

TABLE 1
MERIDIAN PASSAGE AND DECLINATION
OF THE SUN AT 12^h UT

TABLES 2 and 3
DEPRESSION OF SUN
AT VARIOUS HEIGHTS

Day	January		February		March		April		May		June		Height	TABLE 2 AT SUNRISE AND SUNSET		TABLE 3 AT CIVIL TWILIGHT	
	Mer. Pass.	Dec	Mer. Pass.	Dec	Mer. Pass.	Dec	Mer. Pass.	Dec	Mer. Pass.	Dec	Mer. Pass.	Dec		Depression	Diff. from 0°8	Depression	Diff. from 0°8
	12 ^h		12 ^h		12 ^h		12 ^h		12 ^h		12 ^h						
	m °		m °		m °		m °		m °		m °						
1	+03 S	23-0	+14 S	17-2	+12 S	7-3	+04 N	4-8	-03 N	15-3	-02 N	22-1					
2	+04	22-9	+14	16-9	+12	7-0	+03	5-2	-03	15-6	-02	22-3					
3	+04	22-9	+14	16-6	+12	6-6	+03	5-6	-03	15-9	-02	22-4					
4	+05	22-8	+14	16-3	+12	6-2	+03	5-9	-03	16-2	-02	22-5					
5	+05	22-7	+14	16-0	+11	5-8	+03	6-3	-03	16-4	-01	22-6					
6	+06 S	22-5	+14 S	15-7	+11 S	5-4	+02 N	6-7	-03 N	16-7	-01 N	22-7					
7	+06	22-4	+14	15-4	+11	5-0	+02	7-1	-03	17-0	-01	22-8					
8	+06	22-3	+14	15-1	+11	4-6	+02	7-5	-04	17-3	-01	22-9					
9	+07	22-2	+14	14-8	+10	4-2	+01	7-8	-04	17-5	-01	23-0					
10	+07	22-0	+14	14-5	+10	3-8	+01	8-2	-04	17-8	00	23-1					
11	+08 S	21-9	+14 S	14-1	+10 S	3-5	+01 N	8-6	-04 N	18-1	00 N	23-1	1 000	1-5	0-7	6-0	5-2
12	+08	21-7	+14	13-8	+10	3-1	+01	8-9	-04	18-3	00	23-2	2 000	1-7	0-9	6-1	5-3
13	+09	21-5	+14	13-5	+09	2-7	00	9-3	-04	18-5	00	23-2	3 000	1-9	1-1	6-1	5-3
14	+09	21-4	+14	13-1	+09	2-3	00	9-6	-04	18-8	00	23-3	4 000	2-1	1-3	6-1	5-3
15	+09	21-2	+14	12-8	+09	1-9	00	10-0	-04	19-0	+01	23-3	5 000	2-2	1-4	6-2	5-4
16	+10 S	21-0	+14 S	12-4	+09 S	1-5	00 N	10-4	-04 N	19-3	+01 N	23-4	6 000	2-4	1-6	6-2	5-4
17	+10	20-8	+14	12-1	+08	1-1	-01	10-7	-04	19-5	+01	23-4	7 000	2-5	1-7	6-2	5-4
18	+10	20-6	+14	11-8	+08	0-7	-01	11-1	-04	19-7	+01	23-4	8 000	2-6	1-8	6-3	5-5
19	+11	20-4	+14	11-4	+08 S	0-3	-01	11-4	-04	19-9	+01	23-4	9 000	2-7	1-9	6-3	5-5
20	+11	20-2	+14	11-0	+07 N	0-1	-01	11-7	-03	20-1	+02	23-4	10 000	2-8	2-0	6-3	5-5
21	+11 S	20-0	+14 S	10-7	+07 N	0-5	-01 N	12-1	-03 N	20-3	+02 N	23-4	15 000	3-2	2-4	6-5	5-7
22	+11	19-8	+14	10-3	+07	0-9	-02	12-4	-03	20-5	+02	23-4	20 000	3-6	2-8	6-6	5-8
23	+12	19-5	+13	10-0	+06	1-3	-02	12-8	-03	20-7	+02	23-4	25 000	3-9	3-1	6-8	6-0
24	+12	19-3	+13	9-6	+06	1-7	-02	13-1	-03	20-9	+02	23-4	30 000	4-2	3-4	6-9	6-1
25	+12	19-0	+13	9-2	+06	2-1	-02	13-4	-03	21-1	+03	23-4	35 000	4-4	3-6	7-1	6-3
26	+12 S	18-8	+13 S	8-8	+06 N	2-5	-02 N	13-7	-03 N	21-2	+03 N	23-3	40 000	4-7	3-9	7-2	6-4
27	+13	18-5	+13	8-5	+05	2-9	-02	14-0	-03	21-4	+03	23-3	45 000	4-9	4-1	7-3	6-5
28	+13	18-3	+13	8-1	+05	3-2	-03	14-4	-03	21-6	+03	23-2	50 000	5-1	4-3	7-5	6-7
29	+13	18-0	+12 S	7-7	+05	3-6	-03	14-7	-03	21-7	+04	23-2	55 000	5-3	4-5	7-6	6-8
30	+13	17-8			+04	4-0	-03 N	15-0	-02	21-9	+04 N	23-1	60 000	5-5	4-7	7-7	6-9
31	+13 S	17-5			+04 N	4-4			-02 N	22-0							

An alternative method to those given on pages A12–A14 is to use the graphs to give the corrections to the tabulated times of sunrise and sunset at ground level; in this case it is adequate to use the graphs for the *nearest* tabular latitude and declination. The difference in hour angle is found between the hour angle for zero depression and the hour angle at the tabular depression minus 0°8. The difference in hour angle so found is then applied to the time of sunrise or sunset. The result will be less than 5^m in error if the declination curve cuts all the depression lines.

Example. To find the times of sunrise and sunset on 2008 April 18 in latitude N65° 17', longitude W35° 15', at a height of 37 000 feet. From Table 1, Dec = N11°1; Table 2, Depression diff. from 0°8 = 3°7.

	Sunrise	Sunset
	h m	h m
Page A134, N65° 17'	04 11	19 50
Page A147, Lat 66°, Dec 11° (same); diff. in HA from depression 0° to 3°7	-45	+45
LMT	03 26	20 35
Longitude W 35° 15'	2 21	2 21
UT	05 47	22 56