THE FORTNIGHTLY REVIEW.
[WITH CHRONICLE NOTICES]
THE NEW FORTNIGHTLYREVIEW.CO.UK SERIES.
'THE STROKE OF AN OAR GIVEN IN TRUE TIME'

The Calendar Year

When all the above conditions are taken into account we can calculate the events that take place during the Martian Calendar year. The results when the vernal equinox occurs at midnight commencing 1 March are tabulated below.

Table 1 – Events of the Martian Calendar Year

Event	Symbol	L_S, °	t, sols	Calendar Date
Sagittarius, Northern Vernal, Southern Autumnal Equinox	♐	0	0	Mar 1.00
Capricorn	♑	30	61.17	Apr 6.17
Aquarius	♒	60	126.58	May 14.58
Aphelion	A	70.98	151.04	May 40.04
Pisces, Northern Summer, Southern Winter Solstice	♓	90	193.29	Jun 26.29
Aries	♈	120	257.79	Jul 34.79
Taurus	♉	150	317.54	Aug 38.54
Latus Rectum, Inbound	Q2	160.98	338.04	Sep 3.04
Gemini, Northern Autumnal, Southern Vernal Equinox	♊	180	371.86	Sep 36.86
Cancer	♋	210	421.60	Oct 30.60
Leo	♌	240	468.48	Nov 21.48
Perihelion	Π	250.98	485.34	Nov 38.34
Virgo, Northern Winter, Southern Summer Solstice	♍	270	514.59	Dec 11.59
0° Ecliptic Longitude	L0	274.94	522.26	Dec 19.26
Libra	♎	300	562.04	Jan 3.04
Scorpius	♏	330	612.86	Jan 53.86
Latus Rectum, Outbound	Q1	340.98	632.64	Feb 17.64

Notes:

Dust storm season: Cancer through Virgo, October 30 – January 1[1]
L_S – Planetocentric Longitude of the Sun from the Northern Vernal Equinox
t – Days (sols) since Vernal Equinox

The careful reader will notice that the lengths of the seasons in the table differ slightly from those given before. This is because the table was calculated from a nominal mean orbit, and the parameters differ slightly from those used before. The difference, however, is small, less than 0.05 sol (about an hour).

[1] Zubrin, R., 1997. *The Case for Mars*; Touchstone.

The Calendar Date for an event in Table 1 is nominal. It represents the earliest possible time within a 22-year cycle of intercalation. To find an approximate time, we must add an offset, as from the following table:

Table 2 – The 22-Year Intercalation Cycle

Year in Cycle	Offset	Days in Year	Days in Feb	Year in Cycle	Offset	Days in Year	Days in Feb
1	0.01	668	52	12	0.51	669	53
2	0.60	669	53	13	0.10	668	52
3	0.19	668	52	14	0.69	669	53
4	0.78	669	53	15	0.28	668	52
5	0.37	668	52	16	0.87	669	53
6	0.96	669	53	17	0.46	669	53
7	0.56	669	53	18	0.06	668	52
8	0.15	668	52	19	0.65	669	53
9	0.74	669	53	20	0.24	668	52
10	0.33	668	52	21	0.83	669	53
11	0.92	668	52	22	0.42	669	53

To find the time of an event in a given year of the 22-year cycle, add the offset to the calendar date. Thus, for example, if we want the approximate time of the Perihelion in the 10th year of the cycle, we add the offset of the year 10 in the table above, 0.33, to the nominal calendar date, November 37.24 to get November 37.57, or approximately 1:40 pm at Airy-0 on November 37. The times are no more precise than about 10 or 15 minutes.

The offset may place an event on the following date. For example, we wish to find the time of the northern summer solstice in the 16th year of the cycle, we add 0.86 to June 25.29 to obtain June 26.15, or about 1:40 am at Airy-0 on June 26. We notice that this puts the solstice on a different date than the nominal June 25. The northern vernal equinox, however, falls within March 1.

Table 3 – Perpetual Calendar for Mars

Day of Week for Dominical Letter

							Dominical Letter
Sun	Mon	Tue	Wed	Thu	Fri	Sat	A
Sat	Sun	Mon	Tue	Wed	Thu	Fri	b
Fri	Sat	Sun	Mon	Tue	Wed	Thu	c
Thu	Fri	Sat	Sun	Mon	Tue	Wed	d
Wed	Thu	Fri	Sat	Sun	Mon	Tue	e
Tue	Wed	Thu	Fri	Sat	Sun	Mon	f
Mon	Tue	Wed	Thu	Fri	Sat	Sun	g

Calendar for Every Month

A*	b	c	d	e	f	g
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	32	33	34	35
36	37	38	39	40	41	42
43	44	45	46	47	48	49
50	51	52	53	54	55	56

Number of the Week Within the Month†

Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
1	9	17	25	33	41	49	57	65	73	81	89
2	10	18	26	34	42	50	58	66	74	82	90
3	11	19	27	35	43	51	59	67	75	83	91
4	12	20	28	36	44	52	60	68	76	84	92
5	13	21	29	37	45	53	61	69	77	85	93
6	14	22	30	38	46	54	62	70	78	86	94
7	15	23	31	39	47	55	63	71	79	87	95
8	16	24	32	40	48	56	64	72	80	88	96

Notes:

February ends on the 52nd or 53rd as needed by the 22-year intercalation cycle.

The Dominical Letter can be computed as: $L = 7 - \text{mod}((\text{int}(79\ (MY + 14) / 22) + 6), 7)$, where 1 = A, 2 = b, 3 = c, etc. To avoid unwieldy numbers, we may subtract multiples of 154 (= 7 × 22) from MY without changing the result. Such multiples are: 1540, 2310, 3080, 3234, 3388, 3542, 3696, and 3850.

** Golden Letter for the day of the month.*
† The week begins on Sunday

From ‘A Calendar for Mars’ by Rev. George D. Lardas.

http://fortnightlyreview.co.uk/2012/08/martian-calendar/