

VII. *Tide Observations at Otaheite, or Tahiti.*

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F.R.S., &c.*

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H. M. Ship Sulphur, Spithead,  
July 22, 1842.

SIR,

WITH reference to that part of my instructions relating to noon high water at the Island of Otaheite, or Tahiti, I now transmit to you fair copies of the tide-journal registered at the island of Motouta, in the harbour of Papiete, as well as a short comparative series made at Point Venus.

The island of Motouta, the position before named, is the property of the Queen, and therefore free from intrusion or likelihood of disturbance. It is situated well within the reefs, upon a coral flat, and any wave tumbling over the reef would expend itself before reaching the island.

It is, at the same time, within the direct influence of the deep water channel, to seaward, but entirely protected by the reef. The swell does not enter by reason of the overlapping tongue of the northern reef, which, projecting westerly, receives and throws off the sea obliquely. The gauge was placed in ten feet of water, and the batten in four.

In order to prevent any confusion, by change of observers, and thus destroying the interest which a single individual would feel if entrusted with the sole execution of this interesting duty, I selected one of my old followers, Mr. M<sup>c</sup>Kinley Richardson, Mate, and placing him in entire charge of the island, furnished him with a tide-gauge of my own construction, as well as a tide-batten.

The tide-gauge was constructed as follows (Plate IV.):—A square wooden trunk of six inches aperture, *a a*, was closed at the bottom, but admitted water by small lateral holes, *b b*, six inches from the bottom. This was to prevent any sudden wave which might roll in from affecting the mean level.

Within this trunk floated a glass cylindrical jar *c*, five inches in diameter by eleven in height, and ballasted with sufficient small shot to half immerse it. It was rendered air-tight by means of the gauge-rod which screwed into an interior stuffed pad against the collar of the exterior.

The end of this rod was of brass, where it screwed into the float, but for ten feet above was of very light, tough cypress, half an inch in diameter.

At the summit of the trunk a cap was fitted, *d*, having three friction rollers, through

which the rod traversed freely. Above the trunk, secured to strong uprights, stepping into its exterior sides *e, e*, the graduated battens rose, having a clear space between them, and very neatly and *strongly* graduated with black divisions on a white ground.

The index had a clamp tube, through which the gauge-rod passed, *f*, when it was finally clamped at the first high water.

The index was a piece of machinery, *per se, ff*. It was furnished with fore, as well as back, friction rollers, on springs, amounting to eight, by which it maintained its position steadily, and kept the gauge-rod perpendicular. This machine had been well tested at Bow Island and its imperfections obviated.

This gauge was fixed upon the abrupt steep of the reef in ten feet water, and well ballasted by pigs of iron, on which it also rested. It was distant from the wall thirty yards, and easily read off by a telescope. It was registered during daylight (from 6 A.M. until 6 P.M.) *from the top*, so that the *least* number indicated high water, and *vice versa*.

The tide-batten was lashed to the rocks (similarly ballasted) close to the wall of Motouta, in four feet water, and a thick plank enabled the observer to take the closest inspection. It was registered from the *bottom* by day as well as night, and by day at the same periods as the tide-gauge. The *greatest* number therefore indicates high water.

As it is almost impossible to determine the actual moment of high or low water, I had recourse to the method of equal altitudes, within two hours on each side; as the results of my observations on the coast of Lancashire, where the water was subject to a rise and fall of thirty-one feet, always coincided up to the latest half hour.

I have been thus minute in order to satisfy any sceptical minds bent on the maintenance of the *absolute noon period*, that the minutest attention was devoted to this duty, and the coincidence of the two observers, five miles asunder, will in some points be found to agree minutely.

It will be seen by reference to the mean tide-levels, subsequently reduced for each day (and *not contemplated* by the observers themselves), how strictly this duty was attended to, the range never exceeding *two inches* on either gauge or batten.

The position at Matavai was at the extremity of Point Venus, which was shielded in a great measure from the influence of the sea, by reefs similar to those at Papiete; but here we had merely tide-battens; the observations, however, were corroborated by repetitions within the rivulet, on a pole with crosses to mark the simultaneous levels, the more readily to deduce the moments of high and low water. These were watched for the last week by Mr. CHRISTOPHER GEORGE, second master, my general assistant in the observatory, and superintendent of the tide-journals.

These data (from the 22nd to the 27th) are comparable with those observed at Motouta.

By these documents it will be observed that there were two irregular moments of

high water during each twenty-four hours, and that their range was from 10 A.M. to 2<sup>h</sup> 27<sup>m</sup> P.M., or nearly 4<sup>h</sup> 27<sup>m</sup> by day, and 3<sup>h</sup> 20<sup>m</sup> by night. The influences of the sea or land breezes are not apparent. Indeed, if any such influence be admitted, it is decidedly at variance with the anticipated effect, as the night tides are *higher* with the land wind *off shore*.

With a *strong* land wind the height generally indicated the same as in calm. But the mean tide-levels before alluded to, distinctly indicate *an equable rise and fall*.

The night tides observed at Point Venus do not so exactly accord with those observed at Motouta.

I much regret that we had not an opportunity of observing the whole lunation; but I trust that sufficient has been advanced to satisfy you that no exertion was wanting in carrying through these intricate labours, and that even in their present form they may prove not altogether without interest.

I am Sir,

Your most obedient Servant,

EDWARD BELCHER, Captain.

Captain F. BEAUFORT, R.N.,  
*Hydrographer.*

Abstract of Tide Observations.—TABLE I.

Date.		Mean time of		Duration of		Height of Tide by		Extreme Rise and Fall.		Mean Tide Level.			Moon's		Diff. of Moon's Passage and High Water.	Weather, &c.	
		High Water.	Low Water.	Flood.	Ebb.	Gauge.	Batten.	Gauge.	Batten.	Gauge.	Batten.	Diff.	Age.	Change.			Passage.
		h m	h m	ft. ins.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	h m	h m	h m	h m
♂ 8.	2 27 P.M.	8 36	6 9	3 10½	1 6¾	0 1¾	0 4¾	3 9½	1 9	2 0½	5 9	Q.	8 18 22	5 21	2 54	Wind { from 9 0 A.M. to 4 0 P.M. 6 10 Mid. At 4 P.M. the wind outside the reefs was apparently N.W.	h m { from 9 0 A.M. to 4 0 P.M. 6 10 Mid. At 4 P.M. the wind outside the reefs was apparently N.W.
♀ 9.	10 44 A.M. 10 00 P.M.		Tide irregular.	3 10½ 3 4	1 8½ 2 1½	0 6½ 0 5	0 5	3 7¼	1 11	1 8½	6 9		6 20	3 40	Wind { from 0 0 to 9 0 A.M. 9 0 Mid. to 9 0 A.M. N.N.E. 1 3 B.C. S.W. 1 5 B.C.	h m { from 0 0 to 9 0 A.M. 9 0 Mid. to 9 0 A.M. N.N.E. 1 3 B.C. S.W. 1 5 B.C.	
♀ 10.	10 45 A.M. 10 12 P.M.	5 38 4 36	5 7 5 36	3 5 3 11½	2 2½ 1 7½	0 6½ 0 7	0 7	3 8¼	1 11½	1 9	7 9		7 15	2 57	Wind { from 0 0 to 2 0 P.M. 8 30 9 0 Mid. S.E. & E. 2 B.C. S.W. 2 S.E. to E. 2 4 B.C.	h m { from 0 0 to 2 0 P.M. 8 30 9 0 Mid. S.E. & E. 2 B.C. S.W. 2 S.E. to E. 2 4 B.C.	
♂ 11.	10 43 A.M. 11 40 P.M.	6 5 5 35	4 38 6 8	4 1½ 3 5	1 5½ 2 4½	0 8½ 0 11½	0 11½	3 8½	1 9½	1 11	8 9		8 7	3 33	Wind { from 0 0 to 5 0 P.M. 5 0 Mid. to 5 0 A.M. Calm 0 B.C. East 1 4 B.C. N. S.E. 2 B.C.	h m { from 0 0 to 5 0 P.M. 5 0 Mid. to 5 0 A.M. Calm 0 B.C. East 1 4 B.C. N. S.E. 2 B.C.	
⊙ 12.	10 0 A.M. 11 47 P.M.	5 32 5 25	4 28 6 12	4 0 3 3½	2 5½ 1 4	0 8½ 1 1½	1 1½	3 8½	1 9	1 11½	9 9		8 54	2 53	Wind { from 0 0 to Noon 1 Mid. Vble. N.N.E. 1 B.C. Vble. 2 B.C. N.	h m { from 0 0 to Noon 1 Mid. Vble. N.N.E. 1 B.C. Vble. 2 B.C. N.	
♂ 13.	11 20 A.M. 0 35 P.M.	6 0 5 20	5 42 5 22	3 2 4 3½	1 3 2 5½	1 1½ 1 2½	1 2½	3 9	1 10	1 11	10 9		9 37	2 58	Wind { from 0 0 A.M. to 9 0 A.M. 9 0 Mid. to 0 0 A.M. Calm 0 B.C. N.E. 1 2 B.C. R.P.M.	h m { from 0 0 A.M. to 9 0 A.M. 9 0 Mid. to 0 0 A.M. Calm 0 B.C. N.E. 1 2 B.C. R.P.M.	
♂ 14.	11 26 A.M. 11 42 P.M.	5 44 6 20	5 42 5 22	3 2 4 3½	2 5½ 1 3	1 1½ 1 2½	1 2½	3 9	1 10	1 11	11 9		10 22	0 53	Wind { from Easterly all day. 1 2 B.C. B.C.L.	h m { from Easterly all day. 1 2 B.C. B.C.L.	
♂ 15.	11 50 A.M. 11 48 P.M.	6 2 7 1	5 48 4 47	4 3½ 3 1	1 3 2 7½	1 2¼ 1 4½	1 4½	3 8¼	1 11¼	1 9	12 9		11 0	0 48	Wind { Easterly all day. 2 4 B.C. B.C.T.L. R.Q.C. R.O.Q.P.	h m { Easterly all day. 2 4 B.C. B.C.T.L. R.Q.C. R.O.Q.P.	

TABLE I. (Continued.)

Date.		Mean time of		Duration of		Height of Tide by		Extreme Rise and Fall.		Mean Tide Level.			Moon's		Diff. of Moon's Passage and High Water.	Weather, &c.	
		High Water.	Low Water.	Flood.	Ebb.	Gauge.	Batten.	Gauge.	Batten.	Gauge.	Batten.	Diff.	Age.	Change.			Passage.
♄	16.	h m 11 52 A.M.	h m 6 40	ft. in. 4 52	ft. in. 7 18	ft. in. 3 0	ft. in. 2 5	ft. in. 1 3	ft. in. 1 3	ft. in. 3 7½	ft. in. 1 10	ft. in. 1 9½	h m 13 9	d h m 16 7 55	h m 0 0	h m 8 0	h m to 6 0 A.M. 8 0 Mid. Easterly. 2 Easterly. 2 B. C. B. C. B. C.
♀	17.	1 10 A.M.	6 48	6 30	5 38	4 2	2 7	0 11½	1 3½	3 8½	1 10½	1 9½	14 9	0 26	0 54	0 0 A.M. to 9 0 A.M. 1 30 3 0 Mid. Calm. Calm. 2 3 B. C. 3 B. C.	
♃	18.	1 20 A.M.	6 38	5 45	5 18	3 3	2 5	0 10½	1 0½	3 8¼	1 10¾	1 9¼	15 9	1 12	0 8	from 0 0 A.M. to 6 0 A.M. 6 0 8 0 4 0 Mid. E.S.E. 1 Calm. East. 3 Calm. 0 B. C.	
☉	19.	1 18 A.M.	6 20	6 18	5 2	4 0	2 4	0 8	1 1½	3 8	1 11¼	1 8¾	16 9	1 58	0 40	from 0 0 to 8 0 P.M. 8 0 Mid. Easterly. 1 2 B. C.	
☽	20.	1 35 A.M.	6 55	4 41	5 20	4 1½	2 3½	0 8½	0 12	3 9½	1 10	1 11½	17 9	2 49	0 0	from 0 0 to 6 0 A.M. 6 0 10 0 5 30 7 0 Mid. Easterly. 1 B. C.	
♂	21.	1 37 A.M.	0 0	Tide irregular, flowing and ebbing at intervals of three hours.		0 10	0 6	1 10	1 11	3 9	1 10	1 11	18 9	3 40	0 0	from 0 0 A.M. to Noon. Noon 5 0 9 0 Mid. S.E. 1 3 B. C.	
♁	22.	2 30 A.M.	8 3	8 13	5 37	4 0	3 7½	0 5	0 8½	3 9½	1 8½	2 1½	19 9	4 32	0 0	from 0 0 A.M. to 6 0 A.M. 6 0 9 0 Mid. West. 3 B. C. B. C.V.	

TABLE I. (Continued.)

Date.	Mean time of		Duration of		Height of Tide by		Extreme Rise and Fall.		Mean Tide Level.			Moon's			Diff. of Moon's Passage and High Water.	Weather, &c.
	High Water.	Low Water.	Flood.	Ebb.	Gauge.	Batten.	Gauge.	Batten.	Gauge.	Batten.	Diff.	Age.	Change.	Passage.		
4 23.	2 30 P.M.	7 0	Tide ebbing and flowing at irregular intervals.		0 1½	0 2½	3 9½	1 8½	2 1	20 9		5 22		Wind	{ from 0 0 A.M. to 5 0 A.M. Easterly. 2 B. C. 5 0 Calm. 0 B. C. 8 0 W.N.W. 1 4 B. C. 4 30 P.M. Calm. 0 B. C. 8 0 Calm. 0 B. C. 8 0 Mid. S.E. 5 B. C.	
♀ 24.	4 0	9 0	3 10½	1 9½	0 1½	0 3½	3 9½	1 10½	1 11½	21 9	24 11 47	6 12		Wind from East to South. Calm and Variable. 1 2 B. C.		
10 30 A.M.	2 30	4 0	3 9	1 6	0 4	0 5	3 10	1 8½	2 1½	22 9		6 59		{ from 0 0 A.M. to 7 30 A.M. S.E. 1 3 B. C. 7 30 9 0 E.N.E. 2 B. C. 9 0 4 0 P.M. N.W. 1 4 B. C. 5 45 5 45 Mid. South. 2 5 B. C.		
12 0	7 30	6 45	4 15	5 15	0 6	0 8	3 10½	1 8½	2 2	23 9		7 46		{ from Midnight to 10 0 A.M. S.E. 2 B. C. 10 0 4 0 N.by E. 2 B. C. 4 0 Mid. Calm and Variable.		
10 15 A.M.	4 15	6 30	4 0	5 15	4 1½	2 0½	0 8	3 10½	1 8½	23 9		7 46		{ from Midnight to 2 0 Calm. 2 0 6 0 S.E. 1 B. C. 6 0 8 0 Calm. 8 0 2 0 N.E. 1 C. 9 15 5 45 Mid. Calm.		
9 15	3 30	5 45	3 8	1 6	0 8	0 10½	3 9	1 8½	2 1½	25 9				{ from 0 0 to 4 0 E.by N. 3 B. C. 4 0 4 0 S.E. 3 B. C. 6 15 6 15 N.by W. 2 B. C.		
10 30 P.M.	4 0	6 30	4 3	7 1	0 8	0 10½	3 9	1 8½	2 1½	26 9				{ from 0 0 to 4 0 N.by W. 2 B. C. V. 4 0 4 0 S.E.by E. 2 1 6 0 Calm & Var. B. C.		
26.	4 0	6 45	4 1½	2 0½	0 6	0 8	3 10½	1 8½	2 2	23 9		7 46		{ from 0 0 to 4 0 N.by W. 2 B. C. V. 10 0 4 0 S.E.by E. 2 1 4 0 Mid. Calm & Var. B. C.		
10 30 A.M.	4 15	5 45	3 7½	1 4½	0 6	0 8	3 10½	1 8½	2 2	23 9		7 46		{ from 0 0 to 4 0 N.by W. 2 B. C. V. 10 0 4 0 S.E.by E. 2 1 4 0 Mid. Calm & Var. B. C.		
10 0 P.M.	5 10	7 10	4 3½	2 3	0 8½	0 12	3 11½	1 9	2 2½	24 9				{ from 0 0 to 4 0 N.by W. 2 B. C. V. 4 0 4 0 S.E.by E. 2 1 6 30 6 30 N. by W. 2 B. C.		
27.	11 0 A.M.	4 50	4 3½	2 3	0 8½	0 12	3 11½	1 9	2 2½	24 9				{ from 0 0 to 4 0 N.by W. 2 B. C. V. 4 0 4 0 S.E.by E. 2 1 6 30 6 30 N. by W. 2 B. C.		
11 0 A.M.	3 30	5 45	4 2	2 2	0 8	0 10½	3 9	1 8½	2 1½	25 9				{ from 0 0 to 4 0 N.by W. 2 B. C. V. 4 0 4 0 S.E.by E. 2 1 6 15 6 15 N. by W. 2 B. C.		
9 45 P.M.	6 15	6 45	4 30	3 6	0 8	0 10½	3 9	1 8½	2 1½	25 9				{ from 0 0 to 4 0 N.by W. 2 B. C. V. 4 0 4 0 S.E.by E. 2 1 6 15 6 15 N. by W. 2 B. C.		
28.	5 15	6 45	4 1	1 5	0 5½	0 6½	3 9½	1 9	2 2½	26 9				{ from 0 0 to 4 0 N.by W. 2 B. C. V. 4 0 4 0 S.E.by E. 2 1 5 45 5 45 Calm & Var. B. C.		
11 0 A.M.	5 15	7 30	3 7½	1 11½	0 5½	0 6½	3 9½	1 9	2 2½	26 9				{ from 0 0 to 4 0 N.by W. 2 B. C. V. 4 0 4 0 S.E.by E. 2 1 5 45 5 45 Calm & Var. B. C.		



TABLE II.

Otaheite. Point Venus. April 1840.

Date.	Mean time of		Duration of		Height of Tide by		Extreme Rise and Fall.		Mean Tide Level.			Moon's			Diff. of Moon's Passage and High Water.	Weather, &c.
	High Water.	Low Water.	Flood.	Ebb.	Gauge.	Batten.	Gauge.	Batten.	Gauge.	Batten.	Diff.	Age.	Change.	Passage.		
	h m	h m	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	h m	d h m	h m	h m	
♄ 22.	4 52 P.M.	9 11	7 49	5 12	4 0	3 7	0 5	3 9½	0 5	3 9½	.....	19 9	.....	4 32	.....	Wind E.S.E. throughout the day. 2 4 B. C.
♃ 23.	.....	7 41	7 30	.....	3 11	3 8½	0 2½	3 9¾	0 2½	3 9¾	.....	20 9	.....	5 22	.....	from 6 <sup>h</sup> 0 <sup>m</sup> A.M. to 10 <sup>h</sup> 38 <sup>m</sup> S.E. 2 B. C. 10 38 0 30 Calm. 2 B. C. 6 3 P.M. 1 10 N.N.W. 3 B. C. 1 10 Mid. Calm. B. C.
♂ 24.	.....	6 0	.....	.....	3 11½	3 8	0 3½	3 10¾	0 3½	3 10¾	.....	21 9	♃ L. Q. 24 11 47	6 12	.....	Wind S.E. to E.S.E. throughout the day. 4 B. C.
♁ 25.	10 20 A.M.	2 18	4 12	4 6	4 2	3 7	0 7	3 11½	0 7	3 11½	.....	22 9	.....	6 59	.....	from 0 0 A.M. to 2 0 P.M. S.E. 1 B. C. 2 0 6 0 N.W. 3 B. C. 9 50 P.M. 6 0 Mid. E.S.E. B. C.
☉ 26.	.....	7 20	3 32	5 12	4 2	3 7½	0 7½	3 10¾	0 7½	3 10¾	.....	23 9	.....	7 46	.....	Wind S.E. throughout the day. 2 B. C.
♂ 27.	10 51 A.M.	4 58	.....	6 7	4 2½	3 7½	0 7½	3 10¼	0 7½	3 10¼	.....	24 9	.....	8 32	.....	from 0 0 A.M. to 10 0 E.S.E. 3 B. 10 0 11 0 Calm. 3 B. 11 0 Noon. Easterly. 2 B. Noon. 5 0 Northerly. 2 B. 5 0 Mid. S.E. 2 B.
♂ 28.	11 16 A.M.	4 56	.....	5 42	4 3½	3 6	0 9½	3 10¾	0 9½	3 10¾	.....	25 9	.....	.....	.....	from 0 0 A.M. to 4 0 S.E. 4 B. C. 4 0 10 0 S.E. by S. 2 B. C. 10 0 Mid. N. by W. 2 B. C.
♄ 29.	11 20 A.M.	5 10	.....	5 56	4 4	3 6	0 10	3 11	0 10	3 11	.....	26 9	.....	.....	.....	from Midnight to 4 0 N. by W. 2 B. C. 4 0 8 0 S.E. 1 B. C. V. 8 0 Noon. N.E. 4 Noon. Mid. Calm.



Tide Observations.

Otaheite. Motouta Island. April 1840.										
Date.	Moon's age.		Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.	
	h	m				Direction.	Force.			
♀ April 8.	5	9	9 15 A.M.	3 10 $\frac{1}{4}$	.....	s.w.	3	b.c.		
			37	3 10 $\frac{1}{4}$	1 6 $\frac{3}{4}$					
			10 4	3 10	1 7 $\frac{1}{2}$	s.w.	3-4	b.c.		
			19	3 10	1 8					
			11 05	3 10	1 8	s.w.	3-5	b.c.		
			20	3 10	1 8 $\frac{1}{2}$					
			45	3 10	1 8 $\frac{1}{2}$	s.w.	3-5	b.c.		
			Noon.	3 9 $\frac{1}{2}$	1 9 $\frac{1}{2}$					
			0 35 P.M.	3 9 $\frac{1}{2}$	1 9	s.w.	3-5	b.c.		
			1 05	3 9 $\frac{1}{4}$	1 9 $\frac{1}{2}$					
			40	3 8 $\frac{1}{2}$	1 10	s.w.	4	b.c.m.		
			2 4	3 8 $\frac{1}{2}$	1 11 $\frac{1}{2}$					
			27	3 8 $\frac{1}{2}$	1 11 $\frac{1}{2}$	.....	.....	.....		High Water 2 <sup>h</sup> 24 <sup>m</sup> .
			3 00	3 8	1 11	s.w.	4	b.c.m.		
			16	3 8	1 11					
			30	3 8 $\frac{1}{2}$	1 10					
			50	3 8 $\frac{1}{2}$	1 9 $\frac{1}{2}$	s.w.	2	b.c.m.		
			4 02	3 8 $\frac{1}{4}$	1 9 $\frac{1}{2}$					
			25	3 8 $\frac{1}{2}$	1 10	Calm.	.....	.....		Breeze outside strong N.W.
			45	3 8 $\frac{1}{2}$	1 10					
			5 5	3 8 $\frac{1}{2}$	1 10	.....	.....	.....		b.c.m.
			25	3 8 $\frac{1}{2}$	1 10					
			40	3 8 $\frac{1}{2}$	1 10					
			50	3 9	1 9 $\frac{1}{2}$					
			59	3 9	1 9 $\frac{1}{2}$	E.S.E.	1	.....		Land breeze.
			6 20	.....	1 9					
			50	.....	1 8 $\frac{1}{2}$					
			7 20	.....	1 8 $\frac{1}{2}$					
51	.....	1 8								
8 49	.....	1 7 $\frac{1}{2}$	E.S.E.	3	b.c.					
9 12	.....	1 8								
37	.....	1 8 $\frac{1}{2}$								
10 00	.....	1 8 $\frac{1}{2}$				Low Water 8 <sup>h</sup> 36 <sup>m</sup> .				
30	.....	1 8 $\frac{1}{2}$								
11 00	.....	1 8 $\frac{1}{2}$	N.N.E.	2						
26	.....	1 8								
55	.....	1 9								
4 9.	.....	0 25 A.M.	.....	1 9	N.N.E.			Tide irregular.		
		1 00	.....	1 8 $\frac{1}{2}$	.....	3	b.c.			
		20	.....	1 9						
		50	.....	1 9						
		2 26	.....	1 9	.....	.....	.....			
		3 00	.....	1 9						
		35	.....	1 8 $\frac{1}{2}$	.....	2				
		4 10	.....	1 9						
		35	.....	1 9 $\frac{1}{2}$						
		5 00	.....	1 9 $\frac{1}{2}$						
		32	.....	1 9 $\frac{1}{2}$	.....	2				
		5 50	3 10	1 9 $\frac{1}{2}$	N.N.E.	3	b.c.			
		6 11	10 $\frac{1}{2}$	8 $\frac{1}{2}$						
26	10 $\frac{1}{2}$	8 $\frac{1}{2}$								
44	9	10								
52	3 10	1 9 $\frac{1}{2}$	N.E.	2						

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.
					Direction.	Force.		
24 April 9.	.....	h m	ft. in.	ft. in.				
		7 4 A.M.	3 9½	1 9¼				
		10	9½	9				
		24	10	9½	E.N.E.	2		
		42	9½	10				
		8 00	8½	10½				
		20	8	10½	.....	1		
		38	8	10½	E.N.E.	1		
		54	7	11½	Calm.			
		9 5	6½	11½				
		20	6½	11½	W.S.W.	2	b.c.	
		35	5½	2 00	S.W.	4		
		10 2	4	0½				
		20	4	1				
		30	4	1½	S.W.	4	b.c.	
		11 00	5	1½				
		15	5	0½	S.W.	4	b.c.	
		32	5	1	S.W.	5	b.c.	
		46	5½	0½	.....	.....	.....	High Water 10 <sup>h</sup> 44 <sup>m</sup> .
		Noon.	5½	1 11½				
		0 46 P.M.	5½	11½	S.W.	4	b.c.	
		44	5	11½				
		1 2	5	11				
		10	5	11				
		34	5½	11½				
		2 00	6	11½				
		28	6	2 0½	S.W.	3	b.c.	
		44	6	0½				
		3 5	6	1 0½	S.W.	2	b.c.	
		20	6	11½				
		40	5	2 1				
		55	4	2				
		4 4	4	0½	.....	.....	.....	Tide irregular.
		17	4	0				
		40	5	1				
		50	5	1				
		5 2	5	2	S.W.	1	b.c.	
		40	5	1½				
		6 00	3 5	2				
		22	.....	1				
7 4	.....	0						
30	.....	0						
8 2	.....	1 11½						
14	.....	11						
40	.....	2 0						
9 5	.....	0½	S.W.	2	b.c.			
25	.....	0½						
10 0	.....	0½	.....	.....	.....	High Water 10 <sup>h</sup> 00 <sup>m</sup> .		
29	.....	0½						
52	.....	0						
11 22	.....	0						
50	.....	0						
♀ 10.	.....	0 2 A.M.	.....	2 0				
		10	.....	1 11				
		1 20	.....	10½	Calm.	.....	b.c.	
		56	.....	11	S.E.	2		

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.	
					Direction.	Force.			
♀ Ap. 10.	.....	h m	ft. in.	ft. in.					
		2 1 A.M.	.....	1 11½					
		30	.....	11					
		3 0	.....	10½					
		27	.....	10½					
		4 5	.....	10½		S.E.	3		
		19	.....	10½					
		35	.....	10					
		5 5	.....	9½					
		29	.....	9					
		52	.....	9			2		
		6 10	.....	9½			1		
		28	.....	9½			1		
		44	.....	10½	3 5	10½	E.	2	b.c.
		7 4	.....	5½	7	11			
		10	.....	7	7	11			
		30	.....	7	7	11½			
		45	.....	7	7	11½			
		8 5	.....	7½	2	0½	S.W.	1	b.c.
		15	.....	7½	2	0½			
		30	.....	7½	2	0½			
		39	.....	7	2	0½			
		9 2	.....	6½	6	1	Calm.	.....	b.c.
		25	.....	6	6	0½	N.E.	1	b.c.
		40	.....	6	6	0½			
		10 0	.....	6	6	0½		4	
		20	.....	5	5	1			
		40	.....	5	5	2½			
		11 0	.....	5	5	2			High Water 10 <sup>h</sup> 45 <sup>m</sup> .
		20	.....	6	6	1½			
		32	.....	6	6	1			
		0 6 P.M.	.....	6½	1	11			
		32	.....	6½	1	11½			
		52	.....	7	1	11			
		1 0	.....	8	1	10			
		15	.....	8½	3	9½	N.E.	4	b.c.
		25	.....	9	3	9			
		1 40	.....	9½	3	8½			
		49	.....	10	3	8½			
		2 0	.....	10	3	8½	N.E.	4	b.c.
		18	.....	10	3	8			
		30	.....	10	3	8			
		44	.....	10	3	8½			
		55	.....	10½	3	8			
		3 2	.....	10½	3	8½			
		25	.....	10½	3	8½			
		40	.....	10½	3	8½			
		59	.....	10	3	8½			
4 10	.....	11	3	8					
40	.....	11	3	7½			Low Water 4 <sup>h</sup> 36 <sup>m</sup> .		
54	.....	11½	3	8½					
5 8	.....	11½	3	8					
22	.....	11	3	8½	E.	2	b.c.		
40	.....	10½	3	9					
50	.....	10½	3	9	Calm.				
6 2	.....	10½	3	9					
25	.....	.....	.....	1 9					

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.	
					Direction.	Force.			
♀ Ap. 10.	.....	h m	ft. in.	ft. in.					
		6 50 P.M.	.....	1 10					
		7 20	.....	9					
		40	.....	10					
		8 2	.....	10					
		28	.....	11½	s.E.	1	b.c.		
		9 0	.....	2 1½					
		30	.....	2	Calm.				
		10 3	.....	2				High Water 10 <sup>h</sup> 3 <sup>m</sup> .	
		30	.....	2					
		11 1	.....	2					
		20	.....	1½	E.	1	b.c.		
32	.....	1							
46	.....	0½							
♂ 11.	.....	0 0	.....	2 0	Calm.				
		0 14 A.M.	.....	0½					
		34	.....	1					
		52	.....	1½					
		1 19	.....	1					
		40	.....	0½					
		2 4	.....	1 11½		1			
		22	.....	9½		1			
		49	.....	8¼		1			
		3 14	.....	7½					
		34	.....	6½					
		48	.....	6½					
		4 2	.....	6½	Calm.				
		18	.....	6½					
		35	.....	6½	E.				
		5 00	.....	1 6					
		25	.....	6					
		6 00	.....	5½					
		10	.....	4 0				Low Water 6 <sup>h</sup> 5 <sup>m</sup> .	
		30	.....	3 11½					
		50	.....	11					
		7 2	.....	10					
		14	.....	10					
		40	.....	9					
		50	.....	8					
		8 2	.....	8		10	E.	1	b.c.
		16	.....	8		11½			
		50	.....	7½		2 0½		4	
		9 0	.....	6		0			
		20	.....	6		0½			
		37	.....	6		0½			
		50	.....	6		0½			
		10 0	.....	5		1			
		23	.....	5		1			
		42	.....	5		2			
		11 5	.....	5		1½			High Water 10 <sup>h</sup> 43 <sup>m</sup> .
20	.....	6½		1					
32	.....	6		1					
40	.....	5½		1½					
Noon.	.....	6		2 1	E.	3	b.c.		
0 20 P.M.	.....	6		0½					
40	.....	3 7		0					

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.
					Direction.	Force.		
h Ap. 11.	h m	1 0 P.M.	3 8	1 10 $\frac{1}{2}$	.....	3	b.c.v.	
		30	10	10 $\frac{1}{2}$				
		55	10 $\frac{1}{2}$	9 $\frac{1}{2}$				
		2 55	11	7				
		3 10	4 0	6 $\frac{1}{2}$				
		4 10	1	5 $\frac{1}{2}$				
		50	1 $\frac{1}{2}$	5				
		5 30	1 $\frac{1}{2}$	5				
		55	1 $\frac{1}{2}$	5				
		6 10	0 $\frac{1}{2}$	6 $\frac{1}{2}$				
		40	.....	7				
		7 10	.....	8 $\frac{1}{2}$				
		40	.....	10				
		8 15	.....	11				
		50	.....	2 1				
9 25	.....	1 $\frac{1}{2}$						
55	.....	2						
10 25	.....	3						
11 0	.....	4						
		40	.....	4 $\frac{1}{2}$				
☉ 12.	.....	0 20 A.M.	.....	4	.....	2	b.c.	High Water 11 <sup>h</sup> 40 <sup>m</sup> .
		1 00	.....	2 2				
		20	.....	0 $\frac{1}{2}$				
		50	.....	1 11				
		2 30	.....	10				
		3 10	.....	8				
		40	.....	6 $\frac{1}{2}$				
		4 20	.....	5 $\frac{1}{2}$				
		5 10	.....	4				
		32	4 0	4				
		50	4 0	4				
		6 5	4 0	5				
		35	1	5				
		7 00	1	6				
		25	1	6				
		40	4 0	7				
		8 0	3 10	8				
		10	9 $\frac{1}{2}$	9				
		32	9	10				
		9 0	7	2 0				
		25	6	0 $\frac{1}{2}$				
		40	6	1				
10 1	5 $\frac{1}{2}$	2						
20	5	1						
11 0	6	1						
Noon.	5 $\frac{1}{2}$	0 $\frac{1}{2}$						
0 30 P.M.	5	0 $\frac{1}{2}$						
15	5 $\frac{1}{2}$	0 $\frac{1}{2}$						
1 40	6 $\frac{1}{2}$	1 11 $\frac{1}{2}$						
2 20	7 $\frac{1}{2}$	10 $\frac{1}{2}$						
50	8	10						
3 2	9	10						
30	4	6						
5 0	4	5						
25	3 $\frac{1}{2}$	4 $\frac{1}{2}$						
50	3 1	6						

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.												
					Direction.	Force.														
☉ Ap. 12.	h m	6 20 P.M.	ft. in.	1 6	N.E.	2	b.c.													
		35	.....	8																
		7 5	.....	9																
		20	.....	10																
		8 5	.....	11																
		35	.....	2 2																
		9 10	.....	2½																
		40	.....	3																
		10 15	.....	4½																
		45	.....	5																
		11 9	.....	5																
45	.....	5½	Calm.	1	b.c.	High Water 11 <sup>h</sup> 47 <sup>m</sup> .														
☽ 13.	h m	0 40 A.M.	.....	2 5	Calm.	.....	b.c.													
		1 20	.....	3½																
		55	.....	1½																
		3 5	.....	0½																
		30	.....	1 11																
		50	.....	10																
		5 0	.....	9																
		20	.....	8																
		40	.....	7																
		6 0	4 2	5					N.E.	2	.....	Low Water 6 <sup>h</sup> 0 <sup>m</sup> .								
		20	2	6					Calm.	.....	b.c.									
		40	0	6																
		7 0	0	7																
		16	3 11	8																
		40	11	7½																
		8 1	10½	8																
		20	9	9																
		40	8	11																
		9 0	6	2 0									N.E.	1	b.c.					
		20	5	1									Calm.	.....	b.c.					
		40	4	1																
		10 1	5	1																
		34	5½	1																
		46	4	2																
		11 4	4	2																
		18	4	2½																
		Noon.	4	2													Calm.	.....	b.c.	High Water 11 <sup>h</sup> 20 <sup>m</sup> .
		0 26 P.M.	5	2													N.E.	1	b.c.	
		40	5	1½																
		1 0	6	1																
20	7	1 11																		
2 0	9	8																		
16	10	8																		
30	11	8																		
3 0	11	8																		
10	11½	7	N.E.	2	b.c.															
30	11½	6½	Calm.	.....	b.c.															
4 0	11½	6																		
25	11	5½																		
30	4 0	5																		
46	2	4																		
5 0	3	3																		
35	3	3																		
6 0	4	3½					.....	1	b.c.	Low Water 5 <sup>h</sup> 20 <sup>m</sup> .										

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.	
					Direction.	Force.			
» Ap. 13.	h m	35 P.M.	ft. in.	1 4½			R.		
		6 59	.....	5					
		7 14	.....	5½					
		30	.....	6½				Strong breeze off the land.	
		45	.....	7½					
		8 5	.....	1 8½					
		30	.....	11					
		55	.....	11½					
		9 30	.....	2 0					
		10 10	.....	2					
		25	.....	3½					
		55	.....	4½					
		11 20	.....	5					
50	.....	5							
♂ 14.	h m	0 35 A.M.	.....	2 5½	E.	2	b.c.	High Water 0 <sup>h</sup> 35 <sup>m</sup> .	
		1 10	.....	5					
		50	.....	5					
		2 20	.....	2					
		3 0	.....	1 10					
		30	.....	8					
		4 10	.....	7					
		50	.....	6½					
		5 2	.....	4	E.	2	b.c.		
		26	.....	4					
		6 2	4 2	4	.....	.....	.....	.....	Low Water 5 <sup>h</sup> 44 <sup>m</sup> .
		26	2	4					
		7 20	0	5					
		55	2	6					
		8 20	3 11	8					
		9 0	9	10					
		26	7	2 1					
		40	4	1					
		10 1	4	2	E.	2	b.c.		
		17	3	3					
		40	3	4					
		11 0	2	4					
		12	2	5					
		22	2	5	.....	.....	.....	.....	High Water 11 <sup>h</sup> 26 <sup>m</sup> .
		40	2	5					
		Noon.	2	4					
		0 20 P.M.	2	3					
		40	3	3					
		1 0	3	3	.....	1	b.c.		
		20	4	2					
30	5	1							
50	6	0							
2 2	7	1 11½							
3 2	9	10							
20	10	8½							
40	11	7							
4 1	11¾	6	.....	.....	.....	b.c.			
27	4 1	4							
40	2	4							
5 0	4 2	1 3½	E.	1	b.c.				
20	3	3½							

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.	
					Direction.	Force.			
♂ Ap. 14.	h m	5 40 P.M.	4 3	1 3½				Low Water 6 <sup>h</sup> 20 <sup>m</sup> .	
		6 0	.....	3					
		40	.....	3					
		7 0	.....	4		E.	1		b.c.l.
		20	.....	5					
		45	.....	6					
		8 10	.....	7½			1		b.c.
		20	.....	7½					
		40	.....	10					
		9 10	.....	11½					
		37	.....	2 1½		Calm.	.....		b.c.l.
10 10	.....	3½							
11 0	.....	5							
		30	.....	5½		E.	2	b.c.	
♀ 15.	h m	0 20 A.M.	.....	5½				High Water 11 <sup>h</sup> 42 <sup>m</sup> .	
		1 40	.....	2 4					
		2 0	.....	3					
		18	.....	2					
		3 0	.....	2					
		30	.....	2					
		4 5	.....	1 10½					
		30	.....	8					
		5 0	.....	4		E.	2	b.c.	
		20	.....	4					
		40	.....	3					
		6 0	4 2	3					
		30	3¼	3		E.	4	b.c.	
		7 4	2	4					
		30	1	5					
		8 10	0	6					
		20	3 11	8					
		9 0	8	9					
		14	7½	10					
		38	6	10		E.	4	b.c.	
		10 1	5½	2 0					
		26	5	0					
		40	4	1					
		11 1	3	2½					
		16	2	4					
		40	1	5					
		50	1½	6					
		Noon.	1	5½			4		
		0 16 P.M.	1	3					
		38	1½	3					
1 6	2	3							
35	2½	2½							
2 0	3 1	2 2		E.	.....	b.c.t.l.			
16	6*	1							
35	7	1 11½							
3 0	8	10							
16	9	9							
32	10	8							
45	11	7		E.	3	b.c.t.l.			
4 0	4 0	6							
	16	1							

\* Gauge went down suddenly 5 inches.

Heavy rain; lightning over Island of Eimeo.



TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.
					Direction.	Force.		
♀ Ap. 15.	.....	h m	ft. in.	ft. in.				
		4 40 P.M.	4 1	1 4½				
		5 0	1	4½	.....	2	r.q.c.	
		10	1	5				
		26	2	4½				
		6 0	2	4½	W.N.W.	.....	l.q.c.p.	Heavy rain.
		20	.....	4½				
		40	.....	4				
		7 16	.....	1 3	.....	.....	.....	Low Water 7 <sup>h</sup> 1 <sup>m</sup> .
		37	.....	5				
		40	.....	7½				
		8 10	.....	10				
		50	.....	2 1				
		9 15	.....	2½				
		40	.....	3½				
10 15	.....	4½						
48	.....	6						
11 35	.....	7½						
45	.....	7½	.....	.....	.....	High Water 11 <sup>h</sup> 48 <sup>m</sup> .		
♂ 16.	.....	0 15 A.M.	.....	2 7	E.	1	b.c.l.	
		40	.....	5½				
		1 15	.....	4				
		50	.....	2½				
		2 25	.....	1				
		3 0	.....	1 11				
		30	.....	10				
		45	.....	9½				
		4 0	.....	8½				
		55	.....	5½				
		6 0	.....	3½				
		15	4 3	3½				
		30	3	3½	Calm.			
		7 0	3	3	.....	.....	.....	Low Water 7 <sup>h</sup> 0 <sup>m</sup> .
		25	2	4				
		45	2½	4½				
		8 0	2	5½				
		20	1	6				
		32	0	7				
		46	3 10	9	Calm.			
		9 0	3 9	1 10½				
		20	8	2 0½				
		40	7	1				
		10 0	5	2				
		22	5	2				
		46	3	4				
		11 20	2	5				
40	2	5						
Noon.	2	5						
0 30 P.M.	1½	5	Calm.	.....	.....	High Water 11 <sup>h</sup> 52 <sup>m</sup> .		
40	2	4						
1 0	2	4						
18	1	3						
40	0	2						
2 0	2	2½						
30	4	0						
3 0	7	1 11						

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.
					Direction.	Force.		
4 Ap. 16.	h m .....	h m 3 11 P.M.	ft. in. 3 8	ft. in. 1 10				
		32	9	9				
		4 0	10	9				
		20	9	8	Calm.	.....	b.c.	
		40	4 0	6				
		5 10	3 11½	5				
		25	4 1	4				
		39	2	4				
		46	2	4				
		6 0	3	3½				
		9	2	4	Calm.	.....	b.c.	
		20	2	3				
		40	.....	2	.....	.....	.....	Low Water 6 <sup>h</sup> 40 <sup>m</sup> .
		7 12	.....	4	.....	.....	.....	
		35	.....	4½	.....	.....	.....	
		8 0	.....	6	.....	.....	.....	
		11	3 11½	6	E.	2	b.c.	Land breeze.
		20	.....	6½	.....	.....	.....	
		40	.....	7	.....	1	b.c.	
		9 0	.....	7	.....	.....	.....	
		20	.....	9	.....	.....	.....	
		44	.....	11	E.	1	b.c.	
		10 0	3 7	11	.....	.....	.....	
		20	.....	2 0½	.....	.....	.....	
		40	.....	2	.....	.....	.....	
		50	.....	3	.....	.....	.....	
		11 0	.....	4	.....	.....	.....	
		16	.....	4	.....	.....	.....	
		30	.....	4	.....	.....	.....	
		36	.....	5	.....	.....	.....	
49	.....	5	E.	3	b.c.			
	Midnight.	.....	6	.....	.....			
5 Ap. 17.	.....	0 10 A.M.	.....	2 6½				
		30	.....	6½	.....	.....	.....	High Water 1 <sup>h</sup> 10 <sup>m</sup> .
		1 0	.....	7	.....	.....	.....	
		20	.....	6½	.....	.....	.....	
		45	.....	5½	.....	.....	.....	
		55	.....	4	.....	.....	.....	
		2 15	.....	3½	.....	.....	.....	
		45	.....	2½	.....	.....	.....	
		3 5	.....	1	.....	.....	.....	
		25	.....	1 11	.....	.....	.....	
		50	.....	9½	.....	.....	.....	
		4 25	.....	8½	.....	.....	.....	
		5 5	.....	7½	.....	.....	.....	
		30	.....	5½	.....	.....	.....	
		6 15	.....	4½	.....	.....	.....	
		40	.....	4½	Calm.	.....	b.c.	
		7 00	4 2	4½	.....	.....	.....	Low Water 6 <sup>h</sup> 48 <sup>m</sup> .
		18	.....	2¼	.....	.....	.....	
		40	.....	2	.....	.....	.....	
		8 00	.....	1	.....	.....	.....	
30	.....	0½	.....	.....	.....			
9 00	3 11	7	.....	.....	.....			
25	.....	10	.....	.....	.....			
40	.....	8	w.	1	b.c.			

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.		Tide-batten.		Wind.		Weather.	Remarks.																																																																																																																																																																																							
			ft.	in.	ft.	in.	Direction.	Force.																																																																																																																																																																																									
♀ Ap. 17.	.....	9 47 A.M.	3	8	1	11																																																																																																																																																																																											
		10 0	7	11½																																																																																																																																																																																													
		16	7	11½																																																																																																																																																																																													
		30	6	2 0½																																																																																																																																																																																													
		40	6	0½																																																																																																																																																																																													
		11 0	5	1																																																																																																																																																																																													
		30	3	2																																																																																																																																																																																													
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45	.....	3																																																																																																																																																																																															
Midnight.	.....	3½																																																																																																																																																																																															
♂ Ap. 18.	.....	0 30 A.M.																									.....	2 3½	.....	.....	.....	.....																																																																																																																																																																	

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.
					Direction.	Force.		
24 Ap. 18.	.....	h m	ft. in.	ft. in.				
		1 0 A.M.	.....	2 5				
		20	.....	5				High Water 1 <sup>h</sup> 20 <sup>m</sup> .
		40	.....	5				
		2 5	.....	4				
		30	.....	2½				
		50	.....	1½				
		3 20	.....	0				
		40	.....	1 11				
		4 0	.....	10				
		40	.....	9				
		5 0	.....	8				
		30	.....	7				
		6 0	4 0½	6				
		20	0½	6				
		30	1	5½				
		40	1	5½				Low Water 6 <sup>h</sup> 38 <sup>m</sup> .
		7 0	1	5½				
		20	1	6				
		40	4 1	1 6				
		8 0	1	6				
		7	1	6				
		45	1	6¼				
		9 5	3 11	7				
		29	10	8				
		40	9½	9				
		10 5	11	10				
		30	8	11				
		50	6	2 0				
		11 0	5	1				
		30	5	1				
		40	4½	1½				
		Noon.	3½	2½				
		0 15 P.M.	3	3				
		30	3	4				
		40	3	4				
50	3	4						
1 0	3	5						
20	2½	4½		Calm.	.....	b.c.		
30	3	4						
2 5	2½	3½						
25	2½	3						
3 2	2½	3						
30	5	2						
45	7	0½		s.w.	3	P.R.		
4 0	9	1 10½						
20	10½	9						
5 0	4 0	7½						
20	1	6						
6 0	1½	4½						
20	.....	4½						
40	.....	4½						
7 20	.....	4½						
50	.....	4½						
8 20	.....	4½						
50	.....	5						
9 30	.....	6½						

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.	
					Direction.	Force.			
2 Ap. 18.	.....	h m	ft. in.	ft. in.					
		10 10 P.M.	.....	1 8					
		40	.....	9½					
		11 10	.....	11					
		30	.....	2 0					
		Midnight.	.....	1½					
☉ 19.	.....	0 40 A.M.	.....	2 3	s.	2	b.c.		
		1 5	.....	4					
		30	.....	4				High Water 1 <sup>h</sup> 18 <sup>m</sup> .	
		2 0	.....	3					
		40	.....	1½					
		3 20	.....	2 0½					
		40	.....	1 11½					
		4 0	.....	11					
		50	.....	10					
		5 0	.....	9½					
		30	.....	9					
		40	.....	8					
		6 0	.....	7					
		10	.....	6					
		20	4 0	3½					Low Water.
		40	1	5½	1				
		7 0	1	5½		Calm.	.....	b.c.	
		10	1	5½					
		30	1	5½					
		40	1	5½					
		8 0	1½	5½					
		30	1	7		s.w.	1	b.c.	
		45	0	6½					
		9 5	1	6½		Calm.			
		20	0	7					
		30	0	7					
		45	3 11½	7					
		10 0	11	7		N.E.	2	b.c.	
		20	10½	8					
		40	10	9					
		50	9	10					
		11 0	9	11½		w.N.W.	2-4	b.c.	
20	7	12½							
40	6½	2 0½	2						
12 0	6	1½							
0 20 P.M.	5	2							
30	5½	2½		w.	4	b.c.			
40	5	2½							
50	5	2½		Calm.					
55	4½	2½							
1 0	4	3		N.W.	3	b.c.			
15	4	3							
31	4	2½					High Water 1 <sup>h</sup> 10 <sup>m</sup> .		
40	5	2½		w.	3	b.c.			
50	4	2							
2 0	4	2							
24	4½	1½							
40	5	1							
3 0	5	1							
25	6	2 0	2	w.	2	b.c.			

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.		Tide-batten.		Wind.		Weather.	Remarks.
			ft.	in.	ft.	in.	Direction.	Force.		
☉ Ap. 19.	.....	h m	h m	ft.	in.	ft.	in.			
		3 30 P.M.	3 6 $\frac{1}{2}$	1	11 $\frac{1}{2}$					
		49	7		11					
		4 00	8		10					
		18	9		9 $\frac{1}{2}$					
		4 43	3 10	1	9	.....	1	b.c.		
		5 0	10 $\frac{1}{2}$		8	E.N.E.	2	b.c.		
		20	11		8					
		35	11 $\frac{1}{2}$		7					
		52	11 $\frac{1}{2}$		7					
		6 25	.....		6	E.	.....	b.c.		
		40	.....		5 $\frac{1}{2}$					
		55	.....		5 $\frac{1}{2}$	E.	1	b.		
		7 10	.....		5 $\frac{1}{2}$					
		35	.....		5 $\frac{1}{2}$					
		50	.....		5 $\frac{1}{2}$					
		8 0	.....		5 $\frac{1}{2}$					
		30	.....		5					
		55	.....		4					
		9 25	.....		6					
		10 00	.....		6					
		20	.....		6 $\frac{1}{2}$					
		40	.....		7					
		50	.....		9					
		11 15	.....		10 $\frac{1}{2}$					
		35	.....		11	E.	2	b.		
		Midnight.	.....		2 0					
		☽ 20.	.....	0 30 A.M.	.....	2	2			
1 0	.....			2 $\frac{1}{2}$						
20	.....			3						
30	.....			3 $\frac{1}{2}$						
2 0	.....			2 $\frac{1}{2}$						
30	.....			1						
50	.....			0						
3 50	.....			1	9 $\frac{1}{2}$					
4 0	.....				9	E.	2	b.c.		
30	.....				8					
40	.....				7					
5 00	.....				6					
30	.....				5 $\frac{1}{2}$					
6 0	.....				5 $\frac{1}{2}$					
10	4 0				5 $\frac{1}{2}$					
20	0 $\frac{1}{2}$				5 $\frac{1}{2}$	Calm.				
30	0 $\frac{1}{2}$				5 $\frac{1}{2}$					
40	1				5 $\frac{1}{2}$					
50	1				5 $\frac{1}{4}$		3	b.c.		
7 0	1				5 $\frac{1}{4}$		1			
10	1				5 $\frac{1}{2}$					
20	1				5 $\frac{1}{2}$					
30	1 $\frac{1}{2}$				5 $\frac{1}{2}$	Calm.				
40	1 $\frac{1}{2}$				6					
50	0 $\frac{1}{2}$				6	Calm.				
8 15	0 $\frac{1}{2}$				6					
44	4 0 $\frac{1}{2}$			1	5 $\frac{1}{2}$					
40	0				5 $\frac{1}{2}$	Calm.				
9 0	0		6	Calm.						

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.	
					Direction.	Force.			
D Ap. 20.	.....	9 20 A.M.	4 0	1 7					
		31	0	7					
		45	0	7					
		10 0	3 11	7					
		15	11	7½					
		30	11	7½		w. ½ N.	2	b.c.	
		11 0	10	9		w s.w.	3	b.c.	
		15	9	9½		.....	3	b.c.	
		30	9	9½		.....	3		
		45	8	10½		.....	4	b.c.	
		12 0	8	10½		.....	4	b.c.	
		30 P.M.	6	2 1					
		45	6	1					
		1 0	6	1					
		30	6	0½		w.s.w.	2	b.c.	High Water. (The high water not well determined; batten and gauge differ.)
		2 0	6	0½		w.	3	b.c.	
		20	5½	1½					
		40	5	1					
		50	6	0½					
		3 0	6	0			4	b.c.	
		10	6½	1 11½					
		20	6½	11½					
		30	6½	11					
		40	7	10½		Calm.			
		50	7	10½					
		4 0	7½	10					
		10	8	9½		Calm.			
		20	9	8					
		40	10	8					
		5 0	11	7½		w.	2	b.c.	
		10	11	7½					
		20	10½	7					
		30	10	7		w.	3	b.c.	
		40	00	6		.....	0	b.c.	
		6 0	.....	6					
		20	.....	5½					
		35	.....	5		.....	0	b.c.	
		45	.....	4½					
		55	.....	4					
		7 2	.....	3½		E.	1	b.c.	
		20	.....	3½		.....			
		35	.....	4					
		45	.....	4					
		55	.....	4					
		8 5	.....	4½					
		15	.....	4½					
		8 40	.....	1 5½					
		9 20	.....	5½					
40	.....	5½							
10 20	.....	6½							
50	.....	7½							
11 20	.....	8							
50	.....	9							
Midnight.	.....	9½							
3 Ap. 21.	.....	0 25 A.M.	.....	1 10					

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.
					Direction.	Force.		
♂ Ap. 21.	h m	1 0 A.M.	ft. in.	2 0				High Water 1 <sup>h</sup> 57 <sup>m</sup> .
		30	.....	2				
		2 0	.....	3				
		30	.....	2				
		3 0	.....	1				
		40	.....	1 10				
		4 5	.....	9 <sup>1</sup> / <sub>2</sub>				
		40	.....	9				
		5 0	.....	9				
		20	.....	9				
		6 0	3 9	8 <sup>1</sup> / <sub>2</sub>	Calm.	.....	b.c.	
		20	10	8				
		7 0	11 <sup>1</sup> / <sub>2</sub>	7				
		30	4 0	7				
		8 0	0	7	E.	2	b.c.	
		25	3 11 <sup>1</sup> / <sub>2</sub>	8				
		40	11 <sup>1</sup> / <sub>2</sub>	7				
		9 0	4 0	7				
		30	0	7				
		10 0	0	8				
		11 0	0	7	S.E.	3	b.c.	
		30	3 11	8	Calm.	.....		
		Noon.	9	9				
		0 30 P.M.	8 <sup>1</sup> / <sub>2</sub>	7 <sup>1</sup> / <sub>2</sub>			High Water, irregular.	
		1 0	8	7	N.W.	2	b.c.	
		30	7 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>				
		2 0	7 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>2</sub>	Calm.	.....		
		30	6 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>				
		3 0	6 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>2</sub>	W.S.W.	2	b.c.	
		30	6	5				
4 0	7	6	W.	2	b.c.			
30	8	7						
5 0	9	8	W.	2	b.c.			
30	10	9						
6 0	11	10						
30	.....	9						
7 0	.....	6			Tide irregular, ebbing and flowing at three hours intervals.			
30	.....	5 <sup>1</sup> / <sub>2</sub>	Calm.	.....				
8 0	.....	1 6						
30	.....	6 <sup>1</sup> / <sub>2</sub>						
9 0	.....	7 <sup>1</sup> / <sub>2</sub>	S.E.	1				
30	.....	7						
10 0	.....	7 <sup>1</sup> / <sub>2</sub>		2				
30	.....	7 <sup>1</sup> / <sub>2</sub>						
11 0	.....	8		3				
30	.....	8						
Midnight.	.....	8		3	b.c.			
♀ 22.	.....	0 30 A.M.	.....	1 8 <sup>1</sup> / <sub>4</sub>				High Water 2 <sup>h</sup> 30 <sup>m</sup> .
		1 0	.....	9	S.E.	1-3	b.c.	
		30	.....	9 <sup>1</sup> / <sub>2</sub>				
		2 0	.....	10				
		30	.....	10				
		3 0	.....	10				
30	.....	9 <sup>1</sup> / <sub>2</sub>						
4 0	.....	9 <sup>1</sup> / <sub>2</sub>						



TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.	
					Direction.	Force.			
♄ Ap. 22.	.....	h m	ft. in.	ft. in.					
		4 30 A.M.	.....	9½					
		5 0	.....	10					
		30	.....	9					
		6 0	.....	3 11½	9	S.E.	2	b.c.	
		30	.....	11	7½	Calm.			
		7 0	.....	4 0	7			b.	
		30	.....	0	6				
		8 0	.....	0	6				Low Water 8 <sup>h</sup> 3 <sup>m</sup> .
		30	.....	0	6			r.	
		9 0	.....	0	6½			b.c.	
		30	.....	3 11½	7	N.W.	2		
		10 0	.....	11	7	w.	2		
		30	.....	11	7½		2		
		11 0	.....	10½	8		2	b.c.	
		30	.....	10	8		3		
		Noon.	.....	10	8½		4	b.c.	
		0 30 P.M.	.....	10	9		4	b.c.	
		1 0	.....	9½	9				
		30	.....	10½	8½				
		2 0	.....	10	8½		4	b.c.	
		30	.....	9	9				
		3 0	.....	8½	10		4	b.c.	
		30	.....	8	10				
		4 0	.....	8	10		3	b.e.v.	
		30	.....	8	10				
		5 0	.....	8	10				High Water 4 <sup>h</sup> 20 <sup>m</sup> .
		30	.....	8	10				
6 0	.....	7½	9½						
30	.....	.....	9½	w.					
7 0	.....	.....	8						
30	.....	.....	7						
8 0	.....	.....	1 6½		3				
30	.....	.....	5½						
9 0	.....	.....	5				Low Water 9 <sup>h</sup> 15 <sup>m</sup> .		
30	.....	.....	5½						
10 0	.....	.....	6		3				
30	.....	.....	6¼						
11 0	.....	.....	7½						
30	.....	.....	6½						
Midnight.	.....	.....	8		3				
4 23.	.....	0 30 A.M.	.....	1 9					
		1 0	.....	9½					
		30	.....	9½					
		2 0	.....	9½					
		30	.....	9½				High Water 2 <sup>h</sup> 30 <sup>m</sup> .	
		3 0	.....	.....	9½				
		30	.....	.....	9½				
		4 0	.....	.....	9½				
		30	.....	.....	9	E.	2	b.c.	
		5 0	.....	.....	8			b.c.	
		30	.....	.....	8		0		
		6 0	.....	3 10½	8				
		30	.....	10½	8				
		7 0	.....	10½	7½				
30	.....	10	8			Low Water 7 <sup>h</sup> 0 <sup>m</sup> .			

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.	
					Direction.	Force.			
4 Ap. 23.	h m .....	8 0 A.M.	3 10	1 8				Tide ebbing and flowing at irregular intervals.	
		30	10	8½	N.W.	1	b.c.		
		9 0	10	8½					
		30	9½	8½					
		10 0	9½	9	W.	2	b.c.		
		30	10	8					
		11 0	10	8					
		30	10	8	N.W.	2	b.c.		
		Noon.	10	8					
		0 30 P.M.	10½	8					
		1 0	10	8½					
		30	9½	8½	N.W.	4	b.c.		
		2 0	9½	8½					
		30	9	9	N.W.	2	b.c.		
		3 0	9	10	.....	2	b.c.		
		30	9	9½	N.	3	b.c.		
		4 0	9	10	.....	2	b.c.		
		30	9	10½	.....	2	b.c.		
		5 0	9	9¾	Calm.				
		30	9	9½	S.E.	1	b.c.		
		6 0	9	9	.....	2	b.c.		
		30	.....	9					
		7 0	.....	9	.....	0	b.c.		
30	.....	9							
8 0	.....	1 9							
30	.....	8½							
9 0	.....	8½	S.E.	1	b.c.				
30	.....	8½							
10 0	.....	9	.....	5	b.c.				
30	.....	9	.....	5	b.c.				
11 0	.....	9	.....						
30	.....	9							
Midnight.	.....	8							
♀ 24.	.....	0 30 A.M.	.....	1 7	S.E.	2	b.c.	Low Water 4 <sup>h</sup> 0 <sup>m</sup> .  High Water 10 <sup>h</sup> 30 <sup>m</sup> .	
		1 0	.....	7					
		30	.....	6½					
		2 0	.....	6½					
		30	.....	6					
		4 0	.....	6	S.	2	b.c.		
		30	.....	6					
		5 0	.....	6					
		30	.....	6½	S.S.E.	2-4	b.c.		
		6 0	3 11	7					
		30	11	7½	S.E.	1	b.c.		
		7 0	10½	8	.....	1			
		30	10	9	.....	1			
		8 0	9½	9	E.	1	b.c.		
		30	9½	8½	Calm.	.....	b.c.		
		9 0	10	8½					
		30	9	9	N.E.	1	b.c.		
10 0	9	9	Calm.						
30	9	10	W.N.W.	1	b.c.				
11 0	10	9½	W.S.W.	3	b.c.				
30	10	9	.....	3	b.c.				
Noon.	10	8¾							

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.				
					Direction.	Force.						
♀ Ap. 24.	h m	0 30 P.M.	3 10½	1 8	.....	2	b.c.	{ Low Water 2 <sup>h</sup> 30 <sup>m</sup> .  Tide ebbing and flowing at intervals of two hours.				
		1 0	10½	7½	.....	.....	b.c.					
		30	10½	8	Calm.		.....		.....			
		2 0	10½	7½	Variable.	.....	.....		b.			
		30	10½	7								
		3 0	11	7½	Calm.		.....		.....			
		30	11	7½	E.	1	.....		b.c.			
		4 0	10½	8								
		30	10	7½	Calm.	.....	.....		b.c.			
		5 0	9½	7¾								
		30	9	9	S.E.	1	.....		b.c.			
		6 0	.....	8½								
		30	.....	8½	S.E.	.....	.....		.....			
		7 0	.....	9								
		30	.....	9	S.	3	.....		b.c.			
		8 0	.....	9								
		30	.....	8½	S.E.	2	.....		b.c.			
		9 0	.....	9								
		30	.....	9	E.S.E.	3	.....		b.			
10 0	.....	9										
30	.....	9	E.	1	.....	b.c.						
11 0	.....	9										
30	.....	9½	Variable.	1	.....	b.						
Midnight.	.....	9½										
½ 25.	h m	0 30 A.M.	.....	1 9	.....	.....	.....	Low Water 4 <sup>h</sup> 15 <sup>m</sup> .  High Water 10 <sup>h</sup> 15 <sup>m</sup> .  Low Water 3 <sup>h</sup> 30 <sup>m</sup> .				
		1 0	.....	9								
		30	.....	8					S.E.	1	.....	b.c.
		2 0	.....	7½								
		30	.....	7					S.E.	3	.....	b.c.
		3 0	.....	6½								
		30	.....	6					.....	.....	.....	.....
		4 0	.....	6								
		30	.....	6					S.E.	3	.....	b.c.
		5 0	.....	6½								
		30	.....	6½					S.E.	2	.....	b.c.
		6 0	.....	7								
		30	3 11	7½					S.S.E.	1	.....	b.c.
		7 0	11	8								
		30	11	8					.....	1	.....	b.c.
		8 0	11	8								
		30	10	9					E.N.E.	2	.....	b.c.
		9 0	9½	10								
		30	9	10					E.	1	.....	b.c.
10 0	9	10½										
30	8½	10½	Calm.		.....	.....						
11 0	8	10										
30	8½	9½	W.N.W.	1-3	.....	b.c.						
Noon.	8½	9										
0 30 P.M.	9	9	N.E.	1	.....	b.c.						
1 0	9½	8										
30	10	8	N.N.E.	4-2	.....	b.c.						
2 0	10	7										
30	4 0	6½	N.W.	3	.....	b.c.						
3 0	0½	6										
30	1	6	.....	.....	.....	.....						

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.
					Direction.	Force.		
½ Ap. 25.	.....	h m	ft. in.	ft. in.				
		4 0 P.M.	4 0½	1 6	N.W.	4	b.c.	
		30	0	6½				
		5 0	0	7	S.	2		
		30	3 11½	7	.....	3		
		6 0	11½	8				
		30	.....	9½	S.	2	b.c.	
		7 0	.....	10				
		30	.....	1 10½				
		8 0	.....	11	.....	3	b.c.	
		30	.....	11				
		9 0	.....	11				
		30	.....	11	.....	3	b.c.	High Water 9 <sup>h</sup> 15 <sup>m</sup> .
10 0	3 7½	11	.....	5	b.c.			
30	.....	11	.....	3	b.c.			
11 0	.....	10½	.....	3	b.c.			
30	.....	10	.....	2	b.c.			
Midnight.	.....	9	S.S.E.	2	b.c.			
☉ 26.	.....	0 30 A.M.	.....	1 8				
		1 0	.....	7	S.S.E.	3	b.c.	
		30	.....	6				
		2 0	.....	5	.....	3	b.c.	
		30	.....	5				
		3 0	.....	4¾				
		30	.....	4½				
		4 0	.....	4½	S.S.E.	3-4	b.c.	Low Water 4 <sup>h</sup> 0 <sup>m</sup> .
		30	.....	4½				
		5 0	.....	4½				
		30	.....	5				
		6 0	.....	5	S.	2	b.c.	
		30	4 0	6				
		7 0	3 11½	7	S.E.	1	b.c.	
		30	10½	8½				
		8 0	9½	9	Calm.			
		30	9	9				
		9 0	8½	9½	Variable.			
		30	8½	10				
		10 0	8	10	N.N.E.	3	b.c.	
		30	7½	10	.....	4	b.c.	High Water 10 <sup>h</sup> 30 <sup>m</sup> .
		11 0	7½	10	N.N.E.	4	b.c.	
		30	7¾	10				
		Noon.	8¾	10				
		0 30 P.M.	10	9½				
		1 0	11	8				
		30	11½	6½	N.	4	b.	
		2 0	11½	6¼				
30	11¾	6	.....	5	b.			
3 0	4 0¼	5						
30	1½	4	.....	5	b.			
4 0	.....	1 4	N.	2	b.c.	Low Water 4 <sup>h</sup> 15 <sup>m</sup> .		
30	.....	4						
5 0	.....	4	Variable.					
30	.....	4	S.	1	b.			
6 0	.....	4						
30	.....	4½						
7 0	.....	5½						

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.	
					Direction.	Force.			
☉ Ap. 26.	.....	h m	ft. in.	ft. in.					
		7 30 P.M.	.....	1 8	Calm.	0	b.c.		
		8 0	.....	1 9	Variable.				
		30	.....	10	S.S.E.	3	b.c.		
		9 0	.....	1 11	.....	5	b.		
		30	.....	1 11½	.....				
		10 0	.....	3 6	2 0	.....	3-5	b.	High Water 10 <sup>h</sup> 0 <sup>m</sup> .
		30	.....	.....	1 11½	.....			
		11 0	.....	.....	1 11	.....			
		30	.....	.....	1 10½	.....			
		Midnight.	.....	1 10	S.E.	4	b.		
☽ 27.	.....	0 30 A.M.	.....	1 9					
		1 0	.....	1 8					
		30	.....	1 7	E.	2	b.		
		2 0	.....	1 7					
		30	.....	1 6					
		3 0	.....	1 5	E.N.E.	3	b.c.		
		30	.....	1 4	.....	3			
		4 0	.....	1 3½					
		30	.....	1 3½					
		5 0	.....	1 3					
		30	.....	1 3					
		6 0	.....	4 2	1 3½				
		30	.....	4 1	1 4½	S.E.	3	b.	Low Water 5 <sup>h</sup> 10 <sup>m</sup> .
		7 0	.....	4 1	1 4½				
		30	.....	3 11½	1 6				
		8 0	.....	3 10	1 7½	Variable.	2	b.c.	
		30	.....	3 9	1 8½	Calm.	0	b.	
		9 0	.....	3 8½	1 9				
		30	.....	3 8	1 9½				
		10 0	.....	3 7½	1 10	N.	1	b.c.	
		30	.....	3 7	1 10½				
		11 0	.....	3 7	1 11	.....	2	.....	High Water 11 <sup>h</sup> 0 <sup>m</sup> .
		30	.....	3 8	1 10				
		Noon.	.....	3 9½	1 9	N.N.W.	3	b.c.v.	
		0 30	.....	3 10	1 8				
		1 0	.....	3 10½	1 7	N.W. by N.	4	b.c.	
		30	.....	3 11	1 6				
		2 0	.....	4 0	1 5				
		30	.....	4 1	1 4	Calm.	0	b.c.	
		3 0	.....	4 2	1 3½	W.S.W.	1		
30	.....	4 2½	1 2½						
4 0	.....	4 3¼	1 2	.....	.....	.....	Low Water 4 <sup>h</sup> 0 <sup>m</sup> .		
30	.....	4 3½	1 2¼	Calm.	0	b.c.			
5 0	.....	4 3½	1 3						
30	.....	4 3	1 3	S.W.	2				
6 0	.....	4 2	1 4						
0	.....	4 2	1 4	S.W.	2	b.c.			
30	.....	.....	1 4						
7 0	.....	.....	1 4						
30	.....	.....	1 5						
8 0	.....	.....	1 6½						
30	.....	.....	1 8	S.E.	2-4	b.			
9 0	.....	.....	1 11						
30	.....	.....	2 0½						
10 0	.....	.....	2 2	.....	.....	.....	High Water 10 <sup>h</sup> 30 <sup>m</sup> .		

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.																																						
					Direction.	Force.																																								
D Ap. 27.	.....	h m	ft. in.	ft. in.	Variable.	1	b.																																							
		10 30 P.M.	.....	2 2																																										
		11 0	.....	2 2																																										
		30	.....	2 1½																																										
		Midnight.	.....	2 1	s.	3	b.																																							
3 28.	.....	0 30 A.M.	.....	2 1																																										
		1 0	.....	2 0																																										
		30	.....	1 10																																										
		2 0	.....	1 8																																										
		30	.....	1 6																																										
		3 0	.....	1 5					s.	3	b.c.																																			
		30	.....	1 4																																										
		4 0	.....	1 3																																										
		30	.....	1 3																																										
		5 0	.....	1 2½									S.E.	4	.....	Low Water 5 <sup>h</sup> 15 <sup>m</sup> .																														
		30	4 2	1 2½									.....	3																																
		6 0	4 1½	1 3																																										
		30	4 1½	1 3½																																										
		7 0	4 0	1 5													E.	2	b.c.																											
		30	3 11½	1 5½																																										
		8 0	3 10	1 7½																																										
		30	3 9½	1 8½																																										
		9 0	3 8½	1 9½																	W.	3	b.c.																							
		30	3 8	1 10																																										
		10 0	3 7	1 11																					N.	1	b.c.																			
		30	3 6	2 0																					.....	.....	.....	High Water 11 <sup>h</sup> 00 <sup>m</sup> .																		
		11 0	3 6½	2 0½																									N.N.E.	3																
		30	3 7	2 0																																										
		Noon.	3 8	1 11																									N.N.W.	5	b.c.															
		0 30 P.M.	3 9½	1 8																																										
		1 0	3 10	1 7																													N.N.E.	2-4	b.c.											
		30	3 10	1 7																																										
		2 0	4 0	1 6																																										
		30	4 0½	1 5½																																	N.W.	4	b.c.							
		3 0	4 1	1 5																																	.....	.....	.....	Low Water 3 <sup>h</sup> 30 <sup>m</sup> .						
		30	4 0½	1 5																																										
		4 0	4 0	1 5																																	N.W.	4	b.c.							
30	4 0	1 5½																																												
5 0	3 11½	1 6					s.	2-3																													b.c.									
30	3 11½	1 6																																												
6 0	3 11	1 7																																					s.	2	b.c.					
0	3 11	1 7																																												
30	.....	1 7																																												
7 0	.....	1 8																																												
30	.....	1 8½																																												
8 0	.....	1 9																																									s.	2	b.c.	
30	.....	1 9½																																												
9 0	.....	1 11																																												
30	.....	1 11											.....	3	b.c.																															
10 0	3 7½	1 11																																												
30	.....	1 11																																												
11 0	.....	1 10½															.....	5	b.c.																											
30	.....	1 10															.....	3	b.c.																											
Midnight.	.....	1 9																																												
♀ 29.	.....	0 30 A.M.															.....	1 9	S.S.E.	2																										

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.		
					Direction.	Force.				
♀ Ap. 29.	h m	1 0 A.M.	ft. in.	1 8						
		30	1 7							
		2 0	1 6	S.S.E.					3	b.
		30	1 6							
		3 0	1 5 <sup>3</sup> / <sub>4</sub>							
		30	1 5 <sup>1</sup> / <sub>2</sub>	S.S.E.					3-4	b.
		4 0	1 5 <sup>1</sup> / <sub>2</sub>							
		30	1 5							
		5 0	1 5							
		30	1 5							
		6 0	4 1	S.					2	b.c.
		30	4 0	S.E.					1	b.c.
		7 0	3 11 <sup>1</sup> / <sub>2</sub>	Calm.						
		30	3 10 <sup>1</sup> / <sub>2</sub>							
		8 0	3 9 <sup>1</sup> / <sub>2</sub>	N. by E.					2	b.c.
		30	3 9							
		9 0	3 8 <sup>1</sup> / <sub>2</sub>	N.N.E.					4	b.c.
30	3 8									
10 0	3 8									
30	3 7 <sup>1</sup> / <sub>2</sub>									
11 0	3 7 <sup>1</sup> / <sub>2</sub>									
30	3 8									
	Noon.	3 8 <sup>3</sup> / <sub>4</sub>	1 10 <sup>1</sup> / <sub>2</sub>							
♀ May 1.	h m	8 20 A.M.	1 8	Calm.	0	b.				
		8 37	1 9							
		8 55	1 10	N.W.	2	b.c.				
		9 25	1 11							
		10 00	2 0	.....	3					
		35	2 1							
		11 20	2 2	W.N.W.	4					
		40	2 2	.....	5					
		0 25 P.M.	2 1	W.	.....	High Water 11 <sup>h</sup> 30 <sup>m</sup> .				
		1 10	2 0							
		30	1 11	W.	5	b.c.				
		50	1 10							
		2 15	1 9	W.N.W.	3					
		45	1 8							
		3 30	1 7	N.W.	2					
		50	1 6							
		4 10	1 5	N.	2					
		15	.....	N.N.E.	2	b.				
		55	1 4	E.N.E.	.....	b.c.				
		5 20	1 3 <sup>1</sup> / <sub>2</sub>							
		50	1 3	E.S.E.	1	c.				
		6 25	1 2 <sup>1</sup> / <sub>2</sub>	S.E.	2	.....				
		45	1 2 <sup>1</sup> / <sub>2</sub>							
7 0	1 3	S.E. by S.	3-5	b.c.						
27	1 4									
50	1 5	.....	.....	b.						
8 15	1 6									
40	1 7									
9 0	1 8									
25	1 9									
45	1 10									
10 15	1 11	.....	2	b.						

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.	
					Direction.	Force.			
♀ May 1.	.....	h m	ft. in.	ft. in.					
		10 35 P.M.	.....	2 0					
		11 0	.....	2 1					
		30	.....	2 2					
		50	.....	2 3	.....	1-2	b.		
♂ May 2.	.....	0 15 A.M.	.....	2 3½					
		1 0	.....	2 3½	S.E.	1	b.		
		20	.....	2 3½	.....	.....	.....	High Water 0 <sup>h</sup> 49 <sup>m</sup> .	
		35	.....	2 3					
		50	.....	2 2					
		2 05	.....	2 1					
		20	.....	2 0					
		45	.....	1 11					
		3 15	.....	1 10					
		35	.....	1 9	S.E.	2	b.		
		50	.....	1 8					
		4 20	.....	2 3½	1 7				
		40	.....	2 3½	1 6				
		5 5	.....	3	1 5	S.E.	2-3	b.	
		30	.....	2 2	1 4				
		6 5	.....	2 1	1 3				
		40	.....	2 0	1 3				
		7 40	.....	1 11	1 4				
		8 0	.....	1 10	1 5		2		
		20	.....	1 9	1 6		1		
		40	.....	1 8	1 7	Calm.			
		9 5	.....	1 7	1 8				
		25	.....	1 6	1 9	w.	1	b.	
		45	.....	1 5	1 10				
		10 3	.....	1 4	1 11		2		
		32	.....	1 3	2 0		4		
		55	.....	.....	2 1		3	b.	
		11 10	.....	.....	2 2				
		30	.....	.....	2 3				
		Noon.	.....	.....	2 4	N.	4	b.	
		12 25 P.M.	.....	.....	2 3	.....	.....	High Water 11 <sup>h</sup> 55 <sup>m</sup> .	
		40	.....	.....	2 2				
1 0	.....	.....	2 1						
2 0	.....	.....	2 0	N.N.E.	5	b.c.			
20	.....	.....	1 11						
40	.....	.....	1 10						
3 30	.....	.....	1 9						
4 0	.....	.....	1 8	N.E.	5				
20	.....	.....	1 7						
40	.....	.....	1 5	S.W.	4	o.c.g.			
5 20	.....	.....	1 4	E.	3	b.c.			
6 25	.....	.....	1 3½						
7 0	.....	.....	1 3	N.E.	1	.....			
30	.....	.....	1 3			Low Water 6 <sup>h</sup> 52 <sup>m</sup> .			
8 0	.....	.....	1 4	S.E.	1				
30	.....	.....	1 5						
9 0	.....	.....	1 6	.....	5	b.			
20	.....	.....	1 7						
32	.....	.....	1 8						
45	.....	.....	1 9						
10 39	.....	.....	1 11						



TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.
					Direction.	Force.		
1/2 May 2.	.....	11 6 P.M. 34	..... .....	2 0 2 1	E.	1	b.c. b.c.	
					E.N.E.	1		
☉ 3.	.....	0 2 A.M.	.....	2 2				High Water 0 <sup>h</sup> 51 <sup>m</sup> .
		30	.....	2 3				
		1 10	.....	2 3				
		40	.....	2 2				
		2 10	.....	2 1				
		35	.....	2 0				
		35	.....	2 0				
		3 5	.....	1 11				
		30	.....	1 10	S.E.	2	b.	
		4 0	.....	1 9				
		25	.....	1 8				
		5 0	.....	1 7				
		20	.....	1 6		1	b.	
		50	.....	1 5				
		6 30	.....	1 4				
		7 10	.....	1 4				
		50	.....	1 5	Calm.	0	b.	
		8 15	.....	1 6				
		35	.....	1 7		0		
		9 10	.....	1 8				
		40	.....	1 9	w.	1	b.c.	
		10 5	.....	1 10	w.s.w.	4		
		25	.....	1 11				
		45	.....	2 0				
		11 7	.....	2 1				
		30	.....	2 2				
		Noon.	.....	2 2½				
		1 0 P.M.	.....	2 2				
		2 0	.....	2 1	s.	5	o.c.g.	
		25	.....	2 0				
55	.....	1 11						
3 20	.....	1 10		2				
50	.....	1 9		5	o.c.			
4 5	.....	1 8						
25	.....	1 7						
5 9	.....	1 6						
40	.....	1 5						
6 0	.....	1 4						
40	.....	1 3	s.	3	c.			
7 10	.....	1 3						
50	.....	1 4		2	c.			
8 30	.....	1 5						
9 10	.....	1 6		2	b.			
35	.....	1 7						
10 5	.....	1 8		1	b.			
25	.....	1 9		3				
50	.....	1 10						
11 15	.....	1 11		0				
35	.....	2 0						
Midnight.	.....	2 1		2	b.			
D 4.	.....	0 25 A.M.	.....	2 2				
		55	.....	2 3				

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.
					Direction.	Force.		
D May 4.	h m .....	h m		ft. in.				
		1 30 A.M.	.....	2 3	Calm.	0	b.c.	High Water 1 <sup>h</sup> 11 <sup>m</sup> .
		55	.....	2 2	.....	.....	.....	
		2 20	.....	2 1	.....	.....	.....	
		35	.....	2 0	.....	.....	.....	
		50	.....	1 11	s.s.E.	1	b.	
		3 25	.....	1 10	.....	2-3	b.	
		50	.....	1 9	.....	.....	.....	
		4 15	.....	1 8	.....	.....	.....	
		40	.....	1 7	.....	.....	.....	
		5 10	.....	1 6	s.	5	b.	
		6 0	.....	1 6	.....	3	b.	
		35	.....	1 5	.....	.....	.....	
		7 15	.....	1 5	Calm.	.....	b.	
		8 0	.....	1 4 <sup>1</sup> / <sub>2</sub>	Calm.	.....	.....	
		45	.....	1 5	.....	.....	.....	
		9 10	.....	1 6	w.	1	b.	
		50	.....	1 7	.....	.....	.....	
		10 10	.....	1 8	w.s.w.	4	b.c.	Low Water 7 <sup>h</sup> 37 <sup>m</sup> .
		25	.....	1 9	.....	5	.....	
		38	.....	1 10	.....	.....	.....	
		49	.....	1 11	.....	.....	.....	
		11 00	.....	2 00	.....	.....	.....	
		50	.....	2 1	.....	.....	.....	
		0 25 P.M.	.....	2 2	.....	.....	.....	
		1 20	.....	2 2	.....	.....	.....	
		2 40	.....	2 2	n.	6	b.c.	
		3 25	.....	2 0	.....	.....	.....	
		4 0	.....	1 11	.....	.....	.....	
		15	.....	1 10	.....	.....	.....	
30	.....	1 9	.....	.....	.....			
45	.....	1 8	.....	.....	.....			
5 5	.....	1 7	Calm.	.....	.....			
40	.....	1 6	s.s.w.	1	b.c.	Low Water 7 <sup>h</sup> 15 <sup>m</sup> .		
6 10	.....	1 5	.....	.....	.....			
40	.....	1 5	s.E.	1	b.			
7 20	.....	1 5	.....	.....	.....			
8 0	.....	1 5	.....	.....	.....			
9 40	.....	1 6	.....	.....	.....			
10 10	.....	1 7	.....	3	b.			
30	.....	1 8	.....	.....	.....			
40	.....	1 9	.....	.....	.....			
50	.....	1 10	.....	.....	.....			
11 5	.....	1 11	.....	.....	.....			
20	.....	2 0	.....	.....	.....			
55	.....	2 1	.....	.....	.....			
3 5.	.....	0 40 A.M.	.....	2 2	.....	.....	High Water 0 <sup>h</sup> 45 <sup>m</sup> .	
		1 45	.....	2 1	s.s.E.	1		b.
		2 30	.....	2 0	s.E.	3		.....
		3 20	.....	1 11	.....	.....		.....
		55	.....	1 10	.....	.....		.....
		4 25	.....	1 9	Calm.	0		b.
		50	.....	1 8	.....	.....		.....
		5 30	.....	1 7	.....	.....		.....
		6 20	.....	1 6	s.E.	1		b.
		50	.....	1 6	.....	.....		.....

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.
					Direction.	Force.		
♂ May 5.	h m .....	h m		ft. in.				
		7 25 P.M.	.....	1 6				
		55	.....	1 7	Calm.	0	b.	Low Water 6 <sup>h</sup> 32 <sup>m</sup> .
		8 15	.....	1 7				
		40	.....	1 7	w.	1	b.	
		9 50	.....	1 8				
		10 40	.....	1 9				
		11 20	.....	1 10	E.	4	b.c.	
		40	.....	1 11	Variable.			
		Noon	.....	2 0	w.	4	b.c.	
		0 5 P.M.	.....	2 2	w.s.w.	4-5	b.c.	
		40	.....	2 2	.....	.....	.....	High Water 0 <sup>h</sup> 57 <sup>m</sup> .
		1 5	.....	2 2				
		30	.....	2 2				
		2 35	.....	2 1				
		3 10	.....	2 0	Variable.	3	b.c.	
		30	.....	1 11				
		4 10	.....	1 10				
		5 10	.....	1 9	N.	3	b.c.	
		6 5	.....	1 8	E.N.E.	5	b.	
		40	.....	1 7				
7 0	.....	1 7						
25	.....	1 6 <sup>1</sup> / <sub>2</sub>	E.	3	b.			
8 00	.....	1 6						
30	.....	1 6	Calm.	0	b.	Low Water 8 <sup>h</sup> 30 <sup>m</sup> .		
9 0	.....	1 6						
35	.....	1 6						
10 10	.....	1 7						
50	.....	1 8						
11 30	.....	1 9						
♀ 6.	.....	0 10 A.M.	.....	1 10	E.	2	b.	
		50	.....	1 11				
		1 35	.....	1 11	.....	.....	.....	High Water 2 <sup>h</sup> 27 <sup>m</sup> .
		2 5	.....	2 0	Calm.	0	b.	
		40	.....	2 0	E.	3	b.	
		3 30	.....	1 11				
		4 10	.....	1 10				
		50	.....	1 9	S.E.	3	b.	
		5 30	.....	1 8				
		6 10	.....	1 7				
		55	.....	1 6				
		7 25	.....	1 7	.....	.....	.....	Low Water 7 <sup>h</sup> 57 <sup>m</sup> .
		8 20	.....	1 7				
		9 10	.....	1 7	w.	3	b.c.	
		50	.....	1 7				
		10 30	.....	1 8	.....	5		
		11 0	.....	1 9				
		30	.....	1 10				
		0 40 P.M.	.....	1 11	w.	5	b.c.	
1 40	.....	2 0 <sup>1</sup> / <sub>2</sub>						
2 40	.....	2 0 <sup>1</sup> / <sub>2</sub>	N.	4	b.c.			
50	.....	2 0	.....	.....	.....	High Water 2 <sup>h</sup> 43 <sup>m</sup> .		
3 20	.....	2 0						
40	.....	2 0						
4 40	.....	1 11	Calm.	0	b.c.			
5 10	.....	1 10						

TABLE. (Continued.)

Date.	Moon's Age.	Mean Time.	Tide-gauge.	Tide-batten.	Wind.		Weather.	Remarks.
					Direction.	Force.		
☾ May 6.	.....	h m	.....	ft. in.	E.	1	b.c.	Low Water 8 <sup>h</sup> 22 <sup>m</sup> .
		5 50 P.M.	.....	1 9				
		6 30	.....	1 8				
		7 30	.....	1 7				
		8 0	.....	1 6 $\frac{1}{2}$				
		9 0	.....	1 7				
		10	.....	1 7				
		10 0	.....	1 8				
		11 0	.....	1 9				
		☽ 7.	.....	3 40 A.M.				
5 40	.....			1 7				
6 10	.....			1 8				
7 50	.....			1 9	S.E.	0	b.	Tide irregular.
7 15	.....			1 8				
8 40	.....			1 7				
8 20	.....			1 7	N.W.	2	b.c.	
9 0	.....			1 7				
10 50	.....			1 7				
10 30	.....			1 7	W.	3		
11 20	.....			1 7	N.W.	4	b.c.	High Water 6 <sup>h</sup> 25 <sup>m</sup> .
0 20 P.M.	.....			1 8				
0 50	.....			1 9				
2 55	.....			1 10	N.E.	3	b.c.	Low Water 11 <sup>h</sup> 17 <sup>m</sup> .
3 55	.....			1 10				
5 40	.....	1 11						
6 25	.....	1 11						
7 10	.....	1 10						
8.		3 15	.....	1 10				High Water 3 <sup>h</sup> 18 <sup>m</sup> .

