

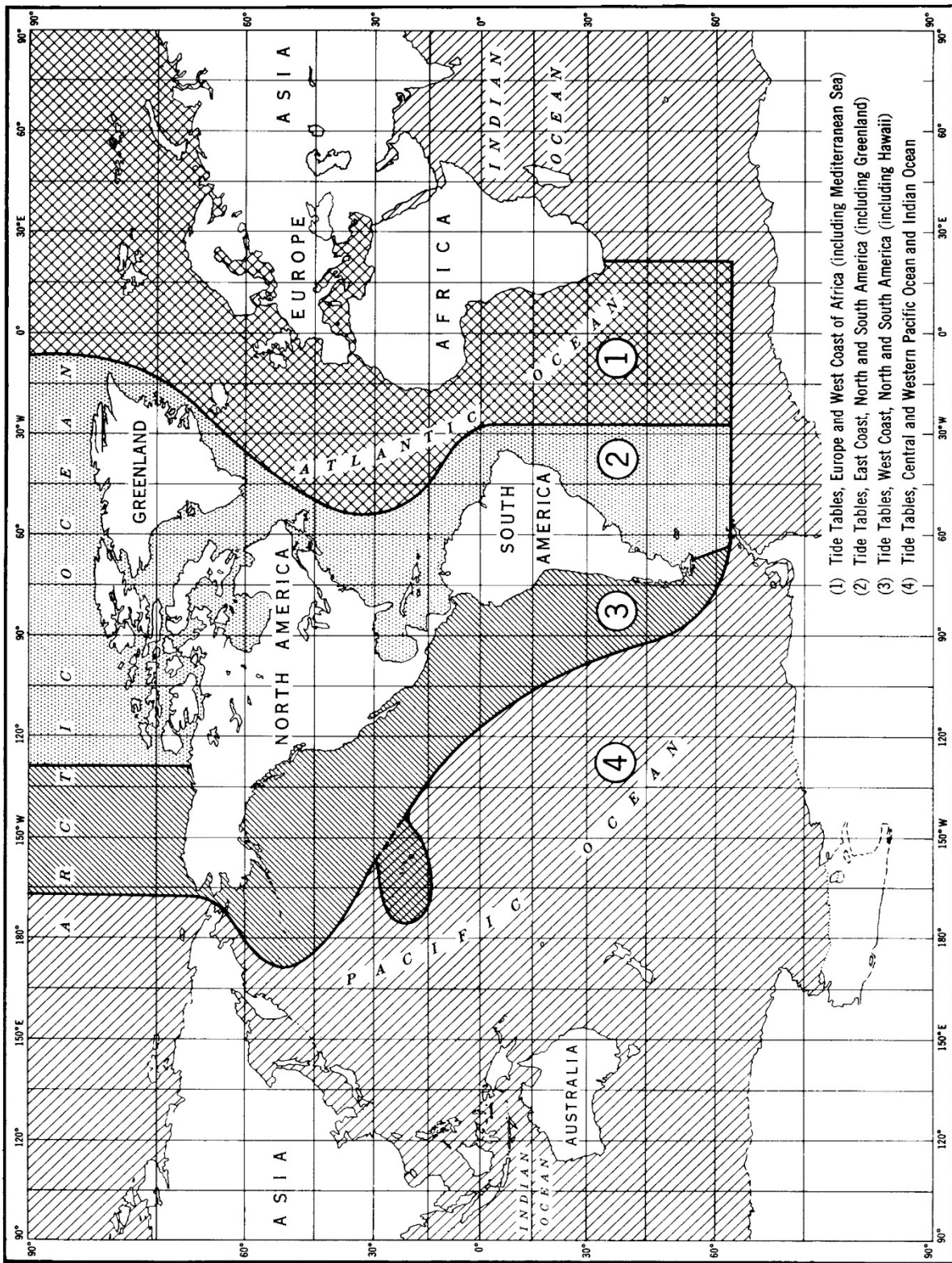
Tide Tables 2018 – Central and Western Pacific Ocean and Indian Ocean

Tide Tables 2018 HIGH AND LOW WATER PREDICTIONS

Central and Western Pacific Ocean and Indian Ocean



INDEX OF TIDE TABLE COVERAGE



Tide Tables 2018 HIGH AND LOW WATER PREDICTIONS

Central and Western Pacific Ocean and Indian Ocean

Issued 2017

SOURCES OF ADDITIONAL INFORMATION

THE NATIONAL OCEAN SERVICE IS NO LONGER PRINTING AND DISTRIBUTING THE TIDE AND TIDAL CURRENT TABLES

Tide and Tidal current data continue to be updated, generated and published by the NOAA/ National Ocean Service; however, the printing and distribution in book-form is now done by several private companies working from information provided by NOS.

NOS now offers two vehicles for obtaining predictions. First, the complete set of Tables as camera-ready page-images will be available on CD-ROM. The CD-ROM vehicle is primarily intended for use by federal or private printers who wish to print in book-form the full set of Tables for distribution to resellers and the general public. Second, for domestic tide stations, predictions are available on the NOS, Center for Operational Oceanographic Products and Services (CO-OPS), website, (<http://tidesandcurrents.noaa.gov/>).

In addition to predictions, the website provides updated information on the status of the Tables as they are finalized each year. Notices concerning the most recent Table updates and publication cut-off dates are included.

For the names of companies printing and distributing the Tables, please call or write to:

National Ocean Service
Oceanographic Division, N/OPS3
1305 East-West Highway
Silver Spring, MD 20910
(301) 713-2815, fax (301) 713-4500

A list of authorized sales agents is published in the Nautical Chart Catalogs or may be obtained on request from the National Ocean Service.

TECHNICAL ASSISTANCE:

Technical questions relating to ***tide and current predictions***, as well as requests for ***special predictions***, should be addressed to:

National Ocean Service
Oceanographic Division, N/OPS3
1305 East-West Highway
Silver Spring, MD 20910
(301) 713-2815

Technical questions relating to ***actual tide observations, tidal datums, and other information necessary for engineering projects*** should be addressed to:

National Ocean Service
Oceanographic Division, N/OPS3
1305 East-West Highway
Silver Spring, MD 20910
(301) 713-2877

Technical questions relating to ***other publications and nautical charts*** should be addressed to:

National Ocean Service
Navigation Services Division
1315 East-West Highway
Silver Spring, MD 20910
(888) 990-NOAA (6622)

SOURCES OF ADDITIONAL INFORMATION

WEBSITES

Center for Operational Oceanographic Products and Services
(PORTS[®] * Predictions * Observations * Bench Marks * Tides Online * Great Lakes Online)
<http://tidesandcurrents.noaa.gov>

Marine Chart Division - <http://www.nauticalcharts.noaa.gov>

Office for Coastal Management - <http://www.coast.noaa.gov>

Ocean Predictions Center - <http://www.opc.ncep.noaa.gov>

National Center for Environmental Information - <https://www.ncei.noaa.gov>

National Centers for Environmental Predictions - <http://www.ncep.noaa.gov>

National Climatic Data Center - <http://www.ncdc.noaa.gov>

National Data Buoy Center - <http://www.ndbc.noaa.gov>

National Geodetic Survey - <http://www.ngs.noaa.gov>

National Geophysical Data Center - <http://www.ngdc.noaa.gov>

National Ocean Service - <http://www.oceanservice.noaa.gov>

National Oceanic and Atmospheric Administration - <http://www.noaa.gov>

National Oceanographic Data Center - <http://www.nodc.noaa.gov>

National Weather Service - <http://www.weather.gov>

U.S. Coast Guard - <http://www.uscg.mil>

U.S. Geological Survey - <http://www.usgs.gov>

U.S. Naval Observatory - <http://www.usno.navy.mil>

U.S. Naval Oceanographic Office - <http://www.usno.navy.mil/NAVO>

CORRECTIONS:

Corrections to this publication, after the date of printing, may appear in the Notice to Mariners. They may also appear in the Local Notice to Mariners, published weekly, by the various United States Coast Guard Districts.

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IMPORTANT NOTICES

For the most part, tide predictions for U.S. reference stations are based upon analyses of tide observations for periods of at least one year. Since the extremes of meteorological conditions have been excluded from the analyses and predictions, the predicted tidal heights should be considered as those expected under average weather conditions. During times when weather conditions differ from what is considered average for the area, the mariner must take note of the corresponding differences between predicted levels and those actually observed. Generally, prolonged onshore winds or a low barometric pressure can produce higher levels than predicted, while the opposite can result in lower levels than those predicted. Exclusive of weather conditions, the astronomical tide is subject to range variations which should be noted. Decreased ranges may be expected near the times when the Moon is in apogee (apogean tides) or in quadrature (neap tides), and increased ranges may be expected when the Moon is in perigee (perigean tides) or in a new or full position (spring tides). A larger diurnal range may also result when the Moon is in its maximum declination (tropic tides). The actual range will depend upon the extent to which combinations of these positions reinforce or detract one from the other. The effect of these astronomical lineups is included in the predictions and may be apparent upon inspection.

The mariner may be kept aware of the times of these astronomical events by referring to the astronomical data listed in this book. He should realize, however, that there is generally a time lag from a few hours to several days from the time of the astronomical event to the time of the resultant tide. During times of storm surges or when extreme weather conditions are imminent, the mariner should closely follow local weather forecasts as they relate to the effects upon the tide levels.

DAYLIGHT-SAVING TIME IS NOT USED IN THIS PUBLICATION. All daily tide predictions and predictions compiled by the use of Table 2 data are based on the standard time meridian indicated for each location. Predicted times may be converted to daylight-saving times, where necessary, by adding 1 hour to these data. In converting times from the Astronomical Data on the inside back cover, it should be noted that daylight-saving time is based on a meridian 15° east of the normal standard meridian for a particular place.

Predicted heights for all reference stations in Table 1 are given in both feet and centimeters. Predicted values from the use of Table 2 and 3 will be in the English system, but can be converted to metric units by the use of Table 6.

The daily tide predictions for the Philippine locations, JOLO, LEGASPI PORT, and SAN FERNANDO HARBOR do not appear in this publication. Daily tide predictions for the Philippine locations are normally supplied to the National Ocean Service by the Bureau of Coast and Geodetic Survey, Republic of the Philippines in accordance with cooperative arrangements for the exchange of tidal predictions. Their predictions were not forwarded in time to appear in this publication. Those predictions usually appear on pages 172 through 175 and 188 through 195. These pages have been omitted from this publication.

NOS, in partnership with other agencies and institutions, has established a series of Physical Oceanographic Real Time Systems (PORTS[®]) in selected areas. These PORTS[®] sites provide constantly updated information on tide and tidal current conditions, water temperature, and weather conditions. This information is updated every six minutes. PORTS[®] sites are currently in operation at several major harbors with future sites to be added. The information is accessible through a computer data connection or by a voice response system at the following numbers:

IMPORTANT NOTICES

PORTS® SITES	VOICE ACCESS	INTERNET ACCESS
CAPE COD	Not Available	www.tidesandcurrents.noaa.gov
CHARLESTON HARBOR	855-216-2137	“
CHERRY POINT	888-817-7794	“
CHESAPEAKE BAY	866-CH-PORTS (866-247-6787)	“
CUYAHOGA	800-376-1192	“
DELAWARE RIVER & BAY	866-30-PORTS (866-307-6787)	“
HOUSTON/GALVESTON	866-HG-PORTS (866-447-6787)	“
HUMBOLDT BAY	855-876-5015	“
JACKSONVILLE	855-901-1549	“
LAKE CHARLES	888-817-7692	“
LOS ANGELES/LONG BEACH	Not Available	“
LOWER COLUMBIA RIVER	888-53-PORTS (888-537-6787)	“
LOWER MISSISSIPPI RIVER	888-817-7767	“
MATAGORDA BAY	888-524-9765	“
MOBILE BAY	877-84-PORTS (877-847-6787)	“
MORGAN CITY	888-312-4113	“
NARRAGANSETT BAY	866-75-PORTS (866-757-6787)	“
NEW HAVEN	888-80-PORTS (888-807-6787)	“
NEW LONDON	855-626-0509	“
NEW YORK/NEW JERSEY	866-21-PORTS (866-217-6787)	“
PASCAGOULA	888-257-1857	“
PORT OF ANCHORAGE	866-AK-PORTS (866-257-6787)	“
PORT FOURCHON	855-687-2084	“
SABINE NECHES	888-257-1859	“
SAN FRANCISCO BAY	866-SB-PORTS (866-727-6787)	“
SOO LOCKS	301-713-9596	“
SAVANNAH	855-907-3136	“
TACOMA	888-60-PORTS (888-607-6787)	“
TAMPA BAY	866-TB-PORTS (866-827-6787)	“

SAMOA ISLANDS

The country of Samoa has changed their time meridian from 165° West to 195° East. Beginning with the 2013 edition of the “Tide Tables, Central and Western Pacific and Indian Ocean”, tide predictions for “Apia, Samoa Island” and for secondary stations in the country of Samoa have been provided relative to the 195° East time meridian. Secondary stations in the western hemisphere which were reference to “Apia, Samoa Island” have been recalculated to use “Pago Pago” as the new reference station for tide predictions.

(Issued January 9, 2012)

INTRODUCTION

Tide tables for the use of mariners have been published by the National Ocean Service (formerly the Coast and Geodetic Survey) since 1853. For a number of years these tables appeared as appendixes to the annual reports of the Superintendent of the Survey, and consisted of detailed instructions enabling the mariner to make his own prediction of tides as the occasion arose.

The first tables to give predictions for each day were those for the year 1867. They gave the times and heights of high waters only and were published in two separate parts, one for the Atlantic coast and the other for the Pacific coast of the United States. Together they contained daily predictions for 19 stations and tidal differences for 124 stations. A few years later predictions for the low waters were also included, and for the year 1896 the tables were extended to include the entire maritime world, with full predictions for 70 ports and tidal differences for about 3,000 stations.

The tide tables are now issued in four volumes, as follows: Europe and West Coast of Africa (including the Mediterranean Sea); East Coast of North and South America (including Greenland); West Coast of North and South America (including the Hawaiian Islands); Central and Western Pacific Ocean and Indian Ocean. Together, they contain daily predictions for more than 250 reference ports and differences and other constants for about 6,500 stations.

This edition of the Tide Tables, Central and Western Pacific Ocean and Indian Ocean contains full daily predictions for more than 90 reference stations and differences and other constants for more than 1,900 stations. It also contains a table for obtaining the approximate height of the tide at any time, a table of local mean time of sunrise and sunset for every 5th day of the year for different latitudes, a table for the reduction of local mean time to standard time, a table for converting feet to centimeters, a table of the Greenwich mean time of the Moon's phases, apogee, perigee, greatest north and south and zero declination, and the time of the solar equinoxes and solstices, and a glossary of terms.

Up to and including the tide tables for the year 1884, all the tide predictions were computed by means of auxiliary tables and curves constructed from the results of tide observations at the different ports. From 1885 to 1911, inclusively, the predictions were generally made by means of the Ferrel tide-predicting machine. From 1912 to 1965, inclusively, they were made by means of the Coast and Geodetic Survey tide predicting machine No. 2. Since 1966, predictions have been made by electronic computer.

In the preparation of these tables all available observations were used. In some cases, however, the observations were insufficient for obtaining final results, and as further information becomes available it will be included in subsequent editions. All persons using these tables are invited to send information or suggestions for increasing their usefulness to the National Ocean Service, Oceanographic Division, 1305 East-West Highway, N/OPS3, Silver Spring, Maryland 20910, U.S.A.

In accordance with cooperative arrangements between the National Ocean Service and the authorities listed below, predictions for the following stations appear in this issue:

Hydrographic Office, Japan.—O. Paramushir Island, Kamaisi, Yokohama, Kobe, Kure, Moji, Sasebo, and Naha.

Hydrographic Department, Admiralty, England.—Musli River, Surabaja Strait, Kutei River entrance, Barito River, Shatt al Arab, Mina Salman, Aden, Karachi, Dar es Salaam, Dreger Harbor, Mina Al Ahmadi, Musay'id Outer Channel Entrance, Mina Jebel Ali, Manila, Cebu and Davao.

Department of Lands and Survey, New Zealand.—Wellington and Auckland.

Geodetic and Research Branch, Survey of India, India.—Mergui, Rangoon, Sagar, Madras, Colombo, Bombay, and Suez.

Service Hydrographique, France.—Do Son, Mui Vung Tau.

Hydrographic Department, Thailand.—Bangkok Bar.

Maritime Headquarters, Republic of South Africa.—Durban.

Instituto Hidrografico, Portugal.—Beira.

Hydrographic Office, Australia.—Sydney, Darwin, Port Phillip, Townsville, Brisbane Bar, Port Adelaide, Port Lincoln, and Port Hedland.

INTRODUCTION

Port of Singapore Authority.—Singapore.

National Mapping & Resource Information Authority, Republic of the Philippines.—Legaspi Port, San Fernando Harbor, Jolo.

National Marine Data and Information Service, Peoples Republic of China.—Hong Kong, Dalian, Qinhuangdao, Tanggu, Yantai, Qingdao, Lianyungang, Wusong, Zhongjun, Kanmen, Xiamen, Shantou, Huangpu, Haikou, and Beihai.

Marine Meteorological Center, Central Weather Bureau, Taiwan.—PengHu, Keelung.

LIST OF REFERENCE STATIONS

Station Name	Page	Datum below mean sea-level	Updated	Data Series
Aden, Yemen.....	360	4.40		
Apia, Samoa Islands	252	1.60		
Auckland, New Zealand	268	5.80		
Bangkok Bar, Thailand	140	7.70		
Barito River (Outer Bar), Borneo	168	4.30		
Beihai, China	128	8.40		
Beira, Mozambique	372	11.40		
Belawan Channel, Sumatra.....	148	4.90		
Bombay, India	328	8.20		
Brisbane Bar, Australia.....	284	4.00		
Cebu, Philippines	180	2.40		
Ch'ang Chiang Approach, China.....	92	9.70		
Chuuk, Moen Island, Caroline Islands.....	204	3.56	2003	6 years (1981-1986)
Colombo, Sri Lanka.....	324	1.20		
Dalian, China.....	60	5.30		
Dar Es Salaam, Tanzania	368	5.00		
Darwin, Australia	276	13.50		
Davao, Philippines.....	176	2.50		
Diego Garcia Island.....	380	2.70		
Djakarta (Tanjungpriok), Java	156	2.00		
Do Son, Hon Dau, Vietnam ¹	132	6.10		
Dreger Harbor, New Guinea.....	272	3.80		
Durban, South Africa	376	3.60		
Guam (Apra Harbor), Mariana Islands	196	1.40	2002	5 years (1994-2000)
Haikou, China.....	124	4.90	2002	5 years (1994-1998)
Hilo, Hawaii Island, Hawaii	240	1.19	2002	5 years (1994-1998)
Hong Kong, China	120	4.50		
Honolulu, Oahu Island, Hawaii	228	0.80	2003	5 years (1996-2000)
Huangpu, China	116	5.10		
Inch'on, Korea	52	15.20		
Johnston Island	244	1.07	2002	5 years (1994-1998)
Jolo, Philippines ¹	172	1.10		
Kahului, Maui Island, Hawaii	236	1.16	2002	5 years (1994-1998)
Kamaisi, Japan.....	16	2.80		
Kanmen, China.....	96	10.80		
Karachi, Pakistan	332	5.40		
Keelung (Chi-lung Chiang), Taiwan	112	1.90		
Kobe, Japan	24	3.10		
Kure, Japan	32	6.60		
Kutei River Entrance, Borneo.....	164	4.60		
Kwajalein Atoll, Marshall Islands	216	3.00	2001	5 years (1994-1998)
Legaspi Port, Philippines ¹	192	2.40		
Lianyungang, China.....	80	9.50		
Madras, India.....	320	2.10		
Malakal Harbor, Palau Islands	200	3.60		
Manila, Philippines	184	1.60		
Mergui, Burma.....	308	9.10		
Mina Al Ahmadi, Kuwait	340	5.64		
Mina Jebel Ali, United Arab Emirates.....	356	3.34		
Mina Salman, Bahrain, Persian Gulf	348	4.20		
Moji, Japan	36	4.60		
Moku O Loe, Oahu Island, Hawaii.....	232	1.07	2002	4 years (1993-1996)

LIST OF REFERENCE STATIONS

Station Name	Page	Datum below mean sea-level	Updated	Data Series
Mui Vung Tau, Vietnam ¹	136	7.90		
Musay'id Outer Channel Entrance, Qatar	352	3.84		
Musi River (Outer Bar), Sumatra	152	6.20		
Naha, Nansei Shoto, Japan	44	3.90		
Namp'O-Hang, Korea	56	10.00		
Nawiliwili, Kauai Island, Hawaii	224	0.85	2002	4 years (1993-1996)
O. Paramushiru, Kuril Islands	8	3.80		
Otomari, Sakhalin Island	4	2.40		
Pago Pago, American Samoa	260	1.34	2002	3 years (1989-1991)
Papeete Harbor, Tahiti Island	248	0.73	2003	5 years (1994-1998)
PengHu (Ma-Kung Kang), Pescadores	108	5.10		
Pohnpei Harbor, Caroline Islands	208	2.30		
Port Adelaide, Australia	296	4.90		
Port Hedland, Australia	304	10.00		
Port Lincoln, Australia	300	2.90		
Port Phillip, Point Lonsdale, Australia	292	2.90		
Pusan, Korea	48	2.10		
Qingdao (Da Gang), China	76	7.80		
Qinhuangdao, China	64	3.00		
Rangoon, Burma	312	10.20		
Ras At Tannurah, Saudi Arabia	344	4.10		
Sagar, Hooghly River, India	316	9.70		
Sakate, Shodo Shima, Japan	28	3.30		
San Fernando Harbor, Philippines ¹	188	1.00		
Sand Island, Midway Islands	220	0.65	2002	5 years (1994-1998)
Sasebo, Japan	40	5.40		
Shantou, China	104	4.50		
Shatt Al Arab (Outer Bar), Iraq	336	5.70		
Singapore (Tanjong Pagar), Singapore	144	5.20		
Suez, Egypt	364	3.70		
Surabaya Strait, Djamuang Reef, Java	160	3.60		
Suva, Suva Harbor	256	2.15	2003	8 years (1990-1997)
Sydney, Australia	288	3.00		
Tanggu (Xingang), China	68	7.90		
Townsville, Australia	280	5.20		
Wake Island	212	1.17	2002	5 years (1994-1998)
Wellington, New Zealand	264	2.90		
Wusong (Shanghai), China	84	6.60		
Xiamen, China	100	10.80		
Yamato Wan, Matsuwa To, Kuril Islands	12	2.60		
Yantai, China	72	4.80		
Yokohama, Japan	20	3.80		
Zhongjun, Changjiang Approach, China	88	7.40		

Each datum figure above represents the difference in elevation between the local mean sea (or river) level and the reference level from which the predicted heights in table 1 were calculated.

Local mean sea level datum should not be confused with the National Geodetic Vertical Datum which is the datum of the geodetic level net of the United States. Relationships between geodetic and local tidal datums are published in connection with the tidal benchmark data of the National Ocean Service.

¹ Daily predictions for this station were omitted.

TABLE 1.— DAILY TIDE PREDICTIONS

EXPLANATION OF TABLE

This table contains the predicted times and heights of the high and low waters for each day of the year at a number of places which are designated as *reference stations*. By using tidal differences from table 2, one can calculate the approximate times and heights of the tide at many other places which are called *subordinate stations*. Instructions on the use of the tidal differences are found in the explanation of table 2.

High water is the maximum height reached by each rising tide, and low water is the minimum height reached by each falling tide. High and low waters can be selected from the predictions by the comparison of consecutive heights. Because of diurnal inequality at certain places, however, there may be a difference of only a few tenths of a foot between one high water and low water of a day, but a marked difference in height between the other high water and low water. Therefore, in using the Tide Tables it is essential, to note carefully the heights as well as the times of the tides.

Time.—The kind of time used for the predictions at each reference station is indicated by the time meridian at the bottom of each page.

Datum.—The datum from which the predicted heights are reckoned is the same as that used for the charts of the locality. In this table a datum approximating to mean low water springs, Indian spring low water, or the lowest possible low water is generally used. The depression of the datum below mean sea level for each of the reference stations of this volume is given on the preceding page.

Depth of water.—The nautical charts published by the United States and other maritime nations show the depth of the water as referred to a low water datum corresponding to that from which the predicted tidal heights are reckoned. To find the actual depth of water at any time, the height of the tide should be added to the charted depth. If the height of the tide is negative—that is, if there is a minus sign (–) before the tabular height—the height should be subtracted from the charted depth. For any time between high and low water, the height of the tide may be estimated from the heights of the preceding and following tides, or table 3 may be used. The reference stations in Table 1 contain the heights in centimeters as well as feet.

Variation in sea level.—Changes in winds and barometric conditions cause variations in sea level from day to day. In general, with onshore winds or a low barometer the heights of both the high and low waters will be higher than predicted, while with offshore winds or a high barometer they will be lower. There are also seasonal variations in sea level, but these variations have been included in the predictions for each station. At ocean stations the seasonal variation in sea level is usually less than half a foot.

At stations on tidal rivers the average seasonal variation in river level due to freshets and droughts may be considerably more than a foot. The predictions for these stations include an allowance for this seasonal variation representing average freshet and drought conditions. Unusual freshets or droughts, however, will cause the tides to be higher or lower, respectively, than predicted.

Number of tides.—There are usually two high and two low waters in a day. Tides follow the Moon more closely than they do the Sun, and the lunar or tidal day is about 50 minutes longer than the solar day. This causes the tide to occur later each day, and a tide that has occurred near the end of one calendar day will be followed by a corresponding tide that may skip the next day and occur in the early morning of the third day. Thus, on certain days of each month only a single high or a single low water occurs. At some stations, during portions of each month, the tide becomes diurnal—that is, only one high and one low water will occur during the period of a lunar day.

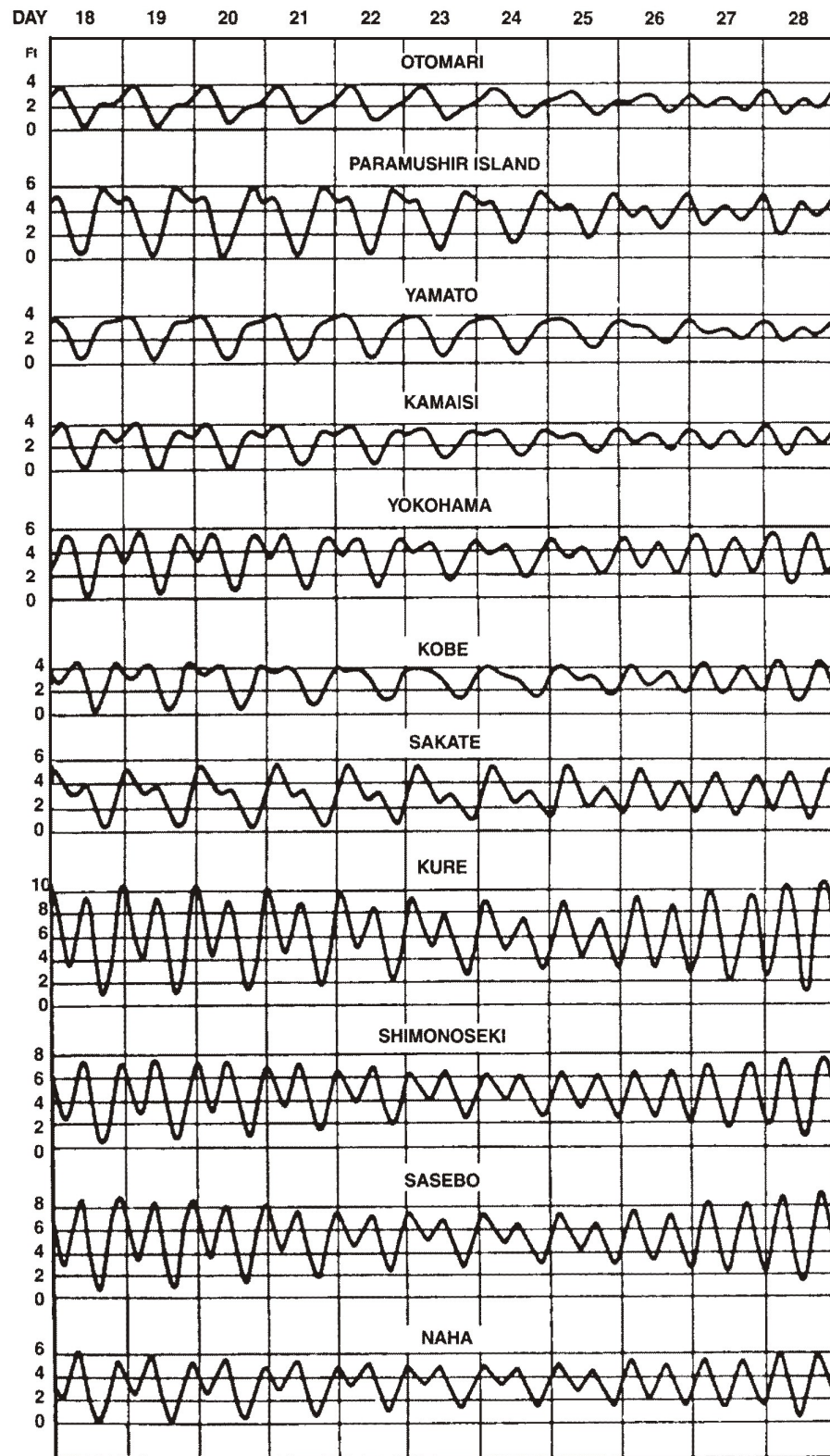
Relation of tide to current.—In using these tables of tide predictions bear in mind that they give the times and heights of high and low waters and not the times of turning of the current or slack water. For stations on the outer coast there is usually a small difference between the time of high or low water and the beginning of ebb or flood current, but for places in narrow channels, landlocked harbors, or on tidal rivers, the time of slack water may differ by several hours from the time of high or low water stand. The relation of the times of high and low water to the turning of the current depends upon a number of factors, so no simple or general rule can be given. For the predicted time of slack water, and other current data, reference should be made to the Tidal Current Tables prepared by the National Ocean

TABLE 1.—DAILY TIDE PREDICTIONS

Service, for the Atlantic and the Pacific coast of North America and Asia.

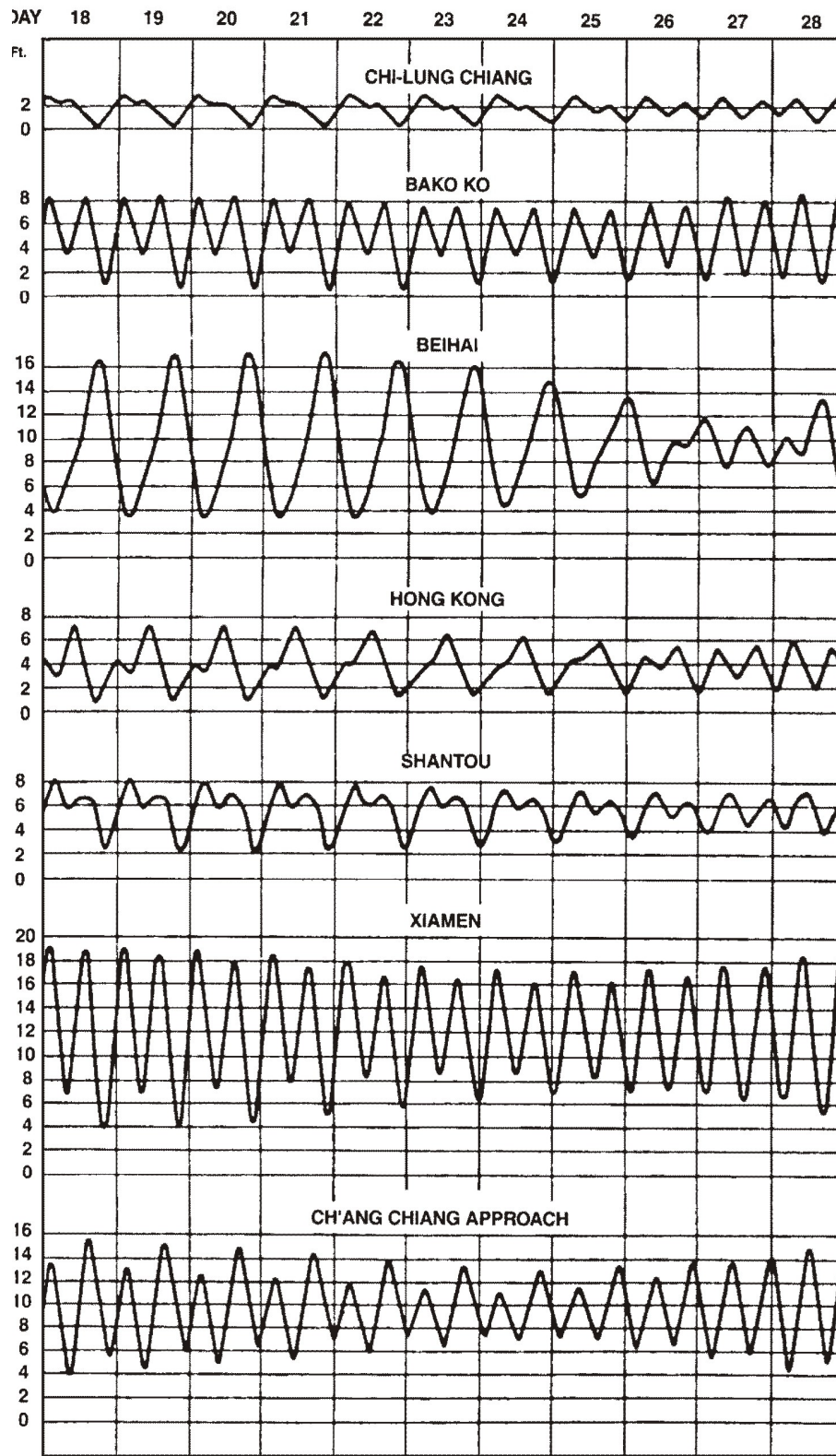
Typical tide curves.— The principal variations in the tide are illustrated by the curves for 25 stations on pages 3, 3a and 3b. These stations are on the Japan and China coasts, but similar variations will be found in other localities. The tide at Pusan is uniformly semidiurnal with the variations following the Moon's phase. The tides for the remainder of the group exhibits considerable inequality. By reference to the curves it is seen that where the inequality is large the tide at some places becomes diurnal around the times of the Moon's maximum declination, whereas at other places there is just a few tenths of a foot difference between the heights of successive high and low waters. It is essential therefore in using tide tables to carefully note the heights as well as the times of the tide.

TYPICAL TIDE CURVES



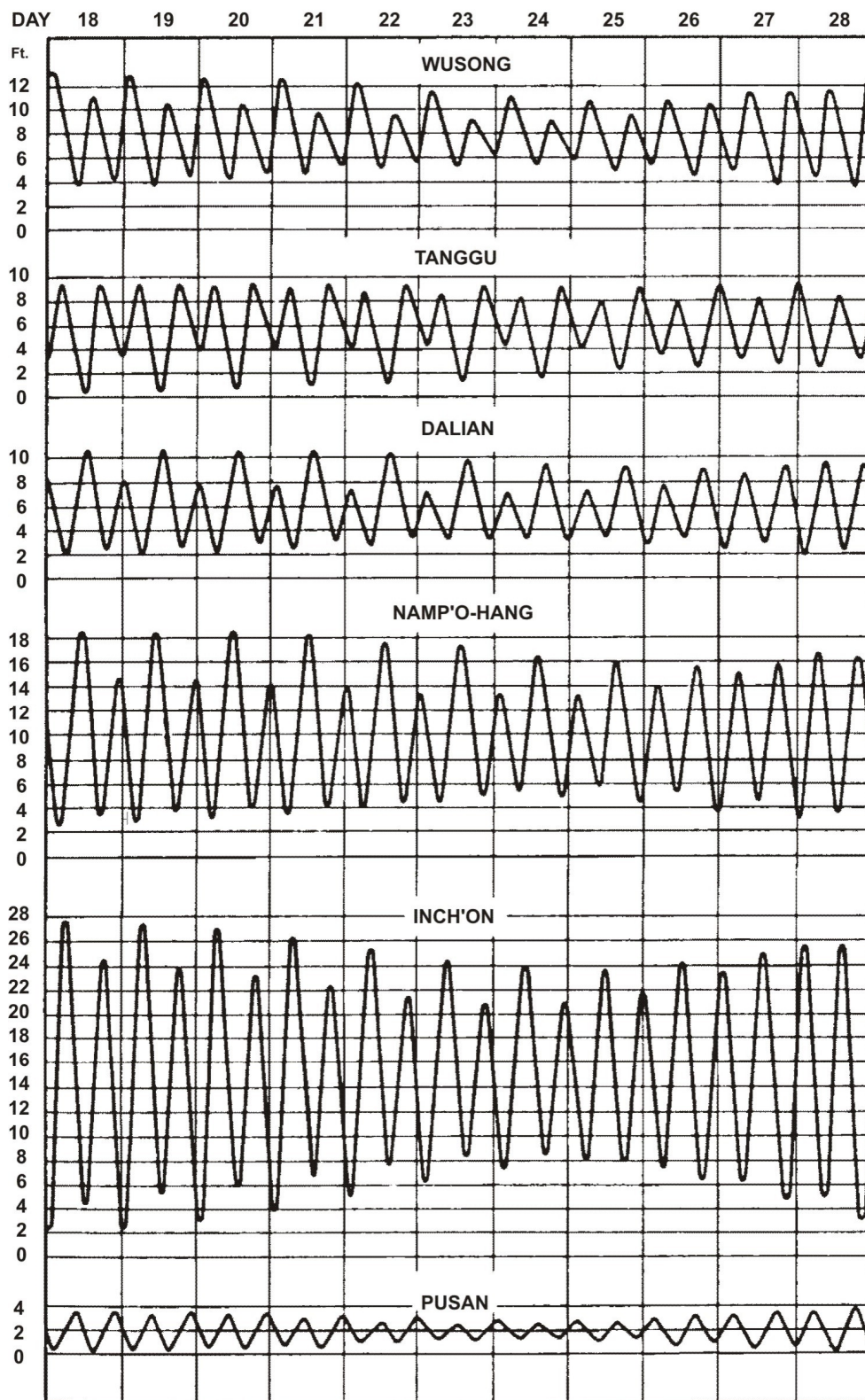
Lunar Data: On Equator, 12th; full Moon, 16th; maximum south declination, 20th; last quarter, 24th; on Equator, 27th; new Moon, 31st.

TYPICAL TIDE CURVES



Lunar Data: On Equator, 12th; full Moon, 16th; maximum south declination, 20th; last quarter, 24th; on Equator, 27th; new Moon, 31st.

TYPICAL TIDE CURVES



Lunar Data: On Equator, 12th; full Moon, 16th; maximum south declination, 20th; last quarter, 24th; on Equator, 27th; new Moon, 31st.

Otomari, Sakhalin Island, 2018

Times and Heights of High and Low Waters

April				May				June																									
Time	Height			Time	Height			Time	Height			Time	Height																				
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																			
1 Su	0534	3.0	91		16 M	0505	3.0	91		1 Tu	0514	3.7	113		16 F	0442	3.9	119		16 Sa	0539	4.8	146		3								
	1140	0.8	24			1130	0.7	21			1221	0.3	9			1211	0.2	6			1329	0.4	12										
	1801	3.3	101			1753	3.0	91			1848	2.6	79			1855	2.5	76			2017	2.4	73										
					●	2330	1.4	43			2327	1.7	52			2246	2.1	64			2325	2.2	67										
2 M	0001	1.2	37		17 Tu	0527	3.3	101		2 W	0542	3.8	116		17 Th	0515	4.2	128		2 Sa	0617	4.1	125		17 Su	0625	4.8	146		9			
	0558	3.3	101			1212	0.5	15			1300	0.3	9			1258	0.0	0			1407	0.6	18			1433	0.3	9					
	1225	0.6	18			1839	2.8	85			1931	2.5	76			1953	2.4	73			2059	2.4	73			2059	2.4	73					
	1845	3.1	94			2348	1.6	49			2348	1.8	55			2303	2.1	64			2350	2.2	67			2350	2.2	67					
3 Tu	0023	1.3	40		18 W	0550	3.5	107		3 Th	0611	3.8	116		18 F	0550	4.3	131		3 Su	0650	4.0	122		18 M	0714	4.5	137		18 M	0714	4.5	137
	0624	3.5	107			1256	0.3	9			1339	0.3	9			1347	0.0	0			1445	0.7	21			1520	0.6	18					
	1308	0.5	15			1927	2.6	79			2013	2.3	70			2058	2.2	67			2144	2.3	70			2232	2.5	76					
	1928	2.8	85												2314	2.1	64								2232	2.5	76						
4 W	0042	1.5	46		19 Th	0001	1.8	55		4 F	0006	1.9	58		19 Sa	0629	4.3	131		4 M	0015	2.2	67		19 Tu	0052	2.4	73		19 Tu	0052	2.4	73
	0650	3.6	110			0617	3.7	113			0641	3.8	116			1439	0.1	3			0725	3.9	119			0805	4.2	128					
	1351	0.5	15			1343	0.2	6			1419	0.4	12								1525	0.9	27			1604	0.9	27					
	2010	2.5	76			2020	2.3	70			2059	2.2	67								2237	2.3	70			2310	2.6	79					
5 Th	0058	1.6	49		20 F	0009	1.9	58		5 Sa	0022	1.9	58		20 Su	0712	4.2	128		5 Tu	0043	2.2	67		20 W	0222	2.4	73		20 W	0222	2.4	73
	0718	3.6	110			0647	3.9	119			0712	3.7	113			1536	0.3	9			0802	3.7	113			0902	3.7	113					
	1435	0.6	18			1435	0.3	9			1503	0.6	18								1606	1.1	34			1646	1.3	40					
	2055	2.3	70			2127	2.0	61			2153	2.1	64											●	2348	2.8	85						
6 F	0109	1.7	52		21 Sa	0003	1.9	58		6 Su	0031	2.0	61		21 M	0801	4.0	122		6 W	0844	3.4	104		21 Th	0422	2.4	73		21 Th	0422	2.4	73
	0748	3.5	107			0722	3.9	119			0746	3.6	110			1636	0.6	18			1648	1.3	40			1013	3.2	98					
	1524	0.8	24			1536	0.4	12			1552	0.8	24													1724	1.6	49					
	2147	2.0	61																														
7 Sa	0113	1.8	55		22 Su	0804	3.8	116		7 M	0825	3.4	104		22 Tu	0858	3.7	113		7 Th	0018	2.5	76		22 F	0026	3.1	94		22 F	0026	3.1	94
	0821	3.4	104			1652	0.6	18			1650	1.0	30			1739	0.9	27			0306	2.4	73			0637	2.2	67					
	1623	0.9	27												●						0939	3.2	98			1153	2.7	82					
																					1731	1.5	46			1758	1.9	58					
8 Su	0902	3.3	101		23 M	0858	3.6	110		8 Tu	0915	3.2	98		23 W	1016	3.2	98		8 F	0049	2.7	82		23 Sa	0104	3.4	104		23 Sa	0104	3.4	104
	1742	1.1	34			1821	0.7	21			1756	1.1	34			1837	1.1	34			0528	2.4	73			0820	1.8	55					
																					1101	2.9	88			1359	2.5	76					
																					1813	1.7	52			1830	2.1	64					
9 M	0959	3.1	94		24 Tu	1017	3.3	101		9 W	1027	3.0	91		24 Th	0207	2.5	76		9 Sa	0117	2.9	88		24 Su	0142	3.7	113		24 Su	0142	3.7	113
	1919	1.1	34			1942	0.8	24			1901	1.2	37			0619	2.3	70			0730	2.1	64			0928	1.5	46					
																					1253	2.6	79			1549	2.4	73					
																					1854	1.8	55			1904	2.3	70					
10 Tu	1130	3.0	91		25 W	1214	3.1	94		10 Th	0251	2.3	70		25 F	0219	2.8	85		10 Su	0146	3.2	98		25 M	0221	3.9	119		25 M	0221	3.9	119
	2032	1.1	34			2039	0.9	27			0544	2.2	67			0819	1.9	58			0848	1.7	52			1017	1.1	34					
											1208	2.8	85			1400	2.7	82			1442	2.5	76			1706	2.5	76					
											1953	1.3	40			2005	1.6	49			1932	2.0	61			1942	2.4	73					
11 W	1313	2.9	88		26 Th	0350	2.3	70		11 F	0248	2.5	76		26 Sa	0241	3.1	94		11 M	0218	3.5	107		26 Tu	0300	4.1	125		26 Tu	0300	4.1	125
	2118	1.0	30			0751	2.0	61			0755	2.0	61			0927	1.4	43			0945	1.2	37			1058	0.9	27					
						1404	3.0	91			1346	2.7	82			1528	2.6	79			1610	2.5	76			1756	2.5	76					
						2119	1.0	30			2033	1.4	43			2038	1.8	55			2008	2.2	67			2026	2.4	73					
12 Th	0411	2.2	67		27 F	0346	2.5	76		12 Sa	0303	2.7	82		27 Su	0308	3.5	107		12 Tu	0253	3.9	119		27 W	0338	4.3	131		27 W	0338	4.3	131
	0806	2.0	61			0915	1.6	49			0903	1.6	49			1018	1.0	30			1035	0.8	24			1135	0.8	24					
	1431	3.0	91			1523	2.9	88			1504	2.7	82			1635	2.6	79			1722	2.6	79			1832	2.6	79					
	2152	1.0	30			2150	1.2	37			2107	1.5	46			2108	1.9	58			2041	2.3	70										

Otomari, Sakhalin Island, 2018

Times and Heights of High and Low Waters

October				November				December																									
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																				
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																			
1 M	0301	0.9	27		16 Tu	0412	1.0	30		1 Th	0535	0.9	27		16 F	0534	1.4	43		1 Sa	0554	1.4	43		16 Su	0500	1.7	52					
	0925	2.1	64			2043	3.5	107			2127	3.6	110			2204	3.2	98			1341	2.7	82			1216	2.9	88					
	1229	2.0	61																							1709	2.6	79		1703	2.6	79	
	1954	3.8	116																							2308	3.1	94		2227	3.0	91	
2 Tu	0414	1.0	30		17 W	0528	1.2	37		2 F	0659	1.1	34		17 Sa	0635	1.5	46		2 Su	0645	1.7	52		17 M	0539	1.9	58					
	2038	3.8	116			2140	3.3	101			2316	3.3	101			1426	2.6	79			1350	3.0	91			1252	3.2	98					
3 W	0557	1.0	30		18 Th	0657	1.3	40		3 Sa	0801	1.2	37		18 Su	0727	1.6	49		3 M	0120	2.9	88		18 Tu	0022	2.8	85					
	2143	3.7	113			2312	3.1	94			1533	2.6	79			1428	2.8	85			0728	1.9	58			0618	2.1	64					
																										1414	3.4	104		1326	3.4	104	
																										2109	1.8	55		2042	2.0	61	
4 Th	0746	1.0	30		19 F	0808	1.3	40		4 Su	0122	3.2	98		19 M	0131	2.9	88		4 Tu	0307	2.8	85		19 W	0228	2.6	79					
	2327	3.6	110			0845	1.3	40			0808	1.7	52			0804	2.1	64			0804	2.1	64			0659	2.3	70					
						1520	2.8	85			1444	3.1	94			1443	3.7	113			1443	3.7	113			1400	3.7	113					
						2052	1.9	58			2100	1.9	58			2203	1.3	40			2203	1.3	40			2138	1.5	46					
5 F	0854	0.9	27		20 Sa	0059	3.1	94		5 M	0254	3.1	94		20 Tu	0252	2.9	88		5 W	0423	2.7	82		20 Th	0404	2.7	82					
						0854	1.3	40			0918	1.5	46			0842	1.8	55			0837	2.3	70			0739	2.4	73					
						1545	2.5	76			1534	3.2	98			1505	3.3	101			1515	4.1	125			1436	4.1	125					
						2009	2.2	67			2152	1.4	43			2148	1.5	46			2247	0.9	27			2225	1.1	34					
6 Sa	0123	3.5	107		21 Su	0219	3.1	94		6 Tu	0403	3.1	94		21 W	0357	2.9	88		6 Th	0521	2.7	82		21 F	0515	2.7	82					
	0938	0.9	27			0928	1.3	40			0946	1.7	52			0911	2.0	61			0909	2.3	70			0817	2.5	76					
	1634	2.4	73			1550	2.7	82			1556	3.5	107			1529	3.6	110			1548	4.3	131			1515	4.4	134					
	2015	2.2	67			2110	1.8	55			2241	1.0	30			2231	1.1	34			2327	0.7	21			2310	0.7	21					
7 Su	0249	3.6	110		22 M	0319	3.2	98		7 W	0500	3.0	91		22 Th	0453	2.9	88		7 F	0609	2.7	82		22 Sa	0613	2.7	82					
	1013	0.9	27			0955	1.4	43			1012	1.8	55			0938	2.1	64			0941	2.4	73			0854	2.6	79					
	1630	2.6	79			1604	2.9	88			1622	3.8	116			1556	3.9	119			1622	4.5	137			1555	4.7	143					
	2132	1.7	52			2157	1.5	46			2325	0.6	18			2313	0.8	24								2354	0.5	15					
8 M	0355	3.6	110		23 Tu	0408	3.2	98		8 Th	0550	2.9	88		23 F	0545	2.8	85		8 Sa	0005	0.6	18		23 Su	0702	2.7	82					
	1042	1.1	34			1020	1.4	43			1037	1.9	58			1002	2.2	67			0650	2.7	82			0929	2.6	79					
	1643	2.9	88			1623	3.1	94			1651	4.1	125			1624	4.2	128			1012	2.4	73			1637	4.9	149					
	2230	1.3	40			2238	1.2	37																									
9 Tu	0451	3.5	107		24 W	0454	3.2	98		9 F	0006	0.4	12		24 Sa	0637	2.8	85		9 Su	0041	0.5	15		24 M	0038	0.3	9					
	1108	1.2	37			1043	1.6	49			0636	2.8	85			1024	2.3	70			0727	2.7	82			0747	2.7	82					
	1705	3.3	101			1643	3.4	104			1100	2.0	61			1655	4.4	134			1043	2.4	73			1006	2.6	79					
	2320	0.9	27			2317	0.9	27			1721	4.2	128								1731	4.6	140			1720	5.0	152					
10 W	0542	3.4	104		25 Th	0538	3.1	94		10 Sa	0047	0.4	12		25 Su	0038	0.3	9		10 M	0118	0.6	18		25 Tu	0122	0.3	9					
	1132	1.4	43			1104	1.7	52			0721	2.7	82			0730	2.6	79			0804	2.7	82			0828	2.6	79					
	1730	3.6	110			1705	3.6	110			1123	2.1	64			1041	2.4	73			1113	2.4	73			1047	2.5	76					
						2357	0.7	21			1752	4.3	131			1729	4.6	140			1806	4.5	137			1804	5.0	152					
11 Th	0007	0.6	18		26 F	0622	2.9	88		11 Su	0127	0.4	12		26 M	0124	0.3	9		11 Tu	0154	0.7	21		26 W	0206	0.5	15					
	0629	3.2	98			1122	1.9	58			0805	2.5	76			0829	2.5	76			0841	2.6	79			0907	2.6	79					
	1155	1.6	49			1728	3.8	116			1143	2.2	67			1054	2.4	73			1143	2.4	73			1134	2.5	76					
	1758	3.8	116								1824	4.2	128			1806	4.7	143			1840	4.4	134			1850	4.8	146					
12 F	0052	0.5	15		27 Sa	0037	0.5	15		12 M	0207	0.6	18		27 Tu	0212	0.4	12		12 W	0231	0.9	27		27 Th	0249	0.7	21					
	0716	2.9	88			0708	2.8	85			0852	2.4	73			1846	4.6	140			0920	2.6	79			0943	2.6	79					
	1215	1.8	55			1136	2.0	61			1201	2.2	67								1212	2.4	73			1232	2.5	76					
	1826	3.9	119			1753	4.0	122			1857	4.1	125								1914	4.2	128			1938	4.5	137					
13 Sa	0137	0.5	15		28 Su	0121	0.5	15		13 Tu	0251	0.8	24		28 W	0304	0.6	18		13 Th	0308	1.1	34		28 F	0330	1.0	30					
	0802	2.7	82			0759	2.5	76			0948	2.3	70			1930	4.4	134			1002	2.6	79			1019	2.8	85					
	1232	1.9	58			1143	2.1	64			1212	2.2	67								1247	2.5	76			1346	2.5	76					
	1856	3.9	119			1822	4.1	125			1931	4.0	122								1950	4.0	122			2029	4.0	122					
14 Su	0223	0.6	18		29 M	0209	0.5	15		14 W	0338	1.0	30		29 Th	0359	0.8	24		14 F	0345	1.3	40		29 Sa	0408	1.4	43					
	0851	2.4	73			0901	2.3	70			2010	3.7	113			2021	4.0	122			1048	2.6	79			1058	3.0	91					
	1244	2.0	61			1139	2.1	64													1334	2.5	76			1527	2.5	76					
	1928	3.9	119			1854	4.2	128													2029												

O. Paramushiru, Kuril Islands, 2018

Times and Heights of High and Low Waters

January				February				March																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 M	0515	5.5	169		16 Tu	0534	5.7	174		1 Th	0610	5.9	179		16 F	0602	5.8	176		1 Th	0455	5.5	169		16 F	0439	5.5	167	
	0928	4.9	148			0951	5.0	153			1102	4.7	143			1112	4.2	129			0955	4.4	134			1005	3.8	116	
	1356	5.7	173			1402	5.7	173			1524	5.6	170			1601	5.5	168			1434	5.3	163			1518	5.3	161	
	2157	0.3	9			2208	0.3	8			2303	0.5	15			2315	0.9	28			2202	1.1	34			2213	1.6	49	
2 Tu	0559	5.8	178		17 W	0610	5.9	180		2 F	0638	5.9	180		17 Sa	0627	5.8	176		2 F	0522	5.6	171		17 Sa	0505	5.5	167	
	1029	5.0	151			1047	5.0	151			1146	4.4	134			1151	3.8	117			1038	4.0	122			1044	3.3	101	
	1439	5.7	173			1455	5.6	172			1622	5.5	168			1659	5.5	168			1540	5.4	166			1620	5.4	166	
	2238	0.1	2			2250	0.2	6			2343	0.7	21			2355	1.2	37			2246	1.2	38			2257	1.8	55	
3 W	0637	6.0	183		18 Th	0642	6.0	183		3 Sa	0705	5.9	180		18 Su	0651	5.7	175		3 Sa	0548	5.6	171		18 Su	0529	5.5	167	
	1121	4.9	150			1136	4.8	145			1226	4.0	123			1230	3.4	104			1117	3.6	109			1120	2.9	87	
	1526	5.6	172			1549	5.6	170			1718	5.4	166			1755	5.4	166			1640	5.5	168			1716	5.6	170	
	2319	0.0	1			2331	0.3	9													2327	1.5	45			2338	2.1	65	
4 Th	0711	6.1	186		19 F	0712	6.0	184		4 Su	0022	1.0	30		19 M	0033	1.6	48		4 Su	0611	5.6	171		19 M	0553	5.5	167	
	1209	4.8	146			1220	4.5	137			0730	5.9	179			0715	5.7	174			1154	3.1	96			1157	2.4	73	
	1614	5.5	169			1643	5.5	167			1307	3.6	111			1309	3.0	91			1735	5.5	169			1808	5.6	171	
	2358	0.2	5								1814	5.3	162			1850	5.3	163											
5 F	0744	6.1	186		20 Sa	0010	0.5	15		5 M	0100	1.4	43		20 Tu	0110	2.1	63		5 M	0006	1.8	56		20 Tu	0016	2.5	76	
	1254	4.6	139			0740	6.0	183			0755	5.8	177			0739	5.7	174			0635	5.6	171			0616	5.5	168	
	1705	5.4	165			1303	4.2	127			1349	3.2	99			1351	2.6	79			1232	2.7	82			1235	2.0	60	
						1738	5.3	163			1912	5.2	157			1947	5.2	158			1829	5.5	168			1900	5.6	171	
6 Sa	0037	0.4	13		21 Su	0049	0.9	26		6 Tu	0136	1.9	59		21 W	0145	2.6	79		6 Tu	0043	2.2	68		21 W	0053	2.9	89	
	0815	6.0	184			0807	5.9	181			0819	5.8	176			0803	5.7	173			0658	5.6	171			0639	5.5	168	
	1340	4.3	131			1346	3.8	116			1434	2.9	87			1435	2.3	69			1311	2.3	70			1314	1.7	51	
	1759	5.2	159			1835	5.2	157			2014	4.9	150			2049	5.0	153			1923	5.4	166			1954	5.5	169	
7 Su	0116	0.8	25		22 M	0127	1.3	41		7 W	0213	2.5	76		22 Th	0221	3.1	95		7 W	0119	2.7	83		22 Th	0129	3.3	102	
	0844	6.0	182			0834	5.9	179			0844	5.7	175			0828	5.7	173			0721	5.6	171			0704	5.5	169	
	1427	3.9	120			1432	3.4	104			1522	2.5	75			1524	2.0	60			1353	2.0	60			1355	1.4	44	
	1858	5.0	151			1936	4.9	149			2123	4.7	144			2200	4.8	147			2020	5.3	161			2051	5.4	164	
8 M	0155	1.3	40		23 Tu	0204	1.9	58		8 Th	0249	3.1	94		23 F	0257	3.6	111		8 Th	0155	3.2	98		23 F	0206	3.8	115	
	0913	5.9	179			0900	5.8	177			0911	5.7	174			0855	5.6	172			0746	5.6	171			0730	5.5	168	
	1518	3.5	108			1521	3.0	92			1614	2.1	65			1617	1.7	53			1437	1.7	53			1440	1.3	40	
	2004	4.7	142			2045	4.7	142			2247	4.6	139			2327	4.8	145			2122	5.1	156			2154	5.2	160	
9 Tu	0234	1.9	58		24 W	0242	2.5	76		9 F	0327	3.7	112		24 Sa	0338	4.1	126		9 F	0231	3.7	112		24 Sa	0245	4.1	126	
	0941	5.8	177			0926	5.8	176			0939	5.7	174			0926	5.6	171			0812	5.6	170			0759	5.5	167	
	1611	3.1	95			1613	2.6	79			1711	1.8	55			1715	1.6	48			1526	1.6	48			1530	1.3	40	
	2121	4.4	134			2205	4.5	136													2236	5.0	152			2308	5.2	157	
10 W	0315	2.6	78		25 Th	0321	3.1	95		10 Sa	0029	4.6	140		25 Su	0110	4.8	147		10 Sa	0310	4.1	126		25 Su	0334	4.5	136	
	1010	5.7	175			1010	5.7	175			0411	4.2	128			0432	4.6	139			0842	5.5	169			0832	5.4	164	
	1706	2.6	80			1708	2.2	66			1012	5.7	173			1003	5.6	170			1621	1.5	45			1626	1.4	42	
	2256	4.2	129			2343	4.4	134			1811	1.5	46			1818	1.4	43											
11 Th	0358	3.2	98		26 F	0403	3.7	114		11 Su	0220	4.8	147		26 M	0246	5.1	154		11 Su	0004	5.0	151		26 M	0031	5.1	156	
	1039	5.7	174			1024	5.7	174			0514	4.7	142			0559	4.9	148			0400	4.5	137			0443	4.7	142	
	1803	2.1	65			1806	1.8	54			1051	5.6	172			1053	5.5	167			0917	5.5	167			0916	5.2	159	
											1911	1.2	38			1921	1.2	38			1722	1.4	44			1729	1.5	45	
12 F	0046	4.3	132		27 Sa	0136	4.6	139		12 M	0341	5.1	156		27 Tu	0346	5.3	161		12 M	0138	5.0	153		27 Tu	0147	5.2	158	
	0448	3.8	116			0455	4.3	131			0651	4.9	150			0744	4.9	149			0516	4.8	145			0620	4.7	142	
	1111	5.7	173			1058	5.7	174			1142	5.6	170			1201	5.4	164			1004	5.3	163			1023	5.1	154	
	1858	1.6	50			1903	1.4	42			2008	1.0	30			2020	1.1	35			1827	1.4	43			1837	1.6	49	
13 Sa	0235	4.6	141		28 Su	0317	4.9	149		13 Tu	0430	5.4	165		28 W	0425	5.4	166		13 Tu	0250	5.2	158		28 W	0242	5.2	160	
	0554	4.4	133			0612	4.7	144			0827	5.0	152			0902	4.7	144			0701	4.8	146			0750	4.4	135	
	1146	5.7	173			1139	5.7	173			1245	5.5	168			1320	5.3	163			1114	5.2	159			1159	4.9	149	
	1950	1.2	36			1958	1.0	31			2101	0.8	25			2113	1.1	33			1932	1.4	43			1944	1.7	52	
14 Su	0356	5.1	154		29 M	0422	5.3	161	</																				

O. Paramushiru, Kuril Islands, 2018

Times and Heights of High and Low Waters

April				May				June															
Time	Height			Time	Height			Time	Height			Time	Height										
	h	m	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm								
1 Su	0445	5.4	164	16 M	0424	5.3	162	1 Tu	0404	5.3	163	16 W	0347	5.4	164	1 F	0408	5.4	166	16 Sa	0007	4.6	141
	1047	2.6	78		1051	1.8	54		1056	1.0	32		1102	0.5	14		1148	-0.1	-3		0411	5.4	165
	1656	5.5	168		1729	5.6	171		1759	5.7	175		1827	5.8	178		1936	6.0	182		1158	-0.2	-6
	2307	2.5	75		2317	3.1	94		2326	3.7	112		2337	4.2	127		1950	6.0	182		1950	6.0	182
2 M	0509	5.4	164	17 Tu	0449	5.3	163	2 W	0431	5.4	164	17 Th	0416	5.4	165	2 Sa	0037	4.6	140	17 Su	0054	4.6	139
	1123	2.1	63		1127	1.3	41		1132	0.7	21		1139	0.2	7		0444	5.4	164		0453	5.3	161
	1748	5.7	173		1819	5.8	176		1848	5.9	179		1914	5.9	181		1227	-0.1	-2		1237	0.0	-1
	2347	2.8	85		2357	3.4	104		0008	4.0	121		0021	4.4	133		2017	6.0	182		2027	5.9	181
3 Tu	0533	5.4	165	18 W	0514	5.4	165	3 Th	0008	4.0	121	18 F	0021	4.4	133	3 Su	0124	4.6	139	18 M	0143	4.4	135
	1200	1.6	50		1204	1.0	30		0458	5.4	165		0447	5.4	166		0523	5.3	161		0540	5.1	155
	1839	5.7	175		1908	5.8	178		1210	0.5	14		1218	0.1	3		1307	0.1	4		1317	0.3	9
									1936	5.9	180		1959	6.0	182		2058	5.9	180		2102	5.8	178
4 W	0025	3.1	96	19 Th	0036	3.7	114	4 F	0049	4.2	128	19 Sa	0105	4.5	137	4 M	0215	4.5	136	19 Tu	0234	4.2	127
	0557	5.4	166		0540	5.4	166		0526	5.4	165		0520	5.4	164		0607	5.1	154		0632	4.8	147
	1238	1.3	40		1243	0.8	23		1249	0.4	11		1257	0.2	5		1347	0.5	14		1347	0.7	22
	1930	5.7	174		1958	5.8	177		2024	5.9	179		2045	5.9	181		2137	5.8	177		2136	5.7	175
5 Th	0103	3.5	107	20 F	0115	4.0	123	5 Sa	0131	4.4	134	20 Su	0153	4.5	138	5 Tu	0312	4.3	130	20 W	0329	3.8	117
	0622	5.5	167		0607	5.4	166		0557	5.4	164		0556	5.2	160		0658	4.8	145		0734	4.5	137
	1317	1.1	34		1322	0.7	21		1329	0.4	13		1338	0.4	11		1430	0.9	28		1439	1.3	39
	2023	5.6	172		2051	5.7	175		2114	5.8	177		2130	5.8	178		2216	5.7	173		2209	5.6	171
6 F	0140	3.9	118	21 Sa	0157	4.3	131	6 Su	0219	4.5	137	21 M	0247	4.5	137	6 W	0415	3.9	120	21 Th	0427	3.4	104
	0648	5.5	167		0636	5.4	164		0631	5.2	160		0637	5.0	153		0804	4.4	135		0852	4.2	127
	1359	1.0	31		1405	0.8	23		1412	0.7	20		1421	0.7	22		1516	1.5	45		1523	1.9	57
	2120	5.5	168		2146	5.6	171		2205	5.7	173		2215	5.7	174		2252	5.5	169		2241	5.5	168
7 Sa	0221	4.2	128	22 Su	0244	4.5	136	7 M	0316	4.5	138	22 Tu	0350	4.3	132	7 Th	0518	3.5	107	22 F	0525	2.9	89
	0717	5.4	165		0709	5.3	161		0711	5.0	153		0728	4.7	144		0933	4.1	125		1029	3.9	120
	1445	1.0	32		1451	0.9	28		1459	1.0	30		1507	1.1	35		1606	2.1	63		1619	2.5	77
	2223	5.4	164		2245	5.5	167		2257	5.6	170		2259	5.6	170		2328	5.4	166		2313	5.4	166
8 Su	0309	4.5	136	23 M	0345	4.5	138	8 Tu	0428	4.4	134	23 W	0501	4.0	123	8 F	0618	3.0	91	23 Sa	0621	2.4	73
	0749	5.3	162		0749	5.1	154		0804	4.8	145		0841	4.4	134		1125	4.0	121		1221	4.0	121
	1536	1.2	36		1543	1.2	37		1551	1.4	42		1559	1.7	51		1703	2.7	81		1707	3.1	96
	2333	5.3	161		2346	5.4	165		2347	5.4	166		2340	5.5	167		0002	5.4	164		2345	5.4	164
9 M	0413	4.6	140	24 Tu	0504	4.5	136	9 W	0547	4.1	125	24 Th	0609	3.6	109	9 Sa	0710	2.4	73	24 Su	0713	1.8	55
	0831	5.2	157		0845	4.8	146		0924	4.4	135		1023	4.1	126		1318	4.1	125		1408	4.2	129
	1633	1.4	43		1641	1.6	48		1650	1.9	57		1657	2.2	68		1809	3.2	99		1814	3.7	113
10 Tu	0043	5.2	160	25 W	0042	5.3	163	10 Th	0032	5.4	164	25 F	0018	5.4	164	10 Su	0036	5.3	163	25 M	0019	5.4	164
	0542	4.6	139		0631	4.2	128		0656	3.6	111		0705	3.0	92		0756	1.8	55		0801	1.2	38
	0932	4.9	149		1015	4.5	138		1119	4.2	129		1222	4.1	125		1451	4.5	136		1533	4.7	142
	1739	1.6	50		1748	1.9	59		1756	2.3	71		1803	2.8	84		1920	3.7	113		1928	4.2	127
11 W	0142	5.3	161	26 Th	0129	5.3	162	11 F	0112	5.3	162	26 Sa	0054	5.3	162	11 M	0109	5.3	163	26 Tu	0054	5.4	165
	0712	4.3	131		0737	3.7	114		0747	3.1	95		0752	2.4	74		0839	1.2	37		0846	0.7	22
	1109	4.7	143		1212	4.4	135		1312	4.3	131		1405	4.3	132		1602	4.9	149		1636	5.1	154
	1848	1.9	57		1858	2.3	69		1907	2.7	83		1913	3.2	98		2029	4.1	125		2042	4.5	136
12 Th	0226	5.3	161	27 F	0208	5.3	161	12 Sa	0147	5.3	161	27 Su	0127	5.3	162	12 Tu	0143	5.4	164	27 W	0132	5.4	165
	0814	3.9	119		0825	3.2	98		0830	2.5	77		0835	1.8	55		0921	0.7	21		0929	0.3	9
	1257	4.7	142		1353	4.6	140		1441	4.6	141		1524	4.7	144		1659	5.3	161		1726	5.4	165
	1955	2.1	64		2005	2.6	78		2013	3.1	94		2021	3.6	110		2132	4.4	133		2147	4.6	141
13 F	0302	5.3	161	28 Sa	0240	5.2	160	13 Su	0219	5.3	161	28 M	0159	5.3	162	13 W	0217	5.4	165	28 Th	0212	5.4	166
	0900	3.4	103		0905	2.7	81		0910	1.9	58		0914	1.2	38		1001	0.3	8		1010	0.0	-1
	1426	4.9	148		1511	4.9	149		1551	5.0	152		1626	5.1	156		1747	5.6	170		1809	5.7	173
	2055	2.3	70		2104	2.9	87		2112	3.4	104		2121	3.9	120		2228	4.5	138		2244	4.7	143
14 Sa	0331	5.3	161	29 Su	0310	5.3	161	14 M	0249	5.3	161	29 Tu	0231	5.3	163	14 Th	0253	5.4	166	29 F	0254	5.4	166
	0939	2.9	87		0943	2.1	63		0947	1.3	41		0953	0.7	22		1040	0.0	-1		1051	-0.2	-6
	1536	5.1	156		1614	5.2	159		1648	5.3	163		1720	5.5	167		1831	5.8	177		1847	5.8	177
	2147	2.5	77		2156	3.1	95		2205	3.7	112		2215	4.2	127		2319	4.6	141		2335	4.7	142
15 Su	0359	5.3	162	30 M	0337	5.3	161	15 Tu	0318	5.3	163	30 W	0302	5.4	165	15 F	0331	5.4	166	30 Sa	0339	5.4	165
	1015	2.3	70		1019	1.5	47		1025	0.9	26		1031	0.3	10		1119	-0.2	-6		1130	-0.2	-7
	1636	5.4	165		1709	5.5	168		1740	5.6	172		1808	5.7	175		1912	5.9	181		1923	5.9	179
	2234	2.8	85		2243	3.4	104		2253	3.9	120		2304	4.4	133		2304	4.4	133		2351	4.5	138
				</																			

O. Paramushiru, Kuril Islands, 2018

Times and Heights of High and Low Waters

July				August				September															
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height										
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm									
1 Su	0022	4.5	138	16 M	0034	4.2	129	1 W	0123	3.3	102	16 Th	0125	2.7	82	1 Sa	0209	1.7	52	16 Su	0212	1.2	36
	0426	5.3	162		0453	5.2	157		0624	4.9	149		0700	4.9	149		0832	4.8	146		0904	5.0	151
	1210	-0.1	-3		1222	0.2	5		1311	1.0	32		1321	1.6	50		1405	2.8	86		1416	3.4	103
	1956	5.9	179		1954	5.7	175		2010	5.5	167		1955	5.3	163		2002	5.2	160		2002	5.2	158
2 M	0109	4.3	132	17 Tu	0118	3.9	119	2 Th	0206	3.0	90	17 F	0208	2.3	70	2 Su	0255	1.4	44	17 M	0258	1.1	33
	0515	5.1	156		0548	5.0	152		0723	4.7	143		0759	4.7	144		0938	4.6	141		1011	4.8	146
	1249	0.2	6		1300	0.6	17		1348	1.6	48		1357	2.2	67		1442	3.3	101		1456	3.8	116
	2028	5.8	177		2022	5.6	172		2035	5.4	166		2019	5.3	162		2029	5.2	160		2015	5.2	157
3 Tu	0156	4.1	124	18 W	0203	3.5	108	3 F	0252	2.6	78	18 Sa	0254	2.0	60	3 M	0346	1.3	39	18 Tu	0350	1.0	32
	0609	4.9	149		0645	4.8	145		0827	4.5	136		0903	4.5	138		1056	4.5	137		1130	4.7	144
	1328	0.6	18		1338	1.0	32		1424	2.2	66		1432	2.8	84		1522	3.8	115		1545	4.1	126
	2059	5.7	174		2049	5.6	170		2101	5.4	164		2045	5.3	162		2059	5.2	159		2050	5.1	154
4 W	0245	3.7	113	19 Th	0250	3.1	96	4 Sa	0342	2.2	66	19 Su	0344	1.6	50	4 Tu	0443	1.1	35	19 W	0448	1.1	33
	0709	4.6	141		0748	4.5	137		0941	4.3	130		1019	4.4	133		1231	4.5	137		1258	4.7	144
	1407	1.1	34		1416	1.6	49		1501	2.8	84		1509	3.3	101		1613	4.2	127		1657	4.4	133
	2128	5.6	171		2116	5.5	168		2127	5.4	164		2112	5.3	161		2135	5.1	156		2136	4.9	150
5 Th	0337	3.3	101	20 F	0340	2.7	83	5 Su	0436	1.8	54	20 M	0439	1.4	43	5 W	0545	1.1	33	20 Th	0553	1.1	35
	0817	4.3	131		0900	4.2	129		1109	4.1	126		1152	4.3	131		1407	4.7	142		1413	4.8	147
	1447	1.7	52		1455	2.2	68		1541	3.3	102		1551	3.8	116		1734	4.4	135		1838	4.4	133
	2157	5.5	168		2143	5.4	166		2157	5.3	163		2144	5.2	160		2224	5.0	153		2245	4.8	145
6 F	0432	2.9	87	21 Sa	0434	2.3	70	6 M	0534	1.4	44	21 Tu	0538	1.2	36	6 Th	0650	1.0	30	21 F	0701	1.2	37
	0940	4.0	123		1026	4.0	123		1257	4.2	128		1340	4.4	135		1514	4.9	148		1504	5.0	151
	1530	2.4	72		1535	2.9	87		1627	3.9	119		1648	4.2	129		1920	4.5	136		2006	4.1	126
	2227	5.4	166		2212	5.4	165		2230	5.3	162		2222	5.2	159		2335	4.9	149		2335	4.9	149
7 Sa	0528	2.4	72	22 Su	0531	1.8	56	7 Tu	0633	1.1	33	22 W	0640	1.0	29	7 F	0753	1.0	29	22 Sa	0019	4.7	142
	1120	3.9	120		1209	4.0	123		1446	4.5	137		1511	4.7	143		1557	5.0	153		0805	1.3	39
	1616	3.0	91		1620	3.5	106		1736	4.3	132		1821	4.5	137		2041	4.3	130		1541	5.0	153
	2257	5.4	165		2242	5.4	164		2310	5.3	161		2313	5.1	156		2313	5.1	156		2103	3.8	115
8 Su	0624	1.8	56	23 M	0628	1.4	42	8 W	0731	0.8	24	23 Th	0741	0.8	24	8 Sa	0100	4.8	147	23 Su	0150	4.7	143
	1313	4.1	124		1403	4.3	130		1600	4.8	147		1605	5.0	151		0850	0.9	28		0902	1.3	41
	1711	3.6	110		1717	4.0	122		1915	4.6	140		2003	4.5	138		1629	5.1	155		1611	5.1	154
	2330	5.4	164		2317	5.4	164		0001	5.2	160		0020	5.1	154		2136	3.9	119		2146	3.3	101
9 M	0717	1.3	40	24 Tu	0723	1.0	29	9 Th	0826	0.5	16	24 F	0837	0.6	19	9 Su	0220	4.9	149	24 M	0305	4.9	148
	1455	4.4	135		1536	4.6	141		1645	5.1	156		1641	5.1	156		0941	1.0	30		0953	1.5	46
	1821	4.1	126		1839	4.4	135		2046	4.6	141		2117	4.4	133		1657	5.2	157		1638	5.1	155
					2358	5.3	163		0102	5.2	158		0135	5.0	153		2219	3.5	107		2224	2.8	86
10 Tu	0006	5.4	165	25 W	0815	0.6	18	10 F	0916	0.3	10	25 Sa	0929	0.6	18	10 M	0329	5.0	152	25 Tu	0409	5.1	154
	0807	0.8	25		1635	5.0	152		1720	5.3	162		1712	5.2	160		1027	1.1	34		1038	1.7	52
	1610	4.8	147		2010	4.7	142		2152	4.5	137		2209	4.1	124		1722	5.2	157		1702	5.1	155
	1943	4.5	137												2257		3.1	93	2301		2.3	71	
11 W	0045	5.4	165	26 Th	0046	5.3	163	11 Sa	0207	5.2	158	26 Su	0246	5.1	154	11 Tu	0429	5.1	156	26 W	0505	5.2	159
	0854	0.4	12		0904	0.3	9		1003	0.3	8		1015	0.6	19		1110	1.3	41		1120	2.0	61
	1703	5.2	159		1718	5.3	161		1749	5.4	165		1738	5.3	161		1746	5.2	157		1726	5.1	156
	2102	4.7	143		2128	4.7	143		2243	4.2	129		2252	3.7	113		2334	2.6	78		2337	1.8	56
12 Th	0130	5.4	165	27 F	0141	5.3	162	12 Su	0311	5.2	157	27 M	0350	5.1	155	12 W	0525	5.2	159	27 Th	0558	5.3	163
	0938	0.1	3		0950	0.1	2		1046	0.3	9		1058	0.8	23		1149	1.6	50		1159	2.4	72
	1745	5.5	167		1752	5.5	167		1817	5.4	166		1803	5.3	161		1809	5.2	158		1750	5.1	156
	2207	4.7	144		2227	4.6	140		2325	3.9	119		2331	3.3	100								
13 F	0218	5.4	165	28 Sa	0238	5.3	161	13 M	0411	5.2	157	28 Tu	0449	5.1	156	13 Th	0011	2.1	65	28 F	0014	1.4	44
	1021	-0.1	-3		1033	0.0	0		1127	0.5	14		1139	1.0	31		0618	5.2	160		0649	5.4	164
	1821	5.7	173		1823	5.6	170		1842	5.4	166		1827	5.3	161		1227	2.0	62		1237	2.8	84
	2302	4.7	142		2316	4.4	133										1832	5.2	158		1814	5.2	157
14 Sa	0308	5.3	163	29 Su	0335	5.2	160	14 Tu	0005	3.5	107	29 W	0009	2.9	87	14 F	0049	1.7	53	29 Sa	0052	1.1	34
	1102	-0.2	-5		1115	0.1	2		0508	5.1	156		0544	5.2	157		0710	5.2	158		0741	5.3	163
	1854	5.7	175		1852	5.6	171		1206	0.8	23		1217	1.4	42		1304	2.5	76		1314	3.1	96
	2350	4.5	136												1851		5.3	161	1856		5.2	158	1838
15 Su	0400	5.3	161	30 M	0000	4.1	124	15 W	0045	3.1	95	30 Th	0047	2.4	74	15 Sa	0129	1.4	43	30 Su	0132	0.9	28
	1142	-0.1	-2		0432	5.2	158		0604	5.0	153		0638	5.1	155		0805	5.1	155		0835	5.2	160
	1925	5.8	176		1155	0.3	8		1244	1.1	35		1254	1.8	55		1339	3.0	90		1351	3.5	108
					1919	5.6	171		1931	5.4	164		1914	5.2	160		1920	5.2	159		1904	5.2	158
			31 Tu	0041	3.7	114																	

O. Paramushiru, Kuril Islands, 2018

Times and Heights of High and Low Waters

October				November				December																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 M	0215	0.8	25		16 Tu	0221	0.6	19		1 Th	0316	0.9	28		16 F	0324	1.2	37		1 Sa	0332	1.6	49		16 Su	0340	2.1	64	
	0934	5.1	156			1001	5.3	161			1116	5.3	163			1117	5.5	167			1111	5.6	170			1059	5.6	172	
	1431	3.9	118			1455	4.2	129			1644	4.3	130			1721	4.0	122			1739	3.6	109			1747	3.1	94	
	1933	5.2	157			1925	5.1	154			2021	4.6	140			2059	4.3	132			2155	4.1	126			2253	4.1	125	
2 Tu	0303	0.9	26		17 W	0309	0.8	25		2 F	0410	1.3	41		17 Sa	0418	1.7	53		2 Su	0425	2.2	67		17 M	0431	2.8	84	
	1041	5.0	152			1104	5.2	158			1208	5.3	161			1200	5.4	164			1147	5.5	167			1132	5.6	170	
	1520	4.2	127			1558	4.3	132			1806	4.0	121			1829	3.5	108			1837	3.0	92			1841	2.5	77	
	2006	5.1	154			2005	4.9	148			2146	4.3	131			2248	4.1	125			2350	4.1	124						
3 W	0355	1.0	30		18 Th	0402	1.1	33		3 Sa	0513	1.8	54		18 Su	0521	2.3	69		3 M	0527	2.8	85		18 Tu	0047	4.2	127	
	1156	4.9	150			1208	5.1	156			1254	5.2	159			1239	5.3	162			1222	5.4	165			0531	3.3	102	
	1626	4.3	132			1721	4.3	130			1913	3.5	108			1923	3.0	91			1928	2.5	75			1205	5.5	169	
	2049	4.9	148			2104	4.6	140			2343	4.2	127											1931		1.9	59		
4 Th	0456	1.1	35		19 F	0504	1.4	43		4 Su	0622	2.2	67		19 M	0045	4.1	126		4 Tu	0140	4.3	130		19 W	0229	4.5	137	
	1308	4.9	150			1305	5.1	155			1334	5.2	157			0629	2.8	84			0635	3.3	102			0641	3.9	119	
	1759	4.3	131			1849	4.0	122			2003	3.0	91			1315	5.3	161			1256	5.4	165			1239	5.5	169	
	2154	4.7	142			2239	4.4	133								2008	2.4	73			2012	1.8	56			2017	1.4	42	
5 F	0603	1.4	42		20 Sa	0613	1.7	53		5 M	0132	4.3	131		20 Tu	0222	4.4	135		5 W	0307	4.7	142		20 Th	0347	4.9	150	
	1406	5.0	152			1352	5.1	155			0731	2.6	79			0739	3.2	97			0746	3.8	115			0754	4.3	132	
	1928	4.1	124			1953	3.6	109			1408	5.2	157			1348	5.3	161			1329	5.4	165			1313	5.6	170	
	2332	4.5	136								2045	2.4	74			2049	1.8	55			2054	1.3	39			2100	0.9	26	
6 Sa	0712	1.5	47		21 Su	0033	4.3	131		6 Tu	0256	4.6	141		21 W	0337	4.8	147		6 Th	0414	5.1	155		21 F	0447	5.3	162	
	1448	5.0	153			0722	2.0	62			0835	2.9	89			0843	3.5	108			0851	4.1	126			0903	4.6	140	
	2029	3.6	111			1429	5.1	154			1439	5.2	157			1419	5.3	161			1402	5.4	166			1350	5.6	171	
						2039	3.1	93			2123	1.8	56			2128	1.2	38			2134	0.8	23			2142	0.4	13	
7 Su	0115	4.5	137		22 M	0209	4.5	137		7 W	0402	5.0	152		22 Th	0437	5.2	159		7 F	0508	5.4	166		22 Sa	0536	5.7	173	
	0816	1.7	53			0826	2.3	70			0931	3.2	98			0940	3.8	117			0950	4.4	134			1005	4.8	146	
	1522	5.0	153			1501	5.1	154			1508	5.2	158			1449	5.3	163			1435	5.5	168			1428	5.6	172	
	2113	3.1	96			2119	2.5	76			2200	1.3	39			2206	0.8	23			2213	0.4	11			2223	0.1	4	
8 M	0239	4.7	143		23 Tu	0323	4.8	146		8 Th	0458	5.3	162		23 F	0529	5.5	169		8 Sa	0556	5.7	175		23 Su	0619	5.9	180	
	0913	1.9	58			0922	2.5	77			1021	3.5	107			1031	4.1	125			1043	4.6	140			1059	4.9	148	
	1551	5.1	154			1529	5.1	155			1536	5.2	160			1520	5.4	165			1510	5.5	169			1509	5.6	172	
	2152	2.6	80			2156	1.9	59			2237	0.8	25			2244	0.4	11			2252	0.1	2			2302	0.0	-1	
9 Tu	0347	5.0	151		24 W	0424	5.1	156		9 F	0548	5.6	170		24 Sa	0617	5.8	177		9 Su	0641	6.0	182		24 M	0658	6.1	185	
	1003	2.1	65			1012	2.8	86			1107	3.8	115			1118	4.3	132			1132	4.7	143			1149	4.9	148	
	1617	5.1	154			1556	5.1	156			1604	5.3	161			1551	5.4	166			1546	5.5	169			1552	5.6	170	
	2228	2.1	64			2232	1.4	43			2314	0.5	14			2322	0.1	3			2331	-0.1	-2			2342	0.0	-1	
10 W	0445	5.2	158		25 Th	0518	5.4	164		10 Sa	0637	5.8	176		25 Su	0702	5.9	181		10 M	0722	6.1	185		25 Tu	0734	6.1	186	
	1048	2.4	73			1057	3.1	95			1150	4.0	123			1204	4.5	136			1220	4.7	144			1236	4.8	145	
	1642	5.1	155			1622	5.2	157			1633	5.3	163			1624	5.4	166			1624	5.5	168			1637	5.5	167	
	2304	1.6	49			2308	1.0	29			2352	0.2	6																
11 Th	0538	5.4	164		26 F	0608	5.6	170		11 Su	0723	5.9	179		26 M	0000	0.0	0		11 Tu	0010	0.0	-1		26 W	0021	0.1	4	
	1130	2.7	83			1139	3.4	104			1233	4.2	129			0746	6.0	183			0802	6.1	186			0809	6.1	186	
	1706	5.1	156			1648	5.2	159			1703	5.3	163			1249	4.6	139			1307	4.7	143			1323	4.6	139	
	2340	1.2	36			2345	0.6	19								1658	5.4	165			1706	5.4	164			1726	5.3	162	
12 F	0628	5.5	168		27 Sa	0657	5.7	173		12 M	0030	0.1	4		27 Tu	0039	0.0	1		12 W	0049	0.2	5		27 Th	0100	0.4	13	
	1209	3.1	94			1219	3.7	113			0810	5.9	179			0829	6.0	183			0840	6.0	184			0842	6.0	184	
	1731	5.2	157			1714	5.2	160			1316	4.4	134			1336	4.6	140			1356	4.6	139			1411	4.3	131	
											1734	5.3	162			1736	5.3	161			1751	5.2	158			1819	5.1	155	
13 Sa	0018	0.9	26		28 Su	0023	0.4	12		13 Tu	0110	0.2	6		28 W	0119	0.3	8		13 Th	0129	0.5	15		28 F	0140	0.9	26	
	0718	5.5	169			0746	5.7	174			0857	5.8	177			0911	5.9	180			0916	6.0	182			0913	5.9	181	
	1247	3.4	104			1300	4.0	121			1404	4.5	136			1429	4.5	137			1450	4.3	132			1503	4.0	121	
	1756	5.2	158			1742	5.2	160			1810	5.2	158			1819	5.1	154			1844	4.9	150			1920	4.8	146	
14 Su	0056	0.7	20		29 M	0102	0.3	10																					

Yamato Wan, Matsuwa To, Kuril Islands, 2018

Times and Heights of High and Low Waters

April				May				June																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 Su	0536	3.3	101		16 M	0451	3.3	101		1 Tu	0439	3.7	113		16 F	0427	4.0	122		16 Sa	0406	4.5	137						
	1127	1.8	55			1109	1.6	49			1155	0.8	24			1247	0.3	9			1244	-0.4	-12						
	1734	3.5	107			1737	3.4	104			1907	3.4	104			2124	3.4	104											
	2349	1.7	52		●	2322	2.1	64			2338	2.7	82			2340	3.3	101											
2 M	0550	3.4	104		17 Tu	0502	3.4	104		2 W	0458	3.8	116		17 Th	0411	4.0	122		2 Sa	0453	4.0	122		17 Su	0451	4.5	137	
	1208	1.4	43			1145	1.2	37			1230	0.6	18			1210	0.1	3			1320	0.3	9			1328	-0.3	-9	
	1833	3.5	107			1834	3.5	107			2000	3.4	104			2015	3.5	107											
						2350	2.4	73							2324	3.3	101												
3 Tu	0020	2.0	61		18 W	0516	3.6	110		3 Th	0005	2.9	88		18 F	0439	4.2	128		3 Su	0521	4.0	122		18 M	0539	4.4	134	
	0606	3.5	107			1223	0.8	24			0518	3.8	116			1252	-0.1	-3			1354	0.4	12			1413	-0.1	-3	
	1247	1.2	37			1932	3.5	107			1304	0.5	15			2122	3.6	110							2255	3.5	107		
	1928	3.4	104								2052	3.4	104			2346	3.5	107											
4 W	0047	2.3	70		19 Th	0015	2.7	82		4 F	0028	3.1	94		19 Sa	0511	4.3	131		4 M	0550	3.9	119		19 Tu	0115	3.4	104	
	0623	3.6	110			0534	3.8	116			0538	3.9	119			1337	-0.2	-6			1429	0.5	15			0630	4.1	125	
	1325	1.0	30			1304	0.5	15			1339	0.5	15													1456	0.3	9	
	2023	3.3	101			2034	3.4	104			2148	3.3	101													2315	3.4	104	
5 Th	0110	2.6	79		20 F	0036	3.0	91		5 Sa	0046	3.2	98		20 Su	0548	4.3	131		5 Tu	0621	3.7	113		20 W	0248	3.2	98	
	0641	3.7	113			0556	4.0	122			0600	3.9	119			1425	-0.1	-3			1506	0.7	21			0726	3.7	113	
	1404	0.9	27			1348	0.3	9			1415	0.5	15													1538	0.7	21	
	2121	3.2	98			2146	3.4	104			2255	3.3	101													2336	3.4	104	
6 F	0128	2.8	85		21 Sa	0051	3.2	98		6 Su	0055	3.2	98		21 M	0628	4.2	128		6 W	0015	3.3	101		21 Th	0438	2.9	88	
	0659	3.7	113			0622	4.1	125			0624	3.8	116			1514	0.1	3			0220	3.2	98			0837	3.2	98	
	1445	0.9	27			1436	0.2	6			1455	0.7	21								0654	3.5	107			1617	1.3	40	
	2231	3.1	94																		1543	1.0	30			2358	3.5	107	
7 Sa	0136	2.9	88		22 Su	0653	4.1	125		7 M	0649	3.7	113		22 Tu	0712	3.9	119		7 Th	0031	3.3	101		22 F	0627	2.4	73	
	0720	3.7	113			1530	0.3	9			1538	0.8	24			1606	0.5	15			0416	3.1	94			1028	2.7	82	
	1529	0.9	27																		0735	3.2	98			1653	1.8	55	
																					1622	1.3	40						
8 Su	0743	3.7	113		23 M	0729	4.1	125		8 Tu	0716	3.6	110		23 W	0115	3.4	104		8 F	0044	3.3	101		23 Sa	0021	3.6	110	
	1622	1.0	30			1631	0.5	15			1627	1.0	30			0357	3.3	101			0632	2.8	85			0749	1.9	58	
																0806	3.5	107			0851	2.9	88			1319	2.5	76	
																1700	0.9	27			1703	1.6	49			1723	2.2	67	
9 M	0809	3.6	110		24 Tu	0813	3.9	119		9 W	0746	3.4	104		24 Th	0129	3.4	104		9 Sa	0058	3.3	101		24 Su	0047	3.7	113	
	1724	1.2	37			1739	0.7	21			1723	1.3	40			0645	3.0	91			0750	2.4	73			0847	1.4	43	
																0940	3.1	94			1138	2.6	79						
																1755	1.4	43			1748	2.0	61						
10 Tu	0843	3.5	107		25 W	0919	3.5	107		10 Th	0247	3.2	98		25 F	0147	3.4	104		10 Su	0112	3.4	104		25 M	0115	3.8	116	
	1837	1.3	40			1850	1.0	30			1823	1.5	46			0819	2.4	73			0834	1.9	58			0934	1.0	30	
																1231	2.7	82			1431	2.6	79						
																1852	1.8	55			1835	2.4	73						
11 W	0947	3.3	101		26 Th	0332	3.3	101		11 F	0245	3.2	98		26 Sa	0206	3.5	107		11 M	0129	3.5	107		26 Tu	0145	3.9	119	
	1948	1.3	40			0810	3.0	91			0837	2.7	82			0912	1.9	58			0914	1.4	43			1014	0.7	21	
						1144	3.2	98			1146	2.8	85			1502	2.7	82			1636	2.8	85						
						1959	1.3	40			1923	1.7	52			1948	2.2	67			1925	2.7	82						
12 Th	0449	3.2	98		27 F	0336	3.3	101		12 Sa	0251	3.2	98		27 Su	0227	3.6	110		12 Tu	0150	3.7	113		27 W	0217	4.0	122	
	0832	3.0	91			0917	2.5	76			0910	2.3	70			0954	1.4	43			0953	0.9	27			1051	0.5	15	
	1214	3.2	98			1412	3.0	91			1414	2.8	85			1646	2.9	88			1805	3.1	94						
	2047	1.4	43			2058	1.6	49			2018	2.0	61			2040	2.6	79			2015	3.0	91						
13 F	0436	3.1	94		28 Sa	0348	3.4	104		13 Su	0300	3.3	101		28 M	0250	3.7	113		13 W	0216	4.0	122		28 Th	0250	4.0	122	
	0924	2.7	82			1003	2.0	61			0943	1.9	58			1032	1.0	30			1034	0.4	12			1126	0.3	9	
	1412	3.1	94			1553	3.1	94			1552	2.9	88			1801	3.1	94											
	2135	1.5	46			2148	1.9	58			2107	2.3	70			2127	2.9	88											
14 Sa	0437	3.1	94		29 Su																								

Yamato Wan, Matsuwa To, Kuril Islands, 2018

Times and Heights of High and Low Waters

July				August				September						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm
1 Su	0432	4.0	122	9	16 M	0456	4.4	134	-3	1 W	0040	2.9	88	
	1304	0.3				1316	-0.1	-3			0557	3.7	113	
						2122	3.4	104			1340	0.9	27	
											2103	3.2	98	
2 M	0507	3.9	119		17 Tu	0028	3.2	98		2 Th	0128	2.7	82	
	1336	0.4	12			0553	4.2	128			0642	3.5	107	
	2212	3.4	104			1356	0.2	6			1405	1.1	34	
						2137	3.4	104			2113	3.3	101	
3 Tu	0033	3.3	101		18 W	0140	3.0	91		3 F	0221	2.5	76	
	0543	3.8	116			0652	3.8	116			0733	3.3	101	
	1406	0.6	18			1432	0.7	21			1429	1.4	43	
	2227	3.3	101			2154	3.4	104			2124	3.3	101	
4 W	0129	3.2	98		19 Th	0256	2.6	79		4 Sa	0320	2.3	70	
	0622	3.7	113			0757	3.4	104			0836	3.0	91	
	1436	0.8	24			1505	1.2	37			1450	1.8	55	
	2241	3.3	101			2214	3.5	107			2138	3.4	104	
5 Th	0237	3.0	91		20 F	0417	2.3	70		5 Su	0426	1.9	58	
	0706	3.4	104			0915	2.9	88			1004	2.7	82	
	1505	1.1	34			1532	1.7	52			1503	2.2	67	
	2254	3.3	101			2236	3.6	110			2156	3.6	110	
6 F	0356	2.8	85		21 Sa	0541	1.9	58		6 M	0539	1.6	49	
	0802	3.1	94			1105	2.6	79			1241	2.5	76	
	1533	1.4	43			1548	2.1	64			1444	2.4	73	
	2307	3.4	104			2302	3.7	113			2221	3.8	116	
7 Sa	0522	2.5	76		22 Su	0701	1.6	49		7 Tu	0654	1.2	37	
	0928	2.7	82			2332	3.8	116			2255	3.9	119	
	1559	1.8	55											
	2323	3.5	107											
8 Su	0641	2.1	64		23 M	0808	1.2	37		8 W	0804	0.8	24	
	1154	2.5	76								2344	4.1	125	
	1618	2.2	67											
	2342	3.6	110											
9 M	0745	1.6	49		24 Tu	0007	3.9	119		9 Th	0906	0.4	12	
						0904	0.9	27						
10 Tu	0007	3.8	116		25 W	0048	3.9	119		10 F	0047	4.2	128	
	0840	1.0	30			0951	0.7	21			1001	0.1	3	
11 W	0041	4.0	122		26 Th	0134	3.9	119		11 Sa	0158	4.3	131	
	0929	0.5	15			1032	0.5	15			1051	0.0	0	
12 Th	0122	4.2	128		27 F	0222	3.9	119		12 Su	0309	4.3	131	
	1017	0.1	3			1110	0.5	15			1136	0.0	0	
											1946	3.4	104	
											2235	3.2	98	
13 F	0211	4.4	134		28 Sa	0308	3.9	119		13 M	0415	4.3	131	
	1104	-0.2	-6			1144	0.4	12			1219	0.2	6	
											1952	3.3	101	
											2340	2.9	88	
14 Sa	0304	4.5	137		29 Su	0352	3.9	119		14 Tu	0518	4.1	125	
	1150	-0.3	-9			1216	0.4	12			1257	0.5	15	
						2037	3.3	101			2004	3.3	101	
						2309	3.2	98						
15 Su	0400	4.5	137		30 M	0434	3.9	119		15 W	0040	2.5	76	
	1234	-0.3	-9			1246	0.5	15			0620	3.9	119	
	2111	3.5	107			2045	3.3	101			1332	0.9	27	
	2315	3.4	104			2355	3.1	94			2018	3.4	104	
					31 Tu	0515	3.8	116		31 F	0115	2.1	64	
						1314	0.7	21			0710	3.4	104	
						2054	3.2	98			1332	1.7	52	
											1948	3.3	101	
16 Su	0159	1.8	55		16 Su	0302	1.1	34		1 Sa	0159	1.8	55	
	0805	3.2	98			1008	3.0	91			0805	3.2	98	
	1352	2.0	61			1401	2.7	82			1352	2.0	61	
	2001	3.5	107			2002	3.7	113			2001	3.5	107	
2 Su	0248	1.5	46		17 M	0356	1.1	34		2 Su	0248	1.5	46	
	0913	3.0	91			2026	3.7	113			0913	3.0	91	
	1407	2.3	70								1407	2.3	70	
	2017	3.6	110								2017	3.6	110	
3 M	0345	1.3	40		18 Tu	0457	1.1	34		3 M	0345	1.3	40	
	1049	2.8	85			2055	3.7	113			1049	2.8	85	
	1407	2.6	79								1407	2.6	79	
	2039	3.8	116								2039	3.8	116	
4 Tu	0452	1.1	34		19 W	0608	1.2	37		4 Tu	0452	1.1	34	
	2110	3.9	119			2134	3.6	110			2110	3.9	119	
5 W	0609	0.9	27		20 Th	0724	1.2	37		5 W	0609	0.9	27	
	2153	4.0	122			2243	3.5	107			2153	4.0	122	
6 Th	0728	0.7	21		21 F	0832	1.2	37		6 Th	0728	0.7	21	
	2300	4.0	122								2300	4.0	122	
7 F	0839	0.5	15		22 Sa	0035	3.4	104		7 F	0839	0.5	15	
						0926	1.2	37						
						1741	3.2	98						
						2120	3.0	91						
8 Sa	0034	3.9	119		23 Su	0210	3.4	104		8 Sa	0034	3.9	119	
	0939	0.4	12			1009	1.2	37			0939	0.4	12	
	1830	3.3	101			1739	3.1	94			1830	3.3	101	
	2040	3.2	98			2203	2.7	82			2040	3.2	98	
9 Su	0210	3.9	119		24 M	0320	3.4	104		9 Su	0210	3.9	119	
	1031	0.5	15			1045	1.3	40			1031	0.5	15	
	1816	3.3	101			1743	3.1	94			1816	3.3	101	
	2201	2.9	88			2239	2.5	76			2201	2.9	88	
10 M	0333	3.9	119		25 Tu	0418	3.5	107		10 M	0333	3		

Kamaisi, Japan, 2018

Times and Heights of High and Low Waters

January				February				March															
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height										
	h	m		ft	cm		h	m		ft	cm		h	m	ft	cm							
1 M	0343	4.0	121	16 Tu	0419	3.8	117	1 Th	0454	4.0	121	16 F	0445	3.8	115	1 Th	0352	3.7	114	16 F	0340	3.6	110
	0815	3.1	93		0902	2.8	86		0948	2.6	79		1000	2.1	64		0900	2.3	70		0909	1.8	56
	1347	4.7	142		1424	4.4	133		1521	4.7	142		1533	4.2	129		1437	4.3	130		1448	3.9	119
	2116	-0.3	-9		2143	0.2	6		2232	-0.3	-10		2227	0.2	6		2135	0.0	-1		2130	0.5	15
2 Tu	0431	4.1	126	17 W	0448	3.9	119	2 F	0523	4.0	122	17 Sa	0507	3.8	117	2 F	0416	3.8	117	17 Sa	0401	3.7	113
	0906	3.1	94		0939	2.7	82		1031	2.3	70		1033	1.9	58		0940	1.9	58		0941	1.5	46
	1432	4.8	146		1501	4.4	135		1609	4.6	141		1610	4.3	130		1527	4.4	133		1528	4.0	123
	2200	-0.5	-15		2215	0.1	4		2309	-0.1	-3		2255	0.3	10		2212	0.1	3		2200	0.6	17
3 W	0513	4.2	127	18 Th	0515	3.9	120	3 Sa	0549	4.0	122	18 Su	0529	3.9	118	3 Sa	0440	3.9	119	18 Su	0421	3.8	116
	0952	3.0	92		1014	2.6	79		1112	2.0	62		1106	1.7	52		1019	1.5	46		1012	1.2	37
	1518	4.9	149		1537	4.4	135		1654	4.4	135		1647	4.2	127		1612	4.4	133		1608	4.1	125
	2244	-0.5	-14		2245	0.1	4		2343	0.3	8		2323	0.5	16		2246	0.4	11		2229	0.7	22
4 Th	0551	4.1	126	19 F	0543	3.9	120	4 Su	0614	4.0	123	19 M	0551	3.9	119	4 Su	0502	4.0	122	19 M	0442	3.9	119
	1036	2.9	88		1048	2.5	76		1154	1.8	55		1140	1.5	46		1056	1.2	37		1045	0.9	28
	1604	4.8	147		1612	4.4	134		1739	4.1	126		1726	4.0	122		1656	4.2	128		1647	4.1	124
	2325	-0.3	-8		2315	0.2	7		0014	0.7	22		0013	0.8	25		2316	0.7	22		2257	1.0	29
5 F	0627	4.1	124	20 Sa	0609	3.9	120	5 M	0614	0.7	22	20 Tu	0613	3.9	119	5 M	0525	4.1	124	20 Tu	0502	4.0	121
	1121	2.7	83		1122	2.4	73		0639	4.1	124		1216	1.4	42		1133	1.0	31		1119	0.7	21
	1650	4.6	141		1648	4.3	130		1238	1.7	51		1809	3.8	115		1738	4.0	121		1729	4.0	121
					2344	0.4	12		1825	3.7	114		0016	1.2	36		2344	1.1	33		2324	1.3	39
6 Sa	0004	0.1	3	21 Su	0636	3.9	119	6 Tu	0043	1.2	36	21 W	0016	1.2	36	6 Tu	0548	4.1	125	21 W	0524	4.0	122
	0700	4.0	123		1159	2.3	69		0706	4.1	124		0636	3.9	120		1212	0.9	28		1155	0.6	17
	1208	2.6	78		1725	4.1	125		1327	1.6	49		1258	1.3	39		1820	3.6	111		1813	3.7	114
	1737	4.3	131						1915	3.3	102		1856	3.5	106						2351	1.6	50
7 Su	0042	0.6	17	22 M	0013	0.7	20	7 W	0111	1.6	50	22 Th	0043	1.6	49	7 W	0010	1.5	45	22 Th	0546	4.0	123
	0731	4.0	122		0702	3.9	119		0735	4.0	123		0700	3.9	119		0613	4.1	125		1235	0.5	16
	1301	2.4	74		1239	2.2	66		1424	1.6	48		1348	1.2	36		1252	1.0	29		1902	3.4	105
	1827	3.9	119		1806	3.8	117		2018	3.0	90		1956	3.1	96		1906	3.3	101				
8 M	0118	1.0	32	23 Tu	0042	1.0	30	8 Th	0139	2.1	63	23 F	0109	2.0	62	8 Th	0036	1.9	57	23 F	0016	2.0	62
	0803	4.0	122		0729	3.9	118		0808	4.0	121		0728	3.9	119		0640	4.0	123		0611	4.0	122
	1403	2.3	70		1326	2.1	63		1539	1.6	48		1453	1.1	35		1337	1.0	32		1322	0.6	17
	1924	3.4	105		1855	3.5	107		2210	2.7	82		2128	2.8	86		2001	3.0	91		2005	3.1	95
9 Tu	0154	1.5	47	24 W	0113	1.4	42	9 F	0210	2.5	75	24 Sa	0135	2.5	75	9 F	0100	2.2	67	24 Sa	0041	2.4	72
	0838	4.0	122		0758	3.8	117		0850	3.9	118		0804	3.8	117		0709	3.9	119		0640	3.9	120
	1520	2.1	65		1425	1.9	59		1709	1.4	44		1621	1.0	31		1434	1.2	37		1423	0.7	21
	2043	3.0	92		1959	3.2	97										2130	2.7	83		2143	2.9	88
10 W	0235	2.0	61	25 Th	0148	1.8	56	10 Sa	0135	2.8	85	25 Su	0858	3.7	114	10 Sa	0123	2.5	76	25 Su	0105	2.7	82
	0919	4.0	122		0831	3.8	117		0314	2.8	84		1754	0.8	23		0745	3.7	113		0716	3.8	115
	1650	1.9	57		1541	1.7	52		0949	3.7	114						1553	1.3	40		1547	0.8	25
	2301	2.8	86		2135	2.9	88		1829	1.2	37												
11 Th	0329	2.4	74	26 F	0229	2.3	70	11 Su	0237	3.1	94	26 M	0239	3.1	96	11 Su	0834	3.5	106	26 M	0816	3.5	108
	1008	4.0	122		0911	3.9	118		1110	3.7	112		0447	3.1	95		1729	1.2	38		1724	0.8	24
	1808	1.5	47		1706	1.3	41		1928	0.9	28		1036	3.7	112		1908	0.4	13				
													1908	0.4	13								
12 F	0119	3.0	91	27 Sa	0016	2.9	89	12 M	0307	3.3	102	27 Tu	0302	3.4	104	12 M	0217	3.0	92	27 Tu	0156	3.1	96
	0447	2.7	83		0333	2.8	84		0707	2.9	89		0706	3.0	92		0508	2.9	89		0535	3.0	91
	1105	4.0	123		1005	3.9	119		1229	3.7	114		1224	3.8	116		1007	3.3	101		1029	3.3	102
	1907	1.2	36		1822	0.9	27		2013	0.7	20		2006	0.2	5		1846	1.1	33		1843	0.7	20
13 Sa	0229	3.3	100	28 Su	0212	3.2	98	13 Tu	0334	3.5	107	28 W	0327	3.6	110	13 Tu	0238	3.2	98	28 W	0219	3.3	102
	0612	2.9	88		0519	3.1	93		0808	2.8	84		0813	2.7	82		0700	2.8	84		0717	2.6	79
	1205	4.1	124		1117	4.0	122		1328	3.9	119		1339	4.0	123		1200	3.3	101		1235	3.5	106
	1954	0.9	26		1925	0.4	13		2051	0.4	13		2054	0.0	-1		1940	0.9	26		1942	0.6	17
14 Su	0312	3.5	107	29 M	0308	3.5	108	14 W	0358	3.6	111	14 W	0259	3.4	103	14 W	0259	3.4	103	29 Th	0242	3.5	107
	0723	2.9	89		0659	3.1	96		0851	2.6	78		0757	2.5	75		0757	2.5	75		0808	2.1	65
	1258	4.2	127		1231	4.2	127		1414	4.0	123		1313	3.5	107		1313	3.5	107		1348	3.7	114
	2033	0.6	17		2019	0.0	0		2125	0.3	8		2022	0.7	20		2022	0.7	20		2029	0.5	16
15 M	0347	3.7	113	30 Tu	0348	3.8	115	15 Th	0422	3.7	114	15 Th	0320	3.5	107	15 Th	0305	3.7	112	30 F	0305	3.7	112
	0817	2.9	88		0809	3.1	93		0927	2.3	71		0835	2.2	66		0848	1.6	50		0848	1.6	50
	1344	4.3	130		1335	4.4	134		1455	4.2	127		1405	3.7	113		1443	4.0	121		1443	4.0	121
	2109	0.3	10		2107	-0.3	-9		2157	0.2	6		2058	0.5	16		2058	0.5	16		2109	0.6	18
			31 W	0423	3.9	119										31 Sa	0328	3.8	117				
				0903	2.9	87											0926	1.2	36				
			○	1431	4.6	139										○	1530	4.1	125				
				2152	-0.4	-12											2145	0.8	24				

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

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Times and Heights of High and Low Waters

July				August				September																				
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height															
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm														
1 Su	0413	4.6	139		16 M	0437	4.9	150		1 W	0519	4.5	136		16 Th	0017	2.0	60		1 Sa	0035	1.8	54		16 Su	0117	1.5	46
	1122	0.6	17			1148	0.4	11			1200	1.2	37			0615	4.4	134			0640	4.1	125			0755	3.7	113
	1825	4.1	125			1837	4.3	130			1840	4.3	131			1229	1.8	54			1223	2.3	69			1247	3.0	90
	2329	2.8	86			2349	2.7	82								1841	4.6	140			1834	4.5	137			1846	4.6	139
2 M	0448	4.5	136		17 Tu	0527	4.7	143		2 Th	0024	2.4	74		17 F	0104	1.9	58		2 Su	0121	1.7	52		17 M	0213	1.7	52
	1154	0.8	23			1227	0.8	24			0559	4.3	130			0707	4.0	122			0736	3.8	116			0927	3.5	106
	1856	4.0	123			1908	4.3	130			1228	1.5	46			1258	2.2	68			1250	2.7	81			1318	3.2	98
											1906	4.3	131			1910	4.6	140			1901	4.5	136			1922	4.3	132
3 Tu	0007	2.8	85		18 W	0039	2.5	76		3 F	0107	2.3	71		18 Sa	0159	1.9	58		3 M	0219	1.7	51		18 Tu	0328	1.8	56
	0525	4.3	130			0618	4.3	132			0646	4.0	122			0810	3.6	111			0856	3.5	108			1226	3.5	107
	1225	1.0	30			1304	1.3	40			1258	1.9	57			1328	2.7	81			1317	3.1	93			1424	3.5	106
	1928	4.0	122			1938	4.3	130			1933	4.3	130			1943	4.5	138			1934	4.4	134			2014	4.1	125
4 W	0050	2.8	84		19 Th	0135	2.4	72		4 Sa	0158	2.2	68		19 Su	0306	1.9	59		4 Tu	0338	1.6	50		19 W	0502	1.9	57
	0605	4.0	123			0716	3.9	120			0743	3.7	114			0950	3.4	103			1133	3.5	106			1338	3.7	113
	1258	1.2	38			1340	1.8	55			1330	2.3	70			1404	3.1	93			1350	3.4	104			1708	3.5	98
	2002	4.0	122			2010	4.3	131			2003	4.3	130			2024	4.4	134			2023	4.3	131			2150	3.9	118
5 Th	0141	2.7	82		20 F	0241	2.2	68		5 Su	0303	2.1	63		20 M	0430	1.9	58		5 W	0511	1.5	45		20 Th	0622	1.7	53
	0653	3.8	115			0828	3.5	108			0903	3.5	106			1239	3.4	104			1356	3.7	114			1408	3.9	119
	1334	1.6	48			1419	2.3	70			1408	2.7	83			1512	3.3	102			1605	3.7	112			1850	3.3	101
	2037	4.0	121			2047	4.3	132			2039	4.3	130			2120	4.3	130			2150	4.2	129			2348	3.9	119
6 F	0244	2.6	78		21 Sa	0359	2.1	63		6 M	0422	1.8	56		21 Tu	0554	1.8	54		6 Th	0632	1.2	36		21 F	0718	1.6	48
	0756	3.5	107			1015	3.3	100			1113	3.4	103			1402	3.7	112			1430	4.0	121			1432	4.0	123
	1417	1.9	59			1508	2.7	83			1503	3.1	95			1714	3.5	106			1833	3.6	110			1943	3.0	92
	2115	4.0	122			2132	4.3	132			2127	4.3	131			2243	4.2	127			2347	4.3	131					
7 Sa	0359	2.3	71		22 Su	0521	1.8	56		7 Tu	0541	1.5	45		22 W	0700	1.5	47		7 F	0734	0.9	28		22 Sa	0102	4.1	124
	0925	3.3	100			1233	3.3	102			1328	3.6	110			1439	3.9	119			1457	4.2	127			0802	1.4	43
	1510	2.3	71			1617	3.1	93			1636	3.4	105			1851	3.4	104			1944	3.3	100			1455	4.2	127
	2156	4.0	123			2227	4.3	132			2235	4.3	132													2021	2.7	82
8 Su	0514	2.0	60		23 M	0630	1.6	48		8 W	0650	1.1	33		23 Th	0010	4.2	129		8 Sa	0111	4.6	139		23 Su	0154	4.3	131
	1125	3.3	100			1359	3.6	109			1436	3.9	119			0751	1.3	40			0825	0.7	22			0838	1.3	41
	1617	2.7	82			1742	3.2	99			1822	3.6	109			1509	4.1	124			1523	4.3	131			1516	4.3	131
	2243	4.1	126			2331	4.3	132			2355	4.5	137			1952	3.2	98			2033	2.9	88			2053	2.4	72
9 M	0617	1.5	46		24 Tu	0725	1.3	39		9 Th	0749	0.7	21		24 F	0114	4.4	133		9 Su	0213	4.8	146		24 M	0236	4.5	136
	1313	3.5	107			1450	3.8	117			1520	4.1	126			0832	1.1	35			0909	0.7	21			0910	1.3	40
	1734	3.0	91			1859	3.3	100			1939	3.5	107			1535	4.2	128			1548	4.4	134			1536	4.4	133
	2334	4.3	130												2036	3.0	92			2115	2.5	75			2124	2.0	62	
10 Tu	0712	1.0	30		25 W	0033	4.4	134		10 F	0106	4.7	143		25 Sa	0203	4.5	138		10 M	0306	5.0	151		25 Tu	0316	4.6	140
	1425	3.8	116			0811	1.0	32			0840	0.4	12			0907	1.0	31			0948	0.8	25			0940	1.4	42
	1846	3.2	97			1528	4.0	123			1556	4.3	131			1559	4.3	130			1612	4.5	137			1556	4.5	136
						2000	3.2	98			2036	3.3	101			2112	2.8	85			2154	2.0	62			2155	1.7	53
11 W	0027	4.5	136		26 Th	0126	4.5	137		11 Sa	0207	4.9	150		26 Su	0244	4.7	142		11 Tu	0354	5.0	152		26 W	0354	4.7	142
	0803	0.5	16			0851	0.9	26			0927	0.2	7			0940	1.0	29			1023	1.1	33			1008	1.5	47
	1521	4.1	124			1600	4.2	127			1628	4.4	134			1622	4.3	132			1635	4.6	140			1616	4.6	139
	1948	3.3	100			2047	3.1	95			2124	3.0	92			2145	2.6	78			2233	1.7	52			2226	1.5	45
12 Th	0119	4.7	142		27 F	0211	4.6	141		12 Su	0301	5.1	155		27 M	0322	4.7	144		12 W	0439	4.9	149		27 Th	0432	4.7	142
	0852	0.2	5			0927	0.7	22			1010	0.3	8			1009	1.0	30			1056	1.4	44			1035	1.8	54
	1608	4.2	129			1630	4.2	129			1657	4.4	135			1644	4.4	134			1658	4.7	143			1637	4.6	141
	2042	3.3	101			2127	3.0	91			2208	2.7	82			2217	2.3	71			2312	1.5	45			2259	1.2	38
13 F	0210	4.9	149		28 Sa	0251	4.7	143		13 M	0351	5.1	156		28 Tu	0359	4.8	145		13 Th	0524	4.7	142		28 F	0511	4.6	139
	0939	-0.1	-2			1001	0.7	21			1049	0.5	15															

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Times and Heights of High and Low Waters

October				November				December																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 M	0054	1.1	35		16 Tu	0128	1.4	42		1 Th	0241	1.2	37		16 F	0237	1.6	50		1 Sa	0321	1.5	47		16 Su	0232	1.7	53	
	0740	3.8	117			0900	3.6	110			1057	3.7	112			1049	3.7	113			1040	3.8	117			1005	3.8	116	
	1218	3.0	92			1302	3.3	101			1430	3.5	106			1618	3.2	97			1653	2.7	83			1648	2.6	78	
	1812	4.6	139			1834	4.2	128			1927	3.9	118			2003	3.4	103			2154	3.3	100			2118	3.0	92	
2 Tu	0150	1.3	39		17 W	0226	1.6	50		2 F	0406	1.5	45		17 Sa	0352	1.9	57		2 Su	0433	1.9	58		17 M	0335	2.1	63	
	0907	3.6	109			1102	3.6	109			1207	3.8	115			1147	3.8	116			1128	4.0	121			1053	3.8	117	
	1244	3.3	101			1422	3.4	105			1720	3.2	99			1758	2.8	86			1814	2.2	67			1759	2.1	65	
	1846	4.4	134			1919	3.9	119			2150	3.6	109			2219	3.2	97								2334	3.0	91	
3 W	0306	1.4	43		18 Th	0349	1.8	56		3 Sa	0529	1.6	49		18 Su	0510	2.0	61		3 M	0011	3.3	102		18 Tu	0449	2.3	71	
	1937	4.2	127			1233	3.7	113			1245	3.9	120			1226	3.9	119			0541	2.2	66			1137	4.0	121	
						1701	3.4	103			1841	2.7	83			1851	2.4	73			1209	4.1	126			1849	1.6	50	
						2050	3.6	109													1908	1.6	50						
4 Th	0443	1.4	44		19 F	0519	1.9	57		4 Su	0010	3.7	112		19 M	0017	3.3	101		4 Tu	0135	3.6	109		19 W	0114	3.2	99	
	1322	3.8	115			1312	3.8	117			0634	1.7	52			0614	2.1	64			0641	2.4	73			0600	2.6	78	
	1655	3.6	111			1837	3.1	94			1315	4.1	125			1257	4.1	124			1247	4.3	131			1217	4.1	125	
	2136	3.9	120			2315	3.5	107			1928	2.1	65			1928	1.9	58			1952	1.1	35			1931	1.1	34	
5 F	0608	1.3	41		20 Sa	0627	1.8	56		5 M	0129	3.9	120		20 Tu	0128	3.6	109		5 W	0234	3.8	117		20 Th	0218	3.6	109	
	1349	4.0	121			1339	4.0	122			0726	1.8	55			0706	2.2	66			0733	2.6	78			0701	2.7	83	
	1850	3.2	99			1924	2.7	82			1343	4.3	131			1324	4.2	128			1323	4.5	137			1255	4.3	131	
	2359	4.0	122								2008	1.6	48			2002	1.4	43			2031	0.7	22			2012	0.6	18	
6 Sa	0711	1.2	38		21 Su	0045	3.7	113		6 Tu	0226	4.2	128		21 W	0220	3.9	118		6 Th	0322	4.0	123		21 F	0309	3.9	118	
	1413	4.1	126			0717	1.8	54			0810	2.0	60			0749	2.3	69			0819	2.7	82			0753	2.9	87	
	1942	2.8	84			1402	4.1	126			1409	4.5	137			1350	4.4	133			1357	4.6	141			1332	4.5	137	
						1959	2.3	69			2046	1.1	33			2035	0.9	28			2108	0.4	13			2052	0.1	4	
7 Su	0121	4.3	130		22 M	0142	3.9	120		7 W	0315	4.4	133		22 Th	0307	4.1	126		7 F	0405	4.2	127		22 Sa	0355	4.1	124	
	0801	1.2	37			0757	1.7	53			0848	2.2	66			0829	2.4	74			0901	2.8	85			0839	3.0	90	
	1436	4.3	131			1423	4.3	130			1436	4.7	142			1416	4.6	139			1431	4.7	144			1410	4.7	142	
	2023	2.2	68			2030	1.9	57			2122	0.7	22			2110	0.5	15			2144	0.2	7			2133	-0.2	-6	
8 M	0220	4.5	138		23 Tu	0228	4.2	128		8 Th	0359	4.4	135		23 F	0351	4.3	131		8 Sa	0444	4.2	129		23 Su	0440	4.2	127	
	0843	1.3	39			0833	1.8	54			0924	2.4	72			0905	2.6	79			0940	2.9	87			0922	3.0	92	
	1500	4.5	136			1444	4.4	134			1504	4.8	146			1444	4.7	143			1504	4.8	145			1449	4.8	147	
	2101	1.7	52			2100	1.4	44			2157	0.5	15			2146	0.2	5			2218	0.2	5			2215	-0.4	-12	
9 Tu	0310	4.7	143		24 W	0310	4.4	134		9 F	0442	4.4	135		24 Sa	0435	4.4	133		9 Su	0522	4.2	128		24 M	0523	4.2	128	
	0920	1.5	45			0905	1.9	57			0958	2.6	78			0940	2.8	84			1016	2.9	88			1003	3.0	92	
	1523	4.6	140			1506	4.5	138			1531	4.9	148			1513	4.8	147			1537	4.7	144			1530	4.9	149	
	2138	1.3	40			2132	1.0	32			2232	0.4	12			2224	0.0	-1			2251	0.2	6			2257	-0.4	-12	
10 W	0356	4.7	144		25 Th	0350	4.5	137		10 Sa	0522	4.4	133		25 Su	0520	4.3	132		10 M	0558	4.1	126		25 Tu	0606	4.1	126	
	0954	1.8	54			0936	2.1	63			1031	2.8	84			1015	2.9	89			1052	2.9	89			1045	3.0	91	
	1546	4.7	144			1527	4.6	141			1600	4.9	148			1544	4.9	149			1610	4.6	141			1613	4.8	147	
	2214	1.0	30			2204	0.8	23			2306	0.4	13			2304	-0.1	-2			2324	0.3	10			2339	-0.2	-6	
11 Th	0439	4.7	142		26 F	0431	4.5	138		11 Su	0603	4.2	128		26 M	0607	4.2	129		11 Tu	0634	4.1	124		26 W	0646	4.0	123	
	1025	2.1	63			1006	2.3	70			1103	2.9	89			1050	3.1	94			1128	3.0	90			1130	2.9	88	
	1611	4.8	147			1550	4.7	144			1629	4.8	145			1618	4.9	148			1643	4.5	137			1657	4.6	141	
	2250	0.8	25			2238	0.5	16			2341	0.6	17			2346	0.0	1			2357	0.6	17						
12 F	0522	4.5	137		27 Sa	0514	4.5	136		12 M	0646	4.1	124		27 Tu	0657	4.1	124		12 W	0710	4.0	121		27 Th	0021	0.1	4	
	1054	2.4	72			1035	2.6	78			1136	3.1	93			1128	3.1	96			1207	3.0	90			0724	4.0	121	
	1636	4.9	148			1615	4.8	146			1659	4.6	140			1655	4.7	143			1717	4.3	130			1220	2.8	85	
	2326	0.8	25			2315	0.4	13																1746		4.3	131		
13 Sa	0605	4.3	130		28 Su	0559	4.3	131		13 Tu	0016	0.8	24		28 W	0030	0.3	9		13 Th	0031	0.8	24		28 F	0103	0.6	18	
	1123	2.7	81			1104	2.8	86			0732	3.9	119			0750	3.9	119			0749	3.9	118			0802	3.9	119	
	1702	4.8	147			1641	4.8	146			1213	3.1	96			1213	3.2	98			1252	3.0	90			1319	2.6	80	
						2354	0.5	15			1730	4.4	133			1736	4.4	135			1753	4.0	121			1841	3.9	118	
14 Su	0003	0.9	28		29 M	0650	4.1	124		14 W	0055	1.1	33		29 Th	0120	0.7												

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Times and Heights of High and Low Waters

January					February					March													
	Time		Height			Time		Height			Time		Height			Time		Height					
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm	h	m	ft	cm
1 M	0449	5.8	178	16 Tu	0523	5.5	167	1 Th	0602	6.0	182	16 F	0553	5.6	170	1 Th	0505	5.7	174	16 F	0456	5.4	166
	1013	3.3	100		1040	3.1	96		1137	2.8	85		1132	2.4	72		1047	2.5	76		1042	2.1	65
	1543	6.1	185		1604	5.7	173		1707	6.2	188		1704	5.8	177		1624	5.9	180		1622	5.6	170
	2241	-0.3	-10		2302	0.4	12		2358	-0.4	-11		2348	0.3	10		2303	0.0	-1		2256	0.7	22
2 Tu	0535	6.1	186	17 W	0551	5.6	171	2 F	0635	5.9	181	17 Sa	0618	5.6	171	2 F	0534	5.8	178	17 Sa	0518	5.6	171
	1102	3.3	100		1114	3.0	92		1215	2.5	77		1202	2.1	65		1123	2.1	63		1112	1.7	53
	1626	6.2	190		1638	5.8	177		1749	6.1	187		1738	5.8	178		1706	6.1	186		1657	5.8	177
	2325	-0.5	-16		2333	0.3	9		●	●	2342		0.1	4	●		2327	0.7	22				
3 W	0618	6.1	187	18 Th	0619	5.6	172	3 Sa	0037	-0.1	-2	18 Su	0018	0.5	14	3 Sa	0601	5.9	179	18 Su	0541	5.7	174
	1146	3.2	99		1147	2.9	88		0706	5.8	178		0642	5.6	172		1157	1.7	53		1142	1.4	43
	1708	6.3	191		1710	5.9	179		1252	2.3	71		1234	1.9	59		1746	6.1	185		1732	5.9	181
	●	●	1829		5.9	179	1813		5.8	176	●		●	1813	5.8		176	●	●		2358	0.9	27
4 Th	0009	-0.5	-15	19 F	0004	0.3	9	4 Su	0112	0.4	13	19 M	0047	0.7	21	4 Su	0016	0.5	14	19 M	0605	5.7	175
	0659	6.1	185		0647	5.6	171		0734	5.7	173		0707	5.6	170		0626	5.8	178		1214	1.1	35
	1228	3.2	97		1219	2.8	85		1329	2.2	67		1307	1.8	55		1231	1.5	46		1810	5.9	180
	1749	6.2	188		1742	5.8	178		1910	5.5	167		1851	5.6	170		1824	5.9	179		●	●	●
5 F	0052	-0.2	-6	20 Sa	0034	0.4	12	5 M	0145	1.0	31	20 Tu	0116	1.1	33	5 M	0048	0.9	28	20 Tu	0028	1.2	36
	0738	5.9	179		0715	5.6	170		0801	5.5	169		0733	5.5	168		0650	5.7	175		0629	5.7	174
	1309	3.1	95		1251	2.7	82		1408	2.2	66		1342	1.7	52		1304	1.4	42		1246	1.0	29
	1832	5.9	179		1816	5.7	173		1954	5.0	152		1933	5.3	161		1903	5.5	168		1850	5.7	175
6 Sa	0132	0.3	9	21 Su	0104	0.6	19	6 Tu	0215	1.7	51	21 W	0146	1.6	48	6 Tu	0117	1.5	45	21 W	0058	1.6	49
	0816	5.7	173		0744	5.5	167		0828	5.4	164		0800	5.4	164		0713	5.6	171		0653	5.6	172
	1352	3.1	93		1326	2.6	80		1452	2.2	67		1422	1.7	52		1337	1.4	43		1321	0.9	27
	1916	5.4	166		1853	5.4	166		2044	4.5	136		2022	4.9	149		1943	5.1	155		1933	5.4	166
7 Su	0212	0.9	27	22 M	0134	0.9	28	7 W	0246	2.3	70	22 Th	0217	2.1	65	7 W	0145	2.0	62	22 Th	0129	2.1	65
	0851	5.4	166		0814	5.4	164		0857	5.2	158		0829	5.2	158		0736	5.4	166		0718	5.5	167
	1440	3.0	92		1404	2.6	79		1548	2.3	70		1512	1.7	53		1413	1.5	47		1400	1.0	30
	2005	5.0	151		1935	5.1	156		2152	4.0	122		2125	4.5	136		2028	4.6	141		2024	5.1	154
8 M	0251	1.6	48	23 Tu	0206	1.3	41	8 Th	0320	2.9	88	23 F	0254	2.8	84	8 Th	0212	2.6	78	23 F	0201	2.7	82
	0927	5.3	161		0847	5.3	161		0932	5.0	152		0904	5.0	152		0802	5.2	159		0745	5.2	160
	1539	3.0	90		1451	2.6	78		1713	2.3	70		1623	1.8	54		1455	1.8	54		1447	1.2	36
	2108	4.4	134		2027	4.7	144		●	●	2359		3.7	114	●		●	2300	4.1		125	2125	4.2
9 Tu	0333	2.2	68	24 W	0242	1.9	57	9 F	0420	3.4	104	24 Sa	0348	3.4	104	9 F	0241	3.1	94	24 Sa	0237	3.3	100
	1006	5.2	157		0923	5.2	157		1019	4.8	145		0951	4.8	145		0831	5.0	151		0816	5.0	151
	1701	2.8	86		1552	2.5	75		1850	2.1	64		1801	1.6	50		1554	2.0	61		1553	1.4	44
	2241	4.0	122		2137	4.3	132		●	●	●		●	2301	3.9		119	●	●		2308	4.3	131
10 W	0426	2.8	86	25 Th	0327	2.5	75	10 Sa	0247	4.0	122	25 Su	0143	4.2	128	10 Sa	0326	3.5	108	25 Su	0339	3.8	115
	1052	5.0	153		1006	5.0	153		0623	3.7	113		0605	3.8	117		0909	4.6	141		0900	4.6	140
	1834	2.5	77		1715	2.3	69		1135	4.6	140		1117	4.6	139		1734	2.1	65		1730	1.6	48
	●	●	2315		4.1	125	●		●	2002	1.8		54	1930	1.2		38	●	●		●	●	
11 Th	0100	3.9	119	26 F	0436	3.1	94	11 Su	0339	4.4	135	26 M	0317	4.7	143	11 Su	0217	4.0	122	26 M	0145	4.4	135
	0543	3.3	100		1101	4.9	150		0803	3.7	112		0814	3.7	114		0548	3.8	117		0640	4.0	121
	1149	5.0	152		1842	1.8	56		1320	4.6	140		1323	4.7	143		1015	4.3	131		1055	4.3	130
	1945	2.1	63		●	●	2054		1.4	42	2054		1.4	42	2038		0.8	23	1914		2.0	60	1908
12 F	0247	4.2	129	27 Sa	0129	4.2	129	12 M	0411	4.8	146	27 Tu	0400	5.2	157	12 M	0314	4.4	134	27 Tu	0256	4.8	147
	0710	3.5	107		0626	3.5	107		0907	3.4	105		0922	3.4	103		0758	3.7	112		0830	3.5	108
	1257	5.0	153		1213	4.9	150		1431	4.9	148		1443	5.1	155		1239	4.2	127		1332	4.5	136
	2035	1.6	49		1953	1.2	37		2136	1.0	31		2133	0.3	10		2021	1.7	51		2021	1.1	34
13 Sa	0343	4.7	142	28 Su	0309	4.7	144	13 Tu	0439	5.1	155	28 W	0434	5.5	167	13 Tu	0344	4.7	144	28 W	0333	5.2	157
	0821	3.5	108		0804	3.6	110		0952	3.2	97		1008	3.0	90		0900	3.3	101		0918	3.0	91
	1359	5.1	156		1334	5.1	155		1518	5.2	157		1538	5.5	169		1416	4.5	136		1447	5.0	151
	2117	1.2	37		2051	0.6	19		2213	0.7	21		2221	0.1	2		2110	1.3	41		2116	0.9	27
14 Su	0421	5.0	153	29 M	0405	5.2	159	14 W	0504	5.3	162	14 W	0410	5.0	153	14 W	0403	5.4	166				
	0917	3.4	105		0915	3.5	107		1028	2.9	88		0939	2.9	89		0939	2.9	89	0955	2.4	74	
	1449	5.3	162		1441	5.4	165		1556	5.4	165		1507	4.9	148		1507	4.9	148	1538	5.4	166	
	2154	0.9	26		2144	0.1	2		2246	0.5	15		2149	1.0	32		2149	1.0	32	2202	0.8	23	
15 M	0453	5.3	161	30 Tu	0449	5.6	171	15 Th	0529	5.5	167	15 Th	0433	5.2	160	15 Th	0430	5.6	172				
	1001	3.3	101		1010	3.3	101		1100	2.6	80		1011	2.5	77		1030	1.9	57				
	1529	5.5	168		1536	5.8	176		1630	5.7	173		1546	5.2	160		1622	5.8	177				
	2229	0.6	17		2232	-0.3	-9		2318	0.4	11		2224	0.8	25		2242	0.8	24				
			31 W	0527	5.9	179								31 Sa	0456	5.8	177						
				1056	3.1	93											1103	1.4	43				
				1623	6.0	184											1702	6.0	182				
				2317	-0.5	-14											2319	1.0	30				

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Yokohama, Japan, 2018

Times and Heights of High and Low Waters

April				May				June																		
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height													
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm												
1 Su	0520	5.9	179	16 M	0500	5.8	178	1 Tu	0504	5.9	180	16 W	0448	6.0	184	1 F	0012	3.2	97	16 Sa	0021	3.4	104			
	1136	1.1	33		1118	0.8	24		1143	0.6	18		1131	0.0	1		0528	5.8	178		0539	6.2	188			
	1741	6.0	182		1726	6.0	184		1812	5.8	178		1806	6.2	188		1225	0.7	20		1244	0.0	-1	1244	0.0	-1
	2352	1.3	40		2335	1.6	50		2359	2.5	76		2351	2.8	84		1917	5.7	173		1939	6.0	184			
2 M	0544	5.9	179	17 Tu	0525	5.9	180	2 W	0528	5.9	179	17 Th	0519	6.1	185	2 Sa	0046	3.3	100	17 Su	0106	3.5	106			
	1207	0.9	27		1152	0.5	14		1214	0.6	17		1211	-0.1	-2		0558	5.7	174		0622	6.0	182			
	1818	5.8	178		1807	6.1	185		1850	5.7	174		1853	6.1	185		1258	0.9	26		1330	0.3	9	2026	5.8	177
3 Tu	0023	1.7	52	18 W	0009	2.0	60	3 Th	0030	2.8	84	18 F	0030	3.1	93	3 Su	0121	3.4	103	18 M	0153	3.5	107			
	0607	5.8	177		0551	5.9	179		0554	5.8	176		0552	6.0	182		0631	5.5	168		0709	5.6	172			
	1238	0.8	25		1227	0.3	9		1245	0.7	20		1252	0.0	1		1331	1.1	33		1417	0.8	25			
	1856	5.6	170		1851	5.9	181		1928	5.5	167		1943	5.8	178		2034	5.3	162		2112	5.6	170			
4 W	0052	2.1	65	19 Th	0042	2.4	72	4 F	0102	3.0	92	19 Sa	0111	3.3	102	4 M	0159	3.5	106	19 Tu	0245	3.5	106			
	0629	5.7	174		0618	5.8	176		0620	5.6	171		0626	5.7	175		0706	5.2	159		0804	5.2	159			
	1309	0.9	27		1304	0.3	10		1316	0.9	27		1337	0.3	10		1407	1.4	43		1507	1.4	43			
	1935	5.3	161		1938	5.6	172		2009	5.2	159		2037	5.5	169		2117	5.2	157		2159	5.4	164			
5 Th	0121	2.6	78	20 F	0117	2.8	86	5 Sa	0135	3.3	100	20 Su	0156	3.6	110	5 Tu	0246	3.6	109	20 W	0351	3.4	103			
	0653	5.5	168		0645	5.6	170		0648	5.3	163		0705	5.4	166		0748	4.9	149		0916	4.8	146			
	1341	1.1	33		1345	0.5	16		1350	1.2	36		1427	0.8	23		1449	1.8	54		1601	2.0	62			
	2018	4.9	150		2032	5.3	161		2055	5.0	151		2138	5.2	160		2207	5.0	153		2246	5.3	161			
6 F	0150	3.0	90	21 Sa	0154	3.3	100	6 Su	0213	3.5	107	21 M	0253	3.8	115	6 W	0351	3.6	110	21 Th	0514	3.1	96			
	0718	5.2	160		0715	5.3	162		0720	5.0	153		0754	5.0	153		0846	4.6	139		1051	4.5	137			
	1417	1.4	42		1434	0.9	26		1430	1.5	47		1526	1.3	39		1542	2.1	65		1703	2.6	79			
	2110	4.6	139		2140	4.9	149		2153	4.7	144		2245	5.1	154		2303	5.0	151		2335	5.2	160			
7 Sa	0223	3.3	102	22 Su	0242	3.7	113	7 M	0305	3.7	113	22 Tu	0418	3.8	116	7 Th	0522	3.4	105	22 F	0636	2.8	85			
	0747	5.0	151		0751	5.0	151		0758	4.7	142		0912	4.6	139		1011	4.3	131		1240	4.4	135			
	1502	1.7	53		1538	1.3	39		1522	1.9	58		1638	1.8	54		1652	2.5	75		1813	3.0	92			
	2225	4.3	130		2312	4.7	142		2308	4.6	140		2354	5.0	152		2354	5.0	152		2354	5.0	152			
8 Su	0313	3.7	112	23 M	0411	4.0	121	8 Tu	0439	3.8	116	23 W	0610	3.5	107	8 F	0001	5.0	153	23 Sa	0026	5.2	160			
	0822	4.6	139		0848	4.5	137		0858	4.3	130		1117	4.3	132		0644	3.1	93		0740	2.3	70			
	1614	2.0	62		1706	1.6	49		1641	2.2	67		1757	2.1	65		1157	4.3	130		1413	4.7	142			
																	1813	2.7	82		1921	3.3	100			
9 M	0036	4.2	128	24 Tu	0059	4.7	144	9 W	0034	4.6	141	24 Th	0055	5.1	155	9 Sa	0055	5.1	156	24 Su	0119	5.3	163			
	0522	3.9	118		0653	3.8	115		0642	3.6	109		0730	3.0	90		0741	2.5	77		0831	1.8	56			
	0921	4.2	127		1119	4.2	128		1052	4.0	122		1312	4.5	136		1331	4.6	139		1518	5.0	152			
	1802	2.2	66		1839	1.7	53		1814	2.3	71		1908	2.4	72		1924	2.8	86		2022	3.4	104			
10 Tu	0215	4.5	136	25 W	0206	5.0	151	10 Th	0137	4.8	147	25 F	0144	5.2	159	10 Su	0141	5.3	162	25 M	0207	5.5	167			
	0740	3.6	110		0812	3.2	98		0751	3.1	95		0821	2.4	72		0826	1.9	58		0913	1.4	44			
	1146	4.0	121		1331	4.4	135		1258	4.2	127		1428	4.8	147		1442	5.0	153		1607	5.3	162			
	1929	2.0	62		1952	1.7	52		1928	2.3	70		2008	2.5	77		2024	2.9	88		2115	3.5	106			
11 W	0256	4.7	144	26 Th	0247	5.2	158	11 F	0219	5.1	154	26 Sa	0224	5.4	165	11 M	0223	5.5	169	26 Tu	0251	5.6	171			
	0837	3.2	97		0855	2.6	79		0833	2.6	79		0902	1.8	55		0908	1.2	38		0952	1.1	34			
	1349	4.2	129		1442	4.9	149		1414	4.6	139		1524	5.2	158		1538	5.5	167		1647	5.6	170			
	2028	1.8	55		2048	1.6	50		2023	2.2	67		2059	2.6	80		2117	3.0	91		2202	3.4	105			
12 Th	0324	5.0	153	27 F	0319	5.4	165	12 Sa	0251	5.3	161	27 Su	0258	5.6	170	12 Tu	0302	5.8	176	27 W	0330	5.7	175			
	0913	2.7	82		0932	2.0	61		0909	2.0	61		0940	1.3	40		0949	0.7	20		1028	0.9	27			
	1447	4.7	142		1533	5.3	162		1507	5.1	154		1610	5.5	167		1629	5.9	179		1723	5.8	176			
	2113	1.6	48		2134	1.7	51		2110	2.2	66		2144	2.8	84		2206	3.1	94		2243	3.4	104			
13 F	0349	5.2	160	28 Sa	0347	5.6	172	13 Su	0321	5.5	169	28 M	0330	5.7	175	13 W	0341	6.0	183	28 Th	0406	5.8	178			
	0945	2.2	67		1006	1.4	44		0943	1.4	43		1015	1.0	29		1031	0.2	6		1103	0.8	23			
	1530	5.1	156		1617	5.6	172		1553	5.5	168		1651	5.7	174		1717	6.1	187		1756	5.8	178			
	2151	1.4	43		2215	1.8	55		2152	2.2	66		2225	2.9	87		2252	3.2	98		2321	3.4	103			
14 Sa	0412	5.5	167	29 Su	0413	5.8	176	14 M	0349	5.8	176	29 Tu	0400	5.8	178	14 Th	0419	6.1	187	29 F	0440	5.9	180			
	1015	1.7	52		1040	1.0	31		1017	0.8	25		1049	0.7	22		1115	-0.1	-3		1137	0.7	21			
	1609	5.5	169		1657	5.8	178		1637	5.9	180		1730	5.8	177		1804	6.2	190		1828	5.9	179			
	2227	1.4	42		2252	2.0	61		2233	2.3	70		2302	3.0	91		2337	3.3	101		2356	3.3	101			
15 Su	0436	5.7	173	30 M	0439	5.9	179	15 Tu	0418	5.9	181	30 W	0430	5.9	180	15 F	0459	6.2	189	30 Sa	0513	5.9	181			
	1046	1.2	37		1112	0.7	22		1053	0.4	11		1121	0.6	18		1159	-0.2	-6		1210	0.8	23			
	1647	5.9	179		1735	5.9	180		1721	6.1	187		1806	5.8	178		1852	6.2	189		1900	5.8	177			
	2301	1.4	44		2326	2.2	68		2312	2.5	76		2338	3.1	94											

Yokohama, Japan, 2018

Times and Heights of High and Low Waters

July				August				September													
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height								
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm							
1 Su	0030	3.3	100			1 W	0117	2.8	85	16 Th	0154	2.3	70	1 Sa	0203	2.0	62	16 Su	0243	2.1	63
	0546	5.9	179				0648	5.8	176		0750	5.6	172		0807	5.5	167		0924	4.9	149
	1242	0.9	27				1324	1.5	45		1406	2.1	65		1400	2.7	82		1437	3.7	113
	1931	5.7	174				1956	5.8	177		2010	5.9	180		2006	5.8	176		2014	5.5	169
2 M	0104	3.3	100			2 Th	0153	2.7	83	17 F	0237	2.3	71	2 Su	0247	2.1	63	17 M	0338	2.3	71
	0620	5.7	174				0729	5.5	169		0842	5.2	158		0904	5.1	156		1054	4.6	141
	1314	1.1	33				1355	1.8	56		1439	2.8	85		1435	3.2	99		1527	4.1	126
	2004	5.6	171				2026	5.7	174		2038	5.7	175		2037	5.6	170		2051	5.2	158
3 Tu	0140	3.2	99			3 F	0234	2.7	82	18 Sa	0327	2.4	74	3 M	0346	2.1	65	18 Tu	0503	2.5	77
	0657	5.5	168				0818	5.2	159		0948	4.7	144		1023	4.8	147		1327	4.7	142
	1347	1.4	42				1428	2.3	70		1515	3.4	103		1521	3.8	116		1729	4.4	133
	2038	5.5	168				2058	5.6	171		2111	5.5	168		2118	5.3	163		2152	4.9	148
4 W	0220	3.2	99			4 Sa	0324	2.6	80	19 Su	0436	2.5	77	4 Tu	0511	2.1	64	19 W	0642	2.5	76
	0739	5.2	159				0918	4.9	150		1127	4.5	136		1227	4.7	144		1445	5.0	151
	1421	1.7	52				1507	2.8	86		1609	3.9	119		1702	4.3	131		1937	4.2	128
	2115	5.4	165				2134	5.5	167		2152	5.3	161		2225	5.1	156				
5 Th	0309	3.2	98			5 Su	0430	2.5	77	20 M	0605	2.5	76	5 W	0643	1.9	57	20 Th	0007	4.7	142
	0832	4.9	149				1037	4.7	142		1357	4.6	139		1433	5.1	155		0755	2.3	69
	1501	2.1	65				1601	3.4	103		1752	4.2	128		1928	4.3	132		1521	5.3	161
	2155	5.3	162				2219	5.3	163		2256	5.1	154						2043	3.8	117
6 F	0413	3.1	95			6 M	0551	2.3	69	21 Tu	0725	2.3	69	6 Th	0024	5.1	154	21 F	0158	4.9	149
	0941	4.6	141				1225	4.6	141		1511	4.9	150		1529	5.5	168		0848	2.0	61
	1551	2.6	78				1730	3.9	118		1938	4.2	128		2050	4.0	122		1549	5.5	169
	2240	5.3	161				2320	5.3	161								2124		3.4	104	
7 Sa	0531	2.9	87			7 Tu	0708	1.8	56	22 W	0039	5.0	152	7 F	0206	5.4	164	22 Sa	0253	5.2	160
	1108	4.5	136				1423	5.0	151		0825	2.0	60		0901	1.1	33		0930	1.8	54
	1659	3.0	92				1918	4.1	124		1550	5.2	160		1607	5.9	180		1614	5.8	176
	2331	5.3	161								2049	4.0	121		2141	3.5	108		2157	3.0	92
8 Su	0644	2.4	73			8 W	0042	5.3	162	23 Th	0208	5.2	157	8 Sa	0310	5.9	179	23 Su	0334	5.6	171
	1250	4.6	140				0814	1.3	40		0913	1.7	51		0953	0.8	24		1006	1.6	49
	1823	3.3	102				1534	5.4	166		1620	5.5	169		1640	6.2	188		1637	5.9	181
							2041	4.0	123		2137	3.7	112		2223	3.1	93		2228	2.6	80
9 M	0027	5.3	163			9 Th	0203	5.5	169	24 F	0303	5.4	166	9 Su	0401	6.3	192	24 M	0410	5.9	181
	0744	1.8	56				0912	0.8	24		0954	1.4	43		1039	0.7	20		1039	1.5	46
	1423	5.0	151				1622	5.8	178		1648	5.7	175		1710	6.3	193		1700	6.1	185
	1942	3.5	108				2143	3.8	116		2216	3.3	102		2302	2.6	78		2257	2.2	68
10 Tu	0127	5.5	167			10 F	0308	5.9	180	25 Sa	0344	5.7	174	10 M	0447	6.6	200	25 Tu	0444	6.2	188
	0837	1.2	37				1004	0.4	12		1030	1.2	37		1120	0.8	23		1110	1.5	47
	1532	5.4	165				1703	6.1	187		1713	5.9	180		1739	6.4	195		1722	6.2	189
	2050	3.6	111				2233	3.5	107		2249	3.1	94		2338	2.2	66		2327	1.9	58
11 W	0223	5.7	174			11 Sa	0401	6.3	191	26 Su	0420	6.0	182	11 Tu	0530	6.6	201	26 W	0519	6.3	192
	0927	0.7	20				1053	0.2	6		1104	1.1	34		1158	1.1	33		1140	1.7	51
	1626	5.8	178				1740	6.3	192		1737	6.0	183		1805	6.4	195		1744	6.2	190
	2148	3.6	111				2317	3.2	97		2320	2.8	85						2357	1.6	49
12 Th	0315	6.0	182			12 Su	0449	6.5	198	27 M	0454	6.1	187	12 W	0014	1.9	57	27 Th	0555	6.3	193
	1015	0.2	7				1138	0.2	6		1135	1.1	34		0612	6.5	197		1209	1.9	59
	1714	6.1	187				1814	6.4	194		1801	6.1	185		1232	1.5	47		1807	6.2	190
	2240	3.6	109				2358	2.9	87		2351	2.6	78		1831	6.3	193				
13 F	0404	6.2	189			13 M	0534	6.5	199	28 Tu	0528	6.2	189	13 Th	0049	1.7	52	28 F	0029	1.4	44
	1103	-0.1	-2				1219	0.5	14		1204	1.2	38		0654	6.2	188		0634	6.2	189
	1758	6.3	191				1846	6.3	192		1825	6.1	186		1304	2.1	64		1239	2.3	70
	2327	3.5	106												1855	6.2	189		1831	6.2	188
14 Sa	0450	6.4	194			14 Tu	0037	2.6	79	29 W	0022	2.3	71	14 F	0124	1.7	52	29 Sa	0102	1.3	41
	1150	-0.1	-3				0618	6.4	195		0603	6.2	188		0737	5.7	175		0715	6.0	182
	1840	6.3	191				1257	0.9	27		1233	1.4	44		1334	2.7	81		1309	2.7	83
							1915	6.2	189		1848	6.1	185		1919	6.0	184		1855	6.0	184
15 Su	0012	3.3	102			15 W	0115	2.4	73	30 Th	0053	2.2	66	15 Sa	0201	1.8	56	30 Su	0138	1.4	42
	0536	6.4	194				0703	6.1	185		0640	6.0	184		0825	5.3	162		0803	5.6	172
	1235	0.1	2				1333	1.5	45		1301	1.8	54		1404	3.2	98		1340	3.2	98
	1919	6.2	188				1943	6.1	185		1913	6.0	184		1945	5.8	177		1922	5.8	178
					31 Tu	0044	2.9	88	31 F	0126	2.1	63									
						0611	6.0	182		0721	5.8	176									
						1255	1.2	36		1330	2.2	67									
						1928	5.9	179		1938	5.9	180									

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

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Times and Heights of High and Low Waters

October			November			December																	
Time	Height		Time	Height		Time	Height		Time	Height													
	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm											
1 M	0221	1.5	47	16 Tu	0250	2.1	63	1 Th	0421	1.9	57	16 F	0411	2.4	74	1 Sa	0512	2.2	67	16 Su	0408	2.5	76
	0902	5.2	160		1017	4.9	148		1208	5.1	155		1207	4.9	150		1217	5.2	158		1129	5.0	152
	1416	3.7	113		1506	4.2	128		1750	4.3	130		1823	3.9	118		1858	3.3	100		1827	3.2	97
	1951	5.5	169		2005	5.1	155		2205	4.6	141		2218	4.2	129		●				2320	4.0	123
2 Tu	0319	1.8	55	17 W	0356	2.4	73	2 F	0555	2.1	63	17 Sa	0544	2.7	81	2 Su	0026	4.4	135	17 M	0531	2.8	86
	1026	5.0	151		1209	4.8	146		1329	5.2	160		1314	5.1	155		0631	2.5	77		1227	5.1	155
	1507	4.2	137		1705	4.3	132		1940	3.7	114		1940	3.4	104		1313	5.3	162		1931	2.6	80
	2031	5.2	159		●	2101	4.7		142	●				●				1959	2.6		80	●	
3 W	0443	2.0	61	18 Th	0536	2.6	79	3 Sa	0044	4.7	142	18 Su	0037	4.3	130	3 M	0202	4.7	144	18 Tu	0114	4.2	129
	1237	4.9	150		1346	5.0	151		0716	2.1	64		0704	2.7	82		0738	2.7	83		0655	3.0	92
	1726	4.5	137		1922	4.1	124		1417	5.5	168		1359	5.3	161		1358	5.5	168		1319	5.2	159
	2153	4.9	148		2321	4.4	134		2030	3.1	94		2023	2.9	87		2044	2.0	60		2017	2.0	61
4 Th	0623	2.0	60	19 F	0705	2.5	77	4 Su	0211	5.1	155	19 M	0203	4.6	141	4 Tu	0307	5.2	157	19 W	0234	4.7	142
	1417	5.2	159		1433	5.2	159		0817	2.1	64		0803	2.7	81		0835	2.9	87		0801	3.1	94
	1952	4.2	127		2022	3.6	110		1452	5.7	175		1433	5.5	168		1436	5.7	174		1403	5.4	166
	●				●				2109	2.4	73		2057	2.3	69		2123	1.4	43		2056	1.3	41
5 F	0039	4.8	147	20 Sa	0132	4.6	140	5 M	0309	5.5	169	20 Tu	0257	5.1	154	5 W	0357	5.5	168	20 Th	0330	5.2	157
	0744	1.7	53		0807	2.4	72		0908	2.1	64		0850	2.6	80		0923	3.0	90		0856	3.1	95
	1502	5.6	170		1504	5.4	166		1522	6.0	182		1502	5.7	175		1510	5.9	179		1444	5.7	173
	2049	3.6	110		2059	3.1	95		2145	1.8	55		2130	1.7	51		2200	1.0	29		2136	0.7	22
6 Sa	0213	5.3	161	21 Su	0235	5.0	152	6 Tu	0357	5.9	181	21 W	0342	5.5	168	6 Th	0440	5.8	176	21 F	0417	5.6	170
	0844	1.5	46		0853	2.2	67		0951	2.2	68		0932	2.6	80		1006	3.1	93		0945	3.1	96
	1536	5.9	179		1530	5.7	173		1551	6.2	188		1530	6.0	182		1543	6.0	184		1522	5.9	181
	2130	3.0	91		2131	2.6	80		2220	1.3	39		2202	1.1	33		2235	0.6	19		2215	0.2	6
7 Su	0312	5.8	177	22 M	0318	5.4	165	7 W	0440	6.2	188	22 Th	0423	5.9	180	7 F	0519	5.9	181	22 Sa	0502	5.9	181
	0934	1.3	41		0932	2.1	63		1031	2.4	73		1011	2.7	82		1045	3.1	96		1030	3.2	98
	1605	6.1	187		1553	5.9	180		1618	6.3	191		1558	6.2	188		1614	6.1	186		1600	6.1	187
	2206	2.4	73		2201	2.1	64		2254	0.9	28		2236	0.6	18		●	2308	0.5		14	2256	-0.2
8 M	0400	6.2	189	23 Tu	0356	5.8	177	8 Th	0521	6.3	191	23 F	0504	6.2	188	8 Sa	0555	6.0	182	23 Su	0545	6.1	186
	1018	1.4	42		1007	2.0	62		1107	2.7	81		1049	2.8	86		1122	3.2	98		1113	3.2	99
	1632	6.3	192		1616	6.1	186		1644	6.3	193		1627	6.3	192		1644	6.1	186		1638	6.3	191
	2242	1.9	57		2231	1.6	50		●	2327	0.7		22	○	2312		0.2	7	2341		0.4	13	○
9 Tu	0443	6.5	197	24 W	0433	6.1	186	9 F	0600	6.2	190	24 Sa	0546	6.3	192	9 Su	0630	5.9	181	24 M	0628	6.1	187
	1057	1.6	48		1041	2.1	64		1141	2.9	89		1127	3.0	92		1157	3.3	100		1156	3.3	100
	1658	6.4	195		1640	6.2	190		1710	6.3	192		1657	6.3	193		1714	6.1	185		1717	6.3	191
	●	2316	1.4		44	2301	1.2		37	2359	0.7		21	2350	0.1		2	●				●	
10 W	0524	6.5	199	25 Th	0511	6.3	192	10 Sa	0638	6.1	186	25 Su	0630	6.3	191	10 M	0013	0.5	15	25 Tu	0021	-0.4	-11
	1132	1.9	58		1114	2.3	69		1214	3.1	96		1205	3.2	99		1230	3.3	102		1113	6.0	184
	1723	6.4	196		1704	6.3	193		1736	6.2	189		1729	6.3	192		1744	5.9	181		1238	3.3	101
	2350	1.2	37		○	2333	0.9		27	●				●				1744	5.9		181	1758	6.1
11 Th	0605	6.4	195	26 F	0549	6.4	194	11 Su	0031	0.8	24	26 M	0029	0.1	2	11 Tu	0045	0.7	21	26 W	0105	-0.1	-3
	1206	2.3	70		1146	2.5	77		0717	5.9	179		0717	6.1	185		0739	5.6	172		0756	5.8	178
	1747	6.4	194		1729	6.3	193		1247	3.4	104		1244	3.5	106		1304	3.4	104		1322	3.3	101
	●				●				1803	6.0	184		1803	6.1	186		1815	5.7	174		1841	5.8	178
12 F	0023	1.1	34	27 Sa	0007	0.7	21	12 M	0104	1.0	31	27 Tu	0112	0.3	9	12 W	0117	1.0	29	27 Th	0149	0.4	12
	0645	6.2	188		0631	6.3	192		0758	5.6	171		0807	5.8	177		0816	5.4	166		0839	5.6	171
	1237	2.7	83		1219	2.9	87		1320	3.6	111		1326	3.7	113		1341	3.5	107		1409	3.3	101
	1811	6.3	191		1755	6.3	191		1832	5.8	176		1839	5.8	177		1848	5.4	165		1929	5.4	164
13 Sa	0055	1.2	36	28 Su	0042	0.7	20	13 Tu	0137	1.3	40	28 W	0158	0.7	21	13 Th	0150	1.3	39	28 F	0234	1.0	30
	0726	5.8	178		0715	6.1	185		0843	5.3	163		0903	5.5	168		0855	5.3	161		0923	5.4	164
	1308	3.1	96		1253	3.2	98		1358	3.8	117		1416	3.9	118		1423	3.6	109		1507	3.2	99
	1836	6.1	185		1822	6.1	186		1902	5.4	165		1922	5.4	165		1926	5.1	154		2029	4.9	149
14 Su	0129	1.4	42	29 M	0121	0.8	24	14 W	0215	1.7	51	29 Th	0251	1.2	36	14 F	0226	1.6	50	29 Sa	0322	1.7	51
	0811	5.5	167		0806	5.7	175		0937	5.1	155		1005	5.3	161		0940	5.1	156		1008	5.2	159
	1339	3.5	108		1329	3.6	111		1448	4.0	122		1526	4.0	121		1521	3.6	110		1623	3.1	95
	1901	5.8	177		1851	5.8	178		1939	5.0	153		2023	4.9	150		2014	4.6	141		2153	4.4	134
15 M	0206	1.7	52	30 Tu	0206	1.1	33	15 Th	0303	2.1	63	30 F	0355	1.7	53	15 Sa	0309	2.1	63	30 Su	0419	2.3	71
	0904	5.1	156		0907	5.4	165		1046	5.0	151		1112	5.2	158		1032	5.0	153		1057	5.1	156
	1414	3.9	118		1412	4.0	122		1614	4.1	125		1716	3.8	115		1650	3.5	108		1759	2.8	85
	1930	5.5	167		1924	5.5	167		●	2032	4.6		140	●	2211		4.5	136	●				2351
				31 W</																			

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Times and Heights of High and Low Waters

January				February				March						
	Time		Height			Time		Height			Time		Height	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm
1 M	0009	-0.3	-9		1 Th	0123	-1.0	-30		1 F	0130	0.0	1	
	0647	4.7	142			0752	4.8	146			0755	4.2	128	
	1210	2.8	85			1325	2.2	68			1324	2.0	62	
	1749	4.6	141			1916	4.7	144			1911	4.2	127	
2 Tu	0052	-0.8	-23		2 F	0204	-0.9	-26		2 Sa	0156	0.0	1	
	0728	5.0	151			0827	4.8	145			0819	4.3	130	
	1254	2.8	84			1407	2.0	62			1358	1.8	56	
	1834	4.8	145			2000	4.6	141			1949	4.3	130	
3 W	0136	-1.0	-30		3 Sa	0243	-0.5	-15		3 Su	0224	0.2	5	
	0810	5.1	154			0904	4.6	140			0847	4.3	131	
	1338	2.7	83			1450	2.0	60			1435	1.7	51	
	1920	4.8	145			2045	4.3	132			2028	4.2	129	
4 Th	0220	-0.9	-28		4 Su	0322	0.1	3		4 M	0255	0.4	13	
	0853	5.0	151			0941	4.3	132			0917	4.2	128	
	1422	2.7	83			1538	2.0	61			1518	1.6	48	
	2006	4.6	140			2130	3.9	118			2111	4.0	123	
5 F	0305	-0.6	-18		5 M	0359	0.8	25		5 Tu	0329	0.8	25	
	0937	4.7	144			1018	4.0	122			0951	4.1	124	
	1510	2.8	85			1637	2.0	61			1607	1.5	46	
	2053	4.2	129			2218	3.3	101			2159	3.7	114	
6 Sa	0349	0.0	-1		6 Tu	0432	1.5	47		6 W	0406	1.3	41	
	1022	4.4	134			1053	3.7	113			1025	3.8	117	
	1606	2.9	87			1822	2.0	60			1706	1.4	44	
	2141	3.7	114			2319	2.8	85			2256	3.3	102	
7 Su	0434	0.7	20		7 W	0452	2.2	67		7 Th	0446	2.0	60	
	1111	4.1	124			1122	3.4	105			1101	3.6	110	
	1838	2.8	85			2015	1.8	54			1815	1.3	41	
	2236	3.2	98											
8 M	0518	1.4	42		8 Th	1130	3.3	101		8 F	0013	3.0	92	
	1203	3.8	116			2124	1.5	46			0531	2.6	78	
	2053	2.4	73								1135	3.4	103	
	2352	2.7	83								1934	1.2	36	
9 Tu	0600	2.1	63		9 F	1025	3.3	100		9 Sa	0506	3.1	95	
	1259	3.6	110			2218	1.2	37			0648	3.1	94	
	2153	2.0	61								1100	3.2	99	
											2059	0.9	28	
10 W	0450	2.7	81		10 Sa	0802	3.4	104		10 Su	0600	3.5	108	
	0639	2.6	80			2259	1.0	29			2211	0.6	17	
	1352	3.5	107											
	2237	1.6	50											
11 Th	1438	3.5	106		11 Su	0744	3.5	108		11 M	0625	3.8	117	
	2306	1.3	40			2335	0.7	22			1254	3.1	94	
											1533	3.3	100	
											2304	0.2	6	
12 F	0736	3.3	102		12 M	0658	3.6	111		12 Tu	0620	4.1	124	
	0958	3.2	99			1151	3.1	94			1132	2.9	88	
	1520	3.5	106			1636	3.2	97			1643	3.7	112	
	2329	1.0	30								2347	-0.2	-5	
13 Sa	0748	3.5	108		13 Tu	0008	0.5	14		13 W	0628	4.3	131	
	1057	3.3	101			0658	3.8	116			1158	2.5	77	
	1603	3.5	107			1207	2.9	87			1736	4.1	126	
	2355	0.7	21			1721	3.4	104						
14 Su	0717	3.7	113		14 W	0038	0.3	8		14 Th	0626	3.9	119	
	1135	3.2	98			0714	4.0	121			1201	2.6	80	
	1645	3.6	110			1229	2.6	79			1715	3.3	100	
						1759	3.7	112						
15 M	0024	0.4	12		15 Th	0105	0.1	4		15 F	0012	0.8	23	
	0714	3.9	119			0734	4.1	125			0642	4.0	122	
	1207	3.1	94			1255	2.3	71			1215	2.3	71	
	1725	3.7	114			1835	3.9	120			1749	3.6	111	
16 Tu	0054	0.2	5		16 F	0123	-1.0	-30		16 Sa	0130	0.0	1	
	0734	4.1	125			0752	4.8	146			0755	4.2	128	
	1238	2.9	88			1325	2.2	68			1324	2.0	62	
	1802	3.9	119			1916	4.7	144			1911	4.2	127	
17 W	0124	0.0	0		17 Sa	0204	-0.9	-26		17 Su	0156	0.0	1	
	0759	4.2	129			0827	4.8	145			0819	4.3	130	
	1308	2.7	82			1407	2.0	62			1358	1.8	56	
	1839	4.0	123			2000	4.6	141			1949	4.3	130	
18 Th	0152	-0.1	-2		18 Su	0243	-0.5	-15		18 M	0224	0.2	5	
	0826	4.3	131			0904	4.6	140			0847	4.3	131	
	1341	2.6	78			1450	2.0	60			1435	1.7	51	
	1915	4.1	125			2045	4.3	132			2028	4.2	129	
19 F	0221	0.0	-1		19 M	0322	0.1	3		19 Tu	0255	0.4	13	
	0854	4.3	131			0941	4.3	132			0917	4.2	128	
	1416	2.5	75			1538	2.0	61			1518	1.6	48	
	1953	4.1	124			2130	3.9	118			2111	4.0	123	
20 Sa	0251	0.1	3		20 M	0359	0.8	25		20 Tu	0329	0.8	25	
	0926	4.2	129			1018	4.0	122			0951	4.1	124	
	1456	2.4	74			1637	2.0	61			1607	1.5	46	
	2034	3.9	119			2218	3.3	101			2159	3.7	114	
21 Su	0322	0.4	11		21 Tu	0432	1.5	47		21 W	0406	1.3	41	
	1000	4.1	125			1053	3.7	113			1025	3.8	117	
	1543	2.4	73			1822	2.0	60			1706	1.4	44	
	2118	3.7	112			2319	2.8	85			2256	3.3	102	
22 M	0357	0.7	21		22 W	0452	2.2	67		22 Th	0446	2.0	60	
	1037	4.0	121			1122	3.4	105			1101	3.6	110	
	1641	2.4	72			2015	1.8	54			1815	1.3	41	
	2207	3.3	102											
23 Tu	0434	1.1	35		23 Th	1130	3.3	101		23 F	0013	3.0	92	
	1118	3.8	116			2124	1.5	46			0531	2.6	78	
	1756	2.2	68								1135	3.4	103	
	2307	3.0	92								1934	1.2	36	
24 W	0515	1.7	51		24 F	1025	3.3	100		24 Sa	0506	3.1	95	
	1201	3.6	111			2218	1.2	37			0648	3.1	94	
	1928	2.0	60								1100	3.2	99	
											2059	0.9	28	
25 Th	0029	2.8	85		25 Sa	0802	3.4	104		25 Su	0600	3.5	108	
	0604	2.2	67			2259	1.0	29			2211	0.6	17	
	1246	3.5	107											
	2044	1.6	48											
26 F	0354	2.8	85		26 Su	0744	3.5	108		26 M	0625	3.8	117	
	0718	2.7	82			2335	0.7	22			1254	3.1	94	
	1337	3.4	105								1533	3.3	100	
	2142	1.1	33								2304	0.2	6	
27 Sa	0559	3.3	100		27 M	0658	3.6	111		27 Tu				

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Times and Heights of High and Low Waters

April				May				June																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Su	0114	0.8	25		16 M	0054	1.3	41		1 Tu	0119	2.2	68		16 W	0102	2.4	72		1 F	0202	3.3	100		16 Sa	0213	3.3	101	
	0719	4.7	143			0659	4.6	141			0711	4.7	142			0654	5.0	151			0728	4.5	137			0753	5.1	155	
	1328	0.9	28			1315	0.7	22			1349	0.6	19			1336	0.1	2			1451	0.8	24			1500	0.0	-1	
	1937	4.8	146			1924	4.9	150			2009	4.7	144			2000	5.3	162			2131	4.7	143			2135	5.3	161	
2 M	0148	1.1	35		17 Tu	0127	1.5	45		2 W	0152	2.5	76		17 Th	0142	2.6	78		2 Sa	0239	3.4	104		17 Su	0303	3.5	106	
	0750	4.6	141			0729	4.7	144			0739	4.5	138			0729	5.0	151			0750	4.3	131			0840	4.8	147	
	1407	0.8	24			1353	0.4	12			1428	0.6	19			1421	-0.1	-2			1530	1.0	30			1550	0.4	11	
	2019	4.6	141			2007	5.1	154			2053	4.6	139			2049	5.2	160			2220	4.5	138			2229	5.0	153	
3 Tu	0221	1.6	49		18 W	0203	1.7	53		3 Th	0224	2.8	85		18 F	0225	2.9	88		3 Su	0324	3.6	109		18 M	0402	3.6	111	
	0818	4.4	135			0800	4.7	143			0801	4.3	132			0806	4.8	146			0810	4.1	125			0932	4.4	135	
	1448	0.8	24			1435	0.2	7			1509	0.8	23			1510	0.0	1			1610	1.2	38			1644	0.9	28	
	2102	4.3	132			2053	4.9	150			2142	4.3	132			2144	5.0	152			2318	4.4	133			2330	4.7	144	
4 W	0251	2.1	64		19 Th	0242	2.2	66		4 F	0256	3.1	95		19 Sa	0313	3.3	100		4 M	0426	3.7	113		19 Tu	0751	3.7	112	
	0844	4.2	127			0833	4.5	138			0817	4.1	125			0843	4.5	136			0815	3.8	117			1033	4.0	122	
	1531	0.9	28			1522	0.3	8			1551	1.0	29			1604	0.3	10			1651	1.5	47			1740	1.5	47	
	2149	3.9	120			2145	4.6	141			2241	4.1	125			2248	4.7	142											
5 Th	0319	2.6	79		20 F	0324	2.7	82		5 Sa	0333	3.4	103		20 Su	0413	3.6	111		5 Tu	0043	4.3	130		20 W	0045	4.5	138	
	0902	3.9	119			0904	4.2	128			0820	3.9	118			0923	4.1	124			1735	1.8	56			0903	3.3	100	
	1618	1.1	33			1616	0.5	14			1637	1.2	37			1703	0.7	22								1153	3.6	110	
	2249	3.6	109			2250	4.2	129																		1841	2.2	66	
6 F	0343	3.0	91		21 Sa	0415	3.2	98		6 Su	0012	3.9	120		21 M	0016	4.4	134		6 W	0221	4.3	130		21 Th	0200	4.4	134	
	0905	3.7	112			0931	3.8	117			0432	3.6	110			1808	1.2	37			1825	2.2	66			0956	2.9	87	
	1713	1.3	39			1718	0.7	22			0718	3.7	113			1726	1.5	45								1352	3.4	105	
																										1949	2.7	82	
7 Sa	0137	3.4	103		22 Su	0032	3.9	120		7 M	0224	4.0	121		22 Tu	0300	4.4	133		7 Th	0310	4.3	131		22 F	0239	4.3	132	
	0404	3.3	101			1829	1.0	31			1821	1.7	52			1020	3.2	99			1021	3.0	91			1035	2.5	76	
	0821	3.5	107								1157	3.3	101			1157	3.3	101			1302	3.1	95			1600	3.6	109	
	1816	1.4	44								1920	1.6	50			1920	1.6	50			1927	2.5	75			2054	3.1	96	
8 Su	0514	3.6	109		23 M	0359	4.1	125		8 Tu	0332	4.1	124		23 W	0348	4.4	133		8 F	0332	4.3	130		23 Sa	0311	4.3	131	
	1939	1.6	48			1952	1.2	38			1938	1.9	59			1057	2.9	88			1037	2.7	82			1059	2.2	66	
																1408	3.2	99			1504	3.3	100			1811	3.8	117	
																2036	2.0	62			2041	2.7	82			2149	3.5	106	
9 M	0442	3.8	115		24 Tu	0449	4.2	128		9 W	0412	4.2	127		24 Th	0354	4.3	131		9 Sa	0342	4.3	130		24 Su	0344	4.3	132	
	2115	1.6	49			1157	2.9	89			2110	2.1	63			1123	2.6	78			1045	2.3	71			1115	1.8	56	
						1411	3.0	92								1533	3.4	105			1610	3.6	111			1854	4.1	124	
						2114	1.4	42								2137	2.3	71			2142	2.9	88			2236	3.6	111	
10 Tu	0506	3.9	119		25 W	0503	4.2	129		10 Th	0439	4.2	127		25 F	0406	4.3	131		10 Su	0402	4.3	132		25 M	0419	4.4	134	
	2219	1.6	48			1210	2.7	82			1131	2.7	81			1124	2.3	69			1057	1.9	57			1141	1.5	46	
						1539	3.3	101			1551	3.1	94			1630	3.7	114			1658	4.1	124			1826	4.3	132	
						2213	1.5	45			2206	2.2	66			2224	2.6	79			2232	3.0	91			2318	3.7	113	
11 W	0528	4.0	122		26 Th	0456	4.3	130		11 F	0454	4.2	128		26 Sa	0431	4.4	134		11 M	0432	4.5	138		26 Tu	0455	4.5	137	
	1231	2.7	82			1138	2.4	74			1124	2.4	72			1122	1.8	56			1124	1.3	40			1213	1.2	38	
	1621	3.0	91			1633	3.7	113			1634	3.5	106			1717	4.0	123			1742	4.5	138			1853	4.6	140	
	2304	1.5	46			2257	1.6	48			2244	2.2	67			2304	2.8	85			2316	3.0	92			2358	3.7	112	
12 Th	0545	4.0	123		27 F	0514	4.4	133		12 Sa	0505	4.2	129		27 Su	0501	4.5	137		12 Tu	0507	4.7	144		27 W	0531	4.6	140	
	1149	2.5	75			1133	2.0	60			1129	2.0	60			1148	1.4	44			1200	0.8	23			1248	1.0	31	
	1658	3.3	101			1720	4.1	125			1713	3.9	119			1801	4.3	132			1826	5.0	152			1925	4.8	146	
	2335	1.4	44			2334	1.7	51			2315	2.2	68			2341	2.9	89											
13 F	0558	4.1	126		28 Sa	0541	4.5	138		13 Su	0523	4.4	134		28 M	0533	4.6	140		13 W	0000	3.1	93		28 Th	0035	3.6	110	
	1155	2.1	64			1200	1.5	45			1149	1.4	44			1221	1.1	33			0545	5.0	152			0606	4.7	142	
	1732	3.8	115			1803	4.4	135			1751	4.4	134			1843	4.6	140			1241	0.3	8			1324	0.9	26	
	2359	1.4	43								2348	2.2	68								1911	5.3	162			1959	4.9	150	
14 Sa	0613	4.3	130		29 Su	0010	1.8	55		14 M	0549	4.6	141		29 Tu	0017	3.0	92		14 Th	0043	3.1	94		29 F	0110	3.5	107	
	1214	1.7	51			0611	4.6																						

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Times and Heights of High and Low Waters

July				August				September															
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height										
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm									
1 Su	0223	3.5	106	16 M	0248	3.3	101	1 W	0326	3.2	98	16 Th	0411	2.8	85	1 Sa	0441	2.5	75	16 Su	0600	2.4	72
	0748	4.6	140		0837	5.2	160		0906	4.7	142		1004	4.7	142		1034	4.5	138		2116	4.4	134
	1507	1.1	33		1529	0.6	19		1542	1.8	55		1620	2.6	79		1624	3.1	94		1624	3.1	94
	2148	4.8	147		2156	5.3	161		2215	4.9	148		2231	4.9	148		2233	4.7	143		2233	4.7	143
2 M	0305	3.5	107	17 Tu	0340	3.3	102	2 Th	0420	3.2	97	17 F	0533	2.8	85	2 Su	0547	2.4	73	17 M	0724	2.4	73
	0826	4.4	134		0927	4.9	148		0954	4.4	134		1107	4.1	126		1146	4.2	129		1831	4.5	138
	1541	1.3	40		1616	1.3	39		1618	2.2	67		1656	3.3	100		1713	3.6	111		1713	3.6	111
	2228	4.7	143		2242	5.0	152		2252	4.7	144		2303	4.6	139		2308	4.5	137		2308	4.5	137
3 Tu	0356	3.6	109	18 W	0448	3.3	102	3 F	0528	3.1	93	18 Sa	0727	2.7	81	3 M	0700	2.2	68	18 Tu	0842	2.3	71
	0909	4.2	127		1022	4.4	133		1050	4.1	126		1536	3.9	119		1613	4.2	129		1804	4.7	142
	1617	1.6	50		1703	2.0	61		1659	2.7	82		1717	3.9	118		1828	4.1	126		1828	4.1	126
	2313	4.6	139		2330	4.7	143		2332	4.6	140		2323	4.4	133		2340	4.3	132		2340	4.3	132
4 W	0507	3.6	109	19 Th	0740	3.1	96	4 Sa	0649	2.9	87	19 Su	0841	2.5	75	4 Tu	0818	2.0	62	19 W	0947	2.2	68
	1001	3.9	119		1131	3.9	119		1203	3.9	119		2048	4.3	131		1717	4.6	141		1747	4.8	145
	1656	2.0	60		1752	2.7	83		1747	3.2	97		0940	2.3	69		0933	1.7	53		1037	2.1	65
													1903	4.5	138		1748	4.9	149		1746	4.9	148
5 Th	0002	4.5	136	20 F	0020	4.5	136	5 Su	0013	4.5	136	20 M	1028	2.1	63	5 W	0016	4.2	127	20 Th	1037	2.1	65
	0805	3.4	103		0849	2.8	86		0800	2.5	77		1903	4.5	138		0251	4.3	131		1746	4.9	148
	1105	3.7	112		1400	3.6	110		1353	3.8	117		1028	2.1	63		0251	4.3	131		1746	4.9	148
	1738	2.4	72		1845	3.3	102		1850	3.6	111		1907	4.6	141		1031	1.4	43		1746	4.9	148
6 F	0050	4.4	134	21 Sa	0110	4.3	132	6 M	0058	4.4	134	21 Tu	1028	2.1	63	6 Th	0016	4.2	127	21 F	0153	3.8	116
	0855	3.1	93		0943	2.5	76		0901	2.2	66		1907	4.6	141		1031	1.4	43		0422	4.0	121
	1228	3.5	107		1737	3.9	118		1718	4.2	128		2019	4.0	121		1753	5.1	156		1117	2.0	61
	1829	2.8	84		1958	3.8	116		2019	4.0	121		2019	4.0	121		2314	4.0	121		1801	4.9	150
7 Sa	0133	4.3	132	22 Su	0156	4.3	130	7 Tu	0151	4.4	134	22 W	1108	1.9	57	7 F	0413	4.6	141	22 Sa	0502	4.3	130
	0927	2.7	82		1025	2.2	67		0957	1.7	53		1830	4.7	144		1118	1.1	33		1150	1.9	59
	1417	3.5	108		1855	4.2	128		1753	4.6	140		2333	4.1	126		1804	5.3	163		1819	5.0	153
	1933	3.1	96		2133	4.1	125		2200	4.1	125		2333	4.1	126		2336	3.6	110		1819	5.0	153
8 Su	0213	4.3	132	23 M	0241	4.2	129	8 W	0300	4.5	137	23 Th	0100	4.2	127	8 Sa	0510	5.1	155	23 Su	0001	3.3	100
	0953	2.3	69		1058	1.9	59		1048	1.3	39		0240	4.1	126		1159	0.9	26		0537	4.6	139
	1607	3.8	117		1927	4.4	134		1805	5.0	151		0421	4.2	128		1828	5.6	170		1217	1.9	57
	2048	3.4	105		2237	4.2	127		2259	4.0	123		1143	1.7	52		1828	5.6	170		1838	5.1	156
9 M	0255	4.4	134	24 Tu	0332	4.3	130	9 Th	0412	4.7	144	24 F	0509	4.4	135	9 Su	0009	3.1	96	24 M	0023	2.9	89
	1025	1.8	55		1130	1.7	51		1134	0.8	25		1216	1.5	47		0559	5.5	169		0610	4.9	149
	1710	4.3	130		1906	4.5	138		1825	5.3	161		1851	5.0	153		1238	0.8	24		1241	1.8	56
	2159	3.6	110		2317	4.1	126		2341	3.8	116		1832*	4.9	149		1858	5.7	175		1857	5.2	159
10 Tu	0342	4.6	139	25 W	0424	4.4	133	10 F	0513	5.1	155	25 Sa	0013	3.6	111	10 M	0046	2.7	82	25 Tu	0049	2.6	78
	1104	1.2	38		1202	1.4	44		1217	0.5	14		0548	4.7	142		0644	5.8	178		0644	5.2	158
	1751	4.7	143		1854	4.7	144		1854	5.6	170		1246	1.4	44		1316	0.9	28		1306	1.8	56
	2257	3.7	112		2351	4.0	121		2351	4.0	121		1914	5.1	156		1930	5.8	177		1919	5.3	162
11 W	0431	4.8	146	26 Th	0512	4.5	137	11 Sa	0022	3.5	107	26 Su	0040	3.4	103	11 Tu	0125	2.3	71	26 W	0119	2.2	67
	1146	0.7	22		1236	1.2	38		0606	5.5	167		0624	4.9	150		0728	5.9	180		0720	5.4	165
	1829	5.1	156		1915	4.9	150		1259	0.2	7		1313	1.4	43		1353	1.2	38		1333	1.9	59
	2346	3.6	110		1915	4.9	150		1928	5.7	175		1937	5.2	159		2003	5.7	175		1944	5.4	164
12 Th	0521	5.1	154	27 F	0024	3.8	115	12 Su	0102	3.2	97	27 M	0110	3.1	94	12 W	0206	2.1	65	27 Th	0154	1.9	59
	1230	0.3	8		0554	4.7	142		0654	5.7	175		0659	5.1	156		0812	5.7	175		0758	5.5	167
	1908	5.4	166		1308	1.1	34		1340	0.3	8		1339	1.4	43		1430	1.8	55		1404	2.1	65
					1941	5.1	154		2003	5.8	177		2001	5.3	161		2037	5.5	169		2013	5.3	163
13 F	0031	3.5	106	28 Sa	0056	3.6	109	13 M	0144	3.0	90	28 Tu	0142	2.9	87	13 Th	0250	2.1	63	28 F	0233	1.7	53
	0611	5.3	162		0632	4.8	147		0740	5.8	177		0734	5.2	160		0857	5.3	163		0840	5.4	164
	1314	0.0	-1		1339	1.0	32		1421	0.6	17		1406	1.5	47		1505	2.5	75		1438	2.5	76
	1948	5.6	172		2009	5.1	156		2040	5.7	174		2027	5.3	161		2108	5.2	159		2043	5.2	159
14 Sa	0115	3.4	103	29 Su	0129	3.4	104	14 Tu	0228	2.8	86	29 W	0218	2.7	82	14 F	0339	2.2	66	29 Sa	0317	1.7	51
	0700	5.5	167		0709	4.9	150		0826	5.6	171		0812	5.2	160		0946	4.8	147		0927	5.2	157
	1359	-0.1	-3		1409	1.1	34		1501	1.1	34		1435	1.7	53		1538	3.1	95		1516	3.0	90
	2029	5.7	173		2039	5.1	156		2117	5.5	167		2055	5.2	160		2135	4.9	149		2114	5.0	152
15 Su	0200	3.3	101	30 M	0203	3.3	100	15 W	0315	2.8	85	30 Th	0258	2.6	79	15 Sa	0439	2.3	70	30 Su	0408	1.7	52
	0748	5.4	166		0746	4.9	150		0913	5.2	158		0854	5.1	155		1048	4.3	132		1024	4.8	146
	1444	0.1	4		1438	1.2	38		1541	1.8	55		1508	2.1	64		1604	3.7	113		1558	3.5	107
	2112	5.5	169		2109	5.1	155		2154	5.2	157		2126	5.1	156		2152	4.6	139		2142	4.7	142

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Times and Heights of High and Low Waters

January					February					March																			
Time		Height			Time		Height			Time		Height			Time		Height												
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 M	0321	-0.3	-9		16 Tu	0359	0.1	3		1 Th	0436	-0.4	-12		16 F	0440	0.4	12		1 Th	0348	0.1	3		16 F	0357	0.8	24	
	1049	5.4	165			1132	4.9	149			1204	5.5	168			1147	4.9	149			1104	5.5	168			1052	4.9	149	
	1647	2.6	79			1728	2.6	79			1802	2.5	76			1744	2.3	70			1704	2.3	70			1651	2.0	61	
	2100	3.6	110			2130	3.3	101			2233	3.8	116			2235	3.7	113			2203	3.9	119			2211	3.9	119	
2 Tu	0400	-0.5	-15		17 W	0424	0.1	3		2 F	0522	-0.2	-6		17 Sa	0511	0.5	15		2 F	0431	0.2	6		17 Sa	0425	0.9	27	
	1133	5.5	168			1155	4.9	149			1242	5.4	165			1207	4.9	149			1136	5.3	162			1106	4.8	146	
	1733	2.7	82			1750	2.6	79			1843	2.4	73			1811	2.1	64			1734	2.2	67			1707	1.9	58	
	2136	3.7	113			2154	3.4	104			2330	3.8	116			2316	3.9	119			2249	4.2	128			2239	4.2	128	
3 W	0442	-0.6	-18		18 Th	0452	0.1	3		3 Sa	0611	0.1	3		18 Su	0549	0.6	18		3 Sa	0514	0.5	15		18 Su	0456	1.1	34	
	1219	5.6	171			1218	4.9	149			1321	5.2	158			1233	4.8	146			1205	5.1	155			1121	4.7	143	
	1821	2.8	85			1817	2.5	76			1928	2.1	64			1844	1.8	55			1806	1.9	58			1729	1.7	52	
	2220	3.7	113			2231	3.5	107			0035	3.9	119			0007	4.0	122			2340	4.3	131			2316	4.4	134	
4 Th	0529	-0.5	-15		19 F	0527	0.1	3		4 Su	0703	0.5	15		19 M	0632	0.7	21		4 Su	0559	0.9	27		19 M	0533	1.2	37	
	1307	5.5	168			1245	4.9	149			1400	5.0	152			1305	4.8	146			1235	4.9	149			1143	4.7	143	
	1913	2.7	82			1851	2.4	73			2014	1.8	55			1923	1.5	46			1843	1.7	52			1759	1.4	43	
	2317	3.6	110			2319	3.5	107			0145	3.9	119			0102	4.1	125			0035	4.4	134			0001	4.6	140	
5 F	0621	-0.3	-9		20 Sa	0608	0.2	6		5 M	0758	1.0	30		20 Tu	0721	1.0	30		5 M	0647	1.3	40		20 Tu	0616	1.4	43	
	1355	5.4	165			1318	5.0	152			1439	4.8	146			1340	4.6	140			1307	4.7	143			1212	4.6	140	
	2008	2.5	76			1931	2.1	64			2103	1.4	43			2005	1.2	37			1924	1.4	43			1836	1.1	34	
	0027	3.5	107			0015	3.5	107			0300	3.9	119			0203	4.2	128			0135	4.5	137			0054	4.8	146	
6 Sa	0718	0.1	3		21 Su	0653	0.3	9		6 Tu	0857	1.4	43		21 W	0814	1.3	40		6 Tu	0739	1.6	49		21 W	0706	1.7	52	
	1443	5.3	162			1354	5.0	152			1520	4.5	137			1417	4.4	134			1342	4.5	137			1247	4.4	134	
	2103	2.2	67			2015	1.8	55			2154	1.1	34			2051	1.0	30			2009	1.1	34			1918	0.8	24	
	0147	3.4	104			0116	3.5	107			0420	3.9	119			0310	4.2	128			0239	4.5	137			0153	4.9	149	
7 Su	0817	0.5	15		22 M	0743	0.5	15		7 W	1003	1.9	58		22 Th	0915	1.8	55		7 W	0837	2.0	61		22 Th	0803	2.0	61	
	1530	5.1	155			1432	4.8	146			1605	4.1	125			1456	4.1	125			1421	4.2	128			1324	4.2	128	
	2157	1.8	55			2100	1.5	46			2249	0.9	27			2142	0.8	24			2056	1.0	30			2005	0.6	18	
	0315	3.4	104			0221	3.5	107			0547	4.0	122			0430	4.2	128			0347	4.5	137			0259	4.9	149	
8 M	0919	1.0	30		23 Tu	0835	0.8	24		8 Th	1122	2.3	70		23 F	1029	2.2	67		8 Th	0942	2.3	70		23 F	0908	2.4	73	
	1617	4.8	146			1512	4.6	140			1658	3.7	113			1539	3.7	113			1504	3.9	119			1405	3.9	119	
	2253	1.4	43			2148	1.3	40			2349	0.8	24			2242	0.7	21			2149	0.9	27			2059	0.6	18	
	0449	3.4	104			0332	3.5	107			0715	4.2	128			0608	4.3	131			0502	4.5	137			0416	4.8	146	
9 Tu	1028	1.5	46		24 W	0935	1.3	40		9 F	1259	2.5	76		24 Sa	1207	2.6	79		9 F	1059	2.5	76		24 Sa	1028	2.7	82	
	1707	4.4	134			1554	4.3	131			1805	3.4	104			1633	3.3	101			1557	3.5	107			1451	3.6	110	
	2351	1.1	34			2240	1.0	30			0052	0.7	21			0744	4.6	140			2249	0.9	27			2201	0.6	18	
	0627	3.6	110			0456	3.6	110			0052	0.7	21			0744	4.6	140			0624	4.5	137			0549	4.8	146	
10 W	1150	2.0	61		25 Th	1047	1.8	55		10 Sa	0828	4.5	137		25 Su	1356	2.7	82		10 Sa	1234	2.5	76		25 Su	1212	2.8	85	
	1802	4.1	125			1640	3.9	119			1433	2.4	73			1752	3.1	94			1711	3.2	98			1553	3.2	98	
	0049	0.8	24			2336	0.8	24			1917	3.2	98			0103	0.4	12			2357	0.9	27			2318	0.7	21	
	0754	4.0	122			0634	3.8	116			0150	0.5	15			0855	5.0	152			0741	4.7	143			0721	5.0	152	
11 Th	1321	2.3	70		26 F	1216	2.2	67		11 Su	0924	4.8	146		26 M	1513	2.6	79		11 Su	1407	2.4	73		26 M	1357	2.7	82	
	1859	3.8	116			1733	3.6	110			1539	2.3	70			1920	3.2	98			1844	3.1	94			1744	3.1	94	
	0142	0.5	15			0035	0.5	15			0238	0.4	12			0207	0.2	6			0106	0.9	27			0040	0.7	21	
	0901	4.4	134			0803	4.3	131			1008	4.9	149			0948	5.3	162			0843	4.9	149			0831	5.2	158	
12 F	1444	2.4	73		27 Sa	1352	2.4	73		12 M	1622	2.3	70		27 Tu	1600	2.5	76		12 M	1511	2.2	67		27 Tu	1501	2.5	76	
	1951	3.5	107			1832	3.3	101			2057	3.2	98			2026	3.4	104			2000	3.1	94			1935	3.2	98	
	0227	0.3	9			0132	0.2	6			0315	0.4	12			0301	0.1	3			0205	0.8	24			0154	0.7	21	
	0952	4.7	143			0909	4.8	146			1042	5.0	152			1029	5.5	168			0930	5.0	152			0923	5.4	165	
13 Sa	1548	2.4	73		28 Su	1509	2.5	76		13 Tu	1650	2.3	70		28 W	1634	2.4	73		13 Tu	1551	2.1	64		28 W	1541	2.2	67	
	2033	3.3	101			1928	3.3	101			2123	3.2	98			2117	3.7	113			2051	3.3	101			2045	3.6	110	
	0304	0.2	6			0223	-0.1	-3			0346	0.3	9			0328	0.7	21			0252	0.7	21			0253	0.7	21	
	1032	4.9	149			1001	5.2	158			1109	5.0	152			1106	5.1	155			1006	5.1	155			1002	5.4	165	
14 Su																													

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Times and Heights of High and Low Waters

April				May				June																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 Su	0504	1.4	43		16 M	0442	1.7	52		1 Tu	0535	2.6	79		16 W	0514	2.7	82		1 F	0053	5.6	171		16 Sa	0053	6.1	186	
	1120	4.8	146			1031	4.5	137			1046	4.3	131			1004	4.3	131			0656	3.3	101			0701	3.5	107	
	1729	1.4	43			1651	1.2	37			1721	0.9	27			1650	0.4	12			1054	4.0	122			1050	4.2	128	
	2344	4.8	146			2315	4.9	149													1800	0.7	21			1805	0.3	9	
2 M	0545	1.8	55		17 Tu	0520	2.0	61		2 W	0024	5.2	158		17 Th	0000	5.6	171		2 Sa	0133	5.6	171		17 Su	0147	6.2	189	
	1142	4.6	140			1052	4.4	134			0619	2.8	85			0603	2.9	88			0746	3.2	98			0802	3.4	104	
	1800	1.2	37			1720	0.9	27			1109	4.2	128			1034	4.2	128			1144	3.9	119			1152	4.1	125	
						2359	5.2	158			1754	0.8	24			1730	0.3	9			1845	0.7	21			1902	0.5	15	
3 Tu	0031	4.9	149		18 W	0606	2.2	67		3 Th	0107	5.3	162		18 F	0053	5.8	177		3 Su	0218	5.7	174		18 M	0242	6.1	186	
	0631	2.1	64			1120	4.3	131			0709	2.9	88			0702	3.1	94			0841	3.0	91			0904	3.2	98	
	1208	4.4	134			1757	0.6	18			1142	4.0	122			1113	4.1	125			1245	3.7	113			1308	4.0	122	
	1836	1.0	30								1834	0.7	21			1818	0.2	6			1936	0.8	24			2003	0.8	24	
4 W	0121	5.0	152		19 Th	0051	5.3	162		4 F	0155	5.4	165		19 Sa	0152	5.8	177		4 M	0305	5.7	174		19 Tu	0336	6.0	183	
	0722	2.3	70			0700	2.5	76			0805	2.9	88			0807	3.1	94			0936	2.7	82			1004	2.9	88	
	1241	4.2	128			1156	4.2	128			1227	3.8	116			1204	3.9	119			1352	3.6	110			1436	3.9	119	
	1918	0.9	27			1842	0.4	12			1920	0.7	21			1913	0.3	9			2030	1.0	30			2107	1.2	37	
5 Th	0216	5.0	152		20 F	0151	5.4	165		5 Sa	0246	5.4	165		20 Su	0254	5.8	177		5 Tu	0354	5.6	171		20 W	0429	5.8	177	
	0820	2.5	76			0803	2.7	82			0907	2.8	85			0918	3.1	94			1031	2.5	76			1104	2.5	76	
	1321	4.0	122			1238	4.0	122			1321	3.6	110			1305	3.7	113			1506	3.5	107			1617	3.9	119	
	2004	0.8	24			1933	0.3	9			2011	0.7	21			2014	0.5	15			2127	1.2	37			2217	1.8	55	
6 F	0315	5.0	152		21 Sa	0256	5.4	165		6 Su	0342	5.4	165		21 M	0359	5.7	174		6 W	0445	5.5	168		21 Th	0523	5.5	168	
	0924	2.6	79			0913	2.8	85			1012	2.6	79			1032	2.9	88			1128	2.3	70			1204	2.2	67	
	1408	3.7	113			1325	3.7	113			1425	3.4	104			1423	3.5	107			1629	3.5	107			1804	4.1	125	
	2055	0.8	24			2030	0.4	12			2108	0.9	27			2120	0.8	24			2230	1.5	46			2336	2.3	70	
7 Sa	0420	5.0	152		22 Su	0410	5.3	162		7 M	0441	5.3	162		22 Tu	0504	5.6	171		7 Th	0538	5.3	162		22 F	0618	5.2	158	
	1038	2.6	79			1036	2.9	88			1120	2.5	76			1146	2.7	82			1223	2.1	64			1301	1.8	55	
	1505	3.4	104			1423	3.5	107			1542	3.2	98			1608	3.4	104			1759	3.6	110			1939	4.4	134	
	2154	0.9	27			2136	0.6	18			2210	1.1	34			2235	1.2	37			2339	1.9	58						
8 Su	0531	4.9	149		23 M	0530	5.2	158		8 Tu	0544	5.2	158		23 W	0609	5.4	165		8 F	0629	5.1	155		23 Sa	0101	2.7	82	
	1201	2.5	76			1211	2.8	85			1228	2.3	70			1253	2.3	70			1312	1.8	55			0712	4.9	149	
	1623	3.1	94			1549	3.2	98			1717	3.2	98			1811	3.5	107			1921	3.9	119			1353	1.4	43	
	2301	1.0	30			2254	0.9	27			2320	1.3	40			2358	1.7	52								2053	4.9	149	
9 M	0644	4.9	149		24 Tu	0649	5.2	158		9 W	0645	5.1	155		24 Th	0710	5.2	158		9 Sa	0051	2.2	67		24 Su	0223	3.0	91	
	1324	2.4	73			1334	2.5	76			1327	2.1	64			1349	1.9	58			0716	4.9	149			0759	4.6	140	
	1805	3.1	94			1802	3.2	98			1850	3.3	101			1950	3.9	119			1353	1.5	46			1436	1.2	37	
																					2025	4.4	134			2148	5.3	162	
10 Tu	0014	1.1	34		25 W	0020	1.1	34		10 Th	0031	1.5	46		25 F	0120	2.0	61		10 Su	0158	2.4	73		25 M	0330	3.1	94	
	0749	5.0	152			0755	5.3	162			0738	5.0	152			0801	5.0	152			0753	4.6	140			0836	4.4	134	
	1425	2.1	64			1430	2.2	67			1413	1.8	55			1433	1.5	46			1426	1.3	40			1511	1.0	30	
	1932	3.2	98			1948	3.5	107			2001	3.6	110			2100	4.4	134			2115	4.8	146			2233	5.6	171	
11 W	0123	1.2	37		26 Th	0139	1.3	40		11 F	0136	1.7	52		26 Sa	0232	2.2	67		11 M	0255	2.6	79		26 Tu	0422	3.3	101	
	0840	5.0	152			0846	5.2	158			0821	4.9	149			0842	4.8	146			0820	4.5	137			0901	4.3	131	
	1507	2.0	61			1510	1.9	58			1447	1.6	49			1509	1.2	37			1455	1.0	30			1539	0.9	27	
	2032	3.5	107			2058	4.0	122			2053	4.0	122			2153	4.9	149			2156	5.3	162			2309	5.7	174	
12 Th	0218	1.2	37		27 F	0243	1.5	46		12 Sa	0230	1.8	55		27 Su	0330	2.5	76		12 Tu	0343	2.8	85		27 W	0501	3.4	104	
	0919	5.0	152			0925	5.1	155			0852	4.8	146			0913	4.6	140			0841	4.4	134			0915	4.2	128	
	1536	1.8	55			1541	1.6	49			1512	1.4	43			1538	1.0	30			1523	0.7	21			1604	0.9	27	
	2113	3.8	116			2149	4.4	134			2132	4.4	134			2236	5.2	158			2235	5.6	171			2340	5.8	177	
13 F	0302	1.2	37		28 Sa	0334	1.7	52		13 Su	0315	2.0	61		28 M	0416	2.7	82		13 W	0428	3.0	91		28 Th	0533	3.5	107	
	0947	4.9	149			0954	4.9	149			0913	4.6	140			0932	4.4	134			0902	4.3	131			0927	4.1	125	
	1556	1.7	52			1607	1.3	40			1533	1.2	37			1602	0.9	27			1554	0.4	12			1629	0.9	27	
	2144	4.1	125			2231	4.8	146			2205	4.8	146			2313	5.4	165			2316	5.9	180						
14 Sa	0337	1.4	43		29 Su	0418	2.0	61		14 M	0354	2.2	67																

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Times and Heights of High and Low Waters

July				August				September																				
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height															
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm														
1 Su	0108	5.8	177		16 M	0128	6.4	195		1 W	0136	6.0	183		16 Su	0238	4.9	149		1 Sa	0152	5.5	168		16 Su	0238	4.9	149
	0717	3.4	104			0736	3.5	107			0755	2.9	88		17 Th	0832	2.6	79		1 Sa	0825	2.1	64		16 Su	0923	1.9	58
	1119	4.2	128			1200	4.6	140			1304	4.7	143		17 F	1434	5.3	162		1 Sa	1447	5.5	168		16 Su	1642	5.7	174
	1818	1.0	30			1852	1.0	30			1928	1.7	52		17 F	2036	2.6	79		1 Sa	2054	2.9	88		16 Su	2245	3.6	110
2 M	0144	5.9	180		17 Tu	0215	6.3	192		2 Th	0212	5.9	180		17 F	0253	5.6	171		2 Su	0231	5.2	158		17 M	0333	4.5	137
	0802	3.2	98			0829	3.2	98			0838	2.6	79			0923	2.3	70			0913	1.9	58		17 M	1023	1.9	58
	1220	4.1	125			1317	4.6	140			1406	4.8	146			1552	5.3	162			1559	5.5	168		17 M	1800	5.7	174
	1906	1.1	34			1951	1.4	43			2019	2.0	61			2142	3.1	94			2203	3.3	101		17 M	2245	3.6	110
3 Tu	0224	5.9	180		18 W	0300	6.1	186		3 F	0250	5.7	174		18 Sa	0337	5.3	162		3 M	0313	4.8	146		18 Tu	0017	3.6	110
	0849	2.9	88			0922	2.8	85			0923	2.3	70			1018	2.1	64			1009	1.8	55		18 Tu	0449	4.2	128
	1326	4.1	125			1441	4.5	137			1512	4.8	146		18 Sa	1716	5.3	162		3 M	1726	5.5	168		18 Tu	1131	1.9	58
	1957	1.2	37			2052	1.9	58			2116	2.4	73		18 Sa	2259	3.4	104		3 M	2331	3.6	110		18 Tu	1916	5.8	177
4 W	0305	5.9	180		19 Th	0345	5.8	177		4 Sa	0330	5.4	165		19 Su	0428	4.9	149		4 Tu	0404	4.5	137		19 W	0147	3.4	104
	0936	2.6	79			1016	2.4	73			1011	2.1	64			1117	1.9	58			1115	1.7	52		19 W	0625	4.1	125
	1434	4.1	125			1610	4.6	140			1627	4.9	149			1843	5.5	168			1900	5.7	174		19 W	1243	1.9	58
	2050	1.5	46			2158	2.4	73			2222	2.9	88												19 W	2019	5.9	180
5 Th	0348	5.7	174		20 F	0432	5.5	168		5 Su	0413	5.1	155		20 M	0032	3.7	113		5 W	0114	3.7	113		20 Th	0251	3.2	98
	1025	2.4	73			1112	2.1	64			1104	1.9	58			0533	4.6	140			0516	4.3	131		20 Th	0746	4.1	125
	1546	4.1	125			1745	4.7	143			1756	5.0	152			1222	1.8	55			1227	1.6	49		20 Th	1346	1.8	55
	2148	1.9	58			2315	3.0	91			2343	3.3	101			2001	5.7	174			2018	6.0	183		20 Th	2109	6.0	183
6 F	0432	5.4	165		21 Sa	0523	5.1	155		6 M	0502	4.7	143		21 Tu	0209	3.6	110		6 Th	0238	3.6	110		21 F	0333	3.0	91
	1116	2.1	64			1211	1.8	55			1202	1.7	52			0651	4.4	134			0645	4.2	128		21 F	0842	4.3	131
	1708	4.2	128			1917	5.0	152			1926	5.3	162			1325	1.7	52			1335	1.4	43		21 F	1437	1.8	55
	2254	2.3	70												2102	6.0	183			2115	6.3	192		21 F	2148	6.1	186	
7 Sa	0519	5.1	155		22 Su	0045	3.3	101		7 Tu	0116	3.5	107		22 W	0321	3.5	107		7 F	0330	3.5	107		22 Sa	0402	2.9	88
	1207	1.9	58			0621	4.8	146			0558	4.5	137			0800	4.3	131			0759	4.4	134		22 Sa	0921	4.5	137
	1836	4.4	134			1309	1.6	49			1301	1.5	46			1419	1.7	52			1433	1.3	40		22 Sa	1516	1.8	55
						2033	5.4	165			2038	5.8	177			2149	6.2	189			2200	6.5	198		22 Sa	2216	6.0	183
8 Su	0011	2.7	82		23 M	0217	3.5	107		8 W	0239	3.6	110		23 Th	0407	3.4	104		8 Sa	0407	3.4	104		23 Su	0423	2.9	88
	0607	4.8	146			0721	4.5	137			0658	4.4	134			0849	4.4	134			0854	4.7	143		23 Su	0948	4.7	143
	1257	1.6	49			1402	1.4	43			1355	1.2	37			1502	1.6	49			1522	1.2	37		23 Su	1548	1.9	58
	1955	4.8	146			2132	5.7	174			2134	6.2	189			2227	6.2	189			2236	6.5	198		23 Su	2236	5.8	177
9 M	0131	3.0	91		24 Tu	0331	3.5	107		9 Th	0339	3.6	110		24 F	0438	3.4	104		9 Su	0437	3.3	101		24 M	0438	2.8	85
	0653	4.6	140			0812	4.4	134			0751	4.4	134			0922	4.4	134			0942	5.1	155		24 M	1010	4.9	149
	1342	1.3	40			1445	1.3	40			1444	1.0	30			1536	1.6	49			1607	1.4	43		24 M	1615	2.1	64
	2057	5.3	162			2218	6.0	183			2220	6.5	198			2255	6.2	189			2308	6.4	195		24 M	2248	5.7	174
10 Tu	0242	3.2	98		25 W	0424	3.5	107		10 F	0422	3.7	113		25 Sa	0458	3.4	104		10 M	0506	3.1	94		25 Tu	0452	2.7	82
	0733	4.4	134			0849	4.3	131			0838	4.6	140			0944	4.5	137			1028	5.3	162		25 Tu	1034	5.1	155
	1422	1.0	30			1521	1.3	40			1529	0.8	24			1604	1.7	52			1651	1.6	49		25 Tu	1643	2.2	67
	2147	5.8	177			2254	6.1	186			2300	6.6	201			2317	6.1	186			2337	6.2	189		25 Tu	2300	5.6	171
11 W	0340	3.4	104		26 Th	0459	3.6	110		11 Sa	0459	3.7	113		26 Su	0514	3.5	107		11 Tu	0538	2.9	88		26 W	0511	2.5	76
	0806	4.4	134			0913	4.2	128			0922	4.8	146			1004	4.7	143			1118	5.5	168		26 W	1105	5.3	162
	1500	0.7	21			1550	1.3	40			1613	0.8	24			1630	1.8	55			1737	2.0	61		26 W	1716	2.4	73
	2231	6.1	186			2324	6.0	183			2338	6.6	201			2333	6.0	183							26 W	2318	5.5	168
12 Th	0427	3.5	107		27 F	0524	3.6	110		12 Su	0535	3.7	113		27 M	0530	3.4	104		12 W	0007	6.0	183		27 Th	0536	2.2	67
	0838	4.4	134			0929	4.3	131			1011	5.0	152			1030	4.9	149			0614	2.7	82		27 Th	1145	5.5	168
	1538	0.5	15			1616	1.3	40			1659	1.0	30			1659	1.8	55			1214	5.6	171		27 Th	1756	2.6	79
	2313	6.3	192			2348	6.0	183																				

Sakate, Shodo Shima, Japan, 2018

Times and Heights of High and Low Waters

October				November				December																							
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																		
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																	
1 M	0136	4.7	143		16 Tu	0242	4.0	122		1 Th	0305	3.6	110		16 F	0010	2.3	70		1 Sa	0011	2.2	67		16 Su	0000	1.5	46			
	0827	1.4	43			0932	1.5	46			1013	1.1	34			0501	3.2	98				0515	3.2	98			0539	3.1	94		
	1542	5.8	177			1713	5.7	174			1805	5.6	171			1059	1.4	43				1114	1.4	43			1118	1.5	46		
	2159	3.5	107			2349	3.2	98			●					1822	5.2	158				1829	5.0	152			1806	4.5	137		
2 Tu	0222	4.4	134		17 W	0405	3.7	113		2 F	0052	2.9	88		17 Sa	0108	2.0	61		2 Su	0112	1.7	52		17 M	0051	1.3	40			
	0927	1.4	43			1039	1.6	49			0506	3.5	107			0635	3.4	104				0709	3.5	107			0706	3.4	104		
	1706	5.7	174			1822	5.6	171			1136	1.4	43			1212	1.6	49				1241	1.7	52			1232	1.8	55		
	2332	3.6	110			●					1915	5.5	168			1917	5.1	155				1925	4.8	146			1855	4.3	131		
3 W	0321	4.1	125		18 Th	0106	2.9	88		3 Sa	0154	2.5	76		18 Su	0155	1.7	52		3 M	0202	1.3	40		18 Tu	0136	1.0	30			
	1038	1.5	46			0549	3.6	110			0706	3.7	113			0750	3.7	113				0831	4.1	125			0815	3.8	116		
	1835	5.8	177			1153	1.8	55			1300	1.6	49			1320	1.8	55				1401	2.0	61			1343	2.0	61		
						1925	5.6	171			2010	5.5	168			2002	4.9	149				2012	4.5	137			1936	4.0	122		
4 Th	0113	3.5	107		19 F	0206	2.6	79		4 Su	0238	2.1	64		19 M	0231	1.5	46		4 Tu	0242	0.9	27		19 W	0213	0.7	21			
	0458	3.9	119			0719	3.8	116			0827	4.2	128			0845	4.1	125				0931	4.6	140			0907	4.3	131		
	1159	1.6	49			1304	1.8	55			1411	1.8	55			1418	1.9	58				1507	2.2	67			1447	2.1	64		
	1951	5.9	180			2018	5.6	171			2053	5.4	165			2036	4.7	143				2048	4.3	131			2007	3.8	116		
5 F	0224	3.2	98		20 Sa	0249	2.4	73		5 M	0313	1.8	55		20 Tu	0259	1.3	40		5 W	0316	0.6	18		20 Th	0243	0.4	12			
	0654	4.0	122			0822	4.1	125			0925	4.7	143			0927	4.4	134				1018	4.9	149			0949	4.7	143		
	1317	1.5	46			1403	1.8	55			1509	2.0	61			1505	2.0	61				1600	2.4	73			1534	2.3	70		
	2047	6.1	186			2059	5.6	171			2126	5.2	158			2058	4.5	137				2114	4.1	125			2029	3.7	113		
6 Sa	0309	3.0	91		21 Su	0320	2.2	67		6 Tu	0342	1.4	43		21 W	0321	1.0	30		6 Th	0345	0.4	12		21 F	0311	0.2	6			
	0815	4.3	131			0907	4.4	134			1011	5.1	155			1000	4.7	143				1058	5.2	158			1025	5.0	152		
	1422	1.5	46			1450	1.9	58			1557	2.2	67			1544	2.2	67				1644	2.6	79			1616	2.5	76		
	2130	6.1	186			2129	5.5	168			2150	4.9	149			2113	4.3	131				2130	3.9	119			2048	3.7	113		
7 Su	0342	2.7	82		22 M	0342	2.1	64		7 W	0409	1.2	37		22 Th	0341	0.8	24		7 F	0411	0.3	9		22 Sa	0339	-0.1	-3			
	0912	4.8	146			0941	4.6	140			1052	5.3	162			1030	5.0	152				1133	5.3	162			1101	5.2	158		
	1515	1.6	49			1527	2.0	61			1639	2.5	76			1620	2.4	73				1722	2.8	85			1656	2.6	79		
	2204	6.0	183			2149	5.3	162			2208	4.7	143			2125	4.2	128				2144	3.8	116			2111	3.7	113		
8 M	0410	2.5	76		23 Tu	0400	1.9	58		8 Th	0434	1.0	30		23 F	0402	0.6	18		8 Sa	0437	0.2	6		23 Su	0412	-0.3	-9			
	0959	5.2	158			1008	4.9	149			1131	5.5	168			1102	5.3	162				1207	5.3	162			1141	5.4	165		
	1601	1.9	58			1559	2.2	67			1720	2.8	85			1657	2.7	82				1800	2.9	88			1739	2.8	85		
	2230	5.8	177			2200	5.1	155			2224	4.5	137			2141	4.2	128				2203	3.7	113			2143	3.7	113		
9 Tu	0436	2.2	67		24 W	0415	1.8	55		9 F	0502	0.9	27		24 Sa	0430	0.3	9		9 Su	0507	0.2	6		24 M	0451	-0.4	-12			
	1042	5.4	165			1034	5.1	155			1211	5.6	171			1141	5.4	165				1242	5.3	162			1225	5.5	168		
	1643	2.2	67			1629	2.4	73			1804	3.0	91			1740	2.8	85				1843	3.0	91			1828	2.9	88		
	2253	5.5	168			2210	4.9	149			2244	4.3	131			2207	4.1	125				2235	3.6	110			2225	3.7	113		
10 W	0504	2.0	61		25 Th	0433	1.5	46		10 Sa	0534	0.8	24		25 Su	0505	0.1	3		10 M	0544	0.2	6		25 Tu	0538	-0.4	-12			
	1126	5.6	171			1103	5.4	165			1254	5.6	171			1227	5.6	171				1320	5.3	162			1315	5.5	168		
	1726	2.6	79			1703	2.6	79			1854	3.2	98			1832	3.0	91				1930	2.9	88			1923	2.8	85		
	2314	5.3	162			2226	4.8	146			2314	4.1	125			2243	4.0	122				2322	3.5	107			2321	3.6	110		
11 Th	0535	1.8	55		26 F	0458	1.3	40		11 Su	0613	0.7	21		26 M	0549	0.0	0		11 Tu	0627	0.3	9		26 W	0631	-0.3	-9			
	1213	5.7	174			1141	5.6	171			1341	5.6	171			1321	5.6	171				1402	5.3	162			1406	5.4	165		
	1813	2.9	88			1744	2.8	85			1951	3.1	94			1933	3.0	91				2023	2.7	82			2022	2.6	79		
	2340	5.1	155			2250	4.7	143			2357	3.9	119			2330	3.8	116													
12 F	0611	1.6	49		27 Sa	0531	1.0	30		12 M	0659	0.8	24		27 Tu	0641	0.0	0		12 W	0021	3.4	104		27 Th	0030	3.5	107			
	1305	5.8	177			1227	5.7	174			1433	5.6	171			1419	5.6	171				0717	0.4	12			0729	0.0	0		
	1906	3.2	98			1834	3.0	91			2054	3.0	91			2040	3.0	91				1447	5.3	162			1458	5.3	162		
						2323	4.6	140															2116	2.4	73			2121	2.3	70	

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Times and Heights of High and Low Waters

January				February				March															
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height										
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm									
1 M	0240	-0.5	-14			1 Th	0405	-1.4	-42	16 F	0406	0.1	4	1 Th	0308	-0.5	-14						
	0911	11.8	360	16 Tu	0313		0.6	18	1033		12.2	371	1030		11.0	336	0934	11.7	356				
	1516	2.9	87		0947		10.7	327	1632		2.3	70	1541		1.9	59	0931	10.8	328				
	2101	10.5	320		1546		3.4	105	2228		10.8	330	2222		10.2	312	1541	1.9	59				
				2123	9.5	291							2134	10.7	326	1638	2.2	66					
2 Tu	0327	-1.1	-33	17 W	0347	0.3	9	2 F	0448	-1.4	-42	17 Sa	0439	0.0	-1	2 F	0352	-0.8	-25	17 Sa	0345	0.5	16
	1000	12.3	374		1019	10.9	333		1113	12.2	371		1100	11.2	340		1013	11.9	364		1001	11.1	338
	1604	2.7	83		1618	3.2	97		1718	1.8	51		1703	1.9	59		1619	1.4	42		1606	1.6	48
3 W	0413	-1.4	-42	18 Th	0421	0.1	3	3 Sa	0529	-1.0	-30	18 Su	0512	0.0	0	3 Sa	0432	-0.8	-24	18 Su	0418	0.3	10
	1045	12.4	378		1051	11.0	336		1152	11.9	363		1130	11.2	341		1049	11.9	364		1032	11.3	344
	1649	2.6	79		1650	3.0	90		1757	1.7	51		1736	1.7	51		1656	1.0	31		1638	1.1	34
	2235	10.7	326	2233	9.9	303	2353	10.7	325	2332	10.5	320	2257	11.3	344	2257	11.3	344	2241	11.1	339		
4 Th	0459	-1.3	-41	19 F	0454	0.1	2	4 Su	0608	-0.2	-7	19 M	0545	0.3	8	4 Su	0510	-0.4	-12	19 M	0452	0.4	11
	1130	12.3	375		1122	11.1	337		1228	11.5	349		1201	11.1	338		1123	11.7	356		1103	11.3	345
	1734	2.6	79		1723	2.8	85		1836	1.8	54		1809	1.5	47		1731	0.9	27		1711	0.8	23
	2321	10.6	322	2308	9.9	303							2335	11.1	339	2317	11.3	344	2317	11.3	344		
5 F	0543	-0.9	-28	20 Sa	0527	0.2	5	5 M	0034	10.2	310	20 Tu	0009	10.4	316	5 M	0545	0.4	11	20 Tu	0527	0.7	20
	1213	12.0	366		1154	11.0	336		0646	0.8	24		0620	0.8	25		1155	11.3	343		1134	11.2	340
	1818	2.7	81		1757	2.7	82		1303	10.8	329		1233	10.8	328		1805	1.0	30		1744	0.6	18
				2344	9.8	300	1915	2.0	61	1844	1.5	46				2355	11.2	341	2355	11.2	341		
6 Sa	0006	10.2	311	21 Su	0601	0.5	14	6 Tu	0117	9.5	290	21 W	0048	10.1	307	6 Tu	0012	10.7	326	21 W	0602	1.3	39
	0627	-0.2	-6		1226	10.9	332		0723	2.0	61		0656	1.6	48		0619	1.3	40		1206	10.8	329
	1256	11.5	350		1833	2.7	81		1337	10.0	305		1306	10.3	313		1225	10.7	325		1819	0.6	19
	1903	2.8	86				1955	2.4	73	1922	1.6	50	1838	1.3	39								
7 Su	0053	9.7	295	22 M	0022	9.6	293	7 W	0204	8.7	266	22 Th	0132	9.6	293	7 W	0050	10.1	307	22 Th	0035	10.9	332
	0710	0.9	26		0637	1.0	29		0803	3.3	100		0737	2.6	79		0652	2.4	73		0640	2.1	64
	1339	10.8	330		1300	10.6	323		1412	9.2	279		1341	9.6	293		1253	9.9	303		1238	10.2	311
	1950	3.0	92	1911	2.7	81	2042	2.8	86	2005	1.9	58	1911	1.7	53	1856	0.9	27	1856	0.9	27		
8 M	0144	9.0	274	23 Tu	0103	9.3	283	8 Th	0307	8.0	245	23 F	0227	9.1	277	8 Th	0130	9.4	285	23 F	0119	10.4	316
	0756	2.0	62		0715	1.6	50		0853	4.5	136		0826	3.7	114		0726	3.5	107		0721	3.1	96
	1423	10.1	308		1336	10.2	310		1455	8.3	253		1423	8.8	269		1321	9.1	277		1313	9.4	288
	2043	3.2	99	1953	2.7	82	2146	3.2	97	2102	2.2	68	1946	2.3	71	1939	1.4	43	1939	1.4	43		
9 Tu	0244	8.3	254	24 W	0150	8.9	271	9 F	0447	7.7	236	24 Sa	0346	8.7	264	9 F	0218	8.6	262	24 Sa	0213	9.7	296
	0848	3.2	99		0759	2.5	76		1023	5.3	163		0942	4.7	144		0807	4.6	140		0813	4.2	129
	1513	9.4	285		1417	9.6	294		1604	7.6	232		1528	8.1	247		1353	8.2	251		1355	8.6	262
	2148	3.3	102	2043	2.8	84	2317	3.2	98	2225	2.4	72	2030	3.0	91	2033	2.1	63	2033	2.1	63		
10 W	0406	7.9	241	25 Th	0252	8.5	259	10 Sa	0626	8.1	247	25 Su	0531	8.8	267	10 Sa	0335	8.0	244	25 Su	0329	9.1	278
	0956	4.3	131		0853	3.5	106		1226	5.4	165		1142	5.1	154		0913	5.5	168		0934	5.1	156
	1615	8.8	267		1508	9.1	276		1743	7.4	226		1709	7.8	237		1442	7.4	225		1504	7.8	237
	2305	3.2	97	2147	2.7	82						2144	3.5	108	2158	2.6	79	2158	2.6	79			
11 Th	0541	8.0	245	26 F	0417	8.4	255	11 Su	0037	2.8	86	26 M	0002	2.0	61	11 Su	0536	8.0	243	26 M	0515	9.1	277
	1128	4.9	148		1014	4.3	131		0733	8.8	267		0700	9.5	289		1158	5.7	173		1140	5.1	156
	1727	8.4	257		1617	8.6	262		1340	4.9	149		1314	4.5	136		1634	6.8	208		1702	7.5	229
				2308	2.3	71	1859	7.7	234	1845	8.2	250	2346	3.6	109	2346	2.5	76	2346	2.5	76		
12 F	0015	2.7	83	27 Sa	0553	8.8	269	12 M	0135	2.2	67	27 Tu	0120	1.1	35	12 M	0659	8.5	260	27 Tu	0643	9.6	294
	0656	8.6	263		1156	4.6	139		0821	9.4	288		0803	10.4	317		1321	5.0	153		1305	4.3	130
	1250	4.8	147		1740	8.5	259		1426	4.3	130		1413	3.6	109		1834	7.2	218		1842	8.2	250
	1832	8.4	257				1953	8.2	251	1954	9.1	276											
13 Sa	0111	2.1	65	28 Su	0026	1.6	48	13 Tu	0221	1.5	47	28 W	0219	0.3	8	13 Tu	0105	3.0	92	28 W	0107	1.8	55
	0752	9.3	284		0711	9.7	295		0858	10.0	305		0852	11.2	340		0752	9.2	280		0744	10.4	317
	1350	4.5	137		1318	4.2	128		1501	3.7	112		1500	2.7	82		1405	4.3	130		1358	3.2	99
	1925	8.6	263	1855	8.8	269	2036	8.8	269	2048	9.9	303	1936	7.9	241	1948	9.3	282	1948	9.3	282		
14 Su	0157	1.5	47	29 M	0131	0.7	20	14 W	0259	1.0	29	29 Th	0156	2.3	69	14 W	0156	2.3	69	29 Th	0205	1.0	32
	0836	9.9	303		0812	10.6	323		0930	10.5	319		0829	9.8	299		0829	9.8	299		0830	11.0	336
	1435	4.1	125		1419	3.6	110		1531	3.1	96		1437	3.5	107		1437	3.5	107		1441	2.3	69
	2009	8.9	272	1958	9.4	285	2112	9.4	286	2112	9.4	286	2019	8.8	267	2038	10.2	312	2038	10.2	312		
15 M	0237	1.0	31	30 Tu	0228	-0.3	-8	15 Th	0333	0.5	14	15 Th	0236	1.6	48	15 Th	0236	1.6	48	30 F	0252	0.5	15
	0914	10.4	317		0904	11.4	347		1000	10.8	329		0901	10.3	315		0910	11.5	349		0910	11.5	349
	1513	3.7	114		1510	3.0	92		1601	2.7	82		1506	2.8	86		1519	1.4	44		1519	1.4	44
	2047	9.3	282	2053</																			

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Times and Heights of High and Low Waters

April					May					June																			
Time		Height			Time		Height			Time		Height			Time		Height												
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Su	0411	0.4	11		16 M	0354	1.1	33		1 Tu	0424	2.2	66		16 W	0410	2.2	67		1 F	0512	3.7	114		16 Sa	0524	3.3	102	
	1020	11.6	353			1000	11.3	344			1019	10.9	333			1005	11.2	341			1052	10.2	312			1110	11.0	334	
	1630	0.6	17			1610	0.4	13			1635	0.4	13			1622	-0.3	-9			1713	1.0	32			1733	-0.2	-7	
	2238	11.6	353			2222	11.8	360			2255	11.6	355			2246	12.5	381			2346	11.4	346						
2 M	0447	0.8	24		17 Tu	0430	1.1	35		2 W	0458	2.6	79		17 Th	0451	2.5	75		2 Sa	0546	4.0	121		17 Su	0007	12.5	382	
	1052	11.4	346			1033	11.3	344			1049	10.7	325			1043	11.1	337			1125	10.0	304			0611	3.5	108	
	1703	0.5	14			1645	0.1	2			1705	0.6	17			1701	-0.4	-12			1745	1.4	42			1157	10.7	325	
	2315	11.5	349			2301	12.0	366			2329	11.4	348			2329	12.4	378								1820	0.3	10	
3 Tu	0521	1.4	43		18 W	0508	1.5	46		3 Th	0530	3.1	94		18 F	0533	2.9	88		3 Su	0020	11.1	338		18 M	0054	12.1	370	
	1121	11.0	334			1107	11.1	339			1117	10.3	314			1122	10.7	327			0621	4.2	129			0700	3.8	115	
	1734	0.6	17			1721	-0.1	-2			1735	0.9	26			1743	-0.1	-4			1159	9.6	293			1247	10.2	312	
	2350	11.1	339			2341	11.9	363													1819	1.8	56			1909	1.1	35	
4 W	0553	2.2	67		19 Th	0546	2.1	64		4 F	0004	11.1	337		19 Sa	0015	12.1	369		4 M	0057	10.8	328		19 Tu	0143	11.6	353	
	1149	10.5	319			1141	10.7	327			0603	3.6	110			0618	3.4	105			0701	4.5	137			0753	4.0	121	
	1804	0.9	27			1758	0.1	2			1146	9.8	300			1204	10.2	312			1237	9.2	280			1342	9.7	295	
											1805	1.3	40			1827	0.4	12			1856	2.4	74			2001	2.2	66	
5 Th	0025	10.6	324		20 F	0023	11.6	353		5 Sa	0039	10.6	324		20 Su	0104	11.6	353		5 Tu	0138	10.4	316		20 W	0236	11.0	335	
	0625	3.0	92			0627	2.9	87			0637	4.1	126			0708	4.0	122			0747	4.8	145			0853	4.1	125	
	1216	9.8	300			1217	10.1	309			1216	9.3	283			1251	9.6	293			1323	8.7	265			1448	9.2	280	
	1834	1.4	42			1838	0.5	16			1837	1.9	58			1917	1.2	37			1941	3.1	94			2101	3.2	98	
6 F	0101	10.0	305		21 Sa	0110	11.0	336		6 Su	0117	10.1	308		21 M	0159	11.0	335		6 W	0226	10.0	304		21 Th	0335	10.4	318	
	0658	3.9	118			0713	3.7	114			0717	4.7	143			0808	4.5	137			0845	4.9	149			1002	4.0	122	
	1243	9.1	278			1257	9.4	286			1252	8.6	263			1348	9.0	273			1422	8.3	252			1609	9.0	273	
	1905	2.0	62			1923	1.2	38			1914	2.6	79			2015	2.1	65			2037	3.7	114			2213	4.1	125	
7 Sa	0143	9.4	285		22 Su	0206	10.3	315		7 M	0204	9.6	292		22 Tu	0304	10.4	318		7 Th	0325	9.7	295		22 F	0440	10.0	306	
	0737	4.7	144			0810	4.6	140			0810	5.2	158			0923	4.7	142			0957	4.8	145			1115	3.7	112	
	1315	8.3	254			1347	8.6	261			1338	8.0	243			1505	8.4	257			1542	8.1	248			1736	9.2	280	
	1942	2.8	84			2021	2.1	64			2002	3.3	102			2129	3.0	91			2151	4.2	129			2334	4.6	140	
8 Su	0239	8.7	266		23 M	0320	9.7	297		8 Tu	0309	9.1	278		23 W	0418	10.1	308		8 F	0434	9.6	292		23 Sa	0545	9.8	300	
	0834	5.4	166			0936	5.1	155			0934	5.4	165			1047	4.4	134			1112	4.3	130			1219	3.1	95	
	1359	7.5	229			1505	7.9	240			1449	7.4	226			1640	8.4	257			1715	8.5	260			1847	9.7	297	
	2035	3.5	108			2146	2.8	86			2115	4.0	122			2254	3.5	106			2318	4.4	133						
9 M	0417	8.4	255		24 Tu	0453	9.6	293		9 W	0435	9.0	274		24 Th	0531	10.1	307		9 Sa	0542	9.7	296		24 Su	0046	4.7	143	
	1056	5.7	174			1123	4.8	147			1119	5.1	155			1201	3.7	113			1214	3.5	106			0642	9.8	299	
	1526	6.9	210			1659	7.8	239			1642	7.4	226			1807	9.0	274			1829	9.4	285			1313	2.5	77	
	2219	4.0	123			2325	3.0	90			2258	4.2	127													1943	10.4	316	
10 Tu	0559	8.6	261		25 W	0613	9.9	302		10 Th	0552	9.2	281		25 F	0013	3.5	108		10 Su	0033	4.1	126		25 M	0144	4.6	140	
	1236	5.1	156			1239	3.9	120			1225	4.3	132			0632	10.2	311			0639	10.0	305			0731	9.9	302	
	1750	7.1	215			1831	8.6	262			1815	8.1	247			1258	2.9	88			1306	2.5	77			1359	2.0	61	
																1911	9.8	298			1926	10.3	315			2030	10.9	333	
11 W	0013	3.8	115		26 Th	0045	2.6	79		11 F	0022	3.8	117		26 Sa	0116	3.4	104		11 M	0131	3.7	114		26 Tu	0231	4.4	135	
	0702	9.1	278			0713	10.4	316			0648	9.7	295			0722	10.4	317			0728	10.4	316			0814	10.0	306	
	1325	4.3	131			1332	2.9	89			1311	3.4	105			1344	2.1	64			1352	1.5	47			1439	1.6	48	
	1905	7.9	241			1933	9.6	292			1913	9.1	278			2002	10.6	322			2015	11.3	344			2111	11.3	345	
12 Th	0117	3.1	95		27 F	0143	2.1	65		12 Sa	0120	3.2	99		27 Su	0206	3.2	99		12 Tu	0222	3.4	104		27 W	0312	4.3	130	
	0746	9.7	296			0759	10.8	329			0733	10.2	310			0805	10.5	321			0813	10.7	326			0852	10.2	310	
	1400	3.4	104			1415	2.0	61			1350	2.5	75			1425	1.5	45			1436	0.7	21			1516	1.3	40	
	1952	8.9	271			2021	10.5	320			1959	10.2	310			2046	11.1	339			2102	12.0	367			2148	11.6	353	
13 F	0202	2.4	72		28 Sa	0230	1.8	55		13 Su	0207	2.7	83		28 M	0249	3.2	97		13 W	0308	3.2	97		28 Th	0349	4.2	127	
	0821	10.3	313			0839	11.1	337			0812	10.6	324			0843	10.6	323			0857	11.0	334			0928	10.3	314	
	1432	2.6	78			1453	1.3	39			1428	1.5	47			1502	1.0	32			1519	0.0	1			1551	1.1	35	
	2031	9.9	301			2104	11.2	341			2041	11.1	338			2125	11.5	351			2148	12.5	382			2223	11.7	356	
14 Sa	0241	1.7	53		29 Su	0311	1.7	52		14 M	0249	2.3	70		29 Tu	0328	3.2	99		14 Th	0353	3.1	95		29 F	0424	4.1	125	
	0854	10.8	328			0915	11.2	340			0850	11.0	334			0917	10.6	323			0941	11.1	338			1002	10.4	316	
	1504	1.7	53			1529	0.8	23			1505	0.7	22			1537	0.8	24			1603	-0.4	-11			1625	1.1	35	
	2108	10.7	326			2143	11.6	353			2122	11.8	360			2202	11.7	356			2234	12.8	389			2257	11.7	356	
15 Su	0318	1.3																											

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Times and Heights of High and Low Waters

October				November				December															
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height										
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm									
1 M	0047	10.4	317	16 Tu	0100	9.0	275	1 Th	0223	8.5	259	16 F	0229	7.6	231	1 Sa	0352	8.3	252	16 Su	0311	7.6	232
	0712	2.2	68		0729	3.4	105		0902	3.1	96		0853	4.2	129		1009	3.3	101		0916	4.0	122
	1344	10.8	328		1431	9.6	292		1609	10.1	308		1615	9.2	281		1651	10.0	304		1602	9.1	277
	1944	5.1	155		2029	6.2	190		2238	5.4	165		2304	5.3	161		2324	3.8	116		2247	4.1	125
2 Tu	0126	9.6	293	17 W	0145	8.2	249	2 F	0410	8.2	251	17 Sa	0426	7.4	227	2 Su	0529	8.7	264	17 M	0449	7.7	236
	0801	2.8	86		0822	4.2	129		1040	3.4	105		1035	4.6	139		1134	3.5	108		1044	4.4	133
	1452	10.2	310		1608	9.2	281		1735	10.3	314		1733	9.4	285		1759	10.1	307		1714	9.1	277
	2054	5.9	181		2252	6.4	194		0004	4.6	139		0011	4.5	138		0029	2.9	89		0612	8.5	258
3 W	0226	8.8	268	18 Th	0316	7.5	229	3 Sa	0553	8.8	269	18 Su	0603	8.1	247	3 M	0643	9.4	288	18 Tu	1208	4.3	130
	0915	3.4	104		1010	4.8	145		1208	3.2	97		1203	4.3	131		1246	3.5	106		1715	9.1	277
	1630	10.0	304		1743	9.4	286		1840	10.8	328		1830	9.7	297		1854	10.2	312		1815	9.3	284
	2253	6.1	186		0021	5.7	174		0102	3.5	106		0057	3.6	111		0120	2.0	61		0612	8.5	258
4 Th	0412	8.4	255	19 F	0544	7.7	236	4 Su	0703	9.9	301	19 M	0701	9.1	276	4 Tu	0740	10.3	314	19 W	0711	9.4	287
	1100	3.5	107		1158	4.5	138		1313	2.7	82		1303	3.8	116		1342	3.3	100		1311	3.9	118
	1805	10.4	318		1845	9.9	301		1930	11.2	342		1914	10.2	310		1941	10.4	317		1906	9.6	294
	0030	5.3	163		0110	4.9	148		0148	2.4	74		0135	2.7	81		0204	1.2	37		0133	1.4	44
5 F	0604	8.9	271	20 Sa	0654	8.6	261	5 M	0756	10.9	331	20 Tu	0746	10.0	306	5 W	0827	11.0	335	20 Th	0800	10.4	317
	1230	2.9	89		1301	3.9	120		1404	2.3	70		1349	3.3	100		1429	3.1	96		1402	3.5	106
	1911	11.2	341		1928	10.4	317		2013	11.5	352		1952	10.6	323		2022	10.5	321		1952	10.0	305
	0129	4.2	129		0145	4.0	121		0229	1.5	46		0210	1.7	53		0244	0.6	19		0217	0.5	15
6 Sa	0717	9.9	303	21 Su	0740	9.5	290	6 Tu	0841	11.6	355	21 W	0826	11.0	334	6 Th	0909	11.5	349	21 F	0845	11.2	342
	1334	2.1	65		1347	3.3	100		1448	2.1	65		1430	2.9	87		1511	3.1	95		1449	3.1	95
	2001	11.8	361		2003	10.9	332		2051	11.7	356		2029	10.9	333		2059	10.5	321		2035	10.3	315
	0214	3.1	96		0216	3.1	95		0307	0.9	27		0246	0.9	27		0321	0.3	9		0300	-0.3	-8
7 Su	0810	11.0	336	22 M	0817	10.4	318	7 W	0922	12.1	370	22 Th	0905	11.7	356	7 F	0948	11.6	355	22 Sa	0929	11.8	360
	1425	1.5	45		1425	2.7	83		1528	2.2	67		1510	2.6	79		1549	3.2	97		1533	2.9	89
	2043	12.3	376		2035	11.3	345		2126	11.6	354		2105	11.1	339		2134	10.5	319		2119	10.6	322
	0254	2.2	68		0246	2.3	71		0343	0.5	16		0322	0.2	7		0356	0.2	5		0343	-0.8	-25
8 M	0856	11.9	363	23 Tu	0852	11.2	342	8 Th	1001	12.3	375	23 F	0944	12.2	371	8 Sa	1025	11.7	356	23 Su	1014	12.2	371
	1509	1.1	35		1500	2.3	70		1606	2.5	76		1549	2.6	78		1626	3.3	101		1617	2.8	86
	2121	12.5	382		2106	11.6	354		2200	11.4	348		2141	11.2	341		2207	10.3	315		2202	10.7	325
	0332	1.5	46		0318	1.6	50		0417	0.4	13		0400	-0.2	-7		0430	0.2	7		0426	-1.1	-33
9 Tu	0938	12.5	380	24 W	0927	11.8	361	9 F	1039	12.2	373	24 Sa	1025	12.4	378	9 Su	1100	11.5	352	24 M	1058	12.3	375
	1549	1.2	36		1535	2.1	64		1642	2.9	89		1629	2.7	82		1700	3.5	107		1701	2.8	86
	2156	12.5	382		2138	11.8	359		2231	11.1	338		2219	11.1	338		2239	10.1	309		2246	10.6	324
	0408	1.1	33		0350	1.0	32		0450	0.6	17		0439	-0.4	-12		0502	0.5	14		0511	-1.0	-32
10 W	1018	12.7	386	25 Th	1003	12.3	374	10 Sa	1115	11.9	364	25 Su	1107	12.4	378	10 M	1135	11.3	345	25 Tu	1143	12.2	372
	1627	1.6	48		1610	2.1	64		1716	3.4	105		1710	3.0	91		1735	3.7	113		1746	2.9	88
	2230	12.3	374		2210	11.8	359		2301	10.7	325		2257	10.8	330		2311	9.9	301		2332	10.4	318
	0443	1.0	29		0423	0.7	21		0521	0.9	27		0519	-0.3	-9		0533	0.8	25		0556	-0.7	-20
11 Th	1056	12.5	382	26 F	1040	12.4	379	11 Su	1151	11.5	352	26 M	1150	12.2	371	11 Tu	1209	11.0	336	26 W	1228	11.9	362
	1703	2.2	67		1646	2.4	72		1750	4.0	121		1753	3.4	104		1810	3.9	119		1833	3.1	93
	2302	11.8	361		2243	11.6	353		2330	10.2	310		2338	10.4	317		2344	9.5	289		2344	9.5	289
	0516	1.0	32		0458	0.5	16		0552	1.4	42		0602	0.1	4		0606	1.3	40		0642	0.1	2
12 F	1134	12.1	370	27 Sa	1119	12.4	377	12 M	1227	11.1	337	27 Tu	1237	11.7	358	12 W	1244	10.7	325	27 Th	1314	11.4	347
	1737	3.0	92		1723	2.8	86		1826	4.5	137		1841	3.9	118		1847	4.1	126		1922	3.2	98
	2332	11.3	344		2316	11.2	342		0001	9.6	292		0022	9.8	300		0020	9.0	275		0110	9.5	290
	0548	1.4	43		0534	0.6	18		0623	2.0	61		0648	0.8	25		0641	1.9	58		0730	1.0	31
13 Sa	1211	11.6	354	28 Su	1159	12.1	369	13 Tu	1306	10.5	320	28 W	1328	11.2	341	13 Th	1321	10.2	312	28 F	1403	10.8	329
	1812	3.9	118		1802	3.5	106		1906	5.0	152		1935	4.3	132		1930	4.4	133		2016	3.3	102
	0000	10.6	324		0612	1.0	29		0035	8.9	272		0114	9.2	280		0103	8.5	259		0209	8.9	272
	0620	1.9	59		1244	11.6	354		0659	2.8	84		0742	1.7	52		0721	2.6	79		0824	2.2	66
14 Su	1250	11.0	334	29 M	1846	4.2	129	14 W	1351	9.9	303	29 Th	1427	10.6	324	14 F	1404	9.8	299	29 Sa	1456	10.1	309
	1847	4.7	144		0029	10.0	305		1958	5.4	166		2041	4.6	139		2022	4.5	138		2119	3.4	103
	0028	9.8	300		0655	1.6	48		0120	8.2	250		0222	8.6	261		0157	7.9	242		0322	8.4	257
	0652	2.7	81		1335	11.0	335		0745	3.5	108		0848	2.6	80		0810	3.3	102		0929	3.2	99
15 M	1333	10.2	312	30 Tu	1939	5.0	152	15 Th	1452	9.4	288	30 F	1536	10.2	310	15 Sa	1457	9.4	286	30 Su	1558	9.5	291
	1928	5.5	169		0029	10.0	305		2120	5.6	172		2202	4.4	135		2129	4.5	137		2234	3.2	97
	0028	9.8	300		0115	9.2	281		0120	8.2	250		0222	8.6	261		0157	7.9	242</				

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Times and Heights of High and Low Waters

January				February				March																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 M	0221	-0.6	-18			1 Th	0347	-1.3	-40	16 F	0341	-0.2	-7	1 Th	0249	-0.7	-20	16 F	0245	0.4	13								
	0853	6.6	202	16 Tu	0250		0.2	5	1 Th		1023	6.8	207		16 F	1007	6.2		190	1 Th	0925	6.6	202	16 F	0909	6.2	190		
	1443	1.6	48																										
	2015	6.9	211																										
2 Tu	0310	-1.1	-33			2 F	0429	-1.3	-40	17 Sa	0412	-0.4	-11	2 F	0332	-0.9	-28	17 Sa	0318	0.1	3	17 Sa	0318	0.1	3				
	0946	6.9	209	17 W	0954		6.2	188	2 F		1034	6.3	193		2 F	1002	6.8		208	17 Sa	0938		6.4	196	17 Sa	0938	6.4	196	
	1531	1.4	43																										
	2104	7.1	215																										
3 W	0356	-1.3	-40			3 Sa	0508	-1.0	-30	18 Su	0444	-0.3	-10	3 Sa	0411	-0.9	-27	18 Su	0351	-0.1	-2	18 Su	0351	-0.1	-2				
	1033	6.9	211	18 Th	1024		6.2	189	3 Sa		1058	6.4	194		3 Sa	1034	6.9		209	18 Su	1005		6.6	201	18 Su	1005	6.6	201	
	1616	1.3	40																										
	2153	7.1	215																										
4 Th	0441	-1.2	-38			4 Su	0545	-0.5	-14	19 M	0515	-0.1	-3	4 Su	0447	-0.6	-17	19 M	0423	0.0	-1	19 M	0423	0.0	-1				
	1116	6.9	209	19 F	1052		6.2	189	4 Su		1118	6.3	193		4 Su	1101	6.8		206	19 M	1029		6.7	203	19 M	1029	6.7	203	
	1700	1.3	40																										
	2240	6.9	211																										
5 F	0524	-0.9	-28			5 M	0619	0.3	9	20 Tu	0546	0.3	8	5 M	0519	0.0	-1	20 Tu	0456	0.2	6	20 Tu	0456	0.2	6				
	1156	6.7	203	20 Sa	1118		6.2	188	5 M		1136	6.3	191		5 M	1121	6.6		201	20 Tu	1048		6.7	203	20 Tu	1048	6.7	203	
	1743	1.4	43																										
	2326	6.6	202																										
6 Sa	0606	-0.4	-11			6 Tu	0035	5.8	176	21 W	0619	0.8	25	6 Tu	0549	0.6	19	21 W	0528	0.6	19	21 W	0528	0.6	19				
	1233	6.4	195	21 Su	0651		1.1	33	21 W		1159	6.1	187		6 Tu	1137	6.4		195	21 W	1105		6.6	201	21 W	1105	6.6	201	
	1826	1.6	49																										
7 Su	0012	6.2	189			7 W	0117	5.2	160	22 Th	0036	5.8	178	7 W	0010	6.0	182	22 Th	0601	1.2	37	22 Th	0601	1.2	37				
	0647	0.4	11	22 M	0725		1.9	57	22 Th		0655	1.5	45		7 W	0617	1.3		41	22 Th	1128		6.4	196	22 Th	1128	6.4	196	
	1308	6.1	185																										
	1913	1.8	56																										
8 M	0102	5.7	174			8 Th	0213	4.8	145	23 F	0129	5.4	164	8 Th	0042	5.5	168	23 F	0030	6.1	185	23 F	0030	6.1	185				
	0729	1.1	35	23 Tu	0807		2.6	80	23 F		0739	2.2	67		8 Th	0645	2.0		62	23 F	0638		1.9	58	23 F	0638	1.9	58	
	1345	5.7	175																										
	2007	2.1	63																										
9 Tu	0202	5.2	158			9 F	0344	4.4	134	24 Sa	0246	4.9	150	9 F	0125	5.0	153	24 Sa	0119	5.6	170	24 Sa	0119	5.6	170				
	0816	1.9	59	24 W	0720		1.4	43	24 Sa		0846	2.9	87		9 F	0717	2.7		83	24 Sa	0722		2.6	79	24 Sa	0722	2.6	79	
	1430	5.5	167																										
	2114	2.2	67																										
10 W	0318	4.8	147			10 Sa	0542	4.5	137	25 Su	0451	4.8	147	10 Sa	0235	4.6	139	25 Su	0237	5.1	155	25 Su	0237	5.1	155				
	0917	2.6	79	25 Th	1125		3.3	102	25 Su		1046	3.1	96		10 Sa	0808	3.3		102	25 Su	0833		3.2	98	25 Su	0833	3.2	98	
	1531	5.3	162																										
	2235	2.1	65																										
11 Th	0451	4.7	143			11 Su	0013	1.8	54	26 M	0642	5.2	159	11 Su	0446	4.4	135	26 M	0448	5.0	152	26 M	0448	5.0	152				
	1043	3.0	90	26 F	0708		4.9	148	26 M		1232	2.8	84		11 Su	1029	3.6		111	26 M	1043		3.3	102	26 M	1043	3.3	102	
	1643	5.3	161																										
	2349	1.8	54																										
12 F	0622	4.9	150			12 M	0112	1.3	40	27 Tu	0101	0.5	15	12 M	0632	4.8	145	27 Tu	0631	5.4	164	27 Tu	0631	5.4	164				
	1207	2.9	89	27 Sa	0759		5.2	160	27 Tu		0752	5.8	176		12 M	1229	3.2		99	27 Tu	1225		2.8	84	27 Tu	1225	2.8	84	
	1747	5.4	166																										
13 Sa	0048	1.3	41			13 Tu	0157	0.9	26	28 W	0200	-0.2	-5	13 Tu	0041	1.9	57	28 W	0046	1.0	30	28 W	0046	1.0	30				
	0726	5.2	160	28 Su	0836		5.6	171	28 W		0843	6.3	191		13 Tu	0730	5.2		158	28 W	0734		5.9	180	28 W	0734	5.9	180	
	1308	2.7	81																										
	1839	5.7	173																										
14 Su	0134	0.9	27			14 W	0234	0.4	12	29 Th	0132	1.3	41	14 W	0132	1.3	41	29 Th	0144	0.5	14	29 Th	0144	0.5	14				
	0812	5.6	170	29 M	0755		5.9	179	29 Th		0807	5.6	170		14 W	0807	5.6		170	29 Th	0820		6.4	194	29 Th	0820	6.4	194	
	1354	2.4	72																										
	1921	5.9	181																										
15 M	0214	0.5	15			15 Th	0308	0.0	1	30 Tu	0210	-0.5	-16	15 Th	0211	0.9	26	30 Tu	0231	0.1	2	30 Tu	0231	0.1	2				
	0849	5.8	178	30 W	0852		6.3	192	30 Tu		0839	5.9	181		30 Tu	1229	3.2		99	30 Tu	0858		6.7	204	30 Tu	0858	6.7	204	
	1432	2.1	64																										
	1958	6.2	188																										
16 Tu	0250	0.2	5			16 W	0308	0.0	1	31 W	0301	-1.0	-32	31 W															

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Times and Heights of High and Low Waters

January				February				March																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 M	0124	-0.5	-14		16 Tu	0159	0.5	15		1 Th	0251	-1.3	-41		16 F	0248	0.1	3		1 Th	0154	-0.5	-15		16 F	0153	0.9	26	
	0804	9.1	276			0841	8.0	245			0928	9.4	288			0916	8.5	258			0828	9.1	278			0818	8.4	255	
	1357	2.5	76			1428	2.9	88			1523	1.7	52			1512	2.0	60			1426	1.7	52			1417	2.0	60	
	1937	8.9	271			2000	8.0	243			2105	9.2	279			2054	8.5	258			2013	9.0	275			2004	8.4	257	
2 Tu	0212	-1.1	-33		17 W	0232	0.2	6		2 F	0334	-1.3	-39		17 Sa	0318	0.0	0		2 F	0237	-0.8	-23		17 Sa	0224	0.6	17	
	0854	9.5	289			0911	8.3	252			1007	9.4	288			0942	8.6	263			0904	9.4	286			0843	8.7	265	
	1447	2.3	71			1500	2.7	82			1603	1.5	46			1542	1.7	52			1504	1.2	36			1446	1.4	44	
	2024	9.1	277			2033	8.2	249			2149	9.1	276			2127	8.6	262			2056	9.3	284			2038	8.8	269	
3 W	0259	-1.4	-42		18 Th	0304	0.0	1		3 Sa	0415	-0.9	-27		18 Su	0349	0.1	2		3 Sa	0317	-0.7	-20		18 Su	0256	0.4	12	
	0941	9.6	293			0939	8.4	255			1042	9.2	279			1008	8.7	264			0936	9.4	286			0909	8.9	272	
	1534	2.2	68			1531	2.5	77			1642	1.5	45			1612	1.5	45			1540	0.9	27			1516	1.0	31	
	2111	9.1	277			2106	8.2	251			2231	8.7	265			2201	8.5	260			2137	9.3	282			2113	9.1	276	
4 Th	0346	-1.3	-40		19 F	0335	0.0	0		4 Su	0454	-0.2	-5		19 M	0421	0.3	10		4 Su	0354	-0.2	-7		19 M	0328	0.5	14	
	1027	9.5	289			1008	8.4	255			1114	8.7	266			1035	8.6	261			1006	9.2	280			0935	9.0	275	
	1619	2.3	69			1603	2.4	74			1720	1.6	49			1645	1.4	42			1614	0.8	24			1547	0.7	21	
	2157	8.9	270			2139	8.2	250			2313	8.1	246			2237	8.3	254			2216	8.9	272			2149	9.1	278	
5 F	0431	-0.9	-27		20 Sa	0407	0.1	3		5 M	0530	0.8	24		20 Tu	0454	0.8	24		5 M	0429	0.5	14		20 Tu	0402	0.8	23	
	1110	9.1	278			1036	8.3	253			1145	8.2	249			1103	8.3	254			1033	8.8	269			1003	9.0	273	
	1704	2.4	72			1635	2.4	73			1758	1.9	57			1720	1.4	43			1648	1.0	29			1621	0.6	17	
	2243	8.4	257			2212	8.0	245			2356	7.3	223			2317	7.9	242			2253	8.4	256			2227	8.9	272	
6 Sa	0515	-0.2	-6		21 Su	0439	0.4	12		6 Tu	0606	1.8	55		21 W	0530	1.5	45		6 Tu	0501	1.3	40		21 W	0437	1.3	39	
	1152	8.6	263			1105	8.1	248			1215	7.6	232			1135	8.0	244			1059	8.3	254			1033	8.7	265	
	1750	2.6	78			1709	2.4	73			1840	2.2	68			1801	1.6	48			1720	1.2	38			1657	0.6	19	
	2331	7.8	237			2249	7.7	236											2330		7.7	235		2310		8.5	259		
7 Su	0558	0.8	23		22 M	0513	0.8	25		7 W	0045	6.6	200		22 Th	0005	7.4	225		7 W	0533	2.2	67		22 Th	0514	2.0	62	
	1232	8.0	245			1137	7.9	241			0643	2.8	85			0610	2.3	70			1124	7.8	238			1105	8.3	252	
	1838	2.8	85			1747	2.5	75			1248	7.0	214			1212	7.5	230			1754	1.7	51			1738	0.9	28	
						2330	7.3	224			1929	2.6	79			1850	1.8	55						2358		7.9	240		
8 M	0024	7.1	215		23 Tu	0551	1.4	43		8 Th	0153	5.9	179		23 F	0106	6.8	207		8 Th	0011	7.0	213		23 F	0555	2.9	88	
	0643	1.7	53			1212	7.6	232			0729	3.7	113			0659	3.2	97			0605	3.1	94			1141	7.7	235	
	1315	7.5	228			1832	2.5	77			1334	6.5	198			1259	7.0	214			1152	7.3	221			1826	1.4	42	
	1933	3.0	91								2038	2.9	87			1955	2.0	62			1832	2.2	67						
9 Tu	0130	6.4	194		24 W	0021	6.9	210		9 F	0346	5.6	170		24 Sa	0237	6.4	194		9 F	0103	6.3	191		24 Sa	0100	7.2	220	
	0733	2.7	83			0635	2.1	64			0845	4.4	134			0812	4.0	123			0642	3.9	120			0646	3.8	116	
	1405	7.0	214			1255	7.3	222			1449	6.1	187			1414	6.6	200			1226	6.7	203			1229	7.1	215	
	2040	3.1	93			1928	2.5	77			2213	2.8	85			2124	2.1	63			1924	2.7	82			1930	1.9	58	
10 W	0301	5.9	180		25 Th	0129	6.4	196		10 Sa	0539	5.9	179		25 Su	0438	6.5	198		10 Sa	0233	5.8	176		25 Su	0234	6.7	204	
	0837	3.5	107			0730	2.9	88			1054	4.6	139			1014	4.4	133			0742	4.6	141			0806	4.5	138	
	1506	6.7	204			1352	7.0	213			1628	6.1	186			1603	6.5	198			1323	6.1	185			1350	6.4	196	
	2200	2.9	87			2038	2.4	74			2334	2.4	72			2259	1.6	49			2050	3.1	93			2102	2.2	68	
11 Th	0442	5.9	181		26 F	0302	6.2	190		11 Su	0641	6.4	196		26 M	0606	7.2	218		11 Su	0453	5.8	178		26 M	0432	6.8	207	
	1001	4.0	121			0846	3.5	108			1216	4.2	127			1159	3.9	120			1014	4.9	149			1025	4.6	140	
	1614	6.6	202			1506	6.8	208			1740	6.4	196			1732	7.0	213			1528	5.8	176			1558	6.4	195	
	2311	2.4	74			2200	2.0	62											2247		2.9	89		2244		2.0	61		
12 F	0601	6.3	193		27 Sa	0446	6.5	199		12 M	0028	1.8	55		27 Tu	0011	0.9	26		12 M	0611	6.4	194		27 Tu	0552	7.4	225	
	1126	4.0	123			1025	3.8	117			0722	7.0	213			0704	7.9	242			1159	4.4	134			1155	3.9	118	
	1714	6.8	206			1628	7.0	212			1304	3.7	112			1259	3.2	97			1712	6.1	185			1729	7.0	213	
						2317	1.3	40			1831	6.9	210			1835	7.7	236			2357	2.4	73			2357	1.4	43	
13 Sa	0005	1.9	58		28 Su	0609	7.2	220		13 Tu	0108	1.2	38		28 W	0106	0.1	2		13 Tu	0653	6.9	211		28 W	0644	8.0	245	
	0655	6.8	208			1156	3.6	111			0754	7.5	228			0749	8.6	263			1245	3.8	115			1246	3.0	91	
	1228	3.8	116			1739	7.4	225			1341	3.2	97			1345	2.4	73			1811	6.7	203			1830	7.8	238	
	1804	7.1	215								1911	7.4	225			1927	8.5	259											
14 Su	0048	1.4	42		29 M	0020	0.5	14		14 W	0144	0.8	23		14 W	0043	1.												

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Times and Heights of High and Low Waters

October				November				December																			
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height														
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm													
1 M	0557	2.4	73			1 Th	0110	7.1	217	16 F	0118	6.3	192	1 Sa	0250	6.7	205	16 Su	0154	6.0	182						
	1230	8.3	252	16 Tu	1342		7.2	219	0		0807	2.8	85		0800	3.6	109		0905	2.7	83	0806	3.2	99			
	1818	4.8	145		1915		5.6	170			1530	7.8	237			1537	7.0			213	1600		7.7	234	1509	6.9	209
	2358	8.1	246		2133		4.9	150			2154	4.7	144			2220	3.4			105	2142		3.7	112			
2 Tu	0658	2.9	88	17 W	0028	7.0	212	2 F	0311	7.0	213	17 Sa	0315	6.2	189	2 Su	0425	7.0	212	17 M	0334	6.0	183				
	1357	7.8	237		0736	3.8	117		0942	2.9	88		0935	3.7	113		1024	2.9	88		0927	3.5	107				
	1933	5.4	166		1534	7.1	215		1646	8.1	247		1726	7.6	233		1657	7.9	240		1612	7.0	214				
3 W	0113	7.5	228	18 Th	0223	6.5	199	3 Sa	0445	7.5	229	18 Su	0442	6.6	201	3 M	0536	7.4	227	18 Tu	0454	6.5	197				
	0824	3.2	98		0924	4.0	123		1059	2.6	80		1049	3.5	107		1130	2.9	88		1043	3.5	106				
	1551	7.8	237		1659	7.3	224		1738	8.5	260		1726	7.6	233		1743	8.1	247		1703	7.3	224				
	2139	5.6	170		2305	5.2	157		2351	3.3	100		2344	3.3	101		2344	3.3	101		2335	2.2	67				
4 Th	0317	7.3	224	19 F	0422	6.8	206	4 Su	0549	8.2	251	19 M	0539	7.2	220	4 Tu	0009	1.9	58	19 W	0555	7.1	217				
	1005	3.0	92		1073	3.7	114		1157	2.3	70		1142	3.2	97		0633	8.0	244		1145	3.3	100				
	1715	8.3	253		1747	7.8	238		1819	9.0	273		1800	8.1	246		1224	2.8	86		1747	7.8	237				
5 F	0454	7.9	240	20 Sa	0527	7.3	224	5 M	0033	2.4	72	20 Tu	0019	2.5	76	5 W	0051	1.2	37	20 Th	0018	1.3	40				
	1122	2.5	75		1146	3.3	100		0640	8.9	271		0624	7.9	241		0721	8.4	257		0645	7.8	239				
	1809	8.9	272		1820	8.3	252		1245	2.1	63		1225	2.9	87		1310	2.8	84		1237	3.0	92				
6 Sa	0012	4.0	122	21 Su	0026	3.7	114	6 Tu	0111	1.6	48	21 W	0051	1.7	52	6 Th	0129	0.7	22	21 F	0100	0.5	14				
	0557	8.7	265		0613	8.0	243		0726	9.4	286		0704	8.6	261		0803	8.8	267		0732	8.5	260				
	1219	1.8	56		1227	2.9	87		1328	2.0	61		1305	2.6	79		1352	2.8	84		1325	2.8	85				
7 Su	1850	9.5	290	1848	8.7	265	1927	9.5	289	1903	8.9	271	1933	8.7	264	1909	8.6	262									
	7 M	0055	3.1	94	22 M	0056	3.0	92	7 W	0148	1.0	30	22 Th	0125	0.9	28	7 F	0204	0.4	11	22 Sa	0142	-0.3	-8			
		0648	9.5	289		0650	8.6	262		0808	9.7	295		0744	9.1	278		0842	8.9	272		0818	9.1	276			
1306		1.4	43	1302		2.5	76	1408		2.1	65	1344		2.4	74	1431		2.8	86	1411		2.6	79				
8 M	1927	10.0	304	1915	9.1	277	1959	9.5	291	1935	9.2	280	2006	8.7	265	1951	8.9	272									
	8 Th	0134	2.3	69	23 Tu	0125	2.3	71	8 Th	0223	0.7	20	23 F	0201	0.3	9	8 Sa	0239	0.2	7	23 Su	0226	-0.8	-25			
		0734	10.1	307		0725	9.2	279		0849	9.7	296		0825	9.5	290		0918	8.9	272		0904	9.4	286			
1349		1.2	37	1335		2.2	68	1446		2.4	73	1424		2.4	73	1508		2.9	89	1457		2.5	76				
9 Tu	2000	10.2	311	1941	9.4	287	2030	9.4	288	2009	9.4	285	2039	8.6	262	2035	9.1	276									
	9 W	0211	1.6	49	24 W	0154	1.7	52	9 F	0257	0.6	17	24 Sa	0238	-0.2	-5	9 Su	0312	0.3	8	24 M	0310	-1.1	-33			
		0817	10.4	316		0800	9.6	293		0927	9.6	292		0907	9.7	296		0952	8.8	268		0950	9.5	289			
1429		1.3	41	1408		2.1	64	1523		2.8	84	1505		2.5	77	1543		3.1	94	1542		2.5	76				
10 W	2032	10.3	313	2007	9.6	294	2100	9.2	281	2046	9.4	285	2112	8.4	257	2119	9.0	275									
	10 Th	0247	1.2	38	25 Th	0225	1.1	35	10 Sa	0330	0.7	20	25 Su	0319	-0.4	-11	10 M	0345	0.4	13	25 Tu	0356	-1.0	-31			
		0859	10.4	317		0836	9.9	301		1003	9.3	282		0952	9.6	294		1025	8.6	261		1036	9.4	285			
1507		1.7	53	1443		2.1	65	1558		3.2	98	1547		2.8	85	1617		3.3	100	1629		2.6	78				
11 Th	2102	10.1	308	2036	9.7	297	2130	8.9	270	2125	9.2	279	2144	8.2	249	2205	8.8	268									
	11 F	0322	1.1	34	26 F	0258	0.8	24	11 Su	0403	1.0	29	26 M	0402	-0.2	-7	11 Tu	0418	0.7	22	26 W	0442	-0.7	-20			
		0939	10.1	308		0914	10.0	304		1040	8.8	268		1040	9.4	285		1058	8.2	251		1123	9.0	275			
1544		2.3	70	1518		2.4	72	1632		3.7	112	1632		3.2	97	1651		3.5	107	1716		2.7	83				
12 F	2131	9.8	298	2107	9.7	295	2201	8.5	258	2207	8.8	267	2218	7.8	238	2254	8.3	254									
	12 Sa	0356	1.2	38	27 Sa	0334	0.6	19	12 M	0436	1.4	43	27 Tu	0448	0.2	5	12 W	0452	1.1	35	27 Th	0530	0.0	0			
		1018	9.6	294		0955	9.8	300		1117	8.3	253		1131	8.9	271		1133	7.9	240		1211	8.5	260			
1618		3.0	92	1556		2.8	85	1708		4.1	126	1722		3.6	110	1729		3.7	114	1807		2.9	89				
13 Sa	2200	9.3	284	2139	9.4	288	2233	7.9	242	2254	8.2	251	2254	7.4	225	2348	7.7	235									
	13 Su	0429	1.6	49	28 Su	0412	0.7	22	13 Tu	0512	1.9	59	28 W	0538	0.8	23	13 Th	0528	1.6	50	28 F	0620	0.9	27			
		1057	9.0	275		1039	9.4	288		1159	7.8	237		1228	8.4	255		1212	7.5	228		1301	8.0	244			
1653		3.7	114	1636		3.4	103	1749		4.6	139	1819		4.0	122	1812		4.0	121	1905		3.1	94				
14 Su	2228	8.8	268	2215	9.0	275	2310	7.4	225	2350	7.6	231	2336	6.9	209	2336	6.9	209									
	14 M	0503	2.1	64	29 M	0455	1.1	33	14 W	0553	2.5	77	29 Th	0636	1.5	46	14 F	0609	2.2	67	29 Sa	0053	7.1	215			
		1138	8.4	255		1130	8.9	272		1252	7.3	222		1335	7.9	241		1259	7.1	217		0715	1.8	56			
1728		4.5	136	1722		4.0	123	1844		4.9	149	1931		4.2	128	1908		4.1	125	1357		7.5	230				
15 M	2258	8.2	250	2256	8.4	257	2358	6.8	207	2358	6.8	207	2358	6.8	207	2358	6.8	207									
	15 Tu	0541	2.7	82	30 Tu	0544	1.6	50	15 Th	0645	3.1	95	30 F	0107	7.0	213	15 Sa	0032	6.3	193	30 Su	0217	6.5	199			
		1228	7.7	235		1231	8.3	253		1407	7.0	213		0745	2.2	68		0659	2.8	85		0819	2.7	82			
1811		5.1	155	1818		4.7	142	2009		5.1	154	1450		7.6	233	1359		6.9	210	1459		7.2	220				
15 M	2333	7.6	231	2347	7.7	236	2347	7.7	236	2059	4.0	123	2022	4.0	123	2022	4.0	123									
	15 W	0645	2.3	69	31 W	0645	2.3	69	31 M	0645	2.3	69	31 M	0645	2.3	69	31 M	0645	2.3	69	31 M	0355	6.4	194			

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Times and Heights of High and Low Waters

January				February				March																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 M	0013	-0.4	-13		16 Tu	0053	0.2	7		1 Th	0138	-1.0	-31		16 F	0137	0.0	0		1 Th	0040	-0.5	-14						
	0646	6.1	185			0727	5.5	167			0808	6.3	192			0802	5.8	176			0708	6.2	188						
	1224	2.1	65			1255	2.3	71			1351	1.6	50			1344	1.7	51			1258	1.5	46						
	1816	6.8	206			1840	5.9	181			1943	6.9	209			1935	6.2	189			1852	6.6	202						
2 Tu	0101	-0.9	-27		17 W	0125	0.0	1		2 F	0221	-1.0	-29		17 Sa	0207	0.0	0		2 F	0122	-0.6	-17		17 Sa	0111	0.4	11	
	0736	6.3	192			0757	5.6	170			0847	6.3	193			0829	5.9	180			0744	6.4	194			0728	6.0	184	
	1313	2.1	64			1327	2.2	67			1434	1.5	45			1416	1.4	44			1338	1.1	34			1323	1.2	36	
	1902	6.9	210			1913	6.1	185			2028	6.7	205			2009	6.2	190			1936	6.8	206			1922	6.3	192	
3 W	0147	-1.1	-33		18 Th	0155	-0.1	-2		3 Sa	0301	-0.6	-19		18 Su	0236	0.1	2		3 Sa	0201	-0.4	-13		18 Su	0141	0.3	10	
	0822	6.4	194			0827	5.6	172			0924	6.2	190			0856	5.9	181			0817	6.4	196			0755	6.2	189	
	1400	2.0	62			1359	2.1	64			1516	1.4	43			1449	1.3	40			1417	0.9	27			1355	0.9	26	
	1949	6.9	210			1946	6.1	187			2112	6.4	195			2044	6.2	188			2018	6.7	203			1957	6.4	195	
4 Th	0233	-1.0	-31		19 F	0226	0.0	-1		4 Su	0339	-0.1	-3		19 M	0306	0.3	9		4 Su	0237	-0.1	-3		19 M	0212	0.4	13	
	0907	6.3	192			0856	5.7	173			0959	6.0	184			0924	5.9	181			0849	6.4	195			0822	6.3	192	
	1446	2.1	63			1327	2.0	62			1559	1.4	44			1524	1.2	37			1454	0.8	24			1428	0.6	18	
	2036	6.7	204			2019	6.1	186			2155	5.9	179			2121	6.0	182			2058	6.4	194			2034	6.4	194	
5 F	0319	-0.7	-22		20 Sa	0256	0.1	2		5 M	0415	0.6	17		20 Tu	0337	0.6	19		5 M	0310	0.4	12		20 Tu	0243	0.7	21	
	0951	6.1	186			0926	5.6	172			1033	5.8	177			0954	5.9	179			0919	6.2	190			0851	6.3	192	
	1534	2.1	64			1506	2.0	61			1643	1.6	48			1602	1.2	36			1530	0.8	25			1504	0.5	14	
	2123	6.3	193			2054	5.9	181			2240	5.3	161			2202	5.6	172			2137	5.9	180			2113	6.2	189	
6 Sa	0403	-0.2	-6		21 Su	0328	0.3	8		6 Tu	0451	1.2	38		21 W	0411	1.1	33		6 Tu	0342	1.0	30		21 W	0315	1.0	32	
	1035	5.9	179			0957	5.6	171			1109	5.5	168			1027	5.7	175			0948	6.0	182			0921	6.2	189	
	1624	2.2	66			1543	2.0	60			1731	1.8	54			1646	1.2	38			1607	1.0	30			1542	0.5	15	
	2212	5.8	178			2131	5.7	174			2331	4.7	143			2249	5.2	159			2217	5.4	164			2155	5.8	178	
7 Su	0447	0.5	14		22 M	0400	0.6	18		7 W	0528	1.9	58		22 Th	0448	1.6	50		7 W	0412	1.6	48		22 Th	0350	1.5	47	
	1119	5.6	172			1030	5.5	169			1147	5.2	158			1105	5.5	168			1017	5.7	173			0954	6.0	183	
	1719	2.3	69			1625	2.0	61			1831	1.9	59			1739	1.3	41			1647	1.2	38			1625	0.6	19	
	2306	5.2	159			2212	5.4	165								2350	4.8	145			2301	4.8	147			2244	5.4	164	
8 M	0532	1.1	35		23 Tu	0436	1.0	30		8 Th	0605	2.5	76		23 F	0535	2.2	68		8 Th	0444	2.2	66		23 F	0428	2.1	64	
	1206	5.4	164			1107	5.4	165			0615	2.5	76			1154	5.2	160			1048	5.3	162			1031	5.7	173	
	1823	2.3	70			1714	2.0	61			1237	4.9	149			1851	1.4	43			1733	1.6	48			1718	0.9	27	
						2302	5.0	153			1950	2.0	61								2357	4.3	132			2346	4.9	149	
9 Tu	0010	4.7	142		24 W	0518	1.4	44		9 F	0224	3.9	118		24 Sa	0118	4.4	133		9 F	0523	2.7	82		24 Sa	0517	2.7	82	
	0622	1.8	55			1151	5.3	162			0727	3.0	91			0646	2.8	86			1126	4.9	150			1120	5.3	162	
	1258	5.2	158			1815	2.0	60			1346	4.7	143			1304	5.0	153			1835	1.8	56			1827	1.2	36	
	1939	2.3	69								2121	1.8	56			2021	1.3	40											
10 W	0135	4.2	129		25 Th	0008	4.6	141		10 Sa	0415	4.0	123		25 Su	0315	4.4	134		10 Sa	0127	4.0	121		25 Su	0116	4.6	139	
	0723	2.3	71			0611	2.0	60			0910	3.1	96			0836	3.1	94			0625	3.2	97			0637	3.2	97	
	1358	5.1	155			1246	5.2	159			1509	4.7	143			1437	5.0	153			1224	4.6	139			1235	5.0	151	
	2100	2.0	62			1931	1.8	55			2232	1.5	46			2150	0.9	28			2008	2.0	60			1959	1.3	40	
11 Th	0314	4.2	127		26 F	0139	4.4	134		11 Su	0522	4.4	135		26 M	0446	4.8	147		11 Su	0334	4.0	123		26 M	0311	4.6	141	
	0838	2.7	82			0723	2.5	75			1034	3.0	92			1017	2.9	89			0826	3.4	103			0843	3.3	100	
	1501	5.1	155			1354	5.2	158			1618	4.9	148			1603	5.3	163			1406	4.4	133			1425	4.9	148	
	2210	1.7	51			2054	1.4	43			2323	1.1	33			2259	0.4	12			2144	1.8	55			2132	1.1	34	
12 F	0438	4.4	133		27 Sa	0323	4.5	136		12 M	0605	4.8	146		27 Tu	0545	5.3	163		12 M	0454	4.4	134		27 Tu	0433	5.0	153	
	0953	2.8	86			0855	2.7	83			1128	2.8	84			1124	2.5	76			1013	3.2	97			1019	2.9	87	
	1558	5.2	158			1507	5.3	163			1710	5.2	158			1709	5.8	178			1544	4.5	137			1558	5.2	158	
	2302	1.2	38			2208	0.9	26								2354	-0.1	-4			2249	1.5	45			2243	0.8	23	
13 Sa	0535	4.7	143		28 Su	0449	4.9	149		13 Tu	0002	0.7	22		28 W	0629	5.8	177		13 Tu	0536	4.8	146		28 W	0524	5.5	168	
	1054	2.8	84			1019	2.7	82			0638	5.1	156			1214	2.0	60			1110	2.8	85			1118	2.3	69	
	1647	5.4	164			1615	5.7	173			1208	2.5	75			1804	6.3	192			1648	4.9	149			1705	5.7	174	
	2344	0.9	26			2311	0.2	6			1751	5.5	167								2334	1.1	33			2336	0.4	13	
14 Su	0619	5.0	153		29 M	0552	5.4	164		14 W	0036	0.4	12		14 W	0608	5.2	157		14 W	0604	5.9	181						
	1142	2.6	80			1125	2.5	76			0707	5.4	165			1149	2.4	72			1149	2.4	72		1203	1.7			

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Times and Heights of High and Low Waters

April				May				June																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 Su	0136	0.4	13		16 M	0112	0.9	28		1 Tu	0142	1.6	50		16 W	0121	1.8	55		1 F	0223	2.8	84		16 Sa	0233	2.7	83	
	0743	6.5	199			0718	6.5	199			0736	6.5	199			0717	7.0	212			0807	6.4	196			0823	7.2	220	
	1355	0.5	15			1332	0.4	11			1406	0.3	10			1349	-0.2	-6			1451	0.7	20			1510	-0.1	-4	
	2005	6.5	198			1943	6.5	199			2029	6.2	188			2015	6.7	203			2126	5.9	180			2146	6.6	201	
2 M	0209	0.7	22		17 Tu	0146	1.0	32		2 W	0213	1.9	59		17 Th	0201	2.0	62		2 Sa	0256	2.9	89		17 Su	0323	2.9	88	
	0811	6.5	198			0748	6.7	203			0804	6.4	196			0754	7.0	213			0839	6.3	191			0912	7.0	212	
	1429	0.4	12			1408	0.1	2			1438	0.4	11			1432	-0.3	-9			1524	0.9	27			1559	0.2	7	
	2043	6.3	191			2024	6.5	199			2105	5.9	181			2102	6.5	199			2203	5.7	175			2236	6.4	195	
3 Tu	0241	1.1	35		18 W	0220	1.3	40		3 Th	0244	2.2	68		18 F	0242	2.3	71		3 Su	0332	3.1	93		18 M	0417	3.0	92	
	0839	6.3	193			0819	6.7	203			0832	6.3	191			0834	6.8	208			0914	6.0	184			1005	6.6	200	
	1503	0.5	14			1446	-0.1	-2			1510	0.6	17			1518	-0.2	-5			1600	1.2	36			1650	0.8	23	
	2120	5.9	180			2106	6.4	194			2142	5.7	173			2152	6.3	191			2242	5.5	169			2329	6.2	188	
4 W	0311	1.6	49		19 Th	0256	1.7	52		4 F	0315	2.5	77		19 Sa	0328	2.7	81		4 M	0413	3.2	98		19 Tu	0518	3.1	94	
	0906	6.1	186			0853	6.5	199			0902	6.0	183			0917	6.6	200			0952	5.7	175			1104	6.1	186	
	1536	0.6	19			1527	0.0	1			1544	0.8	25			1607	0.2	5			1639	1.5	46			1745	1.3	41	
	2158	5.5	168			2152	6.0	183			2221	5.4	164			2246	5.9	181			2328	5.4	164						
5 Th	0340	2.1	63		20 F	0335	2.2	66		5 Sa	0350	2.9	87		20 Su	0420	3.0	91		5 Tu	0504	3.4	103		20 W	0625	6.0	183	
	0934	5.8	178			0930	6.3	191			0933	5.7	174			1007	6.2	188			1037	5.4	165			0627	3.1	94	
	1611	0.9	28			1613	0.3	8			1621	1.1	35			1702	0.7	20			1725	1.9	57			1214	5.6	172	
	2238	5.1	154			2245	5.6	170			2305	5.1	154			2348	5.6	172								1843	1.9	59	
6 F	0412	2.5	76		21 Sa	0420	2.7	81		6 Su	0430	3.1	95		21 M	0526	3.2	99		6 W	0622	5.3	161		21 Th	0745	3.0	90	
	1004	5.5	167			1013	5.9	179			1010	5.3	163			1108	5.7	173			1136	5.1	155			1337	5.3	162	
	1650	1.3	39			1708	0.7	20			1705	1.5	47			1805	1.1	35			1821	2.2	67			1948	2.5	75	
	2328	4.7	142			2350	5.2	158																					
7 Sa	0450	2.9	89		22 Su	0519	3.1	95		7 M	0003	4.8	147		22 Tu	0059	5.5	167		7 Th	0125	5.3	162		22 F	0223	5.9	180	
	1038	5.1	154			1108	5.4	165			0526	3.4	103			0650	3.3	100			0728	3.3	102			0901	2.7	81	
	1740	1.6	50			1816	1.1	33			1056	5.0	151			1228	5.3	161			1256	4.9	149			1504	5.2	160	
											1802	1.9	58			1917	1.6	48			1929	2.4	74			2056	2.8	86	
8 Su	0040	4.3	132		23 M	0116	5.0	151		8 Tu	0120	4.7	144		23 W	0213	5.5	167		8 F	0227	5.5	167		23 Sa	0319	6.0	183	
	0549	3.3	101			0651	3.4	103			0653	3.5	107			0821	3.1	93			0844	3.0	92			1006	2.3	69	
	1127	4.7	142			1231	5.0	153			1209	4.6	141			1404	5.1	156			1426	5.0	151			1621	5.4	164	
	1854	2.0	60			1942	1.4	42			1919	2.2	66			2032	1.9	57			2041	2.6	78			2200	3.0	91	
9 M	0228	4.3	130		24 Tu	0251	5.0	153		9 W	0242	4.8	147		24 Th	0317	5.6	172		9 Sa	0320	5.7	175		24 Su	0409	6.1	187	
	0740	3.5	107			0843	3.2	98			0833	3.4	103			0937	2.6	79			0945	2.5	76			1058	1.8	56	
	1257	4.3	132			1419	4.9	150			1353	4.5	137			1530	5.2	160			1544	5.2	160			1722	5.6	171	
	2032	2.1	63			2107	1.4	43			2042	2.2	67			2140	2.0	62			2145	2.6	78			2255	3.1	94	
10 Tu	0358	4.5	138		25 W	0401	5.3	163		10 Th	0343	5.1	156		25 F	0408	5.9	180		10 Su	0406	6.1	185		25 M	0453	6.3	192	
	0934	3.3	100			1005	2.7	82			0946	3.0	90			1036	2.1	63			1036	1.9	57			1142	1.5	45	
	1455	4.4	133			1549	5.2	158			1523	4.8	145			1639	5.5	168			1647	5.7	173			1810	5.9	179	
	2154	1.9	57			2217	1.3	40			2149	2.1	64			2237	2.1	64			2240	2.5	77			2342	3.1	94	
11 W	0449	4.9	149		26 Th	0451	5.7	174		11 F	0427	5.5	167		26 Sa	0451	6.1	187		11 M	0448	6.4	196		26 Tu	0533	6.4	196	
	1037	2.9	87			1101	2.1	63			1036	2.4	73			1122	1.5	47			1122	1.2	36			1221	1.1	35	
	1613	4.7	144			1655	5.6	171			1628	5.2	158			1734	5.8	177			1742	6.1	186			1852	6.1	185	
	2249	1.6	48			2310	1.2	36			2241	1.9	58			2325	2.2	66			2329	2.5	75						
12 Th	0524	5.3	161		27 F	0530	6.1	185		12 Sa	0502	5.9	179		27 Su	0528	6.4	194		12 Tu	0529	6.8	206		27 W	0622	3.1	93	
	1118	2.3	71			1145	1.5	45			1116	1.8	54			1202	1.1	34			1206	0.6	17			0609	6.6	200	
	1706	5.2	158			1747	6.0	182			1718	5.6	172			1820	6.0	183			1832	6.5	197			1256	1.0	29	
	2330	1.3	39			2355	1.1	35			2324	1.8	54													1929	6.2	189	
13 F	0553	5.7	173		28 Sa	0605	6.3	193		13 Su	0535	6.2	190		28 M	0606	2.2	68		13 W	0616	2.5	75		28 Th	0643	6.7	203	
	1153	1.8	55			1223	1.0	30			1153	1.1	35			0602	6.5	198			0611	7.1	215			0643	6.7	203	
	1748	5.6	172			1832	6.2	190			1803	6.1	186			1239	0.8	24			1250	0.1	2			1329	0.8	25	
																										2003	6.3	191	
14 Sa	0006	1.0	32		29 Su	0034	1.2	38		14 M	0004	1.7	51		29 Tu	0043	2.3	71											

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Times and Heights of High and Low Waters

October				November				December																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 M	0447	1.6	50		16 Tu	0529	2.2	68		1 Th	0659	1.7	53		16 F	0657	2.3	71		1 Sa	0118	5.0	152		16 Su	0025	4.4	134	
	1115	5.8	176			1234	5.1	154			1406	5.4	164			1421	5.0	152			0751	1.7	53			0655	2.2	66	
	1648	3.4	105			1749	4.0	121			2000	3.6	110			2022	3.4	105			1439	5.5	168			1400	5.0	153	
	2248	6.1	187			2317	5.2	158			●										2102	2.6	78			2025	2.7	83	
2 Tu	0551	1.9	59		17 W	0642	2.6	78		2 F	0135	5.2	160		17 Sa	0139	4.5	137		2 Su	0254	5.0	152		17 M	0202	4.3	131	
	1236	5.4	165			1415	5.0	152			0827	1.8	56			0821	2.5	75			0905	1.9	59			0810	2.4	72	
	1800	3.9	119			1941	4.1	124			1523	5.6	172			1524	5.2	159			1536	5.7	175			1458	5.2	159	
	2356	5.7	175			●					2129	3.1	95			2135	3.0	92			2207	1.9	59			2132	2.2	68	
3 W	0717	2.1	64		18 Th	0052	4.9	148		3 Sa	0313	5.4	166		18 Su	0313	4.7	143		3 M	0412	5.2	160		18 Tu	0329	4.5	138	
	1424	5.4	164			0817	2.7	81			0941	1.7	53			0931	2.4	72			1008	2.0	62			0921	2.4	74	
	1958	4.1	124			1538	5.2	158			1617	6.0	183			1608	5.5	169			1623	6.0	182			1547	5.5	167	
						2125	3.8	115			2230	2.4	74			2224	2.5	75			2259	1.3	41			2223	1.6	49	
4 Th	0141	5.6	170		19 F	0248	4.9	149		4 Su	0425	5.9	179		19 M	0418	5.1	155		4 Tu	0513	5.6	170		19 W	0436	4.9	150	
	0851	2.0	60			0938	2.5	77			1040	1.6	49			1024	2.2	68			1101	2.1	63			1020	2.4	72	
	1553	5.7	175			1629	5.5	168			1700	6.4	194			1644	5.9	179			1704	6.2	189			1630	5.8	177	
	2140	3.7	112			2225	3.3	101			2317	1.8	54			2303	1.8	56			2342	0.8	25			2308	0.9	28	
5 F	0321	5.8	178		20 Sa	0404	5.2	160		5 M	0521	6.3	192		20 Tu	0507	5.5	168		5 W	0603	5.8	178		20 Th	0529	5.3	163	
	1007	1.6	50			1033	2.3	69			1128	1.5	47			1107	2.1	63			1146	2.1	64			1110	2.3	70	
	1650	6.2	189			1704	5.9	179			1737	6.7	203			1716	6.2	189			1742	6.4	194			1710	6.1	187	
	2245	3.1	94			2305	2.8	85			2358	1.2	36			2339	1.2	38								2350	0.3	9	
6 Sa	0433	6.4	194		21 Su	0455	5.7	173		6 Tu	0609	6.6	201		21 W	0550	5.9	181		6 Th	0021	0.4	13		21 F	0617	5.8	176	
	1104	1.3	39			1114	2.0	61			1210	1.6	48			1145	2.0	60			0647	6.0	183			1156	2.2	67	
	1733	6.6	202			1734	6.2	189			1811	6.9	209			1748	6.5	198			1226	2.2	66			1750	6.5	197	
	2333	2.4	73			2338	2.3	69													1816	6.4	196						
7 Su	0529	6.9	209		22 M	0535	6.1	185		7 W	0036	0.7	22		22 Th	0014	0.7	20		7 F	0057	0.2	5		22 Sa	0032	-0.3	-8	
	1152	1.0	32			1149	1.8	55			0653	6.7	205			0631	6.3	191			0726	6.1	185			0702	6.1	185	
	1810	7.0	213			1801	6.5	198			1247	1.7	52			1222	1.9	59			1303	2.3	69			1240	2.2	66	
											1844	6.9	211			1820	6.7	205			1849	6.5	197			1831	6.7	205	
8 M	0015	1.8	55		23 Tu	0009	1.7	53		8 Th	0112	0.5	14		23 F	0050	0.2	5		8 Sa	0132	0.1	2		23 Su	0115	-0.7	-21	
	0618	7.2	220			0612	6.5	197			0734	6.7	205			0712	6.5	198			0804	6.0	184			0747	6.3	191	
	1234	1.0	31			1221	1.7	51			1323	1.9	59			1259	2.0	60			1337	2.4	72			1324	2.1	65	
	1844	7.2	220			1828	6.7	205			●					1853	6.9	210			1921	6.4	195			1914	6.9	209	
9 Tu	0054	1.3	40		24 W	0040	1.3	39		9 F	0147	0.3	10		24 Sa	0127	-0.2	-5		9 Su	0205	0.1	2		24 M	0159	-0.9	-26	
	0702	7.4	225			0648	6.7	205			0813	6.6	200			0754	6.6	200			0839	5.9	181			0833	6.3	192	
	1312	1.1	35			1252	1.7	51			1356	2.2	68			1337	2.1	64			1411	2.5	76			1408	2.2	66	
	1917	7.3	223			1855	6.9	211			1945	6.8	206			1929	6.9	211			1953	6.3	191			1958	6.8	208	
10 W	0132	1.0	30		25 Th	0112	0.9	26		10 Sa	0221	0.4	12		25 Su	0208	-0.3	-10		10 M	0238	0.2	6		25 Tu	0244	-0.8	-25	
	0744	7.3	224			0725	6.9	210			0851	6.3	192			0837	6.5	198			0914	5.8	176			0918	6.2	189	
	1348	1.4	44			1324	1.7	53			1429	2.5	77			1416	2.3	71			1444	2.6	79			1455	2.2	68	
	1948	7.3	222			1924	7.0	214			2015	6.5	199			2007	6.8	208			2025	6.1	185			2044	6.6	202	
11 Th	0208	0.9	26		26 F	0145	0.6	17		11 Su	0255	0.6	18		26 M	0251	-0.3	-9		11 Tu	0310	0.4	13		26 W	0331	-0.5	-16	
	0825	7.1	216			0803	6.9	210			0929	6.0	183			0924	6.3	191			0949	5.6	170			1005	6.0	184	
	1422	1.9	57			1356	1.9	59			1502	2.8	86			1459	2.6	78			1519	2.7	83			1545	2.3	71	
	2018	7.1	217			1954	7.0	214			2045	6.2	190			2048	6.6	201			2059	5.8	177			2134	6.3	192	
12 F	0244	0.9	28		27 Sa	0221	0.4	13		12 M	0330	0.9	27		27 Tu	0337	0.0	-1		12 W	0344	0.7	22		27 Th	0419	-0.1	-2	
	0905	6.7	205			0843	6.8	206			1009	5.7	173			1014	6.0	182			1027	5.3	163			1054	5.8	177	
	1455	2.3	71			1431	2.2	68			1538	3.1	94			1548	2.9	87			1558	2.9	87			1640	2.4	73	
	2047	6.9	209			2026	6.9	211			2118	5.9	180			2135	6.2	190			2135	5.5	167			2228	5.8	177	
13 Sa	0320	1.1	34		28 Su	0301	0.5	14		13 Tu	0407	1.2	38		28 W	0429	0.4	12		13 Th	0421	1.0	32		28 F	0509	0.5	16	
	0946	6.3	191			0926	6.5	197			1053	5.3	163			1112	5.7	173			1108	5.2	158			1146	5.6	171	
	1527	2.8	85			1508	2.6	80			1619	3.3	102			1648	3.1	94			1646	3.0	91			1745	2.4	74	
	2117	6.5	198			2101	6.7	204			2154	5.5	167			2231	5.7	175			2217	5.1	156			2331	5.2	160	
14 Su	0357	1.4	43		29 M	0344	0.7	20		14 W	0450	1.6																	

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January				February				March																					
Time		Height		Time		Height		Time		Height		Time		Height															
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm														
1	M	0111	-0.1	-3	16	Tu	0134	0.4	12	1	Th	0239	-0.2	-6	16	F	0227	0.2	6	1	Th	0143	0.0	0	16	F	0137	0.3	9
		0744	4.0	122			0819	3.5	107			0901	4.4	134			0904	3.8	116			0804	4.2	128			0812	3.6	110
		1340	0.0	0			1419	0.4	12			1506	-0.2	-6			1503	0.0	0			1409	-0.1	-3			1409	0.1	3
		2009	3.7	113			2029	3.3	101			2126	4.0	122			2118	3.7	113			2031	4.0	122			2024	3.6	110
2	Tu	0159	-0.2	-6	17	W	0207	0.3	9	2	F	0322	-0.2	-6	17	Sa	0256	0.0	0	2	F	0226	-0.2	-6	17	Sa	0207	0.1	3
		0830	4.3	131			0851	3.6	110			0942	4.5	137			0934	3.9	119			0844	4.4	134			0841	3.8	116
		1428	-0.1	-3			1451	0.2	6			1547	-0.2	-6			1530	0.0	0			1448	-0.2	-6			1436	-0.1	-3
		2054	3.8	116			2102	3.4	104			2205	4.0	122			2149	3.7	113			2109	4.1	125			2055	3.8	116
3	W	0246	-0.2	-6	18	Th	0238	0.2	6	3	Sa	0404	-0.2	-6	18	Su	0326	0.0	0	3	Sa	0306	-0.3	-9	18	Su	0237	0.0	0
		0914	4.4	134			0922	3.7	113			1020	4.4	134			1002	3.9	119			0921	4.5	137			0910	3.9	119
		1515	-0.1	-3			1521	0.2	6			1626	-0.1	-3			1557	-0.1	-3			1524	-0.3	-9			1504	-0.2	-6
		2138	3.9	119			2136	3.5	107			2244	3.9	119			2220	3.7	113			2145	4.2	128			2126	4.0	122
4	Th	0331	-0.2	-6	19	F	0309	0.1	3	4	Su	0445	0.0	0	19	M	0356	0.0	0	4	Su	0343	-0.2	-6	19	M	0307	-0.1	-3
		0957	4.4	134			0952	3.7	113			1058	4.1	125			1032	3.8	116			0957	4.4	134			0940	4.0	122
		1601	-0.1	-3			1550	0.1	3			1704	0.1	3			1625	0.0	0			1557	-0.2	-6			1532	-0.2	-6
		2221	3.8	116			2208	3.5	107			2321	3.7	113			2252	3.7	113			2219	4.1	125			2158	4.0	122
5	F	0417	0.0	0	20	Sa	0340	0.1	3	5	M	0525	0.3	9	20	Tu	0428	0.1	3	5	M	0419	-0.1	-3	20	Tu	0337	-0.1	-3
		1039	4.2	128			1023	3.7	113			1135	3.8	116			1102	3.6	110			1032	4.2	128			1010	3.9	119
		1647	0.1	3			1620	0.1	3			1740	0.3	9			1656	0.1	3			1628	0.0	0			1601	-0.1	-3
		2303	3.6	110			2241	3.4	104			2359	3.3	101			2326	3.5	107			2253	3.9	119			2231	3.9	119
6	Sa	0505	0.2	6	21	Su	0412	0.2	6	6	Tu	0607	0.6	18	21	W	0503	0.2	6	6	Tu	0453	0.2	6	21	W	0410	0.0	0
		1121	3.9	119			1053	3.6	110			1213	3.4	104			1135	3.4	104			1106	3.8	116			1042	3.7	113
		1734	0.3	9			1651	0.2	6			1818	0.6	18			1731	0.3	9			1658	0.2	6			1632	0.0	0
		2347	3.4	104			2315	3.3	101													2326	3.6	110			2305	3.8	116
7	Su	0555	0.5	15	22	M	0446	0.3	9	7	W	0037	3.0	91	22	Th	0005	3.3	101	7	W	0527	0.5	15	22	Th	0445	0.2	6
		1203	3.6	110			1125	3.4	104			0656	0.9	27			0545	0.5	15			1139	3.4	104			1116	3.4	104
		1823	0.5	15			1725	0.3	9			1252	2.9	88			1213	3.1	94			1727	0.5	15			1706	0.2	6
							2352	3.2	98			1902	0.9	27			1816	0.5	15								2344	3.5	107
8	M	0032	3.1	94	23	Tu	0525	0.4	12	8	Th	0122	2.7	82	23	F	0050	3.1	94	8	Th	0000	3.2	98	23	F	0526	0.5	15
		0652	0.8	24			1200	3.2	98			0806	1.2	37			0640	0.8	24			0603	0.8	24			1155	3.1	94
		1248	3.2	98			1806	0.4	12			1338	2.5	76			1300	2.8	85			1214	3.0	91			1749	0.6	18
		1920	0.7	21								2007	1.1	34			1925	0.8	24			1758	0.8	24					
9	Tu	0122	2.8	85	24	W	0033	3.0	91	9	F	0225	2.4	73	24	Sa	0151	2.8	85	9	F	0036	2.8	85	24	Sa	0030	3.2	98
		0800	1.0	30			0613	0.6	18			0937	1.3	40			0809	1.1	34			0653	1.1	34			0620	0.8	24
		1338	2.8	85			1242	3.0	91			1447	2.2	67			1411	2.5	76			1254	2.6	79			1243	2.7	82
		2025	0.9	27			1902	0.6	18			2138	1.2	37			2110	1.0	30			1839	1.1	34			1853	0.9	27
10	W	0226	2.5	76	25	Th	0124	2.9	88	10	Sa	0443	2.3	70	25	Su	0325	2.7	82	10	Sa	0121	2.5	76	25	Su	0129	2.9	88
		0915	1.1	34			0719	0.8	24			1102	1.3	40			1003	1.1	34			0834	1.4	43			0752	1.1	34
		1440	2.5	76			1334	2.7	82			1652	2.2	67			1626	2.4	73			1349	2.2	67			1356	2.4	73
		2134	1.0	30			2020	0.8	24			2301	1.2	37			2246	0.9	27			2010	1.3	40			2055	1.1	34
11	Th	0404	2.4	73	26	F	0231	2.7	82	11	Su	0615	2.5	76	26	M	0517	2.9	88	11	Su	0248	2.2	67	26	M	0301	2.7	82
		1028	1.2	37			0851	1.0	30			1209	1.1	34			1132	0.8	24			1027	1.3	40			0958	1.1	34
		1608	2.4	73			1452	2.6	79			1818	2.4	73			1810	2.8	85			1546	2.0	61			1623	2.3	70
		2239	1.0	30			2146	0.8	24								2358	0.6	18			2222	1.3	40			2238	1.0	30
12	F	0538	2.6	79	27	Sa	0403	2.8	85	12	M	0004	1.0	30	27	Tu	0630	3.4	104	12	M	0544	2.4	73	27	Tu	0501	2.9	88
		1132	1.1	34			1022	0.9	27			0659	2.8	85			1236	0.5	15			1144	1.1	34			1126	0.9	27
		1734	2.5	76			1647	2.6	79			1258	0.8	24			1907	3.2	98			1756	2.3	70			1804	2.7	82
		2334	0.9	27			2302	0.6	18			1905	2.7	82								2341	1.1	34			2350	0.7	21
13	Sa	0632	2.8	85	28	Su	0535	3.1	94	13	Tu	0049	0.8	24	28	W	0055	0.3	9	13	Tu	0636	2.7	82	28	W	0614	3.3	101
		1225	0.9	27			1139	0.7	21			0734	3.1	94			0721	3.8	116			1234	0.8						

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April					May					June																			
	Time		Height			Time		Height			Time		Height			Time		Height											
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Su	0244	-0.2	-6		16 M	0213	-0.1	-3		1 Tu	0253	0.1	3		16 W	0227	0.0	0		1 F	0337	0.6	18		16 Sa	0343	0.4	12	
	0858	4.3	131			0845	3.9	119			0906	4.0	122			0858	4.0	122			0954	3.7	113			1010	4.1	125	
	1454	-0.2	-6			1435	-0.2	-6			1452	0.0	0			1446	-0.1	-3			1525	0.5	15			1600	0.4	12	
	2121	4.2	128			2102	4.1	125			2129	4.1	125			2119	4.4	134			2214	3.9	119			2231	4.6	140	
2 M	0318	-0.1	-3		17 Tu	0246	-0.1	-3		2 W	0325	0.2	6		17 Th	0307	0.0	0		2 Sa	0410	0.7	21		17 Su	0431	0.6	18	
	0932	4.2	128			0918	4.0	122			0940	3.9	119			0937	4.0	122			1029	3.5	107			1055	3.9	119	
	1525	-0.2	-6			1507	-0.2	-6			1521	0.1	3			1524	0.0	0			1557	0.6	18			1649	0.7	21	
	2153	4.1	125			2137	4.2	128			2201	4.0	122			2159	4.3	131			2247	3.8	116			2315	4.3	131	
3 Tu	0351	0.0	0		18 W	0320	-0.1	-3		3 Th	0356	0.3	9		18 F	0348	0.2	6		3 Su	0446	0.8	24		18 M	0523	0.8	24	
	1005	4.0	122			0952	3.9	119			1013	3.7	113			1018	3.8	116			1106	3.3	101			1141	3.7	113	
	1553	0.0	0			1540	-0.1	-3			1549	0.3	9			1604	0.2	6			1631	0.8	24			1744	1.0	30	
	2225	3.9	119			2212	4.1	125			2233	3.8	116			2240	4.2	128			2322	3.5	107						
4 W	0422	0.2	6		19 Th	0356	0.0	0		4 F	0428	0.5	15		19 Sa	0432	0.4	12		4 M	0526	1.0	30		19 Tu	0002	4.0	122	
	1038	3.7	113			1027	3.7	113			1047	3.4	104			1100	3.6	110			1146	3.1	94			0623	1.0	30	
	1620	0.2	6			1614	0.1	3			1618	0.5	15			1649	0.5	15			1709	1.0	30			1232	3.4	104	
	2257	3.7	113			2250	3.9	119			2306	3.5	107			2325	3.9	119								1853	1.2	37	
5 Th	0453	0.4	12		20 F	0435	0.2	6		5 Sa	0502	0.7	21		20 Su	0523	0.7	21		5 Tu	0000	3.3	101		20 W	0054	3.7	113	
	1111	3.4	104			1105	3.4	104			1124	3.1	94			1147	3.3	101			0618	1.1	34			0734	1.2	37	
	1648	0.4	12			1652	0.3	9			1649	0.7	21			1743	0.8	24			1231	2.9	88			1332	3.2	98	
	2329	3.3	101			2332	3.7	113			2341	3.2	98								1758	1.2	37			2012	1.4	43	
6 F	0526	0.7	21		21 Sa	0519	0.5	15		6 Su	0544	1.0	30		21 M	0014	3.6	110		6 W	0045	3.1	94		21 Th	0153	3.4	104	
	1145	3.0	91			1148	3.1	94			1204	2.8	85			0629	0.9	27			0732	1.2	37			0849	1.3	40	
	1716	0.7	21			1738	0.7	21			1726	0.9	27			1242	3.0	91			1326	2.8	85			1450	3.0	91	
																1902	1.1	34			1914	1.4	43			2129	1.5	46	
7 Sa	0004	3.0	91		22 Su	0020	3.3	101		7 M	0021	2.9	88		22 Tu	0111	3.3	101		7 Th	0140	2.9	88		22 F	0306	3.2	98	
	0608	1.0	30			0619	0.9	27			0652	1.2	37			0759	1.1	34			0851	1.2	37			0957	1.3	40	
	1224	2.6	79			1241	2.7	82			1254	2.5	76			1354	2.7	82			1435	2.7	82			1627	3.1	94	
	1751	1.0	30			1852	1.0	30			1821	1.2	37			2040	1.3	40			2049	1.4	43			2236	1.5	46	
8 Su	0045	2.6	79		23 M	0120	3.0	91		8 Tu	0114	2.6	79		23 W	0224	3.0	91		8 F	0255	2.9	88		23 Sa	0430	3.2	98	
	0732	1.3	40			0800	1.1	34			0839	1.2	37			0928	1.1	34			0956	1.1	34			1054	1.3	40	
	1316	2.3	70			1358	2.4	73			1404	2.3	70			1538	2.7	82			1557	2.9	88			1740	3.3	101	
	1853	1.3	40			2052	1.2	37			2016	1.4	43			2202	1.2	37			2205	1.3	40			2333	1.4	43	
9 M	0148	2.4	73		24 Tu	0246	2.8	85		9 W	0235	2.5	76		24 Th	0355	3.0	91		9 Sa	0424	3.0	91		24 Su	0539	3.3	101	
	0939	1.3	40			0951	1.1	34			1000	1.1	34			1037	1.0	30			1050	0.9	27			1142	1.2	37	
	1446	2.1	64			1613	2.4	73			1544	2.4	73			1713	2.9	88			1710	3.2	98			1829	3.5	107	
	2126	1.4	43			2226	1.1	34			2159	1.3	40			2307	1.1	34			2305	1.1	34						
10 Tu	0415	2.3	70		25 W	0435	2.9	88		10 Th	0427	2.6	79		25 F	0515	3.1	94		10 Su	0535	3.2	98		25 M	0022	1.2	37	
	1059	1.1	34			1108	0.9	27			1057	0.9	27			1130	0.9	27			1138	0.7	21			0630	3.4	104	
	1706	2.2	67			1745	2.8	85			1711	2.6	79			1810	3.2	98			1807	3.5	107			1223	1.1	34	
	2259	1.2	37			2333	0.8	24			2302	1.1	34								2356	0.8	24			1909	3.8	116	
11 W	0551	2.6	79		26 Th	0550	3.2	98		11 F	0539	2.8	85		26 Sa	0000	0.9	27		11 M	0629	3.5	107		26 Tu	0104	1.1	34	
	1152	0.8	24			1202	0.6	18			1142	0.7	21			0611	3.3	101			1222	0.5	15			0713	3.6	110	
	1809	2.6	79			1835	3.2	98			1805	3.0	91			1214	0.7	21			1855	3.9	119			1259	0.9	27	
	2353	0.9	27								2350	0.8	24			1852	3.5	107								1945	4.0	122	
12 Th	0634	2.9	88		27 F	0024	0.6	18		12 Sa	0626	3.2	98		27 Su	0044	0.7	21		12 Tu	0043	0.6	18		27 W	0141	1.0	30	
	1231	0.5	15			0640	3.5	107			1221	0.4	12			0655	3.5	107			0716	3.8	116			0751	3.7	113	
	1849	3.0	91			1244	0.4	12			1846	3.4	104			1250	0.6	18			1305	0.3	9			1333	0.8	24	
						1915	3.6	110								1928	3.8	116			1939	4.3	131			2018	4.1	125	
13 F	0033	0.6	18		28 Sa	0107	0.3	9		13 Su	0031	0.5	15		28 M	0122	0.6	18		13 W	0128	0.4	12		28 Th	0216	0.9	27	
	0708	3.2	98			0721	3.7	113			0705	3.5	107			0733	3.7	113			0800	4.0	122			0827	3.9	119	
	1304	0.3	9			1320	0.2	6			1257	0.2	6			1323	0.4	12			1348	0.2	6			1405	0.8	24	
	1923	3.4	104			1950	3.9	119			1925	3.8	116			2002	4.0	122			2022	4.5	137			2051	4.2	128	
14 Sa	0107	0.4	12		29 Su	0145	0.2	6		14 M	0110	0.3	9		29 Tu	0158	0.5	15		14 Th	0213	0.3	9		29 F	0249	0.8	24	
	0741	3.5	107			0758	3.9	119			0743	3.7	113			0809	3.8	116			0844	4.2	128			0902	3.9	119	
	1334	0.0	0			1353	0.1	3			1333	0.0	0			1354	0.4	12			1431	0.2	6			1437	0.8	24	
	1956	3.7	113			2024	4.0	122			2003	4.1	125			2035	4.1	125			2104	4.7	143			2124	4.3	131	
15 Su	0140	0.1	3		30 M	0220	0.1	3		15 Tu	0149	0.1	3		30 W	0231	0.5	15		15 F	0258	0.3	9		30 Sa	0322	0.8	24	
	0813	3.8	116			0832	4.0	122			0821	3.9	119			0844	3.8	116			0927	4.2	128			0937	3.9	119	
	1405	-0.1	-3			1423	0.0	0			1409	-0.1	-3			1425	0.4	12			1515	0.3	9			1509	0.8	24	
	2029	4.0	122			2057	4.1	125			2040	4.3	131			2108	4.1	125			2147	4.7	1						

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Times and Heights of High and Low Waters

July				August				September													
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height								
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm							
1 Su	0354	0.9	27			1 W	0433	1.0	30	16 Th	0519	1.1	34	1 Sa	0505	1.1	34	16 Su	0003	3.7	113
	1012	3.9	119				1059	4.1	125		1141	4.3	131		1143	4.0	122		0547	1.5	46
	1541	0.8	24				1628	1.1	34		1749	1.3	40		1719	1.3	40		1228	3.6	110
	2229	4.1	125				2309	4.2	128		2356	4.3	131		2351	3.8	116		1859	1.8	55
2 M	0428	0.9	27			2 Th	0505	1.1	34	17 F	0601	1.4	43	2 Su	0546	1.3	40	17 M	0047	3.3	101
	1048	3.8	116				1134	4.0	122		1222	3.9	119		1228	3.8	116		0637	1.8	55
	1614	0.9	27				1705	1.2	37		1843	1.7	52		1811	1.5	46		1320	3.2	98
	2302	4.0	122				2343	4.0	122								2046		2.0	61	
3 Tu	0502	1.0	30			3 F	0543	1.2	37	18 Sa	0038	3.8	116	3 M	0037	3.5	107	18 Tu	0149	2.9	88
	1124	3.6	110				1214	3.8	116		0650	1.7	52		0649	1.6	49		0833	2.0	61
	1650	1.1	34				1748	1.4	43		1309	3.6	110		1325	3.6	110		1456	3.0	91
	2336	3.8	116								1957	1.9	58		1934	1.8	55		2221	1.9	58
4 W	0542	1.1	34			4 Sa	0021	3.8	116	19 Su	0127	3.4	104	4 Tu	0144	3.3	101	19 W	0345	2.8	85
	1204	3.5	107				0632	1.4	43		0801	1.9	58		0836	1.7	52		1023	2.0	61
	1732	1.2	37				1300	3.7	113		1414	3.3	101		1448	3.5	107		1722	3.1	94
							1848	1.6	49		2126	2.1	64		2130	1.8	55		2328	1.7	52
5 Th	0014	3.6	110			5 Su	0109	3.5	107	20 M	0237	3.1	94	5 W	0337	3.2	98	20 Th	0537	3.0	91
	0631	1.3	40				0744	1.6	49		0932	2.0	61		1014	1.6	49		1129	1.7	52
	1249	3.3	101				1401	3.5	107		1617	3.2	98		1635	3.6	110		1815	3.4	104
	1826	1.4	43				2014	1.8	55		2247	2.0	61		2258	1.6	49				
6 F	0058	3.4	104			6 M	0217	3.3	101	21 Tu	0432	3.0	91	6 Th	0532	3.4	104	21 F	0014	1.4	43
	0737	1.4	43				0913	1.6	49		1050	1.9	58		1126	1.4	43		0626	3.3	101
	1343	3.2	98				1523	3.5	107		1753	3.4	104		1754	4.0	122		1213	1.5	46
	1941	1.6	49				2149	1.7	52		2351	1.8	55						1850	3.7	113
7 Sa	0154	3.3	101			7 Tu	0400	3.3	101	22 W	0558	3.2	98	7 F	0002	1.3	40	22 Sa	0049	1.2	37
	0851	1.4	43				1031	1.5	46		1149	1.8	55		0634	3.9	119		0701	3.6	110
	1451	3.2	98				1657	3.7	113		1840	3.7	113		1223	1.0	30		1247	1.2	37
	2107	1.6	49				2307	1.5	46						1850	4.5	137		1921	4.0	122
8 Su	0310	3.2	98			8 W	0540	3.6	110	23 Th	0038	1.6	49	8 Sa	0052	0.9	27	23 Su	0119	0.9	27
	0959	1.3	40				1136	1.3	40		0646	3.5	107		0722	4.3	131		0733	3.9	119
	1613	3.4	104				1810	4.1	125		1232	1.6	49		1312	0.8	24		1317	1.0	30
	2223	1.4	43								1915	3.9	119		1935	4.8	146		1951	4.2	128
9 M	0443	3.3	101			9 Th	0010	1.3	40	24 F	0114	1.4	43	9 Su	0137	0.6	18	24 M	0146	0.7	21
	1100	1.1	34				0644	3.9	119		0723	3.8	116		0803	4.7	143		0804	4.2	128
	1729	3.7	113				1233	1.0	30		1307	1.3	40		1356	0.5	15		1346	0.8	24
	2327	1.2	37				1905	4.6	140		1946	4.2	128		2017	5.1	155		2020	4.4	134
10 Tu	0559	3.6	110			10 F	0104	1.0	30	25 Sa	0146	1.1	34	10 M	0217	0.5	15	25 Tu	0213	0.6	18
	1155	0.9	27				0734	4.3	131		0756	4.0	122		0843	4.9	149		0834	4.4	134
	1829	4.1	125				1323	0.8	24		1338	1.1	34		1437	0.4	12		1414	0.6	18
							1952	4.9	149		2016	4.4	134		2056	5.2	158		2049	4.4	134
11 W	0023	1.0	30			11 Sa	0152	0.7	21	26 Su	0214	1.0	30	11 Tu	0255	0.4	12	26 W	0240	0.5	15
	0656	3.9	119				0819	4.6	140		0828	4.3	131		0920	5.0	152		0905	4.5	137
	1245	0.7	21				1410	0.6	18		1408	1.0	30		1517	0.5	15		1443	0.6	18
	1920	4.5	137				2036	5.2	158		2046	4.5	137		2134	5.1	155		2118	4.4	134
12 Th	0114	0.8	24			12 Su	0237	0.6	18	27 M	0242	0.9	27	12 W	0331	0.5	15	27 Th	0307	0.5	15
	0746	4.2	128				0901	4.8	146		0859	4.4	134		0957	4.9	149		0936	4.5	137
	1334	0.6	18				1455	0.5	15		1436	0.9	27		1555	0.6	18		1513	0.6	18
	2007	4.8	146				2117	5.3	162		2115	4.6	140		2211	4.9	149		2148	4.3	131
13 F	0203	0.6	18			13 M	0319	0.6	18	28 Tu	0308	0.8	24	13 Th	0406	0.7	21	28 F	0335	0.5	15
	0832	4.4	134				0942	4.9	149		0930	4.5	137		1034	4.7	143		1008	4.4	134
	1420	0.5	15				1538	0.6	18		1505	0.8	24		1633	0.9	27		1545	0.6	18
	2051	5.0	152				2158	5.2	158		2143	4.6	140		2248	4.6	140		2219	4.2	128
14 Sa	0250	0.5	15			14 Tu	0400	0.6	18	29 W	0335	0.8	24	14 F	0439	0.9	27	29 Sa	0404	0.7	21
	0916	4.5	137				1022	4.8	146		1001	4.5	137		1110	4.3	131		1043	4.3	131
	1507	0.5	15				1621	0.8	24		1534	0.8	24		1711	1.2	37		1619	0.8	24
	2134	5.1	155				2237	5.0	152		2212	4.5	137		2325	4.1	125		2253	3.9	119
15 Su	0336	0.5	15			15 W	0440	0.8	24	30 Th	0402	0.8	24	15 Sa	0512	1.2	37	30 Su	0438	0.9	27
	0959	4.5	137				1101	4.6	140		1032	4.4	134		1147	4.0	122		1121	4.0	122
	1553	0.6	18				1703	1.0	30		1605	0.9	27		1755	1.5	46		1658	1.0	30
	2217	5.0	152				2317	4.7	143		2242	4.3	131						2331	3.6	110
					31 Tu	0403	0.9	27	31 F	0432	0.9	27									
						1026	4.2	128		1106	4.2	128									
						1556	1.0	30		1639	1.1	34									
						2238	4.3	131		2314	4.1	125									

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

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Times and Heights of High and Low Waters

October				November				December															
Time		Height		Time		Height		Time		Height		Time		Height									
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm								
1 M	0518	1.1	34	16 Tu	0017	3.0	91	1 Th	0125	2.8	85	16 F	0151	2.4	73	1 Sa	0240	2.6	79				
	1206	3.8	116		0542	1.5	46		0809	1.4	43		0807	1.4	43		0921	1.1	34	16 Su	0206	2.4	73
	1750	1.3	40		1241	3.1	94		1408	3.1	94		1419	2.6	79		1505	2.9	88		0814	1.1	34
			1953	1.7	52	2111	1.3	40	2145	1.1	34	2157	0.9	27	1421	2.5	76						
2 Tu	0019	3.3	101	17 W	0114	2.7	82	2 F	0314	2.7	82	17 Sa	0321	2.4	73	2 Su	0422	2.7	82	17 M	0321	2.5	76
	0617	1.4	43		0703	1.7	52		0949	1.3	40		0945	1.3	40		1032	1.0	30		0937	1.1	34
	1304	3.5	107		1350	2.8	85		1546	3.1	94		1601	2.6	79		1632	2.9	88		1545	2.5	76
3 W	0129	3.0	91	18 Th	0244	2.5	76	3 Sa	0501	3.0	91	18 Su	0448	2.6	79	3 M	0536	3.0	91	18 Tu	0441	2.7	82
	0817	1.7	52		0934	1.8	55		1059	1.1	34		1046	1.1	34		1130	0.8	24		1042	0.9	27
	1426	3.3	101		1601	2.7	82		1710	3.3	101		1716	2.8	85		1739	3.1	94		1708	2.6	79
4 Th	0329	2.9	88	19 F	0448	2.6	79	4 Su	0602	3.3	101	19 M	0544	2.9	88	4 Tu	0626	3.3	101	19 W	0545	3.0	91
	1005	1.5	46		1050	1.6	49		1153	0.8	24		1133	0.9	27		1219	0.6	18		1136	0.7	21
	1615	3.4	104		1729	3.0	91		1808	3.6	110		1805	3.0	91		1830	3.3	101		1809	2.9	88
5 F	0523	3.2	98	20 Sa	0550	3.0	91	5 M	0013	0.5	15	20 Tu	0002	0.5	15	5 W	0028	0.4	12	20 Th	0003	0.3	9
	1116	1.2	37		1138	1.3	40		0646	3.7	113		0627	3.3	101		0707	3.5	107		0726	3.3	101
	1736	3.7	113		1813	3.2	98		1238	0.5	15		1213	0.6	18		1302	0.4	12		1224	0.4	12
6 Sa	0621	3.7	113	21 Su	0012	0.9	27	6 Tu	0052	0.3	9	21 W	0038	0.3	9	6 Th	0105	0.3	9	21 F	0047	0.1	3
	1211	0.9	27		0629	3.3	101		0725	4.0	122		0706	3.6	110		0745	3.8	116		0721	3.7	113
	1831	4.1	125		1215	1.0	30		1319	0.3	9		1251	0.4	12		1341	0.3	9		1310	0.2	6
7 Su	0035	0.7	21	22 M	0043	0.6	18	7 W	0128	0.2	6	22 Th	0112	0.1	3	7 F	0139	0.2	6	22 Sa	0129	0.0	0
	0705	4.1	125		0703	3.7	113		0801	4.2	128		0743	3.9	119		0820	3.9	119		0804	4.0	122
	1257	0.6	18		1248	0.7	21		1357	0.2	6		1328	0.2	6		1418	0.3	9		1354	0.0	0
8 M	0116	0.4	12	23 Tu	0113	0.4	12	8 Th	0201	0.1	3	23 F	0147	0.0	0	8 Sa	0212	0.2	6	23 Su	0211	-0.1	-3
	0745	4.4	134		0736	3.9	119		0836	4.3	131		0820	4.1	125		0855	3.9	119		0846	4.2	128
	1338	0.4	12		1319	0.5	15		1433	0.2	6		1405	0.1	3		1453	0.3	9		1438	-0.1	-3
9 Tu	0153	0.3	9	24 W	0142	0.3	9	9 F	0233	0.1	3	24 Sa	0223	-0.1	-3	9 Su	0244	0.2	6	24 M	0254	-0.2	-6
	0822	4.6	140		0808	4.2	128		0911	4.3	131		0858	4.2	128		0929	3.9	119		0927	4.3	131
	1417	0.3	9		1350	0.4	12		1508	0.3	9		1444	0.0	0		1528	0.3	9		1522	-0.1	-3
10 W	0228	0.2	6	25 Th	0212	0.2	6	10 Sa	0304	0.2	6	25 Su	0300	0.0	0	10 M	0316	0.2	6	25 Tu	0338	-0.1	-3
	0858	4.7	143		0841	4.3	131		0945	4.1	125		0937	4.2	128		1003	3.8	116		1010	4.2	128
	1454	0.3	9		1422	0.3	9		1542	0.4	12		1524	0.1	3		1603	0.4	12		1607	0.0	0
11 Th	0301	0.3	9	26 F	0242	0.1	3	11 Su	0335	0.4	12	26 M	0339	0.1	3	11 Tu	0349	0.4	12	26 W	0424	0.1	3
	0933	4.7	143		0914	4.4	134		1019	3.9	119		1018	4.1	125		1037	3.6	110		1053	4.1	125
	1529	0.4	12		1455	0.3	9		1617	0.6	18		1606	0.3	9		1639	0.5	15		1655	0.2	6
12 F	0332	0.4	12	27 Sa	0313	0.2	6	12 M	0405	0.6	18	27 Tu	0421	0.3	9	12 W	0422	0.5	15	27 Th	0513	0.3	9
	1007	4.5	137		0950	4.3	131		1054	3.6	110		1101	3.9	119		1112	3.4	104		1137	3.8	116
	1604	0.6	18		1530	0.3	9		1654	0.8	24		1654	0.5	15		1718	0.6	18		1746	0.4	12
13 Sa	0402	0.6	18	28 Su	0346	0.4	12	13 Tu	0438	0.8	24	28 W	0511	0.6	18	13 Th	0459	0.7	21	28 F	0003	3.2	98
	1042	4.2	128		1027	4.2	128		1131	3.3	101		1148	3.6	110		1148	3.1	94		0610	0.6	18
	1639	0.9	27		1608	0.5	15		1740	1.0	30		1752	0.7	21		1805	0.8	24		1224	3.5	107
14 Su	0432	0.9	27	29 M	0423	0.6	18	14 W	0516	1.1	34	29 Th	0014	3.0	91	14 F	0016	2.7	82	29 Sa	0055	2.9	88
	1117	3.8	116		1108	3.9	119		1213	3.0	91		0617	0.9	27		0544	0.9	27		0721	0.8	24
	1718	1.2	37		1651	0.8	24		1853	1.2	37		1241	3.3	101		1229	2.9	88		1316	3.1	94
15 M	0504	1.2	37	30 Tu	0507	0.9	27	15 Th	0045	2.6	79	30 F	0116	2.7	82	15 Sa	0105	2.6	79	30 Su	0158	2.7	82
	1155	3.4	104		1155	3.6	110		0613	1.3	40		0751	1.1	34		0646	1.0	30		0841	1.0	30
	1809	1.5	46		1746	1.1	34		1305	2.7	82		1345	3.0	91		1317	2.7	82		1419	2.8	85
			31 W	0015	3.0	91	16 F	2030	1.3	40	31 Su	0204	1.0	30	16 M	2022	0.9	27	31 Th	0323	2.6	79	
				0611	1.2	37																	
				1252	3.3	101																	
				1917	1.3	40																	

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Inch'on, Korea, 2018

Times and Heights of High and Low Waters

January				February				March						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm
1 M	0403	25.4	774		16 Tu	0441	23.4	713		1 Th	0536	26.5	808	
	1012	-0.5	-15			1047	2.1	64			1136	-1.9	-58	
	1642	29.1	887			1717	26.4	805			1811	30.0	914	
	2255	1.4	43			2327	3.8	116						
2 Tu	0453	26.2	799		17 W	0522	23.9	728		2 F	0016	0.4	12	
	1100	-1.7	-52			1125	1.6	49			0624	26.9	820	
	1731	30.0	914			1754	26.7	814			1221	-2.0	-61	
	2342	0.8	24								1854	29.8	908	
3 W	0543	26.4	805		18 Th	0003	3.5	107		3 Sa	0057	0.3	9	
	1147	-2.2	-67			0601	24.1	735			0709	26.8	817	
	1820	30.2	920			1201	1.3	40			1304	-1.4	-43	
						1829	26.7	814			1934	29.1	887	
4 Th	0028	0.7	21		19 F	0036	3.3	101		4 Su	0137	0.6	18	
	0632	26.3	802			0638	24.0	732			0751	26.5	808	
	1232	-1.4	-64			1235	1.2	37			1344	-0.3	-9	
	1908	29.9	911			1902	26.6	811			2011	28.0	853	
5 F	0113	1.0	30		20 Sa	0109	3.2	98		5 M	0214	1.2	37	
	0721	25.9	789			0713	24.0	732			0830	25.9	789	
	1317	-1.4	-43			1309	1.1	34			1424	1.2	37	
	1953	29.1	887			1933	26.6	811			2044	26.7	814	
6 Sa	0157	1.6	49		21 Su	0140	2.9	88		6 Tu	0249	2.1	64	
	0808	25.4	774			0746	24.1	735			0907	25.0	762	
	1401	-0.2	-6			1342	1.2	37			1503	3.2	98	
	2035	27.9	850			2002	26.5	808			2117	25.1	765	
7 Su	0239	2.4	73		22 M	0210	2.7	82		7 W	0325	3.4	104	
	0853	24.6	750			0818	24.1	735			0945	23.7	722	
	1445	1.5	46			1416	1.5	46			1544	5.4	165	
	2114	26.5	808			2033	26.3	802			2152	23.3	710	
8 M	0322	3.5	107		23 Tu	0243	2.6	79		8 Th	0404	4.9	149	
	0937	23.5	716			0852	24.0	732			1030	22.3	680	
	1529	3.6	110			1453	2.3	70			1634	7.8	238	
	2154	24.7	753			2107	25.6	780			2237	21.3	649	
9 Tu	0406	4.8	146		24 W	0320	2.9	88		9 F	0455	6.6	201	
	1025	22.2	677			0931	23.6	719			1129	20.9	637	
	1620	6.0	183			1537	3.7	113			1746	9.9	302	
	2238	22.8	695			2148	24.5	747			2343	19.6	597	
10 W	0458	6.0	183		25 Th	0406	3.7	113		10 Sa	0609	7.9	241	
	1122	21.0	640			1024	22.8	695			1253	20.2	616	
	1724	8.1	247			1634	5.6	171			1923	10.4	317	
	2335	21.1	643			2245	22.9	698						
11 Th	0604	6.9	210		26 F	0507	4.8	146		11 Su	0111	18.9	576	
	1235	20.5	625			1137	22.1	674			0737	7.9	241	
	1846	9.2	280			1754	7.3	223			1424	21.1	643	
											2048	9.2	280	
12 F	0047	20.1	613		27 Sa	0003	21.5	655		12 M	0235	19.8	604	
	0718	6.9	210			0627	5.3	162			0851	6.5	198	
	1355	21.1	643			1307	22.4	683			1532	22.9	698	
	2009	8.8	268			1929	7.5	229			2147	7.2	219	
13 Sa	0202	20.3	619		28 Su	0132	21.4	652		13 Tu	0337	21.4	652	
	0827	5.9	180			0750	4.4	134			0946	4.7	143	
	1504	22.7	692			1432	24.1	735			1620	24.6	750	
	2115	7.4	226			2049	6.0	183			2231	5.4	165	
14 Su	0306	21.3	649		29 M	0249	22.6	689		14 W	0425	23.0	701	
	0922	4.5	137			0900	2.5	76			1029	3.1	94	
	1556	24.3	741			1539	26.4	805			1659	25.9	789	
	2206	5.8	177			2152	3.9	119			2308	4.0	122	
15 M	0357	22.5	686		30 Tu	0352	24.2	738		15 Th	0506	24.1	735	
	1007	3.1	94			0958	0.5	15			1107	1.9	58	
	1639	25.6	780			1635	28.4	866			1734	26.7	814	
	2248	4.6	140			2245	2.1	64			2342	3.1	94	
					31 W	0446	25.6	780						
						1049	-1.1	-34						
						1724	29.6	902						
						2332	0.9	27						
					31 Sa	0510	28.0	853						
						1107	0.3	9						
						1729	29.0	884						
						2333	0.2	6						

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Inch'on, Korea, 2018

Times and Heights of High and Low Waters

April				May				June																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Su	0549	28.7	875	6	16 M	0524	28.1	856	37	1 Tu	0601	29.0	884	73	16 W	0535	29.9	911	911	1 F	0022	2.5	76	76	16 Sa	0021	-0.6	-18	-18
	1148	0.2	6			1129	1.2	37			1205	2.4	73			1147	1.6	49			0649	27.9	850			0653	30.8	939	
	1804	28.6	872			1736	27.9	850	9		1806	26.7	814			1746	27.6	841			1300	5.0	152			1304	2.4	73	
						2345	0.3									2355	-0.5	-15			1856	24.5	747			1908	26.7	814	
2 M	0008	0.0	0		17 Tu	0600	29.0	884		2 W	0013	1.1	34		17 Th	0617	30.4	927		2 Sa	0057	3.1	94		17 Su	0107	-0.2	-6	
	0627	28.8	878			1207	0.8	24			0636	28.6	872			1230	1.6	49			0725	27.4	835			0742	30.5	930	
	1226	0.7	21			1811	28.0	853			1241	3.2	98			1830	27.3	832			1336	5.6	171			1351	2.9	88	
	1837	27.9	850								1840	26.0	792			1935	24.0	732			1935	24.0	732			1959	26.2	799	
3 Tu	0042	0.4	12		18 W	0019	-0.3	-9		3 Th	0045	1.7	52		18 F	0036	-0.6	-18		3 Su	0131	3.6	110		18 M	0154	0.6	18	
	0702	28.5	869			0637	29.5	899			0709	28.1	856			0702	30.4	927			0800	26.8	817			0830	29.7	905	
	1302	1.7	52			1246	0.8	24			1317	4.1	125			1314	2.1	64			1412	6.1	186			1438	3.6	110	
	1909	27.0	823			1848	27.8	847			1915	25.2	768			1916	26.8	817			2014	23.4	713			2049	25.6	780	
4 W	0114	1.0	30		19 Th	0055	-0.5	-15		4 F	0118	2.5	76		19 Sa	0119	-0.2	-6		4 M	0207	4.3	131		19 Tu	0241	2.0	61	
	0735	27.9	850			0715	29.7	905			0742	27.4	835			0748	30.0	914			0835	26.1	796			0917	28.4	866	
	1338	2.8	85			1326	1.3	40			1353	5.1	155			1400	2.9	88			1447	6.8	207			1526	4.6	140	
	1941	26.0	792			1928	27.3	832			1951	24.4	744			2004	26.0	792			2053	22.8	695			2141	24.6	750	
5 Th	0145	1.8	55		20 F	0134	-0.3	-9		5 Sa	0151	3.4	104		20 Su	0204	0.7	21		5 Tu	0244	5.2	158		20 W	0332	4.0	122	
	0807	27.2	829			0756	29.4	896			0816	26.6	811			0836	29.1	887			0912	25.3	771			1005	26.8	817	
	1412	4.2	128			1408	2.3	70			1428	6.2	189			1448	4.1	125			1526	7.4	226			1619	5.7	174	
	2013	25.0	762			2010	26.4	805			2027	23.5	716			2054	25.0	762			2136	22.0	671			2237	23.6	719	
6 F	0216	2.9	88		21 Sa	0215	0.6	18		6 Su	0224	4.4	134		21 M	0252	2.2	67		6 W	0325	6.4	195		21 Th	0429	6.2	189	
	0838	26.2	799			0839	28.6	872			0851	25.6	780			0927	27.8	847			0955	24.3	741			1058	25.0	762	
	1447	5.8	177			1454	3.9	119			1505	7.4	226			1541	5.6	171			1612	8.1	247			1719	6.7	204	
	2046	23.7	722			2056	25.0	762			2108	22.3	680			2150	23.6	719			2229	21.2	646			2341	22.7	692	
7 Sa	0248	4.3	131		22 Su	0300	2.2	67		7 M	0302	5.8	177		22 Tu	0346	4.3	131		7 Th	0417	7.7	235		22 F	0539	8.1	247	
	0913	24.9	759			0929	27.1	826			0932	24.2	738			1024	26.0	792			1049	23.2	707			1200	23.5	716	
	1525	7.6	232			1547	5.9	180			1549	8.7	265			1643	7.0	213			1712	8.6	262			1828	7.2	219	
	2125	22.2	677			2152	23.2	707			2157	21.0	640		○	2256	22.4	683		○	2336	20.9	637						
8 Su	0325	6.1	186		23 M	0355	4.3	131		8 Tu	0348	7.5	229		23 W	0452	6.4	195		8 F	0528	8.8	268		23 Sa	0055	22.6	689	
	0956	23.2	707			1032	25.2	768			1025	22.8	695			1131	24.5	747			1157	22.6	689			0659	9.0	274	
	1614	9.5	290			1657	7.9	241			1650	9.9	302			1757	7.8	238			1825	8.4	256			1310	22.7	692	
○	2219	20.4	622		○	2305	21.5	655		○	2305	19.9	607													1937	6.7	204	
9 M	0417	8.1	247		24 Tu	0508	6.5	198		9 W	0455	9.0	274		24 Th	0014	21.8	664		9 Sa	0051	21.4	652		24 Su	0209	23.6	719	
	1101	21.4	652			1155	23.7	722			1139	21.7	661			0613	7.8	238			0652	8.9	271			0814	8.6	262	
	1734	11.1	338			1826	8.7	265			1815	10.3	314			1248	23.6	719			1309	22.8	695			1416	22.9	698	
	2341	19.0	579													1916	7.3	223			1935	7.1	216			2037	5.6	171	
10 Tu	0543	9.7	296		25 W	0038	20.9	637		10 Th	0029	19.7	600		25 F	0137	22.5	686		10 Su	0159	23.1	704		25 M	0311	25.1	765	
	1235	20.6	628			0641	7.4	226			0626	9.6	293			0737	7.7	235			0806	7.7	235			0916	7.5	229	
	1920	10.9	332			1328	23.6	719			1302	21.7	661			1402	23.9	728			1413	23.8	725			1512	23.6	719	
						1954	7.5	229			1936	9.1	277			2023	5.8	177			2033	5.1	155			2126	4.4	134	
11 W	0118	19.1	582		26 Th	0207	22.2	677		11 F	0147	21.0	640		26 Sa	0247	24.3	741		11 M	0257	25.4	774		26 Tu	0359	26.6	811	
	0726	9.5	290			0807	6.5	198			0750	8.6	262			0906	6.6	201			0906	5.9	180			1005	6.3	192	
	1405	21.5	655			1444	24.9	759			1411	22.9	698			1501	24.7	753			1507	25.2	768			1559	24.3	741	
	2038	9.0	274			2100	5.3	162			2036	7.0	213			2115	4.1	125			2122	3.1	94			2209	3.5	107	
12 Th	0236	20.9	637		27 F	0315	24.5	747		12 Sa	0248	23.1	704		27 Su	0341	26.2	799		12 Tu	0346	27.6	841		27 W	0440	27.6	841	
	0841	7.6	232			0913	4.7	143			0851	6.6	201			0941	5.3	162			0957	4.3	131			1048	5.5	168	
	1507	23.4	713			1539	26.4	805			1503	24.5	747			1547	25.5	777			1555	26.3	802			1640	24.8	756	
	2127	6.6	201			2148	3.2	98			2121	4.8	146			2158	2.7	82			2207	1.4	43			2249	2.9	88	
13 F	0330	23.2	707		28 Sa	0406	26.7	814		13 Su	0335	25.4	774		28 M	0424	27.6	841		13 W	0431	29.3	893		28 Th	0518	28.0	853	
	0933	5.4	165			1004	3.1	94			0940	4.7	143			1026	4.3	131			1045	3.0	91			1128	5.1	155	
	1551	25.2	768			1622	27.3	832			1546	26.0	792			1627	25.9	789			1641	26.9	820			1721	24.9	759	
	2205	4.5	137			2229	1.6	49			2200	2.7	82			2236	2.0	61			2251	0.2	6			2326	2.8	85	
14 Sa	0412	25.3	771		29 Su	0448	28.2	860		14 M	0416	27.5	838		29 Tu	0502	28.4	866		14 Th	0517	30.4	927		29 F	0556	28.1	856	
	1014	3.5	107			1047	2.2	67			1024	3.1	94			1107	3.9	119			1131	2.4	73			1206	5.1	155	
	1628	26.6	811			1659	27.6	841			1626	27.0	823			1704	25.9	789			1728	27.1	826			1801	24.7	753	
	2239	2.7																											

Inch'on, Korea, 2018

Times and Heights of High and Low Waters

July				August				September															
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height												
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm												
1 Su	0039 0709 1319 1921	3.2 27.5 5.4 24.2	98 838 165 738	16 M	0056 0731 1336 1948	-0.4 30.9 2.2 27.1	-12 942 67 826	1 W	0130 0751 1358 2008	3.1 27.6 4.2 25.3	94 841 128 771	16 Th	0206 0827 1432 2053	2.1 28.6 2.7 27.0	64 872 82 823	1 Sa	0215 0820 1431 2043	3.4 27.4 2.8 26.8	104 835 85 817	16 Su	0259 0900 1506 2134	6.5 24.7 5.1 25.0	198 753 155 762
2 M	0115 0744 1353 1958	3.5 27.2 5.5 24.0	107 829 168 732	17 Tu	0141 0815 1420 2035	0.4 30.1 2.7 26.7	12 917 82 814	2 Th	0203 0820 1428 2040	3.4 27.4 4.1 25.2	104 835 125 768	17 F	0247 0902 1509 2132	4.0 27.0 3.9 25.8	122 823 119 786	2 Su	0253 0855 1509 2125	4.7 26.3 3.5 26.1	143 802 107 796	17 M	0341 0939 1547 2222	8.7 22.9 7.0 23.2	265 698 213 707
3 Tu	0150 0817 1425 2034	3.8 26.9 5.6 23.8	116 820 171 725	18 W	0226 0857 1503 2121	1.9 28.8 3.5 25.9	58 878 107 789	3 F	0237 0851 1502 2115	4.1 26.9 4.3 25.0	125 820 131 762	18 Sa	0329 0938 1548 2216	6.3 25.2 5.5 24.3	192 768 168 741	3 M	0340 0941 1558 2224	6.5 24.7 4.9 24.8	198 753 149 756	18 Tu	0437 1035 1645 2334	10.9 20.9 9.0 21.8	332 637 274 664
4 W	0224 0849 1459 2110	4.3 26.4 5.8 23.5	131 805 177 716	19 Th	0312 0937 1546 2208	3.8 27.2 4.6 24.8	116 829 140 756	4 Sa	0316 0927 1541 2159	5.2 25.9 4.8 24.4	158 789 146 744	19 Su	0418 1021 1636 2312	8.8 23.1 7.3 22.9	268 704 223 698	4 Tu	0445 1048 1707 2350	8.7 22.8 6.6 23.8	265 695 201 725	19 W	0608 1201 1817	12.3 19.6 10.2	375 597 311
5 Th	0302 0923 1536 2151	5.1 25.7 6.1 23.0	155 783 186 701	20 F	0401 1019 1634 2300	6.1 25.3 6.0 23.6	186 771 183 719	5 Su	0405 1014 1633 2301	6.9 24.5 5.8 23.7	210 747 177 722	20 M	0524 1120 1742	10.9 21.3 8.8	332 649 268	5 W	0619 1224 1840	10.0 21.6 7.1	305 658 216	20 Th	0112 0752 1338 1953	21.5 11.5 20.0 9.4	655 351 610 287
6 F	0345 1005 1622 2244	6.3 24.8 6.6 22.5	192 756 201 686	21 Sa	0459 1109 1732	8.5 23.3 7.2	259 710 219	6 M	0514 1122 1744	8.7 23.1 6.6	265 704 201	21 Tu	0029 0655 1243 1908	22.0 11.9 20.3 9.2	671 363 619 280	6 Th	0131 0757 1358 2007	24.4 9.0 22.5 5.7	744 274 686 174	21 F	0238 0903 1453 2101	23.0 9.3 21.9 7.4	701 283 668 226
7 Sa	0441 1100 1722 2352	7.7 23.7 7.0 22.4	235 722 213 683	22 Su	0005 0613 1214 1843	22.6 10.2 21.8 7.9	689 311 664 241	7 Tu	0024 0645 1249 1908	23.6 9.4 22.4 6.4	719 287 683 195	22 W	0159 0825 1410 2027	22.5 10.9 20.8 8.1	686 332 634 247	7 F	0253 0910 1512 2115	26.5 6.6 24.6 3.4	808 201 750 104	22 Sa	0333 0949 1545 2149	25.0 6.9 24.0 5.2	762 210 732 158
8 Su	0557 1211 1835	8.8 23.0 6.8	268 701 207	23 M	0123 0737 1329 1955	22.7 10.5 21.4 7.5	692 320 652 229	8 W	0152 0813 1412 2025	24.7 8.4 23.2 4.8	753 256 707 146	23 Th	0312 0928 1517 2126	24.1 8.9 22.5 6.3	735 271 686 192	8 Sa	0353 1004 1608 2210	28.8 4.0 26.8 1.2	878 122 817 37	23 Su	0413 1025 1626 2228	26.7 5.0 25.8 3.6	814 152 786 110
9 M	0109 0722 1327 1947	23.3 8.6 23.1 5.6	710 262 704 171	24 Tu	0238 0851 1439 2056	23.8 9.4 22.0 6.3	725 287 671 192	9 Th	0305 0922 1519 2128	26.9 6.4 24.8 2.7	820 195 756 82	24 F	0402 1014 1607 2211	25.9 6.9 24.2 4.6	789 210 738 140	9 Su	0442 1050 1657 2258	30.5 2.0 28.5 -0.1	930 61 869 -3	24 M	0447 1058 1702 2303	27.9 3.5 27.0 2.5	850 107 823 76
10 Tu	0221 0836 1434 2049	25.1 7.3 24.1 3.8	765 235 723 116	25 W	0336 0947 1536 2146	25.3 7.9 23.2 5.0	771 241 707 152	10 F	0404 1017 1616 2221	29.1 4.3 26.5 0.9	887 131 808 27	25 Sa	0441 1052 1649 2251	27.3 5.3 25.4 3.4	832 162 774 104	10 M	0525 1132 1742 2342	31.3 0.8 29.4 -0.5	954 24 896 -15	25 Tu	0518 1128 1736 2337	28.4 2.6 27.6 2.0	866 79 841 61
11 W	0321 0937 1532 2144	27.3 5.5 25.4 2.0	832 168 774 61	26 Th	0422 1032 1623 2230	26.7 6.5 24.2 3.9	814 198 738 119	11 Sa	0455 1106 1708 2310	30.7 2.6 27.7 -0.4	936 79 844 -12	26 Su	0516 1126 1727 2327	28.2 4.3 26.2 2.7	860 131 799 82	11 Tu	0605 1211 1825	31.1 0.4 29.6	948 12 902	26 W	0549 1158 1808	28.6 2.0 28.0	872 61 853
12 Th	0414 1029 1625 2234	29.2 3.9 26.4 0.5	890 119 805 15	27 F	0502 1112 1705 2309	27.6 5.5 24.9 3.2	841 168 759 98	12 Su	0542 1151 1757 2357	31.5 1.7 28.3 -0.8	960 52 863 -24	27 M	0549 1159 1803	28.5 3.7 26.5	869 113 808	12 W	0024 0644 1249 1906	-0.1 30.4 0.6 29.3	-3 927 18 893	27 Th	0011 0619 1227 1840	1.8 28.4 1.6 28.2	55 866 49 860
13 F	0505 1118 1717 2322	30.5 2.8 27.1 -0.4	930 85 826 -12	28 Sa	0539 1149 1746 2346	28.0 5.0 25.2 2.9	853 152 768 88	13 M	0628 1234 1844	31.5 1.3 28.5	960 40 869	28 Tu	0001 0621 1229 1837	2.3 28.5 3.4 26.7	70 869 104 814	13 Th	0104 0720 1324 1945	1.1 29.2 1.2 28.6	34 890 37 872	28 F	0044 0649 1258 1911	2.0 28.2 1.3 28.4	61 860 40 866
14 Sa	0554 1206 1808	31.2 2.2 27.3	951 67 832	29 Su	0614 1224 1825	28.1 4.7 25.3	856 143 771	14 Tu	0041 0711 1315 1930	-0.4 31.0 1.4 28.3	-12 945 43 863	29 W	0034 0651 1259 1909	2.3 28.4 3.1 26.8	70 866 94 817	14 F	0143 0753 1359 2021	2.6 27.8 2.2 27.7	79 847 67 844	29 Sa	0119 0721 1331 1944	2.4 27.8 1.2 28.4	73 847 37 866
15 Su	0009 0643 1252 1859	-0.7 31.3 2.1 27.3	-21 954 64 832	30 M	0022 0649 1257 1902	2.9 28.0 4.6 25.3	88 853 140 771	15 W	0124 0750 1354 2012	0.5 30.0 1.8 27.8	15 914 55 847	30 Th	0107 0720 1328 1939	2.4 28.2 2.7 26.9	73 860 82 820	15 Sa	0221 0826 1432 2056	4.5 26.4 3.5 26.5	137 805 107 808	30 Su	0156 0755 1406 2021	3.1 27.1 1.6 28.0	94 826 49 853
				31 Tu	0056 0721 1328 1936	2.9 27.8 4.4 25.2	88 847 134 768					31 F	0140 0749 1358 2010	2.8 27.9 2.6 27.0	85 850 79 823								

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Inch'on, Korea, 2018

Times and Heights of High and Low Waters

October				November				December															
	Time		Height	Time	Height		Time	Height	Time	Height		Time	Height										
	h	m			ft	cm				h	m		ft	cm	h	m	ft	cm					
1 M	0236	4.4	134	16 Tu	0312	8.2	250	1 Th	0419	7.5	229	16 F	0431	9.6	293	1 Sa	0515	6.7	204	16 Su	0444	7.7	235
	0834	26.0	792		0909	22.4	683		1026	21.9	668		1044	19.7	600		1133	21.4	652		1106	19.9	607
	1446	2.7	82		1511	6.4	195		1630	5.7	174		1634	8.5	259		1732	6.4	195		1658	7.9	241
	2105	27.0	823		2143	23.6	719		2315	24.1	735		2318	21.4	652		2318	6.4	195		2329	21.4	652
2 Tu	0324	6.3	192	17 W	0401	10.0	305	2 F	0543	8.6	262	17 Sa	0551	10.0	305	2 Su	0008	23.2	707	17 M	0554	8.0	244
	0922	24.2	738		1003	20.7	631		1156	21.0	640		1205	19.2	585		0635	6.8	207		1221	19.8	604
	1536	4.4	134		1601	8.3	253		1758	7.1	216		1802	9.4	287		1257	21.6	658		1821	8.6	262
	2204	25.3	771		2247	22.0	671		0046	23.7	722		0040	21.2	646		1859	7.0	213		0042	21.1	643
3 W	0428	8.5	259	18 Th	0517	11.5	351	3 Sa	0714	7.8	238	18 Su	0716	9.2	280	3 M	0750	5.6	171	18 Tu	0709	7.2	219
	1031	22.2	677		1122	19.4	591		1328	21.8	664		1327	20.1	613		1416	23.1	704		0709	7.2	219
	1644	6.4	195		1722	9.9	302		1929	6.6	201		1930	8.7	265		2017	6.2	189		1438	23.0	701
	2330	23.9	728		0016	21.1	643		0208	24.7	753		0152	22.1	674		2017	6.2	189		1943	7.9	241
4 Th	0602	9.8	299	19 F	0701	11.3	344	4 Su	0828	5.7	174	19 M	0820	7.2	219	4 Tu	0850	3.8	116	19 W	0812	5.5	168
	1209	21.1	643		1258	19.4	591		1444	24.1	735		1432	22.1	674		1518	25.1	765		0812	5.5	168
	1819	7.4	226		1905	9.9	302		2043	4.8	146		2035	7.0	213		2118	4.8	146		1438	23.0	701
	0113	24.0	732		0146	21.9	668		0310	26.3	802		0247	23.6	719		0327	24.7	753		2048	6.3	192
5 F	0740	8.8	268	20 Sa	0821	9.4	287	5 M	0922	3.2	98	20 Tu	0906	5.0	152	5 W	0938	2.1	64	20 Th	0904	3.5	107
	1347	22.1	674		1418	21.1	643		1540	26.5	808		1521	24.4	744		1606	26.8	817		0904	3.5	107
	1951	6.3	192		2024	8.2	250		2139	3.0	91		2125	5.0	152		2207	3.6	110		1529	25.2	768
	0236	25.9	789		0250	23.6	719		0357	27.5	838		0331	25.0	762		0410	25.3	771		2140	4.5	137
6 Sa	0853	6.2	189	21 Su	0912	7.0	213	6 Tu	1005	1.3	40	21 W	0945	2.9	88	6 Th	1019	1.0	30	21 F	0950	1.5	46
	1501	24.5	747		1514	23.4	713		1625	28.3	863		1601	26.3	802		1647	27.9	850		1614	27.1	826
	2102	4.0	122		2117	6.0	183		2225	1.8	55		2208	3.4	104		2250	3.0	91		1627	27.9	850
	0336	28.0	853		0335	25.4	774		0436	28.0	853		0409	26.1	796		0449	25.5	777		2227	2.9	88
7 Su	0946	3.5	107	22 M	0950	4.8	146	7 W	1044	0.2	6	22 Th	1021	1.3	40	7 F	1056	0.6	18	22 Sa	1033	-0.1	-3
	1557	27.0	823		1557	25.5	777		1705	29.3	893		1639	27.9	850		1724	28.2	860		1658	28.5	869
	2156	1.9	58		2159	4.1	125		2306	1.5	46		2248	2.3	70		2329	2.9	88		2311	1.9	58
	0422	29.5	899		0411	26.8	817		0512	27.8	847		0446	26.7	814		0525	25.2	768		0507	25.9	789
8 M	1030	1.4	43	23 Tu	1023	3.0	91	8 Th	1120	-0.1	-3	23 F	1057	0.1	3	8 Sa	1132	0.7	21	23 Su	1116	-1.2	-37
	1643	28.9	881		1633	27.1	826		1742	29.4	896		1716	28.9	881		1800	28.0	853		1742	29.4	896
	2242	0.5	15		2236	2.7	82		2346	1.8	55		2327	1.7	52		2250	3.0	91		2356	1.3	40
	0502	30.1	917		0444	27.6	841		0547	27.1	826		0524	26.9	820		0602	3.2	98		0553	26.1	796
9 Tu	1109	0.2	6	24 W	1055	1.7	52	9 F	1154	0.2	6	24 Sa	1134	-0.7	-21	9 Su	1208	1.1	34	24 M	1200	-1.8	-55
	1724	29.8	908		1707	28.1	856		1818	29.0	884		1754	29.4	896		1835	27.5	838		1828	29.7	905
	2324	0.2	6		2312	1.9	58		0023	2.7	82		0008	1.5	46		0045	3.8	116		0553	26.1	796
	0539	29.9	911		0516	27.9	850		0621	26.2	799		0604	26.7	814		0640	24.2	738		0641	26.1	796
10 W	1146	-0.1	-3	25 Th	1126	0.8	24	10 Sa	1228	0.9	27	25 Su	1213	-1.0	-30	10 M	1243	1.6	49	25 Tu	1244	-1.9	-58
	1803	30.0	914		1740	28.8	878		1852	28.2	860		1836	29.5	899		1911	26.9	820		1915	29.6	902
	0004	0.8	24		2347	1.6	49		0100	3.7	113		0050	1.7	52		0121	4.4	134		0125	1.2	37
	0614	29.0	884		0548	27.9	850		0656	25.2	768		0648	26.3	802		0719	23.6	719		0730	25.8	786
11 Th	1221	0.2	6	26 F	1814	29.1	887	11 Su	1302	1.8	55	26 M	1254	-0.9	-27	11 Tu	1318	2.2	67	26 W	1330	-1.5	-46
	1841	29.5	899		1926	27.4	835		0137	4.8	146		1920	29.3	893		1946	26.3	802		2002	29.1	887
	0043	1.9	58		0024	1.7	52		0732	24.2	738		0050	1.7	52		0157	4.9	149		0210	1.7	52
	0648	27.8	847		0623	27.6	841		1335	2.8	85		0734	25.7	783		0757	23.0	701		0819	25.4	774
12 F	1254	1.0	30	27 Sa	1233	0.0	0	12 M	2001	26.4	805	27 Tu	1338	-0.4	-12	12 W	1353	2.9	88	27 Th	1416	-0.4	-12
	1916	28.8	878		1849	29.3	893		0213	6.0	183		2007	28.7	875		2021	25.6	780		2048	28.2	860
	0120	3.3	101		0102	2.1	64		0810	23.3	710		0219	3.1	94		0232	5.5	168		0256	2.4	73
	0721	26.6	811		0700	27.1	826		1410	3.9	119		0823	24.8	756		0836	22.4	683		0909	24.6	750
13 Sa	1327	2.0	61	28 Su	1309	0.1	3	13 Tu	2037	25.4	774	28 W	1424	0.8	24	13 Th	1429	3.8	116	28 F	1504	1.3	40
	1950	27.8	847		1928	29.1	887		0251	7.1	216		1424	0.8	24		2057	24.7	753		2135	26.7	814
	0156	4.8	146		0142	2.8	85		0851	22.1	674		0219	3.1	94		0309	6.2	189		0256	2.4	73
	0755	25.3	771		0740	26.3	802		1447	5.3	162		0823	24.8	756		0917	21.6	658		0909	24.6	750
14 Su	1400	3.2	98	29 M	1349	0.7	21	14 W	2118	24.1	735	29 Th	1515	2.5	76	14 F	1508	5.0	152	29 Sa	1557	3.5	107
	2024	26.6	811		2010	28.5	869		0251	7.1	216		2150	26.1	796		2137	23.6	719		2225	24.8	756
	0156	4.8	146		0142	2.8	85		0851	22.1	674		0309	4.3	131		0309	6.2	189		0345	3.6	110
	0755	25.3	771		0740	26.3	802		1447	5.3	162		0916	23.6	719		0917	21.6	658		1002	23.4	713
15 M	1400	3.2	98	30 Tu	2010	28.5	869	15 Th	2118	24.1	735	30 F	1615	4.6	140	15 Sa	1555	6.5	198	30 Su	1700	5.9	180
	2024	26.6	811		2010	28.5	869		0334	8.4	256		1615	4.6	140		2225	22.4	683		2323	22.9	698
	0233	6.5	198		0226	4.1	125		0939	20.9													

Namp'O-Hang, Korea, 2018

Times and Heights of High and Low Waters

January					February					March																							
Time		Height			Time		Height			Time		Height			Time		Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm														
1 M	0215	2.3	70		16 Tu	0301	3.2	98		1 Th	0346	1.2	37		16 F	0348	2.6	79		1 Th	0243	2.1	64		16 F	0245	3.2	98					
	0823	14.3	436			0914	13.6	415			0957	15.3	466			0959	14.7	448			0900	15.2	463			0905	15.0	457					
	1412	0.9	27			1448	2.1	64			1540	0.4	12			1540	1.9	58			1441	1.3	40			1445	2.6	79					
	2057	18.9	576			2136	17.6	536			2221	19.9	607			2216	17.9	546	●		2125	19.2	585			2122	17.4	530					
2 Tu	0308	1.6	49		17 W	0338	2.8	85		2 F	0431	0.9	27		17 Sa	0418	2.3	70		2 F	0329	1.3	40		17 Sa	0318	2.6	79					
	0916	14.6	445			0947	13.8	421			1041	15.8	482			1026	15.1	460			0946	16.3	497			0936	15.7	479					
	1501	0.4	12			1523	1.9	58			1626	0.3	9			1612	1.7	52			1530	0.7	21			1521	2.1	64					
	2145	19.7	600			2206	17.8	543	●		2303	19.8	604			2241	18.0	549			2207	19.5	594			2151	17.6	536					
3 W	0357	1.1	34		18 Th	0410	2.6	79		3 Sa	0514	0.8	24		18 Su	0447	2.0	61		3 Sa	0411	0.9	27		18 Su	0349	2.1	64					
	1004	14.9	454			1016	14.0	427			1123	16.0	488			1053	15.6	475			1027	17.0	518			1004	16.3	497					
	1548	0.3	9			1556	1.8	55			1711	0.7	21			1645	1.5	46			1615	0.5	15			1555	1.8	55					
	2230	20.0	610			2234	17.9	546			2342	19.2	585			2307	18.0	549			2246	19.3	588			2218	17.7	539					
4 Th	0444	1.0	30		19 F	0441	2.4	73		4 Su	0554	1.0	30		19 M	0516	1.7	52		4 Su	0449	0.8	24		19 M	0418	1.8	55					
	1049	15.0	457			1043	14.3	436			1203	16.0	488			1121	16.1	491			1105	17.4	530			1032	16.9	515					
	1634	0.4	12			1628	1.7	52			1756	1.3	40			1719	1.6	49			1657	0.8	24			1628	1.6	49					
	2314	19.8	604			2300	17.9	546			2021	18.2	555			2057	1.6	49			2049	1.0	30			2047	1.5	46					
5 F	0530	1.2	37		20 Sa	0511	2.2	67		5 M	0635	1.5	46		20 Tu	0547	1.6	49		5 M	0525	1.0	30		20 Tu	0447	1.5	46					
	1134	14.9	454			1111	14.5	442			1244	15.8	482			1154	16.4	500			1141	17.4	530			1101	17.5	533					
	1721	0.9	27			1701	1.7	52			1842	2.3	70			1756	1.9	58			1738	1.3	40			1703	1.6	49					
	2357	19.2	585			2328	17.9	546			0059	17.0	518			0008	17.4	530			0601	1.4	43			0518	1.4	43					
6 Sa	0617	1.5	46		21 Su	0543	2.1	64		6 Tu	0717	2.1	64		21 W	0623	1.6	49		6 Tu	1217	17.2	524		21 W	1133	17.8	543					
	1219	14.7	448			1141	14.8	451			1327	15.4	469			1231	16.6	506			1819	2.2	67			1741	1.9	58					
	1810	1.7	52			1736	1.9	58			1932	3.3	101			1839	2.5	76			2346	17.0	518										
	0040	18.2	555			0617	2.0	61			0139	15.7	479			0045	16.7	509			0030	16.8	512			0553	1.6	49					
7 Su	0704	2.0	61		22 M	1216	15.0	457		7 W	0802	2.8	85		22 Th	0703	2.0	61		7 W	0637	2.0	61		22 Th	1210	17.9	546					
	1307	14.4	439			1815	2.2	67			1415	15.0	457			1315	16.5	503			1253	16.8	512			1824	2.5	76					
	1902	2.7	82			0032	17.4	530			0224	14.3	436			0129	15.6	475			0105	15.6	475			0024	16.2	494					
	0125	17.0	518			0656	2.1	64			0854	3.5	107			0753	2.6	79			0716	2.8	85			0634	2.1	64					
8 M	1359	14.1	430		23 Tu	1257	15.1	460		8 Th	1512	14.5	442		23 F	1408	16.1	491		8 Th	1334	16.2	494		23 F	1254	17.6	536					
	2001	3.8	116			1901	2.8	85	●		2134	5.3	162			2037	4.3	131			1951	4.2	128			1915	3.4	104					
	0215	15.6	475			0112	16.7	509			9 F	0320	13.1	399			24 Sa	0221	14.3		436		9 F	0144		14.4	439		24 Sa	0108	15.1	460	
	0849	3.0	91			0741	2.3	70				0953	4.0	122				0855	3.3		101			0802		3.7	113			0722	2.9	88	
1459	13.8	421		1344	15.1	460		1623	14.2	433			1513	15.6	475			1420	15.4	469		1346		17.0	518								
2108	4.7	143		1957	3.6	110		2247	5.6	171			2158	5.0	152	●		2049	5.2	158		2020		4.5	137								
9 Tu	0311	14.3	436		24 W	0158	15.7	479		10 Sa	0435	12.2	372		25 Su	0330	13.1	399		10 Sa	0231	13.2	402		25 Su	0202							

Namp'O-Hang, Korea, 2018

Times and Heights of High and Low Waters

April				May				June																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Su	0344	1.1	34		16 M	0315	2.0	61		1 Tu	0348	1.6	49		16 W	0317	1.7	52		1 F	0424	2.8	85		16 Sa	0419	1.9	58	
	1008	18.0	549			0939	17.5	533			1021	19.0	579			0949	19.2	585			1101	19.0	579			1059	20.6	628	
	1600	1.1	34			1535	2.0	61			1620	2.2	67			1556	2.2	67			1711	3.5	107			1717	2.8	85	
	2225	18.4	561			2151	17.1	521			2234	16.6	506			2203	16.2	494			2313	15.1	460			2317	15.6	475	
2 M	0420	1.1	34		17 Tu	0347	1.7	52		2 W	0421	1.8	55		17 Th	0354	1.6	49		2 Sa	0457	3.0	91		17 Su	0505	2.3	70	
	1043	18.4	561			1009	18.2	555			1052	19.0	579			1026	19.7	600			1131	18.8	573			1143	20.3	619	
	1639	1.3	40			1611	1.8	55			1656	2.4	73			1639	2.2	67			1747	3.7	113			1806	3.1	94	
	2258	17.8	543			2222	17.0	518			2305	16.1	491			2241	16.0	488			2344	14.9	454						
3 Tu	0453	1.3	40		18 W	0419	1.5	46		3 Th	0452	2.2	67		18 F	0433	1.7	52		3 Su	0532	3.4	104		18 M	0004	15.4	469	
	1116	18.4	561			1042	18.7	570			1123	18.8	573			1106	19.9	607			1203	18.5	564			0554	3.0	91	
	1717	1.7	52			1649	1.8	55			1732	2.9	88			1723	2.5	76			1825	4.0	122			1230	19.6	597	
	2330	17.0	518			2255	16.7	509			2335	15.5	472			2321	15.6	475								1858	3.5	107	
4 W	0525	1.7	52		19 Th	0453	1.5	46		4 F	0524	2.6	79		19 Sa	0514	2.1	64		4 M	0018	14.7	448		19 Tu	0055	15.1	460	
	1149	18.2	555			1117	19.0	579			1154	18.4	561			1148	19.6	597			0611	3.9	119			0649	3.8	116	
	1754	2.4	73			1730	2.2	67			1809	3.4	104			1811	3.1	94			1239	18.1	552			1320	18.6	567	
						2330	16.2	494													1907	4.3	131			1954	4.0	122	
5 Th	0001	16.2	494		20 F	0530	1.8	55		5 Sa	0006	14.9	454		20 Su	0006	15.0	457		5 Tu	0058	14.5	442		20 W	0152	14.8	451	
	0558	2.3	70			1156	18.9	576			0600	3.2	98			0601	2.8	85			0657	4.5	137			0753	4.8	146	
	1221	17.8	543			1815	2.8	85			1228	17.9	546			1235	19.0	579			1320	17.5	533			1415	17.5	533	
	1834	3.2	98								1850	4.0	122			1906	3.7	113			1957	4.6	140			2055	4.3	131	
6 F	0033	15.3	466		21 Sa	0011	15.4	469		6 Su	0042	14.4	439		21 M	0057	14.4	439		6 W	0146	14.3	436		21 Th	0259	14.7	448	
	0634	3.0	91			0612	2.4	73			0640	3.9	119			0655	3.7	113			0751	5.1	155			0906	5.6	171	
	1257	17.2	524			1241	18.4	561			1307	17.3	527			1328	18.1	552			1407	16.9	515			1517	16.4	500	
	1918	4.0	122			1908	3.7	113			1938	4.6	140			2009	4.3	131			2052	4.8	146			2158	4.4	134	
7 Sa	0110	14.4	439		22 Su	0058	14.5	442		7 M	0125	13.8	421		22 Tu	0158	13.8	421		7 Th	0242	14.2	433		22 F	0416	14.9	454	
	0717	3.8	116			0704	3.4	104			0730	4.6	140			0803	4.7	143			0856	5.6	171			1022	6.0	183	
	1339	16.4	500			1334	17.6	536			1353	16.6	506			1430	17.0	518			1501	16.2	494			1630	15.5	472	
	2010	4.9	149			2014	4.5	137			2035	5.1	155			2119	4.7	143			2152	4.7	143			2259	4.3	131	
8 Su	0154	13.5	411		23 M	0156	13.5	411		8 Tu	0217	13.3	405		23 W	0314	13.5	411		8 F	0347	14.3	436		23 Sa	0536	15.6	475	
	0809	4.7	143			0810	4.4	134			0831	5.3	162			0923	5.5	168			1007	5.8	177			1134	5.9	180	
	1430	15.6	475			1438	16.6	506			1448	15.9	485			1544	16.1	491			1604	15.7	479			1747	15.0	457	
	2115	5.6	171			2132	5.1	155			2140	5.3	162			2230	4.6	140			2251	4.4	134			2355	4.1	125	
9 M	0252	12.7	387		24 Tu	0314	12.8	390		9 W	0324	13.1	399		24 Th	0445	13.8	421		9 Sa	0459	14.8	451		24 Su	0644	16.6	506	
	0916	5.4	165			0935	5.1	155			0944	5.7	174			1045	5.6	171			1116	5.6	171			1238	5.5	168	
	1537	14.9	454			1602	15.8	482			1555	15.3	466			1709	15.7	479			1712	15.4	469			1855	15.0	457	
	2227	5.8	177			2254	4.9	149			2245	5.1	155			2335	4.1	125			2346	4.0	122						
10 Tu	0411	12.3	375		25 W	0500	12.9	393		10 Th	0444	13.2	402		25 F	0610	14.9	454		10 Su	0610	15.7	479		25 M	0047	3.8	116	
	1032	5.6	171			1102	5.1	155			1056	5.6	171			1159	5.1	155			1219	5.1	155			0739	17.5	533	
	1701	14.7	448			1739	15.8	482			1710	15.2	463			1826	15.7	479			1821	15.3	466			1334	5.0	152	
	2336	5.4	165								2344	4.6	140													1952	15.1	460	
11 W	0548	12.6	384		26 Th	0005	4.2	128		11 F	0603	14.0	427		26 Sa	0032	3.5	107		11 M	0037	3.4	104		26 Tu	0134	3.5	107	
	1143	5.2	158			0634	14.0	427			1201	5.1	155			0714	16.2	494			0710	16.9	515			0826	18.3	558	
	1822	15.1	460			1218	4.5	137			1821	15.4	469			1302	4.5	137			1315	4.4	134			1423	4.6	140	
						1858	16.4	500								1928	15.9	485			1922	15.4	469			2039	15.2	463	
12 Th	0035	4.8	146		27 F	0104	3.3	101		12 Sa	0036	3.9	119		27 Su	0121	3.0	91		12 Tu	0124	2.8	85		27 W	0216	3.3	101	
	0701	13.5	411			0738	15.6	475			0705	15.2	463			0805	17.5	533			0802	18.1	552			0906	18.9	576	
	1243	4.6	140			1321	3.6	110			1257	4.4	134			1356	3.9	119			1408	3.7	113			1506	4.2	128	
	1923	15.8	482			1956	17.0	518			1918	15.8	482			2018	16.1	491			2015	15.6	475			2119	15.2	463	
13 F	0124	3.9	119		28 Sa	0153	2.5	76		13 Su	0122	3.2	98		28 M	0204	2.6	79		13 W	0209	2.3	70		28 Th	0254	3.2	98	
	0752	14.6	445			0828	17.0	518			0753	16.4	500			0848	18.4	561			0848	19.2	585			0941	19.2	585	
	1334	3.8	116			1415	2.8	85			1347	3.7	113			1443	3.4	104			1457	3.1	94			1544	4.1	125	
	2009	16.4	500			2044	17.3	527			2005	16.1	491			2101	16.1	491			2103	15.8	482			2154	15.2	463	
14 Sa	0205	3.2	98		29 Su	0236	1.9	58		14 M	0202	2.6	79		29 Tu	0243	2.4	73		14 Th	0252	2.0	61		29 F	0329	3.2	98	
	0832	15.7	479			0910	18.0	549			0834	17.5	533			0926	18.9	576			0932	20.0	610			1014	19.3	588	
	1418	3.0	91			1501	2.3	70			1432	3.0	91			1524	3.2	98			1544	2.7	82			1619	4.0	122	
	2047	16.8	512			2125	17.4	530			2047	16.3	497			2139	15.9	485			2148	15.8	482						

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Times and Heights of High and Low Waters

July					August					September																			
Time		Height			Time		Height			Time		Height			Time		Height												
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Su	0436	3.4	104		16 M	0458	2.3	70		1 W	0524	3.6	110		16 Th	0023	17.8	543		1 Sa	0011	18.0	549		16 Su	0118	17.6	536	
	1112	19.1	582			1135	20.8	634			1147	19.1	582			0621	3.5	107			0618	3.9	119			0735	5.2	158	
	1725	4.0	122			1753	2.9	88			1803	3.7	113			1240	18.8	573			1224	17.9	546			1330	15.4	469	
	2323	15.3	466			2357	16.5	503								1854	3.4	104			1839	3.5	107			1943	4.9	149	
2 M	0510	3.5	107		17 Tu	0547	2.9	88		2 Th	0004	16.7	509		17 F	0107	17.5	533		2 Su	0052	18.0	549		17 M	0205	16.8	512	
	1142	19.0	579			1219	20.1	613			0602	3.9	119			0712	4.5	137			0706	4.6	140			0835	6.2	189	
	1759	4.0	122			1839	3.2	98			1219	18.8	573			1321	17.5	533			1305	17.0	518			1419	14.2	433	
	2355	15.4	469								1839	3.7	113			1940	4.1	125			1924	4.0	122			2040	5.7	174	
3 Tu	0547	3.8	116		18 W	0044	16.4	500		3 F	0041	16.9	515		18 Sa	0155	17.0	518		3 M	0140	17.7	539		18 Tu	0305	16.1	491	
	1214	18.8	573			0639	3.7	113			0644	4.4	134			0809	5.6	171			0806	5.5	168			0945	6.8	207	
	1836	4.1	125			1303	19.0	579			1255	18.2	555			1407	16.1	491			1354	15.9	485			1526	13.3	405	
						1928	3.7	113			1920	3.9	119			2031	4.9	149			2021	4.6	140			2149	6.2	189	
4 W	0032	15.5	472		19 Th	0134	16.2	494		4 Sa	0124	16.9	515		19 Su	0251	16.5	503		4 Tu	0240	17.2	524		19 W	0424	15.6	475	
	0628	4.2	128			0736	4.7	143			0735	5.0	152			0914	6.5	198			0921	6.2	189			1100	6.8	207	
	1249	18.4	561			1351	17.7	539			1338	17.4	530			1502	14.8	451			1456	14.7	448			1659	13.0	396	
	1918	4.2	128			2021	4.2	128			2008	4.2	128			2130	5.5	168			2134	5.2	158			2302	6.2	189	
5 Th	0113	15.5	472		20 F	0231	15.9	485		5 Su	0215	16.8	512		20 M	0400	16.1	491		5 W	0356	16.9	515		20 Th	0551	15.9	485	
	0716	4.8	146			0840	5.7	174			0837	5.8	177			1026	7.0	213			1047	6.4	195			1207	6.3	192	
	1330	17.8	543			1444	16.4	500			1428	16.4	500			1614	13.9	424			1621	13.9	424			1828	13.6	415	
	2005	4.3	131			2117	4.6	140			2106	4.5	137			2235	5.8	177			2255	5.2	158						
6 F	0202	15.5	472		21 Sa	0336	15.8	482		6 M	0316	16.7	509		21 Tu	0521	16.1	491		6 Th	0530	17.1	521		21 F	0008	5.7	174	
	0812	5.4	165			0950	6.4	195			0951	6.3	192			1138	6.9	210			1207	5.8	177			0700	16.6	506	
	1417	17.1	521			1547	15.2	463			1529	15.4	469			1744	13.6	415			1805	14.0	427			1303	5.6	171	
	2058	4.4	134			2217	4.9	149			2212	4.7	143			2339	5.7	174								1928	14.5	442	
7 Sa	0258	15.6	475		22 Su	0452	16.0	488		7 Tu	0430	16.8	512		22 W	0637	16.7	509		7 F	0010	4.6	140		22 Sa	0103	5.0	152	
	0919	5.9	180			1102	6.6	201			1110	6.3	192			1242	6.4	195			0657	18.1	552			0751	17.3	527	
	1510	16.3	497			1702	14.4	439			1646	14.6	445			1901	14.0	427			1314	4.7	143			1348	4.8	146	
	2157	4.4	134			2317	4.9	149			2321	4.6	140								1929	15.1	460			2013	15.4	469	
8 Su	0403	15.8	482		23 M	0607	16.5	503		8 W	0555	17.4	530		23 Th	0038	5.3	162		8 Sa	0115	3.7	113		23 Su	0150	4.2	128	
	1031	6.0	183			1210	6.4	195			1224	5.7	174			0736	17.5	533			0802	19.3	588			0832	17.9	546	
	1614	15.5	472			1821	14.2	433			1817	14.4	439			1336	5.8	177			1410	3.6	110			1427	4.1	125	
	2257	4.3	131													1957	14.6	445			2028	16.3	497			2050	16.3	497	
9 M	0516	16.4	500		24 Tu	0013	4.8	146		9 Th	0027	4.1	125		24 F	0129	4.8	146		9 Su	0212	2.7	82		24 M	0230	3.6	110	
	1142	5.8	177			0711	17.3	527			0713	18.5	564			0823	18.2	555			0854	20.2	616			0906	18.3	558	
	1727	15.0	457			1310	6.0	183			1329	4.8	146			1421	5.1	155			1459	2.7	82			1501	3.5	107	
	2356	3.9	119			1927	14.4	439			1936	15.0	457			2040	15.3	466			2117	17.5	533			2121	16.9	515	
10 Tu	0629	17.3	527		25 W	0105	4.5	137		10 F	0127	3.4	104		25 Sa	0214	4.2	128		10 M	0303	2.0	61		25 Tu	0306	3.2	98	
	1247	5.2	158			0803	18.0	549			0816	19.7	600			0901	18.7	570			0940	20.6	628			0935	18.4	561	
	1843	14.9	454			1402	5.4	165			1427	3.9	119			1459	4.6	140			1543	2.1	64			1531	3.1	94	
						2018	14.8	451			2038	15.8	482			2116	15.9	485			2201	18.4	561			2149	17.5	533	
11 W	0052	3.4	104		26 Th	0152	4.2	128		11 Sa	0222	2.6	79		26 Su	0252	3.8	116		11 Tu	0350	1.7	52		26 W	0339	2.9	88	
	0734	18.5	564			0846	18.7	570			0908	20.6	628			0934	19.0	579			1021	20.5	625			1002	18.3	558	
	1347	4.4	134			1446	4.9	149			1518	3.1	94			1533	4.1	125			1623	1.9	58			1559	2.8	85	
	1951	15.2	463			2101	15.1	460			2129	16.7	509			2147	16.3	497			2241	18.9	576			2215	17.9	546	
12 Th	0144	2.8	85		27 F	0233	3.9	119		12 Su	0313	2.1	64		27 M	0327	3.4	104		12 W	0434	1.8	55		27 Th	0411	2.7	82	
	0830	19.6	597			0923	19.1	582			0955	21.2	646			1003	19.1	582			1100	20.0	610			1027	18.2	555	
	1441	3.7	113			1524	4.6	140			1604	2.6	79			1602	3.8	116			1701	2.0	61			1627	2.6	79	
	2048	15.6	475			2136	15.4	469			2215	17.3	527			2214	16.7	509			2319	19.0	579			2242	18.4	561	
13 F	0234	2.4	73		28 Sa	0311	3.7	113		13 M	0401	1.9	58		28 Tu	0359	3.3	101		13 Th	0517	2.3	70		28 F	0444	2.7	82	
	0920	20.5	625			0956	19.3	588			1039	21.2	646			1029	19.1	582			1136	19.1	582			1053	17.9	546	
	1532	3.1	94			1558	4.3	131			1648	2.4	73			1631	3.6	110			1738	2.5	76			1656	2.5	76	
	2138	16.0	488																										

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Times and Heights of High and Low Waters

October				November				December																
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height											
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 M	0027	18.6	567			1 Th	0200	17.0	518	16 F	0232	15.5	472	1 Sa	0258	15.7	479	16 Su	0240	15.2	463			
	0646	4.2	128				0851	5.0	152		0923	5.0	152		0949	3.9	119		0928	3.8	116			
	1240	16.0	488				1431	13.0	396		1510	12.6	384		1554	13.0	396		1524	13.2	402	1524	13.2	402
	1850	3.7	113				2050	5.1	155		2126	5.6	171		2204	5.0	152		2143	5.0	152			
2 Tu	0115	18.0	549			2 F	0315	16.1	491	17 Sa	0338	14.9	454	2 Su	0419	14.9	454	17 M	0339	14.5	442			
	0746	5.1	155				1014	5.0	152		1028	4.8	146		1059	3.6	110		1028	3.7	113			
	1331	14.9	454				1607	12.8	390		1630	12.8	390		1727	13.8	421		1636	13.5	411	1727	13.8	421
	1948	4.6	140				2222	5.3	162		2240	5.5	168		2324	4.7	143		2324	4.7	143			
3 W	0215	17.3	527			3 Sa	0449	15.7	479	18 Su	0452	14.6	445	3 M	0545	14.7	448	18 Tu	0447	14.0	427			
	0903	5.9	180				1129	4.4	134		1127	4.3	131		1201	2.9	88		1125	3.3	101			
	1437	13.8	421				1751	13.7	418		1749	13.6	415		1842	15.2	463		1749	14.3	436	1749	14.3	436
	2107	5.3	162				2343	4.7	143		2346	5.0	152		1940	16.5	503		2359	4.5	137			
4 Th	0332	16.6	506			4 Su	0617	16.1	491	19 M	0603	14.7	448	4 Tu	0034	4.0	122	19 W	0558	13.8	421			
	1030	5.9	180				1231	3.4	104		1219	3.6	110		0656	14.9	454		1218	2.7	82			
	1611	13.2	402				1905	15.3	466		1851	14.7	448		1254	2.3	70		1853	15.4	469	1254	2.3	70
	2236	5.5	168												1940	16.5	503							
5 F	0510	16.5	503			5 M	0051	3.7	113	20 Tu	0042	4.3	131	5 W	0132	3.2	98	20 Th	0058	3.8	116			
	1150	5.2	158				0723	16.7	509		0701	15.0	457		0753	15.1	460		0702	13.9	424			
	1801	13.8	421				1324	2.4	73		1305	2.8	85		1341	1.7	52		1306	2.1	64			
	2357	4.8	146				1959	16.8	512		1939	15.9	485		2027	17.7	539		1945	16.6	506			
6 Sa	0640	17.3	527			6 Tu	0148	2.8	85	21 W	0132	3.5	107	6 Th	0223	2.6	79	21 F	0150	3.1	94			
	1256	4.1	125				0815	17.1	521		0749	15.3	466		0841	15.2	463		0757	14.1	430			
	1920	15.2	463				1409	1.7	52		1345	2.2	67		1424	1.4	43		1351	1.6	49			
							2045	18.1	552		2019	16.9	515		2108	18.4	561		2031	17.6	536			
7 Su	0104	3.7	113			7 W	0238	2.1	64	22 Th	0216	2.8	85	7 F	0308	2.2	67	22 Sa	0238	2.4	73			
	0745	18.2	555				0900	17.2	524		0830	15.5	472		0922	15.1	460		0844	14.3	436			
	1349	3.0	91				1450	1.2	37		1422	1.7	52		1502	1.3	40		1433	1.1	34			
	2016	16.8	512				2125	18.9	576		2056	17.8	543		2145	18.7	570		2114	18.5	564			
8 M	0201	2.7	82			8 Th	0322	1.8	55	23 F	0257	2.3	70	8 Sa	0348	2.1	64	23 Su	0324	1.9	58			
	0836	18.9	576				0940	17.0	518		0907	15.5	472		0959	14.9	454		0928	14.5	442			
	1436	2.1	64				1527	1.1	34		1458	1.3	40		1538	1.4	43		1515	0.8	24			
	2102	18.1	552				2202	19.3	588		2131	18.5	564		2219	18.7	570		2155	19.2	585			
9 Tu	0251	1.9	58			9 F	0403	1.8	55	24 Sa	0337	1.9	58	9 Su	0425	2.1	64	24 M	0408	1.6	49			
	0921	19.2	585				1016	16.5	503		0942	15.4	469		1032	14.6	445		1010	14.6	445			
	1517	1.6	49				1602	1.3	40		1533	1.1	34		1611	1.6	49		1557	0.6	18			
	2143	19.0	579				2236	19.3	588		2205	19.0	579		2250	18.6	567		2236	19.4	591			
10 W	0336	1.6	49			10 Sa	0441	2.0	61	25 Su	0417	1.8	55	10 M	0500	2.3	70	25 Tu	0452	1.5	46			
	1001	19.0	579				1049	15.9	485		1017	15.3	466		1103	14.3	436		1052	14.6	445			
	1555	1.4	43				1635	1.7	52		1609	1.1	34		1645	1.9	58		1640	0.8	24			
	2221	19.4	591				2308	19.0	579		2242	19.3	588		2321	18.2	555		2317	19.3	588			
11 Th	0418	1.7	52			11 Su	0518	2.5	76	26 M	0458	2.0	61	11 Tu	0535	2.6	79	26 W	0537	1.6	49			
	1037	18.4	561				1121	15.2	463		1055	15.0	457		1133	14.1	430		1135	14.5	442			
	1630	1.6	49				1708	2.2	67		1648	1.3	40		1719	2.3	70		1726	1.2	37			
	2257	19.5	594				2341	18.5	564		2321	19.1	582		2352	17.8	543							
12 F	0458	2.1	64			12 M	0555	3.1	94	27 Tu	0542	2.3	70	12 W	0611	2.9	88	27 Th	0001	18.8	573			
	1112	17.6	536				1154	14.6	445		1136	14.5	442		1207	13.8	421		0625	2.0	61			
	1705	2.1	64				1744	2.9	88		1731	1.8	55		1757	2.7	82		1223	14.3	436			
	2331	19.2	585												1816	2.0	61							
13 Sa	0538	2.8	85			13 Tu	0015	17.8	543	28 W	0005	18.7	570	13 Th	0027	17.3	527	28 F	0047	18.0	549			
	1145	16.6	506				0636	3.7	113		0632	2.8	85		0652	3.2	98		0717	2.4	73			
	1739	2.7	82				1230	14.0	427		1224	14.0	427		1245	13.6	415		1315	14.0	427			
							1824	3.6	110		1820	2.7	82		1840	3.3	101		1914	3.0	91			
14 Su	0006	18.6	567			14 W	0053	17.1	521	29 Th	0054	17.9	546	14 F	0105	16.7	509	29 Sa	0138	16.8	512			
	0619	3.6	110				0723	4.3	131		0729	3.4	104		0738	3.5	107		0814	2.8	85			
	1219	15.6	475				1312	13.4	408		1319	13.4	408		1329	13.4	408		1415	13.7	418			
	1816	3.5	107				1912	4.4	134		1921	3.7	113		1931	4.0	122		2022	4.0	122			
15 M	0043	17.9	546			15 Th	0138	16.3	497	30 F	0150	16.8	512	15 Sa	0149	16.0	488	30 Su	0235	15.5	472			
	0704	4.5	137				0819	4.8	146		0837	3.9	119		0830	3.7	113		0917	3.2	98			
	1257	14.6	445				1404	12.9	393		1427	13.0	396		1422	13.2	402		1527	13.7	418			
	1859	4.4	134				2013	5.1	155		2038	4.6	140		2033	4.7	143		2140	4.7	143			
					31 W	0100	18.0	549																
						0736	4.4	134																
						1321	13.8	421																
						1929	4.2	128																

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Dalian, China, 2018

Times and Heights of High and Low Waters

January				February				March															
Time	Height			Time	Height			Time	Height			Time	Height										
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm				
1 M	0302	1.0	29		1 Th	0431	0.4	11		16 F	0443	1.1	34		1 Th	0333	0.8	25		16 F	0344	1.5	45
	0843	7.5	228			1010	7.9	240			1024	7.6	231			0916	7.8	237			0931	7.7	236
	1453	-0.5	-15			1620	-0.9	-28			1628	0.3	9			1525	-0.2	-6			1535	1.0	29
	2116	10.2	311			2241	10.4	318			2244	9.3	283			2146	10.0	304			2150	9.1	276
2 Tu	0353	0.6	18		2 F	0514	0.2	5		17 Sa	0509	0.9	28		2 F	0415	0.4	13		17 Sa	0411	1.1	35
	0932	7.7	234			1054	8.2	250			1054	7.8	239			0959	8.4	255			1002	8.2	251
	1542	-0.8	-25			1706	-0.9	-28			1700	0.2	7			1611	-0.5	-14			1609	0.7	20
	2204	10.6	324			2323	10.3	314			2312	9.3	284			2226	10.0	305			2218	9.2	280
3 W	0442	0.4	11		3 Sa	0555	0.1	2		18 Su	0537	0.7	22		3 Sa	0453	0.2	6		18 Su	0438	0.9	26
	1020	7.8	239			1138	8.4	255			1125	8.1	246			1040	8.8	268			1031	8.6	263
	1629	-1.0	-31			1751	-0.7	-20			1733	0.2	7			1654	-0.5	-14			1642	0.5	16
	2250	10.8	328			2303	9.4	287			2341	9.3	283			2304	9.9	301			2246	9.3	282
4 Th	0529	0.3	8		4 Su	0605	10.0	304		19 M	0606	0.5	16		4 Su	0529	0.1	2		19 M	0505	0.6	19
	1106	7.9	241			0636	0.1	2			1158	8.3	252			1120	9.0	275			1102	9.0	273
	1716	-1.0	-29			1223	8.4	255			1808	0.3	10			1736	-0.2	-7			1716	0.5	15
	2337	10.7	325			1836	-0.2	-7			20013	9.2	280			2341	9.6	293			2317	9.2	281
5 F	0616	0.3	8		5 M	0716	0.2	5		20 Tu	0638	0.4	11		5 M	0605	0.1	2		20 Tu	0536	0.4	12
	1154	7.9	241			1309	8.3	252			1234	8.4	257			1200	9.1	278			1135	9.3	283
	1804	-0.7	-21			1922	0.4	12			1846	0.5	16			1817	0.1	4			1752	0.5	16
						2011	1.1	35			20049	8.9	272			20019	9.2	280			2351	9.1	277
6 Sa	0703	0.3	10		6 Tu	0757	0.4	11		21 W	0713	0.3	8		6 Tu	0640	0.2	5		21 W	0609	0.2	7
	1243	7.8	238			1358	8.0	245			1314	8.5	259			1241	9.1	276			1212	9.5	290
	1853	-0.2	-6			2011	1.1	35			1929	0.9	26			1859	0.7	20			1832	0.7	21
7 Su	0112	9.7	297		7 W	0212	8.1	246		22 Th	0129	8.5	259		7 W	0057	8.7	264		22 Th	0028	8.9	270
	0750	0.5	14			0839	0.7	21			0753	0.3	9			0716	0.4	11			0645	0.2	5
	1336	7.6	232			1452	7.7	235			1400	8.5	259			1324	8.8	269			1252	9.6	293
	1945	0.5	15			2106	1.9	59			2019	1.3	41			1943	1.3	40			1917	1.0	31
8 M	0201	9.0	275		8 Th	0301	7.2	220		23 F	0214	7.9	241		8 Th	0136	8.0	244		23 F	0109	8.4	256
	0838	0.7	20			0926	1.1	35			0839	0.5	15			0752	0.8	23			0726	0.3	9
	1434	7.4	225			1556	7.4	225			1456	8.3	254			1410	8.5	259			1339	9.5	291
	2041	1.2	38			2214	2.6	80			2120	1.9	59			2031	2.0	61			2009	1.5	46
9 Tu	0254	8.2	250		9 F	0359	6.4	195		24 Sa	0310	7.1	217		9 F	0219	7.3	221		24 Sa	0156	7.8	237
	0930	0.9	28			1023	1.6	49			0934	0.9	26			0832	1.2	38			0812	0.6	19
	1540	7.2	218			1710	7.2	219			1607	8.2	249			1502	8.0	245			1435	9.2	281
	2147	2.0	61			2341	3.0	92			2241	2.4	74			2130	2.7	83			2112	2.1	65
10 W	0353	7.4	225		10 Sa	0516	5.8	177		25 Su	0424	6.4	196		10 Sa	0310	6.5	197		25 Su	0254	7.1	215
	1027	1.2	36			1134	1.9	58			1044	1.1	35			0919	1.9	57			0909	1.1	35
	1655	7.1	216			1831	7.3	222			1732	8.2	250			1606	7.6	231			1547	8.8	268
	2304	2.5	76													2250	3.2	99			2235	2.6	79
11 Th	0500	6.7	204		11 Su	0613	2.9	89		26 M	0019	2.5	75		11 Su	0419	5.8	177		26 M	0413	6.4	196
	1130	1.3	41			0644	5.6	172			0556	6.1	187			1026	2.4	74			1025	1.7	51
	1810	7.3	221			1248	1.9	59			1210	1.2	36			1728	7.3	224			1715	8.6	261
						1942	7.7	234			1856	8.6	262										
12 F	0029	2.7	81		12 M	0220	2.5	76		27 Tu	0143	2.0	61		12 M	0027	3.3	100		27 Tu	0011	2.6	79
	0613	6.3	191			0753	5.9	181			0723	6.5	197			0559	5.5	169			0553	6.3	193
	1233	1.4	42			1352	1.6	50			1329	0.8	24			1157	2.7	81			1159	1.8	55
	1917	7.6	232			2035	8.1	248			2006	9.2	279			1855	7.5	229			1845	8.7	265
13 Sa	0144	2.4	74		13 Tu	0307	2.0	61		28 W	0245	1.4	42		13 Tu	0146	2.9	89		28 W	0131	2.1	64
	0720	6.2	189			0842	6.4	195			0826	7.1	217			0724	5.9	180			0719	6.9	210
	1332	1.2	38			1441	1.2	37			1432	0.3	8			1316	2.4	73			1322	1.4	44
	2012	8.1	246			2115	8.6	262			2101	9.6	294			2000	8.0	243			1955	9.1	277
14 Su	0240	2.1	63		14 W	0344	1.6	49		29 Th	0237	2.4	72		14 W	0237	2.4	72		29 Th	0228	1.5	46
	0815	6.3	193			0921	6.9	209			0818	6.5	199			0818	6.5	199			0819	7.7	235
	1421	1.0	31			1521	0.8	25			1414	1.9	57			1414	1.9	57			1425	0.9	28
	2057	8.5	259			2148	9.0	273			2045	8.4	257			2045	8.4	257			2047	9.4	287
15 M	0325	1.7	52		15 Th	0415	1.3	40		30 F	0314	1.9	57		15 Th	0314	1.9	57		30 F	0313	1.0	31
	0859	6.6	201			0953	7.3	221			0858	7.2	219			0858	7.2	219			0905	8.5	258
	1502	0.8	23			1555	0.5	15			1458	1.3	41			1458	1.3	41			1516	0.5	15
	2133	8.9	270			2217	9.2	280			2120	8.8	269			2120	8.8	269			2128	9.6	292
16 Tu	0402	1.4	44		16 W	0431	0.4	11		31 Th	0345	0.7	21		31 Sa	0351	0.7	20		31 Sa	0351	0.7	20
	0937	6.9	210			0923	7.5	228			0923	7.5	228			0945	9.1	276			0945	9.1	276
	1538	0.5	16			1532	-0.7	-21			1532	-0.7	-21			1600	0.3	9			1600	0.3	9
	2205	9.1	278			2156	10.3	314			2156	10.3	314			2205	9.1	276			2205	9.5	291

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Dalian, China, 2018

Times and Heights of High and Low Waters

April				May				June																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Su	0426	0.5	14		16 M	0401	0.9	28		1 Tu	0430	0.9	26		16 W	0401	0.8	24		1 F	0511	1.6	48		16 Sa	0507	0.7	21	
	1022	9.4	288			1004	9.5	290			1039	10.2	312			1014	10.9	332			1131	10.7	327			1129	12.1	368	
	1641	0.3	10			1621	1.0	30			1705	1.4	42			1643	1.4	43			1807	2.4	74			1811	1.8	56	
	2241	9.4	287		●	2219	9.2	279			2252	8.8	268			2231	9.0	275			2346	8.4	257			2349	9.0	274	
2 M	0500	0.4	11		17 Tu	0432	0.7	20		2 W	0502	0.9	27		17 Th	0440	0.6	18		2 Sa	0544	1.7	51		17 Su	0555	0.8	25	
	1059	9.7	296			1037	10.0	304			1115	10.3	315			1054	11.3	344			1206	10.7	326			1219	11.9	364	
	1720	0.5	15			1659	0.9	27			1743	1.6	48			1729	1.4	43			1843	2.6	78			1902	1.9	58	
	2316	9.2	280			2253	9.1	278			2328	8.6	262			2313	8.9	272											
3 Tu	0532	0.4	11		18 W	0506	0.4	13		3 Th	0535	1.0	31		18 F	0521	0.5	15		3 Su	0023	8.3	253		18 M	0040	8.9	272	
	1137	9.8	299			1113	10.3	315			1150	10.4	316			1138	11.5	350			0619	1.9	57			0646	1.1	35	
	1759	0.8	25			1739	0.9	28			1822	1.8	56			1817	1.5	47			1241	10.5	321			1311	11.6	353	
	2352	8.9	270			2330	9.0	274			2359	8.7	266			2359	8.7	266			1920	2.7	83			1954	2.0	61	
4 W	0605	0.5	14		19 Th	0542	0.3	9		4 F	0005	8.3	254		19 Sa	0606	0.6	18		4 M	0101	8.1	247		19 Tu	0135	8.8	268	
	1215	9.8	298			1152	10.6	323			0608	1.2	36			1226	11.4	348			0656	2.2	66			0741	1.7	51	
	1839	1.2	37			1823	1.1	33			1227	10.2	312			1909	1.7	53			1319	10.3	313			1406	11.0	335	
											1901	2.1	65								2000	2.9	88			2048	2.1	65	
5 Th	0029	8.5	258		20 F	0011	8.7	266		5 Sa	0043	8.0	245		20 Su	0048	8.4	257		5 Tu	0143	7.9	241		20 W	0237	8.7	265	
	0639	0.7	21			0622	0.3	10			0643	1.5	45			0655	0.9	27			0736	2.6	78			0842	2.3	71	
	1253	9.6	293			1236	10.6	324			1304	10.0	305			1319	11.1	339			1401	9.9	301			1506	10.3	313	
	1920	1.7	51			1912	1.4	42			1942	2.5	76			2005	2.0	61			2043	3.1	93		●	2146	2.3	70	
6 F	0107	8.0	243		21 Sa	0056	8.3	253		6 Su	0123	7.7	234		21 M	0144	8.1	248		6 W	0231	7.7	235		21 Th	0348	8.6	263	
	0714	1.0	32			0707	0.6	17			0719	1.9	58			0749	1.4	43			0824	3.0	92			0952	3.0	90	
	1334	9.3	284			1326	10.4	318			1345	9.6	293			1418	10.6	322			1450	9.4	286			1610	9.5	291	
	2004	2.2	67			2007	1.8	56			2027	2.9	87			2107	2.3	69			2134	3.1	96			2246	2.4	73	
7 Sa	0148	7.4	225		22 Su	0148	7.8	237		7 M	0207	7.3	221		22 Tu	0249	7.8	239		7 Th	0331	7.6	231		22 F	0503	8.8	267	
	0750	1.5	47			0757	1.0	31			0801	2.4	73			0852	2.1	63			0923	3.5	106			1109	3.4	103	
	1418	8.9	270			1424	10.0	304			1432	9.1	278		●	1527	9.9	302			1549	8.9	271			1717	8.9	272	
	2055	2.8	85			2112	2.3	70			2120	3.2	97			2215	2.4	74		●	2233	3.1	95			2347	2.5	75	
8 Su	0234	6.8	206		23 M	0251	7.2	220		8 Tu	0302	6.9	210		23 W	0408	7.7	235		8 F	0442	7.7	235		23 Sa	0615	9.1	276	
	0833	2.2	66			0858	1.6	50			0851	3.0	90			1010	2.6	80			1038	3.8	115			1228	3.5	107	
	1512	8.3	253		●	1537	9.4	286		●	1532	8.6	262			1642	9.3	284			1656	8.6	261			1824	8.5	260	
	2202	3.3	100			2231	2.6	79			2227	3.4	103			2325	2.4	74			2334	3.0	90						
9 M	0336	6.2	189		24 Tu	0413	6.9	210		9 W	0414	6.7	203		24 Th	0533	8.0	243		9 Sa	0555	8.1	248		24 Su	0045	2.4	74	
	0928	2.8	85			1018	2.2	68			1002	3.4	105			1135	2.9	88			1158	3.7	112			0717	9.5	289	
	1624	7.8	239			1703	9.0	273			1645	8.2	251			1756	9.0	273			1804	8.4	257			1338	3.4	104	
	2326	3.5	106			2354	2.5	77			2338	3.3	101													1925	8.3	254	
10 Tu	0504	5.9	181		25 W	0550	7.1	215		10 Th	0542	6.9	209		25 F	0030	2.3	69		10 Su	0030	2.6	79		25 M	0139	2.3	71	
	1057	3.2	97			1151	2.4	72			1135	3.5	108			0646	8.5	259			0656	8.8	269			0811	9.9	302	
	1751	7.7	235			1826	8.9	270			1802	8.1	248			1254	2.8	85			1306	3.3	101			1435	3.2	97	
															1902	8.8	268			1905	8.5	259			2017	8.3	253		
11 W	0048	3.2	99		26 Th	0105	2.1	65		11 F	0040	3.0	90		26 Sa	0126	2.0	61		11 M	0121	2.2	66		26 Tu	0226	2.2	68	
	0641	6.2	190			0708	7.7	235			0654	7.5	228			0743	9.1	278			0745	9.6	293			0856	10.3	314	
	1229	3.1	93			1312	2.1	64			1250	3.2	98			1358	2.5	77			1405	2.9	87			1523	3.0	91	
	1908	7.9	242			1933	9.0	274			1906	8.3	253			1956	8.7	266			1957	8.7	264			2102	8.4	255	
12 Th	0148	2.8	84		27 F	0201	1.7	52		12 Sa	0130	2.5	75		27 Su	0213	1.8	54		12 Tu	0207	1.7	53		27 W	0307	2.1	64	
	0742	6.9	211			0804	8.5	259			0744	8.3	252			0830	9.7	295			0830	10.4	317			0936	10.6	323	
	1338	2.6	78			1414	1.7	51			1349	2.7	83			1450	2.3	70			1456	2.4	74			1605	2.9	87	
	2001	8.3	254			2024	9.1	277			1955	8.6	261			2040	8.7	265			2044	8.8	269			2142	8.5	258	
13 F	0229	2.2	67		28 Sa	0245	1.3	40		13 Su	0212	1.9	59																

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Times and Heights of High and Low Waters

July				August				September																	
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height												
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm											
1 Su	0526	2.0	60		16 M	0546	0.9	28		1 W	0015	9.3	282												
	1148	11.0	335			1208	12.1	370			0617	2.2	68		16 Th	0708	1.8	55							
	1824	2.8	86			1845	1.8	56			1231	10.9	331			1314	10.8	330		1 Sa	0100	10.0	305		
2 M	0003	8.7	265		17 Tu	0027	9.6	293		2 Th	0050	9.3	284			17 F	0144	10.1	308			2 Su	0143	10.0	305
	0600	2.1	64			0636	1.2	38			0654	2.5	75		0759		2.5	76			0801		2.9	88	
	1221	10.9	327			1255	11.7	357			1304	10.6	323		1359		10.1	307		1356	9.4		287		
3 Tu	0039	8.7	264		18 W	0118	9.6	293		3 F	0130	9.4	285		18 Sa	0238	9.8	300		3 M	0234	9.9	302		
	0636	2.3	69			0728	1.8	54			0735	2.8	85			0854	3.2	99			0858	3.4	103		
	1255	10.7	327			1344	11.1	339			1342	10.2	312			1447	9.2	281			1446	8.7	265		
4 W	0117	8.6	263		19 Th	0214	9.5	290		4 Sa	0215	9.4	285		19 Su	0340	9.5	290		4 Tu	0338	9.7	297		
	0715	2.6	78			0823	2.4	74			1425	9.7	296			1000	3.9	120			1012	3.8	117		
	1332	10.4	317			2108	2.2	66			2055	2.4	74			1544	8.4	255			1554	8.0	244		
5 Th	0200	8.5	260		20 F	0316	9.4	285		5 Su	0308	9.4	285		20 M	0450	9.3	283		5 W	0459	9.7	296		
	0758	3.0	90			0924	3.1	96			0920	3.6	111			1122	4.4	134			1147	4.0	121		
	1414	10.0	304			1530	9.5	291			1517	9.1	276			1655	7.7	234			1722	7.6	231		
6 F	0251	8.5	259		21 Sa	0424	9.3	282		6 M	0413	9.4	286		21 Tu	0608	9.2	281		6 Th	0625	10.0	304		
	0850	3.4	104			1036	3.8	115			1033	4.0	122			1250	4.4	135			1315	3.6	109		
	1502	9.5	289			1631	8.8	267			1623	8.4	257			1823	7.4	225			1854	7.8	237		
7 Sa	0351	8.6	261		22 Su	0536	9.3	283		7 Tu	0528	9.6	294		22 W	0028	3.4	105		7 F	0059	2.4	72		
	0953	3.8	115			1157	4.1	126			1200	4.1	124			0724	9.5	289			0740	10.5	321		
	1600	9.0	273			1741	8.1	248			1742	8.1	246			1402	4.1	124			1421	2.9	88		
8 Su	0500	8.8	269		23 M	0001	2.9	88		8 W	0642	10.2	310		23 Th	0135	3.2	99		8 Sa	0207	1.8	55		
	1109	3.9	121			0647	9.5	290			1323	3.7	114			0823	9.9	301			0838	11.1	337		
	1708	8.6	261			1316	4.1	125			1902	8.1	246			1454	3.6	110			1511	2.3	69		
9 M	0608	9.3	284		24 Tu	0104	2.9	89		9 Th	0111	2.2	68		24 F	0229	2.9	87		9 Su	0303	1.2	38		
	1228	3.8	116			0751	9.8	300			0750	10.8	330			0906	10.3	314			0926	11.4	348		
	1818	8.4	255			1422	3.8	116			1431	3.2	97			1534	3.2	98			1554	1.8	54		
10 Tu	0036	2.4	73		25 W	0200	2.8	85		10 F	0214	1.8	54		25 Sa	0312	2.5	75		10 M	0351	0.9	27		
	0709	10.0	305			0843	10.2	312			1525	2.6	80			0941	10.6	323			1007	11.5	351		
	1338	3.4	104			1512	3.5	106			2104	9.0	273			1606	2.9	88			1633	1.4	44		
11 W	0133	2.0	61		26 Th	0248	2.6	79		11 Sa	0309	1.3	39		26 Su	0348	2.2	66		11 Tu	0436	0.8	24		
	0805	10.8	328			0924	10.6	322			0938	11.9	364			1011	10.8	329			1046	11.4	347		
	1440	3.0	90			1554	3.2	98			1613	2.2	66			1635	2.7	81			1711	1.2	38		
12 Th	0228	1.6	48		27 F	0328	2.4	72		12 Su	0400	0.9	28		27 M	0421	2.0	60		12 W	0519	0.9	28		
	0856	11.5	349			1000	10.8	330			1023	12.2	371			1039	10.9	331			1124	11.1	338		
	1534	2.5	77			1629	3.0	92			1656	1.9	57			1702	2.5	76			1748	1.2	36		
13 F	0319	1.2	36		28 Sa	0404	2.2	67		13 M	0448	0.8	25		28 Tu	0453	1.9	58		13 Th	0603	1.3	39		
	0945	12.0	365			1031	11.0	335			1107	12.1	370			1106	10.8	330			1203	10.7	325		
	1624	2.2	68			1701	2.9	89			1738	1.7	51			1729	2.3	71			1825	1.2	38		
14 Sa	0408	0.9	27		29 Su	0437	2.1	63		14 Tu	0534	0.9	28		29 W	0525	1.9	59		14 F	0026	10.6	324		
	1033	12.3	374			1101	11.1	338			1149	11.9	362			1134	10.7	327			0647	1.8	54		
	1712	2.0	62			1730	2.8	86			1819	1.6	49			1756	2.2	66			1243	10.1	308		
15 Su	0457	0.8	24		30 M	0510	2.0	62		15 W	0007	10.3	313		30 Th	0558	2.0	62		15 Sa	0111	10.4	318		
	1120	12.3	376			1130	11.1	338			0621	1.3	39			1204	10.6	323			0734	2.4	73		
	1759	1.9	58			1759	2.8	84			1231	11.4	348			1826	2.0	61			1324	9.4	287		
16 M	0543	2.1	64		31 Tu	0543	2.1	64		31 F	0023	9.9	303		31 F	0634	2.2	67		30 Su	0034	10.5	320		
	1159	11.0	336			1828	2.6	80			1859	1.9	57			1237	10.3	315			0659	2.1	63		
																1906	1.3	40			1250	9.3	283		

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Dalian, China, 2018

Times and Heights of High and Low Waters

October					November					December																			
Time		Height			Time		Height			Time		Height			Time		Height												
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 M	0118	10.5	319		16 Tu	0208	9.5	290		1 Th	0301	9.6	292		16 F	0316	8.2	251		1 Sa	0401	8.7	264		16 Su	0321	7.7	234	
	0748	2.5	75			0851	3.2	97			0958	2.6	78			1015	3.0	90			1048	1.6	48			1009	2.0	62	
	1334	8.7	265			1425	7.3	222			1537	6.9	211			1559	6.2	190			1653	7.0	213			1617	6.3	193	
	1950	1.6	48			2025	2.6	79			2142	2.2	67			2147	3.1	95			2255	2.1	63			2209	2.8	85	
2 Tu	0209	10.2	311		17 W	0304	8.9	272		2 F	0425	9.1	277		17 Sa	0428	7.8	237		2 Su	0518	8.2	250		17 M	0427	7.2	220	
	0848	3.0	90			0958	3.6	110			1120	2.5	76			1125	2.8	86			1156	1.4	42			1111	1.9	58	
	1428	8.0	244			1528	6.7	205			1713	7.0	212			1728	6.4	194			1814	7.5	228			1734	6.7	203	
	2043	2.0	61			2123	3.2	98			2315	2.4	73			2321	3.2	99								2334	2.9	87	
3 W	0315	9.8	298		18 Th	0416	8.4	256		3 Sa	0551	8.9	271		18 Su	0545	7.6	231		3 M	0618	2.0	62		18 Tu	0538	7.0	212	
	1005	3.4	103			1118	3.7	114			1234	2.1	63			1227	2.5	75			0628	8.0	243			1210	1.6	49	
	1541	7.4	225			1656	6.5	197			1838	7.6	231			1843	7.0	212			1256	1.0	31			1839	7.3	222	
	2153	2.5	76			2253	3.6	110													1917	8.2	249						
4 Th	0441	9.5	289		19 F	0541	8.2	250		4 Su	0640	2.1	64		19 M	0639	3.0	90		4 Tu	0129	1.7	53		19 W	0648	2.5	77	
	1138	3.4	103			1235	3.5	107			0702	9.0	273			0651	7.7	234			0726	7.9	240			0642	7.0	212	
	1718	7.2	218			1830	6.8	206			1333	1.5	46			1318	2.0	60			1347	0.7	21			1303	1.2	36	
	2326	2.7	81								1939	8.4	256			1934	7.7	235			2007	8.8	268			1930	8.0	245	
5 F	0612	9.5	290		20 Sa	0621	3.5	106		5 M	0147	1.6	49		20 Tu	0139	2.4	74		5 W	0226	1.4	44		20 Th	0149	2.0	62	
	1300	2.9	89			0656	8.3	254			0757	9.1	277			0741	7.9	240			0815	7.8	238			0737	7.1	217	
	1851	7.6	232			1335	3.0	91			1420	1.0	31			1359	1.4	43			1431	0.4	13			1350	0.7	21	
						1932	7.4	226			2026	9.2	279			2015	8.4	257			2051	9.3	283			2014	8.8	268	
6 Sa	0052	2.3	70		21 Su	0129	3.0	90		6 Tu	0241	1.2	36		21 W	0227	1.9	58		6 Th	0314	1.2	37		21 F	0240	1.5	46	
	0727	9.9	301			0749	8.7	264			0841	9.2	279			0822	8.1	247			0858	7.8	237			0825	7.3	223	
	1402	2.3	69			1417	2.4	74			1500	0.7	20			1435	1.0	29			1510	0.3	8			1433	0.2	7	
	1955	8.4	257			2016	8.1	248			2107	9.7	297			2049	9.1	278			2130	9.6	293			2055	9.5	290	
7 Su	0200	1.7	52		22 M	0220	2.4	73		7 W	0326	1.0	29		22 Th	0308	1.4	44		7 F	0357	1.1	34		22 Sa	0327	1.1	33	
	0822	10.2	312			0830	9.0	274			0920	9.1	277			0858	8.3	252			0936	7.7	236			0909	7.5	229	
	1449	1.6	50			1451	1.9	58			1537	0.4	13			1509	0.5	16			1547	0.2	6			1516	-0.2	-6	
	2043	9.3	282			2052	8.8	269			2145	10.1	308			2123	9.7	296			2206	9.8	299			2136	10.1	308	
8 M	0253	1.1	35		23 Tu	0300	1.9	58		8 Th	0408	0.9	28		23 F	0347	1.1	35		8 Sa	0437	1.1	34		23 Su	0412	0.8	24	
	0906	10.4	318			0904	9.2	280			0956	8.9	272			0934	8.3	254			1014	7.7	234			0951	7.6	233	
	1529	1.2	36			1520	1.5	45			1611	0.3	10			1544	0.2	6			1622	0.2	6			1559	-0.5	-16	
	2124	9.9	302			2123	9.4	286			2221	10.3	315			2157	10.2	311			2241	9.9	302			2218	10.5	321	
9 Tu	0340	0.9	26		24 W	0336	1.6	48		9 F	0448	1.0	31		24 Sa	0426	1.0	29		9 Su	0515	1.2	37		24 M	0458	0.6	19	
	0945	10.4	318			0934	9.3	283			1033	8.7	265			1011	8.3	253			1051	7.6	231			1035	7.7	235	
	1605	0.9	27			1548	1.1	35			1645	0.4	11			1620	0.0	-1			1656	0.3	8			1643	-0.7	-22	
	2203	10.4	316			2153	9.8	299			2258	10.4	317			2234	10.6	322			2316	9.9	301			2303	10.7	327	
10 W	0422	0.8	25		25 Th	0410	1.3	41		10 Sa	0528	1.2	38		25 Su	0508	0.9	27		10 M	0552	1.3	40		25 Tu	0544	0.6	17	
	1021	10.2	312			1005	9.3	283			1110	8.4	257			1050	8.2	250			1127	7.5	228			1120	7.7	235	
	1640	0.8	23			1618	0.9	27			1719	0.5	15			1659	-0.2	-5			1730	0.4	12			1728	-0.7	-22	
	2241	10.6	324			2223	10.2	310			2334	10.3	315			2314	10.8	329			2350	9.8	298			2349	10.7	325	
11 Th	0503	1.0	29		26 F	0445	1.2	38		11 Su	0608	1.5	45		26 M	0553	1.0	29		11 Tu	0629	1.4	44		26 W	0632	0.6	17	
	1057	9.9	303			1037	9.2	281			1148	8.1	248			1133	8.0	245			1204	7.3	223			1208	7.6	233	
	1715	0.8	23			1649	0.7	21			1753	0.7	22			1741	-0.2	-5			1804	0.6	19			1817	-0.5	-15	
	2319	10.7	326			2256	10.5	320								2359	10.8	329											
12 F	0544	1.3	39		27 Sa	0522	1.3	39		12 M	0612	10.2	310		27 Tu	0642	1.1	33		12 W	0625	9.6	292		27 Th	0638	10.4	316	
	1134	9.6	292			1111	9.1	276			0649	1.8	55			1219	7.7	236			0706	1.6	49			0721	0.6	19	
	1750	0.9	26			1723	0.6	17			1227	7.8	237			1827	0.1	2			1242	7.1	216			1300	7.5	229	
	2359	10.6	324			2332	10.7	326			1829	1.0	32								1840	0.9	28			1908	0.0	-1	
13 Sa	0626	1.7	51		28 Su	0603	1.4	42		13 Tu	0050	9.8	300		28 W	0048	10.5	320		13 Th	0102	9.3	282		28 F	0130	9.8	299	
	1213	9.1	277			1149	8.8	268			0732	2.1	65			0735	1.3	39			0744	1.8	54			0812	0.7	21	
	1825	1.1	33			1800	0.5	16			1308	7.3	224			1311	7.4	226			1323	6.9	209			1357	7.3	224	
											1906	1.5	45			1918	0.5	15			1919	1.3	41			2005	0.6	19	
14 Su	0039	10.4	318		29 M	0013	10.8	328		14 W	0131	9.4	286		29 Th	0143	10.0	305		14 F	0142	8.8	268		29 Sa	0225	9.1	278	
	0710	2.1	65			0649	1.6	49			0817	2.5	75			0833	1.5	45			0825	1.9	58			0907	0.8	25	
	1253	8.6	261			1232	8.4	256			1353	6.9	211			1411	7.1	216			1409	6.6	200			1502	7.2	219	
	1901	1.4	44			1842	0.7	21			1948	2.0	62			2017	1.1	34			2003	1.8	56			2109	1.3	40	
15 M	0122	10.0	306		30 Tu	0100	10.6	323		15 Th	0218	8.8	269		30 F	0247	9.3	284											

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Times and Heights of High and Low Waters

July				August				September																				
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height															
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm														
1 Su	0728	1.6	50	170	16 M	0736	1.4	42	180	1 W	0807	2.3	71	16 Th	0817	2.7	82	1 Sa	0746	3.2	98	16 Su	0508	3.9	118			
	2146	5.6	170			2207	5.9	180			1603	4.8	146		1622	4.6	140		1231	4.4	135		0727	3.6	111			
											1903	4.4	135		2008	3.8	115		2055	3.2	98		1238	4.9	150			
											2256	5.1	156		2354	4.6	139						2148	2.3	71			
2 M	0804	1.7	53	168	17 Tu	0815	1.7	51	2 Th	0825	2.6	78	17 F	0838	3.1	94	2 Su	0034	3.9	119	17 M	1311	5.1	156	17 M	2248	2.2	67
	2221	5.5	168			1629	4.8	147			1633	4.8	145		1644	4.5	138		0756	3.4	104							
						1836	4.6	141			2002	4.3	130		2110	3.4	105		1257	4.8	145							
						2259	5.5	169			2336	4.8	146						2149	2.9	89							
3 Tu	0836	1.9	58	163	18 W	0850	2.0	62	3 F	0837	2.8	85	18 Sa	0045	4.1	125	3 M	0605	3.7	114	3 M	0806	3.6	110	18 Tu	1348	5.2	159
	1635	4.7	143			1702	4.7	143			1702	4.7	143		0842	3.4	103		1329	5.1	155							
	1836	4.6	140			1951	4.4	133			2104	4.0	122		1348	4.8	147		2252	2.6	79							
	2256	5.3	163			2351	5.1	155						2213	3.1	95												
4 W	0902	2.1	64	155	19 Th	0920	2.5	75	4 Sa	0023	4.4	135	19 Su	0140	3.6	110	4 Tu	1409	5.4	165	4 Tu	0010	2.1	65	19 W	0010	2.1	65
	1707	4.7	142			1730	4.6	141			0846	3.1	93		0357	3.4	105											
	1938	4.5	138			2112	4.1	124			1727	4.6	140		1425	5.1	156											
	2333	5.1	155								2208	3.7	112		2330	2.8	86											
5 Th	0922	2.4	72	133	20 F	0044	4.6	139	5 Su	0117	4.0	122	20 M	1502	5.3	163	5 W	0022	2.3	69	5 W	0022	2.3	69	20 Th	0140	2.0	62
	1737	4.6	141			0944	2.9	88			0856	3.3	101						1457	5.6	171							
	2053	4.4	133			1744	4.6	140			1436	4.9	148															
						2233	3.7	113			2322	3.3	100															
6 F	0013	4.7	143	125	21 Sa	0141	4.0	121	6 M	0222	3.5	107	21 Tu	0107	2.5	77	6 Th	0157	1.9	59	6 Th	1552	5.7	174	21 F	0254	1.9	59
	0936	2.6	80			0958	3.3	100			0507	3.3	100		1542	5.5	167											
	1805	4.6	139			1550	4.8	147			1506	5.2	158															
	2220	4.1	125																									
7 Sa	0058	4.2	129	138	22 Su	0017	3.3	100	7 Tu	0108	2.8	86	22 W	0229	2.2	67	7 F	0309	1.6	50	7 F	1655	5.6	172	22 Sa	0345	1.9	58
	0950	2.9	89			0254	3.4	104			1543	5.5	168		1630	5.5	169											
	1820	4.5	138			0531	3.2	99																				
						1627	5.1	156																				
8 Su	0616	3.2	97	143	23 M	0152	2.8	84	8 W	0231	2.3	70	23 Th	0328	2.0	60	8 Sa	0404	1.5	46	8 Sa	1814	5.5	167	23 Su	0426	2.0	60
	1633	4.7	143			1706	5.4	164			1628	5.8	177		1736	5.5	168											
9 M	0159	3.1	96	152	24 Tu	0259	2.3	70	9 Th	0334	1.8	55	24 F	0415	1.8	56	9 Su	0450	1.6	48	9 Su	1937	5.3	161	24 M	0502	2.1	65
	0412	3.2	98			1747	5.5	169			1718	6.0	183		1849	5.5	167											
	0624	3.1	94																									
	1650	5.0	152																									
10 Tu	0257	2.6	78	163	25 W	0349	2.0	60	10 F	0425	1.5	45	25 Sa	0456	1.8	55	10 M	0531	1.8	54	10 M	1339	4.4	135	25 Tu	0533	2.4	72
	1717	5.3	163			1831	5.6	172			1816	6.1	186		1943	5.4	165		1616	4.0	123							
11 W	0350	2.0	62	173	26 Th	0434	1.8	54	11 Sa	0512	1.3	40	26 Su	0534	1.9	58	11 Tu	0609	2.1	64	11 Tu	1412	4.4	133	26 W	0557	2.6	80
	1751	5.7	173			1915	5.7	174			1927	6.1	185		2028	5.3	162		1412	4.4	133							
12 Th	0439	1.6	48	181	27 F	0516	1.7	51	12 Su	0555	1.3	41	27 M	0610	2.1	63	12 W	0644	2.5	76	12 W	1445	4.3	131	27 Th	0615	2.9	87
	1834	5.9	181			1956	5.7	174			2031	5.9	181		1405	4.5	137		1820	3.4	104							
13 F	0526	1.3	39	187	28 Sa	0556	1.7	51	13 M	0636	1.6	48	28 Tu	0641	2.3	70	13 Th	0713	2.9	88	13 Th	1517	4.2	129	28 F	0028	3.4	105
	1923	6.1	187			2035	5.7	174			1447	4.8	147		1430	4.5	138		1913	3.1	94							
14 Sa	0612	1.1	35	189	29 Su	0634	1.8	54	14 Tu	0714	1.9	58	29 W	0707	2.6	78	14 F	0126	3.6	111	14 F	0342	4.3	131	29 Sa	0325	4.0	123
	2020	6.2	189			2111	5.6	172			1520	4.8	145		1458	4.6	139		0731	3.2	99							
15 Su	0655	1.2	36	187	30 M	0709	1.9	58	15 W	0748	2.3	70	30 Th	0725	2.8	85	15 Sa	0423	4.1	124	15 Sa	0730	3.5	107	30 Su	0406	4.0	121
	2115	6.1	187			1507	4.8	145			1552	4.7	142		1529													

Qinhuangdao, China, 2018

Times and Heights of High and Low Waters

October				November				December											
Time		Height		Time		Height		Time		Height		Time		Height					
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm				
1	0454	3.9	118	16	1207	4.8	146	1	1242	4.7	144	16	1306	3.4	105				
M	0709	3.6	109	Tu	2215	1.5	46	Th	2317	1.0	31	F	2315	1.2	38				
	1152	4.9	148					●				Sa	2334	1.0	31				
	2134	1.9	58									Su	0623	2.7	83				
2	1233	5.1	156	17	1246	4.8	145	2	1338	4.4	133	17	1310	3.6	110	17	0649	2.7	83
Tu	2232	1.7	52	W	2315	1.6	49	F				Sa	0855	2.8	85	M	2223	1.4	42
●				●								Su	1105	2.7	83				
												18	1412	2.9	87	18	0659	2.7	83
3	1321	5.2	160	18	1328	4.6	140	3	0031	1.2	37	18	0006	1.5	45	Tu	1930	1.5	45
W	2347	1.6	49	Th				Sa	1448	3.9	118	Su	1334	3.1	96	M	0924	2.7	83
												19	0924	1.8	55	Tu	1930	1.5	45
												20	1943	1.8	55				
												2225	2.1	63					
4	1416	5.2	158	19	0036	1.7	51	4	0141	1.4	44	19	0059	1.7	52	4	0118	1.8	54
Th				F	1417	4.3	132	Su	1045	3.2	99	M	0957	2.9	89	Tu	0626	2.9	87
																4	1511	1.6	50
																5	2326	2.4	72
																20	0200	2.1	64
5	0118	1.5	47	20	0152	1.8	54	5	0239	1.7	53	20	0142	1.9	59	5	0654	3.1	95
F	1520	5.0	151	Sa	1518	4.0	122	M	1110	3.2	97	Tu	0749	3.0	90	W	1600	1.1	35
												21	2053	2.1	63				
												2343	2.4	72					
6	0233	1.5	47	21	0252	1.9	57	6	0327	2.0	62	21	0217	2.2	66	6	0017	2.6	79
Sa	1639	4.6	141	Su	1708	3.6	111	Tu	0734	3.1	93	W	0730	3.1	94	Th	0231	2.4	73
																6	0724	3.3	102
																7	1646	0.8	24
																22	0752	3.5	107
7	0330	1.6	50	22	0334	2.0	62	7	0026	3.2	97	22	0018	2.7	81	7	1730	0.6	17
Su	1201	3.9	118	M	1145	3.4	104	W	0405	2.4	72	Th	0250	2.4	72	●			
	1411	3.7	114		1509	3.1	94		0802	3.3	101		0742	3.2	99	8	0815	3.7	112
	1818	4.3	131		1843	3.4	103		1648	1.7	52		1650	1.4	42	Sa	1813	0.4	13
																23	0710	3.8	117
8	0417	1.8	56	23	0406	2.3	69	8	0111	3.3	102	23	0055	2.9	89	Su	1809	0.0	1
M	1228	3.8	116	Tu	1205	3.4	104	Th	0431	2.7	82	F	0322	2.6	78	●			
	1537	3.3	101		1605	2.7	82		0830	3.6	109		0757	3.4	105	9	0833	3.8	115
	1935	4.0	122		1949	3.1	96	●	1736	1.4	42	○	1733	1.0	32	Su	1854	0.4	12
					2221	2.9	89									24	0751	4.1	125
9	0457	2.2	66	24	0040	3.2	99	9	0154	3.4	105	24	0134	3.1	96	M	1854	-0.1	-4
Tu	1302	3.8	115	W	0428	2.5	76	F	0441	3.0	90	Sa	0353	2.8	84				
	1641	2.9	88		0844	3.4	103		0857	3.8	115		0808	3.7	113	10	0858	3.9	118
	2033	3.7	114		1654	2.3	71		1820	1.1	35		1817	0.8	23	Su	1935	0.4	12
	2305	3.2	98													25	0837	4.2	129
10	0124	4.0	121	25	0116	3.4	105	10	0234	3.4	105	25	0215	3.3	102	M	1937	-0.2	-5
W	0532	2.5	77	Th	0446	2.7	83	Sa	0450	3.1	95	Su	0424	3.0	90				
	0912	3.5	108	○	0856	3.5	108		0919	4.0	121		0828	4.0	122				
	1735	2.5	77	○	1739	2.0	62		1903	1.0	30		1902	0.5	16				
11	0207	4.1	124	26	0152	3.6	110	11	0941	4.2	127	26	0904	4.3	131	11	0931	3.9	120
Th	0600	2.9	88	F	0502	2.9	89	Su	1945	0.9	27	M	1947	0.3	10	Tu	2013	0.4	12
	0941	3.8	116		0913	3.7	114									26	0926	4.2	129
	1824	2.2	67		1824	1.8	54									W	2019	-0.1	-3
12	0248	4.0	123	27	0231	3.7	114	12	1008	4.3	131	27	0947	4.5	136	12	1008	3.9	120
F	0615	3.2	98	Sa	0519	3.1	94	M	2027	0.9	26	Tu	2031	0.2	7	W	2049	0.5	14
	1009	4.1	125		0929	4.0	121												
	1911	2.0	60		1908	1.5	46												
13	0328	3.9	120	28	0311	3.8	115	13	1041	4.4	133	28	1034	4.5	137	13	1045	3.8	117
Sa	0612	3.4	104	Su	0540	3.2	99	Tu	2107	0.9	26	W	2115	0.3	8	Th	2121	0.6	17
	1036	4.3	132		0951	4.3	130												
	1956	1.7	53		1952	1.3	39												
14	0407	3.8	115	29	0355	3.7	114	14	1118	4.3	132	29	1123	4.3	132	14	1121	3.6	111
Su	0619	3.5	107	M	0604	3.4	103	W	2148	0.9	28	Th	2200	0.4	13	F	2148	0.7	22
	1102	4.6	139		1023	4.6	139												
	2040	1.6	48		2038	1.0	32												
15	1132	4.7	144	30	1105	4.8	146	15	1157	4.2	128	30	1214	4.0	121	15	1156	3.4	103
M	2125	1.5	46	Tu	2125	0.9	28	Th	2230	1.0	32	F	2245	0.7	21	Sa	2206	0.9	28
								●				●				●			
				31	1151	4.9	148									31	0646	2.6	79
				W	2217	0.9	28									M	1134	2.0	62
																	1350	2.1	63
																	2259	1.5	45

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Yantai, China, 2018

Times and Heights of High and Low Waters

January				February				March											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 M	0250	0.5	15	24	16 Tu	0351	0.8	24	1 Th	0418	-0.1	-2	16 F	0434	0.7	20			
	0854	7.0	212	0956		6.5	199	1028		7.3	224	1038		7.0	213	0933	7.2	220	
	1451	1.1	33	1543		1.8	54	1617		0.9	27	1627		1.4	43	1523	1.3	39	
	2109	8.1	247	2154		7.4	225	2237		8.3	254	2243		7.6	233	2142	8.0	245	
2 Tu	0341	0.2	5	17 W	0425	0.7	21	2 F	0500	-0.2	-5	17 Sa	0500	0.6	19	2 F	0402	0.1	4
	0946	7.2	220		1027	6.7	204		1112	7.5	229		1106	7.2	218		1016	7.6	231
	1540	1.0	29		1614	1.6	49		1702	0.8	24		1656	1.2	37		1606	1.0	30
3 W	0428	0.0	-1	18 Th	0456	0.7	20	3 Sa	0540	-0.1	-4	18 Su	0527	0.6	18	3 Sa	0439	0.1	2
	1035	7.4	226		1057	6.8	208		1155	7.6	232		1135	7.3	222		1054	7.8	238
	1627	0.9	27		1643	1.5	45		1745	0.8	24		1728	1.1	33		1647	0.8	24
4 Th	0514	-0.1	-3	19 F	0525	0.7	20	4 Su	0004	8.2	251	19 M	0555	0.5	16	4 Su	0516	0.1	4
	1123	7.5	228		1126	6.9	210		0620	0.0	0		1205	7.4	226		1132	7.9	242
	1714	0.9	28		1713	1.4	42		1236	7.6	232		1803	1.0	30		1727	0.7	22
5 F	0600	-0.1	-2	20 Sa	0553	0.6	19	5 M	0046	7.9	242	20 Tu	0016	7.6	233	5 M	0552	0.3	8
	1212	7.5	228		1157	7.0	212		0659	0.2	7		0627	0.5	15		1208	8.0	243
	1801	1.0	31		1746	1.3	41		1318	7.5	228		1239	7.5	229		1807	0.8	24
6 Sa	0019	8.3	253	21 Su	0003	7.6	232	6 Tu	0129	7.5	229	21 W	0052	7.5	229	6 Tu	0023	7.9	242
	0644	0.1	2		0622	0.6	18		0740	0.6	18		0701	0.5	16		0628	0.5	16
	1300	7.4	225		1229	7.0	213		1402	7.3	222		1316	7.5	229		1245	7.9	240
7 Su	0106	8.0	243	22 M	0036	7.5	228	7 W	0214	6.9	211	22 Th	0133	7.3	221	7 W	0102	7.6	231
	0729	0.3	9		0654	0.6	18		0822	1.0	32		0740	0.8	23		0705	0.9	26
	1350	7.2	220		1304	7.0	214		1448	7.0	212		1359	7.4	227		1324	7.7	234
8 M	0155	7.4	227	23 Tu	0112	7.3	221	8 Th	0305	6.3	192	23 F	0222	6.9	209	8 Th	0143	7.1	217
	0815	0.6	19		0730	0.7	20		0910	1.6	50		0825	1.1	35		0743	1.3	41
	1441	7.0	213		1344	7.0	213		1539	6.6	200		1449	7.2	220		1404	7.3	224
9 Tu	0247	6.9	209	24 W	0154	7.0	212	9 F	0405	5.7	174	24 Sa	0321	6.4	194	9 F	0229	6.6	200
	0906	1.1	33		0810	0.8	25		1013	2.3	69		0921	1.7	51		0824	1.9	59
	1536	6.7	205		1430	6.9	210		1641	6.2	189		1550	6.9	211		1447	6.9	210
10 W	0346	6.2	190	25 Th	0245	6.6	200	10 Sa	0528	5.3	162	25 Su	0438	5.9	181	10 Sa	0323	6.0	182
	1006	1.6	48		0857	1.1	34		1135	2.7	81		1038	2.2	67		0916	2.6	79
	1638	6.5	198		1524	6.8	206		1800	6.0	183		1705	6.7	204		1538	6.4	195
11 Th	0459	5.7	175	26 F	0348	6.1	187	11 Su	0056	2.0	60	26 M	0009	1.6	49	11 Su	0436	5.5	168
	1119	2.0	60		0956	1.5	45		0702	5.3	163		0611	5.8	178		1036	3.1	95
	1747	6.4	195		1628	6.7	203		1258	2.8	84		1211	2.4	72		1647	6.0	183
12 F	0026	2.0	62	27 Sa	0504	5.9	179	12 M	0202	1.6	49	27 Tu	0129	1.2	37	12 M	0005	2.3	70
	0623	5.5	169		1110	1.8	54		0813	5.7	174		0736	6.2	189		0615	5.4	166
	1231	2.2	66		1741	6.7	204		1403	2.6	78		1332	2.1	65		1209	3.3	100
13 Sa	0132	1.7	52	28 Su	0028	1.5	45	13 Tu	0252	1.2	37	28 W	0232	0.7	22	13 Tu	0124	2.0	61
	0738	5.7	173		0626	5.9	179		0902	6.1	187		0842	6.7	205		0737	5.8	176
	1334	2.2	67		1229	1.8	56		1450	2.2	68		1434	1.7	52		1331	3.1	93
14 Su	0227	1.3	41	29 M	0140	1.0	32	14 W	0332	0.9	27	14 W	0221	1.6	49	14 W	0221	1.6	49
	0836	6.0	182		0742	6.2	189		0938	6.5	198		1527	1.9	58		0831	6.3	191
	1426	2.1	64		1340	1.7	51		1527	7.2	220		2033	6.8	206		1426	2.6	79
15 M	0312	1.0	31	30 Tu	0241	0.6	17	15 Th	0405	0.7	22	15 Th	0303	1.2	38	15 Th	0301	0.8	23
	0920	6.3	191		0847	6.6	202		1010	6.8	206		1038	6.7	205		0915	7.6	233
	1508	1.9	59		1440	1.4	42		1558	1.6	50		1504	2.1	65		1512	1.5	45
16 Sa	2118	7.2	218	31 W	0258	7.8	237	31 W	2211	7.5	228	31 Sa	2114	7.2	219	31 Sa	0340	0.6	19
					0333	0.2	5		0941	7.0	214		1551	1.1	35		0955	8.0	243
					1531	1.1	33		2150	8.1	248		2209	8.1	248		2209	8.1	248

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Lianyungang, China, 2018

Times and Heights of High and Low Waters

July			August						September						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm	
1 Su	0219	2.9	88	16 M	0249	0.7	22	1 W	0304	3.2	98	16 Th	0400	2.3	71
	0817	16.9	515		0825	18.8	574		0852	16.9	516		0920	16.8	513
	1440	5.5	167		1516	4.2	127		1530	5.3	161		1619	4.5	138
	1953	15.9	486		2017	17.7	539		2046	16.3	497		2143	16.8	513
2 M	0251	3.1	93	17 Tu	0338	1.1	35	2 Th	0336	3.5	106	17 F	0443	3.4	104
	0852	16.7	510		0913	18.4	561		0923	16.8	511		1015	16.9	516
	1516	5.6	171		1606	4.3	132		1608	5.3	162		1714	4.4	135
	2030	15.8	481		2109	17.1	521		2128	16.0	487		2244	15.9	485
3 Tu	0324	3.2	99	18 W	0425	1.9	57	3 F	0413	3.9	119	18 Sa	0529	4.6	141
	0928	16.5	502		1003	17.8	543		1000	16.6	505		1108	16.0	488
	1554	5.7	175		1657	4.5	137		1651	5.3	161		1808	4.8	146
	2111	15.5	472		2208	16.3	498		2217	15.6	475		2356	15.2	462
4 W	0400	3.5	108	19 Th	0514	2.8	86	4 Sa	0456	4.4	135	19 Su	0623	5.8	178
	1005	16.2	494		1057	17.1	521		1044	16.3	497		1208	15.2	462
	1637	5.9	179		1752	4.7	143		1741	5.2	159		1909	5.1	154
	2157	15.1	459		2314	15.6	475		2317	15.3	465				
5 Th	0440	4.0	121	20 F	0607	3.9	120	5 Su	0548	5.1	155	20 M	0115	14.7	449
	1046	15.9	486		1155	16.4	499		1137	15.9	486		0728	6.9	209
	1726	5.9	180		1850	4.8	146		1840	5.0	152		1315	14.5	443
	2250	14.6	446										2017	5.1	155
6 F	0528	4.4	135	21 Sa	0029	15.0	458	6 M	0027	15.1	459	21 Tu	0231	14.7	449
	1133	15.7	479		0705	5.0	153		0651	5.7	175		0842	7.4	225
	1823	5.7	175		1257	15.7	479		1238	15.6	477		1424	14.2	434
	2353	14.4	438		1953	4.8	145		1946	4.5	138		2124	4.8	146
7 Sa	0623	5.0	151	22 Su	0146	14.8	451	7 Tu	0145	15.3	465	22 W	0340	15.2	462
	1226	15.6	474		0809	5.9	180		0805	6.2	188		0953	7.3	223
	1923	5.3	162		1400	15.3	465		1347	15.6	475		1527	14.4	438
					2057	4.5	137		2055	3.8	117		2224	4.3	131
8 Su	0103	14.4	439	23 M	0259	15.0	456	8 W	0302	15.9	485	23 Th	0436	15.8	481
	0727	5.4	164		0917	6.4	196		0924	6.2	188		1052	6.9	211
	1325	15.5	473		1501	15.0	458		1454	15.9	484		1619	14.8	451
	2025	4.6	141		2157	4.1	126		2204	3.0	90		2315	3.8	116
9 M	0215	14.9	453	24 Tu	0403	15.4	469	9 Th	0409	16.9	514	24 F	0520	16.4	500
	0837	5.5	169		1020	6.6	200		1035	5.8	176		1139	6.3	193
	1425	15.7	479		1555	15.0	458		1557	16.5	503		1701	15.4	469
	2127	3.8	115		2251	3.7	113		2308	2.0	61		2359	3.3	102
10 Tu	0322	15.7	478	25 W	0456	15.9	485	10 F	0505	17.8	544	25 Sa	0557	16.9	514
	0946	5.4	166		1115	6.4	196		1138	5.2	158		1220	5.8	176
	1522	16.1	491		1640	15.2	463		1653	17.3	526		1737	16.0	487
	2226	2.8	86		2338	3.3	102								
11 W	0422	16.7	509	26 Th	0540	16.4	501	11 Sa	0006	1.2	37	26 Su	0037	3.0	92
	1051	5.1	156		1201	6.2	189		0554	18.6	567		0629	17.1	522
	1616	16.6	507		1720	15.5	472		1235	4.6	140		1256	5.2	160
	2323	1.9	59						1743	17.9	547		1811	16.5	504
12 Th	0516	17.7	539	27 F	0020	3.1	94	12 Su	0100	0.8	23	27 M	0112	2.9	87
	1150	4.7	144		0618	16.8	513		0639	19.0	580		0657	17.3	526
	1706	17.2	524		1240	5.9	180		1326	4.1	126		1329	4.9	149
					1755	15.8	483		1829	18.4	561		1842	16.9	514
13 F	0017	1.2	38	28 Sa	0057	2.9	89	13 M	0149	0.6	19	28 Tu	0143	2.9	87
	0605	18.4	562		0651	17.1	521		0721	19.1	583		0723	17.3	526
	1245	4.4	134		1316	5.6	172		1413	3.8	117		1402	4.6	141
	1753	17.7	539		1828	16.2	494		1915	18.5	564		1913	17.1	520
14 Sa	0110	0.8	23	29 Su	0131	2.9	87	14 Tu	0235	0.9	27	29 W	0213	3.0	91
	0653	18.9	575		0723	17.2	524		0802	18.9	577		0747	17.2	525
	1337	4.2	128		1349	5.4	166		1457	3.8	115		1433	4.5	138
	1840	18.0	548		1901	16.5	502		2001	18.2	556		1946	17.1	520
15 Su	0200	0.6	18	30 M	0203	2.9	88	15 W	0318	1.5	45	30 Th	0243	3.2	98
	0739	19.0	579		0753	17.2	523		0843	18.4	562		0814	17.2	524
	1427	4.1	126		1422	5.3	162		1541	3.8	117		1505	4.5	137
	1928	18.0	548		1934	16.6	505		2049	17.7	538		2022	16.9	516
				31 Tu	0233	3.0	92	31 F	0314	3.5	107		0844	17.1	521
					0822	17.1	520		1540	4.5	137		2103	16.7	508
					1456	5.3	161								
					2008	16.5	504								

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Lianyun Gang, China, 2018

Times and Heights of High and Low Waters

October				November				December																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 M	0414	4.7	144		16 Tu	0503	6.4	195		1 Th	0615	6.0	182		16 F	0014	13.9	425		1 Sa	0034	15.3	465		16 Su	0006	13.7	418	
	0934	16.1	490			1027	13.9	424			1130	14.0	426			0627	6.8	207			0718	4.9	150			0641	5.7	173	
	1642	3.7	113			1730	4.8	146			1847	3.3	102			1157	12.4	378			1241	13.5	412			1213	12.3	376	
	2235	16.0	488			2357	14.4	440			●					1839	5.0	152			1940	3.1	94			1842	4.6	139	
2 Tu	0508	5.6	170		17 W	0603	7.2	220		2 F	0102	15.4	470		17 Sa	0122	13.8	420		2 Su	0146	15.2	462		17 M	0106	13.5	412	
	1030	15.3	466			1133	13.1	398			0738	5.9	181			0742	6.6	201			0831	4.4	133			0748	5.3	162	
	1744	3.9	120			1832	5.3	161			1258	13.7	419			1317	12.3	375			1404	13.7	418			1329	12.3	374	
	●	2351	15.6	474		●					2006	3.3	101			1949	5.1	156			2050	3.3	101			1947	4.9	148	
3 W	0619	6.3	193		18 Th	0112	14.2	432		3 Sa	0218	15.7	478		18 Su	0226	13.9	425		3 M	0250	15.3	466		18 Tu	0207	13.6	415	
	1143	14.6	444			0719	7.6	231			0857	5.2	159			0852	5.9	179			0938	3.5	107			0853	4.6	139	
	1900	4.0	121			1253	12.6	385			1422	14.2	433			1432	12.7	388			1516	14.3	436			1441	12.8	389	
						1945	5.4	166			2119	3.0	92			2057	4.9	150			2157	3.4	103			2056	4.8	147	
4 Th	0117	15.5	472		19 F	0224	14.3	436		4 Su	0321	16.2	493		19 M	0319	14.4	438		4 Tu	0343	15.5	472		19 W	0301	14.0	426	
	0745	6.6	201			0839	7.3	221			1004	4.1	126			0951	4.8	147			1036	2.7	81			0952	3.6	110	
	1309	14.3	436			1413	12.8	391			1531	15.1	460			1531	13.5	412			1614	15.0	457			1541	13.6	414	
	2022	3.6	110			2058	5.2	158			2224	2.7	81			2157	4.5	138			2256	3.4	103			2200	4.5	137	
5 F	0238	15.9	486		20 Sa	0324	14.8	450		5 M	0412	16.6	507		20 Tu	0401	14.9	454		5 W	0428	15.6	476		20 Th	0348	14.5	442	
	0910	6.1	186			0946	6.4	195			1100	3.1	94			1040	3.7	114			1126	2.0	61			1044	2.6	80	
	1432	14.8	451			1518	13.5	412			1626	16.0	487			1619	14.4	440			1702	15.6	474			1631	14.6	445	
	2139	3.0	90			2159	4.6	141			2321	2.4	74			2249	4.0	123			2346	3.4	104			2258	4.0	122	
6 Sa	0344	16.7	510		21 Su	0411	15.3	467		6 Tu	0453	16.9	516		21 W	0437	15.4	470		6 Th	0507	15.7	478		21 F	0431	15.1	460	
	1021	5.1	155			1037	5.3	162			1148	2.3	69			1124	2.8	84			1210	1.6	48			1133	1.7	53	
	1541	15.7	479			1609	14.4	440			1712	16.7	508			1700	15.3	467			1745	15.9	485			1717	15.6	475	
	2244	2.2	68			2250	4.0	123								2336	3.5	108								2351	3.5	107	
7 Su	0435	17.5	532		22 M	0449	15.8	483		7 W	0009	2.4	74		22 Th	0508	15.9	484		7 F	0030	3.5	108		22 Sa	0511	15.6	477	
	1119	4.0	122			1121	4.3	130			0530	17.0	519			1204	2.0	61			0543	15.7	478			1220	1.0	31	
	1636	16.7	510			1651	15.4	468			1230	1.8	55			1737	16.1	490			1249	1.4	44			1801	16.4	500	
	2341	1.7	52			2333	3.5	108			1753	17.0	519								1824	16.1	490						
8 M	0518	17.9	547		23 Tu	0520	16.3	496		8 Th	0051	2.7	81		23 F	0018	3.2	98		8 Sa	0107	3.7	113		23 Su	0040	3.1	95	
	1208	3.1	95			1159	3.4	103			0604	17.0	517			0539	16.2	495			0617	15.6	477			0552	16.1	492	
	1722	17.6	535			1727	16.1	490			1308	1.6	50			1243	1.5	45			1325	1.5	47			1306	0.5	14	
						●	1832	17.1	522			●				1814	16.7	509			1903	16.1	491			●	1844	17.0	517
9 Tu	0030	1.5	47		24 W	0012	3.2	97		9 F	0127	3.1	93		24 Sa	0059	3.0	92		9 Su	0140	3.9	119		24 M	0126	2.9	89	
	0555	18.1	553			0547	16.6	505			0637	16.8	511			0611	16.5	504			0651	15.6	474			0633	16.5	502	
	1252	2.5	77			1236	2.8	84			1342	1.7	53			1322	1.2	36			1357	1.7	53			1351	0.1	4	
	●	1805	18.0	549		1759	16.6	507			1912	17.0	518			1853	17.1	521			1941	16.0	489			1929	17.2	525	
10 W	0113	1.7	53		25 Th	0049	3.0	92		10 Sa	0200	3.5	107		25 Su	0140	3.0	92		10 M	0212	4.1	126		25 Tu	0212	2.9	89	
	0629	18.1	551			0612	16.8	512			0710	16.4	501			0647	16.7	508			0725	15.4	468			0717	16.6	506	
	1330	2.3	69			1310	2.4	72			1415	2.0	61			1401	1.0	32			1429	2.0	61			1438	0.1	2	
	1845	18.1	551			1832	17.0	519			1952	16.7	508			1936	17.2	525			2019	15.8	483			2015	17.2	524	
11 Th	0151	2.2	68		26 F	0124	3.0	92		11 Su	0233	4.0	123		26 M	0222	3.2	99		11 Tu	0244	4.4	133		26 W	0259	3.1	94	
	0703	17.8	543			0638	17.0	517			0745	15.9	486			0727	16.5	504			0800	15.1	459			0804	16.4	500	
	1406	2.3	70			1344	2.2	67			1449	2.4	73			1444	1.1	33			1500	2.3	70			1525	0.2	7	
	1925	17.8	544			1907	17.3	526			2035	16.2	493			2023	17.1	521			2100	15.5	473			2104	16.9	515	
12 F	0226	2.9	88		27 Sa	0158	3.1	96		12 M	0307	4.6	140		27 Tu	0307	3.6	111		12 W	0320	4.7	143		27 Th	0349	3.4	103	
	0737	17.4	529			0709	17.0	517			0821	15.3	467			0812	16.2	493			0838	14.7	447			0854	15.9	484	
	1441	2.5	77			1418	2.2	66			1523	2.9	88			1530	1.3	39			1534	2.7	81			1614	0.7	20	
	2007	17.3	528			1946	17.3	527			2122	15.6	476			2115	16.7	509			2141	15.1	460			2156	16.4	500	
13 Sa	0259	3.7	112		28 Su	0235	3.5	106		13 Tu	0344	5.2	160		28 W	0357	4.2	127		13 Th	0359	5.1	154		28 F	0444	3.7	112	
	0813	16.7	509			0744	16.8	512			0902	14.6	444			0903	15.5	473			0920	14.1	430			0951	15.1	461	
	1517	3.0	90			1455	2.2	68			1601	3.4	105			1623	1.6	50			1611	3.1	94			1707	1.3	41	
	2054	16.6	506			2030	17.1	521			2213	15.0	457			221													

Wusong (Shanghai), China, 2018

Times and Heights of High and Low Waters

January				February				March											
Time		Height		Time		Height		Time		Height		Time		Height					
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm				
1 M	0658	1.2	37	16 Tu	0012	8.7	264	1 Th	0104	10.0	305	16 F	0104	9.7	295				
	1155	12.0	367		0735	1.2	37		0841	0.6	17		0837	1.0	32	0739	1.2	36	
	1949	1.7	51		1236	10.7	327		1322	12.5	381		1323	11.3	345	1226	11.8	360	
2 Tu	0014	10.3	313	17 W	0048	9.1	278	2 F	0149	10.3	314	17 Sa	0135	10.1	307	2 F	0056	10.3	314
	0752	0.9	28		0812	1.2	37		0936	0.3	8		0908	1.3	39		0837	0.7	20
	1230	12.8	390		1314	11.1	339		1413	12.5	380		1356	11.4	347		1314	12.2	371
3 W	0104	10.5	319	18 Th	0120	9.5	289	3 Sa	0230	10.5	320	18 Su	0210	10.3	315	3 Sa	0132	10.8	328
	0845	0.6	19		0846	1.0	32		1017	0.7	22		0942	1.2	36		0931	0.4	13
	1323	13.1	399		1134	11.3	344		1450	12.1	369		1424	11.5	351		1352	12.0	367
4 Th	0152	10.5	319	19 F	0154	9.6	294	4 Su	0315	10.3	315	19 M	0239	10.4	318	4 Su	0216	11.1	337
	0936	0.5	14		0930	1.0	30		1045	0.9	26		1013	1.5	45		0954	0.9	28
	1416	13.0	347		1416	11.4	347		1526	11.7	357		1456	11.3	343		1425	12.0	365
5 F	0238	10.2	312	20 Sa	0225	9.7	296	5 M	0355	9.9	303	20 Tu	0313	10.4	318	5 M	0251	10.9	332
	1017	1.0	30		0948	1.2	38		1120	1.4	44		1041	1.5	45		1034	1.0	30
	1504	12.5	381		1443	11.2	342		1609	10.8	329		1524	11.0	336		1505	11.3	345
6 Sa	0325	9.9	303	21 Su	0259	9.6	292	6 Tu	0433	9.4	286	21 W	0346	10.3	313	6 Tu	0324	10.7	326
	1050	1.2	36		1020	1.6	48		1144	1.9	58		1109	1.9	59		1051	1.6	49
	1544	11.8	361		1516	11.1	337		1644	9.7	296		1600	10.4	316		1533	10.6	322
7 Su	0415	9.4	287	22 M	0331	9.4	287	7 W	0025	1.8	54	22 Th	0425	10.0	305	7 W	0358	10.1	309
	1134	1.6	49		1045	1.7	51		0517	8.7	266		1143	2.3	70		1121	2.1	65
	1630	11.0	336		1546	10.7	326		1215	2.6	79		1638	9.5	291		1606	9.6	294
8 M	0033	1.5	47	23 Tu	0411	9.2	281	8 Th	0047	2.1	64	23 F	0006	2.1	63	8 Th	0429	9.5	290
	0506	8.8	269		1118	2.1	64		0608	8.0	243		0514	9.5	289		1144	2.6	78
	1200	2.3	71		1622	10.2	311		1300	3.2	97		1230	2.9	89		1640	8.5	260
9 Tu	0104	1.9	59	24 W	0004	1.8	56	9 F	0131	2.6	79	24 Sa	0049	2.5	77	9 F	0509	8.7	266
	0603	8.2	251		0455	9.0	273		0716	7.4	227		0619	8.9	272		1223	3.2	97
	1250	2.9	88		1151	2.5	76		1426	3.6	109		1340	3.5	107		1724	7.3	223
10 W	0150	2.2	66	25 Th	0046	2.0	61	10 Sa	0236	2.9	89	25 Su	0155	3.0	92	10 Sa	0005	3.0	92
	0710	7.8	238		0550	8.7	265		0849	7.4	225		0752	8.6	263		0602	7.9	242
	1400	3.3	102		1247	3.0	92		1610	3.4	103		1533	3.5	108		1330	3.6	111
11 Th	0247	2.3	70	26 F	0138	2.3	69	11 Su	0403	2.9	88	26 M	0338	3.1	93	11 Su	0056	3.6	110
	0827	7.7	235		0701	8.5	260		1009	8.0	243		0931	9.1	278		0731	7.4	227
	1531	3.4	103		1406	3.5	106		1732	2.8	85		1715	3.0	90		1523	3.6	111
12 F	0354	2.3	70	27 Sa	0247	2.4	74	12 M	0519	2.5	76	27 Tu	0514	2.6	78	12 M	0254	3.9	118
	0943	8.1	247		0824	8.8	267		1102	8.9	270		1046	10.1	307		0920	7.7	236
	1652	3.0	92		1547	3.4	103		1830	2.3	70		1836	2.1	63		1653	3.1	95
13 Sa	0458	2.1	64	28 Su	0409	2.3	71	13 Tu	0618	2.0	62	28 W	0635	1.8	54	13 Tu	0438	3.4	103
	1040	8.8	268		0947	9.4	288		1143	9.7	295		1141	11.0	335		1027	8.6	262
	1756	2.6	78		1723	2.9	89		1913	2.1	63		1940	1.4	43		1752	2.6	78
14 Su	0554	1.8	56	29 M	0534	1.9	57	14 W	0706	1.6	50	14 W	0543	2.8	84	14 W	0543	2.8	84
	1125	9.5	291		1055	10.4	317		1220	10.4	317		1111	9.5	291		1111	9.5	291
	1850	2.2	66		1840	2.2	66		1951	1.9	57		1841	2.2	66		1841	2.2	66
15 M	0645	1.5	46	30 Tu	0642	1.4	42	15 Th	0029	9.1	277	15 Th	0639	2.2	66	15 Th	0639	2.2	66
	1205	10.2	311		1150	11.3	343		0750	1.3	40		1147	10.4	316		1147	10.4	316
	1938	1.9	58		1944	1.6	49		1252	10.9	332		1930	1.8	56		1930	1.8	56
16 F	0732	1.7	53	31 W	0013	9.5	289	31 W	0744	1.0	29	31 Sa	0031	11.0	335	31 Sa	0031	11.0	335
	1221	11.1	337		1232	11.9	363		1248	11.8	361		0828	1.4	44		0828	1.4	44
	2000	1.9	57		2044	1.1	33		2044	1.1	33		2045	1.0	32		2045	1.0	32

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Wusong (Shanghai), China, 2018

Times and Heights of High and Low Waters

July				August				September																																																																																																																																																																																																																																																																																																																																																																														
Time		Height		Time		Height		Time		Height		Time		Height																																																																																																																																																																																																																																																																																																																																																																								
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																																																																																																																																																																																																																																																																																																																																																																								
1 Su	0209	13.0	396		16 M	0218	14.8	450		1 W	0239	13.0	396		16 Th	0322	13.4	408		1 Sa	0314	12.4	378		16 Su	0404	10.4	316		1 M	0459	10.7	326		2 Su	0529	11.0	336		2 Th	0559	11.0	336		2 Sa	0629	11.0	336		2 Su	0659	11.0	336		3 Tu	0729	11.0	336		3 Th	0759	11.0	336		3 Sa	0829	11.0	336		3 Su	0859	11.0	336		4 M	0929	11.0	336		4 Tu	0959	11.0	336		4 Th	1029	11.0	336		4 Sa	1059	11.0	336		4 Su	1129	11.0	336		5 M	1159	11.0	336		5 Tu	1229	11.0	336		5 Th	1259	11.0	336		5 Sa	0129	11.0	336		5 Su	0159	11.0	336		6 M	0229	11.0	336		6 Tu	0259	11.0	336		6 Th	0329	11.0	336		6 Sa	0359	11.0	336		6 Su	0429	11.0	336		7 M	0459	11.0	336		7 Tu	0529	11.0	336		7 Th	0559	11.0	336		7 Sa	0629	11.0	336		7 Su	0659	11.0	336		8 M	0729	11.0	336		8 Tu	0759	11.0	336		8 Th	0829	11.0	336		8 Sa	0859	11.0	336		8 Su	0929	11.0	336		9 M	0959	11.0	336		9 Tu	1029	11.0	336		9 Th	1059	11.0	336		9 Sa	1129	11.0	336		9 Su	1159	11.0	336		10 M	1229	11.0	336		10 Tu	1259	11.0	336		10 Th	0129	11.0	336		10 Sa	0159	11.0	336		10 Su	0229	11.0	336		11 M	0259	11.0	336		11 Tu	0329	11.0	336		11 Th	0359	11.0	336		11 Sa	0429	11.0	336		11 Su	0459	11.0	336		12 M	0529	11.0	336		12 Tu	0559	11.0	336		12 Th	0629	11.0	336		12 Sa	0659	11.0	336		12 Su	0729	11.0	336		13 M	0759	11.0	336		13 Tu	0829	11.0	336		13 Th	0859	11.0	336		13 Sa	0929	11.0	336		13 Su	0959	11.0	336		14 M	1029	11.0	336		14 Tu	1059	11.0	336		14 Th	1129	11.0	336		14 Sa	1159	11.0	336		14 Su	1229	11.0	336		15 M	1259	11.0	336		15 Tu	0129	11.0	336		15 Th	0159	11.0	336		15 Sa	0229	11.0	336		15 Su	0259	11.0	336	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Kanmen, China, 2018

Times and Heights of High and Low Waters

January				February				March															
	Time		Height		Time		Height		Time		Height		Time		Height								
	h	m			ft	cm			h	m			ft	cm		h	m	ft	cm				
1 M	0144	0.8	23	16 Tu	0230	2.4	73	1 Th	0310	-0.7	-20	16 F	0317	1.6	49	1 Th	0214	0.5	15	16 F	0221	2.5	77
	0812	19.3	588		0857	17.7	540		0939	20.1	613		0941	18.3	559		0839	19.5	593		0840	18.0	548
	1409	4.0	121		1449	5.2	158		1533	3.0	91		1534	3.8	117		1438	3.1	95		1440	3.8	115
	2008	18.4	562		2042	16.7	510		2137	18.9	575		2132	17.6	536		2043	18.6	567		2039	17.5	533
2 Tu	0232	-0.2	-6	17 W	0302	1.9	59	2 F	0353	-0.7	-21	17 Sa	0347	1.4	42	2 F	0257	-0.1	-2	17 Sa	0253	1.9	59
	0901	20.0	611		0930	18.1	551		1021	20.1	613		1010	18.5	564		0921	19.9	606		0911	18.4	562
	1457	3.6	109		1521	4.8	147		1615	2.8	84		1604	3.4	104		1519	2.4	73		1510	3.0	91
	2055	18.8	572		2114	17.0	519		2222	18.8	574		2204	17.8	543		2127	19.1	581		2113	18.1	553
3 W	0318	-0.7	-21	18 Th	0333	1.6	50	3 Sa	0434	-0.2	-6	18 Su	0418	1.4	43	3 Sa	0337	0.0	-1	18 Su	0325	1.6	49
	0949	20.3	620		1001	18.3	557		1102	19.8	602		1039	18.4	562		0959	19.8	604		0940	18.7	569
	1542	3.4	105		1551	4.6	139		1655	2.8	86		1634	3.1	96		1556	2.0	62		1540	2.4	73
	2143	18.8	574		2146	17.2	524		2306	18.4	562		2237	17.8	544		2208	19.1	582		2146	18.5	565
4 Th	0403	-0.7	-21	19 F	0404	1.6	48	4 Su	0514	0.8	23	19 M	0449	1.7	52	4 Su	0415	0.5	15	19 M	0356	1.6	49
	1036	20.2	617		1032	18.3	557		1140	19.1	581		1108	18.3	557		1034	19.4	592		1008	18.7	570
	1627	3.5	107		1622	4.4	134		1735	3.1	96		1707	3.0	92		1632	2.0	61		1612	2.0	60
	2230	18.6	566		2218	17.2	525		2350	17.7	540		2313	17.7	539		2248	18.8	572		2221	18.7	569
5 F	0448	-0.2	-5	20 Sa	0435	1.7	52	5 M	0553	2.0	62	20 Tu	0521	2.2	67	5 M	0451	1.4	42	20 Tu	0428	1.9	57
	1122	19.8	603		1103	18.1	553		1218	18.1	553		1139	17.9	547		1107	18.8	572		1037	18.5	564
	1712	3.8	116		1654	4.3	132		1816	3.7	113		1741	3.1	93		1707	2.3	70		1645	1.8	54
	2319	18.0	550		2252	17.1	522		0036	16.8	511		2352	17.3	527		2326	18.1	552		2257	18.5	565
6 Sa	0532	0.8	25	21 Su	0507	2.0	62	6 Tu	0636	16.8	511	21 W	0557	3.0	91	6 Tu	0526	2.6	78	21 W	0501	2.4	73
	1207	19.1	581		1135	17.9	545		0634	3.6	109		1213	17.4	531		1139	17.9	547		1109	18.1	553
	1759	4.3	130		1728	4.4	133		1258	17.1	520		1820	3.3	101		1743	2.9	87		1720	1.8	56
					2329	16.8	513		1901	4.5	136										2337	18.1	553
7 Su	0010	17.3	526	22 M	0541	2.6	78	7 W	0127	15.6	477	22 Th	0038	16.7	508	7 W	0006	17.3	526	22 Th	0537	3.2	99
	0618	2.1	65		1209	17.5	534		0719	5.2	158		0637	4.0	123		0601	3.9	119		1143	17.5	534
	1253	18.2	554		1805	4.5	137		1341	15.9	485		1253	16.7	509		1213	16.9	516		1759	2.2	68
	1849	4.9	148						1954	5.3	162		1906	3.8	115		1820	3.6	111				
8 M	0105	16.3	497	23 Tu	0010	16.4	499	8 Th	0227	14.6	445	23 F	0135	15.9	485	8 Th	0049	16.2	494	23 F	0023	17.5	532
	0708	3.7	112		0619	3.3	101		0815	6.7	204		0727	5.3	163		0639	5.3	162		0619	4.4	134
	1342	17.2	523		1247	17.1	520		1435	14.8	451		1345	15.8	481		1250	15.8	482		1225	16.7	508
	1947	5.4	166		1848	4.7	143		2104	6.0	182		2006	4.4	134		1902	4.7	142		1844	3.0	91
9 Tu	0206	15.3	467	24 W	0100	15.8	482	9 F	0343	13.9	423	24 Sa	0249	15.2	464	9 F	0140	15.1	460	24 Sa	0120	16.6	505
	0805	5.2	158		0702	4.2	129		0935	7.8	237		0835	6.6	202		0725	6.8	207		0709	5.8	176
	1436	16.2	493		1331	16.5	502		1544	14.0	426		1454	15.0	456		1335	14.6	446		1317	15.6	475
	2055	5.8	178		1939	5.0	151		2229	6.1	186		2132	4.7	144		1958	5.7	174		1944	4.0	122
10 W	0318	14.6	445	25 Th	0201	15.2	464	10 Sa	0509	13.9	424	25 Su	0418	15.1	461	10 Sa	0246	14.1	430	25 Su	0234	15.7	479
	0916	6.4	196		0756	5.3	162		1109	8.0	244		1015	7.3	221		0834	8.0	245		0821	7.1	215
	1537	15.4	470		1427	15.9	485		1705	13.8	420		1624	14.7	449		1436	13.5	413		1432	14.6	445
	2211	5.8	178		2046	5.1	155		2351	5.6	170		2307	4.2	128		2121	6.5	197		2110	4.8	145
11 Th	0437	14.4	440	26 F	0317	14.9	454	11 Su	0622	14.6	446	26 M	0545	15.9	486	11 Su	0415	13.7	417	26 M	0403	15.5	472
	1036	7.1	215		0907	6.2	190		1225	7.5	229		1152	6.7	203		1017	8.6	261		1010	7.4	227
	1645	15.1	459		1535	15.5	472		1816	14.2	434		1749	15.4	468		1608	13.0	397		1614	14.4	438
	2325	5.4	165		2209	4.7	144										2257	6.4	195		2251	4.5	138
12 F	0551	14.8	452	27 Sa	0442	15.2	463	12 M	0051	4.6	141	27 Tu	0025	3.0	90	12 M	0541	14.2	432	27 Tu	0530	16.1	492
	1150	7.1	215		1038	6.6	201		0718	15.6	476		0655	17.3	526		1150	8.0	245		1144	6.6	200
	1750	15.1	460		1650	15.6	474		1318	6.7	203		1301	5.4	166		1738	13.4	409		1742	15.2	464
					2329	3.8	115		1909	15.0	456		1857	16.5	504								
13 Sa	0025	4.7	142	28 Su	0601	16.2	494	13 Tu	0136	3.6	111	28 W	0124	1.6	48	13 Tu	0015	5.5	169	28 W	0011	3.4	105
	0652	15.6	475		1202	6.1	187		0801	16.6	506		0751	18.5	565		0644	15.2	463		0638	17.3	528
	1249	6.7	203		1801	16.1	491		1359	5.8	177		1353	4.2	127		1251	7.0	213		1249	5.2	157
	1845	15.5	471						1951	15.8	481		1954	17.7	540		1840	14.4	439		1850	16.5	504
14 Su	0114	3.8	116	29 M	0036	2.4	74	14 W	0213	2.8	84	14 W	0107	4.4	135	14 W	0110	2.3	70	29 Th	0110	2.3	70
	0740	16.4	500		0706	17.5	534		0837	17.4	531		0730	16.3	497		0732	18.4	561				
	1336	6.1	187		1307	5.2	160		1433	5.0	153		1333	5.8	177		1338	3.7	114				
	1930	15.9	485		1904	17.0	517		2027	16.5	504		1926	15.5	473		1945	17.8	542				
15 M	0154	3.1	93	30 Tu	0134	1.0	32	15 Th	0246	2.1	63	15 Th	0147	3.4	103	15 Th	0158	1.4	44	30 F	0158	1.4	44
	0821	17.1	522		0802	18.7	571		0910	18.0	549		0807	17.3	526		0817	19.1	582				
	1415	5.6	171		1402	4.3	131		1504	4.4	133		1408	4.7	144		1420	2.7	81		1420	2.7	81
	2008	16.3	498		1959	17.8	544		2100	17.1	522		2004	16.6	506		2031	18.7	569				
				31 W	0224	0.0	-1									31 Sa	0239	1.1	33				
					0852	19.7	599										0855	19.4	590				
					1449	3.5	107										1458	2.0	60				
					2049	18.5	565										2112	19.1	582				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Kanmen, China, 2018

Times and Heights of High and Low Waters

April				May				June															
	Time	Height			Time	Height			Time	Height			Time	Height									
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm								
1 Su	0317	1.2	37	16 M	0258	2.2	66	1 Tu	0329	3.1	94	16 W	0308	2.8	85	1 F	0415	4.8	146	16 Sa	0418	3.7	112
	0930	19.2	586		0904	18.7	569		0930	18.0	550		0905	18.6	566		1004	16.8	513		1012	18.2	556
	1533	1.6	49		1514	1.4	44		1542	1.5	47		1526	0.2	6		1627	2.0	62		1639	-0.2	-5
	2151	19.1	583		2125	19.1	583		2206	18.6	568		2147	19.8	602		2256	17.9	547		2313	19.8	603
2 M	0352	1.7	52	17 Tu	0332	2.1	64	2 W	0402	3.6	110	17 Th	0348	3.0	91	2 Sa	0448	5.2	157	17 Su	0505	4.0	123
	1002	18.8	574		0935	18.7	571		0959	17.6	537		0942	18.4	562		1036	16.5	504		1102	17.8	543
	1606	1.6	48		1548	0.9	28		1614	1.7	52		1606	0.0	1		1701	2.5	75		1726	0.5	16
	2227	18.8	574		2203	19.3	589		2240	18.3	558		2232	19.7	600		2332	17.6	535				
3 Tu	0426	2.5	75	18 W	0406	2.4	72	3 Th	0435	4.2	128	18 F	0429	3.4	105	3 Su	0524	5.6	170	18 M	0004	19.3	587
	1032	18.2	556		1007	18.5	565		1029	17.1	522		1023	18.0	550		1110	16.1	491		0554	4.5	138
	1639	1.8	56		1624	0.7	22		1647	2.1	64		1648	0.3	9		1736	3.1	93		1157	17.2	524
	2302	18.3	558		2243	19.2	586		2315	17.8	543		2319	19.3	588						1816	1.6	48
4 W	0459	3.4	103	19 Th	0443	2.9	89	4 F	0508	4.9	149	19 Sa	0513	4.1	126	4 M	0010	17.1	520	19 Tu	0057	18.5	565
	1102	17.6	536		1042	18.1	552		1100	16.6	505		1108	17.4	531		0603	6.1	186		0649	5.1	155
	1712	2.3	71		1701	0.9	28		1720	2.7	82		1734	1.0	30		1149	15.6	475		1259	16.5	502
	2338	17.6	537		2326	18.8	573		2352	17.2	524						1815	3.8	117		1911	2.9	87
5 Th	0532	4.4	134	20 F	0523	3.8	115	5 Sa	0543	5.7	173	20 Su	0011	18.6	568	5 Tu	0052	16.5	502	20 W	0153	17.8	542
	1133	16.8	511		1121	17.5	532		1134	15.9	484		0602	5.0	152		0648	6.6	202		0753	5.5	167
	1746	3.1	93		1743	1.5	46		1756	3.5	107		1200	16.6	506		1236	14.9	455		1410	15.8	483
													1826	2.0	62		1901	4.7	144		2015	4.1	126
6 F	0017	16.8	511	21 Sa	0015	18.1	551	6 Su	0034	16.4	501	21 M	0110	17.8	544	6 W	0142	15.9	485	21 Th	0252	17.1	521
	0607	5.5	169		0608	4.9	148		0623	6.5	199		0700	5.8	177		0746	7.1	215		0904	5.6	171
	1207	15.8	482		1207	16.5	504		1214	15.1	459		1304	15.7	479		1337	14.4	438		1525	15.5	472
	1823	4.0	123		1832	2.5	76		1838	4.5	137		1926	3.2	99		1958	5.5	169		2127	5.2	157
7 Sa	0103	15.8	481	22 Su	0115	17.2	523	7 M	0123	15.6	477	22 Tu	0215	17.1	522	7 Th	0241	15.5	473	22 F	0355	16.6	507
	0649	6.8	206		0703	6.1	185		0715	7.4	225		0815	6.4	194		0857	7.1	215		1017	5.3	163
	1248	14.7	449		1305	15.5	471		1304	14.2	432		1425	15.1	460		1452	14.1	430		1641	15.6	475
	1909	5.2	157		1934	3.7	112		1931	5.5	168		2041	4.3	130		2109	6.1	185		2242	5.7	174
8 Su	0159	14.8	451	23 M	0227	16.4	499	8 Tu	0225	15.0	457	23 W	0325	16.7	510	8 F	0344	15.5	472	23 Sa	0459	16.4	500
	0747	7.9	240		0820	7.0	214		0831	7.9	242		0939	6.2	190		1010	6.5	198		1124	4.8	145
	1341	13.7	417		1428	14.6	444		1414	13.5	410		1552	15.1	459		1611	14.5	441		1750	16.1	490
	2015	6.2	189		2057	4.6	140		2047	6.3	192		2204	4.8	145		2226	6.1	185		2349	5.8	177
9 M	0314	14.2	432	24 Tu	0348	16.1	491	9 W	0337	14.8	450	24 Th	0435	16.7	510	9 Sa	0446	15.8	483	24 Su	0558	16.4	501
	0923	8.5	259		1002	7.0	214		0958	7.8	237		1055	5.5	168		1112	5.4	166		1221	4.0	123
	1504	12.9	394		1607	14.6	444		1545	13.4	408		1710	15.6	476		1722	15.4	470		1849	16.7	510
	2151	6.7	203		2232	4.6	141		2214	6.4	194		2319	4.7	144		2332	5.6	171				
10 Tu	0443	14.2	434	25 W	0507	16.5	504	10 Th	0450	15.1	460	25 F	0539	17.0	519	10 Su	0541	16.5	502	25 M	0046	5.6	172
	1057	8.1	248		1125	6.0	184		1110	6.9	210		1158	4.5	137		1207	4.1	126		0649	16.6	505
	1646	13.1	400		1731	15.5	471		1707	14.1	431		1815	16.5	503		1821	16.6	507		1309	3.3	102
	2319	6.2	190		2349	4.0	122		2326	5.8	177										1939	17.3	528
11 W	0554	15.0	458	26 Th	0612	17.3	528	11 F	0548	15.8	483	26 Sa	0020	4.4	135	11 M	0029	5.0	151	26 Tu	0134	5.4	166
	1207	7.1	215		1227	4.7	143		1206	5.6	172		0633	17.4	529		0630	17.1	522		0733	16.7	509
	1759	14.1	431		1836	16.6	507		1808	15.4	469		1249	3.5	107		1256	2.7	83		1351	2.8	84
													1910	17.3	528		1912	17.8	544		2022	17.8	543
12 Th	0023	5.2	160	27 F	0048	3.2	99	12 Sa	0023	4.9	150	27 Su	0111	4.2	128	12 Tu	0119	4.3	131	27 W	0215	5.2	160
	0645	16.0	489		0705	18.0	550		0635	16.7	510		0718	17.6	535		0715	17.7	541		0811	16.8	512
	1255	5.7	175		1316	3.4	105		1251	4.2	129		1333	2.7	83		1341	1.4	44		1429	2.3	71
	1851	15.4	470		1930	17.7	540		1857	16.7	509		1957	17.9	546		2001	18.9	576		2100	18.1	552
13 F	0109	4.2	127	28 Sa	0136	2.7	83	13 Su	0109	4.1	124	28 M	0154	4.1	124	13 W	0205	3.8	115	28 Th	0252	5.1	156
	0726	17.0	519		0749	18.5	563		0715	17.5	534		0758	17.6	535		0758	18.2	554		0844	16.9	514
	1333	4.5	136		1357	2.5	76		1331	2.9	88		1411	2.2	67		1425	0.5	14		1505	2.1	63
	1934	16.7	509		2015	18.4	562		1941	17.9	546		2038	18.3	557		2048	19.7	599		2134	18.3	557
14 Sa	0148	3.2	99	29 Su	0217	2.6	78	14 M	0150	3.3	102	29 Tu	0233	4.1	126	14 Th	0249	3.5	107	29 F	0326	5.1	154
	0801	17.8	543		0826	18.5	565		0752	18.1	552		0832	17.5	532		0841	18.4	561		0916	16.9	516
	1407	3.2	99		1434	1.9	57		1410	1.7	51		1447	1.9	57		1509	-0.2	-6		1538	2.0	60
	2012	17.8	542		2055	18.8	573		2023	18.8	574		2115	18.4	561		2135	20.0	611		2207	18.3	558
15 Su	0223	2.6	78	30 M	0254	2.7	83	15 Tu	0230	2.9	89	30 W	0308	4.3	130	15 F	0334	3.5	106	30 Sa	0359	5.1	154
	0833	18.4	560		0900	18.4	560		0828	18.5	563		0904	17.3	527		0926	18.4	562		0946	16.9	516
	1441	2.2	68		1509	1.6	48		1448	0.8	23		1521	1.8	54		1553	-0.4	-13		1611	2.0	62
	2049	18.6	567		2132	18.8	574		2105	19.5	593		2149	18.4	560		2223	20.1	612		2239	18.2	556
									31 Th	0342	4.5	137											
										0934	17.1	520											
										1554	1.8	55											
									2223	18.2	555												

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Kanmen, China, 2018

Times and Heights of High and Low Waters

July				August				September																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
1 Su	0432	5.1	156		16 M	0453	3.5	107		1 W	0517	4.7	143		16 Th	0557	3.5	108		1 Sa	0600	4.0	121		16 Su	0032	17.1	521		17 M	0032	17.1	521		17 M	0118	15.8	482		18 Tu	0221	14.7	447		19 W	0355	14.1	430		20 Th	0524	14.5	443		21 F	0032	7.6	233		22 Sa	0115	6.5	198		23 Su	0151	5.4	165		24 M	0222	4.5	137		25 Tu	0252	3.7	114		26 W	0322	3.1	96		27 Th	0352	2.8	85		28 F	0423	2.6	79		29 Sa	0457	2.7	81		30 Su	0534	3.0	91		31 Tu	0603	3.9	118		1 W	0647	5.0	151		2 M	0743	6.1	186		3 Tu	0905	7.0	212		4 W	1037	7.0	212		5 Th	1202	3.4	104		6 F	1305	15.5	471		7 Sa	1432	15.5	473		8 Su	1558	15.1	459		9 M	1639	3.5	107		10 Tu	1718	2.7	82		11 W	1822	18.1	553		12 Th	1913	7.5	229		13 F	2023	8.8	268		14 Sa	2202	9.3	282		15 Su	2331	8.7	265		16 M	2428	18.5	565		17 Tu	2524	19.2	584		18 W	2617	19.7	600		19 Th	2714	19.9	606		20 F	2817	19.9	606		21 Sa	2917	18.8	572		22 Su	3017	18.9	575		23 M	0103	16.8	512		24 Tu	0215	15.9	486		25 W	0342	15.5	473		26 Th	0447	2.4	74		27 F	0524	3.0	92		28 Sa	0603	3.9	118		29 Su	0682	4.4	134		30 M	0762	5.0	151		31 Tu	0844	4.7	142		1 W	0932	17.5	534		2 M	1025	20.3	618		3 Tu	1106	19.7	599		4 W	1199	18.8	572		5 Th	1284	17.7	538		6 F	1374	2.0	62		7 Sa	1468	16.4	499		8 Su	1563	16.6	507		9 M	1657	2.6	78		10 Tu	1754	3.3	101		11 W	1846	4.7	143		12 Th	1935	5.7	174		13 F	2024	17.7	538		14 Sa	2113	8.1	246		15 Su	2204	15.1	459		16 M	2292	15.2	464		17 Tu	2381	18.8	572		18 W	2470	18.6	566		19 Th	2559	18.2	555		20 F	2640	18.3	559		21 Sa	2722	18.2	553		22 Su	2805	18.7	569		23 M	2888	18.7	569		24 Tu	2971	18.9	575		25 W	3054	19.1	581		26 Th	0104	17.1	522		27 F	0191	17.2	523		28 Sa	0278	17.2	523		29 Su	0365	17.3	528		30 M	0452	17.4	531		31 Tu	0539	17.5	534		1 W	0620	17.6	537		2 M	0707	17.7	540		3 Tu	0794	17.8	543		4 W	0881	17.9	545		5 Th	0968	18.0	546		6 F	1055	18.1	549		7 Sa	1142	18.1	551		8 Su	1229	18.2	561		9 M	1316	18.3	564		10 Tu	1403	18.4	567		11 W	1490	18.5	570		12 Th	1577	18.6	573		13 F	1664	18.7	576		14 Sa	1751	18.8	579		15 Su	1838	18.9	582		16 M	1925	19.0	585		17 Tu	2012	19.1	588		18 W	2100	19.2	591		19 Th	2187	19.3	594		20 F	2274	19.4	597		21 Sa	2361	19.5	600		22 Su	2448	19.6	603		23 M	2535	19.7	606		24 Tu	2622	19.8	609		25 W	2710	19.9	612		26 Th	2797	20.0	615		27 F	2884	20.1	618		28 Sa	2971	20.2	621		29 Su	3058	20.3	624		30 M	0145	16.5	504		31 Tu	0232	16.6	507		1 W	0319	16.7	510		2 M	0406	16.8	513		3 Tu	0493	16.9	516		4 W	0580	17.0	519		5 Th	0667	17.1	522		6 F	0754	17.2	525		7 Sa	0841	17.3	528		8 Su	0928	17.4	531		9 M	1015	17.5	534		10 Tu	1102	17.6	537		11 W	1189	17.7	540		12 Th	1276	17.8	543		13 F	1363	17.9	546		14 Sa	1450	18.0	549		15 Su	1537	18.1	552		16 M	1624	18.2	555		17 Tu	1711	18.3	558		18 W	1798	18.4	561		19 Th	1885	18.5	564		20 F	1972	18.6	567		21 Sa	2059	18.7	570		22 Su	2146	18.8	573		23 M	2233	18.9	576		24 Tu	2320	19.0	579		25 W	2407	19.1	582		26 Th	2494	19.2	585		27 F	2581	19.3	588		28 Sa	2668	19.4	591		29 Su	2755	19.5	594		30 M	2842	19.6	597		31 Tu	2929	19.7	600		1 W	3016	19.8	603		2 M	3103	19.9	606		3 Tu	3190	20.0	609		4 W	3277	20.1	612		5 Th	3364	20.2	615		6 F	3451	20.3	618		7 Sa	3538	20.4	621		8 Su	3625	20.5	624		9 M	3712	20.6	627		10 Tu	3799	20.7	630		11 W	3886	20.8	633		12 Th	3973	20.9	636		13 F	4060	21.0	639		14 Sa	4147	21.1	642		15 Su	4234	21.2	645		16 M	4321	21.3	648		17 Tu	4408	21.4	651		18 W	4495	21.5	654		19 Th	4582	21.6	657		20 F	4669	21.7	660		21 Sa	4756	21.8	663		22 Su	4843	21.9	666		23 M	4930	22.0	669		24 Tu	5017	22.1	672		25 W	5104	22.2	675		26 Th	5191	22.3	678		27 F	5278	22.4	681		28 Sa	5365	22.5	684		29 Su	5452	22.6	687		30 M	5539	22.7	690		31 Tu	5626	22.8	693	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Kanmen, China, 2018

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
	h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm
1 M	0616 3.7 112 1250 17.7 539 1840 6.6 200	16 Tu	0034 15.8 481 0655 5.8 176 1347 15.9 485 1934 8.8 267	1 Th	0145 15.5 472 0814 5.1 156 1509 16.9 516 2120 7.9 240	16 F	0159 14.0 427 0827 6.9 211 1518 15.3 467 2144 8.4 257	1 Sa	0308 15.3 467 0923 5.1 156 1556 17.1 521 2222 6.1 187	16 Su	0229 14.0 428 0837 6.5 199 1520 15.4 469 2147 7.1 216
2 Tu	0045 16.7 509 0710 4.6 140 1359 16.9 514 1945 7.8 238	17 W	0129 14.6 446 0803 6.9 210 1500 15.2 464 2113 9.3 283	2 F	0324 15.2 463 0951 5.4 164 1629 17.3 526 2251 6.9 211	17 Sa	0329 13.8 420 0956 7.1 217 1632 15.6 474 2256 7.6 231	2 Su	0432 15.7 478 1044 5.2 159 1704 17.3 528 2330 5.0 153	17 M	0349 14.1 429 0957 6.8 207 1624 15.5 473 2254 6.2 188
3 W	0152 15.6 477 0828 5.4 166 1524 16.5 504 2126 8.4 255	18 Th	0253 13.8 422 0938 7.4 225 1626 15.3 466 2245 8.8 269	3 Sa	0454 15.9 486 1114 4.8 146 1739 18.1 551 2357 5.4 166	18 Su	0455 14.4 440 1109 6.7 203 1733 16.2 495 2352 6.3 192	3 M	0544 16.5 504 1151 5.0 152 1803 17.7 540	18 Tu	0505 14.8 450 1109 6.5 199 1723 16.0 487 2350 4.9 150
4 Th	0330 15.2 464 1009 5.4 165 1653 17.1 521 2307 7.6 231	19 F	0435 14.0 427 1103 7.0 213 1738 16.0 489 2352 7.7 235	4 Su	0604 17.3 526 1217 4.0 121 1834 19.0 578	19 M	0557 15.6 475 1206 5.9 180 1821 17.1 521	4 Tu	0025 3.9 118 0644 17.5 533 1246 4.7 143 1852 18.0 550	19 W	0608 15.9 484 1208 5.9 181 1814 16.7 508
5 F	0506 16.0 487 1134 4.5 136 1804 18.3 558	20 Sa	0548 15.0 458 1206 6.1 186 1830 17.1 520	5 M	0048 4.0 122 0700 18.5 564 1308 3.3 102 1920 19.6 597	20 Tu	0037 4.9 150 0646 16.9 515 1252 5.1 155 1901 17.9 545	5 W	0111 2.9 88 0734 18.3 557 1332 4.5 137 1936 18.2 555	20 Th	0039 3.5 108 0700 17.1 522 1259 5.2 160 1900 17.3 528
6 Sa	0016 6.1 185 0617 17.4 530 1237 3.2 97 1900 19.6 597	21 Su	0039 6.4 195 0639 16.3 498 1253 5.1 156 1910 18.0 549	6 Tu	0132 2.8 86 0748 19.5 593 1351 3.1 93 2000 19.8 604	21 W	0115 3.6 110 0729 18.1 551 1331 4.4 134 1937 18.5 563	6 Th	0153 2.2 67 0818 18.8 572 1414 4.5 137 2014 18.2 554	21 F	0123 2.2 68 0747 18.3 557 1345 4.6 141 1943 17.9 545
7 Su	0109 4.5 137 0714 18.9 575 1328 2.2 66 1946 20.5 624	22 M	0117 5.1 156 0721 17.6 536 1330 4.2 129 1944 18.8 572	7 W	0211 2.0 62 0831 19.9 608 1431 3.1 96 2037 19.7 600	22 Th	0152 2.4 74 0809 19.0 580 1409 3.9 119 2012 18.9 576	7 F	0230 1.8 55 0858 19.0 578 1451 4.6 140 2049 18.0 549	22 Sa	0206 1.1 33 0833 19.2 585 1428 4.2 127 2025 18.3 558
8 M	0153 3.2 97 0802 19.9 608 1412 1.7 51 2027 20.9 637	23 Tu	0150 4.0 121 0758 18.6 568 1405 3.6 110 2015 19.3 588	8 Th	0247 1.6 50 0911 20.0 610 1507 3.5 108 2110 19.3 589	23 F	0228 1.5 45 0849 19.7 601 1446 3.7 112 2047 19.0 580	8 Sa	0306 1.7 51 0935 18.9 577 1526 4.8 147 2122 17.8 542	23 Su	0249 0.2 7 0918 19.8 604 1511 3.9 119 2108 18.5 564
9 Tu	0232 2.3 70 0846 20.5 626 1451 1.7 52 2104 20.8 635	24 W	0222 3.0 91 0833 19.4 592 1437 3.2 99 2046 19.6 597	9 F	0322 1.6 49 0948 19.8 604 1542 4.1 125 2142 18.8 574	24 Sa	0304 0.8 25 0929 20.0 611 1524 3.7 113 2123 19.0 578	9 Su	0339 1.7 53 1010 18.7 571 1559 5.1 155 2154 17.5 533	24 M	0332 -0.2 -6 1003 20.0 611 1554 3.9 118 2152 18.5 563
10 W	0309 1.8 55 0926 20.6 629 1529 2.2 67 2138 20.4 622	25 Th	0254 2.2 68 0908 19.9 606 1510 3.2 97 2115 19.6 598	10 Sa	0356 1.8 56 1024 19.4 590 1615 4.8 145 2214 18.2 556	25 Su	0342 0.6 17 1011 20.1 612 1603 4.0 123 2201 18.7 569	10 M	0412 2.0 61 1045 18.4 562 1632 5.4 164 2226 17.1 522	25 Tu	0415 -0.2 -6 1049 19.9 607 1638 4.1 124 2239 18.2 555
11 Th	0345 1.7 53 1005 20.3 620 1604 3.0 92 2210 19.8 602	26 F	0326 1.7 52 0944 20.1 612 1543 3.4 103 2146 19.4 592	11 Su	0429 2.3 70 1101 18.8 572 1649 5.5 167 2246 17.6 535	26 M	0423 0.7 20 1055 19.8 603 1644 4.6 139 2244 18.1 553	11 Tu	0446 2.4 74 1120 18.0 549 1706 5.8 176 2301 16.6 507	26 W	0500 0.3 8 1137 19.5 595 1725 4.4 134 2329 17.7 539
12 F	0419 2.0 62 1043 19.8 602 1639 4.0 123 2242 19.0 578	27 Sa	0400 1.5 46 1021 20.0 609 1617 3.8 117 2219 19.0 580	12 M	0503 3.0 91 1139 18.0 550 1724 6.3 191 2322 16.7 510	27 Tu	0506 1.2 37 1143 19.2 586 1730 5.3 161 2331 17.4 530	12 W	0520 3.1 93 1157 17.5 533 1743 6.3 191 2339 16.0 489	27 Th	0547 1.1 35 1226 18.9 576 1816 4.9 149
13 Sa	0454 2.6 80 1122 19.0 578 1714 5.2 157 2316 18.0 549	28 Su	0436 1.6 49 1102 19.6 597 1655 4.6 139 2256 18.4 561	13 Tu	0539 3.9 118 1221 17.3 526 1804 7.2 218	28 W	0554 2.1 65 1238 18.5 563 1824 6.1 186	13 Th	0556 3.9 118 1238 16.8 513 1826 6.8 207	28 F	0025 16.9 516 0638 2.4 72 1319 18.1 552 1914 5.3 163
14 Su	0529 3.4 105 1203 18.0 548 1750 6.4 194 2352 16.9 516	29 M	0516 2.1 64 1148 19.0 578 1737 5.5 169 2338 17.5 534	14 W	0002 15.8 482 0620 4.9 150 1309 16.4 500 1855 8.0 244	29 Th	0029 16.5 503 0650 3.3 100 1339 17.7 540 1932 6.7 205	14 F	0023 15.3 466 0638 4.8 146 1324 16.2 493 1919 7.3 221	29 Sa	0129 16.1 492 0736 3.7 114 1415 17.3 528 2023 5.6 172
15 M	0608 4.6 139 1250 16.9 516 1833 7.6 232	30 Tu	0601 3.0 91 1242 18.1 552 1828 6.7 203	15 Th	0051 14.9 453 0712 6.0 184 1408 15.7 478 2013 8.6 262	30 F	0142 15.7 478 0759 4.4 135 1446 17.2 525 2059 6.8 208	15 Sa	0118 14.5 443 0730 5.7 175 1418 15.6 477 2029 7.4 227	30 Su	0242 15.5 472 0844 5.0 153 1516 16.6 507 2140 5.5 169
		31 W	0031 16.5 502 0658 4.1 125 1350 17.3 527 1938 7.7 234					31 M	0400 15.2 464 1004 5.9 179 1622 16.2 495 2255 5.0 153		

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Xiamen, China, 2018

Times and Heights of High and Low Waters

October				November				December							
	Time	Height			Time	Height			Time	Height			Time	Height	
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm
1 M	0331	18.8	574	16 Tu	0402	17.1	520	1 Th	0459	17.0	519	16 F	0509	15.2	464
	1000	3.2	98		1043	4.8	145		1145	4.2	127		1148	6.0	182
	1619	18.7	571		1704	16.8	513		1820	17.7	538		1822	16.0	489
	2232	6.1	187		2310	7.9	240	●				1 Sa	0025	6.3	193
2 Tu	0415	18.0	550	17 W	0452	16.0	487	2 F	0040	7.3	221	17 Sa	0069	16.5	504
	1053	3.7	114		1136	5.7	174		0622	16.4	501		1242	4.6	139
●	1718	17.9	546	●	1807	16.0	487		1303	4.7	142	2 Su	1910	17.8	544
	2331	7.1	215						1941	17.7	540		0140	5.8	176
3 W	0514	17.2	524	18 Th	0016	8.5	260	3 Sa	0203	6.7	203	3 M	0734	16.6	505
	1159	4.3	132		0600	15.1	459		0752	16.7	510		1355	5.0	151
	1836	17.3	528		1245	6.4	194		1426	4.5	138		2017	18.0	549
					1924	15.7	479		2053	18.3	559	3 Tu	0249	4.9	148
4 Th	0048	7.6	231	19 F	0139	8.5	260	4 Su	0317	5.4	166	4 M	0851	17.2	523
	0635	16.6	506		0728	14.8	451		0910	17.7	538		1505	5.1	154
	1321	4.6	140		1403	6.4	196		1536	4.0	122	4 Tu	2116	18.4	560
	2002	17.5	532		2040	16.1	492		2153	19.2	584		0349	3.8	117
5 F	0217	7.3	222	20 Sa	0257	7.8	237	5 M	0415	4.1	125	5 W	0957	18.0	548
	0804	16.8	512		0848	15.4	470		1014	18.8	573		1607	5.0	152
	1445	4.0	123		1514	5.9	179		1635	3.6	110		2208	18.7	570
	2120	18.3	559		2140	17.0	519		2243	19.8	602	5 Tu	0442	3.0	90
6 Sa	0337	6.0	184	21 Su	0356	6.6	201	6 Tu	0504	3.0	91	6 W	1053	18.7	571
	0925	17.8	542		0950	16.5	504		1108	19.8	602		1700	5.0	152
	1556	3.1	96		1609	5.1	155		1724	3.6	109		2253	18.9	576
	2223	19.5	593		2226	17.9	547		2324	20.0	609	6 Th	0526	2.5	75
7 Su	0438	4.7	142	22 M	0443	5.3	163	7 W	0549	2.3	70	7 F	1141	19.2	585
	1031	19.1	583		1040	17.7	541		1155	20.3	618		1748	5.1	154
	1654	2.4	73		1656	4.4	133		1806	3.8	115	●	2334	18.9	576
	2314	20.3	620		2305	18.8	573					7 Sa	0605	2.1	64
8 M	0528	3.6	109	23 Tu	0521	4.4	133	8 Th	0001	20.0	609	8 M	1223	19.3	589
	1124	20.2	615		1121	18.8	573		0629	2.1	65		1831	5.3	161
	1744	2.1	63		1738	3.9	118	●	1238	20.4	622	8 Sa	0008	18.7	571
	2357	20.8	634		2340	19.4	592		1849	4.2	127		0644	2.0	60
9 Tu	0609	2.7	83	24 W	0556	3.4	104	9 F	0036	19.7	601	9 Su	1301	19.3	589
	1211	20.9	636		1159	19.7	599		0703	2.0	61		1904	5.5	169
●	1830	2.3	69		1813	3.8	115		1316	20.2	616	9 M	0042	18.6	566
									1928	4.9	148		0717	2.1	64
10 W	0037	20.8	634	25 Th	0011	19.8	602	10 Sa	0107	19.3	589	10 Su	1338	19.2	584
	0651	2.3	69		0632	2.8	84		0741	2.1	64		1942	5.7	174
	1256	21.1	642	○	1238	20.2	615		1353	19.8	605	10 M	0114	18.3	558
	1910	2.9	87		1849	3.8	115		2000	5.3	162		0751	2.1	65
11 Th	0110	20.5	625	26 F	0043	19.9	607	11 Su	0140	19.0	578	11 Tu	1410	18.9	576
	0732	2.2	67		0703	2.3	71		0812	2.5	75		2013	6.0	182
	1338	20.9	636		1314	20.4	622		1430	19.3	588	11 W	0148	18.1	551
	1950	3.5	108		1928	4.2	127		2038	5.8	176		0825	2.5	76
12 F	0144	20.1	612	27 Sa	0113	19.8	605	12 M	0211	18.4	562	12 Tu	1445	18.6	567
	0805	2.4	73		0740	2.0	61		0848	2.8	85		2048	6.1	186
	1416	20.3	620		1352	20.5	624		1505	18.8	572	12 W	0223	17.7	538
	2031	4.4	134		2002	4.5	138		2111	6.3	193		0857	2.9	88
13 Sa	0215	19.5	593	28 Su	0147	19.7	601	13 Tu	0247	17.8	544	13 W	1519	18.2	554
	0844	2.6	80		0815	2.0	62		0925	3.5	106		2127	6.4	195
	1455	19.7	601		1433	20.2	617		1544	18.0	550	13 Th	0259	17.1	522
	2103	5.3	161		2044	5.0	152		2151	6.8	208		0937	3.5	107
14 Su	0248	18.9	575	29 M	0223	19.3	589	14 W	0326	17.0	519	14 M	1556	17.7	539
	0919	3.2	99		0856	2.1	64		1003	4.2	129		2204	6.6	202
	1534	18.8	574		1515	19.8	603		1627	17.3	526	14 Tu	0342	16.5	502
	2143	6.1	185		2130	5.7	175		2238	7.4	226		1014	4.4	133
15 M	0323	18.0	548	30 Tu	0303	18.8	572	15 Th	0410	16.1	491	15 W	1639	17.1	522
	0957	3.9	118		0944	2.6	79		1050	5.1	156		2252	6.9	210
	1615	17.8	544		1606	19.1	581	●	1718	16.5	504	15 Sa	0432	15.7	479
	2223	7.1	215		2217	6.5	197		2333	7.9	242		1100	5.2	158
				31 W	0354	18.0	548					●	1728	16.6	506
					1039	3.3	102						2348	7.1	215
					1706	18.2	556								
					2321	7.1	216								

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Shantou, China, 2018

Times and Heights of High and Low Waters

January				February				March																		
Time		Height		Time		Height		Time		Height		Time		Height												
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm											
1 M	0514	1.2	37	16 Tu	0622	1.4	42	1 Th	0651	0.7	20	16 F	0136	5.4	166	1 Th	0550	1.0	31	16 F	0046	5.3	162			
	1327	6.9	210		1433	6.4	195		1504	6.9	211		0709	1.4	43		1404	6.6	202		0608	1.8	55			
	1715	4.5	136		1826	4.6	139		1854	4.3	130		1510	6.4	194		1804	4.1	124		1409	6.2	189	1821	3.9	119
	2203	6.3	192		2248	5.5	169		2318	6.1	187		1912	4.1	125		●									
2 Tu	0604	0.9	27	17 W	0657	1.3	39	2 F	0742	0.8	24	17 Sa	0213	5.5	169	2 F	0039	5.6	172	17 Sa	0140	5.6	172			
	1419	7.1	217		1502	6.5	199		1548	6.9	211		0744	1.5	47		0642	1.1	35		0644	1.9	59			
	1807	4.6	140		1900	4.5	138		1945	4.0	122		1534	6.4	194		1448	6.7	204		1436	6.2	190	●	1849	3.6
3 W	0657	0.7	21	18 Th	0730	1.3	39	3 Sa	0012	6.0	183	18 Su	0251	5.7	174	3 Sa	0202	5.8	178	18 Su	0217	5.8	178			
	1510	7.3	221		1530	6.6	200		0828	1.1	33		0812	1.7	53		0727	1.4	44		0715	2.1	65			
	1901	4.6	141		1929	4.4	135		2038	3.7	113		1557	6.3	193		1525	6.6	200		1458	6.2	189			
4 Th	0746	0.7	21	19 F	0150	5.6	170	4 Su	0343	5.9	179	19 M	0335	5.8	177	4 Su	0259	6.0	184	19 M	0255	6.1	186			
	1559	7.3	222		0801	1.3	41		0912	1.4	43		0846	1.9	58		0807	1.7	53		0749	2.4	72			
	1949	4.5	138		1557	6.6	200		1704	6.7	204		1620	6.3	193		1557	6.4	196		1519	6.1	187	1952	3.0	90
5 F	0026	6.3	193	20 Sa	0242	5.6	172	5 M	0441	5.8	177	20 Tu	0411	5.8	177	5 M	0351	6.1	187	20 Tu	0336	6.2	190			
	0842	0.8	25		0834	1.4	44		0953	1.8	54		0917	2.2	66		0848	2.1	64		0820	2.6	80			
	1647	7.3	221		1622	6.6	200		1739	6.5	198		1649	6.3	192		1628	6.2	190		1545	6.1	186	2028	2.5	77
6 Sa	0124	6.1	187	21 Su	0331	5.6	172	6 Tu	0534	5.6	172	21 W	0459	5.8	178	6 Tu	0438	6.1	186	21 W	0415	6.3	193			
	0928	1.1	34		0906	1.6	48		1038	2.2	68		0954	2.4	72		0930	2.5	75		0856	2.9	87			
	1732	7.1	217		1651	6.6	200		1810	6.2	190		1715	6.2	190		1657	6.1	186		1608	6.0	184	2110	2.1	63
7 Su	0230	5.8	178	22 M	0401	5.5	169	7 W	0625	5.4	164	22 Th	0551	5.7	175	7 W	0521	6.0	182	22 Th	0502	6.4	194			
	1019	1.5	45		0942	1.8	54		1116	2.7	82		1035	2.7	83		1007	2.8	86		0937	3.1	94			
	1813	6.9	211		1719	6.5	199		1839	6.0	182		1746	6.1	186		1721	5.9	179		1641	6.0	182	2158	1.7	51
8 M	0534	5.6	171	23 Tu	0451	5.5	168	8 Th	0019	2.4	74	23 F	0649	5.6	172	8 Th	0607	5.8	177	23 F	0551	6.3	193			
	1102	2.0	60		1018	2.0	61		0725	5.1	156		1120	3.1	96		1045	3.2	97		1017	3.4	103			
	1854	6.7	204		1753	6.5	198		1203	3.2	98		1807	5.9	181		1744	5.7	174		1657	5.8	178	2250	1.4	44
9 Tu	0000	3.4	104	24 W	0548	5.4	164	9 F	0125	2.3	69	24 Sa	0012	1.9	57	9 F	0655	5.5	168	24 Sa	0647	6.2	188			
	0640	5.3	163		1059	2.3	71		0842	4.9	150		0758	5.5	168		1125	3.6	109		1112	3.7	112			
	1153	2.5	75		1826	6.4	194		1302	3.7	114		1217	3.6	110		1800	5.5	168		1716	5.8	176	●	2349	1.4
10 W	0105	3.0	92	25 Th	0654	5.2	160	10 Sa	0229	2.1	64	25 Su	0120	1.6	50	10 Sa	0032	2.0	60	25 Su	0754	6.0	183			
	0755	5.1	155		1146	2.8	85		1019	4.9	150		0924	5.5	168		0754	5.2	160		1213	4.0	123			
	1245	3.1	93		1900	6.2	190		1409	4.2	127		1332	4.1	125		1216	4.0	121		1741	5.7	173	●		
11 Th	0215	2.7	82	26 F	0048	2.6	79	11 Su	0333	1.9	58	26 M	0236	1.4	44	11 Su	0134	2.0	60	26 M	0101	1.4	42			
	0931	5.0	152		0814	5.2	158		1152	5.2	159		1057	5.7	175		0915	5.1	156		0914	5.9	180			
	1347	3.6	109		1242	3.3	100		1536	4.5	136		1451	4.4	134		1327	4.3	132		1333	4.3	132	1828	5.5	169
12 F	0316	2.3	71	27 Sa	0157	2.1	65	12 M	0431	1.7	53	27 Tu	0348	1.2	37	12 M	0238	2.0	61	27 Tu	0217	1.5	45			
	1101	5.2	157		0945	5.3	163		1254	5.6	171		1213	6.1	186		1059	5.2	160		1040	6.0	184			
	1457	4.0	123		1344	3.8	116		1655	4.5	138		1608	4.5	136		1501	4.5	138		1457	4.4	133	1930	5.4	166
13 Sa	0413	2.0	62	28 Su	0301	1.7	51	13 Tu	0520	1.5	47	28 W	0454	1.0	32	13 Tu	0344	2.0	60	28 W	0333	1.5	47			
	1215	5.5	168		1110	5.7	174		1339	5.9	181		1313	6.4	196		1209	5.6	170		1152	6.2	190			
	1608	4.3	132		1457	4.2	128		1743	4.5	136		1711	4.3	131		1631	4.5	138		1612	4.2	128	2040	5.4	165
14 Su	0502	1.7	53	29 M	0405	1.2	37	14 W	0601	1.4	43	14 W	0601	1.4	43	14 W	0444	1.9	57	29 Th	0442	1.6	48			
	1312	5.9	179		1222	6.1	187		1413	6.2	189		1258	5.9	179		1258	5.9	179		1252	6.4	195			
	1707	4.5	136		1609	4.4	134		1817	4.4	133		1720	4.3	132		1720	4.3	132		1710	3.8	117			
15 M	0545	1.5	46	30 Tu	0503	0.9	27	15 Th	0033	5.3	161	15 Th	0530	1.8	55	15 Th	0530	1.8	55	30 F	0021	5.5	167			
	1357	6.2	189		1323	6.5	199		0637	1.4	42		1339	6.1	186		1339	6.1	186		0540	1.7	52			
	1752	4.5	138		1711	4.5	137		1445	6.3	193		1753	4.1	126		1753	4.1	126		1341	6.5	197	1758	3.5	106
31 W	2219	5.5	169	31 O	0558	0.7	20	31 O	0558	0.7	20	31 O	0558	0.7	20	31 O	0558	0.7	20	31 O	0558	0.7	20			
					1416	6.8	207		1416	6.8	207		1416	6.8	207		1416	6.8	207		1416	6.8	207	1416	6.8	207
					1804	4.4	134		1804	4.4	134		1804	4.4	134		1804	4.4	134		1804	4.4	134	1804	4.4	134

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Shantou, China, 2018

Times and Heights of High and Low Waters

October					November					December																			
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 M	0441	6.7	203		16 Tu	0457	6.3	191		1 Th	0500	6.4	196		16 F	0013	5.0	152		1 Sa	0050	4.5	136		16 Su	0040	4.4	133	
	1015	2.0	62			1115	2.3	71			1156	2.0	62			0537	5.7	174			0612	5.8	177			0625	5.2	158	
	1822	7.2	219			1901	6.8	207			2009	7.3	222			1219	2.7	83			1247	2.4	72			1224	2.8	86	
	2236	4.4	135			2330	5.0	151			●					2005	6.7	203			2051	7.2	218			1959	6.5	197	
2 Tu	0456	6.5	199		17 W	0531	6.1	185		2 F	0059	5.0	151		17 Sa	0127	4.9	148		2 Su	0202	4.0	122		17 M	0146	4.1	124	
	1115	2.0	60			1213	2.6	79			0607	6.2	189			0645	5.4	166			0841	5.7	173			0802	5.1	154	
	1920	7.0	214			1958	6.6	200			1308	2.4	72			1318	3.1	93			1353	2.9	87			1317	3.2	98	
	2332	4.7	144			●					2122	7.3	222			2104	6.6	202			2148	7.0	214			2046	6.4	196	
3 W	0528	6.4	196		18 Th	0054	5.1	156		3 Sa	0215	4.7	144		18 Su	0243	4.6	141		3 M	0307	3.5	107		18 Tu	0242	3.6	110	
	1221	2.0	62			0610	5.8	178			0736	6.0	183			0848	5.4	164			1027	5.8	178			0949	5.2	160	
	2031	6.9	210			1317	2.8	86			1421	2.6	80			1421	3.3	102			1456	3.3	101			1419	3.6	110	
						2110	6.5	198			2230	7.3	223			2201	6.7	204			2241	6.9	209			2135	6.4	194	
4 Th	0058	4.9	150		19 F	0215	5.1	156		4 Su	0322	4.3	131		19 M	0336	4.2	129		4 Tu	0402	2.9	89		19 W	0330	3.1	95	
	0618	6.3	191			0719	5.6	171			1035	6.2	189			1038	5.7	174			1145	6.2	190			1107	5.7	173	
	1338	2.2	66			1422	3.0	92			1531	2.9	89			1520	3.6	109			1557	3.7	114			1518	3.9	120	
	2155	7.0	213			2223	6.6	201			2329	7.3	222			2250	6.7	205			2330	6.6	202			2214	6.3	192	
5 F	0217	5.0	152		20 Sa	0329	5.0	151		5 M	0416	3.8	116		20 Tu	0414	3.8	115		5 W	0452	2.4	74		20 Th	0415	2.6	78	
	0724	6.2	188			0934	5.6	171			1153	6.6	201			1146	6.2	188			1247	6.6	201			1209	6.2	189	
	1452	2.2	67			1527	3.1	96			1628	3.2	97			1611	3.7	114			1650	4.1	124			1610	4.2	128	
	2309	7.2	219			2320	6.8	206			●					2335	6.8	206			2358	6.4	195			2246	6.2	190	
6 Sa	0337	4.8	146		21 Su	0422	4.7	142		6 Tu	0016	7.2	218		21 W	0448	3.3	101		6 Th	0538	2.1	63		21 F	0457	2.0	61	
	0845	6.1	187			1117	5.9	180			0503	3.3	100			1239	6.7	203			1338	6.9	209			1302	6.7	203	
	1600	2.3	69			1620	3.2	98			1254	7.0	214			1652	4.0	121			1733	4.4	134			1658	4.5	136	
											1714	3.5	108			●										2254	6.2	188	
7 Su	0012	7.4	226		22 M	0006	6.9	210		7 W	0054	7.0	214		22 Th	0004	6.7	204		7 F	0037	6.3	191		22 Sa	0538	1.5	46	
	0435	4.4	135			0456	4.3	131			0545	2.9	87			0520	2.8	85			0617	1.8	56			1351	7.0	214	
	1152	6.4	196			1222	6.3	193			1345	7.3	223			1323	7.1	216			1420	7.0	214			1738	4.7	142	
	1658	2.4	73			1703	3.3	101			1757	3.9	119			1726	4.2	128			1816	4.6	141			2230	6.3	191	
8 M	0103	7.5	228		23 Tu	0045	7.0	213		8 Th	0131	6.8	208		23 F	0039	6.7	203		8 Sa	0053	6.1	187		23 Su	0624	1.2	36	
	0524	4.0	121			0524	3.9	119			0626	2.5	76			0555	2.4	72			0657	1.6	50			1437	7.2	220	
	1303	6.8	208			1308	6.8	207			1430	7.4	227			1403	7.4	226			1458	7.1	216			1822	4.8	145	
	1747	2.7	81			1737	3.5	106			1835	4.3	131			1806	4.5	136			1855	4.8	145			2312	6.3	193	
9 Tu	0147	7.4	226		24 W	0114	7.0	212		9 F	0152	6.7	203		24 Sa	0058	6.6	200		9 Su	0134	6.1	187		24 M	0709	0.9	28	
	0606	3.5	107			0552	3.5	108			0704	2.2	67			0632	2.0	60			0733	1.5	47			1521	7.3	223	
	1358	7.2	219			1349	7.2	219			1508	7.5	229			1445	7.6	232			1536	7.1	217			1910	4.8	146	
	1830	3.0	92			1810	3.7	113			1913	4.5	138			1839	4.7	143			1932	4.8	147			●			
10 W	0221	7.2	218		25 Th	0142	7.0	212		10 Sa	0223	6.5	198		25 Su	0135	6.6	200		10 M	0150	6.0	184		25 Tu	0001	6.4	195	
	0648	3.1	96			0623	3.1	96			0748	2.0	61			0716	1.6	49			0810	1.5	46			0757	0.8	25	
	1445	7.4	227			1425	7.4	226			1546	7.5	229			1529	7.7	234			1610	7.1	217			1608	7.3	224	
	1909	3.4	104			1842	4.0	122			1952	4.7	144			1922	4.8	146			2008	4.8	147			2002	4.8	145	
11 Th	0250	7.0	213		26 F	0201	6.9	210		11 Su	0245	6.5	197		26 M	0135	6.5	199		11 Tu	0237	6.0	184		26 W	0055	6.4	194	
	0728	2.7	83			0655	2.8	84			0825	1.9	59			0759	1.4	42			0851	1.5	47			0850	0.9	27	
	1528	7.5	229			1502	7.6	233			1625	7.4	227			1614	7.7	234			1645	7.1	215			1657	7.3	223	
	1949	3.8	116			1916	4.2	129			2030	4.8	147			2013	4.9	149			2049	4.8	146			2102	4.7	142	
12 F	0314	6.8	206		27 Sa	0233	6.8	208		12 M	0317	6.3	193		27 Tu	0131	6.5	199		12 W	0310	5.9	181		27 Th	0156	6.2	190	
	0812	2.4	74			0734	2.4	72			0906	1.9	58			0850	1.3	39			0927	1.7	51			0940	1.1	34	
	1609	7.5	229			1542	7.7	236			1704	7.3	224			1702	7.6	232			1719	7.0	213			1747	7.3	221	
	2027	4.1	125			1953	4.4	135			2110	4.9	149			2106	4.9	150			2131	4.7	144			2204	4.4	133	
13 Sa	0345	6.7	203		28 Su	0251	6.8	206		13 Tu	0344	6.3	192		28 W	0227	6.5	198		13 Th	0346	5.8	178		28 F	0306	6.0	183	
	0854	2.2	68			0813	2.1	63			0953	2.0	60			0946	1.3	41			1007	1.8	56			1036	1.4	43	
	1650	7.4	227			1625	7.8	237			1742	7.2	219			1755	7.5	230			1755	6.9	209			1837	7.1	217	
	2109	4.3	132			2030	4.6	141			2158	5.0	151			2215	4.9	150			2224	4.7	142			2313	4.1	125	
14 Su	0405																												

PengHu (Ma-Kung Kang), Pescadores, 2018

Times and Heights of High and Low Waters

January			February			March						
Time	Height		Time	Height		Time	Height		Time	Height		
	h	m	h	m	ft	h	m	ft	h	m	ft	
1 M	0344	-5.8	-177	16 Tu	0434	-5.1	-156	1 Th	0525	-5.8	-176	
	1043	2.2	68		1133	1.5	47		1213	2.3	70	
	1606	-3.2	-99		1646	-3.0	-90		1742	-3.5	-108	
	2223	2.8	85		2250	1.8	56		2355	3.0	91	
2 Tu	0438	-6.0	-184	17 W	0505	-5.1	-156	2 F	0625	-5.7	-173	
	1136	2.4	74		1204	1.6	50		1256	2.4	72	
	1702	-3.2	-98		1722	-3.1	-95		1826	-3.8	-116	
	2313	3.0	91	●	2324	1.9	59		17 Sa	0559	-4.7	-144
3 W	0536	-6.1	-185		0539	-5.1	-156	3 Sa	0043	3.0	92	
	1225	2.5	76		1232	1.7	53		0714	-5.5	-167	
	1755	-3.3	-100	18 Th	1757	-3.3	-100		1337	2.4	72	
									1909	-4.0	-123	
4 Th	0003	3.1	93	19 F	0000	2.0	62	4 Su	0128	2.8	85	
	0637	-6.0	-182		0616	-5.1	-155		0753	-5.2	-159	
	1311	2.4	74		1302	1.8	54		1417	2.3	71	
	1842	-3.4	-104		1831	-3.4	-104		1953	-4.2	-127	
5 F	0051	3.0	92	20 Sa	0038	2.1	64	5 M	0214	2.4	74	
	0731	-5.8	-178		0654	-5.0	-152		0828	-4.8	-147	
	1357	2.3	71		1333	1.8	55		1457	2.3	69	
	1927	-3.5	-108		1905	-3.5	-108		2042	-4.2	-129	
6 Sa	0139	2.8	85	21 Su	0117	2.1	64	6 Tu	0303	1.9	59	
	0816	-5.6	-171		0730	-4.8	-147		0905	-4.4	-133	
	1443	2.3	69		1408	1.8	56		1539	2.1	63	
	2013	-3.6	-110		1940	-3.6	-111		2141	-4.2	-128	
7 Su	0228	2.4	73	22 M	0158	2.0	61	7 W	0359	1.4	43	
	0856	-5.3	-161		0805	-4.7	-142		0950	-3.8	-116	
	1530	2.2	67		1445	1.9	57	☉	1624	1.8	55	
	2105	-3.6	-111		2018	-3.7	-113		2251	-4.2	-128	
8 M	0322	1.9	57	23 Tu	0242	1.8	54	8 Th	0505	1.0	29	
	0939	-4.8	-147		0840	-4.4	-135		1057	-3.2	-98	
	1620	2.1	64		1525	1.9	59		1715	1.5	45	
	2212	-3.7	-112		2102	-3.8	-115					
9 Tu	0427	1.4	42	24 W	0332	1.5	46	9 F	0001	-4.3	-130	
	1031	-4.3	-130		0918	-4.1	-126		0617	0.7	20	
	1713	2.0	60		1608	1.9	59		1219	-2.8	-86	
	2334	-3.8	-116		2155	-3.9	-118		1818	1.2	36	
10 W	0542	1.0	31	25 Th	0431	1.3	39	10 Sa	0104	-4.4	-135	
	1143	-3.7	-113		1007	-3.7	-113		0732	0.6	17	
	1811	1.8	55		1657	1.9	57		1322	-2.7	-81	
				☉	2301	-4.1	-124		1924	1.0	32	
11 Th	0046	-4.1	-125	26 F	0540	1.1	33	11 Su	0158	-4.6	-140	
	0655	0.9	27		1125	-3.2	-99		0848	0.7	20	
	1256	-3.3	-101		1757	1.8	54		1414	-2.7	-81	
	1912	1.7	52					2021	1.1	34		
12 F	0147	-4.5	-136	27 Sa	0021	-4.4	-134	12 M	0245	-4.8	-145	
	0804	0.9	27		0656	1.0	32		0951	0.9	28	
	1353	-3.1	-94		1256	-3.0	-92		1501	-2.8	-84	
	2007	1.6	50		1906	1.7	53		2111	1.2	38	
13 Sa	0238	-4.8	-145	28 Su	0133	-4.9	-148	13 Tu	0327	-4.9	-148	
	0911	1.0	31		0815	1.2	36		1038	1.2	37	
	1441	-2.9	-89		1402	-3.0	-90		1546	-2.9	-89	
	2055	1.6	50		2013	1.9	58		2155	1.4	44	
14 Su	0322	-5.0	-151	29 M	0234	-5.3	-162	14 W	0405	-4.9	-149	
	1010	1.2	37		0930	1.5	46		1114	1.4	44	
	1525	-2.8	-86		1459	-3.0	-91		1628	-3.1	-96	
	2138	1.7	51		2114	2.2	66		2236	1.7	51	
15 M	0400	-5.1	-154	30 Tu	0330	-5.6	-172	15 Th	0442	-4.9	-149	
	1056	1.4	43		1034	1.9	57		1144	1.6	49	
	1607	-2.9	-87		1556	-3.1	-95		1706	-3.4	-103	
	2215	1.7	53		2211	2.5	77		2315	1.9	58	
				31 W	0426	-5.8	-177					
					1127	2.2	66					
				☉	1651	-3.3	-100					
					2305	2.8	86					

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

PengHu (Ma-Kung Kang), Pescadores, 2018

Times and Heights of High and Low Waters

April				May				June																				
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		Time	Height												
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm				
1 Su	0602	-4.5	-138		16 M	0516	-4.0	-123		1 Tu	0013	2.6	78		16 W	0538	-3.4	-105		1 F	0114	2.0	60		16 Sa	0112	2.6	78
	1209	2.6	78			1139	2.2	67			0625	-3.6	-109			1142	2.6	79			0656	-2.9	-88			0702	-3.1	-93
	1818	-4.8	-145			1737	-4.8	-145	●		1212	2.4	72			1804	-5.5	-167			1240	1.9	57			1251	2.8	86
											1847	-5.2	-159								1926	-5.2	-157			1947	-5.8	-178
2 M	0024	2.9	87		17 Tu	0006	2.6	79		2 W	0052	2.4	73		17 Th	0035	2.6	80		2 Sa	0147	1.8	56		17 Su	0201	2.4	74
	0643	-4.2	-128			0601	-3.8	-117			0654	-3.3	-102			0629	-3.3	-100			0726	-2.9	-88			0747	-3.1	-93
	1242	2.5	75			1212	2.4	73			1242	2.2	66			1222	2.7	81			1311	1.8	54			1340	2.7	82
	1855	-4.9	-150			1814	-5.0	-151			1919	-5.2	-158			1859	-5.6	-170			1958	-5.2	-157			2035	-5.7	-174
3 Tu	0104	2.7	81		18 W	0046	2.7	81		3 Th	0128	2.1	65		18 F	0120	2.5	77		3 Su	0222	1.7	52		18 M	0251	2.3	71
	0713	-3.9	-119			0642	-3.6	-111			0720	-3.2	-97			0715	-3.1	-95			0800	-2.9	-88			0833	-3.1	-93
	1315	2.3	71			1248	2.5	77			1311	2.0	60			1305	2.6	80			1346	1.6	50			1430	2.4	74
	1931	-5.0	-151			1857	-5.1	-154			1951	-5.1	-156			1954	-5.6	-170			2033	-5.1	-154			2120	-5.5	-167
4 W	0143	2.3	71		19 Th	0128	2.6	78		4 F	0204	1.9	57		19 Sa	0208	2.3	71		4 M	0300	1.6	48		19 Tu	0343	2.3	69
	0741	-3.6	-110			0721	-3.4	-104			0750	-3.1	-93			0759	-3.0	-91			0839	-2.8	-86			0926	-3.1	-94
	1346	2.1	64			1326	2.5	77			1340	1.8	54			1351	2.5	75			1426	1.4	42			1526	2.1	63
	2009	-5.0	-151			1948	-5.1	-155			2026	-5.1	-155			2046	-5.5	-168			2112	-4.9	-148			2207	-5.2	-157
5 Th	0223	2.0	60		20 F	0214	2.3	71		5 Sa	0243	1.6	49		20 Su	0300	2.1	64		5 Tu	0343	1.4	44		20 W	0437	2.2	68
	0813	-3.3	-102			0802	-3.1	-96			0825	-2.9	-88			0846	-2.8	-86			0926	-2.8	-85			1035	-3.1	-96
	1417	1.8	56			1407	2.4	72			1413	1.5	47			1441	2.2	66			1513	1.0	32			1633	1.7	51
	2051	-4.9	-148			2044	-5.1	-154			2105	-5.0	-152			2135	-5.3	-163			2155	-4.6	-139	●	20 Th	2302	-4.7	-144
6 F	0306	1.6	48		21 Sa	0304	2.0	61		6 Su	0326	1.3	41		21 M	0358	1.9	57		6 W	0429	1.3	39		21 Th	0535	2.2	68
	0851	-3.1	-93			0848	-2.9	-87			0909	-2.7	-82			0942	-2.7	-82			1021	-2.8	-84			1155	-3.4	-104
	1451	1.5	47			1453	2.1	63			1452	1.2	37			1538	1.8	54			1612	0.7	22			1750	1.4	44
	2137	-4.8	-145			2140	-5.0	-151			2149	-4.8	-147			2229	-5.2	-157			2246	-4.1	-126					
7 Sa	0355	1.2	36		22 Su	0402	1.7	51		7 M	0415	1.1	34		22 Tu	0500	1.8	54		7 Th	0521	1.2	36		22 F	0009	-4.3	-131
	0940	-2.7	-82			0948	-2.6	-78			1002	-2.5	-77			1056	-2.7	-82			1129	-2.9	-88			0635	2.3	69
	1529	1.2	36			1548	1.7	51			1540	0.9	26			1649	1.4	43		●	1728	0.5	15			1306	-3.8	-117
	2229	-4.6	-141			2240	-4.8	-147			2239	-4.6	-139			2331	-4.9	-149			2349	-3.8	-115			1902	1.4	43
8 Su	0451	0.9	26		23 M	0509	1.4	44		8 Tu	0512	0.9	27		23 W	0608	1.8	55		8 F	0620	1.2	36		23 Sa	0114	-3.9	-120
	1045	-2.4	-73			1108	-2.4	-73			1110	-2.5	-76			1220	-2.9	-89			1240	-3.2	-98			0733	2.3	70
	1619	0.8	23		●	1659	1.3	39		●	1645	0.5	14			1813	1.3	40			1848	0.6	17			1407	-4.3	-132
	2326	-4.5	-136			2349	-4.8	-145			2338	-4.3	-130													2010	1.5	45
9 M	0601	0.6	18		24 Tu	0627	1.4	42		9 W	0620	0.8	24		24 Th	0039	-4.7	-143		9 Sa	0056	-3.6	-109		24 Su	0211	-3.6	-109
	1201	-2.3	-71			1233	-2.5	-77			1224	-2.7	-82			0715	2.0	60			0721	1.3	40			0828	2.3	70
	1733	0.4	13			1827	1.2	37			1819	0.3	9			1332	-3.4	-104			1340	-3.7	-112			1503	-4.8	-145
															1927	1.4	44			1955	0.8	25			2115	1.6	50	
10 Tu	0029	-4.4	-133		25 W	0100	-4.8	-146		10 Th	0044	-4.1	-124		25 F	0141	-4.5	-138		10 Su	0151	-3.5	-107		25 M	0304	-3.2	-99
	0725	0.6	18			0745	1.6	48			0731	0.9	27			0814	2.2	67			0814	1.6	48			0917	2.3	70
	1309	-2.6	-78			1346	-3.0	-90			1330	-3.1	-94			1435	-4.0	-122			1430	-4.2	-129			1554	-5.1	-154
	1908	0.4	12			1945	1.5	45			1938	0.5	16			2032	1.7	52			2055	1.2	37			2216	1.8	56
11 W	0128	-4.3	-132		26 Th	0202	-4.8	-147		11 F	0142	-4.0	-122		26 Sa	0235	-4.3	-130		11 M	0240	-3.4	-104		26 Tu	0358	-3.0	-91
	0836	0.8	24			0849	1.9	59			0827	1.1	34			0905	2.4	73			0902	1.9	57			1002	2.2	68
	1407	-2.9	-89			1450	-3.5	-106			1424	-3.5	-108			1532	-4.6	-139			1517	-4.8	-145			1641	-5.2	-158
	2018	0.7	21			2050	1.9	57			2038	0.9	28			2133	1.9	59			2153	1.7	51			2308	2.0	61
12 Th	0220	-4.3	-132		27 F	0257	-4.8	-145		12 Sa	0231	-4.0	-121		27 Su	0328	-3.9	-120		12 Tu	0328	-3.3	-101		27 W	0451	-2.8	-86
	0926	1.1	34			0940	2.3	70			0911	1.4	44			0951	2.5	76			0947	2.2	67			1041	2.1	65
	1459	-3.3	-102			1550	-4.1	-124			1511	-4.0	-123			1624	-5.0	-153			1602	-5.2	-160			1723	-5.2	-158
	2113	1.1	34			2148	2.2	68			2131	1.4	42			2230	2.2	66			2247	2.1	64			2350	2.0	62
13 F	0306	-4.3	-131		28 Sa	0350	-4.5	-138		13 Su	0315	-3.9	-119		28 M	0423	-3.6	-109		13 W	0420	-3.2	-97		28 Th	0533	-2.7	-83
	1004	1.4	44			1024	2.5	77			0950	1.8	55			1032	2.5	75			1031	2.5	76			1117	2.0	62
	1545	-3.8	-115			1643	-4.6	-140			1554	-4.5	-138			1711	-5.2	-160			1651	-5.6	-170			1759	-5.1	-155
	2202	1.6	48			2242	2.5	77			2221	1.8	56			2319	2.3	69			2337	2.4	74		●			
14 Sa	0349	-4.3	-130		29 Su	0446	-4.2	-128		14 M	0359	-3.8	-116		29 Tu	0519	-3.3	-100		14 Th	0517	-3.1	-93		29 F	0026	2.0	62
	1036	1.7	52			1103	2.6	79			1026	2.1	64			1109	2.3	71			1116	2.7	82			0605	-2.7	-83
	1626	-4.2	-127			1730	-5.0	-152			1634	-5.0	-151			1752	-5.3	-162			1748	-5.8	-176			1148	2.0	60
	2245	2.0	61			2330	2.6	80			2307	2.3	69							●						1829	-5.0	-153
15 Su	0432	-4.2	-127		30 M	0543	-3.9	-118		15 Tu	0446	-3.6	-111		30 W	0002	2.2	68		15 F	0025	2.6	78		30 Sa	0058	2.0	60
	1107	2.0	60			1139	2.5	77		●	1103	2.4	73			0601	-3.1	-93			0614	-3.0	-92			0632	-2.8	-85
	1702	-4.5	-137			1811	-5.2	-158			1716	-5.3	-161			1143	2.2	66			1203	2.8	86			1219	1.9	5

PengHu (Ma-Kung Kang), Pescadores, 2018

Times and Heights of High and Low Waters

July				August				September															
Time		Height		Time		Height		Time		Height		Time		Height									
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm								
1 Su	0129	1.9	59	16 M	0146	2.7	82	1 W	0205	2.2	66	16 Th	0243	3.0	92	1 Sa	0239	2.6	79	16 Su	0322	2.5	77
	0702	-2.9	-88		0729	-3.3	-102		0742	-3.3	-100		0842	-4.1	-124		0826	-3.7	-114		1000	-4.3	-132
	1251	1.9	59		1329	3.1	96		1353	2.3	70		1450	2.9	87		1501	2.4	74		1611	2.0	61
	1930	-5.0	-151		2018	-5.5	-169		2010	-4.2	-128		2105	-4.2	-127		2044	-3.1	-96		2203	-2.6	-79
2 M	0200	1.9	58	17 Tu	0231	2.7	82	2 Th	0238	2.2	66	17 F	0324	2.9	87	2 Su	0317	2.5	77	17 M	0406	2.1	63
	0734	-3.0	-91		0814	-3.5	-106		0818	-3.3	-102		0938	-4.1	-125		0914	-3.8	-115		1057	-4.2	-128
	1328	1.9	57		1418	2.9	88		1435	2.1	65		1544	2.4	72		1551	2.1	65		1715	1.5	47
	2004	-4.9	-148		2057	-5.2	-159		2042	-3.9	-119		2148	-3.6	-109		2125	-2.8	-84	○	2314	-2.2	-66
3 Tu	0234	1.8	56	18 W	0317	2.7	82	3 F	0314	2.2	66	18 Sa	0408	2.6	80	3 M	0400	2.4	72	18 Tu	0501	1.6	50
	0811	-3.1	-93		0905	-3.6	-109		0858	-3.4	-103	○	1041	-4.1	-125	○	1014	-3.8	-116		1159	-4.1	-124
	1408	1.7	53		1510	2.5	76		1521	1.9	57		1647	1.9	57		1651	1.8	55		1830	1.2	38
	2040	-4.6	-141		2138	-4.8	-146		2115	-3.5	-108	○	2249	-3.0	-91	○	2234	-2.3	-69				
4 W	0311	1.8	55	19 Th	0404	2.6	80	4 Sa	0353	2.2	66	19 Su	0459	2.2	68	4 Tu	0454	2.1	63	19 W	0028	-2.0	-62
	0851	-3.1	-93		1008	-3.6	-111		0946	-3.4	-105		1146	-4.1	-126		1131	-3.9	-118		0618	1.3	41
	1453	1.5	46		1611	2.0	62		1614	1.6	49		1756	1.5	46		1802	1.6	48		1259	-4.1	-124
	2116	-4.3	-131		2226	-4.2	-129		2157	-3.1	-95										1953	1.2	38
5 Th	0350	1.7	53	20 F	0454	2.5	77	5 Su	0437	2.1	64	20 M	0006	-2.6	-78	5 W	0016	-2.0	-62	20 Th	0130	-2.1	-64
	0937	-3.1	-94		1121	-3.8	-116	○	1046	-3.6	-109		0601	1.9	58		0606	1.8	56		0735	1.3	41
	1545	1.2	37	○	1720	1.6	50	○	1717	1.4	42		1248	-4.2	-128		1250	-4.1	-125		1355	-4.1	-125
	2156	-3.9	-119		2332	-3.6	-111	○	2305	-2.7	-81		1911	1.3	39		1927	1.5	46		2104	1.5	45
6 F	0433	1.7	51	21 Sa	0549	2.3	71	6 M	0530	2.0	60	21 Tu	0111	-2.3	-71	6 Th	0129	-2.1	-64	21 F	0224	-2.4	-72
○	1033	-3.1	-96		1229	-4.1	-124		1201	-3.8	-116		0709	1.7	52		0728	1.9	59		0836	1.6	48
	1646	1.0	30		1832	1.4	43		1829	1.3	39		1347	-4.3	-131		1358	-4.5	-136		1443	-4.2	-127
	2247	-3.5	-106									2030	1.3	41		2054	1.8	55		2154	1.8	55	
7 Sa	0522	1.6	50	22 Su	0043	-3.2	-97	7 Tu	0039	-2.4	-73	22 W	0207	-2.3	-70	7 F	0231	-2.4	-72	22 Sa	0315	-2.7	-82
	1139	-3.4	-103		0650	2.2	66		0636	1.9	57		0812	1.7	52		0840	2.4	72		0928	1.9	58
	1757	0.9	27		1331	-4.4	-133		1314	-4.2	-128		1439	-4.4	-134		1459	-4.8	-146		1527	-4.2	-127
					1943	1.3	41		1948	1.3	41		2140	1.6	49		2201	2.3	70		2232	2.1	64
8 Su	0001	-3.1	-95	23 M	0144	-2.9	-88	8 W	0147	-2.4	-72	23 Th	0259	-2.4	-72	8 Sa	0330	-2.7	-83	23 Su	0401	-3.1	-94
	0619	1.6	50		0750	2.0	62		0747	2.0	60		0906	1.8	55		0942	2.9	89		1014	2.3	69
	1249	-3.7	-114		1427	-4.6	-141		1417	-4.6	-141		1525	-4.5	-136		1556	-5.0	-152		1608	-4.1	-126
	1908	1.0	29		2055	1.4	44		2108	1.6	50		2231	1.9	58		2252	2.7	83		2304	2.3	70
9 M	0112	-3.0	-90	24 Tu	0238	-2.7	-82	9 Th	0246	-2.5	-75	24 F	0348	-2.5	-77	9 Su	0427	-3.1	-96	24 M	0440	-3.4	-105
	0721	1.7	53		0844	2.0	61		0852	2.3	69		0954	2.0	61		1039	3.4	105		1055	2.6	80
	1349	-4.3	-130		1519	-4.8	-146		1514	-5.0	-153		1606	-4.5	-136		1655	-5.0	-153		1650	-4.0	-123
	2019	1.2	36		2202	1.7	51		2217	2.1	65		2310	2.1	64		2336	3.0	92		2332	2.5	75
10 Tu	0209	-2.9	-87	25 W	0330	-2.6	-78	10 F	0344	-2.6	-80	25 Sa	0433	-2.8	-84	10 M	0518	-3.6	-110	25 Tu	0515	-3.7	-113
	0819	2.0	60		0933	2.0	61		0952	2.7	82		1037	2.2	67		1130	3.8	116		1132	2.9	89
	1442	-4.8	-146		1605	-4.9	-148		1612	-5.3	-161		1646	-4.4	-134		1756	-4.9	-149	○	1732	-3.9	-120
	2128	1.6	48		2254	1.9	58		2312	2.5	77		2341	2.3	69					○	2359	2.6	79
11 W	0303	-2.8	-86	26 Th	0420	-2.6	-78	11 Sa	0443	-2.9	-87	26 Su	0510	-3.0	-91	11 Tu	0015	3.2	97	26 W	0546	-3.9	-119
	0914	2.2	68		1017	2.0	62	○	1049	3.1	96	○	1115	2.4	74		0605	-4.0	-122		1208	3.1	96
	1535	-5.2	-160		1646	-4.8	-147		1715	-5.4	-165		1725	-4.3	-132		1217	3.9	120		1811	-3.8	-115
	2230	2.0	62		2335	2.0	62	○	2359	2.8	86	○					1847	-4.7	-142				
12 Th	0400	-2.8	-85	27 F	0504	-2.6	-80	12 Su	0537	-3.2	-97	27 M	0010	2.3	71	12 W	0053	3.2	99	27 Th	0616	-4.1	-124
	1007	2.5	77		1055	2.1	63		1141	3.5	107		0543	-3.2	-98		0648	-4.3	-131		1244	3.2	98
	1630	-5.5	-169		1723	-4.8	-145		1821	-5.4	-165		1151	2.7	81		1301	3.8	116		1845	-3.6	-110
	2325	2.4	74									1804	-4.2	-129		1925	-4.3	-132					
13 F	0500	-2.9	-87	28 Sa	0008	2.1	65	13 M	0042	3.0	90	28 Tu	0036	2.4	73	13 Th	0129	3.2	99	28 F	0057	2.8	86
	1059	2.8	86	○	0538	-2.8	-84		0624	-3.5	-107		0613	-3.4	-104		0731	-4.5	-136		0647	-4.2	-127
	1732	-5.7	-174	○	1130	2.1	65		1230	3.7	112		1226	2.8	86		1344	3.5	106		1321	3.1	96
					1757	-4.7	-143		1915	-5.3	-161		1841	-4.1	-126		1957	-3.9	-120		1916	-3.4	-103
14 Sa	0014	2.6	80	29 Su	0038	2.1	65	14 Tu	0123	3.0	92	29 W	0103	2.5	75	14 F	0205	3.1	95	29 Sa	0130	2.9	88
	0556	-3.0	-91		0608	-2.9	-89		0708	-3.8	-115		0643	-3.5	-108		0817	-4.5	-138		0723	-4.2	-129
	1151	3.1	94		1204	2.2	68		1316	3.6	110		1301	2.9	89		1428	3.0	92		1400	3.0	90
	1838	-5.8	-176		1831	-4.6	-																

PengHu (Ma-Kung Kang), Pescadores, 2018

Times and Heights of High and Low Waters

October			November			December			December			December											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height										
	h	m		ft	cm		h	m		ft	cm		h	m	ft	cm							
1 M	0246	2.7	83	16 Tu	0314	1.9	59	1 Th	0412	1.9	59	16 F	0414	1.0	30	1 Sa	0518	1.6	48	16 Su	0446	0.7	22
	0859	-4.2	-128		1008	-4.4	-135		1059	-4.5	-137		1104	-4.2	-128		1143	-4.6	-139		1105	-3.8	-117
	1536	2.3	71		1632	1.6	48		1738	1.8	56		1745	1.2	37		1827	2.1	64		1740	1.3	40
	2111	-2.5	-75		2217	-2.2	-66		2335	-2.2	-66		2343	-2.5	-76		2354	-3.2	-99				
2 Tu	0332	2.4	74	17 W	0401	1.5	45	2 F	0535	1.7	51	17 Sa	0540	0.7	21	2 Su	0036	-3.0	-92	17 M	0608	0.6	18
	1002	-4.1	-126		1103	-4.2	-129		1212	-4.5	-136		1209	-3.9	-119		0640	1.6	48		1216	-3.5	-108
	1636	2.0	61		1737	1.2	38		1856	1.9	58		1855	1.2	37		1253	-4.4	-133		1840	1.3	41
	2224	-2.1	-63		2330	-2.0	-62		0056	-2.5	-76		0055	-2.9	-87		1930	2.3	69		1938	1.5	47
3 W	0429	2.0	62	18 Th	0509	1.1	33	3 Sa	0701	1.8	55	18 Su	0709	0.8	25	3 M	0750	1.7	53	18 Tu	0721	0.8	23
	1115	-4.1	-125		1204	-4.1	-124		1321	-4.5	-137		1313	-3.8	-115		1353	-4.1	-126		1320	-3.4	-103
	1748	1.7	53		1856	1.2	36		2007	2.2	68		1956	1.4	43		2026	2.5	76		1938	1.5	47
	2357	-1.9	-59		0042	-2.2	-66		0204	-3.0	-92		0204	-3.4	-103		0244	-4.3	-130		2029	1.8	56
4 Th	0548	1.8	54	19 F	0645	1.0	29	4 Su	0811	2.2	67	19 M	0813	1.1	35	4 Tu	0854	2.0	61	19 W	0823	1.0	31
	1232	-4.2	-128		1306	-4.0	-121		1419	-4.5	-138		1406	-3.7	-113		1444	-3.8	-117		1411	-3.3	-102
	1914	1.7	52		2010	1.3	41		2103	2.6	80		2043	1.7	53		2114	2.7	81		2029	1.8	56
	0113	-2.2	-66		0144	-2.6	-78		0303	-3.7	-112		0244	-3.9	-119		0336	-4.8	-147		0245	-4.7	-144
5 F	0716	1.9	59	20 Sa	0759	1.2	37	5 M	0913	2.6	80	20 Tu	0907	1.5	47	5 W	0954	2.2	68	20 Th	0922	1.4	43
	1342	-4.5	-136		1400	-4.0	-121		1510	-4.4	-134		1450	-3.7	-112		1533	-3.5	-107		1456	-3.3	-100
	2036	2.0	62		2103	1.6	50		2150	2.9	89		2123	2.1	63		2157	2.7	83		2114	2.2	66
	0218	-2.6	-79		0238	-3.0	-92		0356	-4.3	-131		0327	-4.4	-135		0423	-5.2	-159		0327	-5.2	-160
6 Sa	0828	2.4	73	21 Su	0856	1.6	49	6 Tu	1009	3.0	90	21 W	0957	2.0	60	6 Th	1047	2.4	73	21 F	1016	1.8	56
	1441	-4.7	-142		1447	-3.9	-120		1508	-4.1	-124		1532	-3.6	-110		1620	-3.2	-98		1542	-3.2	-98
	2136	2.5	76		2143	1.9	59		2231	3.1	94		2200	2.4	73		2237	2.7	81		2158	2.5	75
	0317	-3.1	-95		0325	-3.5	-107		0444	-4.8	-146		0405	-4.9	-148		0505	-5.4	-164		0410	-5.6	-171
7 Su	0930	3.0	90	22 M	0945	2.0	62	7 W	1101	3.1	96	22 Th	1042	2.4	72	7 F	1134	2.4	74	22 Sa	1106	2.2	66
	1535	-4.7	-144		1530	-3.9	-119		1647	-3.7	-113		1614	-3.5	-106		1706	-3.0	-91		1631	-3.1	-96
	2224	2.9	89		2217	2.2	68		2309	3.1	95		2235	2.7	81		2313	2.6	78		2243	2.7	82
	0412	-3.7	-112		0406	-3.9	-120		0527	-5.1	-156		0441	-5.2	-159		0543	-5.4	-164		0456	-5.8	-178
8 M	1025	3.4	104	23 Tu	1029	2.5	75	8 Th	1146	3.1	96	23 F	1126	2.7	81	8 Sa	1214	2.3	70	23 Su	1153	2.4	73
	1628	-4.6	-140		1611	-3.8	-117		1734	-3.4	-104		1658	-3.3	-101		1744	-2.9	-88		1722	-3.1	-95
	2305	3.2	97		2247	2.5	76		2344	3.0	92		2312	2.9	88		2346	2.4	74		2329	2.9	87
	0501	-4.2	-128		0442	-4.3	-131		0606	-5.2	-160		0520	-5.4	-166		0615	-5.3	-162		0549	-5.9	-179
9 Tu	1116	3.7	113	24 W	1109	2.8	86	9 F	1228	3.0	92	24 Sa	1208	2.8	85	9 Su	1250	2.1	65	24 M	1239	2.4	74
	1722	-4.3	-131		1652	-3.7	-113		1814	-3.2	-97		1744	-3.1	-96		1817	-2.9	-88		1812	-3.1	-96
	2343	3.3	100		2318	2.7	83		0017	2.9	88		2351	3.0	92		0017	2.3	69		1812	-3.1	-96
	0546	-4.6	-140		0515	-4.6	-139		0643	-5.2	-159		0605	-5.5	-168		0647	-5.2	-160		0016	3.0	90
10 W	1201	3.7	114	25 Th	1147	3.1	93	10 Sa	1306	2.8	84	25 Su	1251	2.8	85	10 M	1324	2.0	60	25 Tu	0649	-5.8	-178
	1811	-4.0	-121		2349	2.9	88		1848	3.0	92		1830	-3.1	-93		1850	-3.0	-90		1326	2.4	72
	0019	3.3	100		0548	-4.8	-145		0049	2.7	81		0032	3.0	92		0047	2.1	65		1859	-3.2	-97
	0628	-4.8	-147		1225	3.1	96		0720	-5.2	-157		0659	-5.5	-168		0721	-5.2	-159		0745	-5.7	-175
11 Th	1244	3.6	109	26 F	1813	-3.3	-102	11 Su	1344	2.4	74	26 M	1336	2.6	80	11 Tu	1358	1.8	56	26 W	1414	2.3	69
	1849	-3.7	-112		0022	3.0	92		1921	-2.9	-89		1915	-3.0	-90		1926	-3.0	-91		1944	-3.2	-98
	0053	3.2	97		0624	-4.9	-148		0120	2.4	74		0117	2.9	89		0121	2.0	61		0154	2.7	82
	0708	-4.9	-150		1305	3.1	94		0758	-5.1	-154		0755	-5.4	-165		0758	-5.2	-157		0833	-5.5	-169
12 F	1325	3.3	100	27 Sa	1851	-3.1	-96	12 M	1422	2.1	65	27 Tu	1424	2.4	73	12 W	1434	1.7	52	27 Th	1504	2.2	67
	1922	-3.4	-103		0058	3.1	93		1958	-2.8	-86		2000	-2.8	-86		2005	-3.0	-91		2033	-3.2	-99
	0126	3.0	91		0708	-4.9	-149		0153	2.2	66		0204	2.7	81		0200	1.8	54		0246	2.3	71
	0750	-4.9	-149		1347	2.9	88		0838	-5.0	-151		0848	-5.3	-161		0838	-5.0	-152		0918	-5.2	-160
13 Sa	1405	2.9	87	28 Su	1930	-2.9	-89	13 Tu	1504	1.8	56	28 W	1517	2.2	66	13 Th	1514	1.6	49	28 F	1555	2.2	66
	1956	-3.1	-95		0138	3.0	90		2039	-2.7	-81		2050	-2.7	-83		2049	-3.0	-91		2130	-3.2	-99
	0200	2.7	83		0800	-4.9	-148		0231	1.8	56		0257	2.3	70		0245	1.4	44		0345	1.9	57
	0833	-4.8	-145		1433	2.6	80		0921	-4.8	-146		0939	-5.1	-155		0921	-4.7	-144		1007	-4.9	-148
14 Su	1449	2.4	73	29 M	2012	-2.7	-82	14 W	1551	1.6	48	29 Th	1615	2.0	62	14 F	1558	1.5	45	29 Sa	1650	2.1	65
	2033	-2.8	-86		0221	2.7	83		2129	-2.5	-76		2151	-2.6	-80		2140	-3.0	-90		2244	-3.3	-102
	0235	2.4	72		0856	-4.8	-145		0316	1.4	43		0359	1.9	57		0338	1.0	32		0457	1.5	45
	0919	-4.6	-141		1526	2.3	70		1008	-4.5	-138		1036	-4.8	-147		1007	-4.3	-131		1107	-4.4	-133
15 M	1536	2.0	60	30 Tu	2104	-2.4	-74	15 Th	1644	1.3	41	30 F	1719	2.0	61	15 Sa	1646	1.3	41	30 Su	1748	2.1	65
	2118	-2.5	-76		0311	2.3	71		2230	-2.4	-73		2310	-2.7	-81		2242	-3.0	-92		1848	2.1	65
	0954	-4.6	-141		1627	2.0	61		0954	-4.6	-141		0010	-3.6	-111		0615	1.3	39				
	1627	2.0	61		2210	-2.2	-67		1627	2.0	61		1222	-3.9	-119								

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Keelung (Chi-lung Chiang), Taiwan, 2018

Times and Heights of High and Low Waters

January				February				March																						
	Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm											
1	M	0146	-2.4	-72	16	Tu	0236	-2.0	-60	1	Th	0255	-2.6	-78	16	F	0318	-1.8	-55	1	Th	0203	-2.2	-67	16	F	0225	-1.4	-44	
		0929	1.1	33			1028	0.7	21			1049	1.1	34			1053	0.7	22			0943	1.1	34			0940	0.9	26	
		1416	-0.1	-4			1606	-0.1	-4			1539	-0.4	-11			1611	-0.4	-12			1449	-0.4	-13			1518	-0.4	-13	
		1930	0.8	23			2014	0.2	6			2104	0.8	25			2133	0.4	12			2023	0.9	26			2102	0.6	19	
2	Tu	0225	-2.6	-79	17	W	0304	-2.0	-61	2	F	0341	-2.4	-74	17	Sa	0353	-1.7	-53	2	F	0244	-2.1	-64	17	Sa	0258	-1.4	-42	
		1016	1.2	36			1056	0.7	21			1135	1.0	32			1123	0.7	21			1023	1.0	32			1006	0.8	24	
		1503	-0.1	-3			1626	-0.2	-5			1625	-0.5	-16			1632	-0.6	-17			1524	-0.6	-19			1531	-0.6	-18	
		2011	0.8	25			2049	0.2	7			2202	0.8	24			2216	0.5	14			2115	0.9	28			2140	0.7	22	
3	W	0306	-2.7	-82	18	Th	0335	-2.0	-62	3	Sa	0430	-2.2	-66	18	Su	0430	-1.6	-49	3	Sa	0326	-1.9	-58	18	Su	0331	-1.2	-38	
		1106	1.2	37			1127	0.7	21			1221	1.0	30			1154	0.7	20			1102	1.0	29			1032	0.8	23	
		1553	-0.1	-3			1648	-0.2	-7			1719	-0.7	-20			1702	-0.7	-22			1602	-0.8	-25			1550	-0.8	-25	
		2102	0.8	25			2128	0.2	7			2307	0.7	21			2302	0.5	14			2212	0.9	27			2220	0.8	25	
4	Th	0353	-2.6	-80	19	F	0411	-2.0	-61	4	Su	0524	-1.8	-55	19	M	0511	-1.4	-44	4	Su	0411	-1.6	-48	19	M	0406	-1.1	-34	
		1158	1.2	37			1200	0.7	21			1305	0.9	28			1226	0.7	20			1141	0.8	25			1058	0.7	21	
		1648	-0.2	-5			1718	-0.3	-10			1827	-0.8	-25			1741	-0.9	-26			1647	-1.0	-30			1617	-1.0	-31	
		2200	0.8	23			2212	0.2	7								2357	0.5	14			2316	0.8	24			2303	0.9	26	
5	F	0446	-2.4	-74	20	Sa	0451	-1.9	-58	5	M	0026	0.5	15	20	Tu	0555	-1.2	-38	5	M	0500	-1.2	-37	20	Tu	0444	-0.9	-28	
		1250	1.2	36			1235	0.7	22			0622	-1.4	-42			1259	0.6	19			1219	0.7	22			1126	0.7	21	
		1755	-0.3	-8			1758	-0.5	-14			1347	0.8	25			1832	-1.0	-31			1741	-1.1	-34			1652	-1.2	-37	
		2307	0.7	20			2301	0.2	6			1941	-1.0	-29													2355	0.9	27	
6	Sa	0546	-2.1	-64	21	Su	0536	-1.7	-53	6	Tu	0153	0.3	10	21	W	0101	0.4	13	6	Tu	0027	0.7	20	21	W	0527	-0.7	-22	
		1341	1.1	35			1311	0.7	22			0728	-1.0	-29			0645	-1.0	-30			0555	-0.8	-25			1159	0.7	20	
		1916	-0.4	-13			1848	-0.6	-18			1429	0.7	21			1333	0.6	18			1254	0.6	19			1739	-1.3	-40	
							2359	0.2	5			2051	-1.1	-34			1931	-1.1	-35			1845	-1.2	-37						
7	Su	0025	0.5	14	22	M	0624	-1.5	-47	7	W	0320	0.3	8	22	Th	0212	0.4	13	7	W	0141	0.6	17	22	Th	0055	0.9	26	
		0650	-1.7	-52			1347	0.7	22			0900	-0.6	-17			0747	-0.7	-21			0701	-0.5	-15			0619	-0.5	-14	
		1430	1.1	33			1941	-0.7	-22			1512	0.5	16			1408	0.5	16			1329	0.5	15			1234	0.6	19	
		2034	-0.6	-19								2200	-1.3	-39			2032	-1.3	-39			1949	-1.3	-39			1839	-1.4	-42	
8	M	0201	0.3	9	23	Tu	0111	0.1	4	8	Th	0455	0.3	10	23	F	0328	0.4	13	8	Th	0256	0.5	15	23	F	0204	0.8	25	
		0800	-1.3	-39			0717	-1.3	-40			1053	-0.4	-11			0909	-0.4	-13			0839	-0.2	-6			0732	-0.2	-6	
		1519	1.0	29			1423	0.7	20			1601	0.4	12			1445	0.5	15			1405	0.4	11			1313	0.6	18	
		2146	-0.9	-26			2033	-0.9	-27			2308	-1.4	-43			2136	-1.4	-44			2051	-1.3	-40			1947	-1.4	-44	
9	Tu	0339	0.2	7	24	W	0229	0.1	3	9	F	0636	0.5	14	24	Sa	0501	0.5	16	9	F	0419	0.5	16	24	Sa	0320	0.9	26	
		0929	-0.9	-27			0817	-1.0	-32			1210	-0.3	-8			1041	-0.3	-8			1041	-0.1	-3			0918	0.0	0	
		1612	0.8	25			1501	0.6	19			1703	0.3	8			1529	0.4	13			1445	0.3	8			1358	0.5	16	
		2257	-1.1	-34			2126	-1.1	-33								2245	-1.6	-50			2156	-1.3	-41			2058	-1.5	-45	
10	W	0514	0.3	9	25	Th	0348	0.2	5	10	Sa	0002	-1.6	-48	25	Su	0631	0.7	22	10	Sa	0557	0.6	19	25	Su	0451	0.9	28	
		1104	-0.6	-19			0929	-0.8	-24			0742	0.6	19			1154	-0.2	-5			1157	-0.1	-3			1054	0.0	1	
		1708	0.7	20			1539	0.6	17			1311	-0.2	-7			1626	0.4	12			1539	0.2	6			1455	0.5	14	
		2356	-1.3	-41			2223	-1.3	-40			1800	0.2	7			2348	-1.8	-56			2303	-1.4	-43			2216	-1.5	-46	
11	Th	0645	0.4	13	26	F	0515	0.3	9	11	Su	0043	-1.7	-51	26	M	0733	1.0	29	11	Su	0701	0.7	22	26	M	0614	1.1	33	
		1216	-0.4	-13			1043	-0.6	-18			0827	0.7	22			1251	-0.1	-4			1251	-0.1	-4			1200	0.0	-1	
		1800	0.5	16			1620	0.5	15			1403	-0.2	-6			1739	0.5	14			1706	0.2	6			1619	0.4	13	
							2319	-1.6	-49			1842	0.2	6									2358	-1.4	-44			2330	-1.6	-48
12	F	0042	-1.5	-47	27	Sa	0639	0.5	15	12	M	0118	-1.7	-53	27	Tu	0039	-2.0	-62	12	M	0743	0.8	25	27	Tu	0712	1.2	38	
		0757	0.6	18			1148	-0.4	-12			0901	0.8	23			0821	1.1	33			1336	-0.2	-5			1251	-0.1	-4	
		1317	-0.3	-9			1704	0.5	15			1445	-0.2	-5			1337	-0.2	-5			1815	0.2	7			1800	0.6	17	
		1842	0.4	12								1915	0.2	7			1841	0.6	18											
13	Sa	0117	-1.7	-52	28	Su	0009	-1.9	-58	13	Tu	0148	-1.8	-55	28	W	0122	-2.2	-66	13	Tu	0041	-1.5	-46	28	W	0027	-1.7	-51	
		0849	0.7	21			0743	0.7	22			0930	0.8	23			0903	1.1	35			0816	0.9	27			0758	1.3	39	
		1414	-0.2	-6			1243	-0.3	-8			1515	-0.2	-6			1414	-0.3	-8			1412	-0.2	-6			1332	-0.3	-8	
		1911	0.3	8			1750	0.5	15			1945	0.3	8			1934	0.7	22			1902	0.3	10			1903	0.8	23	
14	Su	0146	-1.8	-55	29	M	0052	-2.2	-67	14	W	0217	-1.8	-56	29	Th	0118	-1.5	-47	14	W	0118	-1.5	-47	29	Th	0113	-1.6	-50	
		0928	0.7	22			0834	1.0	29			0957	0.8	23			0845	0.9	28			0845	0.9	28			0837	1.2	38	
		1505	-0.1	-4			1331	-0.2	-6			1538	-0.2	-7			1440	-0.2	-7			1440	-0.2	-7			1406	-0.4	-13	
		1928	0.2	6			1836	0.6	18			2018	0.3	9			1944	0.4	13			1944	0.4	13			1956	0.9	27	
15	M	0212	-1.9	-57	30	Tu	0132	-2.4	-74	15	Th	0247	-1.8	-56	30	Th	0153	-1.5	-46	15	Th	0153	-1.5	-46	30	F	0153	-1.5	-47	
		1000	0.7	22			0919	1.1	33			1024	0.7	22			0913	0.9	27			0914	1.1	35			0914	1.1	35	
		1541	-0.1	-3			1415	-0.2	-6			1555	-0.3	-9			1502	-0.3	-10			1502	-0.3	-10			1436	-0.6	-19	
		1946	0.2	6			1922	0.7	21			2054																		

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Times and Heights of High and Low Waters

April					May					June																									
	Time	Height				Time	Height				Time	Height				Time	Height																		
		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 Su		0311	-1.1	-34		16 M		0304	-0.7	-20		1 Tu		0345	0.0	-1		16 W		0309	0.1	3		1 F		0002	1.3	39		16 Sa		0425	0.7	22	
		1018	0.8	25				0930	0.9	26				0913	0.7	20				0843	1.0	32				0533	0.6	17				0920	1.4	42	
		1539	-1.1	-33				1512	-1.1	-34				1544	-1.4	-42				1513	-1.6	-50				0850	0.7	21				1626	-1.7	-53	
		2229	1.0	31			●	2217	1.2	37				2326	1.2	36				2256	1.6	48				1631	-1.3	-41							
2 M		0353	-0.8	-24		17 Tu		0338	-0.5	-15		2 W		0436	0.2	5		17 Th		0351	0.3	8		2 Sa		0042	1.3	40		17 Su		0044	1.8	56	
		1043	0.7	21				0950	0.8	25				0927	0.6	18				0906	1.1	33				0622	0.5	16				0534	0.7	22	
		1615	-1.2	-38				1617	-1.3	-41				1620	-1.4	-44				1552	-1.8	-54				0938	0.7	20				1026	1.3	39	
		2324	1.0	29				2300	1.3	39				2349	1.6	49				2349	1.6	49				1718	-1.3	-39				1727	-1.5	-46	
3 Tu		0440	-0.5	-15		18 W		0416	-0.3	-9		3 Th		0013	1.1	35		18 F		0443	0.4	13		3 Su		0124	1.3	40		18 M		0141	1.8	56	
		1107	0.6	18				1014	0.8	25				0536	0.3	8				0722	0.5	14				0708	0.6	19							
		1658	-1.3	-41				1617	-1.5	-47				0953	0.5	16				1043	0.6	18				1144	1.2	36							
								2352	1.3	39				1703	-1.4	-44				1811	-1.2	-36				1835	-1.2	-37							
4 W		0023	0.9	27		19 Th		0502	-0.1	-3		4 F		0103	1.1	34		19 Sa		0050	1.6	50		4 M		0206	1.4	42		19 Tu		0234	1.8	56	
		0537	-0.2	-7				1044	0.8	25				0644	0.3	9				0824	0.4	11				0835	0.4	13							
		1137	0.5	15				1703	-1.6	-49				1037	0.5	14				1159	0.5	16				1314	1.0	32							
		1749	-1.4	-42										1755	-1.4	-42				1907	-1.0	-31				1948	-0.9	-27							
5 Th		0124	0.9	26		20 F		0053	1.3	39		5 Sa		0152	1.1	34		20 Su		0154	1.6	50		5 Tu		0249	1.4	43		20 W		0328	1.8	55	
		0649	0.0	-1				0603	0.1	4				0801	0.3	9				0920	0.3	8				0946	0.2	6							
		1215	0.4	12				1126	0.8	24				1144	0.4	13				1320	0.5	14				1500	1.0	30							
		1847	-1.4	-42				1802	-1.6	-48				1852	-1.3	-39				2003	-0.8	-25			○	2110	-0.6	-17							
6 F		0225	0.8	25		21 Sa		0200	1.3	39		6 Su		0243	1.1	35		21 M		0257	1.6	50		6 W		0333	1.4	43		21 Th		0425	1.7	52	
		0825	0.1	3				0739	0.3	9				0920	0.3	8				1012	0.1	3				1052	-0.1	-3							
		1257	0.3	10				1221	0.7	22				1247	0.4	11				1454	0.5	14				1641	1.0	31							
		1946	-1.3	-40				1913	-1.5	-45				1949	-1.1	-35				2006	-1.1	-35				2240	-0.3	-8							
7 Sa		0329	0.8	25		22 Su		0312	1.3	40		7 M		0335	1.2	36		22 Tu		0401	1.6	50		7 Th		0420	1.4	43		22 F		0521	1.6	49	
		1015	0.1	3				0932	0.3	9				1027	0.2	5				1100	-0.1	-2				1151	-0.4	-11							
		1344	0.3	8				1325	0.6	19				1355	0.3	9				1632	0.6	18				1806	1.1	35							
		2044	-1.2	-38				2028	-1.3	-41				2048	-1.0	-30			○	2130	-0.9	-28			○	2213	-0.4	-13							
8 Su		0442	0.9	26		23 M		0431	1.3	41		8 Tu		0431	1.2	37		23 W		0506	1.6	50		8 F		0507	1.4	42		23 Sa		0612	1.5	45	
		1128	0.0	1				1051	0.2	5				1124	0.0	-1				1142	-0.3	-8				1240	-0.6	-18							
		1440	0.2	7				1445	0.5	16				1526	0.3	9				1748	0.8	24				1923	1.3	39							
	○	2149	-1.2	-36			○	2152	-1.2	-38			○	2154	-0.9	-26				2257	-0.7	-22				2316	-0.3	-8							
9 M		0551	1.0	29		24 Tu		0544	1.4	43		9 W		0527	1.2	38		24 Th		0603	1.6	48		9 Sa		0550	1.3	40		24 Su		0052	0.2	7	
		1217	0.0	-1				1150	0.0	0				1205	-0.1	-3				1216	-0.3	-9				1217	-0.5	-14							
		1607	0.2	6				1646	0.6	18				1716	0.4	13				1812	1.0	30				1849	1.0	30							
		2258	-1.1	-35				2314	-1.2	-36				2303	-0.7	-22																			
10 Tu		0641	1.0	31		25 W		0641	1.5	45		10 Th		0615	1.2	38		25 F		0002	-0.5	-16		10 Su		0007	-0.1	-3		25 M		0148	0.5	14	
		1257	-0.1	-4				1237	-0.2	-6				1240	-0.2	-7				0650	1.5	45				0625	1.2	38							
		1748	0.3	9				1813	0.8	24				1824	0.6	19				1300	-0.5	-16				1246	-0.7	-21							
		2356	-1.1	-35																1919	1.1	34				1943	1.2	37							
11 W		0719	1.1	33		26 Th		0014	-1.1	-34		11 F		0000	-0.6	-19		26 Sa		0055	-0.3	-9		11 M		0048	0.1	2		26 Tu		0248	0.8	23	
		1331	-0.2	-7				0726	1.4	44				0653	1.2	37				0729	1.3	40				0650	1.2	37							
		1847	0.5	14				1318	-0.4	-12				1309	-0.4	-13				1336	-0.7	-22				1313	-1.0	-30							
								1915	1.0	29				1917	0.8	25				2020	1.2	38				2031	1.4	43							
12 Th		0042	-1.1	-33		27 F		0103	-1.0	-30		12 Sa		0046	-0.5	-16		27 Su		0143	0.0	-1		12 Tu		0125	0.3	8		27 W		0347	0.8	23	
		0752	1.1	33				0805	1.3	40				0725	1.2	36				0800	1.1	33				0710	1.2	37							
		1358	-0.3	-10				1352	-0.6	-18				1331	-0.6	-18				1405	-0.9	-28				1342	-1.3	-39							
		1936	0.6	19				2011	1.1	33				2004	1.0	32				2114	1.3	40				2117	1.6	48							
13 F		0122	-1.0	-31		28 Sa		0145	-0.8	-24		13 Su		0124	-0.4	-12		28 M		0230	0.2	6		13 W		0202	0.4	13		28 Th		0426	0.8	24	
		0821	1.0	32				0838	1.1	34				0750	1.1	33				0815	0.9	27				0728	1.2	38							
		1418	-0.5	-14				1421	-0.8	-25				1351	-0.8	-25				1429	-1.1	-33				1415	-1.6	-48							
		2019	0.8	24				2103	1.1	35				2047	1.2	38				2201	1.3	41				2203	1.7	51							
14 Sa		0158	-0.9	-28		29 Su		0224	-0.5	-16		14 M		0159	-0.2	-7		29 Tu		0319	0.4	12		14 Th		0243	0.6	18		29 F		0444	0.8	24	
		0848	1.0	30				0904	0.9	28				0810	1.0	32				0803	0.8	23				0751	1.3	40							
		1434	-0.6	-19				1447	-1.0	-31				1412	-1.1	-34				1452	-1.2	-37				1453	-1.8	-54							
		2059	1.0	29				2152	1.2	36				2128	1.4	43			○	2243	1.3	41			●	2252	1.8	54							
15 Su		0231	-0.8	-28		30 M		0303	-0.3	-8		15 Tu		0233	-0.1	-2		30 W		0409	0.5	16		15 F		0330	0.7	21		30 Sa		0500	0.8	23	
		0910	0.9	28				0914	0.8	23				0826	1.0	31				0806	0.7	22				0828	1.4	42							
		1450	-0.9	-26				1514	-1.2	-37				1440	-1.4	-43				1518	-1.3	-40				1536	-1.8	-56							
		2138	1.1	34			○	2239	1.2	36			●	2209	1.5	46				2323	1.3	40				2346	1.8	55							

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Times and Heights of High and Low Waters

July				August				September															
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height										
	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm							
1 Su	0026	1.4	42	16 M	0028	1.9	57	1 W	0103	1.4	44	16 Th	0128	1.7	51	1 Sa	0121	1.3	39	16 Su	0157	1.1	33
	0536	0.7	20		0506	0.6	19		0621	0.4	11		0703	-0.1	-2		0707	-0.3	-9		0829	-0.7	-22
	0937	0.9	27		1031	1.6	48		1141	1.1	33		1323	1.4	44		1350	1.3	40		1550	1.4	43
	1655	-1.1	-34		1717	-1.3	-39		1816	-0.6	-19		1915	-0.2	-5		1942	0.1	2		2223	0.5	15
2 M	0101	1.4	43	17 Tu	0118	1.8	56	2 Th	0136	1.4	44	17 F	0210	1.6	48	2 Su	0154	1.2	38	17 M	0241	1.0	30
	0629	0.6	17		0623	0.5	15		0715	0.2	6		0817	-0.2	-7		0805	-0.5	-14		0934	-0.7	-22
	1035	0.9	26		1148	1.4	44		1251	1.0	32		1446	1.3	41		1456	1.3	40		1715	1.4	43
	1745	-1.0	-31		1822	-1.0	-29		1907	-0.4	-13		2040	0.2	6		2051	0.3	8		2335	0.5	15
3 Tu	0137	1.5	45	18 W	0205	1.8	56	3 F	0209	1.4	44	18 Sa	0253	1.4	44	3 M	0228	1.2	37	18 Tu	0337	0.9	27
	0726	0.5	14		0749	0.3	9		0807	0.0	1		0926	-0.4	-12		0903	-0.6	-18		1041	-0.7	-22
	1140	0.8	24		1319	1.3	39		1403	1.0	32		1611	1.3	40		1612	1.3	40		1829	1.5	45
	1837	-0.9	-26		1931	-0.6	-17		2002	-0.2	-7		2223	0.4	13		2208	0.5	14				
4 W	0213	1.5	46	19 Th	0252	1.8	54	4 Sa	0243	1.4	43	19 Su	0342	1.3	40	4 Tu	0307	1.2	36	19 W	0028	0.5	14
	0819	0.3	9		0903	0.1	2		0857	-0.1	-4		1035	-0.5	-16		1006	-0.8	-23		0500	0.9	27
	1300	0.8	23		1455	1.2	36		1513	1.1	33		1748	1.4	42		1745	1.4	43		1140	-0.8	-23
	1931	-0.7	-20		2052	-0.2	-5		2103	0.0	1		2342	0.5	16		2318	0.6	17		1920	1.5	46
5 Th	0250	1.5	46	20 F	0341	1.7	51	5 Su	0318	1.4	42	20 M	0443	1.2	37	5 W	0354	1.2	36	20 Th	0113	0.5	14
	0907	0.1	4		1013	-0.2	-6		0948	-0.3	-10		1138	-0.7	-20		1112	-0.9	-28		0605	0.9	28
	1425	0.8	23		1626	1.2	36		1626	1.1	35		1911	1.5	45		1859	1.6	48		1226	-0.8	-24
	2029	-0.4	-13		2227	0.1	4		2209	0.2	7										1959	1.5	46
6 F	0328	1.5	45	21 Sa	0435	1.5	47	6 M	0353	1.3	41	21 Tu	0043	0.6	18	6 Th	0016	0.6	19	21 F	0152	0.4	13
	0955	0.0	-1		1120	-0.4	-13		1043	-0.6	-17		0545	1.1	35		0458	1.2	37		0653	1.0	30
	1546	0.8	25		1800	1.2	38		1754	1.2	38		1226	-0.7	-22		1209	-1.1	-34		1306	-0.8	-24
	2132	-0.2	-6		2346	0.4	11		2311	0.5	14		2007	1.5	47		1953	1.7	53		2031	1.5	45
7 Sa	0408	1.4	44	22 Su	0531	1.4	42	7 Tu	0430	1.3	40	22 W	0137	0.7	20	7 F	0103	0.6	19	22 Sa	0223	0.4	11
	1042	-0.2	-7		1215	-0.6	-19		1137	-0.8	-25		0632	1.1	34		0607	1.3	40		0735	1.0	32
	1702	1.0	29		1926	1.4	42		1912	1.4	43		1305	-0.8	-24		1257	-1.2	-38		1341	-0.8	-23
	2236	0.0	0										2050	1.5	47		2038	1.8	54		2059	1.4	43
8 Su	0447	1.4	42	23 M	0050	0.5	16	8 W	0005	0.6	19	23 Th	0223	0.7	22	8 Sa	0143	0.5	16	23 Su	0248	0.3	9
	1127	-0.5	-15		0620	1.2	38		0511	1.3	41		0706	1.1	34		0704	1.5	45		0816	1.1	34
	1817	1.1	34		1258	-0.8	-23		1225	-1.1	-33		1338	-0.8	-25		1340	-1.3	-40		1416	-0.7	-21
	2331	0.2	6		2030	1.5	45		2009	1.6	49		2126	1.5	46		2119	1.8	54		2127	1.3	41
9 M	0523	1.3	41	24 Tu	0150	0.7	21	9 Th	0053	0.8	23	24 F	0257	0.7	22	9 Su	0218	0.4	12	24 M	0307	0.2	5
	1208	-0.8	-23		0657	1.1	34		0557	1.4	43		0733	1.1	34		0758	1.6	50		0857	1.2	37
	1923	1.3	40		1332	-0.9	-26		1308	-1.3	-40		1408	-0.8	-25		1422	-1.3	-39		1451	-0.6	-18
					2120	1.5	46		2058	1.7	53		2156	1.4	44		2159	1.7	52		2153	1.3	39
10 Tu	0017	0.4	12	25 W	0249	0.8	24	10 F	0138	0.8	24	25 Sa	0320	0.7	22	10 M	0254	0.2	5	25 Tu	0322	0.0	0
	0553	1.3	40		0715	1.0	32		0647	1.5	47		0802	1.1	35		0852	1.7	53		0937	1.3	40
	1245	-1.0	-32		1400	-0.9	-27		1350	-1.5	-45		1438	-0.8	-25		1506	-1.1	-34		1528	-0.5	-15
	2019	1.5	46		2201	1.5	45		2143	1.8	55		2223	1.4	42		2239	1.6	49		2219	1.2	36
11 W	0059	0.6	18	26 Th	0335	0.9	26	11 Sa	0220	0.8	23	26 Su	0337	0.6	19	11 Tu	0334	-0.1	-2	26 W	0341	-0.2	-7
	0619	1.4	42		0723	1.0	31		0739	1.7	51		0838	1.2	37		0952	1.7	53		1017	1.4	42
	1321	-1.3	-41		1425	-0.9	-28		1432	-1.5	-47		1510	-0.8	-24		1553	-0.9	-26		1607	-0.4	-11
	2109	1.6	50		2235	1.4	43		2228	1.8	55		2250	1.3	41		2319	1.5	46		2245	1.1	34
12 Th	0141	0.7	22	27 F	0357	0.9	26	12 Su	0303	0.6	19	27 M	0352	0.5	16	12 W	0419	-0.3	-9	27 Th	0406	-0.4	-13
	0650	1.4	44		0746	1.0	32		0834	1.8	54		0920	1.2	38		1058	1.7	51		1100	1.4	44
	1400	-1.6	-48		1452	-1.0	-30		1518	-1.4	-44		1546	-0.7	-22		1647	-0.5	-15		1648	-0.2	-7
	2156	1.8	54		2304	1.4	42		2314	1.8	54		2318	1.3	40		2359	1.4	43		2314	1.1	33
13 F	0226	0.8	25	28 Sa	0407	0.8	25	13 M	0349	0.5	14	28 Tu	0414	0.4	11	13 Th	0512	-0.5	-14	28 F	0438	-0.6	-19
	0732	1.5	47		0820	1.1	33		0934	1.8	54		1005	1.3	39		1210	1.6	48		1148	1.4	44
	1441	-1.7	-52		1522	-1.0	-30		1608	-1.2	-38		1626	-0.6	-19		1749	-0.1	-4		1733	-0.1	-2
	2245	1.8	56		2332	1.3	41						2347	1.3	40						2345	1.0	32
14 Sa	0315	0.8	24	29 Su	0421	0.8	23	14 Tu	0000	1.7	53	29 W	0444	0.2	5	14 F	0039	1.3	40	29 Sa	0520	-0.8	-24
	0824	1.6	49		0901	1.1	34		0440	0.3	9		1053	1.3	40		0617	-0.6	-18		1243	1.4	44
	1526	-1.7	-52		1558	-1.0	-29		1040	1.7	52		1711	-0.5	-16		1322	1.5	45		1825	0.1	4
	2337	1.8	56						1704	-1.0	-29						1905	0.2	6				
15 Su	0406	0.7	22	30 M	0001	1.4	42	15 W	0045	1.7	52	30 Th	0017	1.3	39	15 Sa	0118	1.2	37	30 Su	0020	1.0	32
	0923	1.6	50		0449	0.6	19		0545	0.1	4		0522	0.0	0		0726	-0.7	-20		0615	-0.9	-27
	1618	-1.5	-47		0949	1.1	34		1158	1.6	48		1147	1.3	40		1434	1.4	44		1345	1.4	44
					1640	-0.9	-27		1806	-0.6	-18		1757	-0.4	-11		2039	0.4	12		1932	0.3	9
			31 Tu	0031	1.4	43				31 F	0049	1.3	39										
				0531	0.5	15					0610	-0.2	-5										
				1041	1.1	34																	
				1727	-0.8	-24																	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Keelung (Chi-lung Chiang), Taiwan, 2018

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0057 1.0 31 0719 -1.0 -29 1451 1.4 44 2100 0.5 14	16 Tu	0138 0.6 18 0830 -1.0 -32 1623 1.3 41 2315 0.3 9	1 Th	0207 0.6 19 0909 -1.3 -39 1705 1.6 48 2321 0.1 3	16 F	0309 0.1 4 0934 -1.1 -33 1709 -1.2 36 2357 -0.3 -9	1 Sa	0358 0.4 12 1011 -1.2 -37 1728 1.3 40 2347 -0.6 -19	16 Su	0416 0.0 -1 0953 -1.0 -30 1648 0.9 26 2336 -0.9 -26
2 Tu	0138 1.0 29 0825 -1.0 -30 1608 1.5 45 2225 0.5 15	17 W	0234 0.5 16 0932 -1.0 -29 1727 1.4 42	2 F	0347 0.6 18 1030 -1.2 -36 1806 1.6 49	17 Sa	0459 0.2 6 1043 -0.9 -28 1755 1.2 36	2 Su	0533 0.5 16 1126 -1.0 -31 1819 1.2 38	17 M	0536 0.2 5 1103 -0.8 -25 1734 0.8 24
3 W	0228 0.9 28 0935 -1.0 -31 1731 1.6 48 2330 0.4 13	18 Th	0002 0.2 6 0359 0.5 15 1038 -0.9 -27 1818 1.4 42	3 Sa	0010 -0.1 -4 0534 0.8 23 1139 -1.1 -34 1854 1.6 48	18 Su	0034 -0.5 -15 0611 0.4 12 1144 -0.8 -24 1835 1.1 34	3 M	0035 -1.0 -29 0647 0.7 22 1225 -0.8 -24 1901 1.1 33	18 Tu	0015 -1.1 -33 0642 0.4 11 1200 -0.7 -20 1813 0.7 22
4 Th	0339 0.9 27 1050 -1.0 -32 1837 1.7 51	19 F	0043 0.1 3 0535 0.6 18 1137 -0.8 -25 1859 1.4 43	4 Su	0053 -0.4 -11 0643 0.9 28 1233 -1.0 -31 1935 1.4 44	19 M	0105 -0.7 -21 0708 0.6 18 1234 -0.7 -20 1909 1.0 32	4 Tu	0116 -1.2 -37 0753 0.9 26 1317 -0.6 -17 1937 0.9 27	19 W	0047 -1.3 -41 0738 0.6 18 1247 -0.5 -15 1845 0.7 20
5 F	0022 0.3 10 0516 1.0 30 1154 -1.1 -34 1927 1.7 53	20 Sa	0118 0.0 -1 0635 0.7 21 1226 -0.8 -24 1933 1.4 42	5 M	0130 -0.6 -19 0744 1.1 33 1318 -0.8 -25 2010 1.3 39	20 Tu	0131 -0.9 -28 0759 0.8 24 1317 -0.5 -16 1937 1.0 29	5 W	0150 -1.5 -45 0852 1.0 30 1408 -0.3 -9 2002 0.7 20	20 Th	0115 -1.6 -49 0827 0.8 24 1328 -0.3 -9 1909 0.6 18
6 Sa	0104 0.2 6 0632 1.1 35 1245 -1.1 -35 2008 1.7 52	21 Su	0148 -0.2 -5 0727 0.9 26 1308 -0.7 -21 2003 1.3 40	6 Tu	0203 -0.9 -28 0840 1.2 37 1401 -0.6 -17 2039 1.1 33	21 W	0153 -1.1 -34 0843 1.0 29 1356 -0.4 -11 2001 0.9 26	6 Th	0220 -1.7 -52 0944 1.0 32 1502 -0.1 -2 2010 0.5 15	21 F	0142 -1.9 -57 0911 1.0 29 1406 -0.1 -4 1930 0.6 18
7 Su	0140 0.0 4 0729 1.3 40 1329 -1.1 -33 2046 1.6 49	22 M	0212 -0.3 -10 0813 1.0 30 1347 -0.6 -18 2030 1.2 37	7 W	0233 -1.2 -36 0934 1.3 39 1445 -0.3 -9 2057 0.9 27	22 Th	0214 -1.4 -42 0925 1.1 34 1432 -0.2 -6 2020 0.8 24	7 F	0247 -1.9 -57 1030 1.0 32 1558 0.1 2 2015 0.4 12	22 Sa	0211 -2.2 -66 0954 1.1 33 1444 0.0 0 1951 0.7 20
8 M	0212 -0.2 -7 0823 1.4 44 1410 -0.9 -28 2120 1.4 44	23 Tu	0232 -0.5 -15 0856 1.1 34 1425 -0.5 -14 2055 1.1 33	8 Th	0303 -1.4 -44 1026 1.3 40 1535 0.0 -1 2106 0.8 23	23 F	0237 -1.6 -50 1006 1.2 37 1508 0.0 -1 2037 0.8 23	8 Sa	0315 -2.0 -60 1114 1.0 31 1649 0.1 4 2034 0.3 10	23 Su	0244 -2.4 -73 1039 1.1 35 1526 0.1 2 2022 0.7 22
9 Tu	0244 -0.5 -15 0918 1.5 47 1452 -0.7 -21 2151 1.3 39	24 W	0248 -0.7 -22 0936 1.2 38 1502 -0.3 -9 2116 1.0 30	9 F	0335 -1.6 -49 1117 1.3 40 1636 0.2 5 2122 0.6 19	24 Sa	0306 -1.9 -58 1049 1.3 39 1548 0.1 3 2056 0.8 24	9 Su	0347 -2.0 -62 1157 1.0 30 1731 0.1 4 2103 0.3 9	24 M	0322 -2.5 -77 1128 1.2 36 1613 0.1 3 2106 0.8 23
10 W	0319 -0.8 -23 1014 1.5 47 1538 -0.4 -11 2220 1.1 35	25 Th	0308 -1.0 -29 1016 1.3 41 1539 -0.2 -5 2137 0.9 28	10 Sa	0412 -1.7 -52 1208 1.3 39 1744 0.3 8 2150 0.5 16	25 Su	0341 -2.1 -63 1138 1.3 41 1636 0.2 7 2125 0.8 24	10 M	0425 -2.0 -61 1239 0.9 28 1815 0.1 2 2146 0.3 8	25 Tu	0407 -2.5 -76 1220 1.2 37 1708 0.1 2 2203 0.7 22
11 Th	0357 -1.0 -30 1112 1.5 47 1633 -0.1 -2 2249 1.0 31	26 F	0333 -1.2 -36 1057 1.4 43 1618 0.0 0 2159 0.9 27	11 Su	0455 -1.7 -52 1300 1.2 37 1853 0.3 9 2234 0.5 14	26 M	0423 -2.1 -65 1234 1.4 42 1739 0.3 9 2210 0.7 22	11 Tu	0510 -1.9 -59 1320 0.9 28 1907 0.0 0 2240 0.2 5	26 W	0501 -2.3 -71 1313 1.2 37 1821 0.0 -1 2311 0.6 19
12 F	0441 -1.1 -35 1213 1.5 45 1742 0.2 6 2324 0.9 27	27 Sa	0406 -1.4 -43 1145 1.4 44 1704 0.2 5 2226 0.9 27	12 M	0546 -1.6 -50 1351 1.2 37 2006 0.3 8 2334 0.4 11	27 Tu	0516 -2.1 -63 1332 1.4 42 1909 0.3 9 2314 0.6 19	12 W	0600 -1.8 -55 1359 0.9 28 2006 -0.1 -4 2343 0.1 2	27 Th	0602 -2.1 -63 1404 1.2 37 1947 -0.2 -6
13 Sa	0534 -1.2 -36 1315 1.4 44 1904 0.4 11	28 Su	0447 -1.5 -46 1240 1.5 45 1804 0.3 9 2302 0.9 26	13 Tu	0641 -1.5 -46 1440 1.2 36 2120 0.2 5	28 W	0620 -1.9 -58 1430 1.4 42 2039 0.2 5	13 Th	0652 -1.6 -50 1438 1.0 29 2103 -0.3 -8	28 F	0031 0.5 15 0710 -1.7 -53 1455 1.1 35 2103 -0.5 -14
14 Su	0006 0.8 24 0633 -1.2 -36 1416 1.4 42 2036 0.4 13	29 M	0539 -1.5 -47 1341 1.5 45 1930 0.4 13 2352 0.8 24	14 W	0034 0.3 8 0736 -1.4 -42 1529 1.2 36 2222 0.0 1	29 Th	0033 0.5 16 0731 -1.7 -51 1529 1.4 42 2150 -0.1 -2	14 F	0059 0.0 -1 0745 -1.4 -44 1519 1.0 29 2158 -0.5 -14	29 Sa	0208 0.4 11 0824 -1.4 -42 1547 1.1 33 2212 -0.8 -23
15 M	0051 0.7 21 0732 -1.1 -34 1518 1.4 42 2213 0.4 11	30 Tu	0644 -1.5 -45 1446 1.5 46 2106 0.4 12	15 Th	0140 0.2 5 0832 -1.2 -38 1619 1.2 36 2313 -0.1 -4	30 F	0204 0.4 12 0846 -1.4 -43 1629 1.4 42 2252 -0.3 -10	15 Sa	0233 -0.1 -3 0844 -1.2 -37 1602 0.9 28 2249 -0.7 -20	30 Su	0354 0.3 10 0954 -1.0 -31 1644 1.0 30 2318 -1.0 -32
		31 W	0054 0.7 21 0754 -1.4 -42 1554 1.5 47 2221 0.3 8							31 M	0529 0.4 13 1119 -0.8 -23 1739 0.9 26

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Hong Kong, China, 2018

Times and Heights of High and Low Waters

January				February				March																		
Time		Height		Time		Height		Time		Height		Time		Height												
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm											
1 M	0242	1.4	42	16 Tu	0347	1.7	52	1 Th	0406	0.6	19	16 F	0411	1.5	47	1 Th	0304	1.0	29							
	0919	4.9	149		1019	4.4	133		1053	4.8	146		1038	4.7	144		0948	4.9	148							
	1329	3.5	106		1354	3.6	109		1505	3.1	94		1512	3.1	94		1416	3.0	92							
	2048	8.1	247		2057	7.3	221		2213	8.1	247		2151	7.1	216		2116	7.6	232							
2 Tu	0330	0.9	28	17 W	0413	1.6	48	2 F	0446	0.7	22	17 Sa	0433	1.6	49	2 F	0341	1.0	29	17 Sa	0332	1.8	55			
	1016	4.9	150		1047	4.5	136		1133	4.9	150		1104	4.9	150		1019	5.1	156		0954	5.2	160			
	1417	3.5	107		1433	3.5	108		1554	3.0	91		1552	3.0	90		1505	2.7	81		1508	2.7	83			
3 W	0417	0.7	21	18 Th	0439	1.5	47	3 Sa	0524	1.0	31	18 Su	0457	1.7	52	3 Sa	0416	1.1	35	18 Su	0355	1.9	58			
	1111	4.9	150		1115	4.6	139		1213	5.1	154		1134	5.1	155		1050	5.3	163		1020	5.5	168			
	1506	3.5	108		1512	3.5	107		1642	3.0	91		1633	2.9	88		1552	2.4	74		1547	2.5	75			
4 Th	0504	0.7	22	19 F	0504	1.6	48	4 Su	0601	1.5	45	19 M	0524	1.9	58	4 Su	0449	1.5	45	19 M	0421	2.0	62			
	1203	4.9	150		1146	4.6	141		1253	5.2	158		1206	5.2	160		1121	5.5	169		1049	5.8	176			
	1555	3.6	110		1552	3.5	107		1729	3.1	95		1716	2.9	88		1637	2.4	72		1629	2.2	68			
5 F	0551	1.0	29	20 Sa	0529	1.7	51	5 M	0027	6.7	203	20 Tu	0554	2.1	65	5 M	0522	1.9	58	20 Tu	0450	2.3	70			
	1253	5.0	151		1222	4.7	144		0636	2.0	60		1241	5.4	164		1152	5.7	174		1119	6.0	183			
	1644	3.7	113		1633	3.6	109		1334	5.3	161		1802	3.0	90		1723	2.5	75		1712	2.1	65			
6 Sa	0637	1.3	41	21 Su	0557	1.8	56	6 Tu	0109	5.9	179	21 W	0030	6.0	182	6 Tu	0017	6.1	186	21 W	0521	2.6	79			
	1341	5.0	153		1303	4.8	147		0709	2.5	75		0625	2.5	75		0553	2.4	73		1149	6.2	188			
	1734	3.9	119		1718	3.7	112		1419	5.4	164		1317	5.5	168		1222	5.8	176		1759	2.1	65			
7 Su	0038	7.2	219	22 M	0627	2.0	62	7 W	0155	5.1	155	22 Th	0118	5.4	164	7 W	0059	5.4	165	22 Th	0035	5.6	171			
	0723	1.8	56		1349	5.0	151		0741	2.9	89		0659	2.8	85		0622	2.9	87		0553	3.0	90			
	1431	5.1	156		1806	3.8	115		1508	5.5	167		1358	5.6	172		1252	5.8	176		1218	6.3	191			
8 M	0124	6.4	195	23 Tu	0020	6.3	191	8 Th	0314	4.4	134	23 F	0222	4.8	145	8 Th	0148	4.8	145	23 F	0132	5.1	154			
	0809	2.3	71		0701	2.3	69		0812	3.3	100		0734	3.2	97		0648	3.3	100		0626	3.3	102			
	1522	5.3	161		1439	5.1	156		1600	5.6	170		1455	5.8	178		1325	5.8	176		1251	6.3	193			
9 Tu	0218	5.6	170	24 W	0107	5.7	175	9 F	0503	3.9	120	24 Sa	0422	4.3	130	9 F	0310	4.2	129	24 Sa	0305	4.5	138			
	0856	2.8	84		0737	2.6	78		0846	3.6	109		0814	3.5	107		0711	3.6	110		0700	3.7	114			
	1616	5.5	168		1530	5.3	162		1655	5.7	175		1618	6.1	185		1410	5.7	174		1339	6.3	193			
10 W	0354	4.9	148	25 Th	0208	5.1	156	10 Sa	0134	3.0	92	25 Su	0556	4.1	126	10 Sa	0506	3.9	120	25 Su	0441	4.3	131			
	0943	3.1	95		0817	2.9	87		0708	3.8	117		0910	3.8	116		0719	3.9	118		0740	4.1	124			
	1710	5.8	176		1622	5.6	172		0937	3.8	115		1727	6.4	196		1517	5.7	174		1457	6.3	193			
11 Th	0016	3.9	119	26 F	0352	4.6	139	11 Su	0210	2.5	77	26 M	0042	2.0	62	11 Su	0019	2.9	87	26 M	1655	6.4	195			
	0528	4.4	133		0903	3.1	96		0849	4.0	121		0726	4.2	128		1629	5.8	176		0800	4.6	140			
	1031	3.4	103		1712	6.0	184		1054	3.8	117		1034	3.9	119		1034	3.9	119		1049	4.3	131			
12 F	0154	3.3	101	27 Sa	0552	4.3	131	12 M	0238	2.1	65	27 Tu	0139	1.5	46	12 M	0116	2.5	76	27 Tu	0017	1.8	56			
	0653	4.2	127		0959	3.4	103		0920	4.1	125		0838	4.4	134		1211	3.8	115		1211	3.8	115	0800	4.6	140
	1117	3.5	107		1803	6.5	198		1207	3.8	116		1930	7.2	220		1930	7.2	220		1811	6.6	201			
13 Sa	0226	2.8	84	28 Su	0054	2.4	72	13 Tu	0303	1.8	56	28 W	0225	1.1	35	13 Tu	0153	2.2	67	28 W	0112	1.6	49			
	0815	4.1	126		0710	4.3	130		0942	4.2	129		0915	4.6	141		0903	4.4	134		0826	4.8	147			
	1200	3.6	110		1103	3.5	108		1304	3.6	111		1321	3.4	104		1200	4.1	125		1225	3.9	118			
14 Su	0254	2.3	70	29 M	0150	1.7	51	14 W	0327	1.7	51	14 W	0222	2.0	60	14 W	0222	2.0	60	29 Th	0154	1.4	44			
	0913	4.2	128		0818	4.4	133		1000	4.4	133		1034	3.9	119		0914	4.6	139		0848	5.1	155			
	1239	3.6	111		1210	3.5	108		1350	3.5	106		1831	6.8	208		1302	3.8	116		1325	3.3	101			
15 M	0320	2.0	60	30 Tu	0239	1.1	34	15 Th	0350	1.6	48	15 Th	0247	1.8	56	15 Th	0247	1.8	56	30 F	0232	1.4	44			
	0950	4.3	130		0919	4.5	137		1018	4.5	138		0924	4.7	144		0924	4.7	144		0911	5.4	165			
	1317	3.6	110		1315	3.4	105		1432	3.3	100		1348	3.4	105		1348	3.4	105		1416	2.8	84			
16 F	2025	7.1	216	31 W	2036	7.9	241	31 W	2114	7.1	215	31 Sa	2008	6.6	200	31 Sa	2108	6.9	210	31 Sa	0307	1.5	47			
					0324	0.8	23		1009	4.6	141		1413	3.2	99		1503	2.3	71		0937	5.7	174			
					2125	8.1	247		2125	8.1	247		2158	6.7	205		2158	6.7	205		1503	2.3	71			

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Hong Kong, China, 2018

Times and Heights of High and Low Waters

July				August				September											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 Su	0052	4.2	129	16 M	0047	4.7	143	1 W	0054	4.7	144	16 Th	0122	5.6	172				
	0415	3.7	114		0441	3.4	104		0524	3.6	111		0615	3.2	99	1 Sa	0042	6.0	182
	0945	7.2	218		1126	7.7	236		1107	6.7	205		1305	6.3	191		0645	3.3	101
	1802	1.4	43		1821	0.8	25		1830	2.1	63		1859	2.5	77		1258	5.7	175
													1842	3.3	101				
2 M	0130	4.3	130	17 Tu	0133	4.8	147	2 Th	0126	4.9	149	17 F	0206	5.8	176	2 Su	0115	6.1	187
	0454	3.8	117		0532	3.5	106		0609	3.7	112		0714	3.4	105		0748	3.3	101
	1025	7.0	213		1216	7.2	220		1153	6.3	193		1411	5.5	167		1359	5.2	159
	1838	1.6	49		1906	1.3	39		1900	2.3	71		1935	3.1	93		1915	3.7	113
3 Tu	0210	4.3	131	18 W	0220	5.0	152	3 F	0208	5.1	155	18 Sa	0253	5.9	180	3 M	0156	6.3	193
	0536	4.0	121		0626	3.6	110		0701	3.7	114		0838	3.6	109		0919	3.2	98
	1108	6.7	205		1308	6.5	199		1243	5.8	178		1536	4.8	147		1553	4.7	144
	1915	1.8	55		1951	1.8	55		1932	2.7	81		2010	3.5	108		1952	4.0	123

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Hong Kong, China, 2018
Times and Heights of High and Low Waters

Table with columns for months (October, November, December) and rows for days (1-31). Each day entry includes time and height for high and low waters, with units in hours/minutes/feet/centimeters.

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Haikou, China, 2018

Times and Heights of High and Low Waters

October				November				December															
Time		Height		Time		Height		Time		Height		Time		Height									
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm								
1 M	0132 0523 1036 1906	6.3 5.6 7.7 2.3	192 171 236 71	16 Tu	1051 1952	8.0 2.8	244 86	1 Th	1005 2137	8.3 2.6	252 78	16 F	0959 2150	7.3 3.2	222 99	1 Sa	1044 2302	7.3 2.9	222 88	16 Su	1050 2157	6.4 3.3	195 101
2 Tu	1050 2000	8.0 2.4	245 72	17 W	1116 2040	7.8 3.1	238 96	2 F	1031	7.9	242	17 Sa	0955 2334	6.9 3.4	211 103	2 Su	1147 2344	6.5 3.4	198 105	17 M	0805 2244	5.9 3.7	179 114
3 W	1106 2108	8.2 2.6	249 78	18 Th	1111	7.5	228	3 Sa	0025 1049	2.7 7.3	81 224	18 Su	0904	6.6	201	3 M	0749 1138 1801	5.9 5.4 5.7	179 166 175	18 Tu	0704 1223 1511 2319	5.7 5.0 5.2 4.3	174 153 157 131
4 Th	1128	8.1	246	19 F	0056 1042	3.2 7.1	99 217	4 Su	0106 0935 1210 1623	2.8 6.7 6.5 6.7	86 204 199 204	19 M	0021 0828 1315 1548	3.5 6.4 5.7 5.7	107 194 173 175	4 Tu	0016 0701 1245 2015	4.1 5.8 4.4 5.9	125 178 133 179	19 W	0609 1303 2012 2346	5.7 4.1 5.2 4.9	174 126 160 150
5 F	0104 1157	2.6 7.7	78 236	20 Sa	0129 1001 1322 1545	3.2 6.8 6.6 6.7	98 208 202 204	5 M	0135 0859 1247 1908	3.1 6.2 5.5 6.7	96 190 169 203	20 Tu	0057 0813 1324 1934	3.8 6.2 4.9 5.9	115 189 149 179	5 W	0044 0644 1341 2135	4.8 6.2 3.3 6.0	145 188 101 184	20 Th	0526 1346 2159	6.0 3.1 5.7	184 96 174
6 Sa	0200 1639	2.3 7.5	70 229	21 Su	0143 0934 1317 1720	3.2 6.6 6.1 6.6	97 201 186 200	6 Tu	0200 0830 1334 2040	3.6 6.1 4.5 6.9	111 185 136 209	21 W	0126 0752 1357 2048	4.2 6.2 4.0 6.2	127 188 123 189	6 Th	0107 0641 1435 2241	5.3 6.7 2.4 6.2	163 203 74 188	21 F	0012 0525 1433	5.5 6.6 2.3	169 201 69
7 Su	0233 1032 1250 1814	2.3 6.7 6.5 7.5	69 204 198 229	22 M	0204 0923 1333 1858	3.2 6.4 5.5 6.6	98 195 168 201	7 W	0224 0816 1423 2148	4.3 6.3 3.4 7.0	130 191 104 212	22 Th	0149 0731 1436 2152	4.7 6.3 3.1 6.5	144 193 95 198	7 F	0128 0653 1527 2345	5.8 7.2 1.8 6.2	177 218 56 190	22 Sa	0552 1521	7.2 1.5	219 45
8 M	0258 1014 1333 1945	2.4 6.2 5.6 7.6	74 189 170 231	23 Tu	0229 0916 1403 2017	3.4 6.3 4.8 6.8	103 192 147 207	8 Th	0246 0813 1513 2247	4.9 6.7 2.6 6.9	150 203 78 211	23 F	0209 0719 1517 2300	5.3 6.8 2.3 6.7	162 206 70 204	8 Sa	0148 0724 1616	6.1 7.5 1.5	185 229 46	23 Su	0639 1611	7.7 1.0	235 29
9 Tu	0322 0952 1419 2104	2.8 5.9 4.6 7.6	86 181 140 233	24 W	0254 0907 1440 2116	3.7 6.3 4.1 7.0	112 191 124 214	9 F	0305 0816 1603 2346	5.5 7.1 2.0 6.8	168 217 61 206	24 Sa	0231 0726 1559	5.9 7.3 1.6	180 223 50	9 Su	0804 1701	7.8 1.5	237 45	24 M	0735 1702	8.1 0.7	246 21
10 W	0345 0940 1508 2210	3.4 6.0 3.6 7.6	104 183 111 232	25 Th	0315 0858 1520 2210	4.2 6.4 3.3 7.2	127 194 101 218	10 Sa	0320 0828 1650	5.9 7.6 1.7	180 231 53	25 Su	0020 0255 0748 1642	6.8 6.4 7.9 1.2	207 195 240 37	10 M	0846 1738	7.9 1.6	240 49	25 Tu	0826 1754	8.2 0.7	251 20
11 Th	0406 0935 1557 2306	4.2 6.3 2.9 7.4	127 193 87 225	26 F	0332 0850 1602 2305	4.7 6.7 2.6 7.2	144 204 80 218	11 Su	0052 0331 0852 1733	6.5 6.1 7.9 1.8	198 187 241 54	26 M	0817 1726	8.2 1.1	251 33	11 Tu	0924 1807	7.8 1.8	238 55	26 W	0907 1846	8.2 0.9	251 26
12 F	0423 0935 1647	4.9 6.8 2.4	148 208 72	27 Sa	0350 0853 1644	5.3 7.2 2.1	161 219 64	12 M	0924 1811	8.0 2.0	245 61	27 Tu	0840 1814	8.4 1.2	256 37	12 W	0950 1835	7.6 2.0	233 62	27 Th	0933 1934	8.0 1.3	245 39
13 Sa	0001 0434 0940 1737	7.0 5.4 7.4 2.2	212 165 225 66	28 Su	0008 0408 0904 1726	6.9 5.8 7.7 1.8	211 178 235 54	13 Tu	0955 1842	8.0 2.3	244 70	28 W	0856 1910	8.4 1.5	255 47	13 Th	1001 1912	7.4 2.3	226 70	28 F	1001 2020	7.7 1.8	234 56
14 Su	0101 0438 0956 1825	6.4 5.7 7.8 2.2	195 175 237 68	29 M	0143 0421 0919 1809	6.6 6.3 8.1 1.7	201 192 248 52	14 W	1014 1915	7.8 2.6	238 80	29 Th	0921 2025	8.2 2.0	250 61	14 F	1003 2002	7.2 2.6	218 79	29 Sa	1042 2101	7.2 2.6	218 78
15 M	1022 1910	8.0 2.5	244 76	30 Tu	0932 1856	8.4 1.8	255 56	15 Th	1001 2005	7.6 3.0	231 90	30 F	0958 2156	7.8 2.4	239 74	15 Sa	1021 2100	6.9 2.9	209 89	30 Su	1140 2136	6.4 3.3	195 102
				31 W	0946 1952	8.4 2.2	256 67													31 M	0525 0830 1323 2202	5.2 5.0 5.5 4.1	157 153 168 126

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Beihai, China, 2018

Times and Heights of High and Low Waters

January				February				March																						
Time	Height			Time	Height			Time	Height			Time	Height																	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm											
1 M	0419	15.3	465	64	16 Tu	0514	14.2	433	86	1 Th	0547	16.0	489	54	16 F	0614	13.9	423	108	1 Th	0445	15.2	462	78	16 F	0508	13.2	401	401	
	1346	2.1	64			1512	2.8	86			1553	1.8	54			1543	3.5	108			1440	2.6	78			1418	4.2	127		
2 Tu	0503	16.2	495	42	17 W	0549	14.4	438	86	2 F	0642	15.9	486	71	17 Sa	0656	13.8	420	120	2 F	0546	15.1	461	96	17 Sa	0559	13.1	400	400	
	1451	1.4	42			1547	2.8	86			1630	2.3	71			1601	3.9	120			1512	3.1	96			1434	4.7	143	143	
3 W	0552	16.7	509	38	18 Th	0626	14.4	439	91	3 Sa	0736	15.6	474	95	18 Su	0736	13.6	414	202	3 Sa	0645	14.9	453	168	18 Su	0647	13.0	395	395	
	1552	1.2	38			1617	3.0	91			1701	3.1	95			1614	4.4	134			1529	4.0	123			1444	5.3	162	162	
4 Th	0642	16.7	510	46	19 F	0701	14.3	437	98	4 Su	0829	14.8	452	187	19 M	0021	6.2	188	222	4 Su	0741	14.2	433	217	19 M	0030	5.9	179	179	
	1649	1.5	46			1644	3.2	98			1716	4.0	123			0816	13.2	403			1539	5.0	152			0735	12.5	382	382	
5 F	0734	16.4	501	62	20 Sa	0737	14.2	432	106	5 M	0107	5.8	178	224	20 Tu	0145	6.0	184	251	5 M	0130	5.2	159	259	20 Tu	0142	5.2	158	158	
	1738	2.0	62			1707	3.5	106			0920	13.6	416			0858	12.5	382			0836	13.1	399			0824	11.8	359	359	
6 Sa	0825	15.8	483	83	21 Su	0811	13.9	424	115	6 Tu	0304	6.1	186	266	21 W	0310	5.8	177	289	6 Tu	0249	4.9	149	302	21 W	0252	4.5	137	137	
	1817	2.7	83			1727	3.8	115			1010	12.1	368			0945	11.5	349			0930	11.6	355			0917	10.7	325	325	
7 Su	0916	15.0	456	109	22 M	0847	13.5	412	126	7 W	0450	6.3	192	184	22 Th	0431	5.5	169	332	7 W	0405	4.8	147	337	22 Th	0402	4.0	122	122	
	1845	3.6	109			1743	4.1	126			1102	10.2	312			1040	9.9	303			1025	10.0	305			1019	9.3	283	283	
8 M	1007	13.7	417	133	23 Tu	0928	12.9	392	140	8 Th	0000	10.1	307	188	23 F	0605	5.2	159	373	8 Th	0525	4.9	148	364	23 F	0520	3.6	111	111	
	1902	4.4	133			1759	4.6	140			0643	6.3	193			1150	8.2	249			1126	8.4	256			1151	7.8	239	239	
9 Tu	1059	12.0	366	155	24 W	0002	7.5	230	157	9 F	0049	11.3	343	185	24 Sa	0759	4.8	145	145	9 F	0700	4.9	148	380	24 Sa	0653	3.5	106	106	
	1912	5.1	155			0301	7.1	216			0907	5.9	181			0034	13.4	407			1306	7.0	214			2255	14.2	432	432	
10 W	0143	8.7	265	172	25 Th	0018	8.7	264	175	10 Sa	0138	12.1	370	150	25 Su	0034	13.4	407	120	10 Sa	0857	4.7	142	142	25 Su	0838	3.3	100	100	
	0551	7.7	235			0504	7.1	216			1137	4.9	150			1016	3.9	120			1518	6.8	208			2356	14.4	440	440	
11 Th	0213	10.1	309	181	26 F	0050	10.1	309	184	11 Su	0226	12.8	389	121	26 M	0133	14.2	432	92	11 Su	0026	12.8	390	127	26 M	1018	3.0	91	91	
	0849	7.3	223			0713	6.6	202			1251	4.0	121			1155	3.0	92			1047	4.2	127							
12 F	0249	11.5	350	182	27 Sa	0128	11.8	359	182	12 M	0313	13.2	403	102	27 Tu	0236	14.7	447	75	12 M	0120	13.0	396	114	27 Tu	0102	14.4	440	440	
	1137	6.0	182			0945	5.5	168			1338	3.3	102			1303	2.5	75			1156	3.7	114			1130	2.9	87	87	
13 Sa	0326	12.6	383	140	28 Su	0213	13.3	406	119	13 Tu	0400	13.5	413	93	28 W	0341	15.0	456	71	13 Tu	0216	13.1	399	107	28 W	0214	14.3	437	437	
	1300	4.6	140			1150	3.9	119			1417	3.1	93			1357	2.3	71			1244	3.5	107			1225	3.0	91	91	
14 Su	0403	13.4	407	110	29 M	0303	14.6	444	79	14 W	0446	13.8	420	93	29 Th	0315	13.2	401	108	14 W	0315	13.2	401	108	29 Th	0329	14.2	434	434	
	1352	3.6	110			1308	2.6	79			1451	3.1	93			1323	3.5	108			1323	3.5	108			1308	3.4	104	104	
15 M	0439	13.9	423	93	30 Tu	0356	15.4	470	56	15 Th	0531	13.9	423	98	30 F	0413	13.2	401	115	15 Th	0413	13.2	401	115	30 F	0441	14.0	428	428	
	1434	3.1	93			1410	1.8	56			1519	3.2	98			1355	3.8	115			1355	3.8	115			1335	4.2	127	127	
					31 W	0451	15.9	484	49																		1915	6.8	207	207
						1505	1.6	49																			2151	6.4	196	196
																											0547	13.7	417	417
																											1349	5.1	154	154
																											1856	7.6	231	231
																											2341	5.7	173	173

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Beihai, China, 2018

Times and Heights of High and Low Waters

October				November				December															
Time		Height		Time		Height		Time		Height		Time		Height									
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm								
1 M	0217 0942 1832	8.1 14.7 3.5	247 448 108	16 Tu	1021 2017	14.8 3.7	451 114	1 Th	1049 2116	15.6 3.0	476 90	16 F	1048 2116	13.7 4.1	419 124	1 Sa	1125 2118	14.2 3.9	432 119	16 Su	1041 2023	12.4 4.6	377 140
2 Tu	1033 2001	15.3 3.3	465 101	17 W	1107 2126	14.5 3.8	442 117	2 F	1152 2209	15.1 3.3	459 101	17 Sa	1137 2149	13.0 4.5	396 136	2 Su	1240 2139	12.8 4.8	391 146	17 M	1132 2035	11.2 5.2	341 158
3 W	1129 2131	15.5 3.1	471 95	18 Th	1158 2221	14.1 4.0	431 121	3 Sa	1305 2250	14.4 3.9	438 118	18 Su	1238 2212	12.1 5.0	369 151	3 M	0417 0730 1413 2148	8.9 8.4 11.2 5.7	271 256 342 173	18 Tu	0355 0736 1250 2035	9.3 8.8 9.7 5.8	283 269 296 177
4 Th	1230 2244	15.5 3.0	471 92	19 F	1255 2304	13.7 4.2	417 127	4 Su	1431 2317	13.6 4.7	414 143	19 M	1401 2227	11.2 5.5	340 169	4 Tu	0420 1022 1556 2151	10.3 7.1 9.6 6.4	314 216 294 196	19 W	0345 1034 1455 2027	10.5 7.4 7.2 6.3	319 226 252 193
5 F	1337 2340	15.4 3.1	468 95	20 Sa	1359 2337	13.2 4.6	402 139	5 M	0529 0852 1555 2333	8.7 8.0 12.7 5.6	264 243 387 172	20 Tu	0513 0956 1538 2233	9.7 8.4 10.3 6.2	296 256 315 190	5 W	0436 1200 1739 2156	11.9 5.3 8.4 6.9	363 161 255 211	20 Th	0357 1159 1706 2014	11.9 5.4 7.2 6.6	364 166 218 202
6 Sa	1449	15.2	464	21 Su	1510	12.7	388	6 Tu	0531 1058 1716 2344	9.8 6.7 11.6 6.5	298 203 355 198	21 W	0509 1128 1705 2235	10.7 6.9 9.6 6.9	326 209 292 209	6 Th	0457 1312 1921 2140	13.4 3.8 7.4 7.2	409 115 227 218	21 F	0418 1301	13.5 3.6	413 111
7 Su	0024 1602	3.5 15.0	107 457	22 M	0002 0629 0902 1620	5.1 8.7 8.4 12.3	154 265 255 376	7 W	0535 1226 1835 2357	11.3 5.1 10.5 7.2	343 154 319 220	22 Th	0515 1234 1824 2238	12.0 5.1 8.8 7.3	367 156 269 224	7 F	0527 1415	14.5 2.9	443 87	22 Sa	0446 1400	15.0 2.3	458 69
8 M	0057 0647 0936 1711	4.2 7.6 7.2 14.5	128 233 190 443	23 Tu	0018 0617 1046 1723	5.6 9.3 7.6 11.9	172 283 231 363	8 Th	0551 1333 1955	12.9 3.7 9.3	392 114 283	23 F	0528 1333 1953 2234	13.5 3.5 8.0 7.6	413 108 244 232	8 Sa	0601 1513	15.2 2.5	463 75	23 Su	0523 1500	16.1 1.5	491 46
9 Tu	0113 0638 1129 1817	5.1 8.5 6.2 13.7	156 259 190 417	24 W	0026 0619 1204 1822	6.3 10.1 6.5 11.4	192 309 197 347	9 F	0004 0619 1437 2121 2340 0656 1543	7.8 14.2 3.0 8.3 8.0 15.1 2.7	238 434 91 253 244 460 83	24 Sa	0552 1430	15.0 2.4	458 72	9 Su	0636 1608	15.4 2.5	470 76	24 M	0606 1600	16.7 1.3	508 39
10 W	0123 0633 1255 1924	6.1 9.8 5.0 12.5	185 300 153 380	25 Th	0034 0623 1310 1921	6.9 11.3 5.2 10.6	211 345 157 323	10 Sa	0735 1648	15.5 2.8	471 86	25 Su	0626 1536	16.1 1.8	491 55	10 M	0709 1657	15.4 2.7	468 82	25 Tu	0652 1700	16.8 1.4	513 43
11 Th	0141 0651 1408 2030	6.9 11.5 4.0 11.0	210 352 123 336	26 F	0041 0634 1410 2023	7.5 12.7 3.9 9.6	229 388 120 294	11 Su	0812 1745	15.4 3.1	470 93	26 M	0708 1640	16.7 1.7	508 52	11 Tu	0743 1741	15.2 3.0	463 91	26 W	0740 1756	16.7 1.8	508 55
12 F	0153 0722 1514 2142	7.6 13.1 3.5 9.6	233 399 107 292	27 Sa	0051 0659 1512 2147	8.0 14.1 3.0 8.6	243 431 92 262	12 M	0849 1845	15.2 3.3	464 101	27 Tu	0753 1749	16.8 1.9	511 58	12 W	0817 1823	14.9 3.2	455 99	27 Th	0830 1844	16.2 2.3	495 71
13 Sa	0200 0805 1629 2307	8.1 14.2 3.3 8.4	246 432 102 257	28 Su	0040 0735 1620	8.2 15.3 2.6	251 466 79	13 Tu	0927 1943	14.9 3.6	453 109	28 W	0840 1856	16.5 2.2	503 68	13 Th	0851 1902	14.5 3.5	443 107	28 F	0922 1921	15.5 3.1	473 93
14 Su	0134 0851 1741	8.1 14.8 3.4	247 450 105	29 M	0818 1731	15.9 2.5	486 76	14 W	1005 2034	14.4 3.8	438 116	29 Th	0929 1955	15.9 2.7	486 81	14 F	0926 1934	14.0 3.8	427 116	29 Sa	1017 1945	14.4 3.9	439 119
15 M	0937 1900	14.9 3.6	455 110	30 Tu	0905 1847	16.1 2.6	492 79	15 Th				30 F	1022 2043	15.2 3.2	464 98	15 Sa	1001 2002	13.3 4.1	405 126	30 Su	1117 1959	12.8 4.8	390 146
				31 W	0955 2007	16.0 2.8	487 84													31 M	0224 0551 1228 2002	8.5 7.8 10.7 5.6	258 239 327 170

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Pages 132 through 139 intentionally omitted

Bangkok Bar, Thailand, 2018

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 Su	0554 11.8 361 1217 5.5 167 1806 11.3 344	16 M ●	0510 11.2 340 1152 4.9 150 1757 11.3 343	1 Tu	0003 6.9 210 0511 10.8 329 1213 3.2 97 1903 11.6 355	16 W	0428 10.5 319 1146 2.5 75 1851 11.9 364	1 F	0119 8.2 250 0522 9.6 294 1247 2.1 63 2022 11.6 354	16 Sa	0139 8.6 262 0507 9.7 297 1258 0.7 22 2046 12.4 379
2 M	0017 5.4 164 0614 11.6 353 1245 4.8 146 1853 11.5 350	17 Tu	0004 6.4 194 0527 11.1 339 1216 4.1 124 1839 11.8 359	2 W	0042 7.4 225 0531 10.6 323 1239 2.9 87 1944 11.7 357	17 Th	0036 7.8 238 0458 10.5 319 1222 1.8 54 1942 12.3 375	2 Sa	0154 8.3 252 0554 9.5 290 1319 2.1 65 2058 11.6 354	17 Su	0233 8.5 260 0557 9.6 293 1345 0.8 24 2134 12.4 379
3 Tu	0053 6.1 185 0628 11.4 346 1311 4.3 131 1936 11.5 350	18 W	0040 6.8 206 0546 11.1 339 1245 3.3 100 1926 12.1 370	3 Th	0116 7.8 239 0554 10.4 318 1305 2.7 82 2022 11.7 357	18 F	0123 8.2 249 0530 10.4 317 1302 1.4 42 2035 12.5 380	3 Su	0231 8.3 253 0625 9.4 285 1351 2.3 70 2135 11.6 353	18 M	0330 8.3 254 0649 9.4 286 1429 1.2 36 2217 12.2 373
4 W	0124 6.8 208 0643 11.2 340 1336 3.9 120 2017 11.4 347	19 Th	0117 7.3 222 0610 11.1 338 1317 2.7 83 2016 12.3 374	4 F	0150 8.2 249 0619 10.3 313 1334 2.7 81 2100 11.6 355	19 Sa	0215 8.5 259 0607 10.2 312 1344 1.3 41 2130 12.4 379	4 M	0314 8.3 252 0654 9.1 278 1423 2.6 80 2214 11.5 350	19 Tu	0424 8.0 243 0746 9.0 274 1510 2.0 60 2253 11.9 363
5 Th	0155 7.5 229 0701 11.0 335 1403 3.7 114 2100 11.3 343	20 F	0158 7.9 240 0636 11.0 334 1353 2.4 74 2112 12.2 373	5 Sa	0227 8.4 257 0643 10.0 306 1404 2.8 85 2142 11.6 353	20 Su	0312 8.8 267 0646 10.0 304 1428 1.6 48 2224 12.3 375	5 Tu	0401 8.2 251 0721 8.8 268 1454 3.1 96 2252 11.3 344	20 W	0518 7.4 227 0849 8.5 258 1550 3.1 93 ● 2323 11.5 349
6 F	0226 8.1 248 0720 10.8 329 1430 3.7 113 2146 11.1 339	21 Sa	0242 8.5 259 0705 10.8 328 1430 2.4 74 2212 12.0 367	6 Su	0309 8.6 263 0705 9.7 297 1436 3.1 95 2229 11.5 349	21 M	0420 8.8 268 0730 9.5 291 1513 2.2 66 2315 12.0 367	6 W	0459 8.1 247 0748 8.4 256 1523 3.9 118 2329 11.0 335	21 Th	0614 6.8 206 1007 7.9 240 1631 4.4 135 2352 11.0 334
7 Sa	0300 8.7 264 0735 10.5 320 1501 3.9 119 2243 11.0 334	22 Su	0334 9.1 276 0736 10.4 317 1514 2.8 84 2317 11.8 360	7 M	0400 8.8 269 0724 9.4 286 1511 3.6 110 2320 11.3 344	22 Tu	0541 8.5 260 0823 9.0 274 1600 3.0 92 ●	7 Th	1552 4.7 144 ●	22 F	0711 6.0 183 1203 7.5 228 1720 5.9 179
8 Su	0344 9.2 279 0745 10.1 309 1536 4.3 131 ● 2351 10.8 329	23 M	0457 9.4 287 0808 9.9 302 1605 3.4 103 ●	8 Tu	1548 4.3 131 ●	23 W	0002 11.7 357 0659 8.0 243 0937 8.3 253 1656 4.1 125	8 F	0004 10.6 324 1629 5.7 175	23 Sa	0023 10.4 318 0808 5.2 157 1449 7.8 238 1829 7.3 222
9 M	0448 9.6 292 0739 9.8 298 1621 4.9 148	24 Tu	0028 11.6 354 1713 4.2 127	9 W	0015 11.1 338 1635 5.1 155	24 Th	0047 11.4 346 0809 7.1 217 1149 7.7 235 1803 5.3 161	9 Sa	0037 10.3 313 0827 6.5 197 1337 7.3 224 1737 6.8 208	24 Su	0058 9.9 303 0900 4.3 132 1638 8.9 270 2030 8.2 250
10 Tu	0113 10.8 328 1727 5.5 167	25 W	0139 11.5 350 1838 5.0 151	10 Th	0110 10.9 332 1745 5.9 180	25 F	0130 11.0 335 0902 6.1 186 1411 8.0 243 1928 6.3 193	10 Su	0109 10.0 305 0900 5.5 167 1533 8.3 252 1949 7.6 233	25 M	0134 9.5 290 0943 3.6 110 1726 9.8 300 2224 8.5 258
11 W	0247 10.9 333 1859 5.9 181	26 Th	0241 11.5 349 0956 7.4 227 1352 8.4 255 2007 5.5 167	11 F	0200 10.8 328 1000 7.1 217 1407 7.7 234 1923 6.6 200	26 Sa	0212 10.7 325 0941 5.1 154 1604 8.9 271 2058 7.1 215	11 M	0143 9.8 299 0933 4.4 135 1645 9.4 287 2142 8.0 245	26 Tu	0215 9.3 282 1020 3.0 91 1800 10.6 322 2333 8.4 256
12 Th	0345 11.2 340 1108 7.9 241 1419 8.3 252 2040 6.0 184	27 F	0326 11.4 348 1020 6.4 196 1532 9.1 278 2125 5.8 178	12 Sa	0243 10.6 324 1004 6.3 192 1536 8.6 261 2102 6.9 210	27 Su	0249 10.4 317 1015 4.1 125 1703 9.9 302 2215 7.4 227	12 Tu	0219 9.7 296 1008 3.3 102 1732 10.5 319 2256 8.2 250	27 W	0259 9.1 278 1056 2.5 76 1834 11.1 338
13 F	0415 11.3 344 1056 7.3 222 1536 9.0 274 2156 6.0 182	28 Sa	0359 11.3 345 1047 5.4 165 1642 10.1 307 2229 6.1 187	13 Su	0316 10.5 321 1025 5.3 163 1636 9.6 292 2215 7.1 215	28 M	0323 10.2 310 1047 3.3 100 1749 10.7 327 2315 7.7 234	13 W	0258 9.7 296 1045 2.4 72 1818 11.3 344 2353 8.4 255	28 Th	0020 8.3 252 0343 9.1 277 1130 2.2 66 ○ 1909 11.4 346
14 Sa	0435 11.3 344 1110 6.6 200 1630 9.8 299 2247 6.0 182	29 Su	0427 11.2 341 1115 4.5 136 1734 10.9 331 2320 6.5 197	14 M	0342 10.4 318 1049 4.3 132 1722 10.6 322 2306 7.3 221	29 Tu	0352 10.0 305 1118 2.7 82 1830 11.3 343 ○	14 Th	0339 9.7 297 1126 1.5 47 1906 11.9 362 ●	29 F	0058 8.2 249 0426 9.1 278 1204 2.0 60 1944 11.5 349
15 Su	0454 11.2 342 1130 5.8 176 1715 10.6 323 2329 6.1 186	30 M	0450 11.0 335 1145 3.7 113 1820 11.4 347 ○	15 Tu	0403 10.4 318 1115 3.3 102 1805 11.4 346 ● 2351 7.5 229	30 W	0002 7.9 240 0420 9.9 301 1147 2.3 71 1910 11.5 352	15 F	0045 8.5 259 0422 9.8 298 1211 1.0 30 1956 12.3 374	30 Sa	0130 8.1 247 0507 9.2 279 1239 1.9 58 2016 11.5 350
						31 Th	0044 8.0 245 0450 9.7 297 1217 2.1 65 1947 11.6 354				

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Bangkok Bar, Thailand, 2018

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 Su	0159 8.0 245 0545 9.1 278 1312 2.0 60 2048 11.5 351	16 M	0230 8.1 246 0608 9.4 287 1340 0.8 25 2115 12.3 375	1 W	0237 7.1 216 0700 9.1 277 1354 3.0 91 2105 11.3 343	16 Th	0305 5.7 175 0813 9.4 286 1430 3.9 118 2108 11.3 344	1 Sa	0247 4.9 149 0832 9.8 298 1421 5.7 175 2018 10.8 330	16 Su	0312 3.8 115 1008 9.8 298 1503 7.8 237 2019 10.5 319
2 M	0231 7.9 242 0622 9.0 275 1344 2.2 66 2120 11.5 350	17 Tu	0312 7.5 230 0705 9.3 282 1419 1.4 44 2146 12.0 367	2 Th	0304 6.7 204 0738 8.9 272 1416 3.7 112 2115 11.0 335	17 F	0336 5.2 157 0911 9.0 275 1500 5.2 158 2118 10.9 332	2 Su	0315 4.4 135 0926 9.6 294 1447 6.7 205 2032 10.7 325	17 M	0344 3.8 116 1120 9.6 293 1534 8.6 263 2026 10.1 309
3 Tu	0305 7.8 237 0656 8.9 270 1412 2.5 77 2149 11.4 347	18 W	0353 7.0 212 0803 8.9 272 1455 2.5 76 2210 11.6 354	3 F	0332 6.2 190 0821 8.7 266 1437 4.5 137 2122 10.8 328	18 Sa	0408 4.7 143 1018 8.7 264 1526 6.5 199 2128 10.5 321	3 M	0348 4.0 123 1037 9.5 289 1517 7.8 237 2049 10.5 319	18 Tu	0421 4.0 123 1120 9.7 295 1623 9.4 285 2011 9.8 298
4 W	0341 7.5 230 0730 8.6 262 1436 3.1 94 2215 11.1 339	19 Th	0433 6.3 192 0904 8.5 258 1528 3.8 116 2230 11.2 340	4 Sa	0402 5.7 175 0912 8.5 259 1459 5.5 167 2131 10.6 322	19 Su	0444 4.4 135 1149 8.4 257 1545 7.8 237 2135 10.1 309	4 Tu	0431 3.8 117 1230 9.5 289 1556 8.9 271 2104 10.2 310	19 W	0510 4.4 134 1503 10.1 307
5 Th	0416 7.3 222 0806 8.3 252 1459 3.9 118 2230 10.8 329	20 F	0515 5.7 174 1019 8.0 243 1600 5.3 161 2245 10.6 324	5 Su	0436 5.2 158 1022 8.3 252 1524 6.6 201 2145 10.3 315	20 M	0528 4.3 132 2122 9.8 299	5 W	0535 3.8 115 1512 10.0 305	20 Th	0622 4.7 144 1559 10.6 323
6 F	0455 6.9 210 0855 7.9 241 1520 4.8 146 2240 10.5 319	21 Sa	0602 5.2 157 1200 7.7 234 1630 6.8 206 2300 10.1 308	6 M	0521 4.7 143 1236 8.3 252 1553 7.8 238 2205 10.0 306	21 Tu	0627 4.4 133 1846 9.7 295	6 Th	0704 3.6 111 1634 10.9 333	21 F	0802 4.8 146 1634 11.1 337 2331 8.0 245
7 Sa	0540 6.4 194 1011 7.5 230 1545 5.8 178 2256 10.2 310	22 Su	0700 4.7 142 2307 9.6 294	7 Tu	0625 4.2 127 2218 9.7 296	22 W	0751 4.2 129 1712 10.3 314	7 F	0831 3.3 101 1713 11.6 354	22 Sa	0205 8.3 252 0923 4.6 139 1705 11.4 348 2330 7.5 229
8 Su	0634 5.7 173 1258 7.5 229 1622 7.1 215 2322 9.9 301	23 M	0801 4.2 129 2311 9.3 282	8 W	0744 3.6 109 1710 10.2 312	23 Th	0906 3.9 120 1728 10.9 331	8 Sa	0945 2.8 86 1745 12.0 367 2352 8.1 246	23 Su	0327 8.8 268 1020 4.3 131 1731 11.6 353 2342 7.0 213
9 M	0735 4.8 147	24 Tu	0900 3.7 114 1741 10.0 306	9 Th	0859 2.9 87 1746 11.2 341	24 F	1003 3.5 107 1753 11.3 344	9 Su	0334 9.2 281 1045 2.5 76 1812 12.2 372	24 M	0423 9.4 286 1105 4.2 128 1753 11.5 352
10 Tu	0001 9.6 292 0834 3.8 117 1701 9.6 293 2129 8.9 272	25 W	0950 3.3 100 1759 10.6 324	10 F	1006 2.1 65 1823 11.8 360	25 Sa	0012 8.0 245 0322 8.7 265 1051 3.1 95 1821 11.5 352	10 M	0013 7.3 224 0442 9.8 299 1136 2.4 74 1837 12.2 371	25 Tu	0001 6.4 196 0509 9.9 303 1143 4.3 132 1809 11.4 348
11 W	0054 9.4 285 0930 2.9 88 1746 10.7 325 2319 8.9 272	26 Th	1034 2.8 86 1825 11.1 338	11 Sa	0033 8.7 266 0306 9.1 276 1104 1.5 46 1858 12.2 372	26 Su	0026 7.7 234 0419 9.1 277 1132 2.9 88 1848 11.6 355	11 Tu	0042 6.5 199 0539 10.3 313 1219 2.8 85 1902 12.0 365	26 W	0024 5.8 178 0549 10.4 316 1215 4.7 142 1822 11.2 342
12 Th	0157 9.3 282 1023 2.0 60 1830 11.5 349	27 F	0032 8.3 252 0323 8.7 266 1115 2.4 74 1855 11.4 347	12 Su	0053 8.4 255 0423 9.4 286 1156 1.2 36 1930 12.3 376	27 M	0045 7.3 223 0506 9.4 287 1209 2.9 88 1913 11.6 354	12 W	0114 5.7 174 0633 10.5 319 1259 3.5 108 1925 11.6 355	27 Th	0047 5.2 160 0629 10.7 326 1245 5.2 157 1834 11.1 338
13 F	0018 8.9 270 0303 9.3 283 1115 1.2 38 1915 12.0 365	28 Sa	0057 8.0 245 0418 8.9 272 1153 2.2 67 1926 11.5 351	13 M	0123 7.8 238 0526 9.6 294 1242 1.2 38 2001 12.3 374	28 Tu	0108 7.0 212 0547 9.6 294 1241 3.1 95 1933 11.5 350	13 Th	0145 5.0 152 0725 10.5 319 1333 4.6 139 1941 11.3 344	28 F	0111 4.6 140 0709 11.0 334 1313 5.8 176 1847 11.0 335
14 Sa	0104 8.7 265 0407 9.4 286 1206 0.8 23 1957 12.3 375	29 Su	0120 7.8 239 0505 9.1 277 1229 2.1 64 1955 11.5 352	14 Tu	0157 7.2 218 0623 9.7 297 1323 1.7 53 2030 12.0 367	29 W	0132 6.5 199 0626 9.8 298 1308 3.6 109 1948 11.3 344	14 F	0215 4.4 134 0816 10.3 313 1404 5.7 174 1952 11.0 335	29 Sa	0136 4.0 121 0752 11.1 338 1343 6.5 197 1903 10.9 333
15 Su	0146 8.5 258 0509 9.4 288 1255 0.6 18 2038 12.4 378	30 M	0144 7.6 233 0545 9.2 280 1301 2.2 67 2022 11.5 351	15 W	0231 6.4 196 0718 9.6 294 1359 2.7 81 2052 11.7 356	30 Th	0157 6.0 184 0705 9.8 299 1332 4.2 127 1959 11.1 339	15 Sa	0243 4.0 121 0909 10.0 306 1433 6.8 207 2005 10.7 327	30 Su	0204 3.5 106 0841 11.1 338 1414 7.3 221 1922 10.8 329
		31 Tu	0210 7.4 226 0624 9.2 280 1330 2.5 77 2046 11.4 348			31 F	0221 5.4 166 0746 9.8 300 1357 4.9 149 2008 11.0 334				

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Singapore (Tanjong Pagar), Singapore, 2018

Times and Heights of High and Low Waters

July				August				September																					
Time		Height		Time		Height		Time		Height		Time		Height															
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm										
1	Su	0015	9.2	280	16	M	0033	10.5	320	1	W	0105	9.5	290	16	Th	0200	9.8	300	1	Sa	0205	8.9	270	16	Su	0331	8.2	250
		0656	0.7	20			0724	-0.3	-10			0743	1.3	40			0845	1.3	40			0818	2.3	70			0924	3.9	120
		1350	8.2	250			1416	8.9	270			1415	8.2	250			1446	8.9	270			1424	8.5	260			1500	8.2	250
		1905	3.9	120			1941	3.3	100			1948	3.3	100			2050	2.3	70			2043	2.3	70			2156	2.3	70
2	M	0046	9.2	280	17	Tu	0122	10.2	310	2	Th	0141	9.2	280	17	F	0252	9.2	280	2	Su	0252	8.2	250	17	M	0431	7.2	220
		0731	1.0	30			0816	0.0	0			0813	1.3	40			0926	2.3	70			0856	3.0	90			1003	4.6	140
		1424	8.2	250			1500	8.9	270			1445	8.2	250			1522	8.5	260			1503	8.5	260			1539	7.9	240
		1937	3.9	120			2028	3.3	100			2026	3.3	100			2141	2.3	70			2137	2.3	70			2301	2.6	80
3	Tu	0120	9.2	280	18	W	0213	9.8	300	3	F	0220	8.9	270	18	Sa	0348	8.2	250	3	M	0356	7.5	230	18	Tu	0556	6.6	200
		0807	1.0	30			0907	0.7	20			0846	2.0	60			1007	3.0	90			0945	3.6	110			1101	5.2	160
		1500	7.9	240			1539	8.5	260			1518	8.2	250			1601	8.2	250			1552	8.2	250			1635	7.2	220
		2013	3.9	120			2118	3.3	100			2109	3.0	90			2239	2.6	80			2245	2.3	70					

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Belawan Channel, Sumatra, 2018

Times and Heights of High and Low Waters

January				February				March						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm
1 M	0028	8.4	256		16 Tu	0058	7.5	229		1 Th	0056	7.7	235	
	0702	1.2	37			0735	1.7	52			0722	0.7	21	
	1310	7.1	216			1345	6.4	195			1341	7.5	229	
	1856	2.2	67			1919	2.8	85			1935	1.9	58	
2 Tu	0110	8.6	262		17 W	0127	7.7	235		2 F	0136	8.0	244	
	0745	0.8	24			0803	1.4	43			0758	0.5	15	
	1357	7.4	226			1414	6.6	201			1416	7.8	238	
	1941	2.1	64			1950	2.7	82			2012	1.6	49	
3 W	0151	8.7	265		18 Th	0155	7.7	235		3 Sa	0212	8.1	247	
	0826	0.5	15			0829	1.2	37			0832	0.4	12	
	1441	7.5	229			1443	6.8	207			1448	7.9	241	
	2025	2.2	67			2021	2.7	82			2046	1.6	49	
4 Th	0231	8.6	262		19 F	0223	7.8	238		4 Su	0246	8.0	244	
	0906	0.5	15			0856	1.1	34			0903	0.6	18	
	1525	7.5	229			1512	6.9	210			1519	7.8	238	
	2108	2.4	73			2051	2.6	79			2120	1.6	49	
5 F	0311	8.3	253		20 Sa	0252	7.7	235		5 M	0319	7.7	235	
	0947	0.7	21			0924	1.1	34			0933	0.9	27	
	1610	7.3	223			1542	6.9	210			1549	7.6	232	
	2152	2.8	85			2123	2.7	82			2152	1.9	58	
6 Sa	0351	7.9	241		21 Su	0322	7.5	229		6 Tu	0350	7.2	219	
	1028	1.1	34			0953	1.2	37			1001	1.4	43	
	1656	7.0	213			1614	6.9	210			1618	7.3	223	
	2238	3.2	98			2158	2.8	85			2225	2.2	67	
7 Su	0432	7.3	223		22 M	0355	7.3	223		7 W	0421	6.7	204	
	1111	1.5	46			1026	1.3	40			1029	2.0	61	
	1745	6.7	204			1651	6.8	207			1648	7.0	213	
	2330	3.6	110			2239	3.0	91			2300	2.6	79	
8 M	0516	6.6	201		23 Tu	0432	6.9	210		8 Th	0454	6.1	186	
	1156	2.1	64			1103	1.6	49			1057	2.6	79	
	1843	6.5	198			1734	6.7	204			1721	6.5	198	
						2328	3.2	98			2341	3.1	94	
9 Tu	0036	3.9	119		24 W	0517	6.4	195		9 F	0532	5.5	168	
	0610	5.9	180			1148	2.0	61			1128	3.2	98	
	1250	2.6	79			1828	6.5	198			1801	6.0	183	
	1951	6.3	192											
10 W	0207	4.1	125		25 Th	0033	3.4	104		10 Sa	0042	3.5	107	
	0727	5.4	165			0617	5.9	180			0635	4.9	149	
	1357	3.1	94			1245	2.5	76			1213	3.8	116	
	2109	6.3	192			1938	6.4	195			1911	5.6	171	
11 Th	0352	3.8	116		26 F	0205	3.5	107		11 Su	0250	3.7	113	
	0915	5.1	155			0748	5.4	165			0938	4.7	143	
	1516	3.3	101			1405	2.9	88			1436	4.3	131	
	2218	6.5	198			2103	6.5	198			2128	5.5	168	
12 F	0508	3.4	104		27 Sa	0350	3.2	98		12 M	0453	3.3	101	
	1050	5.2	158			0944	5.4	165			1134	5.2	158	
	1629	3.3	101			1539	3.0	91			1700	4.0	122	
	2310	6.8	207			2222	6.8	207			2301	5.8	177	
13 Sa	0558	2.9	88		28 Su	0510	2.5	76		13 Tu	0546	2.8	85	
	1153	5.5	168			1115	5.8	177			1214	5.8	177	
	1725	3.2	98			1700	2.8	85			1756	3.6	110	
	2352	7.0	213			2326	7.3	223			2350	6.3	192	
14 Su	0635	2.4	73		29 M	0607	1.8	55		14 W	0620	2.3	70	
	1237	5.8	177			1219	6.3	192			1243	6.3	192	
	1809	3.1	94			1803	2.5	76			1832	3.1	94	
15 M	0027	7.3	223		30 Tu	0018	7.7	235		15 Th	0026	6.7	204	
	0707	2.0	61			0654	1.1	34			0649	1.8	55	
	1313	6.1	186			1309	6.8	207			1308	6.8	207	
	1846	2.9	88			1854	2.2	67			1902	2.6	79	
					31 W	0103	8.1	247		16 Sa	0121	7.8	238	
						0736	0.6	18			0734	1.0	30	
						1353	7.3	223			1351	8.2	250	
						1939	2.0	61			1957	1.7	52	

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Belawan Channel, Sumatra, 2018

Times and Heights of High and Low Waters

October				November				December									
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height				
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm			
1 M	0437	7.7	235			16 F	0023	5.1	155	1 Sa	0216	4.5	137	16 Su	0117	4.7	143
	1106	2.8	85				0557	6.0	183		0744	6.1	186		0633	5.8	177
	1715	6.6	201				1335	3.6	110		1435	2.8	85		1333	3.1	94
	2305	3.6	110				2117	6.1	186		2142	7.0	213		2053	6.4	195
2 Tu	0526	7.1	216			17 Sa	0314	5.0	152	2 Su	0359	4.1	125	17 M	0310	4.4	134
	1213	3.2	98				0809	5.7	174		0929	6.1	186		0819	5.5	168
	1837	6.0	183				1509	3.5	107		1551	2.8	85		1451	3.2	98
							2223	6.6	201		2242	7.4	226		2157	6.7	204
3 W	0018	4.3	131			18 Su	0437	4.5	137	3 M	0505	3.5	107	18 Tu	0427	3.9	119
	0643	6.6	201				0954	5.9	180		1046	6.3	192		0954	5.7	174
	1358	3.4	104				1613	3.2	98		1650	2.6	79		1559	3.0	91
	2055	6.0	183				2303	7.1	216		2327	7.8	238		2247	7.2	219
4 Th	0238	4.6	140			19 M	0521	3.8	116	4 Tu	0553	2.9	88	19 W	0518	3.2	98
	0847	6.4	195				1055	6.3	192		1142	6.6	201		1101	6.0	183
	1549	3.1	94				1659	2.9	88		1737	2.5	76		1654	2.8	85
	2238	6.6	201				2335	7.7	235						2328	7.7	235
5 F	0433	4.1	125			20 Tu	0555	3.2	98	5 W	0005	8.2	250	20 Th	0600	2.6	79
	1025	6.8	207				1139	6.7	204		0632	2.4	73		1153	6.4	195
	1700	2.6	79				1738	2.6	79		1227	6.9	210		1742	2.6	79
	2335	7.3	223								1816	2.5	76				
6 Sa	0535	3.5	107			21 W	0005	8.1	247	6 Th	0038	8.4	256	21 F	0007	8.1	247
	1128	7.3	223				0626	2.6	79		0706	2.0	61		0639	1.9	58
	1750	2.0	61				1218	7.1	216		1306	7.0	213		1239	6.8	207
							1813	2.3	70		1851	2.5	76		1826	2.4	73
7 Su	0017	7.9	241			22 Th	0035	8.5	259	7 F	0108	8.5	259	22 Sa	0045	8.5	259
	0621	2.8	85				0658	2.1	64		0738	1.7	52		0717	1.4	43
	1216	7.8	238				1255	7.4	226		1341	7.0	213		1323	7.2	219
	1831	1.6	49				1848	2.2	67		1922	2.6	79		1908	2.2	67
8 M	0053	8.4	256			23 F	0106	8.8	268	8 Sa	0136	8.5	259	23 Su	0122	8.7	265
	0659	2.3	70				0730	1.7	52		0808	1.6	49		0755	1.0	30
	1257	8.1	247				1332	7.6	232		1414	7.0	213		1406	7.4	226
	1908	1.4	43				1922	2.1	64		1952	2.8	85		1949	2.2	67
9 Tu	0126	8.7	265			24 Sa	0138	9.0	274	9 Su	0203	8.4	256	24 M	0200	8.8	268
	0735	1.9	58				0805	1.4	43		0837	1.6	49		0835	0.8	24
	1334	8.3	253				1410	7.7	235		1446	6.9	210		1449	7.5	229
	1941	1.4	43				1958	2.2	67		2021	3.0	91		2032	2.4	73
10 W	0157	8.9	271			25 Su	0211	9.0	274	10 M	0230	8.2	250	25 Tu	0239	8.7	265
	0808	1.8	55				0841	1.2	37		0907	1.7	52		0916	0.7	21
	1408	8.2	250				1450	7.6	232		1518	6.8	207		1534	7.4	226
	2012	1.6	49				2035	2.5	76		2051	3.2	98		2116	2.6	79
11 Th	0226	8.8	268			26 M	0246	8.8	268	11 Tu	0258	8.0	244	26 W	0320	8.4	256
	0840	1.8	55				0920	1.3	40		0937	1.8	55		0958	0.9	27
	1441	8.0	244				1534	7.4	226		1553	6.7	204		1622	7.2	219
	2041	1.9	58				2116	2.9	88		2122	3.5	107		2203	3.0	91
12 F	0254	8.6	262			27 Tu	0324	8.4	256	12 W	0326	7.7	235	27 Th	0403	7.9	241
	0911	1.9	58				1004	1.5	46		1010	2.0	61		1044	1.2	37
	1513	7.7	235				1624	7.1	216		1632	6.5	198		1714	7.0	213
	2108	2.4	73				2201	3.4	104		2158	3.8	116		2256	3.4	104
13 Sa	0321	8.3	253			28 W	0407	7.9	241	13 Th	0358	7.2	219	28 F	0450	7.3	223
	0942	2.2	67				1053	1.9	58		1046	2.3	70		1134	1.7	52
	1545	7.2	219				1724	6.8	207		1718	6.3	192		1815	6.8	207
	2135	2.9	88				2258	4.0	122		2242	4.2	128				
14 Su	0348	7.9	241			29 Th	0457	7.3	223	14 F	0434	6.8	207	29 Sa	0001	3.8	116
	1015	2.6	79				1153	2.3	70		1129	2.6	79		0546	6.6	201
	1619	6.7	204				1842	6.5	198		1816	6.1	186		1231	2.2	67
	2202	3.5	107								2342	4.5	137		1927	6.6	201
15 M	0416	7.4	226			30 F	0019	4.5	137	15 Sa	0521	6.2	189	30 Su	0127	4.0	122
	1052	3.0	91				0605	6.6	201		1223	2.9	88		0700	5.9	180
	1701	6.2	189				1308	2.7	82		1932	6.1	186		1341	2.7	82
	2232	4.1	125				2018	6.6	201						2047	6.6	201
					31 W				31 M				31 M	0311	3.9	119	
														0839	5.6	171	
														1459	2.9	88	
														2159	6.8	207	

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Musi River (Outer Bar), Sumatra, 2018

Times and Heights of High and Low Waters

January				February				March																													
Time	Height			Time	Height			Time	Height			Time	Height																								
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																		
1 M	0650	11.5	350	70	16 Tu	0744	11.5	350	90	1 Th	0809	12.8	390	60	16 F	0804	11.5	350	110	1 Th	0707	12.1	370	90	16 F	0651	10.8	330	1553	4.9	150	1809	5.2	160	2247	4.6	140
2 Tu	0734	12.5	380	50	17 W	0810	11.8	360	80	2 F	0852	12.8	390	60	17 Sa	0833	11.5	350	110	2 F	0749	11.8	360	90	17 Sa	0723	10.8	330	1542	5.2	160	1842	5.6	170	2348	4.6	140
3 W	0819	13.1	400	40	18 Th	0836	11.8	360	80	3 Sa	0036	2.3	70	370	18 Su	0011	3.6	110	340	3 Sa	0002	3.0	90	340	18 Su	0755	10.2	310	1532	5.6	170	1915	6.2	190			
4 Th	0904	13.1	400	40	19 F	0904	11.8	360	80	4 Su	0127	3.0	90	340	19 M	0059	3.9	120	320	4 Su	0102	3.6	110	310	19 M	0047	4.6	140	0825	9.8	300	1522	5.9	180	1953	6.9	210
5 F	0027	1.3	40	390	20 Sa	0000	3.0	90	360	5 M	0216	3.9	120	310	20 Tu	0150	4.3	130	200	5 M	0158	4.3	130	290	20 Tu	0147	4.9	150	0851	8.9	270	1511	5.9	180	2037	7.9	240
6 Sa	0110	2.0	60	380	21 Su	0029	3.0	90	350	6 Tu	0305	4.9	150	280	21 W	0250	4.9	150	270	6 Tu	0253	5.2	160	260	21 W	0252	5.2	160	0911	7.9	240	1503	5.6	170	2129	8.5	260
7 Su	0151	2.6	80	350	22 M	0101	3.3	100	340	7 W	0354	6.2	190	260	22 Th	0405	5.9	180	240	7 W	0351	5.9	180	240	22 Th	0409	5.6	170	0916	6.9	210	1503	4.9	150	2231	9.2	280
8 M	0228	3.6	110	320	23 Tu	0139	3.9	120	320	8 Th	0203	7.5	230	220	23 F	0606	6.6	200	160	8 Th	0505	6.9	210	230	23 F	0608	6.2	190	0840	6.2	190	1512	4.3	130	2343	9.8	300
9 Tu	0252	4.9	150	290	24 W	0223	4.9	150	290	9 F	0414	8.2	250	140	24 Sa	0141	8.9	270	130	9 F	0044	8.5	260	130	24 Sa	1532	3.6	110									
10 W	1230	8.5	260	150	25 Th	0033	5.9	180	260	10 Sa	0507	9.2	280	120	25 Su	0314	9.8	300	110	10 Sa	0220	8.9	270	130	25 Su	0106	10.5	320	1605	3.3	100						
11 Th	1206	7.9	240	130	26 F	0312	7.2	220	220	11 Su	0543	9.8	300	120	26 M	0428	10.8	330	100	11 Su	0338	9.5	290	130	26 M	0234	10.8	330	1652	3.3	100						
12 F	0602	8.5	260	120	27 Sa	0413	8.5	260	130	12 M	0613	10.5	320	110	27 Tu	0528	11.5	350	90	12 M	0430	9.8	300	130	27 Tu	0352	11.2	340	1807	3.3	100						
13 Sa	0625	9.5	290	110	28 Su	0503	10.2	310	110	13 Tu	0641	10.8	330	110	28 W	0620	12.1	370	90	13 Tu	0510	10.2	310	130	28 W	0457	11.5	350	2003	3.6	110						
14 Su	0652	10.5	320	100	29 M	0551	11.2	340	80	14 W	0708	11.2	340	110	29 Th	0545	10.5	320	140	14 W	0545	10.5	320	140	29 Th	0551	11.2	340	2154	3.9	120						
15 M	0718	10.8	330	90	30 Tu	0638	12.1	370	70	15 Th	0735	11.5	350	110	15 Th	0618	10.8	330	140	15 Th	0618	10.8	330	140	30 F	0636	10.8	330	1440	5.6	170	1730	5.9	180	2321	3.9	120
					31 W	0725	12.8	390	60															31 Sa	0714	9.8	300	1416	5.9	180	1836	6.9	210				

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Musi River (Outer Bar), Sumatra, 2018

Times and Heights of High and Low Waters

October				November				December																												
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																							
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																						
1 M	0238	3.3	100	280	16 Tu	1233	9.5	290	1 Th	1321	11.2	340	16 F	0145	3.0	90	1 Sa	0243	3.0	90	16 Su	0017	3.6	110	16 Su	1255	10.2	310	16 Su	2333	3.9	120				
2 Tu	0254	2.6	80	290	17 W	0301	2.6	80	2 F	0308	2.0	60	17 Sa	0116	3.0	90	2 Su	0128	3.9	120	17 M	1335	9.5	290	17 M	2304	4.3	130	17 M	2304	4.3	130				
3 W	0322	2.0	60	310	18 Th	0307	2.6	80	3 Sa	0336	3.0	90	18 Su	0042	3.3	100	3 M	1530	8.5	260	18 Tu	1413	8.5	260	18 Tu	2246	4.3	130	18 Tu	2246	4.3	130				
4 Th	0400	2.0	60	320	19 F	0252	3.0	90	4 Su	0203	3.9	120	19 M	0022	3.6	110	4 Tu	0554	7.2	220	19 W	0657	7.5	230	19 W	1002	7.2	220	19 W	1442	7.9	240	19 W	2235	4.3	130
5 F	0457	2.3	70	320	20 Sa	0212	3.3	100	5 M	0050	4.6	140	20 Tu	0011	3.9	120	5 W	0627	8.5	260	20 Th	0628	8.5	260	20 Th	1318	6.9	210	20 Th	1438	6.9	210	20 Th	2231	3.9	120
6 Sa	0644	2.6	80	310	21 Su	0143	3.6	110	6 Tu	0025	4.6	140	21 W	0705	7.2	220	6 Th	0705	9.8	300	21 F	0644	9.8	300	21 F	2236	3.3	100	21 F	2236	3.3	100				
7 Su	0908	3.0	90	300	22 M	0131	3.6	110	7 W	0016	4.3	130	22 Th	0707	8.2	250	7 F	0744	10.5	320	22 Sa	0713	11.2	340	22 Sa	2251	2.6	80	22 Sa	2251	2.6	80				
8 M	0518	4.9	150	180	23 Tu	0126	3.9	120	8 Th	0016	4.3	130	23 F	0728	9.2	280	8 Sa	0822	11.2	340	23 Su	0750	12.1	370	23 Su	2315	2.0	60	23 Su	2315	2.0	60				
9 Tu	0621	5.9	180	180	24 W	0123	4.3	130	9 F	0023	3.3	100	24 Sa	0759	10.5	320	9 Su	0858	11.5	350	24 M	0831	12.8	390	24 M	2347	1.3	40	24 M	2347	1.3	40				
10 W	0715	7.2	220	220	25 Th	0117	4.3	130	10 Sa	0036	2.6	80	25 Su	0836	11.5	350	10 M	0011	1.6	50	25 Tu	0916	13.1	400	25 Tu	0916	13.1	400	25 Tu	0916	13.1	400				
11 Th	0806	7.9	240	240	26 F	0111	4.3	130	11 Su	0053	2.3	70	26 M	0014	2.0	60	11 Tu	0032	2.0	60	26 W	0025	1.0	30	26 W	1003	13.1	400	26 W	1003	13.1	400				
12 F	0856	8.9	270	270	27 Sa	0106	3.9	120	12 M	0112	2.0	60	27 Tu	0038	1.3	40	12 W	0049	2.0	60	27 Th	0106	1.3	40	27 Th	1051	12.8	390	27 Th	1051	12.8	390				
13 Sa	0947	3.3	100	280	28 Su	0108	3.3	100	13 Tu	0130	2.0	60	28 W	0109	1.3	40	13 Th	0102	2.3	70	28 F	0148	2.0	60	28 F	1139	12.1	370	28 F	1139	12.1	370				
14 Su	1039	2.6	80	290	29 M	0118	2.6	80	14 W	0145	2.3	70	29 Th	0142	1.3	40	14 F	0107	2.6	80	29 Sa	0230	3.0	90	29 Sa	1226	10.8	330	29 Sa	1226	10.8	330				
15 M	1135	2.3	70	290	30 Tu	0137	2.0	60	15 Th	0152	2.3	70	30 F	0216	2.0	60	15 Sa	0056	3.3	100	30 Su	0306	4.3	130	30 Su	1307	9.8	300	30 Su	2214	5.2	160				
					31 W	0203	1.6	50												31 M	1338	8.5	260	31 M	2138	4.9	150	31 M	2138	4.9	150					

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Djakarta (Tandjungpriok), Java, 2018

Times and Heights of High and Low Waters

January				February				March															
Time		Height		Time		Height		Time		Height		Time		Height									
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm				
1	1923	0.5	15	16	1952	0.8	24	1	1944	0.8	24	16	1922	1.1	34	1	1807	1.0	30	16	0933	2.8	85
M				Tu				Th				F				Th				F			
												●											
2	1013	3.8	116	17	1015	3.4	104	2	1105	3.3	101	17	1024	3.0	91	2	1022	3.1	94	17	0224	1.7	52
Tu				W				F				Sa				F				Sa			
○				●												○				●			
3	1047	3.8	116	18	1027	3.3	101	3	1125	3.0	91	18	1035	2.8	85	3	0053	1.8	55	18	0316	1.8	55
W				Th				Sa				Su				Sa				Su			
4	1119	3.6	110	19	1039	3.3	101	4	1123	2.7	82	19	1036	2.6	79	4	0115	2.0	61	19	0414	1.8	55
Th				F				Su				M				Su				M			
5	1147	3.4	104	20	1051	3.2	98	5	0953	2.5	76	20	1010	2.4	73	5	0158	2.1	64	20	0533	1.9	58
F				Sa				M				Tu				M				Tu			
6	1200	3.1	94	21	1058	3.0	91	6	0747	2.5	76	21	0822	2.3	70	6	0326	2.2	67	21	0000	2.4	73
Sa				Su				Tu				W				Tu				W			
7	1123	2.8	85	22	1053	2.8	85	7	0734	2.7	82	22	0624	2.4	73	7	0509	2.4	73	22	0042	2.5	76
Su				M				W				Th				W				Th			
								●															
8	0911	2.7	82	23	1017	2.6	79	8	0746	2.9	88	23	0621	2.7	82	8	0602	2.5	76	23	0203	2.6	79
M				Tu				Th				F				Th				F			
												●											
9	0830	2.8	85	24	0856	2.6	79	9	0806	3.0	91	24	0648	2.9	88	9	0641	2.6	79	24	0413	2.8	85
Tu				W				F				Sa				F				Sa			
○																○				○			
10	0829	3.0	91	25	0758	2.7	82	10	0828	3.1	94	25	0723	3.2	98	10	0714	2.8	85	25	0540	2.9	88
W				Th				Sa				Su				Sa				Su			
				○																			
11	0841	3.1	94	26	0746	2.9	88	11	0849	3.2	98	26	0801	3.4	104	11	0743	2.8	85	26	0641	3.0	91
Th				F				Su				M				Su				M			
12	0858	3.2	98	27	0759	3.2	98	12	0908	3.2	98	27	0839	3.4	104	12	0808	2.9	88	27	0732	3.1	94
F				Sa				M				Tu				M				Tu			
13	0916	3.3	101	28	0824	3.5	107	13	0926	3.2	98	28	0915	3.4	104	13	0832	2.9	88	28	0817	3.0	91
Sa				Su				Tu				W				Tu				W			
14	0934	3.4	104	29	0856	3.7	113	14	0942	3.2	98					14	0853	2.9	88	29	0210	1.9	58
Su				M				W								W				Th			
15	0949	3.4	104	30	0929	3.7	113	15	0957	3.2	98					15	0832	2.9	88	30	0311	1.8	55
M				Tu				Th								Th				F			
				○																○			
				31	1004	3.7	113													31	0411	1.8	55
				W																Sa			
				○																○			

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Djakarta (Tandjungpriok), Java, 2018

Times and Heights of High and Low Waters

July				August				September																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 Su	0940	0.9	27	94	16 M	0904	0.8	24	91	1 W	0822	1.3	40	82	16 Th	0721	1.5	46	73	1 Sa	0419	1.5	46	73	16 Su	0221	1.1	34	82
2 M	1009	1.0	30	91	17 Tu	0932	1.0	30	79	2 Th	0802	1.4	43	76	17 F	0525	1.5	46	79	2 Su	0336	1.3	40	79	17 M	0241	1.0	30	82
3 Tu	1031	1.1	34	88	18 W	0952	1.2	37	76	3 F	0721	1.5	46	76	18 Sa	0353	1.3	40	85	3 M	0322	1.1	34	85	18 Tu	0305	0.9	27	85
4 W	1042	1.2	37	85	19 Th	1000	1.4	43	82	4 Sa	0613	1.5	46	79	19 Su	0350	1.1	34	88	4 Tu	0330	0.9	27	91	19 W	0329	0.9	27	85
5 Th	1040	1.3	40	79	20 F	0926	1.5	46	88	5 Su	0506	1.3	40	85	20 M	0406	0.9	27	91	5 W	0349	0.7	21	98	20 Th	0352	0.9	27	85
6 F	1022	1.4	43	79	21 Sa	0501	1.3	40	91	6 M	0440	1.1	34	94	21 Tu	0429	0.8	24	94	6 Th	0413	0.7	21	101	21 F	0413	0.9	27	85
7 Sa	0917	1.5	46	85	22 Su	0501	1.1	34	98	7 Tu	0445	0.9	27	101	22 W	0453	0.8	24	94	7 F	0438	0.7	21	101	22 Sa	0430	1.0	30	64
8 Su	0607	1.4	43	91	23 M	0519	0.9	27	101	8 W	0504	0.7	21	107	23 Th	0518	0.8	24	94	8 Sa	0501	0.8	24	94	23 Su	0442	1.2	37	64
9 M	0535	1.1	34	98	24 Tu	0544	0.8	24	101	9 Th	0530	0.6	18	110	24 F	0541	0.9	27	94	9 Su	0521	1.0	30	58	24 M	0445	1.3	40	64
10 Tu	0544	0.9	27	107	25 W	0611	0.8	24	101	10 F	0559	0.6	18	110	25 Sa	0602	1.0	30	91	10 M	0536	1.2	37	61	25 Tu	0440	1.4	43	67
11 W	0609	0.7	21	110	26 Th	0639	0.8	24	101	11 Sa	0628	0.7	21	107	26 Su	0618	1.1	34	88	11 Tu	0542	1.4	43	70	26 W	0423	1.5	46	64
12 Th	0642	0.5	15	113	27 F	0707	0.8	24	98	12 Su	0655	0.8	24	98	27 M	0627	1.2	37	85	12 W	0535	1.5	46	61	27 Th	0355	1.6	49	73
13 F	0718	0.5	15	113	28 Sa	0733	0.9	27	98	13 M	0718	1.0	30	88	28 Tu	0626	1.3	40	79	13 Th	0459	1.6	49	76	28 F	0311	1.5	46	79
14 Sa	0755	0.5	15	110	29 Su	0757	1.0	30	94	14 Tu	0735	1.2	37	76	29 W	0613	1.5	46	73	14 F	0317	1.5	46	76	29 Sa	0216	1.4	43	82
15 Su	0831	0.7	21	101	30 M	0816	1.1	34	91	15 W	0741	1.4	43	70	30 Th	0548	1.5	46	64	15 Sa	0216	1.3	40	79	30 Su	0142	1.2	37	85
					31 Tu	0826	1.2	37	88					31 F	0510	1.6	49	67											

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Djakarta (Tandjungpriok), Java, 2018

Times and Heights of High and Low Waters

October				November				December																						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																
1 M	0144	1.0	30	88	16 Tu	0135	0.8	24	82	1 Th	0126	0.7	21	85	16 F	0119	0.9	27	82	1 Sa	0044	0.9	27	82	16 Su	0014	1.1	34	82	
	1354	2.9	88			1212	2.7	82			1553	2.8	85			1056	2.7	82			0937	2.7	82			1001	2.7	82		
2 Tu	0202	0.8	24	88	17 W	0201	0.8	24	82	2 F	0150	0.8	24	82	17 Sa	0133	1.0	30	82	2 Su	0056	1.1	34	85	17 M	0007	1.3	40	85	
	1553	2.9	88			1140	2.6	79			1103	2.5	76			1034	2.7	82			0914	2.8	85			0927	2.8	85		
3 W	0226	0.7	21	88	18 Th	0225	0.9	27	82	3 Sa	0208	0.9	27	82	18 Su	0140	1.1	34	82	3 M	0058	1.2	37	91	18 Tu	0906	2.9	88	43	
	1728	2.9	88			1122	2.5	76			1007	2.5	76			1011	2.6	79			0914	3.0	91			2242	1.4	43		
4 Th	0251	0.7	21	88	19 F	0245	0.9	27	82	4 Su	0221	1.1	34	82	19 M	0138	1.3	40	82	4 Tu	0045	1.3	40	98	19 W	0901	3.1	94	37	
	1835	2.9	88			1111	2.5	76			0952	2.6	79			0951	2.7	82			0926	3.2	98			1849	1.2	37		
5 F	0314	0.8	24	88	20 Sa	0300	1.1	34	82	5 M	0226	1.3	40	85	20 Tu	0126	1.4	43	85	5 W	0943	3.3	101	30	20 Th	0909	3.3	101	30	
	1930	2.9	88			1058	2.4	73			0955	2.8	85			0940	2.8	85			1910	1.0	30			1853	1.0	30		
6 Sa	0334	0.9	27	82	21 Su	0309	1.2	37	82	6 Tu	0220	1.4	43	91	21 W	0058	1.4	43	91	6 Th	1002	3.4	104	27	21 F	0926	3.5	107	21	
	1054	2.2	67	82		1044	2.4	73			1006	3.0	91			0939	3.0	91			1949	0.9	27			1917	0.7	21		
7 Su	0349	1.1	34	82	22 M	0310	1.3	40	82	7 W	0151	1.5	46	94	22 Th	0948	3.2	98	34	7 F	1021	3.4	104	24	22 Sa	0951	3.7	113	18	
	1041	2.3	70	82		1031	2.4	73			1022	3.1	94			1940	1.1	34			2030	0.8	24			1952	0.6	18		
8 M	0358	1.3	40	82	23 Tu	0301	1.4	43	82	8 Th	1040	3.2	98	34	23 F	1005	3.3	101	27	8 Sa	1039	3.4	104	21	23 Su	1021	3.8	116	15	
	1044	2.4	73	82		1022	2.5	76			2051	1.1	34			2026	0.9	27			2111	0.7	21			2031	0.5	15		
9 Tu	0358	1.4	43	82	24 W	0241	1.5	46	82	9 F	1058	3.2	98	27	24 Sa	1028	3.5	107	21	9 Su	1053	3.4	104	21	24 M	1053	3.8	116	15	
	1056	2.6	79	82		1020	2.7	82			2156	0.9	27			2115	0.7	21			2151	0.7	21			2113	0.5	15		
10 W	0342	1.5	46	82	25 Th	0203	1.5	46	82	10 Sa	1115	3.2	98	24	25 Su	1057	3.6	110	18	10 M	1104	3.3	101	21	25 Tu	1125	3.6	110	15	
	1113	2.7	82	82		1028	2.9	88			2246	0.8	24			2202	0.6	18			2229	0.7	21			2152	0.5	15		
11 Th	0249	1.5	46	82	26 F	0038	1.4	43	82	11 Su	1128	3.2	98	24	26 M	1130	3.5	107	15	11 Tu	1111	3.2	98	21	26 W	1154	3.4	104	21	
	1134	2.8	85	82		1043	3.0	91			2326	0.8	24			2247	0.5	15			2304	0.7	21			2228	0.7	21		
12 F	1155	2.9	88	82	27 Sa	1106	3.1	94	82	12 M	1135	3.1	94	82	27 Tu	1204	3.4	104	15	12 W	1114	3.1	94	24	27 Th	1212	3.1	94	24	
						2317	1.0	30							2326	0.5	15				2333	0.8	24			2256	0.8	24		
13 Sa	0006	1.2	37	88	28 Su	1136	3.2	98	82	13 Tu	0002	0.8	24	91	28 W	1236	3.2	98	18	13 Th	1111	3.0	91	27	28 F	1144	2.8	85	30	
	1215	2.9	88			2352	0.8	24			1135	3.0	91			2359	0.6	18			2355	0.9	27			2317	1.0	30		
14 Su	0037	1.0	30	85	29 M	1214	3.2	98	82	14 W	0032	0.8	24	88	29 Th	1254	3.0	91	82	14 F	1100	2.9	88	82	29 Sa	0924	2.7	82	37	
	1232	2.8	85								1128	2.9	88													2329	1.2	37		
15 M	0106	0.9	27	85	30 Tu	0026	0.7	21	85	15 Th	0058	0.8	24	85	30 F	0025	0.8	24	82	15 Sa	0010	1.0	30	85	30 Su	0836	2.8	85	40	
	1238	2.8	85			1302	3.1	94			1115	2.8	85			1110	2.7	82			1036	2.8	85			2329	1.3	40		
					31 W	0057	0.6	18	91	31 M																	0832	3.0	91	43
						1409	3.0	91																			2253	1.4	43	

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Surabaya Strait, Djamuang Reef, Java, 2018

Times and Heights of High and Low Waters

April				May				June															
Time		Height		Time		Height		Time		Height		Time		Height									
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm								
1 Su	0559 1343 1941 2252	2.6 4.3 3.6 3.9	80 130 110 120	16 M	0459 1213 1942	3.0 4.6 3.0	90 140 90	1 Tu	1112 2025	4.9 2.3	150 70	16 W	1052 2025	5.6 1.3	170 40	1 F	1019 2106	6.2 1.0	190 30	16 Sa	1016 2119	6.6 0.7	200 20
2 M	0547 1308 2008 2348	3.0 4.3 3.3 3.6	90 130 100 110	17 Tu	0106 0427 1204 2022	3.3 3.3 4.9 2.6	100 100 150 80	2 W	1100 2054	5.2 2.0	160 60	17 Th	1051 2103	5.9 1.3	180 40	2 Sa	1035 2138	6.6 1.0	200 30	17 Su	1024 2153	6.6 0.7	200 20
3 Tu	0501 1233 2054	3.3 4.6 3.0	100 140 90	18 W	1157 2113	5.2 2.3	160 70	3 Th	1100 2131	5.6 1.6	170 50	18 F	1053 2146	5.9 1.0	180 30	3 Su	1052 2212	6.6 1.0	200 30	18 M	1031 2227	6.2 1.0	190 30
4 W	0110 0258 1212 2211	3.3 3.3 4.9 2.6	100 100 150 80	19 Th	1151 2215	5.2 2.0	160 60	4 F	1110 2216	5.9 1.6	180 50	19 Sa	1057 2232	6.2 1.0	190 30	4 M	1108 2246	6.2 1.0	190 30	19 Tu	1038 2257	6.2 1.3	190 40
5 Th	1207	5.2	160	20 F	1149 2325	5.6 1.6	170 50	5 Sa	1125 2306	6.2 1.3	190 40	20 Su	1103 2319	6.2 1.0	190 30	5 Tu	1117 2319	6.2 1.3	190 40	20 W	1041 2317	5.9 1.6	180 50
6 F	0009 1214	2.3 5.2	70 160	21 Sa	1151	5.9	180	6 Su	1141 2357	6.2 1.3	190 40	21 M	1111	6.2	190	6 W	1117 2349	5.9 1.6	180 50	21 Th	1040 2312	5.6 2.0	170 60
7 Sa	0114 1230	2.0 5.6	60 170	22 Su	0031 1156	1.6 5.9	50 180	7 M	1156	6.2	190	22 Tu	0006 1118	1.3 6.2	40 190	7 Th	1104	5.6	170	22 F	1033 2137	5.6 2.3	170 70
8 Su	0156 1248	2.0 5.6	60 170	23 M	0127 1206	1.3 5.9	40 180	8 Tu	0045 1205	1.3 5.9	40 180	23 W	0049 1124	1.3 5.9	40 180	8 F	0010 1042	2.0 5.2	60 160	23 Sa	1019 1958	5.2 2.3	160 70
9 M	0232 1307	1.6 5.6	50 170	24 Tu	0214 1216	1.3 5.9	40 180	9 W	0127 1205	1.6 5.6	50 170	24 Th	0125 1126	1.6 5.6	50 170	9 Sa	0009 1022 2032	2.3 5.2 2.6	70 160 80	24 Su	0959 1922	5.2 2.0	160 60
10 Tu	0304 1321	1.6 5.6	50 170	25 W	0254 1225	1.6 5.6	50 170	10 Th	0202 1155	1.6 5.2	50 160	25 F	0148 1122	2.3 5.6	70 170	10 Su	1008 1914	5.2 2.3	160 70	25 M	0936 1913	5.2 1.6	160 50
11 W	0334 1325	1.6 5.2	50 160	26 Th	0327 1230	1.6 5.2	50 160	11 F	0230 1138	2.0 5.2	60 160	26 Sa	0145 1111 2023	2.6 5.2 2.6	80 160 80	11 M	1001 1907	5.6 2.0	170 60	26 Tu	0918 1918	5.6 1.3	170 40
12 Th	0401 1317	1.6 4.9	50 150	27 F	0353 1229	2.0 5.2	60 160	12 Sa	0250 1121 1959 2159	2.3 4.9 3.0 3.0	70 150 90 90	27 Su	1053 1949	5.2 2.3	160 70	12 Tu	0958 1920	5.6 1.3	170 40	27 W	0912 1932	5.9 1.0	180 30
13 F	0425 1259	2.0 4.9	60 150	28 Sa	0409 1219 2022 2230	2.3 4.9 3.3 3.3	70 150 100 100	13 Su	0255 1108 1921	2.6 5.2 2.6	80 160 80	28 M	1031 1945	5.2 2.0	160 60	13 W	0959 1944	5.9 1.0	180 30	28 Th	0918 1950	6.2 0.7	190 20
14 Sa	0445 1240 1902 2202	2.3 4.6 3.6 3.9	70 140 110 120	29 Su	0407 1200 2000	3.0 4.9 3.0	90 150 90	14 M	0110 0203 1100 1929	3.3 3.3 5.2 2.3	100 100 160 70	29 Tu	1013 1955	5.6 1.6	170 50	14 Th	1003 2013	6.2 0.7	190 20	29 F	0933 2013	6.2 0.7	190 20
15 Su	0458 1224 1913 2329	2.6 4.6 3.3 3.6	80 140 100 110	30 M	0047 0316 1135 2005	3.3 3.3 4.9 2.6	100 100 150 80	15 Tu	1055 1953	5.2 1.6	160 50	30 W	1004 2013	5.9 1.3	180 40	15 F	1009 2045	6.2 0.7	190 20	30 Sa	0953 2037	6.6 0.7	200 20
												31 Th	1008 2038	6.2 1.0	190 30								

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Surabaya Strait, Djamuang Reef, Java, 2018

Times and Heights of High and Low Waters

July				August				September																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 Su	1014	6.6	200	20	16 M	1003	6.2	190	30	1 W	1036	5.6	170	50	16 Th	0947	4.9	150	70	1 Sa	0335	4.3	130	90	16 Su	0112	4.6	140	80
2 M	1032	6.2	190	30	17 Tu	1010	5.9	180	40	2 Th	1023	4.9	150	60	17 F	0914	4.6	140	80	2 Su	0320	4.6	140	80	17 M	0114	4.9	150	60
3 Tu	1046	6.2	190	40	18 W	1012	5.6	170	50	3 F	0924	4.6	140	70	18 Sa	0812	4.3	130	80	3 M	0312	4.6	140	60	18 Tu	0131	5.2	160	50
4 W	1047	5.9	180	50	19 Th	1007	5.6	170	60	4 Sa	0815	4.6	140	80	19 Su	0612	4.3	130	70	4 Tu	0310	4.9	150	50	19 W	0154	5.6	170	50
5 Th	1031	5.6	170	60	20 F	0953	5.2	160	70	5 Su	0740	4.6	140	70	20 M	0427	4.6	140	60	5 W	0316	5.2	160	40	20 Th	0221	5.6	170	40
6 F	1000	5.2	160	70	21 Sa	0931	4.9	150	70	6 M	0730	4.9	150	60	21 Tu	0426	4.9	150	50	6 Th	0332	5.2	160	30	21 F	0250	5.2	160	40
7 Sa	0929	5.2	160	70	22 Su	0901	4.9	150	60	7 Tu	0735	5.2	160	40	22 W	0503	5.2	160	40	7 F	0358	5.2	160	30	22 Sa	0316	5.2	160	40
8 Su	0910	5.2	160	70	23 M	0829	4.9	150	50	8 W	0749	5.6	170	30	23 Th	0601	5.6	170	30	8 Sa	0444	5.2	160	30	23 Su	0325	4.9	150	50
9 M	0901	5.2	160	50	24 Tu	0807	5.2	160	40	9 Th	0809	5.6	170	20	24 F	0705	5.6	170	30	9 Su	0822	4.9	150	40	24 M	0254	4.6	140	40
10 Tu	0900	5.6	170	40	25 W	0804	5.6	170	30	10 F	0832	5.9	180	20	25 Sa	0803	5.6	170	30	10 M	0914	4.9	150	50	25 Tu	0544	4.6	140	40
11 W	0906	5.9	180	30	26 Th	0818	5.9	180	20	11 Sa	0857	5.9	180	20	26 Su	0852	5.6	170	30	11 Tu	0951	4.6	140	60	26 W	0846	4.6	140	40
12 Th	0915	5.9	180	20	27 F	0841	6.2	190	20	12 Su	0920	5.9	180	30	27 M	0935	5.2	160	40	12 W	0434	4.3	130	80	27 Th	0734	3.3	100	100
13 F	0927	6.2	190	10	28 Sa	0909	6.2	190	20	13 M	0940	5.6	170	40	28 Tu	1013	5.2	160	50	13 Th	0325	3.9	120	90	28 F	0107	4.6	140	90
14 Sa	0940	6.2	190	10	29 Su	0938	6.2	190	20	14 Tu	0954	5.2	160	50	29 W	1042	4.9	150	60	14 F	0727	3.9	120	100	29 Sa	0837	3.0	90	100
15 Su	0952	6.2	190	20	30 M	1004	5.9	180	30	15 W	0958	5.2	160	60	30 Th	1055	4.3	130	80	15 Sa	1017	4.3	130	80	30 Su	1309	3.3	100	100
					31 Tu	1026	5.9	180	40						31 F	0405	4.3	130	90		1831	3.0	90			1655	3.3	100	
																					1903	2.6	80			1059	3.9	120	
																					1808	2.6	80			1808	2.6	80	

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Surabaya Strait, Djamuang Reef, Java, 2018

Times and Heights of High and Low Waters

October				November				December																					
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 M	0047	5.2	160	60	16 Tu	0005	5.9	180	50	1 Th	1334	1.3	40	40	16 F	1249	1.3	40	40	1 Sa	1248	1.6	50	50	16 Su	1128	2.0	60	60
	1325	2.0	60	60		1309	1.6	50	50		2358	5.9	180	180		2353	5.9	180	180		2310	5.9	180	180		2234	5.2	160	160
2 Tu	0049	5.2	160	60	17 W	0024	5.9	180	50	2 F	1417	1.3	40	40	17 Sa	1323	1.6	50	50	2 Su	1310	2.0	60	60	17 M	1112	2.3	70	70
	1414	1.6	50	50		1353	1.6	50	50		2357	4.9	150	150		2344	5.6	170	170		2305	5.6	170	170		2209	5.2	160	160
3 W	0055	5.6	170	80	18 Th	0042	5.9	180	50	3 Sa	0005	5.6	170	80	18 Su	1349	2.0	60	60	3 M	1256	2.6	80	80	18 Tu	0844	2.6	80	80
	1456	1.3	40	40		1430	1.6	50	50		1452	1.6	50	50		2326	5.2	160	160		2254	5.2	160	160		2150	5.2	160	160
4 Th	0105	5.6	170	80	19 F	0057	5.6	170	80	4 Su	0008	5.6	170	80	19 M	1404	2.3	70	70	4 Tu	0814	2.6	80	80	19 W	0715	2.3	70	70
	1533	1.3	40	40		1502	1.6	50	50		1520	2.0	60	60		2305	5.2	160	160		2238	5.2	160	160		2139	5.6	170	170
5 F	0116	5.6	170	80	20 Sa	0103	5.6	170	80	5 M	0006	5.2	160	80	20 Tu	1356	2.6	80	80	5 W	0740	2.3	70	70	20 Th	0700	1.6	50	50
	1607	1.3	40	40		1530	1.6	50	50		1537	2.3	70	70		2248	5.2	160	160		2217	5.2	160	160		2137	5.6	170	170
6 Sa	0127	5.2	160	60	21 Su	0056	5.2	160	60	6 Tu	0820	3.0	90	90	21 W	0726	2.6	80	80	6 Th	0737	2.0	60	60	21 F	0709	1.3	40	40
	1637	1.6	50	50		1554	2.0	60	60		1054	3.3	100	100		2238	5.2	160	160		2159	5.6	170	170		2140	5.9	180	180
7 Su	0134	5.2	160	50	22 M	0038	4.9	150	150	7 W	0758	2.6	80	80	22 Th	0725	2.0	60	60	7 F	0748	1.3	40	40	22 Sa	0730	1.0	30	30
	1704	1.6	50	50		1612	2.3	70	70		2318	4.9	150	150		2233	5.6	170	170		2149	5.9	180	180		2147	6.2	190	190
8 M	0136	4.9	150	60	23 Tu	0730	3.6	110	110	8 Th	0803	2.3	70	70	23 F	0744	1.6	50	50	8 Sa	0806	1.0	30	30	23 Su	0757	0.7	20	20
	1724	2.0	60	60		0941	3.6	110	110		2256	5.2	160	160		2233	5.9	180	180		2151	6.2	190	190		2156	6.2	190	190
9 Tu	0128	4.6	140	120	24 W	0718	3.0	90	90	9 F	0821	2.0	60	60	24 Sa	0812	1.3	40	40	9 Su	0829	1.0	30	30	24 M	0827	0.3	10	10
	0754	3.9	120	120		1132	3.3	100	100		2242	5.6	170	170		2235	5.9	180	180		2202	6.6	200	200		2207	6.6	200	200
10 W	0110	4.6	140	110	25 Th	0738	2.6	80	80	10 Sa	0848	1.6	50	50	25 Su	0846	1.0	30	30	10 M	0855	0.7	20	20	25 Tu	0900	0.3	10	10
	0755	3.6	110	100		1346	3.3	100	100		2241	5.9	180	180		2240	6.2	190	190		2218	6.6	200	200		2217	6.6	200	200
11 Th	0041	4.6	140	100	26 F	0812	2.3	70	70	11 Su	0921	1.3	40	40	26 M	0925	1.0	30	30	11 Tu	0924	0.7	20	20	26 W	0933	0.7	20	20
	0817	3.0	90	100		2333	5.2	160	160		2250	6.2	190	190		2246	6.2	190	190		2237	6.6	200	200		2224	6.2	190	190
12 F	0010	4.6	140	80	27 Sa	0855	2.0	60	60	12 M	0959	1.3	40	40	27 Tu	1007	0.7	20	20	12 W	0954	0.7	20	20	27 Th	1005	0.7	20	20
	0854	2.6	80	150		2331	5.6	170	170		2305	6.2	190	190		2253	6.6	200	200		2254	6.6	200	200		2229	6.2	190	190
13 Sa	0947	2.3	70	160	28 Su	0946	1.6	50	180	13 Tu	1042	1.3	40	190	28 W	1050	1.0	30	190	13 Th	1024	1.0	30	180	28 F	1033	1.3	40	180
	2342	5.2	160	180		2333	5.9	180	180		2322	6.2	190	190		2300	6.2	190	190		2306	6.2	190	180		2230	5.9	180	180
14 Su	1100	2.3	70	170	29 M	1045	1.3	40	180	14 W	1126	1.3	40	190	29 Th	1133	1.0	30	190	14 F	1052	1.3	40	180	29 Sa	1053	1.6	50	170
	2349	5.6	170	180		2336	5.9	180	180		2338	6.2	190	190		2306	6.2	190	190		2309	5.9	180	180		2227	5.6	170	170
15 M	1213	2.0	60	180	30 Tu	1146	1.3	40	180	15 Th	1210	1.3	40	190	30 F	1214	1.3	40	180	15 Sa	1116	1.6	50	170	30 Su	1047	2.0	60	170
						2343	5.9	180	180		2350	6.2	190	190		2309	5.9	180	180		2258	5.6	170	170		2218	5.6	170	170
					31 W	1243	1.3	40	180															31 M	0922	2.3	70	160	
						2350	5.9	180	180																				

Time meridian 105° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Kutei River Entrance, Borneo, 2018

Times and Heights of High and Low Waters

January				February				March											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 M	0536	6.6	200	16 Tu	0043	3.0	90	1 Th	0111	1.6	50	16 F	0116	2.0	60				
	1119	2.3	70		0618	6.2	190		0656	7.2	220		0706	7.2	220	0617	6.9	210	
	1800	9.5	290		1154	2.6	80		1241	1.6	50		1251	2.3	70	1203	2.3	70	
2 Tu	0038	2.0	60	17 W	0108	2.6	80	2 F	0142	1.6	50	17 Sa	0137	2.0	60	2 F	0055	1.6	50
	0618	6.9	210		0647	6.6	200		0730	7.5	230		0729	7.5	230		0647	7.5	230
	1201	2.0	60		1225	2.6	80		1319	1.6	50		1317	2.0	60		1240	1.6	50
3 W	0116	1.6	50	18 Th	0132	2.3	70	3 Sa	0212	1.3	40	18 Su	0159	1.6	50	3 Sa	0121	1.6	50
	0657	6.9	210		0714	6.9	210		0803	7.9	240		0752	7.9	240		0716	8.2	250
	1240	1.6	50		1254	2.3	70		1355	1.6	50		1344	1.6	50		1314	1.3	40
4 Th	0152	1.6	50	19 F	0156	2.0	60	4 Su	0240	1.6	50	19 M	0221	1.6	50	4 Su	0145	1.3	40
	0735	7.2	220		0740	6.9	210		0835	7.9	240		0817	7.9	240		0745	8.5	260
	1318	1.6	50		1322	2.3	70		1430	1.6	50		1413	2.0	60		1346	1.3	40
5 F	0227	1.6	50	20 Sa	0220	2.0	60	5 M	0307	1.6	50	20 Tu	0243	1.6	50	5 M	0209	1.3	40
	0812	7.2	220		0807	7.2	220		0908	7.9	240		0844	8.2	250		0813	8.9	270
	1356	2.0	60		1350	2.3	70		1504	2.3	70		1443	2.0	60		1417	1.6	50
6 Sa	0302	2.0	60	21 Su	0245	2.0	60	6 Tu	0333	2.0	60	21 W	0307	2.0	60	6 Tu	0232	1.6	50
	0850	7.2	220		0835	7.2	220		0941	7.5	230		0914	7.9	240		0840	8.5	260
	1434	2.3	70		1419	2.3	70		1537	3.0	90		1515	2.3	70		1446	2.0	60
7 Su	0337	2.3	70	22 M	0312	2.3	70	7 W	0359	2.6	80	22 Th	0333	2.3	70	7 W	0254	2.0	60
	0929	6.9	210		0905	7.2	220		1017	7.2	220		0948	7.9	240		0908	8.5	260
	1514	2.6	80		1451	2.6	80		1612	3.6	110		1553	3.0	90		1514	2.6	80
8 M	0412	2.6	80	23 Tu	0340	2.3	70	8 Th	0426	3.0	90	23 F	0401	2.6	80	8 Th	0315	2.3	70
	1013	6.9	210		0938	6.9	210		1100	6.9	210		1030	7.5	230		0936	7.9	240
	1556	3.6	110		1526	3.0	90		1654	4.6	140		1640	3.9	120		1543	3.3	100
9 Tu	0450	3.0	90	24 W	0411	2.6	80	9 F	0455	3.6	110	24 Sa	0434	3.3	100	9 F	0335	2.6	80
	1106	6.6	200		1019	6.9	210		1208	6.2	190		1134	6.9	210		1005	7.5	230
	1648	4.3	130		1609	3.6	110		1824	5.2	160		1810	4.6	140		1612	3.9	120
10 W	0536	3.6	110	25 Th	0448	3.0	90	10 Sa	0539	3.9	120	25 Su	0526	3.9	120	10 Sa	0352	3.3	100
	1225	6.2	190		1115	6.6	200		1506	6.2	190		1355	6.6	200		1041	6.9	210
	1815	4.9	150		1709	4.3	130						2244	4.6	140		1651	4.9	150
11 Th	0643	3.9	120	26 F	0538	3.3	100	11 Su	0033	4.6	140	26 M	0316	4.9	150	11 Su	0400	3.9	120
	1428	6.6	200		1243	6.6	200		0347	4.6	140		0823	4.3	130		1155	6.2	190
	2127	4.9	150		1910	4.6	140		0849	4.3	130		1611	7.2	220				
12 F	0142	5.2	160	27 Sa	0017	5.6	170	12 M	0004	3.9	120	27 Tu	0504	5.6	170	12 M	0214	4.6	140
	0821	3.9	120		0703	3.6	110		0522	5.2	160		1022	3.6	110		1626	6.2	190
	1603	6.9	210		1452	6.9	210		1033	3.9	120		1711	8.2	250		2357	3.9	120
13 Sa	0400	5.2	160	28 Su	0308	5.2	160	13 Tu	0018	3.3	100	28 W	0544	6.2	190	13 Tu	0544	5.2	160
	0944	3.6	110		0858	3.6	110		0554	5.9	180		1119	3.0	90		1035	4.6	140
	1655	7.5	230		1619	7.5	230		1121	3.6	110		1753	8.9	270		1710	7.2	220
14 Su	0505	5.6	170	29 M	0446	5.6	170	14 W	0036	3.0	90	14 W	0550	5.9	180	14 W	0550	5.9	180
	1039	3.3	100		1019	3.3	100		0619	6.2	190		1117	3.9	120		1117	3.9	120
	1732	8.2	250		1714	8.5	260		1155	3.0	90		1738	7.9	240		1738	7.9	240
15 M	0016	3.3	100	30 Tu	0003	3.0	90	15 Th	0056	2.3	70	15 Th	0011	3.0	90	15 Th	0011	3.0	90
	0545	5.9	180		0539	6.2	190		0643	6.9	210		0606	6.6	200		0606	6.6	200
	1120	3.0	90		1115	2.6	80		1224	2.6	80		1147	3.3	100		1147	3.3	100
16 F	0001	2.3	70	31 W	0039	2.3	70	16 F	0026	2.0	60	16 F	0026	2.0	60	16 F	0026	2.0	60
	0601	7.5	230		0620	6.6	200		0629	8.2	250		0629	8.2	250		0629	8.2	250
	1158	2.3	70		1201	2.0	60		1232	1.6	50		1232	1.6	50		1232	1.6	50
17 Sa	0026	2.0	60	1 Th	0039	2.3	70	17 Sa	0026	2.0	60	17 Sa	0026	2.0	60	17 Sa	0026	2.0	60
	0629	8.2	250		0620	6.6	200		0629	8.2	250		0629	8.2	250		0629	8.2	250
	1232	1.6	50		1836	9.8	300		1836	9.8	300		1836	9.8	300		1836	9.8	300

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Kutei River Entrance, Borneo, 2018

Times and Heights of High and Low Waters

July				August				September											
Time	Height			Time	Height			Time	Height			Time	Height						
	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft				
1 Su	0116	1.3	40		16 M	0142	0.3	10		1 W	0211	0.7	20		16 Th	0251	0.3	10	
	0750	7.9	240			0815	8.2	250			0832	7.2	220			0902	6.9	210	
	1427	1.3	40			1449	0.3	10			1500	0.3	10			1518	0.3	10	
	2007	5.2	160			2036	5.6	170			2054	5.6	170			2126	6.2	190	
2 M	0145	1.3	40		17 Tu	0222	0.7	20		2 Th	0241	1.0	30		17 F	0326	1.0	30	
	0818	7.9	240			0851	7.9	240			0859	6.9	210			0930	5.9	180	
	1455	1.3	40			1524	0.7	20			1526	0.7	20			1545	0.7	20	
	2039	5.2	160			2116	5.6	170			2125	5.6	170			2201	5.9	180	
3 Tu	0215	1.6	50		18 W	0303	1.0	30		3 F	0314	1.3	40		18 Sa	0403	1.6	50	
	0847	7.5	230			0927	7.2	220			0928	6.2	190			0955	5.2	160	
	1526	1.3	40			1559	1.0	30			1554	1.0	30			1611	1.0	30	
	2113	5.2	160			2158	5.6	170			2201	5.2	160			2242	5.2	160	
4 W	0248	2.0	60		19 Th	0346	1.6	50		4 Sa	0353	1.6	50		19 Su	0446	2.3	70	
	0918	6.9	210			1003	6.2	190			1000	5.6	170			1017	4.6	140	
	1600	1.6	50			1635	1.3	40			1627	1.0	30			1639	1.6	50	
	2152	4.9	150			2246	5.2	160			2247	5.2	160			2340	4.9	150	
5 Th	0325	2.3	70		20 F	0436	2.3	70		5 Su	0442	2.3	70		20 M	0559	3.3	100	
	0953	6.6	200			1040	5.6	170			1036	4.9	150			1027	3.6	110	
	1638	1.6	50			1715	1.6	50			1707	1.6	50			1714	2.3	70	
	2241	4.9	150			2349	4.9	150			2354	4.9	150			1851	2.6	80	
6 F	0412	2.6	80		21 Sa	0544	3.0	90		6 M	0606	3.0	90		21 Tu	0153	4.6	140	
	1034	5.9	180			1124	4.6	140			1129	3.9	120			1936	2.6	80	
	1725	2.0	60			1806	2.0	60			1809	2.0	60			2146	2.3	70	
	2348	4.9	150																
7 Sa	0522	3.0	90		22 Su	0120	4.9	150		7 Tu	0146	4.9	150		22 W	0418	4.9	150	
	1129	5.2	160			0752	3.3	100			0903	3.0	90			1150	2.3	70	
	1827	2.3	70			1237	3.9	120			1344	3.3	100			1709	3.3	100	
						1922	2.3	70			1957	2.0	60			2210	2.3	70	
8 Su	0122	4.9	150		23 M	0312	5.2	160		8 W	0339	5.6	170		23 Th	0510	5.6	170	
	0721	3.3	100			1029	3.0	90			1053	2.3	70			1204	1.6	50	
	1258	4.6	140			1504	3.6	110			1609	3.6	110			1743	3.9	120	
	1944	2.3	70			2058	2.3	70			2141	1.6	50			2306	2.0	60	
9 M	0257	5.6	170		24 Tu	0426	5.6	170		9 Th	0446	6.2	190		24 F	0543	6.2	190	
	0930	3.0	90			1131	2.3	70			1141	1.3	40			1223	1.3	40	
	1449	4.3	130			1640	3.6	110			1715	3.9	120			1808	4.6	140	
	2100	2.0	60			2210	2.0	60			2247	1.3	40			2342	1.3	40	
10 Tu	0404	6.2	190		25 W	0514	6.2	190		10 F	0535	7.2	220		25 Sa	0611	6.6	200	
	1046	2.3	70			1206	2.0	60			1219	0.7	20			1242	0.7	20	
	1612	4.6	140			1731	3.9	120			1759	4.6	140			1832	4.9	150	
	2202	1.6	50			2301	1.6	50			2338	0.7	20						
11 W	0455	6.9	210		26 Th	0550	6.6	200		11 Sa	0616	7.9	240		26 Su	0013	1.0	30	
	1138	1.6	50			1234	1.3	40			1252	0.3	10			0635	6.9	210	
	1711	4.6	140			1807	4.3	130			1837	5.2	160			1303	0.3	10	
	2253	1.3	40			2340	1.3	40								1854	5.6	170	
12 Th	0539	7.9	240		27 F	0621	6.9	210		12 Su	0021	0.0	0		27 M	0040	0.7	20	
	1221	1.0	30			1259	1.0	30			0653	8.2	250			0659	7.2	220	
	1758	4.9	150			1838	4.6	140			1324	0.0	0			1323	0.3	10	
	2338	0.7	20								1912	5.6	170			1916	5.9	180	
13 F	0620	8.2	250		28 Sa	0014	1.0	30		13 M	0101	-0.3	-10		28 Tu	0106	0.3	10	
	1300	0.7	20			0648	7.2	220			0728	8.2	250			0723	7.2	220	
	1840	5.2	160			1324	0.7	20			1354	-0.3	-10			1343	0.0	0	
						1905	4.9	150			1945	5.9	180			1939	6.2	190	
14 Sa	0020	0.3	10		29 Su	0045	0.7	20		14 Tu	0139	-0.3	-10		29 W	0132	0.3	10	
	0659	8.5	260			0715	7.5	230			0801	7.9	240			0747	7.2	220	
	1338	0.3	10			1347	0.7	20			1423	-0.3	-10			1404	0.0	0	
	1919	5.6	170			1932	5.2	160			2019	6.2	190			2002	6.2	190	
15 Su	0102	0.3	10		30 M	0114	0.7	20		15 W	0215	-0.3	-10		30 Th	0159	0.3	10	
	0737	8.5	260			0740	7.5	230			0833	7.5	230			0811	7.2	220	
	1414	0.3	10			1411	0.3	10			1451	0.0	0			1425	0.0	0	
	1958	5.6	170			1958	5.2	160			2052	6.2	190			2027	6.2	190	

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Barito River (Outer Bar), Borneo, 2018

Times and Heights of High and Low Waters

January				February				March																
	Time	Height			Time	Height			Time	Height			Time	Height										
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 M	0120 0946 1818	7.2 1.0 8.5	220 30 260		16 Tu	1004 1908	1.6 8.5	50 260		1 Th	1052 1917	1.0 9.5	30 290		16 F	1035 1915	2.0 8.2	60 250		1 Th	0204 0944 1746	6.2 1.3 8.9	190 40 270	
2 Tu	1028 1907	0.7 9.2	20 280		17 W	1033 1943	1.6 8.9	50 270		2 F	1140 2000	1.3 9.5	40 290		17 Sa	1111 1947	2.3 8.2	70 250		2 F	0020 0310 1033 1826	5.9 6.2 1.6 8.9	180 190 50 270	
○					●															●	1755	7.5	230	
3 W	1112 1954	0.7 9.8	20 300		18 Th	1104 2017	1.6 8.9	50 270		3 Sa	1229 2041	2.0 9.2	60 280		18 Su	1150 2018	2.6 7.9	80 240		3 Sa	0106 0426 1123 1906	5.6 5.9 2.3 8.5	170 180 70 260	
4 Th	1159 2039	0.7 9.8	20 300		19 F	1137 2049	2.0 8.9	60 270		4 Su	0422 0633 1321 2120	5.2 5.2 2.6 8.9	160 160 80 270		19 M	1232 2046	3.3 7.9	100 240		4 Su	0151 0551 1217 1945	4.9 5.9 3.3 7.9	150 180 100 240	
5 F	1247 2122	1.3 9.8	40 300		20 Sa	1212 2120	2.3 8.9	70 270		5 M	0451 0839 1418 2157	4.6 5.2 3.6 8.5	140 160 110 260		20 Tu	0430 0659 1322 2112	5.2 5.2 3.9 7.5	160 160 120 230		5 M	0236 0728 1318 2023	4.6 5.9 3.9 7.5	140 180 120 230	
6 Sa	1337 2203	2.0 9.8	60 300		21 Su	1249 2148	2.6 8.5	80 260		6 Tu	0524 1037 1522 2231	3.9 5.2 4.6 7.9	120 160 140 240		21 W	0438 0930 1424 2137	4.6 5.2 4.6 7.2	140 160 140 220		6 Tu	0320 0910 1429 2058	4.3 5.9 4.6 7.2	130 180 140 220	
7 Su	0632 0756 1430 2241	4.6 4.6 2.6 9.5	140 140 80 290		22 M	1329 2213	3.0 8.5	90 260		7 W	0557 1220 1635 2300	3.6 5.9 5.2 7.5	110 180 160 230		22 Th	0502 1131 1546 2202	3.9 5.9 5.2 7.2	120 180 160 220		7 W	0403 1047 1555 2132	3.9 6.2 5.2 6.6	120 190 160 200	
8 M	0634 1021 1525 2315	4.3 4.6 3.6 8.9	130 140 110 270		23 Tu	1414 2236	3.6 8.2	110 250		8 Th	0629 1341 1758 2324	3.3 6.6 5.9 7.2	100 200 180 220		23 F	0534 1257 1723 2229	3.3 6.6 5.9 6.9	100 200 180 210		8 Th	0444 1207 1731 2202	3.3 6.9 5.6 6.2	100 210 170 190	
9 Tu	0656 1214 1626 2345	3.6 5.2 4.3 8.5	110 160 130 260		24 W	0638 1100 1509 2257	4.3 4.9 4.6 7.9	130 150 140 240		9 F	0701 1445 1924 2341	2.6 6.9 6.2 6.9	80 210 190 210		24 Sa	0610 1359 1859 2258	2.6 7.2 6.2 6.9	80 220 190 210		9 F	0523 1309 1902 2228	3.0 7.2 5.9 6.2	90 220 180 190	
10 W	0722 1349 1732	3.3 5.9 5.2	100 180 160		25 Th	0642 1258 1619 2318	3.6 5.6 5.2 7.9	110 200 160 240		10 Sa	0731 1536 2050 2349	2.6 7.5 6.6 6.6	80 230 200 200		25 Su	0649 1451 2024 2333	2.0 7.9 6.6 6.9	60 240 200 210		10 Sa	0601 1359 2023 2251	3.0 7.5 5.9 5.9	90 230 180 180	
11 Th	0010 0748 1507 1846	7.9 3.0 6.6 5.9	240 90 200 180		26 F	0702 1420 1746 2339	3.0 6.2 5.9 7.5	90 190 180 230		11 Su	0801 1620 2225 2341	2.3 7.9 6.6 6.6	70 240 200 200		26 M	0730 1537 2137	1.6 8.5 6.6	50 260 200		11 Su	0636 1442 2131 2310	2.6 7.9 5.9 5.9	80 240 180 180	
12 F	0028 0815 1611 2009	7.5 2.3 6.9 6.6	230 70 210 200		27 Sa	0730 1522 1922	2.3 7.2 6.6	70 220 200		12 M	0830 1659	2.0 8.2	60 250		27 Tu	0014 0813 1622 2239	6.6 1.3 8.9 6.2	200 40 270 190		12 M	0709 1519 2225 2332	2.6 7.9 5.9 5.9	80 240 180 180	
13 Sa	0036 0841 1704 2148	7.2 2.3 7.5 6.9	220 70 230 210		28 Su	0002 0804 1615 2100	7.5 1.6 7.9 6.9	230 50 240 210		13 Tu	0900 1735	2.0 8.2	60 250		28 W	0105 0858 1704 2332	6.6 1.3 8.9 6.2	200 40 270 190		13 Tu	0742 1553 2302	2.3 8.2 5.9	70 250 180	
14 Su	0028 0908 1750	6.9 2.0 7.9	210 60 240		29 M	0027 0842 1703 2240	7.2 1.0 8.5 6.9	220 30 260 210		14 W	0930 1809	2.0 8.2	60 250		14 W	0004 0815 1625 2324	5.9 2.3 8.2 5.9	180 70 250 180		14 W	0004 0815 1625 2324	5.9 2.3 8.2 5.9	180 70 250 180	
15 M	0935 1830	1.6 8.2	50 250		30 Tu	0050 0923 1749	7.2 0.7 9.2	220 20 280		15 Th	1002 1843	2.0 8.2	60 250		15 Th	0050 0849 1656 2342	5.9 2.6 7.9 5.9	180 80 240 180		15 Th	0050 0849 1656 2342	5.9 2.6 7.9 5.9	180 80 240 180	
					31 W	1006 1833	0.7 9.2	20 280																
					○																○	2357	4.3	130

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to the chart datum of soundings.

Barito River (Outer Bar), Borneo, 2018

Times and Heights of High and Low Waters

July				August				September						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm
1 Su	0001	1.3	40	260	16 M	0025	0.3	10	280	1 W	0042	2.0	60	230
	0925	8.5	260			0902	9.2	280			0938	7.5	230	
2 M	0035	1.3	40	260	17 Tu	0116	0.7	20	270	2 Th	0120	2.3	70	230
	0957	8.5	260			0943	8.9	270			1004	7.5	230	
3 Tu	0109	1.6	50	260	18 W	0209	1.6	50	260	3 F	0203	3.0	90	220
	1027	8.5	260			1022	8.5	260			1026	7.2	220	
4 W	0145	2.0	60	250	19 Th	0306	2.3	70	250	4 Sa	0254	3.6	110	210
	1054	8.2	250			1058	8.2	250			1046	6.9	210	
5 Th	0224	2.3	70	250	20 F	0407	3.3	100	240	5 Su	0019	4.6	140	140
	1117	8.2	250			1130	7.9	240			0357	4.3	130	
6 F	0306	3.0	90	240	21 Sa	0102	4.9	150	220	6 M	0151	5.2	160	150
	1138	7.9	240			0515	4.3	130			0519	4.9	150	
7 Sa	1952	3.6	110	120	22 Su	1159	7.2	220	210	7 Tu	1125	6.6	200	200
	2354	3.9	120			1928	2.3	70			1911	2.0	60	
8 Su	0354	3.6	110	230	23 M	0228	5.6	170	190	8 W	0257	6.2	190	190
	1156	7.5	230			0630	4.9	150			0650	5.6	170	
9 M	1948	3.3	100	100	24 Tu	1221	6.9	210	200	9 Th	1147	6.6	200	200
						1958	2.0	60			1944	1.3	40	
10 Tu	0144	4.6	140	130	25 W	0338	6.2	190	170	10 F	0350	6.9	210	210
	0451	4.3	130	220		0751	5.6	170			0821	5.9	180	
11 W	1214	7.2	220	80	26 Th	1236	6.6	200	200	11 Sa	1212	6.6	200	200
	2000	2.6	80			2028	1.3	40			2021	0.7	20	
12 Th	0308	5.2	160	160	27 F	0436	6.9	210	210	12 Su	0437	7.5	230	230
	0603	4.9	150	220		0922	5.9	180			0950	6.2	190	
13 F	1231	7.2	220	60	28 Sa	1240	6.2	190	190	13 M	1240	6.6	200	200
	2023	2.0	60			2057	1.3	40			2102	0.3	10	
14 Sa	0414	6.2	190	190	29 Su	0527	7.2	220	240	14 Tu	0523	7.9	240	240
	0730	5.9	180	210		1128	6.2	190			1115	6.2	190	
15 Su	1248	6.9	210	30	30 M	1204	6.2	190	190	15 W	1314	6.2	190	190
	2053	1.0	30			2127	1.0	30			2145	0.0	0	
16 M	0510	6.9	210	210	31 Tu	0611	7.5	230	30	16 Th	0607	8.2	250	250
	0912	6.2	190	210		2157	1.0	30			1237	5.9	180	
17 Tu	1305	6.9	210	20	1 W	0651	7.9	240	30	17 F	1354	5.9	180	180
	2129	0.7	20			2227	1.0	30			2231	0.0	0	
18 W	0601	7.5	230	200	2 Th	0729	7.9	240	30	18 Sa	0651	8.5	260	260
	1111	6.6	200	200		2259	1.0	30			1347	5.6	170	
19 Th	1313	6.6	200	0	3 F	0729	7.9	240	30	19 Su	1453	5.6	170	170
	2208	0.0	0			2259	1.0	30			2319	0.3	10	
20 F	0649	8.2	250	0	4 Sa	0804	7.9	240	40	20 M	0734	8.5	260	260
	2252	0.0	0			2331	1.3	40			1438	5.2	160	
21 Sa	0735	8.9	270	0	5 Su	0804	7.9	240	40	21 Tu	1618	5.2	160	160
	2337	0.0	0			2331	1.3	40			0010	1.0	30	
22 Su	0819	8.9	270	240	6 M	0838	7.9	240	240	22 W	0816	8.2	250	250
						0005	1.6	50			1522	4.9	150	
23 M					7 Th	0005	1.6	50	240	23 F	1800	4.9	150	150
						0909	7.9	240			0104	1.6	50	
24 Tu					8 Sa	0909	7.9	240	240	24 Su	0857	7.9	240	240
											1603	4.3	130	
25 W					9 Su				240	25 M	1953	4.9	150	150
											0104	1.6	50	
26 Th					10 M				240	26 Tu	0115	3.3	100	100
											0854	6.6	200	200
27 F					11 W				240	27 F	1559	4.3	130	130
											2051	4.9	150	150
28 Sa					12 Th				240	28 Sa	0025	3.0	90	90
											0828	6.6	200	200
29 Su					13 F				240	29 Su	1536	4.6	140	140
											1838	4.9	150	150
30 M					14 Sa				240	30 M	0025	3.0	90	90
											0828	6.6	200	200
31 Tu					15 Su				240	31 Tu	1536	4.6	140	140
											1838	4.9	150	150

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Barito River (Outer Bar), Borneo, 2018

Times and Heights of High and Low Waters

October				November				December																			
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height														
	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm											
1 M	0537	5.2	160	16 Tu	1618	2.6	80	1 Th	0018	9.2	280	16 F	0027	8.9	270	1 Sa	0019	9.5	290	16 Su	0003	8.9	270				
	0757	5.6	170				1645		2.0	60			1628	3.3	100			0805	4.3		130		0835	4.3	130		
	1549	2.6	80				●											1145	4.6		140		1204	4.3	130		
2 Tu	0002	7.5	230	17 W	0041	8.2	250	2 F	0059	9.2	280	17 Sa	0054	8.5	260	2 Su	0052	9.2	280	17 M	0023	8.5	260	17 M	0825	3.9	120
	0718	5.2	160				0838		4.6	140			0910	4.3	130			0820	3.6		110		0825		3.9	120	
	0835	5.2	160		●		1116		4.9	150			1205	4.6	140			1321	5.2		160		1339		4.9	150	
3 W	0054	7.9	240	18 Th	0118	8.2	250	3 Sa	0135	9.2	280	18 Su	0118	8.5	260	3 M	0122	8.9	270	18 Tu	0040	8.2	250	18 Tu	0829	3.6	110
	0812	5.2	160				0851		4.3	130			0907	4.3	130			0842	3.3		100		0829		3.6	110	
	0942	5.2	160		●		1245		4.9	150			1318	4.6	140			1445	5.9		180		1459		5.6	170	
4 Th	0139	8.2	250	19 F	0151	8.2	250	4 Su	0210	8.9	270	19 M	0140	8.2	250	4 Tu	0147	8.2	250	19 W	0055	7.9	240	19 W	0843	3.0	90
	0843	5.2	160				0913		3.9	120			0911	3.9	120			0908	2.6		80		0843		3.0	90	
	1100	5.2	160		●		1404		5.6	170			1424	5.2	160			1602	6.6		200		1608		6.2	190	
5 F	0220	8.5	260	20 Sa	0220	7.9	240	5 M	0241	8.2	250	20 Tu	0158	7.9	240	5 W	0206	7.5	230	20 Th	0108	7.5	230	20 Th	0904	2.6	80
	0911	4.9	150				0938		3.6	110			0922	3.6	110			0936	2.3		70		0904		2.6	80	
	1213	5.2	160		●		1519		5.9	180			1529	5.6	170			1714	7.2		220		1710		6.9	210	
6 Sa	0300	8.5	260	21 Su	0246	7.9	240	6 Tu	0309	7.9	240	21 W	0215	7.5	230	6 Th	0215	7.2	220	21 F	0117	7.5	230	21 F	0932	2.0	60
	0940	4.9	150				1007		3.3	100			0939	3.3	100			1005	2.0		60		0932		2.0	60	
	1324	5.6	170		●		1633		6.2	190			1636	6.2	190			1820	7.9		240		1804		7.5	230	
7 Su	0337	8.2	250	22 M	0310	7.5	230	7 W	0334	7.2	220	22 Th	0229	7.2	220	7 F	0157	6.9	210	22 Sa	0116	7.2	220	22 Sa	1005	1.3	40
	1010	4.6	140				1037		2.6	80			1003	3.0	90			1036	1.6		50		1005		1.3	40	
	1434	5.6	170		●		1748		6.9	210			1745	6.9	210			1918	8.5		260		1855		8.5	260	
8 M	0413	7.9	240	23 Tu	0333	7.2	220	8 Th	0351	6.6	200	23 F	0237	6.9	210	8 Sa	1108	1.6	50	23 Su	1044	1.0	30	23 Su	1941	9.2	280
	1043	4.3	130				1110		2.3	70			1033	2.3	70			2009	8.9		270		1941		9.2	280	
	1546	5.9	180		●		1901		7.5	230			1852	7.5	230			●					●				
9 Tu	0448	7.5	230	24 W	0354	6.9	210	9 F	0051	5.9	180	24 Sa	0001	6.6	200	9 Su	1141	1.6	50	24 M	1127	0.7	20	24 M	2026	9.5	290
	1118	3.9	120				0352		6.2	190			0228	6.6	200			2054	9.2		280		2026		9.5	290	
	1701	6.2	190		●		1145		2.3	70			1110	2.0	60												
10 W	0521	6.9	210	25 Th	0413	6.6	200	10 Sa	1222	2.0	60	25 Su	1151	1.6	50	10 M	1215	1.6	50	25 Tu	1213	0.7	20	25 Tu	2109	9.8	300
	1155	3.3	100				2108		8.5	260			2048	8.9	270			2135	9.2		280		2109		9.8	300	
	1820	6.2	190		○																						
11 Th	0006	4.3	130	26 F	0427	6.2	190	11 Su	1300	2.0	60	26 M	1236	1.3	40	11 Tu	1250	2.0	60	26 W	1301	1.0	30	26 W	2150	10.2	310
	0551	6.2	190				1144		3.0	90			2138	9.2	280			2211	9.5		290		2150		10.2	310	
	1235	3.3	100		○		1931		6.9	210																	
12 F	0137	4.9	150	27 Sa	0108	5.6	170	12 M	1340	2.3	70	27 Tu	1325	1.3	40	12 W	1326	2.3	70	27 Th	1352	1.6	50	27 Th	2229	9.8	300
	0619	5.9	180				0432		5.9	180			2223	9.8	300			2244	9.2		280		2229		9.8	300	
	1317	3.0	90		●		1225		2.6	80																	
13 Sa	0336	5.2	160	28 Su	1310	2.3	70	13 Tu	1421	2.3	70	28 W	1418	1.3	40	13 Th	1402	2.6	80	28 F	1446	2.3	70	28 F	2306	9.8	300
	0642	5.6	170				2152		7.9	240			2304	9.8	300			2313	9.2		280		2306		9.8	300	
	1401	2.6	80		●																						
14 Su	1447	2.6	80	29 M	1401	2.0	60	14 W	1503	2.6	80	29 Th	1512	2.0	60	14 F	1440	3.0	90	29 Sa	0707	4.3	130	29 Sa	1544	3.0	90
	2310	7.9	240				2247		8.5	260			2343	9.8	300			2340	8.9		270		1016		4.6	140	
					○																		2340		9.2	280	
15 M	1533	2.6	80	30 Tu	1455	2.0	60	15 Th	1546	3.0	90	30 F	0818	4.6	140	15 Sa	1520	3.6	110	30 Su	0720	3.6	110	30 Su	1215	4.9	150
	2359	8.2	250				2335		8.9	270			0933	4.6	140							1215	4.9		150		
					●								1609	2.3	70			●				1646	3.9		120		
			31 W	1550	1.6	50						31 M				31 M	0010	8.9	270		0742	3.3	100				
																					1353	5.6	170				
																					1754	4.9	150				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Pages 172 through 175 intentionally omitted

Davao, Philippines, 2018

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm
1 Su	0059 0.7 20 0708 5.2 160 1334 -0.3 -10 1953 4.3 130	16 M	0120 0.0 0 0735 6.2 190 1403 -1.0 -30 2020 4.9 150	1 W	0145 0.7 20 0752 5.2 160 1407 0.0 0 2025 4.6 140	16 Th	0238 0.3 10 0841 4.9 150 1450 0.0 0 2110 4.9 150	1 Sa	0236 0.3 10 0841 4.6 140 1439 0.7 20 2057 4.9 150	16 Su	0339 1.0 30 0931 3.6 110 1517 1.3 40 2147 4.6 140
2 M	0130 0.7 20 0738 5.2 160 1404 0.0 0 2025 4.3 130	17 Tu	0208 0.3 10 0820 5.6 170 1445 -0.3 -10 2104 4.6 140	2 Th	0218 0.7 20 0825 4.9 150 1438 0.3 10 2056 4.6 140	17 F	0326 0.7 20 0922 4.3 130 1526 0.7 20 2153 4.6 140	2 Su	0322 0.7 20 0924 3.9 120 1516 1.0 30 2142 4.9 150	17 M	0442 1.3 40 1029 3.0 90 1601 2.0 60 2249 3.9 120
3 Tu	0201 1.0 30 0810 4.9 150 1434 0.0 0 2057 3.9 120	18 W	0258 0.7 20 0906 4.9 150 1528 0.0 0 2153 4.6 140	3 F	0257 1.0 30 0903 4.6 140 1513 0.7 20 2135 4.6 140	18 Sa	0422 1.0 30 1010 3.6 110 1609 1.3 40 2248 4.3 130	3 M	0426 1.0 30 1027 3.6 110 1604 1.6 50 2248 4.6 140	18 Tu	0622 1.6 50 1319 2.6 80 1746 2.3 70
4 W	0236 1.0 30 0846 4.6 140 1509 0.3 10 2134 3.9 120	19 Th	0355 1.0 30 0957 4.3 130 1614 0.7 20 2248 4.3 130	4 Sa	0348 1.0 30 0951 3.9 120 1554 1.0 30 2225 4.3 130	19 Su	0537 1.3 40 1125 3.0 90 1709 1.6 50	4 Tu	0605 1.3 40 1211 3.0 90 1727 2.0 60	19 W	0053 3.6 110 0822 1.3 40 1501 3.3 100 2016 2.3 70
5 Th	0322 1.3 40 0930 4.3 130 1550 0.7 20 2221 3.9 120	20 F	0503 1.3 40 1100 3.6 110 1710 1.0 30 2355 4.3 130	5 Su	0458 1.3 40 1057 3.6 110 1649 1.3 40 2334 4.3 130	20 M	0010 3.9 120 0718 1.6 50 1345 3.0 90 1845 2.0 60	5 W	0030 4.3 130 0756 1.0 30 1424 3.3 100 1932 2.0 60	20 Th	0232 3.9 120 0927 1.0 30 1549 3.6 110 2126 1.6 50
6 F	0422 1.6 50 1027 3.9 120 1643 1.0 30 2320 3.9 120	21 Sa	0625 1.3 40 1230 3.3 100 1819 1.3 40	6 M	0633 1.3 40 1230 3.3 100 1810 1.6 50	21 Tu	0147 4.3 130 0855 1.3 40 1516 3.3 100 2029 2.0 60	6 Th	0213 4.6 140 0913 0.7 20 1536 3.9 120 2101 1.3 40	21 F	0328 4.3 130 1005 0.7 20 1621 4.3 130 2207 1.3 40
7 Sa	0543 1.6 50 1141 3.6 110 1750 1.3 40	22 Su	0111 4.3 130 0755 1.3 40 1409 3.3 100 1938 1.6 50	7 Tu	0101 4.6 140 0808 1.0 30 1420 3.3 100 1944 1.6 50	22 W	0258 4.3 130 0954 0.7 20 1610 3.6 110 2135 1.6 50	7 F	0324 5.2 160 1006 0.0 0 1623 4.6 140 2201 1.0 30	22 Sa	0409 4.9 150 1035 0.3 10 1647 4.6 140 2239 0.7 20
8 Su	0031 4.3 130 0713 1.3 40 1310 3.6 110 1906 1.3 40	23 M	0220 4.3 130 0911 1.0 30 1524 3.3 100 2049 1.3 40	8 W	0225 4.9 150 0921 0.3 10 1538 3.6 110 2101 1.3 40	23 Th	0349 4.6 140 1034 0.3 10 1647 3.9 120 2220 1.3 40	8 Sa	0418 5.9 180 1049 -0.7 -20 1702 4.9 150 2249 0.3 10	23 Su	0444 5.2 160 1101 0.0 0 1712 4.9 150 2310 0.3 10
9 M	0144 4.6 140 0829 0.7 20 1438 3.6 110 2017 1.0 30	24 Tu	0317 4.6 140 1005 0.3 10 1618 3.6 110 2144 1.3 40	9 Th	0331 5.2 160 1017 -0.3 -10 1633 4.3 130 2202 0.7 20	24 F	0430 4.9 150 1105 0.0 0 1716 4.3 130 2256 0.7 20	9 Su	0504 6.2 190 1127 -1.0 -30 1738 5.6 170 2333 -0.3 -10	24 M	0516 5.6 170 1128 -0.3 -10 1738 5.2 160 2340 0.0 0
10 Tu	0248 4.9 150 0932 0.3 10 1545 3.9 120 2117 1.0 30	25 W	0404 4.9 150 1047 0.0 0 1700 3.9 120 2229 1.0 30	10 F	0425 5.9 180 1103 -0.7 -20 1717 4.6 140 2254 0.3 10	25 Sa	0505 5.2 160 1132 -0.3 -10 1742 4.6 140 2329 0.7 20	10 M	0546 6.2 190 1203 -1.0 -30 1813 5.9 180	25 Tu	0548 5.6 170 1154 -0.3 -10 1804 5.6 170
11 W	0344 5.6 170 1024 -0.3 -10 1639 4.3 130 2210 0.7 20	26 Th	0444 5.2 160 1122 -0.3 -10 1734 3.9 120 2307 0.7 20	11 Sa	0513 6.2 190 1145 -1.0 -30 1758 4.9 150 2341 0.0 0	26 Su	0537 5.6 170 1158 -0.3 -10 1809 4.9 150	11 Tu	0015 -0.7 -20 0626 6.2 190 1238 -1.0 -30 1847 5.9 180	26 W	0009 -0.3 -10 0617 5.6 170 1220 -0.3 -10 1829 5.9 180
12 Th	0433 5.9 180 1111 -1.0 -30 1726 4.6 140 2300 0.3 10	27 F	0519 5.2 160 1152 -0.3 -10 1804 4.3 130 2341 0.7 20	12 Su	0558 6.6 200 1225 -1.3 -40 1837 5.2 160	27 M	0000 0.3 10 0607 5.6 170 1224 -0.3 -10 1835 4.9 150	12 W	0055 -0.7 -20 0704 5.9 180 1311 -0.7 -20 1921 5.9 180	27 Th	0038 -0.3 -10 0646 5.6 170 1245 -0.3 -10 1854 5.9 180
13 F	0520 6.2 190 1156 -1.3 -40 1811 4.6 140 2347 0.0 0	28 Sa	0553 5.6 170 1219 -0.7 -20 1833 4.6 140	13 M	0026 -0.3 -10 0640 6.6 200 1304 -1.0 -30 1915 5.6 170	28 Tu	0030 0.0 0 0637 5.6 170 1249 -0.3 -10 1901 5.2 160	13 Th	0134 -0.3 -10 0740 5.6 170 1342 -0.3 -10 1953 5.9 180	28 F	0109 -0.3 -10 0716 5.2 160 1312 0.0 0 1923 5.9 180
14 Sa	0606 6.6 200 1239 -1.3 -40 1854 4.9 150	29 Su	0014 0.3 10 0624 5.6 170 1248 -0.7 -20 1902 4.6 140	14 Tu	0110 -0.3 -10 0721 6.2 190 1340 -1.0 -30 1953 5.6 170	29 W	0058 0.0 0 0705 5.6 170 1313 -0.3 -10 1925 5.2 160	14 F	0213 0.0 0 0814 4.9 150 1412 0.3 10 2027 5.6 170	29 Sa	0143 -0.3 -10 0749 4.9 150 1341 0.3 10 1954 5.6 170
15 Su	0033 0.0 0 0650 6.2 190 1322 -1.3 -40 1936 4.9 150	30 M	0046 0.3 10 0654 5.6 170 1315 -0.3 -10 1931 4.6 140	15 W	0154 0.0 0 0802 5.6 170 1416 -0.3 -10 2031 5.2 160	30 Th	0126 0.0 0 0733 5.2 160 1339 0.0 0 1952 5.2 160	15 Sa	0253 0.3 10 0850 4.3 130 1443 0.7 20 2104 4.9 150	30 Su	0221 0.0 0 0827 4.6 140 1413 0.7 20 2030 5.2 160
		31 Tu	0116 0.7 20 0723 5.2 160 1341 -0.3 -10 1958 4.6 140			31 F	0159 0.3 10 0805 4.9 150 1408 0.3 10 2022 5.2 160				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Cebu, Philippines, 2018

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm
1 Su	0122 3.0 90 0548 1.6 50 1225 5.9 180 1942 -0.3 -10	16 M	0140 3.0 90 0611 1.3 40 1253 6.2 190 2009 -0.7 -20	1 W	0152 3.6 110 0657 1.3 40 1319 5.6 170 2011 0.0 0	16 Th	0206 3.9 120 0752 0.7 20 1409 4.9 150 2029 0.7 20	1 Sa	0157 4.6 140 0809 0.7 20 1416 4.3 130 2009 1.0 30	16 Su	0217 4.9 150 0913 0.7 20 1503 3.0 90 2002 1.6 50
2 M	0152 3.0 90 0619 1.6 50 1255 5.6 170 2012 -0.3 -10	17 Tu	0214 3.0 90 0658 1.3 40 1336 5.9 180 2044 -0.3 -10	2 Th	0217 3.6 110 0734 1.3 40 1352 4.9 150 2036 0.3 10	17 F	0237 4.3 130 0842 1.0 30 1447 3.9 120 2050 1.0 30	2 Su	0225 4.6 140 0858 0.7 20 1456 3.6 110 2029 1.3 40	17 M	0251 4.9 150 1014 1.0 30 1550 2.3 70 2006 1.6 50
3 Tu	0223 3.0 90 0652 1.6 50 1327 5.6 170 2044 0.0 0	18 W	0251 3.3 100 0751 1.3 40 1420 5.2 160 2118 0.3 10	3 F	0245 3.6 110 0817 1.3 40 1428 4.6 140 2101 0.7 20	18 Sa	0312 4.3 130 0941 1.3 40 1530 3.3 100 2108 1.3 40	3 M	0302 4.9 150 1001 1.0 30 1549 3.0 90 2047 1.6 50	18 Tu	0335 4.6 140 1156 1.3 40
4 W	0258 3.0 90 0732 1.6 50 1403 5.2 160 2118 0.0 0	19 Th	0331 3.6 110 0852 1.6 50 1506 4.3 130 2151 0.7 20	4 Sa	0317 3.9 120 0911 1.3 40 1511 3.9 120 2127 1.0 30	19 Su	0354 4.3 130 1101 1.3 40 1628 2.6 80 2123 1.6 50	4 Tu	0351 4.9 150 1140 1.0 30 1732 2.3 70 2056 2.0 60	19 W	0448 4.3 130 1423 1.3 40
5 Th	0338 3.0 90 0820 2.0 60 1443 4.6 140 2154 0.3 10	20 F	0418 3.6 110 1009 1.6 50 1601 3.6 110 2225 1.3 40	5 Su	0358 4.3 130 1024 1.3 40 1608 3.3 100 2155 1.3 40	20 M	0452 4.3 130 1309 1.3 40 1903 2.0 60 2119 2.0 60	5 W	0506 4.6 140 1400 1.0 30	20 Th	0658 3.9 120 1530 1.0 30 2244 3.0 90
6 F	0424 3.3 100 0927 2.0 60 1533 3.9 120 2233 1.0 30	21 Sa	0514 3.9 120 1155 1.6 50 1720 3.0 90 2303 1.6 50	6 M	0452 4.3 130 1211 1.3 40 1746 2.6 80 2228 2.0 60	21 Tu	0617 4.3 130 1508 1.0 30	6 Th	0656 4.6 140 1530 0.3 10 2246 2.6 80	21 F	0201 2.6 80 0835 4.3 130 1609 0.7 20 2242 3.3 100
7 Sa	0518 3.6 110 1103 2.0 60 1643 3.3 100 2318 1.3 40	22 Su	0621 4.3 130 1358 1.3 40 1933 2.3 70 2355 2.0 60	7 Tu	0605 4.6 140 1418 1.0 30 2050 2.3 70 2326 2.3 70	22 W	0752 4.6 140 1605 0.7 20 2255 2.6 80	7 F	0116 2.6 80 0832 5.2 160 1623 0.0 0 2256 3.0 90	22 Sa	0321 2.3 70 0933 4.6 140 1639 0.3 10 2258 3.6 110
8 Su	0618 3.9 120 1304 1.6 50 1834 3.0 90	23 M	0730 4.6 140 1525 1.0 30 2136 2.3 70	8 W	0729 4.9 150 1543 0.3 10 2234 2.6 80	23 Th	0202 2.3 70 0903 4.9 150 1643 0.3 10 2309 3.0 90	8 Sa	0305 2.0 60 0941 5.6 170 1703 -0.3 -10 2318 3.3 100	23 Su	0406 1.6 50 1017 4.9 150 1706 0.0 0 2316 3.9 120
9 M	0011 1.6 50 0718 4.3 130 1444 1.0 30 2039 2.6 80	24 Tu	0109 2.0 60 0831 4.9 150 1620 0.3 10 2239 2.6 80	9 Th	0120 2.3 70 0843 5.2 160 1639 -0.3 -10 2313 2.6 80	24 F	0320 2.0 60 0954 4.9 150 1714 0.0 0 2330 3.3 100	9 Su	0407 1.6 50 1035 5.9 180 1738 -0.3 -10 2342 3.6 110	24 M	0443 1.3 40 1053 5.2 160 1730 0.0 0 2335 3.9 120
10 Tu	0111 2.0 60 0814 4.9 150 1551 0.3 10 2208 2.6 80	25 W	0223 2.0 60 0923 5.2 160 1700 0.0 0 2318 2.6 80	10 F	0252 2.0 60 0945 5.9 180 1723 -0.7 -20 2345 3.0 90	25 Sa	0410 1.6 50 1034 5.2 160 1742 0.0 0 2351 3.3 100	10 M	0457 1.0 30 1122 5.9 180 1809 -0.3 -10	25 Tu	0515 1.0 30 1126 5.2 160 1752 0.0 0 2353 4.3 130
11 W	0211 2.0 60 0906 5.2 160 1644 -0.3 -10 2307 2.6 80	26 Th	0321 2.0 60 1006 5.6 170 1734 0.0 0 2347 3.0 90	11 Sa	0356 1.6 50 1038 6.2 190 1802 -0.7 -20	26 Su	0448 1.6 50 1109 5.6 170 1807 -0.3 -10	11 Tu	0007 3.9 120 0541 0.7 20 1204 5.9 180 1835 0.0 0	26 W	0546 0.3 10 1158 4.9 150 1812 0.3 10
12 Th	0306 2.0 60 0954 5.9 180 1730 -0.7 -20 2352 3.0 90	27 F	0407 1.6 50 1044 5.6 170 1804 -0.3 -10	12 Su	0013 3.0 90 0448 1.3 40 1125 6.6 200 1837 -0.7 -20	27 M	0012 3.6 110 0521 1.3 40 1141 5.6 170 1830 -0.3 -10	12 W	0032 4.3 130 0623 0.3 10 1243 5.2 160 1859 0.3 10	27 Th	0012 4.6 140 0616 0.3 10 1229 4.9 150 1830 0.7 20
13 F	0355 2.0 60 1041 6.2 190 1813 -1.0 -30	28 Sa	0014 3.0 90 0445 1.6 50 1118 5.9 180 1831 -0.3 -10	13 M	0042 3.3 100 0535 1.0 30 1209 6.2 190 1910 -0.7 -20	28 Tu	0033 3.6 110 0552 1.0 30 1210 5.6 170 1852 0.0 0	13 Th	0057 4.6 140 0703 0.0 0 1319 4.9 150 1919 0.7 20	28 F	0031 4.9 150 0648 0.0 0 1300 4.6 140 1847 0.7 20
14 Sa	0030 3.0 90 0440 1.6 50 1126 6.6 200 1853 -1.0 -30	29 Su	0040 3.3 100 0519 1.6 50 1150 5.9 180 1857 -0.3 -10	14 Tu	0109 3.6 110 0620 1.0 30 1250 5.9 180 1939 -0.3 -10	29 W	0052 3.9 120 0622 0.7 20 1240 5.6 170 1912 0.0 0	14 F	0122 4.9 150 0744 0.0 0 1354 4.3 130 1936 1.0 30	29 Sa	0052 5.2 160 0723 0.0 0 1333 3.9 120 1904 1.0 30
15 Su	0106 3.0 90 0525 1.3 40 1210 6.6 200 1932 -1.0 -30	30 M	0104 3.3 100 0551 1.3 40 1219 5.9 180 1922 -0.3 -10	15 W	0137 3.9 120 0706 0.7 20 1330 5.6 170 2006 0.3 10	30 Th	0112 4.3 130 0654 0.7 20 1309 5.2 160 1931 0.3 10	15 Sa	0148 4.9 150 0826 0.3 10 1428 3.6 110 1950 1.3 40	30 Su	0117 5.2 160 0803 0.0 0 1409 3.6 110 1921 1.3 40
		31 Tu	0128 3.3 100 0623 1.3 40 1249 5.6 170 1947 -0.3 -10			31 F	0133 4.3 130 0729 0.7 20 1341 4.6 140 1950 0.7 20				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Manila, Philippines, 2018

Times and Heights of High and Low Waters

October				November				December							
Time		Height		Time		Height		Time		Height		Time		Height	
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm
1	0117	3.6	110	16	0137	3.3	100	1	0238	3.6	110	16	0225	3.0	90
M	0920	0.3	10	Tu	1059	0.3	10	Th	1151	-0.3	-10	F	1203	0.0	0
2	0204	3.6	110	17	0226	3.3	100	2	0355	3.3	100	17	0333	2.6	80
Tu	1041	0.3	10	W	1218	0.3	10	F	1254	0.0	0	Sa	1247	0.3	10
3	0304	3.6	110	18	0328	3.3	100	3	0520	3.3	100	18	0452	2.3	70
W	1211	0.3	10	Th	1318	0.3	10	Sa	1343	0.0	0	Su	1321	0.3	10
4	0419	3.6	110	19	0440	3.0	90	4	0017	2.0	60	19	0103	1.6	50
Th	1330	0.0	0	F	1402	0.3	10	Su	0649	3.0	90	M	0621	2.3	70
5	0540	3.6	110	20	0556	3.0	90	5	0200	1.3	40	20	0214	1.3	40
F	1426	0.0	0	Sa	1435	0.3	10	M	0812	2.6	80	Tu	0751	2.0	60
6	0700	3.6	110	21	0012	2.0	60	6	0305	1.0	30	21	0307	0.7	20
Sa	1510	0.0	0	Su	0709	3.0	90	Tu	0923	2.6	80	W	0905	2.0	60
7	0054	1.6	50	22	0151	1.6	50	7	0401	0.7	20	22	1008	1.6	50
Su	0814	3.6	110	M	0815	3.0	90	W	1023	2.3	70	Th	1439	1.0	30
8	0227	1.3	40	23	0250	1.3	40	8	0454	0.3	10	23	0446	0.0	0
M	0920	3.6	110	Tu	0913	2.6	80	Th	1119	2.0	60	F	1106	1.6	50
9	0333	1.0	30	24	0341	1.0	30	9	0546	0.0	0	24	1208	1.3	40
Tu	1018	3.3	100	W	1005	2.6	80	F	1214	1.6	50	Sa	1447	1.3	40
10	0433	0.7	20	25	0431	0.7	20	10	0638	-0.3	-10	25	0627	-0.7	-20
W	1111	3.0	90	Th	1055	2.6	80	Sa	1318	1.6	50	Su	1328	1.3	40
11	0531	0.7	20	26	0523	0.3	10	11	1540	1.3	40	26	1436	1.3	40
Th	1202	2.6	80	F	1146	2.3	70	12	2310	3.6	110	27	2258	3.9	120
12	0629	0.3	10	27	0617	0.0	0	13	0729	-0.3	-10	28	0721	-0.7	-20
F	1254	2.3	70	Sa	1242	2.0	60	14	2339	3.6	110	29	2337	3.9	120
13	0730	0.3	10	28	0715	0.0	0	15	0821	-0.3	-10	30	0818	-1.0	-30
Sa	1354	2.0	60	Su	1353	1.6	50	16	0844	-0.7	-20	31	0844	-0.7	-20
14	0022	3.3	100	29	0001	3.6	110	17	0022	3.3	100	31	0022	3.3	100
Su	0832	0.3	10	M	0816	-0.3	-10	18	0926	-0.3	-10	1	0926	-0.3	-10
15	0057	3.3	100	30	0042	3.9	120	19	0103	3.0	90	2	0103	3.0	90
M	0940	0.3	10	Tu	0923	-0.3	-10	20	1008	-0.3	-10	3	1008	-0.3	-10
				31	0134	3.9	120	21	0118	3.6	110	4	0148	2.6	80
				W	1037	-0.3	-10	22	1018	-0.7	-20	Sa	1048	0.0	0
								23	0223	3.3	100	5	0244	2.3	70
								24	1117	-0.3	-10	6	1126	0.3	10
								25				7	1939	1.6	50
								26				8	2203	1.6	50
								27				9	0356	2.0	60
								28				10	1157	0.3	10
								29				11	1910	2.0	60
								30				12	0101	1.3	40
								31				13	0537	1.6	50
												14	1222	0.7	20
												15	1925	2.3	70
												16	0218	0.7	20
												17	0738	1.3	40
												18	1241	0.7	20
												19	1951	2.6	80
												20	0315	0.3	10
												21	0915	1.3	40
												22	1255	1.0	30
												23	2020	3.0	90
												24	0406	-0.3	-10
												25	1032	1.0	30
												26	1305	1.0	30
												27	2052	3.6	110
												28	0453	-0.7	-20
												29	1149	1.0	30
												30	1308	1.0	30
												31	2126	3.9	120
													0541	-1.0	-30
													2203	3.9	120
													0628	-1.3	-40
													2243	4.3	130
													0716	-1.3	-40
													2329	4.3	130
													0805	-1.0	-30
													0019	3.9	120
													0855	-1.0	-30
													0115	3.6	110
													0943	-0.7	-20
													0216	3.0	90
													1027	-0.3	-10
													0321	2.3	70
													1104	0.0	0
													1815	1.6	50
													2336	1.3	40
													0439	2.0	60
													1131	0.3	10
													1840	2.0	60

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Pages 188 through 195 intentionally omitted

Guam (Apra Harbor), Mariana Islands, 2018

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>
1 Su	0210 0.3 9 0814 2.5 76 1437 0.3 9 2037 2.4 73	16 M 0144 0.5 15 0740 2.5 76 1409 0.2 6 2022 2.5 76	1 Tu	0230 1.0 30 0754 2.4 73 1450 -0.1 -3 2216 2.4 73	16 W	0201 1.1 34 0726 2.5 76 1424 -0.5 -15 2113 2.6 79	1 F	0335 1.5 46 0814 2.2 67 1535 -0.3 -9 2244 2.3 70	16 Sa	0329 1.5 46 0822 2.5 76 1543 -0.9 -27 2255 2.6 79	
2 M	0252 0.5 15 0843 2.5 76 1516 0.2 6 2125 2.4 73	17 Tu	0225 0.7 21 0809 2.5 76 1447 0.0 0 2111 2.5 76	2 W	0311 1.1 34 0822 2.3 70 1525 -0.2 -6 2211 2.3 70	17 Th	0250 1.2 37 0802 2.5 76 1508 -0.6 -18 2207 2.6 79	2 Sa	0417 1.5 46 0847 2.1 64 1610 -0.2 -6 2325 2.3 70	17 Su	0426 1.5 46 0912 2.4 73 1633 -0.7 -21 2347 2.6 79
3 Tu	0332 0.7 21 0911 2.4 73 1554 0.1 3 2214 2.3 70	18 W	0306 0.9 27 0840 2.5 76 1527 -0.2 -6 2203 2.5 76	3 Th	0352 1.3 40 0850 2.2 67 1600 -0.2 -6 2256 2.3 70	18 F	0341 1.3 40 0841 2.5 76 1555 -0.7 -21 2304 2.6 79	3 Su	0502 1.5 46 0923 2.1 64 1648 -0.1 -3	18 M	0527 1.4 43 1007 2.3 70 1725 -0.5 -15
4 W	0411 0.9 27 0938 2.3 70 1633 0.1 3 2305 2.2 67	19 Th	0350 1.1 34 0913 2.4 73 1611 -0.3 -9 2300 2.4 73	4 F	0435 1.4 43 0920 2.1 64 1637 -0.1 -3 2344 2.2 67	19 Sa	0436 1.4 43 0924 2.4 73 1646 -0.6 -18	4 M	0008 2.3 70 0551 1.5 46 1004 2.0 61 1727 0.0 0	19 Tu	0039 2.5 76 0631 1.3 40 1110 2.1 64 1818 -0.2 -6
5 Th	0452 1.2 37 1007 2.2 67 1713 0.1 3	20 F	0438 1.2 37 0949 2.4 73 1659 -0.4 -12	5 Sa	0521 1.5 46 0953 2.0 61 1717 0.0 0	20 Su	0003 2.5 76 0536 1.5 46 1012 2.3 70 1740 -0.5 -15	5 Tu	0051 2.2 67 0645 1.5 46 1053 1.9 58 1811 0.2 6	20 W	0128 2.5 76 0738 1.1 34 1227 1.9 58 1912 0.2 6
6 F	0000 2.1 64 0537 1.3 40 1037 2.1 64 1758 0.2 6	21 Sa	0003 2.3 70 0534 1.4 43 1030 2.3 70 1754 -0.3 -9	6 Su	0037 2.1 64 0614 1.5 46 1031 1.9 58 1802 0.1 3	21 M	0105 2.5 76 0644 1.5 46 1111 2.1 64 1838 -0.3 -9	6 W	0135 2.3 70 0744 1.4 43 1156 1.8 55 1858 0.3 9	21 Th	0214 2.5 76 0845 0.9 27 1402 1.8 55 2009 0.6 18
7 Sa	0105 2.0 61 0630 1.4 43 1114 2.0 61 1849 0.2 6	22 Su	0115 2.3 70 0640 1.5 46 1121 2.2 67 1856 -0.2 -6	7 M	0134 2.1 64 0716 1.5 46 1120 1.8 55 1854 0.2 6	22 Tu	0206 2.4 73 0758 1.4 43 1226 1.9 58 1939 0.0 0	7 Th	0217 2.3 70 0841 1.2 37 1318 1.7 52 1950 0.5 15	22 F	0257 2.5 76 0947 0.6 18 1541 1.7 52 2109 0.9 27
8 Su	0219 2.0 61 0738 1.5 46 1202 1.9 58 1947 0.3 9	23 M	0231 2.3 70 0759 1.5 46 1229 2.0 61 2004 -0.1 -3	8 Tu	0231 2.1 64 0825 1.5 46 1227 1.7 52 1950 0.3 9	23 W	0301 2.4 73 0910 1.2 37 1401 1.8 55 2042 0.3 9	8 F	0257 2.3 70 0934 1.0 30 1450 1.7 52 2047 0.7 21	23 Sa	0337 2.4 73 1042 0.3 9 1706 1.8 55 2212 1.1 34
9 M	0332 2.0 61 0856 1.5 46 1313 1.8 55 2051 0.3 9	24 Tu	0338 2.3 70 0920 1.4 43 1359 1.9 58 2113 0.0 0	9 W	0321 2.2 67 0928 1.3 40 1356 1.7 52 2049 0.4 12	24 Th	0347 2.4 73 1014 0.9 27 1539 1.8 55 2146 0.5 15	9 Sa	0335 2.4 73 1022 0.7 21 1613 1.8 55 2146 0.8 24	24 Su	0415 2.4 73 1130 0.1 3 1815 2.0 61 2314 1.3 40
10 Tu	0427 2.0 61 1007 1.4 43 1441 1.8 55 2154 0.3 9	25 W	0432 2.3 70 1030 1.2 37 1534 2.0 61 2219 0.2 6	10 Th	0403 2.2 67 1021 1.1 34 1525 1.7 52 2147 0.5 15	25 F	0428 2.5 76 1108 0.6 18 1702 1.9 58 2247 0.8 24	10 Su	0413 2.4 73 1107 0.3 9 1725 2.0 61 2247 1.0 30	25 M	0452 2.4 73 1213 -0.1 -3 1911 2.1 64
11 W	0509 2.1 64 1101 1.3 40 1600 1.9 58 2249 0.3 9	26 Th	0515 2.4 73 1126 0.9 27 1655 2.0 61 2320 0.3 9	11 F	0440 2.3 70 1106 0.9 27 1638 1.9 58 2243 0.6 18	26 Sa	0504 2.5 76 1155 0.3 9 1810 2.0 61 2343 1.0 30	11 M	0451 2.5 76 1150 0.0 0 1827 2.2 67 2346 1.1 34	26 Tu	0012 1.4 43 0528 2.4 73 1252 -0.2 -6 1957 2.2 67
12 Th	0543 2.2 67 1144 1.1 34 1703 2.0 61 2338 0.3 9	27 F	0552 2.4 73 1214 0.6 18 1802 2.2 67	12 Sa	0513 2.4 73 1146 0.6 18 1741 2.0 61 2335 0.7 21	27 Su	0537 2.5 76 1237 0.0 0 1908 2.1 64	12 Tu	0530 2.5 76 1234 -0.3 -9 1923 2.4 73	27 W	0104 1.5 46 0604 2.3 70 1329 -0.3 -9 2037 2.2 67
13 F	0614 2.3 70 1222 0.9 27 1757 2.1 64	28 Sa	0014 0.5 15 0625 2.5 76 1257 0.3 9 1900 2.3 70	13 Su	0546 2.4 73 1224 0.3 9 1836 2.2 67	28 M	0036 1.1 34 0609 2.4 73 1315 -0.1 -3 1958 2.2 67	13 W	0044 1.3 40 0610 2.6 79 1320 -0.6 -18 2017 2.5 76	28 Th	0151 1.5 46 0640 2.3 70 1405 -0.4 -12 2113 2.3 70
14 Sa	0023 0.4 12 0643 2.4 73 1258 0.6 18 1846 2.3 70	29 Su	0102 0.6 18 0656 2.5 76 1337 0.1 3 1952 2.3 70	14 M	0025 0.8 24 0618 2.5 76 1303 0.0 0 1929 2.4 73	29 Tu	0124 1.2 37 0640 2.4 73 1351 -0.3 -9 2043 2.3 70	14 Th	0140 1.4 43 0652 2.6 79 1406 -0.8 -24 2110 2.6 79	29 F	0233 1.5 46 0716 2.3 70 1440 -0.4 -12 2148 2.3 70
15 Su	0104 0.4 12 0712 2.4 73 1333 0.4 12 1934 2.4 73	30 M	0147 0.8 24 0725 2.5 76 1414 0.0 0 2040 2.4 73	15 Tu	0113 0.9 27 0652 2.5 76 1342 -0.3 -9 2021 2.5 76	30 W	0210 1.3 40 0711 2.3 70 1426 -0.3 -9 2124 2.3 70	15 F	0234 1.4 43 0736 2.6 79 1454 -0.9 -27 2203 2.6 79	30 Sa	0314 1.5 46 0752 2.2 67 1514 -0.3 -9 2222 2.3 70
						31 Th	0253 1.4 43 0742 2.3 70 1500 -0.3 -9 2204 2.3 70				

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Guam (Apra Harbor), Mariana Islands, 2018

Times and Heights of High and Low Waters

July				August				September																			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height																
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm																
1 Su	0353 0829 1548 2256	1.5 2.2 -0.2 2.3	46 67 -6 70	16 M	0408 0908 1618 2315	1.3 2.5 -0.6 2.6	40 76 -18 79	1 W	0439 0942 1630 2313	1.2 2.1 0.2 2.3	37 64 6 70	16 Sa	0529 1108 1730 2343	0.6 2.2 0.5 2.4	18 67 15 73	1 Su	0524 1128 1722 2321	0.5 2.0 0.9 2.3	15 61 27 70	16 Su	0631 1328 1853 2357	0.2 2.0 1.3 2.0	6 61 40 61				
2 M	0434 0907 1623 2330	1.5 2.1 -0.1 2.3	46 64 -3 70	17 Tu	0505 1006 1706 2358	1.2 2.3 -0.3 2.5	37 70 -9 76	2 Th	0522 1031 1705 2343	1.1 2.0 0.4 2.3	34 61 12 70	17 F	0624 1220 1818	0.5 2.0 0.8	15 61 24	2 Su	0615 1238 1812	0.4 2.0 1.1	12 61 34	17 M	0728 1454 2003	0.2 1.9 1.5	6 58 46				
3 Tu	0518 0949 1658	1.4 2.0 0.0	43 61 0	18 W	0604 1110 1755	1.0 2.1 0.1	30 64 3	3 F	0608 1129 1744	0.9 1.9 0.6	27 58 18	18 Sa	0722 1346 1912	2.3 1.8 1.1	70 12 55 34	3 M	0000 0713 1404 1914	2.2 0.2 1.9 1.3	67 6 58 40	18 Tu	0049 0829 1608 2119	1.9 0.3 2.0 1.5	58 9 61 46				
4 W	0005 0605 1038 1735	2.3 1.3 1.9 0.2	70 40 58 6	19 Th	0039 0705 1226 1845	2.5 0.8 1.9 0.5	76 24 58 15	4 Sa	0017 0659 1240 1830	2.3 0.7 1.8 0.8	70 51 55 24	19 Su	0102 0822 1521 2015	2.2 0.3 1.8 1.3	67 9 55 40	4 Tu	0050 0818 1533 2030	2.2 0.0 2.0 1.4	67 0 61 43	19 W	0157 0931 1702 2227	1.9 0.3 2.0 1.4	58 9 61 43				
5 Th	0040 0656 1137 1816	2.3 1.2 1.8 0.4	70 57 35 12	20 F	0121 0807 1357 1938	2.4 0.6 1.8 0.9	73 18 55 27	5 Su	0054 0754 1408 1926	2.3 0.5 1.8 1.1	70 15 55 34	20 M	0149 0922 1643 2128	2.1 0.2 1.9 1.5	64 6 58 46	5 W	0152 0925 1647 2150	2.2 -0.1 2.1 1.5	67 -3 64 46	20 Th	0312 1029 1743 2319	1.9 0.2 2.1 1.3	58 6 64 40				
6 F	0116 0749 1253 1903	2.4 1.0 1.7 0.6	73 30 52 18	21 Sa	0202 0909 1536 2037	2.4 0.4 1.7 1.1	73 12 52 34	6 M	0138 0853 1540 2034	2.3 0.2 1.9 1.3	70 6 58 40	21 Tu	0244 1019 1744 2239	2.1 0.1 2.0 1.5	64 3 61 46	6 Th	0304 1030 1745 2301	2.3 -0.3 2.3 1.4	70 -9 70 43	21 F	0417 1119 1816	1.9 0.2 2.2	58 6 67				
7 Sa	0153 0843 1423 1958	2.4 0.7 1.7 0.8	73 21 52 24	22 Su	0245 1006 1702 2143	2.3 0.2 1.8 1.4	70 6 55 43	7 Tu	0229 0954 1700 2149	2.4 -0.1 2.0 1.4	73 -3 61 43	22 W	0341 1111 1828 2338	2.1 0.1 2.1 1.4	64 3 64 43	7 F	0415 1130 1833	2.3 -0.4 2.4	70 -12 73	22 Sa	0001 0512 1204 1845	1.2 2.1 0.2 2.2	37 64 6 67				
8 Su	0234 0936 1553 2101	2.4 0.4 1.8 1.1	73 12 55 34	23 M	0328 1058 1809 2252	2.3 0.1 1.9 1.5	70 3 58 46	8 W	0326 1053 1804 2302	2.4 -0.3 2.2 1.4	73 -9 67 43	23 Th	0436 1158 1904	2.1 0.0 2.1	64 0 64	8 Sa	0001 0521 1225 1915	1.2 2.5 -0.4 2.5	37 76 -12 76	23 Su	0037 0600 1244 1912	1.0 2.2 0.2 2.3	30 67 6 70				
9 M	0317 1028 1711 2208	2.4 0.1 2.0 1.2	73 3 61 37	24 Tu	0413 1145 1859 2353	2.3 -0.1 2.1 1.5	70 -3 64 46	9 Th	0426 1149 1858	2.5 -0.6 2.4	76 -18 73	24 F	0025 0526 1240 1935	1.4 2.2 -0.1 2.2	43 67 -3 67	9 Su	0054 0621 1317 1953	1.0 2.6 -0.4 2.5	30 79 -12 76	24 M	0112 0645 1321 1939	0.9 2.3 0.2 2.3	27 70 6 70				
10 Tu	0403 1119 1817 2317	2.5 -0.2 2.2 1.4	76 -6 67 43	25 W	0457 1228 1940	2.2 -0.2 2.1	67 -6 64	10 F	0008 0524 1244 1946	1.4 2.6 -0.7 2.5	43 79 -21 76	25 Sa	0104 0611 1318 2004	1.3 2.2 -0.1 2.2	40 67 -3 67	10 M	0143 0718 1405 2029	0.8 2.6 -0.2 2.5	24 79 -6 76	25 Tu	0145 0727 1356 2005	0.7 2.3 0.3 2.4	21 70 9 73				
11 W	0451 1210 1914	2.5 -0.5 2.4	76 -15 73	26 Th	0045 0540 1307 2014	1.5 2.2 -0.2 2.2	46 67 -6 67	11 Sa	0106 0621 1335 2031	1.3 2.6 -0.7 2.5	40 79 -21 76	11 Tu	0230 0814 1451 2103	0.6 2.6 0.0 2.5	18 79 0 76	26 W	0218 0810 1430 2031	0.6 2.4 0.4 2.4	18 73 12 73								
12 Th	0021 0540 1301 2007	1.4 2.6 -0.8 2.5	43 79 -24 76	27 F	0129 0622 1344 2046	1.5 2.3 -0.3 2.2	46 70 -9 67	12 Su	0200 0717 1424 2112	1.2 2.7 -0.7 2.6	37 82 -21 79	12 M	0216 0734 1427 2058	1.1 2.3 0.0 2.3	34 70 0 70	12 W	0317 0908 1535 2136	0.5 2.5 0.3 2.5	15 76 9 76	27 Th	0252 0854 1505 2058	0.4 2.4 0.6 2.4	12 73 18 73				
13 F	0121 0630 1351 2057	1.4 2.6 -0.9 2.6	43 79 -27 79	28 Sa	0209 0701 1419 2116	1.4 2.3 -0.3 2.3	43 70 -9 70	13 M	0252 0812 1512 2151	1.1 2.6 -0.5 2.6	34 79 -15 79	13 Tu	0250 0814 1459 2124	1.0 2.3 0.1 2.3	30 70 3 70	13 Th	0403 1004 1620 2209	0.3 2.4 0.6 2.4	9 73 18 73	28 F	0328 0941 1542 2126	0.3 2.3 0.8 2.3	9 70 24 70				
14 Sa	0218 0721 1440 2145	1.4 2.7 -0.9 2.6	43 82 -27 79	29 Su	0246 0740 1453 2146	1.4 2.3 -0.2 2.3	43 70 -6 70	14 Tu	0343 0908 1558 2229	0.9 2.5 -0.2 2.5	27 76 -6 76	29 W	0325 0856 1531 2151	0.9 2.3 0.3 2.3	27 70 9 70	14 F	0451 1104 1705 2242	0.2 2.2 0.9 2.3	6 67 27 70	29 Sa	0407 1033 1623 2157	0.2 2.3 1.0 2.3	6 70 30 70				
15 Su	0313 0814 1529 2230	1.4 2.6 -0.8 2.6	43 79 -24 79	30 M	0323 0819 1525 2215	1.3 2.2 -0.1 2.3	40 67 -3 70	15 W	0435 1005 1644 2306	0.8 2.3 0.1 2.5	24 70 3 76	30 Th	0401 0940 1605 2218	0.8 2.2 0.4 2.3	24 67 12 70	15 Sa	0539 1210 1755 2317	0.2 2.1 1.2 2.1	6 64 37 64	30 Su	0451 1132 1710 2232	0.0 2.2 1.2 2.2	0 67 37 67				
				31 Tu	0400 0859 1558 2244	1.3 2.2 0.0 2.3	40 67 0 70	31 F	0440 1030 1641 2248	0.7 2.1 0.7 2.3	21 64 21 70																

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Malakal Harbor, Palau Islands 2018

Times and Heights of High and Low Waters

January			February			March									
Time	Height		Time	Height		Time	Height		Time	Height					
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm	
1 M	0040	-0.1	-3	16 Tu	0119	0.3	9	1 Th	0203	-0.7	-21	16 F	0206	0.2	6
	0700	5.5	168		0737	5.0	152		0821	5.8	177		0812	5.4	165
	1248	2.2	67		1324	2.2	67		1413	1.5	46		1411	1.6	49
	1827	6.4	195		1857	5.8	177		1956	6.5	198		1952	5.9	180
2 Tu	0127	-0.5	-15	17 W	0153	0.2	6	2 F	0245	-0.6	-18	17 Sa	0235	0.2	6
	0748	5.8	177		0807	5.2	158		0859	5.9	180		0838	5.5	168
	1335	2.1	64		1357	2.1	64		1456	1.4	43		1440	1.5	46
	1914	6.7	204		1931	5.9	180		2040	6.5	198		2025	6.0	183
3 W	0212	-0.6	-18	18 Th	0225	0.2	6	3 Sa	0325	-0.3	-9	18 Su	0302	0.4	12
	0833	5.9	180		0836	5.4	165		0935	5.9	180		0906	5.7	174
	1420	2.0	61		1427	2.1	64		1538	1.4	43		1509	1.5	46
	2000	6.8	207		2004	6.0	183		2124	6.3	192		2100	6.0	183
4 Th	0256	-0.6	-18	19 F	0255	0.3	9	4 Su	0405	0.2	6	19 M	0330	0.6	18
	0916	6.0	183		0905	5.4	165		1011	5.8	177		0935	5.7	174
	1505	2.1	64		1457	2.2	67		1622	1.5	46		1540	1.4	43
	2045	6.7	204		2037	6.0	183		2208	5.9	180		2138	5.9	180
5 F	0341	-0.3	-9	20 Sa	0324	0.4	12	5 M	0444	0.8	24	20 Tu	0358	1.0	30
	0959	5.9	180		0935	5.5	168		1047	5.7	174		1006	5.7	174
	1552	2.2	67		1527	2.2	67		1708	1.6	49		1616	1.4	43
	2132	6.4	195		2112	6.0	183		2254	5.5	168		2219	5.6	171
6 Sa	0426	0.2	6	21 Su	0354	0.7	21	6 Tu	0523	1.4	43	21 W	0430	1.3	40
	1043	5.8	177		1007	5.5	168		1125	5.5	168		1041	5.7	174
	1643	2.3	70		1600	2.2	67		1759	1.7	52		1635	1.3	40
	2221	6.0	183		2150	5.8	177		2343	5.0	152		2307	5.3	162
7 Su	0512	0.7	21	22 M	0424	0.9	27	7 W	0605	1.9	58	22 Th	0506	1.7	52
	1127	5.6	171		1042	5.5	168		1205	5.3	162		1122	5.6	171
	1740	2.3	70		1638	2.2	67		1857	1.8	55		1752	1.3	40
	2314	5.6	171		2233	5.6	171								
8 M	0601	1.3	40	23 Tu	0458	1.2	37	8 Th	0039	4.5	137	23 F	0004	4.9	149
	1214	5.5	168		1120	5.4	165		0653	2.4	73		0551	2.2	67
	1843	2.3	70		1725	2.1	64		1250	5.0	152		1209	5.4	165
					2323	5.2	158		2005	1.8	55		1901	1.3	40
9 Tu	0013	5.0	152	24 W	0538	1.6	49	9 F	0149	4.1	125	24 Sa	0116	4.5	137
	0654	1.8	55		1203	5.4	165		0758	2.7	82		0656	2.6	79
	1303	5.3	162		1824	2.0	61		1345	4.8	146		1310	5.1	155
	1953	2.2	67						2120	1.7	52		2032	1.3	40
10 W	0121	4.6	140	25 Th	0022	4.8	146	10 Sa	0322	3.9	119	25 Su	0249	4.2	128
	0753	2.2	67		0626	2.0	61		0923	2.9	88		0842	2.9	88
	1356	5.2	158		1252	5.3	162		1452	4.7	143		1426	5.0	152
	2104	2.0	61		1939	1.8	55		2232	1.5	46		2204	0.9	27
11 Th	0243	4.3	131	26 F	0136	4.5	137	11 Su	0502	4.0	122	26 M	0433	4.3	131
	0900	2.5	76		0733	2.4	73		1042	2.8	85		1026	2.7	82
	1453	5.1	155		1351	5.2	158		1605	4.7	143		1553	5.1	155
	2211	1.7	52		2106	1.5	46		2332	1.1	34		2318	0.5	15
12 F	0413	4.2	128	27 Sa	0307	4.3	131	12 M	0606	4.3	131	27 Tu	0550	4.7	143
	1009	2.6	79		0905	2.6	79		1143	2.5	76		1139	2.3	70
	1552	5.1	155		1500	5.2	158		1710	4.9	149		1711	5.4	165
	2309	1.3	40		2226	1.0	30								
13 Sa	0530	4.4	134	28 Su	0442	4.4	134	13 Tu	0020	0.7	21	28 W	0016	0.0	0
	1111	2.6	79		1035	2.6	79		0646	4.6	140		0642	5.2	158
	1648	5.2	158		1612	5.4	165		1230	2.2	67		1234	1.8	55
	2359	0.9	27		2333	0.4	12		1801	5.2	158		1813	5.8	177
14 Su	0623	4.6	140	29 M	0559	4.8	146	14 W	0100	0.4	12	14 W	0613	4.6	140
	1203	2.4	73		1145	2.4	73		0718	4.9	149		1208	2.2	67
	1737	5.4	165		1719	5.7	174		1308	2.0	61		1738	4.9	149
									1842	5.5	168				
15 M	0041	0.5	15	30 Tu	0029	-0.2	-6	15 Th	0134	0.2	6	15 Th	0031	0.8	24
	0704	4.8	146		0655	5.2	158		0745	5.1	155		0644	4.9	149
	1246	2.3	70		1241	2.0	61		1341	1.8	55		1246	1.8	55
	1819	5.6	171		1817	6.1	186		1918	5.7	174		1823	5.3	162
16 Sa				31 W	0118	-0.6	-18	16 Th				16 Th			
					0740	5.5	168								
					1329	1.7	52								
					1909	6.4	195								

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings which is about 1.0ft (30 cm) below mean low water springs.

Malakal Harbor, Palau Islands 2018

Times and Heights of High and Low Waters

July				August				September							
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm	
1 Su	0308	2.6	79			1 W	0352	2.5	76			1 Sa	0437	2.0	61
	0839	5.9	180				0936	6.0	183				1044	5.9	180
	1535	0.5	15				1610	1.2	37				1640	2.4	73
	2153	5.4	165				2227	5.8	177				2257	6.2	189
2 M	0341	2.7	82			2 Th	0428	2.4	73			2 Su	0525	2.0	61
	0915	5.8	177				1017	5.8	177				1137	5.5	168
	1607	0.8	24				1641	1.5	46				1719	2.8	85
	2228	5.4	165				2302	5.8	177				2341	6.1	186
3 Tu	0417	2.8	85			3 F	0510	2.4	73			3 M	0628	2.0	61
	0954	5.6	171				1103	5.5	168				1243	5.1	155
	1640	1.1	34				1715	1.9	58				1814	3.2	98
	2305	5.4	165				2341	5.8	177				2303	3.2	98
4 W	0459	2.8	85			4 Sa	0602	2.3	70			4 Tu	0037	5.9	180
	1037	5.4	165				1157	5.1	155				0752	2.0	61
	1717	1.4	43				1757	2.3	70				1409	4.9	149
	2345	5.4	165										1945	3.5	107
5 Th	0550	2.8	85			5 Su	0025	5.7	174			5 W	0147	5.7	174
	1127	5.1	155				0707	2.1	64				0924	1.7	52
	1757	1.7	52				1304	4.8	146				1549	4.9	149
							1850	2.6	79				2140	3.5	107
6 F	0029	5.4	165			6 M	0118	5.6	171			6 Th	0311	5.7	174
	0651	2.6	79				0826	1.9	58				1043	1.3	40
	1226	4.8	146				1426	4.6	140				1714	5.2	158
	1845	2.0	61				2009	3.0	91				2303	3.2	98
7 Sa	0116	5.4	165			7 Tu	0221	5.6	171			7 F	0432	6.0	183
	0801	2.4	73				0949	1.5	46				1145	0.8	24
	1336	4.6	140				1600	4.6	140				1811	5.7	174
	1944	2.3	70				2146	3.1	94						
8 Su	0208	5.4	165			8 W	0332	5.7	174			8 Sa	0003	2.7	82
	0913	1.9	58				1100	0.9	27				0540	6.4	195
	1456	4.4	134				1724	4.9	149				1236	0.5	15
	2058	2.5	76				2307	2.9	88				1855	6.1	186
9 M	0306	5.5	168			9 Th	0442	5.9	180			9 Su	0052	2.1	64
	1021	1.4	43				1200	0.4	12				0635	6.8	207
	1620	4.5	137				1826	5.3	162				1321	0.3	9
	2214	2.6	79										1933	6.5	198
10 Tu	0405	5.6	171			10 F	0010	2.7	82			10 M	0136	1.7	52
	1121	0.8	24				0545	6.3	192				0724	7.0	213
	1734	4.8	146				1251	0.0	0				1402	0.4	12
	2322	2.6	79				1915	5.7	174				2008	6.7	204
11 W	0502	5.9	180			11 Sa	0102	2.3	70			11 Tu	0217	1.4	43
	1214	0.2	6				0640	6.6	201				0809	7.1	216
	1835	5.2	158				1337	-0.3	-9				1440	0.7	21
							1957	6.1	186				2041	6.8	207
12 Th	0019	2.4	73			12 Su	0148	2.0	61			12 W	0257	1.3	40
	0556	6.2	189				0730	6.9	210				0851	7.0	213
	1303	-0.3	-9				1421	-0.2	-6				1516	1.2	37
	1926	5.5	168				2036	6.3	192				2113	6.8	207
13 F	0110	2.3	70			13 M	0232	1.8	55			13 Th	0337	1.4	43
	0646	6.5	198				0817	6.9	210				0933	6.7	204
	1349	-0.5	-15				1502	0.0	0				1552	1.7	52
	2012	5.8	177				2113	6.4	195				2146	6.7	204
14 Sa	0157	2.2	67			14 Tu	0316	1.7	52			14 F	0418	1.5	46
	0735	6.7	204				0902	6.8	207				1015	6.2	189
	1434	-0.6	-18				1542	0.5	15				1627	2.3	70
	2056	5.9	180				2150	6.4	195				2220	6.5	198
15 Su	0243	2.2	67			15 W	0401	1.7	52			15 Sa	0502	1.8	55
	0822	6.7	204				0948	6.5	198				1101	5.8	177
	1518	-0.4	-12				1622	1.1	34				1704	2.9	88
	2138	6.0	183				2227	6.3	192				2256	6.2	189
					31 Tu	0320	2.4	73			31 F	0358	2.0	61	
						0900	6.1	186				0959	6.2	189	
						1542	0.9	27				1607	2.0	61	
						2155	5.8	177				2219	6.3	192	

Time meridian 135° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to the chart datum of soundings which is about 1.0ft (30 cm) below mean low water springs.

Chuuk, Moen Island, Caroline Islands, 2018

Times and Heights of High and Low Waters

January				February				March								
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height			
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		
1 M	0315 0546 1403 2219	0.2 0.1 2.3 -0.6	6 3 70 -18	16 Tu	0337 0548 1411 2216	0.2 0.1 2.1 -0.2	6 3 64 -6	1 Th	0406 0712 1501 2253	0.3 0.2 2.3 -0.4	9 6 70 -12	16 F	0324 0748 1453 2203	0.7 0.3 2.2 -0.1	21 9 67 -3	
2 Tu	0351 0610 1433 2255	0.1 0.0 2.4 -0.6	3 0 73 -18	17 W	0325 0634 1435 2227	0.2 0.1 2.1 -0.2	6 3 64 -6	2 F	0415 0752 1526 2310	0.4 0.2 2.2 -0.2	12 6 67 -6	17 Sa	0335 0820 1517 2216	0.8 0.2 2.1 0.0	24 6 64 0	
3 W	0421 0634 1503 2332	0.0 -0.1 2.4 -0.5	0 -3 73 -15	18 Th	0332 0710 1500 2242	0.2 0.1 2.2 -0.2	6 3 67 -6	3 Sa	0428 0828 1546 2319	0.5 0.2 2.0 0.0	15 6 61 0	18 Su	0352 0852 1540 2230	0.9 0.3 2.0 0.0	27 9 61 0	
4 Th	0447 0656 1531	0.0 -0.1 2.3	0 -3 70	19 F	0347 0741 1525 2259	0.3 0.1 2.1 -0.2	9 3 64 -6	4 Su	0443 0900 1557 2318	0.7 0.3 1.8 0.1	21 9 55 3	19 M	0412 0923 1600 2241	1.1 0.4 1.8 0.1	34 12 55 3	
5 F	0007 0511 0716 1555	-0.4 0.0 -0.1 2.1	-12 0 -3 64	20 Sa	0407 0809 1548 2318	0.4 0.1 2.0 -0.1	12 3 61 -3	5 M	0502 0929 1557 2307	0.8 0.5 1.5 0.2	24 15 46 6	20 Tu	0434 0955 1613 2247	1.2 0.5 1.5 0.2	37 15 46 6	
6 Sa	0039 1610	-0.2 1.9	-6 58	21 Su	0431 0834 1610 2337	0.5 0.2 1.9 0.0	15 6 58 0	6 Tu	0525 0951 1542 2246	0.9 0.7 1.3 0.2	27 21 40 6	21 W	0458 1028 1610 2244	1.3 0.6 1.3 0.2	40 18 40 6	
7 Su	0101 1613	0.0 1.6	0 49	22 M	0501 0857 1626 2354	0.6 0.3 1.7 0.1	18 9 52 3	7 W	0554 1003 1512 2227	1.0 0.9 1.2 0.1	30 27 37 3	22 Th	0528 1107 1515 2225	1.3 0.9 1.0 0.2	40 27 30 6	
8 M	0104 1558	0.2 1.4	6 43	23 Tu	0539 0915 1631	0.7 0.5 1.4	21 15 43	8 Th	0642 0941 1423 2215	1.1 1.0 1.2 0.0	34 30 37 0	23 F	0611 2145	1.3 0.1	40 3	
9 Tu	0035 1521 2342	0.2 1.2 0.2	6 37 6	24 W	0005 0641 0911 1556	0.2 0.8 0.7 1.2	6 24 21 37	9 F	1323 2211	1.3 -0.1	40 -3	24 Sa	1119 2109	1.4 -0.1	43 -3	
10 W	1420 2304	1.2 0.1	37 3	25 Th	0005 1335 2328	0.2 1.1 0.2	6 34 6	10 Sa	1258 2209	1.5 -0.1	46 -3	25 Su	1214 2102	1.7 -0.2	52 -6	
11 Th	1324 2246	1.3 0.0	40 0	26 F	1226 2147	1.3 0.1	40 3	11 Su	1304 2204	1.6 -0.1	49 -3	26 M	1250 2110	1.9 -0.3	58 -9	
12 F	1305 2236	1.5 -0.1	46 -3	27 Sa	1234 2118	1.6 -0.2	49 -6	12 M	1321 2156	1.8 -0.1	55 -3	27 Tu	1324 2123	2.1 -0.3	64 -9	
13 Sa	1310 2225	1.7 -0.1	52 -3	28 Su	1259 2127	1.9 -0.4	58 -12	13 Tu	1342 2148	1.9 -0.1	58 -3	28 W	0353 0614 1355 2137	0.7 0.6 2.2 -0.3	21 18 67 -9	
14 Su	1326 2216	1.8 -0.2	55 -6	29 M	1329 2146	2.1 -0.5	64 -15	14 W	0342 0631 1405 2147	0.5 0.4 2.1 -0.1	15 12 64 -3	14 Th	0348 0633 1325 2102	0.9 0.8 1.9 0.1	27 24 58 3	
15 M	1347 2212	2.0 -0.2	61 -6	30 Tu	1401 2209	2.3 -0.6	70 -18	15 Th	0323 0713 1429 2153	0.6 0.3 2.2 -0.1	18 9 67 -3	15 F	0307 0707 1348 2100	0.9 0.6 2.0 0.1	27 18 61 3	
				31 W	0404 0624 1432 2233	0.3 0.2 2.4 -0.5	9 6 73 -15						31 Sa	0248 0817 1430 2055	1.5 0.5 1.8 0.3	46 15 55 9

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Wake Island, 2018

Times and Heights of High and Low Waters

January				February				March						
Time	Height			Time	Height			Time	Height			Time	Height	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm
1 M	0311	2.0	61		16 Tu	0936	0.0	0		1 Th	0435	2.1	64	
	0859	-0.1	-3			1549	2.4	73			1023	-0.4	-12	
	1520	2.7	82			2221	-0.3	-9			1642	2.9	88	
	2154	-0.6	-18			2221	-0.3	-9			2311	-0.8	-24	
2 Tu	0359	2.1	64		17 W	0426	1.9	58		2 F	0513	2.2	67	
	0944	-0.2	-6			1010	-0.1	-3			1104	-0.5	-15	
	1605	2.9	88			1622	2.5	76			1722	2.9	88	
	2239	-0.7	-21			2251	-0.4	-12			2347	-0.8	-24	
3 W	0442	2.2	67		18 Th	0456	2.0	61		3 Sa	0550	2.3	70	
	1028	-0.3	-9			1042	-0.1	-3			1143	-0.4	-12	
	1648	3.0	91			1653	2.6	79			1759	2.8	85	
	2322	-0.8	-24			2320	-0.5	-15			0022	-0.6	-18	
4 Th	0525	2.2	67		19 F	0526	2.0	61		4 Su	0626	2.3	70	
	1110	-0.3	-9			1113	-0.1	-3			1221	-0.3	-9	
	1731	2.9	88			1724	2.6	79			1836	2.6	79	
						2349	-0.4	-12			0056	-0.5	-15	
5 F	0004	-0.7	-21		20 Sa	0555	2.0	61		5 M	0701	2.2	67	
	0606	2.1	64			1143	-0.1	-3			1259	-0.2	-6	
	1152	-0.2	-6			1754	2.6	79			1911	2.3	70	
	1812	2.8	85			0018	-0.4	-12			0128	-0.2	-6	
6 Sa	0045	-0.5	-15		21 Su	0624	2.0	61		6 Tu	0737	2.1	64	
	0648	2.1	64			1215	-0.1	-3			1339	0.0	0	
	1235	-0.1	-3			1826	2.5	76			1947	2.0	61	
	1854	2.6	79			0048	-0.3	-9			0201	0.0	0	
7 Su	0126	-0.3	-9		22 M	0655	2.0	61		7 W	0816	1.9	58	
	0731	2.0	61			1249	0.0	0			1424	0.3	9	
	1320	0.1	3			1900	2.3	70			2026	1.6	49	
	1938	2.3	70			0120	-0.2	-6			0238	0.2	6	
8 M	0209	-0.1	-3		23 Tu	0730	1.9	58		8 Th	0903	1.7	52	
	0818	1.9	58			1329	0.1	3			1523	0.5	15	
	1410	0.3	9			1938	2.1	64			2118	1.3	40	
	2025	2.0	61			0157	0.0	0			0328	0.5	15	
9 Tu	0255	0.1	3		24 W	0812	1.9	58		9 F	1011	1.6	49	
	0912	1.8	55			1418	0.2	6			1703	0.6	18	
	1513	0.5	15			2026	1.9	58			2302	1.1	34	
	2123	1.7	52			0242	0.1	3			0454	0.6	18	
10 W	0350	0.3	9		25 Th	0906	1.8	55		10 Sa	1150	1.6	49	
	1019	1.7	52			1526	0.3	9			1911	0.5	15	
	1639	0.6	18			2131	1.6	49			0119	1.1	34	
	2243	1.4	43			0342	0.3	9			0645	0.6	18	
11 Th	0500	0.5	15		26 F	1021	1.8	55		11 Su	1320	1.7	52	
	1139	1.7	52			1703	0.4	12			2021	0.3	9	
	1822	0.6	18			2306	1.4	43			0228	1.3	40	
						0506	0.4	12			0759	0.4	12	
12 F	0021	1.4	43		27 Sa	1155	1.8	55		12 M	1419	1.9	58	
	0616	0.5	15			1848	0.2	6			2103	0.0	0	
	1252	1.8	55			0052	1.4	43			0310	1.5	46	
	1940	0.4	12			0640	0.4	12			0847	0.2	6	
13 Sa	0140	1.4	43		28 Su	1318	2.0	61		13 Tu	1501	2.1	64	
	0722	0.4	12			2005	-0.1	-3			2136	-0.2	-6	
	1350	2.0	61			0211	1.6	49			0343	1.7	52	
	2033	0.2	6			0754	0.2	6			0926	0.0	0	
14 Su	0235	1.5	46		29 M	1422	2.3	70		14 W	1537	2.3	70	
	0815	0.3	9			2102	-0.4	-12			2206	-0.3	-9	
	1435	2.2	67			0308	1.8	55			0412	1.9	58	
	2114	0.0	0			0851	0.0	0			0959	-0.1	-3	
15 M	0317	1.7	52		30 Tu	1514	2.6	79		15 Th	1609	2.5	76	
	0858	0.2	6			2149	-0.6	-18			2234	-0.5	-15	
	1514	2.3	70			0354	2.0	61						
	2149	-0.2	-6			0939	-0.2	-6						
				31 W	1600	2.8	85							
					2231	-0.8	-24							

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Wake Island, 2018

Times and Heights of High and Low Waters

October			November			December									
Time	Height		Time	Height		Time	Height		Time	Height					
	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm			
1 M	0115	0.1	3	16 Tu	0147	0.5	15	1 Th	0326	0.4	12	16 F	0327	0.6	18
	0718	2.1	64		0746	1.6	49		0939	1.5	46		1005	1.4	43
	1306	0.4	12		1327	0.8	24		1505	0.8	24		1533	1.0	30
	1929	2.4	73		1957	2.0	61		2154	2.0	61		2155	1.7	52
2 Tu	0209	0.4	12	17 W	0247	0.7	21	2 F	0510	0.5	15	17 Sa	0506	0.7	21
	0811	1.8	55		0855	1.4	43		1136	1.6	49		1157	1.5	46
	1352	0.7	21		1422	1.0	30		1715	0.9	27		1737	0.9	27
	2027	2.2	67		2110	1.8	55		2347	2.0	61		2339	1.7	52
3 W	0332	0.6	18	18 Th	0441	0.8	24	3 Sa	0636	0.3	9	18 Su	0624	0.5	15
	0940	1.6	49		1140	1.4	43		1257	1.9	58		1259	1.8	55
	1508	0.9	27		1648	1.1	34		1852	0.6	18		1854	0.7	21
	2207	2.0	61		2317	1.7	52								
4 Th	0532	0.6	18	19 F	0638	0.7	21	4 Su	0107	2.2	67	19 M	0052	1.9	58
	1154	1.6	49		1314	1.6	49		0733	2.2	6		0716	0.4	12
	1725	0.9	27		1846	0.9	27		1348	2.2	67		1340	2.0	61
									1953	0.3	9		1944	0.4	12
5 F	0008	2.1	64	20 Sa	0051	1.9	58	5 M	0203	2.4	73	20 Tu	0144	2.1	64
	0705	0.4	12		0734	0.5	15		0817	0.0	0		0756	0.2	6
	1322	1.8	55		1355	1.9	58		1429	2.5	76		1415	2.3	70
	1906	0.7	21		1942	0.7	21		2040	0.0	0		2026	0.2	6
6 Sa	0128	2.4	73	21 Su	0145	2.1	64	6 Tu	0248	2.5	76	21 W	0227	2.2	67
	0803	0.1	3		0811	0.3	9		0855	-0.1	-3		0832	0.1	3
	1414	2.1	64		1426	2.1	64		1505	2.7	82		1448	2.5	76
	2007	0.4	12		2022	0.4	12		2120	-0.2	-6		2103	-0.1	-3
7 Su	0223	2.6	79	22 M	0225	2.3	70	7 W	0328	2.6	79	22 Th	0306	2.3	70
	0846	-0.1	-3		0842	0.1	3		0929	-0.2	-6		0905	-0.1	-3
	1454	2.4	73		1455	2.4	73		1539	2.9	88		1520	2.7	82
	2054	0.1	3		2056	0.2	6		2157	-0.3	-9		2140	-0.3	-9
8 M	0307	2.8	85	23 Tu	0300	2.5	76	8 Th	0404	2.5	76	23 F	0344	2.4	73
	0924	-0.2	-6		0911	0.0	0		1001	-0.2	-6		0939	-0.1	-3
	1530	2.7	82		1522	2.6	79		1611	3.0	91		1554	2.9	88
	2135	-0.2	-6		2128	-0.1	-3		2232	-0.4	-12		2218	-0.5	-15
9 Tu	0347	2.9	88	24 W	0333	2.6	79	9 F	0437	2.5	76	24 Sa	0421	2.4	73
	0958	-0.3	-9		0939	-0.1	-3		1031	-0.1	-3		1013	-0.2	-6
	1604	2.9	88		1550	2.8	85		1642	2.9	88		1628	2.9	88
	2213	-0.3	-9		2201	-0.2	-6		2305	-0.3	-9		2256	-0.5	-15
10 W	0423	2.9	88	25 Th	0405	2.7	82	10 Sa	0510	2.3	70	25 Su	0500	2.4	73
	1029	-0.3	-9		1007	-0.2	-6		1101	-0.1	-3		1048	-0.1	-3
	1636	3.0	91		1618	2.9	88		1713	2.9	88		1705	2.9	88
	2249	-0.3	-9		2233	-0.3	-9		2338	-0.2	-6		2336	-0.5	-15
11 Th	0457	2.8	85	26 F	0438	2.7	82	11 Su	0542	2.2	67	26 M	0539	2.2	67
	1100	-0.2	-6		1036	-0.2	-6		1130	0.1	3		1124	-0.1	-3
	1708	3.0	91		1648	2.9	88		1744	2.7	82		1743	2.9	88
	2323	-0.3	-9		2307	-0.4	-12								
12 F	0530	2.6	79	27 Sa	0511	2.6	79	12 M	0011	-0.1	-3	27 Tu	0019	-0.4	-12
	1129	-0.1	-3		1106	-0.1	-3		0613	2.0	61		0622	2.1	64
	1738	2.9	88		1719	2.9	88		1159	0.2	6		1203	0.1	3
	2357	-0.2	-6		2343	-0.3	-9		1815	2.5	76		1826	2.7	82
13 Sa	0601	2.4	73	28 Su	0547	2.4	73	13 Tu	0045	0.1	3	28 W	0106	-0.2	-6
	1157	0.1	3		1137	0.0	0		0648	1.8	55		0709	1.9	58
	1809	2.8	85		1753	2.8	85		1230	0.4	12		1248	0.3	9
									1849	2.3	70		1914	2.5	76
14 Su	0030	0.0	0	29 M	0023	-0.2	-6	14 W	0124	0.3	9	29 Th	0201	0.0	0
	0633	2.1	64		0626	2.2	67		0728	1.6	49		0807	1.7	52
	1224	0.3	9		1211	0.2	6		1306	0.6	18		1342	0.5	15
	1840	2.5	76		1831	2.7	82		1929	2.1	64		2013	2.2	67
15 M	0106	0.2	6	30 Tu	0108	0.0	0	15 Th	0214	0.5	15	30 F	0308	0.2	6
	0706	1.9	58		0710	1.9	58		0826	1.5	46		0922	1.6	49
	1253	0.5	15		1250	0.4	12		1357	0.8	24		1500	0.7	21
	1914	2.3	70		1916	2.5	76		2026	1.9	58		2132	2.0	61
			31 W	0205	0.2	6									
				0809	1.7	52									
				1341	0.6	18									
				2018	2.2	67									

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Sand Island, Midway Islands, 2018

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
	h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm
1 Su	0133 0.3 9 0614 0.7 21 1219 0.0 0 1936 1.2 37	16 M	0125 0.3 9 0656 1.0 30 1300 0.0 0 1940 1.4 43	1 W	0159 0.3 9 0740 1.0 30 1329 0.3 9 2001 1.2 37	16 Th	0220 0.1 3 0851 1.3 40 1443 0.4 12 2029 1.3 40	1 Sa	0218 0.1 3 0901 1.3 40 1459 0.6 18 2021 1.1 34	16 Su	0302 0.1 3 1009 1.4 43 1616 0.6 18 2118 1.0 30
2 M	0207 0.3 9 0703 0.7 21 1259 0.0 0 2007 1.2 37	17 Tu	0211 0.2 6 0802 1.0 30 1357 0.1 3 2021 1.3 40	2 Th	0230 0.3 9 0831 1.0 30 1416 0.4 12 2029 1.2 37	17 F	0303 0.1 3 0950 1.3 40 1540 0.5 15 2110 1.2 37	2 Su	0258 0.1 3 0955 1.4 43 1553 0.7 21 2056 1.1 34	17 M	0348 0.2 6 1105 1.3 40 1714 0.6 18 2204 1.0 30
3 Tu	0241 0.2 6 0754 0.7 21 1342 0.1 3 2039 1.2 37	18 W	0257 0.1 3 0909 1.1 34 1455 0.2 6 2102 1.2 37	3 F	0303 0.2 6 0925 1.1 34 1508 0.5 15 2059 1.1 34	18 Sa	0348 0.1 3 1049 1.3 40 1641 0.6 18 2152 1.1 34	3 M	0344 0.0 0 1053 1.4 43 1654 0.7 21 2140 1.0 30	18 Tu	0439 0.2 6 1204 1.3 40 1814 0.6 18 2258 0.9 27
4 W	0315 0.2 6 0850 0.8 24 1428 0.2 6 2110 1.1 34	19 Th	0344 0.0 0 1016 1.1 34 1556 0.4 12 2144 1.2 37	4 Sa	0340 0.1 3 1023 1.2 37 1606 0.6 18 2131 1.1 34	19 Su	0435 0.1 3 1150 1.3 40 1745 0.7 21 2237 1.0 30	4 Tu	0437 0.0 0 1156 1.4 43 1801 0.7 21 2237 1.0 30	19 W	0536 0.2 6 1304 1.2 37 1916 0.6 18
5 Th	0350 0.1 3 0949 0.8 24 1522 0.3 9 2142 1.0 30	20 F	0431 0.0 0 1123 1.1 34 1702 0.5 15 2227 1.1 34	5 Su	0422 0.0 0 1124 1.3 40 1712 0.7 21 2209 1.0 30	20 M	0525 0.1 3 1251 1.3 40 1853 0.7 21 2327 1.0 30	5 W	0538 0.0 0 1300 1.4 43 1910 0.7 21 2348 1.0 30	20 Th	0001 0.9 27 0638 0.3 9 1400 1.2 37 2012 0.6 18
6 F	0427 0.1 3 1052 0.9 27 1624 0.4 12 2216 1.0 30	21 Sa	0519 0.0 0 1228 1.2 37 1813 0.6 18 2313 1.0 30	6 M	0509 0.0 0 1227 1.3 40 1825 0.7 21 2256 1.0 30	21 Tu	0618 0.2 6 1351 1.3 40 1959 0.7 21	6 Th	0644 0.0 0 1401 1.4 43 2015 0.7 21	21 F	0110 0.9 27 0741 0.3 9 1450 1.2 37 2101 0.6 18
7 Sa	0506 0.0 0 1156 1.0 30 1736 0.5 15 2253 0.9 27	22 Su	0607 0.0 0 1331 1.2 37 1926 0.6 18	7 Tu	0603 -0.1 -3 1331 1.4 43 1939 0.8 24 2355 1.0 30	22 W	0023 0.9 27 0713 0.2 6 1447 1.3 40 2059 0.7 21	7 F	0110 1.0 30 0752 0.1 3 1457 1.4 43 2112 0.6 18	22 Sa	0217 1.0 30 0840 0.3 9 1534 1.2 37 2142 0.5 15
8 Su	0550 -0.1 -3 1300 1.1 34 1854 0.6 18 2336 0.9 27	23 M	0002 0.9 27 0656 0.0 0 1428 1.3 40 2036 0.6 18	8 W	0702 -0.1 -3 1432 1.4 43 2047 0.7 21	23 Th	0124 0.9 27 0808 0.2 6 1536 1.3 40 2150 0.7 21	8 Sa	0230 1.1 34 0858 0.1 3 1547 1.4 43 2202 0.5 15	23 Su	0317 1.0 30 0934 0.3 9 1611 1.2 37 2219 0.4 12
9 M	0637 -0.2 -6 1401 1.2 37 2011 0.6 18	24 Tu	0054 0.8 24 0745 0.0 0 1521 1.3 40 2138 0.6 18	9 Th	0105 1.0 30 0803 -0.1 -3 1528 1.5 46 2145 0.7 21	24 F	0226 0.9 27 0900 0.2 6 1619 1.3 40 2232 0.6 18	9 Su	0343 1.2 37 1001 0.1 3 1633 1.4 43 2249 0.3 9	24 M	0410 1.1 34 1023 0.3 9 1645 1.2 37 2252 0.3 9
10 Tu	0027 0.8 24 0728 -0.2 -6 1459 1.3 40 2120 0.6 18	25 W	0148 0.8 24 0833 0.0 0 1609 1.3 40 2230 0.6 18	10 F	0221 1.0 30 0905 -0.1 -3 1619 1.5 46 2236 0.6 18	25 Sa	0324 1.0 30 0949 0.2 6 1657 1.3 40 2309 0.5 15	10 M	0449 1.2 37 1059 0.2 6 1716 1.3 40 2333 0.2 6	25 Tu	0457 1.2 37 1110 0.4 12 1716 1.1 34 2323 0.3 9
11 W	0125 0.8 24 0822 -0.3 -9 1553 1.4 43 2218 0.6 18	26 Th	0242 0.8 24 0919 0.0 0 1651 1.4 43 2313 0.6 18	11 Sa	0335 1.0 30 1005 -0.1 -3 1705 1.5 46 2323 0.5 15	26 Su	0418 1.0 30 1034 0.3 9 1730 1.3 40 2342 0.5 15	11 Tu	0548 1.3 40 1155 0.2 6 1757 1.3 40	26 W	0541 1.2 37 1154 0.4 12 1745 1.1 34 2354 0.2 6
12 Th	0230 0.8 24 0918 -0.3 -9 1643 1.5 46 2308 0.5 15	27 F	0335 0.8 24 1003 0.1 3 1729 1.4 43 2351 0.5 15	12 Su	0445 1.1 34 1103 0.0 0 1749 1.5 46	27 M	0507 1.0 30 1116 0.3 9 1800 1.3 40	12 W	0015 0.2 6 0643 1.4 43 1248 0.3 9 1837 1.3 40	27 Th	0623 1.3 40 1237 0.4 12 1814 1.1 34
13 F	0337 0.8 24 1014 -0.3 -9 1731 1.5 46 2355 0.4 12	28 Sa	0425 0.8 24 1045 0.1 3 1804 1.4 43	13 M	0008 0.4 12 0550 1.2 37 1159 0.1 3 1830 1.4 43	28 Tu	0013 0.4 12 0554 1.1 34 1158 0.3 9 1828 1.3 40	13 Th	0057 0.1 3 0735 1.4 43 1339 0.4 12 1916 1.2 37	28 F	0026 0.1 3 0706 1.4 43 1321 0.5 15 1843 1.0 30
14 Sa	0443 0.9 27 1110 -0.3 -9 1816 1.5 46	29 Su	0025 0.5 15 0514 0.9 27 1125 0.1 3 1835 1.3 40	14 Tu	0052 0.3 9 0652 1.2 37 1254 0.2 6 1910 1.4 43	29 W	0042 0.3 9 0639 1.2 37 1240 0.4 12 1855 1.2 37	14 F	0138 0.1 3 0826 1.4 43 1430 0.4 12 1956 1.1 34	29 Sa	0100 0.1 3 0751 1.4 43 1406 0.5 15 1915 1.0 30
15 Su	0040 0.3 9 0550 0.9 27 1205 -0.2 -6 1859 1.4 43	30 M	0058 0.4 12 0603 0.9 27 1205 0.2 6 1905 1.3 40	15 W	0136 0.2 6 0752 1.3 40 1348 0.3 9 1950 1.3 40	30 Th	0112 0.3 9 0724 1.2 37 1324 0.4 12 1922 1.2 37	15 Sa	0219 0.1 3 0917 1.4 43 1522 0.5 15 2036 1.1 34	30 Su	0139 0.0 0 0839 1.4 43 1453 0.6 18 1951 1.0 30
		31 Tu	0129 0.4 12 0651 0.9 27 1246 0.2 6 1933 1.3 40			31 F	0143 0.2 6 0811 1.3 40 1410 0.5 15 1950 1.1 34				

Time meridian 165° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Sand Island, Midway Islands, 2018

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm
1 M	0224 0.0 0 0930 1.4 43 1544 0.6 18 2035 1.0 30	16 Tu	0302 0.1 3 1020 1.3 40 1642 0.5 15 2135 0.9 27	1 Th	0356 0.1 3 1052 1.3 40 1724 0.4 12 2258 0.9 27	16 F	0407 0.3 9 1106 1.1 34 1743 0.3 9 2327 0.8 24	1 Sa	0456 0.3 9 1108 1.2 37 1755 0.1 3	16 Su	0432 0.5 15 1048 1.1 34 1736 0.2 6
2 Tu	0315 0.0 0 1025 1.4 43 1640 0.6 18 2130 1.0 30	17 W	0353 0.2 6 1112 1.2 37 1735 0.5 15 2235 0.8 24	2 F	0506 0.2 6 1147 1.2 37 1822 0.3 9	17 Sa	0513 0.4 12 1151 1.0 30 1829 0.3 9	2 Su	0032 1.1 34 0613 0.4 12 1158 1.1 34 1847 0.1 3	17 M	0010 1.0 30 0545 0.6 18 1127 1.0 30 1818 0.1 3
3 W	0413 0.0 0 1124 1.3 40 1742 0.6 18 2240 0.9 27	18 Th	0451 0.3 9 1206 1.1 34 1830 0.5 15 2345 0.8 24	3 Sa	0024 1.0 30 0623 0.3 9 1242 1.1 34 1917 0.2 6	18 Su	0040 0.9 27 0627 0.5 15 1237 1.0 30 1913 0.2 6	3 M	0145 1.2 37 0732 0.5 15 1251 1.0 30 1938 0.0 0	18 Tu	0114 1.1 34 0704 0.6 18 1209 1.0 30 1900 0.1 3
4 Th	0519 0.1 3 1225 1.3 40 1845 0.6 18	19 F	0557 0.3 9 1259 1.1 34 1921 0.4 12	4 Su	0144 1.1 34 0740 0.3 9 1335 1.1 34 2009 0.1 3	19 M	0146 1.0 30 0743 0.5 15 1322 0.9 27 1954 0.1 3	4 Tu	0248 1.3 40 0847 0.5 15 1344 0.9 27 2025 0.0 0	19 W	0213 1.2 37 0822 0.7 21 1255 0.9 27 1944 0.0 0
5 F	0003 1.0 30 0632 0.1 3 1324 1.3 40 1946 0.5 15	20 Sa	0059 0.9 27 0708 0.4 12 1349 1.1 34 2008 0.4 12	5 M	0253 1.2 37 0853 0.4 12 1427 1.0 30 2057 0.0 0	20 Tu	0244 1.1 34 0853 0.5 15 1406 0.9 27 2033 0.0 0	5 W	0342 1.4 43 0952 0.5 15 1436 0.9 27 2110 -0.1 -3	20 Th	0307 1.4 43 0930 0.6 18 1344 0.9 27 2030 -0.1 -3
6 Sa	0129 1.0 30 0745 0.2 6 1419 1.2 37 2040 0.4 12	21 Su	0207 1.0 30 0815 0.4 12 1433 1.0 30 2049 0.3 9	6 Tu	0352 1.3 40 0958 0.4 12 1516 1.0 30 2141 0.0 0	21 W	0334 1.2 37 0954 0.5 15 1447 0.9 27 2112 0.0 0	6 Th	0430 1.4 43 1049 0.5 15 1525 0.9 27 2152 -0.1 -3	21 F	0356 1.5 46 1028 0.6 18 1436 0.9 27 2118 -0.2 -6
7 Su	0245 1.1 34 0855 0.2 6 1509 1.2 37 2129 0.2 6	22 M	0305 1.0 30 0916 0.4 12 1513 1.0 30 2126 0.2 6	7 W	0443 1.4 43 1055 0.4 12 1602 0.9 27 2223 -0.1 -3	22 Th	0420 1.4 43 1048 0.5 15 1528 0.8 24 2152 -0.1 -3	7 F	0514 1.5 46 1138 0.5 15 1612 0.8 24 2232 0.0 0	22 Sa	0444 1.6 49 1117 0.6 18 1530 0.9 27 2207 -0.2 -6
8 M	0351 1.2 37 0959 0.3 9 1556 1.2 37 2215 0.1 3	23 Tu	0356 1.2 37 1011 0.4 12 1550 1.0 30 2200 0.1 3	8 Th	0529 1.4 43 1146 0.4 12 1646 0.9 27 2302 -0.1 -3	23 F	0504 1.5 46 1137 0.5 15 1610 0.8 24 2233 -0.2 -6	8 Sa	0555 1.5 46 1223 0.5 15 1656 0.8 24 2311 0.0 0	23 Su	0530 1.6 49 1201 0.6 18 1626 0.9 27 2257 -0.2 -6
9 Tu	0449 1.3 40 1057 0.3 9 1640 1.1 34 2257 0.1 3	24 W	0441 1.3 40 1101 0.4 12 1624 0.9 27 2234 0.0 0	9 F	0612 1.5 46 1234 0.4 12 1728 0.9 27 2340 -0.1 -3	24 Sa	0548 1.5 46 1221 0.5 15 1653 0.8 24 2317 -0.2 -6	9 Su	0634 1.5 46 1304 0.4 12 1738 0.8 24 2350 0.0 0	24 M	0614 1.6 49 1244 0.5 15 1725 0.9 27 2349 -0.2 -6
10 W	0541 1.4 43 1151 0.3 9 1722 1.1 34 2338 0.0 0	25 Th	0524 1.4 43 1148 0.4 12 1658 0.9 27 2309 0.0 0	10 Sa	0653 1.5 46 1318 0.4 12 1808 0.8 24	25 Su	0632 1.6 49 1304 0.5 15 1739 0.8 24	10 M	0712 1.4 43 1342 0.4 12 1821 0.8 24	25 Tu	0658 1.6 49 1326 0.5 15 1827 1.0 30
11 Th	0628 1.4 43 1241 0.3 9 1802 1.0 30	26 F	0606 1.4 43 1232 0.4 12 1731 0.9 27 2346 -0.1 -3	11 Su	0019 0.0 0 0734 1.4 43 1400 0.4 12 1848 0.8 24	26 M	0003 -0.2 -6 0717 1.5 46 1347 0.4 12 1831 0.9 27	11 Tu	0029 0.1 3 0748 1.4 43 1419 0.4 12 1906 0.8 24	26 W	0042 -0.1 -3 0740 1.5 46 1410 0.4 12 1932 1.0 30
12 F	0017 0.0 0 0714 1.5 46 1329 0.4 12 1842 1.0 30	27 Sa	0649 1.5 46 1316 0.4 12 1807 0.9 27	12 M	0057 0.0 0 0814 1.4 43 1443 0.4 12 1930 0.8 24	27 Tu	0052 -0.2 -6 0801 1.5 46 1432 0.4 12 1929 0.9 27	12 W	0109 0.1 3 0824 1.4 43 1457 0.4 12 1957 0.8 24	27 Th	0137 0.0 0 0822 1.5 46 1456 0.3 9 2041 1.0 30
13 Sa	0056 0.0 0 0759 1.4 43 1416 0.4 12 1921 0.9 27	28 Su	0026 -0.1 -3 0733 1.5 46 1400 0.5 15 1847 0.9 27	13 Tu	0138 0.1 3 0856 1.3 40 1525 0.4 12 2017 0.8 24	28 W	0145 -0.1 -3 0847 1.4 43 1519 0.4 12 2035 0.9 27	13 Th	0151 0.2 6 0859 1.3 40 1535 0.4 12 2052 0.8 24	28 F	0235 0.2 6 0904 1.4 43 1543 0.2 6 2154 1.1 34
14 Su	0135 0.0 0 0844 1.4 43 1503 0.4 12 2002 0.9 27	29 M	0111 -0.1 -3 0820 1.5 46 1445 0.5 15 1933 0.9 27	14 W	0222 0.1 3 0938 1.2 37 1610 0.4 12 2111 0.8 24	29 Th	0242 0.0 0 0933 1.4 43 1609 0.3 9 2150 0.9 27	14 F	0238 0.3 9 0934 1.2 37 1614 0.3 9 2155 0.9 27	29 Sa	0337 0.3 9 0947 1.3 40 1633 0.1 3 2309 1.1 34
15 M	0217 0.1 3 0930 1.3 40 1551 0.5 15 2045 0.9 27	30 Tu	0200 -0.1 -3 0908 1.4 43 1534 0.5 15 2029 0.9 27	15 Th	0311 0.2 6 1021 1.2 37 1656 0.4 12 2215 0.8 24	30 F	0345 0.2 6 1019 1.3 40 1701 0.2 6 2312 1.0 30	15 Sa	0330 0.4 12 1010 1.2 37 1655 0.3 9 2302 0.9 27	30 Su	0445 0.5 15 1031 1.2 37 1723 0.1 3
		31 W	0255 0.0 0 0959 1.3 40 1627 0.4 12 2137 0.9 27							31 M	0022 1.2 37 0600 0.6 18 1119 1.1 34 1814 0.0 0

Time meridian 165° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Nawiliwili, Kauai Island, Hawaii, 2018

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>
1 Su	0053 0.4 12 0518 0.7 21 1040 0.1 3 1815 1.9 58	16 M	0108 0.2 6 0626 0.9 27 1139 0.2 6 1851 2.0 61	1 W	0101 0.3 9 0648 1.0 30 1157 0.5 15 1834 1.6 49	16 Th	0127 0.2 6 0826 1.4 43 1350 0.8 24 1924 1.3 40	1 Sa	0110 0.3 9 0837 1.5 46 1443 0.9 27 1851 1.1 34	16 Su	0142 0.4 12 1005 1.7 52 1851 0.7 21 2132 0.8 24
2 M	0131 0.4 12 0613 0.7 21 1119 0.2 6 1849 1.8 55	17 Tu	0152 0.2 6 0744 1.0 30 1238 0.4 12 1934 1.7 52	2 Th	0136 0.3 9 0802 1.1 34 1257 0.7 21 1904 1.4 43	17 F	0209 0.2 6 0947 1.5 46 1549 0.9 27 2008 1.0 30	2 Su	0158 0.3 9 1001 1.7 52 1708 0.8 24 1950 0.9 27	17 M	0248 0.5 15 1115 1.7 52 1926 0.6 18 2324 0.8 24
3 Tu	0210 0.3 9 0727 0.7 21 1205 0.4 12 1923 1.6 49	18 W	0236 0.2 6 0912 1.1 34 1353 0.7 21 2017 1.5 46	3 F	0215 0.2 6 0928 1.2 37 1425 0.9 27 1938 1.2 37	18 Sa	0257 0.3 9 1103 1.6 49 1845 0.8 24 2126 0.9 27	3 M	0301 0.2 6 1115 1.8 55 1857 0.7 21 2212 0.8 24	18 Tu	0408 0.5 15 1212 1.8 55 1948 0.6 18
4 W	0248 0.3 9 0859 0.8 24 1305 0.6 18 1959 1.5 46	19 Th	0321 0.1 3 1037 1.3 40 1540 0.8 24 2105 1.2 37	4 Sa	0259 0.2 6 1047 1.4 43 1630 0.9 27 2027 1.1 34	19 Su	0352 0.3 9 1205 1.7 52 1959 0.7 21 2308 0.8 24	4 Tu	0412 0.2 6 1216 2.0 61 1939 0.6 18 2349 0.8 24	19 W	0025 0.9 27 0521 0.5 15 1257 1.8 55 2006 0.5 15
5 Th	0326 0.2 6 1028 1.0 30 1433 0.8 24 2040 1.3 40	20 F	0405 0.1 3 1147 1.5 46 1800 0.9 27 2203 1.0 30	5 Su	0349 0.1 3 1151 1.7 52 1839 0.8 24 2153 0.9 27	20 M	0451 0.3 9 1254 1.8 55 2031 0.6 18	5 W	0522 0.1 3 1307 2.1 64 2012 0.5 15	20 Th	0107 1.0 30 0618 0.4 12 1334 1.9 58 2022 0.5 15
6 F	0404 0.1 3 1134 1.2 37 1625 0.8 24 2131 1.2 37	21 Sa	0448 0.1 3 1241 1.7 52 1949 0.8 24 2310 0.9 27	6 M	0443 0.0 0 1243 1.9 58 1952 0.7 21 2327 0.8 24	21 Tu	0020 0.8 24 0546 0.2 6 1335 1.9 58 2053 0.6 18	6 Th	0053 0.9 27 0624 0.0 0 1352 2.2 67 2042 0.4 12	21 F	0141 1.1 34 0704 0.3 9 1407 1.9 58 2038 0.4 12
7 Sa	0443 0.0 0 1224 1.5 46 1815 0.8 24 2232 1.0 30	22 Su	0530 0.1 3 1325 1.8 55 2047 0.7 21	7 Tu	0539 -0.1 -3 1331 2.1 64 2037 0.6 18	22 W	0110 0.9 27 0635 0.2 6 1411 2.0 61 2112 0.5 15	7 F	0145 1.1 34 0720 0.0 0 1434 2.3 70 2112 0.3 9	22 Sa	0213 1.2 37 0745 0.3 9 1435 1.9 58 2057 0.4 12
8 Su	0524 -0.1 -3 1309 1.8 55 1939 0.7 21 2338 0.9 27	23 M	0015 0.8 24 0611 0.0 0 1403 2.0 61 2123 0.6 18	8 W	0040 0.8 24 0633 -0.1 -3 1415 2.3 70 2115 0.5 15	23 Th	0149 0.9 27 0717 0.1 3 1443 2.0 61 2131 0.5 15	8 Sa	0232 1.2 37 0812 0.0 0 1513 2.2 67 2141 0.3 9	23 Su	0244 1.3 40 0824 0.3 9 1502 1.8 55 2117 0.3 9
9 M	0606 -0.2 -6 1351 2.0 61 2041 0.6 18	24 Tu	0108 0.8 24 0650 0.0 0 1437 2.0 61 2150 0.5 15	9 Th	0139 0.9 27 0725 -0.2 -6 1458 2.4 73 2150 0.4 12	24 F	0223 1.0 30 0756 0.1 3 1513 2.0 61 2150 0.5 15	9 Su	0318 1.4 43 0902 0.0 0 1549 2.1 64 2211 0.2 6	24 M	0317 1.5 46 0903 0.3 9 1528 1.7 52 2140 0.2 6
10 Tu	0041 0.8 24 0650 -0.3 -9 1433 2.2 67 2130 0.5 15	25 W	0152 0.8 24 0729 0.0 0 1510 2.1 64 2214 0.5 15	10 F	0232 0.9 27 0815 -0.2 -6 1539 2.4 73 2225 0.3 9	25 Sa	0256 1.1 34 0833 0.1 3 1541 2.0 61 2211 0.4 12	10 M	0404 1.5 46 0951 0.1 3 1624 1.9 58 2241 0.2 6	25 Tu	0352 1.6 49 0943 0.3 9 1553 1.6 49 2205 0.2 6
11 W	0138 0.8 24 0736 -0.3 -9 1516 2.4 73 2215 0.4 12	26 Th	0231 0.8 24 0806 0.0 0 1541 2.1 64 2238 0.5 15	11 Sa	0322 1.0 30 0904 -0.2 -6 1619 2.3 70 2300 0.3 9	26 Su	0330 1.1 34 0910 0.1 3 1608 2.0 61 2235 0.4 12	11 Tu	0451 1.6 49 1041 0.3 9 1658 1.7 52 2312 0.2 6	26 W	0429 1.6 49 1027 0.4 12 1619 1.5 46 2232 0.2 6
12 Th	0232 0.8 24 0822 -0.4 -12 1559 2.5 76 2259 0.3 9	27 F	0306 0.8 24 0842 0.0 0 1612 2.1 64 2303 0.4 12	12 Su	0413 1.1 34 0952 -0.1 -3 1658 2.2 67 2335 0.2 6	27 M	0405 1.2 37 0947 0.2 6 1634 1.9 58 2300 0.3 9	12 W	0541 1.6 49 1134 0.5 15 1730 1.5 46 2343 0.2 6	27 Th	0510 1.7 52 1116 0.5 15 1646 1.4 43 2302 0.2 6
13 F	0325 0.8 24 0909 -0.3 -9 1642 2.4 73 2342 0.3 9	28 Sa	0342 0.9 27 0918 0.0 0 1642 2.1 64 2329 0.4 12	13 M	0507 1.2 37 1042 0.1 3 1736 2.0 61	28 Tu	0444 1.3 40 1025 0.3 9 1659 1.8 55 2327 0.3 9	13 Th	0635 1.7 52 1235 0.6 18 1801 1.2 37	28 F	0557 1.8 55 1214 0.6 18 1714 1.2 37 2335 0.2 6
14 Sa	0420 0.8 24 0957 -0.2 -6 1726 2.3 70	29 Su	0419 0.9 27 0954 0.1 3 1710 2.0 61 2358 0.4 12	14 Tu	0011 0.2 6 0605 1.2 37 1134 0.3 9 1812 1.8 55	29 W	0528 1.3 40 1109 0.4 12 1724 1.6 49 2357 0.3 9	14 F	0017 0.2 6 0736 1.7 52 1355 0.8 24 1833 1.0 30	29 Sa	0653 1.8 55 1329 0.7 21 1746 1.0 30
15 Su	0025 0.2 6 0519 0.8 24 1046 -0.1 -3 1809 2.2 67	30 M	0501 0.9 27 1031 0.2 6 1739 1.9 58	15 W	0048 0.2 6 0710 1.3 40 1234 0.6 18 1848 1.5 46	30 Th	0618 1.4 43 1200 0.6 18 1751 1.4 43	15 Sa	0054 0.3 9 0848 1.7 52 1609 0.8 24 1915 0.9 27	30 Su	0015 0.2 6 0802 1.8 55 1517 0.7 21 1829 0.8 24
		31 Tu	0029 0.4 12 0549 0.9 27 1110 0.3 9 1806 1.8 55			31 F	0030 0.3 9 0720 1.4 43 1306 0.8 24 1818 1.2 37				

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Nawiliwili, Kauai Island, Hawaii, 2018

Times and Heights of High and Low Waters

October				November				December						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm
1 M	0108	0.3	9		16 Tu	0135	0.6	18		1 Th	0330	0.5	15	
	0922	1.9	58			1013	1.7	52			1105	1.9	58	
	1732	0.6	18			1833	0.6	18		16 F	0345	0.7	21	
	2036	0.7	21			2324	0.8	24			1056	1.6	49	
											1807	0.3	9	
2 Tu	0220	0.3	9		17 W	0311	0.6	18		2 F	0015	1.1	34	
	1039	1.9	58			1115	1.7	52			0504	0.5	15	
	1832	0.6	18			1853	0.5	15		17 Sa	0037	1.1	34	
	2254	0.8	24								0515	0.8	24	
											1141	1.5	46	
											1827	0.3	9	
3 W	0349	0.4	12		18 Th	0018	0.9	27		3 Sa	0104	1.3	40	
	1144	2.0	61			0443	0.6	18			0621	0.5	15	
	1905	0.5	15			1205	1.7	52			1245	1.7	52	
						1910	0.5	15			1919	0.1	3	
4 Th	0009	0.9	27		19 F	0055	1.1	34		4 Su	0148	1.5	46	
	0512	0.3	9			0552	0.6	18			0726	0.5	15	
	1237	2.0	61			1245	1.7	52			1326	1.6	49	
	1934	0.4	12			1926	0.4	12			1945	0.0	0	
5 F	0102	1.1	34		20 Sa	0128	1.2	37		5 M	0227	1.8	55	
	0621	0.3	9			0646	0.5	15			0823	0.5	15	
	1322	2.0	61			1319	1.7	52			1403	1.5	46	
	2002	0.3	9			1944	0.3	9			2011	0.0	0	
6 Sa	0148	1.3	40		21 Su	0159	1.4	43		6 Tu	0305	1.9	58	
	0720	0.2	6			0733	0.5	15			0915	0.5	15	
	1403	2.0	61			1349	1.6	49			1437	1.3	40	
	2028	0.2	6			2004	0.2	6			2037	-0.1	-3	
7 Su	0231	1.5	46		22 M	0231	1.6	49		7 W	0343	2.1	64	
	0814	0.2	6			0817	0.5	15			1005	0.5	15	
	1439	1.9	58			1417	1.6	49			1510	1.2	37	
	2055	0.1	3			2026	0.1	3			2104	-0.1	-3	
8 M	0313	1.7	52		23 Tu	0304	1.7	52		8 Th	0419	2.1	64	
	0904	0.3	9			0901	0.4	12			1055	0.5	15	
	1514	1.7	52			1444	1.5	46			1542	1.0	30	
	2122	0.1	3			2051	0.1	3			2132	0.0	0	
9 Tu	0354	1.8	55		24 W	0338	1.9	58		9 F	0457	2.2	67	
	0954	0.3	9			0946	0.5	15			1146	0.5	15	
	1546	1.5	46			1513	1.3	40			1614	0.9	27	
	2149	0.1	3			2118	0.0	0			2200	0.0	0	
10 W	0435	1.9	58		25 Th	0416	2.0	61		10 Sa	0536	2.1	64	
	1045	0.4	12			1035	0.5	15			1243	0.6	18	
	1617	1.3	40			1543	1.2	37			1648	0.8	24	
	2217	0.1	3			2147	0.0	0			2231	0.1	3	
11 Th	0517	1.9	58		26 F	0456	2.1	64		11 Su	0618	2.0	61	
	1139	0.5	15			1129	0.5	15			1349	0.6	18	
	1648	1.2	37			1615	1.1	34			1728	0.7	21	
	2245	0.1	3			2220	0.0	0			2304	0.3	9	
12 F	0602	1.9	58		27 Sa	0543	2.1	64		12 M	0706	1.9	58	
	1241	0.6	18			1233	0.6	18			1511	0.5	15	
	1718	1.0	30			1651	0.9	27			1836	0.6	18	
	2315	0.2	6			2256	0.1	3			2342	0.4	12	
13 Sa	0652	1.9	58		28 Su	0636	2.1	64		13 Tu	0801	1.8	55	
	1400	0.7	21			1351	0.6	18			1632	0.5	15	
	1751	0.8	24			1736	0.8	24			2059	0.6	18	
	2348	0.3	9			2339	0.2	6						
14 Su	0751	1.8	55		29 M	0738	2.0	61		14 W	0035	0.5	15	
	1606	0.6	18			1529	0.6	18			0902	1.7	52	
	1847	0.7	21			1857	0.7	21			1718	0.5	15	
											2255	0.8	24	
15 M	0030	0.4	12		30 Tu	0034	0.3	9		15 Th	0200	0.7	21	
	0900	1.7	52			0849	2.0	61			1003	1.6	49	
	1801	0.6	18			1657	0.5	15			1745	0.4	12	
	2139	0.7	21			2125	0.7	21			2356	0.9	27	
					31 W	0151	0.4	12						
						1000	1.9	58						
						1747	0.4	12						
						2310	0.8	24						
					31 M	0045	1.6	49						
						0659	0.8	24						
						1120	1.0	30						
						1751	-0.1	-3						

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Honolulu, Oahu Island, Hawaii, 2018

Times and Heights of High and Low Waters

January				February				March																		
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height															
<small>h</small>	<small>m</small>	<small>ft</small>	<small>cm</small>	<small>h</small>	<small>m</small>	<small>ft</small>	<small>cm</small>	<small>h</small>	<small>m</small>	<small>ft</small>	<small>cm</small>															
1 M	0345 1053 1532 2106	2.6 0.0 0.8 -0.4	79 0 24 -12	16 Tu	0402 1108 1546 2114	2.2 0.2 0.7 -0.2	67 6 21 -6	1 Th	0455 1152 1710 2238	2.4 -0.1 0.9 -0.2	73 -3 27 -6	16 F	0438 1123 1648 2222	2.0 0.0 1.0 -0.1	61 0 30 -3	1 Th	0351 1034 1608 2149	2.2 -0.2 1.1 -0.3	67 -6 34 -9	16 F	0336 1006 1553 2140	1.8 -0.1 1.2 -0.1	55 -3 37 -3			
2 Tu	0430 1141 1626 2152	2.7 0.0 0.7 -0.4	82 0 21 -12	17 W	0433 1139 1624 2149	2.2 0.1 0.7 -0.1	67 3 21 -3	2 F	0536 1230 1803 2329	2.2 -0.1 1.0 0.0	67 -3 30 0	17 Sa	0508 1151 1729 2303	1.9 0.0 1.1 0.0	58 0 34 0	2 F	0429 1106 1653 2238	2.0 -0.2 1.2 -0.1	61 -6 37 -3	17 Sa	0406 1031 1630 2223	1.7 -0.1 1.3 0.0	52 -3 40 0			
3 W	0515 1229 1722 2240	2.6 0.0 0.7 -0.2	79 0 21 -6	18 Th	0505 1211 1704 2224	2.2 0.1 0.8 -0.1	67 3 24 -3	3 Sa	0615 1308 1901	2.0 -0.1 1.1	61 -3 34	18 Su	0539 1220 1815 2350	1.8 0.0 1.1 0.2	55 0 34 6	3 Sa	0506 1137 1739 2328	1.8 -0.2 1.3 0.0	55 -6 40 0	18 Su	0437 1058 1710 2309	1.6 -0.2 1.5 0.0	49 -6 46 0			
4 Th	0600 1316 1824 2331	2.5 0.0 0.8 0.0	76 0 24 0	19 F	0537 1244 1750 2302	2.1 0.1 0.8 0.1	64 3 24 3	4 Su	0024 0654 1347 2006	0.2 1.7 -0.1 1.2	6 52 -3 37	19 M	0612 1252 1908	1.6 0.0 1.2	49 0 37	4 Su	0542 1208 1826	1.6 -0.1 1.4	49 -3 43	19 M	0509 1126 1753	1.5 -0.2 1.5	46 -6 46			
5 F	0646 1404 1935	2.2 0.0 0.8	67 0 24	20 Sa	0610 1318 1842 2345	2.0 0.1 0.8 0.2	61 3 24 6	5 M	0129 0734 1427 2118	0.4 1.4 0.0 1.3	12 43 0 40	20 Tu	0047 0647 1327 2011	0.4 1.4 0.0 1.3	12 43 0 40	5 M	0022 0617 1240 1918	0.2 1.3 -0.1 1.4	6 40 -3 43	20 Tu	0002 0544 1157 1843	0.2 1.2 -0.2 1.6	6 37 -6 49			
6 Sa	0028 0732 1452 2056	0.2 2.0 0.0 0.9	6 61 0 27	21 Su	0644 1354 1944	1.8 0.1 0.9	55 3 27	6 Tu	0257 0817 1510 2234	0.6 1.1 0.0 1.4	18 34 0 43	21 W	0204 0728 1409 2124	0.5 1.1 0.0 1.4	15 34 0 43	6 Tu	0125 0653 1313 2016	0.4 1.1 0.0 1.4	12 34 0 43	21 W	0105 0623 1232 1940	0.3 1.0 -0.1 1.7	9 30 -3 52			
7 Su	0139 0819 1538 2220	0.5 1.7 0.0 1.1	15 52 0 34	22 M	0039 0721 1432 2057	0.4 1.7 0.0 1.0	12 52 0 30	7 W	0455 0912 1557 2341	0.7 0.9 0.1 1.5	21 27 3 46	22 Th	0351 0824 1500 2241	0.6 0.9 0.0 1.6	18 27 0 49	7 W	0246 0735 1351 2123	0.5 0.9 0.1 1.4	15 27 3 43	22 Th	0227 0712 1315 2048	0.4 0.8 -0.1 1.7	12 24 -3 52			
8 M	0313 0909 1622 2333	0.7 1.4 0.0 1.3	21 43 0 40	23 Tu	0153 0803 1513 2213	0.6 1.4 0.0 1.2	18 43 0 37	8 Th	0650 1029 1649	0.6 0.7 0.1	18 21 3	23 F	0551 0947 1602 2350	0.5 0.7 -0.1 1.8	15 21 -3 55	8 Th	0437 0835 1439 2236	0.5 0.7 0.2 1.5	15 21 6 46	23 F	0411 0823 1412 2204	0.3 0.6 0.0 1.7	9 18 0 52			
9 Tu	0507 1005 1704	0.8 1.2 0.0	24 37 0	24 W	0339 0855 1558 2323	0.7 1.2 0.0 1.5	21 37 0 46	9 F	0036 0800 1153 1740	1.7 0.4 0.6 0.0	52 12 18 0	24 Sa	0715 1126 1710	0.3 0.6 -0.1	9 18 -3	9 F	0626 1016 1545 2343	0.4 0.5 0.2 1.5	12 15 6 46	24 Sa	0549 1010 1528 2318	0.2 0.5 0.0 1.8	6 15 0 55			
10 W	0030 0651 1106 1743	1.6 0.7 1.0 0.0	49 21 30 0	25 Th	0540 1003 1647	0.7 1.0 -0.1	21 30 -3	10 Sa	0121 0842 1257 1829	1.8 0.3 0.6 0.0	55 9 18 0	25 Su	0050 0808 1245 1816	2.0 0.1 0.6 -0.2	61 3 18 -6	10 Sa	0727 1154 1659	0.3 0.5 0.2	9 15 6	25 Su	0654 1149 1654	0.1 0.6 0.0	3 18 0			
11 Th	0114 0805 1208 1820	1.8 0.6 0.8 -0.1	55 18 24 -3	26 F	0021 0714 1122 1738	1.8 0.5 0.8 -0.2	55 15 24 -6	11 Su	0200 0913 1345 1913	1.9 0.2 0.7 -0.1	58 6 21 -3	26 M	0141 0849 1346 1915	2.1 0.0 0.7 -0.3	64 0 21 -9	11 Su	0038 0804 1255 1803	1.6 0.2 0.6 0.1	49 6 18 3	26 M	0021 0739 1257 1810	1.9 0.0 0.7 0.0	58 0 21 0			
12 F	0152 0856 1303 1855	1.9 0.5 0.8 -0.1	58 15 24 -3	27 Sa	0113 0819 1237 1830	2.0 0.3 0.7 -0.3	61 9 21 -9	12 M	0235 0940 1424 1953	1.9 0.2 0.7 -0.1	58 6 21 -3	27 Tu	0228 0926 1436 2009	2.2 -0.1 0.8 -0.3	67 -3 24 -9	12 M	0123 0832 1336 1855	1.7 0.1 0.7 0.0	52 3 21 0	27 Tu	0115 0816 1349 1915	1.9 -0.1 0.9 -0.1	58 -3 27 -3			
13 Sa	0226 0935 1350 1930	2.0 0.3 0.7 -0.1	61 9 21 -3	28 Su	0201 0909 1340 1921	2.3 0.1 0.7 -0.4	70 3 21 -12	13 Tu	0307 1005 1459 2031	2.0 0.1 0.8 -0.2	61 3 24 -6	28 W	0311 1001 1523 2100	2.2 -0.2 1.0 -0.3	67 -6 30 -9	13 Tu	0201 0856 1411 1940	1.8 0.1 0.8 0.0	55 3 24 0	28 W	0202 0848 1433 2011	1.9 -0.2 1.1 -0.1	58 -6 34 -3			
14 Su	0259 1008 1431 2005	2.1 0.3 0.7 -0.1	64 9 21 -3	29 M	0247 0953 1436 2011	2.4 0.0 0.7 -0.4	73 0 21 -12	14 W	0338 1031 1534 2107	2.0 0.1 0.8 -0.2	61 3 24 -6	14 W	0234 0919 1445 2021	1.8 0.0 0.9 -0.1	55 0 27 -3	14 W	0234 0919 1445 2021	1.8 0.0 0.9 -0.1	55 0 27 -3	29 Th	0244 0919 1515 2103	1.9 -0.2 1.3 -0.1	58 -6 40 -3			
15 M	0330 1038 1509 2039	2.2 0.2 0.7 -0.2	67 6 21 -6	30 Tu	0331 1034 1528 2101	2.5 -0.1 0.8 -0.4	76 -3 24 -12	15 Th	0409 1056 1609 2144	2.0 0.0 0.9 -0.2	61 0 27 -6	15 Th	0305 0943 1518 2100	1.8 0.0 1.1 -0.1	55 0 34 -3	15 Th	0305 0943 1518 2100	1.8 0.0 1.1 -0.1	55 0 34 -3	30 F	0322 0947 1555 2152	1.8 -0.3 1.5 -0.1	55 -9 46 -3			
				31 W	0414 1113 1619 2149	2.5 -0.1 0.9 -0.4	76 -3 27 -12																31 Sa	0358 1015 1634 2240	1.6 -0.3 1.6 0.0	49 -9 49 0

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Honolulu, Oahu Island, Hawaii, 2018

Times and Heights of High and Low Waters

April					May					June				
Time	Height	Time	Height		Time	Height	Time	Height	Time	Height	Time	Height		
<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>		<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>		
1 Su	0433 1.4 43 1043 -0.2 -6 1714 1.7 52 2330 0.1 3	16 M	0405 1.3 40 1008 -0.3 -9 1652 1.9 58 2320 0.1 3		1 Tu	0436 0.9 27 1017 -0.2 -6 1726 2.0 61	16 W	0422 0.8 24 1003 -0.4 -12 1721 2.3 70	1 F	0108 0.1 3 0536 0.5 15 1040 0.0 0 1818 2.0 61	16 Sa	0121 0.0 0 0609 0.6 18 1115 -0.1 -3 1846 2.4 73		
2 M	0507 1.2 37 1110 -0.2 -6 1754 1.7 52	17 Tu	0443 1.1 34 1039 -0.3 -9 1735 2.0 61		2 W	0025 0.2 6 0514 0.7 21 1044 -0.1 -3 1805 1.9 58	17 Th	0030 0.0 0 0512 0.7 21 1042 -0.3 -9 1810 2.3 70	2 Sa	0157 0.1 3 0630 0.5 15 1116 0.1 3 1900 1.9 58	17 Su	0216 -0.1 -3 0723 0.6 18 1212 0.1 3 1937 2.2 67		
3 Tu	0023 0.2 6 0543 1.0 30 1137 -0.1 -3 1837 1.7 52	18 W	0018 0.1 3 0524 0.9 27 1112 -0.2 -6 1824 2.0 61		3 Th	0121 0.2 6 0556 0.6 18 1113 0.0 0 1847 1.8 55	18 F	0134 0.0 0 0611 0.5 15 1125 -0.2 -6 1903 2.2 67	3 Su	0249 0.1 3 0738 0.5 15 1157 0.2 6 1945 1.8 55	18 M	0309 -0.1 -3 0848 0.7 21 1320 0.3 9 2030 1.9 58		
4 W	0124 0.3 9 0621 0.8 24 1206 0.0 0 1924 1.6 49	19 Th	0126 0.1 3 0612 0.7 21 1151 -0.2 -6 1919 2.0 61		4 F	0224 0.2 6 0650 0.5 15 1146 0.1 3 1935 1.7 52	19 Sa	0242 0.0 0 0727 0.5 15 1218 0.0 0 2001 2.1 64	4 M	0339 0.1 3 0903 0.6 18 1252 0.4 12 2033 1.7 52	19 Tu	0359 -0.1 -3 1016 0.9 27 1449 0.5 15 2125 1.7 52		
5 Th	0238 0.3 9 0708 0.6 18 1239 0.1 3 2020 1.6 49	20 F	0245 0.2 6 0716 0.5 15 1237 -0.1 -3 2023 1.9 58		5 Sa	0333 0.2 6 0806 0.4 12 1227 0.2 6 2030 1.7 52	20 Su	0349 0.0 0 0902 0.5 15 1326 0.2 6 2103 1.9 58	5 Tu	0423 0.1 3 1028 0.7 21 1411 0.5 15 2124 1.6 49	20 W	0445 -0.1 -3 1130 1.2 37 1632 0.7 21 2221 1.5 46		
6 F	0410 0.3 9 0820 0.5 15 1322 0.2 6 2127 1.5 46	21 Sa	0412 0.1 3 0849 0.4 12 1340 0.1 3 2133 1.9 58		6 Su	0439 0.2 6 0951 0.5 15 1329 0.3 9 2130 1.6 49	21 M	0447 -0.1 -3 1039 0.7 21 1457 0.4 12 2206 1.8 55	6 W	0501 0.0 0 1133 0.9 27 1551 0.6 18 2216 1.5 46	21 Th	0525 -0.1 -3 1229 1.5 46 1811 0.7 21 2316 1.2 37		
7 Sa	0537 0.3 9 1014 0.5 15 1432 0.3 9 2237 1.5 46	22 Su	0525 0.0 0 1038 0.5 15 1508 0.2 6 2243 1.8 55		7 M	0530 0.1 3 1120 0.6 18 1504 0.4 12 2231 1.5 46	22 Tu	0535 -0.1 -3 1154 0.9 27 1638 0.5 15 2306 1.6 49	7 Th	0534 0.0 0 1220 1.1 34 1726 0.7 21 2307 1.4 43	22 F	0602 -0.2 -6 1316 1.7 52 1933 0.6 18		
8 Su	0633 0.2 6 1148 0.5 15 1607 0.3 9 2339 1.5 46	23 M	0619 -0.1 -3 1202 0.7 21 1645 0.2 6 2347 1.8 55		8 Tu	0607 0.1 3 1215 0.8 24 1641 0.5 15 2325 1.5 46	23 W	0614 -0.2 -6 1250 1.2 37 1808 0.5 15	8 F	0605 -0.1 -3 1300 1.4 43 1845 0.6 18 2358 1.2 37	23 Sa	0010 1.1 34 0635 -0.2 -6 1356 1.9 58 2037 0.5 15		
9 M	0710 0.1 3 1242 0.7 21 1728 0.3 9	24 Tu	0700 -0.1 -3 1259 0.9 27 1809 0.2 6		9 W	0637 0.0 0 1255 1.0 30 1758 0.4 12	24 Th	0000 1.5 46 0649 -0.2 -6 1335 1.5 46 1923 0.4 12	9 Sa	0635 -0.2 -6 1338 1.7 52 1952 0.5 15	24 Su	0100 0.9 27 0707 -0.2 -6 1432 2.1 64 2128 0.4 12		
10 Tu	0030 1.5 46 0738 0.1 3 1320 0.8 24 1831 0.2 6	25 W	0041 1.7 52 0734 -0.2 -6 1345 1.2 37 1917 0.2 6		10 Th	0012 1.5 46 0704 -0.1 -3 1330 1.2 37 1902 0.4 12	25 F	0049 1.3 40 0719 -0.3 -9 1414 1.7 52 2025 0.4 12	10 Su	0048 1.1 34 0707 -0.3 -9 1417 2.0 61 2051 0.3 9	25 M	0147 0.8 24 0738 -0.2 -6 1505 2.2 67 2211 0.3 9		
11 W	0112 1.6 49 0802 0.0 0 1353 1.0 30 1922 0.1 3	26 Th	0128 1.6 49 0805 -0.3 -9 1426 1.4 43 2016 0.1 3		11 F	0055 1.4 43 0730 -0.2 -6 1404 1.5 46 1957 0.3 9	26 Sa	0133 1.1 34 0747 -0.3 -9 1449 1.9 58 2119 0.3 9	11 M	0138 1.0 30 0742 -0.4 -12 1457 2.2 67 2146 0.2 6	26 Tu	0230 0.7 21 0809 -0.2 -6 1537 2.2 67 2249 0.3 9		
12 Th	0149 1.6 49 0826 -0.1 -3 1426 1.2 37 2008 0.1 3	27 F	0210 1.5 46 0833 -0.3 -9 1504 1.6 49 2108 0.1 3		12 Sa	0135 1.3 40 0756 -0.2 -6 1439 1.7 52 2050 0.2 6	27 Su	0213 1.0 30 0815 -0.3 -9 1523 2.0 61 2207 0.2 6	12 Tu	0227 0.9 27 0819 -0.4 -12 1538 2.4 73 2239 0.1 3	27 W	0311 0.7 21 0841 -0.2 -6 1610 2.2 67 2325 0.2 6		
13 F	0223 1.6 49 0849 -0.1 -3 1459 1.4 43 2053 0.0 0	28 Sa	0248 1.3 40 0859 -0.3 -9 1540 1.8 55 2158 0.1 3		13 Su	0215 1.2 37 0824 -0.3 -9 1515 1.9 58 2142 0.1 3	28 M	0252 0.9 27 0841 -0.3 -9 1556 2.1 64 2252 0.2 6	13 W	0317 0.8 24 0858 -0.4 -12 1622 2.5 76 2332 0.0 0	28 Th	0351 0.7 21 0914 -0.1 -3 1643 2.2 67		
14 Sa	0256 1.5 46 0914 -0.2 -6 1535 1.6 49 2139 0.0 0	29 Su	0324 1.2 37 0925 -0.3 -9 1615 1.9 58 2246 0.1 3		14 M	0255 1.1 34 0854 -0.4 -12 1554 2.1 64 2235 0.1 3	29 Tu	0331 0.8 24 0909 -0.2 -6 1629 2.2 67 2336 0.2 6	14 Th	0409 0.7 21 0940 -0.4 -12 1708 2.5 76	29 F	0001 0.2 6 0432 0.7 21 0949 -0.1 -3 1717 2.2 67		
15 Su	0330 1.4 43 0940 -0.3 -9 1612 1.7 52 2227 0.0 0	30 M	0400 1.0 30 0951 -0.2 -6 1650 2.0 61 2335 0.1 3		15 Tu	0337 1.0 30 0927 -0.4 -12 1636 2.3 70 2331 0.1 3	30 W	0410 0.7 21 0938 -0.2 -6 1703 2.1 64	15 F	0026 0.0 0 0505 0.6 18 1026 -0.3 -9 1756 2.5 76	30 Sa	0038 0.2 6 0515 0.6 18 1024 0.0 0 1753 2.1 64		
							31 Th	0021 0.1 3 0451 0.6 18 1008 -0.1 -3 1740 2.1 64						

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to mean lower low water which is the chart datum of soundings.

Honolulu, Oahu Island, Hawaii, 2018

Times and Heights of High and Low Waters

July				August				September											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 Su	0117	0.2	6		16 M	0133	0.0	0		1 W	0130	0.2	6						
	0604	0.7	21			0703	0.9	27			0721	1.1	34		16 Th	0159	0.1	3	
	1101	0.1	3			1210	0.2	6			1226	0.5	15			0846	1.5	46	
	1829	2.0	61			1908	2.1	64			1902	1.7	52			1439	0.7	21	
														2002		1.3	40		
2 M	0156	0.2	6		17 Tu	0219	0.0	0		2 Th	0204	0.2	6		17 F	0242	0.2	6	
	0701	0.7	21			0816	1.0	30			0826	1.2	37			0959	1.6	49	
	1143	0.3	9			1317	0.4	12			1333	0.7	21			1629	0.8	24	
	1906	1.9	58			1954	1.8	55			1940	1.5	46			2100	1.1	34	
3 Tu	0236	0.1	3		18 W	0304	0.0	0		3 F	0242	0.2	6		18 Sa	0331	0.2	6	
	0809	0.8	24			0936	1.2	37			0937	1.4	43			1110	1.7	52	
	1233	0.4	12			1442	0.7	21			1506	0.8	24			1819	0.7	21	
	1944	1.8	55			2043	1.5	46			2026	1.3	40			2218	0.9	27	
4 W	0314	0.1	3		19 Th	0348	0.0	0		4 Sa	0325	0.1	3		19 Su	0425	0.3	9	
	0924	0.9	27			1052	1.4	43			1047	1.6	49			1210	1.8	55	
	1342	0.6	18			1629	0.8	24			1701	0.8	24			1934	0.6	18	
	2027	1.6	49			2137	1.3	40			2128	1.1	34			2342	0.8	24	
5 Th	0352	0.1	3		20 F	0432	0.0	0		5 Su	0413	0.1	3		20 M	0521	0.3	9	
	1036	1.1	34			1156	1.6	49			1149	1.8	55			1259	1.9	58	
	1516	0.8	24			1818	0.8	24			1841	0.7	21			2020	0.5	15	
	2114	1.4	43			2238	1.1	34			2245	0.9	27						
6 F	0429	0.0	0		21 Sa	0515	0.0	0		6 M	0506	0.0	0		21 Tu	0047	0.8	24	
	1136	1.4	43			1248	1.8	55			1243	2.1	64			0613	0.2	6	
	1704	0.8	24			1942	0.6	18			1950	0.5	15			1341	2.0	61	
	2209	1.3	40			2344	0.9	27								2053	0.4	12	
7 Sa	0507	-0.1	-3		22 Su	0556	0.0	0		7 Tu	0003	0.9	27		22 W	0135	0.9	27	
	1226	1.6	49			1332	2.0	61			0600	-0.1	-3			0659	0.2	6	
	1838	0.7	21			2040	0.5	15			1333	2.3	70			1418	2.1	64	
	2311	1.1	34								2041	0.3	9			2121	0.3	9	
8 Su	0546	-0.1	-3		23 M	0045	0.8	24		8 W	0110	0.8	24		23 Th	0213	0.9	27	
	1311	1.9	58			0636	0.0	0			0653	-0.2	-6			0741	0.1	3	
	1952	0.5	15			1410	2.1	64			1420	2.5	76			1451	2.1	64	
						2122	0.4	12			2125	0.2	6			2146	0.3	9	
9 M	0014	1.0	30		24 Tu	0136	0.8	24		9 Th	0208	0.9	27		24 F	0248	1.0	30	
	0628	-0.2	-6			0714	0.0	0			0746	-0.3	-9			0819	0.1	3	
	1355	2.2	67			1444	2.2	67			1505	2.6	79			1522	2.1	64	
	2051	0.4	12			2156	0.3	9			2206	0.1	3			2211	0.3	9	
10 Tu	0114	0.9	27		25 W	0220	0.8	24		10 F	0301	1.0	30		25 Sa	0321	1.1	34	
	0711	-0.3	-9			0751	0.0	0			0837	-0.3	-9			0856	0.1	3	
	1439	2.4	73			1517	2.2	67			1549	2.6	79			1552	2.1	64	
	2143	0.2	6			2226	0.3	9			2245	0.0	0			2235	0.2	6	
11 W	0212	0.8	24		26 Th	0259	0.8	24		11 Sa	0353	1.0	30		26 Su	0356	1.2	37	
	0756	-0.4	-12			0828	0.0	0			0927	-0.2	-6			0933	0.1	3	
	1523	2.6	79			1549	2.2	67			1631	2.5	76			1621	2.1	64	
	2231	0.1	3			2255	0.3	9			2324	0.0	0			2301	0.2	6	
12 Th	0306	0.8	24		27 F	0336	0.8	24		12 Su	0444	1.1	34		27 M	0432	1.3	40	
	0842	-0.4	-12			0903	0.0	0			1018	-0.1	-3			1011	0.2	6	
	1608	2.6	79			1621	2.2	67			1713	2.4	73			1650	2.0	61	
	2317	0.0	0			2324	0.2	6								2327	0.2	6	
13 F	0401	0.8	24		28 Sa	0414	0.9	27		13 M	0002	0.0	0		28 Tu	0511	1.3	40	
	0930	-0.4	-12			0939	0.0	0			0537	1.2	37			1051	0.3	9	
	1653	2.6	79			1652	2.2	67			1111	0.1	3			1720	1.9	58	
						2354	0.2	6			1754	2.1	64			2355	0.2	6	
14 Sa	0003	0.0	0		29 Su	0454	0.9	27		14 Tu	0040	0.0	0		29 W	0555	1.4	43	
	0457	0.8	24			1016	0.1	3			0634	1.3	40			1136	0.4	12	
	1020	-0.2	-6			1724	2.1	64			1209	0.3	9			1751	1.7	52	
	1738	2.5	76								1835	1.9	58						
15 Su	0048	0.0	0		30 M	0025	0.2	6		15 W	0119	0.1	3		30 Th	0024	0.2	6	
	0557	0.9	27			0537	0.9	27			0737	1.4	43			0643	1.5	46	
	1112	-0.1	-3			1054	0.2	6			1315	0.5	15			1231	0.5	15	
	1823	2.3	70			1755	2.0	61			1916	1.6	49			1825	1.5	46	
				31 Tu	0057	0.2	6		31 F	0057	0.2	6		31 Sa	0057	0.2	6		
					0625	1.0	30			0740	1.6	49			0740	1.6	49		
					1136	0.3	9			1341	0.7	21			1341	0.7	21		
					1828	1.9	58			1904	1.3	40			1904	1.3	40		

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Honolulu, Oahu Island, Hawaii, 2018

Times and Heights of High and Low Waters

October				November				December															
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height												
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm												
1 M	0132 0925 1714 2137	0.3 2.0 0.5 0.7	9 61 15 21	16 Tu	0212 1016 1814 2351	0.6 1.8 0.4 0.8	18 55 12 24	1 Th	0402 1110 1829	0.5 2.0 0.1	15 61 3	16 F	0012 0428 1104 1821	1.0 0.7 1.6 0.2	30 21 49 6	1 Sa	0023 0534 1127 1822	1.3 0.7 1.6 -0.1	40 21 49 -3	16 Su	0012 0512 1043 1747	1.2 0.8 1.4 0.0	37 24 43 0
2 Tu	0246 1039 1821 2319	0.3 2.0 0.4 0.8	9 61 12 24	17 W	0353 1119 1850	0.6 1.8 0.3	18 55 9	2 F	0033 0534 1207 1905	1.1 0.5 1.9 0.0	34 15 58 0	17 Sa	0050 0549 1152 1847	1.2 0.7 1.6 0.1	37 21 49 3	2 Su	0111 0657 1220 1855	1.6 0.6 1.4 -0.2	49 18 43 -6	17 M	0051 0636 1136 1817	1.5 0.7 1.3 -0.1	46 21 40 -3
3 W	0415 1145 1907	0.3 2.1 0.2	9 64 6	18 Th	0039 0518 1210 1918	1.0 0.6 1.8 0.3	30 18 55 9	3 Sa	0121 0649 1257 1936	1.4 0.5 1.8 -0.1	43 15 55 -3	18 Su	0122 0654 1235 1911	1.4 0.6 1.5 0.0	43 18 46 0	3 M	0153 0805 1308 1925	1.9 0.5 1.3 -0.2	58 15 40 -6	18 Tu	0127 0743 1227 1849	1.8 0.6 1.1 -0.2	55 18 34 -6
4 Th	0030 0537 1241 1944	1.0 0.3 2.2 0.1	30 67 67 3	19 F	0114 0621 1253 1943	1.1 0.5 1.8 0.2	34 15 55 6	4 Su	0203 0752 1341 2006	1.7 0.4 1.7 -0.1	52 12 52 -3	19 M	0154 0749 1314 1936	1.7 0.6 1.4 0.0	52 18 43 0	4 Tu	0231 0903 1353 1955	2.1 0.4 1.1 -0.2	64 12 34 -6	19 W	0203 0840 1316 1922	2.0 0.5 1.0 -0.2	61 15 30 -6
5 F	0122 0645 1330 2017	1.2 0.2 2.2 0.0	37 6 67 0	20 Sa	0145 0713 1329 2005	1.3 0.5 1.8 0.1	40 15 55 3	5 M	0242 0848 1422 2034	1.9 0.4 1.5 -0.1	58 12 46 -3	20 Tu	0226 0839 1352 2003	1.9 0.5 1.3 -0.1	58 15 40 -3	5 W	0306 0953 1434 2024	2.3 0.4 1.0 -0.2	70 12 30 -6	20 Th	0240 0930 1405 1958	2.3 0.3 0.9 -0.3	70 9 27 -9
6 Sa	0208 0745 1414 2048	1.4 0.2 2.1 0.0	43 6 64 0	21 Su	0215 0758 1402 2027	1.5 0.4 1.7 0.1	46 12 52 3	6 Tu	0319 0941 1501 2101	2.1 0.3 1.4 -0.1	64 9 43 -3	21 W	0300 0928 1431 2031	2.1 0.4 1.2 -0.2	64 12 37 -6	6 Th	0341 1039 1515 2053	2.3 0.3 0.9 -0.2	70 9 27 -6	21 F	0320 1019 1453 2037	2.4 0.2 0.8 -0.4	73 6 24 -12
7 Su	0250 0840 1454 2118	1.6 0.2 2.0 0.0	49 6 61 0	22 M	0246 0842 1434 2050	1.7 0.4 1.7 0.0	52 12 52 0	7 W	0356 1031 1538 2129	2.2 0.3 1.2 -0.1	67 9 37 -3	22 Th	0336 1017 1511 2102	2.3 0.3 1.1 -0.2	70 9 34 -6	7 F	0415 1123 1555 2123	2.4 0.3 0.8 -0.1	73 9 24 -3	22 Sa	0401 1108 1543 2118	2.6 0.1 0.8 -0.4	79 3 24 -12
8 M	0332 0932 1533 2147	1.8 0.2 1.8 0.0	55 6 55 0	23 Tu	0319 0926 1506 2115	1.9 0.3 1.6 0.0	58 9 49 0	8 Th	0433 1122 1616 2156	2.3 0.3 1.0 0.0	70 9 30 0	23 F	0414 1109 1554 2136	2.4 0.3 1.0 -0.2	73 9 30 -6	8 Sa	0449 1206 1636 2154	2.3 0.2 0.7 0.0	70 6 21 0	23 Su	0444 1157 1635 2202	2.6 0.1 0.7 -0.3	79 3 21 -9
9 Tu	0412 1023 1610 2216	2.0 0.2 1.6 0.0	61 6 49 0	24 W	0353 1012 1540 2141	2.0 0.3 1.4 0.0	61 9 43 0	9 F	0510 1214 1656 2224	2.3 0.3 0.9 0.1	70 9 27 3	24 Sa	0457 1204 1641 2214	2.5 0.2 0.8 -0.2	76 6 24 -6	9 Su	0525 1251 1720 2227	2.3 0.2 0.7 0.1	70 6 21 3	24 M	0529 1247 1732 2249	2.6 0.0 0.7 -0.2	79 0 21 -6
10 W	0453 1116 1646 2244	2.1 0.3 1.4 0.0	64 9 43 0	25 Th	0430 1101 1615 2210	2.2 0.3 1.3 0.0	67 9 40 0	10 Sa	0549 1310 1740 2254	2.2 0.4 0.8 0.2	67 12 24 6	25 Su	0542 1304 1735 2255	2.5 0.2 0.7 -0.1	76 6 21 -3	10 M	0602 1338 1812 2302	2.2 0.2 0.6 0.2	67 6 18 6	25 Tu	0616 1339 1839 2341	2.5 0.0 0.7 0.0	76 0 21 0
11 Th	0535 1212 1724 2313	2.1 0.4 1.2 0.1	64 12 37 3	26 F	0511 1156 1654 2241	2.2 0.4 1.1 0.0	67 12 34 0	11 Su	0631 1412 1836 2326	2.1 0.4 0.7 0.3	64 12 21 9	26 M	0632 1408 1843 2343	2.4 0.2 0.6 0.1	73 6 18 3	11 Tu	0642 1427 1916 2341	2.1 0.2 0.6 0.3	64 6 18 9	26 W	0704 1431 1958	2.3 0.0 0.8	70 0 24
12 F	0619 1316 1806 2343	2.1 0.5 1.0 0.2	64 15 30 6	27 Sa	0556 1300 1740 2317	2.3 0.4 0.9 0.1	70 12 27 3	12 M	0717 1520 1956	2.0 0.4 0.6	61 12 18	27 Tu	0727 1513 2013	2.3 0.1 0.6	70 3 18	12 W	0725 1516 2038	1.9 0.2 0.7	58 6 21	27 Th	0043 0755 1522 2127	0.3 2.0 0.0 0.9	9 61 0 27
13 Sa	0707 1431 1859	2.0 0.5 0.8	61 15 24	28 Su	0648 1415 1839	2.2 0.4 0.8	67 12 24	13 Tu	0004 0811 1623 2147	0.4 1.9 0.3 0.7	12 58 9 21	28 W	0044 0826 1613 2156	0.3 2.1 0.1 0.8	9 64 3 24	13 Th	0030 0810 1602 2210	0.5 1.8 0.2 0.8	15 55 6 24	28 F	0203 0848 1610 2252	0.5 1.8 -0.1 1.2	15 55 -3 37
14 Su	0016 0802 1600 2023	0.4 1.9 0.5 0.7	12 58 15 21	29 M	0000 0747 1538 2007	0.2 2.2 0.4 0.7	6 67 12 21	14 W	0104 0910 1714 2320	0.6 1.8 0.3 0.8	18 55 9 24	29 Th	0208 0928 1703 2321	0.5 2.0 0.0 1.0	15 61 0 30	14 F	0143 0859 1641 2322	0.7 1.7 0.2 1.0	21 52 6 30	29 Sa	0348 0945 1655	0.7 1.5 -0.1	21 46 -3
15 M	0100 0907 1720 2224	0.5 1.8 0.4 0.7	15 55 12 21	30 Tu	0057 0854 1652 2201	0.3 2.1 0.3 0.7	9 64 9 21	15 Th	0243 1010 1751	0.7 1.7 0.2	21 52 6	30 F	0353 1029 1745	0.6 1.8 0.0	18 55 0	15 Sa	0327 0950 1715	0.8 1.5 0.1	24 46 3	30 Su	0000 0540 1045 1736	1.5 0.7 1.3 -0.1	46 21 40 -3
				31 W	0220 1004 1747 2332	0.4 2.1 0.2 0.9	12 64 6 27													31 M	0053 0713 1146 1814	1.7 0.6 1.1 -0.1	52 18 34 -3

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Moku O Loe, Oahu Island, Hawaii, 2018

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 Su	0257 1.9 58 0915 0.0 0 1543 2.0 61 2141 0.5 15	16 M	0223 1.8 55 0844 -0.2 -6 1529 2.2 67 2132 0.6 18	1 Tu	0227 1.4 43 0854 -0.2 -6 1611 2.2 67 2231 0.9 27	16 W	0210 1.4 43 0844 -0.5 -15 1614 2.5 76 2246 0.9 27	1 F	0232 1.1 34 0918 -0.1 -3 1712 2.3 70	16 Sa	0317 1.1 34 0953 -0.4 -12 1744 2.6 79
2 M	0318 1.7 52 0940 0.0 0 1624 2.0 61 2224 0.7 21	17 Tu	0249 1.6 49 0913 -0.2 -6 1615 2.2 67 2223 0.8 24	2 W	0246 1.3 40 0919 -0.1 -3 1650 2.2 67 2325 1.0 30	17 Th	0241 1.3 40 0921 -0.4 -12 1705 2.5 76 2358 0.9 27	2 Sa	0031 0.9 27 0254 1.0 30 0949 0.0 0 1754 2.2 67	17 Su	0100 0.8 24 0417 1.0 30 1039 -0.1 -3 1833 2.4 73
3 Tu	0337 1.5 46 1004 0.0 0 1708 1.9 58 2311 0.9 27	18 W	0313 1.5 46 0945 -0.2 -6 1706 2.2 67 2326 0.9 27	3 Th	0301 1.2 37 0945 -0.1 -3 1734 2.1 64	18 F	0313 1.1 34 1002 -0.3 -9 1801 2.4 73	3 Su	1021 0.2 6 1838 2.1 64	18 M	0207 0.7 21 0544 0.9 27 1131 0.2 6 1924 2.2 67
4 W	0350 1.4 43 1029 0.1 3 1759 1.9 58	19 Th	0336 1.3 40 1021 -0.2 -6 1807 2.2 67	4 F	0041 1.0 30 0302 1.1 34 1012 0.1 3 1826 2.0 61	19 Sa	0133 0.9 27 0346 1.0 30 1048 -0.1 -3 1903 2.3 70	4 M	1058 0.3 9 1926 2.0 61	19 Tu	0306 0.6 18 0753 0.9 27 1236 0.6 18 2013 2.0 61
5 Th	0016 1.1 34 0349 1.2 37 1056 0.2 6 1904 1.8 55	20 F	0058 1.0 30 0350 1.1 34 1104 -0.1 -3 1922 2.1 64	5 Sa	1044 0.2 6 1928 1.9 58	20 Su	1143 0.1 3 2009 2.2 67	5 Tu	0407 0.7 21 0638 0.8 24 1148 0.6 18 2014 1.9 58	20 W	0354 0.4 12 1009 1.1 34 1413 0.9 27 2100 1.8 55
6 F	1128 0.3 9 2037 1.7 52	21 Sa	1200 0.1 3 2047 2.1 64	6 Su	1125 0.4 12 2039 1.8 55	21 M	0428 0.7 21 0741 0.8 24 1301 0.4 12 2111 2.1 64	6 W	0422 0.6 18 0938 0.9 27 1317 0.8 24 2101 1.8 55	21 Th	0432 0.2 6 1136 1.4 43 1612 1.1 34 2143 1.6 49
7 Sa	1220 0.5 15 2212 1.8 55	22 Su	1326 0.3 9 2203 2.1 64	7 M	1242 0.6 18 2142 1.8 55	22 Tu	0458 0.5 15 1012 0.9 27 1446 0.6 18 2205 2.0 61	7 Th	0442 0.4 12 1107 1.1 34 1516 0.9 27 2144 1.7 52	22 F	0505 0.1 3 1229 1.7 52 1752 1.1 34 2223 1.5 46
8 Su	1417 0.6 18 2311 1.8 55	23 M	0603 0.7 21 0950 0.8 24 1515 0.4 12 2301 2.1 64	8 Tu	0554 0.7 21 1028 0.9 27 1447 0.7 21 2230 1.8 55	23 W	0525 0.3 9 1133 1.2 37 1625 0.8 24 2249 1.8 55	8 F	0504 0.2 6 1156 1.4 43 1654 1.0 30 2225 1.6 49	23 Sa	0535 -0.1 -3 1309 1.9 58 1905 1.1 34 2300 1.4 43
9 M	0711 0.8 24 1048 0.9 27 1607 0.5 15 2350 1.9 58	24 Tu	0616 0.5 15 1122 1.1 34 1644 0.4 12 2344 2.1 64	9 W	0553 0.6 18 1129 1.1 34 1621 0.7 21 2306 1.8 55	24 Th	0551 0.2 6 1225 1.5 46 1743 0.8 24 2325 1.7 52	9 Sa	0530 0.0 0 1237 1.8 55 1809 1.0 30 2305 1.6 49	24 Su	0604 -0.2 -6 1342 2.1 64 2000 1.1 34 2335 1.3 40
10 Tu	0657 0.7 21 1142 1.1 34 1714 0.5 15	25 W	0635 0.4 12 1218 1.4 43 1750 0.4 12	10 Th	0604 0.4 12 1209 1.3 40 1727 0.7 21 2338 1.8 55	25 F	0615 0.0 0 1307 1.8 55 1845 0.9 27 2356 1.6 49	10 Su	0600 -0.2 -6 1316 2.1 64 1912 0.9 27 2345 1.5 46	25 M	0632 -0.2 -6 1412 2.3 70 2042 1.0 30
11 W	0019 1.9 58 0701 0.6 18 1220 1.3 40 1802 0.4 12	26 Th	0020 2.0 61 0657 0.2 6 1302 1.6 49 1845 0.5 15	11 F	0621 0.2 6 1247 1.6 49 1822 0.7 21	26 Sa	0639 -0.1 -3 1344 2.0 61 1938 0.9 27	11 M	0633 -0.4 -12 1357 2.3 70 2009 0.9 27	26 Tu	0010 1.2 37 0700 -0.3 -9 1442 2.4 73 2119 1.0 30
12 Th	0044 2.0 61 0714 0.4 12 1256 1.5 46 1844 0.3 9	27 F	0050 1.9 58 0719 0.1 3 1343 1.8 55 1932 0.5 15	12 Sa	0008 1.8 55 0643 0.0 0 1324 1.9 58 1912 0.7 21	27 Su	0024 1.5 46 0703 -0.2 -6 1418 2.2 67 2025 0.9 27	12 Tu	0024 1.4 43 0708 -0.5 -15 1439 2.6 79 2104 0.9 27	27 W	0044 1.2 37 0730 -0.3 -9 1511 2.4 73 2153 0.9 27
13 F	0109 2.0 61 0731 0.3 9 1331 1.7 52 1924 0.3 9	28 Sa	0117 1.8 55 0742 -0.1 -3 1420 2.0 61 2017 0.6 18	13 Su	0038 1.7 52 0709 -0.2 -6 1403 2.1 64 2002 0.7 21	28 M	0050 1.4 43 0728 -0.3 -9 1451 2.3 70 2109 0.9 27	13 W	0105 1.3 40 0746 -0.6 -18 1522 2.7 82 2158 0.9 27	28 Th	0119 1.2 37 0801 -0.3 -9 1542 2.4 73 2227 0.9 27
14 Sa	0133 1.9 58 0753 0.1 3 1408 1.9 58 2005 0.4 12	29 Su	0142 1.7 52 0806 -0.2 -6 1457 2.2 67 2100 0.7 21	14 M	0108 1.6 49 0738 -0.3 -9 1444 2.3 70 2052 0.7 21	29 Tu	0116 1.3 40 0754 -0.3 -9 1524 2.4 73 2153 0.9 27	14 Th	0146 1.3 40 0826 -0.6 -18 1608 2.7 82 2254 0.9 27	29 F	0154 1.1 34 0832 -0.3 -9 1613 2.4 73 2303 0.9 27
15 Su	0158 1.9 58 0817 0.0 0 1447 2.0 61 2047 0.5 15	30 M	0205 1.6 49 0830 -0.2 -6 1534 2.2 67 2144 0.8 24	15 Tu	0139 1.5 46 0810 -0.4 -12 1527 2.5 76 2146 0.8 24	30 W	0142 1.2 37 0820 -0.3 -9 1558 2.4 73 2239 0.9 27	15 F	0229 1.2 37 0909 -0.5 -15 1655 2.7 82 2355 0.8 24	30 Sa	0230 1.1 34 0904 -0.2 -6 1646 2.3 70 2342 0.9 27
						31 Th	0208 1.2 37 0849 -0.2 -6 1634 2.3 70 2330 1.0 30				

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Moku O Loe, Oahu Island, Hawaii, 2018

Times and Heights of High and Low Waters

October				November				December							
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm	
1 M	0838	1.9	58	16 Tu	0953	1.8	55	1 Th	0224	0.4	12	16 F	0216	0.7	21
2 Tu	0107	0.2	6	17 W	0155	0.6	18	2 F	0408	0.5	15	17 Sa	0409	0.8	24
3 W	0256	0.3	9	18 Th	0357	0.6	18	3 Sa	0523	0.5	15	18 Su	0013	1.4	43
4 Th	0426	0.2	6	19 F	0505	0.5	15	4 Su	0044	1.6	49	19 M	0045	1.6	49
5 F	0532	0.1	3	20 Sa	0020	1.3	40	5 M	0125	1.9	58	20 Tu	0117	1.9	58
6 Sa	0033	1.5	46	21 Su	0050	1.5	46	6 Tu	0204	2.1	64	21 W	0151	2.1	64
7 Su	0118	1.7	52	22 M	0122	1.7	52	7 W	0242	2.3	70	22 Th	0228	2.3	70
8 M	0201	1.9	58	23 Tu	0155	1.9	58	8 Th	0319	2.3	70	23 F	0307	2.5	76
9 Tu	0243	2.0	61	24 W	0231	2.1	64	9 F	0356	2.3	70	24 Sa	0349	2.5	76
10 W	0325	2.1	64	25 Th	0309	2.2	67	10 Sa	0436	2.3	70	25 Su	0436	2.5	76
11 Th	0408	2.1	64	26 F	0350	2.2	67	11 Su	0518	2.2	67	26 M	0527	2.5	76
12 F	0453	2.0	61	27 Sa	0437	2.3	70	12 M	0607	2.1	64	27 Tu	0623	2.4	73
13 Sa	0545	2.0	61	28 Su	0533	2.2	67	13 Tu	0707	1.9	58	28 W	0725	2.2	67
14 Su	0650	1.9	58	29 M	0641	2.1	64	14 W	0816	1.9	58	29 Th	0741	1.8	55
15 M	0821	1.8	55	30 Tu	0803	2.1	64	15 Th	0921	1.8	55	30 F	0829	2.1	64
	2346	0.5	15	31 W	0029	0.3	9	16 F	1749	0.6	18	31 Sa	0006	0.3	9
				1 Th	0924	2.1	64	17 Su	2256	0.8	24	1 M	0827	1.7	52
				2 F	1752	0.7	21	18 Tu				2 Tu	1607	0.6	18
				3 Sa	2107	0.8	24	19 W				3 W	2124	0.8	24
				4 Su				20 Th				4 Th	0719	1.8	55
				5 M				21 F				5 F	1607	0.6	18
				6 Tu				22 Sa				6 Sa	2313	1.3	40
				7 W				23 Su				7 Su	0326	1.1	34
				8 Th				24 M				8 M	0905	1.6	49
				9 F				25 Tu				9 Tu	1641	0.1	3
				10 Sa				26 W				10 W	0017	1.6	49
				11 Su				27 Th				11 Th	0539	1.2	37
				12 M				28 F				12 F	0954	1.4	43
				13 Tu				29 Sa				13 Sa	1717	0.0	0
				14 W				30 Su				14 Su			
				15 Th				1 M				15 M			

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Kahului, Maui Island, Hawaii, 2018

Times and Heights of High and Low Waters

July					August					September													
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		Time	Height							
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm				
1 Su	0320	1.2	37		16 M	0427	1.3	40		1 W	0444	1.4	43		16 Sa	0638	1.7	52					
	0935	-0.1	-3			1024	0.0	0			1026	0.4	12			1200	1.2	37		16 Su	0008	0.5	15
	1706	2.4	73			1736	2.5	76			1719	2.2	67			1708	1.6	49			0854	1.8	55
	2358	0.8	24																		●		
2 M	0359	1.1	34		17 Tu	0027	0.5	15		2 Th	0008	0.6	18		2 Su	0028	0.4	12		17 M	0119	0.6	18
	1006	0.1	3			0533	1.3	40			0543	1.4	43			0829	1.8	55			1043	1.9	58
	1738	2.3	70			1111	0.3	9			1102	0.7	21		●	1430	1.3	40					
						1815	2.2	67			1744	2.0	61			1713	1.4	43					
3 Tu	0042	0.8	24		18 W	0118	0.5	15		3 F	0050	0.5	15		3 Sa	0140	0.4	12		18 Tu	0316	0.6	18
	0450	1.0	30			0659	1.3	40			0708	1.4	43			1024	2.0	61			1139	2.1	64
	1038	0.3	9			1205	0.7	21			1154	1.0	30								1913	0.9	27
	1811	2.1	64			1853	2.0	61			1813	1.8	55								2254	1.1	34

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Kahului, Maui Island, Hawaii, 2018

Times and Heights of High and Low Waters

October				November				December																						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																
1 M	0801	2.1	64		16 Tu	0925	2.0	61		1 Th	0213	0.6	18		16 F	0214	0.9	27		1 Sa	0338	0.9	27		16 Su	0234	1.1	34		
2 Tu	0047 0948	0.4 2.2	12 67		17 W	0138 1038 1832 2303	0.8 2.0 0.8 1.1	24 61 24 34		2 F	0402 1104 1800 2350	0.6 2.3 0.4 1.6	18 70 12 49		17 Sa	0407 1044 1746	0.9 2.0 0.5	27 61 15		2 Su	0510 1056 1746	0.9 2.0 0.1	27 61 3		17 M	0435 1001 1711	1.2 1.7 0.2	37 52 6		
3 W	0243 1058 1823 2235	0.4 2.3 0.8 1.1	12 70 24 34		18 Th	0353 1122 1828 2343	0.8 2.1 0.7 1.3	24 64 21 40		3 Sa	0517 1144 1823	0.6 2.3 0.2	18 70 6		18 Su	0002 0516 1117 1802	1.6 0.9 2.0 0.3	49 27 61 9		3 M	0036 0617 1134 1814	2.0 0.9 1.8 -0.1	61 27 55 -3		18 Tu	0020 0554 1046 1740	1.9 1.1 1.7 0.0	58 34 52 0		
4 Th	0420 1146 1838 2341	0.4 2.5 0.6 1.4	12 76 18 43		19 F	0502 1153 1836	0.7 2.2 0.6	21 67 18		4 Su	0034 0615 1218 1848	1.9 0.6 2.2 0.0	58 18 67 0		19 M	0033 0607 1147 1823	1.9 0.9 2.0 0.1	58 27 61 3		4 Tu	0113 0711 1209 1841	2.3 0.9 1.7 -0.2	70 27 52 -6		19 W	0055 0651 1129 1812	2.2 1.0 1.6 -0.3	67 30 49 -9		
5 F	0527 1225 1900	0.2 2.6 0.5	6 79 15		20 Sa	0014 0549 1219 1849	1.5 0.6 2.2 0.5	46 18 67 15		5 M	0113 0705 1249 1913	2.2 0.6 2.1 -0.1	67 18 64 -3		20 Tu	0104 0653 1217 1847	2.1 0.8 1.9 -0.1	64 24 58 -3		5 W	0148 0757 1241 1909	2.5 0.9 1.7 -0.3	76 27 52 -9		20 Th	0130 0741 1211 1847	2.5 0.9 1.6 -0.5	76 27 49 -15		
6 Sa	0029 0621 1259 1924	1.7 0.2 2.6 0.3	52 6 79 9		21 Su	0044 0629 1243 1906	1.8 0.5 2.2 0.3	55 15 67 9		6 Tu	0150 0750 1318 1938	2.4 0.6 2.0 -0.2	73 18 61 -6		21 W	0138 0737 1247 1914	2.4 0.8 1.9 -0.3	73 24 58 -9		6 Th	0221 0839 1312 1937	2.7 0.9 1.6 -0.4	82 27 49 -12		21 F	0207 0827 1252 1923	2.7 0.9 1.5 -0.6	82 27 46 -18		
7 Su	0112 0708 1330 1949	2.0 0.2 2.5 0.1	61 6 76 3		22 M	0115 0706 1307 1927	2.0 0.5 2.2 0.1	61 15 67 3		7 W	0226 0832 1345 2004	2.6 0.7 1.9 -0.3	79 21 58 -9		22 Th	0213 0820 1318 1943	2.6 0.8 1.8 -0.4	79 24 55 -12		7 F	0254 0919 1342 2006	2.7 0.9 1.5 -0.3	82 27 46 -9		22 Sa	0246 0912 1334 2002	2.9 0.8 1.5 -0.7	88 24 46 -21		
8 M	0153 0752 1359 2015	2.2 0.2 2.4 0.0	67 6 73 0		23 Tu	0147 0743 1331 1949	2.2 0.5 2.2 0.0	67 15 67 0		8 Th	0302 0914 1410 2030	2.7 0.8 1.7 -0.2	82 24 52 -6		23 F	0251 0906 1349 2016	2.8 0.8 1.7 -0.5	85 24 52 -15		8 Sa	0328 0959 1411 2035	2.7 0.9 1.4 -0.3	82 27 43 -9		23 Su	0327 0959 1416 2041	3.0 0.8 1.4 -0.6	91 24 43 -18		
9 Tu	0232 0834 1426 2041	2.4 0.3 2.2 0.0	73 9 67 0		24 W	0221 0820 1355 2014	2.4 0.6 2.1 -0.1	73 18 64 -3		9 F	0338 0958 1434 2057	2.7 0.9 1.6 -0.2	82 27 49 -6		24 Sa	0332 0955 1421 2050	2.8 0.9 1.5 -0.5	85 27 46 -15		9 Su	0402 1040 1440 2104	2.6 0.9 1.3 -0.2	79 27 40 -6		24 M	0409 1048 1500 2122	2.9 0.8 1.3 -0.5	88 24 40 -15		
10 W	0311 0915 1451 2108	2.5 0.5 2.0 -0.1	76 15 61 -3		25 Th	0257 0900 1420 2041	2.5 0.7 1.9 -0.2	76 21 58 -6		10 Sa	0416 1045 1455 2123	2.6 1.0 1.4 -0.1	79 30 43 -3		25 Su	0417 1051 1454 2127	2.8 0.9 1.4 -0.3	85 27 43 -9		10 M	0438 1126 1508 2134	2.5 0.9 1.2 0.0	76 27 37 0		25 Tu	0453 1140 1551 2205	2.8 0.8 1.2 -0.2	85 24 37 -6		
11 Th	0351 0958 1514 2134	2.5 0.7 1.8 0.0	76 21 55 0		26 F	0336 0944 1445 2110	2.6 0.8 1.8 -0.2	79 24 55 -6		11 Su	0456 1142 1510 2150	2.4 1.1 1.3 0.1	73 34 40 3		26 M	0506 1159 1531 2207	2.7 1.0 1.2 -0.2	82 30 37 -6		11 Tu	0516 1222 1537 2203	2.4 1.0 1.1 0.1	73 30 34 3		26 W	0538 1239 1653 2251	2.7 0.7 1.1 0.1	82 21 34 3		
12 F	0432 1043 1533 2159	2.4 0.9 1.6 0.1	73 27 49 3		27 Sa	0420 1035 1509 2142	2.6 1.0 1.6 -0.1	79 30 49 -3		12 M	0543 2217	2.3 0.3	70 9		27 Tu	0601 1329 1619 2254	2.6 1.0 1.1 0.1	79 30 34 3		12 W	0556 1332 1614 2234	2.3 0.9 1.0 0.4	70 27 30 12		27 Th	0625 1342 1822 2344	2.4 0.6 1.1 0.5	73 18 34 15		
13 Sa	0518 1140 1542 2225	2.3 1.1 1.4 0.2	70 34 43 6		28 Su	0511 1142 1530 2219	2.5 1.1 1.4 0.0	76 34 43 0		13 Tu	0641 2249	2.1 0.5	64 15		28 W	0703 1510 1805 2356	2.4 0.8 0.9 0.4	73 24 27 12		13 Th	0640 1453 1738 2309	2.1 0.8 0.9 0.6	64 24 27 18		28 F	0713 1445 2034	2.2 0.5 1.1	67 15 34		
14 Su	0615 2254	2.1 0.4	64 12		29 M	0614 2304	2.4 0.2	73 6		14 W	0754 2343	2.0 0.7	61 21		29 Th	0811 1609 2106	2.3 0.7 1.0	70 21 30		14 F	0728 1545 2051	2.0 0.8 1.0	61 24 30		29 Sa	0103 0805 1540 2239	0.9 2.0 0.4 1.4	27 61 12 43		
15 M	0738 2335	2.0 0.6	61 18		30 Tu	0735	2.3	70		15 Th	0908 1734 2240	2.0 0.8 1.0	61 24 30		30 F	0138 0915 1646 2254	0.7 2.2 0.5 1.3	21 67 15 40		15 Sa	0011 0819 1617 2258	0.9 1.9 0.6 1.2	27 58 18 37		30 Su	0312 0901 1627 2350	1.1 1.7 0.2 1.8	34 52 6 55		
					31 W	0013 0903 1728 2101	0.4 2.3 0.8 0.9	12 70 24 27																						

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Hilo, Hawaii Island, Hawaii, 2018

Times and Heights of High and Low Waters

January				February				March											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 M	0301	3.2	98		16 Tu	0319	2.7	82		1 Th	0408	3.1	94						
	0935	0.5	15			0952	0.6	18			1039	0.2	6		16 F	0352	2.6	79	
	1423	1.6	49			1439	1.4	43			1557	1.7	52			1016	0.2	6	
	2032	-0.7	-21			2042	-0.3	-9			2155	-0.4	-12			1542	1.7	52	
												2139	-0.2	-6					
2 Tu	0345	3.3	101		17 W	0350	2.8	85		2 F	0446	2.9	88		17 Sa	0420	2.5	76	
	1022	0.4	12			1023	0.5	15			1117	0.1	3			1044	0.2	6	
	1512	1.5	46			1515	1.4	43			1646	1.7	52			1620	1.7	52	
	2117	-0.6	-18			2115	-0.3	-9			2239	-0.2	-6			2214	0.0	0	
3 W	0429	3.2	98		18 Th	0420	2.7	82		3 Sa	0523	2.6	79		18 Su	0448	2.4	73	
	1109	0.4	12			1054	0.5	15			1155	0.1	3			1114	0.1	3	
	1603	1.5	46			1551	1.4	43			1737	1.7	52			1701	1.7	52	
	2203	-0.5	-15			2148	-0.2	-6			2324	0.1	3			2251	0.2	6	
4 Th	0513	3.1	94		19 F	0451	2.7	82		4 Su	0557	2.4	73		19 M	0516	2.3	70	
	1156	0.4	12			1127	0.5	15			1235	0.2	6			1146	0.1	3	
	1657	1.5	46			1630	1.4	43			1835	1.6	49			1749	1.7	52	
	2249	-0.2	-6			2222	0.0	0								2335	0.4	12	
5 F	0557	2.9	88		20 Sa	0521	2.6	79		5 M	0013	0.5	15		20 Tu	0546	2.0	61	
	1245	0.4	12			1201	0.4	12			0631	2.1	64			1221	0.1	3	
	1757	1.4	43			1713	1.4	43			1317	0.2	6			1847	1.7	52	
	2338	0.1	3			2257	0.2	6			1944	1.6	49						
6 Sa	0640	2.6	79		21 Su	0553	2.4	73		6 Tu	0112	0.8	24		21 W	0030	0.7	21	
	1337	0.4	12			1238	0.4	12			0705	1.8	55			0619	1.8	55	
	1909	1.4	43			1806	1.4	43			1403	0.3	9			1305	0.1	3	
						2338	0.4	12			2111	1.6	49			2004	1.8	55	
7 Su	0034	0.5	15		22 M	0626	2.3	70		7 W	0245	1.1	34		22 Th	0152	0.9	27	
	0725	2.3	70			1319	0.4	12			0744	1.5	46			0701	1.5	46	
	1430	0.3	9			1913	1.4	43			1459	0.3	9			1401	0.1	3	
	2038	1.4	43								2246	1.8	55			2139	1.9	58	
8 M	0144	0.8	24		23 Tu	0031	0.7	21		8 Th	0511	1.1	34		23 F	0406	1.0	30	
	0811	2.0	61			0703	2.0	61			0844	1.3	40			0807	1.2	37	
	1524	0.3	9			1406	0.3	9			1602	0.3	9			1514	0.1	3	
	2215	1.6	49			2040	1.5	46			2358	2.0	61			2308	2.1	64	
9 Tu	0323	1.1	34		24 W	0151	1.0	30		9 F	0656	1.0	30		24 Sa	0606	0.9	27	
	0903	1.8	55			0749	1.8	55			1021	1.1	34			0957	1.1	34	
	1615	0.2	6			1501	0.2	6			1704	0.2	6			1633	0.0	0	
	2334	1.8	55			2216	1.8	55											
10 W	0517	1.2	37		25 Th	0351	1.1	34		10 Sa	0047	2.1	64		25 Su	0013	2.4	73	
	1001	1.6	49			0851	1.6	49			0741	0.8	24			0707	0.7	21	
	1702	0.1	3			1601	0.1	3			1142	1.1	34			1132	1.1	34	
						2333	2.1	64			1758	0.1	3			1742	-0.2	-6	
11 Th	0030	2.1	64		26 F	0548	1.0	30		11 Su	0125	2.3	70		26 M	0105	2.6	79	
	0643	1.1	34			1011	1.4	43			0809	0.7	21			0748	0.4	12	
	1101	1.4	43			1700	-0.1	-3			1237	1.2	37			1239	1.3	40	
	1744	0.1	3								1842	0.0	0			1841	-0.4	-12	
12 F	0111	2.3	70		27 Sa	0032	2.4	73		12 M	0158	2.4	73		27 Tu	0149	2.8	85	
	0740	1.0	30			0705	0.8	24			0834	0.6	18			0823	0.3	9	
	1156	1.4	43			1128	1.4	43			1320	1.3	40			1333	1.5	46	
	1823	0.0	0			1757	-0.3	-9			1922	-0.2	-6			1933	-0.5	-15	
13 Sa	0146	2.5	76		28 Su	0121	2.7	82		13 Tu	0228	2.5	76		28 W	0228	2.8	85	
	0820	0.8	24			0758	0.6	18			0858	0.5	15			0857	0.1	3	
	1243	1.3	40			1234	1.4	43			1357	1.4	43			1420	1.7	52	
	1859	-0.1	-3			1849	-0.5	-15			1958	-0.2	-6			2019	-0.5	-15	
14 Su	0218	2.6	79		29 M	0206	3.0	91		14 W	0256	2.6	79		14 Th	0154	2.3	70	
	0853	0.7	21			0842	0.5	15			0923	0.4	12			0820	0.3	9	
	1325	1.4	43			1330	1.5	46			1432	1.5	46			1346	1.5	46	
	1935	-0.2	-6			1938	-0.6	-18			2032	-0.3	-9			1942	-0.1	-3	
15 M	0249	2.7	82		30 Tu	0248	3.1	94		15 Th	0325	2.6	79		15 F	0222	2.4	73	
	0923	0.6	18			0922	0.3	9			0949	0.3	9			0844	0.2	6	
	1403	1.4	43			1421	1.6	49			1507	1.6	49			1420	1.7	52	
	2009	-0.3	-9			2025	-0.7	-21			2105	-0.3	-9			2017	-0.2	-6	
				31 W	0329	3.1	94		16 Sa	0305	2.3	70		16 Su	0249	2.4	73		
					1001	0.2	6			0908	0.0	0			1504	1.9	58		
					1509	1.6	49			1454	1.9	58			2104	-0.4	-12		
					2111	-0.6	-18			2053	-0.2	-6							

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Hilo, Hawaii Island, Hawaii, 2018

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
	h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm
1 Su	0335 2.1 64 0948 -0.3 -9 1613 2.3 70 2219 0.2 6	16 M	0308 2.0 61 0921 -0.4 -12 1557 2.5 76 2208 0.2 6	1 Tu	0325 1.5 46 0933 -0.4 -12 1632 2.5 76 2258 0.5 15	16 W	0313 1.5 46 0924 -0.6 -18 1632 2.9 88 2306 0.4 12	1 F	0404 1.1 34 1005 -0.2 -6 1729 2.5 76	16 Sa	0000 0.4 12 0440 1.2 37 1038 -0.4 -12 1759 2.9 88
2 M	0403 1.9 58 1016 -0.3 -9 1652 2.3 70 2302 0.3 9	17 Tu	0340 1.8 55 0952 -0.5 -15 1640 2.5 76 2258 0.3 9	2 W	0355 1.4 43 1001 -0.3 -9 1710 2.4 73 2345 0.6 18	17 Th	0355 1.3 40 1003 -0.6 -18 1721 2.8 85	2 Sa	0026 0.6 18 0444 1.0 30 1039 0.0 0 1810 2.4 73	17 Su	0057 0.4 12 0543 1.1 34 1129 -0.2 -6 1850 2.7 82
3 Tu	0431 1.7 52 1043 -0.2 -6 1733 2.2 67 2349 0.5 15	18 W	0414 1.6 49 1027 -0.4 -12 1728 2.5 76 2355 0.5 15	3 Th	0425 1.2 37 1031 -0.2 -6 1751 2.3 70	18 F	0007 0.4 12 0442 1.2 37 1047 -0.4 -12 1814 2.7 82	3 Su	0120 0.6 18 0533 0.9 27 1117 0.1 3 1854 2.2 67	18 M	0156 0.3 9 0700 1.1 34 1228 0.2 6 1942 2.4 73
4 W	0458 1.4 43 1112 -0.1 -3 1818 2.1 64	19 Th	0451 1.4 43 1105 -0.3 -9 1823 2.4 73	4 F	0041 0.6 18 0458 1.0 30 1103 0.0 0 1838 2.2 67	19 Sa	0116 0.5 15 0540 1.0 30 1137 -0.2 -6 1913 2.5 76	4 M	0219 0.6 18 0640 0.9 27 1203 0.3 9 1942 2.1 64	19 Tu	0254 0.2 6 0833 1.2 37 1341 0.5 15 2036 2.2 67
5 Th	0046 0.7 21 0525 1.2 37 1144 0.1 3 1913 2.0 61	20 F	0108 0.6 18 0536 1.1 34 1151 -0.2 -6 1929 2.3 70	5 Sa	0152 0.7 21 0540 0.9 27 1141 0.2 6 1934 2.0 61	20 Su	0232 0.4 12 0701 0.9 27 1239 0.1 3 2017 2.4 73	5 Tu	0316 0.5 15 0816 0.9 27 1305 0.6 18 2034 2.0 61	20 W	0349 0.2 6 1008 1.4 43 1511 0.8 24 2130 2.0 61
6 F	0209 0.8 24 0555 1.0 30 1224 0.2 6 2025 1.8 55	21 Sa	0243 0.6 18 0642 0.9 27 1252 0.0 0 2046 2.2 67	6 Su	0322 0.7 21 0655 0.8 24 1234 0.4 12 2040 1.9 58	21 M	0344 0.4 12 0849 0.9 27 1400 0.3 9 2123 2.2 67	6 W	0404 0.4 12 0955 1.1 34 1432 0.7 21 2126 1.9 58	21 Th	0437 0.0 0 1126 1.7 52 1648 0.9 27 2222 1.8 55
7 Sa	0428 0.8 24 0654 0.9 27 1327 0.4 12 2151 1.8 55	22 Su	0423 0.5 15 0838 0.8 24 1418 0.2 6 2204 2.2 67	7 M	0437 0.6 18 0907 0.8 24 1359 0.5 15 2147 1.9 58	22 Tu	0442 0.2 6 1031 1.2 37 1536 0.5 15 2223 2.1 64	7 Th	0443 0.3 9 1108 1.3 40 1607 0.8 24 2217 1.9 58	22 F	0519 -0.1 -3 1224 2.0 61 1812 0.9 27 2312 1.6 49
8 Su	0556 0.7 21 0945 0.8 24 1510 0.5 15 2304 1.9 58	23 M	0528 0.4 12 1036 1.0 30 1557 0.3 9 2309 2.2 67	8 Tu	0520 0.5 15 1049 1.0 30 1540 0.6 18 2243 1.9 58	23 W	0526 0.1 3 1143 1.5 46 1704 0.6 18 2315 2.0 61	8 F	0518 0.1 3 1201 1.7 52 1729 0.8 24 2306 1.8 55	23 Sa	0556 -0.2 -6 1309 2.2 67 1917 0.9 27 2358 1.5 46
9 M	0626 0.5 15 1124 1.0 30 1644 0.4 12 2355 1.9 58	24 Tu	0611 0.2 6 1151 1.3 40 1720 0.3 9	9 W	0550 0.3 9 1147 1.2 37 1701 0.6 18 2329 1.9 58	24 Th	0603 -0.1 -3 1237 1.8 55 1816 0.6 18 2359 1.9 58	9 Sa	0552 -0.1 -3 1245 2.0 61 1836 0.7 21 2353 1.7 52	24 Su	0630 -0.2 -6 1347 2.4 73 2009 0.8 24
10 Tu	0649 0.4 12 1215 1.2 37 1748 0.3 9	25 W	0001 2.2 67 0645 0.0 0 1244 1.6 49 1825 0.2 6	10 Th	0617 0.1 3 1230 1.5 46 1803 0.5 15	25 F	0636 -0.2 -6 1320 2.1 64 1914 0.6 18	10 Su	0627 -0.3 -9 1327 2.4 73 1935 0.6 18	25 M	0040 1.4 43 0703 -0.3 -9 1421 2.6 79 2051 0.7 21
11 W	0034 2.0 61 0711 0.3 9 1254 1.4 43 1837 0.2 6	26 Th	0044 2.2 67 0716 -0.1 -3 1328 1.9 58 1919 0.2 6	11 F	0008 1.9 58 0643 0.0 0 1308 1.9 58 1855 0.4 12	26 Sa	0038 1.8 55 0706 -0.3 -9 1358 2.3 70 2005 0.6 18	11 M	0038 1.7 52 0704 -0.5 -15 1409 2.7 82 2029 0.5 15	26 Tu	0120 1.3 40 0736 -0.3 -9 1454 2.7 82 2129 0.6 18
12 Th	0106 2.1 64 0734 0.1 3 1329 1.7 52 1920 0.1 3	27 F	0121 2.1 64 0744 -0.3 -9 1408 2.1 64 2006 0.2 6	12 Sa	0045 1.9 58 0711 -0.2 -6 1346 2.2 67 1944 0.4 12	27 Su	0114 1.6 49 0734 -0.4 -12 1434 2.5 76 2050 0.5 15	12 Tu	0124 1.6 49 0743 -0.7 -21 1452 2.9 88 2121 0.4 12	27 W	0159 1.3 40 0809 -0.4 -12 1526 2.7 82 2205 0.6 18
13 F	0137 2.2 67 0758 -0.1 -3 1404 1.9 58 2000 0.1 3	28 Sa	0154 2.0 61 0812 -0.4 -12 1445 2.3 70 2050 0.2 6	13 Su	0121 1.9 58 0741 -0.4 -12 1424 2.4 73 2032 0.3 9	28 M	0148 1.5 46 0803 -0.4 -12 1507 2.6 79 2132 0.5 15	13 W	0210 1.5 46 0823 -0.7 -21 1537 3.0 91 2213 0.4 12	28 Th	0236 1.3 40 0842 -0.3 -9 1559 2.7 82 2240 0.6 18
14 Sa	0207 2.2 67 0824 -0.2 -6 1440 2.1 64 2041 0.1 3	29 Su	0225 1.9 58 0839 -0.4 -12 1521 2.5 76 2132 0.3 9	14 M	0157 1.8 55 0813 -0.5 -15 1504 2.7 82 2121 0.3 9	29 Tu	0221 1.4 43 0832 -0.4 -12 1541 2.6 79 2213 0.5 15	14 Th	0257 1.4 43 0906 -0.7 -21 1623 3.1 94 2305 0.4 12	29 F	0314 1.3 40 0916 -0.3 -9 1633 2.7 82 2317 0.5 15
15 Su	0237 2.1 64 0851 -0.3 -9 1517 2.3 70 2123 0.1 3	30 M	0255 1.7 52 0906 -0.4 -12 1556 2.5 76 2215 0.4 12	15 Tu	0234 1.7 52 0847 -0.6 -18 1547 2.8 85 2212 0.3 9	30 W	0254 1.3 40 0902 -0.4 -12 1615 2.6 79 2254 0.5 15	15 F	0346 1.3 40 0950 -0.6 -18 1710 3.0 91	30 Sa	0352 1.2 37 0950 -0.2 -6 1706 2.6 79 2355 0.5 15
						31 Th	0329 1.2 37 0933 -0.3 -9 1651 2.6 79 2338 0.6 18				

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Hilo, Hawaii Island, Hawaii, 2018

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>
1 M ●	0039 0.3 9 0832 2.3 70 1554 1.1 34 1921 1.2 37	16 Tu ●	0112 0.7 21 0935 2.1 64 1738 0.9 27 2152 1.1 34	1 Th	0314 0.6 18 1034 2.5 76 1742 0.5 15 2320 1.5 46	16 F	0324 0.9 27 1025 2.1 64 1736 0.6 18 2341 1.5 46	1 Sa	0428 0.8 24 1044 2.2 67 1738 0.1 3	16 Su	0345 1.1 34 0953 1.9 58 1702 0.3 9 2352 1.8 55
2 Tu	0157 0.4 12 1000 2.4 73 1729 0.9 27 2137 1.2 37	17 W	0258 0.8 24 1046 2.2 67 1809 0.8 24 2321 1.3 40	2 F	0445 0.6 18 1129 2.5 76 1818 0.3 9	17 Sa	0448 0.9 27 1111 2.1 64 1802 0.4 12	2 Su	0012 2.0 61 0549 0.8 24 1133 2.1 64 1813 0.0 0	17 M	0515 1.1 34 1044 1.9 58 1736 0.1 3
3 W	0333 0.4 12 1111 2.5 76 1816 0.7 21 2314 1.3 40	18 Th	0432 0.7 21 1136 2.2 67 1833 0.6 18	3 Sa	0018 1.8 55 0555 0.5 15 1215 2.5 76 1849 0.1 3	18 Su	0022 1.8 55 0551 0.8 24 1150 2.1 64 1828 0.2 6	3 M	0100 2.3 70 0654 0.8 24 1216 2.0 61 1845 -0.1 -3	18 Tu	0035 2.1 64 0625 1.0 30 1133 1.8 55 1811 -0.1 -3
4 Th	0457 0.3 9 1206 2.7 82 1852 0.5 15	19 F	0008 1.5 46 0536 0.7 21 1215 2.3 70 1854 0.5 15	4 Su	0104 2.2 67 0653 0.5 15 1254 2.4 73 1919 0.0 0	19 M	0058 2.1 64 0643 0.8 24 1226 2.1 64 1854 0.0 0	4 Tu	0140 2.6 79 0747 0.8 24 1255 1.9 58 1917 -0.2 -6	19 W	0115 2.4 73 0722 0.9 27 1219 1.7 52 1847 -0.3 -9
5 F	0016 1.6 49 0603 0.2 6 1250 2.7 82 1924 0.3 9	20 Sa	0044 1.7 52 0624 0.6 18 1247 2.3 70 1916 0.4 12	5 M	0146 2.5 76 0744 0.5 15 1329 2.3 70 1949 -0.2 -6	20 Tu	0133 2.4 73 0730 0.7 21 1300 2.1 64 1922 -0.1 -3	5 W	0218 2.8 85 0834 0.7 21 1331 1.7 52 1947 -0.3 -9	20 Th	0154 2.7 82 0813 0.7 21 1304 1.7 52 1924 -0.4 -12
6 Sa	0106 1.9 58 0658 0.1 3 1330 2.7 82 1954 0.1 3	21 Su	0117 2.0 61 0706 0.5 15 1316 2.4 73 1939 0.2 6	6 Tu	0225 2.7 82 0830 0.5 15 1403 2.1 64 2017 -0.2 -6	21 W	0208 2.6 79 0815 0.6 18 1335 2.0 61 1952 -0.3 -9	6 Th ●	0253 2.9 88 0917 0.7 21 1406 1.6 49 2018 -0.3 -9	21 F	0234 3.0 91 0901 0.6 18 1349 1.6 49 2004 -0.6 -18
7 Su	0150 2.2 67 0747 0.1 3 1405 2.7 82 2025 0.0 0	22 M	0150 2.2 67 0745 0.4 12 1345 2.3 70 2003 0.1 3	7 W ●	0302 2.8 85 0915 0.6 18 1434 2.0 61 2046 -0.3 -9	22 Th ○	0246 2.9 88 0901 0.6 18 1410 1.9 58 2025 -0.4 -12	7 F	0327 2.9 88 0958 0.7 21 1441 1.5 46 2049 -0.3 -9	22 Sa ○	0316 3.1 94 0948 0.6 18 1434 1.6 49 2045 -0.6 -18
8 M ●	0232 2.4 73 0833 0.1 3 1439 2.6 79 2054 -0.1 -3	23 Tu	0223 2.4 73 0824 0.4 12 1413 2.3 70 2029 -0.1 -3	8 Th	0339 2.9 88 0959 0.6 18 1505 1.8 55 2115 -0.2 -6	23 F	0325 3.0 91 0948 0.6 18 1448 1.8 55 2100 -0.4 -12	8 Sa	0401 2.9 88 1038 0.7 21 1516 1.5 46 2120 -0.2 -6	23 Su	0359 3.2 98 1036 0.5 15 1521 1.5 46 2128 -0.6 -18
9 Tu	0313 2.6 79 0918 0.3 9 1511 2.4 73 2124 -0.1 -3	24 W ○	0259 2.6 79 0904 0.5 15 1443 2.2 67 2056 -0.1 -3	9 F	0417 2.9 88 1044 0.7 21 1536 1.6 49 2144 -0.1 -3	24 Sa	0408 3.1 94 1039 0.6 18 1527 1.6 49 2138 -0.4 -12	9 Su	0437 2.8 85 1120 0.7 21 1552 1.4 43 2153 -0.1 -3	24 M	0443 3.2 98 1125 0.5 15 1611 1.4 43 2213 -0.4 -12
10 W	0354 2.7 82 1002 0.4 12 1541 2.2 67 2153 -0.1 -3	25 Th	0336 2.7 82 0946 0.5 15 1513 2.0 61 2126 -0.2 -6	10 Sa	0455 2.8 85 1132 0.8 24 1608 1.5 46 2215 0.0 0	25 Su	0453 3.1 94 1134 0.7 21 1611 1.5 46 2219 -0.3 -9	10 M	0514 2.7 82 1205 0.7 21 1630 1.3 40 2227 0.1 3	25 Tu	0529 3.1 94 1217 0.5 15 1707 1.4 43 2301 -0.2 -6
11 Th	0435 2.7 82 1048 0.6 18 1611 1.9 58 2223 0.0 0	26 F	0416 2.8 85 1033 0.6 18 1545 1.8 55 2159 -0.2 -6	11 Su	0536 2.6 79 1228 0.9 27 1642 1.3 40 2247 0.2 6	26 M	0544 3.0 91 1238 0.7 21 1703 1.3 40 2306 -0.1 -3	11 Tu	0552 2.6 79 1254 0.8 24 1716 1.2 37 2303 0.3 9	26 W	0617 2.9 88 1313 0.5 15 1815 1.3 40 2355 0.2 6
12 F	0518 2.6 79 1138 0.8 24 1640 1.7 52 2254 0.1 3	27 Sa	0501 2.8 85 1127 0.8 24 1620 1.6 49 2235 -0.1 -3	12 M	0623 2.5 76 1339 0.9 27 1725 1.2 37 2325 0.4 12	27 Tu	0639 2.8 85 1350 0.7 21 1814 1.2 37	12 W	0634 2.4 73 1350 0.8 24 1816 1.1 34 2344 0.5 15	27 Th	0706 2.6 79 1411 0.4 12 1940 1.3 40
13 Sa	0605 2.5 76 1239 1.0 30 1710 1.4 43 2327 0.3 9	28 Su	0553 2.7 82 1235 0.9 27 1701 1.4 43 2318 0.1 3	13 Tu	0718 2.3 70 1507 0.9 27 1841 1.0 30	28 W	0002 0.2 6 0740 2.7 82 1505 0.6 18 1955 1.2 37	13 Th	0719 2.3 70 1449 0.7 21 1945 1.1 34	28 F ●	0100 0.5 15 0758 2.4 73 1509 0.3 9 2120 1.5 46
14 Su	0700 2.3 70 1408 1.1 34 1745 1.2 37	29 M	0654 2.6 79 1404 0.9 27 1759 1.2 37	14 W	0015 0.6 18 0822 2.2 67 1622 0.8 24 2058 1.1 34	29 Th ●	0115 0.5 15 0845 2.5 76 1608 0.5 15 2147 1.3 40	14 F	0039 0.7 21 0808 2.2 67 1541 0.6 18 2133 1.2 37	29 Sa	0226 0.8 24 0854 2.1 64 1603 0.2 6 2252 1.7 52
15 M	0008 0.5 15 0812 2.2 67 1623 1.0 30 1903 1.1 34	30 Tu	0013 0.2 6 0808 2.5 76 1546 0.9 27 1946 1.1 34	15 Th ●	0138 0.8 24 0928 2.1 64 1706 0.7 21 2244 1.2 37	30 F	0251 0.7 21 0948 2.3 70 1657 0.3 9 2312 1.6 49	15 Sa ●	0201 0.9 27 0900 2.0 61 1625 0.5 15 2257 1.5 46	30 Su	0412 1.0 30 0951 1.9 58 1652 0.1 3
		31 W ●	0132 0.4 12 0926 2.5 76 1657 0.7 21 2155 1.2 37							31 M	0000 2.0 61 0550 1.0 30 1049 1.7 52 1736 0.0 0

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Papeete Harbor, Tahiti Island, 2018

Times and Heights of High and Low Waters

July				August				September						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm
1 Su	0156	0.6	18		16 M	0215	0.7	21		1 W	0222	0.6	18	
	0759	0.0	0			0820	-0.1	-3			0827	0.0	0	
	1416	0.7	21			1443	0.8	24			1451	0.7	21	
	2024	0.0	0			2055	0.1	3			2055	0.1	3	
2 M	0219	0.6	18		17 Tu	0247	0.7	21		2 Th	0239	0.6	18	
	0823	0.0	0			0855	0.0	0			0849	0.1	3	
	1446	0.6	18			1524	0.7	21			1519	0.6	18	
	2054	0.1	3			2133	0.2	6			2118	0.2	6	
3 Tu	0242	0.5	15		18 W	0319	0.6	18		3 F	0253	0.5	15	
	0848	0.1	3			0934	0.1	3			0913	0.1	3	
	1520	0.6	18			1611	0.6	18			1553	0.6	18	
	2128	0.2	6			2218	0.3	9			2141	0.3	9	
4 W	0306	0.5	15		19 Th	0355	0.5	15		4 Sa	0300	0.5	15	
	0917	0.1	3			1024	0.2	6			0941	0.2	6	
	1606	0.5	15			1728	0.5	15			1701	0.5	15	
	2218	0.3	9		●	2346	0.3	9		●	2212	0.3	9	
5 Th ●	0331	0.4	12		20 F	0456	0.4	12		5 Su	0123	0.4	12	
	0957	0.2	6			1218	0.3	9			1332	0.3	9	
	1735	0.5	15			2038	0.5	15			2224	0.5	15	
6 F	0052	0.3	9		21 Sa	0343	0.3	9		6 M	0501	0.3	9	
	0417	0.4	12			0856	0.4	12			1014	0.4	12	
	1148	0.3	9			1521	0.2	6			1616	0.2	6	
	2034	0.5	15			2215	0.6	18			2250	0.6	18	
7 Sa	0359	0.3	9		22 Su	0438	0.2	6		7 Tu	0501	0.2	6	
	0858	0.4	12			1018	0.5	15			1047	0.5	15	
	1449	0.3	9			1629	0.1	3			1657	0.1	3	
	2152	0.6	18			2257	0.6	18			2316	0.6	18	
8 Su	0428	0.2	6		23 M	0509	0.1	3		8 W	0519	0.1	3	
	1001	0.5	15			1100	0.6	18			1117	0.7	21	
	1558	0.2	6			1710	0.0	0			1730	0.0	0	
	2234	0.7	21			2328	0.6	18			2342	0.7	21	
9 M	0454	0.2	6		24 Tu	0536	0.1	3		9 Th	0542	0.0	0	
	1039	0.6	18			1133	0.6	18			1147	0.8	24	
	1644	0.1	3			1743	0.0	0			1801	-0.1	-3	
	2308	0.7	21			2355	0.7	21						
10 Tu	0520	0.1	3		25 W	0600	0.0	0		10 F	0009	0.8	24	
	1113	0.6	18			1201	0.7	21			0608	-0.1	-3	
	1723	0.0	0			1811	-0.1	-3			1218	0.9	27	
	2340	0.7	21							●	1832	-0.1	-3	
11 W	0547	0.0	0		26 Th	0019	0.7	21		11 Sa	0035	0.8	24	
	1147	0.7	21			0623	-0.1	-3			0635	-0.1	-3	
	1759	-0.1	-3			1227	0.7	21			1248	0.9	27	
						1836	-0.1	-3			1901	-0.2	-6	
12 Th ●	0011	0.8	24		27 F	0042	0.7	21		12 Su	0102	0.8	24	
	0615	0.0	0			0645	-0.1	-3			0703	-0.2	-6	
	1221	0.8	24			1252	0.7	21			1319	0.9	27	
	1834	-0.1	-3		○	1900	-0.1	-3			1930	-0.1	-3	
13 F	0042	0.8	24		28 Sa	0103	0.7	21		13 M	0129	0.8	24	
	0645	-0.1	-3			0706	-0.1	-3			0732	-0.2	-6	
	1255	0.8	24			1315	0.8	24			1350	0.9	27	
	1909	-0.1	-3			1924	-0.1	-3			1959	-0.1	-3	
14 Sa	0113	0.8	24		29 Su	0124	0.7	21		14 Tu	0154	0.8	24	
	0715	-0.1	-3			0726	-0.1	-3			0801	-0.1	-3	
	1330	0.8	24			1339	0.8	24			1420	0.9	27	
	1944	-0.1	-3			1947	-0.1	-3			2025	0.0	0	
15 Su	0144	0.7	21		30 M	0145	0.7	21		15 W	0219	0.8	24	
	0747	-0.1	-3			0746	-0.1	-3			0829	-0.1	-3	
	1406	0.8	24			1402	0.8	24			1449	0.8	24	
	2019	0.0	0			2009	0.0	0			2050	0.1	3	
					31 Tu	0204	0.7	21		31 F	0207	0.7	21	
						0807	0.0	0			0818	0.0	0	
						1426	0.7	21			1438	0.7	21	
						2032	0.1	3			2033	0.2	6	

Time meridian 150° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to mean lower low water which is the chart datum of soundings.

Apia, Samoa Islands, 2018

Times and Heights of High and Low Waters

July				August				September															
Time	Height			Time	Height			Time	Height			Time	Height										
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm								
1 Su	0211	0.4	12	16 M	0241	-0.2	-6	1 W	0256	0.4	12	16 Th	0417	0.1	3	1 Sa	0404	0.6	18	16 Su	0602	0.7	21
	0810	2.8	85		0845	3.3	101		0858	2.7	82		1011	2.8	85		1006	2.6	79		1146	2.4	73
	1454	0.2	6		1523	-0.4	-12		1529	0.3	9		1647	0.1	3		1623	0.6	18		1819	0.8	24
	2041	2.3	70		2121	2.9	88		2130	2.5	76		2247	2.7	82		2238	2.7	82				
2 M	0251	0.5	15	17 Tu	0340	-0.1	-3	2 Th	0340	0.5	15	17 F	0523	0.3	9	2 Su	0511	0.6	18	17 M	0016	2.6	79
	0850	2.7	82		0941	3.1	94		0943	2.6	79		1112	2.5	76		1108	2.5	76		0711	0.7	21
	1534	0.3	9		1620	-0.2	-6		1611	0.4	12		1749	0.3	9		1728	0.6	18		1259	2.3	70
	2125	2.3	70		2219	2.8	85		2217	2.5	76		2350	2.6	79		2342	2.8	85		1924	0.8	24
3 Tu	0334	0.6	18	18 W	0444	0.1	3	3 F	0434	0.6	18	18 Sa	0633	0.4	12	3 M	0627	0.6	18	18 Tu	0122	2.6	79
	0933	2.6	79		1040	2.9	88		1035	2.5	76		1220	2.3	70		1217	2.5	76		0813	0.7	21
	1616	0.3	9		1720	-0.1	-3		1701	0.4	12		1853	0.5	15		1842	0.6	18		1405	2.3	70
	2210	2.3	70		2321	2.7	82		2311	2.5	76										2022	0.8	24

Time meridian 195° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Suva, Suva Harbor, 2018

Times and Heights of High and Low Waters

January				February				March													
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height								
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm							
1 M	0529	4.4	134			1 Th	0046	-0.8	-24	16 F	0057	0.1	3	1 Th	0552	4.6	140	16 F	0600	3.9	119
	1122	0.2	6				0701	4.7	143		0711	4.0	122		1151	0.0	0		1158	0.6	18
	1738	5.3	162				1258	0.0	0		1305	0.7	21		1803	5.1	155		1804	4.3	131
2 Tu	0010	-0.7	-21			2 F	0136	-0.8	-24	17 Sa	0132	0.1	3	2 F	0027	-0.7	-21	17 Sa	0022	0.1	3
	0624	4.5	137				0752	4.8	146		0747	4.1	125		0641	4.7	143		0636	4.1	125
	1217	0.1	3				1351	0.0	0		1343	0.6	18		1243	-0.1	-3		1237	0.4	12
3 W	0102	-0.8	-24			3 Sa	0226	-0.7	-21	18 Su	0207	0.1	3	3 Sa	0115	-0.7	-21	18 Su	0058	0.0	0
	0718	4.7	143				0843	4.9	149		0824	4.2	128		0729	4.8	146		0712	4.3	131
	1312	0.1	3				1444	0.1	3		1423	0.6	18		1334	-0.1	-3		1317	0.3	9
4 Th	0155	-0.9	-27			4 Su	0315	-0.5	-15	19 M	0244	0.1	3	4 Su	0201	-0.5	-15	19 M	0135	0.0	0
	0811	4.7	143				0933	4.8	146		0902	4.2	128		0816	4.9	149		0750	4.4	134
	1407	0.1	3				1538	0.2	6		1505	0.6	18		1423	-0.1	-3		1358	0.2	6
5 F	0247	-0.8	-24			5 M	0405	-0.2	-6	20 Tu	0322	0.2	6	5 M	0247	-0.3	-9	20 Tu	0213	0.0	0
	0905	4.8	146				1024	4.7	143		0942	4.3	131		0903	4.8	146		0829	4.5	137
	1503	0.2	6				1634	0.4	12		1551	0.6	18		1513	0.1	3		1442	0.2	6
6 Sa	0340	-0.6	-18			6 Tu	0456	0.1	3	21 W	0404	0.3	9	6 Tu	0334	0.0	0	21 W	0254	0.1	3
	1000	4.7	143				1117	4.5	137		1026	4.3	131		0950	4.6	140		0911	4.5	137
	1601	0.3	9				1732	0.5	15		1641	0.6	18		1604	0.2	6		1529	0.1	3
7 Su	0434	-0.4	-12			7 W	0548	0.4	12	22 Th	0451	0.5	15	7 W	0421	0.3	9	22 Th	0340	0.3	9
	1056	4.6	140				1211	4.4	134		1114	4.3	131		1038	4.4	134		0957	4.4	134
	1702	0.5	15				1833	0.7	21		1737	0.6	18		1658	0.4	12		1621	0.2	6
8 M	0529	-0.1	-3			8 Th	0039	3.7	113	23 F	0544	0.6	18	8 Th	0511	0.6	18	23 F	0430	0.4	12
	1153	4.5	137				0644	0.7	21		1209	4.3	131		1129	4.2	128		1049	4.4	134
	1804	0.6	18				1306	4.2	128		1839	0.5	15		1754	0.6	18		1718	0.2	6
9 Tu	0009	4.2	128			9 F	0143	3.5	107	24 Sa	0045	3.7	113	9 F	0005	3.6	110	24 Sa	0528	0.6	18
	0625	0.3	9				0741	1.0	30		0645	0.7	21		0605	0.9	27		1147	4.3	131
	1250	4.5	137				1402	4.1	125		1309	4.3	131		1223	4.0	122		1821	0.2	6
10 W	0112	3.9	119			10 Sa	0246	3.4	104	25 Su	0154	3.7	113	10 Sa	0108	3.4	104	25 Su	0035	3.7	113
	0721	0.5	15				0838	1.1	34		0750	0.7	21		0703	1.1	34		0632	0.7	21
	1346	4.4	134				1456	4.1	125		1412	4.4	134		1320	3.8	116		1251	4.2	128
11 Th	0216	3.7	113			11 Su	0344	3.4	104	26 M	0301	3.8	116	11 Su	0211	3.3	101	26 M	0143	3.7	113
	0818	0.7	21				0932	1.1	34		0855	0.6	18		0803	1.1	34		0740	0.6	18
	1440	4.4	134				1546	4.1	125		1515	4.6	140		1417	3.8	116		1358	4.3	131
12 F	0317	3.6	110			12 M	0434	3.5	107	27 Tu	0403	4.1	125	12 M	0309	3.3	101	27 Tu	0249	3.9	119
	0911	0.9	27				1021	1.0	30		0958	0.4	12		0900	1.1	34		0847	0.5	15
	1531	4.3	131				1632	4.1	125		1614	4.8	146		1511	3.8	116		1502	4.4	134
13 Sa	0412	3.6	110			13 Tu	0518	3.6	110	28 W	0459	4.3	131	13 Tu	0400	3.4	104	28 W	0349	4.1	125
	1002	0.9	27				1106	1.0	30		1056	0.2	6		0951	1.0	30		0949	0.3	9
	1617	4.3	131				1714	4.2	128		1710	5.0	152		1600	3.9	119		1602	4.5	137
14 Su	0501	3.6	110			14 W	0558	3.7	113	29 Th	0544	3.6	110	14 W	0444	3.6	110	29 Th	0443	4.3	131
	1048	1.0	30				1147	0.9	27		1036	0.9	27		1036	0.9	27		1046	0.1	3
	1659	4.4	134				1754	4.3	131		1644	4.0	122		1644	4.0	122		1657	4.6	140
15 M	0545	3.7	113			15 Th	0021	0.2	6	30 F	0523	3.7	113	15 Th	0523	3.7	113	30 F	0533	4.5	137
	1131	0.9	27				0635	3.9	119		1118	0.7	21		1118	0.7	21		1138	0.0	0
	1740	4.4	134				1226	0.8	24		1724	4.2	128		1724	4.2	128		1748	4.7	143
						31 W	1832	4.4	134												
							0608	4.5	137												
							1203	0.1	3												
						1816	5.3	162													

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Suva, Suva Harbor, 2018
Times and Heights of High and Low Waters

Table with columns for April, May, and June, and sub-columns for Time and Height in various units (h m, ft, cm). Rows list daily high and low water times and heights for each month.

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Suva, Suva Harbor, 2018

Times and Heights of High and Low Waters

July				August				September						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm
1 Su	0222	0.6	18		16 M	0234	-0.3	-9		1 W	0316	0.5	15	
	0827	3.9	119			0845	4.8	146			0918	3.8	116	
	1455	-0.1	-3			1512	-1.0	-30			1538	0.1	3	
	2113	3.4	104			2130	4.4	134			2157	3.6	110	
2 M	0304	0.6	18		17 Tu	0331	-0.2	-6		2 Th	0359	0.6	18	
	0907	3.8	116			0941	4.6	140			1000	3.6	110	
	1535	0.0	0			1606	-0.8	-24			1617	0.2	6	
	2154	3.4	104			2225	4.3	131			2239	3.6	110	
3 Tu	0347	0.7	21		18 W	0431	-0.1	-3		3 F	0446	0.6	18	
	0949	3.7	113			1039	4.3	131			1047	3.5	107	
	1615	0.1	3			1701	-0.6	-18			1700	0.3	9	
	2237	3.4	104			2322	4.3	131			2323	3.7	113	
4 W	0433	0.8	24		19 Th	0532	0.0	0		4 Sa	0538	0.6	18	
	1033	3.5	107			1140	4.0	122			1139	3.4	104	
	1657	0.2	6			1757	-0.3	-9			1748	0.4	12	
	2321	3.4	104											
5 Th	0522	0.8	24		20 F	0020	4.2	128		5 Su	0013	3.7	113	
	1121	3.4	104			0636	0.1	3			0634	0.5	15	
	1740	0.3	9			1243	3.7	113			1237	3.3	101	
						1855	0.0	0			1841	0.4	12	
6 F	0007	3.5	107		21 Sa	0117	4.1	125		6 M	0107	3.8	116	
	0615	0.8	24			0740	0.2	6			0735	0.3	9	
	1212	3.3	101			1348	3.5	107			1340	3.3	101	
	1827	0.3	9			1953	0.2	6			1939	0.4	12	
7 Sa	0055	3.6	110		22 Su	0214	4.0	122		7 Tu	0204	4.0	122	
	0710	0.6	18			0842	0.2	6			0835	0.1	3	
	1308	3.3	101			1451	3.4	104			1443	3.4	104	
	1917	0.3	9			2049	0.4	12			2040	0.3	9	
8 Su	0144	3.8	116		23 M	0308	4.0	122		8 W	0302	4.2	128	
	0806	0.4	12			0939	0.1	3			0934	-0.2	-6	
	1407	3.3	101			1549	3.3	101			1545	3.6	110	
	2010	0.3	9			2143	0.5	15			2140	0.2	6	
9 M	0235	4.0	122		24 Tu	0358	4.0	122		9 Th	0359	4.4	134	
	0902	0.1	3			1030	0.0	0			1031	-0.6	-18	
	1506	3.5	107			1641	3.3	101			1643	3.9	119	
	2105	0.2	6			2232	0.5	15			2238	0.0	0	
10 Tu	0327	4.2	128		25 W	0444	4.0	122		10 F	0454	4.7	143	
	0957	-0.2	-6			1115	0.0	0			1125	-0.8	-24	
	1604	3.6	110			1728	3.4	104			1737	4.1	125	
	2200	0.1	3			2317	0.5	15			2334	-0.2	-6	
11 W	0419	4.5	137		26 Th	0526	4.0	122		11 Sa	0549	4.9	149	
	1051	-0.5	-15			1156	-0.1	-3			1217	-1.0	-30	
	1700	3.8	116			1809	3.4	104			1830	4.4	134	
	2255	-0.1	-3			2358	0.5	15						
12 Th	0512	4.7	143		27 F	0606	4.0	122		12 Su	0029	-0.4	-12	
	1143	-0.8	-24			1235	-0.2	-6			0642	5.0	152	
	1755	4.0	122			1848	3.5	107			1307	-1.1	-34	
	2349	-0.2	-6								1922	4.5	137	
13 F	0604	4.9	149		28 Sa	0038	0.4	12		13 M	0122	-0.5	-15	
	1235	-1.0	-30			0645	4.0	122			0734	4.9	149	
	1849	4.2	128			1312	-0.2	-6			1358	-1.1	-34	
						1926	3.5	107			2013	4.6	140	
14 Sa	0044	-0.3	-9		29 Su	0117	0.4	12		14 Tu	0216	-0.5	-15	
	0657	4.9	149			0723	4.0	122			0827	4.8	146	
	1327	-1.2	-37			1348	-0.2	-6			1448	-0.9	-27	
	1942	4.3	131			2003	3.6	110			2104	4.6	140	
15 Su	0139	-0.4	-12		30 M	0156	0.4	12		15 W	0311	-0.4	-12	
	0751	4.9	149			0801	4.0	122			0921	4.6	140	
	1419	-1.2	-37			1425	-0.1	-3			1539	-0.7	-21	
	2036	4.4	134			2040	3.6	110			2156	4.5	137	
					31 Tu	0235	0.5	15		31 F	0329	0.3	9	
						0839	3.9	119			0934	3.8	116	
						1501	0.0	0			1543	0.2	6	
						2118	3.6	110			2200	3.9	119	

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Pago Pago, American Samoa 2018

Times and Heights of High and Low Waters

April				May				June																					
Time	Height			Time	Height			Time	Height			Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 Su	0151	-0.2	-6		16 M	0112	-0.1	-3		1 Tu	0204	0.1	3		16 W	0136	-0.3	-9		1 F	0259	0.3	9		16 Sa	0312	-0.3	-9	
	0802	2.9	88			0728	2.9	88			0817	2.7	82			0756	3.2	98			0914	2.4	73			0934	3.2	98	
	1417	-0.1	-3			1344	-0.2	-6			1440	0.1	3			1419	-0.4	-12			1543	0.2	6			1600	-0.5	-15	
	2028	2.7	82			1950	2.8	85			2048	2.3	70			2026	2.7	82			2153	2.0	61			2210	2.8	85	
2 M	0236	-0.1	-3		17 Tu	0158	-0.1	-3		2 W	0247	0.2	6		17 Th	0229	-0.2	-6		2 Sa	0346	0.4	12		17 Su	0415	-0.2	-6	
	0848	2.8	85			0816	2.9	88			0902	2.6	79			0851	3.1	94			1000	2.4	73			1036	3.1	94	
	1506	0.0	0			1434	-0.2	-6			1527	0.2	6			1517	-0.4	-12			1631	0.3	9			1701	-0.4	-12	
	2117	2.5	76			2041	2.7	82			2136	2.2	67			2124	2.7	82			2243	2.0	61			2314	2.7	82	
3 Tu	0323	0.1	3		18 W	0247	-0.1	-3		3 Th	0334	0.3	9		18 F	0327	-0.1	-3		3 Su	0436	0.5	15		18 M	0520	-0.1	-3	
	0936	2.6	79			0908	2.9	88			0949	2.4	73			0950	3.1	94			1049	2.3	70			1139	3.0	91	
	1558	0.2	6			1530	-0.2	-6			1617	0.3	9			1617	-0.3	-9			1720	0.4	12			1803	-0.3	-9	
	2208	2.3	70			2137	2.6	79			2228	2.0	61			2227	2.6	79			2334	2.0	61						

Time meridian 165° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Pago Pago, American Samoa 2018

Times and Heights of High and Low Waters

July					August					September					
Time	Height			Time	Height			Time	Height			Time	Height		
	h	m	ft/cm		h	m	ft/cm		h	m	ft/cm		h	m	ft/cm
1 Su	0312	0.4	12	16 M	0355	-0.3	-9	1 W	0409	0.4	12	16 Th	0539	0.1	3
	0925	2.4	73		1015	3.1	94		1017	2.4	73		1153	2.6	79
	1552	0.3	9		1637	-0.4	-12		1636	0.3	9		1805	0.0	0
	2203	2.1	64		2250	2.8	85		2255	2.2	67		1746	0.3	9
2 M	0357	0.4	12	17 Tu	0459	-0.1	-3	2 Th	0500	0.5	15	17 F	0024	2.6	79
	1009	2.4	73		1116	2.9	88		1106	2.3	70		0646	0.2	6
	1635	0.3	9		1737	-0.3	-9		1723	0.3	9		1257	2.4	73
	2250	2.1	64		2352	2.8	85		2345	2.3	70		1906	0.2	6
3 Tu	0446	0.5	15	18 W	0605	0.0	0	3 F	0556	0.4	12	18 Sa	0126	2.5	76
	1055	2.3	70		1219	2.8	85		1200	2.3	70		0752	0.3	9
	1720	0.4	12		1837	-0.1	-3		1815	0.3	9		1400	2.3	70
	2338	2.1	64						2004	0.3	9		2004	0.3	9
4 W	0537	0.5	15	19 Th	0055	2.7	82	4 Sa	0040	2.4	73	19 Su	0224	2.5	76
	1144	2.3	70		0711	0.1	3		0655	0.4	12		0852	0.3	9
	1806	0.4	12		1323	2.6	79		1258	2.3	70		1457	2.2	67
					1936	0.0	0		1910	0.2	6		2057	0.3	9
5 Th	0027	2.2	67	20 F	0156	2.7	82	5 Su	0136	2.5	76	20 M	0316	2.5	76
	0631	0.5	15		0816	0.2	6		0756	0.2	6		0943	0.2	6
	1235	2.3	70		1424	2.4	73		1358	2.3	70		1547	2.1	64
	1854	0.3	9		2032	0.1	3		2007	0.1	3		2144	0.3	9
6 F	0117	2.3	70	21 Sa	0252	2.6	79	6 M	0233	2.7	82	21 Tu	0401	2.5	76
	0726	0.4	12		0915	0.2	6		0854	0.0	0		1027	0.2	6
	1328	2.3	70		1520	2.3	70		1457	2.5	76		1630	2.1	64
	1943	0.2	6		2123	0.2	6		2103	0.0	0		2225	0.2	6
7 Sa	0208	2.5	76	22 Su	0343	2.6	79	7 Tu	0329	2.9	88	22 W	0441	2.5	76
	0821	0.3	9		1007	0.2	6		0951	-0.2	-6		1105	0.2	6
	1423	2.4	73		1610	2.3	70		1554	2.6	79		1708	2.2	67
	2034	0.1	3		2209	0.2	6		2159	-0.2	-6		2303	0.2	6
8 Su	0258	2.7	82	23 M	0427	2.6	79	8 W	0423	3.1	94	23 Th	0517	2.6	79
	0916	0.1	3		1052	0.2	6		1046	-0.4	-12		1140	0.1	3
	1518	2.5	76		1654	2.2	67		1650	2.8	85		1743	2.2	67
	2125	0.0	0		2250	0.2	6		2254	-0.4	-12		2339	0.2	6
9 M	0350	2.9	88	24 Tu	0507	2.6	79	9 Th	0517	3.3	101	24 F	0553	2.6	79
	1010	-0.1	-3		1132	0.2	6		1139	-0.6	-18		1213	0.1	3
	1612	2.6	79		1734	2.2	67		1744	2.9	88		1818	2.3	70
	2218	-0.2	-6		2328	0.2	6		2349	-0.5	-15		1911	3.1	94
10 Tu	0441	3.1	94	25 W	0544	2.6	79	10 F	0610	3.4	104	25 Sa	0015	0.1	3
	1103	-0.3	-9		1209	0.1	3		1232	-0.7	-21		0628	2.6	79
	1706	2.7	82		1811	2.2	67		1838	3.0	91		1247	0.1	3
	2311	-0.3	-9										1854	2.3	70
11 W	0534	3.3	101	26 Th	0005	0.2	6	11 Sa	0043	-0.5	-15	26 Su	0052	0.1	3
	1157	-0.5	-15		0620	2.6	79		0704	3.5	107		0704	2.6	79
	1801	2.8	85		1244	0.1	3		1325	-0.7	-21		1322	0.1	3
					1848	2.2	67		1932	3.0	91		1930	2.4	73
12 Th	0005	-0.4	-12	27 F	0042	0.2	6	12 Su	0138	-0.5	-15	27 M	0131	0.1	3
	0627	3.4	104		0657	2.6	79		0758	3.4	104		0741	2.6	79
	1251	-0.6	-18		1320	0.1	3		1418	-0.6	-18		1358	0.1	3
	1856	2.9	88		1925	2.2	67		2027	3.0	91		2008	2.4	73
13 F	0100	-0.5	-15	28 Sa	0120	0.2	6	13 M	0235	-0.4	-12	28 Tu	0211	0.2	6
	0722	3.4	104		0734	2.6	79		0853	3.3	101		0820	2.6	79
	1345	-0.7	-21		1357	0.1	3		1512	-0.5	-15		1435	0.2	6
	1952	2.9	88		2003	2.2	67		2123	3.0	91		2048	2.4	73
14 Sa	0156	-0.5	-15	29 Su	0159	0.2	6	14 Tu	0333	-0.3	-9	29 W	0253	0.2	6
	0818	3.4	104		0812	2.6	79		0950	3.0	91		0901	2.5	76
	1441	-0.6	-18		1434	0.2	6		1608	-0.3	-9		1515	0.2	6
	2050	2.9	88		2043	2.2	67		2221	2.9	88		2131	2.4	73
15 Su	0254	-0.4	-12	30 M	0240	0.3	9	15 W	0435	-0.1	-3	30 Th	0340	0.3	9
	0915	3.3	101		0851	2.5	76		1050	2.8	85		0947	2.4	73
	1538	-0.5	-15		1513	0.2	6		1706	-0.1	-3		1600	0.3	9
	2149	2.9	88		2124	2.2	67		2322	2.7	82		2219	2.4	73
				31 Tu	0323	0.4	12					31 F	0433	0.3	9
					0933	2.4	73						1038	2.3	70
					1553	0.3	9						1649	0.3	9
					2208	2.2	67						2313	2.4	73

Time meridian 165° W. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to the chart datum of soundings.

Wellington, New Zealand, 2018

Times and Heights of High and Low Waters

April				May				June							
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm	
1	0511	5.6	170			16	0512	5.2	160			1	0102	2.3	70
	1130	2.0	60				1124	2.0	60			16	0643	5.6	170
	1742	5.6	170				1735	5.6	170			Sa	1253	1.6	50
○	2358	2.0	60				2354	2.0	60				1904	6.2	190
2	0607	5.6	170			17	0610	5.2	160			2	0151	2.3	70
	1228	2.0	60				1222	2.0	60			Sa	0747	4.9	150
	1837	5.6	170				1830	5.9	180			Su	1353	2.3	70
3	0057	2.0	60									2005	5.2	160	
	0703	5.2	160			18	0055	1.6	50			3	0238	2.3	70
	1324	2.3	70				0706	5.6	170			Su	0832	4.9	150
	1930	5.6	170				1318	2.0	60			M	1437	2.3	70
							1926	5.9	180				2050	5.2	160
4	0153	2.0	60			19	0154	1.6	50			4	0323	2.3	70
	0757	5.2	160				0802	5.6	170			M	0915	4.9	150
	1416	2.3	70				1414	1.6	50			Tu	1520	2.3	70
	2022	5.2	160				2022	5.9	180				2133	5.2	160
5	0247	2.0	60			20	0251	1.6	50			5	0405	2.3	70
	0849	5.2	160				0857	5.6	170			Tu	0957	4.9	150
	1505	2.3	70				1509	1.6	50			W	1602	2.3	70
	2112	5.2	160				2118	5.9	180			○	2216	5.2	160
6	0338	2.0	60			21	0347	1.6	50			6	0444	2.3	70
	0938	5.2	160				0951	5.6	170			W	1038	4.9	150
	1551	2.3	70				1603	1.6	50				1644	2.3	70
	2201	5.2	160				2214	5.9	180				2258	5.2	160
7	0426	2.0	60			22	0440	1.6	50			7	0522	2.3	70
	1024	5.2	160				1045	5.6	170			Th	1119	4.9	150
	1635	2.3	70				1658	1.6	50			○	1725	2.3	70
	2247	5.2	160				2310	5.9	180				2340	5.2	160
8	0509	2.3	70			23	0532	1.6	50			8	0601	2.3	70
	1108	4.9	150				1139	5.6	170			F	1201	4.9	150
	1716	2.3	70				1753	1.6	50				1808	2.3	70
○	2331	5.2	160												
9	0550	2.3	70			24	0005	5.9	180			9	0023	5.2	160
	1149	4.9	150				0624	1.6	50			Sa	0640	2.3	70
	1756	2.3	70				1233	5.6	170				1246	5.2	160
							1848	1.6	50				1853	2.3	70
10	0013	5.2	160			25	0100	5.9	180			10	0109	5.2	160
	0629	2.3	70				0715	1.6	50			Su	0723	2.3	70
	1230	4.9	150				1328	5.6	170				1334	5.2	160
	1835	2.3	70				1943	2.0	60				1941	2.3	70
11	0053	5.2	160			26	0153	5.6	170			11	0159	5.2	160
	0707	2.3	70				0806	2.0	60			M	0810	2.0	60
	1311	4.9	150				1423	5.6	170				1425	5.6	170
	1915	2.3	70				2038	2.0	60				2033	2.0	60
12	0134	5.2	160			27	0246	5.6	170			12	0252	5.2	160
	0746	2.3	70				0858	2.0	60			Tu	0902	2.0	60
	1354	4.9	150				1516	5.6	170				1519	5.6	170
	1957	2.3	70				2132	2.0	60				2130	2.0	60
13	0216	5.2	160			28	0339	5.2	160			13	0349	5.2	160
	0828	2.3	70				0949	2.3	70			W	0958	2.0	60
	1440	4.9	150				1607	5.2	160				1614	5.9	180
	2042	2.3	70				2225	2.3	70				2229	2.0	60
14	0302	5.2	160			29	0431	5.2	160			14	0447	5.6	170
	0915	2.3	70				1041	2.3	70			Th	1056	2.0	60
	1528	4.9	150				1657	5.2	160			○	1710	5.9	180
	2130	2.3	70				2318	2.3	70				2331	1.6	50
15	0351	5.2	160			30	0522	4.9	150			15	0546	5.6	170
	1006	2.3	70				1131	2.3	70			F	1155	1.6	50
	1619	5.2	160				1745	5.2	160				1807	5.9	180
	2224	2.3	70												
16	0451	5.2	160			31	0011	2.3	70			16	0032	2.3	70
	1106	2.3	70				0612	4.9	150			Sa	0630	4.9	150
	1720	5.2	160				1220	2.3	70				1233	2.3	70
○	2339	2.0	60				1833	5.2	160				1846	5.2	160

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Wellington, New Zealand, 2018

Times and Heights of High and Low Waters

July				August				September																																																																																																																																																																																																																																																																																																																																																																																																																																			
Time		Height		Time		Height		Time		Height		Time		Height																																																																																																																																																																																																																																																																																																																																																																																																																													
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																																																																																																																																																																																																																																																																																																																																																																																																																								
1 Su	0120	2.3	70		16 M	0111	1.6	50		1 W	0218	2.3	70		16 Th	0245	1.6	50		1 Sa	0312	2.3	70		16 Su	0404	2.0	60																																																																																																																																																																																																																																																																																																																																																																																																															
	0715	4.9	150			1318	2.6	80			1931	5.2	160			0718	5.9	180			1329	1.3	40			1416	2.3	70		1507	1.6	50		1525	2.3	70		1941	6.2	190		2029	4.9	150		2116	5.9	180		2135	5.2	160		0206	2.3	70		0759	4.9	150		1402	2.6	80		2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160	
	1318	2.6	80			1931	5.2	160			0718	5.9	180			1329	1.3	40			1416	2.3	70			1507	1.6	50		1525	2.3	70		1941	6.2	190		2029	4.9	150		2116	5.9	180		2135	5.2	160		0206	2.3	70		0759	4.9	150		1402	2.6	80		2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160					
	1931	5.2	160			0718	5.9	180			1329	1.3	40			1416	2.3	70			1507	1.6	50			1525	2.3	70		1941	6.2	190		2029	4.9	150		2116	5.9	180		2135	5.2	160		0206	2.3	70		0759	4.9	150		1402	2.6	80		2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160									
0718	5.9	180		1329	1.3	40		1416	2.3	70		1507	1.6	50		1525	2.3	70		1941	6.2	190		2029	4.9	150		2116	5.9	180		2135	5.2	160		0206	2.3	70		0759	4.9	150		1402	2.6	80		2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																			
1329	1.3	40		1416	2.3	70		1507	1.6	50		1525	2.3	70		1941	6.2	190		2029	4.9	150		2116	5.9	180		2135	5.2	160		0206	2.3	70		0759	4.9	150		1402	2.6	80		2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																							
1416	2.3	70		1507	1.6	50		1525	2.3	70		1941	6.2	190		2029	4.9	150		2116	5.9	180		2135	5.2	160		0206	2.3	70		0759	4.9	150		1402	2.6	80		2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																											
1507	1.6	50		1525	2.3	70		1941	6.2	190		2029	4.9	150		2116	5.9	180		2135	5.2	160		0206	2.3	70		0759	4.9	150		1402	2.6	80		2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																															
1525	2.3	70		1941	6.2	190		2029	4.9	150		2116	5.9	180		2135	5.2	160		0206	2.3	70		0759	4.9	150		1402	2.6	80		2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																			
1941	6.2	190		2029	4.9	150		2116	5.9	180		2135	5.2	160		0206	2.3	70		0759	4.9	150		1402	2.6	80		2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																							
2029	4.9	150		2116	5.9	180		2135	5.2	160		0206	2.3	70		0759	4.9	150		1402	2.6	80		2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																											
2116	5.9	180		2135	5.2	160		0206	2.3	70		0759	4.9	150		1402	2.6	80		2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																															
2135	5.2	160		0206	2.3	70		0759	4.9	150		1402	2.6	80		2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																			
0206	2.3	70		0759	4.9	150		1402	2.6	80		2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																							
0759	4.9	150		1402	2.6	80		2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																											
1402	2.6	80		2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																															
2015	5.2	160		0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																			
0210	1.6	50		0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																							
0814	5.9	180		1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																											
1428	1.3	40		2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																															
2039	6.2	190		0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																			
0301	2.3	70		0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																							
0852	4.9	150		1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																											
1501	2.3	70		2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																															
2113	4.9	150		0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																			
0339	1.6	50		0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																							
0943	5.6	170		1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																											
1604	1.6	50		2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																															
2211	5.6	170		0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																			
0355	2.3	70		0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																							
0953	5.2	160		1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																											
1612	2.0	60		2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																															
2221	5.2	160		0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																			
0452	2.0	60		1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																							
1103	5.6	170		1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																											
1725	2.0	60		2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																															
2327	5.2	160		0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																			
0438	2.0	60		1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																							
1041	5.6	170		1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																											
1700	2.0	60		2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																															
2309	5.2	160		0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																			
0538	2.0	60		1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																							
1153	5.6	170		1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																											
1811	2.0	60			0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																															
0523	2.0	60		1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																				
1131	5.6	170		1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																								
1749	2.0	60		2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																												
2358	5.2	160		0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																
0610	2.0	60		1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																				
1223	5.9	180		1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																								
1839	1.6	50		0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																												
0059	4.9	150		0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																
0705	2.3	70		1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																				
1325	5.2	160		1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																								
1938	2.3	70		0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																												
0143	4.9	150		0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																
0748	2.3	70		1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																				
1408	5.2	160		2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																								
2020	2.3	70		0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																												
0229	4.9	150		0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																
0831	2.3	70		1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																				
1451	5.2	160		2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																								
2105	2.3	70		0315	4.9	150		0916	2.3	70		1535	5.2	160		2152	2.3	70		0401	4.9	150		1003	2.3	70		1621	4.9	150		2242	2.3	70		0448	4.9	150		1052	2.3	70		1708	4.9	150		2332	2.3	70		0535	4.9	150		1143	2.3	70		1758	4.9	150			0027	1.6	50		0635	5.9	180		1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																												
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1251	1.6	50		1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																					
1901	5.9	180		0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																									
0023	2.3	70		0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																													
0622	4.9	150		1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																	
1234	2.3	70		1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																					
1847	5.2	160		0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																									
0111	2.3	70		0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																													
0708	5.2	160		1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																	
1325	2.3	70		1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																					
1937	5.2	160		0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																									
0158	2.3	70		0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																													
0755	5.2	160		1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																																	
1416	2.3	70		2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																																					
2025	5.2	160		0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																																									
0244	2.3	70		0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																																													
0843	5.6	170		1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																																																	
1506	2.0	60		2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																																																					
2113	5.2	160		0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																																																									
0313	2.0	60		0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																																																													
0919	5.6	170		1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																																																																	
1543	1.6	50		2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																																																																					
2147	5.6	170		0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																																																																									
0230	2.3	70		0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																																																																													
0823	4.9	150		1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																																																																																	
1437	2.3	70		2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																																																																																					
2048	5.2	160																																																																																																																																																																																																																																																																																																																																																																																																																																									

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Auckland, New Zealand, 2018

Times and Heights of High and Low Waters

January				February				March											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 M	0612	10.8	330	16 Tu	0037	2.6	80	1 Th	0116	1.0	30	16 F	0130	2.6	80				
	1212	2.0	60		0705	9.8	300		0744	11.5	350		0757	10.2	310				
	1834	10.8	330		1257	3.0	90		1346	1.3	40		1352	2.6	80	1234	2.0	60	
2 Tu	0040	1.0	30	17 W	0119	2.6	80	2 F	0209	0.7	20	17 Sa	0209	2.3	70	2 F	0058	1.3	40
	0708	11.2	340		0746	10.2	310		0837	11.8	360		0836	10.5	320		0725	11.5	350
	1308	1.3	40		1339	3.0	90		1440	1.3	40		1432	2.6	80		1329	1.6	50
3 W	0134	0.7	20	18 Th	0157	2.3	70	3 Sa	0259	0.7	20	18 Su	0247	2.3	70	3 Sa	0150	1.0	30
	0802	11.8	360		0826	10.2	310		0928	11.8	360		0915	10.5	320		0816	11.8	360
	1403	1.3	40		1419	2.6	80		1532	1.3	40		1512	2.3	70		1420	1.3	40
4 Th	0226	0.3	10	19 F	0235	2.3	70	4 Su	0349	1.0	30	19 M	0325	2.0	60	4 Su	0239	1.0	30
	0855	11.8	360		0904	10.2	310		1017	11.8	360		0954	10.5	320		0905	11.8	360
	1457	1.0	30		1459	2.6	80		1622	1.3	40		1553	2.0	60		1509	1.3	40
5 F	0318	0.3	10	20 Sa	0312	2.3	70	5 M	0438	1.3	40	20 Tu	0405	2.0	60	5 M	0326	1.3	40
	0947	11.8	360		0942	10.5	320		1106	11.5	350		1034	10.5	320		0953	11.5	350
	1551	1.0	30		1539	2.6	80		1711	1.6	50		1634	2.0	60		1556	1.3	40
6 Sa	0409	0.7	20	21 Su	0349	2.3	70	6 Tu	0527	2.0	60	21 W	0447	2.3	70	6 Tu	0412	1.6	50
	1039	11.8	360		1020	10.5	320		1155	10.8	330		1117	10.5	320		1039	11.2	340
	1644	1.3	40		1619	2.3	70		1759	2.0	60		1717	2.0	60		1641	1.6	50
7 Su	0500	1.3	40	22 M	0428	2.3	70	7 W	0021	10.5	320	22 Th	0533	2.3	70	7 W	0458	2.0	60
	1130	11.5	350		1100	10.2	310		0617	2.3	70		1202	10.5	320		1124	10.8	330
	1737	1.6	50		1700	2.3	70		1243	10.5	320		1803	2.0	60		1726	2.0	60
8 M	0553	1.6	50	23 Tu	0509	2.3	70	8 Th	0112	9.8	300	23 F	0023	10.2	310	8 Th	0545	2.6	80
	1222	10.8	330		1141	10.2	310		0709	3.0	90		0624	2.6	80		1209	10.2	310
	1830	2.0	60		1743	2.3	70		1332	9.8	300		1251	10.2	310		1810	2.6	80
9 Tu	0051	10.2	310	24 W	0554	2.6	80	9 F	0205	9.5	290	24 Sa	0117	10.2	310	9 F	0036	9.8	300
	0647	2.3	70		1225	10.2	310		0805	3.3	100		0721	3.0	90		0634	3.0	90
	1315	10.5	320		1829	2.3	70		1422	9.5	290		1345	10.2	310		1254	9.8	300
10 W	0145	9.8	300	25 Th	0044	9.8	300	10 Sa	0302	9.2	280	25 Su	0218	9.8	300	10 Sa	0126	9.5	290
	0744	2.6	80		0645	3.0	90		0902	3.6	110		0824	3.0	90		0726	3.3	100
	1408	10.2	310		1314	10.2	310		1516	9.2	280		1445	10.2	310		1342	9.5	290
11 Th	0242	9.5	290	26 F	0137	9.5	290	11 Su	0400	9.2	280	26 M	0324	10.2	310	11 Su	0220	9.2	280
	0843	3.0	90		0742	3.0	90		0959	3.6	110		0930	3.0	90		0822	3.6	110
	1501	9.5	290		1407	9.8	300		1611	9.2	280		1551	10.2	310		1434	9.2	280
12 F	0341	9.5	290	27 Sa	0238	9.8	300	12 M	0456	9.2	280	27 Tu	0430	10.2	310	12 M	0318	9.2	280
	0941	3.3	100		0845	3.0	90		1052	3.6	110		1035	2.6	80		0919	3.9	120
	1555	9.5	290		1506	9.8	300		1706	9.2	280		1657	10.2	310		1530	8.9	270
13 Sa	0438	9.5	290	28 Su	0344	9.8	300	13 Tu	0547	9.5	290	28 W	0533	10.8	330	13 Tu	0416	9.2	280
	1035	3.3	100		0949	2.6	80		1142	3.6	110		1136	2.3	70		1014	3.6	110
	1649	9.2	280		1609	10.2	310		1759	9.2	280		1800	10.5	320		1627	8.9	270
14 Su	0531	9.5	290	29 M	0450	10.2	310	14 W	0007	3.0	90	29 Th	0509	9.2	280	14 W	0509	9.2	280
	1126	3.3	100		1052	2.6	80		0634	9.8	300		1106	3.6	110		1106	3.6	110
	1741	9.2	280		1713	10.2	310		1228	3.3	100		1723	9.2	280		1723	9.2	280
15 M	0620	9.5	290	30 Tu	0551	10.8	330	15 Th	0050	3.0	90	30 F	0557	9.5	290	15 Th	0557	9.5	290
	1213	3.3	100		1153	2.0	60		0717	9.8	300		1153	3.3	100		1153	3.3	100
	1830	9.2	280		1816	10.5	320		1311	3.0	90		1814	9.5	290		1814	9.5	290
				31 W	0020	1.3	40												
					0649	11.2	340												
					1251	1.6	50												
				1915	11.2	340													

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Auckland, New Zealand, 2018

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0515 1.6 50 1138 10.2 310 1740 2.3 70	16 Tu	0003 9.5 290 0600 2.6 80 1233 9.5 290 1834 3.0 90	1 Th	0047 9.8 300 0645 2.0 60 1317 10.2 310 1926 2.3 70	16 F	0101 8.9 270 0701 3.3 100 1338 9.2 280 1942 3.3 100	1 Sa	0132 9.8 300 0731 2.3 70 1402 10.5 320 2012 2.3 70	16 Su	0110 8.9 270 0712 3.3 100 1344 9.2 280 1950 3.3 100
2 Tu	0006 10.2 310 0605 2.0 60 1231 10.2 310 1836 2.6 80	17 W	0050 9.2 280 0649 3.0 90 1325 9.2 280 1928 3.3 100	2 F	0147 9.8 300 0748 2.3 70 1420 10.2 310 2030 2.3 70	17 Sa	0152 8.5 260 0758 3.6 110 1431 9.2 280 2036 3.3 100	2 Su	0234 9.8 300 0836 2.3 70 1502 10.2 310 2113 2.3 70	17 M	0201 8.9 270 0807 3.6 110 1434 9.2 280 2041 3.0 90
3 W	0100 9.8 300 0701 2.3 70 1331 9.8 300 1938 2.6 80	18 Th	0141 8.9 270 0745 3.3 100 1421 9.2 280 2025 3.3 100	3 Sa	0251 9.8 300 0854 2.3 70 1523 10.2 310 2133 2.3 70	18 Su	0248 8.5 260 0858 3.6 110 1525 9.2 280 2130 3.3 100	3 M	0337 9.8 300 0939 2.3 70 1600 10.2 310 2212 2.0 60	18 Tu	0257 8.9 270 0905 3.6 110 1526 9.2 280 2135 3.0 90
4 Th	0200 9.5 290 0803 2.3 70 1435 9.8 300 2044 2.6 80	19 F	0237 8.5 260 0846 3.6 110 1519 8.9 270 2122 3.3 100	4 Su	0356 9.8 300 1000 2.3 70 1624 10.2 310 2233 2.0 60	19 M	0346 8.5 260 0955 3.3 100 1616 9.2 280 2221 3.0 90	4 Tu	0439 9.8 300 1039 2.3 70 1657 10.2 310 2308 2.0 60	19 W	0356 8.9 270 1002 3.3 100 1619 9.5 290 2228 2.6 80
5 F	0305 9.5 290 0911 2.3 70 1541 10.2 310 2149 2.3 70	20 Sa	0335 8.5 260 0947 3.6 110 1613 9.2 280 2215 3.3 100	5 M	0459 10.2 310 1100 2.0 60 1721 10.5 320 2329 1.6 50	20 Tu	0442 8.9 270 1047 3.3 100 1705 9.5 290 2310 2.6 80	5 W	0536 10.2 310 1133 2.3 70 1751 10.2 310	20 Th	0454 9.5 290 1056 3.0 90 1712 9.8 300 2321 2.3 70
6 Sa	0411 9.8 300 1017 2.0 60 1644 10.5 320 2251 2.0 60	21 Su	0433 8.9 270 1042 3.3 100 1703 9.2 280 2305 3.0 90	6 Tu	0556 10.5 320 1154 1.6 50 1814 10.5 320	21 W	0534 9.5 290 1135 3.0 90 1753 9.8 300 2357 2.3 70	6 Th	0000 2.0 60 0629 10.5 320 1223 2.3 70 1842 10.2 310	21 F	0548 9.8 300 1148 2.6 80 1806 10.2 310
7 Su	0515 10.2 310 1117 1.6 50 1741 10.8 330 2348 1.6 50	22 M	0526 9.2 280 1130 3.0 90 1749 9.5 290 2350 2.6 80	7 W	0022 1.3 40 0649 10.8 330 1244 1.6 50 1905 10.8 330	22 Th	0623 9.8 300 1221 2.3 70 1840 10.2 310	7 F	0049 1.6 50 0717 10.5 320 1310 2.0 60 1930 10.2 310	22 Sa	0013 1.6 50 0641 10.5 320 1239 2.3 70 1900 10.5 320
8 M	0614 10.5 320 1213 1.3 40 1836 11.2 340	23 Tu	0613 9.5 290 1213 2.6 80 1832 9.8 300	8 Th	0111 1.3 40 0738 10.8 330 1332 1.6 50 1953 10.8 330	23 F	0044 1.6 50 0709 10.2 310 1306 2.0 60 1927 10.5 320	8 Sa	0134 1.6 50 0802 10.5 320 1355 2.0 60 2016 10.2 310	23 Su	0104 1.3 40 0731 10.8 330 1330 1.6 50 1953 10.8 330
9 Tu	0042 1.3 40 0708 11.2 340 1304 1.0 30 1927 11.2 340	24 W	0033 2.3 70 0657 9.8 300 1254 2.3 70 1915 10.2 310	9 F	0157 1.3 40 0824 11.2 340 1417 1.6 50 2039 10.5 320	24 Sa	0130 1.3 40 0755 10.8 330 1352 1.6 50 2015 10.5 320	9 Su	0217 1.6 50 0845 10.5 320 1438 2.3 70 2100 9.8 300	24 M	0154 1.0 30 0822 11.5 350 1421 1.6 50 2046 10.8 330
10 W	0132 1.0 30 0758 11.2 340 1353 1.0 30 2016 11.2 340	25 Th	0115 2.0 60 0739 10.2 310 1335 2.0 60 1957 10.5 320	10 Sa	0241 1.3 40 0908 10.8 330 1501 1.6 50 2124 10.5 320	25 Su	0216 1.0 30 0842 11.2 340 1440 1.6 50 2104 10.8 330	10 M	0257 2.0 60 0926 10.5 320 1520 2.3 70 2141 9.8 300	25 Tu	0244 0.7 20 0912 11.5 350 1514 1.3 40 2138 11.2 340
11 Th	0220 1.0 30 0846 11.5 350 1439 1.0 30 2103 11.2 340	26 F	0157 1.6 50 0821 10.5 320 1416 1.6 50 2040 10.5 320	11 Su	0322 1.6 50 0950 10.8 330 1544 2.0 60 2207 10.2 310	26 M	0303 1.0 30 0929 11.2 340 1529 1.6 50 2154 10.8 330	11 Tu	0336 2.0 60 1007 10.5 320 1602 2.6 80 2222 9.8 300	26 W	0334 0.7 20 1003 11.8 360 1607 1.3 40 2231 11.2 340
12 F	0306 1.0 30 0931 11.2 340 1525 1.3 40 2149 10.8 330	27 Sa	0240 1.3 40 0903 10.8 330 1500 1.6 50 2124 10.5 320	12 M	0403 2.0 60 1032 10.5 320 1628 2.3 70 2249 9.8 300	27 Tu	0351 1.0 30 1018 11.2 340 1621 1.6 50 2245 10.8 330	12 W	0415 2.3 70 1047 10.2 310 1645 2.6 80 2301 9.5 290	27 Th	0425 1.0 30 1055 11.5 350 1701 1.3 40 2323 10.8 330
13 Sa	0350 1.3 40 1016 10.8 330 1610 1.6 50 2234 10.5 320	28 Su	0324 1.0 30 0947 10.8 330 1545 1.6 50 2211 10.5 320	13 Tu	0443 2.3 70 1115 10.2 310 1713 2.6 80 2331 9.5 290	28 W	0441 1.0 30 1110 11.2 340 1715 1.6 50 2338 10.5 320	13 Th	0454 2.6 80 1128 9.8 300 1728 3.0 90 2342 9.2 280	28 F	0518 1.3 40 1149 11.2 340 1756 1.6 50
14 Su	0433 1.6 50 1100 10.5 320 1656 2.3 70 2318 9.8 300	29 M	0409 1.3 40 1034 10.8 330 1634 2.0 60 2300 10.5 320	14 W	0525 2.6 80 1159 9.8 300 1800 3.0 90	29 Th	0533 1.3 40 1205 10.8 330 1812 2.0 60	14 F	0536 3.0 90 1211 9.5 290 1813 3.0 90	29 Sa	0018 10.5 320 0613 1.6 50 1244 10.8 330 1852 2.0 60
15 M	0516 2.0 60 1145 10.2 310 1743 2.6 80	30 Tu	0457 1.3 40 1123 10.5 320 1727 2.0 60 2351 10.2 310	15 Th	0014 9.2 280 0610 3.0 90 1246 9.5 290 1850 3.3 100	30 F	0034 10.2 310 0630 1.6 50 1302 10.5 320 1911 2.0 60	15 Sa	0024 9.2 280 0621 3.0 90 1256 9.5 290 1900 3.0 90	30 Su	0114 10.2 310 0712 2.0 60 1340 10.5 320 1950 2.0 60
		31 W	0548 1.6 50 1218 10.5 320 1824 2.3 70							31 M	0213 10.2 310 0813 2.6 80 1437 10.2 310 2048 2.3 70

Time meridian 180° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Darwin, Australia, 2018

Times and Heights of High and Low Waters

January				February				March									
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height						
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft						
1 M	0433 21.0 1134 3.0 1808 24.3 2355 9.2	640 90 740 280	16 Tu	0014 10.5 0522 19.4 1209 4.9 1847 23.0	320 590 150 700	1 Th	0040 8.2 0607 22.3 1257 2.0 1929 26.2	250 680 60 800	16 F	0100 8.9 0627 21.0 1300 4.6 1925 24.0	270 640 140 730	1 Th	0520 21.0 1205 3.9 1829 24.9	640 120 760	16 F	0011 9.2 0543 20.3 1210 6.2 1825 23.0	280 620 190 700
2 Tu	0522 22.0 1220 1.6 1856 25.6	670 50 780	17 W	0043 9.8 0557 20.3 1240 4.3 1918 23.6	300 620 130 720	2 F	0125 6.9 0657 23.3 1339 1.6 2008 26.6	210 710 70 810	17 Sa	0128 7.9 0702 22.0 1329 4.3 1952 24.6	240 670 130 750	2 F	0034 7.2 0612 22.6 1247 3.0 1908 25.9	220 690 90 790	17 Sa	0037 7.9 0619 21.7 1242 5.2 1854 24.0	240 660 160 730
3 W	0042 8.2 0608 22.6 1304 1.0 1940 26.2	250 690 30 800	18 Th	0110 9.2 0631 20.7 1311 3.9 1947 24.0	280 630 120 730	3 Sa	0209 6.2 0744 23.6 1417 2.3 2042 26.2	190 720 110 800	18 Su	0156 6.9 0735 22.6 1356 4.3 2017 24.6	210 690 130 750	3 Sa	0115 5.9 0700 24.0 1325 3.0 1942 26.2	180 730 90 800	18 Su	0105 6.6 0654 23.0 1311 4.9 1920 24.3	200 700 150 740
4 Th	0128 7.5 0655 23.0 1347 1.0 2022 26.2	230 700 30 800	19 F	0138 8.9 0705 21.3 1340 3.9 2014 24.0	270 650 120 730	4 Su	0251 5.6 0831 23.3 1455 3.6 2114 25.6	170 710 110 780	19 M	0228 6.2 0809 22.6 1422 4.9 2039 24.3	190 690 150 740	4 Su	0153 4.6 0744 24.3 1401 3.3 2012 25.9	140 740 100 790	19 M	0135 5.2 0728 23.6 1337 4.6 1944 24.6	160 720 140 750
5 F	0215 7.2 0743 22.6 1429 2.0 2102 25.9	220 690 60 790	20 Sa	0209 8.2 0739 21.3 1409 4.3 2041 24.0	250 650 130 730	5 M	0333 5.6 0915 22.3 1528 5.6 2144 24.3	170 680 170 740	20 Tu	0301 5.9 0845 22.6 1448 5.6 2102 24.0	180 690 170 730	5 M	0229 4.3 0823 24.3 1432 4.6 2039 25.3	130 740 140 770	20 Tu	0206 4.6 0801 24.0 1404 4.9 2006 24.6	140 730 150 750
6 Sa	0304 7.2 0832 22.3 1510 3.6 2140 24.9	220 680 110 760	21 Su	0243 8.2 0815 21.3 1437 4.9 2107 23.6	250 650 150 720	6 Tu	0414 6.2 0959 21.0 1558 7.9 2211 22.6	190 640 240 690	21 W	0336 5.9 0923 22.3 1517 6.9 2128 23.0	180 680 210 700	6 Tu	0305 4.3 0900 23.6 1501 6.2 2103 24.0	130 720 190 730	21 W	0238 3.9 0836 24.3 1432 5.9 2030 24.0	120 740 180 730
7 Su	0354 7.2 0924 21.0 1552 5.6 2218 23.6	220 640 170 720	22 M	0319 7.9 0852 21.0 1505 5.9 2133 23.0	240 640 180 700	7 W	0455 7.2 1044 19.7 1623 9.8 2239 20.7	220 600 300 630	22 Th	0413 6.2 1006 21.3 1550 8.5 2156 21.7	190 650 260 660	7 W	0338 4.9 0936 22.3 1526 8.2 2126 22.3	150 680 250 680	22 Th	0312 3.9 0913 23.6 1504 7.2 2058 23.0	120 720 220 700
8 M	0445 7.9 1019 19.7 1634 7.9 2255 22.0	240 600 240 670	23 Tu	0359 8.2 0933 20.3 1535 7.2 2202 22.3	250 620 220 680	8 Th	0539 8.2 1136 18.0 1702 12.1 2312 19.0	250 550 370 580	23 F	0454 6.9 1057 20.0 1633 10.5 2230 20.3	210 610 320 620	8 Th	0411 6.2 1012 21.0 1544 9.8 2149 20.7	190 640 300 630	23 F	0349 4.6 0954 22.6 1540 8.9 2127 21.7	140 690 270 660
9 Tu	0540 8.2 1121 18.0 1721 10.2 2335 20.3	250 550 310 620	24 W	0442 8.2 1022 19.4 1611 8.9 2234 21.3	250 590 270 650	9 F	0631 9.2 1247 17.1 1828 13.5	280 520 410	24 Sa	0543 7.5 1202 19.0 1740 12.5 2317 18.7	230 580 380 570	9 F	0446 7.5 1052 19.4 1611 11.8 2216 18.7	230 590 360 570	24 Sa	0429 5.9 1042 21.0 1623 10.8 2202 19.7	180 640 330 600
10 W	0640 8.9 1235 17.1 1824 11.8	270 520 360	25 Th	0529 8.5 1121 18.7 1703 10.5 2314 20.0	260 570 320 610	10 Sa	0007 17.4 0742 9.8 1454 17.1 2029 14.1	530 300 520 430	25 Su	0654 8.2 1339 18.4 1931 13.5	250 560 410	10 Sa	0528 8.9 1144 17.7 1722 13.5 2255 16.7	270 540 410 510	25 Su	0517 7.2 1143 19.7 1732 12.5 2254 17.7	220 600 380 540
11 Th	0024 19.0 0748 8.9 1408 17.1 1947 13.1	580 270 520 400	26 F	0627 8.5 1236 18.0 1817 12.1	260 550 370	11 Su	0154 16.1 0915 9.5 1632 18.4 2252 13.1	490 290 560 400	26 M	0048 17.4 0839 8.2 1538 19.4 2132 12.8	530 250 590 390	11 Su	0628 10.2 1309 16.7 1930 14.4	310 510 440	26 M	0627 8.5 1315 18.7 1934 13.5	260 570 410
12 F	0131 17.7 0902 8.5 1545 18.0 2126 13.1	540 260 550 400	27 Sa	0009 19.0 0744 8.2 1418 18.4 1958 12.8	580 250 560 390	12 M	0336 16.7 1030 8.5 1717 20.0 2338 11.8	510 260 610 360	27 Tu	0304 17.4 1011 6.9 1650 21.3 2254 11.2	530 210 650 340	12 M	0047 15.4 0758 10.5 1559 17.4 2250 13.1	470 320 530 400	27 Tu	0056 16.4 0816 9.2 1513 19.4 2137 12.1	500 280 590 370
13 Sa	0252 17.7 1007 7.5 1648 19.7 2248 12.5	540 230 600 380	28 Su	0131 18.4 0912 7.2 1557 19.7 2137 12.5	560 220 600 380	13 Tu	0432 17.7 1119 7.2 1754 21.3	540 220 650	28 W	0421 19.0 1114 5.2 1743 23.3 2349 9.2	580 160 710 280	13 Tu	0322 15.7 0949 9.8 1649 19.0 2321 11.8	480 300 580 360	28 W	0314 17.4 0955 8.2 1627 21.0 2248 9.8	530 250 640 300
14 Su	0356 18.0 1056 6.9 1734 21.0 2338 11.5	550 210 640 350	29 M	0309 18.7 1025 5.6 1703 22.0 2251 11.2	570 170 670 340	14 W	0009 10.8 0515 19.0 1157 6.2 1826 22.3	330 580 190 680	14 W	0424 17.1 1052 8.5 1724 20.3 2346 10.5	520 260 620 320	14 W	0425 19.4 1101 6.6 1719 22.6 2337 7.9	590 200 690 240	29 Th	0425 19.4 1101 6.6 1719 22.6 2337 7.9	590 200 690 240
15 M	0443 18.7 1135 5.9 1812 22.3	570 180 680	30 Tu	0419 19.7 1122 3.9 1758 23.6 2350 9.8	600 120 720 300	15 Th	0035 9.8 0552 20.0 1230 5.2 1857 23.3	300 610 160 710	15 Th	0506 18.7 1135 7.2 1755 21.7	570 220 660	15 Th	0522 21.3 1150 5.6 1802 24.0	650 170 730	30 F	0522 21.3 1150 5.6 1802 24.0	650 170 730
			31 W	0515 21.0 1212 2.6 1846 25.3	640 80 770							31 Sa	0018 5.9 0612 23.0 1231 4.6 1837 24.6	180 700 140 750	31 Sa	0018 5.9 0612 23.0 1231 4.6 1837 24.6	180 700 140 750

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Darwin, Australia, 2018

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
	<small>h m ft cm</small>		<small>h m ft cm</small>		<small>h m ft cm</small>		<small>h m ft cm</small>		<small>h m ft cm</small>		<small>h m ft cm</small>
1 Su	0054 4.6 140 0655 24.3 740 1306 4.6 140 1908 24.9 760	16 M	0035 5.2 160 0638 23.3 710 1245 5.9 180 1840 24.0 730	1 Tu	0100 3.3 100 0718 24.3 740 1313 6.6 200 1854 23.3 710	16 W	0038 2.6 80 0659 24.6 750 1251 6.6 200 1829 23.3 710	1 F	0134 3.6 110 0808 23.3 710 1350 8.2 250 1922 21.0 640	16 Sa	0137 1.3 40 0811 24.9 760 1355 7.2 220 1928 22.3 680
2 M	0128 3.6 110 0734 24.6 750 1338 4.9 150 1935 24.9 760	17 Tu	0107 3.9 120 0715 24.3 740 1315 5.6 170 1906 24.0 730	2 W	0130 3.0 90 0752 24.3 740 1342 7.2 220 1921 22.6 690	17 Th	0115 2.0 60 0739 25.3 770 1326 6.6 200 1903 23.3 710	2 Sa	0206 3.9 120 0836 22.6 690 1420 8.5 260 1954 20.3 620	17 Su	0222 1.6 50 0853 24.6 750 1442 7.2 220 2015 21.7 660
3 Tu	0201 3.3 100 0809 24.6 750 1408 5.9 180 1958 24.3 740	18 W	0140 3.0 90 0751 24.9 760 1345 5.9 180 1932 24.0 730	3 Th	0201 3.3 100 0824 24.0 730 1410 7.9 240 1947 22.0 670	18 F	0153 1.6 50 0818 25.3 770 1403 7.2 220 1939 23.0 700	3 Su	0238 4.9 150 0907 22.0 670 1452 9.2 280 2029 19.4 590	18 M	0307 2.6 80 0936 24.0 730 1534 7.5 230 2107 20.7 630
4 W	0233 3.6 110 0842 24.0 730 1435 7.2 220 2022 23.3 710	19 Th	0214 2.6 80 0827 24.9 760 1417 6.6 200 2001 23.6 720	4 F	0232 3.9 120 0854 23.0 700 1438 8.9 270 2015 21.0 640	19 Sa	0233 2.0 60 0858 24.6 750 1446 7.9 240 2020 22.0 670	4 M	0312 5.9 180 0938 21.3 650 1530 9.8 300 2107 18.4 560	19 Tu	0355 4.3 130 1020 22.6 690 1633 8.2 250 2209 19.4 590
5 Th	0303 4.3 130 0914 23.0 700 1459 8.5 260 2046 22.0 670	20 F	0250 2.6 80 0905 24.3 740 1453 7.5 230 2034 22.3 680	5 Sa	0302 4.9 150 0924 22.0 670 1507 9.8 300 2046 19.7 600	20 Su	0316 3.0 90 0942 23.6 720 1533 8.9 270 2106 20.3 620	5 Tu	0350 6.9 210 1013 20.3 620 1618 10.5 320 2152 17.4 530	20 W	0447 6.2 190 1107 21.3 650 1739 8.5 260 2322 18.4 560
6 F	0333 5.2 160 0946 21.7 660 1523 9.8 300 2112 20.3 620	21 Sa	0329 3.6 110 0946 23.3 710 1534 9.2 280 2110 21.0 640	6 Su	0336 6.2 190 0957 21.0 640 1543 10.8 330 2120 18.0 550	21 M	0403 4.9 150 1030 22.0 670 1633 9.8 300 2203 18.7 570	6 W	0432 8.2 250 1053 19.4 590 1723 10.8 330 2255 16.4 500	21 Th	0544 8.2 250 1158 20.0 610 1850 8.5 260
7 Sa	0406 6.9 210 1021 20.3 620 1554 11.5 350 2140 18.4 560	22 Su	0413 5.2 160 1035 21.7 660 1625 10.8 330 2155 19.0 580	7 M	0415 7.9 240 1036 19.7 600 1635 11.8 360 2204 16.7 510	22 Tu	0458 6.6 200 1125 20.7 630 1753 10.5 320 2327 17.4 530	7 Th	0524 9.5 290 1141 18.7 570 1838 10.8 330	22 F	0043 17.7 540 0651 9.8 300 1257 19.0 580 2001 8.2 250
8 Su	0445 8.2 250 1104 18.7 570 1653 12.8 390 2216 16.4 500	23 M	0505 6.9 210 1134 20.0 610 1744 12.1 370 2306 17.1 520	8 Tu	0503 9.2 280 1125 18.4 560 1802 12.5 380 2322 15.4 470	23 W	0605 8.5 260 1231 19.7 600 1923 10.2 310	8 F	0017 15.7 480 0628 10.5 320 1242 18.0 550 1954 10.2 310	23 Sa	0207 17.7 540 0806 10.8 330 1404 18.4 560 2109 7.2 220
9 M	0539 9.8 300 1205 17.4 530 1845 13.8 420 2353 15.1 460	24 Tu	0617 8.5 260 1257 19.0 580 1941 12.1 370	9 W	0607 10.5 320 1231 17.7 540 1949 12.1 370	24 Th	0114 17.1 520 0728 9.5 290 1348 19.0 580 2045 9.2 280	9 Sa	0148 16.4 500 0744 10.8 330 1353 18.0 550 2101 8.9 270	24 Su	0325 18.7 570 0924 10.8 330 1510 18.4 560 2206 6.6 200
10 Tu	0655 10.8 330 1350 17.1 520 2154 13.1 400	25 W	0123 16.4 500 0756 9.5 290 1434 9.0 580 2121 10.5 320	10 Th	0125 15.1 460 0728 10.8 330 1401 17.7 540 2114 11.2 340	25 F	0244 18.0 550 0852 9.8 300 1500 19.4 590 2150 7.5 230	10 Su	0309 17.7 540 0901 10.5 320 1502 18.7 570 2156 7.2 220	25 M	0430 19.7 600 1032 10.5 320 1604 18.7 570 2254 5.6 170
11 W	0249 15.1 460 0839 10.8 330 1551 18.0 550 2235 11.5 350	26 Th	0309 17.7 540 0930 8.9 270 1549 20.3 620 2225 8.5 260	11 F	0306 16.4 500 0856 10.5 320 1520 18.4 560 2205 9.5 290	26 Sa	0354 19.4 590 1003 9.5 290 1557 20.0 610 2241 6.2 190	11 M	0411 19.7 600 1007 9.5 290 1555 19.7 600 2244 5.2 160	26 Tu	0523 21.0 640 1124 9.8 300 1647 19.0 580 2334 4.9 150
12 Th	0359 16.7 510 1006 9.8 300 1635 19.4 590 2303 9.8 300	27 F	0417 19.7 600 1037 8.2 250 1642 21.3 650 2313 6.6 200	12 Sa	0403 18.0 550 1005 9.5 290 1610 19.7 600 2246 7.5 230	27 Su	0452 20.7 630 1058 8.9 270 1642 20.7 630 2323 4.9 150	12 Tu	0506 21.3 650 1101 8.9 270 1641 20.7 630 2329 3.6 110	27 W	0608 21.7 660 1204 9.2 280 1723 19.4 590
13 F	0442 18.7 570 1058 8.5 260 1710 20.7 630 2333 8.2 250	28 Sa	0512 21.3 650 1127 7.2 220 1724 22.3 680 2353 5.2 160	13 Su	0449 20.0 610 1056 8.5 260 1649 21.0 640 2324 5.9 180	28 M	0541 22.0 670 1142 8.5 260 1718 21.0 640 2359 4.3 130	13 W	0555 23.0 700 1147 8.2 250 1722 21.7 660	28 Th	0009 4.3 130 0647 22.3 680 1237 8.9 270 1758 20.0 610
14 Sa	0522 20.3 620 1139 7.2 220 1741 22.0 670	29 Su	0600 23.0 700 1207 6.6 200 1758 23.0 700	14 M	0534 22.0 670 1138 7.5 230 1724 22.0 670	29 Tu	0624 23.0 700 1219 8.2 250 1750 21.3 650	14 Th	0012 2.3 70 0643 24.3 740 1230 7.5 230 1802 22.3 680	29 F	0043 3.9 120 0721 22.6 690 1306 8.5 260 1831 20.3 620
15 Su	0003 6.6 200 0600 22.0 670 1214 6.2 190 1812 23.0 700	30 M	0028 3.9 120 0642 24.0 730 1242 6.6 200 1827 23.3 710	15 Tu	0001 4.3 130 0617 23.6 720 1216 6.9 210 1758 22.6 690	30 W	0032 3.6 110 0702 23.3 710 1251 7.9 240 1820 21.3 650	15 F	0054 1.3 40 0728 24.9 760 1311 7.2 220 1843 22.6 690	30 Sa	0115 3.9 120 0753 22.6 690 1335 8.2 250 1905 20.3 620
						31 Th	0103 3.3 100 0736 23.3 710 1321 7.9 240 1850 21.3 650				

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
Heights are referred to the chart datum of soundings.

Darwin, Australia, 2018

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 Su	0147 4.3 0822 22.6 1406 8.2 1940 20.3	16 M	0213 1.3 0842 24.9 1439 5.9 2014 22.3	1 W	0230 4.6 0853 22.3 1501 6.9 2042 20.7	16 Th	0317 4.6 0926 23.6 1551 4.6 2145 21.7	1 Sa	0304 6.6 0907 22.0 1550 5.6 2147 21.0	16 Su	0347 9.2 0933 20.0 1630 6.2 2244 19.4
2 M	0219 4.6 0850 22.3 1439 8.2 2016 20.0	17 Tu	0256 2.6 0921 24.3 1528 5.9 2107 21.7	2 Th	0300 5.6 0918 22.0 1538 6.9 2121 20.0	17 F	0353 6.6 0955 22.3 1634 5.2 2231 20.0	2 Su	0338 7.9 0932 20.7 1629 6.2 2235 20.0	17 M	0422 11.2 0959 18.0 1713 7.9 2336 17.7
3 Tu	0251 5.2 0918 21.7 1517 8.5 2055 19.4	18 W	0340 4.3 0959 23.3 1618 6.2 2202 20.3	3 F	0330 6.6 0944 21.3 1619 7.2 2206 19.4	18 Sa	0429 8.9 1023 20.3 1719 6.6 2322 18.7	3 M	0420 9.8 1002 19.4 1716 6.9 2334 18.7	18 Tu	0532 12.8 1039 15.7 1815 9.5
4 W	0325 6.2 0948 21.0 1600 8.9 2138 18.4	19 Th	0424 6.2 1036 22.0 1711 6.6 2300 19.0	4 Sa	0406 7.9 1013 20.3 1704 7.5 2300 18.7	19 Su	0511 10.8 1056 18.4 1812 7.9	4 Tu	0521 11.5 1044 17.7 1819 7.5	19 W	0054 16.7 0741 13.5 1245 14.1 1945 10.2
5 Th	0401 7.2 1020 20.3 1650 9.2 2230 17.7	20 F	0510 8.2 1115 20.3 1807 7.2	5 Su	0452 9.5 1048 19.0 1756 7.9	20 M	0026 17.4 0621 12.5 1148 16.4 1918 8.5	5 W	0054 18.0 0656 12.5 1203 16.1 1952 7.9	20 Th	0321 17.1 1037 11.8 1530 15.1 2129 9.5
6 F	0443 8.5 1057 19.4 1746 9.2 2332 17.1	21 Sa	0004 18.0 0605 10.2 1159 18.7 1910 7.9	6 M	0004 18.0 0555 10.8 1136 18.0 1901 7.9	21 Tu	0201 16.7 0811 13.1 1336 15.1 2045 8.9	6 Th	0247 18.4 0855 12.1 1433 16.1 2130 6.9	21 F	0427 18.4 1110 10.5 1623 16.7 2234 8.5
7 Sa	0536 9.8 1142 18.7 1848 8.9	22 Su	0120 17.4 0716 11.5 1300 17.4 2020 7.9	7 Tu	0125 17.7 0720 11.8 1250 17.1 2024 7.2	22 W	0355 17.7 1035 12.1 1528 15.7 2204 8.2	7 F	0412 20.3 1023 10.5 1557 18.0 2240 5.2	22 Sa	0505 19.7 1134 9.2 1701 18.4 2317 7.2
8 Su	0046 17.1 0643 10.5 1240 18.0 1957 8.2	23 M	0251 17.4 0846 12.1 1423 16.7 2130 7.5	8 W	0307 18.7 0858 11.8 1435 17.1 2145 5.9	23 Th	0454 19.0 1125 10.8 1627 16.7 2258 7.2	8 Sa	0510 22.0 1120 8.5 1656 20.0 2335 3.9	23 Su	0536 21.0 1158 7.9 1734 20.0 2353 6.2
9 M	0211 17.7 0803 11.2 1353 17.7 2107 6.9	24 Tu	0411 18.7 1020 11.5 1538 16.7 2229 6.6	9 Th	0426 20.3 1019 10.5 1554 18.4 2250 4.6	24 F	0535 20.3 1158 9.5 1708 18.0 2340 6.2	9 Su	0559 23.6 1207 6.6 1748 22.0	24 M	0606 22.0 1221 6.6 1807 21.3
10 Tu	0336 19.0 0924 10.8 1508 18.4 2210 5.2	25 W	0508 19.7 1122 10.5 1630 17.4 2315 5.9	10 F	0526 22.0 1121 9.2 1651 20.0 2344 3.0	25 Sa	0609 21.3 1224 8.5 1743 19.4	10 M	0021 3.0 0641 24.9 1248 4.9 1836 23.3	25 Tu	0024 5.2 0633 22.6 1247 5.6 1840 22.3
11 W	0442 20.7 1032 9.8 1609 19.4 2305 3.9	26 Th	0553 21.0 1202 9.8 1710 18.4 2354 5.2	11 Sa	0618 23.6 1213 7.5 1743 21.3	26 Su	0015 5.2 0641 22.3 1247 7.5 1817 20.3	11 Tu	0102 2.6 0718 25.3 1327 3.3 1922 24.3	26 W	0053 4.9 0659 23.3 1315 4.6 1913 23.0
12 Th	0539 22.3 1127 8.9 1659 20.3 2355 2.3	27 F	0631 21.7 1233 8.9 1746 19.4	12 Su	0033 2.0 0704 24.9 1259 6.2 1834 22.6	27 M	0046 4.6 0709 22.6 1311 6.9 1850 21.3	12 W	0140 3.0 0749 25.3 1405 2.6 2004 24.3	27 Th	0121 4.9 0723 23.6 1344 3.6 1945 23.6
13 F	0631 24.0 1217 7.9 1747 21.3	28 Sa	0029 4.6 0705 22.3 1259 8.2 1821 20.0	13 M	0118 1.3 0744 25.6 1344 4.9 1924 23.3	28 Tu	0115 4.3 0735 23.3 1338 5.9 1923 22.0	13 Th	0215 3.9 0818 24.6 1442 2.6 2044 23.6	28 F	0147 5.2 0744 23.3 1414 3.3 2018 23.6
14 Sa	0042 1.3 0718 24.9 1304 6.9 1834 22.3	29 Su	0101 4.3 0735 22.6 1325 7.9 1855 20.7	14 Tu	0159 1.6 0821 25.6 1427 4.3 2013 23.3	29 W	0142 4.3 0759 23.3 1408 5.2 1956 22.0	14 F	0248 5.6 0844 23.6 1518 3.3 2123 22.6	29 Sa	0214 5.9 0808 23.0 1446 3.6 2053 23.3
15 Su	0128 1.0 0802 25.3 1351 6.2 1923 22.6	30 M	0132 3.9 0803 22.6 1354 7.2 1930 20.7	15 W	0239 3.0 0855 24.9 1509 3.9 2059 22.6	30 Th	0208 4.6 0822 23.3 1439 4.9 2030 22.0	15 Sa	0319 7.2 0909 22.0 1553 4.6 2202 21.0	30 Su	0245 7.2 0832 22.0 1521 4.3 2133 22.3
		31 Tu	0201 4.3 0829 22.6 1426 6.9 2006 20.7			31 F	0235 5.6 0843 22.6 1513 5.2 2107 21.7				

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Townsville, Australia, 2018

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
	h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm
1 M	0207 0.7 20 0832 12.8 390 1506 3.3 100 2015 10.2 310	16 Tu	0210 2.6 80 0902 10.8 330 1533 4.9 150 2027 8.9 270	1 Th	0319 1.0 30 0945 13.5 410 1625 3.0 90 2145 10.2 310	16 F	0244 2.6 80 0929 11.2 340 1555 4.6 140 2113 9.5 290	1 Th	0229 1.0 30 0843 13.5 410 1519 2.6 80 2048 10.8 330	16 F	0204 3.0 90 0829 11.2 340 1459 3.6 110 2028 10.2 310
2 Tu	0246 0.7 20 0917 13.1 400 1556 3.3 100 2105 9.8 300	17 W	0232 2.6 80 0928 10.8 330 1559 4.9 150 2055 8.5 260	2 F	0401 1.3 40 1028 12.8 390 1712 3.6 110 2232 9.8 300	17 Sa	0310 3.0 90 0956 10.8 330 1622 4.6 140 2147 9.2 280	2 F	0305 1.3 40 0921 13.1 400 1554 3.0 90 2129 10.8 330	17 Sa	0227 3.0 90 0853 11.5 350 1519 3.6 110 2058 10.5 320
3 W	0330 1.0 30 1004 13.1 400 1649 3.3 100 2157 9.5 290	18 Th	0258 2.6 80 0958 10.8 330 1631 4.9 150 2126 8.5 260	3 Sa	0444 2.3 70 1112 11.8 360 1802 3.9 120 2322 8.9 270	18 Su	0338 3.3 100 1025 10.8 330 1654 4.6 140 2228 9.2 280	3 Sa	0342 2.0 60 0959 12.5 380 1630 3.3 100 2210 10.5 320	18 Su	0254 3.0 90 0919 11.2 340 1540 3.6 110 2134 10.5 320
4 Th	0417 1.3 40 1054 12.5 380 1747 3.6 110 2253 8.9 270	19 F	0326 3.0 90 1029 10.5 320 1709 5.2 160 2202 8.2 250	4 Su	0533 3.6 110 1157 10.8 330 1904 4.6 140	19 M	0408 3.9 120 1058 10.2 310 1739 4.9 150 2317 8.5 260	4 Su	0419 3.0 90 1036 11.5 350 1705 3.9 120 2253 9.8 300	19 M	0323 3.3 100 0948 10.8 330 1604 3.6 110 2216 10.2 310
5 F	0510 2.3 70 1145 11.8 360 1852 4.3 130 2355 8.2 250	20 Sa	0354 3.3 100 1102 10.2 310 1756 5.2 160 2245 7.9 240	5 M	0021 8.2 250 0645 4.9 150 1248 9.5 290 2022 4.9 150	20 Tu	0444 4.6 140 1136 9.5 290 1845 5.2 160	5 M	0501 4.3 130 1113 10.2 310 1743 4.6 140 2340 8.9 270	20 Tu	0357 3.9 120 1022 10.2 310 1635 3.9 120 2303 9.8 300
6 Sa	0614 3.3 100 1242 10.8 330 2007 4.3 130	21 Su	0425 3.9 120 1139 9.8 300 1855 5.6 170 2343 7.5 230	6 Tu	0204 7.5 230 0841 5.9 180 1400 8.5 260 2154 4.9 150	21 W	0020 8.2 250 0543 5.6 170 1226 8.9 270 2007 5.2 160	6 Tu	0602 5.6 170 1153 8.9 270 1834 5.2 160	21 W	0442 4.9 150 1101 9.2 280 1725 4.6 140
7 Su	0118 7.5 230 0742 4.6 140 1351 9.8 300 2126 4.3 130	22 M	0503 4.6 140 1224 9.2 280 2007 5.6 170	7 W	0433 7.9 240 1040 5.9 180 1551 8.2 250 2313 4.6 140	22 Th	0151 7.9 240 0827 6.2 190 1344 8.2 250 2140 4.9 150	7 W	0044 8.2 250 0804 6.2 190 1245 7.9 240 2015 5.6 170	22 Th	0002 9.2 280 0633 5.9 180 1154 8.2 250 1904 4.9 150
8 M	0317 7.5 230 0921 4.9 150 1515 9.2 280 2242 3.9 120	23 Tu	0059 7.2 220 0611 5.6 170 1320 8.9 270 2126 4.9 150	8 Th	0558 8.9 270 1202 5.6 170 1717 8.2 250	23 F	0416 8.5 260 1046 5.9 180 1554 7.9 240 2256 4.3 130	8 Th	0345 7.9 240 1035 6.2 190 1443 7.2 220 2223 5.6 170	23 F	0126 8.9 270 0846 6.2 190 1322 7.5 230 2053 4.9 150
9 Tu	0454 8.2 250 1053 5.2 160 1632 9.2 280 2341 3.6 110	24 W	0259 7.2 220 0841 5.9 180 1440 8.5 260 2231 4.6 140	9 F	0005 4.3 130 0636 9.5 290 1254 4.9 150 1807 8.2 250	24 Sa	0527 9.5 290 1200 5.2 160 1719 8.2 250 2351 3.3 100	9 F	0542 8.9 270 1155 5.6 170 1713 7.2 220 2333 4.9 150	24 Sa	0351 9.2 280 1053 5.6 170 1614 7.5 230 2230 4.6 140
10 W	0600 8.9 270 1205 4.9 150 1729 8.9 270	25 Th	0439 8.2 250 1037 5.9 180 1606 8.5 260 2322 3.6 110	10 Sa	0041 3.6 110 0704 10.2 310 1332 4.6 140 1842 8.5 260	25 Su	0614 10.8 330 1249 4.3 130 1809 8.9 270	10 Sa	0613 9.5 290 1238 4.9 150 1801 7.9 240	25 Su	0509 10.2 310 1155 4.6 140 1729 8.2 250 2336 3.6 110
11 Th	0025 3.3 100 0644 9.5 290 1259 4.9 150 1812 8.9 270	26 F	0537 9.2 280 1154 5.2 160 1709 8.9 270	11 Su	0108 3.6 110 0728 10.5 320 1402 4.6 140 1909 8.5 260	26 M	0036 2.6 80 0652 11.8 360 1330 3.6 110 1850 9.5 290	11 Su	0014 4.6 140 0638 9.8 300 1310 4.6 140 1831 8.2 250	26 M	0558 11.2 340 1240 3.6 110 1814 8.9 270
12 F	0059 3.0 90 0716 10.2 310 1341 4.6 140 1847 8.9 270	27 Sa	0005 3.0 90 0621 10.5 320 1248 4.6 140 1758 9.2 280	12 M	0128 3.3 100 0752 10.8 330 1427 4.6 140 1932 8.9 270	27 Tu	0115 2.0 60 0729 12.5 380 1408 3.0 90 1929 10.2 310	12 M	0044 4.3 130 0701 10.5 320 1337 4.3 130 1856 8.5 260	27 Tu	0025 3.0 90 0636 11.8 360 1318 3.0 90 1850 9.8 300
13 Sa	0125 3.0 90 0744 10.5 320 1415 4.6 140 1915 8.9 270	28 Su	0045 2.3 70 0702 11.5 350 1334 3.9 120 1843 9.8 300	13 Tu	0143 3.0 90 0815 10.8 330 1448 4.3 130 1954 9.2 280	28 W	0152 1.3 40 0806 13.1 400 1443 2.6 80 2008 10.8 330	13 Tu	0106 3.9 120 0724 10.8 330 1359 4.3 130 1918 8.9 270	28 W	0106 2.3 70 0710 12.5 380 1352 2.6 80 1925 10.5 320
14 Su	0142 3.0 90 0810 10.5 320 1444 4.6 140 1939 8.9 270	29 M	0123 1.3 40 0742 12.5 380 1417 3.3 100 1928 10.2 310	14 W	0200 3.0 90 0839 11.2 340 1508 4.3 130 2017 9.2 280	29 Th	0125 3.3 100 0745 10.8 330 1419 3.9 120 1938 9.5 290	14 W	0125 3.3 100 0745 10.8 330 1419 3.9 120 1938 9.5 290	29 Th	0142 2.0 60 0744 12.8 390 1423 2.3 70 1959 10.8 330
15 M	0154 2.6 80 0836 10.8 330 1509 4.6 140 2003 8.9 270	30 Tu	0201 1.0 30 0822 13.1 400 1459 3.0 90 2013 10.5 320	15 Th	0220 2.6 80 0903 11.2 340 1531 4.3 130 2043 9.5 290	30 F	0144 3.3 100 0807 11.2 340 1439 3.9 120 2001 9.8 300	15 Th	0144 3.3 100 0807 11.2 340 1439 3.9 120 2001 9.8 300	30 F	0217 2.0 60 0818 12.5 380 1453 2.3 70 2036 11.2 340
		31 W	0239 0.7 20 0903 13.5 410 1541 3.0 90 2058 10.5 320							31 Sa	0252 2.3 70 0853 12.1 370 1521 2.6 80 2114 11.2 340

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Townsville, Australia, 2018

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 Su	0544 5.2 160 1025 7.2 220 1611 3.6 110 2324 9.5 290	16 M	0617 3.3 100 1131 8.2 250 1748 2.6 80	1 W	0633 4.9 150 1136 6.9 210 1652 4.3 130 2356 8.9 270	16 Th	0021 9.5 290 0745 3.9 120 1329 7.5 230 2002 4.9 150	1 Sa	0737 4.6 140 1324 7.5 230 1951 5.9 180	16 Su	0228 6.6 200 0948 4.6 140 1706 8.5 260 2336 4.9 150
2 M	0640 5.2 160 1117 6.6 200 1647 3.9 120	17 Tu	0009 11.2 340 0724 3.6 110 1240 7.9 240 1857 3.6 110	2 Th	0736 4.9 150 1240 6.9 210 1741 4.9 150	17 F	0123 8.2 250 0907 3.9 120 1535 7.9 240 2200 5.2 160	2 Su	0052 7.2 220 0902 4.6 140 1541 7.9 240 2224 5.9 180	17 M	0455 6.6 200 1103 4.3 130 1752 9.2 280
3 Tu	0003 9.2 280 0753 5.2 160 1220 6.6 200 1732 4.6 140	18 W	0107 10.2 310 0837 3.6 110 1415 7.5 230 2027 4.6 140	3 F	0041 8.2 250 0848 4.6 140 1413 6.9 210 1950 5.9 180	18 Sa	0311 7.5 230 1029 3.9 120 1719 8.5 260 2340 4.9 150	3 M	0307 6.9 210 1020 3.9 120 1702 8.9 270 2345 4.9 150	18 Tu	0024 4.3 130 0548 7.2 220 1152 3.6 110 1822 9.5 290
4 W	0050 8.5 260 0908 4.9 150 1343 6.2 190 1849 5.2 160	19 Th	0222 9.2 280 0951 3.6 110 1557 7.9 240 2208 4.9 150	4 Sa	0145 7.9 240 0956 4.3 130 1604 7.5 230 2201 5.9 180	19 Su	0454 7.2 220 1132 3.6 110 1815 9.2 280	4 Tu	0456 7.2 220 1118 3.3 100 1751 9.8 300	19 W	0059 3.6 110 0619 7.5 230 1227 3.6 110 1849 9.8 300
5 Th	0151 8.2 250 1005 4.6 140 1524 6.6 200 2033 5.6 170	20 F	0349 8.5 260 1058 3.3 100 1722 8.5 260 2339 4.9 150	5 Su	0324 7.5 230 1050 3.6 110 1713 8.2 250 2339 5.2 160	20 M	0040 4.3 130 0553 7.5 230 1219 3.3 100 1850 9.8 300	5 W	0031 3.9 120 0547 7.9 240 1205 2.3 70 1831 10.8 330	20 Th	0128 3.3 100 0645 7.9 240 1253 3.3 100 1913 10.2 310
6 F	0310 8.2 250 1049 3.9 120 1637 7.2 220 2221 5.6 170	21 Sa	0501 8.2 250 1153 3.0 90 1822 9.2 280	6 M	0441 7.5 230 1136 3.0 90 1802 9.5 290	21 Tu	0122 3.9 120 0631 7.5 230 1253 3.0 90 1918 10.2 310	6 Th	0111 3.3 100 0627 8.5 260 1247 1.6 50 1907 11.8 360	21 F	0151 3.3 100 0709 8.2 250 1313 3.0 90 1936 10.5 320
7 Sa	0413 8.2 250 1126 3.6 110 1729 8.2 250 2339 5.2 160	22 Su	0044 4.6 140 0554 8.2 250 1237 3.0 90 1904 9.8 300	7 Tu	0035 4.6 140 0534 8.2 250 1217 2.3 70 1843 10.5 320	22 W	0156 3.6 110 0701 7.9 240 1318 3.0 90 1944 10.2 310	7 F	0147 2.6 80 0704 9.2 280 1325 1.0 30 1944 12.5 380	22 Sa	0212 3.3 100 0730 8.5 260 1330 3.0 90 1957 10.5 320
8 Su	0459 8.5 260 1200 3.0 90 1812 9.2 280	23 M	0132 4.3 130 0634 8.2 250 1311 2.6 80 1937 10.2 310	8 W	0119 3.9 120 0619 8.5 260 1257 1.6 50 1923 11.5 350	23 Th	0222 3.6 110 0725 8.2 250 1335 2.6 80 2008 10.5 320	8 Sa	0222 2.0 60 0743 9.8 300 1404 0.7 20 2021 12.8 390	23 Su	0230 3.3 100 0751 8.9 270 1349 2.6 80 2019 10.5 320
9 M	0034 4.6 140 0539 8.9 270 1234 2.3 70 1852 10.2 310	24 Tu	0211 3.9 120 0707 8.2 250 1335 2.6 80 2005 10.2 310	9 Th	0200 3.3 100 0703 9.2 280 1336 1.0 30 2002 12.5 380	24 F	0246 3.6 110 0748 8.2 250 1351 2.6 80 2032 10.5 320	9 Su	0258 2.0 60 0824 10.2 310 1443 0.7 20 2059 12.8 390	24 M	0248 3.3 100 0815 9.2 280 1412 2.6 80 2040 10.5 320
10 Tu	0121 4.3 130 0620 9.2 280 1309 1.6 50 1932 11.2 340	25 W	0243 3.9 120 0736 8.2 250 1351 2.6 80 2032 10.5 320	10 F	0240 2.6 80 0749 9.5 290 1417 0.7 20 2043 12.8 390	25 Sa	0305 3.6 110 0810 8.5 260 1409 2.6 80 2055 10.5 320	10 M	0333 2.0 60 0907 10.2 310 1524 1.3 40 2138 12.1 370	25 Tu	0305 3.0 90 0843 9.2 280 1436 3.0 90 2102 10.2 310
11 W	0205 3.6 110 0703 9.2 280 1346 1.0 30 2015 12.1 370	26 Th	0310 4.3 130 0801 8.2 250 1407 2.6 80 2058 10.5 320	11 Sa	0321 2.3 70 0835 9.8 300 1459 0.7 20 2124 13.1 400	26 Su	0324 3.6 110 0835 8.5 260 1432 2.6 80 2119 10.5 320	11 Tu	0409 2.3 70 0952 9.8 300 1607 2.3 70 2216 11.2 340	26 W	0321 3.3 100 0917 9.2 280 1503 3.3 100 2125 9.8 300
12 Th	0249 3.3 100 0750 9.5 290 1427 0.7 20 2058 12.5 380	27 F	0334 4.3 130 0827 7.9 240 1427 2.6 80 2124 10.5 320	12 Su	0402 2.3 70 0924 9.8 300 1543 1.0 30 2206 12.8 390	27 M	0345 3.9 120 0903 8.5 260 1458 2.6 80 2144 10.2 310	12 W	0448 2.6 80 1039 9.5 290 1658 3.3 100 2255 9.8 300	27 Th	0338 3.3 100 0956 9.2 280 1534 3.9 120 2152 9.2 280
13 F	0336 3.0 90 0841 9.5 290 1511 0.7 20 2143 12.8 390	28 Sa	0358 4.3 130 0854 7.9 240 1453 2.6 80 2151 10.5 320	13 M	0447 2.6 80 1013 9.5 290 1629 1.6 50 2249 11.8 360	28 Tu	0409 3.9 120 0936 8.5 260 1524 3.0 90 2209 9.8 300	13 Th	0532 3.3 100 1132 8.9 270 1806 4.6 140 2336 8.5 260	28 F	0401 3.6 110 1044 8.9 270 1613 4.6 140 2225 8.5 260
14 Sa	0425 3.0 90 0936 9.2 280 1559 1.0 30 2230 12.8 390	29 Su	0425 4.6 140 0924 7.9 240 1520 3.0 90 2220 10.2 310	14 Tu	0537 3.0 90 1106 8.9 270 1722 2.6 80 2334 10.8 330	29 W	0437 4.3 130 1015 8.2 250 1552 3.6 110 2236 9.2 280	14 F	0630 4.3 130 1242 8.2 250 1947 5.6 170	29 Sa	0433 3.9 120 1143 8.5 260 1807 5.6 170 2308 7.5 230
15 Su	0518 3.0 90 1032 8.9 270 1650 1.6 50 2317 12.1 370	30 M	0458 4.6 140 0959 7.5 230 1549 3.3 100 2249 9.8 300	15 W	0635 3.6 110 1205 8.2 250 1828 3.9 120	30 Th	0514 4.3 130 1103 7.9 240 1624 4.3 130 2307 8.9 270	15 Sa	0028 7.5 230 0802 4.6 140 1504 7.9 240 2203 5.6 170	30 Su	0628 4.3 130 1300 8.2 250 2012 5.9 180
		31 Tu	0540 4.9 150 1042 7.2 220 1618 3.6 110 2321 9.2 280			31 F	0619 4.6 140 1203 7.5 230 1711 5.2 160 2347 7.9 240				

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Brisbane Bar, Australia, 2018

Times and Heights of High and Low Waters

July				August				September							
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 Su	0543	2.0	60	16 M	0626	1.0	30	1 W	0624	1.6	50	16 Th	0041	7.5	230
	1113	5.9	180		1205	6.6	200		1209	6.2	190		0716	1.3	40
	1706	1.6	50		1803	1.0	30		1805	2.0	60		1319	6.6	200
	2339	7.5	230										1925	2.0	60
2 M	0617	2.0	60	17 Tu	0026	8.5	260	2 Th	0021	7.2	220	17 F	0123	6.6	200
	1151	5.9	180		0713	1.3	40		0659	2.0	60		0756	1.6	50
	1743	2.0	60		1257	6.2	190		1252	6.2	190		1412	6.6	200
					1854	1.6	50		1847	2.0	60		2020	2.6	80
3 Tu	0014	7.5	230	18 W	0112	7.9	240	3 F	0057	6.9	210	18 Sa	0210	5.9	180
	0653	2.0	60		0758	1.3	40		0737	2.0	60		0840	2.0	60
	1233	5.9	180		1351	6.2	190		1342	6.2	190	●	1513	6.2	190
	1824	2.0	60		1949	2.0	60		1937	2.3	70	○	2130	3.0	90
4 W	0050	7.2	220	19 Th	0201	7.2	220	4 Sa	0141	6.6	200	19 Su	0308	5.6	170
	0733	2.3	70		0845	1.6	50		0824	2.0	60		0933	2.0	60
	1321	5.9	180		1451	6.2	190		1441	6.2	190		1623	6.6	200
	1910	2.3	70		2051	2.3	70		2041	2.6	80		2254	3.0	90
5 Th	0132	6.9	210	20 F	0253	6.6	200	5 Su	0238	6.2	190	20 M	0423	5.2	160
	0819	2.0	60		0934	1.6	50		0920	2.0	60		1035	2.0	60
	1416	5.9	180	●	1557	6.6	200	●	1551	6.6	200		1732	6.6	200
	2005	2.6	80	○	2202	2.6	80	○	2159	2.6	80				
6 F	0221	6.6	200	21 Sa	0352	6.2	190	6 M	0350	5.9	180	21 Tu	0012	2.6	80
	0911	2.0	60		1027	1.6	50		1025	1.6	50		0539	5.2	160
●	1521	5.9	180		1704	6.6	200		1705	6.9	210		1140	2.0	60
○	2112	3.0	90		2320	3.0	90		2324	2.6	80		1831	6.9	210
7 Sa	0320	6.6	200	22 Su	0457	5.9	180	7 Tu	0507	5.9	180	22 W	0110	2.3	70
	1008	2.0	60		1122	1.6	50		1132	1.3	40		0641	5.2	160
	1630	6.2	190		1806	6.9	210		1812	7.5	230		1238	2.0	60
	2229	2.6	80										1919	7.2	220
8 Su	0427	6.2	190	23 M	0031	2.6	80	8 W	0043	2.3	70	23 Th	0157	2.0	60
	1107	1.6	50		0602	5.6	170		0618	5.9	180		0730	5.6	170
	1736	6.9	210		1217	1.6	50		1236	1.3	40		1327	1.6	50
	2345	2.6	80		1859	7.2	220		1913	7.9	240		2001	7.5	230
9 M	0532	6.2	190	24 Tu	0130	2.3	70	9 Th	0152	1.6	50	24 F	0237	1.6	50
	1205	1.3	40		0659	5.6	170		0723	5.9	180		0811	5.9	180
	1836	7.5	230		1306	1.6	50		1336	1.0	30		1410	1.3	40
					1945	7.5	230		2009	8.5	260		2039	7.5	230
10 Tu	0057	2.3	70	25 W	0218	2.0	60	10 F	0251	1.3	40	25 Sa	0313	1.6	50
	0634	6.2	190		0747	5.9	180		0822	6.2	190		0848	5.9	180
	1300	1.0	30		1350	1.3	40		1433	0.7	20		1448	1.3	40
	1931	7.9	240		2027	7.5	230		2100	8.9	270		2114	7.5	230
11 W	0202	2.0	60	26 Th	0301	2.0	60	11 Sa	0344	1.0	30	26 Su	0347	1.6	50
	0733	6.2	190		0829	5.9	180	●	0917	6.6	200	○	0921	6.2	190
	1354	1.0	30		1429	1.3	40		1526	0.7	20		1525	1.3	40
	2024	8.5	260		2104	7.9	240	●	2148	8.9	270	○	2147	7.5	230
12 Th	0302	1.6	50	27 F	0339	2.0	60	12 Su	0432	1.0	30	27 M	0418	1.3	40
	0831	6.6	200		0907	5.9	180		1008	6.6	200		0956	6.2	190
	1446	0.7	20		1506	1.3	40		1616	0.7	20		1601	1.3	40
	2115	8.9	270		2139	7.9	240		2234	8.9	270		2218	7.5	230
13 F	0357	1.3	40	28 Sa	0414	1.6	50	13 M	0517	1.0	30	28 Tu	0450	1.3	40
	0926	6.6	200		0943	5.9	180		1056	6.9	210		1032	6.6	200
	1536	0.7	20	○	1541	1.3	40		1703	0.7	20		1637	1.3	40
●	2204	8.9	270	○	2212	7.9	240		2317	8.5	260		2249	7.5	230
14 Sa	0449	1.0	30	29 Su	0447	1.6	50	14 Tu	0558	1.0	30	29 W	0521	1.3	40
	1021	6.6	200		1017	5.9	180		1143	6.9	210		1109	6.6	200
	1625	0.7	20		1616	1.3	40		1749	1.0	30		1713	1.3	40
	2252	8.9	270		2244	7.9	240						2320	7.2	220
15 Su	0539	1.0	30	30 M	0518	1.6	50	15 W	0000	8.2	250	30 Th	0552	1.3	40
	1113	6.6	200		1052	6.2	190		0638	1.0	30		1147	6.6	200
	1714	1.0	30		1651	1.3	40		1231	6.6	200		1751	1.6	50
	2339	8.9	270		2315	7.5	230		1836	1.3	40		2353	6.9	210
				31 Tu	0551	1.6	50					31 F	0624	1.3	40
					1130	6.2	190						1228	6.6	200
					1727	1.6	50						1832	2.0	60
					2348	7.5	230								

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Sydney, Australia, 2018

Times and Heights of High and Low Waters

January					February					March						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height			
	h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm		h m	ft cm	h m	ft cm
1 M	0041 0712 1351 1949	1.0 6.6 0.7 4.9	30 200 20 150	16 Tu	0113 0746 1425 2016	1.6 5.6 1.3 4.3	50 170 40 130	1 Th	0215 0843 1518 2120	1.0 6.6 0.3 4.9	30 200 10 150	16 F	0211 0836 1505 2103	1.6 5.9 1.0 4.6	50 180 30 140	
2 Tu	0133 0804 1444 2044	1.0 6.6 0.3 4.9	30 200 10 150	17 W	0150 0822 1459 2052	1.6 5.9 1.3 4.6	50 180 40 140	2 F	0307 0932 1605 2210	1.0 6.6 0.3 4.9	30 200 10 150	17 Sa	0248 0912 1538 2139	1.3 5.9 1.0 4.9	40 180 30 150	
3 W	0226 0856 1536 2138	1.0 6.9 0.3 4.9	30 210 20 150	18 Th	0227 0858 1533 2129	1.6 5.9 1.0 4.6	50 180 30 140	3 Sa	0359 1020 1650 2258	1.0 6.2 0.7 4.9	30 190 20 150	18 Su	0327 0947 1612 2216	1.3 5.6 1.0 4.9	40 170 30 150	
4 Th	0319 0947 1628 2231	1.0 6.6 0.3 4.9	30 200 10 150	19 F	0304 0933 1608 2205	1.6 5.9 1.3 4.6	50 180 40 140	4 Su	0450 1107 1733 2345	1.3 5.9 1.0 4.9	40 180 30 150	19 M	0408 1026 1646 2257	1.3 5.6 1.3 4.9	40 170 40 150	
5 F	0414 1039 1718 2325	1.3 6.6 0.7 4.9	40 200 20 150	20 Sa	0344 1009 1643 2245	1.6 5.6 1.3 4.6	50 170 40 140	5 M	0543 1154 1816	1.6 5.2 1.3	50 160 40	20 Tu	0453 1106 1724 2340	1.6 5.2 1.3 4.9	50 160 40 150	
6 Sa	0509 1130 1809	1.3 5.9 1.0	40 180 30	21 Su	0424 1046 1719 2326	1.6 5.6 1.3 4.6	50 170 40 140	6 Tu	0034 0638 1241 1859	4.9 2.0 4.9 1.6	150 60 150 50	21 W	0542 1150 1805	1.6 4.9 1.3	50 150 40	
7 Su	0020 0606 1221 1900	4.6 1.6 5.6 1.3	140 50 170 40	22 M	0508 1126 1758	2.0 5.2 1.3	60 160 40	7 W	0126 0738 1331 1945	4.9 2.0 4.3 2.0	150 60 130 60	22 Th	0028 0638 1242 1852	4.9 2.0 4.6 1.6	150 60 140 50	
8 M	0115 0706 1315 1949	4.6 2.0 4.9 1.3	140 60 150 40	23 Tu	0011 0558 1210 1841	4.6 2.0 4.9 1.3	140 60 150 40	8 Th	0220 0845 1431 2036	4.6 2.3 3.9 2.0	140 70 120 60	23 F	0123 0745 1345 1950	4.9 2.0 4.3 2.0	150 60 130 60	
9 Tu	0213 0813 1413 2040	4.6 2.3 4.6 1.6	140 70 140 50	24 W	0101 0654 1300 1929	4.6 2.0 4.9 1.6	140 60 150 50	9 F	0319 0957 1543 2135	4.6 2.3 3.9 2.3	140 70 120 70	24 Sa	0227 0902 1502 2100	4.9 2.0 4.3 2.0	150 60 130 60	
10 W	0311 0923 1515 2130	4.6 2.3 4.3 2.0	140 70 130 60	25 Th	0157 0800 1401 2024	4.6 2.0 4.6 1.6	140 60 140 50	10 Sa	0419 1105 1652 2234	4.9 2.0 3.9 2.3	150 60 120 70	25 Su	0337 1022 1624 2212	5.2 1.6 4.3 2.0	160 50 130 60	
11 Th	0408 1033 1620 2220	4.9 2.3 3.9 2.0	150 70 120 60	26 F	0258 0916 1515 2125	4.9 2.0 4.3 1.6	150 60 130 50	11 Su	0515 1200 1751 2328	4.9 2.0 3.9 2.0	150 60 120 60	26 M	0446 1132 1735 2318	5.6 1.3 4.3 1.6	170 40 130 50	
12 F	0500 1137 1720 2309	4.9 2.0 3.9 2.0	150 60 120 60	27 Sa	0401 1033 1631 2229	5.2 1.6 4.3 1.6	160 50 130 50	12 M	0602 1246 1838	5.2 1.6 4.3	160 50 130	27 Tu	0548 1231 1833	5.9 1.0 4.6	180 30 140	
13 Sa	0547 1229 1813 2353	5.2 2.0 3.9 2.0	160 60 120 60	28 Su	0503 1144 1741 2329	5.6 1.3 4.6 1.3	170 40 140 40	13 Tu	0014 0645 1325 1918	2.0 5.2 1.3 4.3	60 160 40 130	28 W	0018 0645 1324 1926	1.3 6.2 0.7 4.9	40 190 20 150	
14 Su	0630 1311 1858	5.2 1.6 4.3	160 50 130	29 M	0602 1245 1843	5.9 1.0 4.6	180 30 140	14 W	0055 0724 1400 1954	1.6 5.6 1.3 4.6	50 170 40 140	14 Th	0615 1251 1851	5.2 1.6 4.6	160 50 140	
15 M	0034 0710 1349 1938	2.0 5.6 1.3 4.3	60 170 40 130	30 Tu	0027 0658 1340 1938	1.3 6.2 0.7 4.9	40 190 20 150	15 Th	0133 0800 1433 2029	1.6 5.6 1.3 4.6	50 170 40 140	15 F	0034 0655 1326 1927	2.0 5.2 1.3 4.6	60 160 40 140	
				31 W	0121 0751 1430 2030	1.0 6.6 0.3 4.9	30 200 10 150						31 Sa	0154 0806 1425 2035	1.0 5.9 1.0 5.6	30 180 30 170

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Sydney, Australia, 2018

Times and Heights of High and Low Waters

July				August				September																				
Time		Height		Time		Height		Time		Height		Time		Height														
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm														
1 Su	0422	1.3	40		16 M	0452	0.7	20		1 W	0502	1.3	40		16 Su	0045	3.9	120										
	1019	4.3	130			1059	4.9	150			1109	4.6	140			1213	4.9	150		0636	2.0	60						
	1547	2.0	60			1642	1.3	40			1650	2.0	60			1818	1.6	50		1312	4.9	150						
	2217	5.6	170			2304	6.2	190			2307	5.2	160							1955	2.0	60						
2 M	0500	1.6	50		17 Tu	0544	0.7	20		2 Th	0540	1.3	40		17 F	0023	4.9	150		2 Su	0015	4.6	140		17 M	0145	3.6	110
	1100	4.3	130			1153	4.9	150			1152	4.6	140			0640	1.3	40			0625	1.6	50			0729	2.3	70
	1629	2.3	70			1739	1.6	50			1737	2.0	60			1305	4.9	150			1255	4.9	150			1410	4.6	140
	2255	5.6	170			2357	5.9	180			2348	4.9	150			1920	2.0	60			1915	2.0	60			2104	2.0	60
3 Tu	0540	1.6	50		18 W	0635	1.0	30		3 F	0619	1.6	50		18 Sa	0116	4.3	130		3 M	0115	4.3	130		18 Tu	0256	3.6	110
	1144	4.3	130			1248	4.9	150			1239	4.6	140			0727	1.6	50			0718	1.6	50			0831	2.3	70
	1714	2.3	70			1841	2.0	60			1830	2.0	60			1400	4.9	150			1355	4.9	150			1515	4.6	140
	2335	5.2	160								2030	2.0	60			2030	2.0	60			2030	2.0	60			2211	2.0	60
4 W	0621	1.6	50		19 Th	0051	5.2	160		4 Sa	0036	4.6	140		19 Su	0218	3.9	120		4 Tu	0228	3.9	120		19 W	0408	3.6	110
	1230	4.3	130			0726	1.3	40			0704	1.6	50			0818	2.0	60			0823	2.0	60			0940	2.3	70
	1803	2.3	70			1345	4.9	150			1330	4.6	140			1500	4.9	150			1502	5.2	160			1618	4.6	140
						1946	2.0	60			1933	2.3	70			2143	2.0	60			2150	1.6	50			2308	1.6	50
5 Th	0020	4.9	150		20 F	0149	4.9	150		5 Su	0133	4.6	140		20 M	0328	3.6	110		5 W	0348	3.9	120		20 Th	0508	3.9	120
	0706	1.6	50			0815	1.6	50			0755	1.6	50			0915	2.0	60			0935	1.6	50			1043	2.0	60
	1321	4.6	140			1445	4.9	150			1429	4.9	150			1600	4.9	150			1612	5.2	160			1713	4.9	150
	1900	2.6	80			2058	2.3	70			2046	2.0	60			2250	2.0	60			2300	1.3	40			2354	1.6	50
6 F	0111	4.9	150		21 Sa	0252	4.3	130		6 M	0243	4.3	130		21 Tu	0436	3.6	110		6 Th	0501	4.3	130		21 F	0555	4.3	130
	0753	1.6	50			0906	2.0	60			0852	1.6	50			1014	2.0	60			1044	1.6	50			1134	2.0	60
	1415	4.6	140			1543	4.9	150			1530	5.2	160			1657	4.9	150			1715	5.9	180			1759	4.9	150
	2004	2.6	80			2210	2.3	70			2203	2.0	60			2345	2.0	60										

Time meridian 150° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Port Adelaide, Australia, 2018

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm
1 Su	0512 7.2 220 1115 1.3 40 1720 7.9 240 2330 1.3 40	16 M ●	0501 7.5 230 1059 1.3 40 1709 8.2 250 2327 1.0 30	1 Tu	0503 6.9 210 1047 1.6 50 1705 8.9 270 2334 1.3 40	16 W	0508 6.9 210 1046 2.0 60 1705 9.2 280 2346 1.0 30	1 F	0543 6.6 200 1115 2.0 60 1743 9.2 280	16 Sa	0019 1.3 40 0605 5.9 180 1120 2.6 80 1753 9.2 280
2 M	0524 7.2 220 1123 1.3 40 1732 8.2 250 2350 1.0 30	17 Tu	0522 7.5 230 1116 1.3 40 1729 8.5 260 2354 1.0 30	2 W	0523 6.9 210 1106 1.6 50 1729 9.2 280	17 Th	0535 6.6 200 1108 2.0 60 1732 9.2 280	2 Sa	0021 1.3 40 0612 6.6 200 1143 2.3 70 1812 8.9 270	17 Su	0051 1.6 50 0631 5.9 180 1146 2.6 80 1822 8.9 270
3 Tu	0541 7.2 220 1136 1.3 40 1753 8.5 260	18 W	0546 7.2 220 1136 1.3 40 1753 8.9 270	3 Th	0000 1.3 40 0549 6.9 210 1129 1.6 50 1756 9.2 280	18 F	0019 1.3 40 0603 6.2 190 1129 2.3 70 1800 9.2 280	3 Su	0050 1.6 50 0641 6.6 200 1210 2.3 70 1838 8.9 270	18 M	0117 2.0 60 0654 5.9 180 1209 3.0 90 1847 8.2 250
4 W	0014 1.0 30 0603 6.9 210 1153 1.3 40 1817 8.5 260	19 Th	0024 1.0 30 0611 6.9 210 1153 1.6 50 1817 8.9 270	4 F	0028 1.3 40 0617 6.6 200 1152 2.0 60 1822 8.9 270	19 Sa	0050 1.6 50 0628 5.9 180 1146 2.3 70 1824 8.9 270	4 M	0116 2.0 60 0708 6.2 190 1236 2.6 80 1903 8.2 250	19 Tu	0135 2.3 70 0718 5.9 180 1237 3.0 90 1913 7.9 240
5 Th	0039 1.3 40 0626 6.9 210 1212 1.3 40 1841 8.5 260	20 F	0051 1.3 40 0633 6.2 190 1206 2.0 60 1837 8.9 270	5 Sa	0054 1.6 50 0641 6.6 200 1214 2.0 60 1846 8.5 260	20 Su	0114 2.0 60 0647 5.6 170 1201 2.6 80 1847 8.5 260	5 Tu	0142 2.0 60 0737 6.2 190 1306 3.0 90 1932 7.9 240	20 W ○	0152 2.6 80 0750 5.9 180 1314 3.3 100 1942 7.2 220
6 F	0102 1.3 40 0648 6.6 200 1231 1.3 40 1904 8.5 260	21 Sa	0113 1.6 50 0649 5.9 180 1216 2.0 60 1856 8.5 260	6 Su	0118 1.6 50 0704 6.2 190 1236 2.3 70 1909 8.2 250	21 M	0133 2.3 70 0706 5.6 170 1219 2.6 80 1910 7.9 240	6 W	0214 2.3 70 0817 6.2 190 1344 3.3 100 2008 7.2 220	21 Th	0217 2.6 80 0839 6.2 190 1408 3.6 110 2022 6.6 200
7 Sa	0125 1.6 50 0709 6.2 190 1251 1.6 50 1925 8.2 250	22 Su	0132 2.0 60 0704 5.6 170 1228 2.0 60 1916 8.2 250	7 M	0142 2.0 60 0730 5.9 180 1301 2.6 80 1935 7.9 240	22 Tu	0153 2.6 80 0732 5.2 160 1246 3.0 90 1937 7.2 220	7 Th ○	0259 2.6 80 0919 5.9 180 1445 3.9 120 2106 6.6 200	22 F	0258 3.0 90 0955 6.2 190 1544 4.3 130 2131 5.6 170
8 Su ●	0151 2.0 60 0732 5.9 180 1311 2.0 60 1949 7.5 230	23 M ○	0152 2.6 80 0719 5.2 160 1242 2.6 80 1937 7.2 220	8 Tu ○	0215 2.6 80 0803 5.6 170 1327 3.3 100 2006 7.2 220	23 W	0222 3.3 100 0815 5.2 160 1316 3.9 120 2008 6.2 190	8 F	0413 3.3 100 1113 5.9 180 1716 4.6 140 2309 5.9 180	23 Sa	0411 3.6 110 1201 6.2 190 1934 4.3 130
9 M	0222 2.6 80 0753 5.2 160 1326 3.0 90 2013 6.6 200	24 Tu	0217 3.3 100 0723 4.6 140 1236 3.3 100 1941 6.2 190	9 W	0305 3.3 100 0904 4.9 150 1351 4.3 130 2055 5.9 180	24 Th	0327 3.9 120 1734 4.9 150 2022 4.9 150 2247 4.9 150	9 Sa	0619 3.3 100 1325 6.6 200 2005 3.9 120	24 Su	0026 4.9 150 0636 3.6 110 1349 6.9 210 2106 3.3 100
10 Tu	0307 3.6 110 0756 4.6 140 1252 3.6 110 2009 5.6 170	25 W	0247 4.3 130 0430 4.3 130 1035 3.6 110 1730 5.6 170 2225 4.6 140	10 Th	0553 3.6 110 1509 5.2 160 2013 4.6 140	25 F	0735 3.6 110 1442 5.9 180 2112 3.9 120	10 Su	0144 5.9 180 0754 3.0 90 1434 7.2 220 2112 3.0 90	25 M	0238 5.2 160 0809 3.3 100 1451 7.9 240 2150 2.6 80
11 W	0943 3.3 100 1646 5.2 160 2142 4.3 130	26 Th	0318 5.2 160 0943 3.0 90 1619 6.2 190 2159 3.3 100	11 F	0129 5.6 170 0826 3.0 90 1514 6.2 190 2115 3.6 110	26 Sa	0243 5.6 170 0839 3.3 100 1509 7.2 220 2143 3.0 90	11 M	0307 6.2 190 0850 3.0 90 1517 8.2 250 2158 2.0 60	26 Tu	0338 5.9 180 0902 3.0 90 1533 8.2 250 2224 2.0 60
12 Th	0314 5.9 180 0951 2.3 70 1619 6.2 190 2159 3.3 100	27 F	0347 6.2 190 0957 2.3 70 1616 6.9 210 2218 2.6 80	12 Sa	0302 6.2 190 0912 2.6 80 1538 7.2 220 2150 2.6 80	27 Su	0330 6.2 190 0913 3.0 90 1535 7.9 240 2211 2.0 60	12 Tu	0357 6.6 200 0929 2.6 80 1551 8.5 260 2236 1.3 40	27 W	0416 6.2 190 0940 3.0 90 1606 8.9 270 2253 1.6 50
13 F	0352 6.6 200 1011 1.6 50 1630 6.9 210 2222 2.3 70	28 Sa	0413 6.9 210 1013 2.0 60 1625 7.5 230 2237 2.0 60	13 Su	0345 6.9 210 0942 2.0 60 1600 7.9 240 2219 2.0 60	28 M	0401 6.6 200 0938 2.6 80 1559 8.5 260 2235 1.6 50	13 W	0435 6.6 200 0959 2.6 80 1621 9.2 280 2311 1.3 40	28 Th ○	0447 6.6 200 1011 2.6 80 1637 9.2 280 2320 1.3 40
14 Sa	0420 7.2 220 1029 1.3 40 1642 7.5 230 2242 1.6 50	29 Su	0432 6.9 210 1025 2.0 60 1635 8.2 250 2255 1.6 50	14 M	0416 7.2 220 1005 2.0 60 1621 8.5 260 2247 1.3 40	29 Tu	0425 6.6 200 0959 2.3 70 1621 8.9 270 2258 1.3 40	14 Th ●	0506 6.2 190 1027 2.6 80 1651 9.2 280 2346 1.0 30	29 F	0514 6.6 200 1040 2.3 70 1706 9.2 280 2347 1.3 40
15 Su	0442 7.5 230 1044 1.3 40 1655 7.9 240 2303 1.3 40	30 M ○	0447 6.9 210 1034 2.0 60 1647 8.5 260 2313 1.3 40	15 Tu ●	0443 7.2 220 1025 2.0 60 1641 8.9 270 2315 1.0 30	30 W ○	0449 6.6 200 1021 2.3 70 1645 9.2 280 2324 1.3 40	15 F	0536 6.2 190 1054 2.6 80 1722 9.2 280	30 Sa	0541 6.6 200 1110 2.3 70 1735 9.2 280
						31 Th	0514 6.6 200 1047 2.0 60 1713 9.2 280 2352 1.3 40				

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time.
 Heights are referred to the chart datum of soundings.

Port Adelaide, Australia, 2018

Times and Heights of High and Low Waters

July				August				September															
Time		Height		Time		Height		Time		Height		Time		Height									
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm									
1 Su	0015	1.3	40	16 M	0045	1.6	50	1 W	0050	1.3	40	16 Th	0045	1.6	50	1 Sa	0057	1.3	40	16 Su	0033	1.3	40
	0609	6.6	200		0629	5.9	180		0650	6.9	210		0650	7.2	220		0711	7.5	230		0708	7.9	240
	1140	2.3	70		1154	2.6	80		1234	2.3	70		1246	2.3	70		1317	2.0	60		1318	2.0	60
	1804	8.9	270		1819	8.5	260		1844	8.2	250		1845	7.5	230		1909	7.2	220		1901	6.6	200
2 M	0042	1.3	40	17 Tu	0105	2.0	60	2 Th	0112	1.3	40	17 F	0056	1.6	50	2 Su	0113	1.6	50	17 M	0054	1.3	40
	0638	6.6	200		0651	6.2	190		0717	7.2	220		0716	7.5	230		0736	7.5	230		0735	7.5	230
	1209	2.3	70		1222	2.6	80		1304	2.3	70		1313	2.3	70		1347	2.3	70		1346	2.6	80
	1831	8.9	270		1843	8.2	250		1909	7.9	240		1906	7.2	220		1932	6.6	200		1923	5.9	180
3 Tu	0108	1.6	50	18 W	0119	2.0	60	3 F	0135	1.6	50	18 Sa	0111	1.6	50	3 M	0130	2.0	60	18 Tu	0117	2.0	60
	0706	6.6	200		0714	6.6	200		0745	7.2	220		0744	7.5	230		0805	7.5	230		0803	7.2	220
	1239	2.6	80		1252	2.6	80		1338	2.6	80		1344	2.6	80		1424	2.6	80		1420	3.0	90
	1858	8.5	260		1906	7.5	230		1937	7.5	230		1930	6.6	200		1956	5.9	180		1939	5.2	160
4 W	0134	1.6	50	19 Th	0132	2.0	60	4 Sa	0158	1.6	50	19 Su	0134	1.6	50	4 Tu	0146	2.3	70	19 W	0134	2.6	80
	0735	6.6	200		0742	6.9	210		0819	7.2	220		0818	7.5	230		0841	6.9	210		0836	6.2	190
	1311	2.6	80		1325	3.0	90		1419	2.6	80		1423	3.0	90		1516	3.6	110		1514	3.9	120
	1926	8.2	250		1931	7.2	220		2010	6.9	210		1956	6.2	190		2007	4.6	140		1902	4.6	140

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Port Adelaide, Australia, 2018

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm
1 M	0029 1.6 50 0658 7.9 240 1321 2.0 60 1901 5.9 180	16 Tu	0026 1.6 50 0704 7.9 240 1325 2.0 60 1906 5.9 180	1 Th	0024 2.3 70 0718 6.9 210 1354 3.0 90 1911 4.6 140	16 F	0111 3.0 90 0745 6.6 200 1431 3.0 90 2029 4.9 150	1 Sa	0103 3.3 100 0749 5.9 180 1439 3.3 100 2126 4.6 140	16 Su	0221 3.3 100 0832 6.2 190 1518 2.6 80 2207 5.2 160
2 Tu	0042 2.0 60 0721 7.5 230 1347 2.6 80 1917 5.6 170	17 W	0048 2.0 60 0728 7.2 220 1353 2.6 80 1928 5.2 160	2 F	0024 3.0 90 0730 5.9 180 1417 3.9 120 1701 4.3 130 2242 3.6 110	17 Sa	0140 3.6 110 0826 5.6 170 1621 3.6 110	2 Su	0132 4.3 130 0807 4.9 150 1850 3.6 110	17 M	0404 3.9 120 0959 5.2 160 1656 3.3 100
3 W	0052 2.3 70 0745 7.2 220 1416 3.3 100 1914 4.6 140	18 Th	0108 2.6 80 0752 6.6 200 1432 3.6 110 1932 4.6 140	3 Sa	0523 5.2 160 1020 4.6 140 1505 4.9 150 2125 3.0 90	18 Su	0235 4.9 150 0756 4.3 130 1308 4.9 150 2008 3.3 100	3 M	0221 5.2 160 0902 3.6 110 1446 4.9 150 2024 3.3 100	18 Tu	0031 5.6 170 0735 3.6 110 1311 4.9 150 1920 3.3 100
4 Th	0041 3.0 90 0759 6.2 190 1448 4.6 140 1554 4.6 140 2303 3.0 90	19 F	0050 3.6 110 0756 5.2 160 2130 3.3 100	4 Su	0357 5.6 170 0937 3.3 100 1533 5.9 180 2138 2.3 70	19 M	0248 5.9 180 0901 3.3 100 1453 5.9 180 2055 2.6 80	4 Tu	0251 6.6 200 0933 2.3 70 1531 5.6 170 2102 2.6 80	19 W	0207 6.6 200 0900 2.6 80 1502 5.2 160 2034 3.0 90
5 F	0548 5.2 160 1009 4.6 140 1523 5.9 180 2210 2.3 70	20 Sa	0417 5.2 160 0918 3.9 120 1501 5.6 170 2132 2.6 80	5 M	0354 6.6 200 0959 2.0 60 1601 6.6 200 2157 2.0 60	20 Tu	0317 6.9 210 0935 2.3 70 1536 6.2 190 2126 2.0 60	5 W	0320 7.2 220 1003 1.6 50 1602 5.9 180 2130 2.3 70	20 Th	0300 7.2 220 0947 1.6 50 1555 5.9 180 2119 2.6 80
6 Sa	0442 5.9 180 0955 3.3 100 1555 6.9 210 2222 1.6 50	21 Su	0351 6.2 190 0939 3.0 90 1538 6.6 200 2152 2.0 60	6 Tu	0406 7.2 220 1022 1.3 40 1623 6.9 210 2212 1.6 50	21 W	0341 7.5 230 1004 1.3 40 1607 6.6 200 2151 2.0 60	6 Th	0345 7.9 240 1029 1.0 30 1626 5.9 180 2152 2.3 70	21 F	0338 7.9 240 1025 1.0 30 1633 5.9 180 2152 2.3 70
7 Su	0439 6.6 200 1018 2.3 70 1623 7.5 230 2240 1.3 40	22 M	0404 6.9 210 1003 2.0 60 1606 7.2 220 2211 1.3 40	7 W	0418 7.9 240 1042 1.0 30 1639 6.6 200 2221 1.6 50	22 Th	0403 8.2 250 1032 1.0 30 1633 6.9 210 2211 1.6 50	7 F	0409 8.2 250 1052 1.0 30 1647 6.2 190 2212 2.0 60	22 Sa	0409 8.2 250 1101 0.7 20 1705 5.9 180 2221 2.3 70
8 M	0448 6.9 210 1039 1.6 50 1644 7.5 230 2254 1.3 40	23 Tu	0420 7.5 230 1025 1.3 40 1628 7.5 230 2227 1.3 40	8 Th	0430 8.2 250 1100 1.0 30 1653 6.6 200 2231 1.6 50	23 F	0423 8.5 260 1058 0.7 20 1657 6.6 200 2232 1.6 50	8 Sa	0432 8.5 260 1115 0.7 20 1708 6.2 190 2235 2.0 60	23 Su	0439 8.5 260 1134 0.3 10 1733 5.9 180 2249 2.3 70
9 Tu	0454 7.2 220 1057 1.3 40 1659 7.5 230 2301 1.3 40	24 W	0434 7.9 240 1045 1.0 30 1647 7.5 230 2241 1.3 40	9 F	0445 8.5 260 1119 1.0 30 1709 6.6 200 2247 1.6 50	24 Sa	0446 8.9 270 1127 0.7 20 1722 6.6 200 2254 2.0 60	9 Su	0458 8.9 270 1141 0.7 20 1733 6.2 190 2303 1.6 50	24 M	0510 8.9 270 1206 0.7 20 1800 5.9 180 2317 2.3 70
10 W	0500 7.5 230 1113 1.3 40 1710 7.2 220 2306 1.3 40	25 Th	0447 8.2 250 1106 1.0 30 1704 7.2 220 2256 1.3 40	10 Sa	0507 8.9 270 1143 1.0 30 1731 6.6 200 2308 1.6 50	25 Su	0513 8.9 270 1159 0.7 20 1749 6.2 190 2316 2.0 60	10 M	0527 8.9 270 1207 1.0 30 1801 6.2 190 2331 2.0 60	25 Tu	0542 8.9 270 1238 0.7 20 1826 5.6 170 2345 2.3 70
11 Th	0510 7.9 240 1130 1.0 30 1722 7.2 220 2315 1.3 40	26 F	0505 8.2 250 1131 0.7 20 1726 7.2 220 2314 1.3 40	11 Su	0534 8.9 270 1209 1.0 30 1757 6.2 190 2331 1.6 50	26 M	0541 8.9 270 1231 1.0 30 1815 5.9 180 2336 2.0 60	11 Tu	0557 8.5 260 1235 1.0 30 1828 6.2 190 2359 2.0 60	26 W	0612 8.5 260 1304 1.0 30 1850 5.6 170
12 F	0528 8.2 250 1152 1.0 30 1741 6.9 210 2329 1.3 40	27 Sa	0527 8.5 260 1159 1.0 30 1750 6.6 200 2332 1.6 50	12 M	0601 8.5 260 1234 1.3 40 1822 6.2 190 2354 2.0 60	27 Tu	0608 8.5 260 1258 1.3 40 1837 5.6 170 2353 2.3 70	12 W	0625 8.2 250 1300 1.3 40 1855 6.2 190	27 Th	0011 2.3 70 0639 7.9 240 1325 1.6 50 1911 5.6 170
13 Sa	0551 8.2 250 1216 1.3 40 1802 6.6 200 2346 1.3 40	28 Su	0552 8.5 260 1227 1.0 30 1812 6.2 190 2348 1.6 50	13 Tu	0627 8.2 250 1257 1.6 50 1846 5.9 180	28 W	0632 8.2 250 1319 2.0 60 1856 5.2 160	13 Th	0026 2.0 60 0651 7.9 240 1325 1.3 40 1923 5.9 180	28 F	0036 2.3 70 0702 7.5 230 1339 2.0 60 1935 5.6 170
14 Su	0617 8.2 250 1239 1.6 50 1824 6.6 200	29 M	0615 8.2 250 1252 1.3 40 1831 5.9 180 2359 2.0 60	14 W	0017 2.0 60 0651 7.9 240 1321 2.0 60 1911 5.9 180	29 Th	0009 2.3 70 0655 7.5 230 1337 2.3 70 1918 5.2 160	14 F	0055 2.3 70 0717 7.5 230 1351 1.6 50 1956 5.9 180	29 Sa	0106 2.6 80 0727 6.9 210 1354 2.0 60 2010 5.9 180
15 M	0005 1.3 40 0640 8.2 250 1301 2.0 60 1845 6.2 190	30 Tu	0636 8.2 250 1311 2.0 60 1847 5.6 170	15 Th	0043 2.3 70 0716 7.2 220 1350 2.3 70 1941 5.2 160	30 F	0033 2.6 80 0720 6.9 210 1401 2.6 80 1953 4.9 150	15 Sa	0130 2.6 80 0749 6.9 210 1427 2.0 60 2044 5.6 170	30 Su	0148 3.0 90 0756 6.2 190 1418 2.3 70 2102 5.9 180
		31 W	0011 2.0 60 0656 7.5 230 1331 2.3 70 1902 5.2 160						31 M	0253 3.6 110 0834 5.2 160 1452 2.6 80 2229 5.6 170	

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Port Lincoln, Australia, 2018

Times and Heights of High and Low Waters

April				May				June							
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
h m ft cm	ft cm	ft cm	h m ft cm	ft cm	ft cm	h m ft cm	ft cm	ft cm	h m ft cm	ft cm	ft cm	h m ft cm	ft cm	ft cm	
1 Su	0227 0836 1442 2054	4.3 1.0 4.6 1.0	130 30 140 30	16 M	0221 0825 1432 2053	4.6 1.0 4.9 1.0	140 30 150 30	1 Tu	0222 0809 1427 2106	3.6 1.0 5.6 1.0	110 30 170 30	16 W	0236 0758 1424 2117	3.6 1.3 5.9 1.0	110 40 180 30
2 M	0244 0851 1455 2119	4.3 0.7 4.9 1.0	130 20 150 30	17 Tu	0248 0841 1451 2122	4.3 1.0 5.2 1.0	130 30 160 30	2 W	0243 0823 1448 2131	3.6 1.0 5.6 1.3	110 30 170 40	17 Th	0302 0811 1448 2148	3.3 1.3 5.9 1.3	100 40 180 40
3 Tu	0300 0901 1514 2142	3.9 0.7 5.2 1.0	120 20 160 30	18 W	0311 0855 1511 2150	3.9 1.0 5.6 1.0	120 30 170 30	3 Th	0306 0839 1513 2156	3.6 1.0 5.6 1.3	110 30 170 40	18 F	0321 0820 1512 2219	3.0 1.3 5.9 1.6	90 40 180 50
4 W	0319 0911 1536 2206	3.9 0.7 5.2 1.3	120 20 160 40	19 Th	0329 0902 1532 2218	3.6 1.0 5.6 1.3	110 30 170 40	4 F	0329 0856 1538 2222	3.3 1.0 5.6 1.6	100 30 170 50	19 Sa	0332 0827 1537 2250	2.6 1.3 5.6 2.0	80 40 170 60
5 Th	0340 0925 1559 2231	3.6 0.7 5.2 1.3	110 20 160 40	20 F	0343 0905 1554 2247	3.3 1.0 5.6 1.6	100 30 170 50	5 Sa	0353 0913 1603 2250	3.3 1.3 5.2 2.0	100 40 160 60	20 Su	0343 0836 1603 2322	2.6 1.6 5.2 2.3	80 50 160 70
6 F	0401 0940 1624 2258	3.3 1.0 4.9 1.6	100 30 150 50	21 Sa	0352 0907 1618 2317	3.0 1.3 5.2 2.3	90 40 160 70	6 Su	0415 0923 1627 2323	3.0 1.6 4.9 2.0	90 50 150 60	21 M	0354 0844 1630	2.6 1.6 4.9	80 50 150
7 Sa	0418 0948 1648 2331	3.0 1.3 4.6 2.3	90 40 140 70	22 Su	0347 0908 1643 2357	2.6 1.3 4.9 2.6	80 40 150 80	7 M	0435 0924 1649	3.0 2.0 4.6	90 60 140	22 Tu	0834 1655	2.0 4.3	60 130
8 Su	0423 0943 1710	3.0 1.3 4.3	90 40 130	23 M	0127 0851 1707	2.6 1.6 4.3	80 50 130	8 Tu	0915 1710	2.3 4.3	70 130	23 W	0725 1701	2.3 3.6	70 110
9 M	0929 1729	1.6 3.9	50 120	24 Tu	0756 1716 1937 2144	1.6 3.6 3.6 3.6	50 110 110 110	9 W	0648 1727	2.3 3.6	70 110	24 Th	0536 1325 1847 2217	2.3 3.3 3.0 3.3	70 100 90 100
10 Tu	0758 1738 1915 2232	2.0 3.3 3.3 3.6	60 100 100 110	25 W	0706 1412 1850 2355	1.6 3.3 3.0 3.6	50 100 100 110	10 Th	0555 1334 1829 2245	2.0 3.3 3.3 3.6	60 100 100 110	25 F	0543 1236 1856 2357	2.3 3.9 2.6 3.3	70 120 80 100
11 W	0713 1407 1850	1.6 3.0 3.0	50 90 90	26 Th	0701 1330 1905	1.6 3.6 2.3	50 110 70	11 F	0611 1257 1842	2.0 3.6 2.6	60 110 80	26 Sa	0551 1241 1917	2.0 4.3 2.3	60 130 70
12 Th	0004 0713 1339 1903	3.9 1.3 3.3 2.3	120 40 100 70	27 F	0040 0711 1327 1927	3.9 1.6 3.9 2.0	120 50 120 60	12 Sa	0005 0633 1302 1909	3.6 1.6 4.3 2.0	110 50 130 60	27 Su	0038 0609 1257 1939	3.3 2.0 4.9 2.0	100 60 150 60
13 F	0046 0725 1342 1928	4.3 1.3 3.9 2.0	130 40 120 60	28 Sa	0112 0722 1337 1950	3.9 1.3 4.3 1.6	120 40 130 50	13 Su	0052 0657 1317 1941	3.9 1.6 4.6 1.6	120 50 140 50	28 M	0111 0635 1316 2003	3.3 2.0 5.2 1.6	100 60 160 50
14 Sa	0121 0744 1355 1956	4.3 1.0 4.3 1.3	130 30 130 40	29 Su	0139 0736 1352 2015	3.9 1.3 4.9 1.3	120 40 150 40	14 M	0130 0721 1338 2013	3.9 1.3 5.2 1.3	120 40 160 40	29 Tu	0140 0702 1338 2029	3.3 1.6 5.6 1.3	100 50 170 40
15 Su	0152 0805 1413 2024	4.6 1.0 4.6 1.0	140 30 140 30	30 M	0201 0753 1408 2040	3.9 1.3 5.2 1.0	120 40 160 30	15 Tu	0206 0741 1401 2046	3.9 1.3 5.6 1.0	120 40 170 30	30 W	0208 0727 1403 2055	3.3 1.6 5.9 1.3	100 50 180 40
												31 Th	0234 0751 1429 2122	3.3 1.3 5.9 1.3	100 40 180 40

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Port Lincoln, Australia, 2018

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm
1 M	0419 4.6 140 1102 1.6 50 1605 2.6 80 2128 1.3 40	16 Tu	0426 4.6 140 1110 2.0 60 1430 2.6 80 2113 1.3 40	1 Th	0444 3.9 120 1918 1.3 40	16 F	0447 3.6 110 1701 2.0 60	1 Sa	0442 3.3 100 1706 2.0 60	16 Su	0503 3.3 100 1300 2.0 60
2 Tu	0444 4.6 140 1138 2.3 70 1400 2.6 80 2111 1.3 40	17 W	0448 3.9 120 1149 2.3 70 1354 2.6 80 2055 1.6 50	2 F	0454 3.3 100 0749 3.3 100 0922 3.3 100 1841 1.3 40	17 Sa	0444 3.3 100 1726 2.0 60	2 Su	0116 3.0 90 0739 2.6 80 1032 2.6 80 1721 2.0 60	17 M	0305 3.0 90 1533 2.0 60 2340 3.3 100
3 W	0510 3.9 120 2001 1.3 40	18 Th	0505 3.6 110 1916 1.6 50	3 Sa	0144 3.0 90 0643 2.6 80 1139 3.3 100 1836 1.3 40	18 Su	0100 3.0 90 0647 2.6 80 1057 3.0 90 1746 1.6 50	3 M	0017 3.3 100 0654 2.0 60 1202 2.6 80 1731 1.6 50	18 Tu	0643 2.3 70 1106 2.6 80 1635 2.0 60 2355 3.9 120
4 Th	0534 3.6 110 0732 3.3 100 1012 3.6 110 1929 1.3 40	19 F	0459 3.0 90 0711 3.0 90 1051 3.3 100 1844 1.6 50	4 Su	0105 3.3 100 0651 2.0 60 1227 3.6 110 1848 1.3 40	19 M	0034 3.6 110 0641 2.0 60 1202 3.3 100 1808 1.3 40	4 Tu	0023 3.9 120 0713 1.6 50 1243 2.6 80 1745 1.6 50	19 W	0655 1.6 50 1229 2.6 80 1718 1.6 50
5 F	0228 3.0 90 0638 3.0 90 1201 3.9 120 1921 1.0 30	20 Sa	0128 3.0 90 0645 2.6 80 1200 3.6 110 1847 1.3 40	5 M	0103 3.6 110 0714 1.6 50 1301 3.6 110 1902 1.3 40	20 Tu	0038 3.9 120 0702 1.6 50 1243 3.3 100 1831 1.3 40	5 W	0038 4.6 140 0735 1.3 40 1313 2.6 80 1809 1.3 40	20 Th	0019 4.6 140 0725 1.3 40 1316 2.6 80 1755 1.6 50
6 Sa	0147 3.0 90 0654 2.3 70 1247 4.3 130 1933 1.0 30	21 Su	0111 3.3 100 0654 2.0 60 1236 3.9 120 1902 1.3 40	6 Tu	0114 4.3 130 0739 1.0 30 1329 3.6 110 1914 1.3 40	21 W	0054 4.6 140 0728 1.0 30 1319 3.3 100 1854 1.3 40	6 Th	0058 4.9 150 0758 1.0 30 1341 2.6 80 1836 1.3 40	21 F	0048 4.9 150 0758 0.7 20 1356 2.6 80 1829 1.3 40
7 Su	0143 3.3 100 0721 1.6 50 1321 4.3 130 1949 1.0 30	22 M	0116 3.6 110 0715 1.6 50 1307 3.9 120 1921 1.0 30	7 W	0130 4.6 140 0803 1.0 30 1353 3.3 100 1929 1.0 30	22 Th	0115 4.9 150 0758 0.7 20 1352 3.3 100 1916 1.0 30	7 F	0120 5.2 160 0821 0.7 20 1406 2.6 80 1904 1.3 40	22 Sa	0119 5.2 160 0832 0.7 20 1433 2.6 80 1859 1.3 40
8 M	0153 3.6 110 0748 1.0 30 1350 4.3 130 2004 1.0 30	23 Tu	0129 4.3 130 0740 1.0 30 1337 4.3 130 1941 1.0 30	8 Th	0146 4.9 150 0828 0.7 20 1413 3.3 100 1944 1.0 30	23 F	0138 5.2 160 0829 0.7 20 1423 3.3 100 1935 1.0 30	8 Sa	0145 5.6 170 0846 0.7 20 1429 3.0 90 1929 1.0 30	23 Su	0151 5.6 170 0907 0.3 10 1505 2.6 80 1928 1.3 40
9 Tu	0206 4.3 130 0814 1.0 30 1414 4.3 130 2017 1.0 30	24 W	0147 4.6 140 0808 0.7 20 1405 4.3 130 2001 1.0 30	9 F	0205 5.2 160 0853 0.7 20 1432 3.3 100 1956 1.0 30	24 Sa	0203 5.6 170 0900 0.3 10 1451 3.0 90 1951 1.0 30	9 Su	0211 5.6 170 0912 0.7 20 1452 3.0 90 1954 1.0 30	24 M	0222 5.9 180 0940 0.7 20 1533 2.3 70 1954 1.3 40
10 W	0220 4.6 140 0840 0.7 20 1433 3.9 120 2029 1.0 30	25 Th	0207 4.9 150 0836 0.7 20 1432 3.9 120 2017 1.0 30	10 Sa	0227 5.6 170 0918 0.7 20 1451 3.0 90 2010 1.0 30	25 Su	0228 5.6 170 0931 0.7 20 1514 2.6 80 2005 1.0 30	10 M	0239 5.6 170 0938 0.7 20 1517 3.0 90 2021 1.0 30	25 Tu	0251 5.6 170 1011 0.7 20 1553 2.3 70 2017 1.3 40
11 Th	0234 4.9 150 0905 0.7 20 1448 3.6 110 2038 1.0 30	26 F	0227 5.2 160 0905 0.3 10 1455 3.6 110 2031 1.0 30	11 Su	0251 5.6 170 0942 1.0 30 1513 3.0 90 2029 1.0 30	26 M	0253 5.6 170 1002 1.0 30 1531 2.3 70 2015 1.0 30	11 Tu	0307 5.2 160 1004 1.0 30 1543 3.0 90 2046 1.3 40	26 W	0319 5.2 160 1037 1.0 30 1605 2.3 70 2039 1.3 40
12 F	0251 4.9 150 0928 0.7 20 1503 3.6 110 2043 0.7 20	27 Sa	0248 5.2 160 0932 0.7 20 1516 3.3 100 2040 1.0 30	12 M	0317 5.2 160 1006 1.0 30 1537 3.0 90 2048 1.0 30	27 Tu	0319 5.2 160 1032 1.3 40 1543 2.3 70 2024 1.3 40	12 W	0334 5.2 160 1030 1.0 30 1611 2.6 80 2108 1.3 40	27 Th	0346 4.9 150 1101 1.3 40 1621 2.3 70 2102 1.6 50
13 Sa	0312 5.2 160 0951 1.0 30 1521 3.3 100 2055 0.7 20	28 Su	0310 5.2 160 1000 1.0 30 1532 3.0 90 2045 1.0 30	13 Tu	0343 4.9 150 1033 1.3 40 1601 2.6 80 2100 1.3 40	28 W	0345 4.9 150 1103 1.6 50 1557 2.0 60 2032 1.3 40	13 Th	0400 4.9 150 1058 1.3 40 1642 2.6 80 2124 1.6 50	28 F	0411 4.6 140 1118 1.6 50 1649 2.6 80 2128 2.0 60
14 Su	0337 4.9 150 1014 1.3 40 1541 3.0 90 2109 1.0 30	29 M	0332 5.2 160 1028 1.3 40 1544 2.6 80 2046 1.0 30	14 W	0407 4.6 140 1103 1.6 50 1625 2.6 80 2101 1.6 50	29 Th	0411 4.6 140 1138 2.0 60 1339 2.0 60 2022 1.6 50	14 F	0425 4.3 130 1129 1.3 40 1720 2.6 80 2129 2.0 60	29 Sa	0433 3.9 120 1133 1.6 50 1735 2.6 80 2150 2.3 70
15 M	0402 4.9 150 1040 1.6 50 1559 3.0 90 2118 1.0 30	30 Tu	0356 4.9 150 1058 1.6 50 1546 2.3 70 2046 1.3 40	15 Th	0429 4.3 130 1141 2.0 60 1436 2.3 70 2051 2.0 60	30 F	0435 3.9 120 1906 2.0 60	15 Sa	0447 3.9 120 1205 1.6 50 1828 2.6 80 2120 2.3 70	30 Su	0444 3.3 100 1147 1.6 50
		31 W	0421 4.6 140 1135 2.0 60 1329 2.3 70 2022 1.3 40							31 M	0300 3.0 90 1205 1.6 50 2313 3.3 100

Time meridian 142° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Port Hedland, Australia, 2018

Times and Heights of High and Low Waters

October				November				December																		
Time		Height		Time		Height		Time		Height		Time		Height												
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm											
1 M	0146	21.3	650	16 Tu	0210	19.4	590	1 Th	0244	18.4	560	16 F	0253	16.7	510	1 Sa	0353	17.1	520	16 Su	0326	16.7	510			
	0800	4.3	130		0823	6.6	200		0912	7.9	240		0912	9.5	290		1022	8.9	270		0939	9.5	290			
	1410	19.4	590		1435	17.4	530		1530	16.1	490		1544	15.4	470		1658	16.7	510		1615	16.4	500			
	2007	6.2	190		2026	8.9	270		2135	10.5	320		2144	11.8	360		2330	10.5	320		2236	11.2	340			
2 Tu	0215	20.0	610	17 W	0237	17.7	540	2 F	0348	16.4	500	17 Sa	0352	15.1	460	2 Su	0534	16.1	490	17 M	0432	15.4	470			
	0834	5.9	180		0853	8.5	260		1039	9.8	300		1038	10.8	330		1202	9.8	300		1052	10.5	320			
	1444	17.7	540		1509	15.7	480		1729	15.1	460		1816	14.8	450		1853	17.1	520		1755	16.1	490			
	2040	8.2	250		2054	10.8	330																			
3 W	0251	18.4	560	18 Th	0311	15.7	480	3 Sa	0001	11.5	350	18 Su	0045	11.8	360	3 M	0122	9.5	290	18 Tu	0042	10.8	330			
	0918	7.9	240		0937	10.5	320		0617	15.4	470		0645	14.4	440		0736	16.1	490		0638	15.1	460			
	1530	15.7	480		1615	14.1	430		1304	9.8	300		1316	10.8	330		1344	9.2	280		1255	10.8	330			
	2126	10.2	310		2211	12.5	380		2001	16.4	500		2005	15.7	480		2014	18.0	550		1932	16.7	510			
4 Th	0347	16.4	500	19 F	0442	14.1	430	4 Su	0208	9.8	300	19 M	0217	10.5	320	4 Tu	0237	8.2	250	19 W	0157	9.8	300			
	1048	9.8	300		1309	11.2	340		0826	16.7	510		0830	15.4	470		0858	17.4	530		0817	15.7	480			
	1732	14.1	430		2030	14.4	440		1436	8.5	260		1430	9.8	300		1451	8.2	250		1408	9.8	300			
									2104	18.4	560		2055	17.4	530		2109	19.4	590		2031	18.0	550			
5 F	0000	11.5	350	20 Sa	0230	11.5	350	5 M	0310	7.5	230	20 Tu	0306	8.9	270	5 W	0327	6.2	190	20 Th	0253	8.2	250			
	0632	15.4	470		0831	14.8	450		0927	18.4	560		0920	17.1	520		0949	18.7	570		0919	17.1	520			
	1333	9.8	300		1454	9.8	300		1526	6.6	200		1515	8.5	260		1539	7.2	220		1502	8.9	270			
	2037	15.4	470		2119	16.1	490		2145	20.0	610		2130	19.0	580		2152	20.7	630		2118	19.4	590			
6 Sa	0228	10.2	310	21 Su	0320	9.8	300	6 Tu	0351	5.2	160	21 W	0341	6.9	210	6 Th	0408	4.9	150	21 F	0339	6.2	190			
	0844	16.7	510		0926	16.4	500		1011	20.0	610		0959	18.4	560		1030	19.7	600		1005	18.4	560			
	1506	7.9	240		1531	8.2	250		1605	5.2	160		1549	7.2	220		1619	6.2	190		1548	7.5	230			
	2134	17.7	540		2147	17.7	540		2221	21.7	660		2202	20.3	620		2230	21.7	660		2201	20.7	630			
7 Su	0331	7.5	230	22 M	0350	7.9	240	7 W	0429	3.6	110	22 Th	0413	4.9	150	7 F	0445	3.9	120	22 Sa	0420	4.6	140			
	0945	19.0	580		0959	18.0	550		1048	21.0	640		1032	19.7	600		1108	20.3	620		1046	19.7	600			
	1552	5.9	180		1600	6.9	210		1641	4.3	130		1621	5.9	180		1656	5.6	170		1631	6.6	200			
	2213	20.0	610		2214	19.4	590		2255	22.6	690		2234	21.7	660		2305	22.0	670		2243	22.0	670			
8 M	0412	5.2	160	23 Tu	0417	5.9	180	8 Th	0503	2.3	70	23 F	0445	3.6	110	8 Sa	0520	3.3	100	23 Su	0501	3.3	100			
	1028	20.7	630		1030	19.7	600		1124	21.7	660		1106	20.7	630		1142	20.7	630		1126	20.7	630			
	1630	3.9	120		1628	5.6	170		1715	3.6	110		1654	4.9	150		1730	5.6	170		1713	5.6	170			
	2248	21.7	660		2241	20.7	630		2328	23.0	700		2306	22.6	690		2339	22.0	670		2324	22.6	690			
9 Tu	0449	3.0	90	24 W	0445	4.3	130	9 F	0537	2.0	60	24 Sa	0518	2.3	70	9 Su	0554	3.0	90	24 M	0542	2.3	70			
	1107	22.0	670		1100	20.7	630		1157	21.7	660		1140	21.3	650		1213	20.7	630		1205	21.0	640			
	1704	2.6	80		1655	4.6	140		1746	3.9	120		1728	4.6	140		1802	5.6	170		1754	4.9	150			
	2322	23.0	700		2309	22.0	670		2358	23.0	700		2340	23.0	700											
10 W	0524	1.6	50	25 Th	0513	3.0	90	10 Sa	0608	2.0	60	25 Su	0553	2.0	60	10 M	0010	22.0	670	25 Tu	0005	23.0	700			
	1143	22.6	690		1130	21.7	660		1227	21.3	650		1214	21.7	660		1243	20.7	630		0622	2.0	60			
	1738	2.0	60		1722	3.6	110		1817	4.3	130		1802	4.3	130		1833	5.9	180		1245	21.3	650			
	2354	23.6	720		2336	22.6	690														1834	4.9	150			
11 Th	0558	1.0	30	26 F	0542	2.0	60	11 Su	0027	22.6	690	26 M	0014	23.0	700	11 Tu	0040	21.7	660	26 W	0045	23.0	700			
	1216	22.6	690		1200	22.0	670		0638	2.6	80		0628	2.0	60		0655	3.9	120		0701	2.3	70			
	1810	2.3	70		1751	3.3	100		1255	21.0	640		1248	21.3	650		1248	21.3	650		1312	20.0	610	1323	21.3	650
					1845	4.9	150		1845	4.9	150		1838	4.9	150		1838	4.9	150		1902	6.6	200	1916	5.2	160
12 F	0024	23.6	720	27 Sa	0004	23.0	700	12 M	0054	22.0	670	27 Tu	0047	22.6	690	12 W	0109	21.0	640	27 Th	0127	22.3	680			
	0630	1.3	40		0611	1.6	50		0707	3.6	110		0704	2.6	80		0724	4.6	140		0742	3.3	100			
	1246	22.3	680		1230	22.0	670		1322	20.0	610		1322	20.7	630		1340	19.7	600		1401	20.7	630			
	1840	3.0	90		1821	3.6	110		1914	6.2	190		1914	6.2	190		1915	5.6	170		1931	7.2	220			
13 Sa	0052	23.0	700	28 Su	0032	23.0	700	13 Tu	0121	20.7	630	28 W	0123	21.7	660	13 Th	0138	20.0	610	28 F	0208	21.3	650			
	0700	2.0	60		0642	2.0	60		0734	4.9	150		0743	3.9	120		0752	5.6	170		0823	4.6	140			
	1315	21.3	650		1259	21.3	650		1349	19.0	580		1359	19.7	600		1409	19.0	580		1442	20.3	620			
	1908	3.9	120		1850	4.3	130		1941	7.5	230		1955	6.9	210		1955	6.9	210		2002	8.2	250			
14 Su	0118	22.0	670	29 M	0100	22.6	690	14 W	0148	19.7	600	29 Th	0203	20.3	620	14 F	0208	19.0	580	29 Sa	0252	19.7	600			
	0728	3.3	100		0713	2.6	80		0802	6.2	190		0825	5.6	170		0822	6.9	210		0906	5.9	180			
	1341	20.0	610		1328	20.7	630		1418	18.0	550		1442	18.7	570		1441	18.0	550		1526	19.4	590			
	1934	5.6	170		1921	5.2	160		2009	8.9	270		2044	8.2	250		2044	8.2	250		2137	8.2	250			
15 M	0144	21.0	640	30 Tu	0129	21.7	660	15 Th	0217	18.0	550	30 F	0250	18.7	570	15 Sa	0243	17.7	540	30 Su	0343	18.4	560			
	0756	4.9	150		0746	3.9	120		0832	7.9	240		0915	7.2	220		0856	8.2	250		0955	7.5	230			
	1407	18.7	570		1359	19.4	590		1452	16.7	510		1536	17.4	530		1520	17.4	530		1620	18.4	560			
	2000	7.2	220		1954	6.6	200		2043	10.2	310		2149	9.8	300		2122	10.2	310		2244	9.2	280			
			31 W	0202	20.3	620										31 M	0446	16.7	510							
				0823	5.9	180											1058	9.2	280							
				1436	17.7	540											1734	17.7	540							
				2033	8.5	260																				

Time meridian 120° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Mergui, Burma, 2018

Times and Heights of High and Low Waters

April				May				June															
	Time	Height			Time	Height			Time	Height			Time	Height									
	h m	ft	cm		h m	ft	cm		h m	ft	cm		h m	ft	cm								
1 Su	0525 1123 1740 2336	-1.6 18.6 -1.0 18.1	-49 568 -32 551	16 M	0504 1105 1723 2320	-1.0 18.5 -0.8 18.2	-30 564 -24 554	1 Tu	0529 1127 1747 2342	0.1 18.1 0.6 16.6	4 553 18 507	16 W	0515 1116 1742 2337	-0.6 19.1 -0.3 17.8	-17 583 -9 542	1 F	0600 1203 1822	2.2 17.0 2.3	66 517 70	16 Sa	0008 0619 1224 1850	17.4 0.5 18.7 0.6	531 16 571 19
2 M	0556 1154 1811	-1.3 18.4 -0.6	-40 560 -18	17 Tu	0537 1137 1758 2354	-1.3 18.8 -0.9 18.0	-41 573 -27 548	2 W	0556 1156 1814	0.7 17.6 1.1	21 537 35	17 Th	0551 1153 1818	-0.4 18.9 0.0	-13 577 0	2 Sa	0018 0625 1228 1849	15.2 2.6 16.5 2.8	463 80 502 85	17 Su	0049 0659 1303 1931	16.9 1.3 17.9 1.4	515 40 547 44
3 Tu	0005 0622 1221 1838	17.4 -0.5 17.7 0.3	529 -16 539 9	18 W	0610 1208 1831	-1.1 18.6 -0.4	-34 567 -13	3 Th	0008 0619 1219 1839	15.9 1.4 16.9 1.9	486 43 515 58	18 F	0015 0627 1228 1856	17.3 0.2 18.3 0.8	527 7 558 24	3 Su	0043 0650 1255 1916	14.7 3.2 15.8 3.4	448 99 482 104	18 M	0131 0740 1344 2015	16.0 2.5 16.8 2.6	489 75 513 78
4 W	0031 0646 1243 1900	16.4 0.5 16.7 1.4	499 16 509 42	19 Th	0027 0641 1238 1903	17.3 -0.4 17.9 0.5	528 -11 545 16	4 F	0032 0641 1242 1902	15.2 2.3 16.0 2.8	462 69 489 84	19 Sa	0052 0702 1304 1933	16.4 1.3 17.3 1.9	500 41 526 59	4 M	0112 0717 1326 1948	14.0 4.0 15.0 4.2	428 123 457 127	19 Tu	0216 0822 1344 2101	15.0 3.8 15.6 3.7	458 116 474 114
5 Th	0052 0704 1303 1921	15.2 1.7 15.6 2.6	464 53 513 78	20 F	0056 0709 1307 1935	16.3 0.9 16.8 1.8	496 26 513 55	5 Sa	0055 0702 1306 1926	14.3 3.2 15.1 3.7	435 98 459 113	20 Su	0131 0738 1342 2016	15.3 2.8 16.0 3.3	465 84 487 100	5 Tu	0145 0751 1404 2029	13.3 5.0 14.1 5.0	405 153 429 152	20 W	0310 0915 1527 2200	14.0 5.1 14.3 4.8	428 156 435 146
6 F	0112 0721 1324 1944	14.0 3.0 14.3 3.8	426 91 437 116	21 Sa	0128 0740 1340 2011	15.0 2.4 15.5 3.3	456 72 472 101	6 Su	0120 0724 1333 1957	13.3 4.3 13.9 4.8	404 131 425 146	21 M	0218 0822 1433 2111	14.0 4.3 14.6 4.6	426 132 444 139	6 W	0233 0839 1500 2128	12.5 6.1 13.2 5.7	382 185 401 174	21 Th	0420 1027 1641 2318	13.4 6.0 13.4 5.3	408 184 408 162
7 Sa	0134 0741 1349 2012	12.7 4.3 13.0 5.2	386 132 395 157	22 Su	0208 0815 1423 2103	13.5 4.0 13.9 4.9	411 123 425 148	7 M	0152 0755 1413 2044	12.2 5.5 12.7 5.9	371 169 388 180	22 Tu	0322 0925 1548 2233	12.9 5.7 13.4 5.4	392 175 409 164	7 Th	0345 0957 1621 2255	12.0 6.9 12.6 5.9	367 209 385 180	22 F	0544 1201 1808	13.4 6.2 13.2	408 188 401
8 Su	0204 0808 1429 2105	11.3 5.8 11.5 6.5	344 176 351 199	23 M	0312 0914 1546 2245	12.0 5.7 12.5 5.8	366 175 382 178	8 Tu	0249 0849 1538 2223	11.1 6.9 11.7 6.6	338 209 357 202	23 W	0455 1104 1725	12.5 6.4 13.1	380 195 398	8 F	0530 1154 1757	12.3 6.7 12.9	375 203 393	23 Sa	0041 0700 1320 1921	5.2 14.0 5.5 13.5	158 428 167 412
9 M	0304 0903 1712 2358	9.9 7.3 10.5 6.9	301 221 321 211	24 Tu	0512 1122 1756	11.4 6.6 12.4	347 201 378	9 W	0502 1115 1746	10.7 7.4 11.8	326 227 359	24 Th	0011 0631 1248 1855	5.2 13.2 5.8 13.6	158 402 176 415	9 Sa	0029 0655 1319 1913	5.3 13.5 5.5 13.8	161 411 169 420	24 Su	0147 0758 1419 2020	4.6 15.0 4.6 14.1	140 456 140 429
10 Tu	0631 1248 1900	9.9 7.2 11.4	302 220 347	25 W	0049 0703 1323 1930	5.2 12.5 5.5 13.6	159 380 168 415	10 Th	0024 0650 1307 1907	6.1 11.7 6.4 12.8	186 358 195 391	25 F	0128 0740 1358 1959	4.2 14.5 4.5 14.6	129 442 137 444	10 Su	0138 0755 1418 2012	4.2 15.0 4.1 14.9	127 457 126 453	25 M	0240 0847 1508 2108	3.9 15.8 3.8 14.6	120 481 116 445
11 W	0134 0754 1404 2004	5.8 11.4 5.7 12.9	176 347 175 392	26 Th	0206 0813 1430 2032	3.6 14.3 3.7 15.1	110 436 113 461	11 F	0135 0752 1408 2005	4.8 13.4 4.9 14.2	147 408 148 432	26 Sa	0225 0832 1450 2050	3.1 15.8 3.3 15.4	96 482 101 469	11 M	0234 0844 1508 2104	3.0 16.4 2.8 15.9	90 501 85 485	26 Tu	0325 0929 1552 2152	3.4 16.4 3.2 15.0	103 499 98 458
12 Th	0229 0840 1451 2050	4.2 13.1 4.1 14.4	128 400 124 440	27 F	0258 0903 1519 2119	2.0 16.1 2.1 16.4	61 490 64 499	12 Sa	0227 0839 1457 2053	3.3 15.1 3.2 15.5	102 460 99 473	27 Su	0311 0915 1535 2134	2.3 16.8 2.4 15.9	71 512 74 485	12 Tu	0324 0931 1556 2153	1.8 17.7 1.6 16.8	55 538 49 511	27 W	0406 1009 1633 2230	3.0 16.8 2.8 15.3	90 512 85 467
13 F	0311 0918 1532 2131	2.6 14.9 2.4 15.9	80 453 74 484	28 Sa	0342 0943 1603 2200	0.8 17.4 1.0 17.1	24 529 30 521	13 Su	0314 0921 1541 2136	1.9 16.7 1.8 16.6	59 508 55 507	28 M	0352 0955 1616 2213	1.8 17.4 1.9 16.1	55 530 58 491	13 W	0410 1016 1642 2240	0.9 18.5 0.8 17.3	28 565 23 528	28 Th	0442 1045 1708 2305	2.7 17.1 2.5 15.5	81 521 76 473
14 Sa	0350 0955 1610 2209	1.1 16.4 1.0 17.1	35 500 31 520	29 Su	0421 1021 1641 2238	0.1 18.1 0.4 17.3	3 552 11 528	14 M	0356 1000 1621 2219	0.7 17.9 0.7 17.5	22 547 20 532	29 Tu	0430 1030 1652 2248	1.6 17.6 1.7 16.1	49 537 52 491	14 Th	0455 1059 1727 2325	0.3 19.1 0.3 17.6	10 581 8 535	29 F	0516 1118 1740 2337	2.4 17.2 2.3 15.6	74 525 70 476
15 Su	0427 1030 1648 2245	-0.1 17.7 -0.1 17.8	-4 539 -4 544	30 M	0457 1057 1716 2312	-0.1 18.3 0.3 17.1	-3 559 8 522	15 Tu	0435 1040 1702 2259	-0.2 18.8 -0.1 17.8	-5 572 -2 544	30 W	0504 1104 1725 2322	1.6 17.6 1.7 15.9	49 536 53 485	15 F	0539 1142 1810	0.2 19.1 0.2	6 583 6	30 Sa	0546 1149 1810	2.4 17.2 2.2	72 525 68
												31 Th	0533 1134 1756 2350	1.8 17.4 2.0 15.6	55 529 60 476								

Time meridian 97° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Mergui, Burma, 2018

Times and Heights of High and Low Waters

October			November			December																	
Time	Height		Time	Height		Time	Height		Time	Height													
	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm											
1 M	0123	15.7	480	16 Tu	0133	13.3	404	1 Th	0303	12.9	392	16 F	0312	11.3	345	1 Sa	0438	12.6	384	16 Su	0343	11.7	357
	0752	4.1	125		0759	6.2	189		1000	6.3	192		1002	7.0	214		1125	5.2	157		1013	5.6	172
	1347	14.2	434		1351	11.6	354		1633	11.7	358		1702	10.7	325		1753	12.9	392		1657	11.5	350
	1959	4.5	136		1954	7.0	214		2240	7.2	218		2322	7.9	240						2327	6.6	202
2 Tu	0159	14.4	438	17 W	0209	11.7	356	2 F	0518	12.4	379	17 Sa	0539	11.4	346	2 Su	0611	5.8	176	17 M	0529	11.6	354
	0833	5.5	169		0853	7.6	232		1211	5.9	179		1211	6.5	197		0618	13.0	395		1158	5.3	163
	1434	12.7	387		1508	10.2	311		1831	12.7	388		1845	11.8	359		1253	4.3	132		1316	4.3	132
	2046	6.1	185		2056	8.5	259										1909	14.1	431		1836	12.5	380
3 W	0304	12.9	393	18 Th	0529	10.9	332	3 Sa	0050	6.1	185	18 Su	0102	6.6	201	3 M	0130	4.4	134	18 Tu	0102	5.5	168
	0959	6.9	209		1208	7.7	234		0659	13.6	416		0659	12.4	379		0731	13.9	425		0655	12.4	377
	1630	11.6	353		1839	10.8	329		1334	4.3	130		1408	5.2	157		1355	3.2	97		1316	4.3	132
	2238	7.3	222		1942	14.6	446		1942	14.6	446		1940	13.4	409		2005	15.6	475		1937	13.9	424
4 Th	0539	12.5	381	19 F	0100	7.7	236	4 Su	0201	4.1	126	19 M	0155	5.0	151	4 Tu	0225	3.0	91	19 W	0159	4.0	123
	1234	6.4	195		0700	12.0	365		0802	15.3	466		0751	13.8	421		0825	14.9	455		0755	13.5	411
	1846	12.5	380		1328	6.4	194		1429	2.5	77		1408	3.7	113		1444	2.2	67		1412	3.1	95
					1945	12.3	376		2033	16.5	504		2022	15.1	459		2050	16.7	510		2025	15.4	468
5 F	0107	6.3	191	20 Sa	0157	6.1	187	5 M	0251	2.3	70	20 Tu	0239	3.3	102	5 W	0312	1.9	57	20 Th	0250	2.6	79
	0721	14.0	426		0754	13.5	411		0851	16.7	509		0836	15.1	461		0911	15.6	476		0847	14.6	445
	1358	4.5	138		1415	4.8	147		1514	1.1	35		1451	2.3	71		1529	1.5	46		1501	1.9	59
	2004	14.4	440		2025	14.0	427		2115	18.0	549		2100	16.6	505		2132	17.5	532		2111	16.6	506
6 Sa	0220	4.2	128	21 Su	0236	4.5	137	6 Tu	0336	1.0	29	21 W	0319	1.9	58	6 Th	0355	1.2	36	21 F	0336	1.3	41
	0825	15.9	486		0834	15.0	456		0934	17.6	537		0917	16.2	495		0953	15.9	486		0935	15.6	475
	1454	2.5	76		1451	3.3	102		1555	0.3	9		1532	1.2	36		1610	1.2	36		1549	1.0	29
	2056	16.5	504		2058	15.6	476		2155	18.9	576		2138	17.7	541		2210	17.7	541		2155	17.6	536
7 Su	0314	2.2	66	22 M	0312	3.0	90	7 W	0416	0.2	6	22 Th	0359	0.8	23	7 F	0435	0.9	27	22 Sa	0421	0.3	10
	0915	17.7	539		0911	16.3	498		1014	17.9	547		0957	17.1	520		1033	16.0	487		1020	16.3	497
	1541	0.8	23		1528	2.0	60		1633	0.0	0		1613	0.3	10		1647	1.2	36		1634	0.2	6
	2141	18.2	556		2132	17.0	519		2231	19.2	584		2216	18.5	565		2247	17.7	538		2238	18.2	555
8 M	0359	0.6	18	23 Tu	0349	1.6	49	8 Th	0454	0.0	0	23 F	0440	0.0	0	8 Sa	0511	0.9	28	23 Su	0506	-0.4	-11
	0957	18.9	576		0946	17.4	530		1051	17.7	541		1037	17.5	533		1108	15.8	481		1105	16.8	511
	1621	-0.4	-12		1603	0.9	26		1708	0.2	7		1651	-0.1	-4		1720	1.4	43		1718	-0.2	-6
	2220	19.4	591		2206	18.1	553		2305	18.9	575		2252	18.9	576		2320	17.3	527		2320	18.5	563
9 Tu	0440	-0.4	-12	24 W	0424	0.6	18	9 F	0527	0.3	10	24 Sa	0518	-0.3	-10	9 Su	0543	1.2	36	24 M	0549	-0.7	-20
	1037	19.4	591		1023	18.1	553		1123	17.2	523		1115	17.5	534		1140	15.4	470		1147	16.9	514
	1659	-0.9	-27		1638	0.1	2		1739	0.9	26		1729	-0.1	-4		1750	1.8	55		1758	-0.2	-5
	2257	19.8	603		2240	18.9	575		2336	18.2	555		2329	18.8	572		2350	16.8	511				
10 W	0516	-0.6	-19	25 Th	0501	0.0	-1	10 Sa	0558	1.0	31	25 Su	0556	-0.2	-5	10 M	0612	1.6	49	25 Tu	0001	18.3	557
	1113	19.2	586		1057	18.4	561		1154	16.3	497		1153	17.1	522		1208	14.9	455		0629	-0.5	-16
	1734	-0.7	-21		1713	-0.3	-9		1807	1.7	52		1804	0.4	11		1817	2.3	71		1228	16.6	506
	2330	19.6	596		2312	19.1	582														1838	0.3	10
11 Th	0550	-0.2	-7	26 F	0534	-0.2	-6	11 Su	0004	17.3	526	26 M	0004	18.2	554	11 Tu	0017	16.1	492	26 W	0041	17.7	539
	1146	18.5	563		1130	18.2	555		0627	1.9	58		0632	0.5	15		0639	2.2	66		0709	0.1	2
	1804	0.1	3		1746	-0.1	-4		1219	15.4	468		1229	16.3	498		1235	14.4	438		1309	15.9	486
					2343	18.9	575		1829	2.7	83		1841	1.3	39		1841	3.0	90		1917	1.2	38
12 F	0001	18.8	572	27 Sa	0608	0.2	6	12 M	0028	16.2	493	27 Tu	0038	17.2	525	12 W	0042	15.4	470	27 Th	0119	16.7	509
	0621	0.7	22		1203	17.6	536		0650	2.9	89		0710	1.5	46		0704	2.8	85		0748	1.0	32
	1214	17.3	528		1817	0.5	16		1243	14.3	436		1307	15.3	467		1300	13.7	419		1349	15.1	459
	1831	1.3	39						1850	3.8	115		1916	2.5	77		1904	3.7	113		1958	2.4	74
13 Sa	0027	17.6	537	28 Su	0012	18.1	553	13 Tu	0050	15.0	458	28 W	0116	16.0	488	13 Th	0109	14.6	444	28 F	0201	15.5	471
	0648	2.0	60		0639	1.0	32		0713	4.0	122		0749	2.7	83		0733	3.5	107		0830	2.2	68
	1239	16.0	487		1234	16.6	506		1307	13.2	403		1349	14.1	431		1331	13.0	396		1436	14.1	429
	1853	2.7	81		1848	1.6	49		1912	4.9	149		1957	4.0	121		1935	4.6	141		2044	3.8	115
14 Su	0049	16.2	495	29 M	0041	17.1	522	14 W	0116	13.8	420	29 Th	0159	14.6	445	14 F	0142	13.6	414	29 Sa	0247	14.1	429
	0710	3.3	102		0712	2.3	69		0741	5.1	155		0839	4.0	122		0808	4.3	132		0919	3.4	104
	1300	14.5	443		1304	15.4	468		1338	12.1	369		1447	13.0	396		1411	12.2	372		1535	13.2	401
	1912	4.1	125		1917	3.0	91		1940	6.1	187		2051	5.3	163		2016	5.6	172		2143	4.9	150
15 M	0110	14.8	451	30 Tu	0112	15.8	483	15 Th	0152	12.5	381	30 F	0304	13.3	405	15 Sa	0229	12.5	382	30 Su	0350	12.8	390
	0733	4.8	146		0745	3.7	113		0825	6.2	189		0948	5.0	152		0857	5.1	156		1024	4.4	134
	1321	13.1	399		1341	13.9	425		1433	11.0	336		1612	12.4	378		1514	11.5	352		1654	12.7	387
	1930	5.5	169		1951	4.6	139		2030	7.4	225		2220	6.2	190		2124	6.6	200		2311	5.5	168
16 Th				31 W	0151	14.3	437	16 Su	0151	14.3	437	16 M	0518	12.0	367	31 M	0518	12.0	367				
					0832	5.2	158													1153	4.8	145	
					1439	12.5	382													1824	13.0	397	
					2043	6.2	188																

Time meridian 97° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Rangoon, Burma, 2018

Times and Heights of High and Low Waters

July					August					September																			
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm															
1 Su	0141	3.4	105		16 M	0214	3.7	112		1 W	0223	4.4	134		16 Th	0307	4.2	127		1 Sa	0258	4.5	137		16 Su	0327	5.3	163	
	0616	18.1	552			0622	19.8	604			0645	19.1	581			0728	20.1	614			0729	19.8	605			0824	18.4	560	
	1319	3.9	119			1404	4.4	133			1417	5.0	153			1517	5.1	154			1516	4.7	142			1554	5.5	169	
	1816	19.5	593			1830	20.9	637			1851	19.7	599			1945	19.9	608			1942	19.1	581			2052	16.9	516	
2 M	0210	3.5	106		17 Tu	0255	3.6	110		2 Th	0250	4.3	132		17 F	0339	4.5	138		2 Su	0324	4.8	145		17 M	0354	6.6	200	
	0648	18.0	548			0713	19.7	600			0721	19.1	582			0818	19.5	594			0810	19.3	589			0914	16.9	515	
	1350	4.2	128			1447	4.6	140			1452	5.0	153			1554	5.4	165			1547	4.8	147			1634	6.5	197	
	1846	19.1	582			1923	20.4	621			1926	19.3	588			2035	18.8	572			2029	18.0	549			2200	15.5	471	
3 Tu	0239	3.6	109		18 W	0333	3.6	111		3 F	0317	4.3	132		18 Sa	0408	5.3	161		3 M	0357	5.4	166		18 Tu	0440	7.9	242	
	0722	17.8	544			0807	19.4	592			0759	19.1	581			0909	18.5	564			0857	18.4	560			1024	15.5	473	
	1422	4.6	139			1530	4.9	149			1525	5.0	153			1631	6.0	184			1634	5.4	164			1804	7.2	218	
	1920	18.6	568			2018	19.6	596			2007	18.7	570			2131	17.3	527			2133	16.7	510			2339	14.7	448	
4 W	0307	3.8	115		19 Th	0410	4.0	121		4 Sa	0344	4.6	140		19 Su	0443	6.4	196		4 Tu	0449	6.4	194		19 W	0624	8.7	266	
	0759	17.7	541			0903	18.9	577			0841	18.8	573			1004	17.3	528			1004	17.3	528			1211	15.1	459	
	1457	4.9	150			1616	5.3	163			1603	5.2	157			1727	6.7	205			1756	5.9	181			1943	6.8	208	
	1959	18.1	552			2116	18.4	562			2055	17.8	544			2245	15.9	484			2317	15.9	485						
5 Th	0335	4.0	123		20 F	0447	4.6	141		5 Su	0420	5.1	155		20 M	0541	7.6	231		5 W	0621	7.0	214		20 Th	0111	15.1	461	
	0840	17.7	539			1001	18.2	556			0930	18.3	558			1121	16.4	499			1151	16.9	515			1312	8.1	248	
	1536	5.2	159			1711	5.8	178			1659	5.4	166			1857	7.0	212			1946	5.7	175			2057	6.0	184	
	2044	17.5	534			2220	17.2	524			2201	16.9	514			2022	15.3	465			2117	5.0	151			2200	5.3	162	
6 F	0408	4.4	134		21 Sa	0536	5.5	167		6 M	0516	5.7	174		21 Tu	0712	8.1	246		6 Th	0809	6.7	203		21 F	0924	7.0	214	
	0925	17.6	536			1104	17.5	534			1038	17.7	541			1254	16.2	495			1322	17.7	540			1429	16.9	515	
	1627	5.4	165			1823	6.1	187			1823	5.6	171			2023	6.5	197			2117	5.0	151			2200	5.3	162	
	2139	16.9	515			2339	16.2	493			2337	16.3	496			0146	15.6	477			0217	17.7	538			0303	17.4	530	
7 Sa	0453	4.8	145		22 Su	0640	6.2	189		7 Tu	0640	6.1	186		22 W	0838	7.7	234		7 F	0935	5.8	176		22 Sa	1020	5.9	181	
	1022	17.5	533			1220	17.2	523			1210	17.7	540			1403	16.9	516			1425	19.0	580			1510	18.0	550	
	1739	5.4	165			1945	5.9	181			2001	5.3	162			2135	5.7	174			2231	4.3	132			2253	4.8	145	
	2252	16.4	499																										
8 Su	0559	5.0	151		23 M	0106	15.9	485		8 W	0111	16.6	507		23 Th	0246	16.6	505		8 Sa	0310	19.0	579		23 Su	0338	18.4	562	
	1135	17.6	536			0753	6.5	197			0813	5.9	180			0948	6.8	208			1043	5.0	151			1104	5.1	156	
	1907	5.1	154			1330	17.4	530			1330	18.4	562			1453	17.8	544			1511	20.2	616			1542	19.0	579	
						2058	5.4	165			2128	4.8	145			2238	5.1	155			2331	4.0	122			2335	4.4	135	
9 M	0020	16.3	498		24 Tu	0213	16.3	497		9 Th	0223	17.6	537		24 F	0332	17.5	534		9 Su	0350	20.0	611		24 M	0404	19.2	586	
	0717	4.9	148			0902	6.2	190			0934	5.4	165			1044	6.0	182			1136	4.6	139			1140	4.6	141	
	1249	18.1	551			1424	17.9	547			1430	19.5	593			1534	18.7	571			1551	21.0	640			1609	19.7	600	
	2031	4.4	135			2204	4.8	147			2243	4.3	132			2329	4.8	145											
10 Tu	0137	16.9	516		25 W	0306	16.9	516		10 F	0319	18.7	569		25 Sa	0408	18.4	560		10 M	0018	4.0	121		25 Tu	0006	4.3	130	
	0835	4.5	137			1004	5.8	176			1044	4.9	150			1127	5.4	164			1223	4.5	136			1212	4.5	136	
	1353	18.9	576			1510	18.6	566			1521	20.4	622			1606	19.5	593			1627	21.4	651			1633	20.1	613	
	2147	3.9	119			2302	4.4	135			2346	4.2	127																
11 W	0238	17.7	541		26 Th	0350	17.6	536		11 Sa	0403	19.6	596		26 Su	0009	4.7	142		11 Tu	0057	4.0	123		26 W	0035	4.2	128	
	0947	4.2	127			1056	5.2	160			1142	4.7	143			0433	19.0	579			0454	21.0	639			0448	20.2	616	
	1447	19.8	602			1551	19.1	583			1604	21.1	643			1201	5.1	155			1305	4.6	139			1245	4.4	134	
	2254	3.6	111			2350	4.3	130								1632	19.9	608			1705	21.4	651			1659	20.3	618	
12 Th	0329	18.5	565		27 F	0427	18.1	553		12 Su	0036	4.2	127		27 M	0039	4.7	144		12 W	0132	4.1	125		27 Th	0103	4.1	126	
	1051	3.9	120			1140	4.9	148			0439	20.2	615			0454	19.4	592			0529	21.0	640			0514	20.4	623	
	1536	20.5	624			1625	19.6	597			1232	4.6	141			1231	5.0	153			1344	4.6	141			1322	4.3	132	
	2354	3.6	110								1642	21.5	654			1656	20.2	617			1745	21.1	642			1729	20.3	618	
13 F	0414	19.2	584		28 Sa	0028	4.2	129		13 M	0119	4.2	128		28 Tu	0105	4.8	145		13 Th	0205	4.1	126		28 F	0134	4.1	124	
	1146	3.9	119			0457	18.5	565			0515	20.5	625			0515	19.7	600			0609	20.8	633			0547	20.5	626	
	1618	21.0	639			1213	4.7	142			1315	4.7	144			1303	5.1	154			1424	4.6	141			1359	4.2	127	
						1655	19.9	606			1722	21.5	656			1722	20.3	620			1830	20.5	625			1804	20.0	611	
14 Sa	0045	3.7	112		29 Su	0059	4.3	132		14 Tu	0157	4.2	128		29 W	0132	4.7	144		14 F	0236	4.2	128		29 Sa	0205	4.0	123	
	0455	19.6	597			0522	18.8	573			0554	20.6	628			0540	19.9	606			0654	20.3	619			0626	20.4	623	
	1235	4.0	122			1243	4.7	142			1357	4.8	147			1336	5.1	155			1458	4.7	142			1435	4.0	121	
	1700	21.2	646			1722	20.0	610			1807	21.3	649			1751	20.3	620			1917	19.7	599			1844	19.6	596	
15 Su	0132	3.7	113		30 M	0126	4.4	135		15 W	0234	4.1	126		30 Th	0200	4.6	141		15 Sa	0303	4.6	139		30 Su	0234	4.2	128	
	0537	19.8	603			0545	18.9	577			0638	20.5	625			0613	20.0	610			0740	19.5	595			0708	20.0	610	
	1320	4.2	127			1311	4.8	146			1439	4.9	149			1411	5.0	151			1527	4.9	149			1506</			

Sagar, Hooghly River, India, 2018

Times and Heights of High and Low Waters

January				February				March																					
Time		Height		Time		Height		Time		Height		Time		Height															
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm										
1 M	0335	3.6	109		16 Tu	0415	4.5	137		1 Th	0509	1.8	54		16 F	0459	2.9	89		1 Th	0417	2.0	61		16 F	0408	3.2	97	
	0901	15.8	481			0946	13.8	420			1034	16.2	495			1028	14.6	444			0940	15.5	473			0936	14.3	437	
	1547	2.6	79			1622	3.7	113			1718	1.5	47			1707	2.6	78			1626	1.8	56			1617	3.0	91	
	2129	17.6	537			2207	15.6	474			2256	17.5	532		●	2244	15.8	483			2200	17.0	518			2148	15.7	478	
2 Tu	0426	2.9	87		17 W	0444	4.1	124		2 F	0551	1.6	48		17 Sa	0528	2.5	75		2 F	0456	1.4	42		17 Sa	0437	2.5	76	
	0951	16.4	499			1015	14.2	433			1118	16.3	497			1057	15.0	458			1020	16.2	493			1001	15.2	462	
	1636	2.1	64			1651	3.3	102			1759	1.7	51			1736	2.3	71			1706	1.5	45			1645	2.5	75	
○	2216	18.0	548		●	2235	15.7	479			2337	17.1	521			2312	16.0	487		○	2240	17.1	522		●	2216	16.1	491	
3 W	0513	2.5	75		18 Th	0513	3.7	114		3 Sa	0630	1.8	55		18 Su	0558	2.2	66		3 Sa	0531	1.2	36		18 Su	0504	1.9	58	
	1041	16.6	506			1045	14.5	441			1200	16.0	488			1128	15.3	467			1057	16.4	500			1030	15.8	483	
	1721	2.0	62			1719	3.1	96			1837	2.2	68			1806	2.3	70			1743	1.6	48			1715	2.1	64	
	2303	17.8	544			2302	15.8	481							2344	15.9	485			2315	16.8	512			2246	16.4	500		
4 Th	0559	2.4	74		19 F	0542	3.5	107		4 Su	0017	16.4	500		19 M	0630	2.1	63		4 Su	0603	1.4	43		19 M	0533	1.5	45	
	1129	16.4	500			1116	14.6	446			0706	2.3	71			1203	15.4	470			1132	16.2	495			1102	16.3	498	
	1804	2.4	72			1747	3.1	94			1239	15.5	471			1837	2.5	77			1814	2.0	62			1745	1.9	59	
	2349	17.3	528			2333	15.7	479			1910	3.0	91								2348	16.2	493			2317	16.4	500	
5 F	0645	2.8	84		20 Sa	0615	3.4	103		5 M	0053	15.5	473		20 Tu	0016	15.7	478		5 M	0633	1.9	58		20 Tu	0604	1.3	41	
	1217	15.9	484			1149	14.7	447			0737	3.0	92			0702	2.2	66			1205	15.8	482			1136	16.5	502	
	1847	3.1	93			1819	3.2	99			1316	14.8	450			1238	15.3	467			1842	2.7	82			1817	2.1	64	
											1941	3.9	119			1907	2.9	89								2352	16.1	491	
6 Sa	0036	16.5	502		21 Su	0005	15.6	474		6 Tu	0127	14.6	445		21 W	0051	15.3	467		6 Tu	0019	15.4	470		21 W	0635	1.6	48	
	0729	3.3	102			0649	3.4	103			0805	3.8	115			0731	2.4	74			0658	2.5	77			1213	16.3	496	
	1303	15.2	462			1224	14.6	445			1351	14.0	427			1312	15.0	458			1237	15.2	464			1850	2.6	78	
	1930	3.9	120			1851	3.6	109			2011	4.8	147			1940	3.5	106			1908	3.4	105						
7 Su	0122	15.6	474		22 M	0039	15.3	467		7 W	0202	13.6	414		22 Th	0129	14.7	449		7 W	0048	14.6	444		22 Th	0029	15.6	474	
	0809	4.1	124			0722	3.5	106			0833	4.5	138			0803	2.9	89			0721	3.2	97			0706	2.1	64	
	1351	14.4	439			1259	14.5	442			1428	13.2	401			1351	14.5	442			1307	14.5	442			1250	15.8	481	
	2011	4.9	150			1923	4.0	123		○	2046	5.8	177			2022	4.2	129			1932	4.3	130			1925	3.2	99	
8 M	0207	14.6	445		23 Tu	0113	15.0	457		8 Th	0241	12.5	381		23 F	0212	13.9	423		8 Th	0116	13.7	417		23 F	0107	14.8	450	
	0847	4.8	146			0753	3.6	110			0908	5.4	164			0846	3.6	110			0744	4.0	121			0740	2.9	87	
	1438	13.7	417			1336	14.3	436			1521	12.2	373			1441	13.7	419			1338	13.6	415			1330	15.0	456	
	2054	5.9	179			1959	4.5	138			2138	6.8	206		○	2118	5.1	156			1959	5.2	159			2005	4.2	127	
9 Tu	0256	13.6	415		24 W	0152	14.6	444		9 F	0339	11.4	346		24 Sa	0312	12.8	389		9 F	0148	12.7	386		24 Sa	0153	13.7	418	
	0929	5.4	166			0829	3.8	117			1009	6.2	189			0946	4.5	136			0814	5.0	151			0822	3.9	118	
	1530	13.0	396			1418	14.0	427			1649	11.6	353			1604	13.0	396			1419	12.5	382			1420	13.9	424	
○	2150	6.7	204			2045	5.1	155			2318	7.3	224			2245	5.8	176		○	2039	6.3	192		○	2102	5.2	159	
10 W	0351	12.7	386		25 Th	0240	13.9	424		10 Sa	0516	10.6	323		25 Su	0453	12.0	365		10 Sa	0230	11.5	350		25 Su	0257	12.5	382	
	1024	6.0	184			0916	4.2	128			1156	6.5	197			1122	5.0	152			0902	6.0	184			0925	5.0	153	
	1637	12.5	382			1516	13.6	414			1838	11.8	361			1750	13.1	400			1528	11.5	350			1548	13.0	396	
	2309	7.2	220		○	2149	5.6	172													2150	7.3	221			2235	5.9	181	
11 Th	0502	11.9	363		26 F	0347	13.1	400		11 Su	0111	7.0	212		26 M	0043	5.5	168		11 Su	0352	10.4	316		26 M	0444	11.8	359	
	1137	6.3	193			1022	4.6	141			0717	10.9	331			0634	12.2	373			1035	6.8	208			1111	5.6	171	
	1803	12.5	381			1641	13.4	407			1332	5.9	179			1306	4.6	139			1737	11.3	344			1738	13.1	398	
						2316	5.9	181			1952	12.8	390			1918	14.1	431											
12 F	0035	7.2	219		27 Sa	0517	12.7	387		12 M	0232	6.0	182		27 Tu	0222	4.4	133		12 M	0016	7.3	222		27 Tu	0037	5.5	169	
	0630	11.7	356			1150	4.7	144			0819	11.7	357			0757	13.3	405			0625	10.3	315			0633	12.3	374	
	1254	6.2	188			1812	13.8	421			1441	5.0	151			1434	3.6	109			1247	6.5	197			1259	5.1	156	
	1920	13.1	398								2039	13.8	420			2024	15.4	469			1913	12.2	371			190			

Sagar, Hooghly River, India, 2018

Times and Heights of High and Low Waters

July					August					September																									
Time		Height			Time		Height			Time		Height			Time		Height																		
Day	Mo	h	m	ft	cm	Day	Mo	h	m	ft	cm	Day	Mo	h	m	ft	cm	Day	Mo	h	m	ft	cm												
		1	Su	0523	4.4			135		16	M			0605	3.3	102				1	W	0609	4.7	142		16	Th	0705	4.9	149		1	Sa	0031	16.7
		1114	16.8	512				1150	18.3	559				1158	16.8	511				1249	16.5	504				0655	5.1	156				0733	6.7	205	
		1747	5.0	153				1842	3.7	112				1836	4.7	143				1927	4.9	148				1242	16.1	492				1321	14.1	431	
		2332	15.6	475																1915	4.7	144				1915	4.7	144				1946	6.8	207	
2	M	0552	4.8	145		17	Tu	0023	17.1	521		2	Th	0020	16.0	489		17	F	0116	16.0	489		2	Su	0106	16.2	493		17	M	0148	14.2	432	
		1147	16.5	502				0649	4.2	128				0640	5.2	158				0737	5.9	181				0732	5.8	177				0812	7.8	238	
		1821	5.2	159				1237	17.4	531				1231	16.4	499				1327	15.4	470				1324	15.4	469				1404	13.0	396	
								1925	4.4	133				1909	5.0	151				1959	5.8	177				1955	5.4	164				2034	7.9	240	
3	Tu	0006	15.3	466		18	W	0110	16.3	497		3	F	0055	15.8	481		18	Sa	0154	15.1	459		3	M	0151	15.5	471		18	Tu	0258	13.1	398	
		0624	5.3	161				0731	5.2	159				0713	5.7	175				0813	7.0	212				0823	6.6	201				0926	8.7	265	
		1222	16.1	491				1326	16.4	500				1308	15.9	485				1410	14.3	435				1420	14.5	441				1548	12.0	365	
		1858	5.5	169				2007	5.2	157				1943	5.3	161				2037	6.8	206				2053	6.2	188				2218	8.6	263	

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Sagar, Hooghly River, India, 2018

Times and Heights of High and Low Waters

October				November				December															
Time		Height		Time		Height		Time		Height		Time		Height									
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm				
1	M			16	Tu			1	Th			16	F			1	Sa			16	Su		
0049	16.5	53.9	503	0114	14.5	44.1	441	0255	14.4	43.8	438	0249	13.1	39.8	398	0417	14.1	43.0	430	0312	13.1	40.0	400
0724	5.6	17.1	171	0741	7.4	22.7	227	0947	6.9	21.1	211	0924	7.9	24.2	242	1105	6.0	18.2	182	0946	6.7	20.3	203
1311	15.2	46.2	462	1330	13.1	39.8	398	1558	13.3	40.5	405	1541	12.1	36.9	369	1711	13.7	41.8	418	1600	12.6	38.3	383
1940	5.5	16.8	168	1953	7.7	23.6	236	2222	7.4	22.6	226	2203	8.5	26.0	260	2340	6.8	20.8	208	2224	7.6	23.3	233
2	Tu			17	W			2	F			17	Sa			2	Su			17	M		
0136	15.5	47.2	472	0204	13.3	40.6	406	0441	14.1	43.1	431	0434	12.9	39.2	392	0538	14.1	43.0	430	0432	12.9	39.3	393
0816	6.6	20.0	200	0840	8.4	25.5	255	1133	6.6	20.0	200	1102	7.7	23.5	235	1216	5.6	17.1	171	1100	6.5	19.7	197
1411	14.1	42.9	429	1438	12.1	36.8	368	1739	13.8	42.1	421	1727	12.6	38.3	383	1830	14.4	44.0	440	1726	13.0	39.7	397
2039	6.6	20.0	200	2110	8.7	26.5	265					2355	8.1	24.6	246					2352	7.3	22.2	222
3	W			18	Th			3	Sa			18	Su			3	M			18	Tu		
0249	14.4	44.0	440	0408	12.6	38.5	385	0007	6.9	21.0	210	0553	13.4	40.8	408	0059	6.3	19.2	192	0546	13.1	39.9	399
0938	7.3	22.2	222	1038	8.7	26.4	264	0609	14.8	45.1	451	1227	6.9	20.9	209	0648	14.4	43.9	439	1219	5.9	18.0	180
1555	13.3	40.5	405	1707	11.9	36.3	363	1253	5.6	17.1	171	1842	13.6	41.5	415	1324	5.2	15.7	157	1835	13.9	42.4	424
2220	7.3	22.1	221	2339	8.7	26.4	264	1859	15.0	45.8	458					1929	15.3	46.5	465				
4	Th			19	F			4	Su			19	M			4	Tu			19	W		
0449	14.2	43.4	434	0553	13.2	40.1	401	0128	5.9	18.0	180	0113	7.1	21.6	216	0208	5.7	17.3	173	0111	6.5	19.8	198
1142	7.0	21.2	212	1230	7.8	23.7	237	0713	15.7	47.9	479	0651	14.1	43.1	431	0743	14.7	44.9	449	0649	13.6	41.5	415
1749	13.8	42.0	420	1851	13.0	39.5	395	1401	4.7	14.2	142	1331	5.8	17.8	178	1424	4.8	14.5	145	1329	5.1	15.6	156
								1954	16.2	49.5	495	1933	14.8	45.1	451	2015	15.9	48.6	486	1931	14.9	45.5	455
5	F			20	Sa			5	M			20	Tu			5	W			20	Th		
0017	6.7	20.4	204	0107	7.5	23.0	230	0233	4.9	15.0	150	0208	6.0	18.4	184	0302	5.2	15.7	157	0214	5.6	17.0	170
0624	15.3	46.5	465	0659	14.2	43.4	434	0803	16.4	50.1	501	0738	14.9	45.4	454	0828	15.0	45.6	456	0743	14.3	43.5	435
1314	5.7	17.4	174	1333	6.6	20.0	200	1453	4.0	12.1	121	1422	4.9	15.0	150	1512	4.5	13.6	136	1428	4.3	13.1	131
1914	15.2	46.3	463	1942	14.3	43.5	435	2036	17.1	52.2	522	2012	15.9	48.4	484	2054	16.4	50.0	500	2017	15.9	48.6	486
6	Sa			21	Su			6	Tu			21	W			6	Th			21	F		
0142	5.5	16.7	167	0204	6.4	19.4	194	0321	4.3	13.1	131	0253	5.2	15.8	158	0343	4.8	14.7	147	0306	4.7	14.4	144
0730	16.6	50.5	505	0745	15.3	46.6	466	0846	16.8	51.3	513	0819	15.6	47.5	475	0907	15.1	46.1	461	0831	15.0	45.8	458
1422	4.4	13.3	133	1423	5.5	16.7	167	1535	3.6	10.9	109	1506	4.1	12.6	126	1551	4.2	12.9	129	1520	3.5	10.8	108
2008	16.6	50.7	507	2018	15.4	47.0	470	2112	17.7	53.9	539	2046	16.8	51.2	512	2130	16.7	50.9	509	2101	16.9	51.4	514
7	Su			22	M			7	W			22	Th			7	F			22	Sa		
0245	4.3	13.1	131	0249	5.3	16.3	163	0359	4.0	12.2	122	0332	4.5	13.7	137	0418	4.7	14.2	142	0352	3.9	12.0	120
0820	17.7	53.8	538	0821	16.1	49.0	490	0922	16.9	51.6	516	0855	16.2	49.3	493	0942	15.2	46.4	464	0918	15.7	48.0	480
1513	3.3	10.2	102	1504	4.6	14.0	140	1608	3.5	10.6	106	1543	3.5	10.6	106	1622	4.1	12.4	124	1604	2.9	8.7	87
2052	17.7	54.1	541	2047	16.4	49.9	499	2143	17.9	54.6	546	2119	17.6	53.6	536	2204	16.8	51.1	511	2143	17.6	53.5	535
8	M			23	Tu			8	Th			23	F			8	Sa			23	Su		
0334	3.5	10.6	106	0325	4.6	14.1	141	0431	4.0	12.2	122	0407	3.9	12.0	120	0448	4.6	14.0	140	0435	3.3	10.1	101
0903	18.3	55.7	557	0853	16.7	50.8	508	0957	16.8	51.2	512	0933	16.7	50.8	508	1017	15.2	46.4	464	1003	16.3	49.7	497
1554	2.8	8.4	84	1537	3.9	11.9	119	1637	3.5	10.8	108	1619	3.0	9.1	91	1651	4.0	12.3	123	1646	2.4	7.4	74
2128	18.4	56.2	562	2113	17.2	52.4	524	2214	17.9	54.5	545	2153	18.1	55.2	552	2235	16.7	50.8	508	2226	17.8	54.4	544
9	Tu			24	W			9	F			24	Sa			9	Su			24	M		
0414	3.1	9.5	95	0357	4.1	12.6	126	0501	4.2	12.8	128	0444	3.6	10.9	109	0516	4.7	14.2	142	0520	3.0	9.0	90
0941	18.4	56.2	562	0922	17.1	52.1	521	1029	16.5	50.2	502	1012	16.9	51.6	516	1049	15.1	46.0	460	1051	16.5	50.2	502
1628	2.6	8.0	80	1607	3.4	10.3	103	1704	3.8	11.5	115	1653	2.8	8.4	84	1719	4.1	12.5	125	1727	2.4	7.2	72
2201	18.7	57.1	571	2140	17.8	54.4	544	2245	17.6	53.5	535	2231	18.3	55.7	557	2308	16.4	49.9	499	2311	17.7	54.1	541
10	W			25	Th			10	Sa			25	Su			10	M			25	Tu		
0448	3.2	9.7	97	0425	3.8	11.5	115	0529	4.5	13.8	138	0524	3.5	10.6	106	0544	4.8	14.7	147	0607	2.9	8.9	89
1015	18.2	55.5	555	0951	17.4	53.0	530	1100	16.0	48.7	487	1053	16.8	51.3	513	1120	14.9	45.3	453	1139	16.3	49.6	496
1657	2.8	8.6	86	1636	3.0	9.1	91	1729	4.2	12.8	128	1730	2.9	8.8	88	1746	4.3	13.2	132	1810	2.7	8.2	82
2234	18.6	56.6	566	2209	18.3	55.8	558	2317	17.0	51.8	518	2313	18.0	54.8	548	2339	15.9	48.6	486	2359	17.3	52.6	526
11	Th			26	F			11	Su			26	M			11	Tu			26	W		
0519	3.5	10.8	108	0456	3.6	10.9	109	0556	5.0	15.2	152	0605	3.7	11.3	113	0613	5.1	15.4	154	0655	3.2	9.8	98
1048	17.6	53.7	537	1025	17.5	53.2	532	1130	15.4	46.9	469	1139	16.3	49.8	498	1152	14.5	44.2	442	1229	15.7	48.0	480
1725	3.3	10.1	101	1706	2.9	8.8	88	1755	4.7	14.4	144	1809	3.4	10.5	105	1813	4.7	14.4	144	1856	3.4	10.3	103
2305	18.1	55.2	552	2244	18.4	56.1	561	2348	16.3	49.7	497	2359	17.3	52.7	527								
12	F			27	Sa			12	M			27	Tu			12	W			27	Th		
0547	4.2	12.7	127	0530	3.6	11.1	111	0624	5.5	16.8	168	0650	4.2	12.9	129	0011	15.5	47.1	471	0049	16.5	50.3	503
1119	16.8	51.3	513	1101	17.2	52.4	524	1200	14.7	44.9	449	1229	15.6	47.5	475	0646	5.3	16.3	163	0742	3.7	11.3	113
1751	4.0	12.2	122	1738	3.1	9.5	95	1822	5.4	16.4	164	1853	4.3	13.1	131	1226	14.1	42.9	429	1321	15.1	45.9	459
2336	17.4	53.0	530	2320	18.1	55.2	552									1846	5.3	16.1	161	1944	4.3		

Madras, India, 2018

Times and Heights of High and Low Waters

January				February				March						
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height	
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm
1 M	0123	1.0	29		16 Tu	0213	1.0	30		1 Th	0254	0.1	2	
	0712	3.6	109			0755	2.8	86			0850	3.3	100	
	1319	0.3	9			1351	0.6	17			1447	-0.1	-3	
	1955	4.4	134			2026	3.6	109			2114	4.0	122	
2 Tu	0213	0.7	22		17 W	0244	0.9	26		2 F	0338	0.0	0	
	0805	3.7	112			0826	2.9	89			0935	3.3	100	
	1408	0.2	7			1422	0.5	15			1532	0.0	1	
	2042	4.5	136			2054	3.6	111			2155	3.9	119	
3 W	0304	0.6	18		18 Th	0312	0.8	23		3 Sa	0419	0.0	1	
	0856	3.7	112			0856	3.0	90			1017	3.2	97	
	1456	0.3	9			1453	0.5	14			1614	0.2	7	
	2127	4.5	136			2122	3.7	112			2233	3.7	112	
4 Th	0352	0.5	16		19 F	0342	0.7	21		4 Su	0459	0.2	5	
	0945	3.6	109			0927	3.0	91			1101	3.1	93	
	1543	0.4	13			1524	0.5	14			1659	0.5	14	
	2212	4.3	132			2150	3.7	112			2312	3.4	104	
5 F	0440	0.6	18		20 Sa	0412	0.6	19		5 M	0542	0.4	11	
	1034	3.4	105			0959	3.0	91			1147	2.9	88	
	1631	0.7	20			1557	0.6	17			1744	0.8	23	
	2257	4.1	125			2220	3.6	110			2353	3.1	93	
6 Sa	0529	0.7	21		21 Su	0444	0.6	19		6 Tu	0622	0.6	17	
	1126	3.3	100			1037	3.0	90			1236	2.7	82	
	1720	1.0	29			1633	0.7	21			1834	1.0	31	
	2343	3.8	117			2254	3.5	107						
7 Su	0619	0.9	26		22 M	0518	0.6	19		7 W	0035	2.7	82	
	1222	3.1	94			1120	2.9	89			0707	0.8	23	
	1815	1.3	39			1712	0.9	26			1333	2.5	77	
						2330	3.3	102			1933	1.3	39	
8 M	0032	3.5	107		23 Tu	0557	0.7	20		8 Th	0121	2.4	72	
	0713	1.0	32			1211	2.9	87			0759	0.9	28	
	1326	3.0	90			1758	1.0	32			1444	2.4	73	
	1917	1.5	47								2053	1.4	43	
9 Tu	0126	3.2	97		24 W	0012	3.1	96		9 F	0223	2.1	64	
	0812	1.2	36			0643	0.7	20			0908	1.0	30	
	1442	2.9	87			1312	2.8	86			1606	2.4	72	
	2034	1.7	53			1859	1.2	38			2231	1.4	43	
10 W	0229	2.9	88		25 Th	0107	3.0	90		10 Sa	0357	2.0	60	
	0917	1.3	39			0742	0.7	21			1027	1.0	29	
	1556	2.9	88			1420	2.8	86			1720	2.5	75	
	2200	1.8	55			2020	1.4	42			2350	1.2	38	
11 Th	0341	2.7	81		26 F	0213	2.8	84		11 Su	0522	2.0	61	
	1019	1.2	38			0853	0.7	20			1132	0.8	25	
	1702	3.0	90			1539	2.9	88			1819	2.6	80	
	2315	1.7	52			2149	1.3	41						
12 F	0449	2.6	79		27 Sa	0334	2.6	80		12 M	0046	1.0	31	
	1113	1.2	36			1007	0.6	17			0624	2.1	65	
	1758	3.1	94			1655	3.1	94			1222	0.6	19	
						2311	1.1	35			1903	2.8	86	
13 Sa	0015	1.5	47		28 Su	0457	2.7	81		13 Tu	0127	0.8	24	
	0551	2.6	79			1115	0.4	12			0709	2.3	70	
	1200	1.0	31			1801	3.3	101			1303	0.4	13	
	1843	3.2	99								1938	3.0	92	
14 Su	0103	1.3	41		29 M	0019	0.9	26		14 W	0158	0.6	18	
	0641	2.7	81			0608	2.8	86			0744	2.5	75	
	1241	0.9	26			1215	0.2	6			1337	0.3	9	
	1921	3.4	103			1857	3.6	110			2009	3.2	97	
15 M	0141	1.1	35		30 Tu	0117	0.5	16		15 Th	0226	0.4	13	
	0720	2.8	84			0709	3.0	92			0815	2.6	80	
	1317	0.7	21			1310	0.0	0			1408	0.2	5	
	1955	3.5	106			1947	3.8	117			2036	3.3	101	
				31 W	0208	0.3	8		16 F	0318	0.2	5		
					0802	3.2	97			0911	2.9	88		
					1401	-0.1	-3			1508	0.1	3		
					2032	4.0	121			2127	3.4	104		

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Madras, India, 2018

Times and Heights of High and Low Waters

July				August				September											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 Su	0335	0.5	16		16 M	0413	0.2	5		1 W	0424	0.5	15						
	1009	3.5	108			1040	3.9	120			1045	3.4	103		16 Th	0527	0.6	18	
	1630	0.9	27			1708	0.3	9			1705	0.6	17			1139	3.3	102	
	2207	2.8	86			2304	3.1	96			2302	2.9	87			1804	0.6	17	
2 M	0409	0.6	19		17 Tu	0502	0.4	13		2 Th	0459	0.7	20		17 F	0012	3.0	90	
	1041	3.5	106			1126	3.7	114			1118	3.2	99			0615	0.9	28	
	1704	0.9	27			1757	0.4	13			1740	0.6	18			1222	3.0	91	
	2245	2.8	85			2357	3.0	92			2346	2.8	85			1849	0.8	24	
3 Tu	0444	0.8	23		18 W	0554	0.7	22		3 F	0539	0.9	26		18 Sa	0106	2.7	83	
	1115	3.4	104			1214	3.5	106			1154	3.1	95			0710	1.2	36	
	1740	0.9	28			1848	0.6	19			1819	0.6	19			1309	2.6	80	
	2329	2.7	83													1942	1.0	31	
4 W	0522	0.9	28		19 Th	0655	2.9	87		4 Sa	0038	2.7	83		19 Su	0212	2.6	78	
	1151	3.3	101			0650	1.0	31			0628	1.0	32			0822	1.4	43	
	1819	0.9	28			1304	3.1	96			1239	2.9	89			1408	2.4	72	
						1942	0.8	24			1909	0.7	20			2050	1.1	35	
5 Th	0018	2.7	81		20 F	0159	2.7	83		5 Su	0140	2.7	82		20 M	0336	2.5	75	
	0605	1.1	34			0755	1.3	39			0733	1.2	37			0953	1.5	46	
	1234	3.1	96			1401	2.8	86			1337	2.8	84			1535	2.2	66	
	1906	1.0	29			2043	1.0	29			2013	0.7	21			2210	1.1	35	
6 F	0117	2.6	80		21 Sa	0314	2.7	81		6 M	0253	2.7	82		21 Tu	0458	2.5	77	
	0700	1.3	40			0912	1.4	44			0857	1.3	40			1120	1.4	44	
	1321	3.0	92			1507	2.6	78			1450	2.6	79			1701	2.2	66	
	2002	0.9	28			2148	1.0	31			2128	0.6	19			2319	1.0	31	
7 Sa	0226	2.7	81		22 Su	0427	2.7	81		7 Tu	0414	2.8	86		22 W	0604	2.7	82	
	0816	1.5	45			1034	1.5	45			1024	1.2	37			1224	1.3	39	
	1422	2.9	88			1619	2.4	74			1614	2.6	79			1807	2.3	70	
	2105	0.9	26			2249	1.0	30			2241	0.5	15						
8 Su	0341	2.8	85		23 M	0533	2.8	84		8 W	0526	3.1	93		23 Th	0012	0.9	26	
	0939	1.5	45			1146	1.4	42			1142	1.0	31			0652	2.9	87	
	1529	2.8	86			1726	2.4	72			1732	2.7	82			1310	1.1	33	
	2209	0.7	21			2343	0.9	27			2346	0.3	9			1853	2.5	75	
9 M	0448	3.0	92		24 Tu	0627	2.9	88		9 Th	0628	3.3	102		24 F	0053	0.7	20	
	1052	1.3	41			1241	1.2	38			1245	0.7	22			0728	3.1	94	
	1640	2.9	87			1822	2.4	74			1836	2.9	89			1344	0.9	28	
	2306	0.5	15													1930	2.7	81	
10 Tu	0547	3.3	100		25 W	0028	0.7	22		10 F	0043	0.1	3		25 Sa	0128	0.5	16	
	1157	1.1	34			0710	3.0	92			0721	3.6	111			0801	3.2	99	
	1743	3.0	90			1326	1.1	33			1340	0.4	13			1413	0.8	23	
						1906	2.5	77			1934	3.1	96			2002	2.9	87	
11 W	0001	0.3	8		26 Th	0107	0.6	18		11 Sa	0137	-0.1	-2		26 Su	0201	0.4	12	
	0641	3.5	108			0747	3.1	96			0809	3.9	118			0829	3.4	104	
	1253	0.9	26			1402	1.0	29			1429	0.2	6			1440	0.6	18	
	1842	3.1	94			1942	2.6	80			2025	3.3	101			2032	3.0	91	
12 Th	0053	0.1	2		27 F	0142	0.5	14		12 Su	0226	-0.1	-3		27 M	0230	0.3	10	
	0731	3.8	116			0819	3.3	100			0854	4.0	122			0854	3.5	107	
	1347	0.6	18			1434	0.8	25			1514	0.1	2			1507	0.5	15	
	1937	3.2	98			2016	2.7	82			2112	3.4	104			2100	3.1	95	
13 F	0144	0.0	-1		28 Sa	0215	0.4	11		13 M	0312	-0.1	-2		28 Tu	0300	0.3	10	
	0820	4.0	121			0850	3.4	103			0936	4.0	122			0918	3.6	109	
	1439	0.4	12			1504	0.7	22			1557	0.0	1			1532	0.4	13	
	2030	3.3	101			2047	2.8	85			2157	3.4	103			2129	3.2	98	
14 Sa	0234	-0.1	-2		29 Su	0247	0.3	9		14 Tu	0357	0.1	3		29 W	0331	0.4	12	
	0907	4.1	124			0918	3.4	105			1017	3.9	118			0945	3.6	109	
	1529	0.3	9			1534	0.6	19			1640	0.1	4			1600	0.4	12	
	2122	3.3	101			2118	2.9	87			2241	3.3	100			2200	3.2	99	
15 Su	0324	0.0	0		30 M	0318	0.3	10		15 W	0441	0.3	10		30 Th	0403	0.5	15	
	0955	4.0	123			0946	3.5	106			1058	3.6	111			1014	3.5	106	
	1619	0.3	8			1603	0.6	18			1722	0.3	10			1630	0.4	13	
	2213	3.2	99			2150	2.9	88			2326	3.1	96			2237	3.2	98	
				31 Tu	0350	0.4	12		31 F	0438	0.6	19							
					1014	3.4	105			1045	3.4	103							
					1634	0.6	17			1704	0.5	14							
					2224	2.9	88			2316	3.1	96							

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Madras, India, 2018

Times and Heights of High and Low Waters

October				November				December															
Time		Height		Time		Height		Time		Height		Time		Height									
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm								
1 M	0554	1.3	39	16 Tu	0025	3.3	102	1 Th	0145	3.7	114	16 F	0144	3.4	105	1 Sa	0243	3.8	115				
	1147	3.2	98		0646	1.9	57		0827	1.8	54		0833	2.1	63		0931	1.6	48	16 Su	0144	3.3	102
	1804	1.0	30		1224	2.8	86		1437	3.1	96		1447	3.0	90		1600	3.5	106		0837	1.7	51
			1832	1.7	53	2034	1.9	57	2030	2.3	69	2150	2.1	63	1507	3.0	92						
2 Tu	0042	3.4	104	17 W	0128	3.1	96	2 F	0315	3.7	112	17 Sa	0307	3.4	103	2 Su	0359	3.7	113	17 M	0253	3.2	98
	0659	1.5	45		0801	2.0	61		0959	1.7	51		0953	2.0	60		1038	1.5	45		0943	1.6	48
	1253	3.0	91		1344	2.7	81		1619	3.3	102		1623	3.1	95		1711	3.7	113		1626	3.2	98
3 W	0159	3.2	99	18 Th	0303	3.1	93	3 Sa	0434	3.8	115	18 Su	0421	3.4	104	3 M	0505	3.7	113	18 Tu	0404	3.2	98
	0829	1.6	49		0943	2.0	61		1109	1.5	45		1055	1.8	55		1132	1.3	41		1041	1.4	42
	1426	2.8	86		1550	2.7	82		1729	3.6	111		1726	3.4	104		1805	3.9	120		1723	3.5	106
4 Th	0336	3.3	100	19 F	0427	3.1	96	4 Su	0536	3.9	120	19 M	0518	3.5	108	4 Tu	0007	1.8	55	19 W	0505	3.3	100
	1010	1.5	47		1105	1.9	57		1201	1.2	38		1142	1.6	48		0600	3.7	113		1127	1.1	35
	1617	2.9	89		1712	2.9	89		1822	4.0	121		1811	3.7	114		1215	1.2	37		1807	3.8	115
5 F	0459	3.5	106	20 Sa	0529	3.3	101	5 M	0019	1.6	48	20 Tu	0008	1.9	59	5 W	0055	1.6	50	20 Th	0015	1.7	51
	1129	1.3	39		1157	1.6	50		0627	4.1	124		0601	3.7	113		0646	3.7	114		0556	3.4	104
	1736	3.2	98		1807	3.2	98		1243	1.1	33		1217	1.3	40		1253	1.1	34		1210	0.9	26
6 Sa	0601	3.7	114	21 Su	0003	1.7	52	6 Tu	0106	1.4	43	21 W	0048	1.7	52	6 Th	0135	1.5	46	21 F	0059	1.4	43
	1225	1.0	30		0615	3.5	108		0709	4.2	127		0638	3.8	117		0724	3.7	114		0641	3.5	108
	1834	3.6	109		1234	1.4	43		1320	1.0	29		1248	1.1	33		1327	1.0	32		1250	0.6	19
7 Su	0031	1.0	30	22 M	0043	1.5	46	7 W	0147	1.3	39	22 Th	0123	1.5	46	7 F	0212	1.4	43	22 Sa	0141	1.1	35
	0650	4.0	122		0652	3.7	114		0745	4.2	128		0710	4.0	121		0758	3.7	113		0726	3.7	112
	1309	0.7	22		1303	1.2	36		1352	0.9	27		1320	0.9	26		1358	1.0	31		1333	0.5	14
8 M	0119	0.8	25	23 Tu	0117	1.3	41	8 Th	0225	1.2	38	23 F	0159	1.3	40	8 Sa	0247	1.4	42	23 Su	0226	1.0	30
	0733	4.2	128		0720	3.9	119		0819	4.1	126		0747	4.1	124		0830	3.6	110		0812	3.7	113
	1347	0.6	17		1330	1.0	30		1423	0.9	28		1354	0.7	22		1429	1.0	31		1416	0.4	12
9 Tu	0201	0.7	22	24 W	0148	1.2	37	9 F	0300	1.3	39	24 Sa	0237	1.2	37	9 Su	0321	1.4	42	24 M	0312	0.9	26
	0811	4.3	130		0747	4.0	123		0850	4.0	122		0825	4.1	125		0903	3.5	108		0900	3.7	113
	1423	0.5	15		1355	0.8	25		1454	1.0	31		1432	0.7	21		1503	1.1	33		1503	0.5	14
10 W	0240	0.7	22	25 Th	0219	1.1	34	10 Sa	0335	1.4	42	25 Su	0319	1.2	36	10 M	0356	1.4	43	25 Tu	0402	0.8	25
	0846	4.2	128		0815	4.1	125		0922	3.8	116		0905	4.0	122		0936	3.4	105		0950	3.6	111
	1456	0.6	17		1423	0.7	21		1527	1.1	35		1512	0.8	23		1535	1.1	35		1550	0.6	19
11 Th	0318	0.8	25	26 F	0253	1.1	33	11 Su	0413	1.5	46	26 M	0406	1.2	38	11 Tu	0433	1.5	45	26 W	0452	0.8	25
	0918	4.1	124		0846	4.1	125		0956	3.6	110		0952	3.9	118		1012	3.3	101		1045	3.5	107
	1528	0.7	21		1454	0.7	21		1559	1.3	40		1557	0.9	28		1610	1.3	39		1642	0.9	26
12 F	0355	1.0	30	27 Sa	0329	1.1	34	12 M	0451	1.6	50	27 Tu	0457	1.3	40	12 W	0511	1.5	46	27 Th	0546	0.9	27
	0952	3.8	116		0921	4.0	123		1031	3.4	105		1045	3.7	113		1051	3.2	98		1144	3.4	103
	1600	0.9	27		1531	0.7	22		1633	1.5	45		1648	1.2	36		1647	1.4	43		1737	1.1	34
13 Sa	0433	1.2	37	28 Su	0412	1.2	37	13 Tu	0532	1.8	54	28 W	0554	1.4	43	13 Th	0551	1.6	48	28 F	0005	4.0	122
	1026	3.5	108		1000	3.9	118		1109	3.2	99		1147	3.5	107		1134	3.1	94		0642	1.0	30
	1633	1.1	33		1610	0.9	27		1711	1.7	51		1744	1.5	45		1727	1.6	49		1249	3.2	99
14 Su	0512	1.4	44	29 M	0458	1.3	41	14 W	0618	1.9	58	29 Th	0021	4.1	126	14 F	0001	3.7	112	29 Sa	0100	3.7	114
	1059	3.3	100		1045	3.7	112		1157	3.1	95		0659	1.5	46		0636	1.6	50		0744	1.1	34
	1706	1.3	40		1657	1.1	34		1754	1.9	57		1302	3.3	102		1229	3.0	91		1405	3.1	96
15 M	0556	1.6	50	30 Tu	0553	1.5	46	15 Th	0041	3.6	109	30 F	0127	3.9	120	15 Sa	0048	3.5	107	30 Su	0205	3.4	105
	1137	3.1	93		1143	3.4	105		0716	2.0	62		0813	1.6	48		0731	1.7	52		0851	1.2	37
	1743	1.5	47		1750	1.4	42		1303	3.0	91		1432	3.3	102		1340	3.0	90		1527	3.2	97
			31 W	0031	3.9	119	16 F	1853	2.1	64	16 Su	2019	2.0	61	16 M	1919	2.1	63	31 Th	0317	3.2	97	
				0702	1.7	51															0959	1.2	38
				1257	3.2	99															1641	3.3	100
				1900	1.7	51										2242	1.8	55					

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Colombo, Sri Lanka, 2018

Times and Heights of High and Low Waters

January				February				March											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 M	0145	2.8	85	16 Tu	0201	2.6	78	1 Th	0248	2.8	84	16 F	0254	2.6	78				
	0800	0.8	24		0841	0.7	21		0905	0.4	13		0903	0.4	13	1 Th	0818	0.5	15
	1356	2.0	61		1422	2.0	60		1515	2.3	69		1515	2.1	65		1433	2.2	68
	1928	0.6	17		2001	0.7	21		2058	0.5	15		2048	0.5	15		2018	0.5	15
2 Tu	0222	2.9	88	17 W	0233	2.6	80	2 F	0320	2.7	83	17 Sa	0322	2.5	77		2 F	0237	2.6
	0837	0.7	20		0903	0.6	19		0935	0.3	10		0920	0.4	11	0846		0.3	10
	1437	2.1	64		1456	2.0	61		1546	2.3	71		1543	2.2	68	1503		2.4	73
	2013	0.5	16		2028	0.6	19		2135	0.5	15		2115	0.5	14	2054		0.4	13
3 W	0256	2.9	88	18 Th	0305	2.7	81	3 Sa	0348	2.7	81	18 Su	0348	2.5	76	3 Sa	0303	2.6	79
	0913	0.6	17		0920	0.6	17		1007	0.3	9		0941	0.3	9		0915	0.2	7
	1515	2.2	66		1528	2.1	63		1620	2.4	72		1609	2.3	69		1531	2.5	76
	2056	0.5	16		2052	0.6	18		2211	0.6	18		2145	0.5	14		2128	0.4	13
4 Th	0330	2.9	87	19 F	0335	2.6	80	4 Su	0416	2.6	78	19 M	0411	2.4	73	4 Su	0330	2.6	78
	0948	0.5	16		0939	0.5	16		1035	0.3	9		1005	0.3	8		0943	0.2	5
	1552	2.2	67		1558	2.1	63		1652	2.3	71		1635	2.3	70		1600	2.5	77
	2135	0.6	19		2120	0.6	18		2243	0.7	21		2216	0.5	15		2158	0.5	14
5 F	0401	2.8	84	20 Sa	0403	2.6	78	5 M	0445	2.4	73	20 Tu	0430	2.3	70	5 M	0356	2.5	75
	1024	0.5	16		1001	0.5	15		1103	0.4	11		1031	0.3	8		1009	0.2	6
	1630	2.2	67		1626	2.1	63		1726	2.3	69		1701	2.3	69		1628	2.5	76
	2215	0.7	22		2152	0.6	18		2313	0.8	25		2250	0.6	19		2226	0.5	16
6 Sa	0433	2.6	79	21 Su	0428	2.5	75	6 Tu	0513	2.2	68	21 W	0446	2.2	66	6 Tu	0422	2.4	72
	1058	0.6	17		1028	0.5	14		1130	0.5	14		1101	0.3	9		1031	0.2	7
	1709	2.2	66		1656	2.1	63		1801	2.1	65		1731	2.2	68		1656	2.4	73
	2254	0.9	27		2226	0.7	20		2343	1.0	30		2326	0.8	24		2250	0.7	20
7 Su	0505	2.4	74	22 M	0450	2.3	71	7 W	0543	2.0	62	22 Th	0503	2.0	62	7 W	0450	2.2	67
	1131	0.6	18		1056	0.5	14		1156	0.6	18		1133	0.4	13		1054	0.3	10
	1750	2.1	64		1726	2.1	63		1845	2.0	61		1807	2.1	65		1728	2.3	69
	2333	1.0	32		2301	0.8	24		2415	1.1	35		2358	1.0	30		2315	0.8	24
8 M	0537	2.2	68	23 Tu	0511	2.2	67	8 Th	0613	1.1	35	23 F	0007	1.0	31	8 Th	0516	2.0	62
	1207	0.7	21		1130	0.5	16		1222	0.8	23		1209	0.6	18		1115	0.5	15
	1839	2.0	62		1801	2.0	62		1941	1.9	57		1858	2.0	61		1801	2.1	64
	9 Tu	0016	1.2		38	24 W	0530		2.0	62	9 F		0100	1.3	41		24 Sa	0105	1.3
0613		2.0	62	1205	0.6		18	1300	0.9	28		1258	0.8	25	1137	0.7		20	
1246		0.8	25	1848	2.0		61	2115	1.8	54		2043	1.8	56	1843	1.9		59	
1941		1.9	59	2005	1.9		59	2326	1.8	56		2350	2.0	60	1946	1.7		53	
10 W	0120	1.4	43	25 Th	0033	1.2	36	10 Sa	0624	1.3	41	25 Su	0324	1.4	44	10 Sa	0011	1.1	34
	0658	1.8	55		0550	1.9	57		0828	1.4	42		0526	1.4	44		0605	1.6	49
	1339	1.0	29		1252	0.7	22		1433	1.1	34		1448	1.0	32		1201	0.9	26
	2109	1.9	58		2005	1.9	59		2326	1.8	56		2350	2.0	60		1946	1.7	53
11 Th	0435	1.5	45	26 F	0152	1.4	42	11 Su	0716	1.1	34	26 M	0713	1.2	36	11 Su	0101	1.3	40
	0811	1.6	50		0615	1.7	51		1158	1.4	43		1241	1.5	45		0409	1.4	43
	1522	1.0	31		1358	0.9	27		1811	1.0	32		1733	1.0	31		1231	1.0	32
	2258	2.0	60		2224	2.0	60		2415	1.1	34		2415	1.1	34		2207	1.7	51
12 F	0618	1.3	40	27 Sa	0448	1.4	44	12 M	0035	2.0	62	27 Tu	0052	2.2	67	12 M	0716	1.1	35
	1018	1.5	47		0735	1.4	44		0746	0.9	28		0724	0.9	28		1207	1.3	40
	1715	1.0	30		1543	1.0	29		1305	1.6	48		1328	1.8	54		1813	1.2	36
	13 Sa	0007	2.1		65	28 Su	0003		2.2	67	13 Tu		0116	2.2	68		28 W	0133	2.4
0709		1.1	34	0654	1.2		37	0813	0.8	23		0750	0.7	21	0735	0.9		28	
1205		1.6	49	1218	1.5		47	1343	1.8	54		1401	2.0	62	1300	1.5		47	
1816		0.9	28	1728	0.9		27	1935	0.8	23		1937	0.7	20	1901	1.0		30	
14 Su	0050	2.3	70	29 M	0058	2.4	74	14 W	0150	2.4	73	29 Th	0056	2.0	62	14 W	0056	2.0	62
	0745	1.0	29		0728	1.0	30		0833	0.6	19		0754	0.8	23		0754	0.8	23
	1303	1.7	53		1318	1.7	53		1416	1.9	59		1331	1.8	54		1331	1.8	54
	1900	0.8	25		1839	0.8	23		2001	0.7	20		1931	0.8	25		1931	0.8	25
15 M	0128	2.5	75	30 Tu	0139	2.6	79	15 Th	0224	2.5	76	15 Th	0133	2.2	68	15 Th	0133	2.2	68
	0816	0.8	24		0800	0.8	23		0850	0.5	16		0809	0.6	19		1400	2.0	61
	1345	1.9	57		1401	1.9	59		1446	2.1	63		1400	2.0	61		1954	0.7	20
	1933	0.7	22		1931	0.6	19		2024	0.6	17		1954	0.7	20		2013	0.5	16
16 Sa	0216	2.7	82	31 W	0216	2.7	82	31 O	0216	2.7	82	31 O	0216	2.7	82	31 O	0215	2.4	72
	0831	0.6	17		0831	0.6	17		1439	2.1	65		1439	2.1	65		1443	2.5	77
	1439	2.1	65		2016	0.5	16		2016	0.5	16		2016	0.5	16		2045	0.5	14
	2016	0.5	16		2016	0.5	16		2016	0.5	16		2016	0.5	16		2045	0.5	14

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Colombo, Sri Lanka, 2018

Times and Heights of High and Low Waters

April					May					June																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
Day	Time		Height		Day	Time		Height		Day	Time		Height		Day	Time		Height																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm	h	m	ft	cm																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
1 Su	0243	2.4	73	0848	0.2	7	1509	2.6	80	2115	0.4	13	16 M	0237	2.2	68	0818	0.3	9	1458	2.6	79	2050	0.4	12	1 Tu	0245	2.1	65	0845	0.3	8	1511	2.6	80	2126	0.4	13	16 W	0243	1.9	59	0818	0.2	6	1509	2.6	80	2113	0.4	11	1 F	0333	1.7	53	0911	0.3	9	1552	2.3	71	2205	0.3	10	16 Sa	0346	1.6	50	0924	0.2	5	1605	2.3	71	2222	0.2	6	2 M	0309	2.4	73	0915	0.2	6	1535	2.6	80	2143	0.4	13	17 Tu	0303	2.2	68	0845	0.2	6	1526	2.7	81	2122	0.4	12	2 W	0315	2.1	64	0909	0.3	8	1539	2.6	78	2150	0.4	13	17 Th	0313	1.9	58	0854	0.2	5	1541	2.6	80	2148	0.4	12	2 Sa	0409	1.7	51	0937	0.4	11	1624	2.2	68	2230	0.4	11	17 Su	0426	1.6	50	1007	0.3	8	1639	2.2	67	2301	0.2	6	3 Tu	0335	2.3	71	0939	0.2	6	1601	2.6	79	2207	0.5	14	18 W	0328	2.2	66	0915	0.2	6	1556	2.7	81	2154	0.4	13	3 Th	0345	2.0	62	0931	0.3	10	1607	2.5	76	2215	0.5	15	18 F	0343	1.9	57	0931	0.2	7	1613	2.5	77	2226	0.4	13	3 Su	0443	1.6	49	1005	0.4	12	1656	2.1	64	2258	0.4	12	18 M	0507	1.6	49	1050	0.4	12	1713	2.0	62	2343	0.3	8	4 W	0401	2.3	69	1000	0.3	8	1630	2.5	76	2230	0.6	17	19 Th	0352	2.1	64	0946	0.2	7	1624	2.6	79	2230	0.5	16	4 F	0415	1.9	59	0954	0.4	12	1639	2.4	72	2239	0.5	16	19 Sa	0416	1.8	55	1007	0.4	11	1645	2.4	73	2303	0.5	16	4 M	0520	1.5	46	1037	0.5	15	1730	1.9	59	2331	0.4	13	19 Tu	0554	1.6	48	1137	0.6	18	1748	1.8	56	5 Th	0430	2.1	65	1022	0.4	11	1700	2.4	72	2252	0.7	20	20 F	0415	2.0	61	1018	0.3	10	1654	2.5	75	2305	0.7	20	5 Sa	0446	1.8	55	1018	0.5	15	1709	2.5	67	2305	0.6	19	20 Su	0452	1.7	53	1046	0.5	16	1720	2.2	67	2346	0.6	19	5 Tu	0601	1.4	44	1113	0.6	19	1803	1.8	54	20 W	0026	0.3	10	0650	1.5	46	1231	0.8	24	1830	1.6	50	6 F	0458	2.0	60	1043	0.5	15	1730	2.2	67	2318	0.8	24	21 Sa	0441	1.9	57	1052	0.5	15	1726	2.3	70	2346	0.9	26	6 Su	0518	1.7	51	1046	0.6	19	1743	2.0	62	2339	0.7	22	21 M	0537	1.6	50	1130	0.8	23	1758	2.0	61	6 W	0009	0.5	16	0654	1.4	42	1200	0.8	23	1845	1.6	49	21 Th	0115	0.4	12	0800	1.5	45	1354	1.0	29	1918	1.4	44	7 Sa	0524	1.8	54	1105	0.7	20	1805	2.0	61	2348	0.9	28	22 Su	0513	1.7	53	1126	0.7	22	1805	2.1	63	7 M	0558	1.5	46	1118	0.8	24	1822	1.8	56	22 Tu	0037	0.7	22	0641	1.5	47	1228	1.0	31	1848	1.8	54	7 Th	0100	0.6	18	0815	1.3	41	1307	0.9	28	1948	1.4	44	22 F	0220	0.5	14	0937	1.5	46	1613	1.0	30	2033	1.2	38	8 Su	0552	1.6	48	1131	0.8	25	1852	1.8	55	23 M	0037	1.0	31	0556	1.6	48	1211	1.0	31	1901	1.8	56	8 Tu	0022	0.9	26	0658	1.4	42	1200	1.0	30	1928	1.6	50	23 W	0148	0.8	25	0839	1.5	45	1430	1.2	36	2007	1.6	48	8 F	0205	0.7	20	1000	1.4	44	1500	1.0	31	2131	1.3	41	23 Sa	0346	0.5	15	1111	1.6	49	1752	0.9	26	2216	1.2	36	9 M	0033	1.1	34	0618	1.4	42	1201	1.0	32	2033	1.6	50	24 Tu	0213	1.1	35	0800	1.4	43	1430	1.3	39	2139	1.7	51	9 W	0130	1.0	30	0922	1.3	41	1326	1.2	36	2128	1.5	47	24 Th	0335	0.8	25	1115	1.6	50	1713	1.1	34	2216	1.5	45	9 Sa	0328	0.6	19	1122	1.6	50	1726	1.0	29	2309	1.3	41	24 Su	0505	0.4	13	1209	1.8	54	1850	0.7	21	2350	1.2	37	10 Tu	0637	1.2	36	1105	1.3	40	1756	1.3	39	2307	1.7	51	25 W	0505	1.1	33	1216	1.7	51	1746	1.2	36	2354	1.8	54	10 Th	0401	1.0	31	1124	1.5	47	1756	1.1	35	2315	1.6	49	25 F	0503	0.7	22	1213	1.9	57	1824	0.9	28	2348	1.5	47	10 Su	0446	0.6	17	1216	1.9	58	1831	0.8	23	11 W	0658	1.0	31	1230	1.6	48	1845	1.1	33	26 Th	0607	0.9	26	1254	2.0	60	1846	1.0	29	11 F	0539	0.9	26	1218	1.8	55	1837	1.0	29	26 Sa	0600	0.6	17	1250	2.1	63	1909	0.8	23	11 M	0015	1.4	43	0545	0.4	12	1301	2.1	64	1913	0.6	18	26 Tu	0048	1.3	39	0650	0.3	9	1328	2.0	61	2009	0.4	11	12 Th	0020	1.8	56	0713	0.9	26	1301	1.8	56	1913	0.9	27	27 F	0043	1.9	58	0646	0.7	20	1324	2.2	68	1926	0.8	23	12 Sa	0016	1.7	52	0611	0.7	21	1256	2.1	63	1905	0.8	24	27 Su	0039	1.6	50	0643	0.4	13	1322	2.2	68	1945	0.6	18	12 Tu	0105	1.5	45	0633	0.3	8	1341	2.3	70	1952	0.5	14	27 W	0135	1.4	42	0728	0.2	7	1401	2.1	64	2041	0.3	8	13 F	0101	2.0	62	0724	0.7	21	1331	2.1	64	1935	0.7	22	28 Sa	0118	2.0	61	0720	0.5	14	1350	2.4	74	2000	0.6	18	13 Su	0100	1.8	56	0641	0.5	16	1331	2.3	70	1935	0.6	19	28 M	0116	1.7	52	0718	0.3	10	1350	2.4	72	2018	0.5	15	13 W	0148	1.5	47	0718	0.2	5	1418	2.4	73	2030	0.3	10	28 Th	0215	1.4	44	0801	0.2	6	1435	2.1	65	2111	0.2	6	14 Sa	0137	2.2	66	0735	0.6	17	1401	2.3	70	1958	0.6	18	29 Su	0148	2.1	64	0750	0.3	10	1416	2.5	77	2031	0.5	15	14 M	0137	1.9	58	0713	0.4	12	1403	2.5	75	2005	0.5	15	29 Tu	0152	1.8	54	0750	0.3	8	1420	2.4	73	2048	0.4	12	14 Th	0228	1.6	49	0800	0.1	3	1456	2.5	75	2107	0.3	8	29 F	0252	1.4	44	0831	0.2	5	1507	2.1	65	2135	0.1	4	15 Su	0209	2.2	68	0754	0.4	13	1430	2.5	75	2022	0.5	14	30 M	0216	2.1	65	0818	0.3	8	1443	2.6	79	2100	0.4	13	15 Tu	0211	1.9	59	0745	0.3	8	1437	2.6	79	2037	0.4	13	30 W	0226	1.8	55	0818	0.3	8	1450	2.4	74	2116	0.4	11	15 F	0307	1.6	50	0843	0.1	3	1530	2.4	74	2145	0.2	6	30 Sa	0330	1.5	45	0858	0.2	5	1541	2.1	64	2158	0.1	3																								
2 M	0309	2.4	73	0915	0.2	6	1535	2.6	80	2143	0.4	13	17 Tu	0303	2.2	68	0845	0.2	6	1526	2.7	81	2122	0.4	12	2 W	0315	2.1	64	0909	0.3	8	1539	2.6	78	2150	0.4	13	17 Th	0313	1.9	58	0854	0.2	5	1541	2.6	80	2148	0.4	12	2 Sa	0409	1.7	51	0937	0.4	11	1624	2.2	68	2230	0.4	11	17 Su	0426	1.6	50	1007	0.3	8	1639	2.2	67	2301	0.2	6	3 Tu	0335	2.3	71	0939	0.2	6	1601	2.6	79	2207	0.5	14	18 W	0328	2.2	66	0915	0.2	6	1556	2.7	81	2154	0.4	13	3 Th	0345	2.0	62	0931	0.3	10	1607	2.5	76	2215	0.5	15	18 F	0343	1.9	57	0931	0.2	7	1613	2.5	77	2226	0.4	13	3 Su	0443	1.6	49	1005	0.4	12	1656	2.1	64	2258	0.4	12	18 M	0507	1.6	49	1050	0.4	12	1713	2.0	62	2343	0.3	8	4 W	0401	2.3	69	1000	0.3	8	1630	2.5	76	2230	0.6	17	19 Th	0352	2.1	64	0946	0.2	7	1624	2.6	79	2230	0.5	16	4 F	0415	1.9	59	0954	0.4	12	1639	2.4	72	2239	0.5	16	19 Sa	0416	1.8	55	1007	0.4	11	1645	2.4	73	2303	0.5	16	4 M	0520	1.5	46	1037	0.5	15	1730	1.9	59	2331	0.4	13	19 Tu	0554	1.6	48	1137	0.6	18	1748	1.8	56	5 Th	0430	2.1	65	1022	0.4	11	1700	2.4	72	2252	0.7	20	20 F	0415	2.0	61	1018	0.3	10	1654	2.5	75	2305	0.7	20	5 Sa	0446	1.8	55	1018	0.5	15	1709	2.5	67	2305	0.6	19	20 Su	0452	1.7	53	1046	0.5	16	1720	2.2	67	2346	0.6	19	5 Tu	0601	1.4	44	1113	0.6	19	1803	1.8	54	20 W	0026	0.3	10	0650	1.5	46	1231	0.8	24	1830	1.6	50	6 F	0458	2.0	60	1043	0.5	15	1730	2.2	67	2318	0.8	24	21 Sa	0441	1.9	57	1052	0.5	15	1726	2.3	70	2346	0.9	26	6 Su	0518	1.7	51	1046	0.6	19	1743	2.0	62	2339	0.7	22	21 M	0537	1.6	50	1130	0.8	23	1758	2.0	61	6 W	0009	0.5	16	0654	1.4	42	1200	0.8	23	1845	1.6	49	21 Th	0115	0.4	12	0800	1.5	45	1354	1.0	29	1918	1.4	44	7 Sa	0524	1.8	54	1105	0.7	20	1805	2.0	61	2348	0.9	28	22 Su	0513	1.7	53	1126	0.7	22	1805	2.1	63	7 M	0558	1.5	46	1118	0.8	24	1822	1.8	56	22 Tu	0037	0.7	22	0641	1.5	47	1228	1.0	31	1848	1.8	54	7 Th	0100	0.6	18	0815	1.3	41	1307	0.9	28	1948	1.4	44	22 F	0220	0.5	14	0937	1.5	46	1613	1.0	30	2033	1.2	38	8 Su	0552	1.6	48	1131	0.8	25	1852	1.8	55	23 M	0037	1.0	31	0556	1.6	48	1211	1.0	31	1901	1.8	56	8 Tu	0022	0.9	26	0658	1.4	42	1200	1.0	30	1928	1.6	50	23 W	0148	0.8	25	0839	1.5	45	1430	1.2	36	2007	1.6	48	8 F	0205	0.7	20	1000	1.4	44	1500	1.0	31	2131	1.3	41	23 Sa	0346	0.5	15	1111	1.6	49	1752	0.9	26	2216	1.2	36	9 M	0033	1.1	34	0618	1.4	42	1201	1.0	32	2033	1.6	50	24 Tu	0213	1.1	35	0800	1.4	43	1430	1.3	39	2139	1.7	51	9 W	0130	1.0	30	0922	1.3	41	1326	1.2	36	2128	1.5	47	24 Th	0335	0.8	25	1115	1.6	50	1713	1.1	34	2216	1.5	45	9 Sa	0328	0.6	19	1122	1.6	50	1726	1.0	29	2309	1.3	41	24 Su	0505	0.4	13	1209	1.8	54	1850	0.7	21	2350	1.2	37	10 Tu	0637	1.2	36	1105	1.3	40	1756	1.3	39	2307	1.7	51	25 W	0505	1.1	33	1216	1.7	51	1746	1.2	36	2354	1.8	54	10 Th	0401	1.0	31	1124	1.5	47	1756	1.1	35	2315	1.6	49	25 F	0503	0.7	22	1213	1.9	57	1824	0.9	28	2348	1.5	47	10 Su	0446	0.6	17	1216	1.9	58	1831	0.8	23	11 W	0658	1.0	31	1230	1.6	48	1845	1.1	33	26 Th	0607	0.9	26	1254	2.0	60	1846	1.0	29	11 F	0539	0.9	26	1218	1.8	55	1837	1.0	29	26 Sa	0600	0.6	17	1250	2.1	63	1909	0.8	23	11 M	0015	1.4	43	0545	0.4	12	1301	2.1	64	1913	0.6	18	26 Tu	0048	1.3	39	0650	0.3	9	1328	2.0	61	2009	0.4	11	12 Th	0020	1.8	56	0713	0.9	26	1301	1.8	56	1913	0.9	27	27 F	0043	1.9	58	0646	0.7	20	1324	2.2	68	1926	0.8	23	12 Sa	0016	1.7	52	0611	0.7	21	1256	2.1	63	1905	0.8	24	27 Su	0039	1.6	50	0643	0.4	13	1322	2.2	68	1945	0.6	18	12 Tu	0105	1.5	45	0633	0.3	8	1341	2.3	70	1952	0.5	14	27 W	0135	1.4	42	0728	0.2	7	1401	2.1	64	2041	0.3	8	13 F	0101	2.0	62	0724	0.7	21	1331	2.1	64	1935	0.7	22	28 Sa	0118	2.0	61	0720	0.5	14	1350	2.4	74	2000	0.6	18	13 Su	0100	1.8	56	0641	0.5	16	1331	2.3	70	1935	0.6	19	28 M	0116	1.7	52	0718	0.3	10	1350	2.4	72	2018	0.5	15	13 W	0148	1.5	47	0718	0.2	5	1418	2.4	73	2030	0.3	10	28 Th	0215	1.4	44	0801	0.2	6	1435	2.1	65	2111	0.2	6	14 Sa	0137	2.2	66	0735	0.6	17	1401	2.3	70	1958	0.6	18	29 Su	0148	2.1	64	0750	0.3	10	1416	2.5	77	2031	0.5	15	14 M	0137	1.9	58	0713	0.4	12	1403	2.5	75	2005	0.5	15	29 Tu	0152	1.8	54	0750	0.3	8	1420	2.4	73	2048	0.4	12	14 Th	0228	1.6	49	0800	0.1	3	1456	2.5	75	2107	0.3	8	29 F	0252	1.4	44	0831	0.2	5	1507	2.1	65	2135	0.1	4	15 Su	0209	2.2	68	0754	0.4	13	1430	2.5	75	2022	0.5	14	30 M	0216	2.1	65	0818	0.3	8	1443	2.6	79	2100	0.4	13	15 Tu	0211	1.9	59	0745	0.3	8	1437	2.6	79	2037	0.4	13	30 W	0226	1.8	55	0818	0.3	8	1450	2.4	74	2116	0.4	11	15 F	0307	1.6	50	0843	0.1	3	1530	2.4	74	2145	0.2	6	30 Sa	0330	1.5	45	0858	0.2	5	1541	2.1	64	2158	0.1	3																																																																																																						
3 Tu	0335	2.3	71	0939	0.2	6	1601	2.6	79	2207	0.5	14	18 W	0328	2.2	66	0915	0.2	6	1556	2.7	81	2154	0.4	13	3 Th	0345	2.0	62	0931	0.3	10	1607	2.5	76	2215	0.5	15	18 F	0343	1.9	57	0931	0.2	7	1613	2.5	77	2226	0.4	13	3 Su	0443	1.6	49	1005	0.4	12	1656	2.1	64	2258	0.4	12	18 M	0507	1.6	49	1050	0.4	12	1713	2.0	62	2343	0.3	8	4 W	0401	2.3	69	1000	0.3	8	1630	2.5	76	2230	0.6	17	19 Th	0352	2.1	64	0946	0.2	7	1624	2.6	79	2230	0.5	16	4 F	0415	1.9	59	0954	0.4	12	1639	2.4	72	2239	0.5	16	19 Sa	0416	1.8	55	1007	0.4	11	1645	2.4	73	2303	0.5	16	4 M	0520	1.5	46	1037	0.5	15	1730	1.9	59	2331	0.4	13	19 Tu	0554	1.6	48	1137	0.6	18	1748	1.8	56	5 Th	0430	2.1	65	1022	0.4	11	1700	2.4	72	2252	0.7	20	20 F	0415	2.0	61	1018	0.3	10	1654	2.5	75	2305	0.7	20	5 Sa	0446	1.8	55	1018	0.5	15	1709	2.5	67	2305	0.6	19	20 Su	0452	1.7	53	1046	0.5	16	1720	2.2	67	2346	0.6	19	5 Tu	0601	1.4	44	1113	0.6	19	1803	1.8	54	20 W	0026	0.3	10	0650	1.5	46	1231	0.8	24	1830	1.6	50	6 F	0458	2.0	60	1043	0.5	15	1730	2.2	67	2318	0.8	24	21 Sa	0441	1.9	57	1052	0.5	15	1726	2.3	70	2346	0.9	26	6 Su	0518	1.7	51	1046	0.6	19	1743	2.0	62	2339	0.7	22	21 M	0537	1.6	50	1130	0.8	23	1758	2.0	61	6 W	0009	0.5	16	0654	1.4	42	1200	0.8	23	1845	1.6	49	21 Th	0115	0.4	12	0800	1.5	45	1354	1.0	29	1918	1.4	44	7 Sa	0524	1.8	54	1105	0.7	20	1805	2.0	61	2348	0.9	28	22 Su	0513	1.7	53	1126	0.7	22	1805	2.1	63	7 M	0558	1.5	46	1118	0.8	24	1822	1.8	56	22 Tu	0037	0.7	22	0641	1.5	47	1228	1.0	31	1848	1.8	54	7 Th	0100	0.6	18	0815	1.3	41	1307	0.9	28	1948	1.4	44	22 F	0220	0.5	14	0937	1.5	46	1613	1.0	30	2033	1.2	38	8 Su	0552	1.6	48	1131	0.8	25	1852	1.8	55	23 M	0037	1.0	31	0556	1.6	48	1211	1.0	31	1901	1.8	56	8 Tu	0022	0.9	26	0658	1.4	42	1200	1.0	30	1928	1.6	50	23 W	0148	0.8	25	0839	1.5	45	1430	1.2	36	2007	1.6	48	8 F	0205	0.7	20	1000	1.4	44	1500	1.0	31	2131	1.3	41	23 Sa	0346	0.5	15	1111	1.6	49	1752	0.9	26	2216	1.2	36	9 M	0033	1.1	34	0618	1.4	42	1201	1.0	32	2033	1.6	50	24 Tu	0213	1.1	35	0800	1.4	43	1430	1.3	39	2139	1.7	51	9 W	0130	1.0	30	0922	1.3	41	1326	1.2	36	2128	1.5	47	24 Th	0335	0.8	25	1115	1.6	50	1713	1.1	34	2216	1.5	45	9 Sa	0328	0.6	19	1122	1.6	50	1726	1.0	29	2309	1.3	41	24 Su	0505	0.4	13	1209	1.8	54	1850	0.7	21	2350	1.2	37	10 Tu	0637	1.2	36	1105	1.3	40	1756	1.3	39	2307	1.7	51	25 W	0505	1.1	33	1216	1.7	51	1746	1.2	36	2354	1.8	54	10 Th	0401	1.0	31	1124	1.5	47	1756	1.1	35	2315	1.6	49	25 F	0503	0.7	22	1213	1.9	57	1824	0.9	28	2348	1.5	47	10 Su	0446	0.6	17	1216	1.9	58	1831	0.8	23	11 W	0658	1.0	31	1230	1.6	48	1845	1.1	33	26 Th	0607	0.9	26	1254	2.0	60	1846	1.0	29	11 F	0539	0.9	26	1218	1.8	55	1837	1.0	29	26 Sa	0600	0.6	17	1250	2.1	63	1909	0.8	23	11 M	0015	1.4	43	0545	0.4	12	1301	2.1	64	1913	0.6	18	26 Tu	0048	1.3	39	0650	0.3	9	1328	2.0	61	2009	0.4	11	12 Th	0020	1.8	56	0713	0.9	26	1301	1.8	56	1913	0.9	27	27 F	0043	1.9	58	0646	0.7	20	1324	2.2	68	1926	0.8	23	12 Sa	0016	1.7	52	0611	0.7	21	1256	2.1	63	1905	0.8	24	27 Su	0039	1.6	50	0643	0.4	13	1322	2.2	68	1945	0.6	18	12 Tu	0105	1.5	45	0633	0.3	8	1341	2.3	70	1952	0.5	14	27 W	0135	1.4	42	0728	0.2	7	1401	2.1	64	2041	0.3	8	13 F	0101	2.0	62	0724	0.7	21	1331	2.1	64	1935	0.7	22	28 Sa	0118	2.0	61	0720	0.5	14	1350	2.4	74	2000	0.6	18	13 Su	0100	1.8	56	0641	0.5	16	1331	2.3	70	1935	0.6	19	28 M	0116	1.7	52	0718	0.3	10	1350	2.4	72	2018	0.5	15	13 W	0148	1.5	47	0718	0.2	5	1418	2.4	73	2030	0.3	10	28 Th	0215	1.4	44	0801	0.2	6	1435	2.1	65	2111	0.2	6	14 Sa	0137	2.2	66	0735	0.6	17	1401	2.3	70	1958	0.6	18	29 Su	0148	2.1	64	0750	0.3	10	1416	2.5	77	2031	0.5	15	14 M	0137	1.9	58	0713	0.4	12	1403	2.5	75	2005	0.5	15	29 Tu	0152	1.8	54	0750	0.3	8	1420	2.4	73	2048	0.4	12	14 Th	0228	1.6	49	0800	0.1	3	1456	2.5	75	2107	0.3	8	29 F	0252	1.4	44	0831	0.2	5	1507	2.1	65	2135	0.1	4	15 Su	0209	2.2	68	0754	0.4	13	1430	2.5	75	2022	0.5	14	30 M	0216	2.1	65	0818	0.3	8	1443	2.6	79	2100	0.4	13	15 Tu	0211	1.9	59	0745	0.3	8	1437	2.6	79	2037	0.4	13	30 W	0226	1.8	55	0818	0.3	8	1450	2.4	74	2116	0.4	11	15 F	0307	1.6	50	0843	0.1	3	1530	2.4	74	2145	0.2	6	30 Sa	0330	1.5	45	0858	0.2	5	1541	2.1	64	2158	0.1	3																																																																																																																																																																																				
4 W	0401	2.3	69	1000	0.3	8	1630	2.5	76	2230	0.6	17	19 Th	0352	2.1	64	0946	0.2	7	1624	2.6	79	2230	0.5	16	4 F	0415	1.9	59	0954	0.4	12	1639	2.4	72	2239	0.5	16	19 Sa	0416	1.8	55	1007	0.4	11	1645	2.4	73	2303	0.5	16	4 M	0520	1.5	46	1037	0.5	15	1730	1.9	59	2331	0.4	13	19 Tu	0554	1.6	48	1137	0.6	18	1748	1.8	56	5 Th	0430	2.1	65	1022	0.4	11	1700	2.4	72	2252	0.7	20	20 F	0415	2.0	61	1018	0.3	10	1654	2.5	75	2305	0.7	20	5 Sa	0446	1.8	55	1018	0.5	15	1709	2.5	67	2305	0.6	19	20 Su	0452	1.7	53	1046	0.5	16	1720	2.2	67	2346	0.6	19	5 Tu	0601	1.4	44	1113	0.6	19	1803	1.8	54	20 W	0026	0.3	10	0650	1.5	46	1231	0.8	24	1830	1.6	50	6 F	0458	2.0	60	1043	0.5	15	1730	2.2	67	2318	0.8	24	21 Sa	0441	1.9	57	1052	0.5	15	1726	2.3	70	2346	0.9	26	6 Su	0518	1.7	51	1046	0.6	19	1743	2.0	62	2339	0.7	22	21 M	0537	1.6	50	1130	0.8	23	1758	2.0	61	6 W	0009	0.5	16	0654	1.4	42	1200	0.8	23	1845	1.6	49	21 Th	0115	0.4	12	0800	1.5	45	1354	1.0	29	1918	1.4	44	7 Sa	0524	1.8	54	1105	0.7	20	1805	2.0	61	2348	0.9	28	22 Su	0513	1.7	53	1126	0.7	22	1805	2.1	63	7 M	0558	1.5	46	1118	0.8	24	1822	1.8	56	22 Tu	0037	0.7	22	0641	1.5	47	1228	1.0	31	1848	1.8	54	7 Th	0100	0.6	18	0815	1.3	41	1307	0.9	28	1948	1.4	44	22 F	0220	0.5	14	0937	1.5	46	1613	1.0	30	2033	1.2	38	8 Su	0552	1.6	48	1131	0.8	25	1852	1.8	55	23 M	0037	1.0	31	0556	1.6	48	1211	1.0	31	1901	1.8	56	8 Tu	0022	0.9	26	0658	1.4	42	1200	1.0	30	1928	1.6	50	23 W	0148	0.8	25	0839	1.5	45	1430	1.2	36	2007	1.6	48	8 F	0205	0.7	20	1000	1.4	44	1500	1.0	31	2131	1.3	41	23 Sa	0346	0.5	15	1111	1.6	49	1752	0.9	26	2216	1.2	36	9 M	0033	1.1	34	0618	1.4	42	1201	1.0	32	2033	1.6	50	24 Tu	0213	1.1	35	0800	1.4	43	1430	1.3	39	2139	1.7	51	9 W	0130	1.0	30	0922	1.3	41	1326	1.2	36	2128	1.5	47	24 Th	0335	0.8	25	1115	1.6	50	1713	1.1	34	2216	1.5	45	9 Sa	0328	0.6	19	1122	1.6	50	1726	1.0	29	2309	1.3	41	24 Su	0505	0.4	13	1209	1.8	54	1850	0.7	21	2350	1.2	37	10 Tu	0637	1.2	36	1105	1.3	40	1756	1.3	39	2307	1.7	51	25 W	0505	1.1	33	1216	1.7	51	1746	1.2	36	2354	1.8	54	10 Th	0401	1.0	31	1124	1.5	47	1756	1.1	35	2315	1.6	49	25 F	0503	0.7	22	1213	1.9	57	1824	0.9	28	2348	1.5	47	10 Su	0446	0.6	17	1216	1.9	58	1831	0.8	23	11 W	0658	1.0	31	1230	1.6	48	1845	1.1	33	26 Th	0607	0.9	26	1254	2.0	60	1846	1.0	29	11 F	0539	0.9	26	1218	1.8	55	1837	1.0	29	26 Sa	0600	0.6	17	1250	2.1	63	1909	0.8	23	11 M	0015	1.4	43	0545	0.4	12	1301	2.1	64	1913	0.6	18	26 Tu	0048	1.3	39	0650	0.3	9	1328	2.0	61	2009	0.4	11	12 Th	0020	1.8	56	0713	0.9	26	1301	1.8	56	1913	0.9	27	27 F	0043	1.9	58	0646	0.7	20	1324	2.2	68	1926	0.8	23	12 Sa	0016	1.7	52	0611	0.7	21	1256	2.1	63	1905	0.8	24	27 Su	0039	1.6	50	0643	0.4	13	1322	2.2	68	1945	0.6	18	12 Tu	0105	1.5	45	0633	0.3	8	1341	2.3	70	1952	0.5	14	27 W	0135	1.4	42	0728	0.2	7	1401	2.1	64	2041	0.3	8	13 F	0101	2.0	62	0724	0.7	21	1331	2.1	64	1935	0.7	22	28 Sa	0118	2.0	61	0720	0.5	14	1350	2.4	74	2000	0.6	18	13 Su	0100	1.8	56	0641	0.5	16	1331	2.3	70	1935	0.6	19	28 M	0116	1.7	52	0718	0.3	10	1350	2.4	72	2018	0.5	15	13 W	0148	1.5	47	0718	0.2	5	1418	2.4	73	2030	0.3	10	28 Th	0215	1.4	44	0801	0.2	6	1435	2.1	65	2111	0.2	6	14 Sa	0137	2.2	66	0735	0.6	17	1401	2.3	70	1958	0.6	18	29 Su	0148	2.1	64	0750	0.3	10	1416	2.5	77	2031	0.5	15	14 M	0137	1.9	58	0713	0.4	12	1403	2.5	75	2005	0.5	15	29 Tu	0152	1.8	54	0750	0.3	8	1420	2.4	73	2048	0.4	12	14 Th	0228	1.6	49	0800	0.1	3	1456	2.5	75	2107	0.3	8	29 F	0252	1.4	44	0831	0.2	5	1507	2.1	65	2135	0.1	4	15 Su	0209	2.2	68	0754	0.4	13	1430	2.5	75	2022	0.5	14	30 M	0216	2.1	65	0818	0.3	8	1443	2.6	79	2100	0.4	13	15 Tu	0211	1.9	59	0745	0.3	8	1437	2.6	79	2037	0.4	13	30 W	0226	1.8	55	0818	0.3	8	1450	2.4	74	2116	0.4	11	15 F	0307	1.6	50	0843	0.1	3	1530	2.4	74	2145	0.2	6	30 Sa	0330	1.5	45	0858	0.2	5	1541	2.1	64	2158	0.1	3																																																																																																																																																																																																																																																																		
5 Th	0430	2.1	65	1022	0.4	11	1700	2.4	72	2252	0.7	20	20 F	0415	2.0	61	1018	0.3	10	1654	2.5	75	2305	0.7	20	5 Sa	0446	1.8	55	1018	0.5	15	1709	2.5	67	2305	0.6	19	20 Su	0452	1.7	53	1046	0.5	16	1720	2.2	67	2346	0.6	19	5 Tu	0601	1.4	44	1113	0.6	19	1803	1.8	54	20 W	0026	0.3	10	0650	1.5	46	1231	0.8	24	1830	1.6	50	6 F	0458	2.0	60	1043	0.5	15	1730	2.2	67	2318	0.8	24	21 Sa	0441	1.9	57	1052	0.5	15	1726	2.3	70	2346	0.9	26	6 Su	0518	1.7	51	1046	0.6	19	1743	2.0	62	2339	0.7	22	21 M	0537	1.6	50	1130	0.8	23	1758	2.0	61	6 W	0009	0.5	16	0654	1.4	42	1200	0.8	23	1845	1.6	49	21 Th	0115	0.4	12	0800	1.5	45	1354	1.0	29	1918	1.4	44	7 Sa	0524	1.8	54	1105	0.7	20	1805	2.0	61	2348	0.9	28	22 Su	0513	1.7	53	1126	0.7	22	1805	2.1	63	7 M	0558	1.5	46	1118	0.8	24	1822	1.8	56	22 Tu	0037	0.7	22	0641	1.5	47	1228	1.0	31	1848	1.8	54	7 Th	0100	0.6	18	0815	1.3	41	1307	0.9	28	1948	1.4	44	22 F	0220	0.5	14	0937	1.5	46	1613	1.0	30	2033	1.2	38	8 Su	0552	1.6	48	1131	0.8	25	1852	1.8	55	23 M	0037	1.0	31	0556	1.6	48	1211	1.0	31	1901	1.8	56	8 Tu	0022	0.9	26	0658	1.4	42	1200	1.0	30	1928	1.6	50	23 W	0148	0.8	25	0839	1.5	45	1430	1.2	36	2007	1.6	48	8 F	0205	0.7	20	1000	1.4	44	1500	1.0	31	2131	1.3	41	23 Sa	0346	0.5	15	1111	1.6	49	1752	0.9	26	2216	1.2	36	9 M	0033	1.1	34	0618	1.4	42	1201	1.0	32	2033	1.6	50	24 Tu	0213	1.1	35	0800	1.4	43	1430	1.3	39	2139	1.7	51	9 W	0130	1.0	30	0922	1.3	41	1326	1.2	36	2128	1.5	47	24 Th	0335	0.8	25	1115	1.6	50	1713	1.1	34	2216	1.5	45	9 Sa	0328	0.6	19	1122	1.6	50	1726	1.0	29	2309	1.3	41	24 Su	0505	0.4	13	1209	1.8	54	1850	0.7	21	2350	1.2	37	10 Tu	0637	1.2	36	1105	1.3	40	1756	1.3	39	2307	1.7	51	25 W	0505	1.1	33	1216	1.7	51	1746	1.2	36	2354	1.8	54	10 Th	0401	1.0	31	1124	1.5	47	1756	1.1	35	2315	1.6	49	25 F	0503	0.7	22	1213	1.9	57	1824	0.9	28	2348	1.5	47	10 Su	0446	0.6	17	1216	1.9	58	1831	0.8	23	11 W	0658	1.0	31	1230	1.6	48	1845	1.1	33	26 Th	0607	0.9	26	1254	2.0	60	1846	1.0	29	11 F	0539	0.9	26	1218	1.8	55	1837	1.0	29	26 Sa	0600	0.6	17	1250	2.1	63	1909	0.8	23	11 M	0015	1.4	43	0545	0.4	12	1301	2.1	64	1913	0.6	18	26 Tu	0048	1.3	39	0650	0.3	9	1328	2.0	61	2009	0.4	11	12 Th	0020	1.8	56	0713	0.9	26	1301	1.8	56	1913	0.9	27	27 F	0043	1.9	58	0646	0.7	20	1324	2.2	68	1926	0.8	23	12 Sa	0016	1.7	52	0611	0.7	21	1256	2.1	63	1905	0.8	24	27 Su	0039	1.6	50	0643	0.4	13	1322	2.2	68	1945	0.6	18	12 Tu	0105	1.5	45	0633	0.3	8	1341	2.3	70	1952	0.5	14	27 W	0135	1.4	42	0728	0.2	7	1401	2.1	64	2041	0.3	8	13 F	0101	2.0	62	0724	0.7	21	1331	2.1	64	1935	0.7	22	28 Sa	0118	2.0	61	0720	0.5	14	1350	2.4	74	2000	0.6	18	13 Su	0100	1.8	56	0641	0.5	16	1331	2.3	70	1935	0.6	19	28 M	0116	1.7	52	0718	0.3	10	1350	2.4	72	2018	0.5	15	13 W	0148	1.5	47	0718	0.2	5	1418	2.4	73	2030	0.3	10	28 Th	0215	1.4	44	0801	0.2	6	1435	2.1	65	2111	0.2	6	14 Sa	0137	2.2	66	0735	0.6	17	1401	2.3	70	1958	0.6	18	29 Su	0148	2.1	64	0750	0.3	10	1416	2.5	77	2031	0.5	15	14 M	0137	1.9	58	0713	0.4	12	1403	2.5	75	2005	0.5	15	29 Tu	0152	1.8	54	0750	0.3	8	1420	2.4	73	2048	0.4	12	14 Th	0228	1.6	49	0800	0.1	3	1456	2.5	75	2107	0.3	8	29 F	0252	1.4	44	0831	0.2	5	1507	2.1	65	2135	0.1	4	15 Su	0209	2.2	68	0754	0.4	13	1430	2.5	75	2022	0.5	14	30 M	0216	2.1	65	0818	0.3	8	1443	2.6	79	2100	0.4	13	15 Tu	0211	1.9	59	0745	0.3	8	1437	2.6	79	2037	0.4	13	30 W	0226	1.8	55	0818	0.3	8	1450	2.4	74	2116	0.4	11	15 F	0307	1.6	50	0843	0.1	3	1530	2.4	74	2145	0.2	6	30 Sa	0330	1.5	45	0858	0.2	5	1541	2.1	64	2158	0.1	3																																																																																																																																																																																																																																																																																																																																													
6 F	0458	2.0	60	1043	0.5	15	1730	2.2	67	2318	0.8	24	21 Sa	0441	1.9	57	1052	0.5	15	1726	2.3	70	2346	0.9	26	6 Su	0518	1.7	51	1046	0.6	19	1743	2.0	62	2339	0.7	22	21 M	0537	1.6	50	1130	0.8	23	1758	2.0	61	6 W	0009	0.5	16	0654	1.4	42	1200	0.8	23	1845	1.6	49	21 Th	0115	0.4	12	0800	1.5	45	1354	1.0	29	1918	1.4	44	7 Sa	0524	1.8	54	1105	0.7	20	1805	2.0	61	2348	0.9	28	22 Su	0513	1.7	53	1126	0.7	22	1805	2.1	63	7 M	0558	1.5	46	1118	0.8	24	1822	1.8	56	22 Tu	0037	0.7	22	0641	1.5	47	1228	1.0	31	1848	1.8	54	7 Th	0100	0.6	18	0815	1.3	41	1307	0.9	28	1948	1.4	44	22 F	0220	0.5	14	0937	1.5	46	1613	1.0	30	2033	1.2	38	8 Su	0552	1.6	48	1131	0.8	25	1852	1.8	55	23 M	0037	1.0	31	0556	1.6	48	1211	1.0	31	1901	1.8	56	8 Tu	0022	0.9	26	0658	1.4	42	1200	1.0	30	1928	1.6	50	23 W	0148	0.8	25	0839	1.5	45	1430	1.2	36	2007	1.6	48	8 F	0205	0.7	20	1000	1.4	44	1500	1.0	31	2131	1.3	41	23 Sa	0346	0.5	15	1111	1.6	49	1752	0.9	26	2216	1.2	36	9 M	0033	1.1	34	0618	1.4	42	1201	1.0	32	2033	1.6	50	24 Tu	0213	1.1	35	0800	1.4	43	1430	1.3	39	2139	1.7	51	9 W	0130	1.0	30	0922	1.3	41	1326	1.2	36	2128	1.5	47	24 Th	0335	0.8	25	1115	1.6	50	1713	1.1	34	2216	1.5	45	9 Sa	0328	0.6	19	1122	1.6	50	1726	1.0	29	2309	1.3	41	24 Su	0505	0.4	13	1209	1.8	54	1850	0.7	21	2350	1.2	37	10 Tu	0637	1.2	36	1105	1.3	40	1756	1.3	39	2307	1.7	51	25 W	0505	1.1	33	1216	1.7	51	1746	1.2	36	2354	1.8	54	10 Th	0401	1.0	31	1124	1.5	47	1756	1.1	35	2315	1.6	49	25 F	0503	0.7	22	1213	1.9	57	1824	0.9	28	2348	1.5	47	10 Su	0446	0.6	17	1216	1.9	58	1831	0.8	23	11 W	0658	1.0	31	1230	1.6	48	1845	1.1	33	26 Th	0607	0.9	26	1254	2.0	60	1846	1.0	29	11 F	0539	0.9	26	1218	1.8	55	1837	1.0	29	26 Sa	0600	0.6	17	1250	2.1	63	1909	0.8	23	11 M	0015	1.4	43	0545	0.4	12	1301	2.1	64	1913	0.6	18	26 Tu	0048	1.3	39	0650	0.3	9	1328	2.0	61	2009	0.4	11	12 Th	0020	1.8	56	0713	0.9	26	1301	1.8	56	1913	0.9	27	27 F	0043	1.9	58	0646	0.7	20	1324	2.2	68	1926	0.8	23	12 Sa	0016	1.7	52	0611	0.7	21	1256	2.1	63	1905	0.8	24	27 Su	0039	1.6	50	0643	0.4	13	1322	2.2	68	1945	0.6	18	12 Tu	0105	1.5	45	0633	0.3	8	1341	2.3	70	1952	0.5	14	27 W	0135	1.4	42	0728	0.2	7	1401	2.1	64	2041	0.3	8	13 F	0101	2.0	62	0724	0.7	21	1331	2.1	64	1935	0.7	22	28 Sa	0118	2.0	61	0720	0.5	14	1350	2.4	74	2000	0.6	18	13 Su	0100	1.8	56	0641	0.5	16	1331	2.3	70	1935	0.6	19	28 M	0116	1.7	52	0718	0.3	10	1350	2.4	72	2018	0.5	15	13 W	0148	1.5	47	0718	0.2	5	1418	2.4	73	2030	0.3	10	28 Th	0215	1.4	44	0801	0.2	6	1435	2.1	65	2111	0.2	6	14 Sa	0137	2.2	66	0735	0.6	17	1401	2.3	70	1958	0.6	18	29 Su	0148	2.1	64	0750	0.3	10	1416	2.5	77	2031	0.5	15	14 M	0137	1.9	58	0713	0.4	12	1403	2.5	75	2005	0.5	15	29 Tu	0152	1.8	54	0750	0.3	8	1420	2.4	73	2048	0.4	12	14 Th	0228	1.6	49	0800	0.1	3	1456	2.5	75	2107	0.3	8	29 F	0252	1.4	44	0831	0.2	5	1507	2.1	65	2135	0.1	4	15 Su	0209	2.2	68	0754	0.4	13	1430	2.5	75	2022	0.5	14	30 M	0216	2.1	65	0818	0.3	8	1443	2.6	79	2100	0.4	13	15 Tu	0211	1.9	59	0745	0.3	8	1437	2.6	79	2037	0.4	13	30 W	0226	1.8	55	0818	0.3	8	1450	2.4	74	2116	0.4	11	15 F	0307	1.6	50	0843	0.1	3	1530	2.4	74	2145	0.2	6	30 Sa	0330	1.5	45	0858	0.2	5	1541	2.1	64	2158	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																								
7 Sa	0524	1.8	54	1105	0.7	20	1805	2.0	61	2348	0.9	28	22 Su	0513	1.7	53	1126	0.7	22	1805	2.1	63	7 M	0558	1.5	46	1118	0.8	24	1822	1.8	56	22 Tu	0037	0.7	22	0641	1.5	47	1228	1.0	31	1848	1.8	54	7 Th	0100	0.6	18	0815	1.3	41	1307	0.9	28	1948	1.4	44	22 F	0220	0.5	14	0937	1.5	46	1613	1.0	30	2033	1.2	38	8 Su	0552	1.6	48	1131	0.8	25	1852	1.8	55	23 M	0037	1.0	31	0556	1.6	48	1211	1.0	31	1901	1.8	56	8 Tu	0022	0.9	26	0658	1.4	42	1200	1.0	30	1928	1.6	50	23 W	0148	0.8	25	0839	1.5	45	1430	1.2	36	2007	1.6	48	8 F	0205	0.7	20	1000	1.4	44	1500	1.0	31	2131	1.3	41	23 Sa	0346	0.5	15	1111	1.6	49	1752	0.9	26	2216	1.2	36	9 M	0033	1.1	34	0618	1.4	42	1201	1.0	32	2033	1.6	50	24 Tu	0213	1.1	35	0800	1.4	43	1430	1.3	39	2139	1.7	51	9 W	0130	1.0	30	0922	1.3	41	1326	1.2	36	2128	1.5	47	24 Th	0335	0.8	25	1115	1.6	50	1713	1.1	34	2216	1.5	45	9 Sa	0328	0.6	19	1122	1.6	50	1726	1.0	29	2309	1.3	41	24 Su	0505	0.4	13	1209	1.8	54	1850	0.7	21	2350	1.2	37	10 Tu	0637	1.2	36	1105	1.3	40	1756	1.3	39	2307	1.7	51	25 W	0505	1.1	33	1216	1.7	51	1746	1.2	36	2354	1.8	54	10 Th	0401	1.0	31	1124	1.5	47	1756	1.1	35	2315	1.6	49	25 F	0503	0.7	22	1213	1.9	57	1824	0.9	28	2348	1.5	47	10 Su	0446	0.6	17	1216	1.9	58	1831	0.8	23	11 W	0658	1.0	31	1230	1.6	48	1845	1.1	33	26 Th	0607	0.9	26	1254	2.0	60	1846	1.0	29	11 F	0539	0.9	26	1218	1.8	55	1837	1.0	29	26 Sa	0600	0.6	17	1250	2.1	63	1909	0.8	23	11 M	0015	1.4	43	0545	0.4	12	1301	2.1	64	1913	0.6	18	26 Tu	0048	1.3	39	0650	0.3	9	1328	2.0	61	2009	0.4	11	12 Th	0020	1.8	56	0713	0.9	26	1301	1.8	56	1913	0.9	27	27 F	0043	1.9	58	0646	0.7	20	1324	2.2	68	1926	0.8	23	12 Sa	0016	1.7	52	0611	0.7	21	1256	2.1	63	1905	0.8	24	27 Su	0039	1.6	50	0643	0.4	13	1322	2.2	68	1945	0.6	18	12 Tu	0105	1.5	45	0633	0.3	8	1341	2.3	70	1952	0.5	14	27 W	0135	1.4	42	0728	0.2	7	1401	2.1	64	2041	0.3	8	13 F	0101	2.0	62	0724	0.7	21	1331	2.1	64	1935	0.7	22	28 Sa	0118	2.0	61	0720	0.5	14	1350	2.4	74	2000	0.6	18	13 Su	0100	1.8	56	0641	0.5	16	1331	2.3	70	1935	0.6	19	28 M	0116	1.7	52	0718	0.3	10	1350	2.4	72	2018	0.5	15	13 W	0148	1.5	47	0718	0.2	5	1418	2.4	73	2030	0.3	10	28 Th	0215	1.4	44	0801	0.2	6	1435	2.1	65	2111	0.2	6	14 Sa	0137	2.2	66	0735	0.6	17	1401	2.3	70	1958	0.6	18	29 Su	0148	2.1	64	0750	0.3	10	1416	2.5	77	2031	0.5	15	14 M	0137	1.9	58	0713	0.4	12	1403	2.5	75	2005	0.5	15	29 Tu	0152	1.8	54	0750	0.3	8	1420	2.4	73	2048	0.4	12	14 Th	0228	1.6	49	0800	0.1	3	1456	2.5	75	2107	0.3	8	29 F	0252	1.4	44	0831	0.2	5	1507	2.1	65	2135	0.1	4	15 Su	0209	2.2	68	0754	0.4	13	1430	2.5	75	2022	0.5	14	30 M	0216	2.1	65	0818	0.3	8	1443	2.6	79	2100	0.4	13	15 Tu	0211	1.9	59	0745	0.3	8	1437	2.6	79	2037	0.4	13	30 W	0226	1.8	55	0818	0.3	8	1450	2.4	74	2116	0.4	11	15 F	0307	1.6	50	0843	0.1	3	1530	2.4	74	2145	0.2	6	30 Sa	0330	1.5	45	0858	0.2	5	1541	2.1	64	2158	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
8 Su	0552	1.6	48	1131	0.8	25	1852	1.8	55	23 M	0037	1.0	31	0556	1.6	48	1211	1.0	31	1901	1.8	56	8 Tu	0022	0.9	26	0658	1.4	42	1200	1.0	30	1928	1.6	50	23 W	0148	0.8	25	0839	1.5	45	1430	1.2	36	2007	1.6	48	8 F	0205	0.7	20	1000	1.4	44	1500	1.0	31	2131	1.3	41	23 Sa	0346	0.5	15	1111	1.6	49	1752	0.9	26	2216	1.2	36	9 M	0033	1.1	34	0618	1.4	42	1201	1.0	32	2033	1.6	50	24 Tu	0213	1.1	35	0800	1.4	43	1430	1.3	39	2139	1.7	51	9 W	0130	1.0	30	0922	1.3	41	1326	1.2	36	2128	1.5	47	24 Th	0335	0.8	25	1115	1.6	50	1713	1.1	34	2216	1.5	45	9 Sa	0328	0.6	19	1122	1.6	50	1726	1.0	29	2309	1.3	41	24 Su	0505	0.4	13	1209	1.8	54	1850	0.7	21	2350	1.2	37	10 Tu	0637	1.2	36	1105	1.3	40	1756	1.3	39	2307	1.7	51	25 W	0505	1.1	33	1216	1.7	51	1746	1.2	36	2354	1.8	54	10 Th	0401	1.0	31	1124	1.5	47	1756	1.1	35	2315	1.6	49	25 F	0503	0.7	22	1213	1.9	57	1824	0.9	28	2348	1.5	47	10 Su	0446	0.6	17	1216	1.9	58	1831	0.8	23	11 W	0658	1.0	31	1230	1.6	48	1845	1.1	33	26 Th	0607	0.9	26	1254	2.0	60	1846	1.0	29	11 F	0539	0.9	26	1218	1.8	55	1837	1.0	29	26 Sa	0600	0.6	17	1250	2.1	63	1909	0.8	23	11 M	0015	1.4	43	0545	0.4	12	1301	2.1	64	1913	0.6	18	26 Tu	0048	1.3	39	0650	0.3	9	1328	2.0	61	2009	0.4	11	12 Th	0020	1.8	56	0713	0.9	26	1301	1.8	56	1913	0.9	27	27 F	0043	1.9	58	0646	0.7	20	1324	2.2	68	1926	0.8	23	12 Sa	0016	1.7	52	0611	0.7	21	1256	2.1	63	1905	0.8	24	27 Su	0039	1.6	50	0643	0.4	13	1322	2.2	68	1945	0.6	18	12 Tu	0105	1.5	45	0633	0.3	8	1341	2.3	70	1952	0.5	14	27 W	0135	1.4	42	0728	0.2	7	1401	2.1	64	2041	0.3	8	13 F	0101	2.0	62	0724	0.7	21	1331	2.1	64	1935	0.7	22	28 Sa	0118	2.0	61	0720	0.5	14	1350	2.4	74	2000	0.6	18	13 Su	0100	1.8	56	0641	0.5	16	1331	2.3	70	1935	0.6	19	28 M	0116	1.7	52	0718	0.3	10	1350	2.4	72	2018	0.5	15	13 W	0148	1.5	47	0718	0.2	5	1418	2.4	73	2030	0.3	10	28 Th	0215	1.4	44	0801	0.2	6	1435	2.1	65	2111	0.2	6	14 Sa	0137	2.2	66	0735	0.6	17	1401	2.3	70	1958	0.6	18	29 Su	0148	2.1	64	0750	0.3	10	1416	2.5	77	2031	0.5	15	14 M	0137	1.9	58	0713	0.4	12	1403	2.5	75	2005	0.5	15	29 Tu	0152	1.8	54	0750	0.3	8	1420	2.4	73	2048	0.4	12	14 Th	0228	1.6	49	0800	0.1	3	1456	2.5	75	2107	0.3	8	29 F	0252	1.4	44	0831	0.2	5	1507	2.1	65	2135	0.1	4	15 Su	0209	2.2	68	0754	0.4	13	1430	2.5	75	2022	0.5	14	30 M	0216	2.1	65	0818	0.3	8	1443	2.6	79	2100	0.4	13	15 Tu	0211	1.9	59	0745	0.3	8	1437	2.6	79	2037	0.4	13	30 W	0226	1.8	55	0818	0.3	8	1450	2.4	74	2116	0.4	11	15 F	0307	1.6	50	0843	0.1	3	1530	2.4	74	2145	0.2	6	30 Sa	0330	1.5	45	0858	0.2	5	1541	2.1	64	2158	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
9 M	0033	1.1	34	0618	1.4	42	1201	1.0	32	2033	1.6	50	24 Tu	0213	1.1	35	0800	1.4	43	1430	1.3	39	2139	1.7	51	9 W	0130	1.0	30	0922	1.3	41	1326	1.2	36	2128	1.5	47	24 Th	0335	0.8	25	1115	1.6	50	1713	1.1	34	2216	1.5	45	9 Sa	0328	0.6	19	1122	1.6	50	1726	1.0	29	2309	1.3	41	24 Su	0505	0.4	13	1209	1.8	54	1850	0.7	21	2350	1.2	37	10 Tu	0637	1.2	36	1105	1.3	40	1756	1.3	39	2307	1.7	51	25 W	0505	1.1	33	1216	1.7	51	1746	1.2	36	2354	1.8	54	10 Th	0401	1.0	31	1124	1.5	47	1756	1.1	35	2315	1.6	49	25 F	0503	0.7	22	1213	1.9	57	1824	0.9	28	2348	1.5	47	10 Su	0446	0.6	17	1216	1.9	58	1831	0.8	23	11 W	0658	1.0	31	1230	1.6	48	1845	1.1	33	26 Th	0607	0.9	26	1254	2.0	60	1846	1.0	29	11 F	0539	0.9	26	1218	1.8	55	1837	1.0	29	26 Sa	0600	0.6	17	1250	2.1	63	1909	0.8	23	11 M	0015	1.4	43	0545	0.4	12	1301	2.1	64	1913	0.6	18	26 Tu	0048	1.3	39	0650	0.3	9	1328	2.0	61	2009	0.4	11	12 Th	0020	1.8	56	0713	0.9	26	1301	1.8	56	1913	0.9	27	27 F	0043	1.9	58	0646	0.7	20	1324	2.2	68	1926	0.8	23	12 Sa	0016	1.7	52	0611	0.7	21	1256	2.1	63	1905	0.8	24	27 Su	0039	1.6	50	0643	0.4	13	1322	2.2	68	1945	0.6	18	12 Tu	0105	1.5	45	0633	0.3	8	1341	2.3	70	1952	0.5	14	27 W	0135	1.4	42	0728	0.2	7	1401	2.1	64	2041	0.3	8	13 F	0101	2.0	62	0724	0.7	21	1331	2.1	64	1935	0.7	22	28 Sa	0118	2.0	61	0720	0.5	14	1350	2.4	74	2000	0.6	18	13 Su	0100	1.8	56	0641	0.5	16	1331	2.3	70	1935	0.6	19	28 M	0116	1.7	52	0718	0.3	10	1350	2.4	72	2018	0.5	15	13 W	0148	1.5	47	0718	0.2	5	1418	2.4	73	2030	0.3	10	28 Th	0215	1.4	44	0801	0.2	6	1435	2.1	65	2111	0.2	6	14 Sa	0137	2.2	66	0735	0.6	17	1401	2.3	70	1958	0.6	18	29 Su	0148	2.1	64	0750	0.3	10	1416	2.5	77	2031	0.5	15	14 M	0137	1.9	58	0713	0.4	12	1403	2.5	75	2005	0.5	15	29 Tu	0152	1.8	54	0750	0.3	8	1420	2.4	73	2048	0.4	12	14 Th	0228	1.6	49	0800	0.1	3	1456	2.5	75	2107	0.3	8	29 F	0252	1.4	44	0831	0.2	5	1507	2.1	65	2135	0.1	4	15 Su	0209	2.2	68	0754	0.4	13	1430	2.5	75	2022	0.5	14	30 M	0216	2.1	65	0818	0.3	8	1443	2.6	79	2100	0.4	13	15 Tu	0211	1.9	59	0745	0.3	8	1437	2.6	79	2037	0.4	13	30 W	0226	1.8	55	0818	0.3	8	1450	2.4	74	2116	0.4	11	15 F	0307	1.6	50	0843	0.1	3	1530	2.4	74	2145	0.2	6	30 Sa	0330	1.5	45	0858	0.2	5	1541	2.1	64	2158	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
10 Tu	0637	1.2	36	1105	1.3	40	1756	1.3	39	2307	1.7	51	25 W	0505	1.1	33	1216	1.7	51	1746	1.2	36	2354	1.8	54	10 Th	0401	1.0	31	1124	1.5	47	1756	1.1	35	2315	1.6	49	25 F	0503	0.7	22	1213	1.9	57	1824	0.9	28	2348	1.5	47	10 Su	0446	0.6	17	1216	1.9	58	1831	0.8	23	11 W	0658	1.0	31	1230	1.6	48	1845	1.1	33	26 Th	0607	0.9	26	1254	2.0	60	1846	1.0	29	11 F	0539	0.9	26	1218	1.8	55	1837	1.0	29	26 Sa	0600	0.6	17	1250	2.1	63	1909	0.8	23	11 M	0015	1.4	43	0545	0.4	12	1301	2.1	64	1913	0.6	18	26 Tu	0048	1.3	39	0650	0.3	9	1328	2.0	61	2009	0.4	11	12 Th	0020	1.8	56	0713	0.9	26	1301	1.8	56	1913	0.9	27	27 F	0043	1.9	58	0646	0.7	20	1324	2.2	68	1926	0.8	23	12 Sa	0016	1.7	52	0611	0.7	21	1256	2.1	63	1905	0.8	24	27 Su	0039	1.6	50	0643	0.4	13	1322	2.2	68	1945	0.6	18	12 Tu	0105	1.5	45	0633	0.3	8	1341	2.3	70	1952	0.5	14	27 W	0135	1.4	42	0728	0.2	7	1401	2.1	64	2041	0.3	8	13 F	0101	2.0	62	0724	0.7	21	1331	2.1	64	1935	0.7	22	28 Sa	0118	2.0	61	0720	0.5	14	1350	2.4	74	2000	0.6	18	13 Su	0100	1.8	56	0641	0.5	16	1331	2.3	70	1935	0.6	19	28 M	0116	1.7	52	0718	0.3	10	1350	2.4	72	2018	0.5	15	13 W	0148	1.5	47	0718	0.2	5	1418	2.4	73	2030	0.3	10	28 Th	0215	1.4	44	0801	0.2	6	1435	2.1	65	2111	0.2	6	14 Sa	0137	2.2	66	0735	0.6	17	1401	2.3	70	1958	0.6	18	29 Su	0148	2.1	64	0750	0.3	10	1416	2.5	77	2031	0.5	15	14 M	0137	1.9	58	0713	0.4	12	1403	2.5	75	2005	0.5	15	29 Tu	0152	1.8	54	0750	0.3	8	1420	2.4	73	2048	0.4	12	14 Th	0228	1.6	49	0800	0.1	3	1456	2.5	75	2107	0.3	8	29 F	0252	1.4	44	0831	0.2	5	1507	2.1	65	2135	0.1	4	15 Su	0209	2.2	68	0754	0.4	13	1430	2.5	75	2022	0.5	14	30 M	0216	2.1	65	0818	0.3	8	1443	2.6	79	2100	0.4	13	15 Tu	0211	1.9	59	0745	0.3	8	1437	2.6	79	2037	0.4	13	30 W	0226	1.8	55	0818	0.3	8	1450	2.4	74	2116	0.4	11	15 F	0307	1.6	50	0843	0.1	3	1530	2.4	74	2145	0.2	6	30 Sa	0330	1.5	45	0858	0.2	5	1541	2.1	64	2158	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
11 W	0658	1.0	31	1230	1.6	48	1845	1.1	33	26 Th	0607	0.9	26	1254	2.0	60	1846	1.0	29	11 F	0539	0.9	26	1218	1.8	55	1837	1.0	29	26 Sa	0600	0.6	17	1250	2.1	63	1909	0.8	23	11 M	0015	1.4	43	0545	0.4	12	1301	2.1	64	1913	0.6	18	26 Tu	0048	1.3	39	0650	0.3	9	1328	2.0	61	2009	0.4	11	12 Th	0020	1.8	56	0713	0.9	26	1301	1.8	56	1913	0.9	27	27 F	0043	1.9	58	0646	0.7	20	1324	2.2	68	1926	0.8	23	12 Sa	0016	1.7	52	0611	0.7	21	1256	2.1	63	1905	0.8	24	27 Su	0039	1.6	50	0643	0.4	13	1322	2.2	68	1945	0.6	18	12 Tu	0105	1.5	45	0633	0.3	8	1341	2.3	70	1952	0.5	14	27 W	0135	1.4	42	0728	0.2	7	1401	2.1	64	2041	0.3	8	13 F	0101	2.0	62	0724	0.7	21	1331	2.1	64	1935	0.7	22	28 Sa	0118	2.0	61	0720	0.5	14	1350	2.4	74	2000	0.6	18	13 Su	0100	1.8	56	0641	0.5	16	1331	2.3	70	1935	0.6	19	28 M	0116	1.7	52	0718	0.3	10	1350	2.4	72	2018	0.5	15	13 W	0148	1.5	47	0718	0.2	5	1418	2.4	73	2030	0.3	10	28 Th	0215	1.4	44	0801	0.2	6	1435	2.1	65	2111	0.2	6	14 Sa	0137	2.2	66	0735	0.6	17	1401	2.3	70	1958	0.6	18	29 Su	0148	2.1	64	0750	0.3	10	1416	2.5	77	2031	0.5	15	14 M	0137	1.9	58	0713	0.4	12	1403	2.5	75	2005	0.5	15	29 Tu	0152	1.8	54	0750	0.3	8	1420	2.4	73	2048	0.4	12	14 Th	0228	1.6	49	0800	0.1	3	1456	2.5	75	2107	0.3	8	29 F	0252	1.4	44	0831	0.2	5	1507	2.1	65	2135	0.1	4	15 Su	0209	2.2	68	0754	0.4	13	1430	2.5	75	2022	0.5	14	30 M	0216	2.1	65	0818	0.3	8	1443	2.6	79	2100	0.4	13	15 Tu	0211	1.9	59	0745	0.3	8	1437	2.6	79	2037	0.4	13	30 W	0226	1.8	55	0818	0.3	8	1450	2.4	74	2116	0.4	11	15 F	0307	1.6	50	0843	0.1	3	1530	2.4	74	2145	0.2	6	30 Sa	0330	1.5	45	0858	0.2	5	1541	2.1	64	2158	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
12 Th	0020	1.8	56	0713	0.9	26	1301	1.8	56	1913	0.9	27	27 F	0043	1.9	58	0646	0.7	20	1324	2.2	68	1926	0.8	23	12 Sa	0016	1.7	52	0611	0.7	21	1256	2.1	63	1905	0.8	24	27 Su	0039	1.6	50	0643	0.4	13	1322	2.2	68	1945	0.6	18	12 Tu	0105	1.5	45	0633	0.3	8	1341	2.3	70	1952	0.5	14	27 W	0135	1.4	42	0728	0.2	7	1401	2.1	64	2041	0.3	8	13 F	0101	2.0	62	0724	0.7	21	1331	2.1	64	1935	0.7	22	28 Sa	0118	2.0	61	0720	0.5	14	1350	2.4	74	2000	0.6	18	13 Su	0100	1.8	56	0641	0.5	16	1331	2.3	70	1935	0.6	19	28 M	0116	1.7	52	0718	0.3	10	1350	2.4	72	2018	0.5	15	13 W	0148	1.5	47	0718	0.2	5	1418	2.4	73	2030	0.3	10	28 Th	0215	1.4	44	0801	0.2	6	1435	2.1	65	2111	0.2	6	14 Sa	0137	2.2	66	0735	0.6	17	1401	2.3	70	1958	0.6	18	29 Su	0148	2.1	64	0750	0.3	10	1416	2.5	77	2031	0.5	15	14 M	0137	1.9	58	0713	0.4	12	1403	2.5	75	2005	0.5	15	29 Tu	0152	1.8	54	0750	0.3	8	1420	2.4	73	2048	0.4	12	14 Th	0228	1.6	49	0800	0.1	3	1456	2.5	75	2107	0.3	8	29 F	0252	1.4	44	0831	0.2	5	1507	2.1	65	2135	0.1	4	15 Su	0209	2.2	68	0754	0.4	13	1430	2.5	75	2022	0.5	14	30 M	0216	2.1	65	0818	0.3	8	1443	2.6	79	2100	0.4	13	15 Tu	0211	1.9	59	0745	0.3	8	1437	2.6	79	2037	0.4	13	30 W	0226	1.8	55	0818	0.3	8	1450	2.4	74	2116	0.4	11	15 F	0307	1.6	50	0843	0.1	3	1530	2.4	74	2145	0.2	6	30 Sa	0330	1.5	45	0858	0.2	5	1541	2.1	64	2158	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
13 F	0101	2.0	62	0724	0.7	21	1331	2.1	64	1935	0.7	22	28 Sa	0118	2.0	61	0720	0.5	14	1350	2.4	74	2000	0.6	18	13 Su	0100	1.8	56	0641	0.5	16	1331	2.3	70	1935	0.6	19	28 M	0116	1.7	52	0718	0.3	10	1350	2.4	72	2018	0.5	15	13 W	0148	1.5	47	0718	0.2	5	1418	2.4	73	2030	0.3	10	28 Th	0215	1.4	44	0801	0.2	6	1435	2.1	65	2111	0.2	6	14 Sa	0137	2.2	66	0735	0.6	17	1401	2.3	70	1958	0.6	18	29 Su	0148	2.1	64	0750	0.3	10	1416	2.5	77	2031	0.5	15	14 M	0137	1.9	58	0713	0.4	12	1403	2.5	75	2005	0.5	15	29 Tu	0152	1.8	54	0750	0.3	8	1420	2.4	73	2048	0.4	12	14 Th	0228	1.6	49	0800	0.1	3	1456	2.5	75	2107	0.3	8	29 F	0252	1.4	44	0831	0.2	5	1507	2.1	65	2135	0.1	4	15 Su	0209	2.2	68	0754	0.4	13	1430	2.5	75	2022	0.5	14	30 M	0216	2.1	65	0818	0.3	8	1443	2.6	79	2100	0.4	13	15 Tu	0211	1.9	59	0745	0.3	8	1437	2.6	79	2037	0.4	13	30 W	0226	1.8	55	0818	0.3	8	1450	2.4	74	2116	0.4	11	15 F	0307	1.6	50	0843	0.1	3	1530	2.4	74	2145	0.2	6	30 Sa	0330	1.5	45	0858	0.2	5	1541	2.1	64	2158	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
14 Sa	0137	2.2	66	0735	0.6	17	1401	2.3	70	1958	0.6	18	29 Su	0148	2.1	64	0750	0.3	10	1416	2.5	77	2031	0.5	15	14 M	0137	1.9	58	0713	0.4	12	1403	2.5	75	2005	0.5	15	29 Tu	0152	1.8	54	0750	0.3	8	1420	2.4	73	2048	0.4	12	14 Th	0228	1.6	49	0800	0.1	3	1456	2.5	75	2107	0.3	8	29 F	0252	1.4	44	0831	0.2	5	1507	2.1	65	2135	0.1	4	15 Su	0209	2.2	68	0754	0.4	13	1430	2.5	75	2022	0.5	14	30 M	0216	2.1	65	0818	0.3	8	1443	2.6	79	2100	0.4	13	15 Tu	0211	1.9	59	0745	0.3	8	1437	2.6	79	2037	0.4	13	30 W	0226	1.8	55	0818	0.3	8	1450	2.4	74	2116	0.4	11	15 F	0307	1.6	50	0843	0.1	3	1530	2.4	74	2145	0.2	6	30 Sa	0330	1.5	45	0858	0.2	5	1541	2.1	64	2158	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
15 Su	0209	2.2	68	0754	0.4	13	1430	2.5	75	2022	0.5	14	30 M	0216	2.1	65	0818	0.3	8	1443	2.6	79	2100	0.4	13	15 Tu	0211	1.9	59	0745	0.3	8	1437	2.6	79	2037	0.4	13	30 W	0226	1.8	55	0818	0.3	8	1450	2.4	74	2116	0.4	11	15 F	0307	1.6	50	0843	0.1	3	1530	2.4	74	2145	0.2	6	30 Sa	0330	1.5	45	0858	0.2	5	1541	2.1	64	2158	0.1	3																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Colombo, Sri Lanka, 2018

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 Su	0403 0926 1613 2220	16 M	0426 1007 1628 2248	1 W	0454 1018 1650 2248	16 Th	0516 1111 1703 2322	1 Sa	0522 1111 1658 2316	16 Su	0550 1139 1735 2330
2 M	0439 0956 1643 2245	17 Tu	0503 1048 1700 2324	2 Th	0524 1054 1713 2318	17 F	0552 1143 1733 2350	2 Su	0554 1152 1715 2352	17 M	0633 1213 1811 2356
3 Tu	0513 1030 1713 2315	18 W	0545 1130 1730 2358	3 F	0556 1131 1731 2352	18 Sa	0631 1218 1805	3 M	0639 1245 1735	18 Tu	0731 1307 1913
4 W	0548 1107 1741 2348	19 Th	0626 1213 1803	4 Sa	0635 1216 1752	19 Su	0020 0722 1303 1845	4 Tu	0037 0754 1411 1801	19 W	0031 0920 1820 2248
5 Th	0630 1150 1809	20 F	0035 0716 1305 1841	5 Su	0031 0730 1316 1815	20 M	0054 0831 1613 1950	5 W	0156 1035 1805 2337	20 Th	0531 1126 1858
6 F	0026 0720 1243 1839	21 Sa	0116 0820 1433 1930	6 M	0122 0900 1452 1856	21 Tu	0200 1022 1835 2233	6 Th	0424 1211 1848	21 F	0031 0635 1228 1926
7 Sa	0115 0835 1358 1926	22 Su	0216 0946 1713 2052	7 Tu	0239 1103 1745 2245	22 W	0520 1158 1920	7 F	0054 0609 1303 1918	22 Sa	0107 0711 1307 1946
8 Su	0216 1013 1552 2109	23 M	0354 1120 1839 2300	8 W	0426 1222 1900	23 Th	0035 0635 1252 1952	8 Sa	0135 0707 1341 1950	23 Su	0137 0739 1343 2001
9 M	0335 1137 1758 2324	24 Tu	0531 1224 1928	9 Th	0045 0558 1315 1937	24 F	0124 0718 1331 2018	9 Su	0211 0752 1415 2020	24 M	0207 0801 1413 2015
10 Tu	0458 1237 1900	25 W	0033 0635 1309 2003	10 F	0139 0701 1356 2011	25 Sa	0158 0750 1405 2039	10 M	0243 0833 1445 2052	25 Tu	0235 0824 1443 2031
11 W	0043 0605 1324 1945	26 Th	0128 0720 1346 2035	11 Sa	0222 0754 1433 2045	26 Su	0231 0816 1437 2054	11 Tu	0313 0909 1513 2122	26 W	0303 0848 1509 2054
12 Th	0139 0701 1407 2022	27 F	0209 0754 1422 2101	12 Su	0300 0839 1507 2118	27 M	0301 0841 1507 2111	12 W	0343 0943 1541 2150	27 Th	0330 0915 1533 2118
13 F	0224 0752 1445 2100	28 Sa	0246 0824 1456 2122	13 M	0335 0920 1537 2152	28 Tu	0330 0905 1535 2128	13 Th	0413 1015 1609 2218	28 F	0356 0945 1554 2145
14 Sa	0307 0839 1520 2137	29 Su	0320 0850 1528 2141	14 Tu	0409 1000 1607 2222	29 W	0358 0933 1601 2150	14 F	0443 1043 1635 2243	29 Sa	0424 1018 1611 2215
15 Su	0346 0924 1556 2213	30 M	0352 0918 1558 2200	15 W	0443 1035 1635 2254	30 Th	0426 1003 1622 2216	15 Sa	0516 1111 1705 2307	30 Su	0452 1054 1630 2246
		31 Tu	0424 0946 1626 2222			31 F	0452 1035 1641 2245				

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Bombay, India, 2018

Times and Heights of High and Low Waters

January			February			March										
Time	Height		Time	Height		Time	Height		Time	Height						
	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm				
1 M	0500	5.5	169		16 Tu	0556	6.4	194	1 Th	0027	16.6	506	16 F	0028	14.4	438
	1050	13.6	415			1134	11.9	364		0629	3.6	110		0629	4.7	144
	1707	0.5	16			1733	2.6	78		1225	14.7	447		1228	12.9	394
	2355	16.3	497							1831	0.4	11		1818	2.2	68
2 Tu	0553	4.9	149		17 W	0020	14.2	433	2 F	0109	16.8	513	17 Sa	0054	14.7	448
	1142	14.2	432			0625	6.0	182		0717	2.9	89		0700	4.1	126
	1753	0.1	3			1210	12.3	376		1313	15.0	456		1302	13.4	408
3 W	0041	16.8	513			1803	2.3	71		1913	0.8	25		1847	2.3	70
	0644	4.3	131		18 Th	0050	14.5	443	3 Sa	0150	16.7	509	18 Su	0123	14.9	453
	1232	14.5	443			0655	5.5	169		0800	2.6	78		0729	3.6	110
	1839	0.1	4			1245	12.7	387		1400	14.8	451		1300	15.1	461
4 Th	0126	17.0	517			1834	2.3	69		1952	1.8	54		1917	2.6	80
	0733	3.8	117		19 F	0120	14.8	450	4 Su	0230	16.2	493	19 M	0152	14.8	452
	1321	14.6	446			0726	5.2	158		0840	2.6	79		0758	3.2	99
	1924	0.7	20			1219	12.9	393		1447	14.2	432		1415	13.6	414
5 F	0212	16.8	512			1904	2.5	75		2032	3.1	95		1951	3.2	98
	0821	3.6	110		20 Sa	0150	14.9	453	5 M	0310	15.3	465	20 Tu	0223	14.6	444
	1412	14.3	437			0758	4.9	149		0921	3.1	93		0828	3.1	94
	2008	1.7	51			1355	12.9	392		1534	13.2	403		1455	13.3	405
6 Sa	0257	16.3	496			1933	2.9	88		2113	4.8	145		2031	4.1	125
	0908	3.7	112		21 Su	0221	14.8	450	6 Tu	0350	14.1	429	21 W	0255	14.1	429
	1503	13.7	417			0828	4.7	144		1001	3.8	116		0901	3.1	95
	2054	3.1	95			1433	12.6	384		1623	12.1	368		1543	12.8	390
7 Su	0341	15.4	469			2006	3.5	108		2200	6.3	193		2118	5.2	157
	0958	4.0	122		22 M	0253	14.5	441	7 W	0429	12.8	389	22 Th	0332	13.4	407
	1600	12.7	388			0900	4.7	142		1047	4.6	140		0942	3.4	103
	2146	4.8	145			1516	12.2	372		1720	11.1	337		1638	12.2	372
8 M	0426	14.3	435			2046	4.4	134		2301	7.6	233		2213	6.3	191
	1053	4.5	137		23 Tu	0327	14.0	427	8 Th	0507	11.5	351	23 F	0413	12.5	381
	1702	11.7	357			0938	4.6	141		1144	5.2	158		1035	3.7	114
	2248	6.3	193			1608	11.7	358		1835	10.5	319		1745	11.7	357
9 Tu	0513	13.1	399			2133	5.4	165						2326	7.2	219
	1153	4.9	148		24 W	0403	13.4	409	9 F	0035	8.4	256	24 Sa	0503	11.7	356
	1818	11.0	335			1024	4.7	142		0557	10.5	321		1149	4.0	122
10 W	0008	7.5	229			1707	11.4	346		1256	5.3	163		1915	11.6	355
	0607	12.0	366			2233	6.4	196		2031	10.6	323				
	1301	5.0	152		25 Th	0446	12.8	389	10 Sa	0226	8.4	255	25 Su	0102	7.5	229
	2001	10.9	332			1123	4.6	139		0723	10.0	304		0614	11.0	335
11 Th	0139	8.0	245			1819	11.2	342		1409	5.1	156		1318	3.8	116
	0711	11.3	343			2349	7.2	220		2136	11.3	344		2045	12.3	376
	1404	4.8	146		26 F	0536	12.1	370	11 Su	0339	7.9	240	26 M	0232	7.1	217
	2119	11.5	349			1235	4.2	129		0849	10.1	307		0803	11.0	335
12 F	0257	8.0	243			1950	11.6	355		1506	4.6	140		1442	3.2	97
	0824	11.0	334		27 Sa	0122	7.5	229	12 M	0430	7.2	220	27 Tu	0341	6.1	187
	1457	4.4	133			0645	11.7	356		0947	10.5	320		0929	11.8	361
	2208	12.1	370			1351	3.6	110		1555	4.0	121		1549	2.4	72
13 Sa	0357	7.6	232			2108	12.6	385		2256	12.8	389		2241	14.5	442
	0924	11.0	335		28 Su	0244	7.2	220	13 Tu	0505	6.6	201	28 W	0436	4.9	150
	1544	3.8	117			0815	11.7	356		1033	11.1	338		1033	13.0	396
	2246	12.8	390			1500	2.7	83		1638	3.4	103		1646	1.6	49
14 Su	0446	7.2	219			2206	13.8	422		2329	13.4	408		2327	15.5	471
	1014	11.2	342		29 M	0350	6.5	198	14 W	0532	6.0	183	14 W	0358	7.1	215
	1624	3.3	102			0935	12.3	375		1114	11.7	357		0923	10.0	306
	2319	13.4	407			1601	1.7	53		1715	2.9	87		1520	4.6	141
15 M	0524	6.8	206			2255	15.0	458		2359	13.9	424		2222	12.2	373
	1055	11.5	352		30 Tu	0448	5.5	169	15 Th	0600	5.4	164	15 Th	0431	6.2	190
	1700	2.9	89			1038	13.2	402		1152	12.3	376		1011	10.8	330
	2351	13.8	421			1657	0.9	28		1747	2.4	74		1606	4.0	121
						2342	16.0	487						2256	12.9	394
					31 W	0541	4.5	138					15 Sa	0500	5.4	165
						1133	14.0	428						1053	11.7	356
						1747	0.4	13						1648	3.4	103
														2327	13.5	413
													31 Sa	0546	1.8	56
														1203	14.7	449
														1801	2.5	75

Time meridian 82° 30' E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Karachi, Pakistan, 2018

Times and Heights of High and Low Waters

April				May				June			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm
1 Su	0514 0.7 20 1121 9.5 290 1719 1.6 50 2328 9.8 300	16 M	0440 1.3 40 1110 9.8 300 1654 2.6 80 2259 9.5 290	1 Tu	0521 0.3 10 1149 9.5 290 1739 3.6 110 2323 9.2 280	16 W	0452 0.3 10 1137 10.2 310 1718 3.6 110 2255 9.5 290	1 F	0602 1.0 30 1255 9.5 290 1846 4.9 150 2355 8.2 250	16 Sa	0605 -0.3 -10 1253 10.5 320 1843 3.6 110
2 M	0553 0.7 20 1201 9.5 290 1756 2.3 70	17 Tu	0518 0.7 20 1150 9.8 300 1732 3.0 90 2330 9.8 300	2 W	0555 0.7 20 1226 9.5 290 1815 4.3 130 2352 8.9 270	17 Th	0534 0.0 0 1218 10.2 310 1800 3.9 120 2332 9.5 290	2 Sa	0634 1.3 40 1330 9.2 280 1922 5.2 160	17 Su	0004 8.9 270 0650 0.0 0 1339 10.2 310 1932 3.6 110
3 Tu	0001 9.5 290 0629 0.7 20 1239 9.2 280 1831 3.3 100	18 W	0557 0.3 10 1228 9.8 300 1811 3.3 100	3 Th	0627 1.0 30 1302 9.2 280 1849 4.6 140	18 F	0616 0.0 0 1301 10.2 310 1844 3.9 120	3 Su	0028 7.9 240 0708 2.0 60 1406 9.2 280 2002 5.2 160	18 M	0050 8.5 260 0739 0.7 20 1428 9.8 300 2030 3.6 110
4 W	0033 9.2 280 0704 1.0 30 1317 8.9 270 1905 3.9 120	19 Th	0001 9.5 290 0636 0.3 10 1308 9.8 300 1851 3.6 110	4 F	0021 8.2 250 0659 1.3 40 1339 8.9 270 1924 5.2 160	19 Sa	0010 9.2 280 0700 0.3 10 1348 9.8 300 1933 4.3 130	4 M	0105 7.5 230 0745 2.3 70 1445 8.9 270 2055 5.2 160	19 Tu	0143 7.9 240 0833 1.6 50 1520 9.8 300 2135 3.6 110
5 Th	0103 8.5 260 0738 1.3 40 1356 8.2 250 1941 4.6 140	20 F	0034 9.5 290 0719 0.7 20 1352 9.2 280 1938 3.9 120	5 Sa	0050 7.9 240 0733 2.0 60 1419 8.5 260 2010 5.6 170	20 Su	0049 8.5 260 0750 0.7 20 1442 9.5 290 2034 4.3 130	5 Tu	0151 6.9 210 0828 3.0 90 1528 8.9 270 2158 5.2 160	20 W	0300 7.2 220 0934 2.3 70 1614 9.5 290 2245 3.3 100
6 F	0132 7.9 240 0815 2.0 60 1442 7.9 240 2027 5.2 160	21 Sa	0108 8.9 270 0807 1.0 30 1448 8.9 270 2037 4.6 140	6 Su	0123 7.2 220 0812 2.6 80 1509 8.2 250 2118 5.9 180	21 M	0136 7.9 240 0847 1.3 40 1542 9.2 280 2148 4.3 130	6 W	0258 6.6 200 0921 3.6 110 1615 8.5 260 2306 4.9 150	21 Th	0444 6.9 210 1040 3.3 100 1709 9.2 280 2355 3.0 90
7 Sa	0203 7.5 230 0858 2.6 80 1542 7.5 230 2141 5.9 180	22 Su	0150 8.2 250 0906 1.3 40 1558 8.5 260 2152 4.6 140	7 M	0205 6.9 210 0900 3.3 100 1611 8.2 250 2301 5.6 170	22 Tu	0246 7.2 220 0953 2.3 70 1644 9.2 280 2307 3.9 120	7 Th	0430 6.6 200 1029 4.3 130 1705 8.5 260	22 F	0613 7.2 220 1151 3.9 120 1805 8.9 270
8 Su	0244 6.9 210 0950 3.0 90 1708 7.2 220 2349 5.9 180	23 M	0249 7.5 230 1014 2.0 60 1711 8.5 260 2322 4.6 140	8 Tu	0318 6.6 200 1002 3.6 110 1715 8.2 250	23 W	0447 6.9 210 1104 3.0 90 1744 9.2 280	8 F	0008 4.3 130 0557 6.9 210 1146 4.6 140 1755 8.9 270	23 Sa	0058 2.3 70 0723 7.5 230 1300 4.3 130 1858 8.9 270
9 M	0358 6.6 200 1054 3.3 100 1856 7.5 230	24 Tu	0433 7.2 220 1129 2.3 70 1820 8.5 260	9 W	0015 5.2 160 0504 6.6 200 1117 3.9 120 1811 8.2 250	24 Th	0021 3.3 100 0621 7.2 220 1217 3.3 100 1839 9.2 280	9 Sa	0058 3.3 100 0706 7.5 230 1255 4.6 140 1842 8.9 270	24 Su	0152 1.6 50 0822 8.2 250 1403 4.6 140 1947 8.5 260
10 Tu	0102 5.2 160 0538 6.2 190 1210 3.3 100 1944 7.9 240	25 W	0042 3.9 120 0621 7.2 220 1244 2.3 70 1918 8.9 270	10 Th	0103 4.6 140 0627 6.9 210 1230 3.9 120 1858 8.5 260	25 F	0122 2.6 80 0733 7.5 230 1322 3.6 110 1930 9.2 280	10 Su	0140 2.6 80 0805 8.2 250 1352 4.6 140 1928 9.2 280	25 M	0238 1.3 40 0916 8.5 260 1501 4.6 140 2033 8.5 260
11 W	0147 4.9 150 0657 6.9 210 1315 3.3 100 2016 8.2 250	26 Th	0143 3.0 90 0738 7.5 230 1346 2.3 70 2007 9.2 280	11 F	0139 3.9 120 0732 7.5 230 1330 3.9 120 1938 8.9 270	26 Sa	0212 1.6 50 0832 8.2 250 1419 3.6 110 2016 9.2 280	11 M	0222 1.6 50 0900 8.9 270 1444 4.6 140 2013 9.2 280	26 Tu	0321 1.0 30 1006 8.9 270 1555 4.6 140 2117 8.5 260
12 Th	0222 3.9 120 0759 7.2 220 1406 3.0 90 2047 8.5 260	27 F	0234 2.0 60 0842 8.2 250 1441 2.3 70 2052 9.5 290	12 Sa	0213 3.0 90 0828 8.2 250 1420 3.9 120 2017 9.2 280	27 Su	0257 1.0 30 0926 8.9 270 1513 3.9 120 2059 9.2 280	12 Tu	0305 1.0 30 0953 9.2 280 1535 4.3 130 2100 9.5 290	27 W	0401 0.7 20 1050 9.2 280 1644 4.6 140 2158 8.2 250
13 F	0254 3.3 100 0854 7.9 240 1452 2.6 80 2120 8.9 270	28 Sa	0321 1.3 40 0937 8.9 270 1531 2.6 80 2135 9.5 290	13 Su	0250 2.0 60 0920 8.9 270 1506 3.6 110 2057 9.2 280	28 M	0339 0.7 20 1016 9.2 280 1603 3.9 120 2140 9.2 280	13 W	0350 0.3 10 1041 9.8 300 1625 4.3 130 2148 9.5 290	28 Th	0438 0.7 20 1130 9.5 290 1727 4.6 140 2236 8.2 250
14 Sa	0328 2.6 80 0943 8.5 260 1535 2.6 80 2154 9.2 280	29 Su	0404 0.7 20 1026 9.2 280 1618 3.0 90 2214 9.5 290	14 M	0329 1.3 40 1009 9.5 290 1551 3.6 110 2137 9.5 290	29 Tu	0419 0.7 20 1100 9.5 290 1650 4.3 130 2218 8.9 270	14 Th	0436 -0.3 -10 1126 10.2 310 1712 3.9 120 2235 9.5 290	29 F	0512 0.7 20 1208 9.5 290 1805 4.6 140 2311 8.2 250
15 Su	0403 2.0 60 1029 9.2 280 1615 2.6 80 2227 9.5 290	30 M	0444 0.7 20 1109 9.5 290 1701 3.3 100 2250 9.5 290	15 Tu	0410 0.7 20 1055 9.8 300 1635 3.6 110 2217 9.5 290	30 W	0455 0.7 20 1140 9.5 290 1733 4.6 140 2252 8.5 260	15 F	0521 -0.3 -10 1210 10.5 320 1757 3.9 120 2320 9.2 280	30 Sa	0545 1.0 30 1243 9.5 290 1839 4.6 140 2346 8.2 250
						31 Th	0529 0.7 20 1218 9.5 290 1811 4.6 140 2323 8.5 260				

Time meridian 75° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Karachi, Pakistan, 2018

Times and Heights of High and Low Waters

July				August				September															
Time		Height		Time		Height		Time		Height		Time		Height									
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm								
1 Su	0618	1.3	40	16 M	0006	8.9	270	1 W	0052	8.2	250	16 Sa	0154	8.2	250	16 Su	0257	7.2	220				
	1315	9.5	290		0640	0.0	0		0706	2.0	60		0750	2.3	70		0754	3.6	110	0845	4.6	140	
	1912	4.6	140		1317	10.2	310		1336	9.2	280		1405	9.2	280		1352	8.5	260	1427	7.2	220	
2 M	0021	7.9	240	17 Tu	0054	8.5	260	2 Th	0132	7.9	240	17 F	0230	7.5	230	2 Su	0249	7.5	230	17 M	0429	6.9	210
	0652	1.6	50		0726	0.7	20		0743	2.6	80		0840	3.3	100		0843	4.3	130		1013	5.2	160
	1345	9.2	280		1401	9.8	300		1406	8.9	270		1449	8.5	260		1431	8.2	250		1514	6.6	200
3 Tu	0100	7.5	230	18 W	0147	7.9	240	3 F	0220	7.5	230	18 Sa	0343	7.2	220	3 M	0410	7.2	220	18 Tu	0642	6.9	210
	0728	2.3	70		0816	1.6	50		0826	3.3	100		0941	4.3	130		0943	4.9	150		1218	5.6	170
	1415	9.2	280		1447	9.5	290		1441	8.9	270		1539	7.9	240		1520	7.9	240		1650	6.2	190
4 W	0144	7.2	220	19 Th	0254	7.2	220	4 Sa	0324	7.2	220	19 Su	0530	6.9	210	4 Tu	0547	7.2	220	19 W	0001	3.3	100
	0808	3.0	90		0912	2.6	80		0916	4.3	130		1101	4.9	150		1102	5.2	160		0746	7.2	220
	1448	8.9	270		2215	2.6	80		1523	8.5	260		1639	7.2	220		1628	7.5	230		1356	5.2	160
5 Th	0241	7.2	220	20 F	0422	6.9	210	5 Su	0446	6.9	210	20 M	0701	6.9	210	5 W	0711	7.5	230	20 Th	0118	3.0	90
	0854	3.6	110		1014	3.6	110		1016	4.6	140		1232	5.2	160		1251	4.9	150		0826	7.5	230
	1527	8.9	270		1630	8.5	260		1614	8.2	250		1751	6.9	210		1757	7.2	220		1435	4.6	140
6 F	0357	6.9	210	21 Sa	0556	6.9	210	6 M	0617	7.2	220	21 Tu	0101	2.6	80	6 Th	0117	1.3	40	21 F	0211	2.6	80
	0949	4.3	130		1127	4.3	130		1139	5.2	160		0803	7.5	230		0806	8.2	250		0858	7.9	240
	1612	8.9	270		1728	8.2	250		1715	8.2	250		1351	4.9	150		1404	4.3	130		1504	4.3	130
7 Sa	0523	6.9	210	22 Su	0030	2.3	70	7 Tu	0037	2.0	60	22 W	0200	2.3	70	7 F	0220	1.0	30	22 Sa	0251	2.3	70
	1059	4.6	140		0712	7.2	220		0730	7.5	230		0850	7.9	240		0852	8.9	270		0928	8.2	250
	1703	8.5	260		1244	4.9	150		1311	4.9	150		1448	4.6	140		1500	3.3	100		1533	3.6	110
8 Su	0013	3.0	90	23 M	0131	2.0	60	8 W	0142	1.3	40	23 Th	0246	2.0	60	8 Sa	0312	0.3	10	23 Su	0326	2.0	60
	0642	7.2	220		0813	7.9	240		0828	8.2	250		0930	8.2	250		0936	9.2	280		0956	8.5	260
	1220	4.9	150		1354	4.9	150		1420	4.6	140		1531	4.3	130		1550	2.6	80		1602	3.0	90
9 M	0110	2.3	70	24 Tu	0222	1.6	50	9 Th	0237	0.7	20	24 F	0324	1.6	50	9 Su	0359	0.0	0	24 M	0400	2.0	60
	0747	7.9	240		0905	8.2	250		0919	8.9	270		1006	8.5	260		1016	9.8	300		1023	8.9	270
	1330	4.9	150		1454	4.6	140		1518	3.9	120		1608	3.9	120		1635	1.6	50		1631	2.6	80
10 Tu	0201	1.3	40	25 W	0306	1.3	40	10 F	0328	0.0	0	25 Sa	0400	1.3	40	10 M	0442	0.3	10	25 Tu	0432	1.6	50
	0844	8.5	260		0952	8.5	260		1609	3.3	100		1642	3.6	110		1718	1.3	40		1050	9.2	280
	1430	4.9	150		2104	7.9	240		2132	8.5	260		2215	8.2	250		2309	9.2	280		1659	2.0	60
11 W	0249	0.7	20	26 Th	0345	1.0	30	11 Sa	0416	-0.3	-10	26 Su	0433	1.3	40	11 Tu	0523	0.7	20	26 W	0504	2.0	60
	0938	9.2	280		1033	8.9	270		1048	9.8	300		1110	8.9	270		1132	10.2	310		1116	9.2	280
	1527	4.6	140		1632	4.3	130		1656	2.6	80		1713	3.0	90		1758	1.0	30		1728	1.6	50
12 Th	0338	0.0	0	27 F	0422	1.0	30	12 Su	0501	-0.3	-10	27 M	0505	1.3	40	12 W	0601	1.0	30	27 Th	0536	2.0	60
	1027	9.5	290		1111	9.2	280		1128	10.2	310		1137	9.2	280		1208	9.8	300		1142	9.2	280
	1620	4.3	130		1710	3.9	120		1740	2.3	70		1742	3.0	90		1838	0.7	20		1800	1.3	40
13 F	0426	-0.3	-10	28 Sa	0456	1.0	30	13 M	0543	-0.3	-10	28 Tu	0536	1.3	40	13 Th	0033	9.2	280	28 F	0018	9.2	280
	1112	9.8	300		1145	9.2	280		1207	10.2	310		1201	9.2	280		0638	2.0	60		0609	2.6	80
	1708	3.6	110		1745	3.9	120		1822	1.6	50		1809	2.6	80		1243	9.5	290		1209	9.2	280
14 Sa	0512	-0.7	-20	29 Su	0529	1.0	30	14 Tu	0003	9.2	280	29 W	0002	8.9	270	14 F	0115	8.5	260	29 Sa	0053	8.9	270
	1154	10.2	310		1217	9.5	290		0624	0.3	10		0606	1.6	50		0716	3.0	90		0644	3.0	90
	1753	3.3	100		1816	3.6	110		1245	10.2	310		1226	9.2	280		1317	8.9	270		1237	9.2	280
15 Su	0557	-0.3	-10	30 M	0601	1.3	40	15 W	0048	8.9	270	30 Th	0037	8.9	270	15 Sa	0200	7.9	240	30 Su	0130	8.5	260
	1235	10.5	320		1244	9.2	280		0705	1.0	30		0638	2.3	70		0756	3.9	120		0724	3.6	110
	1838	3.0	90		1845	3.6	110		1324	9.8	300		1324	9.2	280		1351	8.2	250		1308	8.9	270
				31 Tu	0015	8.2	250	31 F	0112	8.5	260	31 F	0112	8.5	260								
					0633	1.6	50		0713	2.6	80		0713	2.6	80								
					1309	9.2	280		1320	8.9	270		1320	8.9	270								
				1915	3.3	100				1948	2.3	70											

Time meridian 75° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Shatt Al Arab (Outer Bar), Iraq, 2018

Times and Heights of High and Low Waters

July				August				September			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 Su	0110 8.9 270 0624 5.6 170 1205 10.5 320 1942 1.0 30	16 M	0117 9.5 290 0700 4.6 140 1228 11.2 340 1957 -0.3 -10	1 W	0135 9.2 280 0715 4.9 150 1254 10.2 310 1959 1.6 50	16 Th	0157 10.2 310 0824 3.0 90 1352 9.8 300 2040 1.6 50	1 Sa	0142 10.2 310 0808 3.0 90 1359 9.2 280 2016 3.0 90	16 Su	0219 9.8 300 0932 2.0 60 1515 7.9 240 2108 3.9 120
2 M	0143 8.9 270 0700 5.6 170 1236 10.5 320 2009 1.0 30	17 Tu	0157 9.5 290 0751 4.3 130 1313 10.8 330 2035 0.3 10	2 Th	0159 9.5 290 0751 4.6 140 1329 9.8 300 2024 2.0 60	17 F	0230 9.8 300 0910 3.0 90 1438 8.9 270 2112 2.6 80	2 Su	0213 10.5 320 0857 3.0 90 1446 8.2 250 2053 3.3 100	17 M	0253 9.5 290 1025 2.3 70 1620 7.2 220 2147 4.6 140
3 Tu	0214 8.9 270 0737 5.6 170 1307 10.2 310 2035 1.3 40	18 W	0235 9.5 290 0841 3.9 120 1359 9.8 300 2112 1.0 30	3 F	0226 9.5 290 0832 4.3 130 1407 9.2 280 2054 2.3 70	18 Sa	0305 9.8 300 1000 3.0 90 1530 7.9 240 2146 3.3 100	3 M	0250 10.2 310 0959 2.6 80 1548 7.5 230 2140 4.3 130	18 Tu	0331 8.9 270 1130 2.6 80 1806 6.9 210 2242 5.2 160
4 W	0243 8.9 270 0816 5.6 170 1341 9.8 300 2104 1.6 50	19 Th	0313 9.5 290 0933 3.9 120 1448 9.2 280 2150 2.0 60	4 Sa	0256 9.8 300 0923 3.9 120 1453 8.5 260 2130 3.0 90	19 Su	0344 9.5 290 1100 3.0 90 1641 7.2 220 2226 4.3 130	4 Tu	0335 9.8 300 1117 2.6 80 1738 6.6 200 2245 4.9 150	19 W	0426 8.5 260 1248 2.6 80 1948 7.2 220 2356 5.6 170
5 Th	0314 8.9 270 0902 5.2 160 1420 9.2 280 2137 2.0 60	20 F	0355 9.5 290 1030 3.6 110 1546 8.2 250 2229 2.6 80	5 Su	0334 9.8 300 1026 3.9 120 1554 7.5 230 2216 3.6 110	20 M	0432 9.2 280 1212 3.0 90 1833 6.6 200 2317 4.9 150	5 W	0437 9.5 290 1247 2.3 70 1949 6.9 210	20 Th	0615 7.9 240 1405 2.6 80 2048 7.5 230
6 F	0350 8.9 270 0958 4.9 150 1506 8.5 260 2216 2.6 80	21 Sa	0444 9.2 280 1135 3.6 110 1709 7.2 220 2313 3.6 110	6 M	0422 9.8 300 1143 3.6 110 1744 6.9 210 2314 4.3 130	21 Tu	0544 8.9 270 1336 3.0 90 2011 6.9 210	6 Th	0006 5.2 160 0609 9.2 280 1414 1.6 50 2058 7.9 240	21 F	0122 5.9 180 0755 8.2 250 1506 2.3 70 2130 8.2 250
7 Sa	0434 9.2 280 1104 4.6 140 1613 7.5 230 2303 3.3 100	22 Su	0544 9.2 280 1251 3.3 100 1901 6.9 210	7 Tu	0525 9.8 300 1311 3.0 90 1956 6.9 210	22 W	0022 5.6 170 0712 8.9 270 1453 2.3 70 2113 7.5 230	7 F	0133 5.2 160 0748 9.5 290 1523 1.0 30 2146 8.5 260	22 Sa	0243 5.6 170 0853 8.5 260 1551 2.0 60 2203 8.9 270
8 Su	0528 9.2 280 1219 4.3 130 1812 6.9 210 2357 3.9 120	23 M	0004 4.3 130 0650 9.5 290 1412 3.0 90 2026 7.2 220	8 W	0021 4.9 150 0645 9.8 300 1436 2.0 60 2111 7.5 230	23 Th	0137 5.6 170 0820 9.2 280 1550 2.0 60 2158 8.2 250	8 Sa	0255 4.9 150 0900 10.2 310 1618 0.7 20 2227 9.2 280	23 Su	0340 4.9 150 0936 9.2 280 1627 2.0 60 2232 9.2 280
9 M	0630 9.5 290 1338 3.3 100 2007 7.2 220	24 Tu	0102 4.9 150 0752 9.5 290 1522 2.3 70 2127 7.5 230	9 Th	0135 5.2 160 0802 10.2 310 1545 1.0 30 2205 8.2 250	24 F	0252 5.6 170 0911 9.5 290 1634 1.6 50 2236 8.5 260	9 Su	0403 4.3 130 0956 10.5 320 1705 0.3 10 2304 9.5 290	24 M	0421 4.6 140 1014 9.2 280 1658 2.0 60 2258 9.2 280
10 Tu	0055 4.3 130 0731 10.2 310 1454 2.3 70 2118 7.5 230	25 W	0203 5.2 160 0843 9.8 300 1616 1.6 50 2216 7.9 240	10 F	0250 5.2 160 0905 10.8 330 1641 0.3 10 2251 8.9 270	25 Sa	0353 5.6 170 0953 9.8 300 1711 1.3 40 2310 8.9 270	10 M	0500 3.3 100 1046 10.8 330 1748 0.3 10 2339 9.8 300	25 Tu	0456 4.3 130 1049 9.5 290 1725 2.3 70 2321 9.5 290
11 W	0155 4.6 140 0826 10.8 330 1559 1.3 40 2214 8.2 250	26 Th	0304 5.6 170 0927 10.2 310 1701 1.3 40 2258 8.5 260	11 Sa	0401 4.9 150 1000 11.2 340 1730 0.0 0 2333 9.2 280	26 Su	0439 5.2 160 1030 9.8 300 1743 1.3 40 2339 9.2 280	11 Tu	0551 2.6 80 1133 10.8 330 1827 0.7 20	26 W	0528 3.6 110 1123 9.5 290 1750 2.3 70 2344 9.8 300
12 Th	0257 4.9 150 0918 11.2 340 1655 0.7 20 2305 8.5 260	27 F	0400 5.6 170 1007 10.5 320 1741 1.0 30 2337 8.5 260	12 Su	0505 4.6 140 1050 11.2 340 1815 -0.3 -10	27 M	0517 4.9 150 1103 10.2 310 1811 1.6 50	12 W	0012 10.2 310 0637 2.3 70 1218 10.5 320 1902 1.3 40	27 Th	0600 3.0 90 1158 9.5 290 1816 2.6 80
13 F	0400 5.2 160 1006 11.5 350 1746 0.0 0 2352 8.9 270	28 Sa	0450 5.6 170 1043 10.5 320 1816 1.0 30	13 M	0012 9.5 290 0601 3.9 120 1138 11.2 340 1855 0.0 0	28 Tu	0005 9.2 280 0549 4.6 140 1137 10.2 310 1835 1.6 50	13 Th	0045 10.2 310 0721 2.0 60 1300 10.2 310 1935 2.0 60	28 F	0008 10.2 310 0634 2.6 80 1235 9.5 290 1842 3.0 90
14 Sa	0504 5.2 160 1054 11.5 350 1833 -0.3 -10	29 Su	0012 8.9 270 0532 5.6 170 1118 10.5 320 1846 1.0 30	14 Tu	0049 9.8 300 0651 3.6 110 1224 10.8 330 1933 0.3 10	29 W	0029 9.5 290 0620 4.3 130 1209 10.2 310 1857 2.0 60	14 F	0117 10.2 310 0803 1.6 50 1343 9.5 290 2006 2.6 80	29 Sa	0035 10.5 320 0712 2.0 60 1314 9.2 280 1911 3.3 100
15 Su	0035 9.2 280 0604 4.9 150 1141 11.5 350 1916 -0.3 -10	30 M	0043 8.9 270 0608 5.6 170 1150 10.5 320 1912 1.0 30	15 W	0123 9.8 300 0738 3.3 100 1308 10.5 320 2008 1.0 30	30 Th	0051 9.8 300 0652 3.9 120 1243 9.8 300 1921 2.0 60	15 Sa	0148 10.2 310 0846 2.0 60 1426 8.9 270 2035 3.3 100	30 Su	0105 10.5 320 0755 1.6 50 1357 8.5 260 1945 3.6 110
		31 Tu	0110 9.2 280 0642 5.2 160 1222 10.5 320 1936 1.3 40			31 F	0115 9.8 300 0728 3.3 100 1319 9.5 290 1946 2.3 70				

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Shatt Al Arab (Outer Bar), Iraq, 2018

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm
1 M	0138 10.8 330 0844 1.6 50 1447 7.9 240 2027 4.3 130	16 Tu	0211 9.5 290 0955 1.6 50 1604 7.2 220 2121 5.2 160	1 Th	0243 9.5 290 1043 1.0 30 1728 7.5 230 2241 5.2 160	16 F	0250 8.2 250 1057 2.0 60 1801 7.5 230 2307 5.6 170	1 Sa	0338 8.2 250 1118 1.3 40 1804 8.2 250 2358 4.3 130	16 Su	0311 7.5 230 1045 2.3 70 1730 8.2 250 2333 4.9 150
2 Tu	0216 10.5 320 0945 1.6 50 1554 7.2 220 2121 4.6 140	17 W	0245 8.9 270 1049 2.3 70 1732 7.2 220 2219 5.6 170	2 F	0347 8.5 260 1153 1.3 40 1855 7.9 240	17 Sa	0343 7.2 220 1149 2.3 70 1904 7.9 240	2 Su	0516 7.2 220 1217 2.0 60 1904 8.5 260	17 M	0420 6.6 200 1131 2.6 80 1823 8.5 260
3 W	0302 9.8 300 1059 2.0 60 1741 6.9 210 2237 5.2 160	18 Th	0327 8.2 250 1152 2.6 80 1908 7.2 220 2335 5.9 180	3 Sa	0009 4.9 150 0531 7.9 240 1303 1.6 50 1954 8.5 260	18 Su	0022 5.2 160 0537 6.9 210 1242 2.6 80 1949 8.2 250	3 M	0117 3.3 100 0714 7.2 220 1316 2.3 70 1954 9.2 280	18 Tu	0043 4.3 130 0634 6.2 190 1221 3.3 100 1911 8.9 270
4 Th	0404 9.2 280 1222 1.6 50 1931 7.2 220	19 F	0442 7.5 230 1258 2.6 80 2008 7.9 240	4 Su	0134 3.9 120 0731 7.9 240 1407 1.6 50 2038 9.2 280	19 M	0135 4.6 140 0740 6.9 210 1331 3.0 90 2024 8.9 270	4 Tu	0229 2.3 70 0833 7.5 230 1412 3.0 90 2037 9.8 300	19 W	0152 3.3 100 0812 6.6 200 1311 3.6 110 1954 9.2 280
5 F	0007 5.2 160 0546 8.5 260 1343 1.6 50 2032 8.2 250	20 Sa	0101 5.6 170 0710 7.2 220 1359 2.6 80 2048 8.2 250	5 M	0246 3.0 90 0846 8.2 250 1502 2.0 60 2116 9.8 300	20 Tu	0236 3.9 120 0844 7.2 220 1415 3.3 100 2054 9.2 280	5 W	0330 1.3 40 0931 7.9 240 1502 3.3 100 2116 10.2 310	20 Th	0255 2.6 80 0916 6.9 210 1401 3.9 120 2035 9.8 300
6 Sa	0138 4.9 150 0741 8.5 260 1450 1.3 40 2116 8.9 270	21 Su	0219 5.2 160 0824 7.9 240 1447 2.6 80 2120 8.9 270	6 Tu	0345 2.0 60 0942 8.9 270 1550 2.3 70 2152 10.2 310	21 W	0325 3.0 90 0933 7.9 240 1456 3.3 100 2122 9.8 300	6 Th	0422 0.7 20 1021 8.2 250 1549 3.6 110 2152 10.5 320	21 F	0350 1.6 50 1008 7.5 230 1451 4.3 130 2115 10.2 310
7 Su	0256 3.9 120 0855 9.2 280 1544 1.0 30 2154 9.5 290	22 M	0314 4.6 140 0913 8.2 250 1526 2.6 80 2147 9.2 280	7 W	0435 1.3 40 1030 8.9 270 1633 2.6 80 2226 10.5 320	22 Th	0409 2.3 70 1018 8.2 250 1536 3.6 110 2152 10.2 310	7 F	0510 0.0 0 1107 8.2 250 1633 4.3 130 2228 10.5 320	22 Sa	0442 0.7 20 1057 7.9 240 1543 4.6 140 2156 10.5 320
8 M	0357 3.0 90 0951 9.5 290 1631 1.3 40 2229 9.8 300	23 Tu	0355 3.9 120 0954 8.5 260 1559 2.6 80 2211 9.5 290	8 Th	0522 0.7 20 1116 9.2 280 1713 3.3 100 2259 10.5 320	23 F	0452 1.6 50 1102 8.2 250 1616 3.9 120 2224 10.5 320	8 Sa	0555 0.0 0 1152 8.5 260 1716 4.6 140 2303 10.5 320	23 Su	0531 0.0 0 1144 8.2 250 1638 4.9 150 2238 10.8 330
9 Tu	0449 2.3 70 1039 9.8 300 1713 1.3 40 2302 10.2 310	24 W	0431 3.3 100 1033 8.9 270 1630 3.0 90 2235 9.8 300	9 F	0607 0.3 10 1200 8.9 270 1750 3.6 110 2332 10.5 320	24 Sa	0536 0.7 20 1147 8.5 260 1658 4.3 130 2258 10.8 330	9 Su	0637 -0.3 -10 1234 8.5 260 1758 4.9 150 2338 10.2 310	24 M	0618 -0.7 -20 1229 8.2 250 1736 4.9 150 2322 10.8 330
10 W	0536 1.6 50 1125 9.8 300 1752 2.0 60 2335 10.5 320	25 Th	0507 2.6 80 1111 8.9 270 1701 3.3 100 2301 10.2 310	10 Sa	0649 0.0 0 1243 8.9 270 1826 3.9 120	25 Su	0621 0.3 10 1232 8.5 260 1744 4.6 140 2336 10.8 330	10 M	0716 -0.3 -10 1316 8.5 260 1839 4.9 150	25 Tu	0704 -1.0 -30 1314 8.5 260 1835 4.6 140
11 Th	0621 1.0 30 1208 9.8 300 1828 2.6 80	26 F	0545 2.0 60 1150 8.9 270 1733 3.6 110 2329 10.5 320	11 Su	0004 10.5 320 0729 0.0 0 1326 8.5 260 1901 4.6 140	26 M	0707 -0.3 -10 1317 8.5 260 1833 4.6 140	11 Tu	0012 10.2 310 0752 0.0 0 1356 8.2 250 1919 5.2 160	26 W	0007 10.8 330 0747 -1.0 -30 1357 8.5 260 1931 4.6 140
12 F	0007 10.5 320 0703 1.0 30 1251 9.5 290 1900 3.0 90	27 Sa	0624 1.3 40 1231 8.9 270 1808 3.6 110	12 M	0037 10.2 310 0809 0.3 10 1408 8.2 250 1936 4.9 150	27 Tu	0015 10.8 330 0753 -0.3 -10 1405 8.2 250 1925 4.9 150	12 W	0045 9.8 300 0825 0.3 10 1434 8.2 250 1959 5.2 160	27 Th	0053 10.5 320 0830 -0.7 -20 1440 8.5 260 2027 4.3 130
13 Sa	0038 10.5 320 0745 0.7 20 1334 8.9 270 1931 3.6 110	28 Su	0000 10.8 330 0706 0.7 20 1315 8.5 260 1845 3.9 120	13 Tu	0108 9.8 300 0847 0.7 20 1453 7.9 240 2016 4.9 150	28 W	0058 10.5 320 0840 -0.3 -10 1455 8.2 250 2024 4.9 150	13 Th	0117 9.2 280 0857 0.7 20 1513 8.2 250 2042 5.2 160	28 F	0140 9.8 300 0911 -0.3 -10 1523 8.5 260 2124 3.9 120
14 Su	0109 10.2 310 0826 1.0 30 1417 8.5 260 2002 3.9 120	29 M	0035 10.8 330 0752 0.7 20 1401 8.2 250 1927 4.3 130	14 W	0140 9.5 290 0927 1.0 30 1544 7.5 230 2102 5.2 160	29 Th	0143 9.8 300 0929 0.0 0 1550 8.2 250 2128 4.9 150	14 F	0150 8.9 270 0929 1.0 30 1553 8.2 250 2131 5.2 160	29 Sa	0231 8.9 270 0954 0.7 20 1611 8.5 260 2226 3.6 110
15 M	0140 9.8 300 0908 1.3 40 1505 7.9 240 2037 4.6 140	30 Tu	0113 10.8 330 0842 0.7 20 1454 7.9 240 2018 4.6 140	15 Th	0213 8.9 270 1009 1.6 50 1646 7.5 230 2159 5.6 170	30 F	0234 9.2 280 1022 0.7 20 1655 8.2 250 2240 4.6 140	15 Sa	0226 8.2 250 1005 1.6 50 1638 7.9 240 2228 5.2 160	30 Su	0331 7.9 240 1039 1.3 40 1704 8.5 260 2335 3.3 100
		31 W	0154 10.2 310 0939 0.7 20 1600 7.5 230 2122 4.9 150					31 M	0456 6.9 210 1128 2.3 70 1804 8.9 270		

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Mina Al Ahmadi, Kuwait, 2018

Times and Heights of High and Low Waters

October					November					December																			
Day	Time		Height		Day	Time		Height		Day	Time		Height		Day	Time		Height											
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm		h	m	ft	cm	h	m	ft	cm						
1 M	0223	9.2	280		16 Tu	0250	8.2	250		1 Th	0334	8.2	250		16 F	0335	7.2	220		1 Sa	0455	7.5	230		16 Su	0410	7.2	220	
	0922	1.6	50																										
	1623	6.9	210																										
	2058	4.9	150																										
2 Tu	0302	8.9	270		17 W	0326	7.5	230		2 F	0450	7.5	230		17 Sa	0004	5.6	170		2 Su	0052	4.6	140		17 M	0030	5.2	160	
	1026	1.6	50																										
	1745	6.6	200																										
	2152	5.2	160																										
3 W	0352	8.5	260		18 Th	0414	7.2	220		3 Sa	0103	4.9	150		18 Su	0144	5.2	160		3 M	0219	3.9	120		18 Tu	0155	4.6	140	
	1145	1.6	50																										
	1924	6.6	200																										
	2309	5.9	180																										
4 Th	0459	8.2	250		19 F	0105	5.9	180		4 Su	0232	4.3	130		19 M	0251	4.6	140		4 Tu	0326	3.0	90		19 W	0257	3.9	120	
	1312	1.3	40																										
	2047	6.9	210																										
5 F	0054	5.9	180		20 Sa	0238	5.6	170		5 M	0335	3.3	100		20 Tu	0336	3.6	110		5 W	0419	2.3	70		20 Th	0346	3.0	90	
	0629	7.9	240																										
	1428	1.3	40																										
	2143	7.5	230																										
6 Sa	0233	5.2	160		21 Su	0332	4.9	150		6 Tu	0425	2.3	70		21 W	0413	3.0	90		6 Th	0505	1.6	50		21 F	0429	2.3	70	
	0809	7.9	240																										
	1527	1.0	30																										
	2226	7.9	240																										
7 Su	0340	4.3	130		22 M	0410	3.9	120		7 W	0509	1.6	50		22 Th	0448	2.0	60		7 F	0546	1.3	40		22 Sa	0510	1.3	40	
	0931	8.2	250																										
	1615	1.0	30																										
	2302	8.2	250																										
8 M	0432	3.3	100		23 Tu	0442	3.3	100		8 Th	0549	1.0	30		23 F	0522	1.3	40		8 Sa	0623	1.0	30		23 Su	0552	1.0	30	
	1036	8.5	260																										
	1656	1.3	40																										
	2333	8.5	260																										
9 Tu	0517	2.6	80		24 W	0512	2.6	80		9 F	0627	0.7	20		24 Sa	0558	0.7	20		9 Su	0658	1.0	30		24 M	0636	0.3	10	
	1134	8.5	260																										
	1734	1.6	50																										
10 W	0002	8.9	270		25 Th	0542	2.0	60		10 Sa	0015	8.9	270		25 Su	0637	0.3	10		10 M	0018	9.2	280		25 Tu	0005	10.2	310	
	0558	2.0	60																										
	1228	8.5	260																										
	1809	2.3	70																										
11 Th	0030	8.9	270		26 F	0614	1.3	40		11 Su	0043	8.9	270		26 M	0016	9.5	290		11 Tu	0049	8.9	270		26 W	0053	10.2	310	
	0639	1.3	40																										
	1319	8.2	250																										
	1844	3.0	90																										
12 F	0056	8.9	270		27 Sa	0015	8.9	270		12 M	0111	8.5	260		27 Tu	0056	9.5	290		12 W	0121	8.9	270		27 Th	0144	9.8	300	
	0719	1.3	40																										
	1407	7.9	240																										
	1919	3.3	100																										
13 Sa	0123	8.9	270		28 Su	0042	9.2	280		13 Tu	0140	8.5	260		28 W	0142	9.2	280		13 Th	0154	8.5	260		28 F	0240	9.2	280	
	0759	1.3	40																										
	1455	7.5	230																										
	1953	3.9	120																										
14 Su	0150	8.9	270		29 M	0114	9.2	280		14 W	0212	7.9	240		29 Th	0234	8.9	270		14 F	0231	8.2	250		29 Sa	0341	8.5	260	
	0842	1.3	40																										
	1546	7.2	220																										
	2029	4.6	140																										
15 M	0219	8.5	260		30 Tu	0151	8.9	270		15 Th	0249	7.5	230		30 F	0337	8.2	250		15 Sa	0315	7.5	230		30 Su	0453	7.9	240	
	0929	1.6	50																										
	1642	6.9	210																										
	2109	5.2	160																										
				31 W	0236	8.5	260																						

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Ras At Tannurah, Saudi Arabia, 2018

Times and Heights of High and Low Waters

April				May				June															
	Time	Height			Time	Height			Time	Height			Time	Height									
		h m	ft cm			h m	ft cm			h m	ft cm			h m	ft cm								
1 Su	0517 1130 1746	6.8 0.7 7.0	207 21 213	16 M ●	0454 1102 1716 2328	6.4 1.2 6.5 1.2	195 37 198 37	1 Tu	0540 1148 1751	6.9 1.7 6.6	210 52 201	16 W	0512 1117 1721 2331	7.0 2.0 6.6 0.9	213 61 201 27	1 F	0007 0638 1245 1833	1.3 6.9 2.8 6.2	40 210 85 189	16 Sa	0635 1250 1834	7.8 2.7 6.9	238 82 210
2 M	0000 0558 1207 1821	1.0 6.9 0.9 6.9	30 210 27 210	17 Tu	0533 1137 1750 2359	6.7 1.3 6.6 1.0	204 40 201 30	2 W	0001 0618 1222 1824	1.0 6.9 2.0 6.4	30 210 61 195	17 Th	0557 1201 1802	7.3 2.1 6.7	223 64 204	2 Sa	0040 0713 1320 1907	1.4 6.9 2.9 6.1	43 210 88 186	17 Su	0047 0725 1344 1924	0.8 7.8 2.7 6.9	24 238 82 210
3 Tu	0032 0637 1242 1854	0.9 6.9 1.2 6.6	27 210 37 201	18 W	0612 1213 1825	6.9 1.5 6.6	210 46 201	3 Th	0032 0654 1256 1857	1.1 6.8 2.3 6.2	34 207 70 189	18 F	0012 0643 1249 1846	0.8 7.5 2.3 6.7	24 229 70 204	3 Su	0115 0750 1359 1942	1.5 6.7 3.0 6.0	46 204 91 183	18 M	0138 0816 1440 2016	0.9 7.7 2.8 6.7	27 235 85 204
4 W	0104 0715 1316 1927	0.9 6.7 1.6 6.4	27 204 49 195	19 Th	0032 0654 1252 1902	0.9 7.0 1.8 6.5	27 213 55 198	4 F	0104 0731 1331 1930	1.2 6.7 2.5 6.0	37 204 76 183	19 Sa	0056 0732 1341 1933	0.8 7.4 2.6 6.5	24 226 79 198	4 M	0153 0828 1442 2022	1.6 6.6 3.1 5.8	49 201 94 177	19 Tu	0232 0909 1540 2113	1.2 7.4 2.8 6.5	37 226 85 198
5 Th	0136 0753 1351 2000	1.1 6.5 2.0 6.0	34 198 61 183	20 F	0110 0739 1335 1944	0.9 7.0 2.1 6.3	27 213 64 192	5 Sa	0138 0809 1411 2005	1.4 6.4 2.8 5.8	43 195 85 177	20 Su	0145 0824 1440 2025	1.0 7.2 2.8 6.3	30 219 85 192	5 Tu	0234 0909 1530 2106	1.8 6.4 3.1 5.7	55 195 94 174	20 W	0330 1005 1642 2215	1.6 7.1 2.7 6.2	49 216 82 189
6 F	0211 0833 1429 2035	1.3 6.1 2.4 5.6	40 186 73 171	21 Sa	0153 0828 1426 2031	1.0 6.8 2.5 6.0	30 207 76 183	6 Su	0217 0850 1458 2046	1.6 6.2 3.0 5.5	49 189 91 168	21 M	0240 0922 1550 2124	1.2 7.0 3.0 6.0	37 213 91 183	6 W	0320 0955 1624 2157	2.0 6.1 3.1 5.5	61 186 94 168	21 Th	0432 1105 1745 2324	2.0 6.7 2.6 6.0	61 204 79 183
7 Sa	0250 0917 1516 2116	1.6 5.8 2.9 5.3	49 177 88 162	22 Su	0244 0926 1533 2128	1.2 6.5 2.9 5.7	37 198 88 174	7 M	0303 0938 1558 2135	1.8 5.9 3.2 5.2	55 180 98 158	22 Tu	0343 1025 1706 2232	1.5 6.7 3.0 5.8	46 204 91 177	7 Th	0411 1046 1723 2257	2.1 6.0 3.0 5.4	64 183 91 165	22 F	0540 1208 1846	2.4 6.4 2.4	73 195 73
8 Su	0339 1011 1622 2208	1.9 5.4 3.2 4.9	58 165 98 149	23 M	0348 1034 1705 2239	1.5 6.2 3.2 5.4	46 189 98 165	8 Tu	0357 1035 1710 2236	2.1 5.6 3.3 5.0	64 171 101 152	23 W	0454 1136 1820 2348	1.8 6.4 2.8 5.7	55 195 85 174	8 F	0509 1142 1821	2.3 5.9 2.8	70 180 85	23 Sa	0037 0651 1311 1944	5.9 2.7 6.3 2.2	180 82 192 67
9 M	0440 1121 1754 2321	2.1 5.2 3.3 4.7	64 158 101 143	24 Tu	0505 1154 1841	1.7 6.0 3.1	52 183 94	9 W	0501 1142 1823 2348	2.2 5.5 3.1 5.0	67 168 94 152	24 Th	0610 1246 1926	2.0 6.3 2.5	61 192 76	9 Sa	0003 0611 1240 1916	5.4 2.4 5.8 2.5	165 73 177 76	24 Su	0149 0801 1409 2037	6.0 2.9 6.2 2.0	183 88 189 61
10 Tu	0555 1249 1924	2.2 5.1 3.2	67 155 98	25 W	0002 0630 1316 1957	5.3 1.8 6.1 2.7	162 55 186 82	10 Th	0610 1251 1926	2.2 5.5 2.8	67 168 85	25 F	0104 0722 1350 2022	5.8 2.1 6.3 2.1	177 64 192 64	10 Su	0110 0714 1338 2006	5.6 2.5 5.9 2.1	171 76 180 64	25 M	0252 0906 1501 2123	6.2 3.0 6.1 1.8	189 91 186 55
11 W	0046 0710 1405 2028	4.7 2.1 5.3 2.9	143 64 162 88	26 Th	0124 0747 1423 2054	5.5 1.7 6.3 2.2	168 52 192 67	11 F	0100 0715 1350 2017	5.1 2.2 5.6 2.5	155 67 171 76	26 Sa	0212 0828 1444 2110	6.0 2.2 6.4 1.8	183 67 195 55	11 M	0214 0816 1431 2054	6.0 2.6 6.1 1.8	183 79 186 55	26 Tu	0346 1001 1547 2205	6.4 3.0 6.2 1.7	195 91 189 52
12 Th	0157 0814 1457 2115	4.9 1.9 5.6 2.5	149 58 171 76	27 F	0232 0852 1516 2141	5.9 1.5 6.5 1.8	180 46 198 55	12 Sa	0202 0812 1439 2101	5.4 2.0 5.8 2.1	165 61 177 64	27 Su	0311 0925 1531 2152	6.2 2.2 6.4 1.5	189 79 195 46	12 Tu	0312 0915 1522 2140	6.4 2.6 6.3 1.4	195 79 192 43	27 W	0433 1048 1628 2242	6.7 3.0 6.2 1.6	204 91 189 49
13 F	0252 0905 1537 2153	5.3 1.6 5.8 2.1	162 49 177 64	28 Sa	0328 0945 1601 2222	6.2 1.4 6.6 1.4	189 43 201 43	13 Su	0255 0903 1522 2139	5.8 1.9 6.1 1.7	177 58 186 52	28 M	0401 1014 1612 2229	6.5 2.3 6.4 1.4	198 70 195 43	13 W	0405 1011 1610 2225	6.9 2.6 6.5 1.1	210 79 198 34	28 Th	0513 1128 1705 2316	6.8 3.1 6.3 1.6	207 94 192 49
14 Sa	0336 0949 1612 2226	5.7 1.4 6.1 1.7	174 43 186 52	29 Su	0417 1031 1641 2257	6.5 1.4 6.7 1.2	198 43 204 37	14 M	0343 0950 1602 2216	6.2 1.9 6.3 1.4	189 58 192 43	29 Tu	0445 1056 1650 2303	6.7 2.4 6.4 1.3	204 73 195 40	14 Th	0456 1104 1658 2311	7.3 2.6 6.7 0.9	223 79 204 27	29 F	0550 1203 1740 2350	7.0 3.1 6.3 1.5	213 94 192 46
15 Su	0416 1027 1644 2257	6.1 1.3 6.3 1.4	186 40 192 43	30 M	0500 1111 1717 2330	6.8 1.5 6.6 1.0	207 46 201 30	15 Tu	0428 1033 1641 2253	6.7 1.9 6.5 1.1	204 58 198 34	30 W	0525 1135 1726 2335	6.8 2.5 6.3 1.3	207 76 192 40	15 F	0545 1157 1745 2359	7.7 2.6 6.9 0.8	235 79 210 24	30 Sa	0624 1236 1814	7.0 3.1 6.4	213 94 195
								31 Th	0602 1210 1759	6.9 2.7 6.3	210 82 192												

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Ras At Tannurah, Saudi Arabia, 2018

Times and Heights of High and Low Waters

July				August				September							
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height		
h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	h m	ft	cm	
1 Su	0023 0657 1309 1847	1.5 7.0 3.0 6.4	46 213 91 195	16 M	0038 0712 1332 1911	0.8 8.1 2.5 7.3	24 247 76 223	1 W	0106 0735 1345 1933	1.6 7.1 2.7 6.7	49 216 82 204	16 Th	0152 0816 1433 2029	1.4 7.6 2.1 7.2	43 232 64 219
2 M	0056 0730 1342 1921	1.6 7.0 3.0 6.3	49 213 91 192	17 Tu	0126 0759 1421 2001	0.9 8.0 2.5 7.2	27 244 76 219	2 Th	0137 0806 1416 2010	1.7 7.0 2.6 6.6	52 213 79 201	17 F	0237 0859 1519 2119	2.0 7.2 2.2 6.8	61 219 67 207
3 Tu	0130 0803 1417 1958	1.6 6.9 3.0 6.3	49 210 91 192	18 W	0216 0846 1511 2054	1.3 7.6 2.5 6.9	40 232 76 210	3 F	0209 0839 1451 2051	1.9 6.8 2.6 6.4	58 207 79 195	18 Sa	0325 0944 1609 2216	2.6 6.7 2.4 6.4	79 204 73 195
4 W	0206 0839 1455 2038	1.7 6.7 2.9 6.1	52 204 88 186	19 Th	0306 0935 1604 2150	1.7 7.2 2.5 6.6	52 219 76 201	4 Sa	0246 0916 1532 2140	2.2 6.6 2.5 6.3	67 201 76 192	19 Su	0422 1036 1707 2324	3.1 6.2 2.6 6.0	94 189 79 183
5 Th	0244 0916 1537 2122	1.9 6.6 2.9 6.0	58 201 88 183	20 F	0401 1027 1700 2252	2.2 6.8 2.5 6.2	67 207 76 189	5 Su	0330 1000 1623 2238	2.6 6.4 2.5 6.1	79 195 76 186	20 M	0536 1139 1813	3.6 5.8 2.7	110 177 82
6 F	0326 0958 1624 2214	2.1 6.4 2.8 5.9	64 195 85 180	21 Sa	0502 1124 1800	2.8 6.4 2.5	85 195 76	6 M	0426 1054 1725 2349	3.0 6.2 2.5 6.1	91 189 76 186	21 Tu	0047 0709 1254 1923	5.9 3.8 5.6 2.7	180 116 171 82
7 Sa	0414 1045 1718 2315	2.4 6.2 2.7 5.8	73 189 82 177	22 Su	0004 0614 1227 1902	6.0 3.2 6.1 2.4	183 98 186 73	7 Tu	0541 1202 1837	3.4 6.0 2.4	104 183 73	22 W	0211 0835 1406 2027	6.0 3.8 5.7 2.5	183 116 174 76
8 Su	0512 1140 1816	2.7 6.1 2.5	82 186 76	23 M	0121 0735 1333 2002	6.0 3.5 5.9 2.4	183 107 180 73	8 W	0112 0717 1319 1949	6.2 3.6 6.1 2.1	189 110 186 64	23 Th	0315 0935 1503 2120	6.3 3.6 5.9 2.3	192 110 180 70
9 M	0024 0621 1243 1916	5.9 3.0 6.0 2.2	180 91 183 67	24 Tu	0234 0851 1433 2056	6.1 3.5 5.9 2.2	186 107 180 67	9 Th	0231 0847 1432 2056	6.6 3.5 6.3 1.7	201 107 192 52	24 F	0402 1018 1549 2203	6.6 3.3 6.2 2.0	201 101 189 61
10 Tu	0138 0737 1349 2016	6.1 3.2 6.1 1.9	186 98 186 58	25 W	0333 0952 1525 2143	6.4 3.5 6.0 2.1	195 101 183 64	10 F	0337 0956 1534 2155	7.2 3.3 6.7 1.3	219 101 204 40	25 Sa	0439 1053 1627 2241	6.8 3.1 6.4 1.8	207 94 195 55
11 W	0247 0852 1451 2112	6.6 3.2 6.3 1.6	201 98 192 49	26 Th	0420 1039 1609 2224	6.6 3.3 6.2 1.9	201 101 189 58	11 Sa	0432 1052 1629 2248	7.6 2.9 7.1 1.0	232 88 216 30	26 Su	0512 1123 1701 2314	7.0 2.9 6.6 1.6	213 88 201 49
12 Th	0348 0959 1548 2206	7.1 3.1 6.6 1.2	216 94 201 37	27 F	0500 1117 1647 2301	6.9 3.2 6.3 1.8	210 98 192 55	12 Su	0522 1140 1720 2337	8.0 2.6 7.5 0.8	244 79 229 24	27 M	0541 1151 1732 2344	7.1 2.7 6.8 1.5	216 82 207 46
13 F	0444 1059 1642 2258	7.5 2.9 6.9 1.0	229 88 210 30	28 Sa	0535 1149 1722 2334	7.0 3.1 6.5 1.6	213 94 198 49	13 M	0607 1224 1808	8.2 2.3 7.7	250 70 235	28 Tu	0608 1218 1804	7.2 2.5 6.9	219 76 210
14 Sa	0535 1152 1732 2348	7.9 2.8 7.2 0.8	241 85 219 24	29 Su	0606 1219 1755	7.1 3.0 6.6	216 91 201	14 Tu	0023 0651 1307 1854	0.8 8.2 2.2 7.7	24 250 67 235	29 W	0013 0635 1244 1835	1.5 7.2 2.4 7.0	46 219 73 213
15 Su	0624 1243 1822	8.1 2.6 7.3	247 79 223	30 M	0006 0636 1248 1827	1.6 7.2 2.9 6.7	49 219 88 204	15 W	0108 0734 1350 1941	1.0 8.0 2.1 7.5	30 244 64 229	30 Th	0041 0703 1310 1909	1.6 7.1 2.3 7.0	49 216 70 213
				31 Tu	0036 0705 1316 1859	1.5 7.2 2.8 6.7	46 219 85 204	31 F	0109 0732 1338 1945	1.8 7.0 2.2 7.0	55 213 67 213	31 Sa	0207 0820 1433 2048	2.3 6.9 2.0 6.9	70 210 61 210

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Mina Salman, Bahrain, Persian Gulf, 2018

Times and Heights of High and Low Waters

July				August				September							
Time		Height		Time		Height		Time		Height		Time		Height	
h	m	ft	cm	h	m	ft	cm	h	m	ft	cm	h	m	ft	cm
1	0113	2.3	70	16	0140	1.3	40	1	0200	2.3	70	16	0251	1.6	50
Su	0725	7.2	220	M	0746	8.5	260	W	0806	7.5	230	Th	0853	8.2	250
	1336	3.3	100		1408	2.6	80		1422	3.3	100		1516	2.3	70
	1918	7.9	240		1949	8.9	270		2004	7.9	240		2104	8.2	250
2	0146	2.3	70	17	0228	1.6	50	2	0233	2.3	70	17	0333	2.0	60
M	0758	7.2	220	Tu	0835	8.5	260	Th	0838	7.5	230	F	0938	7.9	240
	1411	3.6	110		1457	2.6	80		1458	3.3	100		1603	2.6	80
	1952	7.5	230		2038	8.5	260		2040	7.5	230		2154	7.5	230
3	0221	2.6	80	18	0316	2.0	60	3	0309	2.3	70	18	0417	2.6	80
Tu	0833	7.2	220	W	0925	8.2	250	F	0915	7.5	230	Sa	1026	7.5	230
	1449	3.6	110		1439	3.0	90		1537	3.3	100	☉	1654	3.0	90
	2028	7.5	230		2130	8.2	250		2121	7.5	230	☾	2249	6.9	210
4	0257	2.6	80	19	0405	2.3	70	4	0348	2.6	80	19	0505	3.3	100
W	0911	7.2	220	Th	1018	7.9	240	Sa	0958	7.5	230	Su	1121	7.2	220
	1529	3.6	110	☉	1639	3.0	90	☉	1622	3.3	100		1753	3.3	100
	2108	7.5	230		2226	7.9	240	☾	2210	7.2	220		2355	6.6	200
5	0338	2.6	80	20	0456	2.6	80	5	0433	3.0	90	20	0603	3.6	110
Th	0953	7.2	220	F	1114	7.5	230	Su	1049	7.5	230	M	1225	6.9	210
	1614	3.6	110		1736	3.3	100		1715	3.3	100		1908	3.3	100
	2153	7.2	220		2327	7.2	220		2310	6.9	210				
6	0423	3.0	90	21	0552	3.0	90	6	0527	3.3	100	21	0116	6.2	190
F	1042	7.2	220	Sa	1215	7.5	230	M	1151	7.2	220	Tu	0720	3.9	120
☉	1705	3.6	110		1839	3.3	100		1820	3.3	100		1336	6.9	210
	2246	7.2	220										2029	3.3	100
7	0514	3.0	90	22	0036	6.9	210	7	0023	6.6	200	22	0236	6.2	190
Sa	1138	7.2	220	Su	0654	3.3	100	Tu	0635	3.3	100	W	0845	3.9	120
	1802	3.6	110		1318	7.2	220		1301	7.2	220		1442	6.9	210
	2348	6.9	210		1947	3.3	100		1936	3.0	90		2134	3.0	90
8	0614	3.3	100	23	0150	6.6	200	8	0144	6.6	200	23	0342	6.2	190
Su	1239	7.2	220	M	0804	3.6	110	W	0758	3.6	110	Th	0949	3.6	110
	1906	3.3	100		1418	7.2	220		1412	7.5	230		1538	7.2	220
					2054	3.0	90		2054	2.6	80		2224	2.6	80
9	0058	6.9	210	24	0259	6.6	200	9	0301	6.9	210	24	0433	6.6	200
M	0722	3.3	100	Tu	0911	3.6	110	Th	0920	3.3	100	F	1038	3.6	110
	1342	7.5	230		1513	7.2	220		1517	7.9	240		1625	7.2	220
	2012	3.3	100		2152	3.0	90		2203	2.3	70		2303	2.3	70
10	0210	6.9	210	25	0359	6.6	200	10	0408	7.5	230	25	0514	6.9	210
Tu	0834	3.3	100	W	1008	3.6	110	F	1028	3.0	90	Sa	1117	3.3	100
	1442	7.5	230		1601	7.5	230		1616	8.2	250		1705	7.5	230
	2116	2.6	80		2240	2.6	80		2301	1.6	50		2337	2.3	70
11	0317	7.2	220	26	0449	6.9	210	11	0505	7.9	240	26	0549	7.2	220
W	0941	3.3	100	Th	1055	3.6	110	Sa	1124	2.6	80	Su	1152	3.0	90
	1539	7.9	240		1645	7.5	230	☉	1710	8.9	270	☉	1741	7.9	240
	2215	2.3	70		2321	2.6	80		2352	1.3	40				
12	0418	7.5	230	27	0532	6.9	210	12	0555	8.2	250	27	0008	2.0	60
Th	1042	3.0	90	F	1136	3.3	100	Su	1215	2.3	70	M	0619	7.5	230
	1632	8.5	260	☉	1723	7.9	240		1800	8.9	270		1224	3.0	90
	2310	2.0	60		2356	2.3	70						1812	7.9	240
13	0514	7.9	240	28	0608	7.2	220	13	0039	1.3	40	28	0038	2.0	60
F	1137	3.0	90	Sa	1211	3.3	100	M	0642	8.5	260	Tu	0645	7.5	230
☉	1722	8.5	260		1758	7.9	240		1302	2.3	70		1254	2.6	80
									1846	9.2	280		1841	7.9	240
14	0002	1.6	50	29	0027	2.3	70	14	0125	1.0	30	29	0108	2.0	60
Sa	0606	8.2	250	Su	0640	7.2	220	Tu	0726	8.5	260	W	0711	7.5	230
	1230	2.6	80		1245	3.3	100		1347	2.3	70		1324	2.6	80
	1811	8.9	270		1830	7.9	240		1932	8.9	270		1910	7.9	240
15	0052	1.3	40	30	0058	2.3	70	15	0208	1.3	40	30	0137	2.0	60
Su	0656	8.5	260	M	0709	7.5	230	W	0809	8.5	260	Th	0737	7.9	240
	1319	2.6	80		1317	3.3	100		1432	2.3	70		1355	2.6	80
	1900	8.9	270		1901	7.9	240		2018	8.5	260		1941	7.9	240
				31	0129	2.3	70	31	0209	2.0	60		0806	7.9	240
				Tu	0737	7.5	230		1428	2.6	80		2016	7.9	240
					1349	3.3	100								
					1932	7.9	240								

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Mina Jebel Ali, United Arab Emirates, 2018

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm	h m	ft cm
1 M	0409 4.3 130 0918 2.3 70 1559 5.6 170 2312 1.3 40	16 Tu	0522 3.6 110 0923 3.0 90 1634 4.9 150	1 Th	0024 1.0 30 0656 3.9 120 1112 3.3 100 1750 5.2 160	16 F	0028 1.3 40 0716 3.9 120 1054 3.6 110 1742 4.3 130	1 Sa	0101 1.3 40 0741 4.6 140 1318 3.0 90 1907 4.6 140	16 Su	0019 1.3 40 0706 4.3 130 1207 3.3 100 1800 3.9 120
2 Tu	0515 3.9 120 0959 2.6 80 1651 5.6 170	17 W	0035 1.6 50 0641 3.6 110 0951 3.3 100 1729 4.6 140	2 F	0138 1.0 30 0828 4.3 130 1318 3.3 100 1925 4.9 150	17 Sa	0126 1.6 50 0833 3.9 120 1326 3.6 110 1914 4.3 130	2 Su	0202 1.3 40 0843 4.9 150 1514 2.6 80 2037 4.6 140	17 M	0109 1.6 50 0758 4.6 140 1431 3.0 90 1937 3.9 120
3 W	0036 1.3 40 0654 3.6 110 1107 3.0 90 1803 5.2 160	18 Th	0146 1.6 50 0947 3.6 110 1049 3.6 110 1848 4.6 140	3 Sa	0249 1.3 40 0937 4.6 140 1513 3.0 90 2053 4.9 150	18 Su	0225 1.6 50 0928 4.3 130 1547 3.3 100 2041 4.3 130	3 M	0302 1.6 50 0937 5.2 160 1624 2.0 60 2157 4.6 140	18 Tu	0201 1.6 50 0850 4.6 140 1604 2.6 80 2110 3.9 120
4 Th	0207 1.3 40 0853 3.9 120 1258 3.3 100 1937 5.2 160	19 F	0252 1.6 50 1022 3.9 120 1452 3.6 110 2015 4.6 140	4 Su	0350 1.3 40 1023 4.9 150 1623 2.3 70 2206 4.9 150	19 M	0317 1.6 50 1006 4.6 140 1633 2.6 80 2151 4.3 130	4 Tu	0354 2.0 60 1023 5.2 160 1715 1.6 50 2303 4.6 140	19 W	0253 2.0 60 0937 4.9 150 1652 2.0 60 2221 3.9 120
5 F	0324 1.0 30 1013 4.3 130 1458 3.0 90 2103 5.2 160	20 Sa	0346 1.3 40 1046 4.3 130 1603 3.3 100 2131 4.6 140	5 M	0440 1.3 40 1102 5.2 160 1715 2.0 60 2307 5.2 160	20 Tu	0402 1.6 50 1040 4.9 150 1710 2.3 70 2247 4.6 140	5 W	0436 2.0 60 1104 5.6 170 1759 1.0 30 2359 4.6 140	20 Th	0340 2.0 60 1020 5.2 160 1735 1.3 40 2320 4.3 130
6 Sa	0424 1.0 30 1058 4.6 140 1610 2.6 80 2213 5.6 170	21 Su	0428 1.3 40 1110 4.6 140 1645 3.0 90 2227 4.9 150	6 Tu	0523 1.3 40 1138 5.6 170 1800 1.3 40	21 W	0441 1.6 50 1111 5.2 160 1747 1.6 50 2336 4.6 140	6 Th	0511 2.3 70 1143 5.6 170 1840 0.7 20	21 F	0422 2.3 70 1101 5.6 170 1816 0.7 20
7 Su	0513 0.7 20 1135 4.9 150 1706 2.3 70 2313 5.9 180	22 M	0503 1.3 40 1134 4.9 150 1721 2.3 70 2313 5.2 160	7 W	0001 5.2 160 0559 1.6 50 1214 5.9 180 1844 1.0 30	22 Th	0516 2.0 60 1142 5.6 170 1825 1.0 30	7 F	0047 4.6 140 0540 2.6 80 1220 5.9 180 1919 0.7 20	22 Sa	0013 4.3 130 0501 2.3 70 1143 6.2 190 1857 0.3 10
8 M	0557 0.7 20 1211 5.2 160 1756 1.6 50	23 Tu	0535 1.3 40 1200 5.2 160 1756 2.0 60 2355 5.2 160	8 Th	0050 5.2 160 0630 2.0 60 1249 5.9 180 1926 0.7 20	23 F	0023 4.9 150 0546 2.0 60 1214 5.9 180 1904 0.7 20	8 Sa	0130 4.6 140 0608 2.6 80 1255 5.9 180 1955 0.3 10	23 Su	0103 4.6 140 0541 2.3 70 1224 6.2 190 1939 0.0 0
9 Tu	0007 5.9 180 0635 1.0 30 1246 5.6 170 1843 1.3 40	24 W	0607 1.3 40 1226 5.6 170 1832 1.6 50	9 F	0133 4.9 150 0655 2.0 60 1322 5.9 180 2006 0.7 20	24 Sa	0109 4.9 150 0616 2.0 60 1247 6.2 190 1945 0.3 10	9 Su	0207 4.6 140 0638 2.6 80 1327 5.9 180 2030 0.3 10	24 M	0150 4.6 140 0624 2.3 70 1307 6.6 200 2022 -0.3 -10
10 W	0056 5.9 180 0710 1.0 30 1321 5.9 180 1929 1.0 30	25 Th	0037 5.2 160 0636 1.6 50 1252 5.6 170 1908 1.3 40	10 Sa	0213 4.9 150 0715 2.3 70 1353 5.9 180 2045 0.7 20	25 Su	0153 4.9 150 0647 2.3 70 1322 6.2 190 2028 0.3 10	10 M	0243 4.3 130 0711 2.6 80 1356 5.9 180 2103 0.3 10	25 Tu	0237 4.6 140 0712 2.6 80 1350 6.6 200 2106 0.0 0
11 Th	0141 5.6 170 0739 1.3 40 1354 5.9 180 2014 1.0 30	26 F	0117 5.2 160 0702 1.6 50 1319 5.9 180 1947 1.0 30	11 Su	0252 4.6 140 0739 2.6 80 1422 5.9 180 2124 0.7 20	26 M	0239 4.6 140 0724 2.6 80 1400 6.2 190 2115 0.3 10	11 Tu	0318 4.3 130 0746 3.0 90 1424 5.6 170 2135 0.7 20	26 W	0324 4.6 140 0804 2.6 80 1436 6.6 200 2152 0.0 0
12 F	0223 5.2 160 0802 2.0 60 1426 5.9 180 2058 1.0 30	27 Sa	0157 5.2 160 0725 2.0 60 1347 5.9 180 2028 0.7 20	12 M	0330 4.3 130 0805 2.6 80 1449 5.6 170 2203 1.0 30	27 Tu	0328 4.6 140 0806 2.6 80 1441 6.2 190 2206 0.3 10	12 W	0357 4.3 130 0822 3.0 90 1450 5.2 160 2209 0.7 20	27 Th	0413 4.6 140 0901 2.6 80 1524 5.9 180 2240 0.3 10
13 Sa	0303 4.9 150 0819 2.3 70 1456 5.9 180 2143 1.0 30	28 Su	0238 4.9 150 0749 2.3 70 1418 5.9 180 2114 0.7 20	13 Tu	0413 4.3 130 0835 3.0 90 1516 5.2 160 2245 1.0 30	28 W	0424 4.6 140 0856 3.0 90 1527 5.9 180 2302 0.7 20	13 Th	0439 4.3 130 0902 3.0 90 1520 5.2 160 2248 1.0 30	28 F	0505 4.9 150 1006 2.6 80 1620 5.6 170 2329 1.0 30
14 Su	0343 4.6 140 0836 2.3 70 1525 5.6 170 2232 1.3 40	29 M	0323 4.6 140 0820 2.3 70 1454 5.9 180 2208 0.7 20	14 W	0503 3.9 120 0907 3.3 100 1546 4.9 150 2333 1.3 40	29 Th	0528 4.3 130 0959 3.0 90 1625 5.6 170	14 F	0526 4.3 130 0948 3.3 100 1556 4.9 150 2331 1.0 30	29 Sa	0558 4.9 150 1123 2.6 80 1725 4.9 150
15 M	0428 3.9 120 0858 2.6 80 1556 5.2 160 2330 1.3 40	30 Tu	0418 4.3 130 0900 2.6 80 1536 5.9 180 2312 1.0 30	15 Th	0604 3.9 120 0948 3.3 100 1630 4.6 140	30 F	0000 1.0 30 0635 4.6 140 1126 3.3 100 1740 4.9 150	15 Sa	0615 4.3 130 1048 3.3 100 1647 4.3 130	30 Su	0018 1.3 40 0651 4.9 150 1256 2.6 80 1841 4.3 130
		31 W	0529 3.9 120 0952 3.0 90 1631 5.6 170						31 M	0110 1.6 50 0746 4.9 150 1449 2.3 70 2012 3.9 120	

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Aden, Yemen, 2018

Times and Heights of High and Low Waters

October				November				December											
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height						
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm					
1 M	0429	4.3	130	16 Tu	0226	4.9	150	1 Th	0253	6.2	190	16 F	0309	5.9	180				
	1033	6.6	200		0352	4.9	150		0828	4.6	140		1122	4.3	130	1 Sa	0306	6.9	210
	1817	1.6	50		0945	5.2	160		1301	5.2	160		1257	4.3	130		0955	3.3	100
			1857	2.6	80	2026	2.0	60	1953	3.0	90	2104	3.3	100					
2 Tu	0135	5.2	160	17 W	0503	5.2	160	2 F	0357	6.6	200	17 Sa	0348	5.9	180	2 Su	0356	7.2	220
	0549	4.6	140		2012	2.6	80		1013	3.9	120		1112	3.9	120		1053	2.6	80
	1132	6.2	190						1509	5.2	160		1517	4.3	130		1708	5.6	170
3 W	0328	5.2	160	18 Th	0459	5.6	170	3 Sa	0445	6.9	210	18 Su	0417	6.2	190	3 M	0439	7.2	220
	0755	4.6	140		1149	4.3	130		1109	3.0	90		1118	3.3	100		1138	2.0	60
	1301	5.6	170		1352	4.6	140		1653	5.6	170		1650	4.9	150		1815	5.9	180
4 Th	0441	5.9	180	19 F	0512	5.9	180	4 Su	0524	7.2	220	19 M	0442	6.6	200	4 Tu	0515	7.2	220
	0950	4.3	130		1151	3.9	120		1152	2.3	70		1139	2.6	80		1217	1.3	40
	1449	5.6	170		1603	4.6	140		1802	5.9	180		1743	5.2	160		1907	6.2	190
5 F	0527	6.2	190	20 Sa	0530	5.9	180	5 M	0558	7.2	220	20 Tu	0508	6.9	210	5 W	0547	7.2	220
	1108	3.6	110		1158	3.6	110		1232	1.6	50		1206	2.0	60		1253	1.0	30
	1629	5.9	180		1710	4.9	150		1855	6.6	200		1826	5.9	180		1950	6.6	200
6 Sa	0604	6.9	210	21 Su	0549	6.2	190	6 Tu	0024	3.0	90	21 W	0536	7.2	220	6 Th	0041	4.6	140
	1159	3.0	90		1213	3.0	90		0629	7.5	230		1236	1.3	40		0615	7.2	220
	1743	6.2	190		1754	5.6	170		1309	1.0	30		1908	6.2	190		1328	0.7	20
7 Su	0005	1.3	40	22 M	0609	6.6	200	7 W	0105	3.3	100	22 Th	0012	3.6	110	7 F	0119	4.6	140
	0638	7.2	220		1236	2.3	70		0657	7.5	230		0606	7.5	230		0642	7.2	220
	1243	2.3	70		1834	5.9	180		1346	0.7	20		1309	0.7	20		1401	0.7	20
8 M	0050	1.6	50	23 Tu	0018	2.6	80	8 Th	0142	3.6	110	23 F	0052	3.9	120	8 Sa	0156	4.6	140
	0709	7.2	220		0631	6.9	210		0722	7.2	220		0637	7.5	230		0709	7.2	220
	1324	1.6	50		1302	2.0	60		1421	0.7	20		1345	0.3	10		1432	0.7	20
9 Tu	0130	2.0	60	24 W	0051	3.0	90	9 F	0216	3.9	120	24 Sa	0134	3.9	120	9 Su	0231	4.9	150
	0739	7.5	230		0654	6.9	210		0746	7.2	220		0711	7.9	240		0736	6.9	210
	1404	1.0	30		1331	1.3	40		1454	0.7	20		1424	0.0	0		1502	0.7	20
10 W	0208	2.3	70	25 Th	0124	3.0	90	10 Sa	0248	4.3	130	25 Su	0220	4.3	130	10 M	0307	4.9	150
	0807	7.2	220		0717	7.2	220		0809	6.9	210		0748	7.5	230		0804	6.6	200
	1442	1.0	30		1402	1.0	30		1526	1.0	30		1506	0.0	0		1530	1.0	30
11 Th	0242	3.0	90	26 F	0157	3.3	100	11 Su	0318	4.6	140	26 M	0310	4.3	130	11 Tu	0348	4.9	150
	0833	7.2	220		0743	7.2	220		0830	6.6	200		0829	7.5	230		0833	6.2	190
	1520	1.0	30		1438	0.7	20		1557	1.3	40		1552	0.0	0		1557	1.3	40
12 F	0314	3.6	110	27 Sa	0233	3.6	110	12 M	0352	4.9	150	27 Tu	0409	4.6	140	12 W	0438	4.9	150
	0857	6.9	210		0812	7.2	220		0851	6.2	190		0915	6.9	210		0903	5.9	180
	1556	1.0	30		1518	0.7	20		1628	1.6	50		1642	0.7	20		1626	1.6	50
13 Sa	0343	3.9	120	28 Su	0312	3.9	120	13 Tu	0438	4.9	150	28 W	0000	6.6	200	13 Th	0542	4.9	150
	0916	6.6	200		0845	7.2	220		0910	5.9	180		0521	4.6	140		0935	5.6	170
	1633	1.3	40		1603	0.7	20		1702	2.0	60		1011	6.2	190		1657	2.3	70
14 Su	0408	4.6	140	29 M	0358	4.3	130	14 W	0101	5.6	170	29 Th	0103	6.6	200	14 F	0040	6.2	190
	0933	6.2	190		0924	6.9	210		0605	5.2	160		0649	4.6	140		0659	4.6	140
	1712	1.6	50		1655	1.0	30		0918	5.2	160		1126	5.6	170		1017	4.9	150
15 M	0029	5.2	160	30 Tu	0009	5.9	180	15 Th	0212	5.6	170	30 F	0207	6.9	210	15 Sa	0123	6.2	190
	0427	4.9	150		0502	4.6	140		1841	2.6	80		0829	3.9	120		0823	4.3	130
	0948	5.9	180		1012	6.6	200						1313	5.2	160		1206	4.6	140
16 M	1757	2.3	70	31 W	0130	5.9	180	31 Th	0130	5.9	180	31 F	1951	2.6	80	31 Sa	1819	3.3	100
					0634	4.9	150												
					1119	5.9	180												
			1907	1.6	50														

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Suez, Egypt, 2018

Times and Heights of High and Low Waters

April				May				June																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
Time	Height		Time	Height		Time	Height		Time	Height		Time	Height																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
	h	m	ft	cm		h	m	ft	cm		h	m	ft	cm																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
1 Su	0001	6.7	203		16 M	0533	1.8	55		1 Tu	0028	6.3	193		16 W	0546	1.4	44		1 F	0116	5.5	168		16 Sa	0045	6.4	194		17 Su	0141	6.3	191		2 M	0048	6.7	203		17 Tu	0611	1.7	52		2 W	0107	6.2	188		17 Th	0009	6.5	199		2 Sa	0150	5.4	164		17 Su	0801	0.7	20		3 Tu	0133	6.5	198		18 W	0031	6.5	198		3 Th	0146	6.0	182		18 F	0058	6.5	199		3 Su	0226	5.2	160		18 M	0241	6.1	185		4 W	0216	6.3	191		19 Th	0115	6.5	198		4 F	0226	5.7	174		19 Sa	0152	6.4	195		4 M	0307	5.1	156		19 Tu	0343	5.8	178		5 Th	0303	5.9	181		20 F	0203	6.4	195		5 Sa	0309	5.5	167		20 Su	0250	6.2	189		5 Tu	0354	5.0	153		20 W	0450	5.6	170		6 F	0352	5.6	172		21 Sa	0258	6.2	189		6 Su	0356	5.3	161		21 M	0356	6.0	182		6 W	0448	4.9	150		21 Th	0558	5.4	164		7 Sa	0446	5.3	163		22 Su	0401	6.0	183		7 M	0450	5.1	156		22 Tu	0505	5.8	176		7 Th	0545	4.9	149		22 F	0105	1.2	38		8 Su	0548	5.2	157		23 M	0515	5.8	177		8 Tu	0550	5.1	154		23 W	0009	1.5	47		8 F	0039	2.2	67		23 Sa	0211	1.2	38		9 M	0654	5.1	156		24 Tu	0018	1.9	58		9 W	0026	2.7	81		24 Th	0122	1.5	46		9 Sa	0135	2.1	63		24 Su	0309	1.3	39		10 Tu	0752	5.2	159		25 W	0133	1.7	53		10 Th	0126	2.5	77		25 F	0226	1.4	43		10 Su	0226	1.9	57		25 M	0400	1.4	42		11 W	0843	5.4	164		26 Th	0239	1.5	47		11 Sa	0322	1.4	42		11 M	0311	1.6	50		26 Tu	0441	1.5	46		12 Th	0924	5.6	170		27 F	0271	5.9	179		12 Sa	0243	2.5	77		12 Su	0303	2.1	64		12 Tu	0356	1.4	43		13 W	0343	2.3	69		13 F	1000	5.8	177		28 Sa	0424	1.3	41		13 M	0345	1.9	58		13 Tu	0456	1.9	58		13 W	0441	1.2	36		28 Th	0545	1.7	53		14 Sa	1030	6.0	184		29 Su	0509	1.4	43		14 M	0426	1.7	53		14 Tu	0533	1.7	53		14 Th	0526	1.0	30		29 F	0611	1.7	53		15 Su	1101	6.2	190		30 M	1120	6.4	194		30 Tu	1148	5.6	172		30 W	0615	0.8	24		30 Sa	0045	5.1	156		31 Th	1711	2.0	60		31 M	0550	1.6	48		31 Tu	0607	1.9	58		31 W	1226	5.5	168		31 Th	0637	2.0	61		31 F	1218	6.0	184		31 Sa	1311	4.9	148		31 Su	1837	0.9	27		31 M	1858	1.9	59		31 Tu	1850	2.2	68		31 W	1850	2.2	68		31 Th	1850	2.2	68		31 F	1850	2.2	68		31 Sa	1850	2.2	68		31 Su	1850	2.2	68	

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Suez, Egypt, 2018

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>	<small>h m</small>	<small>ft cm</small>
1 M	0248 5.2 157 0916 1.6 48 1533 5.4 164 2201 1.9 58	16 Tu	0505 4.7 142 1052 2.6 78 1739 5.0 153 2343 2.6 80	1 Th	0505 5.2 158 1130 2.0 62 1746 5.7 173	16 F	0628 4.9 149 1209 3.0 92 1839 5.2 159	1 Sa	0000 1.9 57 0618 5.7 174 1237 2.1 64 1843 6.0 183	16 Su	0613 5.2 158 1209 3.0 92 1820 5.4 164
2 Tu	0352 4.9 149 1020 1.7 53 1643 5.2 160 2315 1.9 59	17 W	0620 4.6 139 1207 2.7 82 1845 4.9 150	2 F	0020 1.9 58 0631 5.3 161 1254 2.0 60 1900 5.8 176	17 Sa	0043 2.8 85 0730 5.1 154 1315 2.9 89 1935 5.3 162	2 Su	0113 1.8 54 0731 5.9 180 1350 2.0 61 1950 6.0 184	17 M	0037 2.7 83 0715 5.3 163 1315 3.0 90 1916 5.4 166
3 W	0509 4.7 143 1141 1.8 55 1801 5.2 159	18 Th	0056 2.6 80 0730 4.6 141 1318 2.7 81 1945 5.0 152	3 Sa	0133 1.7 51 0746 5.6 170 1405 1.7 53 2007 6.0 182	18 Su	0141 2.6 80 0820 5.3 161 1409 2.8 84 2022 5.5 167	3 M	0218 1.6 50 0837 6.2 188 1454 1.9 57 2052 6.2 188	18 Tu	0137 2.6 79 0805 5.6 170 1411 2.8 85 2007 5.6 171
4 Th	0037 1.8 54 0635 4.8 145 1303 1.7 51 1915 5.4 165	19 F	0154 2.5 75 0826 4.8 147 1413 2.5 77 2033 5.2 157	4 Su	0235 1.4 42 0848 5.9 181 1503 1.5 45 2105 6.2 189	19 M	0228 2.4 74 0901 5.6 170 1454 2.6 78 2101 5.7 174	4 Tu	0316 1.5 47 0935 6.4 196 1546 1.8 55 2146 6.2 190	19 W	0228 2.4 74 0850 5.8 178 1501 2.6 79 2052 5.8 176
5 F	0148 1.4 44 0752 5.1 154 1415 1.4 42 2020 5.7 174	20 Sa	0239 2.3 69 0911 5.1 154 1456 2.4 72 2113 5.3 163	5 M	0328 1.1 35 0945 6.3 192 1556 1.3 41 2158 6.4 195	20 Tu	0311 2.2 68 0937 5.8 178 1535 2.4 72 2137 5.9 180	5 W	0405 1.5 47 1024 6.6 201 1635 1.8 56 2237 6.3 191	20 Th	0315 2.2 67 0931 6.1 187 1546 2.4 72 2135 6.0 182
6 Sa	0250 1.0 32 0858 5.5 167 1513 1.0 32 2116 6.0 184	21 Su	0315 2.1 63 0946 5.3 162 1533 2.2 66 2146 5.5 169	6 Tu	0416 1.0 31 1033 6.6 200 1643 1.3 40 2246 6.5 198	21 W	0348 2.0 62 1009 6.1 187 1615 2.2 67 2209 6.1 186	6 Th	0448 1.6 50 1111 6.6 202 1718 1.9 59 2322 6.2 189	21 F	0358 2.0 60 1011 6.4 196 1630 2.1 64 2218 6.2 188
7 Su	0341 0.7 22 0952 5.9 180 1605 0.8 25 2209 6.3 192	22 M	0348 1.9 58 1016 5.6 170 1607 2.0 61 2216 5.7 175	7 W	0500 1.0 32 1120 6.7 205 1728 1.4 43 2331 6.5 197	22 Th	0426 1.9 57 1039 6.4 195 1652 2.0 62 2243 6.3 191	7 F	0528 1.8 55 1152 6.6 201 1756 2.1 64	22 Sa	0441 1.7 53 1052 6.7 205 1711 1.9 57 2303 6.4 194
8 M	0430 0.5 15 1043 6.3 191 1654 0.7 21 2258 6.5 197	23 Tu	0420 1.7 53 1045 5.8 177 1641 1.9 57 2243 5.9 180	8 Th	0541 1.2 37 1203 6.7 205 1809 1.6 48	23 F	0503 1.7 53 1113 6.6 201 1730 1.9 58 2320 6.4 194	8 Sa	0005 6.1 186 0603 2.0 61 1231 6.5 197 1831 2.3 69	23 Su	0524 1.5 47 1135 6.9 211 1756 1.6 50 2350 6.5 197
9 Tu	0515 0.4 12 1131 6.5 198 1739 0.7 22 2345 6.5 198	24 W	0454 1.6 49 1111 6.0 184 1716 1.8 55 2311 6.1 185	9 F	0016 6.3 193 0620 1.4 44 1246 6.6 201 1848 1.8 55	24 Sa	0541 1.6 49 1152 6.8 206 1811 1.8 55	9 Su	0045 5.9 181 0637 2.2 67 1307 6.3 193 1903 2.4 73	24 M	0611 1.4 42 1222 7.1 215 1843 1.4 44
10 W	0558 0.5 15 1218 6.6 200 1826 0.9 27	25 Th	0528 1.5 46 1139 6.2 189 1752 1.7 53 2343 6.1 187	10 Sa	0058 6.1 186 0700 1.7 53 1328 6.4 194 1928 2.1 63	25 Su	0001 6.4 195 0624 1.5 47 1233 6.8 208 1856 1.7 53	10 M	0120 5.8 176 0711 2.4 72 1341 6.1 187 1937 2.5 75	25 Tu	0041 6.5 199 0700 1.3 40 1311 7.1 216 1933 1.3 41
11 Th	0031 6.4 194 0641 0.7 22 1305 6.5 197 1911 1.1 35	26 F	0603 1.5 45 1211 6.3 193 1830 1.7 52	11 Su	0141 5.8 178 0737 2.0 62 1411 6.1 186 2009 2.3 70	26 M	0046 6.4 194 0709 1.5 47 1320 6.8 207 1943 1.7 52	11 Tu	0158 5.6 171 0746 2.5 76 1416 6.0 182 2013 2.5 77	26 W	0135 6.5 197 0752 1.3 41 1403 7.0 213 2026 1.3 40
12 F	0118 6.1 186 0724 1.0 32 1352 6.2 190 1956 1.5 46	27 Sa	0018 6.1 187 0641 1.4 44 1248 6.4 194 1911 1.7 53	12 M	0226 5.5 168 0818 2.3 71 1454 5.8 177 2050 2.5 77	27 Tu	0137 6.2 189 0800 1.6 49 1413 6.6 202 2037 1.7 53	12 W	0235 5.4 166 0826 2.6 80 1452 5.8 177 2054 2.6 78	27 Th	0233 6.4 194 0848 1.5 45 1500 6.8 206 2122 1.4 43
13 Sa	0205 5.7 175 0809 1.4 44 1441 5.9 180 2043 1.9 57	28 Su	0058 6.0 184 0722 1.5 46 1331 6.3 192 1956 1.8 55	13 Tu	0313 5.2 160 0901 2.6 79 1543 5.5 168 2137 2.7 82	28 W	0235 6.0 183 0856 1.7 53 1511 6.4 196 2137 1.8 55	13 Th	0316 5.3 162 0911 2.7 83 1533 5.6 172 2139 2.7 81	28 F	0337 6.2 189 0950 1.7 51 1601 6.5 198 2226 1.5 47
14 Su	0258 5.3 163 0856 1.8 56 1535 5.5 169 2133 2.2 67	29 M	0145 5.9 179 0809 1.6 49 1422 6.1 187 2046 1.9 58	14 W	0411 5.0 152 0954 2.8 86 1637 5.3 162 2231 2.8 86	29 Th	0343 5.8 177 1001 1.9 59 1618 6.2 189 2245 1.9 57	14 F	0407 5.2 159 1003 2.9 87 1624 5.5 167 2233 2.7 83	29 Sa	0446 6.0 184 1100 1.9 58 1709 6.2 189 2335 1.7 52
15 M	0356 5.0 151 0948 2.2 68 1633 5.2 159 2233 2.5 75	30 Tu	0239 5.6 171 0903 1.8 54 1520 5.9 181 2148 2.0 61	15 Th	0518 4.9 149 1058 3.0 91 1739 5.2 158 2335 2.9 87	30 F	0500 5.7 173 1118 2.1 63 1730 6.0 184	15 Sa	0509 5.2 157 1103 3.0 91 1720 5.4 165 2333 2.8 84	30 Su	0600 6.0 182 1215 2.1 64 1820 6.0 183
		31 W	0345 5.3 163 1009 2.0 60 1630 5.7 175 2300 2.0 62							31 M	0050 1.8 55 0713 6.0 183 1331 2.2 66 1931 5.9 179

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Dar Es Salaam, Tanzania, 2018

Times and Heights of High and Low Waters

January				February				March			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
h m	ft	h m	ft	h m	ft	h m	ft	h m	ft	h m	ft
1 M	0309 12.5 380 0930 1.0 30 1542 10.8 330 2131 1.3 40	16 Tu	0400 11.2 340 1022 2.0 60 1631 9.8 300 2217 2.6 80	1 Th	0434 13.1 400 1051 0.3 10 1705 11.8 360 2257 1.0 30	16 F	0444 11.8 360 1101 1.3 40 1710 11.2 340 ● 2303 2.0 60	1 Th	0349 12.5 380 1007 1.0 30 1619 11.8 360 2216 1.3 40	16 F	0354 11.5 350 1008 2.0 60 1618 11.2 340 2215 2.0 60
2 Tu	0354 13.1 400 1013 0.7 20 1626 11.2 340 ○ 2214 1.0 30	17 W	0430 11.5 350 1051 1.6 50 1700 10.2 310 ● 2247 2.3 70	2 F	0515 13.1 400 1128 0.3 10 1744 12.1 370 2338 1.0 30	17 Sa	0513 12.1 370 1126 1.0 30 1736 11.5 350 2332 1.6 50	2 F	0429 12.8 390 1042 0.7 20 1655 12.5 380 ○ 2253 1.0 30	17 Sa	0423 12.1 370 1033 1.3 40 1644 11.8 360 ● 2243 1.6 50
3 W	0437 13.5 410 1054 0.3 10 1709 11.5 350 2258 1.0 30	18 Th	0459 11.8 360 1119 1.3 40 1727 10.5 320 2316 2.3 70	3 Sa	0555 12.8 390 1206 0.3 10 1823 12.1 370	18 Su	0542 12.1 370 1152 1.0 30 1805 11.8 360	3 Sa	0507 13.1 400 1115 0.3 10 1730 12.8 390 2330 0.7 20	18 Su	0452 12.5 380 1058 1.3 40 1711 12.5 380 2313 1.3 40
4 Th	0519 13.1 400 1136 0.3 10 1752 11.5 350 2342 1.3 40	19 F	0528 11.8 360 1145 1.3 40 1755 10.8 330 2345 2.3 70	4 Su	0020 1.3 40 0635 12.1 370 1245 1.0 30 1903 11.5 350	19 M	0002 1.6 50 0611 11.8 360 1219 1.3 40 1834 11.8 360	4 Su	0543 12.8 390 1148 0.7 20 1805 12.8 390	19 M	0521 12.5 380 1125 1.0 30 1740 12.8 390 2344 1.3 40
5 F	0603 12.5 380 1219 0.7 20 1836 11.2 340	20 Sa	0557 11.8 360 1213 1.6 50 1824 10.8 330	5 M	0103 2.0 60 0715 11.2 340 1324 1.6 50 1944 11.2 340	20 Tu	0035 2.0 60 0643 11.5 350 1249 1.6 50 1907 11.5 350	5 M	0006 1.0 30 0618 12.1 370 1222 1.0 30 1839 12.5 380	20 Tu	0552 12.1 370 1153 1.3 40 1811 12.8 390
6 Sa	0029 2.0 60 0648 11.8 360 1304 1.3 40 1923 10.8 330	21 Su	0016 2.3 70 0628 11.5 350 1242 1.6 50 1855 10.8 330	6 Tu	0148 2.6 80 0757 10.2 310 1404 2.3 70 2028 10.5 320	21 W	0111 2.3 70 0716 10.8 330 1322 2.0 60 1944 11.2 340	6 Tu	0043 1.6 50 0653 11.5 350 1255 1.6 50 1914 11.8 360	21 W	0017 1.3 40 0624 11.5 350 1225 1.6 50 1844 12.5 380
7 Su	0119 2.6 80 0736 10.8 330 1350 2.0 60 2013 10.5 320	22 M	0050 2.6 80 0701 10.8 330 1314 2.0 60 1930 10.5 320	7 W	0236 3.6 110 0843 9.2 280 1447 3.3 100 ● 2119 9.5 290	22 Th	0153 3.0 90 0754 9.8 300 1400 2.6 80 2028 10.5 320	7 W	0121 2.3 70 0728 10.5 320 1330 2.3 70 1950 10.8 330	22 Th	0055 2.0 60 0659 10.8 330 1259 2.0 60 1922 11.8 360
8 M	0213 3.3 100 0828 9.8 300 1439 3.0 90 2109 9.8 300	23 Tu	0130 3.0 90 0737 10.2 310 1349 2.3 70 2011 10.2 310	8 Th	0335 4.3 130 0940 8.2 250 1538 4.3 130 2226 8.9 270	23 F	0243 3.6 110 0842 8.9 270 1446 3.3 100 ● 2128 9.8 300	8 Th	0202 3.3 100 0804 9.5 290 1406 3.3 100 2030 9.8 300	23 F	0136 2.6 80 0738 9.8 300 1338 2.6 80 2006 11.2 340
9 Tu	0316 3.9 120 0929 8.9 270 1535 3.6 110 ● 2216 9.5 290	24 W	0216 3.6 110 0820 9.5 290 1431 3.0 90 2103 9.8 300	9 F	0459 4.9 150 1108 7.5 230 1653 4.9 150	24 Sa	0353 4.3 130 0954 7.9 240 1552 4.3 130 2254 9.5 290	9 F	0248 4.3 130 0846 8.2 250 1447 4.3 130 ● 2121 9.2 280	24 Sa	0226 3.3 100 0826 9.2 280 1424 3.6 110 ● 2104 10.2 310
10 W	0435 4.6 140 1046 8.2 250 1644 4.3 130 2339 9.2 280	25 Th	0314 3.9 120 0915 8.9 270 1523 3.6 110 ● 2210 9.5 290	10 Sa	0003 8.9 270 0650 4.9 150 1303 7.5 230 1845 4.9 150	25 Su	0544 4.6 140 1154 7.5 230 1741 4.6 140	10 Sa	0352 4.9 150 0956 7.5 230 1546 5.2 160 2244 8.5 260	25 Su	0332 4.3 130 0942 8.2 250 1532 4.6 140 2230 9.5 290
11 Th	0607 4.6 140 1215 7.9 240 1808 4.3 130	26 F	0434 4.3 130 1036 8.2 250 1637 3.9 120 2334 9.8 300	11 Su	0130 9.2 280 0817 4.3 130 1425 7.9 240 2006 4.6 140	26 M	0042 9.8 300 0735 3.9 120 1346 8.2 250 1940 4.3 130	11 Su	0544 5.2 160 1211 7.2 220 1746 5.6 170	26 M	0522 4.9 150 1144 7.9 240 1734 5.2 160
12 F	0057 9.5 290 0731 4.3 130 1338 8.2 250 1926 4.3 130	27 Sa	0617 4.3 130 1220 7.9 240 1812 3.9 120	12 M	0230 9.8 300 0905 3.6 110 1514 8.5 260 2056 3.9 120	27 Tu	0205 10.5 320 0843 3.0 90 1453 9.5 290 2047 3.3 100	12 M	0047 8.5 260 0747 4.9 150 1402 7.9 240 1943 5.2 160	27 Tu	0028 9.5 290 0722 4.3 130 1341 8.5 260 1940 4.6 140
13 Sa	0159 9.8 300 0832 3.6 110 1440 8.5 260 2024 3.9 120	28 Su	0101 10.2 310 0741 3.3 100 1348 8.5 260 1939 3.6 110	13 Tu	0313 10.5 320 0939 3.0 90 1549 9.5 290 2134 3.3 100	28 W	0303 11.5 350 0928 2.0 60 1539 10.8 330 2135 2.0 60	13 Tu	0203 9.2 280 0840 3.9 120 1451 8.9 270 2037 4.3 130	28 W	0157 10.2 310 0830 3.3 100 1444 9.8 300 2044 3.3 100
14 Su	0248 10.5 320 0916 3.0 90 1525 8.9 270 2108 3.3 100	29 M	0210 11.2 340 0842 2.3 70 1452 9.5 290 2042 2.6 80	14 W	0347 11.2 340 1008 2.3 70 1618 10.2 310 2206 2.6 80	29 Th	0249 10.2 310 0914 3.3 100 1524 9.5 290 2115 3.6 110	14 W	0249 10.2 310 0914 3.3 100 1524 9.5 290 2115 3.6 110	29 Th	0256 11.2 340 0915 2.3 70 1528 11.2 340 2130 2.3 70
15 M	0327 10.8 330 0951 2.3 70 1601 9.5 290 2145 3.0 90	30 Tu	0305 11.8 360 0930 1.6 50 1542 10.5 320 2132 2.0 60	15 Th	0416 11.5 350 1035 1.6 50 1644 10.8 330 2235 2.3 70	30 F	0324 10.8 330 0942 2.6 80 1552 10.5 320 2146 2.6 80	15 Th	0324 10.8 330 0942 2.6 80 1552 10.5 320 2146 2.6 80	30 F	0340 11.8 360 0952 1.6 50 1605 12.1 370 2208 1.6 50
		31 W	0352 12.8 390 1012 0.7 20 1625 11.2 340 ○ 2216 1.3 40					31 Sa	0419 12.5 380 1025 1.0 30 1639 12.8 390 ○ 2243 1.0 30		

Time meridian 45° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Beira, Mozambique, 2018

Times and Heights of High and Low Waters

October				November				December			
Time	Height	Time	Height	Time	Height	Time	Height	Time	Height	Time	Height
	h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm		h m ft cm
1 M	0122 4.3 130 0740 18.0 550 1351 4.9 150 2007 17.7 540	16 Tu	0152 6.9 210 0802 16.1 490 1343 7.5 230 2023 14.4 440	1 Th	0232 8.2 250 1008 14.8 450 1623 8.9 270 2247 14.4 440	16 F	0243 9.2 280 1000 13.8 420 1444 9.8 300 2322 13.1 400	1 Sa	0445 8.9 270 1129 15.1 460 1809 8.5 260 2351 15.1 460	16 Su	0318 8.9 270 1022 14.4 440 1526 9.5 290 2324 14.1 430
2 Tu	0154 5.9 180 0830 16.1 490 1434 6.9 210 2112 15.4 470	17 W	0218 8.5 260 0905 14.1 430 1413 9.2 280 2225 12.8 390	2 F	0550 9.5 290 1208 14.8 450 1857 8.2 250	17 Sa	0610 9.5 290 1150 13.8 420 1928 9.5 290	2 Su	0704 8.2 250 1256 15.7 480 1929 7.2 220	17 M	0551 8.9 270 1154 14.8 450 1841 9.2 280
3 W	0240 7.9 240 1015 14.4 440 1621 8.9 270 2305 14.1 430	18 Th	0415 10.2 310 1108 13.1 400 1934 10.2 310	3 Sa	0034 15.1 460 0745 7.5 230 1335 16.4 500 2005 6.6 200	18 Su	0056 14.1 430 0732 8.2 250 1312 15.1 460 2013 7.9 240	3 M	0110 16.4 500 0806 6.6 200 1359 17.4 530 2022 5.9 180	18 Tu	0050 15.1 460 0718 7.9 240 1311 16.1 490 1951 7.9 240
4 Th	0557 9.5 290 1227 14.8 450 1917 8.2 250	19 F	0039 13.1 400 0730 8.9 270 1300 14.1 430 2026 8.2 250	4 Su	0149 16.7 510 0837 5.6 170 1430 18.4 560 2052 4.9 150	19 M	0154 15.7 480 0817 6.6 200 1405 17.1 520 2047 6.6 200	4 Tu	0208 17.7 540 0852 4.9 150 1446 18.7 570 2107 4.6 140	19 W	0152 16.7 510 0813 6.2 190 1409 17.7 540 2041 6.6 200
5 F	0059 15.1 460 0804 7.5 230 1356 16.4 500 2027 6.2 190	20 Sa	0156 15.1 460 0822 7.2 220 1405 16.1 490 2059 6.6 200	5 M	0239 18.7 570 0919 4.3 130 1512 20.0 610 2135 3.6 110	20 Tu	0237 17.7 540 0856 4.9 150 1447 18.7 570 2122 5.2 160	5 W	0253 19.4 590 0934 4.3 130 1525 20.0 610 2149 3.9 120	20 Th	0242 18.4 560 0902 4.9 150 1458 19.0 580 2129 5.2 160
6 Sa	0213 17.1 520 0859 5.6 170 1451 18.7 570 2117 4.3 130	21 Su	0239 16.7 510 0901 5.6 170 1447 18.0 550 2131 5.2 160	6 Tu	0319 20.3 620 0959 3.3 100 1548 21.0 640 2215 3.0 90	21 W	0314 19.4 590 0935 3.9 120 1526 20.3 620 2158 4.3 130	6 Th	0333 20.3 620 1015 3.6 110 1602 20.7 630 2231 3.3 100	21 F	0326 19.7 600 0951 3.9 120 1542 20.3 620 2217 4.3 130
7 Su	0303 19.0 580 0944 3.9 120 1534 20.3 620 2202 3.0 90	22 M	0314 18.7 570 0936 4.3 130 1522 19.7 600 2202 4.3 130	7 W	0356 21.3 650 1038 2.6 80 1623 21.7 660 2254 2.6 80	22 Th	0350 20.7 630 1015 3.0 90 1602 21.3 650 2236 3.6 110	7 F	0410 21.0 640 1056 3.3 100 1638 21.0 640 2312 3.3 100	22 Sa	0408 20.7 630 1040 3.0 90 1624 21.3 650 2303 3.6 110
8 M	0344 20.7 630 1025 2.6 80 1612 21.7 660 2243 2.3 70	23 Tu	0346 20.0 610 1011 3.3 100 1555 20.7 630 2233 3.6 110	8 Th	0431 21.7 660 1114 2.6 80 1657 21.7 660 2330 2.6 80	23 F	0426 21.3 650 1055 2.6 80 1639 22.0 670 2314 3.3 100	8 Sa	0446 21.0 640 1133 3.3 100 1712 20.7 630 2349 3.3 100	23 Su	0450 21.3 650 1126 2.6 80 1705 21.7 660 2346 3.3 100
9 Tu	0421 21.7 660 1104 2.3 70 1647 22.0 670 2320 2.0 60	24 W	0418 21.0 640 1046 2.6 80 1628 21.7 660 2304 3.3 100	9 F	0504 21.7 660 1148 3.0 90 1729 21.3 650	24 Sa	0501 21.7 660 1134 2.3 70 1715 22.0 670 2349 3.0 90	9 Su	0520 20.7 630 1207 3.6 110 1745 20.3 620	24 M	0530 21.7 660 1208 2.3 70 1745 21.7 660
10 W	0455 22.0 670 1139 2.0 60 1721 22.0 670 2355 2.0 60	25 Th	0449 21.7 660 1119 2.3 70 1700 22.3 680 2333 3.0 90	10 Sa	0004 3.0 90 0536 21.3 650 1217 3.3 100 1800 20.7 630	25 Su	0537 21.7 660 1211 2.3 70 1752 21.7 660	10 M	0023 3.6 110 0553 20.3 620 1235 4.3 130 1817 19.7 600	25 Tu	0024 3.3 100 0610 21.3 650 1247 2.6 80 1825 21.0 640
11 Th	0528 22.0 670 1210 2.3 70 1752 21.7 660	26 F	0520 21.7 660 1150 2.0 60 1731 22.3 680	11 Su	0034 3.6 110 0607 20.7 630 1241 4.3 130 1829 19.4 590	26 M	0022 3.3 100 0614 21.0 640 1246 3.0 90 1829 20.7 630	11 Tu	0051 4.3 130 0624 19.7 600 1257 4.9 150 1846 18.7 570	26 W	0059 3.6 110 0651 20.7 630 1322 3.3 100 1905 20.3 620
12 F	0025 2.6 80 0559 21.7 660 1236 3.0 90 1822 20.7 630	27 Sa	0000 3.0 90 0550 21.7 660 1219 2.3 70 1803 22.0 670	12 M	0059 4.3 130 0636 19.4 590 1300 4.9 150 1856 18.4 560	27 Tu	0053 3.9 120 0652 20.0 610 1320 3.9 120 1908 19.4 590	12 W	0115 4.9 150 0654 18.7 570 1312 5.9 180 1913 17.4 530	27 Th	0131 4.3 130 0733 19.4 590 1356 4.6 140 1947 19.0 580
13 Sa	0052 3.3 100 0628 20.7 630 1257 3.9 120 1849 19.7 600	28 Su	0025 3.0 90 0621 21.0 640 1247 3.0 90 1836 21.0 640	13 Tu	0120 5.2 160 0706 18.0 550 1313 6.2 190 1923 16.7 510	28 W	0124 4.9 150 0734 18.7 570 1356 5.2 160 1953 18.0 550	13 Th	0134 5.9 180 0725 17.7 540 1325 6.6 200 1942 16.4 500	28 F	0202 5.2 160 0821 18.0 550 1433 5.9 180 2035 17.7 540
14 Su	0115 4.3 130 0657 19.4 590 1313 4.9 150 1916 18.0 550	29 M	0050 3.6 110 0654 20.0 610 1316 3.9 120 1912 19.4 590	14 W	0138 6.6 200 0739 16.7 510 1328 7.2 220 1955 15.1 460	29 Th	0156 6.2 190 0829 16.7 510 1440 6.9 210 2053 16.1 490	14 F	0152 6.9 210 0803 16.4 500 1345 7.2 220 2022 15.1 460	29 Sa	0238 6.9 210 0920 16.7 510 1521 7.5 230 2136 16.4 500
15 M	0134 5.6 170 0726 17.7 540 1326 6.2 190 1943 16.4 500	30 Tu	0116 4.6 140 0732 18.4 560 1348 5.2 160 1955 17.4 530	15 Th	0200 7.9 240 0827 15.1 460 1354 8.5 260 2107 13.5 410	30 F	0242 7.5 230 0951 15.4 470 1559 8.5 260 2218 15.1 460	15 Sa	0221 7.9 240 0857 15.1 460 1420 8.2 250 2139 14.1 430	30 Su	0334 8.2 250 1036 15.4 470 1649 8.9 270 2253 15.4 470
		31 W	0147 6.2 190 0825 16.4 500 1432 7.2 220 2101 15.4 470					31 M	0547 8.9 270 1201 15.4 470 1836 8.5 260		

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Durban, South Africa, 2018

Times and Heights of High and Low Waters

July				August				September							
Time		Height		Time		Height		Time		Height		Time		Height	
	<small>h m</small>	<small>ft</small>	<small>cm</small>		<small>h m</small>	<small>ft</small>	<small>cm</small>		<small>h m</small>	<small>ft</small>	<small>cm</small>		<small>h m</small>	<small>ft</small>	<small>cm</small>
1	0516	5.8	178	16	0557	6.3	192	1	0601	5.9	180	16	0042	1.3	40
Su	1126	1.1	34	M	1202	0.7	21	W	1208	1.2	36	Th	0649	5.8	177
	1740	5.9	179		1823	6.5	198		1823	6.0	184		1250	1.2	37
	2343	1.5	45										1912	6.0	182
2	0548	5.7	174	17	0029	1.2	36	2	0031	1.6	48	17	0119	1.8	54
M	1157	1.3	39	Tu	0640	5.9	181	Th	0634	5.7	173	F	0725	5.3	161
	1812	5.7	175		1242	1.0	30		1239	1.4	43		1326	1.8	54
					1906	6.2	188		1858	5.8	177		1950	5.4	165
3	0017	1.7	51	18	0113	1.6	48	3	0108	1.8	56	18	0200	2.3	69
Tu	0621	5.5	168	W	0723	5.5	168	F	0711	5.4	164	Sa	0807	4.8	146
	1230	1.5	46		1324	1.4	43		1315	1.7	53		1408	2.3	71
	1848	5.5	169		1952	5.7	175		1939	5.5	168	●	2039	4.9	148
4	0055	1.9	59	19	0200	2.0	61	4	0152	2.1	65	19	0256	2.7	82
W	0659	5.2	160	Th	0809	5.1	155	Sa	0756	5.0	153	Su	0912	4.3	132
	1307	1.8	54		1409	1.9	57	●	1359	2.1	64		1516	2.9	88
	1929	5.3	162	●	2044	5.3	162	●	2033	5.2	159		2205	4.5	136
5	0139	2.2	68	20	0256	2.4	73	5	0252	2.4	74	20	0442	3.0	90
Th	0743	5.0	152	F	0906	4.7	142	Su	0859	4.7	142	M	1135	4.2	127
	1350	2.1	63		1506	2.3	71		1503	2.5	76		1741	3.1	93
	2021	5.1	155		2152	5.0	151		2152	5.0	151				
6	0237	2.5	75	21	0412	2.7	81	6	0420	2.6	79	21	0012	4.4	135
F	0841	4.7	144	Sa	1030	4.4	134	M	1038	4.5	137	Tu	0645	2.7	83
●	1448	2.4	72		1632	2.7	81		1648	2.7	81		1317	4.5	138
	2131	5.0	151		2320	4.8	146		2334	5.0	152		1916	2.7	83
7	0354	2.6	78	22	0548	2.6	80	7	0605	2.4	74	22	0126	4.8	145
Sa	1001	4.6	139	Su	1212	4.4	135	Tu	1227	4.8	145	W	0746	2.3	70
	1609	2.5	77		1813	2.7	81		1835	2.4	73		1407	5.0	153
	2256	5.0	152										2004	2.3	70
8	0522	2.5	75	23	0040	4.9	148	8	0058	5.3	163	23	0212	5.2	158
Su	1132	4.6	141	M	0704	2.4	73	W	0722	2.0	60	Th	0825	1.9	57
	1741	2.4	73		1327	4.8	145		1339	5.3	161		1441	5.4	166
					1924	2.4	73		1945	1.9	58		2040	1.9	57
9	0012	5.3	161	24	0138	5.1	156	9	0159	5.8	177	24	0246	5.5	169
M	0636	2.1	64	Tu	0757	2.0	62	Th	0817	1.4	44	F	0857	1.5	46
	1248	5.0	152		1416	5.1	156		1433	5.9	180		1511	5.8	178
	1854	2.1	63		2012	2.1	63		2038	1.4	42		2111	1.5	46
10	0114	5.6	172	25	0222	5.4	164	10	0251	6.2	190	25	0316	5.9	179
Tu	0735	1.7	51	W	0837	1.7	51	F	0904	1.0	29	Sa	0926	1.2	36
	1348	5.4	166		1455	5.5	167		1519	6.5	197		1538	6.2	188
	1951	1.6	50		2051	1.7	53		2125	0.9	28		2139	1.2	37
11	0207	6.0	184	26	0259	5.6	172	11	0337	6.6	200	26	0344	6.1	187
W	0825	1.2	38	Th	0911	1.4	42	Sa	0946	0.6	17	Su	0953	0.9	28
	1439	5.9	180		1527	5.8	176	●	1602	6.9	209		1604	6.4	196
	2042	1.2	37		2125	1.5	45		2208	0.6	19	○	2208	1.0	31
12	0256	6.4	194	27	0331	5.8	178	12	0419	6.8	206	27	0412	6.3	192
Th	0912	0.9	26	F	0943	1.1	35	Su	1026	0.3	10	M	1020	0.8	23
	1526	6.3	192		1557	6.0	183		1642	7.1	216		1631	6.6	201
	2130	0.9	28	○	2156	1.3	40		2249	0.6	17		2236	0.9	28
13	0343	6.6	200	28	0402	6.0	183	13	0459	6.7	205	28	0440	6.4	195
F	0956	0.6	18	Sa	1012	1.0	31	M	1104	0.3	9	Tu	1047	0.7	21
●	1611	6.6	201		1625	6.2	188		1721	7.1	215		1658	6.6	202
	2216	0.7	22		2226	1.2	36		2328	0.7	20		2304	0.9	28
14	0429	6.6	202	29	0431	6.1	186	14	0538	6.6	200	29	0508	6.4	194
Sa	1039	0.5	14	Su	1041	0.9	28	Tu	1140	0.4	13	W	1114	0.7	22
	1656	6.7	205		1653	6.2	190		1759	6.9	209		1727	6.6	201
	2301	0.7	22		2256	1.2	36						2334	1.0	31
15	0514	6.5	199	30	0500	6.1	186	15	0005	0.9	28	30	0538	6.2	190
Su	1121	0.5	15	M	1109	0.9	28	W	0614	6.2	190	Th	1142	0.9	27
	1739	6.7	204		1722	6.3	191		1215	0.8	23		1756	6.4	196
	2345	0.9	27		2326	1.2	38		1836	6.5	197				
				31	0530	6.0	184	31	0005	1.2	37	31	0005	1.2	37
				Tu	1138	1.0	31	F	0609	6.0	183		1212	1.1	35
					1752	6.2	188		1828	6.2	188		1828	6.2	188
					2357	1.4	42								

Time meridian 30° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

Diego Garcia Island, 2018

Times and Heights of High and Low Waters

January				February				March								
Time		Height		Time		Height		Time		Height		Time		Height		
1 M	2 Tu	3 W	4 Th	5 F	6 Sa	7 Su	8 M	9 Tu	10 W	11 Th	12 F	13 Sa	14 Su	15 M	16 Tu	
0225 0827 1434 2053	0307 0909 1516 2134	0347 0949 1557 2214	0426 1029 1637 2253	0505 1110 1718 2333	0545 1151 1800	0014 0626 1235 1845	0058 0713 1327 1939	0151 0810 1434 2052	0305 0930 1608 2235	0444 1105 1743	0008 0610 1221 1849	0108 0708 1313 1935	0151 0750 1353 2012	0226 0825 1428 2044	0257 0856 1459 2114	0325 0925 1528 2142
5.0 152 0.5 15 5.3 162 -0.1 -3	5.2 158 0.3 9 5.5 168 -0.3 -9	5.3 162 0.2 6 5.5 168 -0.2 -6	5.3 162 0.2 6 5.4 165 0.0 0	5.1 155 0.4 12 5.2 158 0.3 9	4.9 149 0.7 21 0.7 21 4.8 146	0.7 21 4.5 137 1.0 30 4.4 134	1.1 34 4.2 128 1.3 40 3.9 119	1.5 46 3.8 116 1.7 52 3.6 110	1.9 58 3.6 110 1.8 55 3.4 104	2.0 61 3.6 110 1.7 52	3.6 110 1.9 58 3.8 116 1.4 43	3.8 116 1.6 49 4.1 125 1.1 34	4.1 125 1.4 43 4.4 134 0.8 24	4.4 134 1.1 34 4.6 140 0.8 24	4.6 140 0.9 27 5.0 152 0.4 12	4.8 146 0.7 21 5.0 152 0.3 9
16 Tu	17 W	18 Th	19 F	20 Sa	21 Su	22 M	23 Tu	24 W	25 Th	26 F	27 Sa	28 Su	29 M	30 Tu	31 W	
0257 0856 1459 2114	0325 0925 1528 2142	0353 0953 1557 2211	0420 1022 1626 2239	0448 1051 1657 2308	0518 1122 1729 2340	0550 1157 1806	0016 0626 1238 1848	0058 0711 1330 1944	0153 0812 1444 2108	0318 0944 1629 2302	0510 1129 1807	0033 0636 1247 1914	0134 0736 1344 2005	0221 0823 1431 2049	0302 0905 1512 2128	
4.6 140 0.9 27 4.8 146 0.4 12	4.8 146 0.7 21 5.0 152 0.3 9	4.9 149 0.6 18 5.1 155 0.2 6	4.9 149 0.6 18 5.1 155 0.3 9	4.9 149 0.6 18 5.0 152 0.4 12	4.9 149 0.6 18 0.6 18 4.9 149 0.6 18	4.7 143 0.8 24 0.8 24 4.6 140	0.8 24 4.5 137 1.0 30 4.2 128	0.8 24 4.5 137 1.0 30 4.3 131	1.2 37 4.2 128 1.3 40 3.9 119	1.6 49 3.9 119 1.5 46 3.6 110	1.9 58 3.8 116 1.6 49 3.6 110	3.9 119 1.5 46 4.3 131 0.8 24	4.4 134 1.1 34 4.8 146 0.4 12	4.8 146 0.7 21 5.0 152 0.0 0	5.1 155 0.3 9 5.5 168 -0.2 -6	
1 Th	2 F	3 Sa	4 Su	5 M	6 Tu	7 W	8 Th	9 F	10 Sa	11 Su	12 M	13 Tu	14 W	15 Th	16 F	
0340 0943 1551 2205	0415 1020 1628 2241	0450 1056 1704 2314	0523 1131 1739 2348	0557 1206 1814	0021 0631 1243 1852	0057 0709 1327 1937	0140 0758 1429 2050	0253 0924 1626 2312	0517 1138 1824	0054 0653 1258 1924	0143 0742 1344 2003	0217 0817 1419 2035	0247 0847 1450 2103	0313 0914 1518 2130	0339 0941 1546 2156	
5.4 165 0.1 3 5.6 171 -0.3 -9	5.4 165 0.0 0 5.6 171 -0.2 -6	5.4 165 0.1 3 5.4 165 0.1 3	5.2 158 0.3 9 5.1 155 0.4 12	4.9 149 0.6 18 4.7 143	0.8 24 4.5 137 1.0 30 4.2 128	1.3 40 4.1 125 1.4 43 3.7 113	1.8 55 3.7 113 1.8 55 3.3 101	2.2 67 3.4 104 2.0 61 3.2 98	2.3 70 3.4 104 1.8 55	3.5 107 2.0 61 3.7 113 1.4 43	3.9 119 1.6 49 4.1 125 1.0 30	4.2 128 1.2 37 4.5 137 0.7 21	4.6 140 0.9 27 4.8 146 0.4 12	4.8 146 0.6 18 5.0 152 0.2 6	5.0 152 0.4 12 5.2 158 0.1 3	
16 F	17 Sa	18 Su	19 M	20 Tu	21 W	22 Th	23 F	24 Sa	25 Su	26 M	27 Tu	28 W	29 Th	30 F	31 Sa	
0339 0941 1546 2156	0404 1007 1613 2223	0430 1035 1642 2250	0457 1104 1712 2319	0526 1136 1745 2351	0559 1212 1823	0027 0638 1256 1909	0113 0728 1358 2018	0223 0851 1545 2226	0438 1106 1755	0026 0630 1243 1910	0130 0732 1341 2000	0214 0817 1425 2041	0215 0759 1402 2015	0225 0827 1432 2042	0251 0856 1504 2117	
5.0 152 0.4 12 5.2 158 0.1 3	5.2 158 0.2 6 5.3 162 0.1 3	5.2 158 0.2 6 5.3 162 0.1 3	5.2 158 0.2 6 5.2 158 0.3 9	5.1 155 0.3 9 4.9 149 0.6 18	4.9 149 0.6 18 4.6 140	0.9 27 4.5 137 1.0 30 4.1 125	1.4 43 4.1 125 1.4 43 3.6 110	1.9 58 3.7 113 1.7 52 3.4 104	2.1 64 3.7 113 1.5 46	3.7 113 1.7 52 4.1 125 1.0 30	4.2 128 1.2 37 4.6 140 0.5 15	4.7 143 0.6 18 5.1 155 0.1 3	4.7 143 0.6 18 5.1 155 0.1 3	4.5 137 0.9 27 4.8 146 0.5 15	5.1 155 0.2 6 5.4 166 -0.1 -3	
1 Th	2 F	3 Sa	4 Su	5 M	6 Tu	7 W	8 Th	9 F	10 Sa	11 Su	12 M	13 Tu	14 W	15 Th	16 F	
0251 0856 1504 2117	0325 0931 1539 2150	0357 1003 1612 2220	0427 1035 1643 2250	0456 1105 1713 2318	0525 1135 1743 2346	0553 1205 1813	0014 0623 1239 1847	0046 0657 1320 1932	0129 0749 1440 2125	0335 1026 1746	0032 0633 1238 1904	0125 0725 1328 1944	0157 0759 1402 2015	0225 0827 1432 2042	0251 0856 1504 2117	
5.1 155 0.2 6 5.4 166 -0.1 -3	5.4 165 0.0 0 5.6 171 -0.2 -6	5.5 168 -0.2 -6 5.6 171 -0.2 -6	5.5 168 -0.1 -3 5.5 168 0.0 0	5.4 165 0.0 0 5.2 158 0.3 9	5.1 155 0.3 9 4.9 149 0.6 18	4.8 146 0.7 21 4.4 134	1.1 34 4.4 134 1.2 37 3.9 119	1.6 49 3.9 119 1.6 49 3.4 104	2.1 64 3.4 104 2.1 64 3.0 91	2.5 76 3.1 94 2.1 64	3.2 98 2.2 67 3.5 107 1.7 52	3.7 113 1.7 52 3.9 119 1.2 37	4.1 125 1.3 40 4.4 134 0.8 24	4.5 137 0.9 27 4.8 146 0.5 15	5.1 155 0.2 6 5.4 166 -0.1 -3	
16 F	17 Sa	18 Su	19 M	20 Tu	21 W	22 Th	23 F	24 Sa	25 Su	26 M	27 Tu	28 W	29 Th	30 F	31 Sa	
0250 0853 1459 2108	0315 0919 1526 2134	0340 0946 1554 2201	0406 1014 1623 2228	0434 1043 1653 2258	0504 1116 1726 2329	0537 1152 1803	0005 0614 1234 1847	0049 0703 1333 1953	0158 0825 1522 2209	0426 1057 1745	0016 0623 1236 1900	0116 0722 1331 1947	0157 0803 1413 2024	0232 0839 1448 2057	0304 0911 1520 2127	
4.9 149 0.5 15 5.1 155 0.2 6	5.1 155 0.2 6 5.3 162 0.0 0	5.3 162 0.0 0 5.5 168 0.0 0	5.5 168 -0.1 -3 5.5 168 0.0 0	5.5 168 -0.1 -3 5.4 166 0.2 6	5.3 162 0.0 0 5.1 155 0.5 15	5.1 155 0.0 0 4.8 146 0.5 15	0.9 27 4.7 143 0.8 24 4.2 128	1.4 43 4.2 128 0.8 24 4.2 128	1.9 58 3.7 113 1.8 55 3.3 101	2.1 64 3.6 110 1.6 49	3.7 113 1.7 52 4.0 122 1.1 34	4.2 128 1.1 34 4.6 140 0.7 21	4.7 143 0.6 18 5.0 152 0.3 9	5.1 155 0.2 6 5.3 162 0.1 3	5.4 166 -0.1 -3 5.5 168 0.0 0	

Time meridian 90° E. 0000 is midnight. 1200 is noon. Times are not adjusted for Daylight Saving Time. Heights are referred to the chart datum of soundings.

TABLE 2. — TIDAL DIFFERENCES AND OTHER CONSTANTS

EXPLANATION OF TABLE

The publication of full daily predictions is necessarily limited to a comparatively small number of stations. Tide predictions for many other places, however, can be obtained by applying certain differences to the predictions for the reference stations in Table 1. The following pages list the places called "subordinate stations" for which such predictions can be made, and the differences or ratios to be used. These differences or ratios are to be applied to the predictions for the proper reference station which is listed in Table 2 in boldface type above the differences for the subordinate station. The stations in this table are arranged in geographical order. The index to stations at the end of this volume will assist in locating a particular station.

Time differences.—To determine the time of high water or low water at any station listed in this table there is given in the columns headed "Differences, Time" the hours and minutes to be added to or subtracted from the time of high or low water at some reference station. A plus (+) sign indicates that the tide at the subordinate station is later than at the reference station and the difference should be added; a minus (–) sign indicates that it is earlier and should be subtracted.

To obtain the tide at a subordinate station on any date, apply the difference to the tide at the reference station for that same date. In some cases, however, to obtain an a.m. tide it may be necessary to use the preceding day's p.m. tide at the reference station (or to obtain a p.m. tide it may be necessary to use the following day's a.m. tide). For example, if a high water at a reference station occurs at 0200 on July 17, and the tide at the subordinate station occurs 5 hour earlier, the high water at the subordinate station will occur at 2100 on July 16. For the second case, if a high water occurs at a reference station at 2200 on July 2, and the tide at the subordinate station occurs 3 hours later, then high water will occur at 0100 on July 3 at the subordinate station. The necessary allowance for change in date when the international date line is crossed is included in the time difference. In such cases use the same date at the reference station as desired for the subordinate station as explained above.

The results obtained by the application of the time differences will be in the kind of time indicated by the time meridian shown above the name of the subordinate station. Summer or daylight-saving time is not used in the tide tables.

Height differences.—The height of the tide, referred to the datum of charts, is obtained by means of the height differences or ratios. A plus (+) sign indicates that the difference should be added to the height at the reference station, and a minus (–) sign indicates that it should be subtracted. All height differences, ranges, and levels in Table 2 are in feet but may be converted to centimeters by the use of table 6.

Ratio.—For some stations, use of predicted height difference would give unsatisfactory predictions. In such cases they have been omitted and one or two ratios are given (*). Where two ratios are given, one in the "height of high water" column and one in the "height of low water" column, the high waters and low waters at the reference station should be multiplied by these respective ratios. Where only one is given, the omitted ratio is either unreliable or unknown. For some subordinate stations there is given in parentheses a ratio as well as a correction in feet. In those instances, each predicted high and low water at the reference station should first be multiplied by the ratio and then the correction in feet is added to or subtracted from each product as indicated.

As an example, at Porto Grande, the values in the time and height difference columns in Table 2 are given as –1 02, –0 13, and (*0.73 + 0.7) as referred to the reference station at Hong Kong. If we assume that the tide predictions in column (1) below are those of Hong Kong on a particular day, application of the time and height corrections in columns (2) and (3) would result in the tide predictions for Chino Bay in column (4).

TABLE 2. — TIDAL DIFFERENCES AND OTHER CONSTANTS

(1)		(2)	(3)	(4)		
<i>Time h.m.</i>	<i>Height ft.</i>	<i>Time Corrections</i>	<i>Height Corrections</i>	<i>Time h.m.</i>	<i>ft.</i>	<i>Height centimeters</i>
0230	3.6	-0 ^h 13 ^m	x0.73 + 0.7	0217	3.3	101
0926	7.2	-1 ^h 02 ^m	x0.73 + 0.7	0824	6.0	183
1645	1.0	-0 ^h 13 ^m	x0.73 + 0.7	1632	1.4	43
2318	4.3	-1 ^h 02 ^m	x0.73 + 0.7	2216	3.8	116

Range. — The *mean range* is the difference in height between mean high water (MHW) and mean low water (MLW). The *spring range* is the average semidiurnal range occurring semimonthly as a result of the Moon being new or full. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal. The *diurnal range* is the difference in height between mean higher high water and mean lower low water. Mean higher high water is the average of the higher of the two high water and mean lower low water is the average of the lower of the two low waters. The *tropic range*, which is given for some stations, is the increased diurnal range occurring semimonthly when the effects of the Moon's maximum-declination is greatest.

Caution.—For stations where the tide is chiefly diurnal the time difference and the height differences and ratios are intended primarily for predicting the higher high and lower low waters. When the lower high water and the higher low water at the reference station are nearly the same height the corresponding tides often cannot be obtained satisfactorily by means of the tidal differences.

Datum.—The datum of the predictions obtained through the height differences or ratios is also the datum of the largest scale chart for the locality. To obtain the depth at the time of high or low water, the predicted height should be added to the depth on the chart unless such height is negative (–), when it should be subtracted. To find the height at times between high and low water see table 3. On some foreign charts the depths are given in meters and in such cases the heights of the tide can be converted to centimeters by the use of Table 6. Chart datums for the Hawaiian and Philippines Islands is mean lower low water. For the rest of the area covered by these tables the datums generally used are approximately mean low water springs, Indian spring low water, or the lowest possible low water.

Mean Tide Level (Half-Tide Level). *The mean tide level is a plane midway between mean low water and mean high water. Tabular values are reckoned from chart datum.*

NOTE¹.—Dashes are entered in the place of data which are unknown, unreliable, or not applicable.

NOTE².—Place Names. - For the convenience of the mariner, places names are chosen to correspond to the place names on National Imagery and Mapping Agency nautical charts. The place names are also reviewed by the United States Board on Geographic Names.

NOTE³.—Subordinate locations referencing the Philippines of Jolo, San Fernando Harbor, and Legaspi Port were included only for future considerations, See the IMPORTANT NOTICE on page VI.

This edition includes an extensive revision of the tidal information for locations along the coast of mainland China. All such place names now use the new spelling convention. Where applicable, place names from the 1994 edition appear in hard brackets [] after the new spelling.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	SIBERIA Arctic Ocean <1>-cont. Time meridian, 120° E	North	East	h	m	h	m	ft	ft	ft
				on Pusan, p.48						
1	Domashnii I., Severnaya Zemlya Time meridian, 105° E	79° 30'	91° 08'	+6 38	+6 48	*0.26	*0.29	0.7	1.0	0.6
3	Zarya Road	76° 08'	95° 08'	+5 30	+5 43	(*0.46+0.3)		1.3	1.7	1.3
5	Bonevi Island	76° 10'	95° 10'	+4 01	+4 14	(*0.46+0.1)		1.3	1.8	1.1
7	Dzhekman Island	76° 25'	95° 06'	+4 25	+4 55	(*0.46+0.3)		1.3	1.8	1.3
9	Russki Island Time meridian, 120° E	77° 11'	96° 24'	+5 16	+5 32	(*0.39+0.3)		1.1	1.5	1.1
11	Taimyra River mouth	76° 15'	98° 52'	+5 47	+6 11	(*0.54+0.4)		1.5	2.0	1.5
13	Cape Olovyanny, Shokalskogo Strait	78° 56'	99° 56'	+4 24	+4 34	(*0.36+0.1)		1.0	1.4	0.9
15	Gansena (Hansen) Island	77° 31'	102° 30'	+5 59	+6 09	*0.17	*0.14	0.5	0.6	0.4
17	Cape Chelyuskina	77° 43'	104° 17'	+3 28	+3 59	*0.34	*0.34	0.9	1.2	0.8
19	Samuila I., Komsomolskoi Pravdy Island	77° 25'	106° 54'	+2 48	+3 23	*0.40	*0.40	1.0	1.4	0.9
21	Starokadomskogo Island	78° 14'	105° 58'	+3 32	+3 51	(*0.61+0.2)		1.7	2.1	1.5
23	Pronchishchev Bay Time meridian, 135° E	75° 34'	113° 22'	-6 37	-6 36	+1.4	+0.9	3.3	4.4	3.3
25	Preobrazheniya Island	74° 40'	112° 45'	-3 41	-3 28	+0.7	+0.4	3.1	4.4	2.7
27	Mali (Small) Begichev Island	74° 18'	111° 04'	-2 32	-2 19	+1.4	+0.6	3.6	5.1	3.1
29	Nordvik Bay <2> Time meridian, 120° E	74° 01'	110° 40'	-2 54	-2 48	(*2.14+0.7)		6.0	8.5	5.2
31	Khara-Tumus Peninsula	74° 01'	110° 06'	-3 27	-2 36	+0.4	+0.4	2.8	3.6	2.5
33	Kozhevnikova Bay	73° 26'	109° 42'	+1 15	+1 36	(*0.68+0.5)		1.9	2.6	1.9
35	Syndaska Bay entrance	73° 14'	108° 09'	+1 40	+1 56	+0.8	+0.7	2.9	3.9	2.9
37	Cape Bolshaya Karga	73° 11'	106° 22'	+2 44	+3 53	(*0.82+0.6)		2.3	3.1	2.3
39	Kresty Peninsula, Khatanga River Time meridian, 135° E	72° 45'	105° 15'	+6 20	+8 08	*0.60	*0.60	1.6	2.1	1.3
41	Cape Khorgo, Anabarski Bay	73° 31'	113° 24'	-2 04	-1 42	(*1.50+0.4)		4.2	6.0	3.6
43	Bykovskoe, Lena River mouth	71° 59'	129° 09'	---	---	---	---	0.5	0.7	0.4
45	Bulunkan Bay, Tiksi Bay Time meridian, 150° E	71° 40'	128° 58'	+1 58	+2 08	*0.34	*0.34	0.9	1.2	0.8
47	Omoloi River entrance	71° 14'	132° 10'	+4 09	+4 33	(*0.39+0.2)		1.1	1.4	1.0
49	Yana River mouth	71° 31'	136° 25'	---	---	---	---	Negligible		
51	Kotel'nyy Island Polar Station	75° 58'	137° 59'	+4 47	+5 03	(*0.50+0.4)		1.4	1.9	1.4
53	Nerpalakh Lagoon, Kotel'nyy Island	75° 22'	137° 10'	+5 27	+5 25	*0.20	*0.20	0.5	0.8	0.5
55	Cape Medvezhi, Kotel'nyy Island <i>Bolshoi Lyakhovskii Island</i>	74° 38'	139° 04'	+1 07	+1 23	*0.26	*0.26	0.6	0.8	0.6
57	Kigilyakh Peninsula	73° 26'	139° 55'	---	---	---	---	0.4	0.5	0.3
59	Cape Shalaurova Time meridian, 180° E	73° 12'	143° 34'	-5 24	-5 10	*0.34	*0.34	0.9	1.1	0.8
61	Chetyrekhtolbovoi I., Medvezhi Island Time meridian, 165° E	70° 38'	162° 30'	---	---	---	---	Negligible		
63	Kolyma River mouth Time meridian, 180° E	69° 38'	162° 00'	---	---	---	---	Negligible		
65	Ayon Island	69° 53'	167° 52'	---	---	---	---	Negligible		
67	Cape Shelagski Time meridian, 195° E	70° 05'	170° 34'	---	---	---	---	Negligible		
69	Cape Billingsa	69° 53'	176° 06'	+5 37	+5 50	*0.20	*0.20	0.5	0.8	0.5
71	Wrangell Island	70° 58'	181° 27'	+3 53	+4 06	*0.57	*0.71	1.5	2.1	1.3
73	Cape Shmidt	68° 55'	180° 31'	+5 42	+5 58	(*0.61+0.4)		1.7	2.2	1.7
75	Kolychino Polar Station	67° 04'	186° 13'	---	---	---	---	0.3	0.4	0.3
77	Cape Serdtse-Kamen	66° 57'	188° 22'	---	---	---	---	0.3	0.4	0.2
79	Cape Uelen	66° 10'	190° 10'	---	---	---	---	0.4	0.5	0.4
	Bering Sea									
81	Alera Bay, Penkegnei Bay	64° 49'	187° 05'	-0 54	-0 50	*0.26	*0.29	0.7	0.9	0.6
83	Plover Bay, Provideniya Bay	64° 22'	186° 38'	-2 03	-1 46	(*0.82+0.2)		2.3	2.9	1.9
85	Emma Bay, Provideniya Bay	64° 25'	186° 47'	-2 16	-2 06	(*0.82+0.3)		2.3	3.1	2.0
87	Cape Razdelny, Kresta Bay	66° 11'	181° 00'	+0 55	+1 09	+5.8	+1.9	6.7	8.4	6.0
89	Engaugin Bay, Kresta Bay <i>Anadyr Bay</i>	66° 09'	180° 26'	+0 52	+0 56	+5.4	+1.4	6.8	8.5	5.5
91	Russkaya Koshka Spit	64° 35'	178° 31'	+2 48	+2 52	+2.6	+0.7	4.7	6.0	3.8
93	Salomatova Spit	64° 38'	178° 01'	+3 19	+3 27	+3.1	+0.9	5.0	6.3	4.1
95	Melkaya Bay	64° 47'	177° 34'	+4 15	+4 25	+1.7	+0.6	3.9	5.3	3.3
97	Anadyr River entrance	64° 44'	177° 26'	+3 37	+3 47	+1.0	+0.3	3.5	4.4	2.8
99	Strelka Spit, Anadyr Gulf	64° 25'	178° 15'	+4 22	+5 11	+0.1	+0.2	2.7	3.6	2.3
101	Ugolnaya Bay Time meridian, 180° E	63° 04'	179° 23'	+4 04	+4 14	*0.49	*0.57	1.3	1.7	1.1
				on Paramushiru Island, p.8				Diurnal	Tropic	
103	Anastasi Bay }	61° 25'	172° 56'	-1 00	-0 29	+1.0	+0.9	4.6	5.4	4.8
105	Imatra Bay, Glubokaya Bay }	61° 00'	172° 07'	-0 55	-0 37	(*0.96+0.8)		4.3	5.0	4.4
107	Cape Olyutorski <i>Kamchatka</i>	59° 55'	170° 20'	-0 29	-0 23	(*0.84+0.8)		3.8	4.5	4.0
109	Lavora Harbor }	60° 23'	167° 04'	-1 14	-0 35	(*0.80+1.2)		3.6	4.2	4.2
111	Sibir Harbor }	60° 27'	166° 14'	-0 39	-0 33	+1.3	+1.0	4.8	5.6	5.0
113	Cape Kryugera }	56° 01'	161° 57'	-0 21	-0 18	(*0.87+1.0)		3.9	4.7	4.3
115	Nikolski, Bering Island }	55° 12'	165° 59'	-1 17	-0 10	(*0.82+1.2)		3.7	4.4	4.3
117	Morzhovaya Bay }	53° 14'	159° 57'	+0 01	+0 32	(*0.91+0.9)		4.1	5.1	4.4
119	Petrovskiy Spit }	53° 01'	158° 39'	+1 23	+0 55	(*0.93+1.0)		4.2	4.9	4.5
121	Tanya Bay }	52° 55'	158° 30'	+1 33	+1 05	+0.9	+0.9	4.4	5.1	4.7
123	Akhomten Bay }	52° 26'	158° 28'	+1 08	+0 40	(*0.89+0.9)		4.0	4.7	4.3
125	Vestnik Bay }	51° 33'	157° 42'	+1 43	+1 15	(*0.84+0.9)		3.8	4.4	4.1

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Diurnal	Tropic	
				High Water	Low Water	High Water	Low Water			
	SIBERIA Sea of Okhotsk Time meridian, 180° E	North	East	h m	h m	ft	ft	ft	ft	ft
	<i>Kamchatka-cont.</i>			on Paramushiru Island, p.8						
127	Golygina River entrance }	51° 53'	156° 31'	+1 28	+1 34	+1.3	+1.0	4.8	5.6	5.0
129	Ust Bolsheretsk, Bolshaya River }	52° 46'	156° 14'	+4 35	+4 21	+1.6	+1.1	5.0	5.8	5.2
131	Kompakova River entrance }	54° 40'	155° 42'	+3 43	+3 49	([*] 2.98+2.7)		13.4	15.7	14.0
133	Oblukovina River entrance }	55° 19'	155° 34'	+4 53	+4 59	([*] 2.36+1.9)		10.6	12.3	10.9
				on Musi River, p.152						
135	Cape Astronomicheskii } <i>Penjinski Bay</i>	62° 23'	164° 28'	-10 42	-9 27	*3.14	*2.72	24.1	30.1	17.8
137	Matugin Point }	61° 41'	160° 15'	+8 10	+9 18	+13.4	+2.7	18.0	22.2	13.5
139	Gizhiga River entrance }	61° 58'	160° 24'	+8 08	+10 26	+12.8	+2.1	18.0	22.2	14.0
141	Nayakhanskaya Bay } Time meridian, 165° E	61° 54'	159° 00'	+8 15	+10 04	+11.6	+1.4	17.5	21.7	13.1
143	Udacha Bay }	59° 13'	155° 10'	+9 23	+7 11	+3.2	+0.8	9.7	13.5	8.2
				on Moji, p.36				Mean Spring		
145	Ola Anchorage, Tauiskaya Bay	59° 34'	151° 16'	+0 12	+0 24	*1.50	*1.50	6.9	8.9	7.4
147	Nagaeva Bay, Tauiskaya Bay Time meridian, 150° E	59° 31'	150° 41'	-0 09	-0 18	*1.89	*1.89	8.7	11.3	9.4
149	Okhotsk	59° 21'	143° 10'	+3 02	+2 55	*1.50	*1.50	6.9	8.9	7.4
				on Brisbane Bar, p.284						
151	Ayan Bay	56° 27'	138° 09'	+3 33	+3 25	+2.2	+1.3	5.9	7.9	5.7
153	Udskaya Bay	54° 42'	135° 18'	+7 08	+6 59	+2.7	+1.0	6.7	9.5	5.8
155	Levyazhaya Bay, Feklistov Island	54° 54'	136° 46'	+6 37	+6 29	([*] 2.50+0.7)		12.5	16.4	10.5
157	Abrek Bay, Little Shantar Island	54° 24'	137° 37'	+6 50	+6 42	([*] 2.12+0.2)		10.6	13.5	8.5
				on Jolo, p.172				Diurnal Tropic		
159	Baldukov Island } Time meridian, 165° E	53° 18'	141° 28'	-1 41	-1 40	+2.7	+1.2	4.3	5.4	2.8
	<i>Sakhalin Island</i>									
161	Cape Tamlevo }	53° 21'	141° 46'	-0 24	-0 25	+2.3	+1.1	4.0	5.0	2.6
163	Baikal Bay }	53° 32'	142° 14'	+0 12	+0 10	+2.6	+1.1	4.3	5.3	2.7
165	Kuegda Bay }	54° 19'	142° 36'	+1 06	+1 05	([*] 0.61+0.5)		1.7	2.2	1.2
				on Yamato Wan, p.12						
167	Urkt Bay entrance }	53° 34'	143° 04'	-1 12	+3 44	+0.1	0.0	3.2	4.0	2.4
169	Kyarkvo Anchorage }	52° 52'	143° 19'	-0 12	+4 46	+0.4	+0.3	3.2	4.4	2.7
171	Chaivo Bay }	52° 23'	143° 12'	+3 11	+6 07	+0.8	+0.5	3.4	4.8	3.1
173	Niski Bay }	51° 58'	143° 11'	+3 07	+8 01	+1.4	+0.2	4.3	5.3	3.2
175	Luniski Bay entrance }	51° 18'	143° 30'	+5 33	+6 59	*0.42	*0.42	1.3	1.8	1.1
	KARAFUTO Sakhalin Island			on Otomari, p.4						
177	Mys Popova }	49° 03'	144° 24'	-0 25	-0 25	([*] 0.50+0.2)		1.5	2.0	1.4
179	Tyuleniy }	48° 30'	144° 38'	-0 55	-0 58	([*] 0.87+0.1)		2.6	3.1	2.2
181	Mys Obshirnyy }	48° 42'	144° 39'	-0 45	-1 04	*0.87	*0.87	2.6	3.1	2.1
183	Noto }	49° 07'	144° 15'	-0 36	-1 02	*0.97	*0.97	2.9	3.3	2.3
185	Ozero Nevskoye }	49° 19'	143° 19'	-0 14	-0 49	*0.93	*0.93	2.8	3.2	2.2
187	Shikuka }	49° 14'	143° 08'	-0 10	-0 49	*0.97	*0.97	2.9	3.4	2.3
189	Higashi Chutoru }	48° 38'	142° 48'	-0 03	-0 32	([*] 0.93+0.1)		2.8	3.3	2.3
191	Buruny }	48° 06'	142° 34'	-0 09	-0 31	*0.87	*0.87	2.6	3.0	2.1
193	Sakayehama }	47° 25'	142° 49'	-0 13	-0 30	([*] 0.90-0.1)		2.7	3.1	2.1
195	Noho Misaki }	47° 15'	143° 01'	-0 25	-0 25	([*] 0.83+0.1)		2.5	3.1	2.1
197	Onto Numa }	46° 52'	143° 08'	+1 51	+1 51	([*] 0.47+0.1)		1.4	1.8	1.2
199	Tomunai Hakuchi }	46° 51'	143° 10'	-0 24	-0 22	([*] 0.83+0.1)		2.5	3.1	2.1
201	Airo Wan }	46° 49'	143° 25'	-0 23	-0 17	*0.87	*0.87	2.6	3.2	2.1
203	Mys Menaputsy }	46° 23'	143° 35'	-0 56	-0 39	([*] 0.93+0.1)		2.8	3.4	2.3
205	Tobuchi Ko }	46° 30'	143° 20'	+0 32	+0 54	([*] 0.83+0.1)		2.5	3.1	2.1
207	OTOMARI }	46° 39'	142° 45'					3.0	3.7	2.4
209	Nishi Notoro Misaki, East coast }	45° 54'	142° 05'	+0 30	+1 15	([*] 0.93+0.2)		2.8	3.6	2.4
211	Nishi Notoro Misaki, West coast }	45° 54'	142° 05'	+1 18	+2 04	([*] 0.60+0.1)		1.8	2.3	1.5
213	Soni Misaki }	46° 03'	141° 55'	+2 53	---	([*] 0.40+0.1)		1.2	1.6	1.1
215	Kaiba To (Todo Shima) }	46° 15'	141° 16'	---	---	---	---	0.5	---	0.4
217	Tokombo Road }	46° 40'	141° 51'	---	---	---	---	0.8	---	0.7
219	Port Kholmnsk }	41° 03'	142° 02'	---	---	---	---	0.7	---	0.6
221	Nodasan (Noda) }	47° 26'	141° 58'	---	---	---	---	0.7	---	0.6
				on Pusan, p.48				Mean Spring		
223	Yatsu Misaki	48° 08'	142° 10'	-11 47	-11 39	([*] 0.29+0.2)		0.8	1.0	0.8
225	Ushiro Wan	48° 54'	141° 58'	-10 55	-10 46	([*] 0.57+0.2)		1.6	2.1	1.4
227	Toro Numa	49° 10'	142° 04'	-10 40	-10 32	([*] 0.71+0.1)		2.0	2.6	1.6
229	Lesogorsk	49° 27'	142° 07'	-10 13	-10 05	([*] 0.71+0.1)		2.0	2.6	1.6
231	Mys Polevogo	49° 46'	142° 09'	-10 22	-10 13	+0.1	+0.1	2.8	3.7	2.2
233	Anbetsu	49° 59'	142° 10'	-10 20	-10 12	+0.5	+0.1	3.2	4.1	2.4

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	SIBERIA Sakhalin Island-cont. Time meridian, 165° E	North	East	h m	h m	ft	ft	ft	ft	ft
	on Pusan, p.48									
235	Gulf of Tartary									
	Pilevo Bay	50° 02'	142° 09'	-10 03	-9 59	+0.5	+0.2	3.1	3.9	2.5
237	Alexandrovski	50° 54'	142° 08'	-10 03	-9 57	+2.3	+0.5	4.6	6.3	3.5
239	Viyakhtu Bay	51° 35'	141° 54'	-9 52	-9 48	+4.1	+1.0	5.9	7.4	4.7
241	Cape Tik	51° 44'	141° 41'	-9 48	-9 38	+3.6	+0.9	5.5	6.9	4.4
243	Cape Pogobi, Strait of Tartary	52° 13'	141° 39'	-7 52	-7 48	+1.2	+0.3	3.7	4.6	2.9
	Gulf of Amur Time meridian, 150° E									
	on Jolo, p.172							Diurnal	Tropic	
245	Amur River entrance }	52° 52'	141° 14'	+4 55	+4 55	(*0.54+0.7)		1.5	1.9	1.3
247	Nikolayevsk, Amur River }	53° 08'	140° 45'	+6 15	+6 15	(*0.32+2.7)		0.9	1.1	3.1
249	Uyuzut Island }	52° 49'	141° 12'	+4 50	+4 50	(*0.71+0.9)		2.0	2.5	1.7
251	Cape Dzhaore }	52° 40'	141° 17'	+5 10	+5 10	(*0.93+1.1)		2.6	3.3	2.1
	on Pusan, p.48							Mean	Spring	
253	Cape Lazareva	52° 14'	141° 31'	-8 50	-8 10	+1.3	+0.9	3.2	4.1	3.2
	Gulf of Tartary									
255	Cape Muraveva	52° 09'	141° 33'	-9 38	-9 21	+1.4	+0.4	3.8	4.7	3.0
257	Cape Chikacheva	51° 47'	141° 11'	-10 20	-10 16	+3.3	+0.8	5.3	6.7	4.2
259	Cape Sushcheva	51° 42'	141° 07'	-10 58	-10 55	+2.2	+0.6	4.4	5.5	3.5
261	Taba Bay	51° 37'	140° 53'	-10 42	-10 38	+3.1	+0.8	5.1	6.4	4.1
263	Zaliv Chikhacheva	51° 27'	140° 50'	-10 37	-10 33	+3.1	+0.8	5.1	6.4	4.1
265	Starka Bay	50° 08'	140° 34'	-10 30	-10 26	+0.9	+0.3	3.4	4.3	2.7
267	Datta Bay	49° 17'	140° 24'	-10 17	-10 13	*0.68	*0.71	1.9	2.4	1.5
269	Vanina Bay	49° 06'	140° 17'	-10 08	-10 04	*0.46	*0.46	1.3	1.6	1.0
271	Sovetskaya Harbor	48° 59'	140° 17'	-10 00	-9 51	(*0.43+0.2)		1.2	1.6	1.1
273	Vetrychnui Point	48° 08'	139° 43'	---	---	--	--	0.2	--	0.3
	Japan Sea									
275	Tyutikha Bay	44° 21'	135° 51'	---	---	--	--	0.4	0.6	1.1
277	St. Vladimir Bay	43° 53'	135° 27'	---	---	--	--	0.5	0.6	1.2
279	Olga Bay	43° 43'	135° 15'	---	---	--	--	0.5	0.6	1.2
281	Syaukhu Bay	42° 54'	133° 53'	---	---	--	--	0.6	0.7	1.4
283	Nakhodka Bay, America Bay	42° 49'	132° 54'	---	---	--	--	0.5	0.7	1.3
285	Sukhodol Bay, Ussuri Bay	43° 10'	132° 22'	---	---	--	--	0.5	0.7	1.3
287	Vladivostok	43° 07'	131° 54'	---	---	--	--	0.6	0.7	1.4
289	Reineke Island, Peter the Great Bay	42° 55'	133° 44'	---	---	--	--	0.6	0.7	1.4
291	Slavyanski Bay	42° 52'	131° 23'	---	---	--	--	0.5	0.7	1.3
293	Furugelma Island	42° 28'	130° 56'	---	---	--	--	0.6	0.7	1.5
295	Posiet, Gulf of Posiet	42° 39'	130° 48'	---	---	--	--	0.6	0.7	1.4
	CHISHIMA RETTO Time meridian, 165° E									
	on Paramushiru Island, p.8							Diurnal	Tropic	
297	Shumshu									
	Kotomari Zaki }	50° 50'	156° 30'	+0 40	+0 40	*0.85	*0.85	3.8	4.8	3.4
299	Nakagawa Wan }	50° 39'	156° 24'	-0 20	-0 20	*0.91	*0.91	4.1	5.0	3.5
301	Kozyrevskoye }	50° 43'	156° 12'	+1 20	+1 20	+0.2	+0.2	4.5	5.7	3.9
303	Araido To }	50° 50'	155° 39'	+1 55	+1 55	+1.2	+0.3	5.4	6.7	4.4
305	Banjo Zaki }	50° 45'	156° 08'	+1 35	+1 35	+0.6	+0.2	4.9	6.1	4.1
307	Yotsuiwa }	50° 17'	155° 55'	-0 25	-0 25	*0.89	*0.80	4.1	4.9	3.4
309	PARAMUSHIRU ISLAND }	50° 11'	155° 39'					4.5	5.2	3.8
311	Mys Kapustnyy }	50° 04'	155° 13'	+1 25	+1 25	+0.3	+0.2	4.6	5.7	3.9
313	Kujira Wan }	50° 17'	155° 20'	+1 30	+1 30	+0.2	+0.1	4.6	5.6	4.0
315	Kakumabetsu Wan }	50° 23'	155° 35'	+1 40	+1 40	+0.9	+0.2	5.2	6.5	4.3
	on Yamato Wan, p.12									
317	Kuroishi Wan, Onokotan To }	49° 29'	154° 50'	+0 07	+0 18	+0.1	0.0	3.2	4.1	2.6
	on Paramushiru Island, p.8									
319	Shiomi Wan, Onokotan To	49° 31'	154° 44'	+1 20	+1 20	*0.89	*0.89	3.9	4.9	3.5
321	Kharimkotan	49° 10'	154° 29'	+1 10	+1 10	*0.80	*0.80	3.5	4.3	3.2
323	Higashi Ura, Shasukotan To	48° 47'	154° 05'	+0 25	+0 25	*0.80	*0.80	3.4	4.1	3.0
325	Otome Wan, Shasukotan To	48° 47'	154° 03'	+1 00	+1 00	*0.89	*0.89	3.9	4.9	3.5
	on Yamato Wan, p.12									
327	YAMATO WAN, Matsuwa To	48° 05'	153° 16'					3.1	3.9	2.6
329	Ushishiro To	47° 32'	152° 49'	+0 05	+0 05	+0.5	+0.1	3.5	4.4	3.0
331	Bukhta Broutona, Shimushiru To	47° 09'	152° 15'	+1 00	+1 00	*0.84	*0.84	2.6	3.3	2.1
333	Shimushiru Wan, Shimushiru To	46° 52'	151° 52'	+0 20	+0 20	+0.3	+0.1	3.3	4.3	2.7
335	Suna Wan, Kita Jima	46° 32'	150° 54'	+0 20	+0 20	*0.90	*0.75	2.9	3.5	2.3

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Diurnal	Tropic	
				High Water	Low Water	High Water	Low Water			
	CHISHIMA RETTO Time meridian, 165° E	North	East	h	m	h	m	ft	ft	ft
				on Paramushiru Island, p.8						
337	<i>Uruppu To</i> Yosinohama	46° 12'	150° 31'	+0 15	+0 15	*0.58	*0.58	2.6	3.0	2.2
339	Garan Zaki	45° 48'	149° 56'	+0 15	+0 15	*0.67	*0.60	3.1	3.6	2.5
				on Otomari, p.4						
341	Tokotan Wan	45° 51'	149° 44'	-0 15	-0 15	+0.1	+0.1	3.0	3.8	2.5
343	Tsurigane Wan	46° 06'	150° 10'	-0 15	-0 15	*0.87	*0.87	2.6	3.3	2.1
				on Paramushiru Island, p.8						
345	<i>Yedorofu Jima</i> Zaliv Kasatka	44° 56'	147° 38'	+0 30	+0 30	*0.69	*0.60	3.2	3.7	2.8
347	Kodnyy	44° 43'	147° 21'	+0 25	+0 25	(*0.78+0.2)		3.5	4.2	3.2
				on Otomari, p.4						
349	Naibo Wan	44° 46'	147° 12'	-0 15	-0 15	*0.95	*0.95	2.8	3.5	2.3
351	Kitovyy	45° 15'	147° 53'	-0 20	-0 20	*0.90	*0.90	2.7	3.4	2.2
353	Shamambe Byochi	45° 20'	148° 01'	-0 20	-0 20	*0.97	*0.97	2.8	3.6	2.3
355	Shibetoro	45° 30'	148° 37'	-0 15	-0 15	*0.87	*0.87	2.6	3.2	2.1
357	Moyoro Wan	45° 26'	148° 51'	-0 25	-0 25	*0.90	*0.78	2.8	3.2	2.1
				on Paramushiru Island, p.8						
359	<i>Kunashiri Jima</i> Yuzhno Kurilsk	44° 02'	145° 51'	+0 15	+0 15	*0.73	*0.70	3.3	3.8	2.9
361	Tomari Wan	43° 44'	145° 27'	+0 50	+0 50	*0.78	*0.78	3.5	4.1	3.0
363	Shakotan Ko, Shakotan Jima	43° 52'	146° 49'	+0 30	+0 30	*0.67	*0.67	3.1	3.5	2.6
365	Taraku Jima	43° 38'	146° 21'	+0 25	+0 25	*0.73	*0.73	3.2	3.8	2.8
367	Suisho To	43° 25'	145° 54'	+0 35	+0 35	*0.80	*0.80	3.6	4.1	2.9
	JAPAN Hokkaido Time meridian, 135° E							Mean Spring		
369	Rausu Hakuchi	44° 01'	145° 12'	-0 47	-0 47	(*0.65+0.4)		1.5	2.0	2.3
371	Nemuro Ko	43° 20'	145° 35'	-0 32	-0 34	+0.1	0.0	2.4	3.1	2.9
373	Hanasaki	43° 17'	145° 35'	-0 07	-0 05	-0.3	-0.1	2.1	2.7	2.7
375	Ochiishi Wan	43° 10'	145° 31'	-0 22	-0 25	-0.1	0.0	2.2	2.9	2.8
377	Kiritappu Jima, Hamanaka Wan	43° 04'	145° 10'	-0 28	-0 30	-0.2	-0.1	2.2	2.8	2.7
379	Akkeshi Wan	43° 02'	144° 51'	-0 23	-0 25	-0.2	-0.2	2.3	2.9	2.7
381	Kushiro Ko	42° 58'	144° 22'	-0 08	-0 15	0.0	0.0	2.3	3.0	2.9
383	Rubeshibetsu Saki	42° 12'	143° 20'	-0 26	-0 28	-0.2	-0.1	2.2	2.7	2.7
385	Utaro	41° 58'	143° 12'	-0 16	-0 18	0.0	-0.1	2.4	3.1	2.8
387	Muroran Ko	42° 19'	140° 58'	-0 29	-0 19	+0.6	+0.3	2.6	3.6	3.3
389	Usu Wan, Iburu Wan	42° 31'	140° 46'	-0 14	-0 16	+0.3	0.0	2.6	3.5	3.0
391	Mori Ko, Iburu Wan	42° 07'	140° 36'	-0 19	-0 21	0.0	-0.1	2.4	3.2	2.8
393	Usujiri Wan	41° 56'	140° 57'	-0 15	-0 17	-0.2	-0.1	2.2	2.9	2.7
395	Shiokubi Saki	41° 43'	140° 58'	+0 16	+0 14	0.0	0.0	2.3	3.0	2.9
397	Hakodate Ko	41° 47'	140° 43'	+0 00	+0 10	(*0.74-0.2)		1.7	2.3	1.9
399	Wakimoto	41° 34'	140° 26'	+0 09	+0 07	(*0.65-0.1)		1.5	2.0	1.8
401	Yoshioka	41° 27'	140° 14'	+0 38	+0 35	(*0.48-0.1)		1.1	1.4	1.3
403	Fukuyama Byochi	41° 26'	140° 07'	---	---	---	---	0.5	---	0.7
405	Kamome Jima, Yesashi Ko	41° 52'	140° 06'	---	---	---	---	0.5	---	0.8
407	Aonai Wan, Okushiri Shima	42° 04'	139° 27'	---	---	---	---	0.5	---	0.7
409	Setana Ko	42° 28'	139° 50'	---	---	---	---	0.4	---	0.7
411	Sutsu Ko	42° 47'	140° 16'	---	---	---	---	0.4	---	0.6
413	Iwanai Byochi	42° 59'	140° 30'	---	---	---	---	0.5	---	0.6
415	Kamoi Misaki	43° 20'	140° 21'	---	---	---	---	0.4	---	0.6
417	Otaru Ko	43° 13'	141° 01'	---	---	---	---	0.4	---	0.5
419	Moye	43° 36'	141° 23'	---	---	---	---	0.4	---	0.6
421	Rumoi Ko	43° 57'	141° 39'	---	---	---	---	0.3	---	0.5
423	Tomamai	44° 19'	141° 39'	---	---	---	---	0.4	---	0.6
425	Rishiri To	45° 14'	141° 14'	---	---	---	---	0.4	---	0.6
427	Wakkanai Ko	45° 25'	141° 41'	---	---	---	---	0.4	---	0.6
429	Soya Misaki	45° 31'	141° 57'	---	---	---	---	0.5	---	0.6
				on Otomari, p.4						
431	Esashi Byochi	44° 56'	142° 35'	-2 35	-2 35	*0.80	*0.80	2.4	2.9	1.9
433	Omu Ko	44° 35'	142° 58'	-2 30	-2 30	(*0.83+0.1)		2.5	3.2	2.1
435	Monbetsu Byochi	44° 21'	143° 22'	-2 58	-2 46	*0.97	*0.97	2.8	3.4	2.4
437	Abashiri Byochi	44° 01'	144° 16'	-2 15	-2 15	*0.90	*0.90	2.7	3.4	2.2
439	Koiseboi	44° 02'	144° 56'	-2 30	-2 30	*0.87	*0.87	2.6	3.2	2.1
	Honshu, North Coast							Mean Spring		
441	Tappi Saki	41° 15'	140° 21'	-3 53	-3 53	(*0.24+0.2)		1.0	1.4	1.1
443	Mimmaya, Mimmaya Wan	41° 12'	140° 26'	-4 07	-4 08	*0.24	*0.24	1.0	1.4	0.9
445	Aomori Ko, Mutsu Kaiwan	40° 50'	140° 44'	-4 11	-4 12	*0.34	*0.34	1.4	2.0	1.3
447	Shiranai Wan, Mutsu Kaiwan	40° 57'	140° 58'	-4 09	-4 10	*0.32	*0.32	1.3	1.8	1.2
449	Ominato Ko, Mutsu Kaiwan	41° 15'	141° 09'	-4 12	-3 49	*0.32	*0.28	1.4	2.0	1.2
451	Oma	41° 32'	140° 54'	-4 09	-4 10	*0.37	*0.37	1.5	2.0	1.5
453	Ohata	41° 24'	141° 10'	-4 11	-4 12	(*0.49+0.4)		2.0	2.6	2.3

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	JAPAN Honshu, East Coast Time meridian, 135° E	North	East	h m	h m	ft	ft	ft	ft	ft
				on Kamaisi, p.16						
455	Shiriya	41° 24'	141° 27'	-0 12	-0 15	+0.4	+0.2	2.5	3.2	3.2
457	Tomari	41° 05'	141° 24'	-0 10	-0 13	+0.1	-0.1	2.5	3.2	2.9
459	Hachinohe Ko	40° 32'	141° 33'	-0 16	-0 15	-0.2	-0.1	2.2	2.9	2.7
461	Kuji Wan	40° 11'	141° 49'	-0 10	-0 13	+0.1	0.0	2.4	3.1	2.9
463	Miyako Ko <3>	39° 38'	141° 58'	+0 00	+0 06	-0.2	-0.1	2.2	2.9	2.7
465	Yamada Ko	39° 28'	141° 58'	-0 09	-0 11	-0.1	-0.1	2.3	3.0	2.8
467	KAMAISI	39° 16'	141° 54'	<i>Daily predictions</i>				2.3	3.0	2.9
469	Kesennuma Wan	38° 53'	141° 37'	+0 02	+0 00	-0.1	-0.1	2.3	3.0	2.8
471	Oginohama Ko	38° 23'	141° 26'	+0 08	+0 06	+0.4	+0.1	2.6	3.4	3.1
473	Same Ura, Nobiru Wan	38° 21'	141° 10'	+0 14	+0 12	+0.2	+0.1	2.4	3.3	3.0
475	Hirakata Wan	36° 51'	140° 48'	+0 11	+0 08	-0.1	-0.1	2.3	3.0	2.8
477	Choshi Ko (inside)	35° 44'	140° 50'	+0 48	+0 45	*0.65	*0.65	1.5	1.9	1.9
479	Nagasaki, Inubo Saki	35° 42'	140° 52'	+0 45	+0 43	+0.1	0.0	2.4	3.2	2.9
				on Yokohama, p.20						
481	Katsuura Wan	35° 08'	140° 18'	-0 43	-0 35	*0.78	*0.80	2.7	3.5	3.0
483	Kamogawa, Kamogawa Wan	35° 06'	140° 06'	-0 31	-0 22	(*0.74+0.2)		2.6	3.5	3.0
485	Otohamma	34° 55'	139° 56'	-0 31	-0 22	(*0.74+0.1)		2.6	3.4	2.9
	Honshu, South Coast									
	<i>Tokyo Wan</i>									
487	Tateyama Wan	35° 01'	139° 51'	-0 22	-0 14	*0.83	*0.83	2.9	3.9	3.2
489	Uraga Ko	35° 14'	139° 43'	-0 12	-0 04	(*0.83+0.1)		2.9	3.8	3.3
491	Yokosuka Ko	35° 17'	139° 40'	-0 04	-0 04	*0.91	*0.91	3.2	4.3	3.5
493	YOKOHAMA <4>	35° 26'	139° 40'	<i>Daily predictions</i>				3.5	4.7	3.8
495	Shinagawa, Tokyo Ko	35° 37'	139° 45'	+0 02	+0 11	0.0	-0.1	3.6	4.8	3.7
497	Chiba	35° 36'	140° 07'	-0 06	+0 02	+0.4	+0.1	3.8	5.1	4.0
499	Aburatsubo <5>	35° 09'	139° 37'	-0 08	+0 00	(*0.77+0.1)		2.7	3.6	3.0
501	Koto Wan	35° 13'	139° 37'	-0 23	-0 14	*0.80	*0.80	2.8	3.7	3.0
503	Ajiro Ko	35° 03'	139° 05'	-0 21	-0 12	(*0.77+0.1)		2.7	3.5	3.0
505	Shimoda Ko <6>	34° 40'	138° 57'	+0 05	+0 14	*0.86	*0.86	3.0	3.9	3.3
507	Merakoura Ko	34° 40'	138° 47'	+0 23	+0 31	*0.85	*0.85	3.0	3.9	3.2
509	Tago Minato	34° 48'	138° 46'	+0 25	+0 33	(*0.89-0.1)		3.1	4.2	3.3
511	Eno Ura	35° 01'	138° 53'	+0 32	+0 41	*0.80	*0.80	2.8	3.8	3.0
513	Shimizu Ko	35° 00'	138° 30'	+0 32	+0 36	*0.85	*0.85	3.0	4.1	3.2
515	Omai Saki	34° 36'	138° 13'	+0 18	+0 27	*0.89	*0.85	3.2	4.3	3.3
517	Shino Shima, Mikawa Wan	34° 41'	137° 00'	+0 54	+1 03	+0.8	0.0	4.3	5.8	4.2
519	Gamagori, Mikawa Wan	34° 49'	137° 14'	+0 56	+1 04	+1.3	+0.1	4.7	6.3	4.5
521	Nagoya Ko, Iseno Umi	35° 05'	136° 53'	+1 01	+1 05	(*1.40-0.6)		4.9	6.8	4.7
523	Yokkaichi Ko, Iseno Umi	34° 57'	136° 38'	+1 01	+1 10	+1.0	0.0	4.5	6.0	4.3
525	Tsu Ko, Iseno Umi	34° 43'	136° 32'	+0 59	+1 07	+1.2	+0.1	4.6	6.2	4.4
527	Toba Ko	34° 29'	136° 51'	+0 54	+1 08	+0.3	-0.1	3.9	5.3	3.9
529	Matoya Ko	34° 22'	136° 52'	+0 40	+0 49	*0.89	*0.85	3.2	4.3	3.3
531	Hamashima, Ago Wan	34° 17'	136° 45'	+0 49	+0 58	*0.91	*0.85	3.3	4.4	3.4
533	Gokasho Ko	34° 19'	136° 40'	+0 31	+0 39	*0.91	*0.85	3.3	4.5	3.4
535	Hikimoto Ura, Owashi Wan	34° 05'	136° 15'	+0 44	+0 49	*0.93	*0.90	3.3	4.5	3.5
537	Katsuura Wan	33° 37'	135° 57'	+0 42	+0 51	*0.91	*0.85	3.3	4.3	3.4
539	Urakami Ko	33° 33'	135° 54'	+0 44	+0 53	-0.4	-0.3	3.4	4.5	3.4
541	Kushimoto, Fukuro Ko	33° 28'	135° 46'	+0 53	+1 02	*0.91	*0.85	3.3	4.5	3.4
543	Susami	33° 33'	135° 30'	+0 56	+1 05	-0.1	-0.1	3.5	4.7	3.7
545	Tanabe Ko	33° 43'	135° 22'	+0 47	+0 56	-0.1	-0.3	3.7	4.8	3.6
547	Mio	33° 53'	135° 05'	+0 50	+0 58	-0.2	-0.2	3.5	4.7	3.6
	Nanpo Shoto (Southern Islands)									
549	Habu Ko, O Shima	34° 41'	139° 26'	-0 28	-0 20	(*0.77+0.2)		2.7	3.5	3.1
551	Shikine Shima	34° 19'	139° 13'	+0 06	+0 15	(*0.80+0.2)		2.8	3.8	3.2
553	Kaminato Hakuchi, Hachijo Jima	33° 08'	139° 48'	-0 05	+0 04	(*0.66+0.2)		2.3	3.1	2.7
555	Tori Shima	30° 29'	140° 19'	+0 39	+0 47	(*0.63+0.1)		2.2	3.0	2.5
557	Muko Jima, Ogasawara Gunto	27° 41'	142° 08'	+0 50	+0 50	(*0.63-0.1)		2.2	2.8	2.3
559	Futami Ko, Ogasawara Gunto <7>	27° 05'	142° 11'	+0 47	+0 55	*0.57	*0.57	2.0	2.8	2.2
561	Okimura, Ogasawara Gunto	26° 38'	142° 09'	+1 05	+1 13	(*0.63-0.1)		2.2	2.8	2.3
563	Ishino, Kita Iwo Jima, Kazan Retto	25° 26'	141° 18'	+1 39	+1 39	*0.51	*0.51	1.8	2.3	1.9
565	Nishi, Iwo Jima, Kazan Retto	24° 48'	141° 18'	+1 35	+1 43	*0.51	*0.51	1.8	2.3	1.9
	Shikoku, South Coast									
				on Naha, p.44						
567	Kannoura Ko	33° 33'	134° 18'	-1 25	-1 25	-0.5	0.0	3.6	4.8	3.6
569	Muroto Saki	33° 17'	134° 09'	-1 22	-1 23	0.0	+0.1	4.0	5.2	3.9
571	Urado Ko	33° 30'	133° 34'	-1 15	-1 12	*0.92	*0.92	3.6	4.8	3.6
573	Susaki Ko <8>	33° 24'	133° 17'	-1 19	-1 20	-0.3	0.0	3.8	5.0	3.7
	Naikai (Inland Sea)									
	<i>Kii Suido</i>									
575	Hii Wan	33° 55'	135° 05'	+1 08	+1 17	-0.3	-0.2	3.4	4.6	3.5
577	Shimotsu Ura, Osaki Wan	34° 07'	135° 08'	+1 15	+1 23	-0.2	-0.1	3.4	4.8	3.6
579	Wakanoura Wan	34° 11'	135° 11'	+1 44	+1 46	(*0.89+0.2)		3.1	4.3	3.6
581	Tachibana Ura	33° 52'	134° 39'	+0 55	+1 04	-0.4	-0.3	3.4	4.5	3.4
583	Komatsushima Ko	34° 01'	134° 36'	+1 03	+1 11	*0.87	*0.85	3.1	4.2	3.3

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
		North	East	h	m	ft	ft	ft	ft		
JAPAN											
Naikai (Inland Sea)-cont. Time meridian, 135° E											
on Kobe, p.24											
585	Tomoga Shima, Tomogashima Suido	34° 17'	135° 00'	-0 46		-0 44	+0.6	+0.1	3.0	4.5	3.4
587	Yura Ko, Tomogashima Suido	34° 16'	134° 57'	-0 48		-0 48	0.0	-0.1	2.6	3.6	3.0
Izumi Nada <9>											
589	Sumoto	34° 20'	134° 54'	-0 27		-0 42	*0.98	*0.98	2.4	3.4	3.0
591	Osaka Ko	34° 39'	135° 26'	-0 06		-0 11	+0.2	+0.1	2.6	3.7	3.2
593	KOBE	34° 41'	135° 12'				<i>Daily predictions</i>		2.5	3.6	3.1
595	Karumo Jima	34° 39'	135° 10'	+0 05		-0 04	+0.1	+0.1	2.5	3.4	3.2
597	Akashi Ko, Akashi Seto <10>	34° 39'	135° 00'	---		+0 48	*0.67	*0.67	--	2.4	2.2
599	E Saki, Awaji, Akashi Seto <11>	34° 36'	134° 59'	---		+0 55	*0.65	*0.65	--	2.3	2.2
on Sakate, p.28											
601	Murotsu, Awaji	34° 31'	134° 52'	+0 19		+0 23	(*0.64+0.5)		1.8	2.2	2.6
603	Ei, Awaji	34° 28'	134° 50'	+0 19		+0 09	(*0.68+0.4)		1.9	2.2	2.6
605	Anaga Ura, Awaji	34° 16'	134° 40'	+0 29		+0 37	(*0.86+0.2)		2.4	2.6	3.0
607	Ajiro, Naruto	34° 14'	134° 38'	+0 53		+0 57	*0.92	*0.89	2.6	3.1	3.0
on Yokohama, p.20											
609	Fukura Ura, Awaji	34° 15'	134° 42'	+1 29		+1 36	(*0.94-0.1)		3.3	4.5	3.5
on Kobe, p.24											
611	Tosadomari, Muyano Seto	34° 11'	134° 37'	-0 11		-0 19	+0.1	0.0	2.6	3.6	3.1
613	Kita-tomariura, Muyano Seto <10>	34° 14'	134° 35'	---		+1 46	-1.2	-0.3	--	2.8	2.4
615	Azuro	34° 14'	134° 38'	+4 31		+4 18	0.0	-0.1	2.6	3.4	3.0
on Sakate, p.28											
617	Hikeda, Harima Nada	34° 14'	134° 24'	+0 22		+0 23	*0.93	*0.93	2.6	2.8	3.1
619	SAKATE, Shodo Shima	34° 27'	134° 19'				<i>Daily predictions</i>		2.8	3.1	3.3
621	Ikeda Wan, Shodo Shima	34° 29'	134° 12'	-0 11		-0 06	+1.0	+0.2	3.6	4.5	3.9
Harima Nada											
623	Takasago Ko	34° 45'	134° 49'	-0 29		-0 25	(*0.75+0.4)		2.1	2.5	2.9
625	Shikama Ko	34° 47'	134° 41'	-0 24		-0 28	(*0.82+0.6)		2.3	2.4	3.3
627	Ie Shima	34° 41'	134° 32'	-0 16		-0 16	(*0.82+0.2)		2.3	2.5	2.9
629	O-O Wan	34° 47'	134° 28'	-0 20		-0 16	(*0.93+0.2)		2.6	3.1	3.3
631	Otabu Shima	34° 41'	134° 18'	-0 12		-0 08	-0.1	-0.1	2.8	3.3	3.2
633	Ushimado Ko	34° 36'	134° 09'	-0 01		+0 03	+0.8	+0.1	3.5	4.4	3.8
635	Kogushi, Okayama Suido	34° 36'	134° 02'	+0 01		+0 05	+1.0	+0.1	3.7	4.6	3.9
on Kure, p.32											
Bisan Seto											
637	Nao Shima	34° 27'	133° 58'	+1 29		+1 26	(*0.67+0.4)		5.0	6.2	4.8
639	Ogi Shima	34° 26'	134° 03'	+1 25		+1 46	(*0.56+0.6)		4.2	5.0	4.3
641	Takamatsu Ko	34° 21'	134° 02'	+1 25		+1 26	(*0.60+0.4)		4.5	5.3	4.4
643	Nabe Shima	34° 23'	133° 50'	+1 40		+1 37	(*0.84+0.3)		6.3	8.1	5.8
645	Shimotsui	34° 26'	133° 48'	+1 32		+1 28	(*0.80+0.3)		6.0	7.8	5.6
647	Awashima, Awa Shima	34° 16'	133° 38'	+1 46		+1 46	+0.2	0.0	7.7	9.6	6.7
649	Tomo Tsu, Bingo Nada	34° 23'	133° 23'	+1 25		+1 26	+0.5	0.0	8.0	9.9	6.8
651	Tachibana, Mekari Seto	34° 21'	133° 12'	+1 25		+1 21	+0.1	+0.1	7.5	9.7	6.7
653	Onomichi Seto	34° 24'	133° 12'	+1 16		+1 13	+0.1	0.0	7.6	9.2	6.6
655	Itosaki, Mihara Wan	34° 23'	133° 06'	+1 08		+1 04	-0.3	-0.1	7.3	9.2	6.4
657	Setoda, Ikuchi Jima	34° 18'	133° 05'	+0 49		+0 46	-0.2	-0.2	7.5	9.6	6.4
659	Tadanomi, Mihara Seto	34° 20'	132° 59'	+0 31		+0 27	+0.6	+0.3	7.8	10.3	7.0
661	Takahama, Hiuchi Nada	33° 59'	133° 21'	+1 24		+1 20	+0.5	+0.1	7.9	10.4	6.9
663	Imabari, Kurushima Kaikyo	34° 04'	133° 00'	+1 06		+1 03	-0.3	0.0	7.2	9.4	6.4
665	Hashihama, Kurushima Kaikyo	34° 07'	132° 58'	+0 28		+0 22	+0.3	+0.1	7.7	9.9	6.8
667	Mitarai, Osaki Shimo Shima	34° 11'	132° 52'	+0 11		+0 08	+0.3	+0.1	7.7	10.1	6.8
669	Koyo, Aki Nada	34° 14'	132° 43'	+0 16		+0 13	-1.0	-0.2	6.7	8.9	6.0
671	Mutsuki Seto, Naka Shima	33° 59'	132° 38'	-0 21		-0 25	-0.7	-0.1	6.9	9.0	6.2
Hiroshima Wan											
673	Karoto Koseto	34° 04'	132° 33'	-0 13		-0 16	(*0.88+0.1)		6.6	8.7	5.9
675	Ondo Seto	34° 12'	132° 32'	-0 04		-0 08	(*0.88+0.1)		6.6	8.6	5.9
677	KURE	34° 14'	132° 33'				<i>Daily predictions</i>		7.5	9.9	6.6
679	Yeta Uchi	34° 15'	132° 28'	-0 05		-0 09	0.0	+0.1	7.4	9.8	6.6
681	Nasami Seto	34° 15'	132° 23'	-0 18		-0 21	-0.8	-0.1	6.8	9.3	6.1
683	Hiroshima Ko (Ujina Ko)	34° 21'	132° 28'	-0 09		-0 13	-0.2	0.0	7.3	9.7	6.5
685	Itsuku Shima	34° 18'	132° 19'	-0 09		-0 13	-0.2	0.0	7.3	9.6	6.5
687	Shimminato	34° 11'	132° 14'	-0 12		-0 15	-0.8	-0.1	6.8	9.1	6.1
689	Moro Shima Suido	33° 57'	132° 28'	-0 35		-0 38	-0.5	0.0	7.0	9.1	6.3
691	Yashiro Jima	33° 55'	132° 18'	-0 09		-0 13	(*0.88+0.1)		6.6	8.8	5.9
693	Obatake Seto	33° 57'	132° 10'	-0 50		-0 53	(*0.85+0.2)		6.4	8.5	5.8
Iyo Nada											
695	Okikamuro Shima	33° 51'	132° 22'	-0 41		-0 44	(*0.85+0.2)		6.4	8.3	5.8
697	Kaminoseki Kaikyo	33° 50'	132° 07'	-0 58		-1 02	(*0.79+0.2)		5.9	8.0	5.4
699	Mitsugahama Hakuchi	33° 52'	132° 42'	-0 31		-0 33	-0.4	0.0	7.1	9.3	6.4
701	Ao Shima	33° 44'	132° 29'	-0 55		-0 59	(*0.88+0.2)		6.6	8.7	6.0
703	Nagahama Ko	33° 37'	132° 29'	-1 16		-1 20	(*0.85+0.1)		6.4	8.5	5.7
705	Mitsukuye Ko	33° 27'	132° 14'	-1 12		-1 15	(*0.83+0.3)		6.2	8.2	5.8
707	Saganoseki	33° 15'	131° 53'	-1 16		-1 19	(*0.52+0.6)		3.9	5.1	4.0
709	Beppu Ko	33° 17'	131° 30'	-1 20		-1 24	(*0.59+0.4)		4.4	5.7	4.3

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	JAPAN Naikai (Inland Sea)-cont. Time meridian, 135° E	North	East	h	m	h	m	ft	ft	ft
	Bungo Suido									
711	Yawatahama Ko	33° 27'	132° 24'	+0 10	+0 09	+0.5	+0.3	4.3	5.7	4.3
713	Okuchi Wan	33° 20'	132° 23'	+0 08	+0 07	+0.4	+0.2	4.3	5.7	4.2
715	Hiburi Shima	33° 10'	132° 16'	+0 00	-0 01	+0.1	+0.2	4.0	5.3	4.0
717	Mizugaura, Uwajima Wan	33° 12'	132° 27'	+0 03	+0 03	+0.4	+0.3	4.2	5.6	4.2
719	Uwajima Ko	33° 14'	132° 33'	+0 05	+0 04	(*0.90+0.8)		3.7	5.2	4.3
721	Kashiwa	33° 01'	132° 30'	-0 47	-0 47	0.0	+0.1	4.0	5.2	3.9
723	Sukumo Ko	32° 54'	132° 42'	-1 08	-1 08	-0.2	0.0	3.9	5.2	3.8
725	Katsura, Saeki Wan	32° 59'	131° 54'	-0 05	-0 02	(*0.80+0.3)		3.3	4.4	3.4
727	Saganoseki, Shita Ura	33° 14'	131° 53'	+0 35	+0 26	+0.1	+0.2	4.0	5.4	4.0
	on Naha, p.44									
	Suo Nada									
729	Hime Shima	33° 44'	131° 38'	-0 48	-0 47	(*0.84+0.2)		6.3	8.5	5.7
731	Kakaji	33° 41'	131° 31'	-0 45	-0 49	-0.8	-0.1	6.8	9.1	6.1
733	Unoshima Ko	33° 38'	131° 08'	-0 52	-0 56	+0.5	+0.2	7.8	10.4	6.9
735	Tokuyama Wan	34° 01'	131° 49'	-1 02	-1 01	(*0.84+0.4)		6.3	8.5	5.9
737	Mitajiri Ko	34° 02'	131° 35'	-0 54	-0 58	(*0.84+0.1)		6.3	8.5	5.6
739	Ube Ko	33° 56'	131° 15'	-0 52	-0 51	+0.6	+0.3	7.8	10.5	7.0
	Shimonoseki Kaikyo									
741	Aohama, Kyushu	33° 57'	131° 01'	-0 47	-0 47	+0.6	+0.1	8.0	10.8	6.9
743	Iwakuro, Honshu	33° 58'	130° 59'	-0 37	-0 41	+0.3	+0.1	7.7	10.4	6.8
	on Moji, p.36									
745	Shimonoseki, Honshu	33° 58'	130° 57'	+0 00	+0 00	*1.07	*1.07	5.4	7.2	4.4
747	Isakimachi	33° 57'	130° 55'	+0 09	+0 02	*1.02	*1.02	4.7	6.4	4.1
749	Moji, Kyushu	33° 57'	130° 58'					4.59	6.56	4.27
751	Tanokubi	33° 55'	130° 55'	+0 35	+0 22	*0.74	*0.74	3.4	4.8	3.0
753	Haidomari	33° 57'	130° 53'	+0 38	+0 39	*0.59	*0.59	2.7	3.8	2.6
755	Wakamatsu Ko	33° 55'	130° 49'	+0 54	+0 48	*0.59	*0.59	2.7	3.7	2.6
	Honshu, Northwest Coast									
757	Yoshimo	34° 05'	130° 52'	+0 46	+0 39	*0.50	*0.50	2.3	3.2	2.3
759	Kottoi	34° 19'	130° 54'	+1 05	+0 58	*0.52	*0.52	2.4	3.2	2.4
761	Yuya Wan (Aburatani Wan)	34° 24'	130° 57'	+1 11	+1 04	*0.39	*0.39	1.8	2.5	1.9
	on Hong Kong, p.120									
763	Senzaki Ko	34° 24'	131° 12'	+1 07	+1 17	*0.39	*0.32	1.5	2.0	1.7
765	Hagi Ko	34° 26'	131° 25'	+1 27	+1 37	*0.36	*0.32	1.3	1.8	1.6
767	Esaki Ko	34° 38'	131° 39'	+2 05	+2 15	*0.26	*0.25	0.9	1.2	1.2
769	Hamada Ko (Tono Ura entrance) <12>	34° 55'	132° 04'	+2 41	+2 50	*0.20	*0.18	0.7	0.9	0.9
771	Sagi Ura	35° 27'	132° 41'	---	---	---	---	0.5	---	---
773	Kaka Ura	35° 35'	133° 03'	---	---	---	---	0.5	---	---
775	Sakai Ko, Miho Wan	35° 33'	133° 14'	---	---	---	---	0.3	---	---
777	Yonago Nakami	35° 26'	133° 19'	---	---	---	---	0.3	---	---
779	Hinotso Ura, Dozen, Oki Retto	36° 05'	133° 04'	---	---	---	---	0.4	---	---
781	Saigo Ko, Dogo, Oki Retto	36° 12'	133° 20'	---	---	---	---	0.5	---	---
783	Shibayama Ko	35° 40'	134° 40'	---	---	---	---	0.5	---	---
785	Ine Ko, Wakasa Wan	35° 40'	135° 17'	---	---	---	---	0.5	---	---
787	Maizuru Ko, Wakasa Wan <13>	35° 27'	135° 19'	---	---	---	---	0.5	---	---
789	Tsuruga Ko, Wakasa Wan <14>	35° 40'	136° 04'	---	---	---	---	0.5	---	---
791	Mikuni Ko	36° 15'	136° 08'	---	---	---	---	0.5	---	---
793	Wajima Ko	37° 24'	136° 54'	---	---	---	---	0.5	---	0.6
795	Nanao, Nanao Wan	37° 03'	136° 58'	---	---	---	---	0.5	---	---
797	Fushiki Ko, Toyama Wan	36° 48'	137° 04'	---	---	---	---	0.5	---	---
799	Naoetsu Ko	37° 11'	138° 15'	---	---	---	---	0.5	---	---
801	Niigata Ko	37° 57'	139° 04'	---	---	---	---	0.4	---	---
803	Ogi Ko, Sado Shima	37° 49'	138° 17'	---	---	---	---	0.5	---	---
805	Ryo Zu Ko, Sado Shima	38° 05'	138° 26'	---	---	---	---	0.5	---	---
807	Kamo Ko	38° 46'	139° 44'	---	---	---	---	0.4	---	---
809	Tsuchizaki	39° 45'	140° 03'	---	---	---	---	0.4	---	---
811	Funakawa Wan	39° 53'	139° 52'	---	---	---	---	0.5	---	---
813	Iwasaki	40° 35'	139° 54'	---	---	---	---	0.4	---	---
815	Fuka Ura	40° 39'	139° 55'	---	---	---	---	0.4	---	---
817	Kodomari Wan	41° 08'	140° 18'	---	---	---	---	0.6	---	---
	Kyushu, East Coast									
	on Naha, p.44									
819	Inokushi Ko <15>	32° 48'	131° 54'	-1 07	-1 07	(*0.88+0.2)		3.6	4.8	3.6
821	Todoro Ko	32° 30'	131° 41'	-1 04	-1 04	*0.97	*0.97	3.9	5.3	3.8
823	Hososhima <16>	32° 26'	131° 40'	-0 51	-0 43	*0.90	*0.90	3.6	4.8	3.5
825	Mimitsu	32° 20'	131° 37'	-0 57	-0 58	*0.92	*0.92	3.7	4.9	3.6
827	Uchiiumi <17>	31° 45'	131° 28'	-1 07	-1 07	(*0.93+0.2)		3.8	5.0	3.8
829	Tonoura	31° 31'	131° 22'	-1 09	-1 09	(*0.95+0.2)		3.9	5.2	3.9
831	Fukushima Inamachi, Ariake Wan	31° 27'	131° 12'	-0 59	-1 00	-0.1	0.0	4.0	5.3	3.8

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	JAPAN Kyushu, South Coast Time meridian, 135° E	North	East	h m	h m	ft	ft	ft	ft	ft
				on Naha, p.44						
833	Odomari Wan	31° 01'	130° 41'	-0 24	-0 25	+1.3	+0.4	5.0	6.6	4.7
835	Yamagawa Ko, Kagoshima Kaiwan	31° 12'	130° 38'	-0 02	-0 02	+1.9	+0.5	5.5	7.3	5.1
837	Furue Ko, Kagoshima Kaiwan	31° 23'	130° 46'	-0 02	-0 02	+2.1	+0.5	5.7	7.5	5.2
839	Kagoshima Ko, Kagoshima Kaiwan	31° 36'	130° 34'	-0 01	+0 07	+2.1	+0.7	5.5	7.5	5.3
841	Bono Tsu, Tomari Ura	31° 16'	130° 13'	+0 09	+0 08	+1.6	+0.4	5.3	7.1	4.9
	Kyushu, West Coast			on Sasebo, p.40						
843	Nakagawara Ura <18>	31° 51'	129° 51'	-0 40	-0 42	(*0.90+0.3)		5.5	7.3	5.2
845	Akune	32° 01'	130° 11'	-0 47	-0 49	-0.2	0.0	5.9	7.8	5.3
847	Fukuro Oki, Yatsushiro Kai	32° 11'	130° 22'	+0 15	+0 14	+1.7	+0.4	7.4	9.9	6.4
849	Kaga Shima, Yatsushiro Kai	32° 31'	130° 33'	+0 19	+0 18	+2.7	+0.6	8.2	11.0	7.0
851	Yanagino Seto, Yatsushiro Kai	32° 33'	130° 25'	+0 19	+0 18	+2.9	+0.5	8.5	11.3	7.1
853	Misumi Ko, Misumi No Seto	32° 37'	130° 27'	+0 24	+0 22	*1.39	*1.22	8.9	11.8	7.3
855	Ushibuka, Amakusa Shimo Shima	32° 12'	130° 01'	-0 32	-0 34	+0.1	+0.1	6.1	8.1	5.5
857	Sakitsu Wan, Amakusa Shimo Shima	32° 19'	130° 01'	-0 36	-0 38	0.0	+0.1	6.0	8.2	5.4
859	Tomioka Wan, Amakusa Shimo Shima	32° 32'	130° 02'	-0 24	-0 26	+1.1	+0.3	6.9	9.3	6.1
861	Kuchinotsu Wan	32° 36'	130° 11'	+0 23	+0 21	+1.7	+0.4	7.4	9.7	6.4
863	Shimabara, Shimabara Kaiwan	32° 47'	130° 23'	+0 32	+0 30	*1.58	*1.26	10.4	13.6	8.1
865	Miike Ko, Shimabara Kaiwan	33° 01'	130° 25'	+0 36	+0 37	*1.76	*1.57	11.2	14.9	9.2
867	Kabashima Suido	32° 34'	129° 47'	-0 25	-0 27	+0.1	0.0	6.2	8.2	5.4
869	Fukahori	32° 41'	129° 49'	-0 26	-0 23	+0.1	+0.2	6.0	8.3	5.5
871	Nagasaki Ko <19>	32° 43'	129° 51'	-0 24	-0 26	-0.6	-0.1	5.6	7.5	5.0
873	Terashima Suido	33° 02'	129° 38'	-0 12	-0 14	+0.1	+0.1	6.1	8.3	5.5
875	Omodake	33° 05'	129° 41'	-0 06	-0 08	+0.4	+0.2	6.3	8.5	5.7
877	SASEBO <20>	33° 10'	129° 43'			<i>Daily predictions</i>		6.1	8.4	5.4
879	Kogushi Wan, Omura Wan	33° 04'	129° 49'	+2 51	+2 49	(*0.26+0.1)		1.6	1.9	1.5
881	Omura, Omura Wan	32° 54'	129° 57'	+2 55	+2 53	(*0.28+0.2)		1.7	2.2	1.7
883	Kusudomari	33° 13'	129° 35'	-0 05	-0 07	0.0	+0.1	6.0	8.1	5.4
885	Shijiki Wan, Hirado Shima	33° 12'	129° 23'	+0 19	+0 18	-0.3	0.0	5.8	7.7	5.2
887	Usuka Wan, Hirado Shima	33° 23'	129° 32'	+0 42	+0 40	*0.88	*0.88	5.4	7.3	4.7
	Goto Retto									
889	Me Shima, Danjo Gunto	32° 00'	128° 21'	-0 21	-0 22	(*0.85+0.7)		5.2	7.1	5.3
891	Tamano Ura, Fukaye Jima	32° 37'	128° 37'	+0 07	+0 05	-0.1	+0.1	5.9	8.1	5.4
893	Fukaye, Fukaye Jima	32° 42'	128° 51'	+0 04	+0 02	-0.3	0.0	5.8	7.8	5.2
895	Wakamatsu Ura, Wakamatsu Shima	32° 53'	129° 01'	+0 21	+0 20	-0.1	0.0	6.0	8.0	5.3
897	Arikawa Wan, Nakadori Shima	32° 59'	129° 07'	+0 08	+0 07	*0.87	*0.87	6.3	7.1	4.7
899	Kono Ura, Uku Shima	33° 16'	129° 05'	+0 25	+0 24	-0.7	-0.2	5.6	7.6	4.9
	Kyushu, Northwest Coast			on Moji, p.36						
901	Kazamoto Ura, Iki Shima	33° 51'	129° 41'	+0 22	+0 15	*0.96	*0.96	4.4	5.9	3.8
903	Gono Ura, Iki Shima	33° 45'	129° 41'	+0 26	+0 19	*1.05	*1.05	4.8	6.6	4.2
905	Mikuriya, Imari Wan	33° 22'	129° 40'	+0 07	+0 01	*1.18	*1.18	5.4	7.6	5.0
907	Kariya Ko	33° 29'	129° 50'	+0 25	+0 18	*1.00	*1.00	4.6	6.2	4.2
909	Yobuko Ko <21>	33° 33'	129° 53'	+0 06	+0 00	*0.94	*0.94	4.3	6.1	3.9
911	Fukuoka Wan	33° 36'	130° 23'	+0 41	+0 35	*0.87	*0.87	4.0	5.6	3.7
913	Konominato Ura	33° 51'	130° 29'	+0 41	+0 35	*0.72	*0.72	3.3	4.5	3.1
915	Iwaya	33° 56'	130° 41'	+0 45	+0 38	*0.59	*0.59	2.7	3.7	2.7
	Tsushima			on Sasebo, p.40						
917	Mikata, Aso Wan	34° 18'	129° 16'	+0 33	+0 31	(*0.79-0.4)		4.8	6.5	3.9
919	Tsuna Shima	34° 25'	129° 16'	+0 33	+0 31	(*0.72-0.4)		4.4	6.0	3.5
921	Sasuna Ko	34° 39'	129° 23'	+0 16	+0 14	*0.51	*0.43	3.3	4.5	2.7
				on Moji, p.36						
923	Ajiro, Nishitomari Wan	34° 39'	129° 29'	-0 19	-0 25	*0.54	*0.54	2.5	3.5	1.9
925	Oshika	34° 31'	129° 26'	-0 16	-0 23	*0.63	*0.63	2.9	4.0	2.2
927	Miura Wan	34° 18'	129° 23'	-0 16	-0 23	*0.76	*0.76	3.5	4.8	2.8
929	Izuhara Ko	34° 12'	129° 17'	-0 10	-0 23	*0.83	*0.83	3.8	5.4	3.0
	Nansei Shoto (Southwestern Islands)			on Naha, p.44						
931	Nishinoomote Wan, Tanega Shima	30° 44'	130° 59'	-0 24	-0 24	+0.5	+0.2	4.4	5.8	4.2
933	O Ura, Tanega Shima	30° 27'	130° 58'	-0 52	-0 53	0.0	0.0	4.1	5.4	3.9
935	Isso, Yaku Shima	30° 27'	130° 30'	-0 07	-0 08	+0.7	+0.2	4.6	6.1	4.3
937	Kuchinoerabu Shima	30° 28'	130° 11'	-0 08	-0 09	+0.7	+0.2	4.6	6.2	4.3
939	Nakano Shima	29° 50'	129° 51'	-0 15	-0 16	+0.1	0.0	4.2	5.5	3.9
941	Takara Shima	29° 09'	129° 12'	+0 10	+0 10	-0.1	0.0	4.0	5.3	3.8
943	Somachi Hakuchi, Kikai Jima Amami O Shima	28° 20'	130° 00'	+0 30	+0 30	(*0.76+0.3)		3.1	4.3	3.3
945	Sumiyo Wan	28° 14'	129° 25'	-0 36	-0 37	0.0	0.0	4.1	5.2	3.9
947	Koniya	28° 09'	129° 18'	-0 10	-0 11	-0.1	0.0	4.0	5.4	3.8
949	Nishikomi	28° 14'	129° 10'	-0 08	-0 09	+0.1	0.0	4.2	5.5	3.9
951	Uken, Yakiuchi Wan	28° 18'	129° 14'	-0 04	-0 05	0.0	0.0	4.1	5.4	3.9
953	Kasari Wan	28° 27'	129° 39'	-0 04	-0 05	+0.1	-0.1	4.3	5.6	3.9
955	Uke Shima	28° 02'	129° 14'	-0 24	-0 26	0.0	+0.1	4.0	5.3	3.9
957	Sammura Wan, Tokuno Shima	27° 52'	128° 58'	-0 32	-0 32	*0.93	*0.93	3.8	5.0	3.6
959	Wadomari, Okinoyerabu Jima	27° 24'	128° 40'	-0 31	-0 31	*0.90	*0.90	3.6	4.7	3.5
961	Gakiya, Iheya Jima	27° 03'	127° 58'	-0 09	-0 10	*0.90	*0.90	3.8	5.0	3.5

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	JAPAN Nansei Shoto (Southwestern Islands)-cont. Time meridian, 135° E	North	East	h m	h m	ft	ft	ft	ft	ft
	<i>Okinawa Shima</i>			on Naha, p.44						
963	Sukku, Ora Wan	26° 33'	128° 02'	-0 39	-0 39	0.0	0.0	4.1	5.5	3.9
965	Yonabaru, Buckner Bay	26° 12'	127° 46'	-0 44	-0 42	-0.1	-0.1	4.1	5.4	3.7
967	NAHA	26° 12'	127° 40'	<i>Daily predictions</i>				4.1	5.6	3.9
969	Sesoko Byochi	26° 38'	127° 53'	+0 11	+0 11	-0.2	-0.2	4.1	5.4	3.7
971	Unten Ko	26° 40'	128° 01'	-0 07	-0 08	*0.93	*0.93	3.8	5.0	3.6
973	Zamami Jima, Kerama Kaikyo	26° 13'	127° 18'	-0 06	-0 07	-0.1	-0.1	4.1	5.4	3.8
975	Gima Ko, Kume Shima	26° 20'	126° 44'	-0 07	-0 07	-0.1	-0.1	4.1	5.4	3.8
977	Minami Daito Jima	25° 49'	131° 14'	-0 35	-0 35	*0.81	*0.81	3.3	4.4	3.2
979	Miyako Hakuchi, Miyako Jima	24° 48'	125° 17'	+0 08	+0 07	*0.90	*0.90	3.8	4.9	3.5
981	Ishigaki, Ishigaki Shima	24° 20'	124° 10'	+0 03	+0 02	(*0.83+0.2)		3.4	4.4	3.4
983	Funauke, Iriomote Jima	24° 20'	123° 44'	+0 19	+0 18	(*0.83+0.2)		3.3	4.4	3.4
985	Yonakuni Jima	24° 26'	123° 00'	-0 03	-0 03	(*0.76+0.2)		3.1	4.2	3.2
987	Kobi Sho, Sento Shosho	25° 56'	123° 41'	+0 44	+0 43	(*0.80+0.4)		3.3	4.5	3.5
	KOREA Japan Sea			on Pusan, p.48						
989	Unggi-hang	42° 20'	130° 25'	---	---	--	--	0.5	--	0.7
991	Sajin-man	41° 59'	130° 00'	---	---	--	--	0.5	--	0.7
993	Taeryanghwa-man	41° 12'	129° 44'	---	---	--	--	0.5	--	0.7
995	Songjin-hang	40° 40'	129° 13'	---	---	--	--	0.6	--	0.8
997	Ch'aho-hang	40° 12'	128° 39'	---	---	--	--	0.5	--	0.7
999	Sinp'o-hang	40° 01'	128° 12'	---	---	--	--	0.6	--	0.7
1001	Sohojin-hang	39° 49'	127° 38'	---	---	--	--	0.6	--	0.7
1003	Wonsan-hang, Yonghung-man	39° 10'	127° 26'	---	---	--	--	0.6	--	0.7
1005	Changjon-hang	38° 44'	128° 12'	---	---	--	--	0.5	--	0.7
1007	Chumunjin-hang	37° 54'	128° 50'	---	---	--	--	0.5	--	0.6
1009	Ullung-do	37° 29'	130° 54'	---	---	--	--	0.3	--	0.4
1011	Chukpyon-man	37° 04'	129° 26'	---	---	--	--	0.4	--	0.5
1013	Ch'uksan-hand	36° 30'	129° 27'	---	---	--	--	0.3	--	0.4
1015	Yongil-man	36° 03'	129° 23'	---	---	--	--	0.3	--	0.4
1017	Ulsan	35° 30'	129° 23'	-0 52	-0 44	(*0.46+0.1)		1.3	1.8	1.1
1019	T'eahwa-gang	35° 28'	129° 25'	-1 00	-0 52	(*0.43+0.2)		1.2	1.7	1.1
1021	PUSAN	35° 06'	129° 02'	<i>Daily predictions</i>				2.8	4.0	2.1
1023	Yong-do	35° 05'	129° 03'	-0 11	-0 03	0.0	-0.1	2.9	3.9	2.1
1025	Ch'onsong-man, Kadok-to	35° 01'	128° 49'	+0 07	+0 15	*1.50	*1.50	4.1	5.6	3.2
1027	Masan-man	35° 10'	128° 34'	+0 10	+0 18	*1.60	*1.60	4.4	6.1	3.4
1029	Unp'ung-p'o, Chinhae-man	35° 06'	128° 29'	+0 08	+0 16	*1.74	*1.74	4.8	6.6	3.7
1031	Hyonnaeryang-haehyop, Chinhae-man	34° 53'	128° 28'	+0 20	+0 29	*1.80	*1.80	5.0	6.8	3.8
1033	Chise-p'o, Koje-do	34° 50'	128° 43'	+0 03	+0 11	*1.54	*1.54	4.3	5.7	3.3
				on Ch'ang Chiang Approach, p.92						
1035	Choguri-man, Koje-do	34° 43'	128° 36'	-1 10	-1 23	(*0.63-1.6)		5.4	7.3	4.4
1037	Koje-man, Koje-do	34° 50'	128° 35'	-1 08	-1 20	(*0.67-1.7)		5.8	7.8	4.7
1039	Ch'ungmu-hang	34° 51'	128° 25'	-0 49	-1 12	(*0.67-1.7)		5.8	8.1	4.7
1041	Yokchi-do	34° 39'	128° 16'	-0 59	-1 11	(*0.71-1.9)		6.1	8.2	4.9
1043	Wis-som, Saryang-do	34° 51'	128° 14'	-1 01	-1 13	(*0.74-1.9)		6.4	8.7	5.2
1045	Kosong-man	34° 55'	128° 21'	-0 55	-1 07	(*0.77-2.2)		6.6	8.8	5.2
1047	Mijo-man, Namhae-do	34° 43'	128° 03'	-1 04	-1 16	(*0.74-1.8)		6.4	8.8	5.3
1049	Samch'onp'o	34° 56'	128° 04'	-1 00	-1 12	(*0.77-2.1)		6.6	8.9	5.3
1051	Ch'ojon-ni	35° 03'	128° 03'	-0 31	-0 43	-3.9	-2.9	7.6	10.4	6.2
1053	P'yousan-ni, Namhae-do	34° 46'	127° 51'	-0 59	-1 11	-4.4	-3.0	7.2	10.0	5.9
1055	Yosu	34° 45'	127° 46'	-0 43	-1 08	-4.3	-3.1	7.4	10.2	5.9
1057	Kwangyang-man	34° 51'	127° 45'	-0 40	-0 53	-3.7	-2.9	7.8	10.7	6.3
1059	Noryang-ni	34° 57'	127° 53'	-0 43	-0 55	-3.9	-2.9	7.6	10.4	6.2
1061	Chobal-to, Yoja-man	34° 38'	127° 34'	-0 18	-0 31	-3.3	-2.7	8.0	11.0	6.6
1063	Tonae-hae, Komun-do	34° 01'	127° 19'	-0 21	-0 34	(*0.77-1.6)		6.6	9.0	5.8
1065	Sonjuk-to, Sonjuk-yolto	34° 17'	127° 22'	-0 01	-0 13	(*0.79-1.6)		6.8	9.4	6.0
1067	Sayang-do, Naro-yolto	34° 28'	127° 27'	-0 35	-0 47	-3.7	-2.7	7.6	10.2	6.4
1069	Kogum-sudo	34° 30'	127° 09'	-0 02	-0 14	-3.0	-2.4	8.0	10.9	6.9
1071	Mato-sudo	34° 26'	126° 51'	+0 20	+0 07	-2.7	-2.4	8.3	11.5	7.1
1073	Wando	34° 18'	126° 46'	+1 09	+1 09	-3.8	-2.5	7.3	9.9	6.5
1075	Soan-hang, Soan-do	34° 09'	126° 38'	+0 44	+0 31	-3.9	-2.6	7.3	9.8	6.4
	Yellow Sea									
1077	Sangch'uja-do, Ch'uja-kundo <i>Cheju-do</i>	33° 57'	126° 17'	+1 24	+1 12	(*0.70-1.3)		6.0	7.9	5.4
1079	Udo-sudo	33° 30'	126° 55'	-0 03	-0 16	(*0.56-0.9)		4.8	6.5	4.5
1081	Sogwi-p'o	33° 14'	126° 33'	-0 08	-0 21	(*0.65-1.2)		5.6	7.5	5.0
1083	Ch'agwi-do	33° 18'	126° 09'	+1 02	+0 50	(*0.63-1.0)		5.4	7.1	5.0
1085	Cheju Harbor	33° 31'	126° 32'	+0 56	+0 54	(*0.59-1.1)		5.1	6.9	4.6
1087	Hwabuk-ni	33° 31'	126° 35'	+0 54	+0 41	(*0.56-0.8)		4.8	6.4	4.6
1089	Oran-ni, Maro-hae	34° 21'	126° 29'	+1 23	+1 11	-3.6	-2.5	7.5	9.9	6.6
1091	Sangma-do, Samma-do	34° 27'	126° 25'	+1 24	+1 12	-2.8	-2.4	8.2	10.8	7.0
1093	Hachodo	34° 18'	126° 03'	+3 40	+3 01	(*0.72-1.9)		6.2	8.1	5.0
1095	Hat'ae-do, Naju-kundo	34° 32'	126° 03'	+3 08	+2 56	(*0.90-2.0)		7.7	9.9	6.6
1097	Chin-do	34° 30'	126° 12'	+4 02	+3 50	-3.1	-2.5	8.0	10.3	6.8
1099	Baikpachin	34° 32'	126° 21'	+1 40	+2 03	-3.7	-2.7	7.6	10.0	6.4
1101	Usuyong	34° 35'	126° 18'	+3 50	+3 21	-3.6	-3.0	8.0	10.0	6.3
1103	Siha-do	34° 42'	126° 15'	+4 28	+3 36	-2.5	-2.5	8.6	10.6	7.1
1105	Mokp'o	34° 47'	126° 23'	+5 26	+4 36	-3.0	-3.3	8.9	11.2	6.5

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	KOREA Yellow Sea-cont. Time meridian, 135° E	North	East	h m	h m	ft	ft	ft	ft	ft
				on Ch'ang Chiang Approach, p.92						
1107	Yongsan-dong	34° 53'	126° 32'	+6 02	+5 50	*0.88	*0.60	9.0	11.2	7.7
1109	Taehuksan-do, Taehuksan-kundo	34° 41'	125° 26'	+4 01	+3 49	*0.68	*0.43	7.2	9.2	5.9
1111	Pigum-sudo, Naju-kundo	34° 43'	125° 56'	+3 40	+3 28	-2.4	-2.5	8.7	11.2	7.2
1113	Chaun-do, Naju-kundo	34° 53'	126° 06'	+4 08	+3 56	-0.8	-2.2	10.0	12.8	8.1
1115	Imja-do	35° 03'	126° 05'	+4 31	+4 19	-0.9	-2.4	10.1	13.5	8.0
				on Inch'on, p.52						
1117	Hamp'yong-man	35° 09'	126° 21'	-2 35	-2 30	(*0.63+0.7)		13.1	16.6	10.3
1119	Anma-do, Anma-kundo	35° 21'	126° 01'	-2 28	-2 23	(*0.57+0.5)		11.8	15.1	9.2
1121	Kogunsan-kundo	35° 49'	126° 24'	-1 58	-1 53	(*0.69+0.5)		14.3	18.4	11.0
1123	Chuk-to, Kunsan-hang	36° 02'	126° 32'	-1 50	-1 46	(*0.72+0.7)		15.0	19.6	11.6
1125	Kunsan, Kum-gang	35° 59'	126° 43'	-1 36	-0 54	*0.73	*0.75	15.1	19.0	11.2
1127	Ochongdo	36° 07'	125° 59'	-1 44	-1 39	(*0.64+0.8)		13.2	17.3	10.5
1129	Oeyon-do, Oeyon-yolto	36° 13'	126° 04'	-1 36	-1 32	(*0.60+1.1)		12.5	16.7	10.2
1131	So-do, Ch'onsu-man	36° 24'	126° 26'	-1 10	-1 06	(*0.77+0.6)		15.9	20.8	12.3
1133	Mohang-ni	36° 47'	126° 08'	-0 57	-0 52	(*0.74+0.7)		15.4	20.0	11.9
1135	Umo-do	37° 02'	126° 27'	-0 27	-0 23	*0.91	*0.98	18.4	23.7	13.9
1137	Asan	36° 58'	126° 47'	+0 02	+0 02	+0.3	+0.3	20.7	27.4	15.5
1139	Soya-do, So-sudo	37° 14'	126° 10'	-0 15	-0 11	(*0.85+0.6)		17.6	22.9	13.5
1141	Taemuui-do, (Marie Fortunate Arch.)	37° 23'	126° 27'	-0 09	-0 04	-0.8	+0.3	19.6	25.6	14.9
1143	INCH'ON, Yom-ha	37° 28'	126° 37'			<i>Daily predictions</i>		20.7	27.1	15.2
1145	Yongjong-do, Yom-ha	37° 30'	126° 34'	+0 06	+0 06	+0.4	+0.4	20.7	27.2	15.6
1147	Sinan-ni, Yom-ha	37° 40'	126° 32'	+0 55	---	+1.2	---	---	---	---
1149	Chumun-do, Songmo-sudo	37° 39'	126° 15'	+0 15	+0 20	(*0.92+0.4)		19.0	24.8	14.4
1151	Taeyonp'yong-do, Yonp'yong-yolto	37° 40'	125° 43'	+0 14	+0 18	(*0.76+0.5)		15.7	20.3	12.1
1153	Mu-do, Haeju-man	37° 44'	125° 35'	+0 16	+0 20	(*0.72+0.9)		15.0	19.7	11.8
1155	Haeju, Haeju-man	38° 00'	125° 42'	+0 44	+0 49	(*0.82+0.5)		16.9	22.0	13.0
1157	Tungsan-got	37° 41'	125° 22'	+0 21	+0 25	(*0.62+1.1)		12.8	16.8	10.5
1159	Sunwi-do, Sunwido-myoji	37° 45'	125° 20'	+0 31	+0 36	(*0.53+1.1)		10.9	14.3	9.2
				on Dalian, p.60						
1161	Kirin-do	37° 50'	125° 03'	-4 22	-4 26	*1.41	*1.55	9.4	12.4	8.1
1163	Taech'ong-do, Taech'ong-kundo	37° 50'	124° 43'	-4 02	-4 05	+1.4	+0.8	7.5	9.7	6.8
1165	Wollae-do	38° 03'	124° 49'	-3 59	-4 02	+1.3	+0.7	7.5	9.5	6.7
1167	Ch'angam-dong	38° 07'	124° 43'	-3 24	-3 28	+1.6	+0.8	7.7	10.0	6.9
1169	Monggum-do	38° 11'	124° 47'	-2 28	-2 31	+1.9	+0.8	8.0	10.1	7.0
1171	Chin po Ki	38° 27'	124° 56'	-2 15	-2 19	*1.41	*1.45	9.6	12.3	8.0
				on Namp'O-Hang, p.56						
1173	Taedong-gang									
1175	Sok-to	38° 38'	125° 00'	-0 40	-0 44	-1.9	-0.2	11.0	14.0	8.9
1177	P'i-do	38° 41'	125° 11'	-0 27	-0 24	+1.0	+0.1	13.6	16.8	10.5
1179	NAMP'O-HANG	38° 43'	125° 24'			<i>Daily predictions</i>		12.7	15.6	10.0
1181	Ch'ol-do	38° 39'	125° 38'	+0 20	+0 24	+1.7	+0.2	14.2	17.9	10.9
1183	Kyomip'o	38° 44'	125° 38'	+0 31	+0 30	(*1.21-0.3)		15.4	19.3	11.8
1185	Sokhojong	38° 57'	125° 38'	+1 16	+2 05	+1.6	+0.4	13.9	16.9	11.0
1187	P'yongyang	39° 01'	125° 45'	+3 01	+4 52	(*0.18+0.6)		2.3	3.0	2.4
1189	Sokhae-dong	38° 31'	125° 40'	+0 06	+0 28	(*1.31-0.4)		16.6	20.5	12.7
1191	Unmu-do	39° 25'	125° 07'	+0 08	+0 11	*1.23	*1.23	15.6	20.0	12.3
1193	Nap-to	39° 16'	124° 43'	-0 07	-0 03	+1.2	+0.4	13.5	17.6	10.8
1195	Taehwa-do	39° 27'	124° 37'	+0 06	+0 09	*1.10	*1.10	13.8	17.6	11.0
1197	Ka-do	39° 31'	124° 40'	+0 10	+0 13	(*1.15-0.2)		14.6	18.5	11.3
	<i>Yalu River and Approach</i>									
1199	Suun-do	39° 42'	124° 25'	+0 11	+0 19	+2.0	+0.3	14.4	18.2	11.1
1201	Tasa-do	39° 48'	124° 25'	+0 17	+0 39	(*1.19-0.3)		15.1	19.3	11.6
1203	Shinto Islands	39° 48'	124° 16'	+0 28	+0 32	(*1.17-0.2)		14.9	19.2	11.5
	Yongamp'o	39° 56'	124° 21'	+1 38	+1 41	-1.7	-0.2	11.2	14.0	9.0
	CHINA Yellow Sea, North Shore Time meridian, 120° E									
	<i>Yalu River and Approach-cont.</i>									
1205	Zhaoshigou [Chao-shin-kou]	39° 53'	124° 12'	-0 52	+0 08	(*1.09+0.7)		13.5	17.4	11.5
1207	Dandong [Tan-tung]	40° 07'	124° 24'	+1 21	+3 20	(*0.59-0.3)		8.5	8.9	4.9
1209	Dalu Dao [Talu Tao]	39° 45'	123° 45'	-0 47	-0 26	(*1.01+0.7)		12.5	15.7	10.8
	CHINA, Liaoning, South Coast									
	on Dalian, p.60									
1211	Dayang He									
1213	Shishanzi	39° 58'	123° 40'	+0 06	+1 25	(*1.07+1.0)		8.2	8.9	6.6
	Dagushan [Takushan Road]	39° 46'	123° 33'	-0 59	-1 03	(*1.92-0.3)		13.1	15.4	9.8
	<i>Shicheng Liedao</i>									
1215	Xiaowangjia Dao	39° 32'	123° 05'	-1 06	-1 09	(*1.62+0.7)		10.8	13.8	9.2
1217	Dawangjia Dao [Ta-wang-chia Tao]	39° 27'	123° 04'	-1 16	-1 09	(*1.60+0.0)		10.8	13.8	8.5
	<i>Waichangshan Liedao</i>									
1219	Zhangzi Dao [Changtze Tao, Blonde Group]	39° 03'	122° 45'	-0 52	-0 55	(*1.21+0.0)		8.2	10.2	6.6
	<i>Lichangshan Liedao</i>									
1221	Xiaochangshan Dao	39° 14'	122° 40'	-0 54	-0 54	(*1.29+0.7)		8.5	10.8	7.5
1223	Dachangshan Dao [Tachangshan Tao]	39° 16'	122° 35'	-0 43	-0 46	(*1.35+0.3)		9.2	11.5	7.5
1225	Guanglu Dao [Hu-lu Tao, Lump Island]	39° 12'	122° 18'	-0 29	-0 32	(*1.34+0.3)		10.5	10.8	7.5
1227	Changjiang Ao	39° 05'	122° 03'	-0 22	-0 26	(*1.18+0.0)		7.9	9.8	6.2

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	CHINA, Liaoning, South Coast Time meridian, 120° E	North	East	h	m	h	m	ft	ft	ft
				on Dalian, p.60						
1229	Dagukou [Ta-ku K'ou, Dairen Wan]	38° 58'	121° 50'	-0 06	-0 09	(*1.03+0.3)		6.9	8.5	5.9
1231	Sanshan Dao	38° 53'	121° 49'	-0 32	-0 32	(*1.01-0.3)		6.9	8.5	6.3
1233	DALIAN [Dairen Ko]	38° 55'	121° 40'	<i>Daily predictions</i>				6.6	8.5	6.3
1235	Yuyan	38° 34'	121° 19'	+1 07	+1 03	(*0.92-0.3)		6.2	7.9	4.6
	Gulfs of Liaodong and Bohai									
1237	Yangtouwa [Yang-tou Wan]	38° 47'	121° 08'	+1 15	+1 16	(*0.61+0.7)		5.3	5.6	3.9
1239	Yingchengzi Wan [Eijoshi Wan, Yingchengtze]	38° 58'	121° 19'	+2 26	+2 02	(*0.59+0.7)		5.3	5.6	3.9
1241	Hulutao [Hu-Li-T'ao, Pulantien Chiang]	39° 16'	121° 36'	+3 11	+2 36	(*0.65+0.7)		5.9	6.2	4.3
	<i>Pulandian</i>									
1243	Changshan Dao	39° 19'	121° 40'	+3 40	+3 07	(*0.69+0.7)		5.9	6.6	4.3
1245	Boqi Dao [Pochi Tao, Pulantien Chiang]	39° 23'	121° 45'	+3 59	+3 43	(*0.74+0.7)		6.2	6.9	4.6
1247	Xizhong Dao	39° 23'	121° 14'	+3 51	+3 06	(*0.53+1.0)		4.9	5.9	3.9
1249	Changxing Dao [Changhing Tao, Fuchou Bay]	39° 39'	121° 28'	+5 21	+5 00	(*0.58+1.3)		5.3	5.9	4.3
1251	Bayuquan	40° 18'	122° 05'	+6 44	+6 56	(*1.22+0.0)		9.8	10.2	6.2
	<i>Liao He</i>									
1253	Sidaogou [Bar Signal Station, Liao Ho]	40° 38'	122° 10'	+8 04	+8 46	(*1.22+0.3)		9.5	9.8	6.6
1255	Yingkou Neigang	40° 40'	122° 13'	+7 43	+8 25	(*1.26+0.0)		9.8	10.2	6.9
1257	Bar	40° 32'	122° 04'	+8 11	+8 06	(*1.13+0.7)		8.9	9.5	6.6
1259	Changshansi [Chang-shan-ssu Chiao]	40° 23'	120° 35'	+8 06	+7 30	(*0.63+0.7)		5.3	5.6	3.9
				on Qinhuangdao, p.64						
1261	Ninghai	39° 58'	119° 48'	-1 20	+1 20	(*0.99+0.0)		2.6	3.9	2.6
1263	Qinhuangdao	39° 55'	119° 37'	<i>Daily predictions</i>				2.6	3.6	3.0
1265	Dapu He (Bar)	39° 40'	119° 21'	+2 41	+1 00	(*1.39-1.3)		3.6	4.3	3.0
				on Tanggu, p.68						
1267	Daqinghekou	39° 10'	118° 52'	-1 22	-1 22	(*0.43+1.3)		4.6	5.3	4.6
	<i>Caojidian Tan</i>									
1269	Off Choushui Gou	38° 58'	119° 26'	-2 06	-1 50	(*0.26+2.6)		2.6	2.6	4.6
1271	Caojidian	38° 57'	118° 31'	-0 19	-0 40	(*0.63+1.0)		6.2	6.9	5.9
1273	Nangoutuo	39° 00'	118° 34'	-0 41	-0 25	(*0.53+1.6)		4.9	5.3	5.9
1275	Nanbao	39° 03'	118° 19'	+0 05	+0 30	(*0.52+1.0)		4.9	5.3	4.9
1277	Jianhekou	39° 14'	118° 04'	-0 15	-0 12	(*1.04+0.0)		9.8	10.5	8.2
	<i>Hai He</i>									
1279	Bar	38° 56'	117° 50'	+0 02	-0 01	(*0.90+1.0)		8.5	9.2	7.9
1281	TANGGU (Xingang)	39° 00'	117° 43'	<i>Daily predictions</i>				9.5	10.2	7.9
1283	Dagu	39° 00'	117° 43'	+0 07	+0 31	(*0.77+2.0)		7.2	7.2	7.9
	<i>Qi He</i>									
1285	Bar	38° 34'	117° 35'	+1 01	+0 34	(*0.82+2.0)		7.9	8.2	8.2
1287	Qikou	38° 36'	117° 43'	+0 03	+0 19	(*1.03+0.0)		9.8	10.5	8.2
1289	Off Chengkou	38° 27'	118° 26'	+0 56	-0 11	(*0.56+2.3)		5.9	6.6	6.6
1291	Dakou He (Bar)	38° 15'	117° 51'	+0 43	+0 37	(*0.95+0.3)		9.2	9.8	7.9
1293	Dongfeng Gang	38° 15'	118° 10'	+2 17	+2 15	(*0.71+0.0)		6.9	7.2	5.6
1295	Wanwangoukou	38° 11'	118° 27'	+1 24	+0 03	(*0.62-0.3)		6.6	7.2	4.3
1297	Huanghekou (east)	38° 09'	118° 52'	+2 34	-0 31	(*0.20+1.6)		3.0	3.6	3.0
	Shandong, North Coast									
				on Dalian, p.60						
1299	Tianshuigoukou	37° 43'	119° 05'	+13 11	+13 34	(*0.50-0.3)		4.3	4.6	2.3
	<i>Laizhou Wan</i>									
1301	Xiaqinghekou	37° 20'	119° 03'	+10 41	+10 25	(*0.47+0.3)		3.9	4.6	3.0
1303	Weihoukou	37° 11'	119° 31'	+13 15	+14 22	(*0.53+0.0)		4.6	4.9	3.0
1305	Huhekou	37° 19'	119° 48'	+12 04	+11 48	(*0.47+0.3)		3.9	4.6	3.0
1307	Longkou	37° 39'	120° 19'	+13 45	+13 35	(*0.43+0.0)		3.6	3.9	2.3
1309	Jimu Dao (Gaojiao) [Mu-chi-tao Chiao]	37° 41'	120° 13'	+12 23	+12 13	(*0.47+0.3)		3.9	4.3	3.0
	<i>Miaodao Liedao</i>									
1311	Beihuangcheng Dao	38° 22'	120° 54'	+0 27	+0 28	(*0.60+0.0)		4.3	5.3	3.3
				on Yantai, p.72						
1313	Tuoji Dao	38° 10'	120° 45'	+0 18	+0 19	(*0.70-0.7)		3.6	4.6	3.0
1315	Tangluanzi [Tangluan Anchorage, Miao-tao Group]	37° 59'	120° 41'	-0 12	-0 28	(*0.72-0.7)		3.6	4.6	3.0
1317	Nanchangshan Dao	37° 55'	120° 43'	+0 11	-0 09	(*0.69-0.3)		3.6	4.6	3.0
1319	Penglai	37° 50'	120° 44'	+0 18	+0 22	(*0.65+0.0)		3.3	4.3	3.3
1321	Bajiao	37° 39'	121° 08'	+0 04	+0 00	(*0.98-0.3)		5.3	6.2	4.3
1323	YANTAI [Chefoo Harbor]	37° 33'	121° 23'	<i>Daily Predictions</i>				5.3	6.6	4.9
1325	Kongdong Dao	37° 33'	121° 30'	+0 10	+0 04	(*0.98-0.3)		5.3	6.2	4.6
1327	YANGMA DAO [White Rock Point]	37° 29'	121° 38'	+0 30	+0 32	(*0.81-0.3)		5.3	5.6	3.6
1329	Chu Dao	37° 34'	122° 05'	+0 10	+0 07	(*0.90-0.3)		4.6	5.9	3.9
1331	Jiming Dao (Wangjia Zhuang)	37° 25'	122° 28'	+0 34	+1 01	(*0.74+0.3)		4.9	5.3	3.9
				on Tanggu, p.68						
1333	Hailu Dao	37° 27'	122° 40'	+8 11	+8 30	(*0.33+0.3)		3.6	4.3	3.0
1335	Malan Wan [Malan Cove]	37° 25'	122° 39'	+8 33	+8 31	(*0.38+0.7)		4.3	4.9	3.6
	Shandong, Southeast Coast									
1337	Chengshan Jiao [Dove Cove, Jungcheng Bay]	37° 23'	122° 40'	+8 56	+9 18	(*0.32+0.3)		3.6	4.3	3.0
1339	Lidao Wan [Litao Bay]	37° 16'	122° 33'	+9 50	+9 40	(*0.46-0.7)		4.9	5.6	3.0

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	CHINA, Liaoning, South Coast Shandong, Southeast Coast-cont. Time meridian, 120° E	North	East	h m	h m	ft	ft	ft	ft	ft
				on Qingdao, p.76						
1341	Jinghai Jiao [Chinghai Point]	36° 51'	122° 11'	-1 52	-2 26	(*0.72+1.0)		7.5	7.9	6.6
1343	Gulongzui [Niao-tsui Head]	36° 45'	121° 38'	-1 41	-2 08	(*0.84+0.3)		7.5	9.5	6.9
1345	Haiyang [Haiyanghsein]	36° 41'	121° 14'	-1 08	-1 32	(*0.85+0.3)		8.5	9.2	6.9
1347	Quinliyan	36° 15'	121° 23'	-1 10	-1 25	(*0.72+0.3)		6.6	8.2	5.9
	<i>Jiaozhou Wan</i>									
1349	Nu Dao [Star Reef, Lao Shan Bay]	36° 23'	120° 50'	-0 24	-0 57	(*0.90-0.3)		9.2	9.5	6.6
1351	Dongjia Wan [Tung-chai Harbor]	36° 06'	120° 32'	-0 05	-0 37	(*0.96-0.7)		9.8	10.2	6.9
1353	Mai Dao	36° 04'	120° 25'	-0 12	-0 15	(*0.90+0.0)		7.9	9.8	7.2
1355	Qingdao (Qianhai)	36° 03'	120° 19'	-0 05	-0 09	(*0.93+0.7)		8.2	10.5	7.9
1357	Huang Dao	36° 05'	120° 19'	-0 07	-0 03	(*0.98+0.0)		8.5	10.8	7.5
1359	QINGDAO (DA GANG) [Chingtao, Kaochou Wan]	36° 05'	120° 19'			<i>Daily predictions</i>		8.9	11.2	7.9
1361	Tangdao Wan	35° 55'	120° 09'	+0 13	+0 06	(*0.91+0.7)		7.9	10.5	7.9
1363	Lingshan Dao	35° 46'	120° 10'	+0 21	+0 08	(*0.86+0.7)		7.5	9.5	7.5
1365	Huangjiatang Wan [Huangchiatang Wan]	35° 32'	119° 45'	+0 39	+0 07	(*0.93-0.3)		8.2	10.5	6.9
1367	Shijiu Suo	35° 25'	119° 35'	+1 07	+0 54	(*1.09+0.3)		9.5	12.1	8.9
				on Lianyun Gang, p.80						
1369	Pingshan Dao	35° 08'	119° 54'	-0 21	-0 41	(*0.75+0.0)		8.2	10.5	7.2
	East Coast									
1371	Qinshan Dao	34° 52'	119° 17'	-0 04	+0 03	(*1.02-0.7)		11.2	14.4	9.2
1373	LIANYUN GANG	34° 45'	119° 28'			<i>Daily predictions</i>		10.8	14.1	9.5
1375	Kaishan Dao	34° 32'	119° 52'	+0 20	+0 16	(*0.85+1.0)		10.8	11.5	8.9
1377	Kuataokou	34° 04'	120° 22'	+1 54	+2 41	(*0.57-0.3)		7.2	7.9	4.9
1379	Xinyang Gang	33° 37'	120° 28'	+5 41	+6 46	(*0.52+1.6)		5.9	7.2	6.6
1381	Chenjiawu	33° 06'	121° 13'	+5 34	+5 22	(*1.00+0.3)		11.2	14.4	9.8
1383	Off Chuanshui Gang	32° 58'	121° 07'	+6 26	+6 04	(*1.22+0.3)		13.1	17.1	11.8
1385	Xiaoyangkou	32° 33'	120° 59'	+4 27	+3 55	(*0.69+3.0)		7.5	9.8	9.5
1387	Lusi	32° 08'	121° 35'	+6 11	+5 41	(*1.06+0.0)		11.8	16.1	10.2
				on Wusong, p.84						
	<i>Changjiangkou</i>									
1389	Tongsha Shazui	31° 06'	122° 01'	-1 57	-2 21	(*1.21+0.7)		9.2	11.8	8.5
1391	She Shan	31° 25'	122° 14'	-1 38	-2 26	(*1.09+0.3)		8.2	11.2	7.5
1393	ZHONGJUN, CHANGJIANG APPROACH	31° 07'	121° 54'			<i>Daily predictions, p.88</i>		8.5	11.8	7.5
1395	Jiudian Beacon	31° 16'	121° 43'	-0 50	-1 20	(*1.05+0.7)		7.9	10.5	7.5
1397	Hengsha	31° 17'	121° 51'	-0 49	-1 01	(*1.11-0.3)		8.2	11.2	6.9
	<i>Chongming Dao</i>									
1399	Laomihung	31° 30'	121° 40'	-0 40	-0 49	(*1.15-0.7)		8.5	9.8	6.9
1401	Qixiao Gang	31° 28'	121° 44'	-0 38	-0 47	(*1.12-0.7)		8.2	11.2	6.9
1403	Shixiao Gang	31° 28'	121° 47'	-0 22	-0 30	(*1.12-0.7)		8.2	11.2	6.6
1405	Bao Zhen	31° 32'	121° 38'	+0 28	+0 23	(*0.95-0.7)		6.9	9.5	5.6
	<i>Huangpu Jiang</i>									
1407	Gaoqiao	31° 22'	121° 35'	-0 06	-0 21	(*1.05-0.7)		7.9	10.5	6.6
1409	WUSONG [Shanghai, Wusung Bar]	31° 24'	121° 31'			<i>Daily predictions</i>		7.5	9.8	6.6
1411	Shanghai Gang [Shanghai, Huangpu River]	31° 15'	121° 29'	+0 41	+0 45	(*0.83+0.7)		6.2	8.2	5.9
1413	Jianyuan Dock	31° 12'	121° 30'	+0 55	+1 06	*0.80	--	--	--	--
	<i>Chang Jiang</i>									
1415	Xulujiang	31° 46'	120° 56'	+2 58	+3 02	(*0.82-0.7)		6.2	8.2	4.9
1417	Jiangyin	31° 57'	120° 18'	+5 14	+5 36	(*0.68-0.7)		4.9	6.9	3.9
	<i>Hangzhou Wan</i>									
1419	Jinshanzui	30° 44'	121° 22'	-0 10	-0 38	(*1.61-1.0)		11.8	15.7	10.2
1421	Zhapu	30° 36'	121° 05'	+0 43	-0 04	(*1.97-2.0)		14.8	19.4	11.5
1423	Haining	30° 25'	120° 32'	+1 59	+4 46	(*1.69+0.0)		12.8	16.7	11.2
1425	CH'ANG CHIANG APPROACH (Side Saddle) <41>	30° 49'	122° 38'			<i>Daily predictions, p.92</i>		8.6	11.7	9.6
1427	KANMEN (Yuhuan Dao)	28° 05'	121° 17'			<i>Daily predictions, p.96</i>		13.1	17.1	10.8
	TAIWAN									
	East Coast									
				on Naha, p.44						
1429	KEELUNG (CHI-LUNG CHIANG) <25>	25° 09'	121° 45'			<i>Daily predictions, p.112</i>		1.5	2.4	1.9
1431	Su-ao Kang	24° 35'	121° 52'	-1 13	-1 13	(*0.78+0.2)		3.2	4.2	3.2
1433	Hua-lien Kang	23° 58'	121° 37'	-1 15	-1 15	*0.83 *0.83		3.4	4.5	3.2
1435	Ch'eng-kuang-ao Po-ti	23° 08'	121° 24'	-1 19	-1 20	*0.86 *0.83		3.6	4.8	3.3
1437	Tu-lan Wan	22° 50'	121° 11'	-1 17	-1 17	*0.76 *0.76		3.1	4.1	3.0
1439	Nan-liao Wan, Lu Tao	22° 40'	121° 28'	-1 22	-1 22	*0.73 *0.72		3.0	4.1	2.8
1441	Pa-tai Wan, Lan Yu	22° 02'	121° 34'	-1 03	-1 04	(*0.80-0.2)		3.3	4.4	2.9
	West Coast									
				on Hong Kong, p.120						
1443	Ta-pan-lieh Mao-ti	21° 58'	120° 45'	-2 55	-2 46	*0.59 *0.57		2.0	2.6	2.6
1445	Ch'e-ch'eng Po-ti	22° 04'	120° 42'	-2 31	-2 21	*0.51 *0.54		1.6	2.1	2.3
1447	Tung-kang Po-ti	22° 28'	120° 26'	-1 31	-1 22	*0.48 *0.46		1.6	1.9	2.1
1449	Kao-hsiung <26>	22° 37'	120° 16'	-1 16	-1 07	*0.38 *0.39		1.2	1.5	1.7
1451	An-p'ing Kang	23° 00'	120° 09'	-0 09	+0 00	*0.43 *0.39		1.5	1.9	1.9
1453	Ting-t'ou-o-shan	23° 06'	120° 04'	+0 45	+0 54	*0.54 *0.43		2.1	2.3	2.3

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	TAIWAN West Coast-cont. Time meridian, 120° E	North	East	h m	h m	ft	ft	ft	ft	ft
				on PengHu (Ma-Kung Kang), p.108						
1455	Pu-tai Po-ti	23° 23'	120° 09'	-0 29	-0 25	*0.72	*0.72	4.2	5.0	3.7
1457	Hai-k'ou Po-ti	23° 42'	120° 10'	+0 12	+0 15	+1.5	-0.2	7.8	9.4	5.7
1459	Fang-yuan Po-ti	23° 55'	120° 18'	+0 12	+0 15	(*1.61-1.1)		9.8	11.8	7.1
1461	T'u-ko-k'u Kang	24° 11'	120° 29'	+0 02	+0 06	(*1.67-1.3)		10.2	12.4	7.2
1463	Ta-an Kang	24° 23'	120° 34'	-0 06	-0 03	(*2.00-1.5)		12.0	15.0	8.7
1465	Hou-lung Po-ti	24° 37'	120° 45'	-0 05	-0 01	(*1.85-1.2)		11.3	14.3	8.2
1467	Tan-shui Kang	25° 11'	121° 26'	-0 14	-0 10	+0.9	0.0	7.0	8.8	5.5
	P'ENG-HU CH'UN-TAO (Pescadore Islands)									
1469	Ch'i-mei Yu	23° 13'	119° 25'	+0 07	+0 11	(*0.62+0.5)		3.8	4.5	3.7
1471	Pa-chao Yu	23° 22'	119° 31'	-0 04	+0 00	*0.72	*0.72	4.2	4.9	3.7
1473	Tung-p'an Hsu	23° 31'	119° 31'	+0 06	+0 10	+0.1	+0.1	6.1	7.1	5.2
1475	PENGHU (MA-KUNG KANG)	23° 33'	119° 34'			<i>Daily predictions</i>		6.1	7.1	5.1
1477	Pei-liao	23° 36'	119° 40'	-0 01	+0 03	+1.1	+0.1	7.1	8.9	5.7
1479	Hsiao-men Hsu, Niu-kung Wan	23° 39'	119° 31'	+0 21	+0 24	*1.31	*1.20			
1481	Chi-pei Tao	23° 44'	119° 36'	+0 13	+0 16	*1.30	*1.10	8.3	10.1	6.4
	CHINA East Coast									
				on Xiamen, p.100						
1483	Shizhen (Zhongwai Yu)	24° 33'	118° 30'	-0 55	-0 42	(*0.99+0.0)		12.5	15.7	10.8
1485	Wutongdao	24° 32'	118° 11'	-0 04	-0 03	(*1.03-0.3)		12.8	15.7	10.8
1487	Dadan Dao [Amoy, outer harbor]	24° 23'	118° 10'	-0 04	+0 02	(*0.99-0.3)		12.5	15.1	10.8
1489	XIAMEN [Amoy, inner harbor]	24° 27'	118° 04'			<i>Daily predictions</i>		12.5	15.7	10.8
1491	Qianyan [Knob Rock]	23° 55'	117° 52'	+0 07	+0 12	(*0.80-1.0)		11.5	11.8	7.9
				on Shantou, p.104						
1493	Nanao Dao (Yunao Wan)	23° 24'	117° 03'	-0 46	-0 34	(*1.17-0.3)		5.3	5.9	4.9
1495	SHANTOU (MAYU) [Swatow, Double Island]	23° 20'	116° 45'			<i>Daily predictions</i>		4.3	4.9	4.6
1497	Dahao	23° 15'	116° 55'	-0 11	+0 21	(*0.74-0.3)		3.3	4.3	3.0
1499	Biaojiao	23° 15'	116° 45'	+0 09	-0 05	(*1.04+0.0)		4.6	5.6	4.6
1501	Dahao Dock	23° 15'	116° 45'	+0 15	-0 19	(*0.87-0.3)		3.9	4.9	3.6
1503	Haimen Wan	23° 11'	116° 37'	+0 26	-0 27	(*0.73+0.3)		3.3	4.3	3.6
	South Coast									
1505	Shibeshan Jiao	22° 56'	116° 29'	-0 09	-0 26	(*0.74-0.3)		3.3	3.9	3.0
				on Hong Kong, p.120						
	<i>Mirs Bay</i>									
1507	Peng Chau	22° 33'	114° 26'	+0 03	-0 04	-0.6	-0.3	3.0	5.3	4.0
1509	Jones Cove	22° 28'	114° 20'	-0 27	-0 16	-0.4	-0.1	3.0	4.9	4.2
1511	Tide Cove	22° 24'	114° 12'	-0 12	-0 15	-0.2	+0.1	3.0	5.3	4.4
1513	Port Shelter	22° 23'	114° 17'	-0 33	-0 27	-0.4	-0.1	3.0	5.3	4.2
	<i>Hong Kong Island</i>									
1515	Taitam Bay	22° 14'	114° 14'	-0 07	-0 07	-0.6	-0.1	2.8	4.6	4.1
1517	Aberdeen Harbor	22° 15'	114° 09'	-0 04	-0 01	-0.6	-0.1	2.8	4.6	4.1
1519	HONG KONG	22° 18'	114° 12'			<i>Daily predictions</i>		3.3	5.1	4.5
	<i>Canton River approach</i>									
1521	Wen Wei Rock	21° 49'	113° 56'	+0 08	+0 21	(*0.88-1.0)		2.2	4.5	3.0
1523	Wai-ling-ting	22° 06'	114° 02'	+0 11	+0 01	-0.4	-0.3	3.2	5.0	4.1
1525	Kapshui Mun	22° 21'	114° 03'	+0 16	+0 06	+0.5	+0.4	3.4	5.8	4.9
1527	West Brother	22° 20'	113° 58'	+0 53	+0 52	+0.7	+0.3	3.7	5.9	5.0
1529	Macao Harbor	22° 11'	113° 33'	+0 45	+0 49	+3.3	+3.0	3.6	5.5	7.6
				on Huangpu, p.116						
1531	Zhu Jiang									
1531	Sishengwei	22° 55'	113° 36'	-0 59	-1 07	(*1.01+0.3)		7.2	8.2	5.6
1533	Sanshakou	22° 53'	113° 31'	-0 49	-0 51	(*0.97+0.7)		6.9	7.9	5.6
1535	Nizhoutou	22° 54'	113° 34'	-0 35	-0 56	(*1.03+0.7)		7.2	8.2	6.2
1537	Haixin	22° 58'	113° 32'	-0 46	-0 54	(*0.99+0.7)		7.2	8.2	5.9
1539	Dasheng	23° 03'	113° 32'	-0 14	-0 20	(*0.96+0.3)		6.9	7.5	5.3
1541	Chisha (Lighthouse)	23° 03'	113° 30'	+0 07	-0 27	(*1.00+0.0)		6.9	7.9	5.3
1543	HUANGPU	23° 06'	113° 27'			<i>Daily predictions</i>		6.9	7.9	5.3
1545	Bazhou	23° 07'	113° 22'	+0 43	+0 14	(*0.90+0.3)		6.2	7.2	4.9
				on Haikou, p.124						
1547	Leizhou Bandao									
1547	Chikanzi (Hongkan Wan)	20° 19'	110° 24'	+1 13	+0 05	(*0.79+0.3)		3.6	4.3	4.6
1549	Haian	20° 16'	110° 13'	+0 04	+0 04	(*0.87+1.0)		4.3	5.6	5.6
	Hainan Island									
	<i>Hainan Dao North Coast</i>									
1551	Dengmai Wan	19° 57'	110° 07'	-1 15	-0 25	(*1.32+0.3)		6.2	9.2	6.6
1553	HAIKOU (XIUYING)	20° 01'	110° 16'			<i>Daily predictions</i>		4.6	6.6	4.9
1555	Haikoushi [Hai-k'ou, Hoihow]	20° 03'	110° 20'	+0 52	+0 30	(*0.65+1.3)		3.3	4.3	4.6
1557	Puqian	20° 02'	110° 34'	+2 05	+1 05	(*0.73+0.3)		3.6	4.3	4.3
1559	Dongxicun	20° 02'	110° 37'	+2 30	+1 13	(*0.79-0.3)		3.9	4.3	3.9

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
		North	East	h m	h m	ft	ft	ft	ft	ft
CHINA										
Hainan Island-cont. Time meridian, 120° E										
on Beihai, p.128										
1561	Hainan Dao, West Coast Yinggehai	18° 30'	108° 43'	-5 30	-6 14	(*0.38-0.3)		3.6	4.9	2.3
South Coast										
on Haikou, p.124										
1563	Reizhou Bandao Kuwei Jiao	20° 13'	109° 56'	-1 51	-0 21	(*1.14+0.7)		5.6	7.9	6.2
Beibu Wan										
1565	Weizhou Dao	21° 02'	109° 07'	-0 19	-0 07	(*0.91+0.3)		8.5	12.5	7.9
1567	BEIHAI	21° 29'	109° 05'			<i>Daily predictions</i>		9.5	13.1	8.5
1569	Off Beihai	21° 29'	108° 59'	-0 02	+0 04	(*1.11+0.3)		10.5	14.4	9.5
1571	Dafeng Jiang	21° 38'	108° 52'	+0 15	+0 31	(*0.98-0.3)		9.2	13.1	7.9
1573	Sanniang Wan	21° 38'	108° 47'	-0 10	-0 03	(*0.99+1.6)		9.2	13.1	10.2
VIETNAM										
Time meridian, 105° E										
on Paramushiru Island, p.8										
								Diurnal	Tropic	
1575	Lochuc San {	21° 15'	107° 57'	-1 48	-1 41	(*0.74+0.5)		7.8	10.8	7.8
1577	Cu Xu, Kao Tao {	20° 59'	107° 45'	-1 55	-1 11	(*0.68-0.3)		7.2	10.2	6.4
1579	Tsieng Mun {	21° 08'	107° 37'	-1 40	-0 59	*0.68 *0.68		7.2	10.2	6.8
1581	Cai Bau, Cai Bau Island {	21° 07'	107° 30'	+0 18	-1 32	+1.2 +0.9		6.8	10.8	7.1
1583	Campha Port {	21° 02'	107° 22'	+0 06	-1 44	+1.1 +0.9		6.7	9.6	7.1
1585	Norway Islands {	20° 37'	107° 09'	+0 05	-0 29	+0.1 +0.1		6.5	9.7	6.2
1587	Hon Gai, Halong Bay {	20° 57'	107° 04'	+0 21	-0 09	+2.9 +1.7		7.7	11.4	8.4
1589	Cat Ba, Isle de la Cat Ba {	20° 43'	107° 03'	+0 05	-0 24	(*0.97+0.7)		6.3	9.3	6.6
1591	DO SON (Hon Dau) {	20° 40'	106° 49'			<i>Daily predictions, p.132</i>		6.5	9.7	6.1
1593	Cua Namtrieu {	20° 46'	106° 50'	+0 00	+0 44	-0.1 -0.1		6.5	9.7	6.0
1595	Haiphong, Cua Cam {	20° 52'	106° 40'	+1 11	+1 04	*0.97 *0.97		6.1	9.0	6.0
1597	Bach Long Vi Island {	20° 08'	107° 43'	-0 23	-2 11	(*0.95+0.6)		6.2	9.2	6.4
1599	Balat River entrance {	20° 18'	106° 32'	-0 47	+0 12	(*0.95+0.5)		6.2	9.2	6.3
1601	Hon Ne {	19° 55'	106° 00'	-1 00	+0 07	+0.2 +0.2		6.5	9.3	6.5
1603	Hon Me {	19° 23'	105° 55'	-1 05	+0 46	-0.1 -0.3		6.7	8.6	6.2
1605	Hon Nieu {	18° 48'	105° 46'	-1 27	+1 00	*0.93 *0.93		6.1	7.8	6.0
1607	Hoi River entrance {	18° 46'	105° 45'	-0 14	+1 45	*0.72 *0.69		4.8	6.4	4.8
1609	Sot River entrance {	18° 28'	105° 55'	-1 14	+1 39	(*0.54+0.7)		3.5	4.5	4.0
1611	Vung Chua Bay {	17° 56'	106° 30'	-1 12	+1 21	*0.39 *0.34		2.7	3.4	2.5
1613	Nhat Le River entrance {	17° 30'	106° 37'	-1 12	+1 21	*0.32 *0.28		2.2	2.8	2.0
on Manila, p.184										
1615	Paracel Islands <27> }	16° 33'	111° 37'	-1 20	-1 16	+2.1 +2.1		3.1	3.8	3.9
1617	Chon May Bay <27> }	16° 20'	108° 01'	+0 29	-0 29	(*0.48+1.8)		1.6	2.0	2.5
1619	Da Nang <27> }	16° 07'	108° 13'	-0 12	-0 57	(*0.70+1.9)		2.3	2.7	3.0
1621	Culao Cham <27> }	15° 57'	108° 30'	-0 27	-0 36	(*0.85+2.2)		2.8	3.5	3.6
1623	Dung Quat Bay <27> }	15° 24'	108° 45'	-0 38	-0 30	+2.2 +2.1		3.4	4.4	3.9
1625	Tam Quan <27> }	14° 35'	109° 04'	-0 51	-0 31	+2.2 +2.2		3.2	4.3	4.0
1627	Qui Nhon <27> }	13° 45'	109° 13'	-0 53	-0 29	+2.8 +2.5		3.6	4.5	4.3
1629	Vung Xuan Dai <27> }	13° 23'	109° 16'	-0 54	-0 39	+2.3 +2.3		3.2	4.3	4.1
1631	Vung Ro <27> }	12° 52'	109° 25'	-1 01	-0 42	+2.6 +2.5		3.4	4.6	4.3
1633	Port Van <27> }	12° 40'	109° 23'	-1 03	-0 45	+2.6 +2.5		3.4	4.6	4.3
1635	Nha Trang, Baie de <27> }	12° 15'	109° 13'	-1 15	-0 46	+2.7 +2.4		3.6	4.6	4.3
1637	Cam Ranh Bay <27> }	11° 53'	109° 12'	-1 18	-0 53	+2.4 +1.9		3.8	4.8	4.1
1639	Mui Dinh <27> }	11° 22'	109° 01'	-0 39	-0 30	+1.7 +1.4		3.6	4.8	3.3
1641	Pointe Lagan <27> }	11° 10'	108° 42'	-0 50	-0 23	+5.3 +4.5		4.1	5.2	6.8
1643	Poulo Cecir de Mer <27> }	10° 32'	108° 56'	-0 36	-0 24	+3.5 +3.4		3.4	4.2	5.3
1645	Phan Thiet <27> }	10° 55'	108° 06'	+0 13	+0 14	+5.7 +4.7		4.3	5.8	7.0
on Mui Vung Tau, p.136										
								Mean	Diurnal	
1647	Mui Ke Ga	10° 42'	107° 59'	-1 28	-1 27	(*0.59+2.5)		3.0	5.1	7.2
1649	Mui Ba Kiem	10° 30'	107° 30'	-0 31	-0 31	(*0.85+0.8)		5.0	7.3	7.5
Saigon River										
MUI VUNG TAU										
1651	Coral Bank	10° 37'	106° 51'	+0 51	+1 23	(*0.97+1.6)		5.9	8.6	7.9
1653	Ho Chi Minh City <28>	10° 46'	106° 42'	+2 10	+2 39	-0.4 --		5.6	8.3	9.3
1655	Nha Be River entrance	10° 23'	106° 48'	+0 28	+1 25	0.0 0.0		5.9	8.6	7.9
1657	Cua Tieu entrance	10° 15'	106° 47'	+0 43	+0 42	(*1.10-0.3)		6.6	9.5	8.4
1659	My Tho, Cua Tieu	10° 21'	106° 21'	+1 30	+2 49	-1.3 --		--	--	--
1661	Hau Giang River entrance	9° 24'	106° 27'	+0 40	+1 00	0.0 0.0		5.9	8.6	7.9
1663	Mac Bat, Hau Giang River	9° 43'	106° 09'	+1 30	+2 29	+0.9 --		--	--	--
1665	Con Son	8° 41'	106° 36'	+0 33	+0 33	-0.4 -0.4		5.9	8.7	7.5
1667	Cau Lon River entrance	8° 39'	104° 45'	--	--	-- --		--	2.9	2.5
1669	Pulau Panjang, Gulf of Siam	9° 18'	103° 28'	--	--	-- --		--	1.0	1.5
1671	Rai Island, Gulf of Siam	9° 50'	104° 40'	--	--	-- --		--	2.1	3.0
1673										
on Musi River, p.152										
								Diurnal	Tropic	
1675	Ha Tien } <29>	10° 22'	104° 28'	-4 09	-4 16	*0.36 --		2.2	2.7	2.5

Endnotes can be found at the end of table 2.

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No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Diurnal	Tropic	
				High Water	Low Water	High Water	Low Water			
		North	East	h m	h m	ft	ft	ft	ft	ft
	CAMBODIA Time meridian, 105° E									
1677	Phumi Phsar Ream Bay {	10° 30'	103° 36'	+0 48	+1 03	(*0.26+0.9)		1.7	2.2	2.5
				on Do Son, p.132						
				on Manila, p.184						
1679	Cone Island <27> }	11° 26'	103° 00'	-11 17	-9 54	+1.2	+1.2	3.2	4.5	3.0
	THAILAND East Coast									
				on Bangkok Bar, p.140						
1681	Chong Samet }	12° 35'	101° 26'	+0 43	-0 52	-2.8	-0.7	5.7	6.7	5.4
1683	Sattahip }	12° 39'	100° 55'	-0 10	-0 48	-1.5	+1.0	5.3	6.2	6.8
	<i>Chao Phraya River</i>									
	BANGOK BAR }									
1685	Entrance }	13° 30.0'	100° 59.3'			<i>Daily predictions</i>		7.8	9.1	7.7
1687	Bangkok }	13° 32'	100° 35'	+0 04	+0 54	(*0.90+0.8)		7.0	8.2	7.7
1689		13° 44'	100° 30'	+2 00	+2 00	*0.93	*0.88	7.4	8.6	7.0
				on Chuuk, p.204						
1691	Ko Lak {	11° 48'	99° 49'	-5 23	-1 14	*2.0	*2.0	3.8	4.9	6.2
1693	Chumphon {	10° 27'	99° 15'	- - -	-1 42	*1.7	*1.7	3.2	3.9	3.5
1695	Ko Prap {	9° 16'	99° 26'	-3 59	-3 34	*2.3	*2.3	4.4	5.5	5.7
				on Singapore, p.144				Mean Spring		
1697	Lakon Roads	8° 33'	100° 03'	-0 59	-0 59	(*0.28+1.0)		1.6	1.9	2.5
1699	Songkhla	7° 13'	100° 36'	-1 11	-1 13	(*0.26+1.8)		1.5	1.7	3.2
	MALAYSIA Malaya Time meridian, 120° E									
				on Barito River, p.168				Diurnal Tropic		
1701	Trengganu }	5° 21'	103° 08'	+2 41	+2 32	*0.84	*0.84	4.9	6.0	3.4
				on Singapore, p.144				Mean Spring		
1703	SINGAPORE (Tanjong Pagar)	1° 15.7'	103° 51.1'			<i>Daily predictions</i>		5.7	7.5	5.2
1705	Pulau Bukum	1° 14'	103° 46'	+0 01	+0 13	+0.5	+0.1	6.1	8.1	5.6
1707	Malacca	2° 11'	102° 15'	-3 10	-2 52	*0.74	*0.67	4.4	5.9	3.8
1709	Port Kelang	3° 00'	101° 23'	-5 38	-5 23	(*1.68-1.2)		9.6	13.6	7.6
1711	Bagan Datoh	4° 00'	100° 45'	-7 07	-6 44	+0.7	+0.6	5.8	7.8	5.9
1713	Lumut, Dinding River	4° 14'	100° 37'	-7 21	-7 17	-0.5	+0.4	4.8	7.7	5.2
				on Belawan Channel, p.148						
1715	Pinang (Georgetown)	5° 25'	100° 21'	-1 22	-1 07	+0.1	+0.3	4.3	6.2	5.1
	THAILAND West Coast Time meridian, 105° E									
1717	Pulau Lela	6° 44'	99° 42'	-2 34	-2 43	+2.2	+0.4	6.3	9.0	6.2
1719	Puket Harbor	7° 51'	98° 24'	-3 14	-2 57	+0.5	-0.8	5.8	8.5	4.7
1721	Ao Kaulak	8° 36'	98° 15'	-3 28	-3 24	+0.1	-0.6	5.2	7.2	4.6
	INDONESIA									
	<i>Sumatra Island, Malacca Strait</i>									
1723	Sabang Bay, Poelau We	5° 53'	95° 19'	+4 00	+4 03	(*0.77+0.7)		3.3	4.7	2.6
1725	Uleelheue	5° 34'	95° 17'	+4 48	+4 50	(*0.70+1.5)		3.0	4.0	3.3
1727	Sigli	5° 23'	95° 58'	+4 23	+4 25	(*0.60+1.8)		2.6	3.9	3.3
1729	Lhokseumawe	5° 11'	97° 09'	+4 27	+4 29	(*0.79+1.3)		3.4	4.9	3.3
1731	Idi	4° 58'	97° 47'	+5 27	+5 29	(*0.79+1.3)		3.4	4.8	3.3
1733	Langsa Bay	4° 33'	98° 02'	+6 11	+6 13	(*0.98+1.9)		4.2	6.0	4.3
				on Belawan Channel, p.148						
1735	Sembilan Channel, Aroe Bay	4° 08'	98° 15'	-0 37	-0 37	+0.1	-0.1	4.7	6.6	4.9
1737	BELAWAN CHANNEL	3° 50'	98° 43'			<i>Daily predictions</i>		4.5	6.2	4.9
1739	Tanjong Tiram	3° 14'	99° 35'	+1 56	+1 56	-0.3	-0.9	5.1	7.0	4.3
				on Mergui, p.308						
1741	Asahan River entrance	3° 01'	99° 52'	+5 40	+5 33	(*0.59+1.5)		7.3	10.2	6.9
1743	Berembang, Sungai Panai	2° 37'	100° 07'	+6 22	+6 14	(*0.69+0.9)		8.5	11.4	7.2
1745	Labuhanbilik, Sungai Panai	2° 31'	100° 10'	+6 45	+6 37	(*0.73+0.6)		9.0	12.4	7.2
1747	Bagan-siapiapi, Sungai Rokan	2° 09'	100° 48'	+7 09	+7 02	-0.3	-0.2	12.3	17.3	8.9
				on Ch'ang Chiang Approach, p.92						
1749	Bengkalis	1° 28'	102° 06'	-2 22	-2 35	*0.60	*0.53	5.6	7.8	5.6
1751	Siak River entrance	1° 15'	105° 10'	-1 31	-1 44	*0.58	*0.57	5.1	7.2	5.6
1753	Selat-pandjang	1° 01'	102° 42'	+0 11	-0 02	(*0.86-2.1)		7.4	10.2	6.2

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	INDONESIA Time meridian, 105° E	North	East	h m	h m	ft	ft	ft	ft	ft
	<i>Sumatra Island, Malacca Strait-cont.</i>			on Davao, p.176						
1755	Balai Point, Gelam Strait	0° 59'	103° 26'	-7 33	-7 30	(*1.32+2.2)		5.8	8.1	5.6
1757	Pulo Kenipaan, Gelam Strait	0° 55'	103° 20'	-7 17	-7 14	+3.9	+1.5	6.7	8.7	5.2
1759	Bandung, Pulo Mendol	0° 32'	103° 18'	-6 50	-6 47	(*1.74+2.5)		7.5	10.5	6.9
1761	Pulo Muda, Kampar River	0° 22'	102° 53'	-5 04	-5 02	(*2.14+1.5)		9.2	12.3	6.9
				on Kamaisi, p.16				Diurnal	Tropic	
1763	Bojan, Bulan Strait	1° 01'	103° 55'	-4 45	-4 48	*1.32	*1.32	4.4	5.4	3.6
1765	Oeban Point, Bintan Island	1° 04'	104° 13'	-5 31	-5 33	*1.77	*1.44	6.3	6.9	4.9
1767	Tanjungpinang, Bintan Island	0° 55'	104° 26'	-4 35	-4 37	*1.42	*1.67	4.6	5.5	3.9
1769	Dendang, Kidjang Strait	0° 51'	104° 37'	-5 06	-5 09	*1.40	*1.67	4.5	5.5	4.1
				on Hong Kong, p.120						
1771	Sungaiguntung	0° 18'	103° 36'	-9 00	-8.51	+1.6	-0.4	7.1	8.0	5.3
	<i>Sumatra, East Coast</i>	South	East	on Mui Vung Tau, p.136						
1773	Pulo Beralas, Berhala Strait	0° 30'	104° 02'	-11 42	-11 42	(*0.93-0.7)		8.0	9.7	6.6
1775	Kwala Ladjau, Indragiri River	0° 24'	103° 34'	-10 25	-10 25	+0.7	+0.1	9.2	10.4	8.2
1777	Tembilahan, Indragiri River	0° 19'	103° 14'	-8 42	-8 42	+3.3	+0.4	11.5	12.6	9.8
1779	Kwala Niur	1° 00'	103° 49'	-10 50	-10 50	+0.4	+0.3	8.7	10.1	8.2
				on Musi River, p.152						
1781	Tanjung Butun, Linga Island }	0° 15'	104° 36'	+0 38	-2 09	*0.69	*0.59	5.3	7.2	4.6
1783	Kotadabok, Singkep Island }	0° 30'	104° 34'	-0 06	-1 42	(*0.73+0.2)		5.3	7.2	5.3
1785	Pulo Berhala, Berhala Strait }	0° 52'	104° 24'	-2 49	-1 29	-1.0	-1.1	7.4	9.4	6.2
1787	Chebia, Tudjuh Islands }	1° 13'	105° 16'	-0 22	-1 14	*0.75	*0.72	5.6	8.0	4.9
1789	Sungai Merawang ent., Bangka Island }	2° 05'	106° 10'	-0 07	-1 50	*0.59	*0.59	4.2	6.3	3.9
1791	Klabat Bay, Bangka Island }	1° 42'	105° 42'	+1 02	+0 03	*0.77	*0.69	5.9	8.4	4.9
1793	Sungai Kampa, Bangka Island }	1° 45'	105° 24'	-0 04	-0 22	*0.90	*0.79	6.9	9.7	5.6
1795	MUSI RIVER (outer bar)	2° 14'	104° 56'	<i>Daily predictions</i>				7.3	10.0	6.2
1797	Soengsang, Palembang River }	2° 22'	104° 54'	+0 42	+1 09	0.0	-0.2	7.5	10.2	6.2
1799	Peradjin, Palembang River }	2° 56'	104° 53'	+3 44	+4 17	*0.83	*0.83	6.1	8.3	5.3
1801	Palembang, Palembang River }	2° 59'	104° 43'	+4 12	+4 56	*0.75	*0.66	5.7	7.8	4.6
1803	Tanjung Kelian, Bangka Strait }	2° 05'	105° 07'	+0 03	+0 12	-0.2	-0.3	7.4	10.3	6.2
1805	Muntok, Bangka Island }	2° 05'	105° 10'	-0 13	+0 09	0.0	-0.3	7.6	10.5	6.2
1807	Nangka Island, Bangka Strait }	2° 23'	105° 46'	-0 12	+0 48	*1.12	*0.97	8.6	10.7	6.9
1809	Besar Island, Bangka Strait }	2° 53'	106° 08'	-0 12	+0 19	*0.86	*0.86	5.8	8.1	5.9
				on Surabaya Strait, p.160						
1811	Dapur Island, Banka Island {	3° 08'	106° 31'	+11 43	+14 02	+0.8	-0.1	4.6	6.3	3.9
1813	Tjelaka, Liat Island {	2° 52'	107° 01'	+11 59	+13 00	+0.7	-0.4	4.8	6.9	3.6
1815	Tulangbawang River entrance {	4° 25'	105° 51'	+11 39	+13 42	*0.85	*0.62	3.5	4.0	3.0
	Time meridian, 120° E									
	<i>Gaspar Strait</i>									
1817	Simedang Island {	3° 19'	107° 13'	+13 52	+14 09	+0.3	+0.3	3.7	5.3	3.9
1819	Tanjungpandan, Belitung Island {	2° 45'	107° 38'	+13 01	+13 51	+2.1	+0.6	5.2	7.5	4.9
1821	Langkuas Island {	2° 32'	107° 37'	+13 13	+13 26	+1.2	+0.4	4.5	6.7	4.3
	Time meridian, 105° E			on Davao, p.176				Mean	Spring	
	<i>Sumatra, Sunda Strait</i>									
1823	Bangkai Anchorage, Sebuku Island	5° 52'	105° 31'	+1 45	+1 48	(*0.51+1.0)		2.2	3.0	2.3
1825	Tulukbetung, Lampung Bay	5° 27'	105° 16'	+1 56	+1 58	(*0.53+1.3)		2.3	3.1	2.6
				on Kutei River Ent., p.164						
1827	Kotaagung, Semangka Bay	5° 30'	104° 37'	+1 20	+1 21	*0.54	*0.54	2.3	3.2	2.6
	<i>Sumatra, West Coast</i>									
1829	Enggano Bay, Enggano Island	5° 28'	102° 22'	+0 23	+0 23	*0.49	*0.49	2.2	2.8	2.3
1831	Benkulu	3° 47'	102° 15'	+1 02	+1 02	*0.49	*0.49	2.3	3.1	2.3
1833	Sawangtungku, North Pagai Island	2° 47'	100° 13'	+0 20	+0 21	*0.49	*0.49	2.3	3.0	2.3
1835	Siberut Bay, Siberut Island	1° 35'	99° 13'	+0 19	+0 19	*0.49	*0.49	2.2	2.8	2.3
1837	Padang	0° 58'	100° 21'	+0 23	+0 23	*0.52	*0.45	2.6	3.4	2.3
1839	Telo Island, Batoe Islands	0° 04'	98° 17'	+0 02	+0 02	(*0.38+0.6)		1.8	2.6	2.3
		North	East							
1841	Ajerbangis	0° 12'	99° 22'	-0 08	-0 08	*0.48	*0.48	2.0	2.8	2.3
1843	Natal	0° 33'	99° 06'	+0 20	+0 21	*0.48	*0.48	2.0	2.8	2.3
1845	Telukdalem, Nias Island	0° 34'	97° 49'	-0 02	-0 02	(*0.34+0.7)		1.6	2.1	2.3
1847	Simanari Bay, Nias Island	1° 24'	97° 11'	+0 06	+0 06	(*0.32+0.8)		1.5	2.2	2.3
1849	Sibolga, Sibolga Bay	1° 45'	98° 46'	+0 06	+0 06	(*0.26+1.1)		1.2	1.7	2.3
1851	Barus	2° 01'	98° 23'	+0 08	+0 09	(*0.40+0.5)		1.9	2.7	2.3
1853	Singkil	2° 17'	97° 47'	+0 39	+0 39	(*0.34+0.7)		1.6	2.3	2.3
1855	Sinabang Bay, Pulo Simalur	2° 30'	96° 23'	+0 08	+0 09	*0.26	*0.26	1.0	1.4	1.3
1857	Tapaktuan	3° 15'	97° 11'	+0 52	+0 52	*0.23	*0.14	1.3	1.8	1.0
1859	Meulaboh	4° 08'	96° 08'	+1 12	+1 12	*0.20	*0.20	0.8	1.2	1.0

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	INDONESIA Time meridian, 105° E	North	East	h m	h m	ft	ft	ft	ft	ft
	<i>Sumatra, West Coast-cont.</i>			on Kutei River Ent., p.164						
1861	Tjalang Bay	4° 37'	95° 35'	+1 53	+1 54	*0.22	*0.18	1.1	1.6	1.0
1863	Pulau Raja	4° 52'	95° 23'	---	---	---	---	0.4	0.6	0.7
1865	Pulau Rusa	5° 17'	95° 12'	+2 50	+2 50	*0.26	*0.18	1.4	1.9	1.1
	<i>Java</i>	South	East	on Djakarta, p.156				Diurnal Tropic		
1867	DJAKARTA (Tandjungpriok) {	6° 06'	106° 53'	<i>Daily predictions</i>				2.0	2.6	2.0
1869	Tjirebon	6° 43'	108° 34'	---	---	---	---	1.9	2.0	2.0
1871	Semarang {	6° 58'	110° 25'	+10 44	+9 15	(*0.85+0.3)	---	1.7	2.2	2.0
				on Surabaya Strait, p.160						
1873	Rembang {	6° 42'	111° 20'	+0 31	-0 10	*0.66	*0.62	2.5	3.7	2.3
1875	Udjung Pangah {	6° 54'	112° 34'	-0 14	+0 38	(*0.92+0.3)	---	3.4	4.9	3.5
1877	SURABAJA STRAIT (Djamuang Reef) {	6° 56'	112° 44'	<i>Daily predictions</i>				3.7	5.3	3.6
1879	Sembilangan, Surabaya Strait {	7° 03'	112° 41'	+1 39	-0 58	+0.5	+0.3	3.9	5.1	3.9
				on Hong Kong, p.120						
1881	Surabaya, Surabaya Strait	7° 13'	112° 44'	+1 55	+2 04	+0.6	+0.3	5.8	6.7	4.9
1883	Surabaya Strait, east entrance	7° 20'	112° 52'	+1 34	+1 43	+1.0	-0.2	6.6	7.4	4.9
1885	Pasuruan, Madura Strait	7° 38'	112° 55'	+1 31	+1 40	+1.5	+0.2	6.7	7.4	5.3
1887	Gading, Madura Island	7° 12'	112° 55'	+1 39	+1 49	+1.0	-0.2	6.7	7.3	4.9
1889	Kalianget, Madura Island	7° 03'	113° 56'	+0 25	+0 34	0.0	+0.2	5.1	5.9	4.6
				on Manila, p.184						
1891	Sapudi Island, Sapudi Strait }	7° 05'	114° 16'	-0 01	-0 23	+2.1	+1.5	3.9	4.8	3.6
1893	Pulau Karangmas, Madura Strait }	7° 41'	114° 26'	-0 22	-0 43	+1.8	+1.3	3.8	4.7	3.3
1895	Tabuan Island, Bali Strait }	8° 02'	114° 28'	-0 45	-1 00	(*0.88+2.9)	---	2.9	3.6	4.3
				on Belawan Channel, p.148				Mean Spring		
1897	Banjuwangi, Bali Strait	8° 13'	114° 23'	-4 19	-4 19	(*0.80+1.3)	---	3.6	4.9	5.2
1899	Tjilatjap	7° 44'	109° 00'	-5 25	-5 25	*0.76	*0.65	3.7	5.0	3.6
1901	Genteng Bay	7° 24'	106° 24'	-5 53	-5 54	(*0.60+0.4)	---	2.7	3.7	3.3
1903	Labuhan, Sunda Strait	6° 22'	105° 49'	-6 22	-6 22	*0.49	*0.38	2.5	3.2	2.3
1905	Tandjung Tjikoneng, Sunda Strait	6° 04'	105° 53'	-6 33	-6 33	(*0.40-0.7)	---	1.8	2.4	1.3
	Time meridian, 120° E									
1907	<i>Bali</i> Benoa	8° 45'	115° 13'	-3 36	-3 37	-0.2	-0.9	5.2	7.0	4.3
				on Hong Kong, p.120						
1909	Buleleng	8° 06'	115° 05'	+2 10	+2 20	-1.7	-0.7	2.3	3.0	3.3
	Time meridian, 105° E									
	<i>Lombok</i>			on Manila, p.184				Diurnal Tropic		
1911	Ampenan }	8° 34'	116° 04'	-0 55	-0 51	(*0.85+2.2)	---	2.8	3.6	3.6
1913	Labuan, Tring Bay }	8° 43'	116° 03'	-0 35	-1 06	+2.0	+1.2	3.8	4.7	3.6
	Time meridian, 120° E									
	<i>Sumbawa</i>			on Shatt Al Arab, p.336				Mean Spring		
1915	Bima Bay	8° 27'	118° 43'	+2 05	+1 52	(*0.41+0.7)	---	2.5	3.1	3.0
1917	Sape Bay	8° 34'	119° 02'	+1 32	+1 19	(*0.57+0.7)	---	3.5	4.5	3.9
	<i>Sumba</i>			on Belawan Channel, p.148						
1919	Sendikari Bay	9° 46'	119° 37'	-3 52	-3 52	+1.4	-0.8	6.7	9.4	5.2
1921	Nangamesi Bay	9° 38'	120° 15'	-3 12	-3 12	+1.1	-0.4	6.0	8.3	5.2
	<i>Flores Island</i>									
1923	Tuluk Perapat	8° 47'	119° 50'	-3 05	-3 06	+2.3	+0.4	6.4	8.4	6.2
1925	Ende Bay	8° 47'	121° 24'	-3 17	-3 17	+1.9	+0.2	6.2	8.6	5.9
	<i>Alor Island</i>									
1927	Kalabahi	8° 14'	124° 31'	-1 40	-1 40	-0.3	-0.9	5.1	6.7	4.3
	<i>Timor</i>									
1929	Kupang Bay	10° 10'	123° 34'	-3 05	-3 05	*0.75	*0.73	3.4	4.8	3.6
1931	Atapupu	9° 00'	124° 52'	-2 31	-2 31	*0.90	*0.85	4.2	5.8	4.3
	Time meridian, 135° E									
	<i>Tanimbar Islands</i>									
1933	Ritabel Bay, Larat Island	7° 09'	131° 43'	+0 49	+0 49	*0.90	*0.85	4.2	5.2	4.3
	<i>Moluccas Islands</i>									
1935	Dobo, Wamar Island, Aru Islands	5° 45'	134° 13'	+0 23	+0 23	*0.90	*0.81	4.3	5.4	4.3

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	INDONESIA Time meridian, 135° E	South	East	h m	h m	ft	ft	ft	ft	ft
	<i>Moluccas Islands-cont.</i>			on Shatt Al Arab, p.336						
1937	Naira, Banda Islands	4° 32'	129° 53'	+3 13	+3 03	(*0.67+0.5)		4.1	5.3	4.3
1939	Ambon Bay, Ambon Island	3° 41'	128° 11'	+3 20	+3 08	(*0.56+0.4)		3.4	4.4	3.6
1941	Namlea, Kajeli Bay, Buru Island	3° 16'	127° 06'	+2 58	+2 46	(*0.39+1.4)		2.4	3.1	3.6
				on Shantou, p.104						
1943	Taniwel, Seram Island	2° 51'	128° 28'	+0 44	+1 17	*0.64	*0.61	2.2	3.0	3.6
1945	Sanana, Sula Sanana, Sula Islands	2° 03'	125° 59'	+1 11	+1 43	*0.64	*0.61	2.2	2.8	3.6
		North	East	on Belawan Channel, p.148						
1947	Galela Bay, Halmahera Island	1° 49'	127° 51'	-7 04	-7 04	(*0.67+0.3)		3.0	4.3	3.6
				on Kutei River Ent., p.164						
1949	Ternate, Halmahera Island	0° 47'	127° 23'	+0 13	+0 13	(*0.47+0.8)		2.2	3.3	3.0
1951	Taruna Bay, Sangi Island	3° 37'	125° 29'	+0 16	+0 16	*0.84	*0.84	3.9	5.7	3.9
	Time meridian, 120° E	South	East	on Surabaya Strait, p.160				Diurnal Tropic		
1953	<i>Celebes (Sulawesi)</i> Makasar {	5° 09'	119° 24'	-1 37	+0 24	(*0.59+0.5)		2.2	3.0	2.6
				on Shatt Al Arab, p.336				Mean Spring		
1955	Kolaka, Gulf of Boni	4° 04'	121° 36'	+2 09	+1 57	*0.67	*0.70	4.0	4.9	3.9
1957	Tampunawu, Muna Island	5° 13'	122° 18'	+2 14	+2 02	(*0.67+0.8)		4.1	5.0	4.6
1959	Baubau, Buton Island	5° 28'	122° 37'	+2 10	+1 58	*0.66	*0.66	3.8	4.7	3.9
1961	Lasolo Bay	3° 43'	122° 19'	+2 52	+2 40	(*0.57+0.6)		3.5	4.5	3.9
				on Shantou, p.104						
1963	Lingkobu	2° 04'	121° 32'	-1 18	-0 45	-2.1	-2.2	3.4	4.3	3.6
1965	Teluk Lamala, Peling Strait	0° 54'	123° 09'	-0 08	+0 24	*0.58	*0.56	2.0	2.7	3.3
				on Kutei River Ent., p.164						
1967	Poso	1° 22'	120° 45'	-1 56	-1 55	(*0.45+0.5)		2.1	3.0	2.6
		North	East	on Jolo, p.172				Diurnal Tropic		
1969	Gorontalo River entrance }	0° 30'	123° 03'	---	---	--	--	2.9	--	2.6
				on Kutei River Ent., p.164				Mean Spring		
1971	Lembah Strait	1° 27'	125° 12'	-0 48	-0 48	*0.58	*0.50	2.9	4.2	2.6
1973	Manado	1° 30'	124° 50'	-0 23	-0 22	*0.87	*0.82	4.2	6.1	3.9
1975	Tolitoli Bay	1° 02'	120° 49'	-0 37	-0 36	(*0.72+0.6)		3.4	5.2	3.9
		South	East							
1977	Donggala	0° 40'	119° 44'	-0 37	-0 36	*0.84	*0.84	3.9	5.8	3.9
	<i>Borneo, East Coast</i>	North	East							
1979	Bakapit, Darvel Bay	4° 57'	118° 35'	-0 21	-0 21	*0.75	*0.64	3.8	5.4	3.3
1981	Lahad Datu, Darvel Bay	5° 02'	118° 20'	-0 27	-0 37	*0.74	*0.59	3.8	5.0	3.2
1983	Semporna, Darvel Bay	4° 29'	118° 37'	-0 28	-0 19	*0.74	*0.59	3.8	5.2	3.2
1985	Tawau	4° 15'	117° 53'	+0 02	-0 26	+0.9	-0.1	5.7	8.0	5.0
1987	Lingkas, Tarakan Island	3° 17'	117° 35'	-0 49	-0 48	+1.9	+0.1	6.5	9.3	5.6
1989	Biwan Mouth, Kajan River	2° 55'	117° 42'	+0 01	+0 02	*1.29	*1.29	6.0	8.7	5.9
1991	Tanjungselor, Kahan River	2° 49'	117° 22'	+2 11	+2 11	*0.46	*0.36	2.4	3.4	2.0
1993	Kasseimouth, Berau River	2° 10'	117° 52'	-0 06	-0 05	*1.30	*1.23	6.3	9.1	5.9
1995	Haji Bank, Beraoe River	2° 11'	117° 32'	+1 30	+2 14	0.0	-0.6	5.3	7.4	4.3
1997	Miang Besar, Sangkulirang Bay	0° 45'	118° 00'	-0 39	-0 39	*0.86	*0.86	4.0	5.8	3.9
1999	Sangkulirang, Sangkulirang River	0° 59'	117° 59'	-0 17	-0 16	-0.2	-1.1	5.6	8.4	3.9
		South	East							
2001	KUTEI RIVER ENTRANCE	0° 42'	117° 30'			<i>Daily predictions</i>		4.7	6.8	4.6
2003	Samarinda, Kutei River	0° 30'	117° 08'	+1 18	+1 18	(*0.68+1.2)		3.2	4.6	4.3
2005	Balik Papan	1° 16'	116° 48'	-0 43	-0 43	+0.3	-0.2	5.2	7.9	4.6
2007	Tanahgrogot, Pasir River	1° 55'	116° 12'	+0 55	+0 55	+0.4	-0.3	5.4	7.8	4.6
2009	Aru Bank	2° 15'	116° 40'	-0 49	-0 48	(*0.32+0.5)		1.5	2.3	2.0
2011	Pamukan Bay	2° 36'	116° 30'	-0 38	-0 37	+0.1	-0.1	4.9	7.1	4.6
2013	Klumpeng Bay	3° 01'	116° 13'	-1 10	-1 09	*0.99	*0.99	4.4	6.7	4.6
2015	Kampung Baru, Laut Strait	3° 25'	116° 01'	-0 19	-0 18	(*0.72+1.0)		3.4	5.1	4.3

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Diurnal	Tropic	
				High Water	Low Water	High Water	Low Water			
	INDONESIA Time meridian, 120° E	South	East	h m	h m	ft	ft	ft	ft	ft
	<i>Borneo, South Coast</i>			on Barito River, p.168						
2017	BARITO RIVER (outer bar) }	3° 34'	114° 29'	<i>Daily predictions</i>				5.9	7.5	4.3
2019	Banjermasin, Martapura River }	3° 20'	114° 36'	+1 17	+1 14	(*0.93+0.3)		5.5	7.0	4.3
2021	Pangkoh, Kahajan River }	3° 04'	114° 10'	+1 29	+1 59	(*0.95+0.8)		5.6	6.9	4.9
2023	Pegatan, Mendawai River }	3° 17'	113° 21'	+0 05	+0 29	+0.5	+0.1	6.3	7.8	4.3
2025	Sampit Bay }	3° 00'	113° 03'	+0 16	+0 57	+0.8	+0.1	6.6	8.0	4.6
2027	Pembuang River entrance }	3° 25'	112° 34'	+0 17	+0 25	(*0.64+1.5)		3.8	4.8	4.3
				on Jolo, p.172						
2029	Sungai Aru Tobal, Kumai Bay }	3° 10'	111° 48'	-0 03	-0 03	+1.4	+1.0	3.2	4.0	2.3
2031	Lurah, Kota Waringin River entrance }	2° 54'	111° 26'	-0 30	-0 30	+2.5	+2.2	3.1	3.8	3.3
2033	Djelai River entrance }	2° 59'	110° 44'	-0 04	-0 04	(*0.57+1.0)		1.6	1.9	1.6
				on Djakarta, p.156						
2035	<i>Borneo, West Coast</i> Pawan River entrance }	1° 46'	109° 54'	-0 02	-0 46	(*2.20-0.8)		4.4	6.2	3.6
2037	Sukadana, Sukadana Bay }	1° 14'	109° 57'	-0 31	-0 21	(*2.30-0.7)		4.6	6.4	3.9
				on Musi River, p.152						
2039	Pontianak, Little Kapuas River }	0° 01'	109° 20'	-0 20	-0 09	(*0.38+0.2)		2.8	3.8	2.6
		North	East							
2041	Kapuas-ketjil River entrance }	0° 05'	109° 08'	-1 07	-0 34	*0.48	*0.45	3.6	4.9	3.0
				on Cebu, p.180				Mean Spring		
2043	Pamangkat, Sambas-besar River }	1° 11'	108° 59'	+5 45	+5 43	(*0.55+0.7)		1.8	2.1	2.0
	MALAYSIA Sarawak and Sabah			on Darwin, p.276						
	<i>Borneo, northwest coast</i>									
2045	Tanjung Datu }	2° 05'	109° 39'	-1 42	-1 47	*0.41	*0.30	6.2	7.2	5.2
2047	Kuching, Sarawak River }	1° 34'	110° 21'	-1 18	-0 56	*0.72	*0.72	9.7	12.1	9.9
2049	Pulau Lakei }	1° 45'	110° 30'	-1 52	-1 53	*0.71	*0.86	8.6	11.1	10.2
				on Manila, p.184				Diurnal	Tropic	
2051	Kuala Similajau }	3° 31'	113° 18'	-0 19	+0 18	+2.2	+1.8	3.7	5.0	3.8
2053	Kuala Niah }	3° 58'	113° 42'	+0 18	+1 03	+2.1	+1.7	3.7	5.1	3.7
2055	Miri }	4° 23'	113° 59'	+0 27	+1 09	+2.1	+1.8	3.6	4.8	3.7
2057	Baram River entrance }	4° 35'	113° 59'	+0 08	+0 29	+1.4	+1.4	3.2	4.2	3.1
2059	Sapo Point, Brunei Bay }	5° 00'	115° 08'	+0 50	+0 30	+3.6	+2.0	4.9	6.0	4.6
2061	Sipitang, Brunei Bay }	5° 05'	115° 33'	+0 22	+0 24	+3.4	+2.0	4.7	5.8	4.5
2063	Victoria Harbor, Labuan Island }	5° 16'	115° 15'	+0 26	+0 19	+3.9	+2.6	4.6	5.8	5.0
2065	Kuala Papar, Kimanis Bay }	5° 45'	115° 54'	-0 09	-0 03	+2.1	+1.5	3.9	4.9	3.5
2067	Kota Kinabalu }	5° 59'	116° 04'	+0 19	+0 17	+2.4	+1.6	4.1	5.2	3.7
2069	Kudat, Marudu Bay }	6° 53'	116° 51'	+0 21	+0 00	+2.9	+1.7	4.5	5.6	4.0
				on Cebu, p.180				MeanDiurnal		
2071	Tigabu Island }	6° 53'	117° 29'	-0 13	-0 15	(*0.94+1.7)		2.8	4.8	3.9
2073	Lankayan Island }	6° 30'	117° 55'	-0 18	-0 19	(*0.90+1.9)		2.8	4.6	4.0
2075	Sandakan }	5° 50'	118° 07'	-0 01	-0 20	+1.2	+1.2	3.1	5.1	3.6
	PHILIPPINE ISLANDS Sulu Islands			on Davao, p.176						
2077	Tumindao Channel }	4° 47'	119° 25'	+0 06	+0 14	*0.70	*0.70	3.1	3.8	1.7
2079	Port Bongao, Tawitawi Island }	5° 02'	119° 46'	+0 07	+0 16	*0.74	*0.74	3.3	4.2	1.8
2081	Batu Batu Bay, Tawitawi Island }	5° 04'	119° 53'	+0 05	-0 08	*0.80	*0.80	3.4	4.4	2.0
2083	Banaran Island }	5° 02'	120° 06'	+0 15	-0 15	+0.4	-0.1	4.8	5.6	2.6
2085	Gallo Malo Channel, south entrance }	5° 08'	120° 14'	+0 26	+0 27	+0.7	-0.1	5.1	5.9	2.7
2087	Tandugan Channel, Tawitawi Island }	5° 13'	120° 19'	+0 25	+0 20	*0.80	*0.80	3.4	4.4	2.0
2089	South Ubian Usland }	5° 12'	120° 30'	-0 34	-0 17	*0.61	*0.61	2.6	3.4	1.5
2091	Maimbung, Jolo Island }	5° 55'	121° 01'	-0 08	+0 45	*0.72	*0.72	3.2	3.9	1.7
				on Jolo, p.172						
2093	Tataan Pass, Tawitawi Island }	5° 15'	119° 57'	-0 31	-0 31	*0.86	*0.86	--	2.4	1.0
2095	Basbas Channel, Tawitawi Island }	5° 21'	120° 13'	-0 39	-0 39	*0.89	*0.89	--	2.5	1.2
2097	Lahatlahat Island }	5° 39'	120° 17'	-0 33	-0 33	*0.93	*0.93	--	2.6	1.3
2099	Pearl Bank }	5° 51'	119° 44'	+1 12	+1 12	+0.6	0.0	--	3.4	1.7
2101	Pangutaran Island }	6° 15'	120° 30'	+1 25	+1 25	+0.7	0.0	--	3.5	1.7
2103	Port Siasi, Siasi Island }	5° 33'	120° 49'	-1 33	-1 33	+1.3	0.0	--	4.1	2.0
2105	Banting, Tapul Island }	5° 42'	120° 53'	-1 29	-0 58	+0.3	0.0	--	3.1	1.3
2107	JOLO, Jolo Island }	6° 04'	121° 00'	<i>Daily predictions</i>				--	2.8	0.9
2109	Tulayan Island }	6° 01'	121° 19'	-1 55	-1 55	*0.86	*0.86	--	2.4	1.0
2111	Dassalan Island }	6° 44'	121° 28'	+0 20	+0 20	+0.5	0.0	--	3.3	1.6

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
		North	East	h m	h m	ft	ft	ft	ft	
PHILIPPINE ISLANDS										
Sulu Islands-cont.										
Time meridian, 120° E										
on Davao, p.176										
2113	Capual Island	6° 01'	121° 25'	-0 15	+0 24	*0.89	*0.89	3.9	4.9	2.2
2115	Simisa Island	5° 58'	121° 34'	-0 02	-0 01	*0.78	*0.78	3.5	4.2	1.9
2117	Bulan Island	6° 09'	121° 50'	-0 07	+0 04	*0.91	*0.91	4.0	4.7	2.2
2119	Linawan Island	6° 19'	121° 56'	-0 29	-0 12	*0.78	*0.78	3.5	4.1	1.9
2121	Balas, Basilan Island	6° 41'	122° 08'	+0 13	+0 20	*0.83	*0.83	3.6	4.3	2.0
2123	Bojelebung, Basilan Island	6° 31'	122° 12'	+0 11	-0 17	+0.2	0.0	4.5	5.2	2.5
2125	Amoyloi, Basilan Island	6° 26'	122° 08'	-0 08	+0 52	+0.9	-0.2	5.4	6.2	2.8
on Jolo, p.172										
2127	Port Holland, Basilan Island }	6° 33'	121° 52'	-1 49	-1 49	+0.2	0.0	--	3.0	1.3
2129	Isabela, Basilan Island }	6° 42'	121° 58'	+0 01	+0 01	*0.79	*0.79	--	2.2	1.1
Mindanao Island										
2131	Zamboanga }	6° 54'	122° 04'	-1 54	-1 54	+0.5	0.0	--	3.3	1.4
on Cebu, p.180										
2133	Sibuco Bay	7° 19'	122° 04'	-0 40	-0 40	*0.76	*0.76	2.5	4.0	1.8
2135	Panabutan Bay	7° 35'	122° 08'	-0 40	-0 40	*0.76	*0.76	2.5	4.1	1.8
2137	Port Santa Maria	7° 46'	122° 07'	-0 40	-0 40	*0.76	*0.76	2.5	4.2	1.8
2139	Dapitan	8° 40'	123° 25'	-0 40	-0 40	*0.79	*0.79	2.6	4.4	1.9
2141	Murcielagos	8° 38'	123° 34'	-0 08	-0 13	*0.85	*0.85	2.8	4.2	2.0
2143	Plaridel (Langaran)	8° 37'	123° 43'	-0 25	-0 25	*0.79	*0.79	2.6	4.1	1.9
<i>Iligan Bay</i>										
2145	Oroquieta	8° 29'	123° 48'	-0 15	-0 15	*0.82	*0.82	2.7	4.0	1.8
2147	Jiminez	8° 20'	123° 51'	-0 05	-0 05	*0.82	*0.82	2.7	4.1	1.8
2149	Misamis	8° 09'	123° 51'	+0 00	-0 04	*0.88	*0.88	2.9	4.4	2.0
2151	Iligan	8° 14'	124° 14'	-0 10	-0 10	*0.79	*0.79	2.6	4.2	2.0
2153	Macabalan Pt., Macajalar Bay	8° 30'	124° 40'	-0 15	-0 15	*0.82	*0.82	2.7	4.2	1.8
2155	Canauyor Anchorage	9° 00'	124° 51'	-0 15	-0 15	*0.79	*0.79	2.6	4.1	1.8
2157	Mambajao, Camiguin Island	9° 15'	124° 43'	-0 15	-0 15	*0.76	*0.76	2.5	4.1	1.8
2159	Nasipit Harbor, Butuan Bay	8° 59'	125° 20'	-0 13	-0 21	*0.82	*0.71	2.8	4.1	1.9
2161	Agusan River ent., Butuan Bay	9° 00'	125° 31'	-0 09	-0 13	*0.72	*0.57	2.5	3.8	1.6
on Manila, p.184										
2163	Surigao }	9° 48'	125° 29'	+0 45	+0 45	+0.1	0.0	--	3.4	1.7
2165	Dinagat, Dinagat Island }	9° 58'	125° 35'	+0 20	+0 20	+0.1	0.0	--	3.4	1.7
2167	Melgar, Dinagat Island }	10° 04'	125° 31'	+0 00	+0 00	+0.1	0.0	--	3.4	1.7
2169	San Roque, Dinagat Island }	10° 06'	125° 29'	-0 20	-0 20	+0.2	0.0	--	3.5	1.8
on Legaspi Port, p.192										
2171	Malinao Inlet, Dinagat Island	10° 15'	125° 38'	+0 40	+0 40	*0.88	*0.88	3.2	4.0	2.2
2173	Gaas Bay, Dinagat Island	10° 11'	125° 39'	+0 40	+0 40	*0.88	*0.88	3.2	4.0	2.2
2175	Cuyomongan, Talavera Island	9° 45'	125° 41'	+0 40	+0 40	+0.1	+0.1	3.8	4.6	2.5
2177	Tayanan, Kangbangyo Island	9° 54'	125° 54'	+0 35	+0 35	-0.1	0.0	3.7	4.4	2.4
2179	Port Pilar, Siargao Island	9° 52'	126° 06'	+0 25	+0 25	*0.86	*0.86	3.2	4.0	2.1
2181	San Miguel, East Bugas Island	9° 44'	126° 02'	+0 30	+0 30	*0.88	*0.88	3.2	4.1	2.2
2183	Sohutan Bay, Bucas Grande Island	9° 36'	125° 55'	+0 30	+0 30	+0.1	+0.1	3.8	4.6	2.5
2185	Tugas Point	9° 29'	125° 57'	+0 20	+0 20	+0.1	+0.1	3.8	4.6	2.5
2187	Dahikan Bay	9° 27'	125° 56'	+0 27	+0 22	+0.2	+0.2	3.8	4.7	2.6
2189	Buenavista, General Island	9° 25'	126° 00'	+0 20	+0 20	+0.1	+0.1	3.8	4.6	2.5
2191	Tandag	9° 05'	126° 12'	+0 15	+0 15	+0.2	+0.1	3.9	4.7	2.6
2193	Hinatuan	8° 22'	126° 20'	+0 15	+0 15	+0.3	+0.1	4.0	4.9	2.6
2195	Caraga Bay	7° 17'	126° 35'	+0 10	+0 10	+0.4	+0.1	4.1	5.0	2.6
2197	Mati, Pujada Bay	6° 57'	126° 13'	+0 10	+0 10	+0.2	0.0	4.0	4.8	2.5
on Davao, p.176										
2199	Lavigan Anchorage	6° 18'	126° 11'	+0 04	+0 04	-0.1	+0.1	4.1	4.9	2.4
2201	Sigaboy Island	6° 38'	126° 04'	+0 04	+0 05	0.0	+0.1	4.2	5.0	2.5
2203	DAVAO	7° 05'	125° 38'	<i>Daily predictions</i>				4.3	5.1	2.5
2205	Malalag	6° 36'	125° 25'	+0 04	+0 04	-0.1	+0.1	4.1	4.9	2.4
2207	Malita	6° 25'	125° 37'	-0 04	-0 06	0.0	+0.2	4.1	5.1	2.5
2209	Sarangani Island	5° 25'	125° 27'	-0 01	+0 06	0.0	0.0	4.3	5.2	2.4
2211	Sarangani Bay	5° 50'	125° 12'	+0 03	+0 06	+0.2	0.0	4.5	5.3	2.5
2213	Port Lebak	6° 32'	124° 03'	+0 07	+0 10	+0.7	0.0	5.0	5.8	2.8
2215	Cotabato, Mindanao River	7° 13'	124° 15'	+1 01	+1 42	*0.67	*0.67	3.0	3.5	1.6
<i>Iligan Bay</i>										
2217	Polloc Harbor	7° 21'	124° 13'	+0 14	+0 14	+0.4	-0.1	4.8	5.6	2.6
2219	Port Baras	7° 38'	124° 01'	+0 14	+0 14	+0.5	0.0	4.8	5.6	2.7
2221	Tukuran	7° 51'	123° 35'	+0 19	+0 19	+0.5	0.0	4.8	5.6	2.7
2223	Pagadian	7° 49'	123° 27'	+0 19	+0 19	+0.6	0.0	4.9	5.7	2.8
2225	Port Sambulauan	7° 32'	123° 24'	+0 19	+0 19	+0.5	0.0	4.8	5.6	2.7
2227	Limbug Cove	7° 28'	123° 24'	+0 19	+0 19	+0.4	0.0	4.7	5.5	2.6
2229	Maligay Bay	7° 32'	123° 15'	+0 19	+0 19	+0.5	0.0	4.8	5.6	2.7
2231	Margosatubig, Dumanquilas Bay	7° 35'	123° 10'	+0 11	+0 15	+0.2	-0.1	4.6	5.3	2.5
2233	Port Sibulan	7° 26'	122° 53'	+0 19	+0 19	+0.6	0.0	4.9	5.8	2.8
2235	Taba Bay, Sibuguey Bay	7° 35'	122° 47'	+0 24	+0 24	+0.8	0.0	5.1	6.0	2.8

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
		North	East	h m	h m	ft	ft	ft	ft	
PHILIPPINE ISLANDS										
Mindanao Island-cont. Time meridian, 120° E										
on Davao, p.176										
2237	Ticauan Point, Sibuguey Bay	7° 45'	122° 44'	+0 24	+0 24	+0.9	0.0	5.2	6.1	2.9
2239	Port Banga, Sibuguey Bay	7° 31'	122° 25'	+0 24	+0 24	+0.7	0.0	5.0	5.9	2.8
2241	Landang, Sacol Island	6° 57'	122° 15'	+0 17	+0 20	-0.7	-0.2	3.8	4.6	2.0
Palawan and Vicinity										
on Manila, p.184										
2243	Balabac, Balabac Island }	8° 00'	117° 04'	+0 10	+0 10	+1.0	0.0	--	4.3	2.1
2245	Secam Island, N. Balabac Strait }	8° 11'	117° 01'	+0 10	+0 10	+0.7	0.0	--	4.0	2.0
2247	Tagbita Bay }	8° 42'	117° 20'	-0 24	-0 17	+0.5	0.0	--	3.8	1.9
2249	Eran Bay }	9° 05'	117° 42'	+0 05	+0 05	+0.7	0.0	--	4.0	2.0
2251	Ulugan Bay }	10° 06'	118° 47'	-0 05	-0 05	+0.7	0.0	--	4.0	2.0
2253	Port Barton }	10° 28'	119° 08'	-0 10	-0 10	+0.7	0.0	--	4.0	2.0
2255	Boayan Island }	10° 34'	119° 11'	-0 05	+0 01	+0.4	0.0	--	3.7	1.8
2257	Bolalo Bay, Malampaya Sound }	10° 56'	119° 14'	-0 07	-0 14	0.0	0.0	--	3.3	1.6
2259	Alligator Bay, Malampaya Sound }	10° 52'	119° 17'	-0 04	+0 02	+0.2	0.0	--	3.5	1.8
2261	Bacuit }	11° 11'	119° 23'	+0 20	-0 29	*0.97	*0.97	--	3.2	1.6
2263	Northwest Bay, Linapacan Island }	11° 28'	119° 46'	-0 05	-0 05	+0.8	0.0	--	4.1	2.0
2265	San Nicolas, Linapacan Island }	11° 27'	119° 49'	-0 05	-0 05	+0.9	0.0	--	4.2	2.1
2267	San Miguel, Linapacan Island }	11° 30'	119° 52'	+0 10	+0 10	+1.1	0.0	--	4.4	2.2
2269	Batas Island }	11° 10'	119° 36'	+0 10	+0 10	+1.3	0.0	--	4.6	2.3
2271	Taytay }	10° 50'	119° 31'	+0 15	+0 15	+1.3	0.0	--	4.6	2.3
2273	Paly Island }	10° 42'	119° 42'	+0 15	+0 15	+1.3	0.0	--	4.6	2.3
2275	Araceli, Dumaran Island }	10° 33'	119° 59'	+0 15	+0 15	+1.3	0.0	--	4.6	2.3
2277	Tinitian, Green Island Bay }	10° 04'	119° 12'	+0 40	+0 40	+1.1	0.0	--	4.4	2.2
2279	Puerto Princesa }	9° 44'	118° 43'	+0 05	+0 05	+1.1	0.0	--	4.4	2.2
2281	Island Bay }	9° 06'	118° 07'	+0 15	+0 15	+0.8	0.0	--	4.1	2.0
2283	Sir J. Brooke Point }	8° 46'	117° 50'	+0 10	+0 10	+0.9	0.0	--	4.2	2.1
2285	Cuyo, Cuyo Island }	10° 51'	121° 00'	+0 05	+0 05	+1.2	0.0	--	4.5	2.2
2287	Halsey Harbor, Culion Island }	11° 47'	119° 58'	+0 05	+0 05	+0.7	0.0	--	4.0	2.0
2289	Culion, Culion Island }	11° 53'	120° 01'	+0 05	+0 05	+1.2	0.0	--	4.5	2.2
2291	Coron, Busuanga Island }	12° 01'	120° 12'	+0 10	+0 10	+1.2	0.0	--	4.5	2.2
2293	Apo Island, Mindoro Strait }	12° 40'	120° 24'	-0 05	-0 05	+0.3	0.0	--	3.6	1.8
on Cebu, p.180										
2295	Cagayan Anchorage, Cagayan Island	9° 35'	121° 14'	-0 29	-0 37	*0.80	*0.80	2.6	4.0	1.9
2297	Cagayan Sulu Island	6° 59'	118° 32'	-3 00	-3 00	*0.80	*0.80	2.7	4.2	2.1
Panay and Guimaras Islands										
2299	Aniniy	10° 26'	121° 55'	-0 25	-0 25	*0.95	*0.95	3.0	4.9	2.3
2301	San Jose	10° 44'	121° 56'	-0 30	-0 30	*0.88	*0.88	2.7	4.6	2.1
2303	Tibiao	11° 17'	122° 02'	-0 35	-0 35	+0.3	+0.1	3.5	5.4	2.5
2305	Borocay Island	11° 57'	121° 56'	-0 25	-0 25	+0.3	0.0	3.6	5.3	2.5
2307	Aclan River entrance	11° 44'	122° 22'	-0 05	-0 05	+0.3	0.0	3.6	5.3	2.5
2309	Port Batan	11° 36'	122° 30'	+0 00	+0 00	+0.4	0.0	3.7	5.4	2.5
2311	Libas (Capiz Landing)	11° 36'	122° 43'	+0 00	+0 00	+0.4	+0.1	3.6	5.4	2.6
2313	Estancia	11° 28'	123° 09'	+0 15	+0 15	+1.8	+0.2	4.9	6.9	3.4
2315	Concepcion	11° 13'	123° 06'	+0 15	+0 15	+1.9	+0.2	5.0	7.0	3.4
2317	Banate	11° 00'	122° 49'	+0 25	+0 25	+2.0	+0.2	5.1	7.1	3.4
2319	Navalas, Guimaras Island	10° 44'	122° 41'	+0 15	+0 15	+1.3	+0.2	4.4	6.4	3.1
2321	Inampulugan I., Guimaras Island	10° 27'	122° 43'	-0 10	-0 10	0.0	0.0	3.3	5.1	2.3
2323	Lugmayan Point, Guimaras Island	10° 25'	122° 32'	-0 20	-0 20	*0.85	*0.85	2.7	4.5	2.0
2325	Lloilo	10° 42'	122° 34'	+0 05	+0 05	+0.3	+0.1	3.5	5.4	2.6
2327	Miagao	10° 38'	122° 14'	-0 20	-0 20	*0.88	*0.88	2.7	4.6	2.2
Negros Island										
2329	Cadiz	10° 57'	123° 19'	+0 30	+0 30	+1.6	+0.1	4.8	6.6	3.2
2331	Himugaan River entrance	10° 57'	123° 24'	+0 25	+0 25	+1.3	+0.1	4.5	6.3	3.0
2333	Danao River entrance	10° 49'	123° 33'	+0 15	+0 15	+0.7	0.0	4.0	5.8	2.7
2335	San Carlos	10° 29'	123° 25'	+0 15	+0 15	+0.8	0.0	4.1	5.8	2.7
2337	Calagcalag Bay	9° 49'	123° 08'	+0 10	+0 10	+0.4	0.0	3.7	5.4	2.6
2339	Bais	9° 36'	123° 08'	+0 10	+0 10	+0.3	0.0	3.6	5.3	2.5
2341	Dumaguete	9° 18'	123° 18'	-0 25	-0 25	*0.92	*0.71	3.2	4.8	2.1
2343	Larena, Siquijor Island	9° 15'	123° 35'	-0 25	-0 25	*0.80	*0.71	2.7	4.2	1.8
2345	Port Bonbonon	9° 03'	123° 07'	-0 30	-0 30	*0.88	*0.71	3.0	4.5	2.0
2347	Campomanes Bay	9° 42'	122° 25'	-0 30	-0 30	*0.90	*0.71	3.1	4.5	2.0
2349	Himamaylan	10° 06'	122° 52'	-0 30	-0 30	0.0	0.0	3.3	5.0	2.3
2351	Bacolod	10° 40'	122° 57'	+0 10	+0 10	+1.0	+0.1	4.2	6.1	2.9
Cebu Island										
2353	Moalboal	9° 56'	123° 24'	+0 10	+0 10	+0.4	0.0	3.7	5.5	2.6
2355	Barili Bay	10° 07'	123° 29'	+0 10	+0 10	+0.4	0.0	3.7	5.5	2.6
2357	Balamban Bay	10° 30'	123° 43'	+0 10	+0 10	+0.6	0.0	3.9	5.7	2.6
2359	Tuburan	10° 44'	123° 49'	+0 15	+0 15	+0.7	+0.1	3.9	5.8	2.7
2361	Medellin	11° 08'	123° 58'	+0 20	+0 20	+0.9	0.0	4.2	6.0	2.8
2363	Bantayan, Bantayan Island	11° 10'	123° 43'	+0 20	+0 20	+0.9	0.0	4.2	6.0	2.8
2365	Bogo Bay	11° 04'	124° 00'	+0 20	+0 20	+0.4	0.0	3.7	5.4	2.6
2367	Carmen	10° 35'	124° 01'	+0 10	+0 10	+0.3	0.0	3.6	5.3	2.5

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
		North	East	h m	h m	ft	ft	ft	ft	ft
	PHILIPPINE ISLANDS Cebu Island-cont. Time meridian, 120° E									
				on Cebu, p.180						
				<i>Daily predictions</i>						
2369	CEBU, Fort San Pedro	10° 18'	123° 54'					3.3	5.1	2.3
2371	Carcar Bay	10° 05'	123° 39'	-0 05	-0 05	0.0	0.0	3.3	5.0	2.3
2373	Boljoon	9° 38'	123° 29'	-0 15	-0 15	*0.91	*0.91	3.0	4.5	2.1
	Bohol Island									
2375	Maribojoc	9° 44'	123° 50'	-0 15	-0 15	*0.91	*0.91	3.0	4.6	2.1
2377	Tubigon	9° 57'	123° 58'	-0 10	-0 10	0.0	0.0	3.3	5.1	2.3
2379	Ubay	10° 04'	124° 28'	+0 00	+0 00	+0.1	0.0	3.4	5.1	2.4
2381	Cogton Bay	9° 50'	124° 31'	-0 15	-0 15	*0.76	*0.76	2.5	4.0	1.8
2383	Garcia Hernandez	9° 37'	124° 18'	-0 20	-0 20	*0.79	*0.79	2.6	4.1	1.8
	Leyte Island									
2385	Liloan, Sogod Bay	10° 09'	125° 07'	-0 40	-0 40	*0.76	*0.76	2.5	4.1	1.8
2387	Maasin	10° 08'	124° 50'	-0 15	-0 15	*0.91	*0.91	3.0	4.6	2.1
2389	Baybay	10° 41'	124° 48'	+0 00	+0 00	+0.6	0.0	3.9	5.6	2.6
2391	Ormoc	11° 00'	124° 36'	+0 05	+0 05	+0.6	0.0	3.9	5.6	2.6
2393	Palompon	11° 03'	124° 23'	+0 10	+0 10	+0.5	0.0	3.8	5.6	2.6
2395	Genuruan Island, Biliran Island	11° 42'	124° 21'	+0 05	+0 05	+0.5	0.0	3.8	5.5	2.6
2397	Poro Island, Biliran Strait	11° 28'	124° 29'	+0 10	+0 10	+0.5	0.0	3.8	5.5	2.6
2399	Carigara	11° 18'	124° 41'	+0 15	+0 15	+0.2	0.0	3.5	5.2	2.4
2401	Canauay Island, Janabatas Channel	11° 26'	124° 51'	+0 15	+0 15	*0.97	*0.97	3.2	4.8	2.2
2403	Santa Rita I., San Juanico Strait	11° 26'	124° 58'	+0 24	+0 06	*0.88	*0.88	2.9	4.3	2.0
2405	Uban Point, San Juanico Strait	11° 22'	124° 59'	-1 10	-1 10	*0.67	*0.67	2.2	3.6	1.5
				on Jolo, p.172						
2407	Tacloban, San Juanico Strait }	11° 15'	125° 00'	-1 25	-1 25	*0.82	*0.82	--	2.3	0.9
2409	Abuyog }	10° 45'	125° 01'	-1 40	-1 40	*0.79	*0.79	--	2.2	0.8
2411	Hinunangan }	10° 24'	125° 12'	-0 20	-0 20	*0.82	*0.82	--	2.3	0.9
	Samar Island									
				on Cebu, p.180						
2413	Talalora	11° 32'	124° 50'	+0 15	+0 15	-0.1	-0.2	3.4	4.9	2.2
2415	Parasan Harbor, Daram Island	11° 42'	124° 45'	+0 10	+0 10	+0.2	-0.2	3.7	5.2	2.4
2417	Catbalogan	11° 47'	124° 53'	+0 10	+0 10	+0.2	-0.2	3.7	5.2	2.4
2419	Santo Nino, Santo Nino Island	11° 56'	124° 27'	+0 05	+0 05	0.0	-0.2	3.5	4.8	2.2
2421	Calbayog	12° 04'	124° 35'	+0 05	+0 05	*0.82	*0.82	2.7	4.1	1.8
				on Manila, p.184						
2423	Mauo }	12° 26'	124° 19'	+0 25	+0 25	*0.73	*0.73	--	2.4	1.2
				on Davao, p.176						
2425	Biri Island	12° 39'	124° 22'	-0 20	-0 08	*0.46	*0.46	2.0	2.4	1.1
2427	Talisay Island	12° 39'	124° 25'	+0 13	+0 15	*0.58	*0.58	2.5	2.9	1.5
				on Legaspi Port, p.192						
2429	Catarman River entrance	12° 31'	124° 39'	+0 24	+0 21	*0.93	*0.93	3.6	4.2	2.2
2431	Laoang, Laoang Island	12° 34'	125° 01'	+0 23	+0 20	+0.1	0.0	3.9	4.6	2.4
2433	Helm Harbor, Gamay Bay	12° 18'	125° 21'	+0 15	+0 18	+0.3	0.0	4.1	4.8	2.5
2435	Hilaban Island	12° 02'	125° 34'	+0 13	+0 16	+0.1	+0.1	3.8	4.7	2.5
2437	Andis Island, Port Borongan	11° 39'	125° 29'	+0 17	+0 20	+0.3	+0.1	4.0	4.9	2.6
2439	Matarinao Bay	11° 14'	125° 35'	+0 19	+0 18	+0.4	+0.1	4.1	5.0	2.6
2441	Guiuan	11° 02'	125° 43'	+0 30	+0 01	*0.51	*0.51	2.1	2.6	1.1
	Masbate Island									
				on Cebu, p.180						
2443	Port Cataingan	12° 00'	124° 00'	+0 00	+0 00	-0.1	-0.2	3.4	4.6	2.2
2445	Nin Bay	12° 14'	123° 17'	+0 00	+0 00	+0.3	0.0	3.6	5.3	2.5
2447	Port Barrera	12° 30'	123° 22'	+0 05	+0 05	+0.3	0.0	3.6	5.3	2.5
2449	Masbate	12° 22'	123° 37'	+0 00	+0 00	+0.3	0.0	3.6	5.3	2.5
2451	Dimasalang, Naro Bay	12° 12'	123° 51'	+0 00	+0 00	+0.1	-0.1	3.5	5.0	2.4
	Ticao and Burias Islands									
2453	Port San Miguel, Ticao Island	12° 40'	123° 35'	+0 00	+0 00	+0.3	0.0	3.6	5.3	2.5
2455	San Jacinto, Ticao Island	12° 34'	123° 44'	+0 00	+0 00	*0.95	*0.95	3.2	4.6	2.2
2457	Batuan Bay, Ticao Island	12° 25'	123° 47'	+0 10	+0 10	*0.80	*0.80	2.6	3.9	1.9
2459	Port Boca Engano, Burias Island	12° 47'	123° 19'	+0 05	+0 05	+0.4	0.0	3.7	5.3	2.6
2461	San Pascual, Burias Island	13° 08'	122° 59'	+0 00	+0 00	+0.7	+0.1	3.9	5.6	2.8
	Romblon and Vicinity									
2463	Canguac Point, Sibuyan Island	12° 30'	122° 30'	-0 25	-0 25	+0.7	+0.1	3.9	5.8	2.7
2465	Romblon, Romblon Island	12° 35'	122° 16'	-0 05	-0 05	+0.5	+0.1	3.7	5.5	2.6
2467	Guimbiravan, Tablas Island	12° 10'	122° 02'	+0 00	+0 00	+0.7	+0.1	3.9	5.6	2.8
2469	Looc, Tablas Island	12° 16'	122° 00'	-0 07	-0 08	+0.3	+0.1	3.5	5.2	2.5
2471	Port Concepcion, Maestre de Campo I.	12° 55'	121° 44'	-0 10	-0 10	+0.1	+0.1	3.3	5.1	2.4

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TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	PHILIPPINE ISLANDS	North	East	h	m	h	m	ft	ft	ft
	Marinduque Island									
	Time meridian, 120° E									
				on Cebu, p.180						
2473	Port Balanacan	13° 32'	121° 52'	-0 10	-0 10	*0.95	*0.95	3.0	4.9	2.3
2475	Santa Cruz Harbor	13° 30'	122° 04'	+0 00	+0 00	*0.98	*0.98	3.1	5.0	2.4
2477	Torrijos	13° 19'	122° 05'	-0 05	-0 05	+0.1	+0.1	3.3	5.2	2.4
	Mindoro Island									
2479	Port Galera	13° 31'	120° 58'	-0 30	-0 30	*0.75	*0.75	2.2	4.0	1.9
2481	Calapan Bay	13° 26'	121° 11'	-0 20	-0 20	*0.90	*0.90	2.8	4.7	2.2
2483	Mansalay	12° 31'	121° 26'	-0 10	-0 10	+0.1	+0.1	3.3	5.1	2.4
				on Manila, p.184						
2485	Mangarin }	12° 21'	121° 06'	+0 05	+0 05	+0.4	0.0	--	3.7	1.8
2487	Sablayan }	12° 50'	120° 46'	-0 05	-0 05	+0.3	0.0	--	3.6	1.8
2489	Paluan }	13° 25'	120° 28'	-0 10	-0 10	+0.3	0.0	--	3.6	1.8
2491	Port Tiliig, Lubang Island }	13° 49'	120° 12'	-0 10	-0 10	+0.2	0.0	--	3.5	1.7
	Luzon Island, West Coast									
2493	Anilao, Balayan Bay }	13° 46'	120° 55'	+0 14	+0 20	+0.4	0.0	--	3.7	1.7
2495	Corregidor Island, Manila Bay }	14° 23'	120° 36'	-0 10	-0 10	0.0	0.0	--	3.3	1.6
2497	Cavite, Manila Bay }	14° 29'	120° 55'	+0 14	+0 13	*0.97	*0.97	--	3.2	1.6
2499	MANILA, Pasig River entrance }	14° 35'	120° 58'					--	3.3	1.6
2501	Olongapo, Subic Bay }	14° 49'	120° 17'	-0 04	+0 03	*0.91	*0.91	--	3.0	1.5
2503	Port Silanguin }	14° 46'	120° 07'	-0 20	-0 20	*0.91	*0.91	--	3.0	1.5
2505	Port Masinloc }	15° 31'	119° 55'	-0 31	-0 34	*0.85	*0.85	--	2.8	1.4
2507	Santa Cruz }	15° 46'	119° 54'	-0 41	-0 42	*0.82	*0.82	--	2.7	1.3
				on San Fernando Harbor, p.188						
2509	Bolinao, Lingayen Gulf {	16° 24'	119° 54'	+0 07	-0 51	+0.3	0.0	--	2.5	1.2
2511	Sual, Lingayen Gulf {	16° 04'	120° 06'	+0 17	-0 47	+0.3	0.0	--	2.5	1.2
2513	Santo Tomas, Lingayen Gulf {	16° 17'	120° 23'	+0 11	-0 47	+0.3	0.0	--	2.5	1.2
2515	SAN FERNANDO HARBOR {	16° 37'	120° 18'					--	2.2	1.1
2517	Solvec Cove {	17° 27'	120° 27'	-0 35	-1 09	+0.1	0.0	--	2.3	1.1
2519	Salomague {	17° 47'	120° 25'	-1 18	-1 34	*0.91	*0.91	--	2.0	1.0
2521	Laoag River entrance {	18° 13'	120° 31'	-1 30	-1 46	*0.86	*0.86	--	1.9	0.9
2523	Nagabungan Bay {	18° 29'	120° 34'	-1 32	+4 13	*0.91	*0.91	--	2.0	1.0
	Luzon Island, North Coast									
				on Legaspi Port, p.192						
2525	Claveria Bay	18° 37'	121° 06'	+1 25	+1 05	*0.37	*0.37	1.5	2.1	0.8
2527	Aparri, Cagayan River	18° 21'	121° 38'	+0 34	+0 44	*0.71	*0.71	2.7	3.5	1.7
2529	Camalaniugan, Cagayan River	18° 17'	121° 40'	+0 44	+0 53	*0.74	*0.74	2.8	3.6	1.8
2531	Port San Vicente	18° 31'	122° 08'	-0 03	-0 07	*0.79	*0.79	2.9	3.6	1.9
2533	Port San Pio Quinto, Camiguin Island	18° 54'	121° 52'	+0 34	+0 32	*0.70	*0.70	2.7	3.2	1.6
2535	Musa Bay, Fuga Island	18° 52'	121° 17'	+0 47	+0 44	*0.47	*0.47	1.8	2.3	1.0
2537	Calayan Island	19° 16'	121° 30'	+0 05	-0 01	*0.71	*0.71	2.7	3.4	1.5
2539	Babuyan Island	19° 34'	121° 56'	+0 16	+0 08	*0.79	*0.79	3.2	3.8	1.8
2541	Basco, Batan Island	20° 27'	121° 58'	+0 55	+1 06	*0.53	*0.53	2.0	2.5	1.3
	Luzon Island, East Coast									
2543	Patunungan Bay	18° 24'	122° 18'	+0 05	+0 01	*0.84	*0.84	3.2	3.9	2.0
2545	Divilacan Bay	17° 25'	122° 14'	-0 26	-0 29	*0.84	*0.84	3.2	3.8	2.0
2547	Port Bicobian	17° 17'	122° 25'	+0 35	+0 26	*0.88	*0.88	3.4	4.0	2.1
2549	Diapitan Bay	16° 24'	122° 13'	+0 18	+0 14	*0.87	*0.87	3.3	4.0	2.1
2551	Casiguran Bay	16° 14'	122° 08'	+0 06	+0 02	-0.1	-0.1	3.7	4.4	2.3
2553	Baler Bay	15° 45'	121° 35'	+0 12	+0 16	-0.1	0.0	3.7	4.4	2.3
2555	Umiray River ent., Dingalan Bay	15° 12'	121° 26'	+0 12	+0 10	-0.2	-0.1	3.7	4.3	2.2
2557	Hook Bay, Polillo Island	14° 57'	121° 50'	+0 10	+0 13	0.0	0.0	3.8	4.5	2.4
2559	Burdeos Bay, Polillo Island	14° 54'	121° 58'	+0 22	+0 20	0.0	-0.1	3.9	4.5	2.3
2561	Polillo, Polillo Island	14° 43'	121° 56'	+0 10	+0 06	+0.3	0.0	4.1	4.8	2.5
	Lamon Bay									
2563	Port Lampon	14° 40'	121° 37'	+0 23	+0 20	+0.4	0.0	4.2	4.9	2.6
2565	Sangirin Bay	14° 12'	121° 55'	+0 22	+0 16	+0.7	0.0	4.5	5.2	2.7
2567	Atimonan	14° 00'	121° 55'	+0 24	+0 19	+0.7	0.0	4.5	5.2	2.7
2569	Apat Bay	14° 01'	122° 19'	+0 25	+0 20	+0.7	0.0	4.5	5.2	2.7
2571	Capalonga	14° 20'	122° 29'	+0 19	+0 12	+0.3	0.0	4.1	4.9	2.5
2573	Port Jose Panganiban	14° 18'	122° 41'	+0 21	+0 17	+0.4	0.0	4.2	4.9	2.6
2575	Guintinua Island, Calagua Islands	14° 25'	122° 56'	+0 08	+0 11	+0.3	0.0	4.1	4.9	2.5
2577	Mercedes	14° 07'	123° 01'	+0 26	+0 24	+0.2	0.0	4.0	4.8	2.5
2579	Cabgan Island, San Miguel Bay	13° 46'	123° 16'	+0 25	+0 26	+1.4	+0.2	5.0	5.9	3.2
2581	Sisiran Bay	13° 56'	123° 39'	+0 23	+0 27	+0.2	0.0	4.0	4.8	2.5
2583	Tabgon Bay	13° 50'	123° 49'	+0 21	+0 23	+0.3	+0.1	4.0	4.8	2.6
2585	Hitoma, Catanduanes Island	13° 47'	124° 08'	+0 18	+0 19	+0.2	0.0	4.0	4.8	2.5
2587	Port Anajao, Catanduanes Island	13° 57'	124° 20'	+0 13	+0 14	+0.1	0.0	3.9	4.7	2.4
2589	Virac, Catanduanes Island	13° 35'	124° 14'	+0 25	+0 15	+0.4	0.0	4.2	5.0	2.6
2591	Tabaco, Tabaco Bay	13° 22'	123° 44'	+0 07	+0 05	+0.1	0.0	3.9	4.7	2.4
2593	Batan Island	13° 14'	124° 03'	+0 04	+0 03	+0.1	-0.1	4.0	4.7	2.4
2595	LEGASPI PORT, Albay Gulf	13° 09'	123° 45'					3.8	4.6	2.4
2597	Gubat	12° 55'	124° 08'	-0 04	+0 02	-0.1	0.0	3.7	4.5	2.3
2599	San Bernardino Island	12° 45'	124° 17'	-0 12	+0 00	*0.72	*0.72	2.6	3.4	1.8

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
		North	East	h m	h m	ft	ft	ft	ft	
PHILIPPINE ISLANDS										
Luzon Island, South Coast Time meridian, 120° E										
on Cebu, p.180										
2601	Butag Bay	12° 37'	123° 56'	+0 00	+0 00	*0.82	*0.82	2.7	3.9	1.9
2603	Bagatao Island	12° 50'	123° 48'	+0 05	+0 05	+0.1	0.0	3.4	5.0	2.4
2605	Sorsogon	12° 58'	124° 00'	+0 30	+0 30	*0.88	*0.88	3.0	4.1	2.0
2607	Pasacao, Ragay Gulf	13° 30'	123° 02'	+0 00	+0 00	+0.2	0.0	3.5	5.2	2.4
2609	Guinayangan, Ragay Gulf	13° 54'	122° 27'	+0 15	+0 15	+0.6	+0.1	3.8	5.7	2.7
2611	Port Pusgo	13° 31'	122° 36'	+0 00	+0 00	+0.7	0.0	4.0	5.5	2.7
2613	Aguasa Bay	13° 17'	122° 31'	+0 00	+0 00	+0.2	+0.1	3.4	5.3	2.5
2615	Catanauan	13° 36'	122° 19'	+0 00	+0 00	+0.1	+0.1	3.3	5.2	2.4
2617	Pitogo	13° 47'	122° 05'	+0 00	+0 00	*0.92	*0.92	2.9	4.8	2.2
2619	Tayabas River entrance	13° 54'	121° 36'	+0 05	+0 05	*0.95	*0.95	3.0	4.8	2.3
NORTHERN MARIANAS ISLANDS										
Time meridian, 150° E										
on Guam, p.196										
2621	Pagan Island	18° 08'	145° 46'	+0 05	+0 01	*0.94	*0.94	1.3	1.9	1.5
2623	Tanapag Harbor, Saipan Island	15° 13.6'	145° 44.2'	+0 21	+0 15	*0.92	*1.00	1.46	2.20	1.34
2625	Saipan Harbor, Saipan Island	15° 12'	145° 43'	+0 02	+0 07	*0.80	*0.80	1.3	1.9	1.2
2627	Tinian Island	14° 58'	145° 37'	-0 02	-0 23	*0.74	*0.33	1.5	1.8	1.0
2629	Rota Island	14° 08'	145° 08'	-0 03	-0 06	*0.94	*0.94	1.2	2.1	1.5
2631	APRA HARBOR, GUAM	13° 26.5'	144° 39.2'	<i>Daily predictions</i>				1.62	2.35	1.42
2633	Pago Bay, Guam	13° 25.70'	144° 47.82'	-0 21	-0 23	*0.72	*0.81	1.12	1.72	1.06
PALAU										
Time meridian, 135° E										
on Malakal Harbor, p.200										
								Mean Spring		
2635	Shonian Harbor	7° 03'	134° 16'	+0 07	-0 13	*0.89	*1.00	3.3	4.4	3.3
2637	Koror	7° 21'	134° 29'	-0 07	-0 04	-0.1	0.0	3.8	5.0	3.5
2639	MALAKAL HARBOR	7° 20'	134° 28'	<i>Daily predictions</i>				3.9	5.1	3.6
2641	West Passage	7° 30'	134° 31'	-0 21	-0 41	-0.1	0.0	3.8	4.8	3.5
FEDERATED STATES OF MICRONESIA										
Time meridian, 150° E										
2643	Ngulu Islands	8° 18'	137° 29'	+0 40	+0 19	*0.77	*0.77	3.0	3.8	2.8
2645	Tomil Harbor, Yap Island	9° 30'	138° 08'	+0 35	+0 14	(*0.74+0.5)		2.9	3.7	3.2
2647	Ulithi Islands	10° 02'	139° 46'	+0 34	+0 13	(*0.67+0.2)		2.6	3.4	2.6
on Guam, p.196										
2649	Woleai Islands	7° 22'	143° 54'	+0 21	+0 17	(*0.80+0.6)		1.4	1.6	1.7
2651	Ifalik Atoll	7° 15'	144° 27'	-0 54	-0 13	*1.00	*1.33	1.5	1.8	1.6
2653	Lamotrek Atoll	7° 28'	146° 23'	+0 11	+0 07	(*0.71+0.7)		1.2	1.3	1.7
on Chuuk, p.204										
								Diurnal Tropic		
2655	Pulap Atoll {	7° 38'	149° 25'	-0 53	+0 43	*0.74	*0.74	1.4	1.9	1.4
2657	Namonuito Atoll {	8° 35'	149° 39'	-1 23	+0 21	*0.69	*0.69	1.3	1.9	1.2
2659	Moen Island, Truk Islands {	7° 27'	151° 51'	+0 10	+0 11	*0.85	*0.85	1.6	2.1	1.6
2661	CHUUK, Moen Island {	7° 26.8'	151° 50.8'	<i>Daily predictions</i>				1.40	1.84	0.83
2663	Dublon Island, Truk Islands {	7° 22'	151° 53'	+0 02	+0 30	*1.07	*1.07	1.5	2.0	1.5
Time meridian, 165° E										
2665	Nomwin Atoll, Hall Islands {	8° 27'	151° 47'	-0 08	+0 20	*0.80	*0.80	1.5	1.9	1.5
2667	Murilo Atoll, Hall Islands {	8° 36'	152° 15'	-0 28	+0 00	*0.85	*0.85	1.6	1.9	1.7
2669	Losap Atoll {	6° 54'	152° 44'	-0 03	+0 25	*0.80	*0.80	1.5	2.0	1.5
2671	Namoluk Atoll {	5° 54'	153° 08'	-0 01	+0 27	*0.80	*0.80	1.5	2.0	1.5
2673	Satawan Anchorage, Nomoi Islands {	5° 20'	153° 44'	-0 03	+0 25	*0.96	*0.96	1.8	2.1	2.0
on Pohnpei Harbor, p.208										
								Mean Spring		
2675	Marcus Island	24° 17'	153° 58'	-0 19	-0 19	(*0.65+0.3)		1.5	2.2	1.7
Time meridian, 165° E										
2677	Oroluk Lagoon	7° 37'	155° 10'	+0 23	+0 20	(*0.70+0.3)		1.6	2.2	1.9
2679	Ant Islands (Tauenai Channel)	6° 46'	158° 00'	+1 04	+1 04	0.0	+0.3	2.0	3.0	2.4
2681	POHNPEI HARBOR, Pohnpei Island	6° 59'	158° 13'	<i>Daily predictions</i>				2.3	3.4	2.3
2683	Metalanim Harbor, Pohnpei Island	6° 52'	158° 21'	+0 09	+0 06	+0.4	+0.2	2.5	3.7	2.6
Time meridian, 180° E										
on Kwajalein Atoll, p.216										
2685	Lele Harbor, Kusaie Island	5° 20'	163° 01'	+0 01	+0 00	(*0.91+0.3)		3.2	4.6	3.0
MARSHALL ISLANDS										
<i>Daily predictions, p.212</i>										
2687	WAKE ISLAND (U.S.)	19° 17.4'	166° 37.1'					2.02	2.36	1.13
2689	Ujelang Atoll	9° 46'	160° 58'	+0 04	+0 03	(*0.80+0.2)		2.8	3.9	2.6
2691	Enewetak	11° 21'	162° 21'	-0 07	-0 03	(*0.77+0.3)		2.7	3.9	2.6
2693	Bikini Atoll	11° 36'	165° 33'	-0 19	-0 19	0.0	0.0	3.4	4.9	3.0
2695	Eniirikku Island, Bikini Atoll	11° 30'	165° 20'	-0 15	-0 16	*0.85	*0.85	2.9	4.2	2.6
2697	Rongelap Island, Rongelap Atoll	11° 09'	166° 54'	-0 07	-0 07	*0.96	*0.96	3.3	4.7	2.9
2699	Rongerik Atoll	11° 23'	167° 31'	-0 14	-0 15	+0.1	0.0	3.6	5.0	3.0
2701	Ujae Atoll	9° 02'	165° 36'	-0 10	-0 10	0.0	0.0	3.5	5.0	3.0
2703	Kwajalein Atoll (Namur Island)	9° 24'	167° 29'	-0 02	-0 05	0.0	0.0	3.5	5.0	3.0
2705	KWAJALEIN ATOLL (Kwajalein I.)	8° 44.2'	167° 44.3'	<i>Daily predictions</i>				3.6	3.9	1.9

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	MARSHALL ISLANDS Time meridian, 180° E	North	East	h	m	h	m	ft	ft	ft
				on Kwajalein Atoll, p.216						
2707	Ailinglapalap Atoll	7° 17'	168° 45'	+0 08	+0 07	+0.4	+0.3	3.6	5.2	3.3
2709	Jaluit Atoll (SE Pass)	5° 55'	169° 39'	-0 12	-0 08	-0.1	-0.1	3.5	4.9	2.9
2711	Ebon (Boston) Atoll	4° 36'	168° 41'	-0 10	-0 10	+0.1	+0.1	3.4	4.8	3.0
2713	Taongi Atoll	14° 34'	168° 57'	-0 20	-0 20	0.0	0.0	3.3	4.7	3.0
2715	Bikar (Dawson) Atoll	12° 15'	170° 08'	-0 10	-0 10	0.0	0.0	3.5	4.9	3.0
2717	Ailuk Atoll	10° 13'	169° 59'	-0 10	-0 10	0.0	0.0	3.5	4.9	3.0
2719	Likiep Atoll	9° 49'	169° 19'	+0 00	-0 01	+0.1	0.0	3.6	5.0	3.0
2721	Wotje Atoll	9° 28'	170° 14'	-0 11	-0 11	-0.2	-0.2	3.4	4.7	2.8
2723	Erikub Atoll	9° 12'	169° 55'	-0 10	-0 10	0.0	0.0	3.5	4.9	3.0
2725	Maloelap Atoll	8° 43'	171° 14'	-0 04	-0 05	+0.1	-0.1	3.7	5.1	3.0
2727	Majuro Atoll	7° 07'	171° 22'	-0 05	-0 06	+0.3	+0.1	3.7	5.3	3.2
2729	Arno Atoll	7° 08'	171° 42'	-0 04	-0 05	+0.6	-0.1	4.2	5.7	3.2
2731	Port Rhin, Mili Atoll	6° 14'	171° 48'	+0 04	+0 04	+0.7	0.0	4.2	5.9	3.3
	HAWAIIAN ISLANDS Time meridian, 165° W	North	West	on Honolulu, p.228				Mean Diurnal		
2733	SAND ISLAND, MIDWAY ISLANDS	28° 12.7'	177° 21.6'	<i>Daily predictions, p.220</i>				0.9	1.3	0.7
2735	Lisianski Island	26° 04'	173° 58'	---	---	---	---	0.5	0.8	0.3
	Time meridian, 150° W									
2737	Laysan Island	25° 46'	171° 45'	+1 02	+1 12	*0.53	*0.50	0.7	1.0	0.4
2739	East Island, French Frigate Shoals	23° 47'	166° 13'	+0 03	+0 08	*0.73	*0.73	0.9	1.4	0.6
2741	Nonopapa, Niihau Island	21° 52'	160° 14'	-0 16	-0 11	*0.77	*0.77	1.0	1.6	0.7
	Kauai Island			on Nawiliwili, p.224						
2743	Waimea Bay	21° 57'	159° 40'	+0 07	+0 18	*0.86	*0.91	1.0	1.6	0.7
2745	Port Allen, Hanapepe Bay	21° 54.2'	159° 35.5'	-0 15	-0 10	*1.01	*1.00	1.24	1.84	0.82
2747	NAWILIWILI	21° 57.3'	159° 21.4'	<i>Daily predictions</i>				1.22	1.83	0.81
2749	Hanamaulu Bay	22° 00'	159° 20'	+0 10	+0 04	*1.00	*0.91	0.0	1.2	1.8
2751	Hanaiei Bay	22° 13'	159° 30'	-1 01	-1 22	*1.07	*0.91	1.3	1.8	0.8
	Oahu Island			on Honolulu, p.228						
2753	Haleiwa, Waialua Bay }	21° 36'	158° 07'	-1 02	-2 05	*0.80	*0.80	--	1.6	0.7
2755	Waianae	21° 27'	158° 12'	+0 20	+0 18	*0.93	*1.00	1.2	1.8	0.8
2757	Pearl Harbor Entrance, Bishop Point	21° 19.8'	157° 58.0'	+0 15	+0 06	*1.00	*0.88	1.30	1.66	0.79
2759	Pearl Harbor, Ford Island Ferry	21° 22.1'	157° 56.4'	+0 16	+0 08	*1.03	*0.88	1.35	1.73	0.82
2761	HONOLULU	21° 18.5'	157° 52.0'	<i>Daily predictions</i>				1.28	1.64	0.80
2763	Hanauma Bay	21° 17'	157° 42'	-0 59	-0 45	*1.00	*1.00	1.3	1.9	0.8
	Moku O Loe, p.232									
2765	Waimanalo	21° 20'	157° 42'	+0 11	+0 05	*0.88	*0.75	1.1	1.8	0.8
2767	MOKU O LOE	21° 26.2'	157° 47.6'	<i>Daily predictions</i>				1.5	2.1	1.0
2769	Waikane, Kaneohe Bay	21° 30'	157° 51'	-0 22	-0 04	*1.13	*1.00	1.4	2.2	1.1
2771	Laiemaloo	21° 38.2'	157° 55.3'	+0 43	+0 00	*1.05	*1.08	1.05	1.08	1.11
2773	Laie Bay	21° 39'	157° 56'	-0 21	-0 32	*1.00	*0.75	1.3	2.2	0.9
	Molokai Island			on Honolulu, p.228						
2775	Kolo	21° 06'	157° 12'	+0 05	+0 01	0.0	0.0	1.3	2.0	0.8
2777	Kaunakakai	21° 05.1'	157° 01.9'	-0 10	-0 14	*1.13	*1.25	1.42	1.82	0.91
2779	Kamalo Harbor	21° 03'	156° 53'	-0 37	-0 16	+0.1	0.0	1.4	2.1	0.9
2781	Pukoo Harbor	21° 04'	156° 48'	-1 03	-0 48	+0.1	0.0	1.4	2.1	0.9
2783	Kaunapau, Lanai Island	20° 47'	157° 00'	+0 02	+0 03	+0.2	0.0	1.5	2.2	0.9
	Kahoolawe Island									
2785	Kuheaia Bay	20° 36'	156° 36'	-0 09	-0 09	+0.2	0.0	1.5	2.1	0.9
2787	Smuggler Cove	20° 31'	156° 41'	-0 15	+0 03	+0.2	0.0	1.5	2.2	0.9
	Maui Island			on Kahului, p.236						
2789	KAHULUI	20° 53.9'	156° 28.3'	<i>Daily predictions</i>				1.6	2.3	1.1
2791	Hana	20° 46'	155° 59'	+0 40	+0 18	*1.05	*0.54	1.8	2.5	1.1
2793	Makena	20° 39'	156° 27'	+1 21	+1 09	*0.73	*0.54	1.2	1.8	0.8
2795	Kihei, Maalaea Bay	20° 47'	156° 28'	+1 52	+1 19	*0.94	*0.54	1.6	2.3	1.0
2797	Lahaina	20° 53'	156° 41'	+1 18	+1 01	*0.89	*0.81	1.4	2.2	1.0
	Hawaii Island			on Hilo, p.240						
2799	Mahukona	20° 11'	155° 54'	+0 38	+0 42	*0.80	*0.67	1.4	2.1	0.9
2801	Kawaihae	20° 02.4'	155° 49.9'	+1 01	+0 57	*0.83	*0.60	1.46	2.14	0.91
2803	Kailua Kona	19° 39'	156° 00'	+0 38	+0 37	*0.80	*0.67	1.4	2.1	0.9
2805	Napoopoo, Kealahou Bay	19° 28'	155° 55'	+0 48	+0 47	*0.80	*0.67	1.4	2.1	0.9
2807	Honuapo	19° 05'	155° 33'	+0 38	+0 33	*1.01	*1.00	1.7	2.5	1.1
2809	HILO	19° 43.8'	155° 03.4'	<i>Daily predictions</i>				1.67	2.40	1.13
2811	JOHNSTON ATOLL	16° 44.3'	169° 31.8'	<i>Daily predictions, p.244</i>				1.9	2.2	1.1
	on Honolulu, p.228							Mean Spring		
2813	Palmyra Island	5° 53'	162° 05'	+1 19	+1 13	+0.6	-0.2	2.0	2.7	1.0

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No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	HAWAIIAN ISLANDS Time meridian, 165° W	North	West	h m	h m	ft	ft	ft	ft	ft
				on Honolulu, p.228						
2815	Howland Island	0° 48'	176° 38'	+3 48	+3 46	+4.2	+0.4	5.0	6.2	3.1
	Time meridian, 105° W			on Pago Pago, p.260						
2817	Easter Island (Chile)	27° 09'	109° 27'	-1 43	-1 35	*0.86	*0.86	1.5	1.9	1.5
	FRENCH POLYNESIA Time meridian, 142° 30' W									
	<i>Marquesas Islands</i>									
2819	Taio Hae Bay, Nuku Hiva Island	8° 56'	140° 06'	-3 31	-3 28	*1.56	*1.56	3.2	3.8	2.4
2821	Vai Tahu, Tahu Ata Island	9° 56'	139° 06'	-5 03	-4 58	*1.44	*1.44	2.5	3.1	2.4
	Time meridian, 135° W									
	<i>Tuamotu Archipelago</i>									
2823	Mangareva Island	23° 08'	134° 58'	-4 50	-4 47	*0.86	*0.86	1.8	2.3	1.3
	Time meridian, 150° W									
2825	Hao (Bow or La Harpe) Island	18° 04'	140° 59'	-5 15	-5 10	*1.05	*1.05	1.9	2.4	1.7
2827	Rahiroa (Rangiroa) Island	14° 57'	147° 44'	-2 57	-2 54	*1.01	*1.01	1.7	2.1	1.7
	<i>Society Islands</i>									
2829	PAPEETE HARBOR, Tahiti Island <30>	17° 32'	149° 34'	<i>Daily predictions</i>				0.8	1.1	0.5
2831	Papeari Harbor, Tahiti Island <30>	17° 45'	149° 22'	--	--	*0.31	*0.31	0.8	1.1	0.5
2833	Borabora Island <30>	16° 30'	151° 46'	--	--	--	--	0.5	0.7	--
	<i>Tubuai or Asutral Islands</i>									
2835	Rapa (Oparo) Island	27° 36'	144° 17'	+4 53	+4 59	*1.05	*1.05	1.9	2.4	1.7
2837	Tubuai Island	23° 22'	149° 28'	+7 51	+7 54	*1.05	*1.05	1.9	2.4	1.7
	COOK ISLANDS									
2839	Penrhyn (Tongareva) Island	9° 00'	157° 59'	-0 34	-0 05	*0.62	*0.62	0.7	0.8	1.3
2841	Manihiki	10° 25'	161° 01'	+2 15	+2 51	*0.43	*0.43	0.3	0.4	1.0
2843	Aitutaki Island	18° 51'	159° 47'	+2 00	+1 59	*0.82	*0.82	1.2	1.4	1.5
2845	Avarua, Rarotonga	21° 12'	159° 46'	+2 14	+2 05	*0.74	*0.74	1.8	2.2	1.0
	Time meridian, 165° W									
2847	Pukapuka	10° 52'	165° 53'	+0 05	+0 38	*0.77	*0.77	1.0	1.2	1.5
	Time meridian, local									
2849	Suvarrow (Suvarov) Island	13° 13'	163° 09'	+1 04	+0 58	*0.86	*0.86	1.4	1.9	1.5
	TOKELAU Time meridian, 165° W									
2851	Fakaofu Island	9° 23'	171° 15'	-0 50	-0 47	*1.05	*1.05	1.9	2.4	1.7
	SAMOA Time meridian, 195° E									
2853	Asau Harbor, Savaii Island	13° 30'	172° 38'	-0 03	-0 32	+0.2	-0.3	3.1	3.9	1.6
2855	APIA (Observatory), Upolu Island	13° 48'	171° 46'	<i>Daily predictions</i>				2.6	3.2	1.6
	AMERICAN SAMOA Time meridian, 165° W									
2857	PAGO PAGO Harbor, Tutuila Island	14° 16.8'	170° 41.4'	<i>Daily predictions</i>				2.51	2.72	1.32
2859	Tau Island, Manua Islands	14° 13'	169° 32'	-0 25	-0 24	*1.43	*1.00	3.7	4.6	1.8
2861	Niue Island (N.Z.)	19° 02'	169° 55'	+0 48	+0 47	*1.36	*1.36	2.2	2.4	2.4
	Time meridian, 180° E									
2863	Wallis Islands (France)	13° 22'	176° 11'	-0 48	-1 01	(*1.42+0.5)		3.7	4.6	2.8
	TONGA Time meridian, 195° E									
2865	Neiafu	18° 39'	186° 01'	+0 54	+0 29	+1.9	+1.5	3.0	3.4	3.3
2867	Lifuka Island	19° 48'	185° 39'	+0 31	+0 05	+1.7	+1.4	2.9	3.2	3.2
2869	Nomuka	20° 16'	185° 12'	+0 59	+0 34	+1.8	+1.1	3.3	3.8	3.1
2871	Nukualofa	21° 08'	184° 48'	+0 59	+0 37	+1.8	+0.9	3.5	4.0	3.0
	Time meridian, 180° E									
2873	Raoul or Sunday Island	29° 15'	182° 03'	-1 02	-1 30	+1.9	+1.5	3.0	3.3	3.3
	FIJI Time meridian, 180° E									
2875	Tailevu, Viti Levu Island	17° 39'	178° 35'	+0 00	-0 06	+0.8	+1.0	3.6	4.4	3.0
2877	Nandi Waters, Viti Levu	17° 45'	177° 26'	-0 03	-0 08	+1.3	+1.0	4.1	4.9	3.3
2879	Ngaloa Harbor, Kandavu Island	19° 05'	178° 11'	-0 07	+0 01	+0.8	+0.2	4.4	5.1	2.6
2881	Matuku Island	19° 10'	179° 45'	-0 04	-0 01	+0.7	+1.1	3.4	4.1	3.0
2883	Totoya Island	18° 59'	180° 07'	+1 00	+0 51	+0.9	+0.9	3.8	4.1	3.0
2885	Moala Island	18° 32'	179° 58'	-0 49	-0 38	+1.2	+0.6	4.4	4.9	3.0
2887	SUVA HARBOR, Viti Levu Island	18° 09'	178° 26'	<i>Daily predictions</i>				3.82	4.27	2.15
2889	Ngau Island	18° 00'	179° 14'	+0 14	-0 12	+0.4	+0.8	3.4	3.7	2.7

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	FIJI Time meridian, 180° E	South	East	h m	h m	ft	ft	ft	ft	ft
				on Suva, p.256						
2891	Nairai Island	17° 48'	179° 23'	-0 11	+0 08	-0.1	+0.3	3.4	3.7	2.2
2893	Levuka, Ovalau Island	17° 41'	178° 51'	-0 14	-0 12	+0.9	+1.1	3.6	4.3	3.1
2895	Nandi, Vanua Levu Island	16° 58'	178° 47'	+0 01	+0 09	+0.3	+0.9	3.2	3.9	2.7
				on Davao, p.176						
2897	Rotumah Island	12° 29'	177° 07'	-0 15	+0 00	(*0.81+1.0)		3.5	4.7	2.9
	TUVALU									
2899	Fongafale, Funafuti Atoll	8° 32'	179° 12'	-0 37	-0 30	+0.2	+0.4	4.1	5.6	2.8
	KIRIBATI Time meridian, 150° W	North	West	on Honolulu, p.228						
	<i>Line Islands</i>									
2901	Christmas Island	1° 59'	157° 28'	+0 49	+0 39	+0.7	0.0	1.9	2.3	1.2
2903	Fanning Island	3° 51'	159° 22'	+2 38	+2 39	+0.4	+0.4	1.2	1.6	1.2
		South	West	on Pago Pago, p.260						
2905	Caroline Island	10° 00'	150° 14'	-3 17	-3 13	*0.54	*0.54	0.9	1.1	0.9
	Time meridian, 165° W									
	<i>Phoenix Islands</i>									
2907	Canton Island	2° 48'	171° 43'	-0 22	-0 20	*1.28	*1.28	2.5	3.4	2.1
	Time meridian, 180° E	North	East	on Kwajalein Atoll, p.216						
	<i>Gilbert Islands</i>									
2909	Makin Atoll	3° 02'	172° 48'	+0 12	+0 15	+0.7	-0.1	4.3	6.1	3.3
2911	Tarawa Atoll	1° 22'	172° 56'	+0 19	+0 21	+0.8	-0.1	4.4	6.2	3.3
2913	Abemama Atoll	0° 28'	173° 50'	+0 27	+1 03	+0.7	-0.1	4.3	6.1	3.3
		South	East							
2915	Nonouti Atoll	0° 40'	174° 27'	-0 05	-0 05	+1.0	+0.1	4.4	6.2	3.5
	Time meridian, 165° E									
2917	Ocean Island	0° 52'	169° 35'	-0 21	-0 18	+0.5	+0.3	3.7	5.2	3.4
	NEW ZEALAND South Island Time meridian, 180° E			on Auckland, p.268						
2919	Paterson Inlet, Stewart Island	46° 54'	168° 07'	-5 42	-5 37	-1.9	+0.6	5.5	6.4	5.2
2921	Akaroa	43° 48'	172° 55'	-3 31	-3 12	*0.65	*0.33	5.8	6.3	3.5
2923	Timaru	44° 24'	171° 15'	-4 24	-4 13	*0.72	*1.00	5.3	5.8	4.5
2925	Oamaru	45° 06'	170° 58'	-4 06	-3 55	*0.66	*1.06	4.6	5.3	4.2
2927	Otago Harbor entrance	45° 47'	170° 44'	-4 33	-3 50	*0.58	*0.33	5.1	5.6	3.2
2929	Port Chalmers, Otago Harbor	45° 49'	170° 39'	-3 35	-3 23	*0.58	*0.33	5.1	5.7	3.2
2931	Dunedin, Otago Harbor	45° 53'	170° 33'	-3 00	-2 11	-4.0	-1.2	5.2	5.7	3.2
2933	Nugget Point	46° 26'	169° 48'	-4 52	-4 32	-2.4	+0.5	5.1	5.8	4.9
2935	Waipapa Point	46° 39'	168° 51'	-5 17	-5 11	-1.3	+0.6	6.1	6.8	5.5
2937	Bluff	46° 36'	168° 20'	-5 34	-5 27	-1.4	+0.5	6.1	7.2	5.4
2939	New River	46° 32'	168° 15'	-5 56	-5 49	-1.1	-0.1	7.0	7.9	5.2
2941	Colac Bay	46° 22'	167° 54'	-7 16	-6 56	-2.6	-0.2	5.6	6.8	4.4
2943	Preservation Inlet	46° 04'	166° 41'	+4 59	+5 08	-2.9	-0.6	5.7	6.7	4.0
2945	Dusky Sound	45° 47'	166° 32'	+4 49	+4 58	-3.1	-0.4	5.3	6.4	4.0
2947	Deep Cove	45° 27'	167° 10'	+4 42	+4 49	-3.6	-0.3	4.7	5.4	3.9
2949	Bligh Sound	44° 53'	167° 32'	+4 29	+4 38	-3.2	-0.3	5.1	6.1	4.0
2951	Milford Sound	44° 40'	167° 56'	+4 24	+4 33	-3.2	-0.3	5.1	6.1	4.0
2953	Jackson's Bay	43° 59'	168° 37'	+4 09	+4 18	-3.1	-0.4	5.3	6.4	4.0
2955	Haast River entrance	43° 50'	169° 03'	+3 59	+4 08	-3.1	-0.4	5.3	6.4	4.0
2957	Bruce Bay	43° 35'	169° 36'	+3 49	+3 58	-3.0	-0.5	5.5	6.6	4.0
2959	Okarito	43° 13'	170° 11'	+3 44	+3 53	-2.9	-0.5	5.6	6.7	4.1
2961	Hokitika Bar	42° 43'	170° 58'	+3 39	+3 48	-2.9	-0.6	5.7	7.0	4.0
2963	Greymouth	42° 26'	171° 13'	+3 34	+3 43	-2.8	-0.7	5.9	7.3	4.0
2965	Westport	41° 44'	171° 36'	+3 29	+3 38	-0.1	+0.1	7.8	9.8	5.8
2967	West Haven Inlet	40° 35'	172° 32'	+2 24	+2 33	-1.1	-0.6	7.5	9.0	4.9
2969	Motupipi River entrance	40° 50'	172° 51'	+1 48	+1 41	*1.43	*1.28	11.7	14.0	8.2
2971	Astrolabe Road	40° 58'	173° 03'	+1 53	+1 46	+4.5	+0.2	12.3	15.4	8.2
2973	Nelson	41° 16'	173° 16'	+2 13	+2 06	+1.2	+0.2	9.0	11.6	6.5
2975	Croixilles Harbor	41° 05'	173° 42'	+1 58	+1 51	+2.4	+0.1	10.3	12.1	7.1
2977	Greville Harbor, D'Urville Island	40° 52'	173° 48'	+2 17	+2 20	-0.4	-0.6	8.2	10.8	5.3
2979	Stephens Island	40° 40'	174° 01'	+1 43	+1 36	-2.2	-0.3	6.1	7.0	4.6
2981	Elmslie Bay	40° 56'	173° 51'	+1 23	+1 06	-1.8	-1.5	7.7	8.9	4.2
2983	Pelorus Sound entrance	40° 55'	173° 59'	+1 13	+0 46	-2.4	-0.5	6.1	7.2	4.4
2985	Queen Charlotte Sound entrance	41° 07'	174° 17'	+1 16	+0 53	-5.7	-1.2	3.5	4.7	2.4
2987	Picton, Queen Charlotte Sound	41° 17'	174° 00'	+1 20	+0 50	-5.8	-1.3	3.5	4.8	2.3
				on Wellington, p.264						
2989	Cape Campbell	41° 44'	174° 15'	+0 38	+0 35	+1.1	0.0	4.3	4.6	3.5
2991	Kaikoura Peninsula	42° 24'	173° 42'	+0 13	+0 15	+1.3	-0.1	4.6	4.9	3.5
2993	Lyttelton	43° 37'	172° 43'	-0 17	-0 15	+1.7	-1.1	6.0	6.4	3.2

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	NEW ZEALAND North Island Time meridian, 180° E	South	East	h	m	ft	ft	ft	ft	ft
				on Wellington, p.264						
2995	Gisborne	38° 41'	178° 02'	+1 05	+1 08	+1.5	+0.3	4.4	4.8	3.8
2997	Clyde, Wairoa River	39° 03'	177° 26'	+1 00	+0 51	+0.8	-0.5	4.5	4.8	3.0
2999	Napier	39° 29'	176° 55'	+0 58	+0 49	+0.7	-0.5	4.4	4.6	3.0
3001	Cape Palliser	41° 37'	175° 17'	+0 10	+0 10	+0.2	-0.1	3.5	3.7	3.0
3003	WELLINGTON	41° 17'	174° 47'	<i>Daily predictions</i>				3.2	3.4	2.9
				on Auckland, p.268						
3005	Porirua Harbor	41° 04'	174° 51'	+2 05	+2 02	-4.6	0.0	3.4	4.8	3.5
3007	Manawatu River entrance	40° 28'	175° 13'	+1 43	+1 36	-2.9	-0.2	5.3	6.8	4.3
3009	Wanganui River entrance	39° 57'	174° 49'	+2 38	+2 31	-1.9	+0.5	5.6	7.2	5.1
3011	Opunake Bay	39° 28'	173° 51'	+1 58	+1 51	+0.1	+0.2	7.9	10.1	6.0
3013	Port Taranaki	39° 04'	174° 02'	+2 21	+2 39	+0.5	+0.1	8.4	10.6	6.1
3015	Waitara River entrance	38° 59'	174° 14'	+2 22	+2 40	+0.9	+0.5	8.4	10.5	6.5
3017	Kawhia	38° 04'	174° 49'	+2 39	+2 57	-0.6	-0.5	7.9	10.0	5.3
3019	Raglan	37° 48'	174° 53'	+2 47	+3 05	-0.6	-0.6	8.0	10.2	5.2
3021	Waikato River	37° 24'	174° 45'	+2 17	+2 35	+1.5	+0.9	8.6	10.9	7.0
3023	Manukau Harbor entrance	37° 03'	174° 31'	+2 49	+2 48	-0.3	+0.4	7.3	9.0	5.9
3025	Cornwallis, Manukau Harbor	37° 00'	174° 36'	+2 52	+3 10	+0.7	+0.6	8.1	10.0	6.5
3027	Onehunga, Manukau Harbor	36° 56'	174° 47'	+3 21	+3 30	+2.1	+1.1	9.0	11.1	7.4
3029	Pouto Point, Kaipara Harbor	36° 22'	174° 11'	+3 07	+3 25	+0.4	+0.5	7.9	9.9	6.2
3031	Martins Bay, Hokianga River	35° 32'	173° 23'	+2 22	+2 40	+0.2	-0.3	8.5	10.8	5.8
3033	Cape Maria van Diemen	34° 29'	172° 38'	+1 47	+2 05	-2.1	-0.5	6.4	7.4	4.5
3035	Parengarenga	34° 32'	173° 00'	+0 50	+0 50	-2.2	0.0	5.8	6.9	4.7
3037	Awanui River	34° 54'	173° 18'	+0 50	+0 30	-3.9	-1.3	5.4	6.3	3.2
3039	Whangaroa	35° 02'	173° 47'	+0 20	+0 20	-2.7	-0.1	5.4	6.2	4.4
3041	Port Russell	35° 16'	174° 07'	+0 12	+0 12	-2.4	0.0	5.6	6.4	4.6
3043	Whangarei Heads	35° 49'	174° 30'	+0 20	+0 20	-2.3	-0.1	5.8	6.7	4.6
3045	Port Whangarei, railway wharf	35° 45'	174° 20'	+0 40	+0 40	-1.1	+0.3	6.6	7.7	5.4
3047	Bon Accord Harbor, Kawau Island	36° 27'	174° 50'	+0 15	+0 25	-1.0	-0.1	7.1	8.0	5.2
3049	Nagle Cove, Great Barrier Island	36° 09'	175° 21'	-0 24	-0 11	-2.6	-0.4	5.8	6.6	4.3
3051	AUCKLAND	36° 51'	174° 46'	<i>Daily predictions</i>				8.0	9.2	5.8
3053	Waiheke	36° 47'	175° 09'	-0 06	-0 06	-0.4	0.0	7.6	8.6	5.6
3055	Coromandel	36° 46'	175° 30'	-0 15	-0 15	+0.6	+0.2	8.4	9.7	6.2
3057	Mercury Bay	36° 50'	175° 43'	-0 20	-0 20	-3.0	+0.2	4.8	5.4	4.4
3059	Tauranga Harbor entrance	37° 39'	176° 11'	-0 12	-0 01	-3.9	-0.6	4.7	5.2	3.6
3061	Ohiwa	37° 59'	177° 07'	+0 17	-0 03	-3.7	-0.6	4.9	5.3	3.7
3063	East Cape	37° 41'	178° 33'	-0 55	-0 45	-3.3	+0.2	4.5	5.0	4.2
	NEW CALEDONIA Time meridian, 165° E			on Yokohama, p.20						
3065	Port Goro, Toemo Island	22° 20'	167° 01'	+2 06	+2 07	(*0.57+0.5)		2.0	2.6	2.7
3067	Noumea	22° 16'	166° 27'	+3 05	+3 16	(*0.83+0.8)		2.9	3.8	4.0
3069	Port Nepui	21° 21'	164° 58'	+3 11	+3 35	(*0.89+0.3)		3.1	4.0	3.7
3071	Paagoumene	20° 29'	164° 11'	+3 10	+3 18	(*0.91-0.2)		3.2	4.1	3.3
	<i>Loyalty Islands</i>									
3073	Shepenehe Anchorage	20° 47'	167° 08'	+1 23	+1 23	+0.3	-0.4	4.2	5.4	3.7
	VANUATU									
3075	Vila Harbor, Efate Island	17° 44'	168° 19'	+0 49	+0 59	(*0.80-0.7)		2.8	3.5	2.3
3077	Havannah Harbor, Efate Island	17° 35'	168° 15'	+0 55	+0 59	*0.70	*0.70	2.4	3.0	2.6
3079	Port Sandwich, Malekula Island	16° 26'	167° 47'	+0 03	+0 11	(*0.80-0.7)		2.8	3.8	2.3
3081	Tangoa Island	15° 35'	166° 59'	+1 07	+1 11	*0.56	*0.50	2.1	2.6	2.1
3083	Espiritu Santo Island, Pekoa Chan	15° 31'	167° 10'	+0 23	+0 28	*0.76	*0.65	2.9	3.6	2.8
3085	Aesi	15° 26'	167° 14'	-0 22	-0 15	*0.80	*0.70	3.0	3.8	2.9
3087	Port Patteson, Banks Islands	13° 51'	167° 34'	+1 31	+1 31	+0.55	*0.45	2.1	2.6	2.0
	SOLOMON ISLANDS									
	<i>Santa Cruz Islands</i>									
3089	Manevai Bay	11° 38'	166° 55'	-0 14	-0 14	*0.55	*0.45	2.1	2.6	2.0
				on Dreger Harbor, p.272				Diurnal	Tropic	
3091	Kukum, Guadalcanal Island {	9° 25'	160° 01'	+0 25	+0 00	-2.5	-2.5	1.6	2.3	1.4
3093	Port Purvis, Florida Island {	9° 09'	160° 15'	+1 30	+0 15	-2.0	-2.3	2.0	2.3	1.7
3095	Tulagi Island {	9° 06'	160° 09'	+0 38	-0 35	-2.0	-2.3	2.0	2.3	1.7
				on Cebu, p.180				Mean Spring		
3097	Auki Harbor, Malaita Island	8° 47'	160° 42'	-7 20	-7 10	(*0.88+0.6)		2.9	4.1	2.6
				on Dreger Harbor, p.272				Diurnal	Tropic	
3099	Karunohu Island {	8° 30'	157° 58'	+0 14	+1 05	-2.4	-2.3	1.6	2.3	1.5
3101	Nususonga, New Georgia Island {	8° 20'	157° 15'	-0 01	+1 56	-2.7	-2.7	1.7	2.4	1.2
3103	Gizo Harbor, New Georgia Group {	8° 06'	156° 51'	-0 40	+1 22	-2.0	-1.8	1.5	2.2	1.9

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Diurnal	Tropic	
				High Water	Low Water	High Water	Low Water			
	PAPUA NEW GUINEA Time meridian, 150° E	South	East	h	m	h	m	ft	ft	ft
	<i>Bismark Archipelago</i>			on Dreger Harbor, p.272						
3105	Kokopo, New Britain Island {	4° 21'	152° 17'	+0 23	+0 48	-2.1	-2.1	1.7	2.4	1.8
3107	Rabaul, New Britain Island {	4° 12'	152° 12'	-0 24	+0 18	-2.7	-2.7	1.5	2.1	1.0
3109	Bagaterre Haven, New Ireland I {	2° 47'	151° 00'	-8 49	-6 46	-2.7	-2.7	1.7	2.4	1.2
3111	West Harbor, New Hanover Island {	2° 28'	149° 58'	-9 04	-7 01	-2.8	-2.8	1.6	2.3	1.1
				on Chuuk, p.204						
3113	Emirau Island {	1° 40'	149° 55'	-0 39	-0 23	*1.17	*1.17	1.7	2.2	2.0
				on Djakarta, p.156						
3115	Seeadler Harbor, Manus Island {	2° 01'	147° 16'	+5 36	+5 18	-0.4	-0.4	2.0	2.6	1.7
				on Dreger Harbor, p.272						
3117	Finsch Harbor {	6° 33'	147° 52'	-0 12	-0 40	-1.8	-1.8	1.7	2.2	2.0
3119	DREGER HARBOR {	6° 39'	147° 53'	<i>Daily predictions</i>				1.7	2.4	3.8
3121	East Ape (Goschen Strait) {	10° 14'	150° 53'	-1 43	+0 04	-2.5	-2.4	1.6	2.3	1.4
3123	Blakeney Island {	10° 25'	151° 13'	-1 37	+1 28	-1.8	-2.0	--	2.6	1.9
				on Townsville, p.280				Mean Spring		
3125	South Cape	10° 43'	150° 16'	-0 03	-0 19	(*0.48+1.2)		2.6	3.7	3.7
3127	Dedele Point	10° 14'	148° 43'	+0 21	+0 21	*0.78	*0.78	4.2	6.0	4.1
3129	Port Moresby	9° 29'	147° 08'	+0 17	-0 04	(*0.67+1.2)		3.6	5.2	4.8
				on Darwin, p.276						
3131	Fly River entrance	8° 42'	143° 37'	+2 55	+2 47	*0.54	*0.43	7.9	11.2	7.0
	INDONESIA, NEW GUINEA Time meridian, 135° E			on Singapore, p.144				Mean Spring		
3133	Merauke	8° 29'	140° 23'	+1 36	+1 50	+7.2	+4.5	8.4	10.7	11.0
				on Bangkok Bar, p.140				Diurnal Tropic		
3135	Digul River entrance {	7° 07'	138° 45'	-7 00	-7 03	*1.94	*1.65	15.9	19.3	14.5
				on Singapore, p.144				Mean Spring		
3137	Etna Bay	3° 56'	134° 40'	-8 36	-8 36	-0.4	-0.1	5.4	6.7	4.9
				on Yokohama, p.20						
3139	Sekar Bay, Berau Gulf	2° 42'	132° 25'	-0 36	-0 28	(*0.74+2.1)		2.6	3.3	4.9
				on Bombay, p.328						
3141	Wasian River entrance, Berau Gulf	2° 13'	133° 33'	-5 20	-5 17	+1.4	+0.3	9.8	12.3	9.2
3143	Modan, Berau Gulf	2° 23'	133° 54'	-5 21	-5 18	+5.6	+1.3	13.0	16.4	11.8
				on Yokohama, p.20						
3145	Saonek, Dampier Strait	0° 27'	130° 46'	+1 53	+2 02	(*0.94+0.3)		3.3	4.5	3.9
3147	Manokwari	0° 52'	134° 05'	+1 50	+1 59	-0.2	-0.1	3.4	4.6	3.6
3149	Mios Woendi Lagoon, Schouten Islands	1° 16'	136° 23'	+1 52	+1 44	*0.95	*0.95	3.3	4.2	3.6
3151	Kajo Bay	2° 32'	140° 44'	+1 51	+1 59	(*0.51+1.1)		1.8	2.0	3.0
	AUSTRALIA North Coast Time meridian, 142° 30' E			on Darwin, p.276						
3153	Tapa Bay, Bynoe Harbor	12° 27'	130° 36'	-0 04	-0 04	*0.88	*0.90	11.6	16.8	12.0
3155	East Point, Bynoe Harbor	12° 35'	130° 34'	+0 04	+0 04	*0.91	*0.96	11.9	17.0	12.6
3157	Night Cliff, Point Darwin	12° 23'	130° 50'	+0 06	+0 06	-1.6	-0.5	12.3	17.6	12.6
3159	DARWIN	12° 28'	130° 51'	<i>Daily predictions</i>				13.4	18.8	13.6
3161	Cape Hotham	12° 03'	131° 17'	+1 14	+1 14	*0.64	*0.67	8.3	11.2	8.8
	Time meridian, 120° E									
3163	Cape Keith, Melville Island	11° 36'	131° 28'	+0 03	+0 03	*0.54	*0.55	7.2	9.6	7.4
3165	Cape Don Boat Harbor	11° 19'	131° 46'	-1 02	-1 19	*0.33	*0.33	4.0	5.6	4.6
	Time meridian, 142° 30' E									
3167	Arnhem Bay	12° 11'	136° 06'	+4 15	+4 10	(*0.85-3.0)		11.4	13.6	8.6
	East Coast Time meridian, 150° E			on Townsville, p.280						
3169	Thursday Island, Torres Strait <31>	10° 35'	142° 13'	---	---	--	--	--	6.1	--
3171	Tern Island	11° 00'	142° 45'	+1 38	+1 36	+1.1	+0.9	5.6	8.4	6.3
3173	Hannibal Island	11° 36'	142° 56'	+1 02	+1 01	0.0	0.0	5.4	8.0	5.3
3175	Piper Island	12° 15'	143° 15'	+0 27	+0 28	*0.86	*0.96	4.4	6.6	4.7
3177	Restoration Island	12° 37'	143° 28'	+0 23	+0 23	(*0.70+1.0)		3.8	5.8	4.7
3179	Flinders Islands	14° 10'	144° 15'	+0 15	+0 15	(*0.78+1.9)		4.2	6.2	6.0
3181	Low Wooded Isle	15° 05'	145° 24'	-0 12	-0 12	(*0.72+1.0)		3.9	5.8	4.8

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level	
		Latitude	Longitude	Time		Height		Mean	Spring		
				High Water	Low Water	High Water	Low Water				
	AUSTRALIA East Coast-cont. Time meridian, 150° E	South	East	h	m	h	m	ft	ft	ft	
				on Townsville, p.280							
3183	Cooktown	15° 28'	145° 15'	+0 10	+0 10			(*0.72+0.4)	3.9	5.8	4.2
3185	Low Isles	16° 23'	145° 34'	+0 00	+0 00			(*0.70+1.1)	3.8	5.6	4.8
3187	Cairns	16° 55'	145° 47'	-0 02	-0 02			(*0.76+0.6)	4.1	6.0	4.6
3189	Green Island	16° 46'	145° 58'	-0 18	-0 18			(*0.72+0.7)	3.9	5.6	4.5
3191	High Island	17° 10'	146° 01'	-0 06	-0 06			(*0.72+0.7)	3.9	5.8	4.5
3193	North Barnard Island	17° 41'	146° 11'	-0 04	-0 04			(*0.76+0.9)	4.1	6.0	4.9
3195	Dunk Island	17° 56'	146° 09'	-0 06	-0 06			(*0.81+2.3)	4.4	6.4	6.6
3197	Dungeness (Lucinda)	18° 31'	146° 19'	+0 15	+0 15			+0.3	5.7	8.0	5.5
3199	TOWNSVILLE	19° 15'	146° 50'					<i>Daily predictions</i>	5.4	7.6	5.3
3201	Bowen	20° 01'	148° 15'	+0 52	+0 52			-0.2	5.2	7.0	5.2
				on Brisbane Bar, p.284							
3203	Hook Island	20° 04'	148° 56'	+1 10	+1 05			+1.9	5.9	7.9	5.4
3205	Molle Island	20° 15'	148° 50'	+1 23	+1 18			*1.36	6.7	8.8	5.4
3207	East Repulse Island	20° 35'	148° 53'	+1 39	+1 34			(*1.82+2.0)	9.1	12.1	9.1
3209	Carlisle Island	20° 47'	149° 18'	+1 26	+1 21			(*1.88+2.0)	9.4	12.7	9.3
3211	St. Bees Island	20° 54'	149° 27'	+1 31	+1 26			(*2.10+1.7)	10.5	14.1	9.9
3213	Refuge Bay, Scawfell Island	20° 52'	149° 37'	+1 26	+1 21			(*1.96+2.5)	9.8	13.1	10.1
3215	MacKay, Queensland	21° 07'	149° 14'	+1 35	+1 30			(*2.44+0.3)	12.2	16.0	9.8
3217	Sarina Inlet	21° 24'	149° 20'	+1 43	+1 38			(*2.58+1.1)	12.9	16.8	11.2
3219	Dove Point, Shoalwater Bay	22° 14'	150° 28'	+0 58	+0 53			(*2.58+0.8)	12.9	17.1	10.9
3221	High Peak Island	21° 57'	150° 41'	+0 40	+0 35			(*2.00+0.8)	10.0	13.4	8.6
3223	Port Clinton, Coral Sea	22° 32'	150° 45'	+0 15	+0 10			*1.84	9.5	12.8	7.1
3225	Tryon Island	23° 15'	151° 47'	-0 38	-0 43			+1.9	5.8	7.6	5.4
3227	Port Alma, Fitzroy River	23° 34'	150° 52'	-0 10	-0 15			(*1.88+1.2)	9.4	12.5	8.5
3229	Gladstone, Port Curtis	23° 50'	151° 15'	-0 10	-0 15			+4.2	7.8	10.2	6.7
3231	Lady Musgrave Island	23° 54'	152° 23'	-1 25	-1 25			0.0	4.4	5.9	4.2
3233	Pancake Creek	24° 01'	151° 45'	-0 56	-1 02			+2.3	6.2	8.2	5.6
3235	Lady Elliot Island	24° 07'	152° 43'	-1 19	-1 19			0.0	4.2	5.6	4.3
3237	Burnett Heads	24° 46'	152° 23'	-0 41	-0 41			+1.1	5.2	6.6	4.9
3239	Urangan Jetty	25° 17'	152° 55'	-0 48	-0 48			+3.5	7.8	10.2	6.0
3241	Mary River, Middle Bank	25° 30'	152° 52'	+0 20	+1 00			+3.2	8.1	10.5	5.6
3243	BRISBANE BAR	27° 19'	153° 10'					<i>Daily predictions</i>	5.0	5.9	4.0
3245	Ballina	28° 52'	153° 35'	-0 59	-0 58			(*0.46+0.7)	2.3	2.9	2.5
3247	Iluka	29° 25'	153° 22'	-1 15	-1 15			(*0.56+0.8)	2.8	3.6	3.0
3249	Lord Howe Island	31° 32'	159° 04'	-1 25	-1 20			-0.6	4.1	5.3	3.8
	Time meridian, 172° 30' E										
3251	Norfolk Island	29° 04'	167° 56'	-1 17	-1 29			-1.3	4.1	5.0	2.9
	Time meridian, 150° E										
				on Sydney, p.288							
3253	Coffs Harbor	30° 18'	153° 09'	-0 22	-0 20			0.0	3.7	4.7	3.0
3255	Port Macquarie bar	31° 26'	152° 56'	+0 12	+0 11			-0.3	3.2	4.0	2.8
3257	Nelson's Bay	32° 43'	152° 09'	+0 16	+0 17			+0.1	3.4	4.2	3.2
3259	Newcastle	32° 56'	151° 47'	-0 04	-0 09			0.0	3.4	4.2	3.1
3261	SYDNEY (Fort Denison)	33° 51'	151° 14'					<i>Daily predictions</i>	3.6	4.5	3.0
3263	Port Kembla	34° 29'	150° 55'	+0 00	+0 00			-0.4	3.4	4.0	2.7
3265	Moruya River bar	35° 54'	150° 08'	+0 10	+0 10			-0.4	3.1	3.9	2.9
3267	Eden	37° 04'	149° 54'	+0 00	+0 00			-0.8	2.9	3.6	2.5
3269	Gabo Island	37° 34'	149° 55'	-0 10	-0 01			+0.2	2.6	3.0	3.7
	Tasmania										
				on Port Phillip, p.292							
3271	Stack Island	40° 36'	144° 47'	+0 46	+1 32			(*1.81-1.1)	5.6	6.2	4.1
3273	Devonport	41° 09'	146° 23'	-0 14	+0 32			+4.8	7.8	8.5	5.4
3275	Port Dalrymple entrance	41° 04'	146° 48'	-0 34	+0 12			(*2.26-1.1)	7.0	8.0	5.5
3277	Launceston, Tamar River	41° 26'	147° 08'	+1 26	+3 17			(*3.13-0.9)	9.7	10.8	8.2
				on Hong Kong, p.120							
3279	Parsons Bay	43° 06'	147° 45'	+11 22	+11 31			(*0.52+0.8)	1.7	1.8	3.1
3281	Hobart	42° 53'	147° 20'	+11 09	+11 14			(*0.55+0.9)	1.8	1.9	3.4
				on Port Adelaide, p.296							
3283	Bramble Cove, Port Davey	43° 19'	146° 00'	-3 40	-3 40			(*0.19+1.4)	0.9	1.1	2.3
	South Coast										
				on Port Phillip, p.292							
3285	Rabbit Island	38° 55'	146° 31'	+0 01	+0 47			*1.47	5.2	6.0	4.0
3287	Winter Cove, Kent Islands	39° 28'	147° 21'	-0 34	+0 12			*1.67	6.0	7.0	4.5
3289	Great Glennie Island	39° 05'	146° 14'	-0 24	+0 22			*1.67	6.0	6.8	4.5
3291	Venus Bay	38° 40'	145° 44'	+0 00	---			+2.3	---	---	---
3293	Mussel Rock, Westport	38° 27'	145° 15'	+0 25	-0 10			*1.94	6.0	7.5	5.6
3295	PORT PHILLIP (Point Lonsdale)	38° 18'	144° 37'					<i>Daily predictions</i>	3.1	3.9	2.9
3297	Queenscliff, Port Phillip	38° 19'	144° 40'	+0 24	+0 24			*0.61	1.9	2.1	1.8
3299	Melbourne (Williamstown)	37° 52'	144° 55'	+2 58	+3 41			(*0.55+0.2)	1.7	1.9	1.8
3301	Geelong, Port Phillip	38° 07'	144° 25'	+3 22	+3 22			*0.60	1.8	2.0	1.8
3303	Port Campbell	38° 38'	143° 00'	-1 18	-0 53			(*0.45+0.4)	1.4	2.0	1.7
3305	Warrnambool	38° 24'	142° 29'	+0 20	+0 20			(*0.52+0.7)	1.6	2.4	2.2

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	AUSTRALIA South Coast-cont. Time meridian, 150° E	South	East	h m	h m	ft	ft	ft	ft	ft
				on Port Adelaide, p.296						
3307	Portland Time meridian, 142° 30' E	38° 21'	141° 37'	-4 47	-4 48	(*0.28+0.7)		1.3	1.7	2.0
3309	Port MacDonnell	38° 04'	140° 42'	-5 16	-5 14	*0.62	*0.62	2.9	4.1	3.0
3311	Kingston	36° 50'	139° 51'	-3 59	-4 15	(*0.47+0.9)		1.6	2.2	3.2
3313	Second Valley	35° 31'	138° 13'	-0 25	-0 26	*0.63	*0.67	2.9	4.0	3.1
3315	Hog Bay, Kangaroo Island	35° 44'	137° 57'	-1 16	-0 59	(*0.53+1.3)		2.2	3.1	3.8
3317	PORT ADELAIDE	34° 51'	138° 30'	Daily predictions				4.7	6.6	4.8
3319	Port Wakefield	34° 16'	138° 06'	---	---	+1.9	---	---	---	6.3
3321	PORT LINCOLN	34° 43'	135° 52'	Daily predictions, p.300				2.2	3.1	2.9
3323	Ardrossan, Gulf of St. Vincent	34° 26'	137° 55'	-0 23	-0 15	+1.4	+1.4	5.5	7.8	5.8
3325	Edithburg, Gulf of St. Vincent	35° 05'	137° 45'	-0 52	-0 48	*0.79	*0.79	3.7	5.2	3.8
3327	Port Victoria, Spencer Gulf	34° 30'	137° 27'	-2 37	-2 37	*0.59	*0.59	2.8	4.0	2.8
3329	Wallaroo, Spencer Gulf	33° 55'	137° 37'	+0 28	+0 34	*0.59	*0.59	2.7	3.8	2.9
3331	Port Pirie, Spencer Gulf	33° 10'	138° 01'	+2 40	+2 48	+0.8	+0.2	5.3	7.4	5.3
3333	Port Augusta, Spencer Gulf	32° 30'	137° 46'	+3 08	+3 16	+1.2	-0.1	6.0	8.4	5.3
3335	Coffin Bay	34° 30'	135° 20'	-4 32	-4 26	*0.70	*0.67	3.4	4.8	3.3
3337	Port Eyre	32° 00'	132° 27'	-5 17	-5 17	*0.70	*0.67	3.4	4.8	3.3
	Time meridian, 120° E			on Djakarta, p.156				Mean Tropic		
3339	Albany, Princess Royal Harbor } West and Northwest Coasts	35° 02'	117° 53'	+12 28	+12 11	(*0.85+0.4)		--	2.2	2.1
								Diurnal Tropic		
3341	Bunbury Harbor {	33° 19'	115° 39'	+11 04	+10 43	+1.0	+1.6	--	1.9	3.3
3343	Fremantle, Swan River entrance }	32° 03'	115° 45'	+10 52	+10 20	(*0.81+0.5)		--	2.1	2.1
3345	Champion Bay }	28° 47'	114° 35'	+10 41	+9 51	-1.3	-0.8	--	2.0	0.9
				on Davao, p.176				Mean Spring		
3347	Carnarvon, Shark Bay	24° 52'	113° 39'	+5 08	+4 51	(*0.49+2.3)		2.1	2.9	3.5
3349	Red Cliff Bay, Shark Bay	25° 48'	113° 40'	+7 32	+7 30	(*0.63+1.6)		2.7	3.5	3.2
3351	Learmonth, Exmouth Gulf	22° 11'	114° 05'	+5 17	+5 19	+2.7	+2.1	4.9	6.8	4.9
3353	Long Island	21° 38'	114° 41'	+4 34	+4 28	(*0.84+1.3)		3.6	5.0	3.4
3355	Beadon Point	21° 38'	115° 06'	+4 58	+4 48	+1.0	+1.1	4.2	5.8	3.5
				on Port Hedland, p.304						
3357	Large Islet	21° 18'	115° 30'	+0 23	+0 28	(*0.51+0.9)		6.7	9.7	5.9
3359	Trimouille Island, Monte Bello Islands	20° 23'	115° 33'	-0 04	+0 02	(*0.42+1.5)		5.6	8.1	5.7
3361	Point Samson	20° 38'	117° 12'	-0 27	-0 16	(*0.81+1.3)		10.7	15.3	9.3
3363	PORT HEDLAND	20° 18'	118° 35'	Daily predictions				13.2	19.0	9.9
3365	Broome	18° 00'	122° 13'	-0 22	-0 12	*1.41	*1.41	18.4	27.2	14.0
3367	Red Bluff	17° 04'	122° 19'	+0 01	+0 10	(*1.08+0.7)		14.3	21.6	11.4
3369	Pender Bay	16° 42'	122° 43'	+0 15	+0 15	(*1.23-1.2)		16.2	23.4	11.0
3371	Karrakatta Bay	16° 22'	123° 02'	+1 05	+0 51	(*1.26-0.6)		16.6	23.6	11.9
3373	Bedford Island	16° 09'	123° 19'	+0 43	+0 48	(*1.41+0.2)		18.6	26.8	14.2
3375	Cockatoo Island	16° 05'	123° 35'	+0 21	+0 26	(*1.44+1.4)		19.0	27.3	15.7
3377	Hall Point, Kid Islet	15° 40'	124° 24'	+0 17	+0 22	(*1.54-0.9)		20.3	29.4	14.3
3379	Prince Frederick Harbor	15° 05'	125° 18'	+0 00	+0 00	*1.48	*1.48	19.5	28.1	14.8
3381	Baudin Island	14° 08'	125° 36'	-0 23	-0 18	+1.5	+1.5	13.0	18.8	11.4
3383	Troughton Island	13° 46'	126° 08'	-0 35	-0 35	*1.10	*1.10	14.5	20.9	11.0
				on Port Adelaide, p.296						
3385	Geranium Hbr., Napier Broome Bay	13° 56'	126° 35'	-6 45	-7 21	0.0	-0.5	5.2	7.5	4.5
				on Darwin, p.276						
3387	Reveley Island	14° 22'	127° 50'	-0 49	-0 54	*0.80	*0.80	10.7	14.6	11.0
3389	Lacrosse I., Cambridge Gulf	14° 45'	128° 20'	-0 22	-0 28	-1.3	-0.3	12.4	16.9	12.8
	LESSER ISLANDS Detached Islands Time meridian, 191° 15' E			on Apia, p.252						
3391	Chatham Islands Time meridian, 180° E	43° 55'	183° 23'	-0 27	-0 27	*1.50	*1.50	3.4	3.9	2.6
3393	Auckland Island	50° 52'	166° 05'	+6 56	+6 11	*1.10	*1.10	2.5	3.2	1.9
3395	Perseverance Harbor, Campbell Island Time meridian, 165° E	52° 34'	169° 07'	+7 47	+7 25	*1.30	*1.30	3.0	3.5	2.3
3397	Macquarie Island	54° 31'	158° 58'	+6 26	+5 58	*0.93	*0.93	1.9	2.4	1.8
	Islands, Bay of Bengal Time meridian, 82° 30' E	North	East	on Mergui, p.308						
	<i>Nicobar Islands</i>									
3399	Galathea Bay	6° 47'	93° 51'	-2 08	-2 17	(*0.27+0.5)		3.4	4.6	3.0
3401	Nankauri Harbor	8° 02'	93° 33'	-1 50	-1 58	(*0.29+1.7)		3.6	5.0	4.3
3403	Car Nicobar	9° 10'	92° 50'	-2 05	-2 05	(*0.31+0.5)		3.8	5.3	3.3

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	LESSER ISLANDS Islands, Bay of Bengal-cont. Time meridian, 82° 30' E	North	East	h m	h m	ft	ft	ft	ft	ft
				on Mergui, p.308						
	<i>Andaman Islands</i>									
3405	Sisters Island	11° 09'	92° 44'	-1 54	-1 49	(*0.35+0.3)		4.3	5.8	3.5
3407	Port Blair	11° 41'	92° 46'	-1 38	-1 42	(*0.35+0.3)		4.4	6.1	3.5
3409	Port Cornwallis	13° 19'	93° 03'	-1 03	-1 17	(*0.41+0.9)		5.1	7.2	4.6
	MYNAMAR <32> Time meridian, 97° 30' E									
3411	Pulo Besin	9° 59'	98° 29'	-0 32	-0 43	(*0.67+1.1)		8.3	11.5	7.2
3413	Hastings harbor	10° 07'	98° 17'	-0 35	-0 42	*0.60 *0.52		7.7	10.8	5.4
3415	Lanbi Island	10° 46'	98° 18'	-0 24	-0 36	*0.73 *0.76		9.0	12.5	6.7
3417	Owen Island	11° 12'	98° 15'	-0 24	-0 36	(*0.69+0.9)		8.5	11.9	7.2
3419	Pigeon Island	11° 47'	98° 13'	-0 32	-0 44	*0.69 *0.69		8.6	12.0	6.3
3421	MERGUI	12° 26'	98° 36'			<i>Daily predictions</i>		12.4	17.5	9.1
3423	Padaw Sound	12° 37'	98° 25'	-0 17	-0 17	-0.2 +1.5		10.7	15.1	9.8
3425	Myinkwa Aw, Tavoy R. entrance	13° 33'	98° 08'	-0 11	-0 16	(*0.78+1.1)		9.7	13.6	8.2
3427	Heinze Bok (Long Island)	14° 24'	97° 47'	+0 31	+0 31	(*0.72+1.0)		8.9	12.6	7.6
3429	Wa Kyun	15° 12'	97° 44'	+1 44	+1 46	(*0.78+4.4)		9.7	14.0	11.5
3431	Double Island	15° 52'	97° 35'	+3 17	+3 43	0.0 +0.5		11.9	17.2	9.4
3433	Kyaikkami, Moulmein River	16° 05'	97° 34'	+4 02	+4 15	+2.0 0.0		14.4	20.0	10.1
				on Rangoon, p.312						
3435	Moulmein, Moulmein River <33,34>	16° 29'	97° 37'	-0 53	-0 03	-6.0 --		9.5	12.2	6.2
				on Mergui, p.308						
3437	Elephant Point, Rangoon River	16° 28'	96° 19'	+5 26	+5 52	+3.7 +2.1		14.0	18.9	12.0
				on Rangoon, p.312						
3439	RANGOON, Rangoon River	16° 46'	96° 10'			<i>Daily predictions</i>		13.4	17.0	10.3
				on Mergui, p.308						
3441	China Bakir (Old Lighthouse)	16° 17'	96° 12'	+5 04	+5 05	(*0.82+1.1)		10.2	14.2	8.6
3443	Pymbong Beacon	15° 47'	95° 31'	+0 42	+0 33	(*0.35+1.2)		4.3	6.2	4.4
				on Sagar, p.316						
3445	Diamond Island, Bassein River	15° 52'	94° 17'	+0 14	+0 00	*0.48 *0.46		4.8	6.5	4.7
3447	Bassein, Bassein River <35>	16° 47'	94° 47'	+4 34	+4 53	*0.52 *0.54		4.9	5.7	5.2
3449	Chaungtha River entrance	16° 57'	94° 26'	-0 23	-0 36	*0.42 *0.32		4.6	6.4	3.9
3451	Andrew Bay	18° 21'	94° 21'	-0 26	-0 42	*0.47 *0.34		5.2	7.2	4.3
3453	Searle Point, Cheduba Island	18° 55'	93° 37'	-0 03	-0 15	+0.56 *0.48		5.8	8.0	5.3
3455	Kyaukpyu, Ramree Island	19° 26'	93° 33'	-0 06	-0 33	*0.58 *0.40		6.5	9.0	5.3
3457	Sittwe	20° 08'	92° 54'	+0 13	-0 05	*0.48 *0.28		5.6	7.6	4.2
3459	St. Martins Island	20° 37'	92° 19'	-0 12	-0 31	*0.62 *0.56		6.3	8.8	6.0
	BANGLADESH <36> Time meridian, 90° E									
3461	Cox's Bazar	21° 27'	91° 59'	+0 47	+0 26	*0.67 *0.52		7.2	8.9	6.2
3463	Pusur River	21° 43'	89° 33'	+0 19	+0 12	*0.61 *0.64		5.7	7.5	6.1
3465	Kutubdia Island	21° 52'	91° 50'	+1 45	+1 44	*0.76 *0.44		8.9	11.0	6.7
3467	Chittagong	22° 20'	91° 50'	+3 37	+4 06	*0.80 *0.42		9.6	11.9	6.9
	INDIA <36> Bay of Bengal Time meridian, 82° 30' E									
3469	Matla River Approach	20° 58'	88° 35'	-0 22	-0 42	*0.63 *0.54		6.5	8.8	6.0
3471	SAGAR, Hooghly River	21° 39'	88° 03'			<i>Daily predictions</i>		9.7	14.1	9.9
3473	Diamond Harbor, Hooghly River	22° 11'	88° 11'	+1 35	+2 34	*1.11 *0.88		12.0	16.0	10.4
3475	Calcutta (Garden Reach) Hooghly River	22° 33'	88° 18'	+3 56	+5 38	*1.06 *1.00		10.6	13.7	10.3
3477	Shortt Island	20° 47'	87° 04'	-0 31	-0 36	*0.63 *0.52		6.6	9.0	5.9
3479	Chandbali	20° 46'	86° 44'	+1 22	+1 58	*0.54 +0.52		5.3	6.4	5.3
				on Madras, p.320						
3481	False Point	20° 25'	86° 47'	+0 35	+0 31	(*2.04+0.8)		4.9	6.8	5.1
3483	Gopalpur	19° 16'	84° 55'	+0 05	+0 05	*1.52 *1.52		3.7	5.2	3.2
3485	Vizagapatam	17° 41'	83° 17'	+0 06	+0 05	+0.9 0.0		3.3	4.6	2.6
3487	Cocanada	16° 56'	82° 15'	+0 17	+0 27	+1.1 +0.2		3.3	4.4	2.8
3489	Sacramento Shoal	16° 36'	82° 19'	+0 03	+0 18	+0.7 +0.1		3.0	4.0	2.5
3491	MADRAS	13° 06'	80° 18'			<i>Daily predictions</i>		2.4	3.2	2.1
3493	Cuddalore	11° 43'	79° 47'	-0 01	+0 05	-0.3 +0.2		1.9	2.5	2.1
3495	Negapatam	10° 45'	79° 51'	+0 19	+0 36	*0.55 +0.33		1.5	2.0	1.1
				on Colombo, p.324						
3497	Pamban Channel, Gulf of Mannar	9° 16'	79° 12'	-0 07	-0 09	+0.1 +0.1		1.4	1.9	1.3
3499	Tuticorin, Gulf of Mannar	8° 48'	78° 10'	-0 15	-0 15	+0.8 +0.6		1.6	2.3	1.9

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	INDIA <36> Bay of Bengal-cont. Time meridian, 82° 30' E	North	East	h m	h m	ft	ft	ft	ft	ft
				on Colombo, p.324						
	<i>Sri Lanka</i>									
3501	Point Pedro	9° 50'	80° 14'	-5 46	-5 42	0.0	-0.1	1.5	2.0	1.2
3503	Trincomalee	8° 33'	81° 13'	-5 54	-5 50	0.0	0.0	1.2	1.7	1.3
3505	Galle	6° 02'	80° 13'	+0 14	+0 19	*0.89	*0.89	1.2	1.8	1.1
3507	COLOMBO	6° 57'	79° 51'					1.4	2.0	1.2
3509	Jaffna	9° 39'	80° 01'	+0 57	+1 13	(*0.71+0.4)		1.0	1.4	1.3
	<i>Arabian Sea</i>									
3511	Quilon	8° 53'	76° 34'	-1 43	-1 52	+1.1	+0.8	1.7	2.3	2.2
3513	Cochin	9° 58'	76° 15'	-2 22	-2 24	+0.8	+0.6	1.6	2.0	1.9
3515	Bey pore	11° 10'	75° 48'	-2 34	-2 32	+2.0	+1.3	2.1	2.7	2.9
				on Karachi, p.332						
3517	Calicut	11° 15'	75° 46'	+0 43	+0 20	(*0.40+1.3)		2.3	2.9	3.5
3519	Tellicherry	11° 45'	75° 29'	+0 29	+0 28	(*0.48+0.8)		2.8	3.1	3.4
3521	Cannanore	11° 51'	75° 22'	+0 31	+0 22	(*0.47+0.7)		2.7	3.2	3.2
3523	Mangalore	12° 51'	74° 50'	+0 43	+0 38	(*0.48+0.5)		2.8	3.5	3.1
3525	Malpe	13° 21'	74° 41'	+0 09	+0 01	(*0.55+0.4)		3.2	4.0	3.4
3527	Bhatkal	13° 58'	74° 32'	+0 36	+0 38	*0.43 *0.40		2.6	3.5	2.3
3529	Karwar Bay	14° 48'	74° 06'	+0 22	+0 10	*0.67 *0.67		3.8	4.9	3.7
3531	Mormugao	15° 25'	73° 48'	+0 18	+0 08	*0.66 *0.60		4.0	5.2	3.5
				on Bombay, p.328						
3533	Rajapur River entrance	16° 37'	73° 20'	-1 00	-1 00	*0.56	*0.72	4.2	5.7	5.0
3535	BOMBAY (Apollo Bandar)	18° 55'	72° 50'					8.7	11.8	8.4
3537	Bassein	19° 18'	72° 48'	+0 30	+1 04	-0.9	-0.8	8.6	11.1	7.5
3539	Dahanu	19° 58'	72° 43'	+1 40	+1 40	+1.1	+0.7	9.1	12.4	9.3
3541	Bhavnagar, Gulf of Cambay	21° 45'	72° 14'	+5 03	+5 41	*2.40	*1.90	22.9	29.0	19.1
3543	Port Albert Victor, Gulf of Cambay	20° 57'	71° 32'	+3 06	+2 49	*0.71	*0.62	6.5	8.7	5.8
3545	Navabandar	20° 45'	71° 05'	+1 20	+1 10	(*0.44+2.2)		3.8	5.4	5.9
				on Karachi, p.332						
3547	Porbandar	21° 38'	69° 37'	+0 14	+0 17	(*0.79+1.6)		4.6	6.0	5.9
				on Bombay, p.328						
3549	<i>Gulf of Kutch</i>									
3549	Okha Point	22° 28'	69° 05'	+0 54	+0 46	*0.84	*0.68	8.0	9.8	6.7
3551	Navinar Point	22° 45'	69° 43'	+1 57	+2 06	+4.9	+0.6	13.0	15.5	11.1
3553	Kandla	23° 02'	70° 14'	+2 39	+3 08	+7.8	-0.2	16.7	19.4	12.2
3555	Khori Creek	22° 58'	70° 14'	+2 28	+2 58	+7.4	+0.1	16.0	18.2	12.1
3557	Hansthal Point	22° 56'	70° 21'	+2 33	+3 20	+5.6	-0.2	14.5	16.8	11.1
3559	Navlakhi	22° 58'	70° 27'	+3 02	+3 33	+9.2	+0.4	17.5	20.2	13.2
3561	Navi Wat	23° 05'	70° 20'	+3 09	+3 55	+7.2	+0.1	15.8	17.6	12.0
				on Karachi, p.332						
3563	Kori Creek entrance	23° 31'	68° 21'	+0 25	+0 25	+0.4	0.0	6.2	8.1	5.6
	<i>Arabian Sea Islands</i> Time meridian, 75° E			on Madras, p.320						
3565	Suvadiva Atoll, Maldive Islands	0° 50'	73° 09'	+5 10	+5 10	0.0	+0.2	2.2	2.9	2.2
				on Colombo, p.324						
3567	Horsburgh Atoll, Maldive Islands	4° 54'	72° 57'	-1 50	-1 35	(*0.86+1.1)		1.2	1.7	2.1
3569	Ihavandu, Maldive Islands	6° 57'	72° 55'	-2 32	-2 24	+1.1	+0.9	1.6	2.3	2.2
3571	Minicoy Island	8° 16'	73° 01'	-2 50	-2 41	+2.3	+1.7	2.0	2.5	3.2
	Time meridian, 82° 30' E									
3573	Kardamum Island, Laccadive Islands	11° 13'	72° 46'	+1 15	+1 15	(*0.38+1.3)		1.8	2.9	3.4
3575	Cherbaniani Reef, Laccadive Islands	12° 21'	71° 53'	+0 25	+0 25	(*0.45+1.6)		2.2	3.4	4.0
	PAKISTAN Time meridian, 75° E									
	<i>Indus River Delta</i>									
3577	Hajamro River mouth	24° 06'	67° 19'	+0 00	+0 00	+1.0	+0.2	6.6	8.6	6.0
3579	Jhari Creek	24° 44'	67° 19'	0 30	1 02	+1.6	+0.7	--	--	--
3581	Port Muhammad Bin Qasim	24° 47'	67° 21'	0 23	0 23	+2.3	+1.0	--	--	--
3583	Hasan Point	24° 47'	67° 14'	0 13	0 15	+1.6	+0.7	--	--	--
3585	Bundal Island	24° 42'	67° 08'	+0 00	+0 00	+1.0	+0.3	--	--	--
3587	Ghizri Creek	24° 46'	67° 06'	-0 02	0 01	+0.7	+0.3	--	--	--
3589	KARACHI	24° 48'	66° 58'					5.8	7.6	5.4
3591	Sonmiani Harbor	25° 23'	66° 33'	-0 50	-0 50	0.0	-0.2	6.0	7.8	5.3
3593	Ormara	25° 11'	64° 41'	-0 08	-0 10	*0.86	*0.72	5.3	7.0	4.5
3595	Pasni	25° 12'	63° 30'	+0 09	+0 08	+0.2	+0.9	5.1	6.6	6.0
3597	Gwatar Bay	25° 09'	61° 33'	+0 35	+0 35	(*0.90+0.2)		5.2	6.8	5.1

Endnotes can be found at the end of table 2.

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No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	IRAN Time meridian, 52° 30' E	North	East	h m	h m	ft	ft	ft	ft	ft
				on Colombo, p.324						
3599	Chah Bahar	25° 17'	60° 37'	-1 47	-1 43	+0.7	+0.7	--	--	--
3601	Ras Tang	25° 21'	59° 54'	-1 38	-1 43	+0.7	+1.6	--	--	--
3603	Koksar	25° 32'	58° 50'	-1 42	-1 38	-0.3	+0.7	--	--	--
3605	Khalij-e Jask	25° 38'	57° 46'	-1 42	-1 40	-1.0	-0.3	--	--	--
3607	Jask Bay, Gulf of Oman	25° 39'	57° 45'	-1 20	-1 20	(*0.93+0.3)		5.4	7.0	5.3
3609	Ras al Kuh	25° 47'	57° 19'	-1 34	-1 31	-0.7	-0.3	--	--	--
3611	Gonari Creek	26° 18'	57° 06'	-0 36	-0 28	+1.0	+0.3	--	--	--
3613	Bandar-e Sirik	26° 31'	57° 05'	-0 46	-0 37	+1.3	+0.3	--	--	--
3615	Hengam, Persian Gulf	26° 41'	55° 54'	-0 02	+0 06	-1.0	-0.4	5.2	6.7	4.7
3617	Bandar Abbas, Persian Gulf	27° 11'	56° 17'	-0 40	-0 40	+1.5	+0.6	6.7	9.4	6.5
				on Hong Kong, p.120				MeanDiurnal		
3619	Jazirat Farur, Persian Gulf	26° 15'	54° 31'	-9 30	-9 12	-0.3	-0.4	3.4	5.1	4.1
3621	Bushahr, Persian Gulf	28° 59'	50° 51'	-0 44	-0 37	*0.64	*0.43	2.7	4.5	2.6
3623	Jazirat Kharg, Persian Gulf	29° 16'	50° 20'	-0 39	-0 41	*0.87	*0.96	2.6	4.4	4.0
	IRAQ, Persian Gulf Time meridian, 45° E			on Shatt Al Arab, p.336						
3625	SHATT AL ARAB (outer bar)	29° 50'	48° 43'	<i>Daily predictions</i>				6.1	8.5	5.7
3627	Basra Reach <37>	30° 31'	47° 51'	+5 38	+6 41	(*0.54+2.0)		3.3	3.9	5.1
3629	Abadan	30° 20'	48° 16'	+2 50	+3 45	-3.3	+0.7	--	--	--
3631	Al Faw	29° 58'	48° 29'	+1 00	+1 00	0.0	+1.0	--	--	--
	KUWAIT, Persian Gulf									
3633	Um Qasr	30° 01'	47° 57'	+1 52	+2 01	+5.5	+1.5	10.1	12.8	9.3
3635	Um Al-Aseed (Beacon No. 12)	29° 56'	48° 02'	+1 20	+1 10	+4.6	+1.3	--	--	--
3637	Warba Spit	29° 59'	48° 09'	+1 20	+1 13	+3.7	+0.7	9.1	12.2	8.0
3639	Ras al Barshah (Beacon No. 2)	29° 33'	48° 14'	+0 41	+0 43	+1.3	+1.3	--	--	--
3641	Mina ad Dawhah	29° 23'	47° 48'	+1 09	+1 03	+1.6	+1.0	--	--	--
3643	Ash Shuwaykh	29° 21'	47° 55'	+1 11	+1 07	+1.6	+1.6	--	--	--
3645	Kuwait	29° 21'	47° 56'	+1 12	+1 08	+1.4	+0.9	6.6	8.9	6.9
3647	Fahayhil	29° 04'	48° 10'	+1 12	+0 46	(*0.78+0.6)		4.5	6.6	5.0
				on Mina Al Ahmadi, p.340						
3649	Jazirat Auhah	29° 22'	48° 26'	-0 12	-0 14	+0.3	+0.7	--	--	--
3651	MINA AL AHMADI	29° 04'	48° 10'	<i>Daily Predictions</i>				--	--	--
3653	Ras al Qulai'ah	28° 52'	48° 17'	+0 00	+0 16	-1.6	-0.3	--	--	--
3655	Jazirat Kubbar	29° 04'	48° 30'	-0 12	-0 19	-1.3	+0.3	--	--	--
3657	Jazirat Qaruh	28° 49'	48° 47'	-0 37	-0 13	-2.3	0.0	--	--	--
3659	Jazirat Umm al Maradim	28° 41'	48° 39'	-0 15	+0 08	-3.0	0.0	--	--	--
3661	Ras al Khafji	28° 25'	48° 31'	-0 04	+0 19	-3.3	-0.3	--	--	--
	SAUDI ARABIA, Persian Gulf			on Yamato Wan, p.12				Diurnal Tropic		
3663	Ras Al Mishab }	28° 07'	48° 37'	+8 40	+7 58	+1.2	+0.3	4.0	4.7	3.5
3665	Safaniya }	28° 00'	48° 46'	+8 39	+8 29	+1.0	+0.2	3.9	4.8	3.5
				on Bangkok Bar, p.140						
3667	Munifah <38> }	27° 35'	48° 54'	+10 27	+10 51	(*0.46-0.8)		3.6	4.3	2.7
				on Mina Salman, p.348				Mean Spring		
3669	Fasht Gharibah	26° 59'	50° 13'	-0 30	-0 42	-2.6	-1.3	--	--	--
3671	Abu Sa'fah	26° 57'	50° 30'	-0 35	-0 40	-2.0	-0.7	--	--	--
3673	RAS AT TANNURAH	26° 38'	50° 10'	<i>Daily predictions, p.344</i>				4.2	5.3	4.2
3675	Dawhat at Tarut	26° 39'	50° 02'	-0 31	-0 07	-1.6	-1.0	--	--	--
3677	Ad Dammam (K.A.A.P.)	26° 30'	50° 12'	-0 25	-0 28	-0.3	0.0	--	--	--
3679	Al Kubar	26° 17'	50° 13'	-0 10	-0 20	-3.9	-0.7	--	--	--
	BAHRAIN, Persian Gulf									
3681	Malik Fahd Causway	26° 11'	50° 20'	+0 25	+0 20	-4.3	-1.0	--	--	--
3683	Khawr Fasht	26° 20'	50° 26'	-0 02	+0 11	-1.3	-0.3	--	--	--
3685	Al Manamah Harbor	26° 14'	50° 35'	-0 18	-0 25	-0.3	+0.2	4.4	5.8	4.1
3687	MINA SALMAN, Bahrain Island	26° 13'	50° 36'	<i>Daily predictions</i>				4.9	6.4	4.2
3689	Sitra	26° 10'	50° 40'	+0 05	+0 05	-0.3	0.0	--	--	--
3691	Bahrain Approach Bouy	26° 22'	50° 47'	-0 17	-0 13	-1.0	-0.7	--	--	--
3693	Ras Ashairiq	25° 59'	51° 00'	+0 15	+0 02	*0.62	*0.76	2.8	3.5	2.7
3695	Jabal Fuwaira	26° 03'	51° 22'	-0 49	-1 10	(*0.61+0.3)		3.0	3.8	2.9
	QATAR, Persian Gulf									
3697	Ra's 'Ushayriq	25° 59'	51° 00'	+0 22	+0 22	-3.6	-1.0	--	--	--
3699	Ar Ru'ays	26° 10'	51° 11'	-0 11	-0 06	-2.3	-1.0	--	--	--
				on Musay'id, p.352				MeanDiurnal		
3701	Al Wakrah	25° 10'	51° 37'	-0 03	+0 15	-1.3	-0.7	--	--	--

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Diurnal	
				High Water	Low Water	High Water	Low Water			
	QATAR, Persian Gulf Time meridian, 45° E	North	East	h m	h m	ft	ft	ft	ft	ft
				on Musay'id, p.352						
	<i>Musay'id</i>									
3703	Harbour	24° 54'	51° 39'	+0 50	+0 40	0.0	0.0	--	--	--
3705	OUTER CHANNEL ENTRANCE	25° 02'	51° 39'			<i>Daily predictions</i>		--	--	--
3707	Khawr al Udayd	24° 42'	51° 27'	+1 00	+0 50	+0.3	0.0	--	--	--
3709	Ras Abu Qumayyis	24° 34'	51° 30'	+1 03	+1 00	+0.7	+0.3	--	--	--
3711	Jazirat Halul	25° 40'	52° 25'	-1 16	-1 17	-2.0	-0.7	--	--	--
	UNITED ARAB EMIRATES, Persian Gulf Time meridian, 60° E									
3713	Jazair Ghaghah	24° 24'	51° 33'	+2 18	+2 17	+0.7	0.0	--	--	--
				on Surabaja Strait, p.160						
3715	Jazirat Yas {	24° 17'	52° 37'	-10 51	-10 53	*0.86	*0.86	3.2	4.5	3.1
3717	Jazirat Das {	25° 09'	52° 53'	-11 08	-11 04	(*0.68+0.7)		2.5	3.5	3.1
				on Mina Jebel Ali, p.356						
3719	Ras Zubayyah	24° 20'	54° 10'	+1 24	+1 34	+1.0	+1.0	--	--	--
				on Mina Al Ahmadi, p.340						
3721	Sir Abu Nu'ayr	25° 13'	54° 13'	-10 30	-10 40	-3.3	0.0	--	--	--
3723	Umm an Nar	24° 26'	54° 30'	-8 11	-8 12	-4.3	0.0	--	--	--
3725	Mina Zayed Approaches	24° 38'	54° 17'	-10 32	-10 34	-2.0	0.0	--	--	--
3727	Mina Zayed	24° 31'	54° 09'	-10 12	-10 09	-2.0	0.0	--	--	--
3729	Umm ad Dalkh	24° 35'	54° 09'	-10 28	-10 33	-2.3	+0.3	--	--	--
				on Mina Jebel Ali, p.356						
3731	Khawr Ghurabi	24° 49'	54° 43'	+0 16	+0 18	-0.7	0.0	--	--	--
3733	Khawr Ghanadah	24° 50'	54° 46'	+0 36	+0 35	-0.3	-0.3	--	--	--
3735	MINA JEBEL ALI	25° 00'	55° 03'			<i>Daily predictions</i>		--	--	--
3737	Mina Rashid	25° 15'	55° 16'	-0 11	-0 15	0.0	0.0	--	--	--
3739	Dubayy (Al Maktoum Bridge)	25° 15'	55° 19'	+0 16	+0 07	+0.3	0.0	--	--	--
3741	Ash Sharaqah	25° 22'	55° 23'	-0 16	-0 22	+0.7	+0.3	--	--	--
3743	Ajman	25° 25'	55° 26'	+0 10	+0 00	+0.3	+0.7	--	--	--
3745	Umm al Qaywayn	25° 35'	55° 35'	-0 23	-0 34	+0.3	+0.3	--	--	--
				on Karachi, p.332						
3747	Ras al Khaymah	25° 49'	55° 57'	+0 35	+0 45	-1.3	+1.0	--	--	--
3749	Mina Saqr	25° 58'	56° 03'	+0 35	+0 45	-1.0	+0.7	--	--	--
	OMAN									
	<i>Strait of Hormoz</i>									
3751	Bukha	26° 09'	56° 09'	+0 25	+0 34	-0.7	+0.7	--	--	--
3753	Ghubbat Dabshun	26° 12'	56° 24'	+0 15	+0 22	-0.7	+0.7	--	--	--
3755	Khasab	26° 12'	56° 15'	+0 10	+0 15	-0.3	+1.0	--	--	--
3757	Khawr al Quway	26° 22'	56° 22'	+0 05	+0 10	-0.7	+0.7	--	--	--
3759	Khor Kuwait	26° 21'	56° 22'	+0 09	-0 03	(*0.84+1.1)		4.9	6.4	5.6
3761	Little Quoin I.	26° 29'	56° 32'	-0 04	-0 21	(*0.95-0.6)		5.5	7.0	4.5
3763	Masqat, Gulf of Oman	23° 37'	58° 36'	-1 07	-1 03	(*0.79+0.5)		4.6	6.1	4.8
3765	Ras Dillah	26° 08'	56° 29'	-0 30	-0 30	+0.7	+1.3	--	--	--
3767	Khawr Niad (Khawr Habalayn)	26° 08'	56° 24'	-0 35	-0 35	-0.3	+0.7	--	--	--
3769	Mina Daba	25° 39'	56° 16'	-0 50	-0 50	+0.3	+1.0	--	--	--
3771	Ras al Hadd	22° 31'	59° 48'	-0 54	-0 54	(*0.72+1.5)		4.2	5.8	5.4
3773	Rounders Bay, Masira Island	20° 13'	58° 38'	-1 04	-1 05	(*0.69+0.7)		4.0	5.2	4.4
				on Aden, p.360						
3775	Marbat	16° 59'	54° 42'	+1 16	+1 16	(*0.92+0.1)		3.3	4.9	4.2
	YEMEN Time meridian, 45° E									
3777	Mukalla	14° 31'	49° 08'	-0 10	+0 00	(*0.75+0.7)		2.4	4.0	4.1
3779	ADEN	12° 47'	44° 59'			<i>Daily predictions</i>		3.6	5.3	4.5
	SAUDI ARABIA, Red Sea									
3781	Perim, Bab el Mandeb Strait	12° 39'	43° 24'	+0 03	+0 10	(*0.78+1.0)		2.8	4.4	4.5
3783	Al Mukha	13° 19'	43° 14'	+4 53	+4 53	(*0.39+0.2)		1.4	2.2	2.0
				on Suez, p.364						
3785	Kamaran Passage	15° 17'	42° 38'	+1 48	+1 53	-1.1	+0.4	2.3	2.8	3.4
				on Aden, p.360						
3787	Juddah	21° 28'	39° 11'	+11 25	+11 25	--	--	0.5	--	--

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	SAUDI ARABIA, Red Sea Time meridian, local	North	East	h m	h m	ft	ft	ft	ft	ft
				on Suez, p.364						
3789	Sherm Rabegh Time meridian, 30° E	22° 45'	38° 58'	-5 00	-5 00	(*0.34+1.5)		1.3	1.6	2.8
3791	Aqaba, Gulf of Aqaba	29° 31'	35° 00'	-5 12	-5 07	(*0.53+0.5)		2.0	2.6	2.5
	EGYPT to ERITREA <39>									
	<i>Gulf of Suez</i>									
3793	At Tur	28° 14'	33° 37'	-2 37	-2 33	--	--	0.6	0.7	--
3795	SUEZ	29° 56'	32° 33'	<i>Daily predictions</i>				3.8	4.7	3.7
3797	Zafarana	29° 06'	32° 40'	+0 00	+0 04	-1.2	-0.2	2.8	3.5	3.0
3799	Ras Gharib	28° 21'	33° 06'	-0 21	+0 02	*0.30	*0.22	1.3	1.7	1.0
3801	Ashrafi Island	27° 47'	33° 43'	-5 38	-5 34	*0.29	*0.39	0.9	1.2	1.2
3803	Shadwan Island	27° 27'	34° 02'	-5 37	-5 33	*0.45	*0.45	1.7	2.0	1.7
3805	Al Qusayr	26° 06'	34° 17'	-5 48	-5 44	*0.40	*0.40	1.5	1.8	1.5
3807	Muhammad Qol	20° 54'	37° 10'	-4 59	-5 23	--	--	0.4	0.4	1.2
3809	Port Sudan	19° 36'	37° 15'	---	---	--	--	0.1	--	0.5
3811	Trinkitat	18° 41'	37° 45'	---	---	--	--	0.1	--	0.5
	Time meridian, 45° E									
3813	Harmil Island	16° 29'	40° 11'	+2 00	+2 42	*0.25	*0.28	0.9	1.1	1.0
3815	Massaua	15° 37'	39° 28'	+2 38	+2 43	(*0.63-0.8)		2.4	3.1	1.5
								Mean Diurnal		
3817	Assab	13° 00'	42° 44'	---	---	--	--	0.8	1.6	1.0
	REPUBLIC OF DJIBOUTI									
				on Aden, p.360						
3819	Djibouti, Gulf of Aden	11° 35'	43° 08'	+0 05	+0 04	+1.3	+1.3	3.6	5.4	5.8
	SOMALIA									
3821	Zeila, Gulf of Aden	11° 24'	43° 28'	+0 00	+0 00	+0.8	+0.8	3.6	5.3	5.3
3823	Berbera, Gulf of Aden	10° 26'	45° 01'	+0 03	+0 02	+0.6	+0.6	3.6	5.6	5.1
3825	Cape Guardafui (Ras Asir)	11° 50'	51° 16'	-1 40	-1 40	*0.90	*0.85	3.4	5.0	4.0
				on Pohnpei Harbor, p.208				Mean Spring		
3827	Obbia	5° 21'	48° 32'	-11 23	-11 25	+1.0	-0.3	3.6	5.3	2.6
				on Dar Es Salaam, p.368						
3829	Warsheik	2° 18'	45° 48'	+0 03	+0 06	*0.57	*0.58	4.3	5.8	2.9
3831	Mogadishu	2° 02'	45° 21'	-0 11	-0 07	*0.63	*0.75	4.6	6.3	3.2
3833	Brava	1° 06'	44° 02'	-0 12	-0 10	*0.71	*0.83	5.2	7.1	3.6
	South East									
3835	Giuba River	0° 15'	42° 38'	+0 14	+0 17	*0.95	*1.33	6.7	9.0	5.0
3837	Chisimaio	0° 22'	42° 33'	-0 15	-0 12	*0.74	*0.83	5.4	7.5	3.7
3839	Rirakau River entrance	1° 17'	41° 54'	-0 09	-0 07	*0.89	*1.00	6.5	9.0	4.5
	KENYA and TANGANYIKA									
3841	Malindi	3° 13'	40° 08'	-0 14	-0 13	(*0.89+1.8)		6.7	9.5	6.2
3843	Port Mombasa (Kilindini)	4° 04'	39° 40'	-0 09	-0 08	(*1.03+1.0)		7.7	10.4	6.1
3845	Wasin Island	4° 39'	39° 21'	-0 11	-0 12	(*1.05+1.0)		7.9	10.9	6.3
3847	Mkoani, Pemba Island	5° 21'	39° 38'	-0 14	-0 14	(*1.05+0.6)		7.9	10.9	5.8
3849	Mesale Island, Pemba Island	5° 14'	39° 36'	-0 16	-0 12	(*1.08+0.6)		8.1	11.2	6.0
3851	Mkokotoni Harbor, Zanzibar Island	5° 52'	39° 16'	-0 13	-0 14	(*1.09+0.9)		8.2	11.3	6.4
3853	Zanzibar, Zanzibar Island	6° 09'	39° 11'	-0 21	-0 19	(*1.16+1.0)		8.7	12.3	6.8
3855	DAR ES SALAAM	6° 50'	39° 17'	<i>Daily Predictions</i>				7.5	10.6	5.0
3857	Lindi River	9° 59'	39° 45'	+0 07	+0 09	*0.97	*1.33	6.8	9.4	5.0
	MOZAMBIQUE Time meridian, 30° E									
3859	Tunghi Bay	10° 45'	40° 35'	-1 16	-1 14	+2.8	+2.2	8.1	11.3	7.5
3861	Porto de Mocimboa	11° 20'	40° 22'	-1 04	-0 56	+4.1	+3.0	8.6	12.0	8.5
3863	Ibo	12° 21'	40° 35'	-1 30	-1 24	+3.1	+0.6	8.3	11.7	7.7
3865	Porto Amelia	12° 58'	40° 29'	-1 13	-0 59	+2.9	+2.0	8.4	11.7	7.4
3867	Porto de Mozambique	15° 02'	40° 44'	-1 00	-0 56	+2.9	+2.0	8.4	11.8	7.4
3869	Antonio Enes	16° 14'	39° 54'	-0 17	-0 05	+2.8	+2.0	8.3	11.7	7.4
3871	Porto de Quelimane	18° 00'	36° 54'	-0 30	-0 14	+3.6	+2.5	8.6	12.2	8.0
				on Beira, p.372						
3873	Porto do Chinde	18° 32'	36° 30'	-0 38	-0 31	-7.5	-2.3	8.0	11.1	6.8
3875	BEIRA, Pungoe River	19° 49'	34° 50'	<i>Daily predictions</i>				13.2	18.6	11.7
3877	Ilha de Chiloane	20° 37'	34° 53'	-0 19	-0 37	-0.5	+0.2	12.5	17.6	11.6
3879	Bartolomeu Dias	21° 10'	35° 07'	-0 18	-0 23	*0.67	*0.71	8.6	12.0	7.9
3881	Bahia de Bazaruto	21° 39'	35° 26'	-0 39	-0 33	*0.67	*0.71	8.7	12.5	8.0

Endnotes can be found at the end of table 2.

TABLE 2. – TIDAL DIFFERENCES AND OTHER CONSTANTS

No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Mean	Spring	
				High Water	Low Water	High Water	Low Water			
	MOZAMBIQUE Time meridian, 30° E	South	East	h m	h m	ft	ft	ft	ft	ft
				on Durban, p.376						
3883	Inhambane Bay	23° 44'	35° 24'	+0 29	+0 48	+3.7	+2.0	5.6	8.0	6.4
3885	Porto de Inhambane	23° 51'	35° 23'	+1 12	+1 23	+4.1	+1.4	6.6	9.0	6.3
3887	Inhampura	25° 11'	33° 31'	+0 35	+1 09	(*0.62+1.2)		2.4	3.4	3.4
3889	Maputo	25° 58'	32° 34'	+0 47	+0 54	(*1.79+0.2)		7.0	9.8	6.6
	SOUTH AFRICA <40>									
3891	Richards Bay	28° 47'	32° 05'	+0 00	-0 02	+0.1	-0.1	4.1	5.9	3.6
3893	DURBAN	29° 52'	31° 03'	<i>Daily predictions</i>				3.9	5.6	3.6
3895	East London	33° 02'	27° 55'	+0 02	+0 01	+0.3	+0.4	3.8	5.4	3.9
3897	Port Elizabeth	33° 58'	25° 38'	+0 00	-0 02	-0.1	+0.1	3.7	5.2	3.6
	INDIAN OCEAN ISLANDS Madagascar Time meridian, 45° E									
				on Dar Es Salaam, p.368						
3899	Hellville, Nosibe	13° 24'	48° 18'	-0 17	-0 14	+2.7	+2.0	8.2	11.2	7.3
3901	Baie du Courrier	12° 11'	49° 08'	-0 29	-0 25	+0.3	+1.6	6.2	8.4	5.9
3903	Diego Suarez	12° 16'	49° 18'	-0 41	-0 38	(*0.61+1.3)		4.6	6.2	4.4
3905	Mangerivy Bay (Port Leven)	12° 48'	49° 49'	-0 49	-1 01	(*0.53+1.4)		4.0	5.2	4.1
3907	Vohemar	13° 21'	50° 01'	-1 21	-1 18	(*0.41+1.4)		3.1	4.2	3.5
3909	Maroantsetra	15° 27'	49° 49'	-0 51	-0 49	(*0.40+0.9)		3.0	4.2	2.9
				on Colombo, p.324						
3911	Fenerive	17° 22'	49° 24'	-0 19	-0 06	+2.1	+1.8	1.7	2.3	3.2
3913	Tamatave	18° 09'	49° 26'	-0 13	-0 09	+0.8	+0.7	1.5	2.0	2.0
				on Dar Es Salaam, p.368						
3915	Fort Dauphin	25° 01'	47° 00'	+4 10	+4 41	(*0.19+0.4)		1.4	2.0	1.4
3917	Androka	25° 04'	44° 07'	+1 10	+1 13	(*0.75+3.4)		5.6	8.0	7.2
3919	Tulear	23° 21'	43° 40'	+0 46	+0 50	(*0.77+3.0)		5.8	8.4	6.9
3921	Cap Ankarana	20° 29'	44° 07'	+0 30	+0 33	+3.0	+2.6	7.9	11.3	7.8
3923	Nosi Maroantaly	18° 25'	43° 56'	+0 26	+0 30	+3.4	+2.3	8.6	12.1	7.8
3925	Majunga	15° 44'	46° 19'	-0 12	-0 09	+5.4	+3.8	9.1	12.7	9.6
	Lesser Islands									
3927	Moroni, Comoro Island	11° 41'	43° 15'	+0 24	+0 26	*1.03	--	--	--	--
3929	Zaudzi, Ile Mayotte	12° 47'	45° 16'	-0 04	+0 00	+3.5	+2.8	8.2	11.2	8.1
	Time meridian, 60° E									
				on Yokohama, p.20						
3931	Point des Galets, Reunion Island	20° 55'	55° 17'	-2 49	-2 40	(*0.34+0.3)		1.2	1.6	1.6
3933	Port Louis, Mauritius Island	20° 09'	57° 29'	-3 58	-3 49	(*0.31+0.8)		1.1	1.6	2.0
				on Apia, p.252						
3935	Cargados Carajos Shoal	16° 49'	59° 31'	-4 44	-5 12	*1.20	*1.20	2.8	4.0	2.0
3937	Rodriguez Island	19° 40'	63° 26'	-6 31	-7 00	*1.60	*1.60	3.8	4.7	2.7
	Time meridian, local									
				on Dar Es Salaam, p.368						
3939	Providence Island	9° 13'	51° 01'	+1 36	+1 40	(*0.72+0.3)		5.4	7.8	3.9
	Time meridian, 60° E									
3941	Port Victoria, Seychelle Islands	4° 37'	55° 27'	+0 18	+0 25	(*0.39+1.4)		2.9	4.0	3.4
	Time meridian, 75° E									
3943	DIEGO GARCIA ISLAND, Chagos Archipelago. . .	7° 21'	72° 28'	<i>Daily predictions, p.380</i>				3.8	5.5	3.3
	Time meridian, 97° 30' E									
3945	Port Refuge, Cocos Islands	12° 05'	96° 53'	-0 39	-0 36	(*0.42+1.3)		1.8	2.4	2.3
	Time meridian, 105° E									
3947	Christmas Island	10° 25'	105° 43'	+1 48	+1 46	(*0.60+2.1)		2.6	3.4	3.6
	Time meridian, 75° E									
				on Durban, p.376						
3949	Amsterdam Island	37° 50'	77° 33'	-5 25	-5 22	*0.51	*0.31	2.3	3.3	1.6
3951	St. Paul Island	38° 43'	77° 35'	-2 54	-2 52	(*0.72+1.0)		2.8	3.9	3.6
	Kerguelen Island									
3953	Betsy Cove	49° 09'	70° 12'	-3 06	-2 55	-0.9	-0.2	3.2	4.6	3.0
3955	Baie du Morbihan	49° 21'	70° 13'	-4 38	-4 36	+0.3	+0.4	3.8	5.1	3.9
3957	Observatory Bay	49° 25'	69° 53'	-4 32	-4 30	-0.2	+0.1	3.6	5.2	3.5
				on Mui Vung Tau, p.136						
3959	Heard Island (Atlas Cove)	53° 01'	73° 23'	-1 56	-1 56	*0.31	*0.31	1.8	2.3	2.4

Endnotes can be found at the end of table 2.

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No.	PLACE	POSITION		DIFFERENCES				RANGES		Mean Tide Level
		Latitude	Longitude	Time		Height		Diurnal	Tropic	
				High Water	Low Water	High Water	Low Water			
	ANTARCTICA Time meridian, local	South	East	h m	h m	ft	ft	ft	ft	ft
				on Cebu, p.180						
3961	Gauss Station, Wilhelm II Coast	66° 02'	89° 38'	+2 00	+1 52	--	--	2.8	3.3	--
3963	Mc Donald Bay	66° 33'	93° 01'	+1 03	+1 01	--	--	3.6	4.3	--
3965	Wilkes Station	66° 15'	110° 31'	+0 58	+1 03	--	--	3.6	4.2	--
				on Jolo, p.172						
3967	Pointe Geologie, Adelie Coast }	66° 41'	139° 55'	+3 47	+4 42	--	--	3.7	4.5	--
3969	Cape Margerie (Port Martin) }	66° 50'	141° 25'	+3 38	+4 19	--	--	3.8	5.2	--
3971	Cade Denison, George V Coast }	67° 00'	142° 40'	+3 25	+4 21	--	--	3.9	4.7	--
				on Do Son, p.132						
3973	Cape Armitage, Ross Island {	77° 49'	166° 45'	-3 47	-4 15	--	--	2.2	3.1	--
3975	Scott Base, Ross Sea {	77° 52'	166° 48'	-4 34	-4 49	--	--	2.7	3.9	5.5
	ANTARCTIC PENINSULA	South	West	on Manila, p.184						
3977	Marguerite Bay (East Base) }	68° 12'	67° 03'	+5 50	+6 43	--	--	3.8	4.1	--
				on Yamato Wan, p.12						
3979	Lent Islands, Graham Land }	66° 53'	66° 48'	-11 16	-10 48	--	--	3.6	4.1	--
3981	Ferin Head, Graham Land }	66° 01'	65° 21'	-11 15	-10 47	--	--	3.8	4.4	--
3983	Argentine Islands (Stella Creek) }	65° 15'	64° 16'	-10 52	-10 43	--	--	4.6	5.4	--
3985	Port Circoncision }	65° 10'	64° 14'	-10 35	-10 41	--	--	3.8	4.5	--
3987	Port Charcot, Booth Island }	65° 04'	64° 02'	-10 55	-11 04	--	--	3.5	4.1	--
3989	Lemaire Channel, De Gerlache Strait }	64° 47'	62° 43'	-10 32	-11 03	--	--	4.1	4.8	--
3991	Neko Harbor }	64° 48'	62° 23'	-9 26	-10 01	--	--	4.4	5.1	--
3993	Nansen Island, De Gerlache Strait }	64° 33'	61° 57'	-10 18	-11 14	--	--	5.0	5.7	--
3995	Melchior Harbor, Dallman Bay }	64° 20'	62° 59'	-10 34	-11 04	--	--	4.1	4.8	4.0
				on Yokohama, p.20						
3997	Puerto Soberania	62° 29'	59° 38'	+13 12	+13 19	+1.3	+1.2	5.1	5.5	5.0
3999	Shackleton Base, Vahsel Bay	77° 59'	37° 10'	-10 12	-10 03	--	--	6.2	--	--

Endnotes can be found at the end of table 2.

ENDNOTES

- * RATIO. If the ratio is accompanied by a correction factor multiply the heights of the high and low waters at the reference station by the ratio and then apply the correction factor.
- } The tide at this location is chiefly diurnal. SEE CAUTION NOTE.
- < 1> For other places in Siberia, Arctic Ocean, see "Tide Tables, Europe and West Coast of Africa."
- < 2> Apply differences to predictions for Pusan 2 days earlier than the date desired.
- < 3> There is a seiche at Miyako Ko with a period of about 22 minutes and a range of about 1 foot.
- < 4> At YOKOHAMA, winds from the south may raise the level of the water 1 foot above normal.
- < 5> There is a seiche at Aburatsubo with a period of about 15 minutes and a range of about 1 foot during storms.
- < 6> There is a seiche at Shimoda Ko with a period of about 16 minutes. When the barometric pressure is low, the range is about 0.7 foot.
- < 7> There is a seiche at Futami Ko with a period of 16 to 20 minutes and a range of about 1 foot.
- < 8> There are seiches at Susaki Ko with periods of 18 to 40 minutes and ranges of about 0.7 foot.
- < 9> In Izumi Nada with a strong SW wind and a falling barometer, sea level may rise as much as 2 feet.
- <10> Tide is frequently diurnal. Apply height ratios to HHW and LLW, and time difference to LLW only. Diurnal range is given.
- <11> Tide is frequently diurnal. Apply height ratios to HHW and LLW, and time difference to LLW only. HHW occurs about 14 hours after LLW. Diurnal range is given.
- <12> There is a seiche at Hamada Ko with a period of about 12 minutes and range of about 0.7 foot.
- <13> There are seiches at Maizuru Ko with periods from 16 to 90 minutes and ranges up to 3 feet during storms.
- <14> There are seiches at Tsuruga Ko with periods from 10 to 65 minutes and ranges of about 0.7 foot.
- <15> There is a seiche in nearby Kamae Ko, with a period of about 20 minutes and a range of up to 1 foot.
- <16> There is a seiche in Hososhima with a period of about 10 minutes and ranges of up to 0.7 foot in calm weather and 2 feet during storms.
- <17> There is a seiche at Uchiumi with a period of about 10 minutes and a range of up to 1.3 feet.
- <18> A seiche occurs in Nakagawara Ura before and after rough weather. During late spring or early summer, when there is a heavy sea in the offing the range may be 2 to 3 feet.
- <19> A seiche occurs in Nagasaki Ko with a period of about 35 minutes and may have a range of up to 2 feet. The most pronounced oscillations usually occur with two localized low pressure areas.
- <20> Sasebo has a seiche with periods from 64 to 83 minutes and may have ranges as much as 0.7 foot.
- <21> There is a seiche in Yobuko Ko with a period of about 10 minutes which may have a range as much as 1 foot.
- <25> Mean and diurnal ranges given.
- <26> There is a marked seiche at Kao-hsiung with a period of 13 to 25 minutes.
- <27> Seasonal height corrections-May through August, subtract 0.6 foot; November through January, add 0.6 foot.
- <28> Low water heights at Mui Vung Tau.....10 8 6 4 2 0 -2
Corresponding LW heights at Ho Chi Minh City.... 8.4 6.3 4.5 3.1 2.0 0.9 0.0
- <29> Heights of low waters are about 1.5 feet.
- <30> Except near times of the moon's quadrature when the range of tide is negligible the high waters occur about noon and midnight and the low waters about 6 a.m. and 6 p.m.
- <31> Predictions through differences for stations in Torres Strait are not feasible. Diurnal range given for Thursday Island.
- <32> Bores occur in the following estuaries immediately after low water when the range of tide is large.
Sittang River: Information is meager.
Pegu River: Bore is said to reach a height of 3 feet.
- <33> Neap difference, -3.7; Spring difference, -0.5.

ENDNOTES

- <34> Seasonal height corrections— December through April, -0.7; July through September, +1.0.
- <35> Seasonal height corrections— December through April, -1.0; May, -0.5; June, +0.2; July, +1.2; August and September, +2.0; October, +1.0.
- <36> Bores occur in the following estuaries immediately after low water when the range of tide is large. Meghna River: In the outer channel the bore is particularly dangerous March through October. Hooghly River: The bore commences near Diamond Harbor but is of little importance until it enters the narrow reaches above Hooghly Point; it may attain a height of 4 feet at Kidderpore and 5 feet above that place. Cambay Channel and Mahi River.
- <37> Seasonal corrections to be applied to predictions for Basra Reach are: Jan., -0.9; Feb., -0.4; Mar., +0.5; Apr., +1.6; May, +2.3; June, +1.9; July, +0.8; Aug., -0.6; Sept., -1.3; Oct., -1.4; Nov., -1.3; Dec., -1.1.
- <38> Seasonal corrections to be applied to predictions for Munifah are: Jan., -0.2; Feb., -0.3; Mar., -0.4; Apr., -0.3; May, -0.1; June, +0.2; July, +0.4; Aug., +0.4; Sept., +0.3; Oct., +0.1; Nov., 0.0; Dec., -0.1.
- <39> For places on the Mediterranean Sea, see "Tide Tables, Europe and West Coast of Africa."
- <40> For places on the south and west coast, see "Tide Tables, Europe and West Coast of Africa."
- <41> Predictions at this station are not intended for use in navigating Ch'ang Chiang Approach. They are intended only for use in computing tides at designated Table 2 stations in Korea and Sumatra.

TABLE 3.—HEIGHT OF TIDE AT ANY TIME

EXPLANATION OF TABLE

Although the footnote of Table 3 may contain sufficient explanation for finding the height of tide at any time, two examples are given here to illustrate its use.

Example 1.—Find the height of the tide at 0735 at Namp'o-hang, Korea, on a day when the predicted tides from Table 1 are given as:

<i>Low Water</i>		<i>High Water</i>	
<i>Time</i>	<i>Height</i>	<i>Time</i>	<i>Height</i>
<i>h.m.</i>	<i>ft</i>	<i>h.m.</i>	<i>ft</i>
0418	2.5	1105	4.4
1721	3.6	2324	15.2

An inspection of the above example shows that the desired time falls between the two morning tides

The duration of rise is $11^{\text{h}} 05^{\text{m}} - 4^{\text{h}} 18^{\text{m}} = 6^{\text{h}} 47^{\text{m}}$.

The time after low water for which the height is required is $7^{\text{h}} 35^{\text{m}} - 4^{\text{h}} 18^{\text{m}} = 3^{\text{h}} 17^{\text{m}}$.

The range of tide is $20.5 - 2.5 = 18.0$ feet.

The duration of rise or fall in table 3 is given in heavy-faced type for each 20 minutes from $4^{\text{h}} 00^{\text{m}}$ to $10^{\text{h}} 40^{\text{m}}$. The nearest tabular value to $6^{\text{h}} 47^{\text{m}}$, the above duration of rise, is $6^{\text{h}} 40^{\text{m}}$; and on the horizontal line of $6^{\text{h}} 40^{\text{m}}$, the nearest tabular time to $3^{\text{h}} 17^{\text{m}}$ after low water for which the height is required is $3^{\text{h}} 20^{\text{m}}$. Following down the column in which this $3^{\text{h}} 20^{\text{m}}$ is found to its intersection with the line of the range 18.0 feet, the correction is 9.0 feet, which being reckoned from low water, must be added, making $2.5 + 9.0 = 11.5$ feet or 351 centimeters which is the required height above the chart datum for Namp'o-hang.

Example 2. —Find the height of the tide at 1045 at Manilla, Philippines on a day when the predicted tides from Table 1 are given as:

<i>High Water</i>		<i>Low Water</i>	
<i>Time</i>	<i>Height</i>	<i>Time</i>	<i>Height</i>
<i>h.m.</i>	<i>ft</i>	<i>h.m.</i>	<i>ft</i>
0728	4.2	1633	- 0.9

The duration of fall is $16^{\text{h}} 33^{\text{m}} - 07^{\text{h}} 28^{\text{m}} = 9^{\text{h}} 05^{\text{m}}$.

The time after high water for which the height is required is $10^{\text{h}} 45^{\text{m}} - 7^{\text{h}} 28^{\text{m}} = 3^{\text{h}} 17^{\text{m}}$.

The range of tide is $4.2 - (- 0.9) = 5.1$ feet.

Entering Table 3 at the duration of fall of $9^{\text{h}} 00^{\text{m}}$, which is the nearest value to $9^{\text{h}} 05^{\text{m}}$, the nearest value on the horizontal line to $3^{\text{h}} 17^{\text{m}}$ is $3^{\text{h}} 18^{\text{m}}$ after high water. Following down this column to its intersection with a range of 5.0 feet which is the nearest tabular value to 5.1 feet, one obtains 1.5 which, being calculated from high water, must be subtracted from it. The approximate height at $10^{\text{h}} 45^{\text{m}}$ is, therefore, $4.2 - 1.5 = 2.7$ feet or 82 centimeters.

When the duration of rise or fall is greater than $10^{\text{h}} 40^{\text{m}}$, enter the table with one-half the given duration and with one-half the time from the nearest high or low water; but if the duration of rise or fall is less than 4 hours, enter the table with double the given duration and with double the time from the nearest high or low water.

Similarly, when the range of tide is greater than 20 feet, enter the table with one-half the given range. The tabular correction should then be doubled before applying it to the given high or low water

TABLE 3.—HEIGHT OF TIDE AT ANY TIME

height. If the range of tide is greater than 40 feet, take one-third of the range and multiply the tabular correction by 3.

If the height at any time is desired for a place listed in Table 2 predictions of the high and low waters for the day in question should be obtained by the use of the difference given for the place in that table. Having obtained these predictions, the height for any intermediate time is obtained in the same manner as illustrated in the foregoing example.

GRAPHIC METHOD

If the height of the tide is required for a number of times on a certain day the full tide curve for the day may be obtained by the one-quarter, one-tenth rule. The procedure is as follows:

1. On cross-section paper plot the high and low water points in the order of their occurrence for the day, measuring time horizontally and height vertically. These are the basic points for the curve.
2. Draw light straight lines connecting the points representing successive high and low waters.
3. Divide each of these straight lines into four equal parts. The halfway point of each line gives another point for the curve.
4. At the quarter point adjacent to high water draw a vertical line above the point and at the quarter point adjacent to low water draw a vertical line below the point, making the length of these lines equal to one-tenth of the range between the high and low waters used. The points marking the ends of these vertical lines give two additional intermediate points for the curve.
5. Draw a smooth curve through the points of high and low waters and the intermediate points, making the curve well rounded near high and low waters. This curve will approximate the actual tide curve and heights for any time of the day may be readily scaled from it.

Caution.—Both methods presented are based on the assumption that the rise and fall conform to simple cosine curves. Therefore the heights obtained will be approximate. The roughness of approximation will vary as the tide curve differs from a cosine curve.

An example of the use of the graphical method is illustrated below. Using the same predicted tides as in example 2, the approximate height at 10^h 45^m could be determined as shown below.

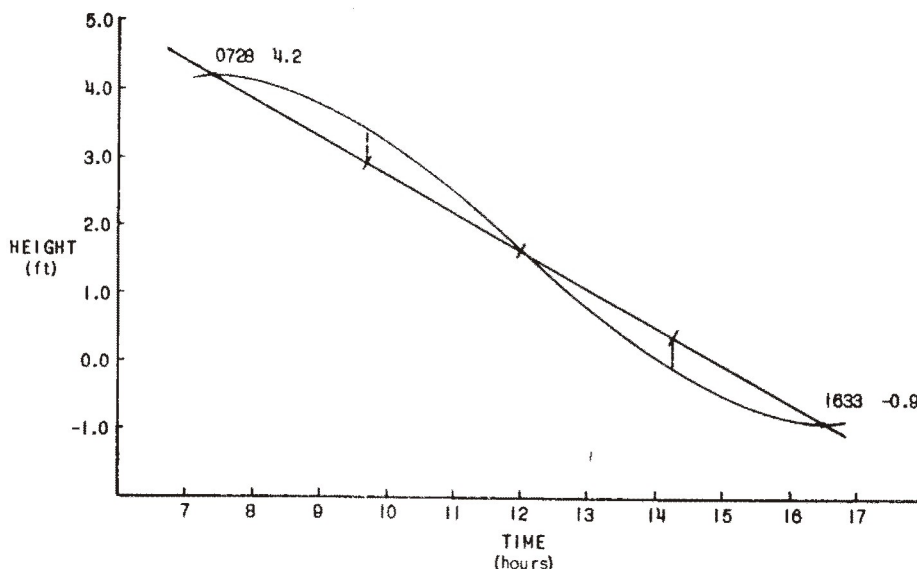


TABLE 3.—HEIGHT OF TIDE AT ANY TIME

<i>h. m.</i>	Time from the nearest high water or low water															
	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>	<i>h. m.</i>
4 10	0 08	0 16	0 24	0 32	0 40	0 48	0 56	1 04	1 12	1 20	1 28	1 36	1 44	1 52	2 00	
4 20	0 09	0 17	0 26	0 35	0 43	0 52	1 01	1 09	1 18	1 27	1 35	1 44	1 53	2 01	2 10	
4 40	0 09	0 19	0 28	0 37	0 47	0 56	1 05	1 15	1 24	1 33	1 43	1 52	2 01	2 11	2 20	
5 00	0 10	0 20	0 30	0 40	0 50	1 00	1 10	1 20	1 30	1 40	1 50	2 00	2 10	2 20	2 30	
5 20	0 11	0 21	0 32	0 43	0 53	1 04	1 15	1 25	1 36	1 47	1 57	2 08	2 19	2 29	2 40	
5 40	0 11	0 23	0 34	0 45	0 57	1 08	1 19	1 31	1 42	1 53	2 05	2 16	2 27	2 39	2 50	
6 00	0 12	0 24	0 36	0 48	1 00	1 12	1 24	1 36	1 48	2 00	2 12	2 24	2 36	2 48	3 00	
6 20	0 13	0 25	0 38	0 51	1 03	1 16	1 29	1 41	1 54	2 07	2 19	2 32	2 45	2 57	3 10	
6 40	0 13	0 27	0 40	0 53	1 07	1 20	1 33	1 47	2 00	2 13	2 27	2 40	2 53	3 07	3 20	
7 00	0 14	0 28	0 42	0 56	1 10	1 24	1 38	1 52	2 06	2 20	2 34	2 48	3 02	3 16	3 30	
7 20	0 15	0 29	0 44	0 59	1 13	1 28	1 43	1 57	2 12	2 27	2 41	2 56	3 11	3 25	3 40	
7 40	0 15	0 31	0 46	1 01	1 17	1 32	1 47	2 03	2 18	2 33	2 49	3 04	3 19	3 35	3 50	
8 00	0 16	0 32	0 48	1 04	1 20	1 36	1 52	2 08	2 24	2 40	2 56	3 12	3 28	3 44	4 00	
8 20	0 17	0 33	0 50	1 07	1 23	1 40	1 57	2 13	2 30	2 47	3 03	3 20	3 37	3 53	4 10	
8 40	0 17	0 35	0 52	1 09	1 27	1 44	2 01	2 19	2 36	2 53	3 11	3 28	3 45	4 03	4 20	
9 00	0 18	0 36	0 54	1 12	1 30	1 48	2 06	2 24	2 42	3 00	3 18	3 36	3 54	4 12	4 30	
9 20	0 19	0 37	0 56	1 15	1 33	1 52	2 11	2 29	2 48	3 07	3 25	3 44	4 03	4 21	4 40	
9 40	0 19	0 39	0 58	1 17	1 37	1 56	2 15	2 35	2 54	3 13	3 33	3 52	4 11	4 31	4 50	
10 00	0 20	0 40	1 00	1 20	1 40	2 00	2 20	2 40	3 00	3 20	3 40	4 00	4 20	4 40	5 00	
10 20	0 21	0 41	1 02	1 23	1 43	2 04	2 25	2 45	3 06	3 27	3 47	4 08	4 29	4 49	5 10	
10 40	0 21	0 43	1 04	1 25	1 47	2 08	2 29	2 51	3 12	3 33	3 55	4 16	4 37	4 59	5 20	
<i>Ft.</i>	Correction to height															
	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>	<i>Ft.</i>
0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
1.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.4	0.4	0.5
1.5	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.4	0.5	0.6	0.7	0.8
2.0	0.0	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
2.5	0.0	0.0	0.1	0.1	0.2	0.2	0.3	0.4	0.5	0.6	0.7	0.9	1.0	1.1	1.2	
3.0	0.0	0.0	0.1	0.1	0.2	0.3	0.4	0.5	0.6	0.8	0.9	1.0	1.2	1.3	1.5	
3.5	0.0	0.0	0.1	0.2	0.2	0.3	0.4	0.6	0.7	0.9	1.0	1.2	1.4	1.6	1.8	
4.0	0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.7	0.8	1.0	1.2	1.4	1.6	1.8	2.0	
4.5	0.0	0.0	0.1	0.2	0.3	0.4	0.6	0.7	0.9	1.1	1.3	1.6	1.8	2.0	2.2	
5.0	0.0	0.1	0.1	0.2	0.3	0.5	0.6	0.8	1.0	1.2	1.5	1.7	2.0	2.2	2.5	
5.5	0.0	0.1	0.1	0.2	0.4	0.5	0.7	0.9	1.1	1.4	1.6	1.9	2.2	2.5	2.8	
6.0	0.0	0.1	0.1	0.3	0.4	0.6	0.8	1.0	1.2	1.5	1.8	2.1	2.4	2.7	3.0	
6.5	0.0	0.1	0.2	0.3	0.4	0.6	0.8	1.1	1.3	1.6	1.9	2.2	2.6	2.9	3.2	
7.0	0.0	0.1	0.2	0.3	0.5	0.7	0.9	1.2	1.4	1.8	2.1	2.4	2.8	3.1	3.5	
7.5	0.0	0.1	0.2	0.3	0.5	0.7	1.0	1.2	1.5	1.9	2.2	2.6	3.0	3.4	3.8	
8.0	0.0	0.1	0.2	0.3	0.5	0.8	1.0	1.3	1.6	2.0	2.4	2.8	3.2	3.6	4.0	
8.5	0.0	0.1	0.2	0.4	0.6	0.8	1.1	1.4	1.8	2.1	2.5	2.9	3.4	3.8	4.2	
9.0	0.0	0.1	0.2	0.4	0.6	0.9	1.2	1.5	1.9	2.2	2.7	3.1	3.6	4.0	4.5	
9.5	0.0	0.1	0.2	0.4	0.6	0.9	1.2	1.6	2.0	2.4	2.8	3.3	3.8	4.3	4.8	
10.0	0.0	0.1	0.2	0.4	0.7	1.0	1.3	1.7	2.1	2.5	3.0	3.5	4.0	4.5	5.0	
10.5	0.0	0.1	0.3	0.5	0.7	1.0	1.3	1.7	2.2	2.6	3.1	3.6	4.2	4.7	5.2	
11.0	0.0	0.1	0.3	0.5	0.7	1.1	1.4	1.7	2.3	2.8	3.3	3.8	4.4	4.9	5.5	
11.5	0.0	0.1	0.3	0.5	0.8	1.1	1.5	1.8	2.3	2.9	3.4	4.0	4.6	5.1	5.8	
12.0	0.0	0.1	0.3	0.5	0.8	1.1	1.5	1.9	2.5	3.0	3.6	4.1	4.8	5.4	6.0	
12.5	0.0	0.1	0.3	0.5	0.8	1.2	1.6	1.9	2.6	3.1	3.7	4.3	5.0	5.6	6.2	
13.0	0.0	0.1	0.3	0.6	0.9	1.2	1.7	2.2	2.7	3.2	3.9	4.5	5.1	5.8	6.5	
13.5	0.0	0.1	0.3	0.6	0.9	1.3	1.7	2.2	2.8	3.4	4.0	4.7	5.3	6.0	6.8	
14.0	0.0	0.2	0.3	0.6	0.9	1.3	1.8	2.3	2.9	3.5	4.2	4.8	5.5	6.3	7.0	
14.5	0.0	0.2	0.4	0.6	1.0	1.4	1.9	2.4	3.0	3.6	4.3	5.0	5.7	6.5	7.2	
15.0	0.0	0.2	0.4	0.6	1.0	1.4	1.9	2.5	3.1	3.8	4.4	5.2	5.9	6.7	7.5	
15.5	0.0	0.2	0.4	0.7	1.0	1.5	2.0	2.6	3.2	3.9	4.6	5.4	6.1	6.9	7.8	
16.0	0.0	0.2	0.4	0.7	1.1	1.5	2.1	2.6	3.3	4.0	4.7	5.5	6.3	7.2	8.0	
16.5	0.0	0.2	0.4	0.7	1.1	1.6	2.1	2.7	3.4	4.1	4.9	5.7	6.5	7.4	8.2	
17.0	0.0	0.2	0.4	0.7	1.1	1.6	2.2	2.8	3.5	4.2	5.0	5.9	6.7	7.6	8.5	
17.5	0.0	0.2	0.4	0.8	1.2	1.7	2.2	2.9	3.6	4.4	5.2	6.0	6.9	7.8	8.8	
18.0	0.0	0.2	0.4	0.8	1.2	1.7	2.3	3.0	3.7	4.5	5.3	6.2	7.1	8.1	9.0	
18.5	0.1	0.2	0.5	0.8	1.2	1.8	2.4	3.1	3.8	4.6	5.5	6.4	7.3	8.3	9.2	
19.0	0.1	0.2	0.5	0.8	1.3	1.8	2.4	3.1	3.9	4.8	5.6	6.6	7.5	8.5	9.5	
19.5	0.1	0.2	0.5	0.8	1.3	1.9	2.5	3.2	4.0	4.9	5.8	6.7	7.7	8.7	9.8	
20.0	0.1	0.2	0.5	0.9	1.3	1.9	2.6	3.3	4.1	5.0	5.9	6.9	7.9	9.0	10.0	

Obtain from the predictions the high water and low water, one of which is before and the other after the time for which the height is required. The difference between the times of occurrence of these tides is the duration of rise or fall, and the difference between their heights is the range of tide for the above table. Find the difference between the nearest high or low water and the time for which the height is required.

Enter the table with the duration of rise or fall, printed in heavy-faced type, which most nearly agrees with the actual value, and on that horizontal line find the time from the nearest high or low water which agrees most nearly with the corresponding actual difference. The correction sought is in the column directly below, on the line with the range of tide.

When the nearest tide is high water, subtract the correction.

When the nearest tide is low, add the correction.

TABLE 4.—LOCAL MEAN TIME OF SUNRISE AND SUNSET

EXPLANATION OF TABLE

This table gives the local mean time of the rising and setting of the Sun's upper limb for every fifth day of the year. The times were computed for the instant when the true zenith distance of the Sun's center is $90^{\circ} 50', 34'$ having been allowed for horizontal refraction and $16'$ for semidiameter. No allowance has been made for elevation of the observer.

Because of the sensible variations which may be made in the time of rising or setting of the Sun by a difference in elevation of the observer, and by changes in the refraction, any great refinement in the interpolation of intermediate dates or latitudes in this table is unnecessary.

The value obtained from table 4 may be converted to standard time by means of Table 5, which follows it.

TABLE 4.-SUNRISE AND SUNSET, 2018

Date	0°		5° N.		10° N.		15° N.		20° N.		25° N.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	06 00	18 07	06 08	17 59	06 17	17 50	06 26	17 41	06 35	17 32	06 45	17 22
6	06 02	18 10	06 10	18 01	06 19	17 53	06 27	17 44	06 37	17 35	06 46	17 26
11	06 04	18 12	06 12	18 04	06 20	17 56	06 29	17 47	06 37	17 39	06 47	17 29
16	06 06	18 13	06 14	18 06	06 22	17 58	06 29	17 50	06 38	17 42	06 47	17 33
21	06 08	18 15	06 15	18 08	06 22	18 00	06 30	17 53	06 38	17 45	06 46	17 37
26	06 09	18 16	06 16	18 09	06 23	18 03	06 30	17 56	06 37	17 48	06 45	17 40
31	06 10	18 17	06 16	18 11	06 22	18 04	06 29	17 58	06 36	17 51	06 43	17 44
Feb. 5	06 10	18 17	06 16	18 12	06 22	18 06	06 28	18 00	06 34	17 54	06 41	17 48
10	06 11	18 18	06 16	18 13	06 21	18 07	06 26	18 02	06 32	17 57	06 38	17 51
15	06 11	18 18	06 15	18 13	06 20	18 09	06 24	18 04	06 29	17 59	06 34	17 54
20	06 10	18 17	06 14	18 13	06 18	18 09	06 22	18 06	06 26	18 01	06 31	17 57
25	06 10	18 16	06 13	18 13	06 16	18 10	06 19	18 07	06 23	18 04	06 26	18 00
Mar. 2	06 09	18 15	06 11	18 13	06 14	18 11	06 16	18 08	06 19	18 05	06 22	18 03
7	06 08	18 14	06 10	18 13	06 11	18 11	06 13	18 09	06 15	18 07	06 17	18 05
12	06 06	18 13	06 08	18 12	06 09	18 11	06 10	18 10	06 11	18 09	06 12	18 08
17	06 05	18 12	06 06	18 11	06 06	18 11	06 06	18 10	06 07	18 10	06 07	18 10
22	06 04	18 10	06 03	18 10	06 03	18 11	06 03	18 11	06 03	18 12	06 02	18 12
27	06 02	18 09	06 01	18 10	06 00	18 11	05 59	18 12	05 58	18 13	05 57	18 14
Apr. 1	06 01	18 07	05 59	18 09	05 57	18 11	05 56	18 12	05 54	18 14	05 52	18 16
6	05 59	18 06	05 57	18 08	05 55	18 10	05 52	18 13	05 50	18 16	05 47	18 18
11	05 58	18 04	05 55	18 07	05 52	18 10	05 49	18 14	05 45	18 17	05 42	18 21
16	05 56	18 03	05 53	18 07	05 49	18 11	05 45	18 14	05 41	18 19	05 37	18 23
21	05 55	18 02	05 51	18 06	05 47	18 11	05 42	18 15	05 38	18 20	05 33	18 25
26	05 54	18 01	05 50	18 06	05 45	18 11	05 40	18 16	05 34	18 22	05 28	18 28
May. 1	05 54	18 01	05 48	18 06	05 43	18 12	05 37	18 17	05 31	18 23	05 24	18 30
6	05 53	18 00	05 47	18 06	05 41	18 12	05 35	18 19	05 28	18 25	05 21	18 33
11	05 53	18 00	05 46	18 06	05 40	18 13	05 33	18 20	05 26	18 27	05 18	18 35
16	05 53	18 00	05 46	18 07	05 39	18 14	05 31	18 21	05 24	18 29	05 15	18 38
21	05 53	18 00	05 46	18 08	05 38	18 15	05 30	18 23	05 22	18 31	05 13	18 40
26	05 53	18 01	05 46	18 08	05 38	18 16	05 30	18 25	05 21	18 33	05 12	18 43
31	05 54	18 01	05 46	18 09	05 38	18 18	05 29	18 26	05 20	18 35	05 10	18 45
Jun. 5	05 55	18 02	05 47	18 10	05 38	18 19	05 29	18 28	05 20	18 37	05 10	18 47
10	05 56	18 03	05 47	18 12	05 39	18 20	05 30	18 29	05 20	18 39	05 10	18 49
15	05 57	18 04	05 48	18 13	05 39	18 22	05 30	18 31	05 20	18 41	05 10	18 51
20	05 58	18 05	05 49	18 14	05 40	18 23	05 31	18 32	05 21	18 42	05 11	18 52
25	05 59	18 06	05 50	18 15	05 41	18 24	05 32	18 33	05 22	18 43	05 12	18 53
30	06 00	18 07	05 51	18 16	05 43	18 25	05 34	18 34	05 24	18 43	05 14	18 54
Jul. 5	06 01	18 08	05 53	18 17	05 44	18 25	05 35	18 34	05 26	18 44	05 15	18 54
10	06 02	18 09	05 54	18 17	05 45	18 26	05 36	18 34	05 27	18 43	05 17	18 53
15	06 02	18 10	05 54	18 17	05 46	18 26	05 38	18 34	05 29	18 43	05 20	18 52
20	06 03	18 10	05 55	18 17	05 48	18 25	05 40	18 33	05 31	18 42	05 22	18 51
25	06 03	18 10	05 56	18 17	05 49	18 24	05 41	18 32	05 33	18 40	05 24	18 49
30	06 03	18 10	05 56	18 17	05 49	18 23	05 42	18 30	05 35	18 38	05 27	18 46
Aug. 4	06 03	18 10	05 56	18 16	05 50	18 22	05 43	18 29	05 36	18 36	05 29	18 43
9	06 02	18 09	05 56	18 15	05 51	18 20	05 45	18 26	05 38	18 33	05 31	18 39
14	06 01	18 08	05 56	18 13	05 51	18 18	05 45	18 24	05 40	18 29	05 34	18 36
19	06 00	18 07	05 56	18 11	05 51	18 16	05 46	18 21	05 41	18 26	05 36	18 31
24	05 59	18 06	05 55	18 10	05 51	18 14	05 47	18 18	05 42	18 22	05 38	18 27
29	05 58	18 04	05 54	18 07	05 51	18 11	05 47	18 14	05 44	18 18	05 40	18 22
Sep. 3	05 56	18 03	05 53	18 05	05 51	18 08	05 48	18 11	05 45	18 14	05 42	18 17
8	05 54	18 01	05 52	18 03	05 50	18 05	05 48	18 07	05 46	18 09	05 43	18 12
13	05 53	17 59	05 51	18 00	05 50	18 02	05 49	18 03	05 47	18 05	05 45	18 06
18	05 51	17 57	05 50	17 58	05 50	17 59	05 49	17 59	05 48	18 00	05 47	18 01
23	05 49	17 56	05 49	17 56	05 49	17 55	05 49	17 55	05 49	17 55	05 49	17 55
28	05 47	17 54	05 48	17 53	05 49	17 52	05 49	17 52	05 50	17 51	05 51	17 50
Oct. 3	05 46	17 52	05 47	17 51	05 49	17 49	05 50	17 48	05 51	17 46	05 53	17 45
8	05 44	17 51	05 46	17 49	05 48	17 47	05 50	17 44	05 53	17 42	05 55	17 40
13	05 43	17 50	05 46	17 47	05 48	17 44	05 51	17 41	05 54	17 38	05 57	17 35
18	05 42	17 48	05 45	17 45	05 49	17 42	05 52	17 38	05 56	17 34	06 00	17 30
23	05 41	17 48	05 45	17 44	05 49	17 39	05 53	17 35	05 58	17 31	06 02	17 26
28	05 40	17 47	05 45	17 42	05 50	17 38	05 55	17 33	06 00	17 28	06 05	17 22
Nov. 2	05 40	17 47	05 45	17 42	05 51	17 36	05 56	17 31	06 02	17 25	06 08	17 19
7	05 40	17 47	05 46	17 41	05 52	17 35	05 58	17 29	06 04	17 23	06 11	17 16
12	05 41	17 48	05 47	17 41	05 53	17 35	06 00	17 28	06 07	17 21	06 14	17 14
17	05 41	17 49	05 48	17 42	05 55	17 35	06 02	17 27	06 10	17 20	06 18	17 12
22	05 43	17 50	05 50	17 42	05 57	17 35	06 05	17 27	06 13	17 19	06 21	17 11
27	05 44	17 51	05 52	17 43	05 59	17 36	06 08	17 28	06 16	17 19	06 25	17 10
Dec. 2	05 46	17 53	05 54	17 45	06 02	17 37	06 10	17 28	06 19	17 19	06 29	17 10
7	05 48	17 55	05 56	17 47	06 04	17 38	06 13	17 30	06 22	17 20	06 32	17 11
12	05 50	17 57	05 58	17 49	06 07	17 40	06 16	17 31	06 25	17 22	06 35	17 12
17	05 52	18 00	06 01	17 51	06 10	17 42	06 19	17 33	06 28	17 24	06 38	17 14
22	05 55	18 02	06 03	17 54	06 12	17 45	06 21	17 36	06 31	17 26	06 41	17 16
27	05 57	18 05	06 06	17 56	06 15	17 47	06 24	17 38	06 33	17 29	06 43	17 19

Local mean time. To obtain standard time of rise or set, see Table 5.

TABLE 4.-SUNRISE AND SUNSET, 2018

Date	30°N.		32°N.		34°N.		36°N.		38°N.		40°N.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	06 56	17 11	07 01	17 07	07 05	17 02	07 11	16 57	07 16	16 51	07 22	16 45
6	06 57	17 15	07 01	17 11	07 06	17 06	07 11	17 01	07 16	16 55	07 22	16 50
11	06 57	17 19	07 01	17 15	07 06	17 10	07 11	17 05	07 16	17 00	07 21	16 55
16	06 56	17 23	07 01	17 19	07 05	17 15	07 10	17 10	07 14	17 05	07 20	17 00
21	06 55	17 28	06 59	17 24	07 03	17 20	07 08	17 15	07 12	17 11	07 17	17 06
26	06 53	17 32	06 57	17 28	07 01	17 24	07 05	17 20	07 09	17 16	07 14	17 12
31	06 51	17 36	06 54	17 33	06 58	17 29	07 02	17 26	07 05	17 22	07 10	17 18
Feb. 5	06 48	17 41	06 51	17 37	06 54	17 34	06 57	17 31	07 01	17 27	07 05	17 24
10	06 44	17 45	06 47	17 42	06 50	17 39	06 53	17 36	06 56	17 33	06 59	17 30
15	06 40	17 49	06 42	17 46	06 45	17 44	06 47	17 41	06 50	17 39	06 53	17 36
20	06 35	17 52	06 37	17 50	06 40	17 48	06 42	17 46	06 44	17 44	06 47	17 42
25	06 30	17 56	06 32	17 55	06 34	17 53	06 36	17 51	06 37	17 49	06 40	17 47
Mar. 2	06 25	18 00	06 26	17 58	06 28	17 57	06 29	17 56	06 31	17 54	06 32	17 53
7	06 19	18 03	06 20	18 02	06 21	18 01	06 22	18 00	06 23	17 59	06 24	17 58
12	06 14	18 06	06 14	18 06	06 15	18 05	06 15	18 05	06 16	18 04	06 17	18 04
17	06 08	18 09	06 08	18 09	06 08	18 09	06 08	18 09	06 08	18 09	06 09	18 09
22	06 02	18 13	06 01	18 13	06 01	18 13	06 01	18 13	06 01	18 14	06 01	18 14
27	05 56	18 16	05 55	18 16	05 54	18 17	05 54	18 18	05 53	18 18	05 52	18 19
Apr. 1	05 50	18 19	05 49	18 20	05 48	18 21	05 47	18 22	05 46	18 23	05 44	18 24
6	05 44	18 22	05 42	18 23	05 41	18 24	05 40	18 26	05 38	18 27	05 36	18 29
11	05 38	18 25	05 36	18 26	05 34	18 28	05 33	18 30	05 31	18 32	05 29	18 34
16	05 32	18 28	05 30	18 30	05 28	18 32	05 26	18 34	05 24	18 37	05 21	18 39
21	05 27	18 31	05 25	18 33	05 22	18 36	05 19	18 39	05 17	18 41	05 14	18 44
26	05 22	18 34	05 19	18 37	05 16	18 40	05 13	18 43	05 10	18 46	05 07	18 49
May. 1	05 17	18 37	05 14	18 40	05 11	18 44	05 08	18 47	05 04	18 51	05 00	18 55
6	05 13	18 40	05 10	18 44	05 06	18 48	05 02	18 51	04 59	18 55	04 54	19 00
11	05 09	18 44	05 06	18 47	05 02	18 51	04 58	18 55	04 53	19 00	04 49	19 04
16	05 06	18 47	05 02	18 51	04 58	18 55	04 54	19 00	04 49	19 04	04 44	19 09
21	05 03	18 50	04 59	18 54	04 55	18 59	04 50	19 03	04 45	19 08	04 40	19 14
26	05 01	18 53	04 57	18 58	04 52	19 02	04 47	19 07	04 42	19 12	04 36	19 18
31	05 00	18 56	04 55	19 01	04 50	19 05	04 45	19 11	04 40	19 16	04 34	19 22
Jun. 5	04 59	18 58	04 54	19 03	04 49	19 08	04 44	19 14	04 38	19 19	04 32	19 25
10	04 58	19 01	04 53	19 06	04 48	19 11	04 43	19 16	04 37	19 22	04 31	19 28
15	04 59	19 03	04 54	19 07	04 48	19 13	04 43	19 18	04 37	19 24	04 31	19 30
20	04 59	19 04	04 54	19 09	04 49	19 14	04 43	19 20	04 37	19 26	04 31	19 32
25	05 00	19 05	04 55	19 10	04 50	19 15	04 45	19 21	04 39	19 27	04 32	19 33
30	05 02	19 05	04 57	19 10	04 52	19 15	04 46	19 21	04 41	19 27	04 34	19 33
Jul. 5	05 04	19 05	04 59	19 10	04 54	19 15	04 49	19 20	04 43	19 26	04 37	19 32
10	05 06	19 04	05 02	19 09	04 57	19 14	04 52	19 19	04 46	19 24	04 40	19 30
15	05 09	19 03	05 05	19 07	05 00	19 12	04 55	19 17	04 49	19 22	04 44	19 28
20	05 12	19 01	05 08	19 05	05 03	19 09	04 58	19 14	04 53	19 19	04 48	19 25
25	05 15	18 58	05 11	19 02	05 06	19 06	05 02	19 11	04 57	19 16	04 52	19 21
30	05 18	18 55	05 14	18 59	05 10	19 03	05 06	19 07	05 01	19 11	04 56	19 16
Aug. 4	05 21	18 51	05 17	18 55	05 13	18 58	05 10	19 02	05 05	19 06	05 01	19 11
9	05 24	18 47	05 21	18 50	05 17	18 53	05 14	18 57	05 10	19 01	05 06	19 05
14	05 27	18 42	05 24	18 45	05 21	18 48	05 18	18 51	05 14	18 55	05 10	18 58
19	05 30	18 37	05 27	18 40	05 24	18 42	05 21	18 45	05 18	18 48	05 15	18 51
24	05 32	18 32	05 30	18 34	05 28	18 36	05 25	18 39	05 23	18 41	05 20	18 44
29	05 35	18 26	05 33	18 28	05 31	18 30	05 29	18 32	05 27	18 34	05 25	18 36
Sep. 3	05 38	18 20	05 36	18 22	05 35	18 23	05 33	18 25	05 31	18 27	05 29	18 29
8	05 41	18 14	05 40	18 15	05 38	18 17	05 37	18 18	05 36	18 19	05 34	18 20
13	05 43	18 08	05 43	18 09	05 42	18 10	05 41	18 10	05 40	18 11	05 39	18 12
18	05 46	18 02	05 46	18 02	05 45	18 03	05 45	18 03	05 44	18 04	05 44	18 04
23	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 48	17 56	05 48	17 56
28	05 52	17 49	05 52	17 49	05 52	17 49	05 52	17 48	05 53	17 48	05 53	17 48
Oct. 3	05 54	17 43	05 55	17 43	05 56	17 42	05 57	17 41	05 57	17 40	05 58	17 39
8	05 57	17 37	05 58	17 36	05 59	17 35	06 01	17 34	06 02	17 33	06 03	17 31
13	06 00	17 32	06 02	17 30	06 03	17 29	06 05	17 27	06 06	17 25	06 08	17 24
18	06 04	17 26	06 06	17 24	06 07	17 23	06 09	17 21	06 11	17 18	06 13	17 16
23	06 07	17 21	06 09	17 19	06 11	17 17	06 14	17 14	06 16	17 12	06 19	17 09
28	06 11	17 16	06 13	17 14	06 16	17 11	06 18	17 09	06 21	17 06	06 24	17 03
Nov. 2	06 14	17 12	06 17	17 09	06 20	17 06	06 23	17 03	06 27	17 00	06 30	16 57
7	06 18	17 09	06 22	17 05	06 25	17 02	06 28	16 59	06 32	16 55	06 36	16 51
12	06 22	17 06	06 26	17 02	06 29	16 58	06 33	16 55	06 37	16 51	06 41	16 46
17	06 27	17 03	06 30	16 59	06 34	16 55	06 38	16 51	06 43	16 47	06 47	16 42
22	06 31	17 01	06 35	16 57	06 39	16 53	06 43	16 49	06 48	16 44	06 53	16 39
27	06 35	17 00	06 39	16 56	06 43	16 51	06 48	16 47	06 53	16 42	06 58	16 37
Dec. 2	06 39	17 00	06 43	16 55	06 48	16 51	06 53	16 46	06 58	16 41	07 03	16 35
7	06 43	17 00	06 47	16 55	06 52	16 51	06 57	16 46	07 02	16 40	07 08	16 35
12	06 46	17 01	06 51	16 56	06 56	16 51	07 01	16 46	07 06	16 41	07 12	16 35
17	06 49	17 03	06 54	16 58	06 59	16 53	07 04	16 48	07 10	16 42	07 16	16 36
22	06 52	17 05	06 57	17 00	07 02	16 55	07 07	16 50	07 13	16 44	07 19	16 38
27	06 54	17 08	06 59	17 03	07 04	16 58	07 09	16 53	07 15	16 47	07 21	16 41

Local mean time. To obtain standard time of rise or set, see Table 5.

Date	42°N.		44°N.		46°N.		48°N.		50°N.		52°N.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	07 28	16 39	07 35	16 33	07 42	16 25	07 50	16 17	07 59	16 09	08 08	15 59
6	07 28	16 44	07 35	16 37	07 42	16 30	07 49	16 23	07 58	16 14	08 07	16 05
11	07 27	16 49	07 33	16 43	07 40	16 36	07 47	16 29	07 55	16 21	08 04	16 12
16	07 25	16 55	07 31	16 49	07 37	16 43	07 44	16 36	07 52	16 28	08 00	16 20
21	07 22	17 01	07 28	16 55	07 34	16 49	07 40	16 43	07 47	16 36	07 55	16 28
26	07 18	17 07	07 24	17 02	07 29	16 56	07 35	16 50	07 42	16 44	07 49	16 37
31	07 14	17 13	07 19	17 09	07 24	17 04	07 29	16 58	07 35	16 52	07 42	16 46
Feb. 5	07 09	17 20	07 13	17 16	07 17	17 11	07 22	17 06	07 28	17 01	07 34	16 55
10	07 03	17 26	07 06	17 23	07 10	17 19	07 15	17 14	07 20	17 10	07 25	17 04
15	06 56	17 33	06 59	17 29	07 03	17 26	07 07	17 22	07 11	17 18	07 15	17 14
20	06 49	17 39	06 52	17 36	06 55	17 33	06 58	17 30	07 01	17 27	07 05	17 23
25	06 42	17 45	06 44	17 43	06 46	17 41	06 49	17 38	06 52	17 35	06 55	17 32
Mar. 2	06 34	17 51	06 36	17 49	06 37	17 48	06 39	17 46	06 42	17 44	06 44	17 41
7	06 26	17 57	06 27	17 56	06 28	17 55	06 30	17 53	06 31	17 52	06 33	17 50
12	06 17	18 03	06 18	18 02	06 19	18 01	06 20	18 01	06 20	18 00	06 21	17 59
17	06 09	18 09	06 09	18 08	06 09	18 08	06 09	18 08	06 10	18 08	06 10	18 08
22	06 00	18 14	06 00	18 15	06 00	18 15	05 59	18 15	05 59	18 16	05 58	18 16
27	05 52	18 20	05 51	18 21	05 50	18 22	05 49	18 23	05 48	18 24	05 47	18 25
Apr. 1	05 43	18 25	05 42	18 27	05 40	18 28	05 39	18 30	05 37	18 32	05 35	18 34
6	05 35	18 31	05 33	18 33	05 31	18 35	05 29	18 37	05 26	18 40	05 24	18 42
11	05 26	18 36	05 24	18 39	05 21	18 42	05 19	18 44	05 16	18 47	05 13	18 51
16	05 18	18 42	05 15	18 45	05 12	18 48	05 09	18 52	05 05	18 55	05 02	18 59
21	05 11	18 48	05 07	18 51	05 04	18 55	05 00	18 59	04 55	19 03	04 51	19 08
26	05 03	18 53	04 59	18 57	04 55	19 01	04 51	19 06	04 46	19 11	04 41	19 16
May. 1	04 56	18 59	04 52	19 03	04 47	19 08	04 42	19 13	04 37	19 18	04 31	19 25
6	04 50	19 04	04 45	19 09	04 40	19 14	04 34	19 20	04 28	19 26	04 21	19 33
11	04 44	19 09	04 39	19 15	04 33	19 20	04 27	19 27	04 20	19 34	04 13	19 41
16	04 39	19 15	04 33	19 20	04 27	19 26	04 20	19 33	04 13	19 41	04 05	19 49
21	04 34	19 19	04 28	19 26	04 22	19 32	04 14	19 39	04 07	19 47	03 58	19 56
26	04 31	19 24	04 24	19 30	04 17	19 38	04 10	19 45	04 01	19 54	03 52	20 03
31	04 28	19 28	04 21	19 35	04 14	19 42	04 06	19 50	03 57	19 59	03 47	20 09
Jun. 5	04 25	19 32	04 18	19 39	04 11	19 46	04 03	19 55	03 53	20 04	03 43	20 14
10	04 24	19 35	04 17	19 42	04 09	19 50	04 01	19 58	03 51	20 08	03 41	20 19
15	04 24	19 37	04 17	19 45	04 09	19 53	04 00	20 01	03 50	20 11	03 40	20 22
20	04 24	19 39	04 17	19 46	04 09	19 54	04 00	20 03	03 51	20 13	03 40	20 24
25	04 26	19 40	04 18	19 47	04 10	19 55	04 02	20 04	03 52	20 13	03 41	20 24
30	04 28	19 40	04 20	19 47	04 13	19 55	04 04	20 03	03 54	20 13	03 44	20 23
Jul. 5	04 30	19 39	04 23	19 46	04 16	19 53	04 07	20 02	03 58	20 11	03 47	20 21
10	04 34	19 37	04 27	19 44	04 19	19 51	04 11	19 59	04 02	20 08	03 52	20 18
15	04 38	19 34	04 31	19 41	04 24	19 48	04 16	19 55	04 07	20 04	03 58	20 13
20	04 42	19 30	04 36	19 37	04 29	19 43	04 21	19 51	04 13	19 59	04 04	20 08
25	04 46	19 26	04 41	19 32	04 34	19 38	04 27	19 45	04 20	19 53	04 11	20 01
30	04 51	19 21	04 46	19 26	04 40	19 32	04 33	19 39	04 26	19 46	04 19	19 53
Aug. 4	04 56	19 15	04 51	19 20	04 46	19 26	04 40	19 31	04 33	19 38	04 26	19 45
9	05 01	19 09	04 57	19 13	04 52	19 18	04 47	19 24	04 41	19 29	04 34	19 36
14	05 07	19 02	05 03	19 06	04 58	19 10	04 53	19 15	04 48	19 20	04 42	19 26
19	05 12	18 55	05 08	18 58	05 04	19 02	05 00	19 06	04 55	19 11	04 50	19 16
24	05 17	18 47	05 14	18 50	05 11	18 53	05 07	18 57	05 03	19 01	04 59	19 05
29	05 22	18 39	05 20	18 41	05 17	18 44	05 14	18 47	05 10	18 51	05 07	18 54
Sep. 3	05 27	18 31	05 25	18 33	05 23	18 35	05 20	18 37	05 18	18 40	05 15	18 43
8	05 33	18 22	05 31	18 24	05 29	18 25	05 27	18 27	05 25	18 29	05 23	18 31
13	05 38	18 13	05 37	18 14	05 35	18 16	05 34	18 17	05 33	18 18	05 31	18 20
18	05 43	18 05	05 42	18 05	05 42	18 06	05 41	18 06	05 40	18 07	05 39	18 08
23	05 48	17 56	05 48	17 56	05 48	17 56	05 48	17 56	05 48	17 56	05 47	17 56
28	05 54	17 47	05 54	17 47	05 54	17 46	05 55	17 46	05 55	17 45	05 56	17 45
Oct. 3	05 59	17 39	06 00	17 38	06 01	17 37	06 02	17 36	06 03	17 34	06 04	17 33
8	06 04	17 30	06 06	17 29	06 07	17 27	06 09	17 25	06 11	17 24	06 12	17 22
13	06 10	17 22	06 12	17 20	06 14	17 18	06 16	17 16	06 18	17 13	06 21	17 11
18	06 16	17 14	06 18	17 12	06 21	17 09	06 23	17 06	06 26	17 03	06 30	17 00
23	06 22	17 07	06 24	17 04	06 28	17 00	06 31	16 57	06 35	16 53	06 39	16 49
28	06 28	16 59	06 31	16 56	06 35	16 52	06 39	16 48	06 43	16 44	06 47	16 39
Nov. 2	06 34	16 53	06 38	16 49	06 42	16 45	06 46	16 40	06 51	16 35	06 56	16 30
7	06 40	16 47	06 44	16 43	06 49	16 38	06 54	16 33	06 59	16 27	07 05	16 21
12	06 46	16 42	06 51	16 37	06 56	16 32	07 02	16 26	07 08	16 20	07 14	16 13
17	06 52	16 37	06 57	16 32	07 03	16 26	07 09	16 20	07 16	16 14	07 23	16 06
22	06 58	16 34	07 04	16 28	07 10	16 22	07 16	16 15	07 24	16 08	07 32	16 00
27	07 04	16 31	07 10	16 25	07 16	16 19	07 23	16 12	07 31	16 04	07 39	15 55
Dec. 2	07 09	16 29	07 16	16 23	07 22	16 16	07 30	16 09	07 38	16 01	07 47	15 52
7	07 14	16 28	07 21	16 22	07 28	16 15	07 35	16 07	07 44	15 59	07 53	15 49
12	07 19	16 29	07 25	16 22	07 33	16 15	07 40	16 07	07 49	15 58	07 59	15 48
17	07 22	16 30	07 29	16 23	07 36	16 16	07 44	16 08	07 53	15 59	08 03	15 49
22	07 25	16 32	07 32	16 25	07 39	16 18	07 47	16 10	07 56	16 01	08 06	15 51
27	07 27	16 35	07 34	16 28	07 41	16 21	07 49	16 13	07 58	16 04	08 08	15 54

Local mean time. To obtain standard time of rise or set, see Table 5.

TABLE 4.-SUNRISE AND SUNSET, 2018

Date	54°N.		56°N.		58°N.		60°N.		62°N.		64°N.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	08 19	15 48	08 31	15 36	08 45	15 22	09 02	15 05	09 23	14 45	09 49	14 18
6	08 17	15 55	08 29	15 43	08 43	15 29	08 59	15 13	09 18	14 54	09 43	14 29
11	08 14	16 02	08 25	15 51	08 38	15 38	08 53	15 23	09 11	15 05	09 34	14 42
16	08 10	16 10	08 20	16 00	08 32	15 48	08 46	15 34	09 03	15 17	09 23	14 57
21	08 04	16 19	08 13	16 10	08 25	15 59	08 37	15 46	08 53	15 31	09 11	15 13
26	07 57	16 29	08 06	16 20	08 16	16 10	08 27	15 58	08 41	15 45	08 57	15 29
31	07 49	16 39	07 57	16 31	08 06	16 22	08 16	16 11	08 28	15 59	08 43	15 45
Feb. 5	07 40	16 49	07 47	16 42	07 55	16 34	08 04	16 25	08 15	16 14	08 27	16 02
10	07 30	16 59	07 37	16 53	07 44	16 46	07 52	16 38	08 01	16 29	08 11	16 18
15	07 20	17 09	07 25	17 04	07 32	16 58	07 38	16 51	07 46	16 43	07 55	16 34
20	07 09	17 19	07 14	17 15	07 19	17 10	07 25	17 04	07 31	16 58	07 38	16 50
25	06 58	17 29	07 02	17 25	07 06	17 21	07 10	17 17	07 15	17 12	07 21	17 06
Mar. 2	06 46	17 39	06 49	17 36	06 52	17 33	06 56	17 30	07 00	17 26	07 04	17 21
7	06 35	17 49	06 37	17 47	06 39	17 45	06 41	17 42	06 44	17 40	06 47	17 37
12	06 22	17 58	06 24	17 57	06 25	17 56	06 26	17 55	06 28	17 53	06 29	17 52
17	06 10	18 08	06 10	18 07	06 11	18 07	06 11	18 07	06 11	18 07	06 12	18 06
22	05 58	18 17	05 57	18 18	05 57	18 18	05 56	18 19	05 55	18 20	05 54	18 21
27	05 46	18 26	05 44	18 28	05 43	18 30	05 41	18 31	05 39	18 34	05 37	18 36
Apr. 1	05 33	18 36	05 31	18 38	05 28	18 41	05 26	18 44	05 23	18 47	05 19	18 51
6	05 21	18 45	05 18	18 48	05 14	18 52	05 11	18 56	05 06	19 00	05 01	19 06
11	05 09	18 54	05 05	18 58	05 01	19 03	04 56	19 08	04 50	19 14	04 44	19 21
16	04 57	19 04	04 52	19 09	04 47	19 14	04 41	19 20	04 34	19 27	04 26	19 36
21	04 46	19 13	04 40	19 19	04 34	19 25	04 26	19 33	04 18	19 41	04 08	19 51
26	04 35	19 22	04 28	19 29	04 21	19 37	04 12	19 45	04 02	19 55	03 51	20 07
May. 1	04 24	19 31	04 16	19 39	04 08	19 48	03 58	19 58	03 47	20 09	03 34	20 23
6	04 14	19 41	04 05	19 49	03 56	19 59	03 45	20 10	03 32	20 23	03 17	20 39
11	04 04	19 49	03 55	19 59	03 45	20 10	03 32	20 22	03 18	20 37	03 00	20 55
16	03 56	19 58	03 46	20 08	03 34	20 20	03 20	20 34	03 04	20 51	02 44	21 11
21	03 48	20 06	03 37	20 17	03 24	20 30	03 09	20 45	02 51	21 04	02 29	21 27
26	03 41	20 14	03 30	20 26	03 16	20 39	03 00	20 56	02 40	21 16	02 14	21 42
31	03 36	20 20	03 23	20 33	03 09	20 48	02 51	21 06	02 29	21 28	02 01	21 57
Jun. 5	03 32	20 26	03 18	20 39	03 03	20 55	02 44	21 14	02 21	21 38	01 49	22 10
10	03 29	20 31	03 15	20 44	02 59	21 01	02 39	21 20	02 14	21 46	01 40	22 21
15	03 27	20 34	03 13	20 48	02 57	21 05	02 36	21 25	02 10	21 51	01 33	22 28
20	03 27	20 36	03 13	20 50	02 56	21 07	02 36	21 28	02 09	21 54	01 31	22 32
25	03 29	20 36	03 15	20 51	02 58	21 07	02 37	21 28	02 11	21 54	01 33	22 31
30	03 32	20 35	03 18	20 49	03 01	21 06	02 41	21 26	02 16	21 51	01 40	22 27
Jul. 5	03 36	20 33	03 22	20 46	03 06	21 02	02 47	21 21	02 23	21 45	01 49	22 18
10	03 41	20 29	03 28	20 42	03 13	20 57	02 55	21 15	02 32	21 37	02 01	22 07
15	03 47	20 24	03 35	20 36	03 20	20 50	03 03	21 07	02 43	21 28	02 15	21 54
20	03 54	20 18	03 43	20 29	03 29	20 42	03 14	20 58	02 54	21 16	02 30	21 40
25	04 02	20 10	03 51	20 21	03 39	20 33	03 24	20 47	03 07	21 04	02 46	21 25
30	04 10	20 02	04 00	20 12	03 49	20 23	03 36	20 35	03 20	20 51	03 01	21 09
Aug. 4	04 18	19 53	04 09	20 02	03 59	20 11	03 48	20 23	03 34	20 36	03 17	20 53
9	04 27	19 43	04 19	19 51	04 10	20 00	04 00	20 10	03 47	20 22	03 33	20 36
14	04 36	19 32	04 29	19 39	04 21	19 47	04 12	19 56	04 01	20 06	03 49	20 19
19	04 45	19 21	04 39	19 27	04 32	19 34	04 24	19 42	04 14	19 51	04 04	20 01
24	04 54	19 10	04 48	19 15	04 42	19 21	04 36	19 28	04 28	19 35	04 19	19 44
29	05 03	18 58	04 58	19 02	04 53	19 07	04 48	19 13	04 41	19 19	04 34	19 26
Sep. 3	05 11	18 46	05 08	18 50	05 04	18 53	04 59	18 58	04 54	19 03	04 48	19 09
8	05 20	18 34	05 18	18 36	05 15	18 39	05 11	18 43	05 07	18 47	05 03	18 51
13	05 29	18 21	05 27	18 23	05 25	18 25	05 23	18 28	05 20	18 30	05 17	18 33
18	05 38	18 09	05 37	18 10	05 36	18 11	05 35	18 12	05 33	18 14	05 31	18 15
23	05 47	17 57	05 47	17 57	05 47	17 57	05 46	17 57	05 46	17 57	05 45	17 58
28	05 56	17 44	05 57	17 43	05 57	17 43	05 58	17 42	05 59	17 41	06 00	17 40
Oct. 3	06 05	17 32	06 07	17 30	06 08	17 29	06 10	17 27	06 12	17 25	06 14	17 23
8	06 14	17 20	06 17	17 17	06 19	17 15	06 22	17 12	06 25	17 09	06 29	17 05
13	06 24	17 08	06 27	17 05	06 30	17 01	06 34	16 57	06 38	16 53	06 43	16 48
18	06 33	16 56	06 37	16 52	06 42	16 48	06 46	16 43	06 52	16 37	06 58	16 31
23	06 43	16 45	06 48	16 40	06 53	16 35	06 59	16 29	07 06	16 22	07 14	16 14
28	06 53	16 34	06 58	16 29	07 04	16 22	07 12	16 15	07 20	16 07	07 29	15 57
Nov. 2	07 02	16 24	07 09	16 17	07 16	16 10	07 24	16 02	07 34	15 52	07 45	15 41
7	07 12	16 15	07 19	16 07	07 28	15 59	07 37	15 49	07 48	15 38	08 01	15 25
12	07 22	16 06	07 30	15 58	07 39	15 48	07 50	15 37	08 03	15 25	08 17	15 10
17	07 31	15 58	07 40	15 49	07 51	15 39	08 03	15 27	08 17	15 13	08 33	14 56
22	07 40	15 51	07 50	15 41	08 02	15 30	08 15	15 17	08 30	15 01	08 49	14 42
27	07 49	15 46	08 00	15 35	08 12	15 23	08 26	15 08	08 43	14 51	09 04	14 30
Dec. 2	07 57	15 42	08 08	15 30	08 21	15 17	08 37	15 02	08 55	14 43	09 18	14 20
7	08 04	15 39	08 16	15 27	08 30	15 13	08 46	14 57	09 06	14 37	09 31	14 12
12	08 10	15 38	08 22	15 25	08 36	15 11	08 53	14 54	09 14	14 33	09 41	14 06
17	08 14	15 38	08 27	15 25	08 42	15 11	08 59	14 53	09 20	14 32	09 49	14 04
22	08 17	15 40	08 30	15 27	08 45	15 12	09 02	14 55	09 24	14 33	09 52	14 05
27	08 19	15 43	08 32	15 31	08 46	15 16	09 03	14 59	09 25	14 37	09 53	14 09

Local mean time. To obtain standard time of rise or set, see Table 5.

TABLE 4.-SUNRISE AND SUNSET, 2018

Date	66°N.		68°N.		70°N.		72°N.		74°N.		76°N.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	10 28	13 40	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
6	10 17	13 55	11 21	12 51	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
11	10 05	14 12	10 53	13 24	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
16	09 50	14 30	10 28	13 52	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
21	09 34	14 49	10 05	14 18	10 56	13 27	-- --	-- --	-- --	-- --	-- --	-- --
26	09 17	15 09	09 43	14 43	10 21	14 05	11 39	12 47	-- --	-- --	-- --	-- --
31	09 00	15 28	09 22	15 06	09 51	14 37	10 36	13 52	-- --	-- --	-- --	-- --
Feb. 5	08 42	15 47	09 00	15 29	09 24	15 05	09 57	14 32	10 52	13 38	-- --	-- --
10	08 24	16 06	08 39	15 50	08 59	15 31	09 24	15 06	10 00	14 30	11 08	13 22
15	08 06	16 24	08 18	16 11	08 34	15 56	08 54	15 36	09 21	15 09	10 01	14 29
20	07 47	16 42	07 57	16 32	08 10	16 19	08 26	16 04	08 46	15 43	09 14	15 15
25	07 28	16 59	07 36	16 51	07 46	16 42	07 58	16 30	08 14	16 14	08 34	15 54
Mar. 2	07 09	17 16	07 16	17 10	07 23	17 03	07 32	16 54	07 43	16 43	07 58	16 29
7	06 51	17 33	06 55	17 29	07 00	17 24	07 06	17 18	07 13	17 11	07 23	17 02
12	06 31	17 50	06 34	17 48	06 37	17 45	06 40	17 42	06 44	17 38	06 49	17 33
17	06 12	18 06	06 13	18 06	06 14	18 05	06 14	18 05	06 15	18 04	06 16	18 03
22	05 53	18 22	05 52	18 24	05 50	18 26	05 49	18 28	05 46	18 30	05 43	18 34
27	05 34	18 39	05 31	18 42	05 27	18 46	05 23	18 51	05 17	18 57	05 10	19 05
Apr. 1	05 15	18 55	05 10	19 00	05 04	19 07	04 56	19 14	04 47	19 24	04 35	19 36
6	04 55	19 12	04 48	19 19	04 40	19 28	04 30	19 38	04 17	19 52	04 00	20 10
11	04 36	19 28	04 27	19 38	04 16	19 49	04 02	20 03	03 45	20 22	03 21	20 47
16	04 17	19 45	04 05	19 57	03 51	20 11	03 34	20 30	03 11	20 54	02 38	21 30
21	03 57	20 03	03 43	20 17	03 26	20 35	03 04	20 58	02 33	21 31	01 43	22 26
26	03 38	20 21	03 21	20 38	03 00	21 00	02 31	21 30	01 47	22 17	** **	** **
May. 1	03 18	20 39	02 58	21 00	02 32	21 27	01 53	22 08	00 31		** **	** **
6	02 58	20 58	02 34	21 23	02 01	21 58	01 03	23 04	** **	** **	** **	** **
11	02 38	21 17	02 09	21 48	01 24	22 36	** **	** **	** **	** **	** **	** **
16	02 19	21 37	01 42	22 16	00 24		** **	** **	** **	** **	** **	** **
21	01 59	21 58	01 10	22 50	** **	** **	** **	** **	** **	** **	** **	** **
26	01 38	22 20	00 19		** **	** **	** **	** **	** **	** **	** **	** **
31	01 17	22 42	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
Jun. 5	00 55	23 06	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
10	00 29	23 36	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
15	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
20	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
25	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
30		23 48	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
Jul. 5	00 47	23 17	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
10	01 12	22 54	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
15	01 35	22 33	** **	** **	** **	** **	** **	** **	** **	** **	** **	** **
20	01 57	22 13	00 56	23 08	** **	** **	** **	** **	** **	** **	** **	** **
25	02 17	21 52	01 35	22 33	** **	** **	** **	** **	** **	** **	** **	** **
30	02 37	21 32	02 04	22 04	01 06	22 57	** **	** **	** **	** **	** **	** **
Aug. 4	02 57	21 13	02 30	21 39	01 50	22 16		23 38	** **	** **	** **	** **
9	03 15	20 53	02 53	21 14	02 23	21 44	01 34	22 28	** **	** **	** **	** **
14	03 34	20 33	03 15	20 51	02 51	21 15	02 17	21 47	01 17	22 40	** **	** **
19	03 51	20 14	03 36	20 29	03 16	20 48	02 50	21 12	02 12	21 48	00 54	22 53
24	04 08	19 54	03 55	20 07	03 40	20 22	03 19	20 41	02 51	21 08	02 09	21 47
29	04 25	19 35	04 15	19 45	04 02	19 57	03 46	20 12	03 25	20 33	02 55	21 00
Sep. 3	04 41	19 15	04 33	19 23	04 23	19 33	04 11	19 45	03 55	20 00	03 33	20 20
8	04 57	18 56	04 51	19 02	04 44	19 09	04 35	19 18	04 23	19 29	04 08	19 43
13	05 13	18 37	05 09	18 41	05 04	18 46	04 58	18 51	04 50	18 59	04 39	19 08
18	05 29	18 17	05 27	18 20	05 24	18 22	05 20	18 26	05 16	18 30	05 10	18 35
23	05 45	17 58	05 44	17 59	05 43	17 59	05 42	18 00	05 41	18 01	05 40	18 02
28	06 01	17 39	06 02	17 38	06 03	17 36	06 05	17 34	06 07	17 32	06 09	17 29
Oct. 3	06 17	17 20	06 20	17 17	06 23	17 13	06 27	17 09	06 33	17 03	06 39	16 56
8	06 33	17 01	06 38	16 56	06 43	16 50	06 50	16 43	06 59	16 34	07 10	16 22
13	06 49	16 42	06 56	16 35	07 04	16 27	07 14	16 17	07 27	16 04	07 43	15 47
18	07 06	16 23	07 15	16 14	07 25	16 03	07 39	15 50	07 56	15 33	08 19	15 10
23	07 23	16 04	07 34	15 53	07 47	15 40	08 04	15 23	08 27	15 00	08 59	14 28
28	07 40	15 46	07 54	15 32	08 11	15 16	08 32	14 54	09 02	14 24	09 48	13 37
Nov. 2	07 58	15 28	08 15	15 11	08 35	14 51	09 02	14 23	09 43	13 42	11 29	11 56
7	08 17	15 10	08 36	14 50	09 01	14 25	09 37	13 49	10 44	12 42	-- --	-- --
12	08 35	14 52	08 58	14 29	09 30	13 57	10 21	13 06	-- --	-- --	-- --	-- --
17	08 54	14 35	09 22	14 07	10 02	13 26	-- --	-- --	-- --	-- --	-- --	-- --
22	09 13	14 18	09 47	13 45	10 44	12 47	-- --	-- --	-- --	-- --	-- --	-- --
27	09 32	14 03	10 13	13 22	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
Dec. 2	09 50	13 48	10 42	12 57	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
7	10 06	13 36	11 18	12 25	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
12	10 20	13 27	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
17	10 30	13 22	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
22	10 35	13 22	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --
27	10 34	13 28	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --

Local mean time. To obtain standard time of rise or set, see Table 5.

TABLE 4.-SUNRISE AND SUNSET, 2018

Date	0° S.		5° S.		10° S.		15° S.		20° S.		25° S.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	06 00	18 07	05 51	18 16	05 43	18 25	05 34	18 34	05 24	18 43	05 14	18 53
6	06 02	18 10	05 54	18 18	05 45	18 26	05 36	18 35	05 27	18 44	05 17	18 54
11	06 04	18 12	05 56	18 20	05 48	18 28	05 39	18 36	05 30	18 45	05 21	18 55
16	06 06	18 13	05 58	18 21	05 51	18 29	05 42	18 37	05 34	18 46	05 25	18 55
21	06 08	18 15	06 00	18 22	05 53	18 30	05 45	18 37	05 37	18 45	05 28	18 54
26	06 09	18 16	06 02	18 23	05 55	18 30	05 48	18 37	05 40	18 44	05 32	18 53
31	06 10	18 17	06 04	18 23	05 57	18 30	05 51	18 36	05 43	18 43	05 36	18 51
Feb. 5	06 10	18 17	06 05	18 23	05 59	18 29	05 53	18 35	05 46	18 41	05 40	18 48
10	06 11	18 18	06 06	18 23	06 00	18 28	05 55	18 33	05 49	18 39	05 43	18 45
15	06 11	18 18	06 06	18 22	06 02	18 27	05 57	18 31	05 52	18 36	05 46	18 42
20	06 10	18 17	06 06	18 21	06 02	18 25	05 58	18 29	05 54	18 33	05 49	18 38
25	06 10	18 16	06 06	18 20	06 03	18 23	06 00	18 26	05 56	18 30	05 52	18 33
Mar. 2	06 09	18 15	06 06	18 18	06 04	18 20	06 01	18 23	05 58	18 26	05 55	18 29
7	06 08	18 14	06 06	18 16	06 04	18 18	06 02	18 20	06 00	18 22	05 57	18 24
12	06 06	18 13	06 05	18 14	06 04	18 15	06 03	18 16	06 01	18 18	06 00	18 19
17	06 05	18 12	06 05	18 12	06 04	18 12	06 04	18 13	06 03	18 13	06 02	18 14
22	06 04	18 10	06 04	18 10	06 04	18 10	06 04	18 09	06 04	18 09	06 04	18 09
27	06 02	18 09	06 03	18 08	06 04	18 07	06 05	18 06	06 06	18 05	06 07	18 04
Apr. 1	06 01	18 07	06 02	18 05	06 04	18 04	06 05	18 02	06 07	18 00	06 09	17 59
6	05 59	18 06	06 01	18 03	06 04	18 01	06 06	17 59	06 08	17 56	06 11	17 54
11	05 58	18 04	06 01	18 01	06 04	17 58	06 07	17 55	06 10	17 52	06 13	17 49
16	05 56	18 03	06 00	17 59	06 04	17 56	06 07	17 52	06 11	17 48	06 15	17 44
21	05 55	18 02	06 00	17 58	06 04	17 54	06 08	17 49	06 13	17 45	06 17	17 40
26	05 54	18 01	05 59	17 56	06 04	17 51	06 09	17 46	06 14	17 41	06 20	17 36
May. 1	05 54	18 01	05 59	17 55	06 05	17 50	06 10	17 44	06 16	17 38	06 22	17 32
6	05 53	18 00	05 59	17 54	06 05	17 48	06 11	17 42	06 18	17 35	06 25	17 28
11	05 53	18 00	05 59	17 53	06 06	17 47	06 13	17 40	06 20	17 33	06 27	17 25
16	05 53	18 00	06 00	17 53	06 07	17 46	06 14	17 39	06 22	17 31	06 30	17 23
21	05 53	18 00	06 00	17 53	06 08	17 45	06 16	17 38	06 24	17 29	06 32	17 21
26	05 53	18 01	06 01	17 53	06 09	17 45	06 17	17 37	06 26	17 28	06 35	17 19
31	05 54	18 01	06 02	17 53	06 10	17 45	06 19	17 37	06 27	17 28	06 37	17 18
Jun. 5	05 55	18 02	06 03	17 54	06 12	17 45	06 20	17 37	06 29	17 28	06 39	17 18
10	05 56	18 03	06 04	17 55	06 13	17 46	06 22	17 37	06 31	17 28	06 41	17 18
15	05 57	18 04	06 05	17 56	06 14	17 47	06 23	17 38	06 33	17 28	06 43	17 18
20	05 58	18 05	06 07	17 57	06 15	17 48	06 24	17 39	06 34	17 29	06 44	17 19
25	05 59	18 06	06 08	17 58	06 16	17 49	06 25	17 40	06 35	17 30	06 45	17 20
30	06 00	18 07	06 09	17 59	06 17	17 50	06 26	17 41	06 36	17 32	06 46	17 22
Jul. 5	06 01	18 08	06 09	18 00	06 18	17 51	06 27	17 43	06 36	17 33	06 46	17 24
10	06 02	18 09	06 10	18 01	06 18	17 53	06 27	17 44	06 36	17 35	06 45	17 26
15	06 02	18 10	06 10	18 02	06 18	17 54	06 27	17 46	06 35	17 37	06 44	17 28
20	06 03	18 10	06 10	18 02	06 18	17 55	06 26	17 47	06 34	17 39	06 43	17 30
25	06 03	18 10	06 10	18 03	06 17	17 56	06 25	17 48	06 33	17 41	06 41	17 32
30	06 03	18 10	06 10	18 03	06 16	17 57	06 23	17 50	06 31	17 42	06 38	17 35
Aug. 4	06 03	18 10	06 09	18 03	06 15	17 57	06 22	17 51	06 28	17 44	06 36	17 37
9	06 02	18 09	06 08	18 03	06 14	17 58	06 19	17 52	06 26	17 46	06 32	17 39
14	06 01	18 08	06 06	18 03	06 12	17 58	06 17	17 53	06 22	17 47	06 28	17 41
19	06 00	18 07	06 05	18 02	06 09	17 58	06 14	17 53	06 19	17 49	06 24	17 43
24	05 59	18 06	06 03	18 02	06 07	17 58	06 11	17 54	06 15	17 50	06 20	17 45
29	05 58	18 04	06 01	18 01	06 04	17 58	06 08	17 54	06 11	17 51	06 15	17 47
Sep. 3	05 56	18 03	05 59	18 00	06 01	17 57	06 04	17 55	06 07	17 52	06 10	17 49
8	05 54	18 01	05 56	17 59	05 58	17 57	06 00	17 55	06 03	17 53	06 05	17 51
13	05 53	17 59	05 54	17 58	05 55	17 57	05 57	17 55	05 58	17 54	05 59	17 53
18	05 51	17 57	05 52	17 57	05 52	17 56	05 53	17 56	05 53	17 55	05 54	17 55
23	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56	05 49	17 56
28	05 47	17 54	05 47	17 55	05 46	17 56	05 45	17 56	05 44	17 57	05 43	17 58
Oct. 3	05 46	17 52	05 44	17 54	05 43	17 55	05 41	17 57	05 40	17 59	05 38	18 00
8	05 44	17 51	05 42	17 53	05 40	17 55	05 38	17 57	05 36	18 00	05 33	18 03
13	05 43	17 50	05 40	17 52	05 37	17 55	05 34	17 58	05 31	18 01	05 28	18 05
18	05 42	17 48	05 38	17 52	05 35	17 56	05 31	17 59	05 28	18 03	05 23	18 07
23	05 41	17 48	05 37	17 52	05 33	17 56	05 28	18 00	05 24	18 05	05 19	18 10
28	05 40	17 47	05 36	17 52	05 31	17 57	05 26	18 02	05 21	18 07	05 15	18 13
Nov. 2	05 40	17 47	05 35	17 52	05 29	17 58	05 24	18 03	05 18	18 09	05 12	18 16
7	05 40	17 47	05 34	17 53	05 28	17 59	05 22	18 05	05 16	18 12	05 09	18 19
12	05 41	17 48	05 34	17 54	05 28	18 01	05 21	18 08	05 14	18 15	05 06	18 23
17	05 41	17 49	05 34	17 55	05 27	18 03	05 20	18 10	05 12	18 18	05 04	18 26
22	05 43	17 50	05 35	17 57	05 28	18 05	05 20	18 13	05 12	18 21	05 03	18 30
27	05 44	17 51	05 36	17 59	05 28	18 07	05 20	18 15	05 11	18 24	05 02	18 33
Dec. 2	05 46	17 53	05 38	18 01	05 29	18 09	05 21	18 18	05 12	18 27	05 02	18 37
7	05 48	17 55	05 39	18 04	05 31	18 12	05 22	18 21	05 13	18 30	05 02	18 41
12	05 50	17 57	05 41	18 06	05 33	18 15	05 24	18 24	05 14	18 33	05 04	18 44
17	05 52	18 00	05 44	18 09	05 35	18 17	05 26	18 27	05 16	18 36	05 05	18 47
22	05 55	18 02	05 46	18 11	05 37	18 20	05 28	18 29	05 18	18 39	05 08	18 49
27	05 57	18 05	05 49	18 13	05 40	18 22	05 31	18 31	05 21	18 41	05 10	18 52

Local mean time. To obtain standard time of rise or set, see Table 5.

Date	30° S.		32° S.		34° S.		36° S.		38° S.		40° S.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	05 02	19 05	04 57	19 10	04 52	19 15	04 47	19 20	04 41	19 26	04 35	19 32
6	05 06	19 05	05 01	19 10	04 56	19 15	04 51	19 20	04 45	19 26	04 39	19 32
11	05 10	19 05	05 05	19 10	05 01	19 15	04 56	19 20	04 50	19 25	04 44	19 31
16	05 14	19 05	05 10	19 09	05 05	19 14	05 00	19 19	04 55	19 24	04 50	19 29
21	05 19	19 04	05 15	19 08	05 10	19 12	05 06	19 17	05 01	19 21	04 56	19 27
26	05 23	19 02	05 19	19 05	05 15	19 09	05 11	19 14	05 06	19 18	05 02	19 23
31	05 28	18 59	05 24	19 02	05 20	19 06	05 16	19 10	05 12	19 14	05 08	19 19
Feb. 5	05 32	18 56	05 29	18 59	05 25	19 02	05 22	19 06	05 18	19 09	05 14	19 13
10	05 36	18 52	05 33	18 55	05 30	18 58	05 27	19 01	05 24	19 04	05 20	19 08
15	05 40	18 47	05 38	18 50	05 35	18 53	05 32	18 55	05 29	18 58	05 26	19 02
20	05 44	18 43	05 42	18 45	05 40	18 47	05 37	18 50	05 35	18 52	05 32	18 55
25	05 48	18 38	05 46	18 39	05 44	18 41	05 42	18 43	05 40	18 45	05 38	18 48
Mar. 2	05 52	18 32	05 50	18 34	05 49	18 35	05 47	18 37	05 45	18 38	05 43	18 40
7	05 55	18 27	05 54	18 28	05 53	18 29	05 52	18 30	05 50	18 31	05 49	18 32
12	05 58	18 21	05 58	18 21	05 57	18 22	05 56	18 23	05 55	18 24	05 54	18 25
17	06 01	18 15	06 01	18 15	06 01	18 15	06 00	18 16	06 00	18 16	06 00	18 16
22	06 05	18 09	06 05	18 09	06 05	18 09	06 05	18 09	06 05	18 08	06 05	18 08
27	06 08	18 03	06 08	18 02	06 08	18 02	06 09	18 01	06 09	18 01	06 10	18 00
Apr. 1	06 11	17 57	06 11	17 56	06 12	17 55	06 13	17 54	06 14	17 53	06 15	17 52
6	06 14	17 51	06 15	17 50	06 16	17 48	06 17	17 47	06 18	17 46	06 20	17 44
11	06 17	17 45	06 18	17 44	06 20	17 42	06 21	17 40	06 23	17 39	06 25	17 37
16	06 20	17 40	06 21	17 38	06 23	17 36	06 25	17 34	06 28	17 31	06 30	17 29
21	06 23	17 34	06 25	17 32	06 27	17 30	06 30	17 27	06 32	17 25	06 35	17 22
26	06 26	17 29	06 28	17 27	06 31	17 24	06 34	17 21	06 37	17 18	06 40	17 15
May. 1	06 29	17 25	06 32	17 22	06 35	17 19	06 38	17 16	06 41	17 12	06 45	17 09
6	06 32	17 21	06 35	17 18	06 39	17 14	06 42	17 11	06 46	17 07	06 50	17 03
11	06 35	17 17	06 39	17 14	06 42	17 10	06 46	17 06	06 50	17 02	06 55	16 58
16	06 38	17 14	06 42	17 10	06 46	17 06	06 50	17 02	06 55	16 58	06 59	16 53
21	06 41	17 12	06 45	17 07	06 50	17 03	06 54	16 59	06 59	16 54	07 04	16 49
26	06 44	17 09	06 49	17 05	06 53	17 01	06 58	16 56	07 03	16 51	07 08	16 46
31	06 47	17 08	06 52	17 04	06 56	16 59	07 01	16 54	07 06	16 49	07 12	16 44
Jun. 5	06 50	17 07	06 54	17 03	06 59	16 58	07 04	16 53	07 09	16 47	07 15	16 42
10	06 52	17 07	06 57	17 02	07 01	16 57	07 07	16 52	07 12	16 47	07 18	16 41
15	06 54	17 07	06 59	17 02	07 03	16 57	07 09	16 52	07 14	16 47	07 20	16 41
20	06 55	17 08	07 00	17 03	07 05	16 58	07 10	16 53	07 16	16 47	07 22	16 41
25	06 56	17 09	07 01	17 04	07 06	16 59	07 11	16 54	07 17	16 49	07 23	16 43
30	06 57	17 11	07 01	17 06	07 06	17 01	07 11	16 56	07 17	16 51	07 23	16 45
Jul. 5	06 56	17 13	07 01	17 08	07 06	17 03	07 11	16 58	07 16	16 53	07 22	16 47
10	06 56	17 15	07 00	17 11	07 05	17 06	07 10	17 01	07 15	16 56	07 21	16 50
15	06 54	17 18	06 59	17 13	07 03	17 09	07 08	17 04	07 13	16 59	07 18	16 54
20	06 52	17 21	06 57	17 16	07 01	17 12	07 05	17 08	07 10	17 03	07 15	16 58
25	06 50	17 23	06 54	17 19	06 58	17 15	07 02	17 11	07 07	17 07	07 11	17 02
30	06 47	17 26	06 51	17 23	06 54	17 19	06 58	17 15	07 02	17 11	07 07	17 06
Aug. 4	06 43	17 29	06 47	17 26	06 50	17 22	06 54	17 19	06 58	17 15	07 02	17 11
9	06 39	17 32	06 42	17 29	06 45	17 26	06 49	17 23	06 52	17 19	06 56	17 15
14	06 35	17 35	06 37	17 32	06 40	17 29	06 43	17 27	06 46	17 23	06 50	17 20
19	06 30	17 38	06 32	17 35	06 35	17 33	06 37	17 30	06 40	17 28	06 43	17 25
24	06 25	17 41	06 27	17 39	06 29	17 36	06 31	17 34	06 33	17 32	06 36	17 29
29	06 19	17 43	06 21	17 42	06 22	17 40	06 24	17 38	06 26	17 36	06 28	17 34
Sep. 3	06 13	17 46	06 14	17 45	06 16	17 43	06 17	17 42	06 19	17 40	06 21	17 39
8	06 07	17 49	06 08	17 48	06 09	17 47	06 10	17 46	06 11	17 45	06 13	17 43
13	06 01	17 51	06 02	17 51	06 02	17 50	06 03	17 49	06 04	17 49	06 04	17 48
18	05 55	17 54	05 55	17 54	05 55	17 54	05 56	17 53	05 56	17 53	05 56	17 53
23	05 49	17 57	05 48	17 57	05 48	17 57	05 48	17 57	05 48	17 57	05 48	17 58
28	05 42	18 00	05 42	18 00	05 41	18 01	05 41	18 01	05 40	18 02	05 40	18 02
Oct. 3	05 36	18 02	05 35	18 03	05 34	18 04	05 34	18 05	05 33	18 06	05 31	18 07
8	05 30	18 05	05 29	18 07	05 28	18 08	05 26	18 09	05 25	18 11	05 23	18 12
13	05 24	18 09	05 23	18 10	05 21	18 12	05 19	18 14	05 18	18 16	05 16	18 18
18	05 19	18 12	05 17	18 14	05 15	18 16	05 13	18 18	05 11	18 20	05 08	18 23
23	05 14	18 15	05 11	18 18	05 09	18 20	05 06	18 23	05 04	18 25	05 01	18 28
28	05 09	18 19	05 06	18 22	05 04	18 25	05 01	18 28	04 58	18 31	04 54	18 34
Nov. 2	05 05	18 23	05 02	18 26	04 59	18 29	04 55	18 32	04 52	18 36	04 48	18 40
7	05 01	18 27	04 58	18 30	04 54	18 34	04 50	18 38	04 46	18 41	04 42	18 46
12	04 58	18 31	04 54	18 35	04 50	18 39	04 46	18 43	04 42	18 47	04 37	18 52
17	04 55	18 35	04 51	18 39	04 47	18 43	04 43	18 48	04 38	18 52	04 33	18 57
22	04 53	18 40	04 49	18 44	04 44	18 48	04 40	18 53	04 35	18 58	04 30	19 03
27	04 52	18 44	04 47	18 48	04 43	18 53	04 38	18 58	04 33	19 03	04 27	19 09
Dec. 2	04 51	18 48	04 47	18 52	04 42	18 57	04 37	19 03	04 31	19 08	04 25	19 14
7	04 51	18 52	04 47	18 56	04 42	19 02	04 36	19 07	04 31	19 13	04 24	19 19
12	04 52	18 55	04 47	19 00	04 42	19 05	04 37	19 11	04 31	19 17	04 25	19 23
17	04 54	18 58	04 49	19 03	04 44	19 09	04 38	19 14	04 32	19 20	04 26	19 26
22	04 56	19 01	04 51	19 06	04 46	19 11	04 40	19 17	04 34	19 23	04 28	19 29
27	04 59	19 03	04 54	19 08	04 49	19 13	04 43	19 19	04 37	19 25	04 31	19 31

Local mean time. To obtain standard time of rise or set, see Table 5.

TABLE 4.-SUNRISE AND SUNSET, 2018

Date	42° S.		44° S.		46° S.		48° S.		50° S.		52° S.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	04 28	19 39	04 21	19 46	04 13	19 54	04 05	20 02	03 55	20 12	03 45	20 22
6	04 33	19 39	04 26	19 45	04 18	19 53	04 10	20 01	04 01	20 10	03 51	20 20
11	04 38	19 37	04 31	19 44	04 24	19 51	04 16	19 59	04 07	20 08	03 58	20 17
16	04 44	19 35	04 38	19 41	04 31	19 48	04 23	19 56	04 15	20 04	04 06	20 13
21	04 50	19 32	04 44	19 38	04 38	19 44	04 30	19 51	04 23	19 59	04 14	20 08
26	04 56	19 28	04 51	19 34	04 45	19 39	04 38	19 46	04 31	19 53	04 23	20 01
31	05 03	19 23	04 58	19 28	04 52	19 34	04 46	19 40	04 40	19 46	04 33	19 53
Feb. 5	05 10	19 18	05 05	19 22	05 00	19 27	04 55	19 33	04 49	19 38	04 42	19 45
10	05 16	19 12	05 12	19 16	05 08	19 20	05 03	19 25	04 57	19 30	04 52	19 36
15	05 23	19 05	05 19	19 08	05 15	19 12	05 11	19 16	05 06	19 21	05 01	19 26
20	05 29	18 58	05 26	19 01	05 23	19 04	05 19	19 07	05 15	19 11	05 11	19 15
25	05 35	18 50	05 33	18 53	05 30	18 55	05 27	18 58	05 24	19 01	05 20	19 05
Mar. 2	05 41	18 42	05 39	18 44	05 37	18 46	05 35	18 49	05 32	18 51	05 29	18 54
7	05 47	18 34	05 46	18 35	05 44	18 37	05 42	18 39	05 41	18 41	05 38	18 43
12	05 53	18 25	05 52	18 26	05 51	18 27	05 50	18 29	05 49	18 30	05 47	18 31
17	05 59	18 17	05 59	18 17	05 58	18 18	05 57	18 18	05 57	18 19	05 56	18 20
22	06 05	18 08	06 05	18 08	06 05	18 08	06 05	18 08	06 05	18 08	06 05	18 08
27	06 10	18 00	06 11	17 59	06 11	17 59	06 12	17 58	06 13	17 57	06 13	17 56
Apr. 1	06 16	17 51	06 17	17 50	06 18	17 49	06 19	17 48	06 20	17 46	06 22	17 45
6	06 21	17 43	06 23	17 41	06 25	17 40	06 26	17 38	06 28	17 36	06 30	17 34
11	06 27	17 35	06 29	17 33	06 31	17 30	06 33	17 28	06 36	17 25	06 39	17 23
16	06 32	17 27	06 35	17 24	06 38	17 21	06 40	17 18	06 44	17 15	06 47	17 12
21	06 38	17 19	06 41	17 16	06 44	17 13	06 48	17 09	06 51	17 05	06 55	17 01
26	06 43	17 12	06 47	17 08	06 50	17 05	06 55	17 00	06 59	16 56	07 04	16 51
May. 1	06 49	17 05	06 53	17 01	06 57	16 57	07 01	16 52	07 06	16 47	07 12	16 42
6	06 54	16 59	06 58	16 54	07 03	16 50	07 08	16 44	07 14	16 39	07 20	16 33
11	06 59	16 53	07 04	16 48	07 09	16 43	07 15	16 37	07 21	16 31	07 28	16 24
16	07 04	16 48	07 09	16 43	07 15	16 37	07 21	16 31	07 28	16 24	07 35	16 17
21	07 09	16 44	07 15	16 38	07 21	16 32	07 27	16 26	07 35	16 18	07 42	16 10
26	07 13	16 40	07 19	16 34	07 26	16 28	07 33	16 21	07 41	16 13	07 49	16 05
31	07 17	16 38	07 24	16 31	07 31	16 25	07 38	16 17	07 46	16 09	07 55	16 00
Jun. 5	07 21	16 36	07 28	16 29	07 35	16 22	07 42	16 14	07 51	16 06	08 00	15 57
10	07 24	16 35	07 31	16 28	07 38	16 21	07 46	16 13	07 55	16 04	08 04	15 54
15	07 27	16 34	07 33	16 28	07 41	16 20	07 49	16 12	07 58	16 03	08 07	15 54
20	07 28	16 35	07 35	16 28	07 42	16 21	07 51	16 13	07 59	16 04	08 09	15 54
25	07 29	16 36	07 36	16 30	07 43	16 22	07 51	16 14	08 00	16 05	08 10	15 55
30	07 29	16 38	07 36	16 32	07 43	16 24	07 51	16 16	08 00	16 08	08 10	15 58
Jul. 5	07 28	16 41	07 35	16 35	07 42	16 27	07 50	16 20	07 58	16 11	08 08	16 02
10	07 27	16 44	07 33	16 38	07 40	16 31	07 47	16 24	07 56	16 15	08 05	16 06
15	07 24	16 48	07 30	16 42	07 37	16 36	07 44	16 28	07 52	16 21	08 01	16 12
20	07 21	16 52	07 26	16 47	07 33	16 40	07 40	16 34	07 47	16 26	07 55	16 18
25	07 17	16 57	07 22	16 52	07 28	16 46	07 34	16 39	07 41	16 32	07 49	16 25
30	07 12	17 02	07 17	16 57	07 22	16 51	07 28	16 45	07 35	16 39	07 42	16 32
Aug. 4	07 06	17 07	07 11	17 02	07 16	16 57	07 21	16 52	07 27	16 46	07 34	16 39
9	07 00	17 12	07 04	17 07	07 09	17 03	07 14	16 58	07 19	16 53	07 25	16 47
14	06 53	17 17	06 57	17 13	07 01	17 09	07 05	17 05	07 10	17 00	07 15	16 55
19	06 46	17 22	06 49	17 18	06 53	17 15	06 57	17 11	07 01	17 07	07 05	17 03
24	06 39	17 27	06 41	17 24	06 44	17 21	06 48	17 18	06 51	17 14	06 55	17 11
29	06 31	17 32	06 33	17 30	06 35	17 27	06 38	17 25	06 41	17 22	06 44	17 19
Sep. 3	06 22	17 37	06 24	17 35	06 26	17 33	06 28	17 31	06 31	17 29	06 33	17 27
8	06 14	17 42	06 15	17 41	06 17	17 39	06 18	17 38	06 20	17 36	06 22	17 35
13	06 05	17 47	06 06	17 47	06 07	17 46	06 08	17 45	06 09	17 44	06 10	17 43
18	05 57	17 52	05 57	17 52	05 57	17 52	05 58	17 52	05 58	17 51	05 58	17 51
23	05 48	17 58	05 48	17 58	05 47	17 58	05 47	17 58	05 47	17 59	05 47	17 59
28	05 39	18 03	05 38	18 04	05 38	18 05	05 37	18 05	05 36	18 06	05 35	18 07
Oct. 3	05 30	18 08	05 29	18 10	05 28	18 11	05 27	18 12	05 25	18 14	05 23	18 16
8	05 22	18 14	05 20	18 16	05 18	18 18	05 16	18 20	05 14	18 22	05 12	18 24
13	05 14	18 20	05 11	18 22	05 09	18 24	05 06	18 27	05 04	18 30	05 01	18 33
18	05 06	18 25	05 03	18 28	05 00	18 31	04 57	18 35	04 53	18 38	04 50	18 42
23	04 58	18 31	04 55	18 35	04 51	18 38	04 48	18 42	04 43	18 46	04 39	18 51
28	04 51	18 38	04 47	18 41	04 43	18 45	04 39	18 50	04 34	18 55	04 29	19 00
Nov. 2	04 44	18 44	04 40	18 48	04 35	18 53	04 30	18 58	04 25	19 03	04 19	19 09
7	04 38	18 50	04 33	18 55	04 28	19 00	04 23	19 06	04 17	19 12	04 10	19 18
12	04 33	18 56	04 27	19 02	04 22	19 07	04 16	19 14	04 09	19 20	04 02	19 28
17	04 28	19 03	04 22	19 08	04 16	19 15	04 09	19 21	04 02	19 29	03 54	19 37
22	04 24	19 09	04 18	19 15	04 11	19 22	04 04	19 29	03 56	19 37	03 48	19 45
27	04 21	19 15	04 15	19 21	04 08	19 28	04 00	19 36	03 52	19 44	03 42	19 54
Dec. 2	04 19	19 20	04 12	19 27	04 05	19 34	03 57	19 42	03 48	19 51	03 38	20 01
7	04 18	19 25	04 11	19 32	04 03	19 40	03 55	19 48	03 46	19 57	03 36	20 08
12	04 18	19 30	04 11	19 37	04 03	19 45	03 54	19 53	03 45	20 03	03 34	20 13
17	04 19	19 33	04 12	19 41	04 04	19 48	03 55	19 57	03 45	20 07	03 35	20 18
22	04 21	19 36	04 14	19 43	04 06	19 51	03 57	20 00	03 47	20 10	03 36	20 21
27	04 24	19 38	04 17	19 45	04 09	19 53	04 00	20 02	03 50	20 11	03 40	20 22

Local mean time. To obtain standard time of rise or set, see Table 5.

Date	54° S.		56° S.		58° S.		60° S.	
	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.	Rise h. m.	Set h. m.
Jan. 1	03 33	20 34	03 19	20 48	03 03	21 04	02 43	21 23
6	03 39	20 32	03 26	20 45	03 10	21 01	02 52	21 19
11	03 47	20 28	03 34	20 41	03 19	20 55	03 02	21 13
16	03 55	20 23	03 43	20 35	03 30	20 48	03 14	21 04
21	04 05	20 17	03 54	20 28	03 41	20 40	03 26	20 55
26	04 14	20 10	04 04	20 19	03 53	20 31	03 40	20 44
31	04 25	20 01	04 15	20 10	04 05	20 20	03 53	20 32
Feb. 5	04 35	19 52	04 27	20 00	04 18	20 09	04 07	20 19
10	04 45	19 42	04 38	19 49	04 30	19 57	04 21	20 06
15	04 56	19 31	04 50	19 37	04 43	19 44	04 35	19 52
20	05 06	19 20	05 01	19 25	04 55	19 31	04 48	19 37
25	05 16	19 09	05 12	19 13	05 07	19 18	05 02	19 23
Mar. 2	05 26	18 57	05 23	19 00	05 19	19 04	05 15	19 08
7	05 36	18 45	05 33	18 47	05 31	18 50	05 27	18 53
12	05 46	18 33	05 44	18 34	05 42	18 36	05 40	18 38
17	05 55	18 20	05 54	18 21	05 53	18 22	05 52	18 23
22	06 05	18 08	06 05	18 08	06 05	18 08	06 05	18 08
27	06 14	17 56	06 15	17 55	06 16	17 54	06 17	17 53
Apr. 1	06 23	17 43	06 25	17 42	06 27	17 40	06 29	17 38
6	06 33	17 31	06 35	17 29	06 38	17 26	06 41	17 23
11	06 42	17 19	06 45	17 16	06 49	17 12	06 53	17 08
16	06 51	17 08	06 55	17 04	07 00	16 59	07 05	16 54
21	07 00	16 57	07 05	16 52	07 11	16 46	07 17	16 40
26	07 09	16 46	07 15	16 40	07 21	16 33	07 29	16 26
May. 1	07 18	16 36	07 25	16 29	07 32	16 21	07 41	16 13
6	07 27	16 26	07 34	16 18	07 43	16 10	07 53	16 00
11	07 35	16 17	07 44	16 08	07 53	15 59	08 04	15 48
16	07 44	16 09	07 53	15 59	08 03	15 49	08 15	15 37
21	07 51	16 01	08 01	15 51	08 13	15 40	08 26	15 27
26	07 59	15 55	08 09	15 44	08 21	15 32	08 36	15 18
31	08 05	15 50	08 16	15 39	08 29	15 26	08 45	15 10
Jun. 5	08 11	15 46	08 22	15 34	08 36	15 21	08 52	15 04
10	08 15	15 44	08 27	15 31	08 42	15 17	08 59	15 00
15	08 18	15 42	08 31	15 30	08 46	15 15	09 03	14 58
20	08 20	15 43	08 33	15 30	08 48	15 15	09 05	14 58
25	08 21	15 44	08 34	15 32	08 49	15 17	09 06	14 59
30	08 20	15 47	08 33	15 35	08 47	15 20	09 04	15 03
Jul. 5	08 18	15 51	08 30	15 39	08 44	15 25	09 01	15 09
10	08 15	15 56	08 27	15 45	08 40	15 31	08 56	15 16
15	08 10	16 02	08 21	15 51	08 34	15 39	08 49	15 24
20	08 04	16 09	08 15	15 59	08 26	15 47	08 40	15 33
25	07 57	16 16	08 07	16 07	08 18	15 56	08 30	15 43
30	07 49	16 24	07 58	16 15	08 08	16 05	08 20	15 54
Aug. 4	07 41	16 32	07 49	16 24	07 58	16 15	08 08	16 05
9	07 31	16 41	07 38	16 34	07 46	16 26	07 55	16 16
14	07 21	16 49	07 27	16 43	07 34	16 36	07 42	16 28
19	07 10	16 58	07 16	16 52	07 22	16 46	07 29	16 40
24	06 59	17 06	07 04	17 02	07 09	16 57	07 15	16 51
29	06 48	17 15	06 51	17 11	06 56	17 07	07 00	17 03
Sep. 3	06 36	17 24	06 39	17 21	06 42	17 18	06 46	17 14
8	06 24	17 33	06 26	17 31	06 28	17 28	06 31	17 26
13	06 11	17 42	06 13	17 40	06 14	17 39	06 16	17 37
18	05 59	17 50	05 59	17 50	06 00	17 50	06 01	17 49
23	05 46	17 59	05 46	18 00	05 46	18 00	05 45	18 01
28	05 34	18 08	05 33	18 10	05 32	18 11	05 30	18 13
Oct. 3	05 22	18 18	05 20	18 20	05 17	18 22	05 15	18 25
8	05 09	18 27	05 07	18 30	05 03	18 33	05 00	18 37
13	04 57	18 36	04 54	18 40	04 50	18 44	04 45	18 49
18	04 46	18 46	04 41	18 51	04 36	18 56	04 30	19 02
23	04 34	18 56	04 29	19 01	04 22	19 08	04 16	19 15
28	04 23	19 06	04 17	19 12	04 10	19 20	04 01	19 28
Nov. 2	04 12	19 16	04 05	19 23	03 57	19 32	03 48	19 41
7	04 03	19 26	03 54	19 34	03 45	19 44	03 34	19 55
12	03 53	19 36	03 44	19 45	03 34	19 56	03 22	20 08
17	03 45	19 46	03 35	19 56	03 24	20 08	03 10	20 22
22	03 38	19 55	03 27	20 06	03 14	20 19	02 59	20 34
27	03 32	20 04	03 20	20 16	03 06	20 30	02 50	20 47
Dec. 2	03 27	20 12	03 15	20 25	03 00	20 40	02 42	20 58
7	03 24	20 20	03 11	20 33	02 55	20 49	02 36	21 08
12	03 22	20 26	03 08	20 39	02 52	20 56	02 32	21 16
17	03 22	20 30	03 08	20 44	02 51	21 01	02 31	21 21
22	03 24	20 33	03 10	20 47	02 53	21 04	02 32	21 25
27	03 27	20 34	03 13	20 48	02 57	21 05	02 36	21 25

Local mean time. To obtain standard time of rise or set, see Table 5.

TABLE 5.—REDUCTION OF LOCAL MEAN TIME TO STANDARD TIME

<i>Difference of longitude between local and standard meridian</i>	<i>Correction to local mean time to obtain standard time</i>	<i>Difference of longitude between local and standard meridian</i>	<i>Correction to local mean time to obtain standard time</i>	<i>Difference of longitude between local and standard meridian</i>	<i>Correction to local mean time to obtain standard time</i>
° / ' ° / '	Minutes	° / ' ° / '	Minutes	°	Hours
0 00 to 0 07	0	7 23 to 7 37	30	15	1
0 08 to 0 22	1	7 38 to 7 52	31	30	2
0 23 to 0 37	2	7 53 to 8 07	32	45	3
0 38 to 0 52	3	8 08 to 8 22	33	60	4
0 53 to 1 07	4	8 23 to 8 37	34	75	5
1 08 to 1 22	5	8 38 to 8 52	35	90	6
1 23 to 1 37	6	8 53 to 9 07	36	105	7
1 38 to 1 52	7	9 08 to 9 22	37	120	8
1 53 to 2 07	8	9 23 to 9 37	38	135	9
2 08 to 2 22	9	9 38 to 9 52	39	150	10
2 23 to 2 37	10	9 53 to 10 07	40	165	11
2 38 to 2 52	11	10 08 to 10 22	41	180	12
2 53 to 3 07	12	10 23 to 10 37	42		
3 08 to 3 22	13	10 38 to 10 52	43		
3 23 to 3 37	14	10 53 to 11 07	44		
3 38 to 3 52	15	11 08 to 11 22	45		
3 53 to 4 07	16	11 23 to 11 37	46		
4 08 to 4 22	17	11 38 to 11 52	47		
4 23 to 4 37	18	11 53 to 12 07	48		
4 38 to 4 52	19	12 08 to 12 22	49		
4 53 to 5 07	20	12 23 to 12 37	50		
5 08 to 5 22	21	12 38 to 12 52	51		
5 23 to 5 37	22	12 53 to 13 07	52		
5 38 to 5 52	23	13 08 to 13 22	53		
5 53 to 6 07	24	13 23 to 13 37	54		
6 08 to 6 22	25	13 38 to 13 52	55		
6 23 to 6 37	26	13 53 to 14 07	56		
6 38 to 6 52	27	14 08 to 14 22	57		
6 53 to 7 07	28	14 23 to 14 37	58		
7 08 to 7 22	29	14 38 to 14 52	59		

If local meridian is east of standard meridian, subtract the correction from local time.

If local meridian is west of standard meridian, add the correction to local time.

For differences of longitude less than 15°, use the first part of the table. For greater differences use both parts thus: 47° 23' is equivalent to 45° + 2° 23', the correction for 45° is 3 hours, the correction for 2° 23' is 10 minutes; therefore the total correction for the difference in longitude 47° 23' is 3 hours and 10 minutes.

TABLE 6.—CONVERSION OF FEET TO CENTIMETERS

Feet	Tenths of a Foot										Feet
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
0	0	3	6	9	12	15	18	21	24	27	0
1	30	34	37	40	43	46	49	52	55	58	1
2	61	64	67	70	73	76	79	82	85	88	2
3	91	94	98	101	104	107	110	113	116	119	3
4	122	125	128	131	134	137	140	143	146	149	4
5	152	155	158	162	165	168	171	174	177	180	5
6	183	186	189	192	195	198	201	204	207	210	6
7	213	216	219	223	226	229	232	235	238	241	7
8	244	247	250	253	256	259	262	265	268	271	8
9	274	277	280	283	287	290	293	296	299	302	9
10	305	308	311	314	317	320	323	326	329	332	10
11	335	338	341	344	347	351	354	357	360	363	11
12	366	369	372	375	378	381	384	387	390	393	12
13	396	399	402	405	408	411	415	418	421	424	13
14	427	430	433	436	439	442	445	448	451	454	14
15	457	460	463	466	469	472	475	479	482	485	15
16	488	491	494	497	500	503	506	509	512	515	16
17	518	521	524	527	530	533	536	539	543	546	17
18	549	552	555	558	561	564	567	570	573	576	18
19	579	582	585	588	591	594	597	600	604	607	19
20	610	613	616	619	622	625	628	631	634	637	20
21	640	643	646	649	652	655	658	661	664	668	21
22	671	674	677	680	683	686	689	692	695	698	22
23	701	704	707	710	713	716	719	722	725	728	23
24	732	735	738	741	744	747	750	753	756	759	24
25	762	765	768	771	774	777	780	783	786	789	25
26	792	796	799	802	805	808	811	814	817	820	26
27	823	826	829	832	835	838	841	844	847	850	27
28	853	856	860	863	866	869	872	875	878	881	28
29	884	887	890	893	896	899	902	905	908	911	29
30	914	917	920	924	927	930	933	936	939	942	30
31	945	948	951	954	957	960	963	966	969	972	31
32	975	978	981	985	988	991	994	997	1000	1003	32
33	1006	1009	1012	1015	1018	1021	1024	1027	1030	1033	33
34	1036	1039	1042	1045	1049	1052	1055	1058	1061	1064	34
35	1067	1070	1073	1076	1079	1082	1085	1088	1091	1094	35
36	1097	1100	1103	1106	1109	1113	1116	1119	1122	1125	36
37	1128	1131	1134	1137	1140	1143	1146	1149	1152	1155	37
38	1158	1161	1164	1167	1170	1173	1177	1180	1183	1186	38
39	1189	1192	1195	1198	1201	1204	1207	1210	1213	1216	39
40	1219	1222	1225	1228	1231	1234	1237	1241	1244	1247	40
41	1250	1253	1256	1259	1262	1265	1268	1271	1274	1277	41
42	1280	1283	1286	1289	1292	1295	1298	1301	1305	1308	42
43	1311	1314	1317	1320	1323	1326	1329	1332	1335	1338	43
44	1341	1344	1347	1350	1353	1356	1359	1362	1366	1369	44
45	1372	1375	1378	1381	1384	1387	1390	1393	1396	1399	45
46	1402	1405	1408	1411	1414	1417	1420	1423	1426	1430	46
47	1433	1436	1439	1442	1445	1448	1451	1454	1457	1460	47
48	1463	1466	1469	1472	1475	1478	1481	1484	1487	1490	48
49	1494	1497	1500	1503	1506	1509	1512	1515	1518	1521	49

Feet to Meters = Centimeters divided by 100 (from above table)

Example: 09.40 feet = (287 centimeters) / (100) = 02.87 meters.

1 Meter = 100 centimeters

1 Foot = 0.30480061 meters

1 Meter = 3.2808399 feet

1 Foot = 30.480061 centimeters

PUBLICATIONS RELATING TO TIDES AND TIDAL CURRENTS

TIDE TABLES

Advance information relative to the rise and fall of the tide is given in annual tide tables. These tables include the predicted times and heights of high and low waters for every day in the year for a number of reference stations and differences for obtaining similar predictions for numerous other places.

Tide Tables, Central and Western Pacific Ocean and Indian Ocean.

Tide Tables, East Coast of North and South America (Including Greenland).

Tide Tables, Europe and West Coast of Africa (Including the Mediterranean Sea).

Tide Tables, West Coast of North and South America (Including the Hawaiian Islands).

TIDAL CURRENT TABLES

Accompanying the rise and fall of the tide is a periodic horizontal flow of the water known as the tidal current. Advance information relative to these currents is made available in annual tidal current tables which include daily predictions of the times of slack water and the times and velocities of strength of flood and ebb currents for a number of waterways together with differences for obtaining predictions for numerous other places.

Tidal Current Tables, Atlantic Coast of North America.

Tidal Current Tables, Pacific Coast of North America and Asia.

GLOSSARY OF TERMS

- ANNUAL INEQUALITY**—Seasonal variation in the water level or current, more or less periodic, due chiefly to meteorological causes.
- APOGEAN TIDES OR TIDAL CURRENTS**—Tides of decreased range or currents of decreased speed occurring monthly as the result of the Moon being in apogee (farthest from the Earth).
- AUTOMATIC TIDE GAGE**—An instrument that automatically registers the rise and fall of the tide. In some instruments, the registration is accomplished by recording the heights at regular intervals in digital format, in others by a continuous graph in which the height versus corresponding time of the tide is recorded.
- BENCH MARK (BM)**—A fixed physical object or marks used as reference for a vertical datum. A *tidal bench mark* is one near a tide station to which the tide staff and tidal datums are referred. A *Geodetic bench mark* identifies a surveyed point in the National Geodetic Vertical Network.
- CHART DATUM**—The tidal datum to which soundings on a chart are referred. It is usually taken to correspond to low water elevation of the tide, and its depression below mean sea level is represented by the symbol Zo.
- CURRENT**—Generally, a horizontal movement of water. Currents may be classified as *tidal* and *nontidal*. Tidal currents are caused by gravitational interactions between the Sun, Moon, and Earth and are a part of the same general movement of the sea that is manifested in the vertical rise and fall, called *tide*. Nontidal currents include the permanent currents in the general circulatory systems of the sea as well as temporary currents arising from more pronounced meteorological variability.
- CURRENT DIFFERENCE**—Difference between the time of slack water (or minimum current) or strength of current in any locality and the time of the corresponding phase of the tidal current at a reference station, for which predictions are given in the *Tidal Current Tables*.
- CURRENT ELLIPSE**—A graphic representation of a rotary current in which the velocity of the current at different hours of the tidal cycle is represented by radius vectors and vectorial angles. A line joining the extremities of the radius vectors will form a curve roughly approximating an ellipse. The cycle is completed in one-half tidal day or in a whole tidal day according to whether the tidal current is of the semidiurnal or the diurnal type. A current of the mixed type will give a curve of two unequal loops each tidal day.
- CURRENT METER**—An instrument for measuring the speed and direction or just the speed of a current. The measurements are usually Eulerian since the meter is most often fixed or moored at a specific location.
- DATUM (vertical)**—For marine applications, a base elevation used as a reference from which to reckon heights or depths. It is called a *tidal datum* when defined by a certain phase of the tide. Tidal datums are local datums and should not be extended into areas which have differing topographic features without substantiating measurements. In order that they may be recovered when needed, such datums are referenced to fixed points known as *bench marks*.
- DAYLIGHT SAVING TIME**—A time used during the summer in some localities in which clocks are advanced 1 hour from the usual standard time.
- DIURNAL**—Having a period or cycle of approximately 1 tidal day. Thus, the tide is said to be diurnal when only one high water and one low water occur during a tidal day, and the tidal current is said to be diurnal when there is a single flood and single ebb period in the tidal day. A rotary current is diurnal if it changes its direction through all points of the compass once each tidal day.
- DIURNAL INEQUALITY**—The difference in height of the two high waters or of the two low waters of each day; also the difference in speed between the two flood tidal currents or the two ebb tidal currents of each day. The difference changes with the declination of the Moon and to a lesser extent with the declination of the Sun. In general, the inequality tends to increase with an increasing declination, either north or south, and to diminish as the Moon approaches the Equator. *Mean diurnal high water inequality* (DHQ) is one-half the average difference between the two high waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of all high waters from the mean of the higher high waters. *Mean diurnal low water inequality* (DLQ) is one-half the average difference between the two low waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of the lower low waters from the mean of all low waters. *Tropic high water inequality* (HWQ) is the average difference between the two high waters of the day at the times of the tropic tides. *Tropic low water inequality* (LWQ) is the average difference between the two low waters of the day at the times of the tropic tides. Mean and tropic inequalities as

GLOSSARY OF TERMS

defined above are applicable only when the type of tide is either semidiurnal or mixed. Diurnal inequality is sometimes called *declinational inequality*.

DOUBLE EBB—An ebb tidal current where, after ebb begins, the speed increases to a maximum called *first ebb*; it then decreases, reaching a *minimum ebb* near the middle of the ebb period (and at some places it may actually run in a flood direction for a short period); it then again ebbs to a maximum speed called second ebb after which it decreases to slack water.

DOUBLE FLOOD—A flood tidal current where, after flood begins, the speed increases to a maximum called first flood; it then decreases, reaching a minimum flood near the middle of the flood period (and at some places it may actually run in an ebb direction for a short period); it then again floods to a maximum speed called second flood after which it decreases to slack water.

DOUBLE TIDE—A double-headed tide, that is, a high water consisting of two maxima of nearly the same height separated by a relatively small depression, or a low water consisting of two minima separated by a relatively small elevation. Sometimes, it is called an agger.

DURATION OF FLOOD AND DURATION OF EBB—Duration of flood is the interval of time in which a tidal current is flooding, and the *duration of ebb* is the interval in which it is ebbing. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tidal current or a period of 24.84 hours for a diurnal current. In a normal semidiurnal tidal current, the duration of flood and duration of ebb will each be approximately equal to 6.21 hours, but the times may be modified greatly by the presence of a nontidal flow. In a river the duration of ebb is usually longer than the duration of flood because of the freshwater discharge, especially during the spring when snow and ice melt are the predominant influences.

DURATION OF RISE AND DURATION OF FALL—*Duration of rise* is the interval from low water to high water, and *duration of fall* is the interval from high water to low water. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tide or a period of 24.84 hours for a diurnal tide. In a normal semidiurnal tide, the duration of rise and duration of fall will each be approximately equal to 6.21 hours, but in shallow waters and in rivers there is a tendency for a decrease in the duration of rise and a corresponding increase in the duration of fall.

EBB CURRENT—The movement of a tidal current away from shore or down a tidal river or estuary. In the

mixed type of reversing tidal current, the terms *greater ebb* and *lesser ebb* are applied respectively to the ebb tidal currents of greater and lesser speed of each day. The terms *maximum ebb* and *minimum ebb* are applied to the maximum and minimum speeds of a current running continuously ebb, the speed alternately increasing and decreasing without coming to a slack or reversing. The expression maximum ebb is also applicable to any ebb current at the time of greatest speed.

EQUATORIAL TIDAL CURRENTS—Tidal currents occurring semimonthly as a result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tidal current is at a minimum.

EQUATORIAL TIDES—Tides occurring semi monthly as the result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tide is at a minimum.

FLOOD CURRENT—The movement of a tidal current toward the shore or up a tidal river or estuary. In the mixed type of reversing current, the terms *greater flood* and *lesser flood* are applied respectively to the flood currents of greater and lesser speed of each day. The terms *maximum flood* and *minimum flood* are applied to the maximum and minimum speeds of a flood current, the speed of which alternately increases and decreases without coming to a slack or reversing. The expression maximum flood is also applicable to any flood current at the time of greatest speed.

GREAT DIURNAL RANGE (Gt)—The difference in height between mean higher high water and mean lower low water. The expression may also be used in its contracted form, *diurnal range*.

GREENWICH INTERVAL—An interval referred to the transit of the Moon over the meridian of Greenwich as distinguished from the local interval which is referred to the Moon's transit over the local meridian. The relation in hours between Greenwich and local intervals may be expressed by the formula:

Greenwich interval = local interval + 0.069 L
where L is the west longitude of the local meridian in degrees. For east longitude, L is to be considered negative.

GULF COAST LOW WATER DATUM—A chart datum. Specifically, the tidal datum formerly designated for the coastal waters of the Gulf Coast of the United States. It was defined as *mean lower low water* when the type of tide was mixed and *mean low water* when the type of tide was diurnal.

HALF-TIDE LEVEL—See *mean tide level*.

GLOSSARY OF TERMS

- HARMONIC ANALYSIS**—The mathematical process by which the observed tide or tidal current at any place is separated into basic harmonic constituents.
- HARMONIC CONSTANTS**—The amplitudes and epochs of the harmonic constituents of the tide or tidal current at any place.
- HARMONIC CONSTITUENT**—One of the harmonic elements in a mathematical expression for the tide-producing force and in corresponding formulas for the tide or tidal current. Each constituent represents a periodic change or variation in the relative positions of the Earth, Moon, and Sun. A single constituent is usually written in the form $y=A \cos (at+\alpha)$, in which y is a function of time as expressed by the symbol t and is reckoned from a specific origin. The coefficient A is called the amplitude of the constituent and is a measure of its relative importance. The angle $(at+\alpha)$ changes uniformly and its value at any time is called the phase of the constituent. The speed of the constituent is the rate of change in its phase and is represented by the symbol a in the formula. The quantity α is the phase of the constituent at the initial instant from which the time is reckoned. The period of the constituent is the time required for the phase to change through 360° and is the cycle of the astronomical condition represented by the constituent.
- HIGH WATER (HW)**—The maximum height reached by a rising tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of prevailing meteorological conditions. Use of the synonymous term, *high tide*, is discouraged.
- HIGHER HIGH WATER (HHW)**—The higher of the two high waters of any tidal day.
- HIGHER LOW WATER (HLW)**—The higher of the two low waters of any tidal day.
- HYDRAULIC CURRENT**—A current in a channel caused by a difference in the surface level at the two ends. Such a current may be expected in a strait connecting two bodies of water in which the tides differ in time or range. The current in the East River, N.Y., connecting Long Island Sound and New York Harbor, is an example.
- KNOT**—A unit of speed, one international nautical mile (1,852.0 meters or 6,076.11549 international feet) per hour.
- LOW WATER (LW)**—The minimum height reached by a falling tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of meteorological conditions. Use of the synonymous term, *low tide*, is discouraged.
- LOWER HIGH WATER (LHW)**—The lower of the two high waters of any tidal day.
- LOWER LOW WATER (LLW)**—The lower of the two low waters of any tidal day.
- LUNAR DAY**—The time of the rotation of the Earth with respect to the Moon, or the interval between two successive upper transits of the Moon over the meridian of a place. The mean lunar day is approximately 24.84 solar hours long, or 1.035 times as long as the mean solar day.
- LUNAR INTERVAL**—The difference in time between the transit of the Moon over the meridian of Greenwich and over a local meridian. The average value of this interval expressed in hours is $0.069 L$, in which L is the local longitude in degrees, positive for west longitude and negative for east longitude. The lunar interval equals the difference between the local and Greenwich interval of a tide or current phase.
- LUNICURRENT INTERVAL**—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and a specified phase of the tidal current following the transit. Examples: *strength of flood interval and strength of ebb interval*, which may be abbreviated to *flood interval and ebb interval*, respectively. The interval is described as local or Greenwich according to whether the reference is to the Moon's transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.
- LUNITIDAL INTERVAL**—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and the following high or low water. The average of all high water intervals for all phases of the Moon is known as *mean high water lunitidal interval* and is abbreviated to high water interval (HWI). Similarly the *mean low water lunitidal interval* is abbreviated to low water interval (LWI). The interval is described as local or Greenwich according to whether the reference is to the transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.
- MEAN HIGH WATER (MHW)**—A tidal datum. The arithmetic mean of the high water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.

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- MEAN HIGHER HIGH WATER (MHHW)**—A tidal datum. The arithmetic mean of the higher high water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the higher high water of each pair of high waters, or the only high water of a tidal day is included in the mean.
- MEAN HIGHER HIGH WATER LINE (MHHWL)**—The intersection of the land with the water surface at the elevation of mean higher high water.
- MEAN LOW WATER (MLW)**—A tidal datum. The arithmetic mean of the low water heights observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). For stations with shorter series, simultaneous observational comparisons are made with a primary control tide station in order to derive the equivalent of a 19-year value.
- MEAN LOW WATER SPRINGS (MLWS)**—A tidal datum. Frequently abbreviated *spring low water*. The arithmetic mean of the low water heights occurring at the time of the spring tides observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch).
- MEAN LOWER LOW WATER (MLLW)**—A tidal datum. The arithmetic mean of the lower low water heights of a mixed tide observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Only the lower low water of each pair of low waters, or the only low water of a tidal day is included in the mean.
- MEAN RANGE OF TIDE (Mn)**—The difference in height between mean high water and mean low water.
- MEAN RIVER LEVEL**—A tidal datum. The average height of the surface of a tidal river at any point for all stages of the tide observed over a 19-year Metonic cycle (the National Tidal Datum Epoch), usually determined from hourly height readings. In rivers subject to occasional freshets the river level may undergo wide variations, and for practical purposes certain months of the year may be excluded in the determination of tidal datums. For charting purposes, tidal datums for rivers are usually based on observations during selected periods when the river is at or near low water stage.
- MEAN SEA LEVEL (MSL)**—A tidal datum. The arithmetic mean of hourly water elevations observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Shorter series are specified in the name; e.g., monthly mean sea level and yearly mean sea level.
- MEAN TIDE LEVEL (MTL)**—Also called half-tide level. A tidal datum midway between mean high water and mean low water.
- MIXED TIDE**—Type of tide with a large inequality in the high and/or low water heights, with two high waters and two low waters usually occurring each tidal day. In strictness, all tides are mixed but the name is usually applied to the tides intermediate to those predominantly semidiurnal and those predominantly diurnal.
- NATIONAL TIDAL DATUM EPOCH**—The specific 19-year period adopted by the National Ocean Service as the official time segment over which tide observations are taken and reduced to obtain mean values (e.g., mean lower low water, etc.) for tidal datums. It is necessary for standardization because of periodic and apparent secular trends in sea level. The present National Tidal Datum Epoch is 1960 through 1978. It is reviewed annually for possible revision and must be actively considered for revision every 25 years.
- NEAP TIDES OR TIDAL CURRENTS**—Tides of decreased range or tidal currents of decreased speed occurring semimonthly as the result of the Moon being in quadrature. The *neap range* (Np) of the tide is the average semidiurnal range occurring at the time of neap tides and is most conveniently computed from the harmonic constants. It is smaller than the mean range where the type of tide is either semidiurnal or mixed and is of no practical significance where the type of tide is diurnal. The average height of the high waters of the neap tides is called *neap high water* or *high water neaps* (MHWN) and the average height of the corresponding low waters is called neap low water or low water neaps (MLWN).
- PERIGEAN TIDES OR TIDAL CURRENTS**—Tides of increased range or tidal currents of increased speed occurring monthly as the result of the Moon being in perigee or nearest the Earth. The *perigean range* (Pn) of tide is the average semidiurnal range occurring at the time of perigean tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal.
- RANGE OF TIDE**—The difference in height between consecutive high and low waters, the *mean range* is the difference in height between mean high water and mean low water. Where the type of tide is diurnal the mean range is the same as the diurnal range.

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For other ranges, see great diurnal, spring, neap, perigean, apogean, and tropic tides.

REFERENCE STATION—A tide or current station for which independent daily predictions are given in the *Tide Tables and Tidal Current Tables*, and from which corresponding predictions are obtained for subordinate stations by means of differences and ratios.

REVERSING CURRENT—A tidal current which flows alternately in approximately opposite directions with a slack water at each reversal of direction. Currents of this type usually occur in rivers and straits where the direction of flow is more or less restricted to certain channels. When the movement is towards the shore or up a stream, the current is said to be flooding, and when in the opposite direction it is said to be ebbing. The combined flood and ebb movement including the slack water covers, on an average, 12.42 hours for the semidiurnal current. If unaffected by a nontidal flow, the flood and ebb movements will each last about 6 hours, but when combined with such a flow, the durations of flood and ebb may be quite unequal. During the flow in each direction the speed of the current will vary from zero at the time of slack water to a maximum about midway between the slacks.

ROTARY CURRENT—A tidal current that flows continually with the direction of flow changing through all points of the compass during the tidal period. Rotary currents are usually found offshore where the direction of flow is not restricted by any barriers. The tendency for the rotation in direction has its origin in the Coriolis force and, unless modified by local conditions, the change is clockwise in the Northern Hemisphere and counterclockwise in the Southern. The speed of the current usually varies throughout the tidal cycle, passing through the two maxima in approximately opposite directions and the two minima with the direction of the current at approximately 90° from the direction at time of maximum speed.

SEMI-DIURNAL—Having a period or cycle of approximately one-half of a tidal day. The predominating type of tide throughout the world is semidiurnal, with two high waters and two low waters each tidal day. The tidal current is said to be semidiurnal when there are two flood and two ebb periods each day.

SET (OF CURRENT)—The direction *towards* which the current flows.

SLACK WATER—The state of a tidal current when its speed is near zero, especially the moment when a

reversing current changes direction and its speed is zero. The term is also applied to the entire period of low speed near the time of turning of the current when it is too weak to be of any practical importance in navigation. The relation of the time of slack water to the tidal phases varies in different localities. For standing tidal waves, slack water occurs near the times of high and low water, while for progressive tidal waves, slack water occurs midway between high and low water.

SPRING TIDES OR TIDAL CURRENTS—Tides of increased range or tidal currents of increased speed occurring semimonthly as the result of the Moon being new or full. The *spring range* (Sg) of tide is the average semidiurnal range occurring at the time of spring tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal. The mean of the high waters of the spring tide is called *spring high water or mean high water springs* (MHWS), and the average height of the corresponding low waters is called *spring low water or mean low water springs* (MLWS).

STAND OF TIDE—Sometimes called a platform tide. An interval at high or low water when there is no sensible change in the height of the tide. The water level is stationary at high and low water for only an instant, but the change in level near these times is so slow that it is not usually perceptible. In general, the duration of the apparent stand will depend upon the range of tide, being longer for a small range than for a large range, but where there is a tendency for a double tide the stand may last for several hours even with a large range of tide.

STANDARD TIME—A kind of time based upon the transit of the Sun over a certain specified meridian, called the *time meridian*, and adopted for use over a considerable area. With a few exceptions, standard time is based upon some meridian which differs by a multiple of 15° from the meridian of Greenwich.

STRENGTH OF CURRENT—Phase of tidal current in which the speed is a maximum; also the speed at this time. Beginning with slack before flood in the period of a reversing tidal current (or minimum before flood in a rotary current), the speed gradually increases to flood strength and then diminishes to slack before ebb (or minimum before ebb in a rotary current), after which the current turns in direction, the speed increases to ebb strength and then diminishes to slack before flood completing the cycle. If it is assumed that the speed throughout the cycle varies as the ordinates of a cosine curve, it can

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be shown that the average speed for an entire flood or ebb period is equal to $2/\pi$ or 0.6366 of the speed of the corresponding strength of current.

SUBORDINATE CURRENT STATION—(1) A current station from which a relatively short series of observations is reduced by comparison with simultaneous observations from a control current station. (2) A station listed in the *Tidal Current Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station .

SUBORDINATE TIDE STATION—(1) A tide station from which a relatively short series of observations is reduced by comparison with simultaneous observations from a tide station with a relatively long series of observations. (2) A station listed in the *Tide Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station.

TIDAL CURRENT TABLES—Tables which give daily predictions of the times and speeds of the tidal currents. These predictions are usually supplemented by current differences and constants through which additional predictions can be obtained for numerous other places.

TIDAL DIFFERENCE—Difference in time or height of a high or low water at a subordinate station and at a reference station for which predictions are given in the *Tide Tables*. The difference, when applied according to sign to the prediction at the reference station, gives the corresponding time or height for the subordinate station .

TIDE—The periodic rise and fall of the water resulting from gravitational interactions between the Sun, Moon, and Earth. The vertical component of the particulate motion of a tidal wave. Although the accompanying horizontal movement of the water is part of the same phenomenon, it is preferable to designate the motion as tidal current.

TIDE TABLES—Tables which give daily predictions of the times and heights of high and low waters. These predictions are usually supplemented by tidal differences and constants through which additional predictions can be obtained for numerous other places.

TIME MERIDIAN—A meridian used as a reference for time.

TROPIC CURRENTS—Tidal currents occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times the tendency of the Moon to produce a diurnal inequality in the current is at a maximum.

TROPIC RANGES—The *great tropic range* (G_c), or *tropic range*, is the difference in height between tropic higher high water and tropic lower low water. The *small tropic range* (S_c) is the difference in height between tropic lower high water and tropic higher low water. The *mean tropic range* (M_c) is the mean between the great tropic range and the small tropic range. The small tropic range and the mean tropic range are applicable only when the type of tide is semidiurnal or mixed. Tropic ranges are most conveniently computed from the harmonic constants.

TROPIC TIDES—Tides occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times there is a tendency for an increase in the diurnal range. The tidal datums pertaining to the tropic tides are designated as *tropic higher high water* (T_cHHW), *tropic lower high water* (T_cLHW), *tropic higher low water* (T_cHLW), and *tropic lower low water* (T_cLLW).

TYPE OF TIDE—A classification based on characteristic forms of a tide curve. Qualitatively, when the two high waters and two low waters of each tidal day are approximately equal in height, the tide is said to be *semidiurnal*; when there is a relatively large diurnal inequality in the high or low waters or both, it is said to be *mixed*; and when there is only one high water and one low water in each tidal day, it is said to be *diurnal*.

VANISHING TIDE—In a mixed tide with very large diurnal inequality, the lower high water (or higher low water) frequently becomes indistinct (or vanishes) at time of extreme declinations. During these periods the diurnal tide has such overriding dominance that the semidiurnal tide, although still present, cannot be readily seen on the tide curve.

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January			
	d	h	m
P	1	22	..
N	2	00	..
○	2	02	24
E	8	07	..
●	8	22	25
A	15	02	..
S	15	17	..
●	17	02	17
E	23	02	..
●	24	22	20
N	29	12	..
P	30	10	..
○	31	13	27

February			
	d	h	m
E	4	16	..
●	7	15	54
A	11	14	..
S	12	00	..
●	15	21	05
E	19	07	..
●	23	08	09
N	25	21	..
P	27	15	..

March			
	d	h	m
○	2	00	51
E	4	02	..
●	9	11	20
S	11	07	..
A	11	09	..
●	17	13	12
E	18	14	..
⊙ _m	20	16	15
●	24	15	35
N	25	03	..
P	26	17	..
E	31	12	..
○	31	12	37

April			
	d	h	m
S	7	15	..
A	8	06	..
●	8	07	18
E	14	22	..
●	16	01	57
P	20	15	..
N	21	08	..
●	22	21	46
E	27	20	..
○	30	00	58

May			
	d	h	m
S	5	00	..
A	6	01	..
●	8	02	09
E	12	08	..
●	15	11	48
P	17	21	..
N	18	16	..
●	22	03	49
E	25	02	..
○	29	14	20

June			
	d	h	m
S	1	08	..
A	2	17	..
●	6	18	32
E	8	18	..
●	13	19	43
P	15	00	..
N	15	01	..
●	20	10	51
E	21	09	..
⊙ _j	21	10	07
○	28	04	53
S	28	15	..
A	30	03	..

July			
	d	h	m
E	6	03	..
●	6	07	51
N	12	12	..
●	13	02	48
P	13	08	..
E	18	16	..
●	19	19	52
S	25	21	..
A	27	06	..
○	27	20	20

August			
	d	h	m
E	2	09	..
●	4	18	18
N	8	23	..
P	10	18	..
●	11	09	58
E	15	00	..
●	18	07	49
S	22	03	..
A	23	11	..
○	26	11	56
E	29	14	..

September			
	d	h	m
●	3	02	37
N	5	07	..
P	8	01	..
●	9	18	01
E	11	10	..
●	16	23	15
S	18	10	..
A	20	01	..
⊙ _s	23	01	54
○	25	02	52
E	25	20	..

October			
	d	h	m
●	2	09	45
N	2	14	..
P	5	22	..
E	8	20	..
●	9	03	47
S	15	18	..
●	16	18	02
A	17	19	..
E	23	04	..
○	24	16	45
N	29	19	..
●	31	16	40
P	31	20	..

November			
	d	h	m
E	5	04	..
●	7	16	02
S	12	03	..
A	14	16	..
●	15	14	54
E	19	14	..
○	23	05	39
N	26	02	..
P	26	12	..
●	30	00	19

December			
	d	h	m
E	2	11	..
●	7	07	20
S	9	12	..
A	12	12	..
●	15	11	49
E	17	00	..
⊙ _d	21	22	23
○	22	17	49
N	23	12	..
P	24	10	..
●	29	09	34
E	29	18	..

LUNAR DATA

- | | |
|--|---|
| <ul style="list-style-type: none"> ● -- new Moon ◐ -- first quarter ○ -- full Moon ◑ -- last quarter | <ul style="list-style-type: none"> A -- Moon in apogee P -- Moon in perigee N -- Moon farthest north of Equator E -- Moon on Equator S -- Moon farthest south of Equator |
|--|---|

SOLAR DATA

- ⊙_m -- March equinox
- ⊙_j -- June solstice
- ⊙_s -- September equinox
- ⊙_d -- December solstice

Greenwich mean time (GMT) or universal time (UT) is the mean solar time on the Greenwich meridian reckoned in days of 24 mean solar hours written as 00^h at midnight and 12^h at noon. To convert the above times to those of other standard time meridians, add 1 hour for each 15° of east longitude of the desired meridian and subtract 1 hour for each 15° of west longitude. This table was compiled from data supplied by the Nautical Almanac Office, United States Naval Observatory.



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