

Grange Observatory

**ASTRONOMICAL ALMANAC
FOR YEAR 2017**

Introduction to Reports Generated by Astronomy Lab 2

In all reports, times and dates are in standard time (not daylight savings time or summer time). Times are in 24 hour format.

Abbreviations used in reports:

AU	Astronomical Units
D	Degrees
DEC	Declination
DIST	Distance
DSO	December Solstice
E	East
FM	Full Moon
FQ	First Quarter Moon
H	Hours
ILL FR,	
ILLUM FRAC	Illuminated Fraction
JSO	June Solstice
KM	Kilometers
LE	Lunar Eclipse
LQ	Last Quarter Moon
M	Minutes
MEQ	March Equinox
MR	Moon Rise
MS	Moon Set
N	North
NM	New Moon
RA	Right Ascension
S	South, Seconds
SE	Solar Eclipse
SEQ	September Equinox
SR	Sunrise
SS	Sunset
UT	Universal Time
W	West
ZHR	Zenithal Hourly Rate

Grange Obs. Latitude: 45°08'32" N Longitude: 7°08'26" E
 Local Time = UT + 1.00 hours Elevation: 470 meters

Calendar Report for 01/01/2017 to 31/12/2017

January 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
SR: 08:10	SR: 08:10	SR: 08:10	SR: 08:10	SR: 08:10	SR: 08:10	SR: 08:10
SS: 17:00	SS: 17:01	SS: 17:02	SS: 17:03	SS: 17:04	SS: 17:05	SS: 17:06
MR: 10:01	MR: 10:36	MR: 11:08	MR: 11:39	MR: 12:10	MR: 12:42	MR: 13:16
MS: 20:27	MS: 21:32	MS: 22:38	MS: 23:46	MS: None	MS: 00:55	MS: 02:06
				FQ: 20:48		
8	9	10	11	12	13	14
SR: 08:09	SR: 08:09	SR: 08:09	SR: 08:08	SR: 08:08	SR: 08:08	SR: 08:07
SS: 17:07	SS: 17:08	SS: 17:10	SS: 17:11	SS: 17:12	SS: 17:13	SS: 17:14
MR: 13:55	MR: 14:40	MR: 15:31	MR: 16:30	MR: 17:35	MR: 18:43	MR: 19:51
MS: 03:18	MS: 04:30	MS: 05:40	MS: 06:46	MS: 07:44	MS: 08:33	MS: 09:16
				FM: 12:35		
15	16	17	18	19	20	21
SR: 08:07	SR: 08:06	SR: 08:05	SR: 08:05	SR: 08:04	SR: 08:03	SR: 08:02
SS: 17:16	SS: 17:17	SS: 17:18	SS: 17:20	SS: 17:21	SS: 17:22	SS: 17:24
MR: 20:58	MR: 22:03	MR: 23:06	MR: None	MR: 00:07	MR: 01:07	MR: 02:05
MS: 09:52	MS: 10:24	MS: 10:53	MS: 11:21	MS: 11:48	MS: 12:16	MS: 12:46
				LQ: 23:14		
22	23	24	25	26	27	28
SR: 08:02	SR: 08:01	SR: 08:00	SR: 07:59	SR: 07:58	SR: 07:57	SR: 07:56
SS: 17:25	SS: 17:26	SS: 17:28	SS: 17:29	SS: 17:31	SS: 17:32	SS: 17:33
MR: 03:03	MR: 04:00	MR: 04:55	MR: 05:47	MR: 06:36	MR: 07:20	MR: 08:01
MS: 13:18	MS: 13:55	MS: 14:37	MS: 15:24	MS: 16:17	MS: 17:15	MS: 18:17
						NM: 01:08
29	30	31				
SR: 07:55	SR: 07:54	SR: 07:53				
SS: 17:35	SS: 17:36	SS: 17:38				
MR: 08:38	MR: 09:11	MR: 09:43				
MS: 19:22	MS: 20:29	MS: 21:38				

February 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
			SR: 07:52	SR: 07:50	SR: 07:49	SR: 07:48
			SS: 17:39	SS: 17:41	SS: 17:42	SS: 17:43
			MR: 10:14	MR: 10:46	MR: 11:19	MR: 11:55
			MS: 22:47	MS: 23:57	MS: None	MS: 01:07
						FQ: 05:20
5	6	7	8	9	10	11
SR: 07:47	SR: 07:45	SR: 07:44	SR: 07:43	SR: 07:41	SR: 07:40	SR: 07:38
SS: 17:45	SS: 17:46	SS: 17:48	SS: 17:49	SS: 17:51	SS: 17:52	SS: 17:54
MR: 12:36	MR: 13:23	MR: 14:17	MR: 15:17	MR: 16:22	MR: 17:30	MR: 18:37
MS: 02:18	MS: 03:26	MS: 04:31	MS: 05:31	MS: 06:23	MS: 07:08	MS: 07:47
						FM: 01:34
12	13	14	15	16	17	18
SR: 07:37	SR: 07:35	SR: 07:34	SR: 07:32	SR: 07:31	SR: 07:29	SR: 07:28
SS: 17:55	SS: 17:56	SS: 17:58	SS: 17:59	SS: 18:01	SS: 18:02	SS: 18:04
MR: 19:44	MR: 20:49	MR: 21:52	MR: 22:53	MR: 23:53	MR: None	MR: 00:51
MS: 08:21	MS: 08:52	MS: 09:21	MS: 09:49	MS: 10:16	MS: 10:46	MS: 11:17
						LQ: 20:35
19	20	21	22	23	24	25
SR: 07:26	SR: 07:25	SR: 07:23	SR: 07:21	SR: 07:20	SR: 07:18	SR: 07:16
SS: 18:05	SS: 18:06	SS: 18:08	SS: 18:09	SS: 18:11	SS: 18:12	SS: 18:13
MR: 01:48	MR: 02:44	MR: 03:37	MR: 04:27	MR: 05:13	MR: 05:56	MR: 06:35
MS: 11:52	MS: 12:31	MS: 13:16	MS: 14:06	MS: 15:01	MS: 16:02	MS: 17:07
26	27	28				
SR: 07:15	SR: 07:13	SR: 07:11				
SS: 18:15	SS: 18:16	SS: 18:17				
MR: 07:10	MR: 07:43	MR: 08:15				
MS: 18:14	MS: 19:24	MS: 20:35				
NM: 16:00						
SE: 15:55						

March 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
			SR: 07:09	SR: 07:08	SR: 07:06	SR: 07:04
			SS: 18:19	SS: 18:20	SS: 18:22	SS: 18:23
			MR: 08:47	MR: 09:20	MR: 09:56	MR: 10:36
			MS: 21:46	MS: 22:58	MS: None	MS: 00:09
5	6	7	8	9	10	11
SR: 07:02	SR: 07:00	SR: 06:59	SR: 06:57	SR: 06:55	SR: 06:53	SR: 06:51
SS: 18:24	SS: 18:26	SS: 18:27	SS: 18:28	SS: 18:30	SS: 18:31	SS: 18:32
MR: 11:21	MR: 12:11	MR: 13:08	MR: 14:10	MR: 15:15	MR: 16:22	MR: 17:28
MS: 01:19	MS: 02:24	MS: 03:24	MS: 04:18	MS: 05:04	MS: 05:44	MS: 06:19
FQ: 12:34						
12	13	14	15	16	17	18
SR: 06:49	SR: 06:48	SR: 06:46	SR: 06:44	SR: 06:42	SR: 06:40	SR: 06:38
SS: 18:34	SS: 18:35	SS: 18:36	SS: 18:38	SS: 18:39	SS: 18:40	SS: 18:41
MR: 18:33	MR: 19:36	MR: 20:39	MR: 21:40	MR: 22:39	MR: 23:37	MR: None
MS: 06:51	MS: 07:20	MS: 07:48	MS: 08:16	MS: 08:45	MS: 09:16	MS: 09:49
FM: 15:55						
19	20	21	22	23	24	25
SR: 06:36	SR: 06:35	SR: 06:33	SR: 06:31	SR: 06:29	SR: 06:27	SR: 06:25
SS: 18:43	SS: 18:44	SS: 18:45	SS: 18:47	SS: 18:48	SS: 18:49	SS: 18:50
MR: 00:34	MR: 01:28	MR: 02:18	MR: 03:06	MR: 03:49	MR: 04:29	MR: 05:06
MS: 10:26	MS: 11:08	MS: 11:55	MS: 12:48	MS: 13:45	MS: 14:47	MS: 15:54
	LQ: 17:01					
	MEQ:11:25					
26	27	28	29	30	31	
SR: 06:23	SR: 06:21	SR: 06:19	SR: 06:18	SR: 06:16	SR: 06:14	
SS: 18:52	SS: 18:53	SS: 18:54	SS: 18:56	SS: 18:57	SS: 18:58	
MR: 05:40	MR: 06:12	MR: 06:45	MR: 07:18	MR: 07:54	MR: 08:33	
MS: 17:03	MS: 18:14	MS: 19:27	MS: 20:41	MS: 21:55	MS: 23:08	
		NM: 03:59				

April 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 SR: 06:12 SS: 18:59 MR: 09:17 MS: None
2 SR: 06:10 SS: 19:01 MR: 10:07 MS: 00:17	3 SR: 06:08 SS: 19:02 MR: 11:03 MS: 01:20 FQ: 19:41	4 SR: 06:06 SS: 19:03 MR: 12:03 MS: 02:16	5 SR: 06:05 SS: 19:04 MR: 13:07 MS: 03:04	6 SR: 06:03 SS: 19:06 MR: 14:12 MS: 03:45	7 SR: 06:01 SS: 19:07 MR: 15:18 MS: 04:21	8 SR: 05:59 SS: 19:08 MR: 16:22 MS: 04:53
9 SR: 05:57 SS: 19:10 MR: 17:25 MS: 05:22	10 SR: 05:55 SS: 19:11 MR: 18:27 MS: 05:50	11 SR: 05:54 SS: 19:12 MR: 19:29 MS: 06:18 FM: 07:09	12 SR: 05:52 SS: 19:13 MR: 20:29 MS: 06:46	13 SR: 05:50 SS: 19:15 MR: 21:28 MS: 07:15	14 SR: 05:48 SS: 19:16 MR: 22:25 MS: 07:47	15 SR: 05:47 SS: 19:17 MR: 23:20 MS: 08:23
16 SR: 05:45 SS: 19:18 MR: None MS: 09:03	17 SR: 05:43 SS: 19:20 MR: 00:12 MS: 09:47	18 SR: 05:41 SS: 19:21 MR: 01:00 MS: 10:37	19 SR: 05:40 SS: 19:22 MR: 01:45 MS: 11:32 LQ: 11:00	20 SR: 05:38 SS: 19:24 MR: 02:25 MS: 12:31	21 SR: 05:36 SS: 19:25 MR: 03:02 MS: 13:34	22 SR: 05:35 SS: 19:26 MR: 03:36 MS: 14:40
23 SR: 05:33 SS: 19:27 MR: 04:09 MS: 15:49	24 SR: 05:31 SS: 19:29 MR: 04:41 MS: 17:01	25 SR: 05:30 SS: 19:30 MR: 05:13 MS: 18:16	26 SR: 05:28 SS: 19:31 MR: 05:47 MS: 19:31 NM: 13:18	27 SR: 05:27 SS: 19:32 MR: 06:25 MS: 20:48	28 SR: 05:25 SS: 19:34 MR: 07:08 MS: 22:01	29 SR: 05:23 SS: 19:35 MR: 07:57 MS: 23:10
30 SR: 05:22 SS: 19:36 MR: 08:53 MS: None						

May 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
	SR: 05:20	SR: 05:19	SR: 05:17	SR: 05:16	SR: 05:15	SR: 05:13
	SS: 19:37	SS: 19:39	SS: 19:40	SS: 19:41	SS: 19:42	SS: 19:44
	MR: 09:54	MR: 10:58	MR: 12:04	MR: 13:10	MR: 14:15	MR: 15:18
	MS: 00:11	MS: 01:03	MS: 01:47	MS: 02:25	MS: 02:57	MS: 03:27
			FQ: 03:48			
7	8	9	10	11	12	13
SR: 05:12	SR: 05:11	SR: 05:09	SR: 05:08	SR: 05:07	SR: 05:05	SR: 05:04
SS: 19:45	SS: 19:46	SS: 19:47	SS: 19:48	SS: 19:50	SS: 19:51	SS: 19:52
MR: 16:20	MR: 17:21	MR: 18:21	MR: 19:20	MR: 20:18	MR: 21:14	MR: 22:08
MS: 03:55	MS: 04:21	MS: 04:49	MS: 05:17	MS: 05:48	MS: 06:22	MS: 07:00
			FM: 22:44			
14	15	16	17	18	19	20
SR: 05:03	SR: 05:02	SR: 05:01	SR: 05:00	SR: 04:59	SR: 04:58	SR: 04:57
SS: 19:53	SS: 19:54	SS: 19:55	SS: 19:57	SS: 19:58	SS: 19:59	SS: 20:00
MR: 22:58	MR: 23:43	MR: None	MR: 00:24	MR: 01:02	MR: 01:36	MR: 02:08
MS: 07:43	MS: 08:30	MS: 09:23	MS: 10:20	MS: 11:20	MS: 12:23	MS: 13:29
					LQ: 01:36	
21	22	23	24	25	26	27
SR: 04:56	SR: 04:55	SR: 04:54	SR: 04:53	SR: 04:52	SR: 04:51	SR: 04:51
SS: 20:01	SS: 20:02	SS: 20:03	SS: 20:04	SS: 20:05	SS: 20:06	SS: 20:07
MR: 02:39	MR: 03:10	MR: 03:42	MR: 04:17	MR: 04:57	MR: 05:43	MR: 06:37
MS: 14:38	MS: 15:49	MS: 17:04	MS: 18:20	MS: 19:36	MS: 20:49	MS: 21:56
				NM: 20:46		
28	29	30	31			
SR: 04:50	SR: 04:49	SR: 04:49	SR: 04:48			
SS: 20:08	SS: 20:09	SS: 20:10	SS: 20:11			
MR: 07:37	MR: 08:43	MR: 09:51	MR: 10:59			
MS: 22:55	MS: 23:44	MS: None	MS: 00:25			

June 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
				1	2	3
				SR: 04:47	SR: 04:47	SR: 04:46
				SS: 20:12	SS: 20:12	SS: 20:13
				MR: 12:06	MR: 13:10	MR: 14:13
				MS: 01:01	MS: 01:32	MS: 02:00
				FQ: 13:43		
4	5	6	7	8	9	10
SR: 04:46	SR: 04:46	SR: 04:45	SR: 04:45	SR: 04:45	SR: 04:44	SR: 04:44
SS: 20:14	SS: 20:15	SS: 20:15	SS: 20:16	SS: 20:17	SS: 20:17	SS: 20:18
MR: 15:14	MR: 16:14	MR: 17:14	MR: 18:12	MR: 19:09	MR: 20:04	MR: 20:55
MS: 02:27	MS: 02:53	MS: 03:21	MS: 03:51	MS: 04:23	MS: 05:00	MS: 05:41
					FM: 14:11	
11	12	13	14	15	16	17
SR: 04:44	SR: 04:44	SR: 04:44	SR: 04:44	SR: 04:44	SR: 04:44	SR: 04:44
SS: 20:19	SS: 20:19	SS: 20:20	SS: 20:20	SS: 20:21	SS: 20:21	SS: 20:21
MR: 21:42	MR: 22:25	MR: 23:04	MR: 23:39	MR: None	MR: 00:11	MR: 00:41
MS: 06:27	MS: 07:17	MS: 08:13	MS: 09:12	MS: 10:13	MS: 11:17	MS: 12:23
						LQ: 12:35
18	19	20	21	22	23	24
SR: 04:44	SR: 04:44	SR: 04:44	SR: 04:44	SR: 04:44	SR: 04:45	SR: 04:45
SS: 20:22	SS: 20:22	SS: 20:22	SS: 20:22	SS: 20:23	SS: 20:23	SS: 20:23
MR: 01:10	MR: 01:41	MR: 02:13	MR: 02:49	MR: 03:31	MR: 04:20	MR: 05:16
MS: 13:31	MS: 14:41	MS: 15:54	MS: 17:09	MS: 18:23	MS: 19:34	MS: 20:38
						NM: 03:33
			JSO:05:22			
25	26	27	28	29	30	
SR: 04:45	SR: 04:46	SR: 04:46	SR: 04:47	SR: 04:47	SR: 04:48	
SS: 20:23	SS: 20:23	SS: 20:23	SS: 20:23	SS: 20:23	SS: 20:23	
MR: 06:21	MR: 07:30	MR: 08:40	MR: 09:50	MR: 10:57	MR: 12:02	
MS: 21:34	MS: 22:20	MS: 22:59	MS: 23:33	MS: None	MS: 00:03	

July 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 SR: 04:48 SS: 20:22 MR: 13:05 MS: 00:31 FQ: 01:52
2 SR: 04:49 SS: 20:22 MR: 14:06 MS: 00:58	3 SR: 04:49 SS: 20:22 MR: 15:06 MS: 01:25	4 SR: 04:50 SS: 20:22 MR: 16:05 MS: 01:54	5 SR: 04:51 SS: 20:21 MR: 17:02 MS: 02:25	6 SR: 04:51 SS: 20:21 MR: 17:58 MS: 03:00	7 SR: 04:52 SS: 20:20 MR: 18:51 MS: 03:39	8 SR: 04:53 SS: 20:20 MR: 19:40 MS: 04:23
9 SR: 04:53 SS: 20:20 MR: 20:25 MS: 05:13 FM: 05:09	10 SR: 04:54 SS: 20:19 MR: 21:05 MS: 06:07	11 SR: 04:55 SS: 20:18 MR: 21:42 MS: 07:05	12 SR: 04:56 SS: 20:18 MR: 22:14 MS: 08:06	13 SR: 04:57 SS: 20:17 MR: 22:45 MS: 09:09	14 SR: 04:58 SS: 20:16 MR: 23:14 MS: 10:14	15 SR: 04:59 SS: 20:16 MR: 23:43 MS: 11:20
16 SR: 05:00 SS: 20:15 MR: None MS: 12:28 LQ: 20:28	17 SR: 05:00 SS: 20:14 MR: 00:14 MS: 13:38	18 SR: 05:01 SS: 20:13 MR: 00:47 MS: 14:49	19 SR: 05:02 SS: 20:13 MR: 01:25 MS: 16:02	20 SR: 05:03 SS: 20:12 MR: 02:08 MS: 17:12	21 SR: 05:04 SS: 20:11 MR: 03:00 MS: 18:19	22 SR: 05:05 SS: 20:10 MR: 03:59 MS: 19:18
23 SR: 05:07 SS: 20:09 MR: 05:06 MS: 20:10 NM: 10:47	24 SR: 05:08 SS: 20:08 MR: 06:16 MS: 20:53	25 SR: 05:09 SS: 20:07 MR: 07:28 MS: 21:30	26 SR: 05:10 SS: 20:06 MR: 08:38 MS: 22:03	27 SR: 05:11 SS: 20:04 MR: 09:46 MS: 22:32	28 SR: 05:12 SS: 20:03 MR: 10:51 MS: 23:00	29 SR: 05:13 SS: 20:02 MR: 11:54 MS: 23:28
30 SR: 05:14 SS: 20:01 MR: 12:56 MS: 23:56 FQ: 16:24	31 SR: 05:15 SS: 20:00 MR: 13:56 MS: None					

August 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
		SR: 05:16	SR: 05:18	SR: 05:19	SR: 05:20	SR: 05:21
		SS: 19:58	SS: 19:57	SS: 19:56	SS: 19:54	SS: 19:53
		MR: 14:54	MR: 15:50	MR: 16:44	MR: 17:35	MR: 18:22
		MS: 00:27	MS: 01:00	MS: 01:37	MS: 02:20	MS: 03:07
6	7	8	9	10	11	12
SR: 05:22	SR: 05:23	SR: 05:25	SR: 05:26	SR: 05:27	SR: 05:28	SR: 05:29
SS: 19:52	SS: 19:50	SS: 19:49	SS: 19:47	SS: 19:46	SS: 19:44	SS: 19:43
MR: 19:04	MR: 19:42	MR: 20:17	MR: 20:48	MR: 21:18	MR: 21:48	MR: 22:18
MS: 04:00	MS: 04:57	MS: 05:58	MS: 07:01	MS: 08:06	MS: 09:13	MS: 10:20
	FM: 19:13					
	LE: 19:20					
13	14	15	16	17	18	19
SR: 05:30	SR: 05:32	SR: 05:33	SR: 05:34	SR: 05:35	SR: 05:36	SR: 05:38
SS: 19:41	SS: 19:40	SS: 19:38	SS: 19:36	SS: 19:35	SS: 19:33	SS: 19:32
MR: 22:49	MR: 23:24	MR: None	MR: 00:05	MR: 00:51	MR: 01:46	MR: 02:47
MS: 11:29	MS: 12:39	MS: 13:49	MS: 14:58	MS: 16:04	MS: 17:05	MS: 17:59
		LQ: 02:17				
20	21	22	23	24	25	26
SR: 05:39	SR: 05:40	SR: 05:41	SR: 05:43	SR: 05:44	SR: 05:45	SR: 05:46
SS: 19:30	SS: 19:28	SS: 19:26	SS: 19:25	SS: 19:23	SS: 19:21	SS: 19:19
MR: 03:55	MR: 05:05	MR: 06:16	MR: 07:26	MR: 08:33	MR: 09:38	MR: 10:42
MS: 18:45	MS: 19:25	MS: 19:59	MS: 20:31	MS: 21:00	MS: 21:28	MS: 21:56
	NM: 19:32					
	SE: 19:27					
27	28	29	30	31		
SR: 05:47	SR: 05:49	SR: 05:50	SR: 05:51	SR: 05:52		
SS: 19:18	SS: 19:16	SS: 19:14	SS: 19:12	SS: 19:10		
MR: 11:43	MR: 12:43	MR: 13:41	MR: 14:36	MR: 15:28		
MS: 22:26	MS: 22:59	MS: 23:34	MS: None	MS: 00:15		
		FQ: 09:14				

September 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
					SR: 05:53	SR: 05:55
					SS: 19:09	SS: 19:07
					MR: 16:16	MR: 17:00
					MS: 01:00	MS: 01:50
3	4	5	6	7	8	9
SR: 05:56	SR: 05:57	SR: 05:58	SR: 05:59	SR: 06:00	SR: 06:02	SR: 06:03
SS: 19:05	SS: 19:03	SS: 19:01	SS: 18:59	SS: 18:57	SS: 18:56	SS: 18:54
MR: 17:40	MR: 18:16	MR: 18:49	MR: 19:20	MR: 19:50	MR: 20:20	MR: 20:52
MS: 02:46	MS: 03:46	MS: 04:49	MS: 05:54	MS: 07:01	MS: 08:10	MS: 09:19
			FM: 08:05			
10	11	12	13	14	15	16
SR: 06:04	SR: 06:05	SR: 06:06	SR: 06:08	SR: 06:09	SR: 06:10	SR: 06:11
SS: 18:52	SS: 18:50	SS: 18:48	SS: 18:46	SS: 18:44	SS: 18:42	SS: 18:40
MR: 21:26	MR: 22:04	MR: 22:48	MR: 23:39	MR: None	MR: 00:37	MR: 01:41
MS: 10:30	MS: 11:41	MS: 12:50	MS: 13:57	MS: 14:58	MS: 15:53	MS: 16:40
			LQ: 07:27			
17	18	19	20	21	22	23
SR: 06:12	SR: 06:14	SR: 06:15	SR: 06:16	SR: 06:17	SR: 06:19	SR: 06:20
SS: 18:38	SS: 18:37	SS: 18:35	SS: 18:33	SS: 18:31	SS: 18:29	SS: 18:27
MR: 02:49	MR: 03:58	MR: 05:07	MR: 06:15	MR: 07:21	MR: 08:26	MR: 09:29
MS: 17:21	MS: 17:57	MS: 18:29	MS: 18:58	MS: 19:27	MS: 19:55	MS: 20:25
			NM: 06:31			
					SEQ:20:59	
24	25	26	27	28	29	30
SR: 06:21	SR: 06:22	SR: 06:23	SR: 06:25	SR: 06:26	SR: 06:27	SR: 06:28
SS: 18:25	SS: 18:23	SS: 18:21	SS: 18:19	SS: 18:17	SS: 18:16	SS: 18:14
MR: 10:30	MR: 11:30	MR: 12:26	MR: 13:20	MR: 14:09	MR: 14:54	MR: 15:36
MS: 20:56	MS: 21:31	MS: 22:09	MS: 22:52	MS: 23:40	MS: None	MS: 00:33
				FQ: 03:55		

October 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
SR: 06:30	SR: 06:31	SR: 06:32	SR: 06:33	SR: 06:35	SR: 06:36	SR: 06:37
SS: 18:12	SS: 18:10	SS: 18:08	SS: 18:06	SS: 18:04	SS: 18:02	SS: 18:01
MR: 16:13	MR: 16:47	MR: 17:19	MR: 17:49	MR: 18:19	MR: 18:51	MR: 19:25
MS: 01:31	MS: 02:32	MS: 03:36	MS: 04:43	MS: 05:52	MS: 07:03	MS: 08:16
				FM: 19:42		
8	9	10	11	12	13	14
SR: 06:38	SR: 06:40	SR: 06:41	SR: 06:42	SR: 06:43	SR: 06:45	SR: 06:46
SS: 17:59	SS: 17:57	SS: 17:55	SS: 17:53	SS: 17:52	SS: 17:50	SS: 17:48
MR: 20:02	MR: 20:45	MR: 21:35	MR: 22:31	MR: 23:33	MR: None	MR: 00:39
MS: 09:29	MS: 10:41	MS: 11:50	MS: 12:54	MS: 13:51	MS: 14:40	MS: 15:22
				LQ: 13:27		
15	16	17	18	19	20	21
SR: 06:47	SR: 06:49	SR: 06:50	SR: 06:51	SR: 06:53	SR: 06:54	SR: 06:55
SS: 17:46	SS: 17:45	SS: 17:43	SS: 17:41	SS: 17:39	SS: 17:38	SS: 17:36
MR: 01:47	MR: 02:55	MR: 04:02	MR: 05:08	MR: 06:13	MR: 07:16	MR: 08:18
MS: 15:58	MS: 16:30	MS: 17:00	MS: 17:28	MS: 17:56	MS: 18:24	MS: 18:55
				NM: 20:13		
22	23	24	25	26	27	28
SR: 06:57	SR: 06:58	SR: 06:59	SR: 07:01	SR: 07:02	SR: 07:03	SR: 07:05
SS: 17:35	SS: 17:33	SS: 17:31	SS: 17:30	SS: 17:28	SS: 17:27	SS: 17:25
MR: 09:19	MR: 10:17	MR: 11:12	MR: 12:03	MR: 12:50	MR: 13:32	MR: 14:10
MS: 19:28	MS: 20:04	MS: 20:46	MS: 21:31	MS: 22:22	MS: 23:17	MS: None
					FQ: 23:23	
29	30	31				
SR: 07:06	SR: 07:08	SR: 07:09				
SS: 17:24	SS: 17:22	SS: 17:21				
MR: 14:45	MR: 15:17	MR: 15:47				
MS: 00:16	MS: 01:18	MS: 02:22				

November 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
			SR: 07:10	SR: 07:12	SR: 07:13	SR: 07:14
			SS: 17:19	SS: 17:18	SS: 17:16	SS: 17:15
			MR: 16:17	MR: 16:47	MR: 17:20	MR: 17:56
			MS: 03:30	MS: 04:40	MS: 05:52	MS: 07:06
						FM: 06:24
5	6	7	8	9	10	11
SR: 07:16	SR: 07:17	SR: 07:19	SR: 07:20	SR: 07:21	SR: 07:23	SR: 07:24
SS: 17:14	SS: 17:12	SS: 17:11	SS: 17:10	SS: 17:09	SS: 17:08	SS: 17:06
MR: 18:38	MR: 19:26	MR: 20:22	MR: 21:24	MR: 22:30	MR: 23:38	MR: None
MS: 08:22	MS: 09:35	MS: 10:44	MS: 11:46	MS: 12:39	MS: 13:24	MS: 14:02
					LQ: 21:38	
12	13	14	15	16	17	18
SR: 07:25	SR: 07:27	SR: 07:28	SR: 07:30	SR: 07:31	SR: 07:32	SR: 07:34
SS: 17:05	SS: 17:04	SS: 17:03	SS: 17:02	SS: 17:01	SS: 17:00	SS: 16:59
MR: 00:47	MR: 01:54	MR: 02:59	MR: 04:03	MR: 05:06	MR: 06:08	MR: 07:09
MS: 14:35	MS: 15:04	MS: 15:32	MS: 15:59	MS: 16:27	MS: 16:56	MS: 17:27
						NM: 12:43
19	20	21	22	23	24	25
SR: 07:35	SR: 07:36	SR: 07:38	SR: 07:39	SR: 07:40	SR: 07:41	SR: 07:43
SS: 16:58	SS: 16:58	SS: 16:57	SS: 16:56	SS: 16:55	SS: 16:55	SS: 16:54
MR: 08:08	MR: 09:05	MR: 09:58	MR: 10:47	MR: 11:31	MR: 12:10	MR: 12:45
MS: 18:02	MS: 18:41	MS: 19:25	MS: 20:14	MS: 21:07	MS: 22:04	MS: 23:03
26	27	28	29	30		
SR: 07:44	SR: 07:45	SR: 07:46	SR: 07:48	SR: 07:49		
SS: 16:53	SS: 16:53	SS: 16:52	SS: 16:52	SS: 16:51		
MR: 13:17	MR: 13:47	MR: 14:16	MR: 14:44	MR: 15:15		
MS: None	MS: 00:05	MS: 01:10	MS: 02:16	MS: 03:26		
FQ: 18:03						

December 2017

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
					SR: 07:50	SR: 07:51
					SS: 16:51	SS: 16:51
					MR: 15:48	MR: 16:27
					MS: 04:38	MS: 05:53
3	4	5	6	7	8	9
SR: 07:52	SR: 07:53	SR: 07:54	SR: 07:55	SR: 07:56	SR: 07:57	SR: 07:58
SS: 16:50	SS: 16:50	SS: 16:50	SS: 16:50	SS: 16:49	SS: 16:49	SS: 16:49
MR: 17:12	MR: 18:05	MR: 19:06	MR: 20:13	MR: 21:24	MR: 22:35	MR: 23:44
MS: 07:09	MS: 08:23	MS: 09:31	MS: 10:31	MS: 11:21	MS: 12:03	MS: 12:38
FM: 16:49						
10	11	12	13	14	15	16
SR: 07:59	SR: 08:00	SR: 08:01	SR: 08:02	SR: 08:03	SR: 08:03	SR: 08:04
SS: 16:49	SS: 16:49	SS: 16:49	SS: 16:49	SS: 16:50	SS: 16:50	SS: 16:50
MR: None	MR: 00:51	MR: 01:56	MR: 02:59	MR: 04:01	MR: 05:02	MR: 06:01
MS: 13:09	MS: 13:38	MS: 14:05	MS: 14:31	MS: 14:59	MS: 15:29	MS: 16:03
LQ: 08:53						
17	18	19	20	21	22	23
SR: 08:05	SR: 08:05	SR: 08:06	SR: 08:07	SR: 08:07	SR: 08:08	SR: 08:08
SS: 16:50	SS: 16:51	SS: 16:51	SS: 16:52	SS: 16:52	SS: 16:53	SS: 16:53
MR: 06:59	MR: 07:53	MR: 08:44	MR: 09:30	MR: 10:11	MR: 10:47	MR: 11:20
MS: 16:40	MS: 17:22	MS: 18:09	MS: 19:01	MS: 19:56	MS: 20:55	MS: 21:55
	NM: 07:31					
				DSO:17:28		
24	25	26	27	28	29	30
SR: 08:09	SR: 08:09	SR: 08:09	SR: 08:09	SR: 08:10	SR: 08:10	SR: 08:10
SS: 16:54	SS: 16:54	SS: 16:55	SS: 16:56	SS: 16:57	SS: 16:57	SS: 16:58
MR: 11:50	MR: 12:18	MR: 12:46	MR: 13:14	MR: 13:44	MR: 14:19	MR: 14:58
MS: 22:57	MS: None	MS: 00:01	MS: 01:07	MS: 02:15	MS: 03:26	MS: 04:40
		FQ: 10:20				
31						
SR: 08:10						
SS: 16:59						
MR: 15:46						
MS: 05:54						

Grange Obs. Latitude: 45°08'32" N Longitude: 7°08'26" E
Local Time = UT + 1.00 hours Elevation: 470 meters

Seasons Report for 2017

MEQ: 20/03/2017 11:25	Winter Length:	88.99 days
JSO: 21/06/2017 05:22	Spring Length:	92.75 days
SEQ: 22/09/2017 20:59	Summer Length:	93.65 days
DSO: 21/12/2017 17:28	Autumn Length:	89.85 days

Dates of Easter Report for 2017

16/04/2017

Grange Obs. Latitude: 45°08'32" N Longitude: 7°08'26" E
Local Time = UT + 1.00 hours Elevation: 470 meters

Lunar Eclipse Report for 2017

Lunar eclipse on 07/08/2017
Moon rise: 19:42
Moon set: 04:57
Magnitude: 0.25
Partial phase begins: 18:23
Time of maximum eclipse: 19:20
Partial phase ends: 20:18

Grange Obs. Latitude: 45°08'32" N Longitude: 7°08'26" E
Local Time = UT + 1.00 hours Elevation: 470 meters

Solar Eclipse Report for 2017

Solar eclipse on 26/02/2017

Sun rise: 07:15

Sun set: 18:15

Time of maximum eclipse: 15:55

Eclipse is annular

Eclipse is visible in the southern hemisphere

Solar eclipse on 21/08/2017

Sun rise: 05:40

Sun set: 19:28

Time of maximum eclipse: 19:27

Eclipse is total

Eclipse is visible in the northern hemisphere

The time of maximum eclipse (above) does not necessarily specify when the eclipse will be maximal when viewed from the specified location.

To see how the eclipse will look at the specified location, run a Planetarium movie of the eclipse.

Grange Obs. Latitude: 45°08'32" N Longitude: 7°08'26" E
 Local Time = UT + 1.00 hours Elevation: 470 meters

Planet View Info Report for 01/01/2017 to 31/12/2017

Mercury

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
01/01/2017	07:23	16:33	18h13m55s	-20°21'04"	8°04'51"	0.049	0.68502
08/01/2017	06:39	15:49	17h55m08s	-20°24'05"	19°16'01"	0.300	0.78640
15/01/2017	06:28	15:30	18h06m32s	-21°21'27"	23°35'11"	0.530	0.92521
22/01/2017	06:34	15:28	18h35m23s	-22°14'48"	23°59'00"	0.682	1.05519
29/01/2017	06:46	15:37	19h12m54s	-22°29'01"	22°28'16"	0.779	1.16386
05/02/2017	06:56	15:56	19h54m52s	-21°48'24"	19°53'53"	0.847	1.25008
12/02/2017	07:05	16:22	20h39m13s	-20°06'03"	16°33'55"	0.898	1.31503
19/02/2017	07:09	16:54	21h24m58s	-17°18'49"	12°32'19"	0.939	1.35907
26/02/2017	07:11	17:31	22h11m42s	-13°25'30"	7°47'37"	0.974	1.38015
05/03/2017	07:10	18:13	22h59m28s	-8°27'09"	2°34'20"	0.997	1.37226
12/03/2017	07:07	18:59	23h48m15s	-2°30'38"	4°50'15"	0.985	1.32379
19/03/2017	07:02	19:46	0h36m51s	3°59'18"	11°27'31"	0.888	1.21966
26/03/2017	06:53	20:26	1h20m52s	10°03'40"	16°58'44"	0.668	1.05827
02/04/2017	06:38	20:46	1h52m35s	14°23'43"	18°58'37"	0.391	0.87266
09/04/2017	06:16	20:35	2h05m39s	16°06'01"	15°46'21"	0.160	0.71086
16/04/2017	05:47	19:54	1h59m47s	14°56'10"	7°19'42"	0.025	0.60523
23/04/2017	05:18	18:56	1h44m16s	11°45'12"	4°42'35"	0.009	0.56836
30/04/2017	04:53	18:07	1h33m26s	8°38'38"	15°04'50"	0.089	0.59371
07/05/2017	04:34	17:37	1h35m11s	7°14'48"	22°04'25"	0.209	0.66301
14/05/2017	04:18	17:28	1h49m39s	7°49'48"	25°20'05"	0.332	0.75951
21/05/2017	04:06	17:36	2h14m38s	9°59'46"	25°32'22"	0.454	0.87284
28/05/2017	03:59	17:58	2h48m39s	13°14'54"	23°17'16"	0.581	0.99643
04/06/2017	03:57	18:32	3h31m42s	17°05'29"	18°53'03"	0.722	1.12272
11/06/2017	04:04	19:17	4h24m43s	20°54'14"	12°27'55"	0.873	1.23664
18/06/2017	04:25	20:08	5h27m21s	23°46'00"	4°27'45"	0.983	1.31091
25/06/2017	05:00	20:51	6h34m29s	24°41'37"	4°26'42"	0.984	1.32018
02/07/2017	05:42	21:18	7h37m52s	23°26'16"	12°10'15"	0.894	1.26908
09/07/2017	06:25	21:29	8h32m39s	20°34'06"	18°26'42"	0.781	1.18320
16/07/2017	07:00	21:27	9h18m04s	16°48'28"	23°05'27"	0.674	1.08293
23/07/2017	07:27	21:17	9h54m40s	12°43'50"	26°04'27"	0.573	0.97835
30/07/2017	07:44	20:59	10h22m33s	8°48'34"	27°12'00"	0.469	0.87411
06/08/2017	07:47	20:36	10h40m37s	5°32'10"	25°58'19"	0.352	0.77420
13/08/2017	07:33	20:05	10h46m15s	3°33'36"	21°31'57"	0.216	0.68628
20/08/2017	06:54	19:28	10h36m54s	3°41'49"	13°05'21"	0.079	0.62709
27/08/2017	05:56	18:51	10h16m11s	6°15'06"	4°12'01"	0.009	0.62540
03/09/2017	04:59	18:23	10h00m37s	9°38'58"	12°04'30"	0.102	0.70815
10/09/2017	04:33	18:11	10h07m43s	11°17'04"	17°33'55"	0.358	0.87019
17/09/2017	04:43	18:10	10h38m48s	9°54'40"	16°48'34"	0.666	1.06463
24/09/2017	05:16	18:10	11h22m45s	6°00'47"	12°12'03"	0.882	1.23162
01/10/2017	05:56	18:07	12h09m15s	0°52'10"	6°28'03"	0.976	1.34315
08/10/2017	06:35	18:03	12h54m21s	-4°31'28"	1°21'12"	0.999	1.40385
15/10/2017	07:12	17:58	13h37m46s	-9°40'03"	4°22'03"	0.992	1.42565
22/10/2017	07:47	17:53	14h20m13s	-14°19'26"	8°44'35"	0.972	1.41694
29/10/2017	08:20	17:49	15h02m25s	-18°21'14"	12°40'23"	0.942	1.38180
05/11/2017	08:50	17:48	15h44m44s	-21°38'23"	16°10'07"	0.900	1.32125
12/11/2017	09:17	17:51	16h26m51s	-24°03'13"	19°10'04"	0.839	1.23414
19/11/2017	09:37	17:56	17h07m05s	-25°27'17"	21°22'05"	0.741	1.11820
26/11/2017	09:43	18:00	17h40m44s	-25°42'47"	21°51'41"	0.577	0.97336
03/12/2017	09:25	17:52	17h56m52s	-24°45'52"	18°19'50"	0.316	0.81329
10/12/2017	08:27	17:15	17h39m27s	-22°37'18"	7°11'15"	0.041	0.69321
17/12/2017	07:10	16:22	17h01m19s	-20°05'49"	9°22'42"	0.070	0.70117
24/12/2017	06:28	15:47	16h48m06s	-19°29'31"	19°30'03"	0.352	0.82549
31/12/2017	06:23	15:31	17h04m30s	-20°40'08"	22°33'34"	0.591	0.97802

Venus

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
01/01/2017	10:41	20:57	22h00m47s	-13°41'43"	46°45'08"	0.566	0.76940
08/01/2017	10:28	21:11	22h28m35s	-10°32'47"	47°04'43"	0.533	0.71775
15/01/2017	10:13	21:23	22h54m35s	-7°15'50"	47°07'26"	0.498	0.66586
22/01/2017	09:56	21:32	23h18m40s	-3°55'40"	46°48'46"	0.459	0.61405
29/01/2017	09:37	21:40	23h40m37s	-0°37'09"	46°03'12"	0.416	0.56262
05/02/2017	09:16	21:44	0h00m05s	2°34'21"	44°43'05"	0.369	0.51194
12/02/2017	08:52	21:44	0h16m27s	5°32'33"	42°37'32"	0.317	0.46267
19/02/2017	08:26	21:39	0h28m49s	8°09'55"	39°32'38"	0.259	0.41580
26/02/2017	07:57	21:27	0h36m08s	10°16'55"	35°12'07"	0.196	0.37264
05/03/2017	07:24	21:05	0h37m11s	11°40'27"	29°19'18"	0.131	0.33495
12/03/2017	06:49	20:32	0h31m10s	12°04'33"	21°47'22"	0.071	0.30523
19/03/2017	06:13	19:48	0h18m53s	11°17'04"	13°16'49"	0.026	0.28647
26/03/2017	05:38	18:57	0h03m39s	9°23'22"	8°17'55"	0.010	0.28118
02/04/2017	05:08	18:06	23h50m11s	6°53'39"	13°57'54"	0.029	0.29024
09/04/2017	04:42	17:22	23h42m23s	4°29'40"	22°19'58"	0.075	0.31259
16/04/2017	04:21	16:47	23h41m51s	2°42'46"	29°33'59"	0.136	0.34580
23/04/2017	04:04	16:23	23h48m12s	1°45'14"	35°08'20"	0.199	0.38700
30/04/2017	03:49	16:08	0h00m08s	1°35'39"	39°12'18"	0.261	0.43377
07/05/2017	03:36	15:59	0h16m19s	2°07'06"	42°03'13"	0.318	0.48437
14/05/2017	03:23	15:55	0h35m41s	3°11'47"	43°56'55"	0.369	0.53760
21/05/2017	03:11	15:56	0h57m29s	4°42'10"	45°06'29"	0.416	0.59246
28/05/2017	03:00	16:00	1h21m11s	6°31'05"	45°42'20"	0.459	0.64822
04/06/2017	02:49	16:06	1h46m25s	8°32'08"	45°52'03"	0.499	0.70441
11/06/2017	02:39	16:14	2h13m01s	10°39'42"	45°40'55"	0.535	0.76068
18/06/2017	02:30	16:24	2h40m53s	12°48'32"	45°13'04"	0.569	0.81667
25/06/2017	02:23	16:35	3h09m59s	14°53'35"	44°31'57"	0.601	0.87206
02/07/2017	02:16	16:46	3h40m15s	16°50'01"	43°40'05"	0.631	0.92660
09/07/2017	02:12	16:58	4h11m39s	18°33'21"	42°39'11"	0.660	0.98019
16/07/2017	02:10	17:10	4h44m10s	19°59'24"	41°30'39"	0.687	1.03263
23/07/2017	02:11	17:21	5h17m40s	21°04'18"	40°15'54"	0.713	1.08370
30/07/2017	02:14	17:31	5h51m59s	21°44'46"	38°55'59"	0.737	1.13323
06/08/2017	02:20	17:40	6h26m53s	21°58'16"	37°31'32"	0.760	1.18117
13/08/2017	02:29	17:46	7h02m08s	21°43'10"	36°03'08"	0.782	1.22743
20/08/2017	02:41	17:50	7h37m28s	20°58'48"	34°31'31"	0.804	1.27184
27/08/2017	02:54	17:51	8h12m37s	19°45'36"	32°57'14"	0.824	1.31426
03/09/2017	03:10	17:50	8h47m22s	18°04'59"	31°20'35"	0.842	1.35468
10/09/2017	03:26	17:46	9h21m35s	15°59'10"	29°41'51"	0.860	1.39306
17/09/2017	03:43	17:41	9h55m14s	13°30'57"	28°01'29"	0.877	1.42932
24/09/2017	04:01	17:34	10h28m18s	10°43'44"	26°19'53"	0.893	1.46334
01/10/2017	04:19	17:26	11h00m51s	7°41'14"	24°37'13"	0.907	1.49512
08/10/2017	04:36	17:18	11h33m03s	4°27'19"	22°53'37"	0.921	1.52470
15/10/2017	04:54	17:08	12h05m03s	1°05'53"	21°09'27"	0.933	1.55205
22/10/2017	05:13	16:59	12h37m03s	-2°18'55"	19°24'59"	0.944	1.57711
29/10/2017	05:31	16:50	13h09m17s	-5°42'49"	17°40'21"	0.954	1.59988
05/11/2017	05:50	16:42	13h41m56s	-9°01'30"	15°55'36"	0.963	1.62045
12/11/2017	06:09	16:34	14h15m13s	-12°10'35"	14°10'59"	0.971	1.63886
19/11/2017	06:28	16:28	14h49m19s	-15°05'33"	12°26'43"	0.978	1.65509
26/11/2017	06:47	16:24	15h24m21s	-17°41'45"	10°42'53"	0.984	1.66912
03/12/2017	07:06	16:22	16h00m21s	-19°54'42"	8°59'27"	0.989	1.68107
10/12/2017	07:24	16:23	16h37m17s	-21°40'11"	7°16'37"	0.993	1.69101
17/12/2017	07:41	16:27	17h15m01s	-22°54'35"	5°34'38"	0.996	1.69895
24/12/2017	07:55	16:35	17h53m18s	-23°35'04"	3°53'50"	0.998	1.70484
31/12/2017	08:06	16:45	18h31m47s	-23°39'58"	2°15'29"	0.999	1.70877

Mars

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
01/01/2017	11:05	22:01	22h45m43s	-8°48'25"	58°46'25"	0.901	1.64051
08/01/2017	10:49	22:02	23h05m14s	-6°40'45"	56°55'17"	0.907	1.68734
15/01/2017	10:31	22:03	23h24m34s	-4°31'01"	55°03'42"	0.912	1.73439
22/01/2017	10:14	22:03	23h43m44s	-2°20'13"	53°11'27"	0.917	1.78165
29/01/2017	09:57	22:03	0h02m47s	-0°09'17"	51°18'31"	0.922	1.82900
05/02/2017	09:40	22:03	0h21m46s	2°00'49"	49°25'07"	0.928	1.87623
12/02/2017	09:22	22:03	0h40m43s	4°09'06"	47°31'14"	0.933	1.92325
19/02/2017	09:05	22:03	0h59m39s	6°14'41"	45°36'42"	0.938	1.97002
26/02/2017	08:48	22:03	1h18m39s	8°16'47"	43°41'28"	0.943	2.01638
05/03/2017	08:32	22:03	1h37m43s	10°14'34"	41°45'48"	0.947	2.06213
12/03/2017	08:15	22:02	1h56m54s	12°07'13"	39°49'45"	0.952	2.10713
19/03/2017	07:59	22:02	2h16m13s	13°53'58"	37°53'12"	0.956	2.15131
26/03/2017	07:43	22:01	2h35m41s	15°34'12"	35°56'03"	0.961	2.19455
02/04/2017	07:28	22:00	2h55m20s	17°07'14"	33°58'30"	0.965	2.23663
09/04/2017	07:14	21:59	3h15m09s	18°32'24"	32°00'38"	0.969	2.27739
16/04/2017	07:00	21:58	3h35m09s	19°49'10"	30°02'22"	0.972	2.31678
23/04/2017	06:47	21:56	3h55m18s	20°57'03"	28°03'32"	0.976	2.35468
30/04/2017	06:35	21:53	4h15m36s	21°55'36"	26°04'12"	0.979	2.39089
07/05/2017	06:23	21:50	4h36m00s	22°44'29"	24°04'29"	0.982	2.42524
14/05/2017	06:13	21:47	4h56m30s	23°23'24"	22°04'20"	0.985	2.45770
21/05/2017	06:03	21:42	5h17m02s	23°52'11"	20°03'31"	0.988	2.48817
28/05/2017	05:55	21:37	5h37m34s	24°10'45"	18°02'01"	0.990	2.51647
04/06/2017	05:47	21:30	5h58m03s	24°19'07"	15°59'56"	0.992	2.54244
11/06/2017	05:40	21:23	6h18m26s	24°17'23"	13°57'15"	0.994	2.56605
18/06/2017	05:33	21:14	6h38m40s	24°05'46"	11°53'46"	0.996	2.58723
25/06/2017	05:28	21:05	6h58m44s	23°44'31"	9°49'27"	0.997	2.60583
02/07/2017	05:23	20:54	7h18m34s	23°14'01"	7°44'29"	0.998	2.62170
09/07/2017	05:18	20:42	7h38m09s	22°34'41"	5°39'19"	0.999	2.63480
16/07/2017	05:14	20:30	7h57m27s	21°47'01"	3°35'04"	1.000	2.64512
23/07/2017	05:10	20:16	8h16m27s	20°51'30"	1°40'03"	1.000	2.65253
30/07/2017	05:07	20:02	8h35m09s	19°48'41"	1°26'27"	1.000	2.65689
06/08/2017	05:03	19:47	8h53m32s	18°39'11"	3°19'18"	1.000	2.65817
13/08/2017	05:00	19:32	9h11m37s	17°23'32"	5°28'29"	0.999	2.65640
20/08/2017	04:56	19:16	9h29m25s	16°02'19"	7°41'57"	0.998	2.65147
27/08/2017	04:52	18:59	9h46m56s	14°36'07"	9°58'02"	0.997	2.64328
03/09/2017	04:49	18:42	10h04m12s	13°05'33"	12°16'08"	0.996	2.63183
10/09/2017	04:45	18:25	10h21m13s	11°31'10"	14°36'08"	0.994	2.61716
17/09/2017	04:41	18:07	10h38m03s	9°53'29"	16°58'10"	0.992	2.59924
24/09/2017	04:37	17:49	10h54m41s	8°13'04"	19°22'13"	0.990	2.57797
01/10/2017	04:33	17:31	11h11m11s	6°30'30"	21°48'07"	0.987	2.55340
08/10/2017	04:29	17:12	11h27m33s	4°46'18"	24°15'48"	0.985	2.52562
15/10/2017	04:25	16:54	11h43m50s	3°00'57"	26°45'24"	0.981	2.49464
22/10/2017	04:21	16:36	12h00m04s	1°15'00"	29°16'58"	0.978	2.46044
29/10/2017	04:16	16:17	12h16m17s	-0°31'01"	31°50'19"	0.975	2.42309
05/11/2017	04:12	15:59	12h32m29s	-2°16'33"	34°25'16"	0.971	2.38273
12/11/2017	04:08	15:40	12h48m44s	-4°01'08"	37°01'51"	0.967	2.33947
19/11/2017	04:04	15:22	13h05m03s	-5°44'16"	39°40'09"	0.962	2.29332
26/11/2017	03:59	15:04	13h21m27s	-7°25'21"	42°19'58"	0.958	2.24441
03/12/2017	03:55	14:46	13h37m58s	-9°03'52"	45°01'02"	0.953	2.19295
10/12/2017	03:51	14:29	13h54m37s	-10°39'21"	47°43'18"	0.948	2.13910
17/12/2017	03:46	14:11	14h11m25s	-12°11'16"	50°26'49"	0.943	2.08295
24/12/2017	03:42	13:55	14h28m22s	-13°39'04"	53°11'28"	0.938	2.02466
31/12/2017	03:38	13:38	14h45m30s	-15°02'14"	55°56'57"	0.933	1.96451

Jupiter

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
01/01/2017	01:33	12:41	13h20m04s	-7°03'26"	79°37'37"	0.992	5.54505
08/01/2017	01:09	12:15	13h22m38s	-7°17'06"	86°05'05"	0.992	5.43279
15/01/2017	00:45	11:49	13h24m43s	-7°27'43"	92°40'06"	0.992	5.31971
22/01/2017	00:19	11:22	13h26m17s	-7°35'09"	99°23'12"	0.992	5.20719
29/01/2017	23:49	10:56	13h27m17s	-7°39'16"	106°14'44"	0.992	5.09677
05/02/2017	23:22	10:28	13h27m44s	-7°39'58"	113°14'37"	0.993	4.99013
12/02/2017	22:54	10:01	13h27m35s	-7°37'17"	120°22'35"	0.994	4.88896
19/02/2017	22:25	09:33	13h26m52s	-7°31'15"	127°38'39"	0.995	4.79481
26/02/2017	21:56	09:05	13h25m35s	-7°21'58"	135°02'35"	0.996	4.70931
05/03/2017	21:26	08:36	13h23m46s	-7°09'40"	142°33'30"	0.997	4.63408
12/03/2017	20:55	08:08	13h21m28s	-6°54'42"	150°10'06"	0.998	4.57054
19/03/2017	20:23	07:39	13h18m47s	-6°37'30"	157°51'08"	0.999	4.51983
26/03/2017	19:51	07:09	13h15m46s	-6°18'35"	165°34'52"	0.999	4.48295
02/04/2017	19:19	06:40	13h12m32s	-5°58'34"	173°16'11"	1.000	4.46070
09/04/2017	18:47	06:10	13h09m12s	-5°38'09"	177°59'20"	1.000	4.45346
16/04/2017	18:15	05:41	13h05m53s	-5°18'03"	170°52'01"	1.000	4.46118
23/04/2017	17:43	05:12	13h02m41s	-4°58'56"	163°14'09"	0.999	4.48363
30/04/2017	17:11	04:42	12h59m43s	-4°41'28"	155°39'05"	0.999	4.52031
07/05/2017	16:40	04:13	12h57m04s	-4°26'13"	148°10'16"	0.998	4.57030
14/05/2017	16:10	03:44	12h54m49s	-4°13'40"	140°49'14"	0.997	4.63243
21/05/2017	15:40	03:16	12h53m02s	-4°04'09"	133°36'39"	0.995	4.70546
28/05/2017	15:11	02:47	12h51m45s	-3°57'55"	126°33'06"	0.994	4.78807
04/06/2017	14:42	02:19	12h51m00s	-3°55'08"	119°39'14"	0.993	4.87871
11/06/2017	14:15	01:51	12h50m47s	-3°55'49"	112°55'08"	0.993	4.97580
18/06/2017	13:48	01:24	12h51m07s	-3°59'54"	106°20'18"	0.992	5.07789
25/06/2017	13:22	00:57	12h51m59s	-4°07'20"	99°54'20"	0.991	5.18357
02/07/2017	12:56	00:30	12h53m22s	-4°17'58"	93°37'00"	0.991	5.29135
09/07/2017	12:32	00:03	12h55m14s	-4°31'36"	87°27'51"	0.991	5.39981
16/07/2017	12:07	23:33	12h57m34s	-4°47'59"	81°26'00"	0.991	5.50774
23/07/2017	11:44	23:07	13h00m20s	-5°06'57"	75°30'38"	0.992	5.61399
30/07/2017	11:21	22:41	13h03m30s	-5°28'16"	69°41'16"	0.992	5.71738
06/08/2017	10:59	22:16	13h07m03s	-5°51'40"	63°57'21"	0.993	5.81681
13/08/2017	10:37	21:51	13h10m56s	-6°16'54"	58°18'04"	0.994	5.91139
20/08/2017	10:15	21:25	13h15m08s	-6°43'46"	52°42'33"	0.995	6.00031
27/08/2017	09:54	21:00	13h19m37s	-7°12'03"	47°10'16"	0.995	6.08267
03/09/2017	09:33	20:36	13h24m22s	-7°41'30"	41°40'49"	0.996	6.15771
10/09/2017	09:13	20:11	13h29m21s	-8°11'52"	36°13'34"	0.997	6.22483
17/09/2017	08:53	19:47	13h34m31s	-8°42'59"	30°47'43"	0.998	6.28349
24/09/2017	08:33	19:22	13h39m53s	-9°14'38"	25°22'50"	0.998	6.33310
01/10/2017	08:13	18:58	13h45m23s	-9°46'37"	19°58'40"	0.999	6.37318
08/10/2017	07:53	18:34	13h51m02s	-10°18'42"	14°34'53"	0.999	6.40340
15/10/2017	07:34	18:10	13h56m46s	-10°50'44"	9°11'16"	1.000	6.42354
22/10/2017	07:14	17:46	14h02m35s	-11°22'30"	3°50'13"	1.000	6.43327
29/10/2017	06:55	17:22	14h08m26s	-11°53'51"	2°01'23"	1.000	6.43241
05/11/2017	06:35	16:58	14h14m19s	-12°24'35"	7°17'48"	1.000	6.42099
12/11/2017	06:16	16:34	14h20m12s	-12°54'33"	12°46'32"	1.000	6.39904
19/11/2017	05:56	16:10	14h26m02s	-13°23'36"	18°18'51"	0.999	6.36661
26/11/2017	05:36	15:47	14h31m49s	-13°51'33"	23°54'12"	0.999	6.32386
03/12/2017	05:16	15:23	14h37m29s	-14°18'16"	29°32'34"	0.998	6.27116
10/12/2017	04:56	14:59	14h43m01s	-14°43'37"	35°14'20"	0.997	6.20895
17/12/2017	04:36	14:35	14h48m23s	-15°07'30"	41°00'00"	0.996	6.13763
24/12/2017	04:15	14:11	14h53m33s	-15°29'45"	46°49'49"	0.996	6.05777
31/12/2017	03:54	13:47	14h58m27s	-15°50'17"	52°43'53"	0.995	5.97015

Saturn

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
01/01/2017	06:41	15:37	17h22m32s	-21°51'48"	19°29'25"	1.000	10.98956
08/01/2017	06:17	15:13	17h25m54s	-21°54'48"	25°49'51"	1.000	10.94439
15/01/2017	05:53	14:48	17h29m09s	-21°57'22"	32°11'51"	0.999	10.88763
22/01/2017	05:29	14:24	17h32m16s	-21°59'30"	38°35'42"	0.999	10.81991
29/01/2017	05:04	13:59	17h35m13s	-22°01'14"	45°01'36"	0.999	10.74193
05/02/2017	04:40	13:34	17h37m58s	-22°02'35"	51°29'31"	0.999	10.65466
12/02/2017	04:15	13:09	17h40m30s	-22°03'36"	57°59'28"	0.998	10.55924
19/02/2017	03:50	12:43	17h42m46s	-22°04'17"	64°31'47"	0.998	10.45682
26/02/2017	03:24	12:18	17h44m47s	-22°04'42"	71°06'50"	0.998	10.34861
05/03/2017	02:58	11:52	17h46m29s	-22°04'53"	77°44'37"	0.998	10.23604
12/03/2017	02:32	11:26	17h47m53s	-22°04'52"	84°25'03"	0.998	10.12066
19/03/2017	02:06	10:59	17h48m57s	-22°04'43"	91°08'25"	0.998	10.00399
26/03/2017	01:39	10:33	17h49m41s	-22°04'26"	97°55'04"	0.998	9.88754
02/04/2017	01:12	10:06	17h50m04s	-22°04'04"	104°44'58"	0.998	9.77299
09/04/2017	00:44	09:38	17h50m06s	-22°03'38"	111°37'52"	0.998	9.66207
16/04/2017	00:16	09:10	17h49m47s	-22°03'08"	118°33'48"	0.998	9.55633
23/04/2017	23:44	08:42	17h49m08s	-22°02'37"	125°32'57"	0.998	9.45731
30/04/2017	23:15	08:14	17h48m10s	-22°02'03"	132°35'09"	0.999	9.36657
07/05/2017	22:47	07:45	17h46m54s	-22°01'28"	139°39'49"	0.999	9.28561
14/05/2017	22:17	07:16	17h45m21s	-22°00'50"	146°46'36"	0.999	9.21565
21/05/2017	21:48	06:47	17h43m36s	-22°00'10"	153°55'20"	1.000	9.15776
28/05/2017	21:19	06:17	17h41m38s	-21°59'28"	161°05'25"	1.000	9.11295
04/06/2017	20:49	05:48	17h39m32s	-21°58'44"	168°15'25"	1.000	9.08202
11/06/2017	20:19	05:18	17h37m21s	-21°57'58"	175°20'05"	1.000	9.06540
18/06/2017	19:49	04:48	17h35m08s	-21°57'12"	176°56'42"	1.000	9.06329
25/06/2017	19:20	04:19	17h32m56s	-21°56'28"	169°58'48"	1.000	9.07580
02/07/2017	18:50	03:49	17h30m49s	-21°55'48"	162°51'00"	1.000	9.10272
09/07/2017	18:20	03:20	17h28m49s	-21°55'14"	155°43'54"	1.000	9.14350
16/07/2017	17:51	02:50	17h27m00s	-21°54'49"	148°38'40"	0.999	9.19741
23/07/2017	17:22	02:21	17h25m23s	-21°54'35"	141°35'46"	0.999	9.26361
30/07/2017	16:53	01:52	17h24m02s	-21°54'36"	134°35'50"	0.999	9.34107
06/08/2017	16:25	01:24	17h22m58s	-21°54'53"	127°39'23"	0.998	9.42843
13/08/2017	15:56	00:56	17h22m12s	-21°55'28"	120°46'26"	0.998	9.52433
20/08/2017	15:28	00:27	17h21m46s	-21°56'22"	113°56'49"	0.998	9.62741
27/08/2017	15:01	23:56	17h21m40s	-21°57'35"	107°10'41"	0.998	9.73615
03/09/2017	14:34	23:28	17h21m55s	-21°59'07"	100°28'14"	0.998	9.84890
10/09/2017	14:07	23:01	17h22m30s	-22°00'57"	93°49'16"	0.998	9.96407
17/09/2017	13:41	22:35	17h23m25s	-22°03'03"	87°13'19"	0.998	10.08020
24/09/2017	13:15	22:08	17h24m39s	-22°05'22"	80°40'13"	0.998	10.19574
01/10/2017	12:49	21:42	17h26m13s	-22°07'52"	74°09'59"	0.998	10.30909
08/10/2017	12:23	21:16	17h28m04s	-22°10'29"	67°42'23"	0.998	10.41881
15/10/2017	11:58	20:51	17h30m12s	-22°13'11"	61°16'51"	0.998	10.52362
22/10/2017	11:33	20:25	17h32m36s	-22°15'52"	54°53'03"	0.998	10.62221
29/10/2017	11:09	20:00	17h35m13s	-22°18'30"	48°30'59"	0.999	10.71330
05/11/2017	10:44	19:35	17h38m03s	-22°21'01"	42°10'26"	0.999	10.79580
12/11/2017	10:20	19:11	17h41m05s	-22°23'22"	35°50'57"	0.999	10.86881
19/11/2017	09:56	18:46	17h44m16s	-22°25'29"	29°32'09"	0.999	10.93144
26/11/2017	09:32	18:22	17h47m35s	-22°27'20"	23°14'01"	1.000	10.98286
03/12/2017	09:08	17:57	17h51m00s	-22°28'52"	16°56'36"	1.000	11.02247
10/12/2017	08:44	17:33	17h54m31s	-22°30'05"	10°39'48"	1.000	11.04990
17/12/2017	08:20	17:09	17h58m04s	-22°30'56"	4°25'14"	1.000	11.06477
24/12/2017	07:56	16:45	18h01m38s	-22°31'25"	2°10'41"	1.000	11.06680
31/12/2017	07:32	16:21	18h05m12s	-22°31'31"	8°20'12"	1.000	11.05600

Uranus

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
01/01/2017	12:30	01:38	1h16m53s	7°28'05"	99°47'41"	0.999	19.75141
08/01/2017	12:02	01:11	1h17m01s	7°29'10"	92°41'52"	0.999	19.87107
15/01/2017	11:35	00:44	1h17m18s	7°31'12"	85°38'54"	0.999	19.99136
22/01/2017	11:07	00:17	1h17m45s	7°34'09"	78°38'41"	0.999	20.11058
29/01/2017	10:40	23:47	1h18m21s	7°38'00"	71°41'16"	0.999	20.22700
05/02/2017	10:13	23:20	1h19m05s	7°42'42"	64°46'59"	0.999	20.33885
12/02/2017	09:46	22:54	1h19m57s	7°48'10"	57°55'58"	1.000	20.44457
19/02/2017	09:19	22:28	1h20m57s	7°54'22"	51°08'00"	1.000	20.54281
26/02/2017	08:52	22:02	1h22m04s	8°01'11"	44°22'54"	1.000	20.63226
05/03/2017	08:25	21:36	1h23m16s	8°08'34"	37°40'47"	1.000	20.71167
12/03/2017	07:59	21:10	1h24m34s	8°16'26"	31°01'42"	1.000	20.78007
19/03/2017	07:32	20:45	1h25m56s	8°24'39"	24°25'23"	1.000	20.83672
26/03/2017	07:05	20:19	1h27m22s	8°33'11"	17°51'28"	1.000	20.88094
02/04/2017	06:39	19:54	1h28m50s	8°41'55"	11°19'58"	1.000	20.91217
09/04/2017	06:12	19:29	1h30m19s	8°50'45"	4°51'31"	1.000	20.93010
16/04/2017	05:45	19:03	1h31m50s	8°59'36"	1°43'41"	1.000	20.93468
23/04/2017	05:19	18:38	1h33m20s	9°08'24"	8°05'31"	1.000	20.92590
30/04/2017	04:52	18:12	1h34m50s	9°17'02"	14°30'08"	1.000	20.90385
07/05/2017	04:25	17:47	1h36m17s	9°25'27"	20°54'01"	1.000	20.86889
14/05/2017	03:59	17:21	1h37m42s	9°33'33"	27°17'14"	1.000	20.82157
21/05/2017	03:32	16:56	1h39m03s	9°41'16"	33°40'21"	1.000	20.76248
28/05/2017	03:05	16:30	1h40m20s	9°48'31"	40°03'43"	1.000	20.69230
04/06/2017	02:38	16:04	1h41m32s	9°55'15"	46°27'26"	1.000	20.61193
11/06/2017	02:12	15:38	1h42m38s	10°01'24"	52°51'44"	1.000	20.52247
18/06/2017	01:45	15:12	1h43m38s	10°06'54"	59°17'13"	1.000	20.42498
25/06/2017	01:18	14:45	1h44m31s	10°11'42"	65°44'20"	0.999	20.32061
02/07/2017	00:51	14:19	1h45m15s	10°15'46"	72°13'11"	0.999	20.21069
09/07/2017	00:23	13:52	1h45m52s	10°19'03"	78°43'56"	0.999	20.09673
16/07/2017	23:52	13:25	1h46m20s	10°21'32"	85°17'02"	0.999	19.98012
23/07/2017	23:25	12:58	1h46m40s	10°23'10"	91°52'56"	0.999	19.86233
30/07/2017	22:58	12:31	1h46m50s	10°23'57"	98°31'44"	0.999	19.74498
06/08/2017	22:30	12:03	1h46m51s	10°23'54"	105°13'24"	0.999	19.62975
13/08/2017	22:02	11:36	1h46m43s	10°22'59"	111°58'10"	0.999	19.51819
20/08/2017	21:35	11:08	1h46m27s	10°21'15"	118°46'27"	1.000	19.41183
27/08/2017	21:07	10:40	1h46m01s	10°18'43"	125°38'11"	1.000	19.31230
03/09/2017	20:39	10:11	1h45m28s	10°15'27"	132°33'07"	1.000	19.22117
10/09/2017	20:11	09:43	1h44m46s	10°11'29"	139°31'15"	1.000	19.13979
17/09/2017	19:43	09:14	1h43m59s	10°06'54"	146°32'44"	1.000	19.06939
24/09/2017	19:15	08:45	1h43m05s	10°01'46"	153°37'25"	1.000	19.01123
01/10/2017	18:47	08:17	1h42m07s	9°56'14"	160°44'44"	1.000	18.96633
08/10/2017	18:19	07:48	1h41m05s	9°50'22"	167°54'17"	1.000	18.93542
15/10/2017	17:51	07:19	1h40m01s	9°44'18"	175°05'12"	1.000	18.91904
22/10/2017	17:23	06:50	1h38m56s	9°38'09"	177°33'46"	1.000	18.91763
29/10/2017	16:54	06:21	1h37m52s	9°32'03"	170°21'24"	1.000	18.93130
05/11/2017	16:26	05:52	1h36m49s	9°26'09"	163°05'16"	1.000	18.95984
12/11/2017	15:58	05:23	1h35m50s	9°20'34"	155°48'08"	1.000	19.00279
19/11/2017	15:30	04:54	1h34m55s	9°15'25"	148°30'31"	1.000	19.05958
26/11/2017	15:02	04:25	1h34m05s	9°10'50"	141°13'07"	1.000	19.12934
03/12/2017	14:34	03:57	1h33m22s	9°06'53"	133°56'34"	1.000	19.21086
10/12/2017	14:06	03:28	1h32m47s	9°03'42"	126°41'08"	1.000	19.30280
17/12/2017	13:38	03:00	1h32m20s	9°01'19"	119°26'57"	1.000	19.40378
24/12/2017	13:11	02:32	1h32m02s	8°59'49"	112°14'33"	0.999	19.51217
31/12/2017	12:43	02:05	1h31m53s	8°59'14"	105°04'29"	0.999	19.62618

Neptune

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
01/01/2017	11:05	21:59	22h46m28s	-8°42'20"	58°59'07"	1.000	30.44656
08/01/2017	10:38	21:33	22h47m06s	-8°38'22"	52°01'23"	1.000	30.54666
15/01/2017	10:11	21:06	22h47m50s	-8°33'56"	45°05'13"	1.000	30.63783
22/01/2017	09:44	20:40	22h48m37s	-8°29'05"	38°10'29"	1.000	30.71885
29/01/2017	09:17	20:13	22h49m28s	-8°23'52"	31°17'08"	1.000	30.78857
05/02/2017	08:50	19:47	22h50m22s	-8°18'22"	24°25'30"	1.000	30.84597
12/02/2017	08:23	19:21	22h51m18s	-8°12'38"	17°35'47"	1.000	30.89035
19/02/2017	07:56	18:55	22h52m16s	-8°06'44"	10°48'03"	1.000	30.92123
26/02/2017	07:29	18:29	22h53m16s	-8°00'44"	4°04'16"	1.000	30.93818
05/03/2017	07:02	18:02	22h54m15s	-7°54'43"	2°54'23"	1.000	30.94098
12/03/2017	06:35	17:36	22h55m15s	-7°48'44"	9°33'05"	1.000	30.92972
19/03/2017	06:08	17:10	22h56m13s	-7°42'52"	16°14'49"	1.000	30.90469
26/03/2017	05:41	16:44	22h57m10s	-7°37'09"	22°56'05"	1.000	30.86624
02/04/2017	05:14	16:18	22h58m05s	-7°31'42"	29°36'31"	1.000	30.81488
09/04/2017	04:47	15:51	22h58m57s	-7°26'32"	36°15'56"	1.000	30.75144
16/04/2017	04:20	15:25	22h59m45s	-7°21'43"	42°54'33"	1.000	30.67687
23/04/2017	03:53	14:59	23h00m30s	-7°17'19"	49°32'47"	1.000	30.59214
30/04/2017	03:26	14:32	23h01m11s	-7°13'21"	56°10'46"	1.000	30.49837
07/05/2017	02:59	14:05	23h01m47s	-7°09'55"	62°48'26"	1.000	30.39692
14/05/2017	02:31	13:38	23h02m18s	-7°07'00"	69°25'59"	1.000	30.28922
21/05/2017	02:04	13:11	23h02m43s	-7°04'39"	76°03'53"	1.000	30.17664
28/05/2017	01:37	12:44	23h03m03s	-7°02'53"	82°42'23"	1.000	30.06067
04/06/2017	01:09	12:17	23h03m17s	-7°01'44"	89°21'24"	1.000	29.94296
11/06/2017	00:42	11:50	23h03m25s	-7°01'12"	96°01'03"	1.000	29.82516
18/06/2017	00:14	11:22	23h03m27s	-7°01'17"	102°41'44"	1.000	29.70879
25/06/2017	23:43	10:55	23h03m23s	-7°01'59"	109°23'46"	1.000	29.59543
02/07/2017	23:15	10:27	23h03m14s	-7°03'16"	116°07'03"	1.000	29.48676
09/07/2017	22:48	09:59	23h02m58s	-7°05'07"	122°51'32"	1.000	29.38433
16/07/2017	22:20	09:31	23h02m38s	-7°07'30"	129°37'31"	1.000	29.28951
23/07/2017	21:52	09:03	23h02m13s	-7°10'22"	136°25'17"	1.000	29.20366
30/07/2017	21:25	08:35	23h01m43s	-7°13'41"	143°14'42"	1.000	29.12815
06/08/2017	20:57	08:06	23h01m09s	-7°17'23"	150°05'33"	1.000	29.06411
13/08/2017	20:29	07:38	23h00m32s	-7°21'23"	156°57'54"	1.000	29.01245
20/08/2017	20:01	07:09	22h59m53s	-7°25'37"	163°51'53"	1.000	28.97397
27/08/2017	19:33	06:41	22h59m11s	-7°30'02"	170°46'48"	1.000	28.94941
03/09/2017	19:05	06:12	22h58m29s	-7°34'31"	177°35'44"	1.000	28.93920
10/09/2017	18:37	05:44	22h57m46s	-7°39'00"	175°08'27"	1.000	28.94347
17/09/2017	18:09	05:15	22h57m03s	-7°43'23"	168°11'25"	1.000	28.96223
24/09/2017	17:41	04:47	22h56m22s	-7°47'38"	161°10'38"	1.000	28.99537
01/10/2017	17:13	04:18	22h55m43s	-7°51'36"	154°08'29"	1.000	29.04244
08/10/2017	16:46	03:50	22h55m07s	-7°55'16"	147°05'29"	1.000	29.10268
15/10/2017	16:18	03:22	22h54m34s	-7°58'31"	140°01'36"	1.000	29.17526
22/10/2017	15:50	02:53	22h54m06s	-8°01'20"	132°56'59"	1.000	29.25920
29/10/2017	15:22	02:25	22h53m42s	-8°03'37"	125°52'06"	1.000	29.35323
05/11/2017	14:54	01:57	22h53m24s	-8°05'21"	118°47'16"	1.000	29.45587
12/11/2017	14:27	01:30	22h53m11s	-8°06'29"	111°42'25"	1.000	29.56559
19/11/2017	13:59	01:02	22h53m04s	-8°07'00"	104°37'37"	1.000	29.68085
26/11/2017	13:32	00:34	22h53m04s	-8°06'52"	97°33'14"	1.000	29.79985
03/12/2017	13:04	00:07	22h53m10s	-8°06'05"	90°29'39"	1.000	29.92073
10/12/2017	12:37	23:36	22h53m22s	-8°04'40"	83°26'51"	1.000	30.04173
17/12/2017	12:09	23:09	22h53m41s	-8°02'37"	76°24'48"	1.000	30.16113
24/12/2017	11:42	22:42	22h54m05s	-7°59'57"	69°23'46"	1.000	30.27708
31/12/2017	11:15	22:15	22h54m36s	-7°56'42"	62°24'08"	1.000	30.38783

Pluto

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
01/01/2017	08:29	17:30	19h12m55s	-21°21'04"	6°16'01"	1.000	34.22062
08/01/2017	08:02	17:03	19h13m57s	-21°19'55"	1°13'50"	1.000	34.23087
15/01/2017	07:35	16:37	19h14m59s	-21°18'44"	7°39'54"	1.000	34.22676
22/01/2017	07:09	16:10	19h15m59s	-21°17'31"	14°31'20"	1.000	34.20846
29/01/2017	06:42	15:44	19h16m59s	-21°16'18"	21°23'56"	1.000	34.17620
05/02/2017	06:15	15:17	19h17m56s	-21°15'06"	28°16'34"	1.000	34.13051
12/02/2017	05:49	14:51	19h18m50s	-21°13'57"	35°08'51"	1.000	34.07222
19/02/2017	05:22	14:24	19h19m41s	-21°12'53"	42°00'56"	1.000	34.00224
26/02/2017	04:55	13:58	19h20m28s	-21°11'55"	48°52'56"	1.000	33.92156
05/03/2017	04:28	13:31	19h21m10s	-21°11'04"	55°44'39"	1.000	33.83143
12/03/2017	04:01	13:04	19h21m47s	-21°10'21"	62°35'52"	1.000	33.73328
19/03/2017	03:34	12:37	19h22m18s	-21°09'48"	69°26'46"	1.000	33.62859
26/03/2017	03:07	12:10	19h22m44s	-21°09'26"	76°17'36"	1.000	33.51884
02/04/2017	02:40	11:43	19h23m04s	-21°09'15"	83°08'15"	1.000	33.40566
09/04/2017	02:13	11:16	19h23m18s	-21°09'17"	89°58'31"	1.000	33.29084
16/04/2017	01:45	10:48	19h23m25s	-21°09'31"	96°48'30"	1.000	33.17605
23/04/2017	01:18	10:21	19h23m26s	-21°09'58"	103°38'32"	1.000	33.06289
30/04/2017	00:50	09:53	19h23m21s	-21°10'38"	110°28'36"	1.000	32.95308
07/05/2017	00:23	09:25	19h23m11s	-21°11'30"	117°18'29"	1.000	32.84831
14/05/2017	23:51	08:57	19h22m54s	-21°12'35"	124°08'12"	1.000	32.75012
21/05/2017	23:23	08:29	19h22m32s	-21°13'51"	130°58'04"	1.000	32.65986
28/05/2017	22:55	08:01	19h22m05s	-21°15'17"	137°48'08"	1.000	32.57895
04/06/2017	22:27	07:33	19h21m34s	-21°16'53"	144°38'12"	1.000	32.50866
11/06/2017	21:59	07:05	19h20m59s	-21°18'37"	151°28'08"	1.000	32.45003
18/06/2017	21:31	06:36	19h20m20s	-21°20'29"	158°18'10"	1.000	32.40387
25/06/2017	21:03	06:08	19h19m40s	-21°22'25"	165°08'22"	1.000	32.37098
02/07/2017	20:35	05:40	19h18m57s	-21°24'25"	171°58'02"	1.000	32.35195
09/07/2017	20:07	05:11	19h18m14s	-21°26'28"	178°36'58"	1.000	32.34708
16/07/2017	19:39	04:43	19h17m30s	-21°28'32"	174°15'20"	1.000	32.35643
23/07/2017	19:11	04:14	19h16m47s	-21°30'34"	167°25'56"	1.000	32.38001
30/07/2017	18:43	03:46	19h16m06s	-21°32'35"	160°35'11"	1.000	32.41761
06/08/2017	18:15	03:18	19h15m26s	-21°34'32"	153°44'16"	1.000	32.46870
13/08/2017	17:47	02:49	19h14m50s	-21°36'24"	146°53'11"	1.000	32.53257
20/08/2017	17:19	02:21	19h14m17s	-21°38'09"	140°01'45"	1.000	32.60843
27/08/2017	16:51	01:53	19h13m49s	-21°39'48"	133°10'04"	1.000	32.69533
03/09/2017	16:24	01:25	19h13m25s	-21°41'17"	126°18'25"	1.000	32.79202
10/09/2017	15:56	00:57	19h13m06s	-21°42'39"	119°26'45"	1.000	32.89713
17/09/2017	15:28	00:29	19h12m53s	-21°43'50"	112°34'47"	1.000	33.00931
24/09/2017	15:01	00:02	19h12m46s	-21°44'51"	105°42'30"	1.000	33.12706
01/10/2017	14:33	23:30	19h12m46s	-21°45'40"	98°50'11"	1.000	33.24867
08/10/2017	14:06	23:03	19h12m51s	-21°46'19"	91°57'52"	1.000	33.37243
15/10/2017	13:39	22:35	19h13m03s	-21°46'46"	85°05'14"	1.000	33.49672
22/10/2017	13:11	22:08	19h13m21s	-21°47'02"	78°12'15"	1.000	33.61984
29/10/2017	12:44	21:41	19h13m45s	-21°47'06"	71°19'08"	1.000	33.73999
05/11/2017	12:17	21:14	19h14m15s	-21°46'59"	64°26'01"	1.000	33.85548
12/11/2017	11:50	20:47	19h14m51s	-21°46'42"	57°32'41"	1.000	33.96482
19/11/2017	11:23	20:20	19h15m32s	-21°46'13"	50°38'59"	1.000	34.06648
26/11/2017	10:57	19:53	19h16m17s	-21°45'35"	43°45'09"	1.000	34.15898
03/12/2017	10:30	19:27	19h17m07s	-21°44'47"	36°51'24"	1.000	34.24104
10/12/2017	10:03	19:00	19h18m00s	-21°43'51"	29°57'36"	1.000	34.31163
17/12/2017	09:36	18:34	19h18m56s	-21°42'47"	23°03'36"	1.000	34.36978
24/12/2017	09:10	18:07	19h19m55s	-21°41'37"	16°09'36"	1.000	34.41464
31/12/2017	08:43	17:41	19h20m55s	-21°40'22"	9°16'00"	1.000	34.44562

Grange Obs. Latitude: 45°08'32" N Longitude: 7°08'26" E
Local Time = UT + 1.00 hours Elevation: 470 meters

Planet Apsides Report for 2017

Earth

03/01/2017	Perihelion	Distance from Sun:	0.98 AU
05/07/2017	Aphelion	Distance from Sun:	1.02 AU

Mercury

23/03/2017	Perihelion	Distance from Sun:	0.31 AU
19/06/2017	Perihelion	Distance from Sun:	0.31 AU
15/09/2017	Perihelion	Distance from Sun:	0.31 AU
12/12/2017	Perihelion	Distance from Sun:	0.31 AU
07/02/2017	Aphelion	Distance from Sun:	0.47 AU
06/05/2017	Aphelion	Distance from Sun:	0.47 AU
02/08/2017	Aphelion	Distance from Sun:	0.47 AU
29/10/2017	Aphelion	Distance from Sun:	0.47 AU

Venus

20/02/2017	Perihelion	Distance from Sun:	0.72 AU
03/10/2017	Perihelion	Distance from Sun:	0.72 AU
13/06/2017	Aphelion	Distance from Sun:	0.73 AU

Mars

08/10/2017	Aphelion	Distance from Sun:	1.67 AU
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Jupiter

18/02/2017	Aphelion	Distance from Sun:	5.46 AU
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Saturn

No Apsis

Grange Obs. Latitude: 45°08'32" N Longitude: 7°08'26" E
Local Time = UT + 1.00 hours Elevation: 470 meters

Planet Conjunction/Opposition Report for 01/01/2017 to 31/12/2017

Mercury

Date	Hour	Event
07/03/2017	0	Superior Conjunction
20/04/2017	6	Inferior Conjunction
22/06/2017	0	Superior Conjunction
27/08/2017	0	Inferior Conjunction
09/10/2017	0	Superior Conjunction
13/12/2017	3	Inferior Conjunction

Venus

Date	Hour	Event
25/03/2017	10	Inferior Conjunction

Mars

Date	Hour	Event
27/07/2017	1	Conjunction

Jupiter

Date	Hour	Event
27/10/2017	0	Conjunction
08/04/2017	0	Opposition

Saturn

Date	Hour	Event
22/12/2017	0	Conjunction
15/06/2017	9	Opposition

Uranus

Date	Hour	Event
14/04/2017	6	Conjunction
20/10/2017	0	Opposition

Neptune

Date	Hour	Event
02/03/2017	3	Conjunction
05/09/2017	6	Opposition

Pluto

Date	Hour	Event
07/01/2017	7	Conjunction
10/07/2017	6	Opposition

Planet Data Report

Planet	Mean Dist From Sun (AU)	Period of Revolution	Inclination	Equatorial Diameter (km)
Mercury	0.39	88 days	7°	4880
Venus	0.72	224.7 days	3.4°	12100
Earth	1.00	365.24 days	0°	12756
Mars	1.52	687 days	1.9°	6794
Jupiter	5.20	11.86 years	1.3°	143200
Saturn	9.54	29.46 years	2.5°	120000
Uranus	19.18	84 years	0.8°	52290
Neptune	30.06	165 years	1.8°	50450
Pluto	39.44	248 years	17.2°	2200-2300

Grange Obs. Latitude: 45°08'32" N Longitude: 7°08'26" E
Local Time = UT + 1.00 hours Elevation: 470 meters

Moon Apisdes Report for 01/01/2017 to 31/12/2017

Date	Hour	Apsis	Distance (km)	Diameter
10/01/2017	7	Perigee	363234	0.5483°
22/01/2017	1	Apogee	404922	0.4918°
06/02/2017	15	Perigee	368807	0.5400°
18/02/2017	22	Apogee	404385	0.4925°
03/03/2017	8	Perigee	369065	0.5396°
18/03/2017	18	Apogee	404646	0.4922°
30/03/2017	14	Perigee	363862	0.5473°
15/04/2017	11	Apogee	405487	0.4912°
27/04/2017	17	Perigee	359341	0.5542°
12/05/2017	21	Apogee	406216	0.4903°
26/05/2017	2	Perigee	357226	0.5575°
08/06/2017	23	Apogee	406371	0.4901°
23/06/2017	12	Perigee	357955	0.5564°
06/07/2017	5	Apogee	405943	0.4906°
21/07/2017	18	Perigee	361245	0.5513°
02/08/2017	19	Apogee	405053	0.4917°
18/08/2017	14	Perigee	366119	0.5440°
30/08/2017	12	Apogee	404312	0.4926°
13/09/2017	17	Perigee	369858	0.5385°
27/09/2017	8	Apogee	404350	0.4925°
09/10/2017	7	Perigee	366854	0.5429°
25/10/2017	3	Apogee	405164	0.4915°
06/11/2017	1	Perigee	361431	0.5510°
21/11/2017	20	Apogee	406132	0.4904°
04/12/2017	10	Perigee	357504	0.5571°
19/12/2017	2	Apogee	406601	0.4898°

Grange Obs. Latitude: 45°08'32" N Longitude: 7°08'26" E
Local Time = UT + 1.00 hours Elevation: 470 meters

Moon Nodes Report for 01/01/2017 to 31/12/2017

Date	Time	Node	Illuminated Fraction
02/01/2017	19:13	Descending	0.20
15/01/2017	11:44	Ascending	0.89
29/01/2017	23:20	Descending	0.04
11/02/2017	20:48	Ascending	0.99
26/02/2017	07:27	Descending	0.00
11/03/2017	05:16	Ascending	0.98
25/03/2017	16:40	Descending	0.07
07/04/2017	10:13	Ascending	0.86
21/04/2017	23:29	Descending	0.25
04/05/2017	11:41	Ascending	0.65
19/05/2017	02:29	Descending	0.49
31/05/2017	12:55	Ascending	0.40
15/06/2017	03:39	Descending	0.73
27/06/2017	17:25	Ascending	0.18
12/07/2017	06:16	Descending	0.91
25/07/2017	01:46	Ascending	0.04
08/08/2017	11:55	Descending	0.99
21/08/2017	11:33	Ascending	0.00
04/09/2017	19:40	Descending	0.98
17/09/2017	19:27	Ascending	0.07
02/10/2017	03:04	Descending	0.85
14/10/2017	23:09	Ascending	0.24
29/10/2017	07:40	Descending	0.64
10/11/2017	23:39	Ascending	0.49
25/11/2017	09:21	Descending	0.37
08/12/2017	01:38	Ascending	0.74
22/12/2017	11:03	Descending	0.15

Grange Obs. Latitude: 45°08'32" N Longitude: 7°08'26" E
Local Time = UT + 1.00 hours Elevation: 470 meters

Meteor Showers Report for 01/01/2017 to 31/12/2017

Date	Meteor Shower	ZHR	RA	DEC	Illum. Frac.	Longitude
04/01/2017	Quadrantids	80	15h28m	50°	0.31	284°
12/04/2017	Virginids	5	14h04m	-9°	0.99	22°
22/04/2017	Lyrids	12	18h08m	32°	0.24	32°
28/04/2017	alpha-Scorpiids	5	16h32m	-24°	0.04	38°
06/05/2017	eta-Aquarids	35	22h20m	-1°	0.79	45°
13/05/2017	alpha-Scorpiids	5	16h04m	-24°	0.96	52°
10/06/2017	Ophiuchids	5	17h56m	-23°	1.00	79°
20/06/2017	Ophiuchids	5	17h20m	-20°	0.23	89°
08/07/2017	Capricornids	5			0.99	106°
16/07/2017	Capricornids	5	20h44m	-15°	0.59	113°
21/07/2017	alpha-Cygnids	5	21h00m	48°	0.08	118°
26/07/2017	Capricornids	5	21h00m	-15°	0.09	123°
29/07/2017	delta-Aquarids	20	22h36m	-17°	0.34	126°
31/07/2017	Piscis Australids	5	22h40m	-30°	0.54	128°
02/08/2017	alpha-Capricornids	5	20h36m	-10°	0.72	130°
07/08/2017	iota-Aquarids	8	22h10m	-15°	0.99	134°
13/08/2017	Perseids	75	3h04m	58°	0.72	140°
21/08/2017	alpha-Cygnids	5	21h00m	48°	0.01	148°
09/09/2017	Piscids	10	0h36m	7°	0.91	166°
21/09/2017	Piscids	5	0h24m	0°	0.01	178°
13/10/2017	Piscids	??	1h44m	14°	0.44	200°
22/10/2017	Orionids	25	6h24m	15°	0.05	209°
03/11/2017	Taurids	8	3h44m	14°	0.98	221°
18/11/2017	Leonids	10	10h08m	22°	0.00	236°
09/12/2017	Puppids-Velids	15	9h00m	-48°	0.64	257°
14/12/2017	Geminids	75	7h28m	32°	0.16	262°
23/12/2017	Ursids	5	14h28m	78°	0.19	271°
26/12/2017	Puppids-Velids	15	9h20m	-65°	0.47	274°

Grange Obs. Latitude: 45°08'32" N Longitude: 7°08'26" E
 Local Time = UT + 1.00 hours Elevation: 470 meters

Twilight Report for 01/01/2017 to 31/12/2017

Date	Sun		Astronomical		Nautical		Civil	
	Rise	Set	Begin	End	Begin	End	Begin	End
01/01/2017	08:10	17:00	06:18	18:52	06:54	18:16	07:31	17:39
08/01/2017	08:09	17:07	06:18	18:58	06:54	18:23	07:31	17:46
15/01/2017	08:07	17:16	06:17	19:05	06:52	18:30	07:28	17:54
22/01/2017	08:02	17:25	06:13	19:13	06:48	18:38	07:24	18:02
29/01/2017	07:55	17:35	06:08	19:21	06:43	18:47	07:18	18:12
05/02/2017	07:47	17:45	06:01	19:30	06:36	18:56	07:11	18:21
12/02/2017	07:37	17:55	05:53	19:39	06:27	19:05	07:02	18:30
19/02/2017	07:26	18:05	05:43	19:48	06:17	19:14	06:51	18:40
26/02/2017	07:15	18:15	05:32	19:57	06:06	19:23	06:40	18:49
05/03/2017	07:02	18:24	05:20	20:07	05:54	19:32	06:28	18:58
12/03/2017	06:49	18:34	05:07	20:16	05:41	19:42	06:16	19:08
19/03/2017	06:36	18:43	04:53	20:26	05:28	19:51	06:02	19:17
26/03/2017	06:23	18:52	04:38	20:37	05:14	20:01	05:49	19:26
02/04/2017	06:10	19:01	04:23	20:48	05:00	20:11	05:36	19:35
09/04/2017	05:57	19:10	04:07	20:59	04:46	20:21	05:22	19:45
16/04/2017	05:45	19:18	03:52	21:12	04:32	20:32	05:09	19:54
23/04/2017	05:33	19:27	03:36	21:25	04:18	20:42	04:56	20:04
30/04/2017	05:22	19:36	03:20	21:38	04:04	20:54	04:45	20:14
07/05/2017	05:12	19:45	03:04	21:53	03:52	21:05	04:33	20:23
14/05/2017	05:03	19:53	02:49	22:07	03:40	21:16	04:24	20:33
21/05/2017	04:56	20:01	02:35	22:21	03:30	21:27	04:15	20:42
28/05/2017	04:50	20:08	02:23	22:35	03:22	21:36	04:08	20:50
04/06/2017	04:46	20:14	02:13	22:47	03:15	21:45	04:04	20:56
11/06/2017	04:44	20:19	02:06	22:56	03:12	21:51	04:01	21:02
18/06/2017	04:44	20:22	02:04	23:01	03:11	21:55	04:00	21:05
25/06/2017	04:45	20:23	02:06	23:02	03:12	21:56	04:02	21:06
02/07/2017	04:49	20:22	02:12	22:59	03:17	21:54	04:06	21:05
09/07/2017	04:53	20:20	02:22	22:51	03:23	21:50	04:11	21:02
16/07/2017	05:00	20:15	02:34	22:40	03:32	21:43	04:18	20:56
23/07/2017	05:07	20:09	02:48	22:28	03:41	21:34	04:26	20:49
30/07/2017	05:14	20:01	03:02	22:13	03:52	21:23	04:35	20:40
06/08/2017	05:22	19:52	03:16	21:58	04:03	21:11	04:44	20:30
13/08/2017	05:30	19:41	03:29	21:42	04:14	20:58	04:53	20:18
20/08/2017	05:39	19:30	03:42	21:26	04:24	20:45	05:03	20:06
27/08/2017	05:47	19:18	03:55	21:10	04:35	20:30	05:12	19:53
03/09/2017	05:56	19:05	04:06	20:54	04:45	20:16	05:21	19:40
10/09/2017	06:04	18:52	04:17	20:39	04:54	20:02	05:30	19:26
17/09/2017	06:12	18:38	04:28	20:23	05:04	19:47	05:38	19:13
24/09/2017	06:21	18:25	04:38	20:08	05:13	19:33	05:47	18:59
01/10/2017	06:30	18:12	04:47	19:54	05:22	19:20	05:56	18:46
08/10/2017	06:38	17:59	04:56	19:41	05:30	19:07	06:04	18:33
15/10/2017	06:47	17:46	05:05	19:29	05:39	18:55	06:13	18:21
22/10/2017	06:57	17:35	05:14	19:18	05:48	18:44	06:22	18:09
29/10/2017	07:06	17:24	05:22	19:08	05:56	18:33	06:31	17:59
05/11/2017	07:16	17:14	05:31	18:59	06:05	18:25	06:40	17:50
12/11/2017	07:25	17:05	05:39	18:52	06:13	18:17	06:49	17:42
19/11/2017	07:35	16:58	05:47	18:47	06:22	18:12	06:57	17:36
26/11/2017	07:44	16:53	05:54	18:43	06:29	18:08	07:06	17:31
03/12/2017	07:52	16:50	06:01	18:41	06:37	18:06	07:13	17:29
10/12/2017	07:59	16:49	06:07	18:41	06:43	18:06	07:20	17:28
17/12/2017	08:05	16:50	06:12	18:43	06:48	18:07	07:25	17:30
24/12/2017	08:09	16:54	06:16	18:46	06:52	18:11	07:29	17:33
31/12/2017	08:10	16:59	06:18	18:51	06:54	18:15	07:31	17:38