

*Anthony F. Amos was a research fellow and past-director of the then Animal Rehabilitation Keep. He passed away in September of 2017. As an animal rehabilitator and oceanographer, he left a legacy that continues today. Prior to his passing Mr. Amos generated tide predictions through 2025.*

These tidal charts are provided for your personal, non-profit use only, and not intended for navigational use. The charts are provided free of charge, but if you would like to contribute to the Amos Rehabilitation Keep (ARK) here at UTMSI, we would gratefully accept any donations. The ARK rehabilitates injured and sick sea turtles and large aquatic birds such as pelicans, herons, loons, cormorants, gannets, boobies, gulls and terns. Send donation checks to The University of Texas Marine Science Institute, 750 Channel View Drive, Port Aransas, Texas 78373-5015. Make them out to UTMSI, but mark "For the ARK" on the check. All monies donated go towards the maintenance of the facility (food, medicines, supplies, etc.) and no overhead charges are assessed. Donations are fully tax-deductible.

#### About Tides

Ocean "tides" are controlled by the gravitational pull of the moon and the sun on the surface of the sea, causing it to rise and fall in a rhythmic pattern which we familiarly call the tides. These are the astronomical tides, and it is these on which this calendar is based. Quite accurate predictions can be made of those changes in water level caused by the moon's and the sun's pull. However, predicting the tides for any location is a complex business and, in fact, is not completely possible because the rise and fall of the sea or of bay and estuary waters is also affected by the following: winds, storms, rainfall, floods, atmospheric pressure, temperature, earthquakes, the shape of the coastline and large-scale alteration of the natural topography (dredged channels, waterways, passes between bays and the sea).

Along the Texas coast the range of the tides (the difference in height between the highs and the lows) is quite small, amounting to less than two feet on average. Because the slopes of our beaches are slight and our bays are shallow, the tide is nonetheless very important to coastal residents, navigation, commerce, and recreation. There are many peculiarities about our tides some of which will be explained here without going into too much technical detail. There are 37 different periods of tidal fluctuation which go into the prediction of the tides. Two of those periods dominate: the once-per-day high and low (diurnal) tide, and the twice-per-day high and low (semidiurnal) tide. Unlike most places on the East Coast of the US, for example, where they get two high tides and two low tides each day, we get week-long periods of diurnal tides, followed by a week of semidiurnal tides. Because of this, you cannot rely on the time of high tide one day to be a predictable number of minutes later the next day, and so-on (as you can along other US coastlines).

Some say the "tide goes backwards" here (meaning that for a few days the tides progress as above, but then one day, the main tide is at an earlier time than it was the day before). This makes those watches and clocks that show the tides not too reliable here. The diurnal tides here have a much greater range than do the semidiurnal periods. To simplify all these

peculiarities, I have developed tide calendars for several places along the Texas coast. (Note, that only Port Aransas tides are available for 2018-2025).

### The Amos Tide Calendars

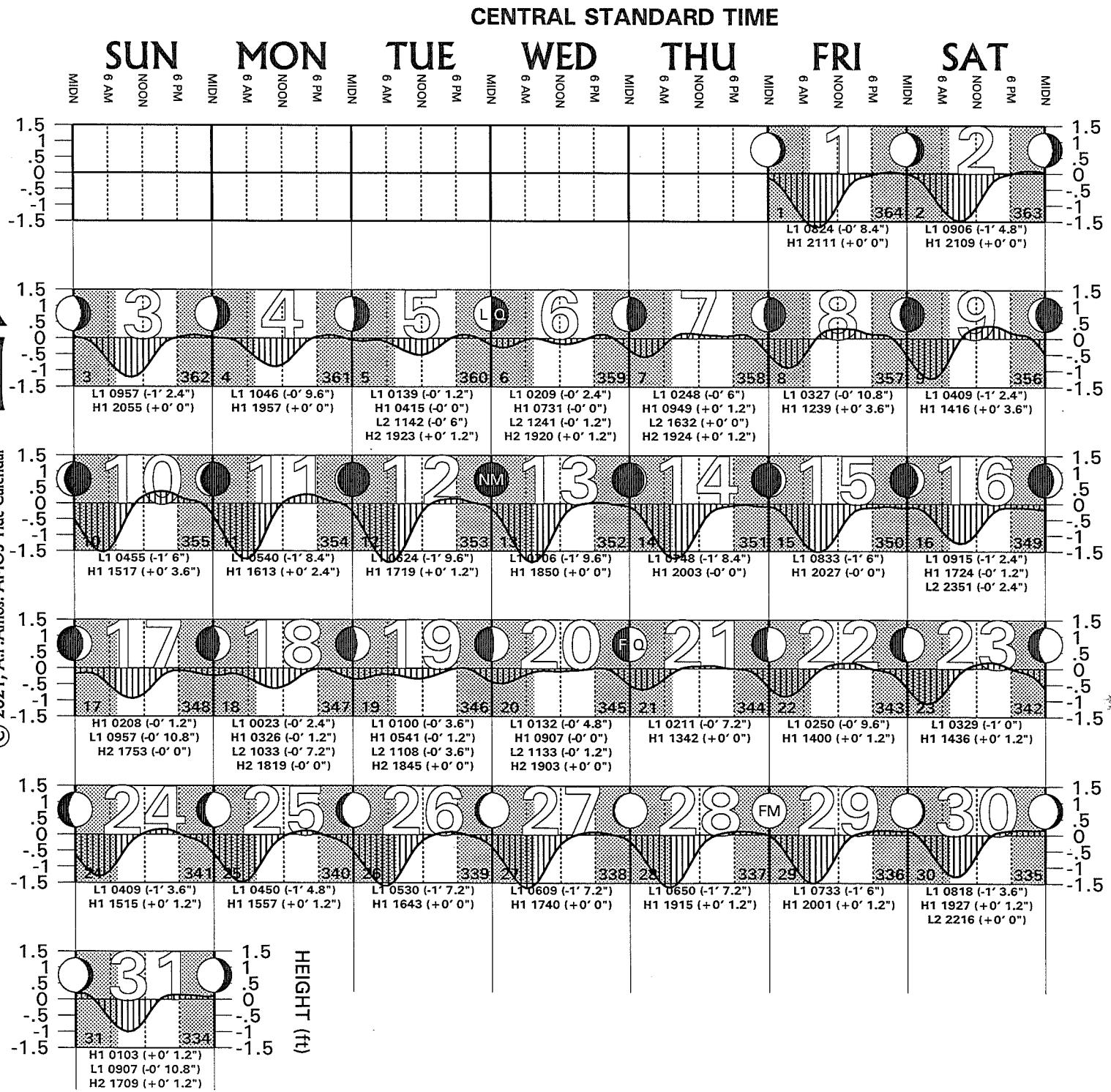
Tide-calendars are available showing predicted tides for the Aransas Pass Ship Channel connecting the Gulf of Mexico with Corpus Christi Bay. Predictions are based on measurements of the actual tides at each location. The method needs at least a year of data. At Port Aransas, the data is based on a one-year series of measurements, made in 1993 at the University of Texas Marine Science Institute's Pier Laboratory (located off the South Jetty of the Aransas Pass Ship Channel). From the series, 37 harmonic constituents of the astronomical tide were calculated and used in a modification of the standard National Ocean Survey tidal prediction program to make hourly water-level predictions and establish the times of the highs and lows for each day. The water level is adjusted to Mean Sea Level, rather than the Gulf Coast Datum. Consequently, the annual and semi-annual variation in sea level can be clearly seen in the position of the daily tide fluctuations relative to the zero mean sea level line (compare January when low tides prevail with October when the opposite is true). Each hour is indicated by a vertical line connecting the curve with the zero line. In general, slack water will be at the times which the curve intersects the zero axis, but when the curve is offset as in January and October, some interpolation may be necessary. Flood and ebb tidal currents will be at a maximum at the times of high and low water, respectively. This astronomical tide is often radically changed by strong winds before and during the passage of cold fronts and during extra tropical depressions. The astronomical signal will still be found "riding" on top of the meteorological surges. Past history has shown that the predicted times are quite accurate, although the range of the tides in the predictions is somewhat exaggerated.

Local times of the highs and lows are listed beneath each daily box (all heights are given in feet and all times are local because it is the system most commonly used by the general public). Highs and lows are listed in "order of appearance": if the first tide extreme is a low then the time and height will be preceded by L1 for Low 1; the next tide will be H1 for High 1, etc. (These numbers may be difficult to read on some older VGA screens.) The shaded areas each day show the hours of darkness. Phases of the moon are shown for each day with the New Moon (NM), First Quarter (FQ), Full Moon (FM), and Last Quarter (LQ) marked on the moon symbol where appropriate. The relative size and shape of the moon will be quite close to reality each day, but the moon's orientation is always vertical on the calendar (the author is working on a method of depicting the moon as it appears to the observer). The symbols appear on the night of the day closest to when the phase occurs, e.g., if full moon is at 1215 (24-hour clock) on the 25th of the month, then the symbol will appear straddling midnight of the 25th. Should it occur at 1145, then the symbol will appear on the 24th of the month. Also shown is the Julian Day (JD). In 2015, a non-leap year, 1 January = JD 1, and 31 December = JD 365. These numbers appear either to the upper right or lower right of each daily box. In case you want to know how fast time flies, in the opposite corner of each box, the number of days left in the year is printed. The local time zone in use is given at the top of each monthly chart. On the days when Daylight Savings Time comes into effect in April and reverts to standard time in October, the symbol "CDT" for Central Daylight Time, or "CST" for Central Standard Time appears. The appropriate

day's length will be 23 hours in April and 25 hours in October. Notice how this messes up a perfectly good calendar. This was one of the more difficult aspects of the calendar to program.

# PORT ARANSAS TIDE CHART

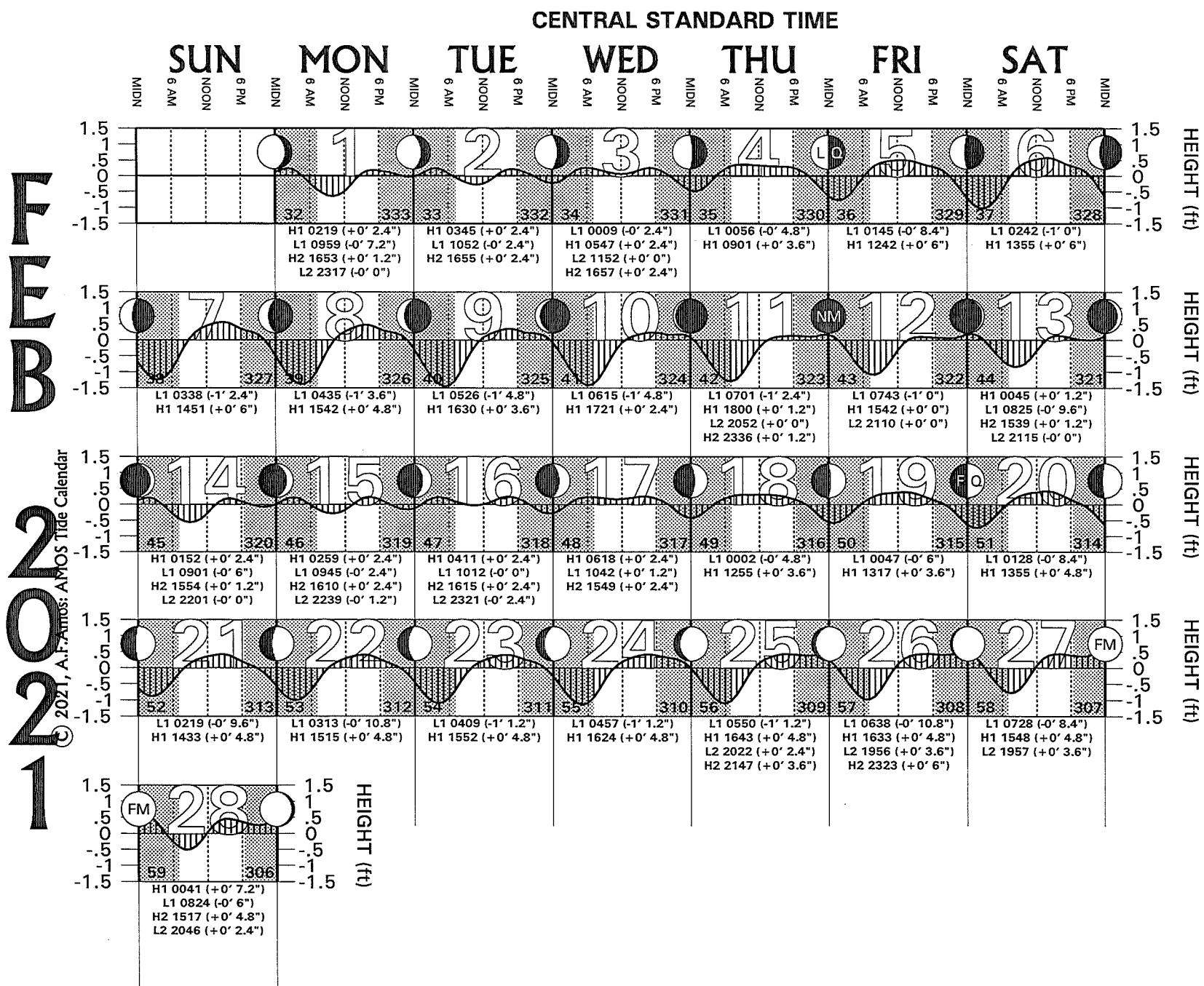
JAN 2021



SUNRISE, SUNSET and TWILIGHTS at Port Aransas for JAN 2021

JDAY	DATE	SUNRISE/SUNSET		CIVIL TWILIGHT				NAUTICAL TWILIGHT				LAN
		RISE h:m	SET h:m	LNGTH h:m	START h:m	END h:m	LNGHT h:m	START h:m	END h:m	LNGTH h:m		
1 FRI	1 JAN	07:19	17:44	10:25	06:54	18:10	11:16	06:25	18:39	12:15	12:32	
2 SAT	2 JAN	07:20	17:45	10:26	06:54	18:11	11:17	06:25	18:40	12:15	12:32	
3 SUN	3 JAN	07:20	17:46	10:26	06:54	18:11	11:17	06:25	18:41	12:15	12:33	
4 MON	4 JAN	07:20	17:47	10:27	06:55	18:12	11:18	06:25	18:41	12:16	12:33	
5 TUE	5 JAN	07:20	17:47	10:27	06:55	18:13	11:18	06:26	18:42	12:16	12:34	
6 WED	6 JAN	07:20	17:48	10:28	06:55	18:14	11:19	06:26	18:43	12:17	12:34	
7 THU	7 JAN	07:21	17:49	10:28	06:55	18:14	11:19	06:26	18:43	12:17	12:35	
8 FRI	8 JAN	07:21	17:50	10:29	06:55	18:15	11:20	06:26	18:44	12:18	12:35	
9 SAT	9 JAN	07:21	17:50	10:30	06:55	18:16	11:20	06:26	18:45	12:18	12:36	
10 SUN	10 JAN	07:21	17:51	10:30	06:55	18:17	11:21	06:26	18:45	12:19	12:36	
11 MON	11 JAN	07:21	17:52	10:31	06:55	18:17	11:22	06:27	18:46	12:20	12:36	
12 TUE	12 JAN	07:21	17:53	10:32	06:55	18:18	11:23	06:27	18:47	12:20	12:37	
13 WED	13 JAN	07:21	17:53	10:33	06:55	18:19	11:23	06:27	18:48	12:21	12:37	
14 THU	14 JAN	07:21	17:54	10:34	06:55	18:20	11:24	06:27	18:48	12:22	12:37	
15 FRI	15 JAN	07:21	17:55	10:34	06:55	18:20	11:25	06:27	18:49	12:22	12:38	
16 SAT	16 JAN	07:21	17:56	10:35	06:55	18:21	11:26	06:27	18:50	12:23	12:38	
17 SUN	17 JAN	07:20	17:57	10:36	06:55	18:22	11:27	06:27	18:50	12:24	12:39	
18 MON	18 JAN	07:20	17:58	10:37	06:55	18:23	11:28	06:26	18:51	12:25	12:39	
19 TUE	19 JAN	07:20	17:58	10:38	06:55	18:23	11:28	06:26	18:52	12:26	12:39	
20 WED	20 JAN	07:20	17:59	10:39	06:55	18:24	11:29	06:26	18:53	12:26	12:39	
21 THU	21 JAN	07:20	18:00	10:40	06:55	18:25	11:30	06:26	18:53	12:27	12:40	
22 FRI	22 JAN	07:19	18:01	10:41	06:54	18:26	11:31	06:26	18:54	12:28	12:40	
23 SAT	23 JAN	07:19	18:02	10:43	06:54	18:26	11:32	06:26	18:55	12:29	12:40	
24 SUN	24 JAN	07:19	18:02	10:44	06:54	18:27	11:33	06:25	18:56	12:30	12:41	
25 MON	25 JAN	07:18	18:03	10:45	06:54	18:28	11:34	06:25	18:56	12:31	12:41	
26 TUE	26 JAN	07:18	18:04	10:46	06:53	18:29	11:36	06:25	18:57	12:32	12:41	
27 WED	27 JAN	07:18	18:05	10:47	06:53	18:30	11:37	06:25	18:58	12:33	12:41	
28 THU	28 JAN	07:17	18:06	10:48	06:52	18:30	11:38	06:24	18:59	12:34	12:41	
29 FRI	29 JAN	07:17	18:06	10:50	06:52	18:31	11:39	06:24	18:59	12:35	12:42	
30 SAT	30 JAN	07:16	18:07	10:51	06:52	18:32	11:40	06:24	19:00	12:36	12:42	
31 SUN	31 JAN	07:16	18:08	10:52	06:51	18:33	11:41	06:23	19:01	12:38	12:42	

# PORT ARansas JETTIES

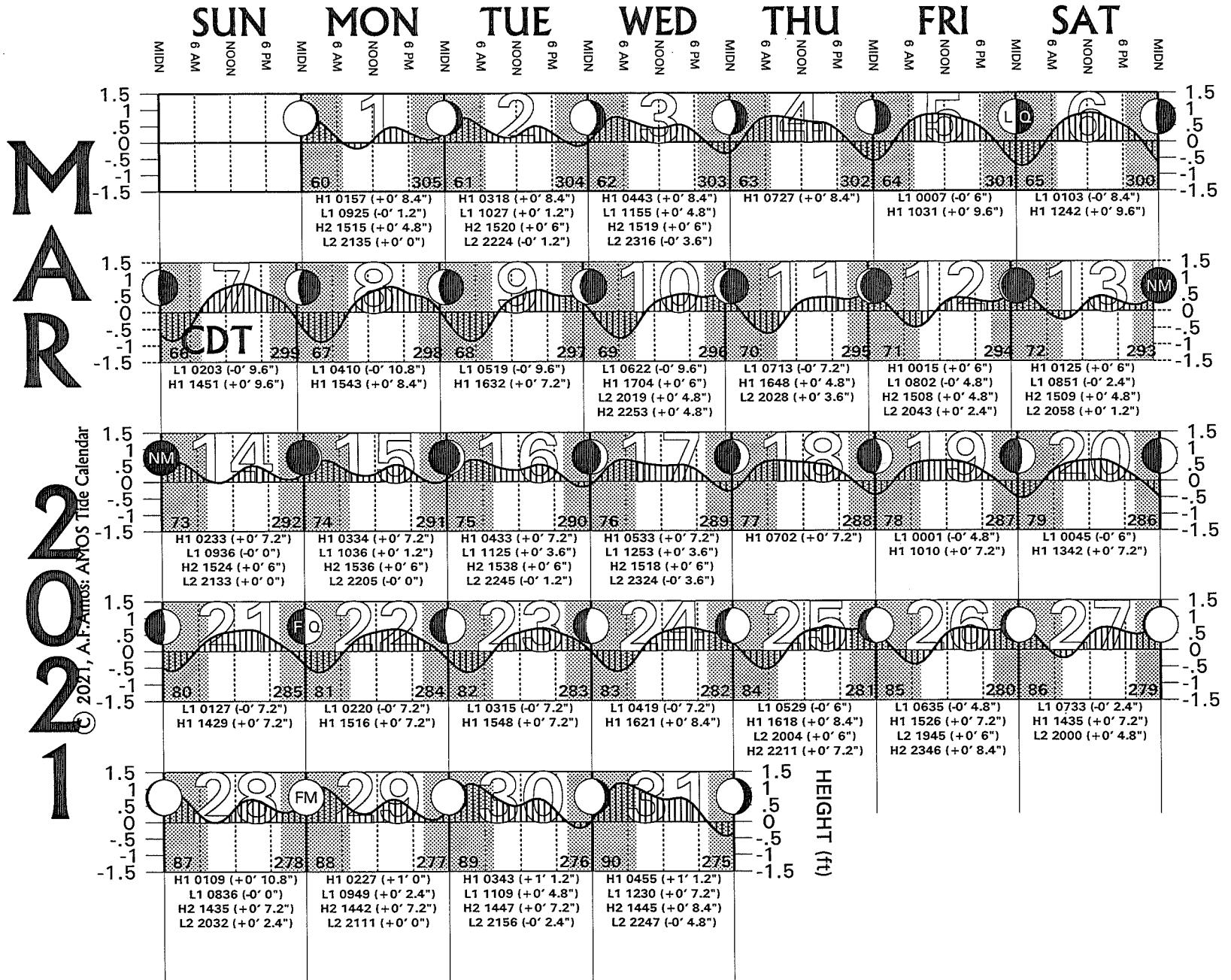


SUNRISE, SUNSET and TWILIGHTS at Port Aransas for FEB 2021

JDAY	DATE	SUNRISE/SUNSET			CIVIL TWILIGHT			NAUTICAL TWILIGHT			LAN
		RISE h:m	SET h:m	LNGTH h:m	START h:m	END h:m	LNGHT h:m	START h:m	END h:m	LNGTH h:m	
32	MON 1 FEB	07:15	18:09	10:54	06:51	18:33	11:43	06:23	19:01	12:39	12:42
33	TUE 2 FEB	07:15	18:10	10:55	06:50	18:34	11:44	06:22	19:02	12:40	12:42
34	WED 3 FEB	07:14	18:10	10:56	06:50	18:35	11:45	06:22	19:03	12:41	12:42
35	THU 4 FEB	07:14	18:11	10:58	06:49	18:36	11:46	06:21	19:03	12:42	12:42
36	FRI 5 FEB	07:13	18:12	10:59	06:49	18:36	11:48	06:21	19:04	12:43	12:42
37	SAT 6 FEB	07:12	18:13	11:00	06:48	18:37	11:49	06:20	19:05	12:45	12:43
38	SUN 7 FEB	07:12	18:14	11:02	06:47	18:38	11:50	06:20	19:06	12:46	12:43
39	MON 8 FEB	07:11	18:14	11:03	06:47	18:38	11:52	06:19	19:06	12:47	12:43
40	TUE 9 FEB	07:10	18:15	11:05	06:46	18:39	11:53	06:18	19:07	12:48	12:43
41	WED 10 FEB	07:10	18:16	11:06	06:46	18:40	11:54	06:18	19:08	12:50	12:43
42	THU 11 FEB	07:09	18:16	11:08	06:45	18:41	11:56	06:17	19:08	12:51	12:43
43	FRI 12 FEB	07:08	18:17	11:09	06:44	18:41	11:57	06:16	19:09	12:52	12:43
44	SAT 13 FEB	07:07	18:18	11:11	06:43	18:42	11:59	06:16	19:10	12:54	12:43
45	SUN 14 FEB	07:07	18:19	11:12	06:43	18:43	12:00	06:15	19:10	12:55	12:43
46	MON 15 FEB	07:06	18:19	11:14	06:42	18:43	12:01	06:14	19:11	12:56	12:43
47	TUE 16 FEB	07:05	18:20	11:15	06:41	18:44	12:03	06:14	19:11	12:58	12:43
48	WED 17 FEB	07:04	18:21	11:17	06:40	18:45	12:04	06:13	19:12	12:59	12:42
49	THU 18 FEB	07:03	18:21	11:18	06:39	18:45	12:06	06:12	19:13	13:01	12:42
50	FRI 19 FEB	07:02	18:22	11:20	06:39	18:46	12:07	06:11	19:13	13:02	12:42
51	SAT 20 FEB	07:02	18:23	11:21	06:38	18:47	12:09	06:10	19:14	13:04	12:42
52	SUN 21 FEB	07:01	18:24	11:23	06:37	18:47	12:10	06:10	19:15	13:05	12:42
53	MON 22 FEB	07:00	18:24	11:24	06:36	18:48	12:12	06:09	19:15	13:06	12:42
54	TUE 23 FEB	06:59	18:25	11:26	06:35	18:49	12:13	06:08	19:16	13:08	12:42
55	WED 24 FEB	06:58	18:25	11:28	06:34	18:49	12:15	06:07	19:16	13:09	12:42
56	THU 25 FEB	06:57	18:26	11:29	06:33	18:50	12:16	06:06	19:17	13:11	12:42
57	FRI 26 FEB	06:56	18:27	11:31	06:32	18:50	12:18	06:05	19:18	13:12	12:41
58	SAT 27 FEB	06:55	18:27	11:32	06:31	18:51	12:20	06:04	19:18	13:14	12:41
59	SUN 28 FEB	06:54	18:28	11:34	06:30	18:52	12:21	06:03	19:19	13:16	12:41

# PORT ARANSAS JETTIES

**CENTRAL DAYLIGHT TIME STARTS AT 2 AM ON MARCH 7**



SUNRISE, SUNSET and TWILIGHTS at Port Aransas for MAR 2021

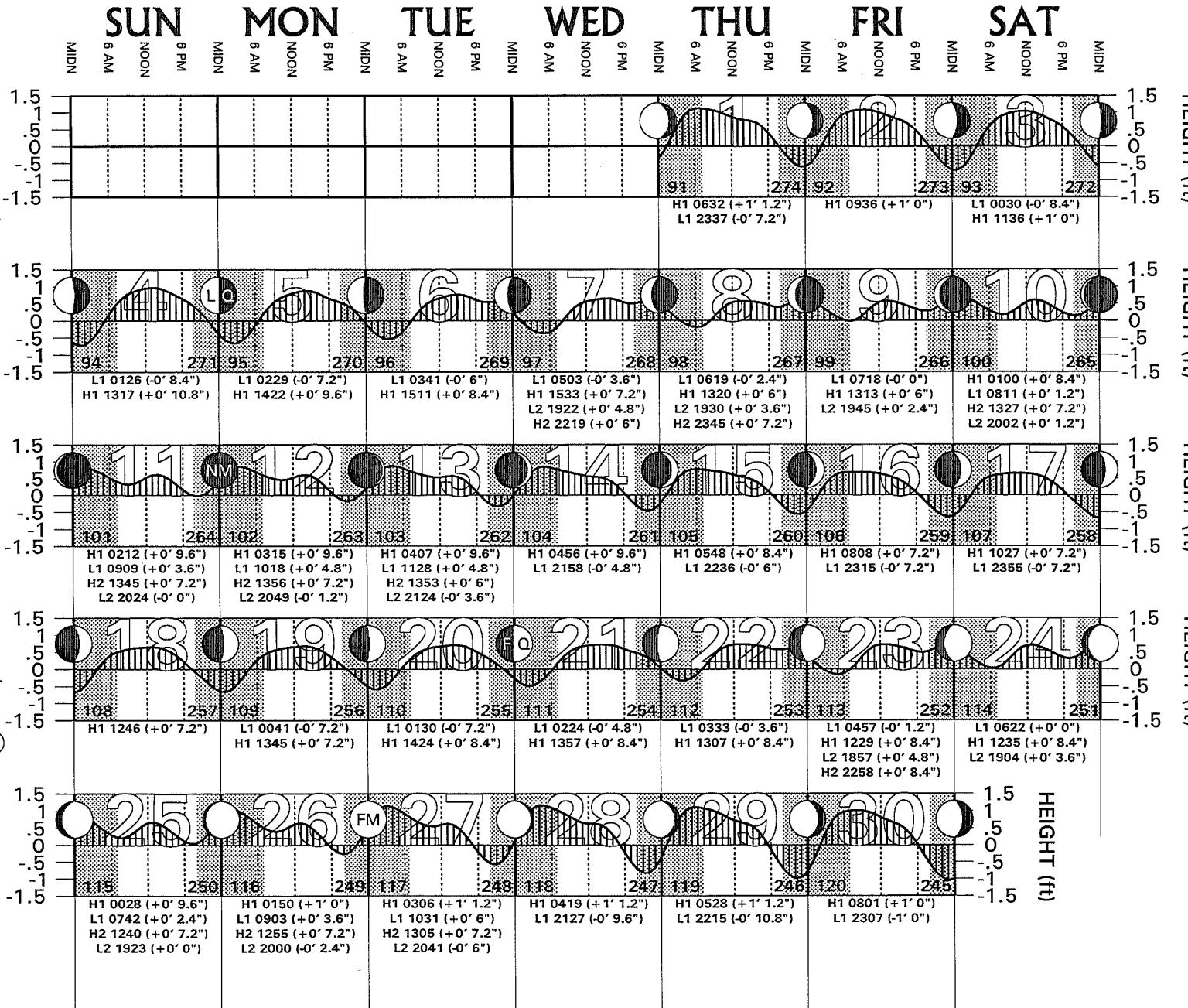
JDAY	DATE	SUNRISE/SUNSET			CIVIL TWILIGHT			NAUTICAL TWILIGHT			LAN
		RISE h:m	SET h:m	LNGTH h:m	START h:m	END h:m	LNGHT h:m	START h:m	END h:m	LNGTH h:m	
60	MON 1 MAR	06:53	18:29	11:36	06:29	18:52	12:23	06:02	19:19	13:17	12:41
61	TUE 2 MAR	06:52	18:29	11:37	06:28	18:53	12:24	06:01	19:20	13:19	12:41
62	WED 3 MAR	06:51	18:30	11:39	06:27	18:53	12:26	06:00	19:21	13:20	12:40
63	THU 4 MAR	06:50	18:30	11:41	06:26	18:54	12:28	05:59	19:21	13:22	12:40
64	FRI 5 MAR	06:49	18:31	11:42	06:25	18:55	12:29	05:58	19:22	13:23	12:40
65	SAT 6 MAR	06:48	18:32	11:44	06:24	18:55	12:31	05:57	19:22	13:25	12:40
66	SUN 7 MAR	07:47	19:32	11:45	07:23	19:56	12:32	06:56	20:23	13:27	13:40
67	MON 8 MAR	07:46	19:33	11:47	07:22	19:56	12:34	06:55	20:23	13:28	13:39
68	TUE 9 MAR	07:45	19:33	11:49	07:21	19:57	12:36	06:54	20:24	13:30	13:39
69	WED 10 MAR	07:44	19:34	11:50	07:20	19:57	12:37	06:53	20:25	13:32	13:39
70	THU 11 MAR	07:42	19:35	11:52	07:19	19:58	12:39	06:52	20:25	13:33	13:39
71	FRI 12 MAR	07:41	19:35	11:54	07:18	19:59	12:41	06:51	20:26	13:35	13:38
72	SAT 13 MAR	07:40	19:36	11:55	07:17	19:59	12:42	06:50	20:26	13:37	13:38
73	SUN 14 MAR	07:39	19:36	11:57	07:16	20:00	12:44	06:49	20:27	13:38	13:38
74	MON 15 MAR	07:38	19:37	11:59	07:15	20:00	12:46	06:47	20:27	13:40	13:37
75	TUE 16 MAR	07:37	19:37	12:00	07:14	20:01	12:47	06:46	20:28	13:42	13:37
76	WED 17 MAR	07:36	19:38	12:02	07:12	20:01	12:49	06:45	20:28	13:43	13:37
77	THU 18 MAR	07:35	19:38	12:04	07:11	20:02	12:51	06:44	20:29	13:45	13:37
78	FRI 19 MAR	07:34	19:39	12:05	07:10	20:02	12:52	06:43	20:30	13:47	13:36
79	SAT 20 MAR	07:32	19:40	12:07	07:09	20:03	12:54	06:42	20:30	13:48	13:36
80	SUN 21 MAR	07:31	19:40	12:09	07:08	20:03	12:56	06:41	20:31	13:50	13:36
81	MON 22 MAR	07:30	19:41	12:10	07:07	20:04	12:57	06:39	20:31	13:52	13:35
82	TUE 23 MAR	07:29	19:41	12:12	07:06	20:05	12:59	06:38	20:32	13:54	13:35
83	WED 24 MAR	07:28	19:42	12:14	07:04	20:05	13:01	06:37	20:32	13:55	13:35
84	THU 25 MAR	07:27	19:42	12:15	07:03	20:06	13:02	06:36	20:33	13:57	13:34
85	FRI 26 MAR	07:26	19:43	12:17	07:02	20:06	13:04	06:35	20:34	13:59	13:34
86	SAT 27 MAR	07:24	19:43	12:19	07:01	20:07	13:06	06:34	20:34	14:00	13:34
87	SUN 28 MAR	07:23	19:44	12:20	07:00	20:07	13:07	06:32	20:35	14:02	13:34
88	MON 29 MAR	07:22	19:44	12:22	06:59	20:08	13:09	06:31	20:35	14:04	13:33
89	TUE 30 MAR	07:21	19:45	12:24	06:58	20:08	13:11	06:30	20:36	14:06	13:33
90	WED 31 MAR	07:20	19:45	12:25	06:56	20:09	13:12	06:29	20:36	14:08	13:33

# PORT ARansas SET-TIDE

# APR 2021

2021, A.F.Fantos: AMOS Tide Calendar

## CENTRAL DAYLIGHT TIME



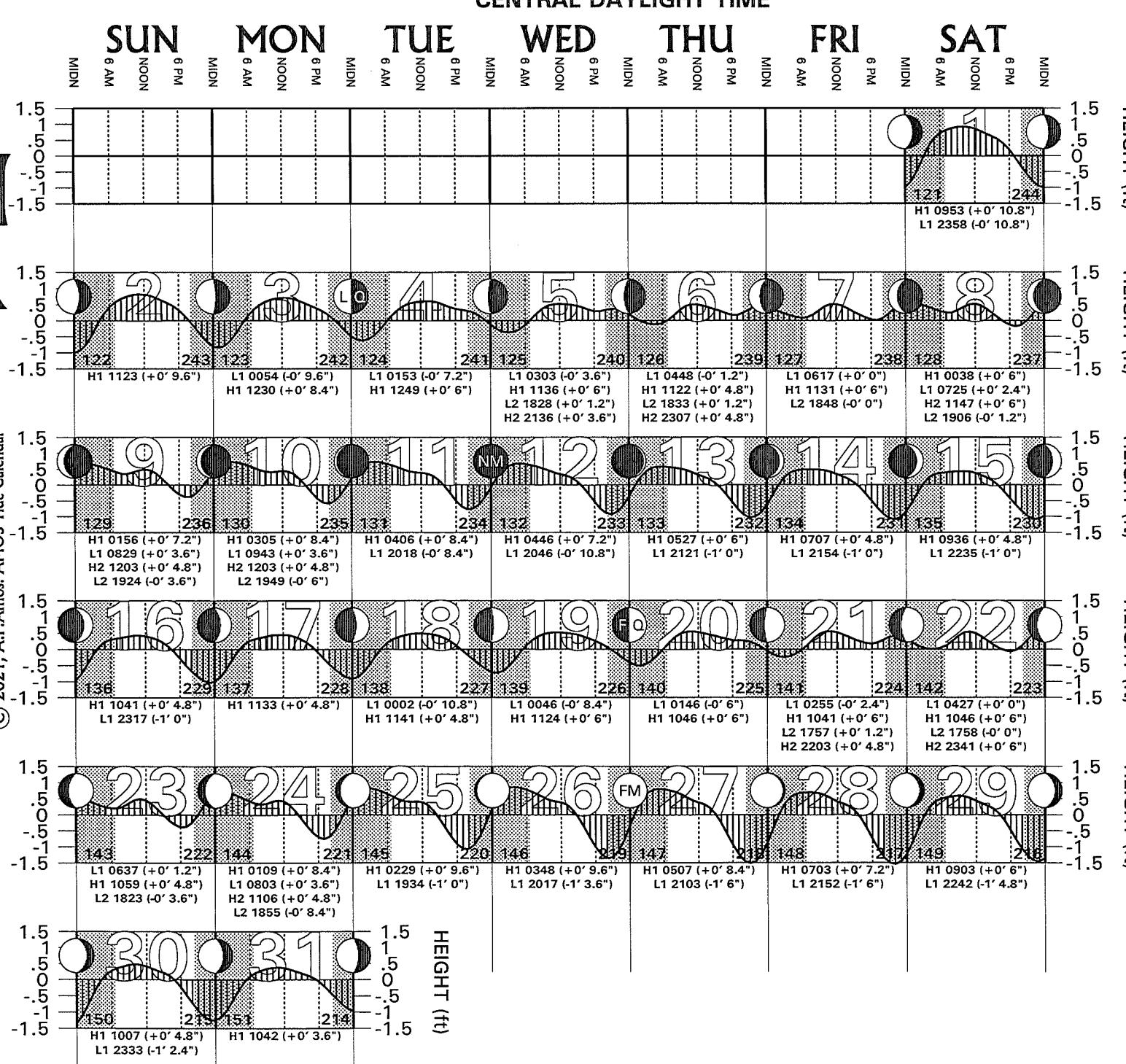
SUNRISE, SUNSET and TWILIGHTS at Port Aransas for APR 2021

JDAY	DATE	SUNRISE/SUNSET			CIVIL TWILIGHT			NAUTICAL TWILIGHT			LAN
		RISE h:m	SET h:m	LNGTH h:m	START h:m	END h:m	LNGHT h:m	START h:m	END h:m	LNGTH h:m	
91	THU 1 APR	07:19	19:46	12:27	06:55	20:09	13:14	06:28	20:37	14:09	13:32
92	FRI 2 APR	07:18	19:46	12:29	06:54	20:10	13:16	06:27	20:38	14:11	13:32
93	SAT 3 APR	07:17	19:47	12:30	06:53	20:11	13:18	06:25	20:38	14:13	13:32
94	SUN 4 APR	07:15	19:47	12:32	06:52	20:11	13:19	06:24	20:39	14:15	13:31
95	MON 5 APR	07:14	19:48	12:34	06:51	20:12	13:21	06:23	20:39	14:16	13:31
96	TUE 6 APR	07:13	19:48	12:35	06:50	20:12	13:23	06:22	20:40	14:18	13:31
97	WED 7 APR	07:12	19:49	12:37	06:48	20:13	13:24	06:21	20:41	14:20	13:31
98	THU 8 APR	07:11	19:50	12:38	06:47	20:13	13:26	06:19	20:41	14:22	13:30
99	FRI 9 APR	07:10	19:50	12:40	06:46	20:14	13:28	06:18	20:42	14:24	13:30
100	SAT 10 APR	07:09	19:51	12:42	06:45	20:14	13:29	06:17	20:42	14:25	13:30
101	SUN 11 APR	07:08	19:51	12:43	06:44	20:15	13:31	06:16	20:43	14:27	13:29
102	MON 12 APR	07:07	19:52	12:45	06:43	20:16	13:33	06:15	20:44	14:29	13:29
103	TUE 13 APR	07:06	19:52	12:46	06:42	20:16	13:34	06:14	20:44	14:31	13:29
104	WED 14 APR	07:05	19:53	12:48	06:41	20:17	13:36	06:13	20:45	14:32	13:29
105	THU 15 APR	07:04	19:53	12:50	06:40	20:17	13:38	06:11	20:46	14:34	13:28
106	FRI 16 APR	07:03	19:54	12:51	06:39	20:18	13:39	06:10	20:46	14:36	13:28
107	SAT 17 APR	07:02	19:54	12:53	06:38	20:18	13:41	06:09	20:47	14:38	13:28
108	SUN 18 APR	07:01	19:55	12:54	06:36	20:19	13:43	06:08	20:48	14:39	13:28
109	MON 19 APR	07:00	19:55	12:56	06:35	20:20	13:44	06:07	20:48	14:41	13:28
110	TUE 20 APR	06:59	19:56	12:57	06:34	20:20	13:46	06:06	20:49	14:43	13:27
111	WED 21 APR	06:58	19:57	12:59	06:33	20:21	13:47	06:05	20:50	14:45	13:27
112	THU 22 APR	06:57	19:57	13:00	06:32	20:21	13:49	06:04	20:50	14:46	13:27
113	FRI 23 APR	06:56	19:58	13:02	06:31	20:22	13:51	06:03	20:51	14:48	13:27
114	SAT 24 APR	06:55	19:58	13:03	06:30	20:23	13:52	06:02	20:52	14:50	13:27
115	SUN 25 APR	06:54	19:59	13:05	06:29	20:23	13:54	06:01	20:52	14:52	13:26
116	MON 26 APR	06:53	19:59	13:06	06:29	20:24	13:55	06:00	20:53	14:53	13:26
117	TUE 27 APR	06:52	20:00	13:08	06:28	20:25	13:57	05:59	20:54	14:55	13:26
118	WED 28 APR	06:51	20:01	13:09	06:27	20:25	13:58	05:58	20:54	14:57	13:26
119	THU 29 APR	06:50	20:01	13:11	06:26	20:26	14:00	05:57	20:55	14:59	13:26
120	FRI 30 APR	06:50	20:02	13:12	06:25	20:26	14:02	05:56	20:56	15:00	13:26

# PORT ARANZA SETTIMANALE

# MAY 2021

2021, A.F. Amos: AMOS Tide Calendar



SUNRISE, SUNSET and TWILIGHTS at Port Aransas for MAY 2021

JDAY	DATE	SUNRISE/SUNSET		CIVIL TWILIGHT				NAUTICAL TWILIGHT				LAN
		RISE	SET	LNGTH	START	END	LNGHT	START	END	LNGTH		
		h:m	h:m	h:m	h:m	h:m	h:m	h:m	h:m	h:m		
121	SAT 1 MAY	06:49	20:02	13:14	06:24	20:27	14:03	05:55	20:56	15:02	13:25	
122	SUN 2 MAY	06:48	20:03	13:15	06:23	20:28	14:05	05:54	20:57	15:04	13:25	
123	MON 3 MAY	06:47	20:03	13:16	06:22	20:28	14:06	05:53	20:58	15:05	13:25	
124	TUE 4 MAY	06:46	20:04	13:18	06:21	20:29	14:08	05:52	20:59	15:07	13:25	
125	WED 5 MAY	06:46	20:05	13:19	06:21	20:30	14:09	05:51	20:59	15:08	13:25	
126	THU 6 MAY	06:45	20:05	13:20	06:20	20:30	14:10	05:50	21:00	15:10	13:25	
127	FRI 7 MAY	06:44	20:06	13:22	06:19	20:31	14:12	05:49	21:01	15:12	13:25	
128	SAT 8 MAY	06:43	20:06	13:23	06:18	20:31	14:13	05:48	21:01	15:13	13:25	
129	SUN 9 MAY	06:43	20:07	13:24	06:17	20:32	14:15	05:47	21:02	15:15	13:25	
130	MON 10 MAY	06:42	20:08	13:26	06:17	20:33	14:16	05:47	21:03	15:16	13:25	
131	TUE 11 MAY	06:41	20:08	13:27	06:16	20:33	14:17	05:46	21:04	15:18	13:25	
132	WED 12 MAY	06:41	20:09	13:28	06:15	20:34	14:19	05:45	21:04	15:19	13:25	
133	THU 13 MAY	06:40	20:09	13:29	06:15	20:35	14:20	05:44	21:05	15:21	13:25	
134	FRI 14 MAY	06:39	20:10	13:30	06:14	20:35	14:21	05:44	21:06	15:22	13:25	
135	SAT 15 MAY	06:39	20:10	13:32	06:13	20:36	14:23	05:43	21:06	15:24	13:25	
136	SUN 16 MAY	06:38	20:11	13:33	06:13	20:37	14:24	05:42	21:07	15:25	13:25	
137	MON 17 MAY	06:38	20:12	13:34	06:12	20:37	14:25	05:42	21:08	15:26	13:25	
138	TUE 18 MAY	06:37	20:12	13:35	06:12	20:38	14:26	05:41	21:09	15:28	13:25	
139	WED 19 MAY	06:37	20:13	13:36	06:11	20:38	14:27	05:40	21:09	15:29	13:25	
140	THU 20 MAY	06:36	20:13	13:37	06:11	20:39	14:29	05:40	21:10	15:30	13:25	
141	FRI 21 MAY	06:36	20:14	13:38	06:10	20:40	14:30	05:39	21:11	15:32	13:25	
142	SAT 22 MAY	06:35	20:14	13:39	06:10	20:40	14:31	05:39	21:11	15:33	13:25	
143	SUN 23 MAY	06:35	20:15	13:40	06:09	20:41	14:32	05:38	21:12	15:34	13:25	
144	MON 24 MAY	06:35	20:16	13:41	06:09	20:42	14:33	05:38	21:13	15:35	13:25	
145	TUE 25 MAY	06:34	20:16	13:42	06:08	20:42	14:34	05:37	21:13	15:36	13:25	
146	WED 26 MAY	06:34	20:17	13:43	06:08	20:43	14:35	05:37	21:14	15:37	13:25	
147	THU 27 MAY	06:34	20:17	13:44	06:08	20:43	14:36	05:36	21:15	15:38	13:25	
148	FRI 28 MAY	06:33	20:18	13:44	06:07	20:44	14:37	05:36	21:15	15:40	13:26	
149	SAT 29 MAY	06:33	20:18	13:45	06:07	20:44	14:38	05:35	21:16	15:41	13:26	
150	SUN 30 MAY	06:33	20:19	13:46	06:07	20:45	14:38	05:35	21:17	15:41	13:26	
151	MON 31 MAY	06:33	20:19	13:47	06:06	20:46	14:39	05:35	21:17	15:42	13:26	

## PORT

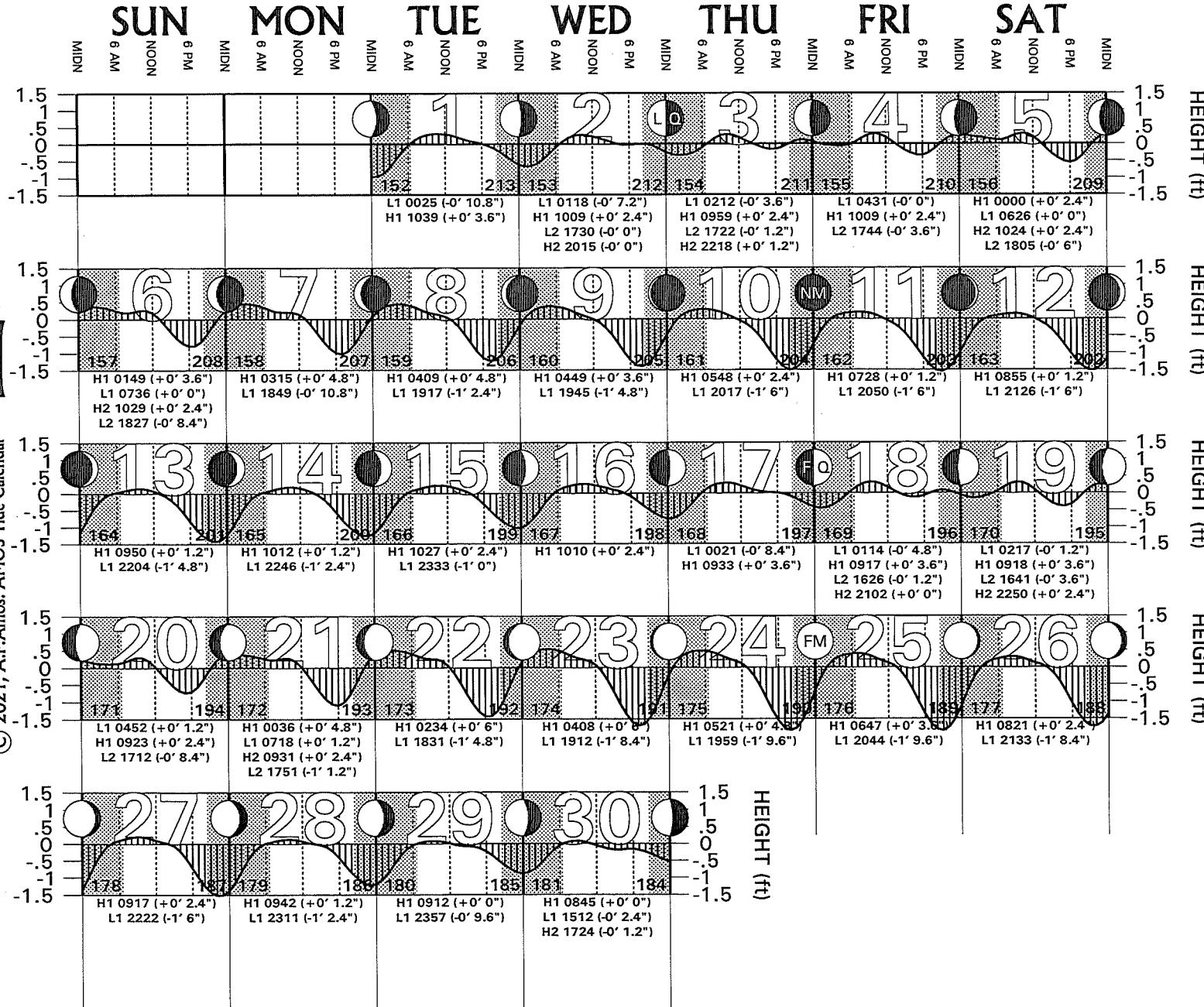
## ARANSAS JETTIES

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**JUN 2021**

© 2021, A.F. Amos: AMOS Tide Calendar

## CENTRAL DAYLIGHT TIME



SUNRISE, SUNSET and TWILIGHTS at Port Aransas for JUN 2021

JDAY	DATE	SUNRISE/SUNSET		CIVIL TWILIGHT				NAUTICAL TWILIGHT				LAN
		RISE	SET	LNGTH	START	END	LNGHT	START	END	LNGTH		
		h:m	h:m	h:m	h:m	h:m	h:m	h:m	h:m	h:m		
152	TUE 1 JUN	06:32	20:20	13:47	06:06	20:46	14:40	05:34	21:18	15:43	13:26	
153	WED 2 JUN	06:32	20:20	13:48	06:06	20:47	14:41	05:34	21:18	15:44	13:26	
154	THU 3 JUN	06:32	20:21	13:49	06:06	20:47	14:41	05:34	21:19	15:45	13:26	
155	FRI 4 JUN	06:32	20:21	13:49	06:05	20:48	14:42	05:34	21:19	15:46	13:27	
156	SAT 5 JUN	06:32	20:22	13:50	06:05	20:48	14:43	05:33	21:20	15:47	13:27	
157	SUN 6 JUN	06:32	20:22	13:50	06:05	20:49	14:43	05:33	21:21	15:47	13:27	
158	MON 7 JUN	06:32	20:23	13:51	06:05	20:49	14:44	05:33	21:21	15:48	13:27	
159	TUE 8 JUN	06:32	20:23	13:51	06:05	20:50	14:44	05:33	21:22	15:48	13:27	
160	WED 9 JUN	06:32	20:23	13:52	06:05	20:50	14:45	05:33	21:22	15:49	13:27	
161	THU 10 JUN	06:31	20:24	13:52	06:05	20:50	14:45	05:33	21:22	15:50	13:28	
162	FRI 11 JUN	06:32	20:24	13:53	06:05	20:51	14:46	05:33	21:23	15:50	13:28	
163	SAT 12 JUN	06:32	20:25	13:53	06:05	20:51	14:46	05:33	21:23	15:50	13:28	
164	SUN 13 JUN	06:32	20:25	13:53	06:05	20:52	14:47	05:33	21:24	15:51	13:28	
165	MON 14 JUN	06:32	20:25	13:54	06:05	20:52	14:47	05:33	21:24	15:51	13:28	
166	TUE 15 JUN	06:32	20:26	13:54	06:05	20:52	14:47	05:33	21:24	15:52	13:29	
167	WED 16 JUN	06:32	20:26	13:54	06:05	20:53	14:47	05:33	21:25	15:52	13:29	
168	THU 17 JUN	06:32	20:26	13:54	06:05	20:53	14:48	05:33	21:25	15:52	13:29	
169	FRI 18 JUN	06:32	20:26	13:54	06:05	20:53	14:48	05:33	21:25	15:52	13:29	
170	SAT 19 JUN	06:32	20:27	13:54	06:06	20:53	14:48	05:33	21:26	15:52	13:30	
171	SUN 20 JUN	06:32	20:27	13:54	06:06	20:54	14:48	05:34	21:26	15:52	13:30	
172	MON 21 JUN	06:33	20:27	13:54	06:06	20:54	14:48	05:34	21:26	15:52	13:30	
173	TUE 22 JUN	06:33	20:27	13:54	06:06	20:54	14:48	05:34	21:26	15:52	13:30	
174	WED 23 JUN	06:33	20:28	13:54	06:06	20:54	14:48	05:34	21:26	15:52	13:30	
175	THU 24 JUN	06:33	20:28	13:54	06:07	20:54	14:48	05:34	21:27	15:52	13:31	
176	FRI 25 JUN	06:34	20:28	13:54	06:07	20:55	14:48	05:35	21:27	15:52	13:31	
177	SAT 26 JUN	06:34	20:28	13:54	06:07	20:55	14:47	05:35	21:27	15:52	13:31	
178	SUN 27 JUN	06:34	20:28	13:54	06:08	20:55	14:47	05:35	21:27	15:51	13:31	
179	MON 28 JUN	06:35	20:28	13:54	06:08	20:55	14:47	05:36	21:27	15:51	13:31	
180	TUE 29 JUN	06:35	20:28	13:53	06:08	20:55	14:47	05:36	21:27	15:51	13:32	
181	WED 30 JUN	06:35	20:28	13:53	06:09	20:55	14:46	05:37	21:27	15:50	13:32	

# PORT ARANSAS JETTIES

HEIGHT (ft)

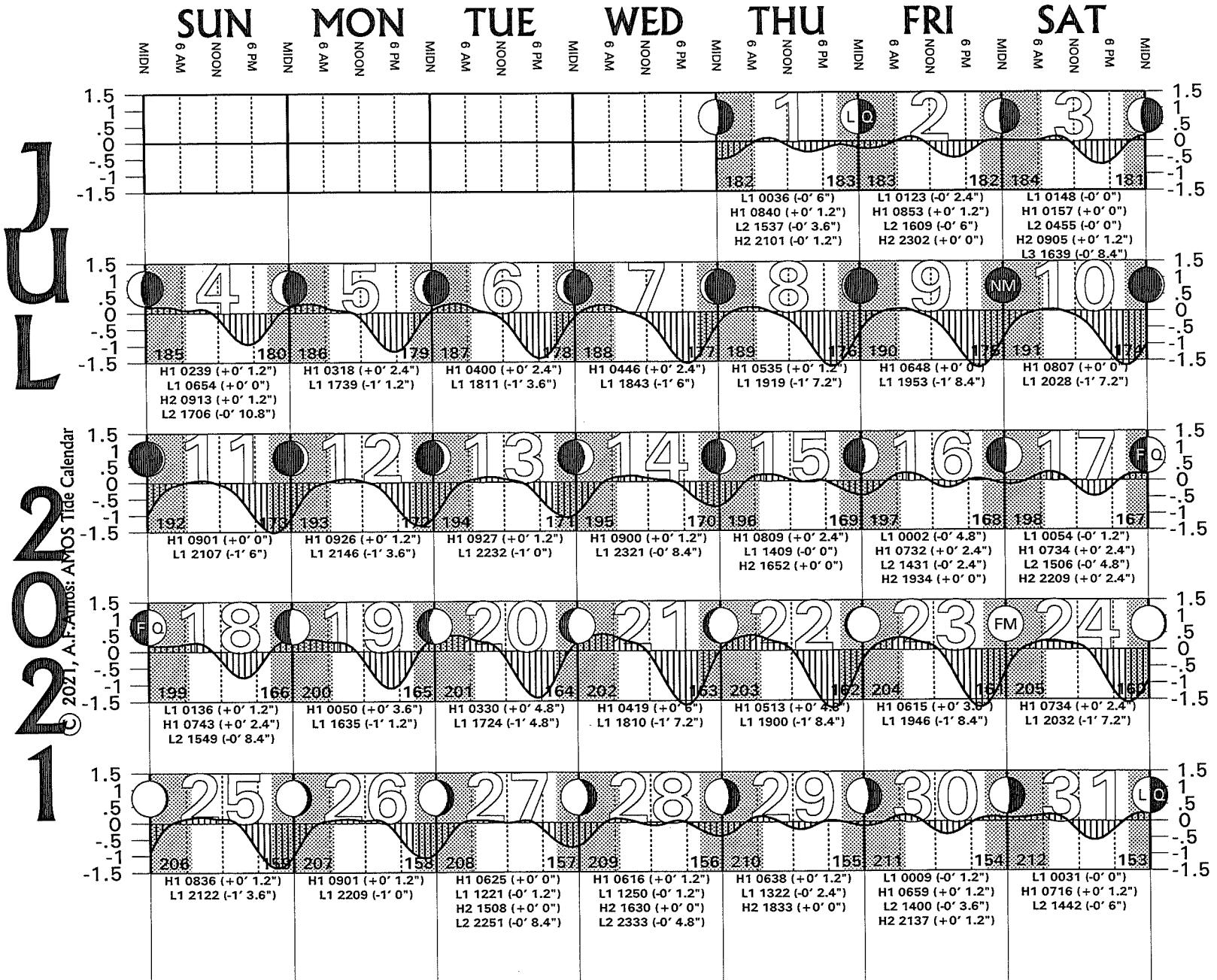
HEIGHT (ft)

HEIGHT (ft)

HEIGHT (ft)

HEIGHT (ft)

## CENTRAL DAYLIGHT TIME



JULY 2021

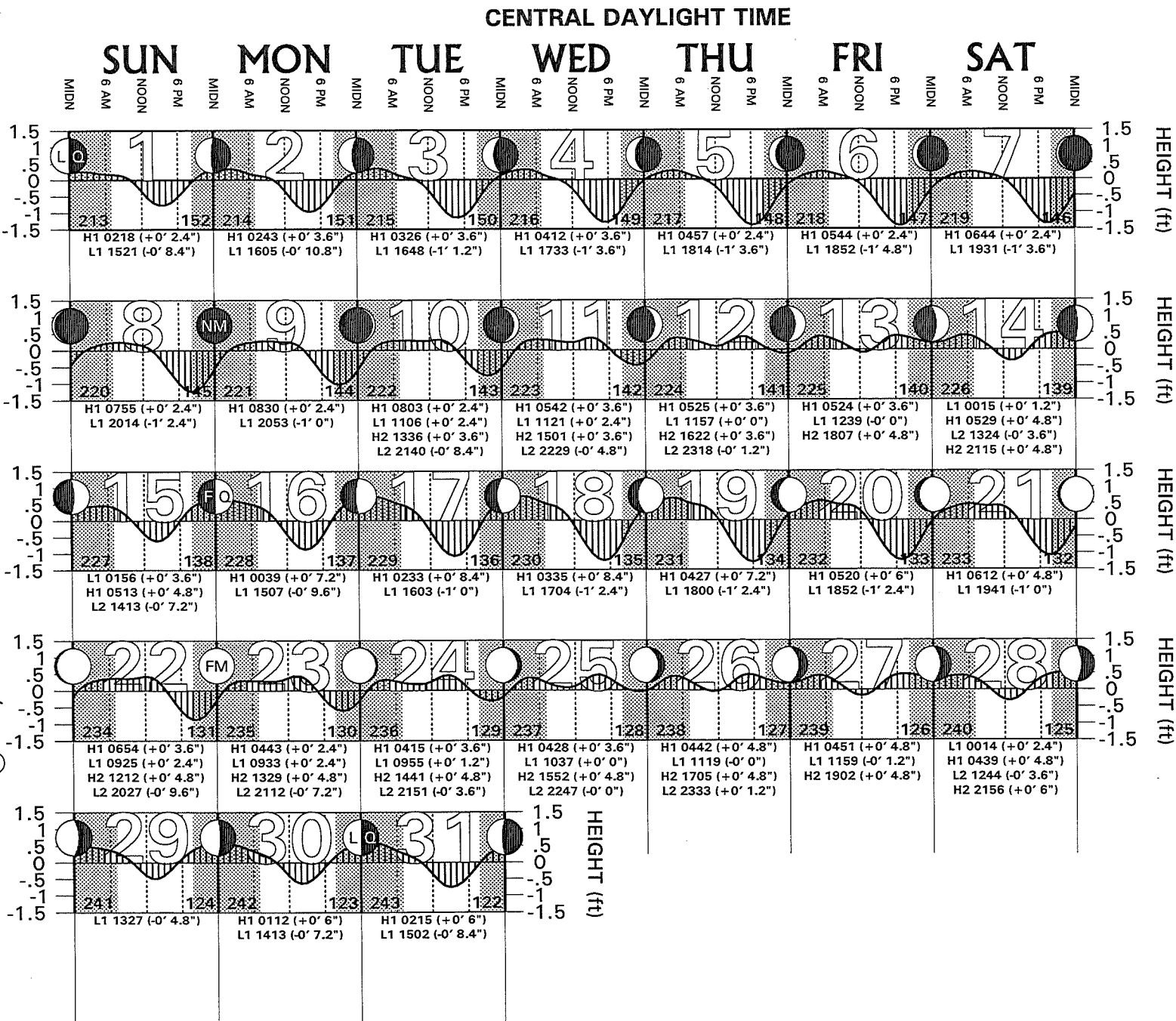
SUNRISE, SUNSET and TWILIGHTS at Port Aransas for JUL 2021

JDAY	DATE	SUNRISE/SUNSET			CIVIL TWILIGHT			NAUTICAL TWILIGHT			LAN
		RISE	SET	LNGTH	START	END	LNGHT	START	END	LNGTH	
		h:m	h:m	h:m	h:m	h:m	h:m	h:m	h:m	h:m	
182	THU 1 JUL	06:36	20:28	13:53	06:09	20:55	14:46	05:37	21:27	15:50	13:32
183	FRI 2 JUL	06:36	20:28	13:52	06:09	20:55	14:45	05:37	21:27	15:50	13:32
184	SAT 3 JUL	06:36	20:28	13:52	06:10	20:55	14:45	05:38	21:27	15:49	13:32
185	SUN 4 JUL	06:37	20:28	13:51	06:10	20:55	14:44	05:38	21:27	15:48	13:33
186	MON 5 JUL	06:37	20:28	13:51	06:11	20:55	14:44	05:39	21:27	15:48	13:33
187	TUE 6 JUL	06:38	20:28	13:50	06:11	20:54	14:43	05:39	21:26	15:47	13:33
188	WED 7 JUL	06:38	20:28	13:50	06:12	20:54	14:43	05:40	21:26	15:46	13:33
189	THU 8 JUL	06:39	20:28	13:49	06:12	20:54	14:42	05:40	21:26	15:46	13:33
190	FRI 9 JUL	06:39	20:28	13:49	06:13	20:54	14:41	05:41	21:26	15:45	13:33
191	SAT 10 JUL	06:39	20:27	13:48	06:13	20:54	14:41	05:41	21:25	15:44	13:33
192	SUN 11 JUL	06:40	20:27	13:47	06:14	20:54	14:40	05:42	21:25	15:43	13:34
193	MON 12 JUL	06:40	20:27	13:47	06:14	20:53	14:39	05:42	21:25	15:42	13:34
194	TUE 13 JUL	06:41	20:27	13:46	06:15	20:53	14:38	05:43	21:25	15:41	13:34
195	WED 14 JUL	06:41	20:26	13:45	06:15	20:53	14:37	05:44	21:24	15:40	13:34
196	THU 15 JUL	06:42	20:26	13:44	06:16	20:52	14:37	05:44	21:24	15:39	13:34
197	FRI 16 JUL	06:42	20:26	13:44	06:16	20:52	14:36	05:45	21:23	15:38	13:34
198	SAT 17 JUL	06:43	20:26	13:43	06:17	20:52	14:35	05:45	21:23	15:37	13:34
199	SUN 18 JUL	06:43	20:25	13:42	06:17	20:51	14:34	05:46	21:22	15:36	13:34
200	MON 19 JUL	06:44	20:25	13:41	06:18	20:51	14:33	05:47	21:22	15:35	13:34
201	TUE 20 JUL	06:44	20:24	13:40	06:19	20:50	14:32	05:47	21:21	15:34	13:34
202	WED 21 JUL	06:45	20:24	13:39	06:19	20:50	14:31	05:48	21:21	15:33	13:34
203	THU 22 JUL	06:45	20:23	13:38	06:20	20:49	14:30	05:49	21:20	15:32	13:34
204	FRI 23 JUL	06:46	20:23	13:37	06:20	20:49	14:29	05:49	21:20	15:30	13:35
205	SAT 24 JUL	06:47	20:23	13:36	06:21	20:48	14:27	05:50	21:19	15:29	13:35
206	SUN 25 JUL	06:47	20:22	13:35	06:21	20:48	14:26	05:51	21:18	15:28	13:35
207	MON 26 JUL	06:48	20:21	13:34	06:22	20:47	14:25	05:51	21:18	15:26	13:35
208	TUE 27 JUL	06:48	20:21	13:33	06:23	20:46	14:24	05:52	21:17	15:25	13:35
209	WED 28 JUL	06:49	20:20	13:32	06:23	20:46	14:23	05:53	21:16	15:24	13:35
210	THU 29 JUL	06:49	20:20	13:30	06:24	20:45	14:21	05:53	21:16	15:22	13:34
211	FRI 30 JUL	06:50	20:19	13:29	06:24	20:44	14:20	05:54	21:15	15:21	13:34
212	SAT 31 JUL	06:50	20:18	13:28	06:25	20:44	14:19	05:55	21:14	15:19	13:34

# PORT ARANSAS JETTIES

**AUGUST 2021**

2021, A.F. Amos: AMOS Tide Calendar



SUNRISE, SUNSET and TWILIGHTS at Port Aransas for AUG 2021

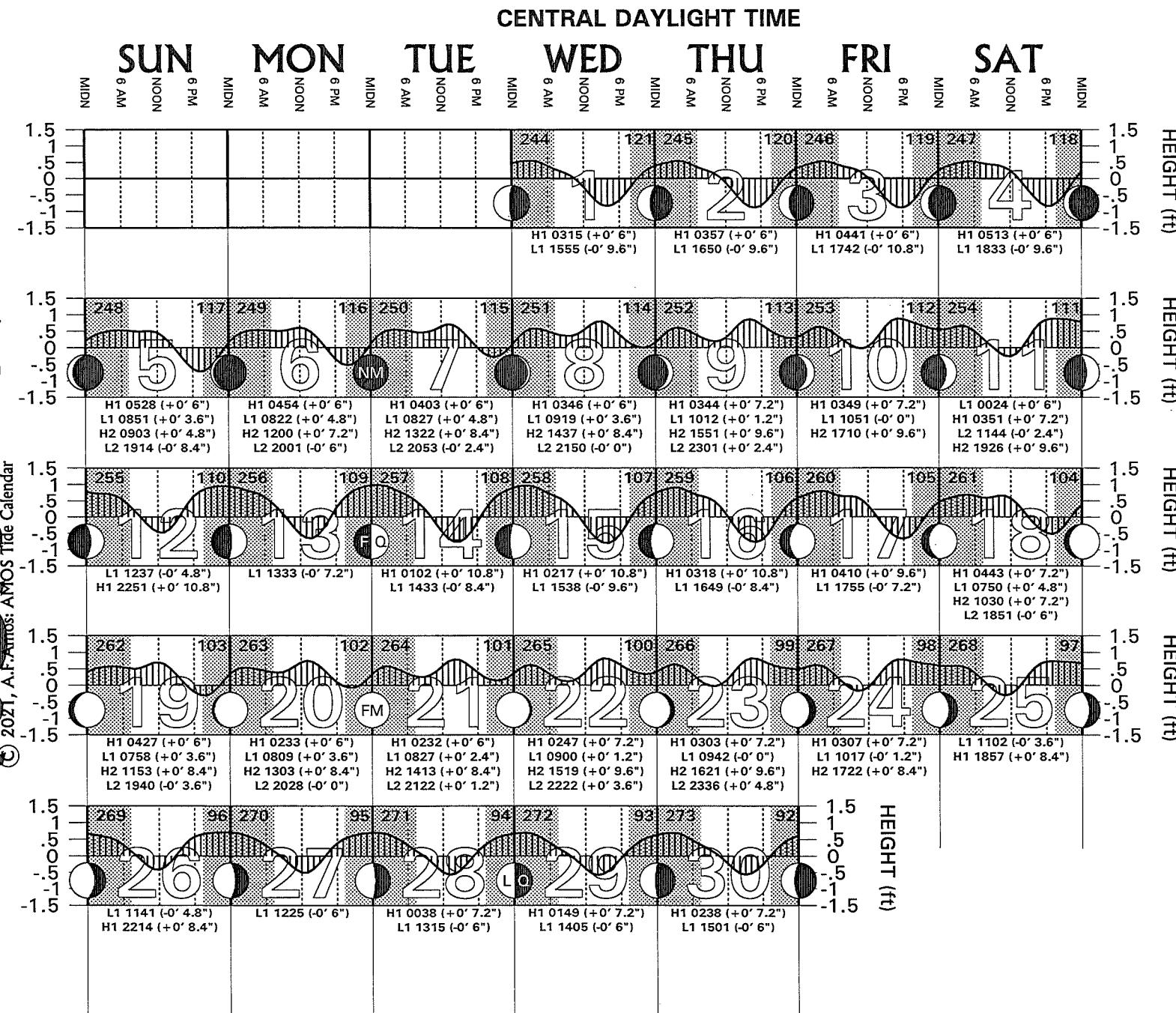
JDAY	DATE	SUNRISE/SUNSET			CIVIL TWILIGHT			NAUTICAL TWILIGHT			LAN
		RISE	SET	LNGTH	START	END	LNGHT	START	END	LNGTH	
		h:m	h:m	h:m	h:m	h:m	h:m	h:m	h:m	h:m	
213	SUN 1 AUG	06:51	20:18	13:27	06:26	20:43	14:17	05:55	21:13	15:18	13:34
214	MON 2 AUG	06:51	20:17	13:26	06:26	20:42	14:16	05:56	21:12	15:16	13:34
215	TUE 3 AUG	06:52	20:16	13:24	06:27	20:42	14:15	05:57	21:12	15:15	13:34
216	WED 4 AUG	06:53	20:16	13:23	06:27	20:41	14:13	05:57	21:11	15:13	13:34
217	THU 5 AUG	06:53	20:15	13:22	06:28	20:40	14:12	05:58	21:10	15:12	13:34
218	FRI 6 AUG	06:54	20:14	13:21	06:29	20:39	14:11	05:59	21:09	15:10	13:34
219	SAT 7 AUG	06:54	20:13	13:19	06:29	20:38	14:09	05:59	21:08	15:09	13:34
220	SUN 8 AUG	06:55	20:13	13:18	06:30	20:37	14:08	06:00	21:07	15:07	13:34
221	MON 9 AUG	06:55	20:12	13:17	06:30	20:37	14:06	06:01	21:06	15:05	13:34
222	TUE 10 AUG	06:56	20:11	13:15	06:31	20:36	14:05	06:01	21:05	15:04	13:33
223	WED 11 AUG	06:56	20:10	13:14	06:32	20:35	14:03	06:02	21:04	15:02	13:33
224	THU 12 AUG	06:57	20:09	13:12	06:32	20:34	14:02	06:03	21:03	15:01	13:33
225	FRI 13 AUG	06:57	20:08	13:11	06:33	20:33	14:00	06:03	21:02	14:59	13:33
226	SAT 14 AUG	06:58	20:07	13:10	06:33	20:32	13:59	06:04	21:01	14:57	13:33
227	SUN 15 AUG	06:58	20:07	13:08	06:34	20:31	13:57	06:05	21:00	14:56	13:32
228	MON 16 AUG	06:59	20:06	13:07	06:34	20:30	13:56	06:05	20:59	14:54	13:32
229	TUE 17 AUG	06:59	20:05	13:05	06:35	20:29	13:54	06:06	20:58	14:52	13:32
230	WED 18 AUG	07:00	20:04	13:04	06:35	20:28	13:53	06:07	20:57	14:50	13:32
231	THU 19 AUG	07:00	20:03	13:02	06:36	20:27	13:51	06:07	20:56	14:49	13:32
232	FRI 20 AUG	07:01	20:02	13:01	06:37	20:26	13:50	06:08	20:55	14:47	13:31
233	SAT 21 AUG	07:01	20:01	12:59	06:37	20:25	13:48	06:08	20:54	14:45	13:31
234	SUN 22 AUG	07:02	20:00	12:58	06:38	20:24	13:46	06:09	20:53	14:44	13:31
235	MON 23 AUG	07:02	19:59	12:56	06:38	20:23	13:45	06:10	20:51	14:42	13:31
236	TUE 24 AUG	07:03	19:58	12:55	06:39	20:22	13:43	06:10	20:50	14:40	13:30
237	WED 25 AUG	07:03	19:57	12:53	06:39	20:21	13:42	06:11	20:49	14:38	13:30
238	THU 26 AUG	07:04	19:56	12:52	06:40	20:20	13:40	06:11	20:48	14:37	13:30
239	FRI 27 AUG	07:04	19:55	12:50	06:40	20:19	13:38	06:12	20:47	14:35	13:30
240	SAT 28 AUG	07:05	19:54	12:49	06:41	20:18	13:37	06:13	20:46	14:33	13:29
241	SUN 29 AUG	07:05	19:52	12:47	06:41	20:16	13:35	06:13	20:45	14:31	13:29
242	MON 30 AUG	07:06	19:51	12:46	06:42	20:15	13:33	06:14	20:43	14:30	13:29
243	TUE 31 AUG	07:06	19:50	12:44	06:42	20:14	13:32	06:14	20:42	14:28	13:28

2021 A EMMOS AMOS TIDE CO.

**S  
E  
P**

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© 2021, A.F. Atoms: AMOS Tide Calendar



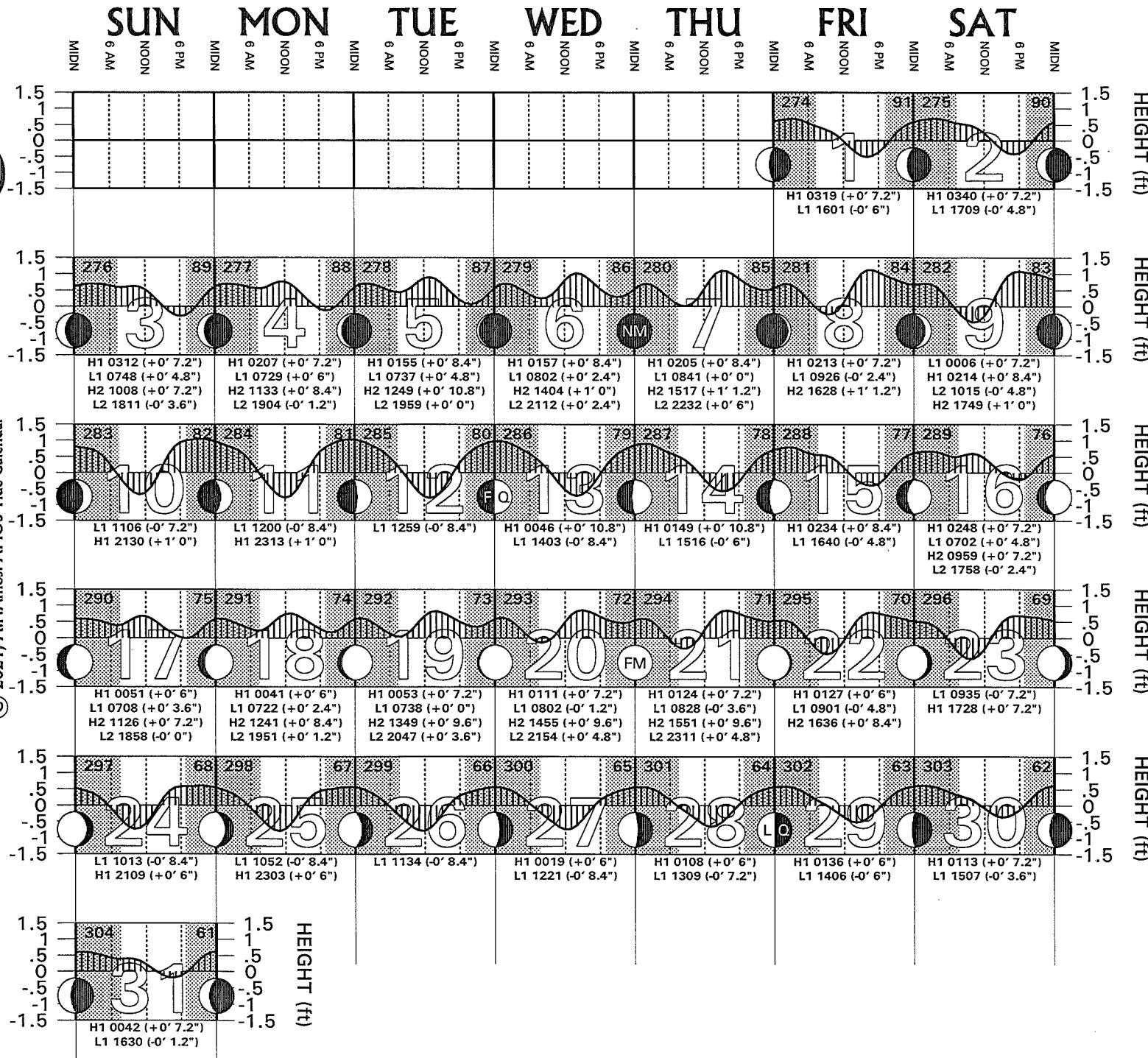
SUNRISE, SUNSET and TWILIGHTS at Port Aransas for SEP 2021

JDAY	DATE	SUNRISE/SUNSET			CIVIL TWILIGHT			NAUTICAL TWILIGHT			LAN
		RISE	SET	LNGTH	START	END	LNGHT	START	END	LNGTH	
		h:m	h:m	h:m	h:m	h:m	h:m	h:m	h:m	h:m	
244	WED 1 SEP	07:07	19:49	12:42	06:43	20:13	13:30	06:15	20:41	14:26	13:28
245	THU 2 SEP	07:07	19:48	12:41	06:43	20:12	13:28	06:15	20:40	14:24	13:28
246	FRI 3 SEP	07:08	19:47	12:39	06:44	20:11	13:27	06:16	20:39	14:23	13:27
247	SAT 4 SEP	07:08	19:46	12:38	06:44	20:10	13:25	06:17	20:37	14:21	13:27
248	SUN 5 SEP	07:09	19:45	12:36	06:45	20:08	13:23	06:17	20:36	14:19	13:27
249	MON 6 SEP	07:09	19:44	12:34	06:45	20:07	13:22	06:18	20:35	14:17	13:26
250	TUE 7 SEP	07:10	19:42	12:33	06:46	20:06	13:20	06:18	20:34	14:16	13:26
251	WED 8 SEP	07:10	19:41	12:31	06:46	20:05	13:18	06:19	20:33	14:14	13:26
252	THU 9 SEP	07:11	19:40	12:30	06:47	20:04	13:17	06:19	20:31	14:12	13:25
253	FRI 10 SEP	07:11	19:39	12:28	06:47	20:03	13:15	06:20	20:30	14:10	13:25
254	SAT 11 SEP	07:11	19:38	12:26	06:48	20:01	13:13	06:20	20:29	14:09	13:25
255	SUN 12 SEP	07:12	19:37	12:25	06:48	20:00	13:12	06:21	20:28	14:07	13:24
256	MON 13 SEP	07:12	19:35	12:23	06:49	19:59	13:10	06:21	20:26	14:05	13:24
257	TUE 14 SEP	07:13	19:34	12:21	06:49	19:58	13:08	06:22	20:25	14:03	13:24
258	WED 15 SEP	07:13	19:33	12:20	06:50	19:57	13:07	06:22	20:24	14:02	13:23
259	THU 16 SEP	07:14	19:32	12:18	06:50	19:55	13:05	06:23	20:23	14:00	13:23
260	FRI 17 SEP	07:14	19:31	12:17	06:51	19:54	13:03	06:23	20:22	13:58	13:22
261	SAT 18 SEP	07:15	19:30	12:15	06:51	19:53	13:02	06:24	20:20	13:56	13:22
262	SUN 19 SEP	07:15	19:28	12:13	06:52	19:52	13:00	06:24	20:19	13:55	13:22
263	MON 20 SEP	07:16	19:27	12:12	06:52	19:51	12:58	06:25	20:18	13:53	13:21
264	TUE 21 SEP	07:16	19:26	12:10	06:53	19:49	12:57	06:25	20:17	13:51	13:21
265	WED 22 SEP	07:17	19:25	12:08	06:53	19:48	12:55	06:26	20:16	13:50	13:21
266	THU 23 SEP	07:17	19:24	12:07	06:54	19:47	12:53	06:26	20:14	13:48	13:20
267	FRI 24 SEP	07:17	19:23	12:05	06:54	19:46	12:52	06:27	20:13	13:46	13:20
268	SAT 25 SEP	07:18	19:21	12:03	06:55	19:45	12:50	06:27	20:12	13:45	13:20
269	SUN 26 SEP	07:18	19:20	12:02	06:55	19:44	12:49	06:28	20:11	13:43	13:19
270	MON 27 SEP	07:19	19:19	12:00	06:56	19:42	12:47	06:28	20:10	13:41	13:19
271	TUE 28 SEP	07:19	19:18	11:58	06:56	19:41	12:45	06:29	20:08	13:40	13:19
272	WED 29 SEP	07:20	19:17	11:57	06:57	19:40	12:44	06:29	20:07	13:38	13:18
273	THU 30 SEP	07:20	19:16	11:55	06:57	19:39	12:42	06:30	20:06	13:36	13:18

2021 OCTOBER

2021, A.F. Amos: AMOS Tide Calendar

# CENTRAL DAYLIGHT TIME



PORT ARANSAS JETTY

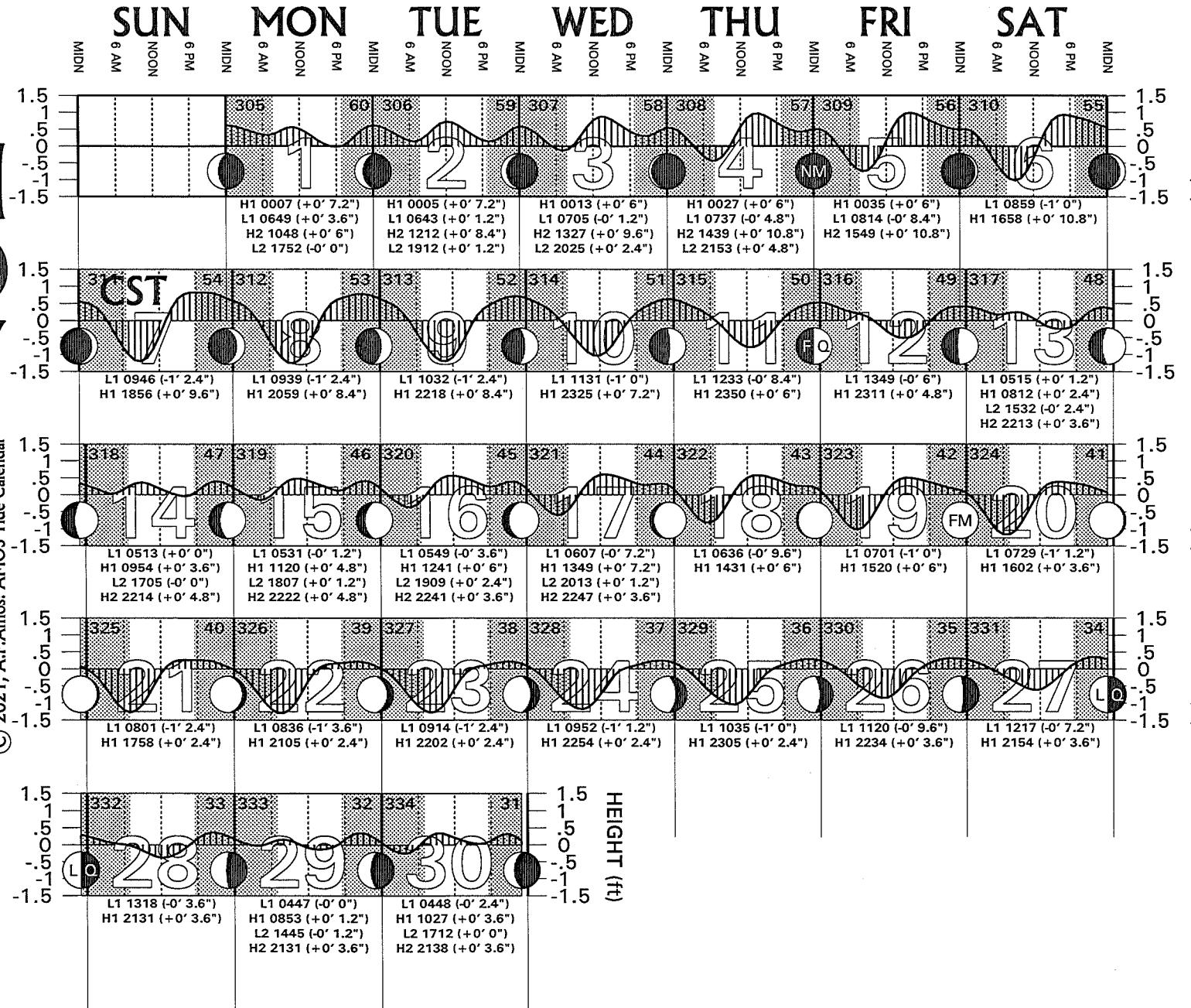
SUNRISE, SUNSET and TWILIGHTS at Port Aransas for OCT 2021

JDAY	DATE	SUNRISE/SUNSET				CIVIL TWILIGHT				NAUTICAL TWILIGHT			
		RISE h:m	SET h:m	LNGTH h:m	START h:m	END h:m	LNGHT h:m	START h:m	END h:m	LNGTH h:m	LAN h:m		
274	FRI 1 OCT	07:21	19:14	11:54	06:57	19:38	12:40	06:30	20:05	13:35	13:18		
275	SAT 2 OCT	07:21	19:13	11:52	06:58	19:37	12:39	06:31	20:04	13:33	13:17		
276	SUN 3 OCT	07:22	19:12	11:50	06:58	19:36	12:37	06:31	20:03	13:31	13:17		
277	MON 4 OCT	07:22	19:11	11:49	06:59	19:34	12:35	06:32	20:02	13:30	13:17		
278	TUE 5 OCT	07:23	19:10	11:47	06:59	19:33	12:34	06:32	20:00	13:28	13:16		
279	WED 6 OCT	07:23	19:09	11:45	07:00	19:32	12:32	06:33	19:59	13:27	13:16		
280	THU 7 OCT	07:24	19:08	11:44	07:00	19:31	12:31	06:33	19:58	13:25	13:16		
281	FRI 8 OCT	07:24	19:07	11:42	07:01	19:30	12:29	06:34	19:57	13:23	13:16		
282	SAT 9 OCT	07:25	19:06	11:41	07:02	19:29	12:27	06:34	19:56	13:22	13:15		
283	SUN 10 OCT	07:26	19:04	11:39	07:02	19:28	12:26	06:35	19:55	13:20	13:15		
284	MON 11 OCT	07:26	19:03	11:37	07:03	19:27	12:24	06:35	19:54	13:19	13:15		
285	TUE 12 OCT	07:27	19:02	11:36	07:03	19:26	12:23	06:36	19:53	13:17	13:14		
286	WED 13 OCT	07:27	19:01	11:34	07:04	19:25	12:21	06:36	19:52	13:16	13:14		
287	THU 14 OCT	07:28	19:00	11:32	07:04	19:24	12:20	06:37	19:51	13:14	13:14		
288	FRI 15 OCT	07:28	18:59	11:31	07:05	19:23	12:18	06:37	19:50	13:13	13:14		
289	SAT 16 OCT	07:29	18:58	11:29	07:05	19:22	12:17	06:38	19:49	13:11	13:14		
290	SUN 17 OCT	07:29	18:57	11:28	07:06	19:21	12:15	06:39	19:48	13:10	13:13		
291	MON 18 OCT	07:30	18:56	11:26	07:06	19:20	12:14	06:39	19:47	13:08	13:13		
292	TUE 19 OCT	07:31	18:55	11:25	07:07	19:19	12:12	06:40	19:46	13:07	13:13		
293	WED 20 OCT	07:31	18:54	11:23	07:08	19:18	12:11	06:40	19:45	13:05	13:13		
294	THU 21 OCT	07:32	18:53	11:21	07:08	19:17	12:09	06:41	19:45	13:04	13:13		
295	FRI 22 OCT	07:33	18:52	11:20	07:09	19:16	12:08	06:41	19:44	13:02	13:12		
296	SAT 23 OCT	07:33	18:52	11:18	07:09	19:15	12:06	06:42	19:43	13:01	13:12		
297	SUN 24 OCT	07:34	18:51	11:17	07:10	19:15	12:05	06:42	19:42	13:00	13:12		
298	MON 25 OCT	07:34	18:50	11:15	07:11	19:14	12:03	06:43	19:41	12:58	13:12		
299	TUE 26 OCT	07:35	18:49	11:14	07:11	19:13	12:02	06:44	19:40	12:57	13:12		
300	WED 27 OCT	07:36	18:48	11:12	07:12	19:12	12:00	06:44	19:40	12:55	13:12		
301	THU 28 OCT	07:36	18:47	11:11	07:12	19:11	11:59	06:45	19:39	12:54	13:12		
302	FRI 29 OCT	07:37	18:46	11:09	07:13	19:11	11:57	06:45	19:38	12:53	13:12		
303	SAT 30 OCT	07:38	18:46	11:08	07:14	19:10	11:56	06:46	19:37	12:51	13:12		
304	SUN 31 OCT	07:38	18:45	11:06	07:14	19:09	11:55	06:47	19:37	12:50	13:12		

# NOVEMBER 2021

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## CENTRAL DAYLIGHT ENDS AT 2 AM ON NOVEMBER 7



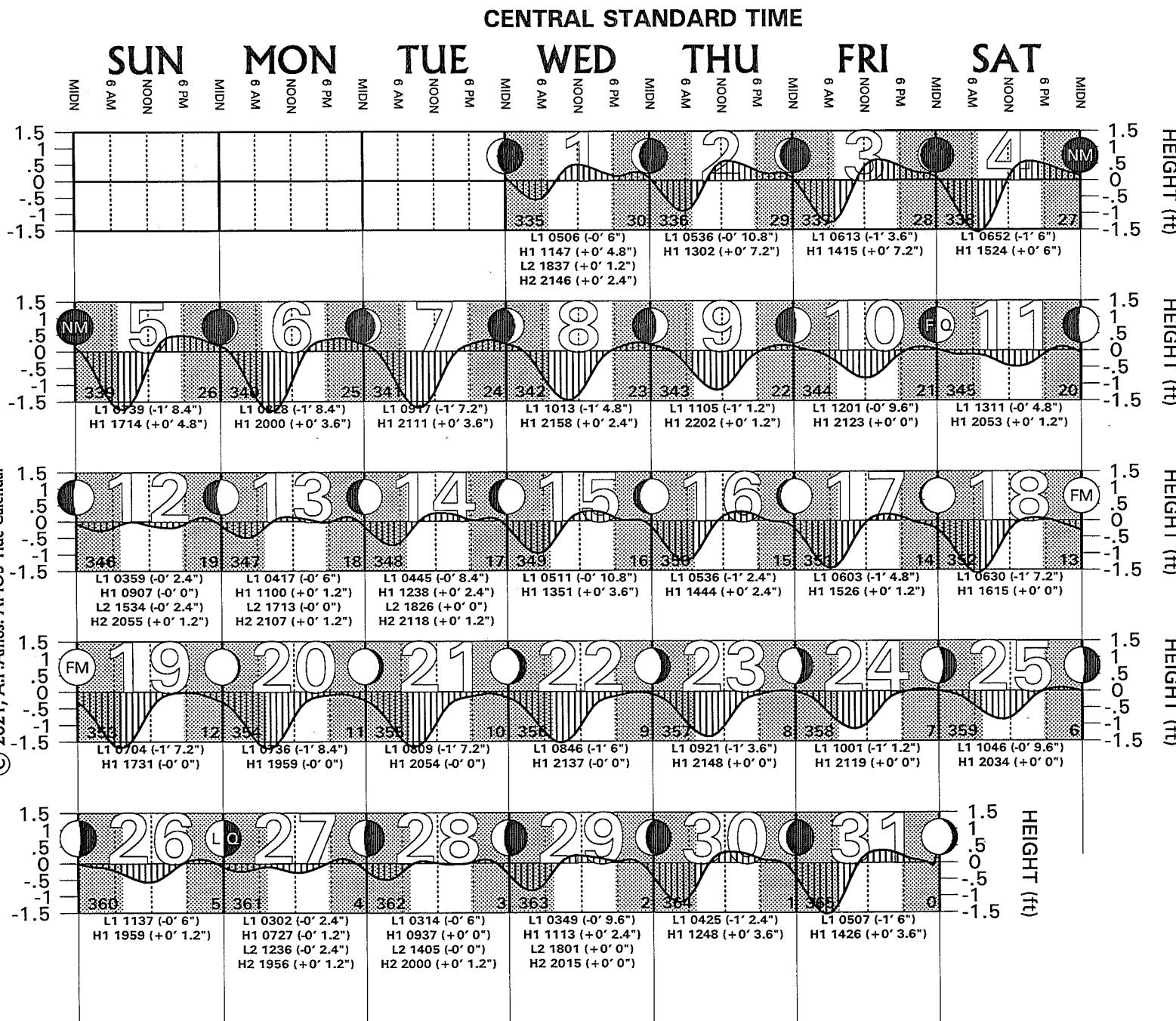
PORT ARANSAS JETTY CO.

SUNRISE, SUNSET and TWILIGHTS at Port Aransas for NOV 2021

JDAY	DATE	SUNRISE/SUNSET			CIVIL TWILIGHT			NAUTICAL TWILIGHT			LAN
		RISE h:m	SET h:m	LNGTH h:m	START h:m	END h:m	LNGHT h:m	START h:m	END h:m	LNGTH h:m	
305	MON 1 NOV	07:39	18:44	11:05	07:15	19:08	11:53	06:47	19:36	12:49	13:12
306	TUE 2 NOV	07:40	18:43	11:04	07:16	19:08	11:52	06:48	19:35	12:48	13:12
307	WED 3 NOV	07:41	18:43	11:02	07:16	19:07	11:51	06:48	19:35	12:46	13:12
308	THU 4 NOV	07:41	18:42	11:01	07:17	19:06	11:49	06:49	19:34	12:45	13:12
309	FRI 5 NOV	07:42	18:41	10:59	07:18	19:06	11:48	06:50	19:34	12:44	13:12
310	SAT 6 NOV	07:43	18:41	10:58	07:18	19:05	11:47	06:50	19:33	12:43	13:12
311	SUN 7 NOV	06:43	17:40	10:57	06:19	18:05	11:46	05:51	18:32	12:41	12:12
312	MON 8 NOV	06:44	17:39	10:55	06:20	18:04	11:44	05:52	18:32	12:40	12:12
313	TUE 9 NOV	06:45	17:39	10:54	06:20	18:03	11:43	05:52	18:31	12:39	12:12
314	WED 10 NOV	06:46	17:38	10:53	06:21	18:03	11:42	05:53	18:31	12:38	12:12
315	THU 11 NOV	06:46	17:38	10:51	06:22	18:02	11:41	05:54	18:31	12:37	12:12
316	FRI 12 NOV	06:47	17:37	10:50	06:22	18:02	11:39	05:54	18:30	12:36	12:12
317	SAT 13 NOV	06:48	17:37	10:49	06:23	18:02	11:38	05:55	18:30	12:35	12:12
318	SUN 14 NOV	06:49	17:36	10:48	06:24	18:01	11:37	05:56	18:29	12:34	12:13
319	MON 15 NOV	06:49	17:36	10:47	06:25	18:01	11:36	05:56	18:29	12:33	12:13
320	TUE 16 NOV	06:50	17:36	10:45	06:25	18:00	11:35	05:57	18:29	12:32	12:13
321	WED 17 NOV	06:51	17:35	10:44	06:26	18:00	11:34	05:58	18:28	12:31	12:13
322	THU 18 NOV	06:52	17:35	10:43	06:27	18:00	11:33	05:58	18:28	12:30	12:13
323	FRI 19 NOV	06:52	17:34	10:42	06:28	17:59	11:32	05:59	18:28	12:29	12:13
324	SAT 20 NOV	06:53	17:34	10:41	06:28	17:59	11:31	06:00	18:28	12:28	12:14
325	SUN 21 NOV	06:54	17:34	10:40	06:29	17:59	11:30	06:01	18:27	12:27	12:14
326	MON 22 NOV	06:55	17:34	10:39	06:30	17:59	11:29	06:01	18:27	12:26	12:14
327	TUE 23 NOV	06:56	17:33	10:38	06:31	17:58	11:28	06:02	18:27	12:25	12:14
328	WED 24 NOV	06:56	17:33	10:37	06:31	17:58	11:27	06:03	18:27	12:24	12:15
329	THU 25 NOV	06:57	17:33	10:36	06:32	17:58	11:26	06:03	18:27	12:24	12:15
330	FRI 26 NOV	06:58	17:33	10:35	06:33	17:58	11:25	06:04	18:27	12:23	12:15
331	SAT 27 NOV	06:59	17:33	10:34	06:33	17:58	11:25	06:05	18:27	12:22	12:16
332	SUN 28 NOV	06:59	17:33	10:33	06:34	17:58	11:24	06:05	18:27	12:21	12:16
333	MON 29 NOV	07:00	17:33	10:32	06:35	17:58	11:23	06:06	18:27	12:21	12:16
334	TUE 30 NOV	07:01	17:33	10:32	06:36	17:58	11:22	06:07	18:27	12:20	12:17

# PORT ARANSAS JETTIES

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SUNRISE, SUNSET and TWILIGHTS at Port Aransas for DEC 2021

JDAY	DATE	SUNRISE/SUNSET			CIVIL TWILIGHT			NAUTICAL TWILIGHT			LAN
		RISE	SET	LNGTH	START	END	LNGHT	START	END	LNGTH	
		h:m	h:m	h:m	h:m	h:m	h:m	h:m	h:m	h:m	
335	WED 1 DEC	07:02	17:33	10:31	06:36	17:58	11:22	06:08	18:27	12:19	12:17
336	THU 2 DEC	07:03	17:33	10:30	06:37	17:58	11:21	06:08	18:27	12:19	12:18
337	FRI 3 DEC	07:03	17:33	10:29	06:38	17:58	11:20	06:09	18:27	12:18	12:18
338	SAT 4 DEC	07:04	17:33	10:29	06:39	17:58	11:20	06:10	18:27	12:18	12:18
339	SUN 5 DEC	07:05	17:33	10:28	06:39	17:58	11:19	06:10	18:27	12:17	12:19
340	MON 6 DEC	07:05	17:33	10:27	06:40	17:58	11:18	06:11	18:27	12:17	12:19
341	TUE 7 DEC	07:06	17:33	10:27	06:41	17:59	11:18	06:12	18:28	12:16	12:20
342	WED 8 DEC	07:07	17:33	10:26	06:41	17:59	11:17	06:12	18:28	12:16	12:20
343	THU 9 DEC	07:08	17:33	10:26	06:42	17:59	11:17	06:13	18:28	12:15	12:21
344	FRI 10 DEC	07:08	17:34	10:25	06:43	17:59	11:17	06:14	18:28	12:15	12:21
345	SAT 11 DEC	07:09	17:34	10:25	06:43	18:00	11:16	06:14	18:29	12:14	12:21
346	SUN 12 DEC	07:10	17:34	10:25	06:44	18:00	11:16	06:15	18:29	12:14	12:22
347	MON 13 DEC	07:10	17:34	10:24	06:45	18:00	11:16	06:15	18:29	12:14	12:22
348	TUE 14 DEC	07:11	17:35	10:24	06:45	18:00	11:15	06:16	18:30	12:14	12:23
349	WED 15 DEC	07:12	17:35	10:24	06:46	18:01	11:15	06:17	18:30	12:13	12:23
350	THU 16 DEC	07:12	17:36	10:23	06:46	18:01	11:15	06:17	18:30	12:13	12:24
351	FRI 17 DEC	07:13	17:36	10:23	06:47	18:02	11:15	06:18	18:31	12:13	12:24
352	SAT 18 DEC	07:13	17:36	10:23	06:48	18:02	11:14	06:18	18:31	12:13	12:25
353	SUN 19 DEC	07:14	17:37	10:23	06:48	18:03	11:14	06:19	18:32	12:13	12:25
354	MON 20 DEC	07:14	17:37	10:23	06:49	18:03	11:14	06:19	18:32	12:13	12:26
355	TUE 21 DEC	07:15	17:38	10:23	06:49	18:03	11:14	06:20	18:33	12:13	12:26
356	WED 22 DEC	07:15	17:38	10:23	06:50	18:04	11:14	06:20	18:33	12:13	12:27
357	THU 23 DEC	07:16	17:39	10:23	06:50	18:04	11:14	06:21	18:34	12:13	12:27
358	FRI 24 DEC	07:16	17:39	10:23	06:51	18:05	11:14	06:21	18:34	12:13	12:28
359	SAT 25 DEC	07:17	17:40	10:23	06:51	18:06	11:15	06:22	18:35	12:13	12:28
360	SUN 26 DEC	07:17	17:40	10:23	06:51	18:06	11:15	06:22	18:35	12:13	12:29
361	MON 27 DEC	07:18	17:41	10:23	06:52	18:07	11:15	06:23	18:36	12:13	12:29
362	TUE 28 DEC	07:18	17:42	10:24	06:52	18:07	11:15	06:23	18:37	12:13	12:30
363	WED 29 DEC	07:18	17:42	10:24	06:53	18:08	11:15	06:23	18:37	12:14	12:30
364	THU 30 DEC	07:19	17:43	10:24	06:53	18:09	11:16	06:24	18:38	12:14	12:31
365	FRI 31 DEC	07:19	17:44	10:25	06:53	18:09	11:16	06:24	18:38	12:14	12:31

EARLIEST SUNRISE =	161	THU	10 JUN	06:31
LATEST SUNRISE =	66	SUN	7 MAR	07:47
EARLIEST SUNSET =	335	WED	1 DEC	17:33
LATEST SUNSET =	182	THU	1 JUL	20:28
LONGEST DAY =	172	MON	21 JUN	13:54
SHORTEST DAY =	355	TUE	21 DEC	10:23