

FIRST CENTURY MOONS AND INTERVALS TABLE I
(Jerusalem Civil Time)

A.D.	Conjunction 1 Nisan	Day of Tr.		Full Moon	14 Nisan	Waxing Period (Days)	Year Length (Days)
		Week	Period (Days)				
1*	Apr.12.49--Apr 14	Thur	1.28	Apr 26.40	Apr 27	13.91	355
2	Apr 1.72--Apr 4	Tues	2.05	Apr 15.91	Apr 17	14.19	384
3*	Apr 20.41--Apr 23	Mon	2.36	May 4.90	May 6	14.49	354
4	Apr 8.44--Apr 11	Fri	2.33	Apr 23.62	Apr 24	15.18	355
5	Mar 28.69--Apr 1	Wed	3.07	Apr 13.22	Apr 14	15.53	384
6*	Apr 16.60--Apr 20	Tues	3.17	May 2.09	May 3	15.49	354
7	Apr 6.25--Apr 9	Sat	2.52	Apr 21.31	Apr 22	15.06	354
8	Mar 25.96--Mar 28	Wed	1.80	Apr 9.33	Apr 10	14.37	384
9*	Apr 13.94--Apr 16	Tues	1.83	Apr 28.02	Apr 29	14.08	354
10	Apr 3.38--Apr 5	Sat	1.39	Apr 17.33	Apr 18	13.95	355
11	Mar 23.53--Mar 26	Thur	2.23	Apr 6.90	Apr 8	14.37	384
12*	Apr 10.23--Apr 13	Wed	2.54	Apr 24.92	Apr 26	14.69	354
13	Mar 30.28--Apr 2	Sun	2.48	Apr 14.61	Apr 15	15.33	384
14*	Apr 18.09--Apr 21	Sat	2.68	May 3.58	May 4	15.49	355
15	Apr 7.57--Apr 11	Thur	3.20	Apr 22.99	Apr 24	15.42	354
16	Mar 27.25--Mar 30	Mon	2.51	Apr 11.11	Apr 12	14.86	384
17*	Apr 15.27--Apr 18	Sun	2.50	Apr 29.78	May 1	14.51	354
18	Apr 4.89--Apr 7	Thur	1.88	Apr 18.89	Apr 20	14.00	354
19	Mar 25.26--Mar 27	Mon	1.50	Apr 8.27	Apr 9	14.01	384
20*	Apr 12.00--Apr 14	Sun	1.77	Apr 26.21	Apr 27	14.21	355
21	Apr 1.03--Apr 4	Fri	2.73	Apr 15.92	Apr 17	14.89	384
22*	Apr 19.74--Apr 23	Thur	3.03	May 4.93	May 6	15.19	354
23	Apr 9.00--Apr 12	Mon	2.77	Apr 24.53	Apr 25	15.53	355
24	Mar 28.55--Apr 1	Sat	3.21	Apr 12.86	Apr 14	15.31	383
25*	Apr 16.57--Apr 19	Thur	2.20	May 1.58	May 2	15.01	354
26	Apr 6.28--Apr 8	Mon	1.49	Apr 20.60	Apr 21	14.32	355
27	Mar 26.83--Mar 29	Sat	1.93	Apr 9.76	Apr 11	13.93	383
28*	Apr 13.68--Apr 15	Thur	1.09	Apr 27.62	Apr 28	13.94	355
29	Apr 2.82--Apr 5	Tues	1.95	Apr 17.21	Apr 18	14.39	355
30	Mar 22.84--Mar 26	Sun	2.92	Apr 6.93	Apr 8	15.09	384
31*	Apr 10.58--Apr 14	Sat	3.19	Apr 25.94	Apr 27	15.36	354
32	Mar 29.95--Apr 2	Wed	2.81	Apr 14.47	Apr 15	15.52	384
33*	Apr 17.90--Apr 21	Tues	2.87	May 3.29	May 4	15.39	354
34	Apr 7.58--Apr 10	Sat	2.19	Apr 22.40	Apr 23	14.82	354
35	Mar 28.27--Mar 30	Wed	1.49	Apr 11.43	Apr 12	14.16	384
36*	Apr 15.21--Apr 17	Tues	1.56	Apr 29.19	Apr 30	13.98	354
37	Apr 4.56--Apr 6	Sat	1.21	Apr 18.59	Apr 19	14.03	355
38	Mar 24.62--Mar 27	Thur	2.24	Apr 8.23	Apr 9	14.61	384
39*	Apr 12.31--Apr 15	Wed	2.46	Apr 27.25	Apr 28	14.94	355
40	Mar 31.46--Apr 4	Mon	3.30	Apr 15.92	Apr 17	15.46	384
41*	Apr 19.33--Apr 23	Sun	3.44	May 4.85	May 6	15.52	354
42	Apr 8.87--Apr 12	Thur	2.90	Apr 24.15	Apr 25	15.28	354
43	Mar 29.58--Apr 1	Mon	2.18	Apr 13.21	Apr 14	14.63	384
44*	Apr 16.60--Apr 19	Sun	2.17	Apr 30.90	May 2	14.30	354
45	Apr 6.14--Apr 8	Thur	1.63	Apr 20.07	Apr 21	13.93	354
46	Mar 26.40--Mar 28	Mon	1.36	Apr 9.55	Apr 10	14.15	384
47*	Apr 14.11--Apr 16	Sun	1.66	Apr 28.54	Apr 29	14.43	355
48	Apr 2.14--Apr 5	Fri	2.63	Apr 17.26	Apr 18	15.12	355
49	Mar 22.35--Mar 26	Wed	3.41	Apr 6.88	Apr 8	15.53	384
50*	Apr 10.25--Apr 14	Tues	3.52	Apr 25.77	Apr 27	15.52	354

* The asterisk marks the years having a Veadar spring.

Conjunction and Full Moon dates taken from Ginzel's "Chronologie."

Full Moon
G.M.T.

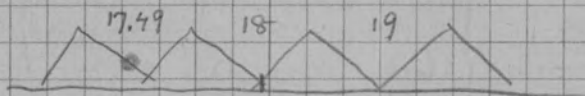
New Moon
G.M.T.

Full Moon
G.M.T.

New Moon
G.M.T.

1767	Apr 13-19-1	13.79	Mar 29-11-39	29.48	1817	Apr 30-19-33	30.91	Apr 16-2-28	16.10
1768	May 1-12-27	1.52	Apr 16-12-20	16.51	1818	Apr 20-12-19	20.51	Apr 5-3-44	5.15
1769	Apr 20-12-42	20.53	Apr 6-4-43	6.19	1819	May 9-12-6	9.50	Apr 23-23-48	23.99
1770	May 9-6-17	9.26	Apr 25-4-40	25.19	1820	Apr 27-21-55	27.91	Apr 12-11-14	12.17
1771	Apr 28-13-57	28.58	Apr 14-14-39	14.61	1821	Apr 17-0-31	17.02	Apr 2-3-11	2.13
1772	Apr 17-4-3	17.17	Apr 2-17-23	2.72	1822	May 5-16-32	5.69	Apr 21-4-17	21.80
1773	May 6-5-2	6.21	Apr 21-10-31	21.44	1823	Apr 24-18-59	24.79	Apr 10-18-48	10.78
1774	Apr 25-21-34	25.9	Apr 10-12-19	10.51	1824	Apr 9-3-47	13.15	Mar 30-3-2	30.12
1775	Apr 15-9-50	15.49	Mar 30-20-44	30.86	1825	May 2-2-59	2.12	Apr 17-21-20	17.88
1776	May 3-5-40	3.23	Apr 17-20-14	17.84	1826	Apr 21-19-26	21.81	Apr 6-21-26	6.89
1777	Apr 22-7-52	22.39	Apr 7-12-18	7.51	1827	May 10-20-25	10.85	Apr 25-15-2	25.62
1778	Apr 11-8-21	11.34	Mar 28-4-0	28.16	1828	Apr 29-10-44	29.44	Apr 13-21-18	13.88
1779	Apr 30-2-51	30.12	Apr 16-3-16	16.13	1829	Apr 18-18-22	18.76	Apr 3-10-21	3.43
1780	Apr 18-12-28	18.52	Apr 4-11-1	4.46	1830	May 7-12-2	7.50	Apr 22-11-27	22.47
1781	May 7-12-18	7.09	Apr 23-5-21	23.22	1831	Apr 26-12-19	26.51	Apr 12-4-0	12.16
1782	Apr 27-5-2	27.21	Apr 12-5-32	12.23	1832	Apr 14-16-0	14.66	Mar 31-17-2	31.71
1783	Apr 16-20-49	16.86	Apr 1-8-50	1.37	1833	May 3-12-46	3.53	Apr 19-13-48	19.57
1784	May 4-19-17	4.80	Apr 19-6-15	19.26	1834	Apr 23-2-35	23.10	Apr 8-16-42	8.69
1785	Apr 24-2-12	24.09	Apr 8-19-45	8.82	1835	Apr 12-19-16	12.80	Mar 28-16-42	28.69
1786	Apr 13-3-4	13.13	Mar 29-12-8	29.50	1836	Apr 30-19-57	30.83	Apr 15-11-3	15.36
1787	May 1-19-38	1.82	Apr 17-12-42	17.53	1837	Apr 20-8-39	20.35	Apr 4-19-20	4.80
1788	Apr 20-0-0	20.	Apr 6-1-17	6.05	1838	May 9-4-57	9.20	Apr 23-19-0	23.79
1789	May 8-21-22	8.89	Apr 24-21-57	24.91	1839	Apr 28-7-24	28.31	Apr 13-11-17	13.47
1790	Apr 28-11-55	28.49	Apr 14-0-29	14.02	1840	Apr 16-7-55	16.33	Apr 2-3-20	2.14
1791	Apr 18-4-48	18.2	Apr 3-0-41	3.03	1841	May 5-2-5	5.08	Apr 21-2-31	21.10
1792	May 6-5-16	6.26	Apr 20-19-36	20.81	1842	Apr 24-11-27	24.47	Apr 10-10-31	10.44
1793	Apr 25-17-19	25.72	Apr 10-4-35	10.19	1843	Apr 14-2-29	14.10	Mar 30-11-48	30.49
1794					1844	May 2-3-16	2.13	Apr 17-4-32	17.19
1795					1845	Apr 21-18-12	21.80	Apr 6-7-40	6.32
1796	Apr 21-15-28	21.64	Apr 7-12-3	7.50	1846	May 10-18-6	10.75	Apr 25-4-48	25.2
1797	Apr 10-21-43	10.90	Mar 27-22-41	27.94	1847	Apr 30-1-25	30.06	Apr 14-13-21	14.76
1798	Apr 29-20-8	29.84	Apr 15-18-20	15.76	1848	Apr 18-2-31	18.10	Apr 3-11-1	3.46
1799	Apr 19-11-40	19.48	Apr 4-19-21	4.80	1849	May 6-19-6	6.79	Apr 22-11-54	22.45
1800	May 8-12-49	8.53	Apr 23-12-32	23.52	1850	Apr 25-23-20	25.92	Apr 12-0-46	12.03
1801	Apr 28-4-31	28.19	Apr 12-16-21	12.68	1851	Apr 15-10-35	15.44	Apr 1-6-32	1.27
1802	Apr 17-14-35	17.61	Apr 2-3-15	2.13	1852	May 3-10-22	3.43	Apr 18-23-45	18.99
1803	May 6-9-14	6.38	Apr 21-3-41	21.15	1853	Apr 23-3-11	23.13	Apr 7-23-57	23.99
1804	Apr 24-10-2	24.42	Apr 9-20-16	9.84	1854	Apr 12-17-56	12.74	Mar 28-4-51	28.2
1805	Apr 13-11-44	13.49	Mar 30-10-53	30.45	1855	May 1-16-3	1.67	Apr 16-3-4	16.12
1806					1856	Apr 19-21-13	19.88	Apr 4-17-52	4.74
1807	May 2-7-19	2.30	Apr 18-8-55	18.37	1857	May 8-14-10	8.61	Apr 23-19-14	23.76
1808	Apr 21-19-15	21.80	Apr 7-14-7	7.59	1858	Apr 27-14-55	27.62	Apr 13-11-15	13.47
1809	May 9-19-39	9.82	Apr 25-7-28	25.31	1859	Apr 16-21-5	16.88	Apr 2-22-17	2.93
1810	Apr 29-12-41	29.53	Apr 14-7-57	14.33	1860	May 4-19-1	4.79	Apr 20-17-43	20.74
1811	Apr 19-9-8	19.19	Apr 3-13-37	3.56	1861	Apr 24-10-23	24.43	Apr 9-18-56	9.79
1812	May 8-0-39	8.03	Apr 22-12-19	22.51	1862	Apr 14-2-57	14.12	Mar 29-19-45	29.82
1813	Apr 26-5-10	26.21	Apr 11-3-37	11.15	1863	May 3-2-51	3.12	Apr 17-15-5	17.63
1814	Apr 15-5-20	15.22	Mar 31-19-55	31.83	1864	Apr 21-13-18	21.55	Apr 6-1-48	6.07
1815	May 3-22-29	3.93	Apr 19-19-55	19.83	1865	May 10-8-23	10.35	Apr 25-2-13	25.09
1816	Apr 23-5-17	23.22	Apr 9-6-20	9.26	1866	Apr 29-9-23	29.39	Apr 14-19-3	14.79
1817	Apr 11-18-43	11.78	Mar 28-9-27	28.39	1867	Apr 18-11-6	18.46	Apr 4-10-3	4.49

$$\begin{array}{r} 32.13 \\ 17.49 \\ \hline 14.64 \end{array}$$



$$\begin{array}{r} 51 \\ 77 \\ \hline 128 \end{array} - 2.25 - 3.38 \times$$

14.64

Year	Phase	Date	Time	Year	Phase	Date	Time	Year	Phase	Date	Time
1868	Full Moon	May 6-6-36	.27	1869	New Moon	Apr 22-8-19	.34	1919	Full Moon	Apr 14-20-25	.85
1869	Full Moon	Apr 25-18-21	.75	1870	New Moon	Apr 11-13-47	.57	1920	Full Moon	May 2-13-47	.57
1870	Full Moon	Apr 15-10-26	.43	1871	New Moon	Mar 31-13-58	.58	1921	Full Moon	Apr 21-19-49	.82
1871	Full Moon	May 4-10-59	.45	1872	New Moon	Apr 19-7-3	.29	1922	Full Moon	May 10-18-6	.75
1872	Full Moon	Apr 23-1-37	.06	1873	New Moon	Apr 7-12-31	.52	1923	Full Moon	Apr 30-9-30	.39
1873	Full Moon	Apr 12-9-51	.41	1874	New Moon	Mar 28-0-54	.03	1924	Full Moon	Apr 19-2-11	.09
1874	Full Moon	May 1-4-9	.17	1875	New Moon	Apr 16-1-52	.07	1925	Full Moon	May 8-13-43	.57
1875	Full Moon	Apr 20-4-30	.18	1876	New Moon	Apr 5-18-35	.74	1926	Full Moon	Apr 28-0-17	.01
1876	Full Moon	May 7-21-53	.91	1877	New Moon	Apr 23-19-3	.79	1927	Full Moon	Apr 17-3-35	.15
1877	Full Moon	Apr 27-4-36	.19	1878	New Moon	Apr 13-5-50	.24	1928	Full Moon	May 4-20-12	.84
1878	Full Moon	Apr 16-17-57	.74	1879	New Moon	Apr 2-9-14	.38	1929	Full Moon	Apr 23-21-47	.91
1879	Full Moon	May 5-18-12	.76	1880	New Moon	Apr 21-1-56	.08	1930	Full Moon	Apr 13-5-49	.24
1880	Full Moon	Apr 24-10-51	.45	1881	New Moon	Apr 9-3-7	.13	1931	Full Moon	May 2-5-14	.22
1881	Full Moon	Apr 13-23-50	.99	1882	New Moon	Mar 29-10-32	.44	1932	Full Moon	Apr 20-21-27	.89
1882	Full Moon	May 2-20-31	.85	1883	New Moon	Apr 17-9-38	.40	1933	Full Moon	May 9-22-4	.92
1883	Full Moon	Apr 21-23-27	.97	1884	New Moon	Apr 7-1-36	.06	1934	Full Moon	Apr 29-12-45	.53
1884	Full Moon	May 9-16-8	.67	1885	New Moon	Apr 25-2-58	.12	1935	Full Moon	May 6-15-01	.62
1885	Full Moon	Apr 28-18-14	.76	1886	New Moon	Apr 14-17-51	.74	1936	Full Moon	Apr 25-15-24	.64
1886	Full Moon	Apr 18-2-59	.12	1887	New Moon	Apr 4-2-31	.10	1937	Full Moon	Apr 14-18-21	.76
1887	Full Moon	May 7-2-1	.08	1888	New Moon	Apr 22-20-53	.87	1938	Full Moon	May 3-15-15	.63
1888	Full Moon	Apr 25-18-22	.26	1889	New Moon	Apr 10-21-8	.88	1939	Full Moon	Apr 22-4-37	.19
1889	Full Moon	Apr 15-10-19	.43	1890	New Moon	Mar 30-23-37	.98	1940	Full Moon	May 11-5-15	.22
1890	Full Moon	May 4-9-9	.38	1891	New Moon	Apr 18-20-6	.83	1941	Full Moon	Apr 26-13-23	.55
1891	Full Moon	Apr 23-17-5	.71	1892	New Moon	Apr 8-8-57	.37				
1892	Full Moon	Apr 11-18-26	.77	1893	New Moon	Mar 28-1-18	.05				
1893	Full Moon	Apr 30-11-23	.47	1894	New Moon	Apr 16-2-35	.11				
1894	Full Moon	Apr 19-15-1	.62	1895	New Moon	Apr 5-16-0	.66				
1895	Full Moon	May 8-11-59	.50	1896	New Moon	Apr 24-13-11	.55				
1896	Full Moon	Apr 27-1-47	.07	1897	New Moon	Apr 12-16-23	.68				
1897	Full Moon	Apr 16-18-25	.76	1898	New Moon	Apr 1-16-24	.68				
1898	Full Moon	May 5-18-34	.77	1899	New Moon	Apr 20-10-21	.43				
1899	Full Moon	Apr 25-7-22	.31	1900	New Moon	Apr 9-18-21	.76				
1900	Full Moon	Apr 14-13-2	.54	1901	New Moon	Mar 30-8-31	.35				
1901	Full Moon	May 3-6-19	.26	1902	New Moon	Apr 18-9-37	.40				
1902	Full Moon	Apr 22-6-50	.28	1903	New Moon	Apr 8-1-50	.07				
1903	Full Moon	May 11-1-18	.05	1904	New Moon	Apr 27-1-31	.06				
1904	Full Moon	Apr 29-10-36	.44	1905	New Moon	Apr 15-9-53	.41				
1905	Full Moon	Apr 19-1-38	.06	1906	New Moon	Apr 4-11-23	.47				
1906	Full Moon	May 8-2-10	.09	1907	New Moon	Apr 23-4-7	.17				
1907	Full Moon	Apr 27-18-5	.75	1908	New Moon	Apr 12-7-6	.29				
1908	Full Moon	Apr 16-4-55	.20	1909	New Moon	Mar 31-17-2	.71				
1909	Full Moon	May 5-0-8	.01	1910	New Moon	Apr 19-16-51	.70				
1910	Full Moon	Apr 24-1-23	.05	1911	New Moon	Apr 9-9-25	.39				
1911	Full Moon	Apr 13-2-37	.11	1912	New Moon	Mar 30-0-38	.02				
1912	Full Moon	Apr 30-22-19	.93	1913	New Moon	Apr 16-23-40	.96				
1913	Full Moon	Apr 20-9-33	.39	1914	New Moon	Apr 6-5-48	.24				
1914	Full Moon	May 9-9-31	.39	1915	New Moon	Apr 24-23-22	.97				
1915	Full Moon	Apr 29-2-19	.09	1916	New Moon	Apr 13-23-36	.98				
1916	Full Moon	Apr 17-7-8	.71	1917	New Moon	Apr 2-4-21	.18				
1917	Full Moon	May 6-14-43	.61	1918	New Moon	Apr 21-2-1	.08				
1918	Full Moon	Apr 25-20-5	.83		New Moon	Apr 10-16-34	.69				

PASSOVER METHOD FOR DETERMINING JULIAN EQUIVALENT OF ARAMAIC DATES*

(3)

Y E A R	FULL MOON G.M.T.**	NISAN 13 J.C.T.	NISAN 14 J.C.T.	NISAN 1 J.C.T.	CONJUNCTION JER. CIV. T.	TRANSLATION PERIOD (DAYS)		LENGTH OF YEAR (DAYS)	Cycle Series
						2.47	2.49		
481	May 4.04	4.63	May 5	Apr 22	Apr 19.28	2.47	2.49	(11)	354
480	Apr 23.12	23.71	Apr 24	Apr 11	Apr 8.99	1.76	1.78	(12)	355
479	Apr 12.16	12.75	Apr 14	Apr 1	Mar 29.64	2.10	2.12	(13)	355
478	Apr 30.93	31.52	May 2	Apr 19	Apr 17.58	1.16	1.19	(14)	354
477	Apr 19.38	19.97	Apr 21	Apr 8	Apr 5.90	1.84	1.86	(15)	354
476	Apr 9.03	9.62	Apr 20	Mar 28	Mar 25.95	1.79	1.81	(16)	354
475	Apr 28.04	28.63	Apr 29	Apr 16	Apr 13.64	2.10	2.13	(17)	354
474	Apr 17.71	18.30	Apr 19	Apr 6	Apr 2.80	2.94	2.96	(18)	354
473	May 5.62	6.21	May 7	Apr 24	Apr 20.68	3.06	3.09	(19)	354
472	Apr 24.89	25.48	Apr 26	Apr 13	Apr 10.27	2.47	2.50	(11)	354
471	Apr 13.93	14.52	Apr 15	Apr 2	Mar 30.98	1.76	1.78	(12)	354
470	May 2.61	3.20	May 4	Apr 21	Apr 18.99	1.75	1.78	(13)	354
469	Apr 20.83	21.42	Apr 22	Apr 9	Apr 7.51	1.23	1.25	(14)	354
468	Apr 10.35	10.94	Apr 12	Mar 30	Mar 27.73	2.01	2.04	(15)	354
467	Apr 29.34	29.93	May 1	Apr 18	Apr 15.42	2.32	2.35	(16)	354
466	Apr 19.06	19.65	Apr 20	Apr 8	Apr 4.45	2.29	2.31	(17)	354
465	May 7.04	7.63	May 8	Apr 25	Apr 22.21	2.53	2.56	(18)	355
464	Apr 26.52	27.11	Apr 28	Apr 15	Apr 11.63	3.11	3.14	(19)	354
463	Apr 15.73	16.32	Apr 17	Apr 4	Apr 1.29	2.45	2.47	(10)	354
462	May 4.40	4.99	May 6	Apr 23	Apr 20.30	2.44	2.47	(11)	354
461	Apr 22.45	23.04	Apr 24	Apr 11	Apr 8.96	1.78	1.81	(12)	354
460	Apr 11.75	12.34	Apr 13	Mar 31	Mar 29.40	1.34	1.37	(13)	354
459	Apr 30.68	31.27	May 2	Apr 19	Apr 17.18	1.56	1.59	(14)	355
458	Apr 20.36	20.95	Apr 22	Apr 9	Apr 6.23	2.51	2.53	(15)	354
457	Apr 9.05	9.64	Apr 10	Mar 28	Mar 25.31	2.43	2.45	(16)	354
456	Apr 28.02	28.61	Apr 29	Apr 16	Apr 13.12	2.62	2.65	(17)	355
455	Apr 17.44	18.03	Apr 19	Apr 6	Apr 2.61	3.12	3.16	(18)	354
454	May 6.18	6.77	May 8	Apr 25	Apr 21.59	3.15	3.18	(19)	354
453	Apr 24.22	24.81	Apr 26	Apr 13	Apr 10.31	2.43	2.46	(10)	354
452	Apr 13.32	13.91	Apr 15	Apr 2	Mar 30.92	1.82	1.84	(11)	354
451	May 2.14	2.73	May 4	Apr 21	Apr 18.82	1.92	1.95	(12)	353
450	Apr 21.67	22.26	Apr 23	Apr 10	Apr 8.02	1.72	1.75	(13)	355
449	Apr 10.36	10.95	Apr 12	Mar 30	Mar 27.05	2.69	2.72	(14)	355
448	Apr 29.38	29.97	May 1	Apr 18	Apr 14.76	2.98	3.01	(15)	354
447	Apr 18.97	19.56	Apr 20	Apr 7	Apr 4.02	2.72	2.75	(16)	354
446	Apr 8.30	8.89	Apr 10	Mar 28	Mar 24.59	3.15	3.17	(17)	355
445	Apr 26.02	26.61	Apr 27	Apr 14	Apr 11.61	2.13	2.16	(18)	354
444	Apr 15.04	15.63	Apr 16	Apr 3	Apr 1.31	1.43	1.45	(19)	354
443	May 3.74	4.33	May 5	Apr 22	Apr 20.28	1.46	1.49	(10)	354
442	Apr 23.07	23.66	Apr 24	Apr 11	Apr 9.71	1.03	1.06	(11)	354
441	Apr 11.67	12.26	Apr 13	Mar 31	Mar 28.84	1.90	1.92	(12)	355
440	Apr 30.69	31.28	May 2	Apr 19	Apr 16.52	2.22	2.25	(13)	354
439	Apr 20.37	20.95	Apr 22	Apr 9	Apr 5.60	3.14	3.19	(14)	355
438	Apr 9.90	10.49	Apr 11	Mar 29	Mar 25.97	2.77	2.79	(15)	354
437	Apr 27.72	28.31	Apr 29	Apr 16	Apr 12.92	2.82	2.85	(16)	354
436	Apr 16.83	17.42	Apr 18	Apr 5	Apr 2.61	2.13	2.16	(17)	354
435	May 5.50	6.09	May 7	Apr 24	Apr 21.62	2.12	2.15	(18)	354
434	Apr 24.61	25.20	Apr 26	Apr 13	Apr 11.24	1.50	1.53	(19)	354
433	Apr 13.02	13.61	Apr 14	Apr 1	Mar 30.58	1.16	1.18	(10)	354
432	May 1.97	2.56	May 3	Apr 20	Apr 18.30	1.44	1.47	(11)	354
431	Apr 21.68	22.27	Apr 23	Apr 10	Apr 7.33	2.41	2.44	(12)	355
430	Apr 11.36	11.95	Apr 13	Mar 31	Mar 27.48	3.26	3.28	(13)	355
429	Apr 29.27	29.86	May 1	Apr 18	Apr 14.34	3.40	3.43	(14)	354
428	Apr 18.57	19.16	Apr 20	Apr 7	Apr 3.91	2.83	2.86	(15)	354
427	May 7.29	7.88	May 9	Apr 26	Mar 27.92	2.89	2.92	(16)	354
426	Apr 26.31	26.90	Apr 28	Apr 15	Apr 12.63	2.11	2.14	(17)	354
425	Apr 14.50	15.09	Apr 16	Apr 3	Apr 1.16	1.58	1.60	(18)	354
424	May 3.37	3.96	May 5	Apr 22	Apr 19.99	1.75	1.78	(19)	354
423	Apr 22.98	23.57	Apr 24	Apr 11	Apr 9.11	1.63	1.66	(10)	354
422	Apr 12.70	13.29	Apr 14	Apr 1	Mar 29.14	2.60	2.62	(11)	355
421	Apr 30.69	31.28	May 2	Apr 19	Apr 15.89	2.85	2.88	(12)	354
420	Apr 20.20	20.79	Apr 22	Apr 9	Apr 5.28	3.46	3.49	(13)	355
419	Apr 9.41	10.00	Apr 11	Mar 29	Mar 25.91	2.83	2.85	(14)	354
418	Apr 28.09	28.68	Apr 29	Apr 16	Apr 13.93	1.81	1.84	(15)	354
417	Apr 16.14	16.73	Apr 18	Apr 5	Apr 2.61	1.12	1.16	(16)	354
416	May 4.90	5.49	May 6	Apr 23	Apr 21.54	1.20	1.23	(17)	354
415	Apr 24.34	24.93	Apr 26	Apr 13	Apr 10.86	1.88	1.91	(18)	354
414	Apr 13.98	14.57	Apr 15	Apr 2	Mar 30.92	1.82	1.84	(19)	354
413	May 2.00	2.59	May 3	Apr 20	Apr 17.60	2.14	2.17	(10)	354
412	Apr 21.67	22.26	Apr 23	Apr 10	Apr 6.78	2.96	2.99	(11)	355
411	Apr 11.09	11.68	Apr 12	Mar 30	Mar 27.24	2.50	2.52	(12)	354
410	Apr 29.86	30.45	May 1	Apr 18	Apr 15.23	2.51	2.54	(13)	354
409	Apr 17.90	18.49	Apr 19	Apr 6	Apr 3.93	1.81	1.84	(14)	354
408	Apr 6.99	7.58	Apr 8	Mar 26	Mar 24.56	1.82	1.85	(15)	354
407	Apr 25.80	26.39	Apr 27	Apr 14	Apr 12.46	1.28	1.31	(16)	355

6939 DAYS

19 YEAR CYCLE

6940 DAYS

Change of Embolism

19 YEAR CYCLE

6939 20818-DAYS IN 3 CYCLES

19 YEAR CYCLE

6940 27758-DAYS IN 4 CYCLES

* The Passover dates, reckoned from full moon, determine length of year, which, in turn, establishes the length of each month.
 ** Cinzel, "Handbuck der mathematischen und technischen Chronologie," Vol. II. Astronomical dates are reduced to Jerusalem Civil Time (J.C.T.) by adding to each G.M.T. date 14^h 20^m, or .59 of a day.

THE FULL MOONS OF NISAN IN 31 A.D. and 30 A.D. WERE BOTH ON THE SAME JEWISH DATE

A.D.	30	Nisan	Apr.	Siv.	May	Ab.	July	Elul	Sept.	Hes.	Nov.	Teb.	Jan.	Adar	Mar.	
	6	22 ⁿ	30 ^m	12	06	8	31	24	225	29	18	25	12	21	6	
Full Moon	13	7	19	1	J	55	226	T	1	19	26	13	22	7	18	3
	14	08	10	2	U	66	227	I	2	20	27	14	23	8	19	4
	15	9	11	3	N	77	228	S	3	21	28	15	24	9	20	5
	16	10	12	4	E	8	29	R	4	22	29	16	25	10	21	6
	17	11	13	5		9	30	I	5	23	30	17	26	11	22	7
	18	12	14	6		10	31		6	24	K	1	27	12	23	8
	19	13	15	7		11	1	A	7	25	I	2	28	13	24	9
	20	14	16	8		12	2	U	8	26	S	3	29	14	25	10
	21	15	17	9		13	3	G	9	27	L	4	30	15	26	11
	22	16	18	10		14	4	U	10	28	E	5	22		27	12
	23	17	19	11		15	5	S	11	29	U	6	23	S	1	16
	24	18	20	12		16	6	T	12	30				H	2	17
	25	19	21	13		17	7		13	1	O	8	25	B	4	19
	26	20	22	14		18	8		14	2	C	9	26	A	5	20
	27	21	23	15		19	9		15	3	T	10	27	T	6	21
	28	22	24	16		20	10		16	4	O	11	28		7	22
	29	23	25	17		21	11		17	5	B	12	29		8	23
	30	24	26	18		22	12		18	6	E	13	30		9	24
I	1	25	27	19		23	13		19	7	R	14	1	D	10	25
Y	2	26	28	20		24	14		20	8		15	2	F	11	26
A	3	27	29	21		25	15		21	9		16	3	G	12	27
R	4	28	30	22		26	16		22	10		17	4	E	13	28
	5	29	T	1	23	27	17		23	11		18	5	M	14	29
	6	30	A	2	24	28	18		24	12		19	6	B	15	30
	7	1	M	3	25	29	19		25	13		20	7	E	16	31
	8	2	A	4	26	30	20		26	14		21	8	R	17	1
	9	3	Y	5	27	E	1	21	27	15		22	9		18	2
	10	4	Z	6	28	L	2	22	28	16		23	10		19	3
	11	5		7	29	U	3	23	29	17		24	11		20	4
	12	6		8	30	L	4	24	30	18		25	12		21	5
	13	7		9	1	J	5	25	H	1	19	26	13		22	6
	14	8		10	2	U	6	26	E	2	20	27	14		23	7
	15	9		11	3	L	7	27	S	3	21	28	15		24	8
	16	10		12	4	Y	8	28	V	4	22	29	16	30	25	9
	17	11		13	5		9	29	A	5	23	T	1	17	26	10
	18	12		14	6		10	30	N	6	24	R	2	18	27	11
	19	13		15	7		11	31		7	25	B	3	19	28	12
	20	14		16	8		12	1	S	8	26	E	4	20	29	13
	21	15		17	9		13	2	E	9	27	T	5	21	A	1
	22	16		18	10		14	3	P	10	28		6	22	D	2
	23	17		19	11		15	4	T	11	29		7	23	A	3
	24	18		20	12		16	5		12	30		8	24	R	4
	25	19		21	13		17	6		13	31		9	25		5
	26	20		22	14		18	7		14	1	N	10	26		6
	27	21		23	15		19	8		15	2	O	11	27		7
	28	22		24	16		20	9		16	3	V	12	28		8
	29	23		25	17		21	10		17	4	E	13	29		9
S	1	24		26	18		22	11		18	5	M	14	30		10
I	2	25		27	19		23	12		19	6	B	15	31		11
V	3	26		28	20		24	13		20	7	E	16	1	J	12
A	4	27		29	21		25	14		21	8	R	17	2	A	13
N	5	28	A	1	22		26	15		22	9		18	3	N	14
	6	29	B	2	23		27	16		23	10		19	4	U	15
	7	30		3	24		28	17		24	11		20	5	A	16

The underlined dates are astronomical full moons

12 25 22ⁿ 45^m Full Moon

13-26
14-27

Year 31 A.D. = 385
Year 30 A.D. = 384

	Nis	Apr	Siv	J'ne	'Ab Aug	'El' Sept	Hes Nov	Teb Jan	Adar Feb		
	24	25	16	15	8	5	29	25 = 5:54	21 15 19	13 5	5 25
	25	26	17	16	9	6	1	26	22 16 4	14 6	6 26
	26	27	18	17	10	7	2	27	23 17 1	15 7	7 27
	27	28 -9-33	19	18	11	8	3	28	24 18 =	16 8	8 28
	28	29	20	19	12 9	-20-6	4	29	25 19	17 9	9 1 M
	29	30 = 6:35	21	20	13	10	5	30	26 20	18 10	10 2 ya
	30	1 M	22	21	14	11	6	1 O	27 21 -18-40	19 11	11 3
I	1	2	23	22	15	12	7	2 c	28 22	20 12	12 4
Y	2	3	24	23	16	13	8	3 t	29 23 = 4:59	21 13	13 5 -0-54
a	3	4	25	24	17	14	9	4	1 24	22 14	14 6
r	4	5	26	25	18	15	10	5	2 25	23 15	15 7
	5	6	27	26 -11-57	19	16	11	6	3 26	24 16	16 8
	6	7	28	27	20	17	12 7	-15-18	4 27	25 17	17 9
	7	8	29	28	21	18	13	8	5 28	26 18	18 10
	8	9	30	29 = 7:07	22	19	14	9	6 29	27 19 -18-54	19 11
	9	10	1	30	23	20	15	10	7 30	28 20	20 12
	10	11	2	1 J	24	21	16	11	8 1 D	29 21 = 5:25	21 13
	11	12	3	2 July	25	22	17	12	9 2 c	1 22	22 14
	12 13 -21-47	4	3 y	26	23	18	18	13	10 3	2 23	23 15
	13	14	5	4	27	24 -19-37	19	14	11 4	3 24	24 16
	14	15	6	5	28	25	20	15	12 5 -19-9	4 25	25 17
	15	16	7	6	29	26	21	16	13 6	5 26	26 18
	16	17	8	7	30	27 = 6:30	22	17	14 7	6 27	27 19 -13-23
	17	18	9	8	1	28	23	18	15 8	7 28	28 20
	18	19	10	9	2	29	24	19	16 9	8 29	29 21 = 6:11
	19	20	11	10	3	30	25	20	17 10	9 30	N 1 22
	20	21	12 11 -12-40	4	31	26	21	21	18 11	10 31	2 23
	21	22	13	12	5	1 S	27	22	19 12	11 1	3 24
	22	23	14	13	6	2 e	28	23 -4-1	20 13	12 2 b	4 25
	23	24	15	14	7	3 t	29	24	21 14	13 3 -6-54	5 26
	24	25	16	15	8	4	30	25 = 5:19	22 15	14 4	6 27
	25	26	17	16	9	5	H 1	26	23 16	15 5	7 28
	26	27 -21-47	18	17	10	6	S 2	27	24 17	16 6	8 29
	27	28	19	18	11	7	3	28	25 18	17 7	9 30
	28	29	20	19	12 8	-4-45	4	29	26 19	18 8	10 31
	29	30 = 6:57	21	20	13	9	5	30	27 20	19 9	11 1
S	1	31	22	21	14	10	6	31	28 21 -7-52	20 10	12 2 Pasch
v	2	1 J	23	22	15	11	7	1 N	29 22	21 11	13 3 -17-13 Moon
a	3	2 June	24	23	16	12	8	2 O	30 23 = 5:03	22 12	14 4 A
n	4	3	25	24	17	13	9	3	1 24	23 13	15 5 P
	5	4	26	25	18	14	10	4	2 25	24 14	16 6 R
	6	5	27	26 -3-18	19	15	11	5	3 26	25 15	17 7 L
	7	6	28	27	20	16	12 6	-4-1	4 27	26 16	18 8
	8	7	29	28 = 6:58	21	17	13	7	5 28	27 17	19 9
	9	8	A 1	29	22	18	14	8	6 29	28 18 -4-45	20 10
	10	9	b 2	30	23	19	15	9	7 30	29 19	21 11
	11	10	3	31	24	20	16	10	8 31 33	30 20 = 5:51	22 12
	12	11	4	1 A	25	21	17	11	9 1 J	1 21	23 13
	13 12 -5-28	5	2 Aug	26	22	22	18	12	10 2 n	2 22	24 14
	14	13	6	3	27	23 -12-25	19	13	11 3	3 23	25 15
	15	14	7	4	28	24	20	14	12 4 -12-40	4 24	26 16
											17 -21-47

This should be Veadar

Month	Translation	Acceleration
Iyar	2 ^d 9 ^h 2 ^m	15 ^d 12 ^h 14 ^m
Sivan	2 21 10	15 7 41
Tammuz	3 7 10	15 0 43
Ab	2 15 40	14 14 48
Elul	2 22 53	14 9 8
Tisri	2 5 29	14 2 53
Heshvan	2 13 18	14 0 0
Kislev	1 4 19	14 0 29
Tebet	2 3 11	14 4 48
Shebat	1 22 26	14 12 0
Adar	2 13 6	14 20 9
Nisan	2 4 48	15 3 50

Cycle	Greenwich Mean Noon	G.M.T.	Wier's Cycle F.M. J.C.T.	Wier's Length Year	Wier's Mean Sample Year
1	23-24 Apr. 23.94 to Apr. 12.97	= 355			
2	24-25 Apr. 12.97 " Apr. 30.99	= 383+			
3	25-26 Apr. 30.99 " Apr. 20.01	= 355			
4	26-27 Apr. 20.01 " Apr. 9.17	= 354			
5	27-28 Apr. 9.17 " Apr. 27.03	= 384+	[Apr. 19] to A. 29 = 385		384
6	28-29 Apr. 27.03 " Apr. 16.62	= 354	Apr. 29 " A. 18 = 354		355
7	29-30 Apr. 16.62 " Apr. 6.34	= 355	Apr. 18 " A. 7 = 354		354
8	30-31 Apr. 6.34 " Apr. 25.35	= 384+	Apr. 7 " A. 27 = 385		384
9	31-32 Apr. 25.35 " Apr. 13.88	= 354	Apr. 27 " A. 15 = 354		355
10	32-33 Apr. 13.88 " May 2.7	= 384+	Apr. 15 " A. 4 = 354		354
11	33-34 May 2.7 " Apr. 21.81	= 354	Apr. 4 " A. 23 = 384		384
12	34-35 Apr. 21.81 " Apr. 10.84	= 354	Apr. 23 " A. 12 = 354		354
13	35-36 Apr. 10.84 " Apr. 28.60	= 384+	Apr. 12 " A. 30 = 384		384
14	36-37 Apr. 28.60 " Apr. 18.00	= 355	Apr. 30 " A. 19 = 354		354
15	37-38 Apr. 18.00 " Apr. 7.64	= 354	Apr. 19 " A. 8 = 354		355
16	38-39 Apr. 7.64 " Apr. 26.66	= 384+	Apr. 8 " A. 27 = 384		384
17	39-40 Apr. 26.66 " Apr. 15.33	= 355	Apr. 27 " A. 16 = 355		354
18	40-41 Apr. 15.33 " May 4.26	= 384+	Apr. 16 " A. 5 = 354		355
19	41-42 May 4.26 " Apr. 23.56	= 354	Apr. 5 " A. 25 = 385		384
1	42-43 Apr. 23.56 " Apr. 12.62	= 354	Apr. 25 " A. 14 = 354		354
2	43-44 Apr. 12.62 " Apr. 30.31	= 384+	Apr. 14 " A. 2 = 354		354
3	44-45 Apr. 30.31 " Apr. 19.48	= 354	Apr. 2 " A. 21 = 384		384
4	45-46 Apr. 19.48 " Apr. 8.96	= 354	Apr. 21 " A. 10 = 354		354

Previous Moon = 6940 6940

To reduce to J.C.T. add 14 h 21 m = .597 Mar 31.69

As. Cycle Corresponding to Wier's Full Moons - J.C.T.

1	27-28 Apr. 9.767 to Apr. 27.627	= 384
2	28-29 Apr. 27 " to Apr. 17.217	= 355
3	29-30 Apr. 17 " to Apr. 6.937	= 354
4	30-31 Apr. 6 " Apr. 25.947	= 384
5	31-32 Apr. 25 " Apr. 14.477	= 355
6	32-33 Apr. 14 " Apr. 3.714	= 354
7	33-34 Apr. 3 " Apr. 22.404	= 384
8	34-35 Apr. 22 " Apr. 11.437	= 354
9	35-36 Apr. 11 " Apr. 29.197	= 384
10	36-37 Apr. 29 " Apr. 18.597	= 354
11	37-38 Apr. 18 " Apr. 8.237	= 355
12	38-39 Apr. 8 " Apr. 27.257	= 384
13	39-40 Apr. 27 " Apr. 15.927	= 354
14	40-41 Apr. 15 " Apr. 5.387	= 355
15	41-42 Apr. 5 " Apr. 24.157	= 384
16	42-43 Apr. 24 " Apr. 13.217	= 354
17	43-44 Apr. 13 " Apr. 1.287	= 354
18	44-45 Apr. 1 " Apr. 20.077	= 384
19	45-46 Apr. 20 " Apr. 9.557	= 354

belong
my w

The proposed March rule for leap year does not point out the true Bible 'symbolic' year. As for instance, the March rule admits as common years according to Table of '218th cycle such dates as April 3, 33; April 5, 41; and April 1, 44.

Kingman, Kansas, July 11, 1925.

Gentlemen:

I have before me a pamphlet published by E. E. Franke, wherein he says: I have before me a report from the United States Naval Observatory, Washington, D. C., giving the dates and days of the weeks of the Paschal full moons, from A. D. 24 to A. D. 38 as follows:

Day	A. D.	Date	Day of Week	Time	Passover
24	A. D.	Apr. 12 th	Wed.	9 P. M.	
25	"	Apr. 1 st	Sun.	11 P. M.	
26	"	Mar. 22 ^d	Fri.	11:58 P. M.	
27	"	Apr. 9 th	Wed.	7 P. M.	
28	"	Mar. 29 th	Mon.	6 A. M.	Mar. 30 April 28 or -
29	"	Apr. 17 th	Sun.	5 A. M.	April 18
30	"	Apr. 6 th	Thurs.	10 P. M.	April 8
31	"	Mar. 27 th	Tues.	2 P. M.	April 27 -
32	"	Apr. 14 th	Mon.	11 A. M.	April 15
33	"	Apr. 3 ^d	Fri.	5 P. M.	Maif 4
34	"	Mar. 23 rd	Tues.	3 P. M.	April 23 -
35	"	Apr. 11 th	Mon.	11 A. M.	April 12
36	"	Mar. 30 th	Fri.	5 P. M.	April 30 -
37	"	Apr. 18 th	Thurs.	2 P. M.	April 19
38	"	Apr. 8 th	Tues.	6 A. M.	

From
Tables for
Full Moon.
Found in his letter to
Hamberger
July 19, 1925.
W. S. Eichelberger
Wash. D. C.
John W. Z. Adams
John Adams
John Adams

He says the following letter from the U.S. Naval Observatory, Washington, confirms the above. Is he correct in his statement?

Wash., D. C.
January 16th, 1919.

Sir:
In reply to your letter of January 15, you are informed the astronomical Full Moon occurred Tuesday, March 27, A. D. 31, 1 h P. M. Jerusalem Time, Indian Calendar. This time may be accepted within two or three hours.

By the direction of the Superintendent, U.S. Nav. Ob.

Very Respectfully,
W. S. Eichelberger,
Commander (Retd.) U.S.N.
Director Nautical Almanac.

Please answer on this sheet so that I may have it as proof positive of the day that Christ was crucified.

Thanking you in advance for an early answer,
I am very respectfully

E. F. Hambergh

July 19, 1925

30	Iyar	Apr.	Siv	J'ne	Ab	Aug.	Tis	Oct	Kis	Nov	Teb	Jan	Ve	Mar
4	28	27	19	-18-11	20	10	13	1	5	22	28	13	21	6
5	29	28	20		21	11	14	2	6	23	29	14	22	7
6	30	29	21		22	12	15	3	7	24	30	15	23	8
7	1M	30	22		23	13	16	4	8	25	1	16	24	9
8	2y	T	23		24	14	17	5	9	26	2	17	25	10
9	3	a	24		25	15	18	6	10	27	3	18	26	11
10	4	m	25		26	16	19	7	11	28	4	19	27	12
11	5	u	26		27	17	20	8	12	29	5	20	28	13
12	6	2	27		28	18	21	9	13	30	6	21	29	14
13	7	4	28		29	19	22	10	14	1	7	22	30	15
14	8	5	29		30	20	23	11	15	2	8	23	1	16
15	9	6	30	J	1	21	24	12	16	3	9	24	2	17
16	10	7	1	u	2	22	25	13	17	4	10	25	3	18
17	11	8	2	l	3	23	26	14	18	5	11	26	4	19
18	12	9	3	u	4	24	27	15	19	6	12	27	5	20
19	13	10	4	2	5	25	28	16	20	7	13	28	6	21
20	14	11	5	1	6	26	29	17	21	8	14	29	7	22
21	15	12	6	2	7	27	30	18	22	9	15	30	8	23
22	16	13	7	3	8	28	1	19	23	10	16	31	9	24
23	17	14	8	4	9	29	2	20	24	11	17	1	10	25
24	18	15	9	5	10	30	3	21	25	12	18	2	11	26
25	19	16	10	6	11	31	4	22	26	13	19	3	12	27
26	20	17	11	7	12	1	5	23	27	14	20	4	13	28
27	21	18	12	8	13	2	6	24	28	15	21	5	14	29
28	22	19	13	9	14	3	7	25	29	16	22	6	15	30
29	23	20	14	10	15	4	8	26	1	17	23	7	16	31
S	1	21	15	11	16	5	9	27	2	18	24	8	17	1
2	24	22	16	12	17	6	10	28	3	19	25	9	18	2
3	25	23	17	13	18	7	11	29	4	20	26	10	19	3
4	26	24	18	14	19	8	12	30	5	21	27	11	20	4
5	27	25	19	15	20	9	13	31	6	22	28	12	21	5
6	28	26	20	16	21	10	14	1	7	23	29	13	22	6
7	29	27	21	17	22	11	15	2	8	24	1	14	23	7
8	30	28	22	18	23	12	16	3	9	25	2	15	24	8
9	1J	29	23	19	24	13	17	4	10	26	3	16	25	9
10	2u	30	24	20	25	14	18	5	11	27	4	17	26	10
11	3e	1A	25	21	26	15	19	6	12	28	5	18	27	11
12	4	2b	26	22	27	16	20	7	13	29	6	19	28	12
13	5	3j	27	23	28	17	21	8	14	30	7	20	29	13
14	6	4u	28	24	29	18	22	9	15	31	8	21	1	14
15	7	5e	29	25	1	19	23	10	16	1	9	22	2	15
16	8	6j	30	26	2	20	24	11	17	2	10	23	3	16
17	9	7u	1	27	3	21	25	12	18	3	11	24	4	17
18	10	8e	2	28	4	22	26	13	19	4	12	25	5	18
19	11	9j	3	29	5	23	27	14	20	5	13	26	6	19
20	12	10u	4	30	6	24	28	15	21	6	14	27	7	20
21	13	11e	5	1	7	25	29	16	22	7	15	28	8	21
22	14	12j	6	2	8	26	30	17	23	8	16	1	9	22
23	15	13u	7	3	9	27	1	18	24	9	17	2	10	23
24	16	14e	8	4	10	28	2	19	25	10	18	3	11	24
25	17	15j	9	5	11	29	3	20	26	11	19	4	12	25
26	18	16u	10	6	12	30	4	21	27	12	20	5	13	26

31 A.D.

25-22-45
Pasch Moon

(384 days)

Nis Apr. Siv J'ne Tam Aug EL' Sept Hes Nov Teb Jan Mar

14	27	7	18	29	9=6:49	22	30	15	21	8	12	A	1	4 = 6:00
15	28	8	19	A 1	10	23	1	16	22	9	13	A	2	5
16	29	9	20	b 2	11	24	2	17	23	10	14	P	3	6
17	30	10	21	3	12	25	3	18	24	11	15		4	7
18	1	M	11	4	13	26	4	19	25	12	16	-12-54	5	8
19	2	Y	12	5	14	27	5	20	26	13	17		6	9
20	3		13	6	15	28	6	21	27	14	18		7	10
21	4		14	7	16	29	7 = 5:40	22	28	15	19		8	11
22	5		15	8	17	1	8	23	29	16	20		9	12
23	6		16	9	18	2	9	24	30	17	21		10	13
24	7		17	10	19	3	10	25	1	18	22		11	14
25	8		18	11	20	4	11	26	2	19	23	12	15	-22-45
26	9		19	12	21	5	12	27	3	20	24		13	16
27	10	-4-30	20	13	22	6	13	28	4	21	25		14	17
28	11	Tr. = 3-14-16	21	14	23	7	14	29	5 = 5:00	22	26		15	18
29	12		22	15	24	8	15	1	6	23	27		16	19
30	13	6:46	23	16	25	9	16	2	7	24	28		17	20
1	14		24	17	26	10	17	3	8	25	29		18	21
2	15		25	18	27	11	18	4	9	26	30		19	22
3	16		26	19	28	12	19	5	10	27	31	-3-4	20	23
4	17		27	20	29	13	20	6	11	28	1	F	21	24
5	18		28	21	30	14	21	7	12	29	2	e = 5:36	22	25
6	19		29	22	31	15	22	8	13	1	3		23	26
7	20		30	11 = 7:06	1	16	23	9	14	2	4		24	27
8	21		1	12	2	17	24	10	15	3	5		25	28
9	22		2	13	3	18	25	11	16	4	6		26	29
10	23		3	14	4	19	26	12	17	5	7	-17-42	27	30
11	24		4	15	5	20	27	13	18	6	8		28	31
12	25	-5-42	5	16	6	21	28	14	19	7	9		29	1
13	26		6	17	7	22	29	15	20	8	10		1	2
14	27		7	18	8 = 6:15	23	30	16	21	9	11		2	3
15	28		8	19	1	24	31	17	22	10	12		3	4
16	29		9	20	2	25	1	18	23	11	13		4	5
17	30		10	21	3	26	2	19	24	12	14		5	6
18	31		11	22	4	27	3	20	25	13	15	-7-9	6	7
19	1	J	12	23	5	28	4	21	26	14	16		7	8
20	2	U	13	24	6	29	5	22	27	15	17		8	9
21	3	e	14	25	7	30	6 = 5:09	23	28	16	18		9	10
22	4		15	26	8	1	7	24	29	17	19		10	11
23	5		16	27	9	2	8	25	30	18	20		11	12
24	6		17	28	10	3	9	26	31	19	21		12	13
25	7		18	29	11	4	10	27	1	20	22		13	14
26	8	-19-37	19	30	12	5	11	28	2	21	23		14	15
27	9	Tr. = 2-23-26	20	31	13	6	12	29	3	22	24		15	16
28	10		21	1	14	7	13	30	4 = 5:11	23	25		16	17
29	11 = 7:03		22	2	15	8	14	1	5	24	26		17	18
1	12		23	3	16	9	15	2	6	25	27		18	19
2	13		24	4	17	10	16	3	7	26	28		19	20
3	14		25	5	18	11	17	4	8	27	29	-12-51	20	21
4	15		26	6	19	12	18	5	9	28	1	M	21	22
5	16		27	7	20	13	19	6	10	29	2	a	22	23
6	17		28	8	21	14	20	7	11	30	3	P	23	24

Yay

Slyan

Tr. = 2-16-28
Tr. = 2-1-58
Tr. = 5-5-42

T
L
S
T
L

S
T
P
E
5-16-30

N
Y
E
P
E
Tr. = 2-22-58

H
Y
G
E
Tr. = 15-47

D
C
E
Tr. = 2-1-3

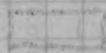
S
h
e
e
b
a
t

N
L
S
Q
N

14-11-28
Pasch Moon

Translation Periods

- Iyar = May 10-13 = 3-14-16
- Sivan = June 8-11 = 2-23-26
- Tammuz = July 8-11 = 3-8-7
- Ab = Aug. 7-9 = 2-16-28
- Elul = Sept. 5-8 = 3-1-45
- Tisri = Oct. 5-7 = 2-11-58
- Hesvan = Nov. 3-6 = 2-12-58
- Kislev =

04:13


31 21

00:33

2:38

2:07

0:00

0:12

13 12

2:09

33

13 14

11:28

2:08

31 Mar. Apr. Ve Mar Feb. Jan Kis. Nov. Tis. Sept. At. Aug Six. June

25-22-45

Pasch Moon

31

x radage V

(Tr. = 3-4-19)

tabber S

(Tr. 3-4-52)

rework X

(Tr. = 3-2-55)

(Tr. = 3-1-11)

Tr. 2-23-43

(Tr. = 3-16-57)

X Add r

(Tr. = 3-16-57)

(Tr. = 3-15-57)

trape

Tr. = 3-0-56

14	27	20	5	26	11	2	19	9	27	15	5	21	13
13	26	19	4	25	10	1	18	8	26	14	4	20	12
12	25	18	3	24	9	XH	30	7	25	13	3	19	11
11	24	17	2	23	8	SE	29	6	24	12	2	18	10
10	23	16	1	22	7	Van	28	5	23	11	1	17	9
9	22	15	28	21	6	n	27	14	22	10	31	16	8
8	21	14	27	20	5		26	13	21	9	30	15	7
7	20	13	26	19	4		25	12	20	8	29	14	6
6	19	12	25	18	3		24	11	19	7	28	13	5
5	18	11	24	17	2		23	10	18	6	27	12	4
4	17	10	23	16	1		22	9	17	5	26	11	3
3	16	9	22	15	31	D	21	8	16	4	25	10	2
2	15	8	21	14	30	ce	20	7	15	3	24	9	1
1	14	7	20	13	29		19	6	14	2	23	8	31 M
29	13	6	19	12	28	-18-25	18	5	13	1	22	7	30
28	12	5	18	11	27		17	4	12	T	29	21	29
27	11	4	17	10	26		16	3	11	28	20	20	28
26	10	3	16	9	25		15	2	10	27	19	7-9	27
25	9	2	15	8	24		14	1	9	26	18	3	26
24	8	1	14	7	23		13	31	8	25	17	2	25
23	7	29	13	6	22		12	30	7	24	16	1	24
22	6	28	12	5	21		11	29	6	23	15	I	23
21	5	27	11	4	20		10	28	5	22	14	Ya	22
20	4	26	10	3	19		9	27	4	21	13	T	21
19	3	25	9	2	18		8	26	3	20	12		20
18	2	24	8	1	17		7	25	2	19	11		19
17	1	23	7	29	16		6	24	1	18	10		18
16	31 M	22	6	28	15		5	23		17	9		17
15	30	21	5	27	14		4	22		16	8		16
14	29	20	4	26	13	-14-6	3	21		15	7		15
13	28	19	3	25	12		2	20		14	6		14
12	27	18	2	24	11		1	19		13	5		13
11	26	17	1	23	10		T	30	18	12	4		12
10	25	16	31	22	9		29	17		11	3	-20-21	11
9	24	15	30	21	8		28	16		10	2		10
8	23	14	29	20	7		27	15	-16-16	9	1		9
7	22	13	28	19	6		26	14		8	30	J	8
6	21	12	27	18	5		25	13		7	29	ex	7
5	20	11	26	17	4		24	12		6	28	e	6
4	19	10	25	16	3		23	11		5	27		5
3	18	9	24	15	2		22	10		4	26		4
2	17	8	23	14	1		21	9		3	25		3
1	16	7	22	13	30	N	20	8		2	24		2
30	15	6	21	12	29	vo	19	7		1	23		1
29	14	5	20	11	28	-22-59	18	6		S	30	22	6
28	13	4	19	10	27		17	5		29	21		5
27	12	3	18	9	26		16	4		28	20		4
26	11	2	17	8	25		15	3		27	19	-18-11	3
25	10	1	16	7	24		14	2		26	18		2
24	9	30	15	6	23		13	1		25	17		1
23	8	29	14	5	22		12	30	-9-33	24	16	N	30
22	7	28	13	4	21		11	29		23	15	23	29
21	6	27	12	3	20		10	28		22	14	22	28

27	21 (12-25)
26	20
25	19
24	18
23	17
22	16
21	15
20	14
19	13
18	12
17	11
16	10
15	9
14	8
13	7

(Tr. = 3-6-6)

6-22-30

12 6 Pasch

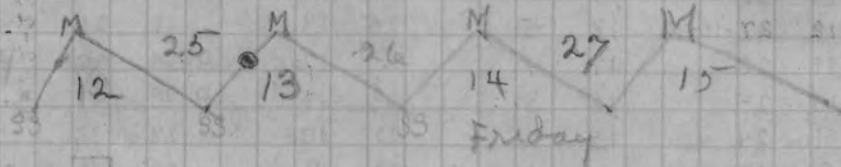
Translation Periods

11 5 Moon 30 A.D.

10	4	Nisan 1 = Mar. 22-25 = 2-21-40
9	3	Iyar 1 = Apr. 21-24 = 3-6-6
8	2	Sivan 1 = May 21-23 = 2-15-7
7	1	Tammuz 1 = June 19-22 = 3-0-56
6	31 M	Ab 1 = July 19-21 = 2-11-53
5	30 P	Elul 1 = Aug 17-20 = 2-23-43
4	29	Tisri 1 = Sept. 16-19 = 2-12-19
3	28	Hesvan 1 = Oct. 15-18 = 3-1-11
2	27	Kislev 1 = Nov. 14-17 = 3-13-58
1	26	Tebet 1 = Dec. 13-16 = 3-2-55
29	25	Shebat 1 = Jan. 12-15 = 3-15-57
28	24	Veadar 1 = Feb. 10-13 = 3-4-52
27	23	Adar 1 = Mar. 12-15 = 3-16-57
26	22	Nisan 1 = Apr. 10-13 = 3-14-19

Nisan
A
d
d
r
2-21-40

April 25-22-45 Wed



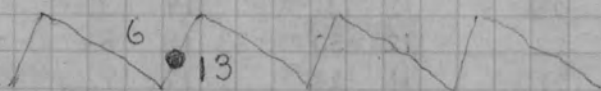
Nisan

April

Nisan

Friday	14	27	15	27	Friday
Thursday	13	26	14	26	Thurs
Wednesday	12	25	13	25	Wed

April 6-20-9 Th.



Nisan 14 = April 8
 Nisan 13 = April 7
 Nisan 12 = April 6

1841 Tr. Per.

Nisan -- 1.08
 Iyar -- 1.68⁹⁰
 Sivan -- 1.87⁴⁰
 Tam. -- 2.11 ✓
 Ab -- 1.79 ✓
 Elul -- .76^{2.40}
 Tisri -- 1.95 ✓
 Hes. -- 2.38 ✓
 Kis. -- 2.72

ab
 Elul
 Tisri
 Hes.
 Kislev

1842

Tebet -- 2.95
 She -- 2.15
 Adar -- 2.38
 Nisan -- 1.74
 Iyar -- 2.20
 Sivan -- 1.77
 Tam. -- 2.26
 Ab -- 2.07
 Elul -- 2.75
 Tisri -- 2.38
 Hes. -- 2.94
 Kis. -- 2.44
 Teb. -- 2.83
 She. -- 2.14
 Adar -- 2.40 ✓
 Nisan -- 1.68
 Iyar -- 2.01
 Sivan -- 1.43
 Tam. -- 2.90
 Ab -- 1.43
 Elul -- 2.06
 Tisri -- 1.69 X

1846

Tebet
 Shebat 2.24 Jan
 Adar 2.84 Mar +
 Veadar 3.41 Apr
 Nisan 2.99 Apr
 Iyar 3.50 May -
 Sivan 2.96 June
 Tam. 3.36 July
 Ab 2.71 Aug
 Elul 3.00 Sept
 Tis 2.30 Oct.
 Hes 2.65 Nov
 Kis 2.09 Dec

Nisan 1.68 April
 Iyar 2.87 May
 Sivan 2.11 June
 Tam. 2.82 July
 ab 2.46 Aug ✓
 Elul 2.99 Sept ✓
 Tisri 2.42 Oct ✓
 Hesvan 2.93 Nov ✓
 Kislev 1.97 Dec ✓
 Tebet 2.15 Jan ✓
 Shebat 1.37 Feb ✓
 Adar 1.69 Mar ✓
 Nisan 1.14 April ✓
 Iyar 1.72 May ✓
 Sivan 1.37 June ✓
 Tam 2.10 July ✓
 ab 1.79 Aug ✓

1843

Hesvan - 2.31 Oct.
 Kislev - 1.89 Nov
 Tebet - 2.40 Dec
 Shebat - 1.87 Jan.
 Adar - 2.28 Feb
 Veadar - 2.65 Mar
 Nisan - 1.99 Apr
 Iyar - 2.32 May
 Sivan - 1.68 June
 Tam - 2.09 July
 ab 1.58 Aug.
 Elul 2.10 Sept
 Tisri 1.66 Oct.
 Hes 2.22 Nov.
 Kis 2.72 Dec.
 Teb 3.31 Jan

1847

Teb 2.59 Jan
 She 2.17 Feb.
 Adar 2.77 March
 Nisan 2.41 April
 Iyar 3.04 May
 Sivan 2.67 June
 Tamung 3.22 July
 Ab 2.66 Aug
 Elul 3.01 Sept.
 Tisri 2.25 Oct
 Hesvan 2.48 Nov.
 Kislev 1.76 Dec
 Tebet 2.11 Jan
 Shebat 1.57 Feb.
 Adar 2.10 Mar
 Nisan 1.71 Apr
 Iyar 2.38 May
 Sivan 2.08 June
 Tam. 2.77 July
 ab 2.38 Aug
 Elul 2.88 Sept
 Tisri 2.25 Sept
 Hesvan 2.51 Oct.
 Kislev 1.72 Nov.
 Tebet 1.93 Dec.

1850

Shebat 1.37 Feb ✓
 Adar 1.69 Mar ✓
 Nisan 1.14 April ✓
 Iyar 1.72 May ✓
 Sivan 1.37 June ✓
 Tam 2.10 July ✓
 ab 1.79 Aug ✓

1844

1848

Shebat 1.87 Jan.
 Adar - 2.28 Feb
 Veadar - 2.65 Mar
 Nisan - 1.99 Apr
 Iyar - 2.32 May
 Sivan - 1.68 June
 Tam - 2.09 July
 ab 1.58 Aug.
 Elul 2.10 Sept
 Tisri 1.66 Oct.
 Hes 2.22 Nov.
 Kis 2.72 Dec.
 Teb 3.31 Jan

1849

Shebat 1.21 Jan
 Adar 1.59 Feb
 Veadar 2.08 Mar

Translation Cycle
 (Moon by moon for nine years)
 112 moons

112
 17 17 32
 14 21
 18 7 53

112 moons
 29 1/2
 86
 1008 3304

112 moons 9 years

79 3
 24
 31 6
 15 8
 19
 68
 24 3
 27 2
 13 6
 16 3 2

The is the forest primeval the murmuring pines and the hemlocks
This is the forest primeval the murmuring pines and the hemlocks stand like druids
of old with voices sad and pathetic This is the forest primeval the murmuring pines and the
hemlocks stand like druids of old with voices sad and prophetic.

45678456784567845678
This is the forest

498
488
498
498
488
488
558
488
498
498
558

Periods from New to Full Moon

1914 Jan. 25 - Feb. 9 = 15-11-6
 12 Feb. 24 - Mar. 11 = 15-4-16.4
 Mar. 25 - Apr. 9 = 14-19-19.1
 Apr. 24 - May 8 = 14-10-8.9
 May 24 - June 7 = 14-2-43.5
 June 22 - July 6 = 13-22-26.6
 July 22 - Aug 5 = 13-22-2.3
 Aug. 20 - Sept. 3 = 14-1-34.7
 Sept. 21 Sept. 18 - Oct. 3 = 14-9-25.6
 Oct. 18 - Nov. 1 = 14-17-14.9
 Nov. 16 - Dec. 1 = 15-2-18.7
 Dec. 16 - Jan. 0 = 15-9-45.4

1915 Jan. 14 - Jan. 30 = 15-13-59.4
 Feb. 13 - Mar. 0 = 15-14-1.6
 n.m. Mar. 16 P. Mar. 30 Mar. 14 - Mar. 30 = 15-9-55.4
 Apr. 13 - Apr. 28 = 15-2-43.6
 May 13 - May 27 = 14-18-1.9
 June 11 - June 26 = 14-9-30.1
 July 11 - July 25 = 14-2-40.2
 Aug. 9 - Aug. 23 = 13-22-48.1
 Sept. 9 Sept. 8 - Sept. 22 = 13-22-42.5
 Oct. 8 - Oct. 22 = 14-14-33.4
 Nov. 6 - Nov. 20 = 14-9-44.1
 Dec. - Dec.

1916 Jan. 4 - Jan. 19 = 15-3-43.6
 (In) Feb. 2 - Feb. 18 = 15-10-23.0
 Mar. 3 - Mar. 18 = 15-13-29.1
 n.m. Apr. 4 P. Apr. 18 Apr. 1 - Apr. 17 = 15-12-46.3
 May 1 - May 16 = 15-8-42.4
 May 30 - June 14 = 15-2-4.4
 June 29 - July 14 = 14-17-56.6
 July 29 - Aug. 12 = 14-9-44.9
 Aug. 27 - Sept. 10 = 14-3-6.2
 Sept. 28 Sept. 26 - Oct. 10 = 13-23-27
 Oct. 25 - Nov. 8 = 13-23-41
 Nov. 24 - Dec. 8 = 14-3-53.5
 Dec. 23 - Jan. 7 = 14-11-10.8

1917 Jan. 22 - Feb. 6 = 14-19-48.4
 12 Feb. 20 - Mar. 7 = 15-3-49
 n.m. Mar. 24 P. Apr. 7 Mar. 22 - Apr. 6 = 15-9-43.8
 Apr. 20 - May 6 = 15-12-42.
 May 20 - June 4 = 15-12-19.9
 June 18 - July 3 = 15-8-38.3
 July 18 - Aug. 2 = 15-2-10.8
 Aug. 16 - Sept. 0 = 14-18-7.5
 Sept. 17 Sept. 15 - Sept. 29 = 14-10-4.6
 Oct. 15 - Oct. 29 = 14-3-38.2
 Nov. 13 - Nov. 27 = 14-0-12.8
 Dec. 13 - Dec. 27 = 14-0-34.3

1918 Jan. 11 - Jan. 26 = 14-4-38.4
 (In) Feb. 10 - Feb. 24 = 14-11-30
 n.m. Mar. 14 P. Mar. 28 Mar. 11 - Mar. 26 = 14-19-40.4
 Apr. 10 - Apr. 25 = 15-3-31.1
 May 9 - May 24 = 15-9-31.5
 June 7 - June 23 = 15-12-35.6
 July 7 - July 22 = 15-12-12.7
 Aug. 5 - Aug. 21 = 15-8-32.7
 Sept. 7 Sept. 4 - Sept. 20 = 15-2-17.2
 Oct. 4 - Oct. 18 = 14-18-29.6
 Nov. 2 - Nov. 17 = 14-10-31.4
 Dec. 2 - Dec. 16 = 14-3-58.2

1919 Jan. 1 - Jan. 15 = 14-0-20.8
 Jan. 30 - Feb. 13 = 14-0-31.2
 Mar. 1 - Mar. 15 = 14-4-29.7
 n.m. Apr. 1 P. Apr. 15 Mar. 30 - Apr. 14 = 14-11-20.2
 Apr. 29 - May 14 = 14-19-30.9
 May 28 - June 12 = 15-3-16.3
 June 26 - July 12 = 15-9-9.6
 July 26 - Aug. 10 = 15-12-18.1
 Aug. 24 - Sept. 9 = 15-12-17.2
 Sept. 25 Sept. 23 - Oct. 8 = 15-9-4.7
 Oct. 22 - Nov. 6 = 15-2-55.7
 Nov. 21 - Dec. 6 = 14-18-43.8
 Dec. 21 - Jan. 4 = 14-10-9.7

1920 Jan. 20 - Feb. 3 = 14-3-15.5
 Feb. 18 - Mar. 3 = 13-23-37.8
 n.m. Mar. 20 P. Apr. 8 Mar. 19 - Apr. 2 = 13-23-58.9
 Apr. 17 - May 2 = 14-4-4.2
 May 17 - June 0 = 14-10-53
 June 15 - June 30 = 14-18-59.4
 July 14 - July 29 = 15-2-54.3
 Aug. 13 - Aug. 28 = 15-9-18.9
 Sept. 13 Sept. 11 - Sept. 27 = 15-13-4.9
 Oct. 11 - Oct. 26 = 15-13-18.5
 Nov. 9 - Nov. 25 = 15-9-37.2
 Dec. 9 - Dec. 24 = 15-2-34.6

1921 Jan. 8 - Jan. 22 = 14-17-41.1
 Feb. 7 - Feb. 21 = 14-8-55.4
 Mar. 8 - Mar. 22 = 14-2-9.7
 n.m. Apr. 9 P. Apr. 23 Apr. 7 - Apr. 21 = 13-22-44.2
 May 6 - May 20 = 13-23-13.9
 June 5 - June 19 = 14-3-26.6
 July 4 - July 19 = 14-10-31.4
 Aug. 2 - Aug. 17 = 14-19-10.8
 Sept. 1 - Sept. 16 = 15-3-47.
 Oct. 3 Oct. 0 - Oct. 15 = 15-10-33.2
 Oct. 29 - Nov. 14 = 15-14-0.3
 Nov. 28 - Dec. 14 = 15-13-24.9
 (Dec. 28 - Jan. 12 = 15-8-57.1)

Periods - New to Full Moon

1922 Jan. 26 to Feb. 11 = 15-1-29
 Feb. 25 to Mar. 12 = 14-16-26
n.m. Mar. 30
P. Apr. 13 Mar. 27 to Apr. 10 = 14-7-40
 Apr. 26 to May 10 = 14-1-2
 May 25 to June 8 = 13-21-53
 June 24 to July 8 = 13-22-47
 July 23 to Aug. 6 = 14-3-31
 Aug. 21 to Sept. 5 = 14-12-13
 Sept. 23 Sept. 20 to Oct. 5 = 14-20-20
 Oct. 19 to Nov. 3 = 15-4-56
 Nov. 18 to Dec. 3 = 15-11-17
 Dec. 17 to Jan. 2 = 15-14-13

1923 Jan. 16 to Feb. 0 = 15-12-52
 Feb. 14 to Mar. 2 = 15-8-16
n.m. Mar. 18
P. Apr. 1 Mar. 16 to Apr. 0 = 15-0-18
 Apr. 15 to Apr. 29 = 14-15-2
 May 14 to May 29 = 14-6-29
 June 13 to June 27 = 14-0-22
 July 13 to July 26 = 13-22-48
 Aug. 11 to Aug. 25 = 13-23-13
 Sept. 11 Sept. 9 to Sept. 24 = 14-3-23
 Oct. 9 to Oct. 23 = 14-12-21
 Nov. 7 to Nov. 22 = 14-21-30
 Dec. 7 to Dec. 22 = 15-6-3

1924 Jan. 6 to Jan. 21 = 15-12-9
 Feb. 4 to Feb. 20 = 15-14-29
 Mar. 5 to Mar. 20 = 15-12-33
n.m. Apr. 5
P. Apr. 19 Apr. 3 to Apr. 19 = 15-6-53
 May 3 to May 18 = 14-22-52
 June 2 to June 16 = 14-14-8
 July 1 to July 15 = 14-6-14
 July 31 to Aug. 14 = 14-0-38
 Aug. 29 to Sept. 12 = 13-22-24
 Sept. 29 Sept. 28 to Oct. 12 = 14-0-6
 Oct. 27 to Nov. 11 = 14-5-33
 Nov. 26 to Dec. 10 = 14-13-48
 Dec. 25 to Jan. 10 = 15-11-2 (14-23-4)

1925 Jan. 24 to Feb. 8 = 15-7-4
 Feb. 23 to Mar. 10 = 15-12-8
n.m. Mar. 26
P. Apr. 9 Mar. 24 to Apr. 9 = 15-13-30
 Apr. 23 to May 8 = 15-11-14
 May 22 to June 6 = 15-5-59
 June 21 to July 6 = 14-22-37
 July 20 to Aug. 4 = 14-14-20
 Aug. 19 to Sept. 2 = 14-6-39
 Sept. 19 Sept. 18-4 to Oct. 2 = 14-1-10
 Oct. 17 to Oct. 31 = 13-23-11
 Nov. 16 to Nov. 30 = 14-1-14
 Dec. 15 to Dec. 30 = 14-6-57

1926 Jan. 14 to Jan. 28 = 14-15-1
 Feb. 12 to Feb. 27 = 14-23-30
n.m. Mar. 16
P. Mar. 30 Mar. 14 to Mar. 29 = 15-6-40
 Apr. 12 to Apr. 28 = 15-11-20
 May 11 to May 27 = 15-12-53
 June 10 to June 25 = 15-11-4
 July 9 to July 25 = 15-6-7
 Aug. 8 to Aug. 23 = 14-22-49
 Sept. 9 Sept. 7⁵⁻⁴⁴ to Sept. 21 = 14-14-35
 Oct. 6 to Oct. 21 = 14-7-2
 Nov. 5 to Nov. 19 = 14-1-47
 Dec. 5 to Dec. 19 = 13-23-57

Periods from New Moon to F.M.

1927. Jan.³-Jan.¹⁷ = 14 - 1 - 58.9
 Feb.²-Feb.¹⁶ = 14 - 7 - 23.9
 Mar.³-Mar.¹⁸ = 14 - 14 - 59.5
 Apr.²-Apr.¹⁷ = 14 - 23 - 11.2 n.m. Apr. 3
p. Apr. 17
 May.¹-May.¹⁶ = 15 - 6 - 23.1
 May.³⁰-June.¹⁵ = 15 - 11 - 13.4
 June.²⁹-July.¹⁴ = 15 - 12 - 50.5
 July.²⁸-Aug.¹³ = 15 - 11 - 0.9
 Aug.²⁷-Sept.¹¹ = 15 - 6 - 8.4
 Sept.²⁵-Oct.¹⁰ = 14 - 23 - 3.9 Sept. 27
 Oct.²⁵-Nov.⁹ = 14 - 14 - 58.7
 Nov.²⁴-Dec.⁸ = 14 - 7 - 22.8
 Dec.²⁴-Jan.⁷ = 14 - 1 - 54.4

1928. Jan.²²-Feb.⁵ = 13 - 23 - 52.3 1928
 Feb.²¹-Mar.⁶ = 14 - 1 - 46.1
 Mar.²¹-Apr.⁵ = 14 - 7 - 9 n.m. Mar. 22
p. Apr. 5
 Apr.²⁰-May.⁴ = 14 - 14 - 47
 May.¹⁹-June.³ = 14 - 22 - 59.4
 June.¹⁷-July.³ = 15 - 6 - 6.4
 July.¹⁷-Aug.¹ = 15 - 10 - 55
 Aug.¹⁵-Aug.³¹ = 15 - 12 - 45.4
 Sept.¹⁴-Sept.²⁹ = 15 - 11 - 21.8 Sept. 15
 Oct.¹³-Oct.²⁸ = 15 - 6 - 47.1
 Nov.¹²-Nov.²⁷ = 14 - 23 - 30.2
 Dec.-Dec. = 14 - 14 - 48.7

1929. Jan.-Jan. = 14 - 7 - 40.9 1929
 Feb.-Feb. = 14 - 1 - 3.5 (In)
 Mar.¹¹-Mar.²⁵ = 13 - 23 - 9.7
 Apr.⁹-Apr.²³ = 14 - 1 - 14.8 n.m. Apr. 11
p. Apr. 25
 May.⁹-May.²³ = 14 - 6 - 42.6
 June-June = 14 - 14 - 18.6
 July-July = 14 - 22 - 33.7
 Aug.-Aug. = 15 - 6 - 2.2
 Sept.³-Sept.¹⁸ = 15 - 11 - 28.3
 Oct.²-Oct.¹⁸ = 15 - 13 - 46.7 Oct. 5
 Nov.-Nov. = 15 - 12 - 13.3
 Dec.-Dec. = 15 - 6 - 49.8

1930. Dec.-Jan. = 14 - 22 - 39.3 1930
 Jan.-Feb. = 14 - 13 - 31.2 13
 Feb.-Mar. = 14 - 5 - 25.7
 Mar.³⁰-Apr.¹³ = 14 - 0 - 2.1 n.m. Mar. 30
p. Apr. 13
 Apr.²⁸-May.¹² = 13 - 22 - 20.9
 May-June = 14 - 0 - 35.1
 June-July = 14 - 6 - 14.4
 July-Aug. = 14 - 14 - 15.7
 Aug.-Sept. = 14 - 23 - 10.9
 Sept.²²-Oct.⁷ = 15 - 7 - 14 Sept. 23
 Oct.²¹-Nov.⁶ = 15 - 12 - 40.5
 Nov.-Dec. = 15 - 14 - 18.7
 Dec.-Jan. = 15 - 11 - 51.2

1931. Jan.-Feb. = 15 - 5 - 50.3
 Feb.-Mar. = 14 - 21 - 25.3
 Mar.¹⁹-Apr.² = 14 - 12 - 14.9 n.m. Mar. 19
p. Apr. 2
 Apr.¹⁸-May.² = 14 - 4 - 14.7
 May-May = 13 - 23 - 5.1
 June-June = 13 - 21 - 45.2
 July-July = 14 - 0 - 27.5
 Aug.-Aug. = 14 - 6 - 42.5
 Sept.¹²-Sept.²⁶ = 14 - 15 - 18.5
 Oct.¹¹-Oct.²⁶ = 15 - 0 - 28.0
 Nov.-Nov. = 15 - 8 - 14.5
 Dec.-Dec. = 15 - 13 - 7.5

1932. Jan.-Jan. = 15 - 14 - 15.4 (In)
 Feb.-Feb. = 15 - 11 - 22.3
 Mar.⁷-Mar.²² = 15 - 4 - 53.1 n.m. Apr. 7
p. Apr. 21
 Apr.⁶-Apr.²⁰ = 14 - 20 - 6
 May-May = 14 - 10 - 57.1
 June-June = 14 - 3 - 22.1
 July-July = 13 - 22 - 46.7
 Aug.-Aug. = 13 - 21 - 59.8
 Aug.-Sept. = 14 - 1 - 11.5
 Sept.³⁰-Oct.¹⁴ = 14 - 7 - 47.9
 Oct.¹-Oct.²⁹ = 14 - 16 - 31.9
 Nov.-Dec. = 15 - 1 - 37.8

1933. Dec.-Jan. = 15 - 9 - 13.2
 Jan.-Feb. = 15 - 13 - 40.8
 Feb.-Mar. = 15 - 14 - 1.8
 Mar.²⁶-Apr.¹⁰ = 15 - 10 - 17.3 n.m. Mar. 28
p. Apr. 11
 Apr.²⁴-May.⁹ = 15 - 3 - 26.1
 May-June = 14 - 18 - 57.8
 June-July = 14 - 10 - 28.3
 July-Aug. = 14 - 3 - 28.5
 Aug.-Sept. = 13 - 23 - 16.5
 Sept.²¹-Sept.¹⁹ = 13 - 22 - 46.7
 Oct.¹⁹-Nov.² = 14 - 2 - 14.5
 Nov.-Dec. = 14 - 9 - 7.1
 Dec.-Dec. = 14 - 18 - 1.2

1934. Jan.-Jan. = 15 - 2 - 54.3 12
 Feb.-Mar. = 15 - 9 - 42.2
 Mar.¹⁵-Mar.³¹ = 15 - 13 - 6.2 n.m. Mar. 17
p. Mar. 31
 Apr.¹³-Apr.²⁹ = 15 - 12 - 48.4
 May-May = 15 - 9 - 11.3
 June-June = 15 - 2 - 56.4
 July-July = 14 - 19 - 2.7
 Aug.-Aug. = 14 - 10 - 51.1
 Sept.¹⁰-Sept.⁹ = 14 - 3 - 58.8
 Oct.⁸-Oct.²² = 13 - 23 - 56.2
 Nov.-Nov. = 13 - 23 - 42.7
 Dec.-Dec. = 14 - 3 - 28.4

1914 British Mean Noon

First Quarter	Jan. 4-1-9.1	Apr. 3-7-41.5	June 30-7-24.5	Sept. 26-0-3.0
Full Moon	11-17-9.0	10-1-28.2	July 7-1-59.8	Oct. 3-17-58.9
Last Quarter	18-12-29.8	16-19-52.2	14-19-31.9	11-21-33.1
New Moon	25-18-34.1	24-23-21.9	22-14-38.4	18-18-33.5

First Quarter	Feb. 2-22-32.6	May 2-18-29.0	29-11-51.0	25-10-44.0
Full Moon	10-5-34.7	9-9-30.8	Aug. 5-12-40.7	Nov. 2-11-48.6
Last Quarter	16-21-23.0	16-10-12.1	13-12-56.0	10-11-36.8
New Moon	24-12-2.1	24-14-34.8	21-0-26.5	17-4-1.9

First Quarter	Mar. 4-17-3.0	June 1-2-3.0	27-16-52.5	24-1-38.7
Full Moon	11-16-18.5	7-17-18.3	Sept. 4-2-1.2	Dec. 2-6-20.6
Last Quarter	18-7-39.4	15-2-20.0	12-5-48.3	9-23-31.7
New Moon	26-6-9.1	23-3-33.2	19-9-33.3	16-14-35.1

First Quarter				23-20-24.8
Apogee	Jan. ^{d h} 3-8.6		Aug. ^{d h} 11-21.8	Oct. ^{d h} 6-5.1
Perigee	15-6.2	Mar. ^{d h} 12-10.3	May ^{d h} 8-7.7	July 2-19.7
Apogee	31-5.5	27-3.5	20-16.2	15-3.1
Perigee	Feb. 12-1.5	Apr. 9-21.9	June 5-11.0	28-0.0
Apogee	27-21.1	23-5.8	17-8.9	
				20-18.5
				16-15.9
				29-10.6
				23-18.5
				19-3.8
				27-0.7

1915

Full Moon	Jan. 1-0-20.5	Mar. 30-17-37.7	June 26-16-27.4	Sept. 22-21-35.2
Last Quarter	8-9-12.6	Apr. 6-8-12.4	July 3-17-54.2	30-21-44.3
New Moon	15-2-41.9	13-23-35.7	11-21-30.8	Oct. 8-9-42.1
First Quarter	22-17-32.3	22-3-39.1	19-9-8.8	15-1-51.5

Full Moon	30-16-41.3	29-2-19.3	26-0-11.0	22-12-15.5
Last Quarter	Feb. 6-17-10.9	May 5-17-22.6	Aug. 2-9-27.3	30-16-39.8
New Moon	13-16-31.0	13-15-31.0	10-10-52.4	Nov. 6-19-52.3
First Quarter	21-14-58.3	21-16-50.	17-14-17.4	13-11-3.0

Full Moon	Mar. 1-6-32.6	28-9-32.9	24-9-40.5	21-5-36.4
Last Quarter	8-0-27.6	June 4-4-32.1	Sept. 1-2-56.6	29-10-10.5
New Moon	15-7-42.3	12-6-57.3	8-12-52.7	Dec. 6-6-3.7
First Quarter	23-10-48.0	20-2-24.3	15-19-21.3	12-23-38.4

Full M. 21-0-52.3
Last Quart. 29-0-58.8

Perigee	Jan. ^{d h} 12-2.1	Mar. 4-15.	Apr. ^{d h} 1-11.6				0	^{d h} 11-0.1
Apogee	23-20.7	20-13.2	17-3.6	May ^{d h} 14-9.4	June ^{d h} 10-12.4	Aug. ^{d h} 4-14.6		26-23.1
Perigee	Feb. 7-1.3		29-19.2	28-5.6	25-14.1	20-2.2	η	8-2.3
Apogee	20-17.9				July 7-22.8	Se 1-9.2		23-11.7
Perigee					23-17.4	14-3.3		
Apogee								

Before 1925 Marks P.M.
After 1925 Marks A.M.

1916

New Moon	Jan 4-16-45.4	Apr. '2- 4-21.2	June 29-22-43.4	Sept 26-19-34.1
First Quarter	11-15-37.6	10- 2-35.7	July 7-23-55.0	Oct. 3-23- 0.5
Full Moon	19-20-29.0	17-17- 7.5	14-16-40.0	10-19- 1.1
Last Quarter	27-12-35.1	24-10-38.3	21-11-33.	18-13- 8.7
New Moon	Feb. 3- 4- 5.6	May 1-17-28.9	29-14-15.4	26- 8-37.0
First Quarter	10-10-20.4	9-20-47.1	Aug. 6- 9- 5.6	Nov. 2- 5-50.6
Full Moon	18-14-28.6	17- 2-11.3	13- 0- 0.3	9- 8- 18.
Last Quarter	25-21-23.8	23-17-16.4	20- 0-52.8	17-10- 0.5
New Moon	Mar. 3-15-57.6	31- 7-37.3	28- 5-24.7	24-20-50.4
First Quarter	11- 6-32.9	June 8-11-59.0	Sept 4-16-26.5	Dec. 1-13-55.5
Full Moon	19- 5-26.7	15- 9-41.7	11- 8-30.9	9- 0-43.9
Last Quarter	26- 4-22.4	22- 1-16.3	18-17-35.3	17- 6- 6.4
New Moon				24- 8-31.2
First Quarter				31- 0- 7.2

Apogee

Jan.	16-17.1	June	30-16.2
Feb.	13- 9.4	July	27-19.5
Mar.	12- 5.4	Aug.	24- 5.
Apr.	9- 1.7	Sept.	20-21.6
May	6-19.7	Oct.	18-17.2
June	3- 9.5	Nov.	15-14.0
		Dec.	13- 8.8

Perigee

Jan.	4- 2.3	July	14-12.3
Feb.	1-12.1	Aug.	11-21.3
Mar.	29- 8.7	Sept.	9- 1.4
Apr.	26- 1.2	Oct.	6-10.5
May	20-23.6	Oct.	31- 6.8
June	18-20.0	Nov.	27- 7.7
	16- 2.6	Dec.	25-12.5

1917

Full Moon	Jan. 7-19-42.0	Apr. 7- 1-48.8	July 4- 9-40.5	Sept. 30- 8-31.8
Last Quarter	15-23-42.1	14- 8-12.0	11- 0-11.9	Oct. 7-10-14.3
New Moon	22-19-40.0	21- 2- 1.3	18-15- 0.1	15-14-41.0
First Quarter	29-13- 1.5	28-17-22.0	26-18-40.4	23- 2-37.7
Full Moon	Feb. 6-15-28.4	May 6-14-43.3	Aug. 2-17-10.9	29-18-19.2
Last Quarter	14-13-53.2	13-13-47.9	9- 7-56.4	Nov. 6- 5- 3.5
New Moon	21- 6- 9.0	20-12-46.8	17- 6-21.0	14- 6-28.5
First Quarter	28- 4-43.7	28-11-33.5	25- 7- 8.2	21-10-28.8
Full Moon	Mar. 8- 9-58.0	June 5- 1- 6.7	Sept. 1- 0-28.5	28- 6-41.3
Last Quarter	16- 0-33.1	11-18-38.5	7-19- 5.2	Dec. 6- 2-13.8
New Moon	22-16- 5.0	19- 1- 2.2	15-22-27.2	13-21-17.3
First Quarter	29-22-36.4	27- 4- 8.4	23-17-41.4	20-18- 7.3
Full Moon				27-21-51.6

Apogee

Perigee

Jan.	9-20.4	July	21-17.6
Feb.	5-20.7	Aug.	18- 0.5
Mar.	5- 2.9	Sept.	14- 2.7
Apr.	1-19.2	Oct.	11-12.5
Apr.	29-14.2	Nov.	8- 5.4
May	27- 9.4	Dec.	6- 2.3
June	24- 3.1		

Jan.	23- 0.6	Aug.	3- 9.9
Feb.	20-13.3	Aug.	31-19.9
Mar.	20-21.2	Sept.	29- 6.1
Apr.	17-15.2	Oct.	27-10.8
May	13- 6.6	Nov.	23-18.5
June	8- 8.2	Dec.	18-10.2
July	6- 3.6		

1918

Last Quarter	Jan.	4-23-49.6	Apr.	4-1-33.1	June	30-20-42.9	Sept.	26-16-38.6
New Moon		12-10-35.8		10-16-34.3	July	7-20-22.1	Oct.	4-15-5.2
First Quarter		19-2-37.9		17-16-7.7		15-18-24.7		12-17-0.0
Full Moon		26-15-14.2		25-20-5.4		23-8-34.8		19-9-34.8
Last Quarter	Feb.	3-19-52.0	May	3-10-26.2		30-1-13.9		26-5-35.4
New Moon		10-22-4.6		10-1-0.9	Aug.	6-8-29.6	Nov.	3-9-1.6
First Quarter		17-12-56.9		17-8-14.3		14-11-16.4		11-4-46.2
Full Moon		25-9-34.6		25-10-32.4		21-17-2.3		17-19-33
Last Quarter	Mar.	5-12-43.6	June	1-16-20.0		28-7-27.1		24-22-25.3
New Moon		12-7-52.4		8-10-2.7	Sept.	4-22-43.7	Dec.	3-3-19.3
First Quarter		19-1-30.4		16-1-11.7		13-3-2.3		10-14-31.4
Full Moon		27-3-32.8		23-22-38.3		20-1-0.9		17-7-17.5
Last Quarter								24-18-30.6

Apogee				Perigee				
	d	h		d	h		d	h
Jan.	2	23.4	July	14	15.3	Jan.	14	17.0
Jan.	30	17.8	Aug.	11	9.1	Feb.	11	23.3
Feb.	27	2.9	Sep.	7	23.7	Mar.	12	10.8
Mar.	26	3.2	Oct.	5	6.4	Apr.	9	21.8
Apr.	22	11.1	Nov.	1	8.1	May	8	4.0
May	20	2.5	Nov.	28	19.2	June	4	19.5
June	16	20.6	Dec.	26	13.9	June	30	11.5

1919

New Moon	Jan.	1-20-24.1	Mar.	31-9-4.9	June	27-8-52.6	Sept.	23-16-33.9
First Quarter		8-22-55.2	Apr.	7-0-38.8	July	4-15-17.2	Oct.	1-20-37.3
Full Moon		15-20-44.4		14-20-25.1		12-18-2.2		9-1-38.6
Last Quarter		23-16-22.0		22-23-21.1		19-23-3.0		15-17-4.7
New Moon		31-11-7.0		29-17-30.4		26-17-21.4		23-8-39.5
First Quarter	Feb.	7-6-52.3	May	6-11-33.9	Aug.	3-8-11.5		31-13-43.2
Full Moon		14-11-38.2		14-13-1.3		11-5-39.5	Nov.	7-11-35.2
Last Quarter		22-13-47.7		22-10-3.9		18-3-56.1		14-3-40.5
New Moon	Mar.	1-23-11.4		29-1-11.9		25-3-37.1		22-3-19.7
First Quarter		8-15-14.1	June	5-0-21.9	Sept.	2-2-21.9		30-4-46.9
Full Moon		16-3-41.1		13-4-28.2		9-15-54.3	Dec.	6-22-3.5
Last Quarter		24-8-33.9		20-17-32.9		16-9-31.7		13-18-2.4
New Moon								21-22-55.2
First Quarter								29-17-25.0

Apogee				Perigee				
	d	h		d	h		d	h
Jan.	23	11.4	Aug.	4	3.3	Jan.	10	22.2
Feb.	20	7.9	Aug.	31	22.3	Feb.	4	14.9
Mar.	20	0.6	Sep.	28	17.5	Mar.	4	2.7
Apr.	16	8.5	Oct.	26	8.7	Apr.	1	9.0
May	13	10.2	Nov.	22	14.4	Apr.	29	19.3
June	9	18.5	Dec.	19	15.6	May	28	5.4
July	7	9.4				June	25	10.4

1920

Full Moon	Jan.	5-9-4.9	Apr.	2-22-54.7	June	30-20-40.7	Sep.	27-18-56.6
Last Quarter		12-12-8.6		11-1-24.2	July	8-17-5.6	Oct.	4-12-53.6
New Moon		20-17-26.9		18-9-43.1		15-8-25.0		11-12-50.4
First Quarter		28-3-38.0		25-1-27.5		22-7-20.4		19-12-29.3

Full Moon	Feb.	3-20-42.4	May	2-13-47.3		30-11-19.3		27-2-8.9
Last Quarter		11-8-49.2		10-17-51.0	Aug.	7-0-50.7	Nov.	2-19-35.0
New Moon		19-9-34.8		17-18-25.2		13-15-43.9		10-4-5.1
First Quarter		26-11-49.5		24-9-7.2		20-22-51.8		18-8-12.8

Full Moon	Mar.	4-9-12.6	June	1-5-18.2		29-1-2.8		25-13-42.3
Last Quarter		12-5-57.4		9-6-58.5	Sep.	5-7-4.9	Dec.	2-4-29.0
New Moon		19-22-55.8		16-1-41.3		12-0-51.7		9-22-3.9
First Quarter		26-18-45.1		22-18-49.5		19-16-55.2		18-2-40.4

Full Moon								25-0-38.5
Last Quarter								31-16-34.7

Apogee				Perigee			
Jan.	d	h		Jan.	d	h	
Jan.	16	4.8	July	27	2.4		
Feb.	13	0.2	Aug.	23	16.6	Jan.	4
Mar.	11	21.1	Sep.	20	10.7	Feb.	1
Apr.	8	16.5	Oct.	18	6.7	Feb.	28
May	6	8.0	Nov.	15	2.3	Mar.	24
June	2	16.5	Dec.	12	17.5	Apr.	20
June	29	19.0				May	18
						June	16

1921

New Moon	Jan.	8-17-26.8	Apr.	7-21-5.2	July	5-1-36.3	Oct.	1-0-26.4
First Quarter		16-18-30.9		14-22-11.6		11-16-15.7		8-8-11.8
Full Moon		23-11-7.9		21-19-49.4		19-12-7.7		16-10-59.6
Last Quarter		30-8-2.1		29-16-8.7		27-14-19.9		23-16-31.5

New Moon	Feb.	7-12-36.9	May	7-9-1.5	Aug.	3-8-17.5		30-11-38.8
First Quarter		15-6-53.2		14-3-24.8		10-2-13.7	Nov.	7-3-53.8
Full Moon		21-21-32.3		21-8-15.4		18-3-28.3		15-1-39.1
Last Quarter	Mar.	1-2-3.2		29-9-44.6		26-0-51.4		21-23-41.0

New Moon		9-6-9.2	June	5-18-14.7	Sep.	1-15-33.0		29-1-25.7
First Quarter		16-15-49.2		12-8-59.5		8-15-29.5	Dec.	7-1-19.5
Full Moon		23-8-18.9		19-21-41.3		16-19-20.0		14-14-50.6
Last Quarter		30-21-13.4		28-1-17.0		24-9-17.7		21-7-54.1
New Moon								28-17-39.4

Apogee				Perigee			
Jan.	d	h		Jan.	d	h	
Jan.	8	21.2	July	20	22.3	Jan.	23
Feb.	4	23.9	Aug.	17	0.9	Feb.	20
Mar.	4	14.0	Sep.	13	8.0	Mar.	20
Apr.	1	8.9	Oct.	10	22.9	Apr.	16
Apr.	29	4.6	Nov.	7	18.2	May	11
May	26	22.8	Dec.	5	15.2	June	7
June	23	13.7				July	6

1922

First Quarter	Jan.	5-22-23.8	Apr.	4-17-45.6	July	1-10-51.9	Sep.	27-10-40.4
Full Moon		13-2-36.5		11-8-43.7		8-15-7.3	Oct.	5-12-58.3
Last Quarter		19-17-59.8		18-12-53.7		16-17-11.0		13-9-55.4
New Moon		27-11-48.2		26-17-3.7		24-0-47.1		20-1-40.2
First Quarter	Feb.	4-16-52.3	May	4-0-55.8		30-16-21.6		27-1-26.4
Full Moon		11-13-17.5		10-18-6.2	Aug.	7-4-18.7	Nov.	4-6-36.5
Last Quarter		18-6-18.1		18-6-16.9		15-8-45.8		11-19-52.5
New Moon		26-6-47.7		26-6-4.0		22-8-34		18-12-6.4
First Quarter	Mar.	6-7-21.6	June	2-6-10.1		28-23-54.9		25-20-15.0
Full Moon		12-23-14.4		9-3-57.9	Sep.	5-19-47.2	Dec.	3-23-23.6
Last Quarter		19-20-43.0		17-0-3.2		13-22-20.0		11-4-40.7
New Moon		28-1-3.4		24-16-19.7		20-16-38.3		18-0-20.0
First Quarter								25-17-53.1

Apogee				Perigee				
	d	h		d	h		d	h
Jan.	2	10.9	July	14	5.4	Jan.	14	11.8
Jan.	30	0.4	Aug.	10	20.9	Feb.	11	23.0
Feb.	26	2.8	Sep.	7	6.2	Mar.	12	11.5
Mar.	25	7.6	Oct.	4	8.0	Apr.	9	20.6
Apr.	21	22.2	Oct.	31	15.2	May	7	19.2
May	19	16.5	Nov.	28	7.4	June	3	7.2
June	16	11.3	Dec.	26	4.1	June	28	15.4

1923

Full Moon	Jan.	2-14-33.4	Apr.	1-1-9.8	June	28-1-4.2	Sep.	24-13-15.8
Last Quarter		9-12-54.5		7-17-22.5	July	5-13-56.4	Oct.	2-17-29.2
New Moon		16-14-41.0		15-18-28.4		13-12-44.8		9-18-5.5
First Quarter		24-15-59.3		23-17-20.3		20-13-31.9		16-8-53.6
Full Moon	Feb.	1-3-53.2		30-9-30.3		27-10-32.6		24-6-26.2
Last Quarter		7-21-15.9	May	7-6-18.2	Aug.	4-7-22.3	Nov.	1-8-48.9
New Moon		15-7-7.2		15-10-38.4		11-23-16.6		8-3-27.0
First Quarter		23-12-6.2		23-2-25.0		18-18-6.9		14-21-41.1
Full Moon	Mar.	2-15-23.6		29-17-7.2		25-22-29.4		23-0-57.9
Last Quarter		9-6-31.0	June	5-21-19.1	Sep.	3-0-47.3		30-22-9.2
New Moon		17-0-51.3		14-0-42.1		10-8-52.6	Dec.	7-13-30.4
First Quarter		25-4-41.5		21-8-45.9		17-0-4.0		14-14-37.9
Full Moon								22-19-33.0
Last Quarter								30-9-7.1

Apogee				Perigee				
	d	h		d	h		d	h
Jan.	23	1.4	Aug.	3	18.4	Jan.	7	23.9
Feb.	19	20.3	Aug.	31	12.9	Feb.	3	19.3
Mar.	19	8.4	Sep.	28	5.4	Mar.	3	22.8
Apr.	15	11.2	Oct.	25	14.6	Apr.	1	9.4
May	12	16.8	Nov.	21	14.9	Apr.	29	20.4
June	9	6.5	Dec.	18	23.2	May	28	3.8
July	6	23.8				June	25	1.5

1924

New Moon	Jan.	6-0-47.7	Apr.	3-19-17.3	July	1-17-35.0	Sep.	28-8-15.9
First Quarter		13-10-44.5		11-23-12.1		9-9-46.0	Oct.	5-2-30.0
Full Moon		21-12-56.7	R	19-2-10.7		15-23-49.0		12-8-21.2
Last Quarter		28-17-52.9		25-16-28.1		23-4-35.8		20-10-54.4
New Moon	Feb.	4-13-38.3	May	3-11-0.0		31-7-41.9		27-18-57.0
First Quarter		12-8-9.0		11-14-13.7	Aug.	7-15-41.3	Nov.	3-10-18.5
Full Moon		20-4-7.2		18-9-52.5		14-8-19.0		11-0-30.7
Last Quarter		27-1-15.2		25-2-16.3		21-21-10.4		19-5-38.5
New Moon	Mar.	5-3-57.7	June	2-2-33.9		29-20-36.8	Dec.	26-5-15.5
First Quarter		13-4-50.4		10-1-36.9	Sep.	5-20-45.5		2-21-10.3
Full Moon		20-16-30.1		16-16-41.4		12-19-0.0		10-19-3.4
Last Quarter		27-8-24.3		23-14-16.0		20-15-35.3		18-22-11.4
New Moon								25-15-45.8

Apogee				Perigee			
	d	h	m		d	h	m
Jan.	15	16	7	Jan.	3	22	2
Feb.	12	13	7	Jan.	31	9	4
Mar.	11	9	9	Feb.	25	3	9
Apr.	8	3	2	Mar.	23	5	2
May	5	14	0	Apr.	20	8	3
June	1	17	4	May	18	17	3
June	28	23	4	June	16	3	1
				July	14	10	1
				Aug.	11	7	9
				Sep.	6	19	0
				Oct.	2	2	2
				Oct.	29	17	1
				Nov.	27	0	6
				Dec.	25	13	2

1845

Last Quarter	Jan.	1	3	21.0
New Moon		7	19	12.7
First Quarter		14	20	50.8
Full Moon		23	2	20.2
Last Quarter		30	13	55.5
New Moon	Feb.	6	6	35.3
First Quarter		13	16	59.9
Full Moon		21	18	46.3
Last Quarter		28	22	18.5

1925

midnight to mid

First Quarter	Jan. 1-23-25.6	Apr. 1-8-11.9	June 29-9-43	Sept. 25-11-50.8
Full Moon	10-2-47.3	9-3-32.8	July 6-4-53.8	Oct. 2-5-22.8
Last Quarter	17-23-33.0	15-23-39.9	12-21-34	9-18-34.
New Moon	24-14-45.	23-2-28.0	20-21-39.9	17-18-5.7

First Quarter	31-16-43.1	May 1-3-19.8	28-20-22.8	24-18-37.8
Full Moon	Feb. 8-21-49.1	8-13-42.6	Aug. 4-11-59	31-17-16.6
Last Quarter	16-9-41.4	15-5-45.8	11-9-10.7	Nov. 8-15-13.1
New Moon	23-2-12.0	22-15-48.2	19-13-14.7	16-6-57.7

First Quarter	Mar. 2-12-6.6	30-20-4.4	27-4-46.1	23-2-5.5
Full Moon	10-14-20.9	June 6-21-47.7	Sept. 2-19-53.	30-8-11.0
Last Quarter	17-17-21.8	13-12-43.8	10-0-11.6	Dec. 8-12-10.7
New Moon	24-14-2.9	21-6-16.9	18-4-12.4	15-19-4.9

First Quarter				22-11-8.4
Full Moon				30-2-1.4

Apogee				Perigee				
Month	d	h	Month	d	h	Month	d	h
Jan.	8	8.5	July	20	12.5	Jan.	23	13.5
Feb.	4	19.1	Aug.	16	18.0	Feb.	20	19.0
Mar.	4	13.6	Sept.	13	7.2	Mar.	20	1.1
Apr.	1	9.8	Oct.	11	1.2	Apr.	13	22.2
Apr.	29	5.0	Nov.	7	21.6	May	11	1.8
May	26	21.5	Dec.	5	18.1	June	8	3.9
June	23	8.4				July	6	12.3

1926

Last Quarter	Jan. 7-7-22.4	Apr. 5-20-50.0	July 2-13-2.4	Sept. 23-17-47.7
New Moon	14-6-34.7	12-12-56.4	9-23-6.4	Oct. 6-22-13.3
First Quarter	20-22-30.8	19-23-22.9	18-2-55.	14-14-27.7
Full Moon	28-21-35.3	28-0-16.6	25-5-13.3	21-5-15.2

Last Quarter	Feb. 5-23-25.1	May 5-3-13.2	31-19-24.8	28-10-57.
New Moon	12-17-20.4	11-22-55.3	Aug. 8-13-48.6	Nov. 5-14-34.3
First Quarter	19-12-35.8	19-17-48.3	16-16-38.6	12-23-1.5
Full Moon	27-16-50.8	27-11-48.7	23-12-37.8	19-16-21.1

Last Quarter	Mar. 7-11-49.5	June 3-8-8.9	30-4-40.3	27-7-15.2
New Moon	14-3-20.2	10-10-8.2	Sept. 7-5-44.8	Dec. 5-6-11.6
First Quarter	21-5-11.7	18-11-13.6	15-4-26.6	12-6-47.1
Full Moon	29-10-0.3	25-21-12.8	21-20-19.	19-6-8.8

Last Quarter				27-4-58.8
New Moon				

Apogee				Perigee				
Month	d	h	Month	d	h	Month	d	h
Jan.	2	10.6	July	14	4.8	Jan.	14	23.6
Jan.	29	16.4	Aug.	10	16.5	Feb.	12	12.4
Feb.	25	17.2	Sept.	6	20.4	Mar.	12	23.5
Mar.	25	4.9	Oct.	4	1.2	Apr.	10	2.7
Apr.	21	22.8	Oct.	31	14.8	May	7	5.7
May	19	17.8	Nov.	28	9.9	June	1	6.4
June	16	12.3	Dec.	26	7.1	June	28	9.8

1843 —

+ 12 hrs = G.C.T

First Quarter	Jan. 8-8-11.1	Apr. 7-11-6.1	July 4-7-2.9	Sept. 30-2-10.7
Full Moon	15-20-27.1	14-2-29	11-5-5.9	Oct. 7-23-16.4
Last Quarter	22-13-1.3	21-0-24.7	19-1-40.2	16-1-59.1
New Moon	30-0-1.2	29-4-18.7	5 26-17-42.4	8 22-19-35.8

First Quarter	Feb. 7-4-32.3	May 6-20-24.3	Aug. 2-11-26.6	29-14-42.5
Full Moon	14-8-9.5	13-10-34.3	9-16-54.3	Nov. 6-17-21.9
Last Quarter	20-22-45.8	20-15-54.2	17-18-49.7	14-14-33.2
New Moon	28-18-2.5	3 28-18-54.5	6 25-2-35.2	9 21-5-33.6

First Quarter	Mar. 8-21-48.8	June 5-2-35.0	31-17-22.4	28-7-8.3
Full Moon	15-17-58.5	11-19-10.7	Sept. 8-6-57.2	Dec. 6-12-0.8
Last Quarter	22-10-33.6	19-8-29.9	16-11-12.8	14-0-53.
New Moon	1 30-11-48.7	4 27-7-20	7 23-10-52.7	10 20-17-8.8

First Quarter				28-2-52.6
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1842

New Moon Dec. 31-7-2.2

1844 —

Full Moon	Jan. 5-5-34.2	Apr. 2-18-57.6	June 29-18-16.6	Sept. 26-1-13.4
Last Quarter	12-9-31.2	9-10-8.8	July 6-22-49.9	Oct. 4-4-29.1
New Moon	11 19-6-18	1 17-4-32.4	4 15-2-23.2	7 11-11-23.8
First Quarter	27-0-30.9	25-8-16.9	22-9-12.6	18-3-15.7

Full Moon	Feb. 3-20-42.8	May 2-3-16.1	29-2-33.3	25-17-4.9
Last Quarter	10-17-21.7	8-20-22.6	Aug. 5-15-26.3	Nov. 2-22-19.1
New Moon	12 17-20-45.9	2 16-20-53.4	5 13-14-31.5	8 9-21-36.4
First Quarter	25-21-57.7	24-19-30.	20-14-15.5	16-13-30.7

Full Moon	Mar. 4-9-2.2	31-10-47.1	27-12-33.5	24-11-42.1
Last Quarter	11-1-19.6	June 7-8-29.2	Sept. 4-9-43.3	Dec. 2-14-7.7
New Moon	13 18-12-17.3	3 15-12-26	6 12-1-16.1	9 9-8-12.9
First Quarter	26-17-1.6	23-3-24.3	18-19-52.1	16-3-21.5
Full Moon				24-7-28.9

1845

1843

Apogee		d	h
Jan.	6 ^d 16 ^h	July	18 10
Feb.	3 11	Aug.	15 5
Mar.	2 23	Sept.	11 19
"	30 2	Oct.	9 4
Apr.	26 9	Nov.	5 7
May	23 22	Dec.	2 15
June	20 16	Dec.	30 8

Perigee		d	h
Jan.	18 9 ^h	July	5 2 ^h
Feb.	15 13	"	30 11
Mar.	16 0	Aug.	27 3
Apr.	13 11	Sept.	24 9
May	11 18	Oct.	22 20
June	8 17	Nov.	20 8
		Dec.	18 14

1844

Jan.	27 4	Aug.	6 22
Feb.	24 1	Sept.	3 17
Mar.	22 19	Oct.	1 12
Apr.	19 6	Oct.	29 3
May	16 10	Nov.	25 11
June	12 16	Dec.	22 13
July	10 5		

Jan.	15 1	Aug.	21 3
Feb.	8 17	Sept.	15 16
Mar.	6 20	Oct.	13 10 ^h
Apr.	3 23	Nov.	10 18
May	2 9	Dec.	9 6
May	30 19		
June	28 2		

1927

G.C.T

New Moon	Jan. 3-20-27.9	Apr. 2-4-24.2	June 29-6-32.0	Sept. 25-22-10.8
First Quarter	10-14-43.3	9-0-20.7	July 7-0-52.5	Oct. 4-2-1.6
Full Moon	17-22-26.8	R 17-3-35.4	14-19-22.5	10-21-14.7
Last Quarter	26-2-5.0	24-22-20.9	21-14-43.4	17-14-31.6
New Moon	Feb. 2-8-54.2	May 1-12-39.7	28-17-36.4	25-15-37.4
First Quarter	8-23-53.7	8-15-27.1	Aug 5-18-5.0	Nov 2-15-15.8
Full Moon	16-16-18.1	16-19-2.8	13-4-37.3	9-6-36.1
Last Quarter	24-20-42.4	24-5-33.8	19-19-54.5	16-5-28.2
New Moon	Mar. 3-19-24.7	30-21-5.9	27-6-45.5	24-10-9.2
First Quarter	10-11-2.8	June 7-7-48.7	Sept. 4-10-44.5	Dec. 2-2-14.9
Full Moon	18-10-24.2	15-8-19.3	11-12-53.9	8-17-32.0
Last Quarter	26-11-35.2	22-10-29.4	18-3-29.6	16-0-3.6
New Moon	Apr. 2-4-24.2	29-6-32.0	25-22-10.8	24-4-13.3
First Quarter	9-0-20.7	July 7-0-52.5	Oct. 4-2-1.6	31-11-22.1

1928

29-14-3.8
29-15-5.9
29-16-11.4
29-17-17.9

Full Moon	Jan. 7-6-7.7	Apr. R 5-3-38.3	July 8-2-48.5	Sept. 29-12-42.5
Last Quarter	14-21-13.6	13-8-8.7	10-12-15.9	Oct. 6-5-5.8
New Moon	22-20-18.7	20-5-24.8	17-4-35.5	13-15-56.3
First Quarter	29-19-25.6	26-21-41.7	24-14-38.1	21-21-6.2
Full Moon	Feb. 5-20-11.0	May 4-20-11.8	Aug. 1-15-30.5	28-22-43.4
Last Quarter	13-19-5.0	12-20-50.3	8-17-23.8	Nov. 4-14-6.3
New Moon	21-9-40.8	19-13-14.1	15-13-48.6	12-9-35.3
First Quarter	28-3-20.6	26-9-11.6	23-8-21.4	20-13-35.8
Full Moon	Mar. 6-11-26.9	June 3-12-13.5	31-2-34.0	27-9-5.5
Last Quarter	14-15-20.0	11-5-51.1	Sept. 6-22-35.0	Dec. 4-2-31.5
New Moon	21-20-29.3	17-20-42.1	14-1-20.7	12-5-6.1
First Quarter	28-11-54.3	24-22-47.4	22-2-57.7	20-3-43.4
Full Moon	Apr. 5-3-38.3	July 3-2-48.5	29-12-42.5	26-19-54.8

1929

29-11-17.3

Last Quarter	Jan. 2-18-44.4	Apr. 2-7-29	June 30-3-53.7	Sept. 26-2-6.8
New Moon	11-0-28.2	9-20-32.6	July 6-20-47	Oct. 2-22-19.3
First Quarter	18-15-15.1	16-14-9.2	13-16-5	10-18-5.2
Full Moon	25-7-9.1	R 23-21-47.4	21-19-20.7	18-12-5.9
Last Quarter	Feb. 1-14-10.4	May 2-1-25.5	29-12-55.8	25-8-21.2
New Moon	9-17-55.1	9-6-7.3	Aug 5-3-40.1	Nov. 1-12-0.9
First Quarter	17-0-22.5	15-20-56.	12-6-1.4	9-14-9.8
Full Moon	23-18-58.6	23-12-49.9	20-9-42.3	17-0-14.2
Last Quarter	Mar. 3-11-9.1	31-16-13.	27-20-1.7	23-16-4.3
New Moon	11-8-36.6	June 7-13-56.4	Sept. 3-11-47.5	Dec. 1-4-43.4
First Quarter	18-7-41.5	14-5-14.5	10-22-57.1	9-9-41.7
Full Moon	25-7-46.3	22-4-15.0	18-23-15.8	16-11-38.2
Last Quarter				23-2-27.3
New Moon				30-23-41.7

1930

First Quarter	Jan.	8-8-10.8	Apr.	6-11-24.9	July	3-4-3.1	Sept.	29-14-57.8	
Full Moon		14-22-21	Pass.	13-5-48.5		10-20-1.1	Oct.	7-18-55.6	Tab.
Last Quarter		21-16-7.		20-22-8.5		18-23-29.2		15-5-11.9	
New Moon		29-19-7.4		28-19-8.4		25-20-41.9		21-21-47.6	
First Quarter	Feb.	6-17-25.8	May	5-16-53.1	Aug.	1-12-26.4		29-9-22.1	
Full Moon		13-8-38.6		12-17-29.3		9-10-57.6	Nov.	6-10-28.1	
Last Quarter		20-8-44.4		20-16-21.6		17-11-30.6		13-12-27.3	
New Moon		28-13-32.7		28-5-36.6		24-3-36.9		20-10-21.2	
First Quarter	Mar.	8-4-0.3	June	3-21-56.3		30-23-56.7		28-6-17.6	
Full Moon		14-18-58.4		11-6-11.7	Sept.	8-2-47.8	Dec.	6-0-39.9	
Last Quarter		22-3-12.6		19-9-0.4		15-21-12.7		12-20-6.6	
New Moon		30-5-46.4		26-13-46.7		22-11-41.6		20-1-23.7	
First Quarter								28-3-58.7	

1931

Full Moon	Jan.	4-13-14.9	Apr. R	2-20-5.5	June	30-0-46.9	Sept.	26-19-44.9	
Last Quarter		11-5-9.2		9-20-15.2	July	7-23-51.6	Oct.	4-20-15.1	
New Moon		18-18-35.6		18-0-59.7		15-12-20.		11-13-5.9	
First Quarter		27-0-5.5		25-13-40.1		22-5-16.1		18-9-20.	
Full Moon	Feb.	3-0-25.9	May	2-5-14.4		29-12-47.5		26-13-39.9	
Last Quarter		9-16-9.6		9-12-48.2	Aug.	6-16-27.8	Nov.	3-7-17.5	
New Moon		17-13-10.8		17-15-27.9		13-20-27.		9-22-55.4	
First Quarter		25-16-41.9		24-19-38.8		20-11-36.3		17-2-13.4	
Full Moon	Mar.	4-10-36.1		31-14-33.		28-3-9.5		25-7-9.9	
Last Quarter		11-5-15.2	June	8-6-18.2	Sept.	5-7-21.2	Dec.	2-16-50.5	
New Moon		19-7-50.6		16-3-1.7		12-4-26.4		9-10-16	
First Quarter		27-5-4.2		23-0-23.2		18-20-37.3		16-22-42.9	
Full Moon								24-23-23.5	
Last Quarter							(Jan)	32-1-23.1	

1932

Last Quarter	Jan.	1-1-23.1	Mar.	29-3-43.5	June	25-20-35.9	Sept.	23-0-46.9	
New Moon		7-23-28.7	Apr.	6-1-21.1	July	3-22-19.7		30-5-29.8	
First Quarter		15-20-55		14-3-15.5		11-3-6.8	Oct.	6-20-5.4	
Full Moon		23-13-44.1		20-21-27.1		17-21-6.4		14-13-17.7	
Last Quarter		30-9-32.2		27-15-14		25-13-41.5		22-17-13.7	
New Moon	Feb.	6-14-45.1	May	5-18-11.5	Aug.	2-9-41.8		29-14-56.1	
First Quarter		14-18-15.7		13-14-2.2		9-7-40.4	Nov.	5-6-50.4	
Full Moon		22-2-7.4		20-5-8.6		16-7-41.6		13-7-28.	
Last Quarter		28-18-3.		27-4-54.5		24-7-21.3		21-7-57.8	
New Moon	Mar.	7-7-44.3	June	4-9-16		31-19-54.6		28-0-43.2	
First Quarter		15-12-41		11-21-39.5	Sept.	7-12-48.9	Dec.	4-21-44.9	
Full Moon		22-12-37.4		18-12-38.1		14-21-6.1		13-2-21	
Last Quarter								20-20-21.9	
New Moon								27-11-22.4	

1933

First Quarter	Jan.	3-16-29.6	Apr.	3-5-56.4	June	30-21-40.5	Sept.	26-15-36.3
Full Moon		11-20-35.6	$w = \rightarrow$	10-13-37.6	July	7-11-50.6	Oct.	3-17-7.6
Last Quarter		19-6-15.4	$r = \leftarrow$	17-4-17.4		14-12-23.6		11-16-45.5
New Moon		25-23-19.7		24-18-38.3		22-16-3.1		19-5-44.7

First Quarter	Feb.	2-13-16.3	May	2-22-39.1		30-4-43.6		25-22-20.7
Full Moon		10-13-0.5		9-22-4.4	Aug	5-19-31.6	Nov.	2-7-59.2
Last Quarter		17-14-8.4		16-12-50.4		13-3-49.3		10-12-17.8
New Moon		24-12-43.9		24-10-6.9		21-5-47.9		17-16-23.8

First Quarter	Mar.	4-10-23.3	June	1-11-52.9		28-10-13.3		24-7-38.4
Full Moon		12-2-45.7		8-5-4.7	Sept	4-5-4.4	Dec.	2-1-30.9
Last Quarter		18-21-4.8		14-23-25.5		11-21-30		10-6-23.6
New Moon		26-3-20.3		23-1-22.3		19-18-20.9		17-2-52.7

First Quarter								23-20-8.8
Full Moon								31-20-53.9

1934

Full Moon	Jan	0-20-53.9	Mar. ⁿ	31-1-14.5	June	27-5-7.9	Sept.	23-4-18.9
Last Quarter		8-21-35.8	Apr.	7-0-48.5	July	3-20-27.9		30-12-29.2
New Moon		15-13-37.1		13-23-57.		11-17-5.9	Oct.	8-15-4.9
First Quarter		22-11-50.3		21-21-20.4		19-18-52.9		15-19-29.0

Full Moon		30-16-31.4		29-12-45.4		26-12-8.6		22-15-1.1
Last Quarter	Feb.	7-9-21.6	May	6-6-41.	Aug.	2-6-26.9		30-8-21.8
New Moon		14-0-43.4		13-12-30.1		10-8-45.6	Nov.	7-4-43.6
First Quarter		21-6-4.7		21-15-19.8		18-4-32.9		14-2-39.4

Full Moon	Mar.	1-10-25.6		28-21-41.4		24-19-36.7		21-4-26.3
Last Quarter		8-18-5.8	June	4-12-52.7		31-19-39.9		29-5-39
New Moon		15-12-8.3		12-2-11.5	Sept	9-0-20.1	Dec.	6-17-24.9
First Quarter		23-1-44.5		20-6-36.7		16-12-25.9		13-10-51.6

Full Moon								20-20-53.3
Last Quarter								29-2-8.1

1933 ✓

Apogee				Perigee				
	d	h		d	h	d	h	
Jan.	7	1.6	July	18	23.5	Jan.	23	2.8
Feb.	3	21.2	Aug.	15	14.8	Feb.	18	10.7
Mar.	3	18.1	Sept.	12	9.1	Mar.	15	17.5
Mar.	31	13.2	Oct.	10	4.9	Apr.	12	11.2
Apr.	28	4.0	Nov.	6	23.7	May	10	17.7
May	25	11.2	Dec.	4	13.3	June	8	3.4
June	21	14.3	Dec.	31	15.2	July	6	12.4

1934

Apogee				Perigee				
	d	h		d	h	d	h	
Jan.	27	19.0	Aug.	8	21.2	Jan.	15	1.2
Feb.	24	10.2	Sept.	5	6.1	Feb.	12	11.3
Mar.	24	5.9	Oct.	2	21.9	Mar.	12	9.7
Apr.	21	1.7	Oct.	30	17.4	Apr.	7	11.2
May	18	19.9	Nov.	27	14.3	May	3	1.8
June	15	10.3	Dec.	25	9.6	May	30	19.2
July	12	18.2				June	28	0.9

Πορο τὸ νυκθήμερον Ἑβραίων διδίδιται in duas partes: in
 ערב, vesperam: and in בקר, mane. Præterea nominam putant
 ἀπὸ φάσεως σελήνης. Quare necesse est, ut calculus Lunaris sem-
 per incidat in eam partem, quæ dicitur "ערב," quæ est ab
 occaso Solis, ad orientem. Aliter quomodo viderent Lunam si
 calculus incideret in "boker," quod tempus est inter ortum, &
 occasum? Atqui 18 hora à meridie putata desinet in ortum
 Solis, & initium "boker." Non igitur potest attribui τὸ ערב,
 præterito. Ergo transfertur in "ערב" sequens. uq; aliter
 Calippum fecisse ostendimus in excessu 45 scrupulorum.
 Translatio politica sit, ne duo dies feriati simul continuen-
 tur, ut plinius infra dicitur. Annus Lunaris communis
 dividitur in duos semisses æquales, singulos dierum 177.
 Nam in anno æquabili à Tisri ad Nisan sunt 177, totidem
 à Nisan ad Tisri. In anno inæquabili à Tisri ad Nisan 207.
 Nam intercalatur solidus Adar prior.

Furthermore the nightthursion of the Hebrews is divided into
 two parts: into "ערב," evening: and into "בקר," morning. And
 besides they reckon the new moon from the phasis of the moon.
 Wherefore it is necessary that the lunar calculation should
 always fall upon that part which is called "ערב," which is
 from sunset to sunrise. Otherwise how would they see the
 Moon if the calculation should fall upon "בקר," which is
 the time between sunrise and sunset? But now the 18th
 hour reckoned from the meridian ends at the rising of the
 sun, and the beginning of "בקר." It could not therefore be
joined to the ערב which is past. Hence it is transferred to the
ערב following. By no other means we showed that Calip-
 pus made 45 scruples in excess. The transfer may be civil,
 but two feast days may be held at the same time, as will
 be further spoken of below. The common lunar year is di-
 vided into two equal halves, of 177 single days. For in an
 even year 177 days are from Tisri to Nisan, and the same
 from Nisan to Tisri. In an unequal year there are 207 from
 Tisri to Nisan. For the whole of the previous Adar is intercala-
 ted.

De emendate temporum
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מַעֲרַב עַר - עֶרֶב

Lev. 23:32

1927 ✓

Apogee			Perigee		
	d	h		d	h
Jan.	23	- 3.3	Aug.	3	- 18.3
Feb.	19	- 18.1	Aug.	31	- 11.2
Mar.	18	- 22.3	Sep.	27	- 23.1
Apr.	15	- 0.9	Oct.	25	- 1.8
May	12	- 12.7	Nov.	21	- 6.9
June	9	- 5.5	Dec.	18	- 22.4
July	6	- 23.9			
Jan.	7	- 3.1	July	19	- 12.4
Feb.	4	- 0.7	Aug.	15	- 15.7
Mar.	4	- 10.2	Sep.	12	- 17.7
Apr.	1	- 21.8	Oct.	11	- 3.4
Apr.	30	- 7.0	Nov.	8	- 15.3
May	28	- 8.4	Dec.	7	- 1.0
June	24	- 9.8			

1928

1929

1930

1931

1932 ✓

Apogee		Perigee			
	d	h			
Jan.	15	9.1	Jan.	2	10.8
Feb.	12	5.7	Jan.	27	9.0
Mar.	10	21.9	Feb.	24	1.5
Apr.	7	5.5	Mar.	23	9.2
May	4	7.8	Apr.	20	20.2
May	31	17.3	May	19	6.0
June	28	9.0	June	16	10.2
July	26	2.9	July	13	22.8
Aug.	22	21.7	Aug.	8	7.7
Sep.	19	15.9	Sept.	3	18.8
Oct.	17	6.1	Oct.	1	17.3
Nov.	13	10.1	Oct.	30	2.3
Dec.	10	12.2	Nov.	27	14.6
			Dec.	26	1.6

Passover Attonment
 April 15
 (= Nisan 14)

Yom Kipp

Jewish Feast Periods (1843 and 1844)

(Greenwich Time) Moon's
N. Moon to F. Moon Motion

	Y	Y	d	h	m
10 Feb.	Dec.	- Jan. 15	= 15	- 12	- 25
1843 11 She.	Jan. 30	- Feb. 14	= 15	- 8	- 8
12 Adar	Feb. 28	- Mar. 15	= 14	- 23	- 56
1 Nis.	Mar. 30	- Apr. 14	= 14	- 14	- 40
2 Iyar	Apr. 29	- May 13	= 14	- 6	- 15
3 Sivan	May 28	- June 11	= 14	- 0	- 16
4 Tam.	June 27	- July 11	= 13	- 21	- 45
5 Ab	July 26	- Aug. 9	= 13	- 23	- 11
6 Elul	Aug. 25	- Sept. 8	= 14	- 4	- 22
7 Tisri	Sept. 23	- Oct. 7	= 14	- 12	- 23
8 Mar.	Oct. 22	- Nov. 6	= 14	- 21	- 46
9 Kis.	Nov. 21	- Dec. 6	= 15	- 6	- 27
10 Feb.	Dec. 20	- Jan. 5	= 15	- 12	- 25
11 She.	Jan. 19	- Feb. 4	= 15	- 14	- 24
12 Adar	Feb. 17	- Mar. 4	= 15	- 12	- 16
13 Adar	Mar. 18	- Apr. 2	= 15	- 6	- 40
1844 1 Nis.	Apr. 17	- May 2	= 14	- 22	- 43
2 Iyar	May 16	- May 31	= 14	- 13	- 53
3 Sivan	June 15	- June 29	= 14	- 5	- 50
4 Tam.	July 15	- July 29	= 14	- 0	- 10
5 Ab	Aug. 13	- Aug. 27	= 13	- 22	- 2
6 Elul	Sept. 12	- Sept. 26	= 13	- 23	- 57
7 Tisri	Oct. 11	- Oct. 25	= 14	- 5	- 41
8 Mar.	Nov. 9	- Nov. 24	= 14	- 14	- 5
9 Kis.	Dec. 9	- Dec. 24	= 14	- 23	- 16
10 Feb.	Jan. 8	- Jan. 23	= 15	- 6	- 46
11 She.	Feb. 8	- Feb. 23	= 15	- 12	- 26
12 Adar	Mar. 9	- Mar. 24	= 15	- 14	- 24

1843-

1843 Passover
 to Tabernacles

177 days

1844

1844 Passover
 to Tabernacles

177 days

JEWISH CALENDAR

Meridian of Jerusalem +30° Lat.

	1919	Sunset	Moonrise		1920	Sunset	Moonrise
	Jan 14				Jan 3		
F	" 15-11-5			F	" 4-23-25		
	" 16				" 5		
	Feb 13				Feb. 2		
F	" 14-1-59			F	" 3-11-3		
	" 15				" 4		
	Mar 14				Mar 2		
F	" 15-18-1			F	" 3-23-33		
	" 16				" 4		
	Apr. 13				Apr. 1		
F	" 14-10-45			F	" 2-13-15		
	" 15				" 3		
	May 13				May 1		
F	" 14-3-22			F	" 2-4-8		
	" 15				" 3		
	June 11				May 30		
F	" 12-18-49.			F	" 31-19-39		
	" 13				June 1		
	July 11				June 29		
F	" 12-8-23			F	" 30-11-1		
	" 13				July 1		
	Aug 9				July 29		
F	" 10-20-0			F	" 30-1-40		
	" 11				" 31		
	Sept 8				Aug. 27		
F	" 9-6-15			F	" 28-15-23		
	" 10				" 29		
	Oct. 7				Sept. 26		
F	" 8-15-59			F	" 27-4-17		
	" 9				" 28		
	Nov. 6				Oct. 25		
F	" 7-1-56			F	" 26-16-29		
	" 8				" 27		
	Dec 5				Nov. 25-4-3		
F	" 6-12-24			F	"		
	" 7				"		
					Dec. 24-14-59		

Meridian of Jerusalem +30° Lat.

1921		Sunset	Moonrise	1922		Sunset	Moonrise
	Jan. 22				Jan 11		
F	" 23-1-28			F	" 12-16-57		
	" 24				" 13		
	Feb. 20				Feb. 10		
F	" 21-11-52			F	" 11-3-38		
	" 22				" 12		
	Mar 21				Mar 11		
F	" 22-22-39			F	" 12-13-35		
	" 23				" 13		
	Apr. 20				Apr. 9		
F	" 21-10-10			F	" 10-23-4		
	" 22				" 11		
	May 19				May 9		
F	" 20-22-36			F	" 10-8-27		
	" 21				" 11		
	June 18				June 7		
F	" 19-12-2			F	" 8-18-18		
	" 20				" 9		
	July 18				July 7		
F	" 19-2-28			F	" 8-5-28		
	" 20				" 9		
	Aug 16				Aug. 5		
F	" 17-17-49			F	" 6-18-39		
	" 18				" 7		
	Sept. 15				Sept. 4		
F	" 16-9-40			F	" 5-10-8		
	" 17				" 6		
	Oct. 15				Oct. 4		
F	" 16-1-20			F	" 5-3-19		
	" 17				" 6		
	Nov. 13				Nov. 2		
F	" 14-15-59			F	" 3-20-57		
	" 15				" 4		
	Dec. 13				Dec. 2		
F	" 14-5-11			F	" 3-13-44		
	" 15				" 4		

Meridian of Jerusalem + 30° Lat.

1923		Sunset	Moonrise	1924		Sunset	Moonrise
Jan. 1				Jan 20			
F " 2-4-54				F " 21-3-17			
" 3				" 22			
Jan. 30				Feb 18			
F " 31-18-14				F " 19-18-28			
Feb. 1				" 20			
Mar 1				Mar 19			
F " 2-5-44				F " 20-6-50			
" 3				" 21			
Mar 30				Apr. 17			
F " 31-15-30				F " 18-16-31			
Apr 1				" 19			
Apr. 28				May 17			
F " 29-23-51				F " 18-0-13			
" 30				" 19			
May 28				June 15			
F " 29-7-28				F " 16-7-2			
" 30				" 17			
June 26				July 14			
F " 27-15-25				F " 15-14-9			
" 28				" 16			
July 26				Aug. 12			
F " 27-0-53				F " 13-22-39			
" 28				" 14			
Aug. 24				Sept 11			
F " 25-12-50				F " 12-9-20			
" 26				" 13			
Sept. 23				Oct. 10			
F " 24-3-36				F " 11-22-41			
" 25				" 12			
Oct. 22				Nov. 9			
F " 23-20-47				F " 10-14-51			
" 24				" 11			
Nov. 21				Dec. 9			
F " 22-15-18				F " 10-9-24			
" 23				" 11			
Dec. 21							
F " 22-9-53							
" 23							

Meridian of Jerusalem +30° Lat.

1925		Sunset	Moonrise	1926		Sunset	Moonrise -5'
Jan	9			Jan	27		
F	" 10-5-8			F	" 28-23-56		
	" 11				" 29		
Feb.	8			Feb.	26		
F	" 9-0-9			F	" 27-19-11		
	" 10				" 28		
Mar	9			Mar	28		
F	" 10-16-41			F	" 29-12-21		
	" 11				" 30		
Apr.	8			Apr.	27		
F	" 9-5-53			F	" 28-2-37		
	" 10				" 29		
May	7			May	26		
F	" 8-16-3			F	" 27-14-9		
	" 9				" 28		
June	6			June	24		
F	" 7-0-8			F	" 25-23-33		
	" 8				" 26		
July	5			July	24		
F	" 6-7-14			F	" 25-7-34		
	" 7				" 26		
Aug	3			Aug	22		
F	" 4-14-19			F	" 23-14-58		
	" 5				" 24		
Sept	1			Sept	20		
F	" 2-22-13			F	" 21-22-39		
	" 3				" 22		
Oct.	1			Oct.	20		
F	" 2-7-43			F	" 21-7-36		
	" 3				" 22		
Oct.	30			Nov.	18		
F	" 31-19-37			F	" 19-18-41		
	Nov 1				" 20		
Nov.	29			Dec	18		
F	" 30-10-31			F	" 19-8-29		
	Dec 1				" 20		
Dec.	29						
F	" 30-4-22						
	" 31						

Meridian of Jerusalem + 30° Lat.

1927		Sunset	Moonrise	1928		Sunset	Moonrise
Jan	17	17 h 24 m	17 h 5 m	Jan	6		
F	" 18-0-47 ↗	17 24	18 1	F	" 7-8-28		
"	" 19	17 25	18 57	"	" 8		
Feb.	15	17 48	16 49	Feb.	4		
F	" 16-18-38 →	17 49	17 45	F	" 5-22-31		
"	" 17	17 50	18 39	"	" 6		
Mar	17	18 9	17 27	Mar.	5		
F	" 18-12-45 →	18 10	18 20	F	" 6-13-47		
"	" 19	18 10	19 12	"	" 7		
Apr.	16	18 27	18 0	Apr	4		
F	" 17-5-56 →	18 28	18 53	F	" 5-5-59		
"	" 18	18 28	19 48	"	" 6		
May	15	18 46	17 41	May	3		
F	" 16-21-23 →	18 46	18 37	F	" 4-22-32		
"	" 17	18 47	19 34	"	" 5		
June	14	19 2	18 24	June	2		
F	" 15-10-40 →	19 2	19 23	F	" 3-14-34		
"	" 16	19 2	20 21	"	" 4		
J'ly	13	19 5	18 10	J'ly	2		
F	" 14-21-43 →	19 5	19 6	F	" 3-5-9		
"	" 15	19 5	19 59	"	" 4		
Aug.	12	18 45	18 38	J'ly	31		
F	" 13-6-58 ↗	18 44	19 23	F	Aug 1-17-51		
"	" 14	18 43	20 4	"	" 2		
Sept	10	18 13	17 56	Aug	30		
F	" 11-15-14 ↗	18 12	18 37	F	" 31-4-54		
"	" 12	18 10	19 15	Sept	1		
Oct.	9	17 37	17 7	Sept	28		
F	" 10-23-35 →	17 36	17 44	F	" 29-14-63		
"	" 11	17 35	18 23	"	" 30		
Nov.	8	17 9	16 52	Oct.	28		
F	" 9-8-56 ↗	17 8	17 35	F	" 29-1-4		
"	" 10	17 7	18 21	"	" 30		
Dec.	7	17 0	16 7	Nov	26		
F	" 8-19-52 →	17 0	16 56	F	" 27-11-26		
"	" 9	17 0	17 52	"	" 28		
				Dec	25		
				F	" 26-22-15		
				"	" 27		

Meridian of Jerusalem +30° Lat.

1929		Sunset	Moonrise	1930		Sunset	Moonrise
Jan 24		17 h 30 m	16 h 39 m	Jan 14		17 h 21 m	16 h 52 m
F " 25-9-29	→	17 31	17 50	F " 15-0-41	↗	17 22	18 7
" 26		17 32	18 59	" 16		17 23	19 21
Feb 22		17 54	16 37	Feb 12		17 46	16 52
F " 23-21-19	→	17 54	17 44	F " 13-10-59	↗	17 46	18 6
" 24		17 55	18 48	" 14		17 47	19 16
Mar 24		18 14	17 35	Mar 13		18 6	16 51
F " 25-10-7	→	18 14	18 34	F " 14-21-19	→	18 7	18 0
" 26		18 15	19 32	" 15		18 8	19 6
Apr 23		18 32	18 19	Apr 12		18 25	17 51
F " 24-0-7	↗	18 32	19 17	F " 13-8-9	→	18 25	18 55
" 25		18 33	20 14	" 14		18 26	19 58
May 22		18 50	18 6	May 11		18 43	17 43
F " 23-15-10	→	18 51	19 3	F " 12-19-50	→	18 44	18 46
" 24		18 52	20 0	" 13		18 44	19 49
J'ne 21		19 4	18 49	J'ne 10		19 0	18 39
F " 22-6-35	↗	19 4	19 42	F " 11-8-32	↗	19 1	19 38
" 23		19 4	20 31	" 12		19 1	20 32
J'ly 20		19 1	18 28	J'ly 9		19 4	18 26
F " 21-21-41	→	19 0	19 13	F " 10-22-21	→	19 4	19 16
" 22		19 0	19 54	" 11		19 4	20 0
Aug 19		18 38	18 31	Aug 8		18 48	18 38
F " 20-12-3	↗	18 37	19 5	F " 9-13-18	↗	18 47	19 13
" 21		18 36	19 36	" 10		18 46	19 44
Sept 8		18 2	18 7	Sept 7		18 16	18 15
F " 19-1-36	↗	18 1	18 36	F " 8-5-8	↗	18 15	18 42
" 20		18 0	19 6	" 9		18 14	19 8
Oct 17		17 28	17 6	Oct 6		17 41	17 11
F " 18-14-26	→	17 27	17 37	F " 7-21-16	→	17 39	17 38
" 19		17 26	18 11	" 8		17 38	18 5
Nov 16		17 4	16 44	Nov 5		17 11	16 36
F " 17-2-35	↗	17 3	17 28	F " 6-12-48	→	17 10	17 10
" 18		17 3	18 20	" 7		17 9	17 49
Dec 15		17 2	16 3	Dec 5		17 0	16 27
F " 16-13-59	→	17 2	17 1	F " 6-3-0	→	17 0	17 19
" 17		17 3	18 8	" 7		17 0	18 20

Meridian of Jerusalem + 30° Lat.

1931			Sunset	Moonrise	1932			Sunset	Moonrise
			17h 12m	16h 1m			17h 28m	16h 20m	
F	Jan 3	4-15-35 →	17 13	17 8	F	Jan. 22	17 28	17 28	
"	" 5		17 14	18 20	"	" 24	17 29	18 36	
	Feb 2		17 37	17 7	Feb. 21		17 52	17 24	
F	" 3	2-46 ↗	17 38	18 21	F	" 22	4-28 ↗	17 53	
"	" 4		17 39	19 33	"	" 23		17 54	
	Mar. 3		18 0	17 6	Mar. 21		18 12	17 17	
F	" 4	12-56 →	18 0	18 18	F	" 22	14-58 →	18 13	
"	" 5		18 1	19 27	"	" 23		18 13	
	Apr. 1		18 18	17 1	Apr. 19		18 29	17 10	
F	" 2	22-26 →	18 19	18 10	F	" 20	23-47 →	18 30	
"	" 3		18 19	19 20	"	" 21		18 31	
	May 1		18 37	18 5	May 19		18 49	18 22	
F	" 2	7-35 ↗	18 37	19 16	F	" 20	7-29 ↗	18 49	
"	" 3		18 38	20 26	"	" 21		18 50	
	June 29		19 5	19 4	June 17		19 3	18 24	
F	" 30	3-7 ↗	19 5	19 58	F	" 18	14-58 →	19 3	
	July 1		19 5	20 43	"	" 19		19 3	
	July 28		18 56	18 39	July 16		19 2	18 16	
F	" 29	15-8 ↗	18 56	19 19	F	" 17	23-27 →	19 2	
"	" 30		18 55	19 53	"	" 18		19 1	
	Aug 27		18 29	18 26	Aug. 15		18 41	18 27	
F	" 28	5-30 ↗	18 28	18 53	F	" 16	10-2 ↗	18 40	
"	" 29		18 27	19 19	"	" 17		18 39	
	Sept. 25		17 54	17 23	Sept. 13		18 8	17 31	
F	" 26	22-5 →	17 53	17 48	F	" 14	23-26 →	18 7	
"	" 27		17 52	18 19	"	" 15		18 6	
	Oct. 25		17 20	16 43	Oct. 13		17 32	16 54	
F	" 26	15-54 →	17 19	17 11	F	" 14	15-38 →	17 31	
"	" 27		17 18	17 43	"	" 15		17 30	
	Nov. 24		17 1	16 18	Nov. 12		17 6	16 23	
F	" 25	9-30 →	17 1	16 58	F	" 13	9-48 →	17 5	
"	" 26		17 1	17 46	"	" 14		17 5	
	Dec. 24		17 6	16 32	Dec. 12		17 1	16 22	
F	" 25	1-44 →	17 6	17 32	F	" 13	4-41 →	17 1	
"	" 26		17 7	18 37	"	" 14		17 2	

Meridian Jerusalem +30° Lat.

1933		Sunset		Moonrise		1934		Sunset		Moonrise		
		h	m	h	m			h	m	h	m	
Jan	10			16	0	Dec.	31	17	10	17	45	x
F	" 11-22-56 →	17	19	16	59	F	Jan. 0-23-14	17	11	16	49	
"	" 12			17	59	"	" 1	17	11	17	45	
Feb	9			16	49	Jan.	29	17	35	16	35	
F	" 10-15-21 →	17	44	17	52	F	" 30-18-52 →	17	36	17	32	
"	" 11			18	53	"	" 31	17	36	18	29	
Mar	11			17	40	Feb.	28	17	58	17	18	
F	" 12-5-6 ↗	18	6	18	44	F	Mar 1-12-46 →	17	59	18	14	
"	" 13			19	49	"	" 2	17	59	19	11	
Apr.	9			17	29	Mar.	30	18	17	17	59	
F	" 10-15-58 →	18	24	18	37	F	" 31-3-35 ↗	18	18	19	0	
"	" 11			19	47	Apr.	1	18	18	20	3	
May	9			18	35	Apr.	28	18	35	17	47	
F	" 10-0-25 ↗	18	43	19	50	F	" 29-15-6 →	18	36	18	54	
"	" 11			21	4	"	" 30	18	37	20	2	
J'ne	7			18	38	May	28	18	53	18	52	
F	" 8-7-25 ↗	18	59	19	49	F	" 29-0-2 ↗	18	53	20	1	
"	" 9			20	52	"	" 30	18	54	21	4	
J'ly	6			18	32	J'ne	26	19	5	18	45	
F	" 7-14-11 →	19	5	19	30	F	" 27-7-28 ↗	19	5	19	45	
"	" 8			20	19	"	" 28	19	5	20	36	
Aug	4			18	7	J'ly	25	18	58	18	22	
F	" 5-21-52 →	18	51	18	51	F	" 26-14-29 →	18	58	19	10	
"	" 6			19	29	"	" 27	18	57	19	51	
Sept	3			17	58	Aug.	23	18	33	17	42	
F	" 4-7-25 →	"	20	18	29	F	" 24-21-57 →	18	32	18	21	
"	" 5			18	59	"	" 25	18	31	18	56	
Oct.	2			16	58	Sept	22	17	57	17	24	
F	" 3-19-28 →	17	44	17	28	F	" 23-6-39 →	17	56	17	58	
"	" 4			17	58	"	" 24	17	55	18	33	
Nov.	1			16	30	Oct.	21	17	24	16	28	
F	" 2-10-20 →	17	13	17	4	F	" 22-17-21 →	17	23	17	4	
"	" 3			17	43	"	" 23	17	22	17	43	
Dec.	1			16	23	Nov.	20	17	2	16	20	
F	" 2-3-51	17	0	17	9	F	" 21-6-47 →	17	2	17	6	
"	" 3			18	0	"	" 22	17	2	17	57	
						Dec.	19	17	4	15	49	
						F	" 20-23-14	17	5	16	43	
						"	" 21 ↘	17	5	17	39	

New Moon G.M.T. Full Moon			New Moon G.M.T. Full Moon		
1854	Jan. 28 5 11 Feb. 26 16 38 *Mar. 28 4 51 Apr. 26 18 14 May 26 8 47 June 25 0 1 July 24 15 16 Aug. 23 6 0 Sept. 21 20 3 Oct. 21 9 24 Nov. 19 22 1 Dec. 19 9 46	Jan. 13 21 11 Feb. 12 14 56 Mar. 14 5 52 Apr. 12 17 56x May 12 3 36 June 10 11 30 July 9 18 24 Aug. 8 1 17 Sept. 6 9 18 Oct. 5 19 36 Nov. 4 9 1 Dec. 4 1 34	1863	Jan. 19 4 1.8 Feb. 17 15 6.3 Mar. 19 2 37.2 Apr. 17 15 5.2 May 17 4 48.5 June 15 19 36.3 July 15 10 53.6 Aug. 14 2 2.9 Sept. 12 16 41.8 Oct. 12 6 42.2 Nov. 10 19 59.4 Dec. 10 8 23.5	Jan. 4 15 32 Feb. 3 10 25 Mar. 5 2 45 Apr. 3 16 8 May 3 2 51 June 1 11 29 June 30 18 46 July 30 1 33 Aug. 28 8 55 Sept. 26 18 2 Oct. 26 5 55 Nov. 24 21 1 Dec. 24 14 50
1855	Jan. 17 20 37 Feb. 16 6 47 *Mar. 17 16 45 Apr. 16 3 4 May 15 14 13 June 14 2 28 July 13 16 1 Aug. 12 6 52 Sept. 10 22 51 Oct. 10 15 23 Nov. 9 7 31 Dec. 8 22 17	Jan. 2 20 18 Feb. 1 15 41 Mar. 3 10 8 Apr. 2 2 28 *May 1 16 3x May 31 2 47 June 29 11 13 July 28 18 20 Aug. 27 1 20 Sept. 25 9 25 Oct. 24 19 26 Nov. 23 7 51 Dec. 22 22 38	1864	Jan. 8 19 45.6 Feb. 7 6 9.7 Mar. 7 15 59.8 *Apr. 6 1 48.8x May 5 12 13.8 June 3 23 40.1 July 3 12 23.9 Aug. 2 2 33.7 Sept. 31 18 7.9 Oct. 30 10 43.1 Nov. 28 19 17.2 Dec. 28 9 21.5	Jan. 23 10 2 Feb. 22 5 0 Mar. 22 22 24 Apr. 21 13 18 May 21 1 24 June 19 10 54 July 18 18 35 Aug. 17 1 36 Sept. 15 9 9 Oct. 14 18 15 Nov. 13 5 33 Dec. 12 19 12
1856	Jan. 7 11 16 Feb. 5 22 35 Mar. 6 8 38 *Apr. 4 17 52 May 4 2 42 June 2 11 39 July 1 21 30 July 31 9 7 Aug. 29 23 13 Sept. 28 15 47 Oct. 28 9 54 Nov. 27 4 0 Dec. 26 20 44	Jan. 21 15 28 Feb. 20 9 40 Mar. 21 4 4 Apr. 19 21 13x May 19 11 56 June 17 23 51 July 17 9 30 Aug. 15 17 54 Sept. 14 2 8 Oct. 13 10 59 Nov. 11 20 55 Dec. 11 8 12	1865	Jan. 26 21 30.4 Feb. 25 8 3.0 Mar. 26 17 28.0 *Apr. 25 2 13.4x May 24 10 49.4 June 22 19 57.2 July 22 6 29.3 Aug. 20 19 17.2 Sept. 19 10 45.8 Oct. 19 4 27.5 Nov. 17 23 0.0 Dec. 17 16 45.2	Jan. 11 10 59 Feb. 10 4 26 Mar. 11 22 41 Apr. 10 16 27 May 10 8 23 June 8 21 40 July 8 8 27 Aug. 6 17 29 Sept. 5 1 51 Oct. 4 10 31 Nov. 2 20 3 Dec. 2 6 44 Dec. 31 18 47
1857	Jan. 25 11 25 Feb. 23 23 57 Mar. 25 10 28 *Apr. 23 19 14 May 23 2 47 June 21 10 3 July 20 18 12 Aug. 19 4 25 Sept. 17 17 32 Oct. 17 9 38 Nov. 16 3 54 Dec. 15 23 1	Jan. 9 21 7 Feb. 8 11 52 Mar. 10 4 17 Apr. 8 21 28 *May 8 14 10x June 7 5 22 July 6 18 43 Aug. 5 6 28 Sept. 3 17 6 Oct. 3 3 8 Nov. 1 12 57 Nov. 30 22 56 Dec. 30 9 33	1866	Jan. 16 8 36.8 Feb. 14 22 12.8 Mar. 16 9 36.9 *Apr. 14 19 3.2x May 14 2 58.9 June 12 10 6.0 July 11 17 35.3 Aug. 10 2 36.4 Sept. 8 14 14.3 Oct. 8 4 58.8 Nov. 6 22 24.1 Dec. 6 17 25.1	Jan. 30 8 28 Feb. 28 23 52 Mar. 30 16 31 Apr. 29 9 23 May 29 1 17 June 27 15 35 July 27 4 12 Aug. 25 15 33 Sept. 24 2 5 Oct. 23 12 12 Nov. 21 22 14 Dec. 21 8 34
1858	Jan. 14 17 32 Feb. 13 10 12 Mar. 15 0 12 *Apr. 13 11 15 May 12 19 47 June 11 2 46 July 10 9 24 Aug. 8 16 53 Sept. 7 2 14 Oct. 6 14 6 Nov. 5 4 48 Dec. 4 22 9	Jan. 28 21 11 Feb. 27 10 4 Mar. 29 0 7 Apr. 27 14 55x May 27 6 4 June 25 21 13 July 25 12 3 Aug. 24 2 11 Sept. 22 15 19 Oct. 22 3 18 Nov. 20 14 24 Dec. 20 1 6	1867	Jan. 5 12 29.8 Feb. 4 6 15.0 Mar. 5 21 38.8 *Apr. 4 10 3.2x May 3 19 40.1 June 2 3 12.3 July 1 9 48.4 July 30 16 43.4 Aug. 29 1 4.7 Sept. 27 11 41.9 Oct. 27 1 3.0 Nov. 25 17 11.0 Dec. 25 11 39.1	Jan. 19 19 35 Feb. 18 7 40 Mar. 19 20 55 Apr. 18 11 6 May 18 1 52 June 16 16 54 July 16 7 56 Aug. 14 22 37 Sept. 13 12 33 Oct. 13 1 24 Nov. 11 13 9 Dec. 11 0 9
1859	Jan. 3 17 25.6 Feb. 2 13 4.3 Mar. 4 7 10.6 *Apr. 2 22 17.5x May 2 10 4.4 May 31 19 10.0 June 30 2 40.7 July 29 9 43.6 Aug. 27 17 13.5 Sept. 26 1 55.8 Oct. 25 12 32.4 Nov. 24 1 42.7 Dec. 23 17 47.2	Jan. 18 11 48 Feb. 16 22 41 Mar. 18 9 45 Apr. 16 21 5x May 16 9 6 June 14 22 17 July 14 12 53 Aug. 13 4 34 Sept. 11 20 31 Oct. 11 11 51 Nov. 10 2 5 Dec. 9 15 12	1868	Jan. 24 7 18.2 Feb. 23 2 20.4 Mar. 23 18 59.0 Apr. 22 8 19.7 May 21 18 35.9 June 20 2 45.1 July 19 9 56.4 Aug. 17 17 11.5 Sept. 16 1 19.5 Oct. 15 11 1.3 Nov. 13 22 55.5 Dec. 13 13 33.2	Jan. 9 10 52 Feb. 7 21 35 Mar. 8 8 22 Apr. 6 19 16 May 6 6 36 June 4 18 55 July 4 8 39 Aug. 2 23 51 Sept. 1 15 57 Oct. 1 7 58 Oct. 30 23 5 Nov. 29 13 0 Dec. 29 1 47
1860	Jan. 22 12 16.6 Feb. 21 7 39.0 Mar. 22 1 56.0 *Apr. 20 17 45.1x May 20 6 46.3 June 18 17 23.3 July 18 2 19.2 Aug. 16 10 19.4 Sept. 14 18 8.7 Oct. 14 2 36.8 Nov. 12 12 35.6 Dec. 12 0 47.6	Jan. 8 3 22 Feb. 6 14 34 Mar. 7 0 43 Apr. 5 9 59 *May 4 19 1x June 3 4 45 July 2 16 6 Aug. 1 5 33 Aug. 30 20 57 Sept. 29 13 39 Oct. 29 6 49 Nov. 27 23 37 Dec. 27 15 17	1869	Jan. 12 6 53.0 Feb. 11 1 54.0 Mar. 12 20 46.5 Apr. 11 13 47.5 May 11 4 7.3 June 9 15 52.1 July 9 1 37.8 Aug. 7 10 8.0 Sept. 5 18 6.7 Oct. 5 2 19.5 Nov. 3 11 35.5 Dec. 2 22 41.2	Jan. 27 13 30 Feb. 26 0 4 Mar. 27 9 32 Apr. 25 18 21 May 25 3 23 June 23 13 38 July 23 1 54 Aug. 21 16 23 Sept. 20 8 41 Oct. 20 1 57 Nov. 18 19 17 Dec. 18 11 50
1861	Jan. 10 15 27.1 Feb. 9 8 4.8 Mar. 11 1 37.5 *Apr. 9 18 56.1x May 9 11 7.5 June 8 1 38.2 July 7 14 12.1 Aug. 6 0 53.7 Sept. 4 10 11.9 Oct. 3 18 56.3 Nov. 2 4 3.3 Dec. 1 14 16.7 Dec. 31 1 54.2	Jan. 26 5 6 Feb. 24 16 42 Mar. 26 2 14 Apr. 24 10 23x May 23 18 5 June 22 2 22 July 21 12 5 Aug. 19 23 50 Sept. 18 14 1 Oct. 18 6 37 Nov. 17 1 6 Dec. 16 20 7	1870	Jan. 1 12 5.4 Jan. 31 3 40.6 Mar. 1 20 39.9 Mar. 31 13 58.1 Apr. 30 6 37.2 May 29 21 57.0 June 28 11 33.2 July 27 23 18.0 Aug. 26 9 25.7 Sept. 24 18 34.6 Oct. 24 3 35.8 Nov. 22 13 20.6 Dec. 22 0 18.6	Jan. 17 2 45 Feb. 15 15 28 Mar. 17 1 52 Apr. 15 10 26 May 14 18 3 June 13 1 47 July 12 10 35 Aug. 10 21 13 Sept. 9 10 11 Oct. 9 1 42 Nov. 7 19 31 Dec. 7 14 39
1862	Jan. 29 14 49.5 Feb. 28 4 49.2 Mar. 29 19 45.1 Apr. 28 11 26.9 May 28 3 25.9 June 26 18 54.1 July 26 9 5.0 Aug. 24 21 40.2 Sept. 23 8 57.5 Oct. 22 19 37.0 Nov. 2 6 14.7 Dec. 20 17 4.3	Jan. 15 13 55 Feb. 14 5 6 Mar. 15 17 16 Apr. 14 2 57x May 13 10 59 June 11 18 16 July 11 1 38 Aug. 9 9 53 Sept. 7 19 57 Oct. 7 8 45 Nov. 6 0 48 Dec. 5 19 37	1871	Jan. 20 12 31.8 Feb. 19 1 48.6 Mar. 20 16 0.3 Apr. 19 7 3.4 May 18 22 45.0 June 17 14 29.3 July 17 5 27.1 Aug. 15 19 1.7 Sept. 14 7 9.6 Oct. 13 18 19.3 Nov. 12 5 8.8 Dec. 11 16 1.5	Jan. 6 9 23 Feb. 5 2 1 Mar. 6 15 38 Apr. 5 2 22 May 4 10 59 June 2 18 26 July 2 1 36 July 31 9 16 Aug. 29 18 20 Sept. 28 5 44 Oct. 27 20 14 Nov. 26 13 53 Dec. 26 9 34

1877			G.M.T.	Full Moons			
New Moons							
Jan	14	1	27. ⁹	Jan	28	20	38. ⁹
Feb	12	20	58. ⁶	Feb	27	7	14. ¹
Mar	14	14	53. ⁶	Mar	28	17	48. ⁸
Apr	13	5	49. ⁸	Apr	27	4	35. ⁸
May	12	17	29. ²	May	26	16	5. ⁰
June	11	2	32. ³	June	25	4	52. ⁷
July	10	10	6. ⁰	July	24	19	19. ⁵
Aug	8	17	17. ⁰	Aug	23	11	10. ⁶
Sept	7	1	0. ⁴	Sept	22	3	34. ⁷
Oct	6	9	58. ²	Oct	21	19	30. ⁷
Nov	4	20	47. ⁸	Nov	20	10	19. ²
Dec	4	10	3. ⁷	Dec	19	23	51. ³

1878							
Jan	3	2	3. ⁰	Jan	18	12	10. ⁸
Feb	1	20	17. ⁰	Feb	16	23	16. ⁶
Mar	3	15	17. ⁵	Mar	18	9	6. ⁸
Apr	2	9	14. ²	Apr	16	17	57. ³
May	2	0	50. ³	May	16	2	31. ²
May	31	13	47. ⁹	June	14	11	51. ⁰
June	30	0	30. ⁷	July	13	22	54. ⁷
July	29	9	40. ³	Aug	12	12	16. ¹
Aug	27	17	59. ⁶	Sept	11	3	49. ⁴
Sept	26	2	10. ³	Oct	10	20	54. ⁴
Oct	25	10	58. ⁴	Nov	9	14	33. ⁹
Nov	23	21	10. ⁵	Dec	9	7	49. ⁸
Dec	23	9	24. ²				

1879							
Jan	21	23	50. ⁸	Jan	7	23	47. ⁷
Feb	20	16	3. ⁰	Feb	6	13	41. ⁵
Mar	22	9	4. ⁴	Mar	8	1	9. ³
Apr	21	1	55. ⁵	Apr	6	10	24. ⁴
May	20	17	50. ⁴	May	5	18	11. ⁸
June	19	8	19. ⁵	June	4	1	35. ⁶
July	18	21	5. ⁹	July	3	9	37. ⁷
Aug	17	8	10. ⁵	Aug	1	19	12. ⁰
Sept	15	17	56. ⁷	"	31	6	57. ⁸
Oct	15	3	8. ⁹	Sept	29	21	17. ⁰
Nov	13	12	38. ⁴	Oct	29	14	9. ⁵
Dec	12	23	4. ¹	Nov	28	8	57. ⁴
				Dec	28	4	15. ⁶

Year	Month	Perigee		Apogee	
1879	Jan	14 ^d	4 ^h	28 ^d	18 ^h
	Feb	9	12	25	12
	Mar	9	13	25	2
	Apr	6	22	21	6
	May	5	9	18	10
	June	2	17	14	22
	"	30	18		
	July			12	15
	"	27	16		
	Aug			9	10
	"	21	18		
	Sept			6	4
	"	18	1		
	Oct			3	21
	"	16	5	31	8
	Nov	13	16	27	8
	Dec	12	5	24	15

1872	New Moons G.M.T.			Full Moons			1876	New Moons G.M.T.			Full Moons				
Jan.	10	2	57. ⁹	Jan.	25	5	14	Jan.	10	18	23	Jan.	10	18	23
Feb.	8	13	51. ⁹	Feb.	23	22	56. ²	Jan.	26	1	41. ⁴	Feb.	9	5	46
Mar.	9	0	53. ²	Mar.	24	13	43. ⁴	Feb.	24	18	20. ³	Mar.	9	18	12
Apr.	7	12	31. ⁷	Apr.	23	1	37. ²	Mar.	25	8	11. ⁵	Apr.	8	7	38
May	7	1	18. ⁷	May	22	11	8. ³	Apr.	23	19	3. ³	May	7	21	52
June	5	15	23. ⁴	June	20	18	57. ⁷	May	23	3	25. ⁰	June	6	12	37
July	5	6	24. ⁹	July	20	1	53. ³	June	21	10	16. ⁸	July	6	3	37
Aug.	3	21	45. ⁶	Aug.	18	8	53. ³	July	20	16	52. ⁷	Aug.	4	18	37
Sept.	2	12	53. ⁵	Sept.	16	17	4. ⁷	Aug.	19	0	25. ⁵	Sept.	3	9	13
Oct.	2	3	30. ⁷	Oct.	16	3	34. ⁶	Sept.	17	9	54. ⁴	Oct.	2	22	56
Oct.	31	17	28. ²	Nov.	14	17	8	Oct.	16	21	57. ⁰	Nov.	1	11	30
Nov.	30	6	34. ⁷	Dec.	14	9	44	Nov.	15	12	47. ⁷	Nov.	30	23	3
Dec.	29	18	36. ⁰					Dec.	15	6	13. ⁹	Dec.	30	9	58

1873				1834							
Jan.	28	5	27. ⁰	Jan.	9	11	10	Jan.	24	22	12
Feb.	26	15	22. ²	Feb.	8	5	1	Feb.	23	8	59
Mar.	28	0	54. ²	Mar.	9	23	16	Mar.	24	18	13
Apr.	26	10	42. ¹	Apr.	8	16	42	Apr.	23	2	35
May	25	21	20. ¹	May	8	8	25	May	22	11	1
June	24	9	12. ²	June	6	21	56	June	20	20	22
July	23	22	33. ⁸	July	6	9	13	July	20	7	16
Aug.	22	13	30. ⁴	Aug.	4	18	35	Aug.	18	20	11
Sept.	21	5	50. ⁹	Sept.	3	2	51	Sept.	17	11	18
Oct.	20	22	55. ¹	Oct.	2	11	2	Oct.	17	4	26
Nov.	19	15	36. ⁶	Nov.	31	20	7	Nov.	15	22	47
Dec.	19	6	49. ³	Dec.	30	6	47	Dec.	15	16	55

1874				1835							
Jan.	17	20	0. ⁰	Jan.	28	9	11	Jan.	14	9	16
Feb.	16	7	14. ⁹	Feb.	27	0	28	Feb.	12	22	59
Mar.	17	17	1. ⁹	Mar.	28	16	42	Mar.	14	10	7
Apr.	16	1	52. ²	Apr.	27	9	20	Apr.	12	19	16
May	15	10	16. ⁶	May	27	1	32	May	12	3	13
June	13	18	52. ²	June	25	16	20	June	10	10	45
July	13	4	27. ⁸	July	25	5	14	July	9	18	36
Aug.	11	15	59. ⁶	Aug.	23	16	21	Aug.	8	3	39
Sept.	10	6	10. ⁴	Sept.	22	2	26	Sept.	6	14	50
Oct.	9	23	1. ⁵	Oct.	21	12	17	Oct.	6	5	0
Nov.	8	17	33. ⁷	Nov.	19	22	29	Nov.	4	22	15
Dec.	8	12	6. ⁰	Dec.	19	9	14	Dec.	4	17	35

1875				1836							
Jan.	7	5	8. ²	Jan.	17	20	27	Jan.	3	13	4
Feb.	5	19	54. ⁸	Feb.	16	8	17	Feb.	2	6	49
Mar.	7	8	20. ²	Mar.	16	21	3	Mar.	2	21	51
Apr.	5	18	35. ⁹	Apr.	15	11	3	Apr.	1	10	6
May	5	3	3. ⁷	May	15	2	7	Apr.	30	19	57
June	3	10	20. ⁹	June	13	17	37	May	30	3	59
July	2	17	24. ⁹	July	13	8	48	June	28	10	56
Aug.	1	1	27. ⁵	Aug.	11	23	12	July	27	17	46
Aug.	30	11	41. ¹	Sept.	10	12	43	Aug.	26	1	39
Sept.	29	0	55. ⁰	Oct.	10	1	28	Sept.	24	11	48
Oct.	28	17	12. ⁸	Nov.	8	13	34	Oct.	24	1	3
Nov.	27	11	44. ⁴	Dec.	8	0	59	Nov.	22	17	30
Dec.	27	7	4. ¹					Dec.	22	12	15

1837	New Moons			Full Moons			1837	New Moons			Full Moons				
Jan.	6	11	46	Jan.	21	7	45	July	2	9	30	July	17	10	50
Feb.	4	22	7	Feb.	20	2	23	Aug.	1	0	19	Aug.	15	17	38
Mar.	6	8	29	Mar.	21	18	55	Aug.	30	16	0	Sept.	14	1	28
Apr.	4	19	20	Apr.	20	8	39	Sept.	29	8	0	Oct.	13	11	14
May	4	7	1	May	19	19	27	Oct.	28	23	32	Nov.	11	23	30
June	2	19	43	June	18	3	51	Nov.	27	13	50	Dec.	11	14	17
								Dec.	27	2	33				

Library of Congress Q138.G6
 New Moon ^{G.M.T.} Full Moon

New Moon 1832 Full Moon ^{G.M.T.} Page

1833

Page	New Moon	Full Moon
1	Jan 20 9 53	Jan. 5 19 45
17	Feb. 19 5 20	Feb. 4 6 32
33	Mar. 20 23 0	Mar. 5 16 46
49	Apr. 19 13 48	Apr. 4 2 40
65	May 19 1 39	May 3 12 46
81	June 17 11 10	June 1 23 52
97	July 16 19 10	July 1 12 33
113	Aug. 15 2 35	July 31 3 2
129	Sept. 13 10 17	Aug. 29 18 55
145	Oct. 12 19 7	Sept. 28 11 26
161	Nov. 11 5 54	Oct. 28 3 48
177	Dec. 10 19 11	Nov. 26 19 20
		Dec. 26 9 30

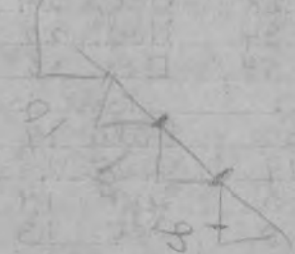
Page	New Moon	Full Moon
1	Jan. 2 15 ^h 12 ^m	Jan. 17 3 ^h 53 ^m
17	Feb. 1 10 16	Feb. 15 15 19
33	Mar. 2 3 14	Mar. 16 3 22
49	Mar. 31 17 2	Apr. 14 16 0
65	Apr. 30 3 40	May 14 5 24
81	May 29 11 56	June 12 19 44
97	June 27 18 58	July 12 10 55
113	July 27 1 55	Aug. 11 2 27
129	Aug. 25 9 44	Sept. 9 17 33
145	Sept. 23 19 8	Oct. 9 7 36
161	Oct. 23 6 48	Nov. 7 20 30
177	Nov. 21 21 17	Dec. 7 8 27
	Dec. 21 14 36	

1824 New Moon G.M.T. Full Moon

1825 New Moon G.M.T. Full Moon

	Jan 15 20 50
Jan 30 15 48	Feb 14 7 24
Feb 29 10 38	Mar 14 17 37
Mar 30 3 2	Apr 13 3 47
Apr 28 16 25	May 12 14 34
May 28 3 3	June 11 2 38
June 26 11 39	July 10 16 20
July 25 19 9	Aug 9 7 32
Aug 24 2 27	Sept 7 23 39
Sept 22 10 27	Oct 7 15 56
Oct 21 20 3	Nov 6 7 42
Nov 20 8 1	Dec 5 22 25
Dec 19 22 40	

Jan 4 11 39
Feb 2 23 15
Mar 4 9 21
Apr 2 18 23
May 2 2 59
May 31 11 58
June 29 22 4
July 29 9 57
Aug 28 0 0
Sept 26 16 13
Oct 26 10 2
Nov 25 4 12
Dec 24 21 13



1842 NEW MOONS table with columns for month, day, hour, and minute.

1842 FULL MOONS table with columns for month, day, hour, and minute.

1838 NEW MOONS table with columns for month, day, hour, and minute.

1838 FULL MOONS table with columns for month, day, hour, and minute.

1843 NEW MOONS table with columns for month, day, hour, and minute.

1843 FULL MOONS table with columns for month, day, hour, and minute.

1839 NEW MOONS table with columns for month, day, hour, and minute.

1839 FULL MOONS table with columns for month, day, hour, and minute.

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1852 FULL MOONS table with columns for month, day, hour, and minute.

1849 NEW MOONS table with columns for month, day, hour, and minute.

1849 FULL MOONS table with columns for month, day, hour, and minute.

1853 NEW MOONS table with columns for month, day, hour, and minute.

1853 FULL MOONS table with columns for month, day, hour, and minute.

1768	New Moon	G.M.T.	Full Moon	1769	New Moon	G.M.T.	Full Moon
			Jan 3 16 16		Jan 7 14 33		Jan 21 15 46
Jan 19 16 4			Feb 2 8 38		Feb 6 5 58		Feb 20 5 46
Feb 17 17 55			Mar 3 2 18		Mar 7 18 36		Mar 21 20 51
Mar 18 3 51			Apr 1 19 56		Apr 6 4 43		Apr 20 12 42
Apr 16 12 20			May 1 12 27		May 5 13 3		May 20 4 46
May 15 20 10			May 31 3 10		June 3 20 22		June 18 20 15
June 14 4 17			June 29 15 48		July 3 3 35		July 18 10 28
July 13 13 47			July 29 2 35		Aug 1 11 40		Aug 16 23 11
Aug 12 1 1			Aug 27 12 1		Aug 30 21 35		Sept 15 10 36
Sept 10 15 19			Sept 25 20 51		Sept 29 10 10		Oct 14 21 19
Oct 10 7 46			Oct 25 5 55		Oct 29 1 53		Nov 13 7 51
Nov 9 2 1			Nov 23 15 53		Nov 27 20 19		Dec 12 18 28
Dec 8 20 49			Dec 23 2 53		Dec 27 15 58		

Jan 21 15 46	Feb 5 46	Mar 20 51	Apr 12 42	May 20 4 46	June 18 20 15	July 18 10 28	Aug 16 23 11	Sept 15 10 36	Oct 14 21 19	Nov 13 7 51	Dec 12 18 28
Feb 6 5 58	Mar 7 18 36	Apr 6 4 43	May 5 13 3	June 3 20 22	July 3 3 35	Aug 1 11 40	Aug 30 21 35	Sept 29 10 10	Oct 29 1 53	Nov 27 20 19	Dec 27 15 58
Mar 7 18 36	Apr 6 4 43	May 5 13 3	June 3 20 22	July 3 3 35	Aug 1 11 40	Aug 30 21 35	Sept 29 10 10	Oct 29 1 53	Nov 27 20 19	Dec 27 15 58	
Apr 6 4 43	May 5 13 3	June 3 20 22	July 3 3 35	Aug 1 11 40	Aug 30 21 35	Sept 29 10 10	Oct 29 1 53	Nov 27 20 19	Dec 27 15 58		
May 5 13 3	June 3 20 22	July 3 3 35	Aug 1 11 40	Aug 30 21 35	Sept 29 10 10	Oct 29 1 53	Nov 27 20 19	Dec 27 15 58			
June 3 20 22	July 3 3 35	Aug 1 11 40	Aug 30 21 35	Sept 29 10 10	Oct 29 1 53	Nov 27 20 19	Dec 27 15 58				
July 3 3 35	Aug 1 11 40	Aug 30 21 35	Sept 29 10 10	Oct 29 1 53	Nov 27 20 19	Dec 27 15 58					
Aug 1 11 40	Aug 30 21 35	Sept 29 10 10	Oct 29 1 53	Nov 27 20 19	Dec 27 15 58						
Aug 30 21 35	Sept 29 10 10	Oct 29 1 53	Nov 27 20 19	Dec 27 15 58							
Sept 29 10 10	Oct 29 1 53	Nov 27 20 19	Dec 27 15 58								
Oct 29 1 53	Nov 27 20 19	Dec 27 15 58									
Nov 27 20 19	Dec 27 15 58										
Dec 27 15 58											

2-18-58
 18,966
 4,741
 4,199
 2,159
 38

Jerusalem C.T.

Cycle "213"

27	Days	29	Days
{ N.M. Mar. 26.837		{ N.M. Jan. 3.627	
{ F.M. Apr. 9.767	13.93	{ F.M. Jan. 19.117	15.45
{ N.M. Apr. 25.247		{ N.M. Feb. 2.397	
{ F.M. May 9.317	14.07	{ F.M. Feb. 17.547	15.15
{ N.M. May 24.587		{ N.M. Mar. 4.127	
{ F.M. June 7.927	14.34	{ F.M. Mar. 18.907	14.78
{ N.M. June 22.867		{ N.M. Apr. 2.827	
{ F.M. July 7.567	14.70	{ F.M. Apr. 17.217	14.39
{ N.M. July 22.167		{ N.M. May 2.447	
{ F.M. Aug. 6.227	15.06	{ F.M. May 16.557	14.11
{ N.M. Aug. 20.497		{ N.M. May 31.997	
{ F.M. Sept. 4.867	15.37	{ F.M. June 14.927	13.93
{ N.M. Sept. 18.927		{ N.M. June 30.447	
{ F.M. Oct. 4.487	15.56	{ F.M. July 14.387	13.94
{ N.M. Oct. 18.457		{ N.M. July 29.857	
{ F.M. Nov. 3.047	15.59	{ F.M. Aug. 12.947	14.09
{ N.M. Nov. 17.107		{ N.M. Aug. 28.217	
{ F.M. Dec. 2.567	15.46	{ F.M. Sept. 11.627	14.41
{ N.M. Dec. 16.837		{ N.M. Sept. 26.607	
28 { F.M. Jan. 1.037	15.20	{ F.M. Oct. 11.397	14.79
{ N.M. Jan. 15.637		{ N.M. Oct. 26.017	
{ F.M. Jan. 30.477	14.84	{ F.M. Nov. 10.177	15.16
{ N.M. Feb. 14.397		{ N.M. Nov. 24.477	
{ F.M. Feb. 28.857	14.46	{ F.M. Dec. 9.917	15.44
{ N.M. Mar. 15.107		{ N.M. Dec. 23.997	
{ F.M. Mar. 29.237	14.13	30 { F.M. Jan. 8.587	15.59
{ N.M. Apr. 13.687		{ N.M. Jan. 22.567	
{ F.M. Apr. 27.627	13.94	{ F.M. Feb. 7.137	15.57
{ N.M. May 13.167		{ N.M. Feb. 21.197	
{ F.M. May 27.077	13.91	{ F.M. Mar. 8.587	15.39
{ N.M. June 11.537		{ N.M. Mar. 22.847	
{ F.M. June 25.617	14.08	{ F.M. Apr. 6.937	15.09
{ N.M. July 10.867		{ N.M. Apr. 21.517	
{ F.M. July 25.237	14.37	{ F.M. May 6.237	14.72
{ N.M. Aug. 9.187		{ N.M. May 21.157	
{ F.M. Aug. 23.927	14.74	{ F.M. June 4.517	14.36
{ N.M. Sept. 7.527		{ N.M. June 19.757	
{ F.M. Sept. 22.647	15.12	{ F.M. July 3.847	14.09
{ N.M. Oct. 6.937		{ N.M. July 19.297	
{ F.M. Oct. 22.367	15.43	{ F.M. Aug. 2.247	13.95
{ N.M. Nov. 5.437		{ N.M. Aug. 17.787	
{ F.M. Nov. 21.027	15.59	{ F.M. Aug. 31.757	13.97
{ N.M. Dec. 5.017		{ N.M. Sept. 16.237	
{ F.M. Dec. 20.617	15.50	{ F.M. Sept. 30.397	14.16
		{ N.M. Oct. 15.677	
		{ F.M. Oct. 30.147	14.47
		{ N.M. Nov. 14.127	
		{ F.M. Nov. 28.957	14.83
		{ N.M. Dec. 13.587	
		{ F.M. Dec. 28.767	15.18

Year 1875	Month	Perigee		Apogee	
		d	h	d	h
	Jan	16	23	29	4
	Feb	10	14	26	1
	Mar	9	18	25	18
	Apr	6	23	22	3
	May	5	9	19	6
	June	2	18	15	12
	July	1	1	13	2
	Aug	28	21	9	19
	Sept	24	0	6	14
	Oct	18	14	4	10
	Nov	16	8	1	2
	Dec	13	15	28	10
	Dec	12	4	25	10

Year 1876	Month	Perigee		Apogee	
		d	h	d	h
	Jan	9	16	21	21
	Feb	6	22	18	16
	Mar	5	2	17	12
	Apr	29	22	14	8
	May	26	4	12	0
	June	24	7	8	9
	July	21	16	5	12
	Aug	20	1	1	19
	Sept	17	8	29	8
	Oct	14	4	26	2
	Nov	10	3	23	22
	Dec	4	19	20	18
	Dec	2	16	18	10
	Dec	31	1		

Year 1877	Month	Perigee		Apogee	
		d	h	d	h
	Jan	28	15	14	14
	Feb			10	16
	Mar	26	2	10	6
	Apr	26	5	7	0
	May	22	6	4	20
	June	17	5	1	15
	July	13	12	29	7
	Aug	11	14	26	17
	Sept	8	23	22	20
	Oct	6	9	19	1
	Nov	4	17	16	15
	Dec	1	14	13	11
	Dec	27	6		
	Dec	23	2	11	8

Year 1878	Month	Perigee		Apogee	
		d	h	d	h
	Jan			8	4
	Feb	20	2	4	19
	Mar	17	13	3	23
	Apr	18	1	31	2
	May	15	11	27	15
	June	13	12	25	9
	July	9	11	22	4
	Aug	4	13	19	22
	Sept	31	19	16	15
	Oct	28	21	13	1
	Nov	26	7	10	4
	Dec	24	18	6	9
	Dec	22	3	4	0
	Dec	19	23	31	20

31

{ N.M. Jan. 12.057	
{ F.M. Jan. 27.487	15.43
{ N.M. Feb. 10.537	
{ F.M. Feb. 26.097	15.56
{ N.M. Mar. 12.047	
{ F.M. Mar. 27.567	15.52
{ N.M. Apr. 10.587	
{ F.M. Apr. 25.947	15.36
{ N.M. May 10.187	
{ F.M. May 25.237	15.05
{ N.M. June 8.817	
{ F.M. June 23.527	14.71
{ N.M. July 8.457	
{ F.M. July 22.827	14.37
{ N.M. Aug. 7.097	
{ F.M. Aug. 21.197	14.10
{ N.M. Sept. 5.687	
{ F.M. Sept. 19.657	13.97
{ N.M. Oct. 5.237	
{ F.M. Oct. 19.247	14.01
{ N.M. Nov. 3.757	
{ F.M. Nov. 17.957	14.20
{ N.M. Dec. 3.247	
{ F.M. Dec. 17.737	14.49
32 { N.M. Jan. 1.697	
{ F.M. Jan. 16.537	14.84
{ N.M. Jan. 31.127	
{ F.M. Feb. 15.297	15.17
{ N.M. Feb. 29.537	
{ F.M. Mar. 15.947	15.41
{ N.M. Mar. 29.957	
{ F.M. Apr. 14.477	15.52
{ N.M. Apr. 28.397	
{ F.M. May 13.907	15.51
{ N.M. May 27.907	
{ F.M. June 12.227	15.32
{ N.M. June 26.497	
{ F.M. July 11.527	15.03
{ N.M. July 26.137	
{ F.M. Aug. 9.837	14.70
{ N.M. Aug. 24.817	
{ F.M. Sept. 8.197	14.38
{ N.M. Sept. 23.517	
{ F.M. Oct. 7.637	14.12
{ N.M. Oct. 23.167	
{ F.M. Nov. 6.167	14.00
{ N.M. Nov. 21.777	
{ F.M. Dec. 5.797	14.02

33

{ N.M. Dec. 21.327	
{ F.M. Jan. 4.527	14.20
{ N.M. Jan. 19.787	
{ F.M. Feb. 3.287	14.50
{ N.M. Feb. 18.197	
{ F.M. Mar. 5.037	14.84
{ N.M. Mar. 19.557	
{ F.M. Apr. 3.717	15.16
{ N.M. Apr. 17.907	
{ F.M. May 3.297	15.39
{ N.M. May 17.267	
{ F.M. June 1.787	15.52
{ N.M. June 15.697	
{ F.M. July 1.187	15.49
{ N.M. July 15.207	
{ F.M. July 30.537	15.33
{ N.M. Aug. 13.827	
{ F.M. Aug. 28.887	15.06
{ N.M. Sept. 12.547	
{ F.M. Sept. 27.257	14.71
{ N.M. Oct. 12.297	
{ F.M. Oct. 26.687	14.39
{ N.M. Nov. 11.047	
{ F.M. Nov. 25.187	14.14
{ N.M. Dec. 10.727	
{ F.M. Dec. 24.747	14.02
34 { N.M. Jan. 9.337	
{ F.M. Jan. 23.367	14.03
{ N.M. Feb. 7.847	
{ F.M. Feb. 22.037	14.19
{ N.M. Mar. 9.257	
{ F.M. Mar. 23.727	14.47
{ N.M. Apr. 7.587	
{ F.M. Apr. 22.407	14.82
{ N.M. May 6.897	
{ F.M. May 22.037	15.14
{ N.M. June 5.207	
{ F.M. June 20.607	15.40
{ N.M. July 4.567	
{ F.M. July 20.087	15.52
{ N.M. Aug. 3.017	
{ F.M. Aug. 18.527	15.51
{ N.M. Sept. 1.587	
{ F.M. Sept. 16.927	15.34
{ N.M. Oct. 1.287	
{ F.M. Oct. 16.337	15.05
{ N.M. Oct. 31.067	
{ F.M. Nov. 14.777	14.71
{ N.M. Nov. 29.857	
{ F.M. Dec. 14.247	14.39

Year	Month	Perigee		Apogee		Year	Month	Perigee		Apogee	
		d	h	d	h			d	h	d	h
1871	Jan	17	18	1	16	1873	Jan	28	14	15	14
	Feb	13	7	26	9		Feb			11	15
	Mar	10	10	26	4		Mar	26	2	10	20
	Apr	7	2	22	20		Apr	26	11	7	11
	May	5	8	20	3		May	23	8	5	6
	June	2	18	16	7		June	19	12	2	0
	July	1	3	13	15		July	14	2	29	18
	Aug	29	8	10	7		Aug	11	17	27	9
	Sept	25	23	7	1		Sept	8	23	23	17
	Oct	20		4	21		Oct	6	8	19	20
	Nov	16	16	1	16		Nov	4	19	17	4
	Dec	13	16	29	7		Dec	2	1	13	21
		12	3	26	10			29	15	11	18

1872	Jan	9	16	22	12		Jan	24	9		
	Feb	7	3	19	2		Feb			8	15
	Mar	6	2	17	22	1874	Mar	20	9	5	9
	Apr	1	9	14	18		Apr	17	13	4	20
	May	26	19	12	12		May	18	0	31	21
	June	24	11	9	3		June	15	11	28	4
	July	21	16	6	12		July	13	18	25	19
	Aug	20	1	2	14		Aug	10	14	22	12
	Sept	17	11	29	22		Sept	6	17	20	6
	Oct	14	16	26	14		Oct	1	8	17	1
	Nov	12	7	24	9		Nov	29	0	13	18
	Dec	6	9	21	6		Dec	26	6	11	2
		3	0	19	1			24	18	7	3
		31	2					22	6	4	13
								20	12		

35

{ N.M. Dec. 29.627	
{ F.M. Jan. 12.747	14.12
{ N.M. Jan. 28.297	
{ F.M. Feb. 11.267	13.97
{ N.M. Feb. 26.837	
{ F.M. Mar. 12.837	14.00
{ N.M. Mar. 28.277	
{ F.M. Apr. 11.437	14.16
{ N.M. Apr. 26.607	
{ F.M. May 11.067	14.46
{ N.M. May 25.897	
{ F.M. June 9.717	14.82
{ N.M. June 24.177	
{ F.M. July 9.337	15.16
{ N.M. July 23.497	
{ F.M. Aug. 7.917	15.42
{ N.M. Aug. 21.897	
{ F.M. Sept. 6.457	15.56
{ N.M. Sept. 20.427	
{ F.M. Oct. 5.977	15.55
{ N.M. Oct. 20.077	
{ F.M. Nov. 4.447	15.37
{ N.M. Nov. 18.827	
{ F.M. Dec. 3.897	15.07

37

{ N.M. Jan. 5.397	
{ F.M. Jan. 20.437	15.04
{ N.M. Feb. 4.197	
{ F.M. Feb. 18.857	14.66
{ N.M. Mar. 5.927	
{ F.M. Mar. 20.227	14.30
{ N.M. Apr. 4.567	
{ F.M. Apr. 18.597	14.03
{ N.M. May 4.097	
{ F.M. May 18.007	13.91
{ N.M. June 2.517	
{ F.M. June 16.497	13.98
{ N.M. July 1.887	
{ F.M. July 16.067	14.18
{ N.M. July 31.197	
{ F.M. Aug. 14.717	14.52
{ N.M. Aug. 29.537	
{ F.M. Sept. 13.447	14.91
{ N.M. Sept. 27.917	
{ F.M. Oct. 13.177	15.26
{ N.M. Oct. 27.367	
{ F.M. Nov. 11.877	15.51
{ N.M. Nov. 25.907	
{ F.M. Dec. 11.517	15.61

36

{ N.M. Dec. 18.647	
{ F.M. Jan. 2.347	14.70
{ N.M. Jan. 17.437	
{ F.M. Jan. 31.787	14.35
{ N.M. Feb. 16.157	
{ F.M. Mar. 1.227	14.07
{ N.M. Mar. 16.757	
{ F.M. Mar. 30.687	13.93
{ N.M. Apr. 15.217	
{ F.M. Apr. 29.197	13.98
{ N.M. May 14.587	
{ F.M. May 28.757	14.17
{ N.M. June 12.897	
{ F.M. June 27.377	14.48
{ N.M. July 12.177	
{ F.M. July 27.037	14.86
{ N.M. Aug. 10.497	
{ F.M. Aug. 25.707	15.21
{ N.M. Sept. 8.867	
{ F.M. Sept. 24.347	15.48
{ N.M. Oct. 8.347	
{ F.M. Oct. 23.947	15.60
{ N.M. Nov. 6.947	
{ F.M. Nov. 22.497	15.55
{ N.M. Dec. 6.627	
{ F.M. Dec. 21.997	15.37

38

{ N.M. Dec. 25.517	
{ F.M. Jan. 10.067	15.55
{ N.M. Jan. 24.197	
{ F.M. Feb. 8.527	15.33
{ N.M. Feb. 22.927	
{ F.M. Mar. 9.897	14.97
{ N.M. Mar. 24.627	
{ F.M. Apr. 8.237	14.61
{ N.M. Apr. 23.297	
{ F.M. May 7.547	14.25
{ N.M. May 22.887	
{ F.M. June 5.887	14.00
{ N.M. June 21.387	
{ F.M. July 5.297	13.91
{ N.M. July 20.817	
{ F.M. Aug. 3.827	14.01
{ N.M. Aug. 19.217	
{ F.M. Sept. 2.447	14.23
{ N.M. Sept. 17.597	
{ F.M. Oct. 2.167	14.57
{ N.M. Oct. 17.007	
{ F.M. Oct. 31.957	14.95
{ N.M. Nov. 15.437	
{ F.M. Nov. 30.737	15.30
{ N.M. Dec. 14.927	
{ F.M. Dec. 30.457	15.53

Year 1867	Month	Perigee		Apogee	
		d	h	d	h
	Jan	18	2	30	0
	Feb	14	22	26	20
	Mar	12	11	26	16
	Apr	7	13	23	10
	May	5	11	20	29
	June	2	18	17	4
	July	1	3	14	8
	Aug	29	12	10	18
	Sept	26	14	7	10
	Oct	22	18	5	5
	Nov	17	15	2	2
	Dec	13	21	29	20
	Dec	12	2	27	8

Year 1868	Month	Perigee		Apogee	
		d	h	d	h
	Jan	9	14	23	7
	Feb	7	3	19	15
	Mar	6	11	18	9
	Apr	3	4	15	4
	May	28	15	12	23
	June	24	21	9	16
	July	21	18	7	5
	Aug	20	1	3	11
	Sept	17	11	30	15
	Oct	14	20	27	1
	Nov	12	23	24	18
	Dec	9	2	21	14
	Dec	3	20	19	12
	Dec	31	6		

Year 1869	Month	Perigee		Apogee	
		d	h	d	h
	Jan	28	13	12	15
	Feb	26	1	11	17
	Mar	26	13	8	1
	Apr	23	19	5	18
	May	21	10	2	12
	June	15	22	30	6
	July	12	5	28	0
	Aug	9	1	24	14
	Sept	6	8	20	20
	Oct	4	19	17	22
	Nov	2	6	14	9
	Dec	30	9	12	3

Year 1870	Month	Perigee		Apogee	
		d	h	d	h
	Jan	27	7	9	0
	Feb	21	2	5	21
	Mar	17	16	5	13
	Apr	18	0	1	21
	May	15	11	29	0
	June	13	21	26	9
	July	11	1	23	0
	Aug	8	15	20	18
	Sept	3	2	17	13
	Sept	29	11	14	7
	Oct	26	8	11	21
	Nov	24	16	8	1
	Dec	22	5	5	3
	Dec	20	16		

39

Days

41

{ N.M. Jan. 13.467
 { F.M. Jan. 29.067
 { N.M. Feb. 12.047
 { F.M. Feb. 27.557
 { N.M. Mar. 13.677
 { F.M. Mar. 28.927
 { N.M. Apr. 12.317
 { F.M. Apr. 27.257
 { N.M. May 11.977
 { F.M. May 26.537
 { N.M. June 10.607
 { F.M. June 24.837
 { N.M. July 10.177
 { F.M. July 24.187
 { N.M. Aug. 8.707
 { F.M. Aug. 22.647
 { N.M. Sept. 7.187
 { F.M. Sept. 21.217
 { N.M. Oct. 6.647
 { F.M. Oct. 20.917
 { N.M. Nov. 5.097
 { F.M. Nov. 19.737
 { N.M. Dec. 4.547
 { F.M. Dec. 19.547

15.60

15.51

15.25

14.94

14.56

14.23

14.01

13.94

14.03

14.27

14.64

15.00

40

{ N.M. Jan. 3.017
 { F.M. Jan. 18.307
 { N.M. Feb. 1.467
 { F.M. Feb. 16.977
 { N.M. Mar. 1.957
 { F.M. Mar. 17.507
 { N.M. Mar. 31.467
 { F.M. Apr. 15.927
 { N.M. Apr. 30.017
 { F.M. May 15.257
 { N.M. May 29.637
 { F.M. June 13.547
 { N.M. June 28.287
 { F.M. July 12.827
 { N.M. July 27.927
 { F.M. Aug. 11.157
 { N.M. Aug. 26.537
 { F.M. Sept. 9.577
 { N.M. Sept. 25.127
 { F.M. Oct. 9.097
 { N.M. Oct. 24.677
 { F.M. Nov. 7.757
 { N.M. Nov. 23.197
 { F.M. Dec. 7.507

15.29

15.51

15.55

15.46

15.24

14.91

14.54

14.23

14.04

13.97

14.08

14.31

{ N.M. Dec. 22.657
 { F.M. Jan. 6.297
 { N.M. Jan. 21.097
 { F.M. Feb. 5.087
 { N.M. Feb. 19.507
 { F.M. Mar. 6.787
 { N.M. Mar. 20.907
 { F.M. Apr. 5.387
 { N.M. Apr. 19.337
 { F.M. May 4.857
 { N.M. May 18.797
 { F.M. June 3.227
 { N.M. June 17.337
 { F.M. July 2.547
 { N.M. July 16.937
 { F.M. July 31.847
 { N.M. Aug. 15.617
 { F.M. Aug. 30.187
 { N.M. Sept. 14.327
 { F.M. Sept. 28.577
 { N.M. Oct. 14.017
 { F.M. Oct. 28.067
 { N.M. Nov. 12.657
 { F.M. Nov. 26.657
 { N.M. Dec. 12.237
 { F.M. Dec. 26.337

14.64

42.

{ N.M. Jan. 10.747
 { F.M. Jan. 25.067
 { N.M. Feb. 9.167
 { F.M. Feb. 23.817
 { N.M. Mar. 10.547
 { F.M. Mar. 25.527
 { N.M. Apr. 8.877
 { F.M. Apr. 24.157
 { N.M. May 8.227
 { F.M. May 23.697
 { N.M. June 6.607
 { F.M. June 22.137
 { N.M. July 6.077
 { F.M. July 21.517
 { N.M. Aug 4.647
 { F.M. Aug 19.887
 { N.M. Sept. 3.827
 { F.M. Sept. 18.237
 { N.M. Oct. 3.077
 { F.M. Oct. 17.647
 { N.M. Nov. 1.887
 { F.M. Nov. 16.107
 { N.M. Dec. 1.577
 { F.M. Dec. 15.637

Year 1863	Month	Perigee		Apogee	
		d	h	d	h
	Jan	18	5	30	12
	Feb	15	11	27	6
	Mar	14	19	27	2
	Apr	8	17	23	21
	May	5	18	21	14
	June	2	19	18	2
	July	1	3	15	6
	Aug	29	13		
	Sept	26	21	11	11
	Oct	23	20	7	23
	Nov	20	9	5	17
	Dec	14	13	2	13
		12	5	30	10
				28	3

1864	Jan	9	14	24	9
	Feb	7	3	20	9
	Mar	6	14	18	20
	Apr	3	18	15	14
	May	30	23		
	June	26	0	13	9
	July	22	1	10	3
	Aug	20	2	7	20
	Sept	17	10	4	8
	Oct	14	20	31	12
	Nov	13	6	27	17
	Dec	10	6	25	6
		6	10	22	1
		31	19	19	21

Year 1865	Month	Perigee		Apogee	
		d	h	d	h
	Jan	28	15	16	18
	Feb			13	9
	Mar	26	0		
	Apr	26	12	12	14
	May	23	22	8	16
	June	22	0	6	4
	July	18	4	2	21
	Aug	13	7	30	15
	Sept	9	7	28	10
	Oct	6	9	25	3
	Nov	4	18	21	16
	Dec	2	6	18	19
		30	16	15	0
				12	15

1866	Jan	23	10	9	11
	Feb	18	4	6	8
	Mar	18	2	6	3
	Apr	15	10	2	17
	May	13	21	29	22
	June	11	5	27	1
	July	9	7	23	12
	Aug	5	11	21	5
	Sept	30	12	17	23
	Oct	26	14		
	Nov	24	17	14	18
	Dec	22	4	12	12
		20	17	9	0
				6	2

43

N.M. Dec. 31.237
 F.M. Jan. 14.227
 N.M. Jan. 29.287
 F.M. Feb. 12.857
 N.M. Feb. 28.237
 F.M. Mar. 14.537
 N.M. Mar. 29.587
 F.M. Apr. 13.217
 N.M. Apr. 27.897
 F.M. May 12.877
 N.M. May 27.187
 F.M. June 11.467
 N.M. June 25.507
 F.M. July 10.987
 N.M. July 24.917
 F.M. Aug. 9.457
 N.M. Aug. 23.427
 F.M. Sept. 7.897
 N.M. Sept. 22.067
 F.M. Oct. 7.317
 N.M. Oct. 21.827
 F.M. Nov. 5.737
 N.M. Nov. 20.617
 F.M. Dec. 5.197
 N.M. Dec. 20.417
 F.M. Jan. 3.687
 N.M. Jan. 19.147
 F.M. Feb. 2.177
 N.M. Feb. 17.757
 F.M. Mar. 2.717
 N.M. Mar. 18.247
 F.M. Apr. 1.287
 N.M. Apr. 16.607
 F.M. Apr. 30.907
 N.M. May 15.917
 F.M. May 30.527
 N.M. June 14.187
 F.M. June 29.177
 N.M. July 13.477
 F.M. July 28.797
 N.M. Aug. 11.837
 F.M. Aug. 27.347
 N.M. Sept. 10.307
 F.M. Sept. 25.877
 N.M. Oct. 26.057
 F.M. Oct. 25.377
 N.M. Nov. 8.597
 F.M. Nov. 23.857
 N.M. Dec. 8.387
 F.M. Dec. 23.317

44

45

N.M. Jan. 7.207
 F.M. Jan. 21.747
 N.M. Feb. 5.957
 F.M. Feb. 20.177
 N.M. Mar. 7.617
 F.M. Mar. 21.607
 N.M. Apr. 6.147
 F.M. Apr. 20.077
 N.M. May 5.567
 F.M. May 19.617
 N.M. June 3.907
 F.M. June 18.197
 N.M. July 3.187
 F.M. July 17.847
 N.M. Aug. 1.497
 F.M. Aug. 16.527
 N.M. Aug. 30.847
 F.M. Sept. 15.187
 N.M. Sept. 29.277
 F.M. Oct. 14.817
 N.M. Oct. 28.807
 F.M. Nov. 13.417
 N.M. Nov. 27.457
 F.M. Dec. 12.937
 N.M. Dec. 27.187
 F.M. Jan. 11.407
 N.M. Jan. 25.967
 F.M. Feb. 9.837
 N.M. Feb. 24.717
 F.M. Mar. 11.197
 N.M. Mar. 26.407
 F.M. Apr. 9.557
 N.M. Apr. 24.987
 F.M. May 8.947

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Year	Month	Perigee		Apogee	
1859	Jan	18 ^d	4 ^h	31	4
	Feb.	15	14	27	17
	Mar.	15	17	27	12
	Apr.	11	10	24	8
	May	6	13	22	2
	June	3	0	18	17
	July	1	4	16	3
	Aug	29	12	12	6
	Sept	26	22	8	12
	Oct	24	5	6	3
	Nov	22	0	2	22
	Dec	16	8	30	19
	Dec	12	14	28	15

Year	Month	Perigee		Apogee	
1860	Jan	9	15	25	5
	Feb	7	2	21	9
	Mar	6	14	19	13
	Apr	4	0	16	3
	May	1	23	13	21
	June	28	15	10	15
	July	22	21	8	10
	Aug	20	7	5	1
	Sept	17	11	1	11
	Oct	14	20	28	13
	Nov	13	7	25	19
	Nov	10	15	22	11
	Dec	8	8	20	7

Year	Month	Perigee		Apogee	
1861	Jan	2 ^d	8 ^h	17 ^d	5 ^h
	Feb	28	23	13	23
	Mar	26	1	13	12
	Apr	26	12	9	15
	May	23	23	6	20
	June	22	6	3	10
	July	19	4	1	3
	Aug	15	20	28	21
	Sept	10	3	25	16
	Oct	6	13	22	8
	Nov	4	18	19	18
	Nov	2	4	15	18
	Dec	30	17	13	2
	Dec	29	1		

Year	Month	Perigee		Apogee	
1862	Jan	25	14	9	20
	Feb	19	10	6	16
	Mar	19	10	6	13
	Apr	18	8	3	7
	May	15	11	30	18
	June	13	20	27	22
	July	11	6	24	3
	Aug	9	13	21	16
	Sept	6	12	18	9
	Oct	2	3	15	4
	Oct	27	8	13	0
	Nov	24	20	9	17
	Dec	22	3	7	2
	Dec	20	16		