

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

Calendar Report for 1/ 1/2014 to 12/31/2014

January 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
			SR: 7:49	SR: 7:49	SR: 7:50	SR: 7:50
			SS: 17:10	SS: 17:11	SS: 17:12	SS: 17:13
			MR: 7:43	MR: 8:33	MR: 9:18	MR: 9:57
			MS: 18:00	MS: 19:13	MS: 20:27	MS: 21:38
			NM: 4:15			
5	6	7	8	9	10	11
SR: 7:50	SR: 7:49	SR: 7:49	SR: 7:49	SR: 7:49	SR: 7:49	SR: 7:49
SS: 17:14	SS: 17:15	SS: 17:16	SS: 17:17	SS: 17:18	SS: 17:19	SS: 17:20
MR: 10:32	MR: 11:06	MR: 11:39	MR: 12:12	MR: 12:47	MR: 13:25	MR: 14:06
MS: 22:47	MS: 23:54	MS: None	MS: 0:58	MS: 2:00	MS: 2:59	MS: 3:56
		FQ: 20:40				
12	13	14	15	16	17	18
SR: 7:48	SR: 7:48	SR: 7:48	SR: 7:47	SR: 7:47	SR: 7:46	SR: 7:46
SS: 17:21	SS: 17:22	SS: 17:23	SS: 17:24	SS: 17:25	SS: 17:26	SS: 17:27
MR: 14:51	MR: 15:40	MR: 16:32	MR: 17:26	MR: 18:21	MR: 19:17	MR: 20:14
MS: 4:50	MS: 5:40	MS: 6:25	MS: 7:06	MS: 7:43	MS: 8:16	MS: 8:48
			FM: 21:54			
19	20	21	22	23	24	25
SR: 7:45	SR: 7:45	SR: 7:44	SR: 7:43	SR: 7:43	SR: 7:42	SR: 7:41
SS: 17:28	SS: 17:30	SS: 17:31	SS: 17:32	SS: 17:33	SS: 17:34	SS: 17:36
MR: 21:12	MR: 22:10	MR: 23:09	MR: None	MR: 0:10	MR: 1:13	MR: 2:17
MS: 9:17	MS: 9:46	MS: 10:15	MS: 10:45	MS: 11:18	MS: 11:56	MS: 12:39
				LQ: 22:21		
26	27	28	29	30	31	
SR: 7:41	SR: 7:40	SR: 7:39	SR: 7:38	SR: 7:37	SR: 7:36	
SS: 17:37	SS: 17:38	SS: 17:39	SS: 17:40	SS: 17:42	SS: 17:43	
MR: 3:21	MR: 4:24	MR: 5:24	MR: 6:18	MR: 7:06	MR: 7:49	
MS: 13:29	MS: 14:27	MS: 15:33	MS: 16:44	MS: 17:58	MS: 19:13	
				NM: 14:41		

February 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 SR: 7:35 SS: 17:44 MR: 8:27 MS: 20:25
2 SR: 7:34 SS: 17:45 MR: 9:03 MS: 21:35	3 SR: 7:33 SS: 17:47 MR: 9:38 MS: 22:43	4 SR: 7:32 SS: 17:48 MR: 10:12 MS: 23:48	5 SR: 7:31 SS: 17:49 MR: 10:48 MS: None	6 SR: 7:30 SS: 17:50 MR: 11:25 MS: 0:50 FQ: 12:23	7 SR: 7:29 SS: 17:52 MR: 12:06 MS: 1:49	8 SR: 7:28 SS: 17:53 MR: 12:50 MS: 2:44
9 SR: 7:27 SS: 17:54 MR: 13:37 MS: 3:35	10 SR: 7:26 SS: 17:55 MR: 14:27 MS: 4:22	11 SR: 7:24 SS: 17:56 MR: 15:20 MS: 5:05	12 SR: 7:23 SS: 17:58 MR: 16:15 MS: 5:43	13 SR: 7:22 SS: 17:59 MR: 17:11 MS: 6:18	14 SR: 7:21 SS: 18:00 MR: 18:08 MS: 6:50 FM: 16:55	15 SR: 7:19 SS: 18:01 MR: 19:06 MS: 7:21
16 SR: 7:18 SS: 18:02 MR: 20:04 MS: 7:50	17 SR: 7:17 SS: 18:04 MR: 21:03 MS: 8:19	18 SR: 7:15 SS: 18:05 MR: 22:03 MS: 8:49	19 SR: 7:14 SS: 18:06 MR: 23:05 MS: 9:22	20 SR: 7:13 SS: 18:07 MR: None MS: 9:57	21 SR: 7:11 SS: 18:08 MR: 0:07 MS: 10:37	22 SR: 7:10 SS: 18:09 MR: 1:10 MS: 11:23 LQ: 10:17
23 SR: 7:08 SS: 18:11 MR: 2:11 MS: 12:15	24 SR: 7:07 SS: 18:12 MR: 3:10 MS: 13:15	25 SR: 7:06 SS: 18:13 MR: 4:04 MS: 14:21	26 SR: 7:04 SS: 18:14 MR: 4:54 MS: 15:32	27 SR: 7:03 SS: 18:15 MR: 5:38 MS: 16:45	28 SR: 7:01 SS: 18:16 MR: 6:19 MS: 17:58	

March 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1
						SR: 7:00
						SS: 18:17
						MR: 6:56
						MS: 19:10
						NM: 1:03
2	3	4	5	6	7	8
SR: 6:58	SR: 6:56	SR: 6:55	SR: 6:53	SR: 6:52	SR: 6:50	SR: 6:49
SS: 18:19	SS: 18:20	SS: 18:21	SS: 18:22	SS: 18:23	SS: 18:24	SS: 18:25
MR: 7:32	MR: 8:08	MR: 8:44	MR: 9:22	MR: 10:02	MR: 10:46	MR: 11:32
MS: 20:20	MS: 21:28	MS: 22:34	MS: 23:36	MS: None	MS: 0:34	MS: 1:28
						FQ: 6:27
9	10	11	12	13	14	15
SR: 6:47	SR: 6:45	SR: 6:44	SR: 6:42	SR: 6:41	SR: 6:39	SR: 6:37
SS: 18:26	SS: 18:27	SS: 18:29	SS: 18:30	SS: 18:31	SS: 18:32	SS: 18:33
MR: 12:22	MR: 13:14	MR: 14:08	MR: 15:03	MR: 16:00	MR: 16:57	MR: 17:56
MS: 2:17	MS: 3:01	MS: 3:41	MS: 4:18	MS: 4:51	MS: 5:22	MS: 5:52
16	17	18	19	20	21	22
SR: 6:36	SR: 6:34	SR: 6:32	SR: 6:31	SR: 6:29	SR: 6:28	SR: 6:26
SS: 18:34	SS: 18:35	SS: 18:36	SS: 18:37	SS: 18:38	SS: 18:39	SS: 18:40
MR: 18:55	MR: 19:56	MR: 20:58	MR: 22:00	MR: 23:03	MR: None	MR: 0:04
MS: 6:22	MS: 6:52	MS: 7:24	MS: 7:59	MS: 8:38	MS: 9:22	MS: 10:12
FM: 10:11						
				MEQ: 9:55		
23	24	25	26	27	28	29
SR: 6:24	SR: 6:23	SR: 6:21	SR: 6:19	SR: 6:18	SR: 6:16	SR: 6:14
SS: 18:41	SS: 18:42	SS: 18:43	SS: 18:44	SS: 18:45	SS: 18:46	SS: 18:48
MR: 1:03	MR: 1:58	MR: 2:47	MR: 3:32	MR: 4:13	MR: 4:50	MR: 5:26
MS: 11:08	MS: 12:10	MS: 13:17	MS: 14:26	MS: 15:36	MS: 16:47	MS: 17:57
LQ: 18:48						
30	31					
SR: 6:13	SR: 6:11					
SS: 18:49	SS: 18:50					
MR: 6:02	MR: 6:38					
MS: 19:06	MS: 20:13					
NM: 11:48						

Midway, UT (JMC) Latitude: 40°30'43" N Longitude: 111°28'40" W
 Local Time = UT - 7.00 hours Elevation: 1706 meters Year 2014
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April 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
		SR: 6:09	SR: 6:08	SR: 6:06	SR: 6:05	SR: 6:03
		SS: 18:51	SS: 18:52	SS: 18:53	SS: 18:54	SS: 18:55
		MR: 7:15	MR: 7:55	MR: 8:38	MR: 9:24	MR: 10:14
		MS: 21:18	MS: 22:19	MS: 23:16	MS: None	MS: 0:09
6	7	8	9	10	11	12
SR: 6:01	SR: 6:00	SR: 5:58	SR: 5:57	SR: 5:55	SR: 5:53	SR: 5:52
SS: 18:56	SS: 18:57	SS: 18:58	SS: 18:59	SS: 19:00	SS: 19:01	SS: 19:02
MR: 11:05	MR: 11:59	MR: 12:54	MR: 13:50	MR: 14:47	MR: 15:45	MR: 16:44
MS: 0:56	MS: 1:38	MS: 2:15	MS: 2:50	MS: 3:22	MS: 3:52	MS: 4:22
	FQ: 1:32					
13	14	15	16	17	18	19
SR: 5:50	SR: 5:49	SR: 5:47	SR: 5:46	SR: 5:44	SR: 5:43	SR: 5:41
SS: 19:03	SS: 19:04	SS: 19:05	SS: 19:06	SS: 19:07	SS: 19:08	SS: 19:09
MR: 17:44	MR: 18:46	MR: 19:50	MR: 20:54	MR: 21:57	MR: 22:58	MR: 23:54
MS: 4:52	MS: 5:24	MS: 5:58	MS: 6:36	MS: 7:19	MS: 8:08	MS: 9:03
		FM: 0:45				
		LE: 0:49				
20	21	22	23	24	25	26
SR: 5:40	SR: 5:38	SR: 5:37	SR: 5:36	SR: 5:34	SR: 5:33	SR: 5:31
SS: 19:10	SS: 19:11	SS: 19:12	SS: 19:13	SS: 19:15	SS: 19:16	SS: 19:17
MR: None	MR: 0:45	MR: 1:31	MR: 2:12	MR: 2:49	MR: 3:25	MR: 3:59
MS: 10:04	MS: 11:09	MS: 12:16	MS: 13:25	MS: 14:33	MS: 15:41	MS: 16:49
		LQ: 0:53				
27	28	29	30			
SR: 5:30	SR: 5:29	SR: 5:27	SR: 5:26			
SS: 19:18	SS: 19:19	SS: 19:20	SS: 19:21			
MR: 4:34	MR: 5:10	MR: 5:48	MR: 6:30			
MS: 17:56	MS: 19:01	MS: 20:04	MS: 21:03			
	NM: 23:18					
	SE: 23:09					

May 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
+-----+-----+-----+-----+-----+-----+-----+						
				1	2	3
				SR: 5:25	SR: 5:24	SR: 5:22
				SS: 19:22	SS: 19:23	SS: 19:24
				MR: 7:15	MR: 8:04	MR: 8:55
				MS: 21:58	MS: 22:48	MS: 23:33
+-----+-----+-----+-----+-----+-----+-----+						
4	5	6	7	8	9	10
SR: 5:21	SR: 5:20	SR: 5:19	SR: 5:18	SR: 5:17	SR: 5:15	SR: 5:14
SS: 19:25	SS: 19:26	SS: 19:27	SS: 19:28	SS: 19:29	SS: 19:30	SS: 19:31
MR: 9:48	MR: 10:43	MR: 11:39	MR: 12:35	MR: 13:32	MR: 14:30	MR: 15:29
MS: None	MS: 0:13	MS: 0:48	MS: 1:21	MS: 1:52	MS: 2:21	MS: 2:51
		FQ: 20:17				
+-----+-----+-----+-----+-----+-----+-----+						
11	12	13	14	15	16	17
SR: 5:13	SR: 5:12	SR: 5:11	SR: 5:10	SR: 5:09	SR: 5:08	SR: 5:07
SS: 19:32	SS: 19:33	SS: 19:34	SS: 19:35	SS: 19:36	SS: 19:37	SS: 19:38
MR: 16:31	MR: 17:34	MR: 18:39	MR: 19:44	MR: 20:47	MR: 21:47	MR: 22:42
MS: 3:21	MS: 3:54	MS: 4:31	MS: 5:12	MS: 6:00	MS: 6:54	MS: 7:54
			FM: 12:19			
+-----+-----+-----+-----+-----+-----+-----+						
18	19	20	21	22	23	24
SR: 5:07	SR: 5:06	SR: 5:05	SR: 5:04	SR: 5:03	SR: 5:03	SR: 5:02
SS: 19:39	SS: 19:40	SS: 19:40	SS: 19:41	SS: 19:42	SS: 19:43	SS: 19:44
MR: 23:30	MR: None	MR: 0:13	MR: 0:51	MR: 1:27	MR: 2:01	MR: 2:35
MS: 9:00	MS: 10:08	MS: 11:17	MS: 12:25	MS: 13:33	MS: 14:39	MS: 15:45
			LQ: 6:01			
+-----+-----+-----+-----+-----+-----+-----+						
25	26	27	28	29	30	31
SR: 5:01	SR: 5:01	SR: 5:00	SR: 5:00	SR: 4:59	SR: 4:58	SR: 4:58
SS: 19:45	SS: 19:46	SS: 19:47	SS: 19:47	SS: 19:48	SS: 19:49	SS: 19:50
MR: 3:09	MR: 3:46	MR: 4:26	MR: 5:09	MR: 5:55	MR: 6:46	MR: 7:39
MS: 16:49	MS: 17:52	MS: 18:52	MS: 19:49	MS: 20:41	MS: 21:28	MS: 22:10
			NM: 11:43			
+-----+-----+-----+-----+-----+-----+-----+						

June 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5	6	7
SR: 4:58	SR: 4:57	SR: 4:57	SR: 4:56	SR: 4:56	SR: 4:56	SR: 4:56
SS: 19:50	SS: 19:51	SS: 19:52	SS: 19:52	SS: 19:53	SS: 19:54	SS: 19:54
MR: 8:33	MR: 9:29	MR: 10:24	MR: 11:21	MR: 12:17	MR: 13:15	MR: 14:15
MS: 22:47	MS: 23:21	MS: 23:52	MS: None	MS: 0:22	MS: 0:51	MS: 1:20
				FQ: 13:41		
8	9	10	11	12	13	14
SR: 4:55	SR: 4:55	SR: 4:55	SR: 4:55	SR: 4:55	SR: 4:55	SR: 4:55
SS: 19:55	SS: 19:55	SS: 19:56	SS: 19:56	SS: 19:57	SS: 19:57	SS: 19:58
MR: 15:16	MR: 16:19	MR: 17:24	MR: 18:30	MR: 19:33	MR: 20:31	MR: 21:24
MS: 1:52	MS: 2:26	MS: 3:04	MS: 3:48	MS: 4:40	MS: 5:38	MS: 6:43
				FM: 21:14		
15	16	17	18	19	20	21
SR: 4:55	SR: 4:55	SR: 4:55	SR: 4:55	SR: 4:55	SR: 4:55	SR: 4:56
SS: 19:58	SS: 19:59	SS: 19:59	SS: 19:59	SS: 19:59	SS: 20:00	SS: 20:00
MR: 22:11	MR: 22:52	MR: 23:29	MR: None	MR: 0:04	MR: 0:38	MR: 1:12
MS: 7:53	MS: 9:04	MS: 10:15	MS: 11:24	MS: 12:32	MS: 13:38	MS: 14:42
				LQ: 11:40		
						JSO: 3:47
22	23	24	25	26	27	28
SR: 4:56	SR: 4:56	SR: 4:56	SR: 4:57	SR: 4:57	SR: 4:57	SR: 4:58
SS: 20:00	SS: 20:00	SS: 20:00	SS: 20:00	SS: 20:01	SS: 20:01	SS: 20:01
MR: 1:48	MR: 2:25	MR: 3:07	MR: 3:51	MR: 4:40	MR: 5:31	MR: 6:25
MS: 15:45	MS: 16:45	MS: 17:42	MS: 18:35	MS: 19:24	MS: 20:08	MS: 20:47
					NM: 1:11	
29	30					
SR: 4:58	SR: 4:59					
SS: 20:01	SS: 20:00					
MR: 7:20	MR: 8:16					
MS: 21:22	MS: 21:54					

July 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1	2	3	4	5
		SR: 4:59	SR: 5:00	SR: 5:00	SR: 5:01	SR: 5:01
		SS: 20:00	SS: 20:00	SS: 20:00	SS: 20:00	SS: 20:00
		MR: 9:12	MR: 10:08	MR: 11:05	MR: 12:02	MR: 13:01
		MS: 22:25	MS: 22:53	MS: 23:22	MS: 23:52	MS: None
						FQ: 5:01
6	7	8	9	10	11	12
SR: 5:02	SR: 5:03	SR: 5:03	SR: 5:04	SR: 5:05	SR: 5:05	SR: 5:06
SS: 19:59	SS: 19:59	SS: 19:59	SS: 19:58	SS: 19:58	SS: 19:57	SS: 19:57
MR: 14:02	MR: 15:05	MR: 16:09	MR: 17:13	MR: 18:14	MR: 19:11	MR: 20:02
MS: 0:24	MS: 0:59	MS: 1:39	MS: 2:26	MS: 3:20	MS: 4:22	MS: 5:30
						FM: 4:27
13	14	15	16	17	18	19
SR: 5:07	SR: 5:08	SR: 5:08	SR: 5:09	SR: 5:10	SR: 5:11	SR: 5:12
SS: 19:56	SS: 19:56	SS: 19:55	SS: 19:55	SS: 19:54	SS: 19:53	SS: 19:53
MR: 20:47	MR: 21:27	MR: 22:05	MR: 22:40	MR: 23:15	MR: 23:50	MR: None
MS: 6:42	MS: 7:56	MS: 9:09	MS: 10:19	MS: 11:28	MS: 12:34	MS: 13:38
					LQ: 19:10	
20	21	22	23	24	25	26
SR: 5:12	SR: 5:13	SR: 5:14	SR: 5:15	SR: 5:16	SR: 5:17	SR: 5:18
SS: 19:52	SS: 19:51	SS: 19:50	SS: 19:49	SS: 19:49	SS: 19:48	SS: 19:47
MR: 0:27	MR: 1:07	MR: 1:50	MR: 2:37	MR: 3:27	MR: 4:20	MR: 5:14
MS: 14:39	MS: 15:37	MS: 16:31	MS: 17:21	MS: 18:06	MS: 18:47	MS: 19:24
						NM: 15:43
27	28	29	30	31		
SR: 5:19	SR: 5:19	SR: 5:20	SR: 5:21	SR: 5:22		
SS: 19:46	SS: 19:45	SS: 19:44	SS: 19:43	SS: 19:42		
MR: 6:10	MR: 7:05	MR: 8:01	MR: 8:58	MR: 9:55		
MS: 19:57	MS: 20:28	MS: 20:57	MS: 21:26	MS: 21:55		

August 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
					SR: 5:23	SR: 5:24
					SS: 19:41	SS: 19:40
					MR: 10:52	MR: 11:51
					MS: 22:25	MS: 22:58
3	4	5	6	7	8	9
SR: 5:25	SR: 5:26	SR: 5:27	SR: 5:28	SR: 5:29	SR: 5:30	SR: 5:31
SS: 19:39	SS: 19:37	SS: 19:36	SS: 19:35	SS: 19:34	SS: 19:33	SS: 19:31
MR: 12:51	MR: 13:53	MR: 14:55	MR: 15:56	MR: 16:54	MR: 17:47	MR: 18:36
MS: 23:35	MS: None	MS: 0:17	MS: 1:06	MS: 2:03	MS: 3:06	MS: 4:16
FQ: 17:51						
10	11	12	13	14	15	16
SR: 5:32	SR: 5:33	SR: 5:34	SR: 5:35	SR: 5:36	SR: 5:37	SR: 5:38
SS: 19:30	SS: 19:29	SS: 19:27	SS: 19:26	SS: 19:25	SS: 19:23	SS: 19:22
MR: 19:19	MR: 19:59	MR: 20:37	MR: 21:13	MR: 21:50	MR: 22:27	MR: 23:07
MS: 5:30	MS: 6:44	MS: 7:58	MS: 9:10	MS: 10:19	MS: 11:26	MS: 12:30
FM: 11:11						
17	18	19	20	21	22	23
SR: 5:39	SR: 5:40	SR: 5:41	SR: 5:42	SR: 5:43	SR: 5:44	SR: 5:45
SS: 19:21	SS: 19:19	SS: 19:18	SS: 19:16	SS: 19:15	SS: 19:13	SS: 19:12
MR: 23:50	MR: None	MR: 0:36	MR: 1:24	MR: 2:16	MR: 3:09	MR: 4:04
MS: 13:30	MS: 14:26	MS: 15:18	MS: 16:05	MS: 16:47	MS: 17:25	MS: 17:59
LQ: 5:27						
24	25	26	27	28	29	30
SR: 5:45	SR: 5:46	SR: 5:47	SR: 5:48	SR: 5:49	SR: 5:50	SR: 5:51
SS: 19:10	SS: 19:09	SS: 19:07	SS: 19:06	SS: 19:04	SS: 19:03	SS: 19:01
MR: 5:00	MR: 5:56	MR: 6:52	MR: 7:49	MR: 8:46	MR: 9:45	MR: 10:44
MS: 18:31	MS: 19:01	MS: 19:30	MS: 19:59	MS: 20:29	MS: 21:01	MS: 21:36
	NM: 7:13					
31						
SR: 5:52						
SS: 18:59						
MR: 11:44						
MS: 22:15						

September 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
	SR: 5:53	SR: 5:54	SR: 5:55	SR: 5:56	SR: 5:57	SR: 5:58
	SS: 18:58	SS: 18:56	SS: 18:55	SS: 18:53	SS: 18:51	SS: 18:50
	MR: 12:44	MR: 13:43	MR: 14:41	MR: 15:34	MR: 16:24	MR: 17:09
	MS: 23:00	MS: 23:52	MS: None	MS: 0:50	MS: 1:55	MS: 3:04
		FQ: 4:12				
7	8	9	10	11	12	13
SR: 5:59	SR: 6:00	SR: 6:01	SR: 6:02	SR: 6:03	SR: 6:04	SR: 6:05
SS: 18:48	SS: 18:46	SS: 18:45	SS: 18:43	SS: 18:41	SS: 18:40	SS: 18:38
MR: 17:50	MR: 18:29	MR: 19:07	MR: 19:44	MR: 20:23	MR: 21:03	MR: 21:46
MS: 4:17	MS: 5:31	MS: 6:44	MS: 7:56	MS: 9:06	MS: 10:14	MS: 11:18
	FM: 18:39					
14	15	16	17	18	19	20
SR: 6:06	SR: 6:07	SR: 6:08	SR: 6:09	SR: 6:10	SR: 6:11	SR: 6:12
SS: 18:36	SS: 18:35	SS: 18:33	SS: 18:31	SS: 18:30	SS: 18:28	SS: 18:26
MR: 22:31	MR: 23:20	MR: None	MR: 0:11	MR: 1:04	MR: 1:58	MR: 2:54
MS: 12:17	MS: 13:11	MS: 14:01	MS: 14:45	MS: 15:24	MS: 16:00	MS: 16:33
	LQ: 19:06					
21	22	23	24	25	26	27
SR: 6:13	SR: 6:14	SR: 6:15	SR: 6:16	SR: 6:16	SR: 6:17	SR: 6:18
SS: 18:25	SS: 18:23	SS: 18:21	SS: 18:20	SS: 18:18	SS: 18:16	SS: 18:15
MR: 3:49	MR: 4:46	MR: 5:43	MR: 6:40	MR: 7:39	MR: 8:38	MR: 9:38
MS: 17:03	MS: 17:33	MS: 18:02	MS: 18:32	MS: 19:04	MS: 19:38	MS: 20:16
		NM: 23:14				
	SEQ:19:26					
28	29	30				
SR: 6:19	SR: 6:20	SR: 6:21				
SS: 18:13	SS: 18:11	SS: 18:10				
MR: 10:38	MR: 11:37	MR: 12:34				
MS: 20:59	MS: 21:47	MS: 22:42				

October 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
			SR: 6:22	SR: 6:23	SR: 6:24	SR: 6:26
			SS: 18:08	SS: 18:06	SS: 18:05	SS: 18:03
			MR: 13:27	MR: 14:17	MR: 15:02	MR: 15:43
			MS: 23:43	MS: None	MS: 0:48	MS: 1:57
			FQ: 12:33			
5	6	7	8	9	10	11
SR: 6:27	SR: 6:28	SR: 6:29	SR: 6:30	SR: 6:31	SR: 6:32	SR: 6:33
SS: 18:01	SS: 18:00	SS: 17:58	SS: 17:57	SS: 17:55	SS: 17:53	SS: 17:52
MR: 16:22	MR: 17:00	MR: 17:37	MR: 18:15	MR: 18:54	MR: 19:37	MR: 20:22
MS: 3:08	MS: 4:19	MS: 5:31	MS: 6:42	MS: 7:51	MS: 8:58	MS: 10:02
			FM: 3:51			
			LE: 3:56			
12	13	14	15	16	17	18
SR: 6:34	SR: 6:35	SR: 6:36	SR: 6:37	SR: 6:38	SR: 6:39	SR: 6:40
SS: 17:50	SS: 17:49	SS: 17:47	SS: 17:46	SS: 17:44	SS: 17:43	SS: 17:41
MR: 21:11	MR: 22:02	MR: 22:56	MR: 23:50	MR: None	MR: 0:45	MR: 1:41
MS: 11:00	MS: 11:53	MS: 12:40	MS: 13:22	MS: 13:59	MS: 14:33	MS: 15:04
			LQ: 12:13			
19	20	21	22	23	24	25
SR: 6:41	SR: 6:42	SR: 6:44	SR: 6:45	SR: 6:46	SR: 6:47	SR: 6:48
SS: 17:40	SS: 17:38	SS: 17:37	SS: 17:36	SS: 17:34	SS: 17:33	SS: 17:31
MR: 2:37	MR: 3:33	MR: 4:31	MR: 5:29	MR: 6:29	MR: 7:30	MR: 8:31
MS: 15:34	MS: 16:03	MS: 16:33	MS: 17:04	MS: 17:38	MS: 18:15	MS: 18:57
				NM: 14:56		
				SE: 14:41		
26	27	28	29	30	31	
SR: 6:49	SR: 6:50	SR: 6:51	SR: 6:53	SR: 6:54	SR: 6:55	
SS: 17:30	SS: 17:29	SS: 17:27	SS: 17:26	SS: 17:25	SS: 17:24	
MR: 9:31	MR: 10:30	MR: 11:24	MR: 12:15	MR: 13:00	MR: 13:42	
MS: 19:45	MS: 20:38	MS: 21:36	MS: 22:40	MS: 23:46	MS: None	
				FQ: 19:49		

Midway, UT (JMC) Latitude: 40°30'43" N Longitude: 111°28'40" W
 Local Time = UT - 7.00 hours Elevation: 1706 meters Year 2014
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November 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
						1 SR: 6:56 SS: 17:23 MR: 14:20 MS: 0:54
2 SR: 6:57 SS: 17:21 MR: 14:56 MS: 2:03	3 SR: 6:58 SS: 17:20 MR: 15:32 MS: 3:12	4 SR: 7:00 SS: 17:19 MR: 16:09 MS: 4:22	5 SR: 7:01 SS: 17:18 MR: 16:47 MS: 5:30	6 SR: 7:02 SS: 17:17 MR: 17:28 MS: 6:38 FM: 15:23	7 SR: 7:03 SS: 17:16 MR: 18:12 MS: 7:43	8 SR: 7:04 SS: 17:15 MR: 18:59 MS: 8:45
9 SR: 7:05 SS: 17:14 MR: 19:50 MS: 9:41	10 SR: 7:07 SS: 17:13 MR: 20:44 MS: 10:32	11 SR: 7:08 SS: 17:12 MR: 21:39 MS: 11:17	12 SR: 7:09 SS: 17:11 MR: 22:34 MS: 11:56	13 SR: 7:10 SS: 17:10 MR: 23:30 MS: 12:32	14 SR: 7:11 SS: 17:09 MR: None MS: 13:04 LQ: 8:18	15 SR: 7:12 SS: 17:08 MR: 0:26 MS: 13:35
16 SR: 7:14 SS: 17:08 MR: 1:22 MS: 14:04	17 SR: 7:15 SS: 17:07 MR: 2:19 MS: 14:33	18 SR: 7:16 SS: 17:06 MR: 3:17 MS: 15:03	19 SR: 7:17 SS: 17:05 MR: 4:16 MS: 15:36	20 SR: 7:18 SS: 17:05 MR: 5:16 MS: 16:11	21 SR: 7:19 SS: 17:04 MR: 6:18 MS: 16:52	22 SR: 7:20 SS: 17:03 MR: 7:20 MS: 17:38 NM: 5:32
23 SR: 7:22 SS: 17:03 MR: 8:21 MS: 18:30	24 SR: 7:23 SS: 17:02 MR: 9:19 MS: 19:28	25 SR: 7:24 SS: 17:02 MR: 10:12 MS: 20:32	26 SR: 7:25 SS: 17:01 MR: 11:00 MS: 21:38	27 SR: 7:26 SS: 17:01 MR: 11:43 MS: 22:46	28 SR: 7:27 SS: 17:01 MR: 12:22 MS: 23:54	29 SR: 7:28 SS: 17:00 MR: 12:58 MS: None FQ: 3:07
30 SR: 7:29 SS: 17:00 MR: 13:33 MS: 1:02						

December 2014

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3	4	5	6
	SR: 7:30	SR: 7:31	SR: 7:32	SR: 7:33	SR: 7:34	SR: 7:35
	SS: 17:00	SS: 17:00	SS: 16:59	SS: 16:59	SS: 16:59	SS: 16:59
	MR: 14:08	MR: 14:44	MR: 15:23	MR: 16:04	MR: 16:50	MR: 17:39
	MS: 2:10	MS: 3:17	MS: 4:23	MS: 5:28	MS: 6:30	MS: 7:29
						FM: 5:27
7	8	9	10	11	12	13
SR: 7:36	SR: 7:37	SR: 7:38	SR: 7:38	SR: 7:39	SR: 7:40	SR: 7:41
SS: 16:59	SS: 16:59	SS: 16:59	SS: 16:59	SS: 16:59	SS: 16:59	SS: 17:00
MR: 18:31	MR: 19:26	MR: 20:22	MR: 21:18	MR: 22:15	MR: 23:10	MR: None
MS: 8:22	MS: 9:10	MS: 9:53	MS: 10:30	MS: 11:04	MS: 11:35	MS: 12:05
14	15	16	17	18	19	20
SR: 7:42	SR: 7:42	SR: 7:43	SR: 7:44	SR: 7:44	SR: 7:45	SR: 7:45
SS: 17:00	SS: 17:00	SS: 17:00	SS: 17:01	SS: 17:01	SS: 17:01	SS: 17:02
MR: 0:07	MR: 1:03	MR: 2:01	MR: 3:00	MR: 4:01	MR: 5:03	MR: 6:05
MS: 12:34	MS: 13:03	MS: 13:34	MS: 14:07	MS: 14:44	MS: 15:27	MS: 16:17
LQ: 5:54						
21	22	23	24	25	26	27
SR: 7:46	SR: 7:46	SR: 7:47	SR: 7:47	SR: 7:48	SR: 7:48	SR: 7:48
SS: 17:02	SS: 17:03	SS: 17:03	SS: 17:04	SS: 17:05	SS: 17:05	SS: 17:06
MR: 7:05	MR: 8:02	MR: 8:54	MR: 9:41	MR: 10:23	MR: 11:01	MR: 11:37
MS: 17:13	MS: 18:16	MS: 19:24	MS: 20:34	MS: 21:44	MS: 22:54	MS: None
NM: 18:36						
DSO:15:59						
28	29	30	31			
SR: 7:49	SR: 7:49	SR: 7:49	SR: 7:49			
SS: 17:07	SS: 17:07	SS: 17:08	SS: 17:09			
MR: 12:12	MR: 12:47	MR: 13:24	MR: 14:03			
MS: 0:02	MS: 1:09	MS: 2:15	MS: 3:19			
FQ: 11:33						

Midway, UT (JMC) Latitude: 40°30'43" N Longitude: 111°28'40" W
Local Time = UT - 7.00 hours Elevation: 1706 meters Year 2014
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Seasons Report for 2014

MEQ: 3/20/2014 9:55	Winter Length:	88.99 days
JSO: 6/21/2014 3:47	Spring Length:	92.74 days
SEQ: 9/22/2014 19:26	Summer Length:	93.65 days
DSO: 12/21/2014 15:59	Autumn Length:	89.86 days

Dates of Easter Report for 2014

4/20/2014

Lunar Eclipse Report for 2014

Lunar eclipse on 4/15/2014
Moon rise: 19:50
Moon set: 5:58
Magnitude: 1.30
Partial phase begins: 23:02
Total phase begins: 0:10
Time of maximum eclipse: 0:49
Total phase ends: 1:28
Partial phase ends: 2:36

Lunar eclipse on 10/ 8/2014
Moon rise: 18:15
Moon set: 6:42
Magnitude: 1.16
Partial phase begins: 2:17
Total phase begins: 3:27
Time of maximum eclipse: 3:56
Total phase ends: 4:24
Partial phase ends: 5:35

Solar Eclipse Report for 2014

Solar eclipse on 4/28/2014
Sun rise: 5:29
Sun set: 19:19
Time of maximum eclipse: 23:09
Eclipse is partial, maximum magnitude = 0.99
Eclipse is visible in the southern hemisphere

Solar eclipse on 10/23/2014
Sun rise: 6:46
Sun set: 17:34
Time of maximum eclipse: 14:41
Eclipse is partial, maximum magnitude = 0.82
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.

Planet View Info Report for 1/ 1/2014 to 12/31/2014

Mercury

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2014	8:08	17:11	18h53m19s	-24°44'02"	2°27'32"	0.998	1.43334
1/ 8/2014	8:24	17:40	19h43m06s	-23°27'38"	6°16'18"	0.984	1.39133
1/15/2014	8:34	18:13	20h32m19s	-20°55'33"	10°38'36"	0.943	1.31404
1/22/2014	8:38	18:46	21h18m48s	-17°12'18"	14°59'01"	0.845	1.19363
1/29/2014	8:31	19:12	21h57m30s	-12°46'02"	18°04'17"	0.641	1.02619
2/ 5/2014	8:08	19:13	22h17m36s	-8°59'43"	16°58'25"	0.323	0.83382
2/12/2014	7:26	18:32	22h07m40s	-8°02'45"	8°30'20"	0.053	0.68414
2/19/2014	6:38	17:27	21h38m30s	-10°14'42"	7°39'17"	0.034	0.64090
2/26/2014	6:04	16:36	21h20m43s	-12°53'44"	18°55'30"	0.198	0.69274
3/ 5/2014	5:46	16:12	21h25m05s	-14°11'23"	25°12'01"	0.375	0.78823
3/12/2014	5:39	16:08	21h45m28s	-13°57'33"	27°26'00"	0.513	0.89386
3/19/2014	5:35	16:17	22h15m15s	-12°23'37"	27°05'39"	0.618	0.99639
3/26/2014	5:33	16:36	22h50m36s	-9°39'40"	25°00'55"	0.703	1.09152
4/ 2/2014	5:32	17:01	23h29m45s	-5°53'19"	21°34'25"	0.780	1.17750
4/ 9/2014	5:31	17:34	0h12m16s	-1°11'09"	16°52'53"	0.855	1.25181
4/16/2014	5:31	18:12	0h58m38s	4°18'55"	10°54'51"	0.931	1.30813
4/23/2014	5:33	18:59	1h49m54s	10°21'38"	3°40'17"	0.991	1.33266
4/30/2014	5:40	19:51	2h46m16s	16°21'51"	4°32'50"	0.983	1.30385
5/ 7/2014	5:51	20:41	3h44m48s	21°19'05"	12°29'07"	0.858	1.20907
5/14/2014	6:05	21:18	4h39m10s	24°22'56"	18°38'17"	0.662	1.06787
5/21/2014	6:16	21:37	5h23m51s	25°30'31"	22°04'39"	0.471	0.91556
5/28/2014	6:21	21:36	5h55m30s	25°08'25"	22°25'55"	0.308	0.77619
6/ 4/2014	6:15	21:15	6h11m48s	23°47'17"	19°22'38"	0.171	0.66262
6/11/2014	5:55	20:37	6h11m43s	21°55'24"	12°46'45"	0.063	0.58485
6/18/2014	5:21	19:48	5h58m37s	20°03'55"	4°29'11"	0.007	0.55354
6/25/2014	4:43	19:01	5h42m48s	18°52'03"	8°43'02"	0.029	0.57624
7/ 2/2014	4:09	18:30	5h36m21s	18°49'36"	16°17'39"	0.125	0.65188
7/ 9/2014	3:48	18:19	5h45m54s	19°51'14"	20°21'29"	0.272	0.77232
7/16/2014	3:43	18:27	6h12m53s	21°19'48"	20°30'43"	0.463	0.92577
7/23/2014	3:56	18:49	6h56m28s	22°19'13"	17°03'42"	0.689	1.09287
7/30/2014	4:28	19:16	7h52m53s	21°46'34"	10°45'59"	0.894	1.23942
8/ 6/2014	5:13	19:37	8h53m42s	19°09'19"	3°22'59"	0.991	1.32955
8/13/2014	5:59	19:48	9h50m38s	14°54'06"	4°53'46"	0.985	1.35695
8/20/2014	6:40	19:51	10h40m48s	9°49'47"	11°11'09"	0.935	1.33905
8/27/2014	7:14	19:48	11h24m49s	4°31'59"	16°28'49"	0.874	1.29260
9/ 3/2014	7:43	19:41	12h03m58s	-0°38'21"	20°43'30"	0.811	1.22680
9/10/2014	8:07	19:32	12h39m05s	-5°27'38"	23°55'11"	0.741	1.14556
9/17/2014	8:25	19:20	13h10m11s	-9°43'42"	25°55'15"	0.658	1.05024
9/24/2014	8:34	19:05	13h35m56s	-13°10'30"	26°17'55"	0.548	0.94197
10/ 1/2014	8:30	18:45	13h52m34s	-15°19'26"	24°03'41"	0.394	0.82542
10/ 8/2014	7:59	18:17	13h53m00s	-15°15'01"	17°19'31"	0.189	0.71755
10/15/2014	6:56	17:40	13h32m04s	-11°50'14"	4°35'05"	0.014	0.66318
10/22/2014	5:48	17:07	13h07m12s	-6°52'11"	10°24'07"	0.091	0.72368
10/29/2014	5:19	16:48	13h07m59s	-5°14'07"	17°54'40"	0.410	0.88957
11/ 5/2014	5:27	16:40	13h34m00s	-7°27'37"	18°07'11"	0.700	1.07694
11/12/2014	5:52	16:37	14h11m42s	-11°21'12"	15°02'37"	0.865	1.22999
11/19/2014	6:22	16:37	14h53m45s	-15°27'24"	11°02'46"	0.945	1.33831
11/26/2014	6:53	16:39	15h37m50s	-19°07'48"	6°57'38"	0.982	1.40732
12/ 3/2014	7:23	16:46	16h23m26s	-22°05'05"	3°02'37"	0.997	1.44337
12/10/2014	7:51	16:57	17h10m31s	-24°09'01"	1°29'40"	0.999	1.45033
12/17/2014	8:16	17:14	17h58m55s	-25°11'31"	5°06'50"	0.991	1.42926
12/24/2014	8:37	17:37	18h48m06s	-25°05'21"	9°03'00"	0.967	1.37847
12/31/2014	8:51	18:05	19h36m54s	-23°45'14"	13°02'13"	0.917	1.29360

Venus

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2014	8:35	18:30	19h53m39s	-18°12'48"	16°37'02"	0.040	0.28008
1/ 8/2014	7:47	17:50	19h37m37s	-17°05'12"	7°12'13"	0.007	0.26731
1/15/2014	6:58	17:07	19h19m15s	-16°16'33"	8°08'06"	0.009	0.26871
1/22/2014	6:15	16:27	19h04m16s	-15°50'44"	17°37'06"	0.045	0.28420
1/29/2014	5:40	15:53	18h56m40s	-15°47'03"	26°09'08"	0.102	0.31161
2/ 5/2014	5:15	15:26	18h57m26s	-15°59'11"	32°50'02"	0.166	0.34801
2/12/2014	4:57	15:07	19h05m46s	-16°17'49"	37°46'07"	0.229	0.39085
2/19/2014	4:46	14:54	19h20m16s	-16°33'31"	41°16'00"	0.288	0.43817
2/26/2014	4:38	14:46	19h39m32s	-16°38'16"	43°39'03"	0.342	0.48848
3/ 5/2014	4:32	14:42	20h02m17s	-16°26'22"	45°11'40"	0.390	0.54071
3/12/2014	4:28	14:42	20h27m33s	-15°54'10"	46°05'57"	0.434	0.59422
3/19/2014	4:24	14:45	20h54m33s	-14°59'38"	46°30'23"	0.475	0.64857
3/26/2014	4:20	14:51	21h22m42s	-13°42'14"	46°31'29"	0.512	0.70332
4/ 2/2014	4:15	14:59	21h51m34s	-12°02'46"	46°14'24"	0.546	0.75812
4/ 9/2014	4:09	15:08	22h20m47s	-10°03'09"	45°42'47"	0.578	0.81277
4/16/2014	4:03	15:18	22h50m11s	-7°45'48"	44°59'04"	0.608	0.86713
4/23/2014	3:56	15:28	23h19m41s	-5°13'34"	44°05'18"	0.637	0.92100
4/30/2014	3:49	15:40	23h49m16s	-2°29'47"	43°03'19"	0.664	0.97414
5/ 7/2014	3:41	15:52	0h18m57s	0°21'59"	41°54'26"	0.689	1.02640
5/14/2014	3:33	16:04	0h48m50s	3°18'08"	40°39'27"	0.714	1.07771
5/21/2014	3:26	16:17	1h19m03s	6°15'03"	39°19'08"	0.737	1.12792
5/28/2014	3:19	16:30	1h49m47s	9°08'58"	37°54'20"	0.759	1.17682
6/ 4/2014	3:13	16:44	2h21m07s	11°55'56"	36°25'39"	0.780	1.22425
6/11/2014	3:07	16:58	2h53m12s	14°32'02"	34°53'25"	0.801	1.27014
6/18/2014	3:04	17:13	3h26m09s	16°53'20"	33°17'58"	0.820	1.31438
6/25/2014	3:02	17:27	4h00m00s	18°55'56"	31°39'48"	0.839	1.35677
7/ 2/2014	3:03	17:41	4h34m46s	20°36'01"	29°59'19"	0.856	1.39715
7/ 9/2014	3:06	17:54	5h10m19s	21°50'09"	28°16'42"	0.873	1.43545
7/16/2014	3:11	18:06	5h46m32s	22°35'29"	26°32'09"	0.889	1.47160
7/23/2014	3:19	18:16	6h23m09s	22°49'58"	24°46'01"	0.904	1.50548
7/30/2014	3:30	18:23	6h59m54s	22°32'29"	22°58'39"	0.918	1.53693
8/ 6/2014	3:42	18:28	7h36m30s	21°43'05"	21°10'11"	0.930	1.56589
8/13/2014	3:57	18:31	8h12m40s	20°22'52"	19°20'46"	0.942	1.59238
8/20/2014	4:12	18:31	8h48m13s	18°33'51"	17°30'42"	0.953	1.61635
8/27/2014	4:28	18:29	9h23m03s	16°18'54"	15°40'17"	0.963	1.63769
9/ 3/2014	4:45	18:25	9h57m06s	13°41'27"	13°49'41"	0.971	1.65639
9/10/2014	5:01	18:20	10h30m26s	10°45'18"	11°58'58"	0.978	1.67251
9/17/2014	5:18	18:14	11h03m09s	7°34'23"	10°08'28"	0.985	1.68610
9/24/2014	5:34	18:07	11h35m26s	4°12'46"	8°18'30"	0.990	1.69713
10/ 1/2014	5:51	17:59	12h07m28s	0°44'36"	6°29'18"	0.994	1.70561
10/ 8/2014	6:07	17:52	12h39m28s	-2°45'53"	4°41'22"	0.997	1.71164
10/15/2014	6:24	17:44	13h11m41s	-6°14'28"	2°56'17"	0.999	1.71534
10/22/2014	6:41	17:38	13h44m21s	-9°36'52"	1°23'10"	1.000	1.71674
10/29/2014	6:58	17:32	14h17m40s	-12°48'37"	1°18'30"	1.000	1.71584
11/ 5/2014	7:15	17:28	14h51m49s	-15°45'07"	2°48'12"	0.999	1.71275
11/12/2014	7:33	17:26	15h26m55s	-18°21'49"	4°29'43"	0.997	1.70760
11/19/2014	7:50	17:26	16h03m00s	-20°34'16"	6°12'39"	0.995	1.70045
11/26/2014	8:07	17:29	16h40m03s	-22°18'14"	7°55'26"	0.991	1.69130
12/ 3/2014	8:22	17:34	17h17m53s	-23°30'06"	9°37'43"	0.987	1.68018
12/10/2014	8:35	17:43	17h56m13s	-24°07'09"	11°19'18"	0.982	1.66722
12/17/2014	8:46	17:54	18h34m44s	-24°07'53"	13°00'01"	0.976	1.65247
12/24/2014	8:54	18:07	19h13m03s	-23°32'07"	14°39'52"	0.970	1.63590
12/31/2014	8:59	18:23	19h50m50s	-22°21'05"	16°18'57"	0.963	1.61748

Mars

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2014	0:35	12:22	12h46m14s	-2°36'18"	88°50'27"	0.904	1.36490
1/ 8/2014	0:23	12:02	12h57m28s	-3°41'55"	92°57'47"	0.904	1.29485
1/15/2014	0:09	11:41	13h07m58s	-4°41'42"	97°17'28"	0.905	1.22477
1/22/2014	23:52	11:20	13h17m35s	-5°35'04"	101°51'16"	0.908	1.15504
1/29/2014	23:35	10:58	13h26m10s	-6°21'10"	106°41'49"	0.912	1.08612
2/ 5/2014	23:17	10:36	13h33m32s	-6°59'11"	111°51'49"	0.917	1.01865
2/12/2014	22:56	10:12	13h39m27s	-7°28'23"	117°23'56"	0.924	0.95337
2/19/2014	22:34	9:48	13h43m41s	-7°48'00"	123°21'22"	0.933	0.89099
2/26/2014	22:09	9:22	13h46m00s	-7°57'08"	129°48'10"	0.944	0.83233
3/ 5/2014	21:41	8:54	13h46m07s	-7°54'57"	136°47'58"	0.956	0.77845
3/12/2014	21:10	8:25	13h43m52s	-7°41'06"	144°22'43"	0.968	0.73054
3/19/2014	20:35	7:54	13h39m14s	-7°15'45"	152°32'33"	0.980	0.68973
3/26/2014	19:59	7:22	13h32m19s	-6°39'51"	161°14'46"	0.990	0.65714
4/ 2/2014	19:19	6:48	13h23m30s	-5°55'39"	170°18'39"	0.997	0.63388
4/ 9/2014	18:39	6:13	13h13m31s	-5°07'11"	177°31'42"	1.000	0.62071
4/16/2014	17:59	5:38	13h03m16s	-4°19'29"	170°02'22"	0.997	0.61777
4/23/2014	17:20	5:04	12h53m39s	-3°37'33"	160°52'22"	0.989	0.62469
4/30/2014	16:42	4:30	12h45m29s	-3°05'44"	152°01'37"	0.978	0.64071
5/ 7/2014	16:08	3:58	12h39m24s	-2°47'10"	143°44'22"	0.964	0.66467
5/14/2014	15:37	3:27	12h35m41s	-2°43'08"	136°06'27"	0.949	0.69509
5/21/2014	15:09	2:57	12h34m23s	-2°53'27"	129°08'17"	0.934	0.73062
5/28/2014	14:45	2:30	12h35m24s	-3°17'11"	122°48'02"	0.920	0.77011
6/ 4/2014	14:23	2:03	12h38m34s	-3°53'11"	117°03'06"	0.908	0.81249
6/11/2014	14:03	1:38	12h43m40s	-4°39'54"	111°49'57"	0.897	0.85679
6/18/2014	13:46	1:14	12h50m29s	-5°35'43"	107°04'17"	0.889	0.90228
6/25/2014	13:31	0:52	12h58m48s	-6°39'10"	102°42'20"	0.882	0.94848
7/ 2/2014	13:17	0:30	13h08m28s	-7°49'03"	98°41'20"	0.876	0.99493
7/ 9/2014	13:05	0:09	13h19m21s	-9°04'04"	94°58'45"	0.872	1.04119
7/16/2014	12:54	23:46	13h31m19s	-10°22'55"	91°31'54"	0.869	1.08698
7/23/2014	12:44	23:26	13h44m17s	-11°44'26"	88°18'30"	0.868	1.13220
7/30/2014	12:36	23:08	13h58m11s	-13°07'36"	85°17'03"	0.867	1.17669
8/ 6/2014	12:28	22:50	14h12m59s	-14°31'18"	82°26'22"	0.867	1.22027
8/13/2014	12:22	22:33	14h28m37s	-15°54'19"	79°44'59"	0.868	1.26285
8/20/2014	12:16	22:17	14h45m05s	-17°15'31"	77°11'32"	0.869	1.30450
8/27/2014	12:11	22:02	15h02m20s	-18°33'50"	74°45'12"	0.871	1.34520
9/ 3/2014	12:06	21:47	15h20m23s	-19°48'04"	72°25'27"	0.873	1.38489
9/10/2014	12:02	21:34	15h39m11s	-20°56'59"	70°11'28"	0.876	1.42357
9/17/2014	11:58	21:22	15h58m42s	-21°59'23"	68°02'22"	0.879	1.46137
9/24/2014	11:55	21:11	16h18m55s	-22°54'07"	65°57'36"	0.883	1.49837
10/ 1/2014	11:51	21:01	16h39m47s	-23°40'03"	63°56'53"	0.886	1.53455
10/ 8/2014	11:48	20:53	17h01m15s	-24°16'06"	61°59'49"	0.890	1.56995
10/15/2014	11:44	20:45	17h23m13s	-24°41'16"	60°05'44"	0.894	1.60472
10/22/2014	11:40	20:39	17h45m37s	-24°54'45"	58°14'11"	0.898	1.63898
10/29/2014	11:35	20:35	18h08m22s	-24°55'52"	56°25'01"	0.903	1.67272
11/ 5/2014	11:29	20:31	18h31m20s	-24°44'11"	54°38'03"	0.907	1.70600
11/12/2014	11:23	20:28	18h54m26s	-24°19'26"	52°52'48"	0.911	1.73894
11/19/2014	11:15	20:27	19h17m33s	-23°41'40"	51°08'52"	0.916	1.77166
11/26/2014	11:07	20:26	19h40m36s	-22°51'04"	49°26'08"	0.920	1.80417
12/ 3/2014	10:58	20:26	20h03m29s	-21°48'08"	47°44'34"	0.925	1.83647
12/10/2014	10:48	20:26	20h26m08s	-20°33'32"	46°03'49"	0.929	1.86865
12/17/2014	10:37	20:27	20h48m29s	-19°08'06"	44°23'35"	0.933	1.90082
12/24/2014	10:25	20:27	21h10m31s	-17°32'46"	42°43'44"	0.938	1.93295
12/31/2014	10:12	20:28	21h32m13s	-15°48'36"	41°04'18"	0.942	1.96498

Jupiter

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2014	17:22	8:17	7h09m47s	22°35'19"	174°25'17"	1.000	4.21264
1/ 8/2014	16:50	7:46	7h05m43s	22°42'52"	177°29'29"	1.000	4.21219
1/15/2014	16:18	7:15	7h01m43s	22°49'55"	169°25'50"	1.000	4.22730
1/22/2014	15:46	6:44	6h57m53s	22°56'16"	161°25'15"	0.999	4.25759
1/29/2014	15:15	6:14	6h54m24s	23°01'48"	153°29'41"	0.998	4.30245
2/ 5/2014	14:44	5:44	6h51m22s	23°06'26"	145°41'09"	0.997	4.36095
2/12/2014	14:14	5:14	6h48m53s	23°10'08"	138°01'29"	0.996	4.43176
2/19/2014	13:44	4:45	6h47m01s	23°12'56"	130°31'42"	0.995	4.51337
2/26/2014	13:16	4:16	6h45m50s	23°14'53"	123°12'18"	0.994	4.60428
3/ 5/2014	12:48	3:49	6h45m21s	23°16'00"	116°03'48"	0.993	4.70287
3/12/2014	12:20	3:21	6h45m33s	23°16'18"	109°06'38"	0.992	4.80740
3/19/2014	11:54	2:55	6h46m27s	23°15'49"	102°20'42"	0.991	4.91619
3/26/2014	11:28	2:29	6h48m01s	23°14'32"	95°45'22"	0.991	5.02773
4/ 2/2014	11:03	2:03	6h50m12s	23°12'25"	89°20'14"	0.991	5.14057
4/ 9/2014	10:38	1:38	6h52m58s	23°09'26"	83°05'01"	0.991	5.25321
4/16/2014	10:15	1:14	6h56m17s	23°05'31"	76°59'07"	0.991	5.36433
4/23/2014	9:51	0:50	7h00m05s	23°00'39"	71°01'38"	0.992	5.47284
4/30/2014	9:28	0:26	7h04m20s	22°54'44"	65°11'48"	0.992	5.57768
5/ 7/2014	9:06	0:03	7h08m59s	22°47'44"	59°29'09"	0.993	5.67779
5/14/2014	8:44	23:36	7h14m00s	22°39'37"	53°53'05"	0.994	5.77227
5/21/2014	8:23	23:13	7h19m19s	22°30'19"	48°22'44"	0.995	5.86045
5/28/2014	8:01	22:51	7h24m54s	22°19'48"	42°57'16"	0.996	5.94165
6/ 4/2014	7:41	22:28	7h30m44s	22°08'04"	37°36'12"	0.997	6.01519
6/11/2014	7:20	22:06	7h36m44s	21°55'07"	32°19'02"	0.997	6.08051
6/18/2014	7:00	21:43	7h42m55s	21°40'57"	27°05'03"	0.998	6.13727
6/25/2014	6:39	21:21	7h49m12s	21°25'35"	21°53'26"	0.999	6.18510
7/ 2/2014	6:19	20:59	7h55m36s	21°09'03"	16°43'40"	0.999	6.22359
7/ 9/2014	6:00	20:36	8h02m03s	20°51'26"	11°35'24"	1.000	6.25249
7/16/2014	5:40	20:14	8h08m32s	20°32'46"	6°28'09"	1.000	6.27169
7/23/2014	5:20	19:51	8h15m01s	20°13'10"	1°23'21"	1.000	6.28108
7/30/2014	5:00	19:29	8h21m29s	19°52'42"	3°49'23"	1.000	6.28050
8/ 6/2014	4:41	19:06	8h27m54s	19°31'30"	8°57'37"	1.000	6.26994
8/13/2014	4:21	18:44	8h34m14s	19°09'43"	14°07'45"	0.999	6.24955
8/20/2014	4:01	18:21	8h40m28s	18°47'27"	19°20'10"	0.999	6.21944
8/27/2014	3:41	17:58	8h46m34s	18°24'53"	24°35'26"	0.998	6.17971
9/ 3/2014	3:21	17:35	8h52m30s	18°02'12"	29°53'55"	0.998	6.13062
9/10/2014	3:01	17:11	8h58m15s	17°39'37"	35°16'02"	0.997	6.07259
9/17/2014	2:40	16:48	9h03m47s	17°17'17"	40°42'33"	0.996	6.00602
9/24/2014	2:19	16:24	9h09m04s	16°55'28"	46°14'13"	0.995	5.93132
10/ 1/2014	1:58	16:00	9h14m04s	16°34'24"	51°51'28"	0.994	5.84908
10/ 8/2014	1:36	15:36	9h18m45s	16°14'20"	57°34'42"	0.994	5.76006
10/15/2014	1:14	15:12	9h23m05s	15°55'32"	63°24'38"	0.993	5.66504
10/22/2014	0:52	14:47	9h27m03s	15°38'15"	69°22'06"	0.992	5.56482
10/29/2014	0:29	14:22	9h30m34s	15°22'48"	75°27'36"	0.992	5.46041
11/ 5/2014	0:05	13:56	9h33m38s	15°09'26"	81°41'28"	0.991	5.35300
11/12/2014	23:37	13:31	9h36m12s	14°58'25"	88°04'17"	0.991	5.24383
11/19/2014	23:12	13:05	9h38m13s	14°50'01"	94°36'47"	0.991	5.13414
11/26/2014	22:46	12:38	9h39m41s	14°44'27"	101°19'24"	0.992	5.02541
12/ 3/2014	22:20	12:11	9h40m32s	14°41'53"	108°12'10"	0.992	4.91928
12/10/2014	21:52	11:44	9h40m47s	14°42'25"	115°15'10"	0.993	4.81738
12/17/2014	21:24	11:16	9h40m24s	14°46'07"	122°28'37"	0.994	4.72129
12/24/2014	20:55	10:48	9h39m24s	14°52'55"	129°52'23"	0.995	4.63276
12/31/2014	20:25	10:20	9h37m47s	15°02'39"	137°25'35"	0.996	4.55355

Saturn

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2014	3:49	14:02	15h14m17s	-15°45'08"	50°06'36"	0.999	10.50059
1/ 8/2014	3:24	13:36	15h16m44s	-15°53'42"	56°38'02"	0.998	10.40705
1/15/2014	2:59	13:11	15h18m57s	-16°01'08"	63°12'42"	0.998	10.30622
1/22/2014	2:34	12:45	15h20m55s	-16°07'24"	69°50'48"	0.998	10.19938
1/29/2014	2:09	12:18	15h22m37s	-16°12'29"	76°32'41"	0.998	10.08782
2/ 5/2014	1:43	11:52	15h24m00s	-16°16'19"	83°18'21"	0.998	9.97305
2/12/2014	1:17	11:25	15h25m05s	-16°18'53"	90°07'35"	0.998	9.85672
2/19/2014	0:50	10:59	15h25m51s	-16°20'12"	97°00'26"	0.998	9.74047
2/26/2014	0:23	10:31	15h26m16s	-16°20'17"	103°57'08"	0.998	9.62589
3/ 5/2014	23:51	10:04	15h26m21s	-16°19'07"	110°57'36"	0.998	9.51470
3/12/2014	23:23	9:36	15h26m06s	-16°16'45"	118°01'24"	0.998	9.40870
3/19/2014	22:55	9:08	15h25m31s	-16°13'16"	125°08'15"	0.998	9.30951
3/26/2014	22:26	8:40	15h24m37s	-16°08'43"	132°18'05"	0.999	9.21864
4/ 2/2014	21:57	8:12	15h23m26s	-16°03'11"	139°30'35"	0.999	9.13759
4/ 9/2014	21:28	7:43	15h21m59s	-15°56'49"	146°44'53"	0.999	9.06779
4/16/2014	20:58	7:15	15h20m19s	-15°49'45"	154°00'06"	1.000	9.01036
4/23/2014	20:28	6:46	15h18m28s	-15°42'08"	161°15'14"	1.000	8.96619
4/30/2014	19:58	6:17	15h16m28s	-15°34'09"	168°27'30"	1.000	8.93606
5/ 7/2014	19:28	5:48	15h14m24s	-15°26'01"	175°19'15"	1.000	8.92054
5/14/2014	18:58	5:19	15h12m18s	-15°17'55"	175°51'10"	1.000	8.91980
5/21/2014	18:28	4:49	15h10m13s	-15°10'04"	169°07'53"	1.000	8.93373
5/28/2014	17:58	4:20	15h08m12s	-15°02'39"	162°01'14"	1.000	8.96212
6/ 4/2014	17:28	3:51	15h06m19s	-14°55'55"	154°53'25"	1.000	9.00448
6/11/2014	16:58	3:23	15h04m36s	-14°50'00"	147°47'49"	0.999	9.05999
6/18/2014	16:29	2:54	15h03m06s	-14°45'05"	140°45'29"	0.999	9.12762
6/25/2014	16:00	2:25	15h01m49s	-14°41'18"	133°46'45"	0.999	9.20631
7/ 2/2014	15:32	1:57	15h00m49s	-14°38'44"	126°52'03"	0.998	9.29485
7/ 9/2014	15:03	1:29	15h00m06s	-14°37'30"	120°01'54"	0.998	9.39175
7/16/2014	14:35	1:01	14h59m42s	-14°37'36"	113°16'17"	0.998	9.49551
7/23/2014	14:08	0:33	14h59m36s	-14°39'04"	106°34'53"	0.998	9.60471
7/30/2014	13:41	0:06	14h59m49s	-14°41'55"	99°57'38"	0.997	9.71783
8/ 6/2014	13:14	23:35	15h00m20s	-14°46'04"	93°24'36"	0.997	9.83325
8/13/2014	12:48	23:08	15h01m11s	-14°51'30"	86°55'33"	0.997	9.94941
8/20/2014	12:22	22:41	15h02m19s	-14°58'07"	80°29'55"	0.997	10.06491
8/27/2014	11:56	22:14	15h03m45s	-15°05'51"	74°07'19"	0.998	10.17833
9/ 3/2014	11:31	21:48	15h05m27s	-15°14'35"	67°47'38"	0.998	10.28819
9/10/2014	11:06	21:22	15h07m24s	-15°24'13"	61°30'36"	0.998	10.39316
9/17/2014	10:41	20:56	15h09m36s	-15°34'38"	55°15'36"	0.998	10.49209
9/24/2014	10:17	20:30	15h12m01s	-15°45'42"	49°02'09"	0.999	10.58386
10/ 1/2014	9:53	20:04	15h14m39s	-15°57'19"	42°50'03"	0.999	10.66732
10/ 8/2014	9:29	19:39	15h17m27s	-16°09'21"	36°39'08"	0.999	10.74149
10/15/2014	9:05	19:14	15h20m24s	-16°21'40"	30°28'58"	0.999	10.80562
10/22/2014	8:41	18:48	15h23m29s	-16°34'09"	24°19'08"	1.000	10.85898
10/29/2014	8:18	18:23	15h26m41s	-16°46'42"	18°09'43"	1.000	10.90085
11/ 5/2014	7:55	17:58	15h29m59s	-16°59'11"	12°01'37"	1.000	10.93073
11/12/2014	7:31	17:33	15h33m19s	-17°11'29"	5°59'22"	1.000	10.94834
11/19/2014	7:08	17:08	15h36m42s	-17°23'31"	1°59'31"	1.000	10.95344
11/26/2014	6:44	16:43	15h40m05s	-17°35'11"	7°03'01"	1.000	10.94583
12/ 3/2014	6:21	16:19	15h43m28s	-17°46'23"	13°11'22"	1.000	10.92556
12/10/2014	5:57	15:54	15h46m47s	-17°57'02"	19°26'09"	1.000	10.89291
12/17/2014	5:34	15:29	15h50m02s	-18°07'05"	25°44'19"	1.000	10.84820
12/24/2014	5:10	15:04	15h53m11s	-18°16'26"	32°05'21"	0.999	10.79180
12/31/2014	4:46	14:39	15h56m11s	-18°25'03"	38°28'56"	0.999	10.72438

Uranus

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2014	12:01	0:28	0h32m58s	2°48'35"	88°11'22"	0.999	20.04317
1/ 8/2014	11:34	0:01	0h33m21s	2°51'21"	81°09'40"	0.999	20.16325
1/15/2014	11:06	23:30	0h33m53s	2°55'05"	74°10'44"	0.999	20.28104
1/22/2014	10:39	23:04	0h34m34s	2°59'42"	67°14'30"	0.999	20.39489
1/29/2014	10:12	22:38	0h35m23s	3°05'10"	60°20'51"	1.000	20.50325
2/ 5/2014	9:45	22:11	0h36m19s	3°11'25"	53°29'55"	1.000	20.60454
2/12/2014	9:18	21:45	0h37m22s	3°18'23"	46°41'56"	1.000	20.69734
2/19/2014	8:52	21:19	0h38m31s	3°25'57"	39°56'49"	1.000	20.78050
2/26/2014	8:25	20:54	0h39m46s	3°34'04"	33°14'15"	1.000	20.85300
3/ 5/2014	7:58	20:28	0h41m05s	3°42'37"	26°34'11"	1.000	20.91386
3/12/2014	7:32	20:02	0h42m28s	3°51'31"	19°56'46"	1.000	20.96232
3/19/2014	7:05	19:37	0h43m53s	4°00'41"	13°21'57"	1.000	20.99789
3/26/2014	6:38	19:11	0h45m21s	4°09'59"	6°49'44"	1.000	21.02025
4/ 2/2014	6:12	18:46	0h46m49s	4°19'22"	0°42'10"	1.000	21.02911
4/ 9/2014	5:45	18:20	0h48m18s	4°28'43"	6°15'09"	1.000	21.02439
4/16/2014	5:19	17:54	0h49m45s	4°37'56"	12°42'10"	1.000	21.00632
4/23/2014	4:52	17:29	0h51m12s	4°46'57"	19°08'47"	1.000	20.97521
4/30/2014	4:25	17:03	0h52m35s	4°55'40"	25°34'54"	1.000	20.93143
5/ 7/2014	3:59	16:38	0h53m56s	5°04'00"	32°00'31"	1.000	20.87555
5/14/2014	3:32	16:12	0h55m12s	5°11'51"	38°25'45"	1.000	20.80840
5/21/2014	3:05	15:46	0h56m24s	5°19'11"	44°51'04"	1.000	20.73084
5/28/2014	2:38	15:20	0h57m30s	5°25'55"	51°16'59"	1.000	20.64378
6/ 4/2014	2:11	14:54	0h58m30s	5°31'58"	57°43'42"	1.000	20.54832
6/11/2014	1:45	14:27	0h59m23s	5°37'18"	64°11'17"	0.999	20.44574
6/18/2014	1:18	14:01	1h00m09s	5°41'51"	70°40'09"	0.999	20.33736
6/25/2014	0:50	13:34	1h00m47s	5°45'34"	77°10'52"	0.999	20.22447
7/ 2/2014	0:23	13:07	1h01m17s	5°48'25"	83°43'38"	0.999	20.10853
7/ 9/2014	23:52	12:40	1h01m38s	5°50'23"	90°18'29"	0.999	19.99114
7/16/2014	23:25	12:13	1h01m50s	5°51'27"	96°55'38"	0.999	19.87388
7/23/2014	22:57	11:45	1h01m54s	5°51'36"	103°35'35"	0.999	19.75823
7/30/2014	22:30	11:18	1h01m49s	5°50'50"	110°18'31"	0.999	19.64581
8/ 6/2014	22:02	10:50	1h01m35s	5°49'11"	117°04'19"	0.999	19.53829
8/13/2014	21:34	10:22	1h01m12s	5°46'41"	123°52'59"	1.000	19.43722
8/20/2014	21:06	9:53	1h00m42s	5°43'22"	130°44'50"	1.000	19.34402
8/27/2014	20:38	9:25	1h00m04s	5°39'18"	137°39'58"	1.000	19.26012
9/ 3/2014	20:10	8:56	0h59m20s	5°34'33"	144°38'04"	1.000	19.18694
9/10/2014	19:42	8:28	0h58m29s	5°29'13"	151°38'50"	1.000	19.12562
9/17/2014	19:14	7:59	0h57m34s	5°23'25"	158°42'20"	1.000	19.07711
9/24/2014	18:46	7:30	0h56m35s	5°17'14"	165°48'24"	1.000	19.04227
10/ 1/2014	18:18	7:01	0h55m34s	5°10'49"	172°56'04"	1.000	19.02184
10/ 8/2014	17:50	6:32	0h54m31s	5°04'17"	179°17'05"	1.000	19.01618
10/15/2014	17:21	6:03	0h53m28s	4°57'47"	172°37'14"	1.000	19.02538
10/22/2014	16:53	5:34	0h52m26s	4°51'26"	165°24'37"	1.000	19.04943
10/29/2014	16:25	5:06	0h51m28s	4°45'23"	158°10'22"	1.000	19.08808
11/ 5/2014	15:57	4:37	0h50m32s	4°39'47"	150°55'38"	1.000	19.14070
11/12/2014	15:29	4:08	0h49m42s	4°34'43"	143°40'49"	1.000	19.20642
11/19/2014	15:01	3:40	0h48m58s	4°30'19"	136°26'04"	1.000	19.28426
11/26/2014	14:33	3:11	0h48m22s	4°26'40"	129°11'50"	1.000	19.37307
12/ 3/2014	14:05	2:43	0h47m53s	4°23'53"	121°58'47"	1.000	19.47135
12/10/2014	13:37	2:15	0h47m32s	4°21'59"	114°47'14"	1.000	19.57750
12/17/2014	13:10	1:48	0h47m20s	4°21'03"	107°37'13"	0.999	19.68991
12/24/2014	12:42	1:20	0h47m18s	4°21'05"	100°29'00"	0.999	19.80688
12/31/2014	12:15	0:53	0h47m25s	4°22'07"	93°23'06"	0.999	19.92653

Midway, UT (JMC) Latitude: 40°30'43" N Longitude: 111°28'40" W
Local Time = UT - 7.00 hours Elevation: 1706 meters Year 2014
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Neptune

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2014	10:37	21:26	22h21m39s	-10°56'37"	52°45'14"	1.000	30.56451
1/ 8/2014	10:10	20:59	22h22m23s	-10°52'26"	45°48'34"	1.000	30.65652
1/15/2014	9:43	20:33	22h23m10s	-10°47'51"	38°53'22"	1.000	30.73839
1/22/2014	9:16	20:06	22h24m02s	-10°42'55"	31°59'33"	1.000	30.80908
1/29/2014	8:49	19:40	22h24m56s	-10°37'41"	25°07'00"	1.000	30.86763
2/ 5/2014	8:23	19:14	22h25m53s	-10°32'13"	18°15'52"	1.000	30.91318
2/12/2014	7:56	18:48	22h26m52s	-10°26'34"	11°26'34"	1.000	30.94513
2/19/2014	7:29	18:22	22h27m52s	-10°20'50"	4°40'04"	1.000	30.96318
2/26/2014	7:02	17:55	22h28m52s	-10°15'03"	2°15'59"	1.000	30.96715
3/ 5/2014	6:35	17:29	22h29m53s	-10°09'17"	8°57'11"	1.000	30.95696
3/12/2014	6:08	17:03	22h30m52s	-10°03'37"	15°40'57"	1.000	30.93282
3/19/2014	5:41	16:37	22h31m50s	-9°58'07"	22°23'48"	1.000	30.89521
3/26/2014	5:14	16:10	22h32m45s	-9°52'49"	29°05'49"	1.000	30.84470
4/ 2/2014	4:47	15:44	22h33m38s	-9°47'48"	35°47'09"	1.000	30.78192
4/ 9/2014	4:20	15:18	22h34m28s	-9°43'08"	42°27'39"	1.000	30.70781
4/16/2014	3:53	14:51	22h35m13s	-9°38'50"	49°07'21"	1.000	30.62349
4/23/2014	3:26	14:24	22h35m55s	-9°34'58"	55°46'41"	1.000	30.53011
4/30/2014	2:59	13:58	22h36m31s	-9°31'35"	62°25'56"	1.000	30.42886
5/ 7/2014	2:32	13:31	22h37m03s	-9°28'43"	69°05'05"	1.000	30.32117
5/14/2014	2:05	13:04	22h37m29s	-9°26'23"	75°44'08"	1.000	30.20859
5/21/2014	1:38	12:37	22h37m49s	-9°24'38"	82°23'28"	1.000	30.09262
5/28/2014	1:10	12:10	22h38m03s	-9°23'27"	89°03'27"	1.000	29.97474
6/ 4/2014	0:43	11:42	22h38m12s	-9°22'53"	95°44'08"	1.000	29.85662
6/11/2014	0:15	11:15	22h38m14s	-9°22'54"	102°25'26"	1.000	29.73997
6/18/2014	23:44	10:47	22h38m11s	-9°23'31"	109°07'37"	1.000	29.62633
6/25/2014	23:16	10:19	22h38m01s	-9°24'42"	115°51'04"	1.000	29.51722
7/ 2/2014	22:49	9:51	22h37m46s	-9°26'26"	122°35'52"	1.000	29.41424
7/ 9/2014	22:21	9:23	22h37m26s	-9°28'42"	129°21'48"	1.000	29.31891
7/16/2014	21:53	8:55	22h37m00s	-9°31'25"	136°09'00"	1.000	29.23255
7/23/2014	21:25	8:27	22h36m30s	-9°34'34"	142°57'47"	1.000	29.15636
7/30/2014	20:57	7:59	22h35m56s	-9°38'06"	149°48'11"	1.000	29.09154
8/ 6/2014	20:29	7:30	22h35m19s	-9°41'56"	156°39'55"	1.000	29.03914
8/13/2014	20:01	7:02	22h34m39s	-9°46'00"	163°32'50"	1.000	28.99990
8/20/2014	19:33	6:34	22h33m58s	-9°50'14"	170°26'51"	1.000	28.97441
8/27/2014	19:05	6:05	22h33m15s	-9°54'32"	177°18'32"	1.000	28.96318
9/ 3/2014	18:37	5:37	22h32m31s	-9°58'52"	175°33'34"	1.000	28.96648
9/10/2014	18:09	5:08	22h31m48s	-10°03'06"	168°37'18"	1.000	28.98426
9/17/2014	17:42	4:40	22h31m07s	-10°07'11"	161°38'06"	1.000	29.01627
9/24/2014	17:14	4:11	22h30m27s	-10°11'03"	154°37'24"	1.000	29.06218
10/ 1/2014	16:46	3:43	22h29m50s	-10°14'36"	147°35'45"	1.000	29.12138
10/ 8/2014	16:18	3:15	22h29m17s	-10°17'47"	140°33'33"	1.000	29.19294
10/15/2014	15:50	2:46	22h28m48s	-10°20'32"	133°30'50"	1.000	29.27579
10/22/2014	15:22	2:18	22h28m24s	-10°22'49"	126°27'32"	1.000	29.36881
10/29/2014	14:54	1:50	22h28m05s	-10°24'33"	119°23'56"	1.000	29.47063
11/ 5/2014	14:27	1:23	22h27m52s	-10°25'43"	112°20'28"	1.000	29.57964
11/12/2014	13:59	0:55	22h27m45s	-10°26'17"	105°17'12"	1.000	29.69421
11/19/2014	13:32	0:27	22h27m44s	-10°26'16"	98°14'03"	1.000	29.81269
11/26/2014	13:04	0:00	22h27m49s	-10°25'36"	91°11'13"	1.000	29.93333
12/ 3/2014	12:37	23:29	22h28m01s	-10°24'20"	84°09'07"	1.000	30.05424
12/10/2014	12:09	23:02	22h28m20s	-10°22'27"	77°07'53"	1.000	30.17361
12/17/2014	11:42	22:35	22h28m44s	-10°19'59"	70°07'24"	1.000	30.28977
12/24/2014	11:15	22:08	22h29m14s	-10°16'57"	63°07'45"	1.000	30.40101
12/31/2014	10:48	21:41	22h29m50s	-10°13'24"	56°09'18"	1.000	30.50561

Pluto

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2014	7:39	17:18	18h47m58s	-20°13'24"	2°50'59"	1.000	33.55437
1/ 8/2014	7:13	16:51	18h49m01s	-20°12'48"	6°41'45"	1.000	33.55284
1/15/2014	6:46	16:25	18h50m03s	-20°12'08"	13°16'49"	1.000	33.53704
1/22/2014	6:20	15:58	18h51m04s	-20°11'24"	20°03'59"	1.000	33.50731
1/29/2014	5:53	15:32	18h52m03s	-20°10'37"	26°54'14"	1.000	33.46407
2/ 5/2014	5:26	15:05	18h52m59s	-20°09'48"	33°45'39"	1.000	33.40797
2/12/2014	5:00	14:39	18h53m51s	-20°09'00"	40°37'20"	1.000	33.33992
2/19/2014	4:33	14:12	18h54m40s	-20°08'12"	47°29'03"	1.000	33.26104
2/26/2014	4:06	13:45	18h55m23s	-20°07'27"	54°20'57"	1.000	33.17245
3/ 5/2014	3:39	13:18	18h56m02s	-20°06'46"	61°12'54"	1.000	33.07543
3/12/2014	3:12	12:51	18h56m36s	-20°06'10"	68°04'37"	1.000	32.97153
3/19/2014	2:45	12:24	18h57m03s	-20°05'40"	74°56'01"	1.000	32.86234
3/26/2014	2:18	11:57	18h57m25s	-20°05'16"	81°47'23"	1.000	32.74940
4/ 2/2014	1:51	11:30	18h57m40s	-20°05'01"	88°38'46"	1.000	32.63437
4/ 9/2014	1:23	11:03	18h57m48s	-20°04'55"	95°29'55"	1.000	32.51902
4/16/2014	0:56	10:35	18h57m51s	-20°04'58"	102°20'45"	1.000	32.40511
4/23/2014	0:28	10:08	18h57m47s	-20°05'11"	109°11'29"	1.000	32.29422
4/30/2014	0:00	9:40	18h57m37s	-20°05'34"	116°02'18"	1.000	32.18800
5/ 7/2014	23:29	9:12	18h57m21s	-20°06'07"	122°52'58"	1.000	32.08808
5/14/2014	23:01	8:44	18h56m59s	-20°06'51"	129°43'18"	1.000	31.99599
5/21/2014	22:33	8:16	18h56m32s	-20°07'43"	136°33'26"	1.000	31.91299
5/28/2014	22:05	7:48	18h56m01s	-20°08'45"	143°23'31"	1.000	31.84033
6/ 4/2014	21:37	7:20	18h55m26s	-20°09'56"	150°13'15"	1.000	31.77920
6/11/2014	21:09	6:51	18h54m48s	-20°11'14"	157°02'01"	1.000	31.73052
6/18/2014	20:41	6:23	18h54m06s	-20°12'39"	163°48'59"	1.000	31.69496
6/25/2014	20:13	5:55	18h53m23s	-20°14'10"	170°30'40"	1.000	31.67309
7/ 2/2014	19:44	5:26	18h52m39s	-20°15'46"	176°32'34"	1.000	31.66537
7/ 9/2014	19:16	4:58	18h51m55s	-20°17'26"	174°44'20"	1.000	31.67195
7/16/2014	18:48	4:30	18h51m11s	-20°19'09"	168°17'28"	1.000	31.69272
7/23/2014	18:20	4:01	18h50m29s	-20°20'53"	161°33'14"	1.000	31.72746
7/30/2014	17:52	3:33	18h49m49s	-20°22'37"	154°45'23"	1.000	31.77581
8/ 6/2014	17:24	3:05	18h49m11s	-20°24'22"	147°56'25"	1.000	31.83711
8/13/2014	16:56	2:37	18h48m37s	-20°26'04"	141°07'03"	1.000	31.91047
8/20/2014	16:28	2:08	18h48m07s	-20°27'44"	134°17'18"	1.000	31.99494
8/27/2014	16:00	1:40	18h47m42s	-20°29'21"	127°27'10"	1.000	32.08944
9/ 3/2014	15:33	1:12	18h47m23s	-20°30'54"	120°36'58"	1.000	32.19266
9/10/2014	15:05	0:45	18h47m09s	-20°32'21"	113°46'51"	1.000	32.30310
9/17/2014	14:37	0:17	18h47m01s	-20°33'42"	106°56'36"	1.000	32.41928
9/24/2014	14:10	23:45	18h46m59s	-20°34'57"	100°06'01"	1.000	32.53971
10/ 1/2014	13:43	23:18	18h47m04s	-20°36'05"	93°15'18"	1.000	32.66266
10/ 8/2014	13:15	22:50	18h47m14s	-20°37'05"	86°24'37"	1.000	32.78637
10/15/2014	12:48	22:23	18h47m32s	-20°37'57"	79°33'47"	1.000	32.90918
10/22/2014	12:21	21:56	18h47m55s	-20°38'40"	72°42'35"	1.000	33.02947
10/29/2014	11:54	21:29	18h48m25s	-20°39'15"	65°51'07"	1.000	33.14552
11/ 5/2014	11:27	21:02	18h49m00s	-20°39'40"	58°59'37"	1.000	33.25565
11/12/2014	11:00	20:35	18h49m41s	-20°39'56"	52°08'02"	1.000	33.35841
11/19/2014	10:34	20:08	18h50m26s	-20°40'04"	45°16'08"	1.000	33.45243
11/26/2014	10:07	19:42	18h51m16s	-20°40'02"	38°24'02"	1.000	33.53635
12/ 3/2014	9:40	19:15	18h52m10s	-20°39'51"	31°32'05"	1.000	33.60896
12/10/2014	9:14	18:49	18h53m06s	-20°39'32"	24°40'32"	1.000	33.66934
12/17/2014	8:47	18:22	18h54m06s	-20°39'06"	17°49'40"	1.000	33.71674
12/24/2014	8:21	17:56	18h55m07s	-20°38'32"	11°01'15"	1.000	33.75043
12/31/2014	7:54	17:29	18h56m09s	-20°37'52"	4°28'23"	1.000	33.76995

Midway, UT (JMC) Latitude: 40°30'43" N Longitude: 111°28'40" W
 Local Time = UT - 7.00 hours Elevation: 1706 meters Year 2014
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Planet Apsides Report for 2014

Earth

1/ 3/2014 Perihelion Distance from Sun: 0.98 AU
 7/ 4/2014 Aphelion Distance from Sun: 1.02 AU

Mercury

2/ 3/2014 Perihelion Distance from Sun: 0.31 AU
 5/ 2/2014 Perihelion Distance from Sun: 0.31 AU
 7/29/2014 Perihelion Distance from Sun: 0.31 AU
 10/25/2014 Perihelion Distance from Sun: 0.31 AU
 3/19/2014 Aphelion Distance from Sun: 0.47 AU
 6/15/2014 Aphelion Distance from Sun: 0.47 AU
 9/11/2014 Aphelion Distance from Sun: 0.47 AU
 12/ 8/2014 Aphelion Distance from Sun: 0.47 AU

Venus

1/23/2014 Perihelion Distance from Sun: 0.72 AU
 9/ 5/2014 Perihelion Distance from Sun: 0.72 AU
 5/16/2014 Aphelion Distance from Sun: 0.73 AU
 12/26/2014 Aphelion Distance from Sun: 0.73 AU

Mars

12/12/2014 Perihelion Distance from Sun: 1.38 AU
 1/ 2/2014 Aphelion Distance from Sun: 1.67 AU

Jupiter

No Apsis

Saturn

No Apsis

Planet Conjunction/Opposition Report for 1/ 1/2014 to 12/31/2014

Mercury

Date	Hour	Event
2/15/2014	17	Inferior Conjunction
4/25/2014	20	Superior Conjunction
6/19/2014	17	Inferior Conjunction
8/ 8/2014	17	Superior Conjunction
10/16/2014	17	Inferior Conjunction
12/ 8/2014	3	Superior Conjunction

Venus

Date	Hour	Event
1/11/2014	17	Inferior Conjunction
10/25/2014	0	Superior Conjunction

Mars

Date	Hour	Event
4/ 8/2014	17	Opposition

Jupiter

Midway, UT (JMC) Latitude: 40°30'43" N Longitude: 111°28'40" W
 Local Time = UT - 7.00 hours Elevation: 1706 meters Year 2014
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Date	Hour	Event
7/24/2014	17	Conjunction
1/ 5/2014	17	Opposition

Saturn

Date	Hour	Event
11/18/2014	2	Conjunction
5/10/2014	17	Opposition

Uranus

Date	Hour	Event
4/ 2/2014	0	Conjunction
10/ 7/2014	17	Opposition

Neptune

Date	Hour	Event
2/23/2014	17	Conjunction
8/29/2014	17	Opposition

Pluto

Date	Hour	Event
1/ 1/2014	17	Conjunction
7/ 4/2014	1	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

Midway, UT (JMC) Latitude: 40°30'43" N Longitude: 111°28'40" W
Local Time = UT - 7.00 hours Elevation: 1706 meters Year 2014
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Moon Apsides Report for 1/ 1/2014 to 12/31/2014

Date	Hour	Apsis	Distance (km)	Diameter
1/ 1/2014	14	Perigee	356945	0.5579°
1/15/2014	19	Apogee	406531	0.4899°
1/30/2014	3	Perigee	357098	0.5577°
2/11/2014	22	Apogee	406243	0.4902°
2/27/2014	13	Perigee	360435	0.5525°
3/11/2014	13	Apogee	405395	0.4913°
3/27/2014	12	Perigee	365703	0.5446°
4/ 8/2014	8	Apogee	404522	0.4923°
4/22/2014	17	Perigee	369767	0.5386°
5/ 6/2014	3	Apogee	404323	0.4926°
5/18/2014	5	Perigee	367093	0.5425°
6/ 2/2014	21	Apogee	404970	0.4918°
6/14/2014	21	Perigee	362074	0.5500°
6/30/2014	12	Apogee	405942	0.4906°
7/13/2014	1	Perigee	358284	0.5559°
7/27/2014	21	Apogee	406547	0.4899°
8/10/2014	11	Perigee	356922	0.5580°
8/23/2014	23	Apogee	406532	0.4899°
9/ 7/2014	21	Perigee	358404	0.5557°
9/20/2014	7	Apogee	405864	0.4907°
10/ 6/2014	3	Perigee	362477	0.5494°
10/17/2014	23	Apogee	404889	0.4919°
11/ 2/2014	18	Perigee	367876	0.5414°
11/14/2014	19	Apogee	404340	0.4925°
11/27/2014	16	Perigee	369838	0.5385°
12/12/2014	16	Apogee	404597	0.4922°
12/24/2014	10	Perigee	364796	0.5459°

Moon Nodes Report for 1/ 1/2014 to 12/31/2014

Date	Time	Node	Illuminated Fraction
1/ 9/2014	4:26	Descending	0.61
1/23/2014	19:54	Ascending	0.54
2/ 5/2014	5:40	Descending	0.34
2/19/2014	20:28	Ascending	0.79
3/ 4/2014	10:45	Descending	0.13
3/18/2014	23:29	Ascending	0.95
3/31/2014	19:29	Descending	0.01
4/15/2014	6:22	Ascending	1.00
4/28/2014	4:35	Descending	0.01
5/12/2014	15:05	Ascending	0.94
5/25/2014	10:55	Descending	0.12
6/ 8/2014	22:35	Ascending	0.79
6/21/2014	13:29	Descending	0.31
7/ 6/2014	2:49	Ascending	0.56
7/18/2014	14:20	Descending	0.55
8/ 2/2014	4:25	Ascending	0.32
8/14/2014	17:17	Descending	0.79
8/29/2014	6:13	Ascending	0.12
9/11/2014	0:32	Descending	0.95
9/25/2014	10:41	Ascending	0.01
10/ 8/2014	10:43	Descending	1.00
10/22/2014	17:45	Ascending	0.01
11/ 4/2014	20:12	Descending	0.94

Midway, UT (JMC) Latitude: 40°30'43" N Longitude: 111°28'40" W
 Local Time = UT - 7.00 hours Elevation: 1706 meters Year 2014
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11/19/2014 1:17 Ascending 0.13
 12/ 2/2014 1:31 Descending 0.78
 12/16/2014 6:27 Ascending 0.34
 12/29/2014 2:26 Descending 0.54

Meteor Showers Report for 1/ 1/2014 to 12/31/2014

Date	Meteor Shower	ZHR	RA	DEC	Illum. Frac.	Longitude
1/ 3/2014	Quadrantids	80	15h28m	50°	0.08	283°
4/11/2014	Virginids	5	14h04m	-9°	0.87	22°
4/22/2014	Lyrids	12	18h08m	32°	0.46	33°
4/28/2014	alpha-Scorpiids	5	16h32m	-24°	0.00	38°
5/ 5/2014	eta-Aquarids	35	22h20m	-1°	0.37	45°
5/12/2014	alpha-Scorpiids	5	16h04m	-24°	0.95	52°
6/ 9/2014	Ophiuchids	5	17h56m	-23°	0.85	79°
6/20/2014	Ophiuchids	5	17h20m	-20°	0.40	89°
7/ 7/2014	Capricornids	5			0.72	106°
7/15/2014	Capricornids	5	20h44m	-15°	0.85	113°
7/20/2014	alpha-Cygnids	5	21h00m	48°	0.33	118°
7/25/2014	Capricornids	5	21h00m	-15°	0.02	123°
7/28/2014	delta-Aquarids	20	22h36m	-17°	0.03	126°
7/30/2014	Piscis Australids	5	22h40m	-30°	0.12	128°
8/ 2/2014	alpha-Capricornids	5	20h36m	-10°	0.37	130°
8/ 6/2014	iota-Aquarids	8	22h10m	-15°	0.78	134°
8/12/2014	Perseids	75	3h04m	58°	0.94	140°
8/20/2014	alpha-Cygnids	5	21h00m	48°	0.20	148°
9/ 8/2014	Piscids	10	0h36m	7°	1.00	166°
9/20/2014	Piscids	5	0h24m	0°	0.11	178°
10/13/2014	Piscids	??	1h44m	14°	0.70	200°
10/22/2014	Orionids	25	6h24m	15°	0.01	209°
11/ 3/2014	Taurids	8	3h44m	14°	0.87	221°
11/17/2014	Leonids	10	10h08m	22°	0.23	235°
12/ 8/2014	Puppids-Velids	15	9h00m	-48°	0.95	257°
12/13/2014	Geminids	75	7h28m	32°	0.58	262°
12/22/2014	Ursids	5	14h28m	78°	0.01	271°
12/25/2014	Puppids-Velids	15	9h20m	-65°	0.18	274°

Twilight Report for 1/ 1/2014 to 12/31/2014

Date	Sun		Astronomical		Nautical		Civil	
	Rise	Set	Begin	End	Begin	End	Begin	End
1/ 1/2014	7:49	17:10	6:07	18:53	6:40	18:20	7:14	17:46
1/ 8/2014	7:49	17:17	6:07	18:59	6:40	18:26	7:14	17:52
1/15/2014	7:47	17:24	6:06	19:05	6:39	18:32	7:12	17:59
1/22/2014	7:43	17:32	6:04	19:12	6:36	18:40	7:09	18:06
1/29/2014	7:38	17:40	6:00	19:19	6:32	18:47	7:04	18:14
2/ 5/2014	7:31	17:49	5:54	19:26	6:26	18:55	6:58	18:22
2/12/2014	7:23	17:58	5:47	19:34	6:19	19:02	6:51	18:30
2/19/2014	7:14	18:06	5:39	19:41	6:10	19:10	6:42	18:38
2/26/2014	7:04	18:14	5:29	19:49	6:01	19:17	6:32	18:46
3/ 5/2014	6:53	18:22	5:19	19:57	5:50	19:25	6:22	18:54
3/12/2014	6:42	18:30	5:07	20:05	5:39	19:33	6:11	19:01
3/19/2014	6:31	18:37	4:55	20:13	5:28	19:40	5:59	19:09
3/26/2014	6:19	18:44	4:43	20:21	5:16	19:48	5:48	19:16
4/ 2/2014	6:08	18:52	4:30	20:30	5:03	19:56	5:36	19:24
4/ 9/2014	5:57	18:59	4:17	20:39	4:51	20:04	5:24	19:31
4/16/2014	5:46	19:06	4:03	20:49	4:39	20:13	5:13	19:39
4/23/2014	5:36	19:13	3:50	20:59	4:27	20:22	5:02	19:47

Midway, UT (JMC) Latitude: 40°30'43" N Longitude: 111°28'40" W
Local Time = UT - 7.00 hours Elevation: 1706 meters Year 2014

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4/30/2014	5:26	19:21	3:38	21:09	4:16	20:31	4:52	19:55
5/ 7/2014	5:18	19:28	3:25	21:20	4:06	20:40	4:43	20:03
5/14/2014	5:10	19:35	3:14	21:31	3:57	20:49	4:35	20:10
5/21/2014	5:04	19:41	3:04	21:41	3:48	20:57	4:28	20:18
5/28/2014	5:00	19:47	2:56	21:51	3:42	21:05	4:22	20:24
6/ 4/2014	4:56	19:52	2:50	21:59	3:38	21:11	4:19	20:30
6/11/2014	4:55	19:56	2:46	22:06	3:35	21:17	4:17	20:35
6/18/2014	4:55	19:59	2:45	22:10	3:34	21:20	4:17	20:38
6/25/2014	4:57	20:00	2:47	22:11	3:36	21:21	4:18	20:39
7/ 2/2014	5:00	20:00	2:51	22:09	3:40	21:20	4:22	20:38
7/ 9/2014	5:04	19:58	2:58	22:05	3:45	21:17	4:26	20:36
7/16/2014	5:09	19:55	3:06	21:58	3:52	21:12	4:32	20:32
7/23/2014	5:15	19:49	3:16	21:49	4:00	21:05	4:39	20:26
7/30/2014	5:21	19:43	3:26	21:38	4:08	20:56	4:46	20:18
8/ 6/2014	5:28	19:35	3:36	21:27	4:16	20:47	4:53	20:10
8/13/2014	5:35	19:26	3:47	21:14	4:25	20:36	5:01	20:00
8/20/2014	5:42	19:16	3:57	21:01	4:34	20:24	5:08	19:50
8/27/2014	5:48	19:06	4:06	20:48	4:42	20:12	5:16	19:38
9/ 3/2014	5:55	18:55	4:15	20:34	4:50	20:00	5:23	19:27
9/10/2014	6:02	18:43	4:24	20:21	4:58	19:47	5:30	19:15
9/17/2014	6:09	18:31	4:32	20:08	5:05	19:35	5:37	19:03
9/24/2014	6:16	18:20	4:40	19:55	5:12	19:23	5:44	18:51
10/ 1/2014	6:22	18:08	4:48	19:43	5:19	19:11	5:51	18:39
10/ 8/2014	6:30	17:57	4:55	19:31	5:26	19:00	5:58	18:28
10/15/2014	6:37	17:46	5:02	19:21	5:34	18:49	6:05	18:18
10/22/2014	6:45	17:36	5:09	19:11	5:41	18:39	6:12	18:08
10/29/2014	6:53	17:26	5:16	19:02	5:48	18:31	6:20	17:59
11/ 5/2014	7:01	17:18	5:23	18:55	5:55	18:23	6:28	17:51
11/12/2014	7:09	17:11	5:30	18:49	6:02	18:17	6:35	17:45
11/19/2014	7:17	17:05	5:37	18:45	6:10	18:13	6:43	17:40
11/26/2014	7:25	17:01	5:44	18:42	6:16	18:10	6:50	17:36
12/ 3/2014	7:32	16:59	5:50	18:41	6:23	18:09	6:57	17:35
12/10/2014	7:38	16:59	5:56	18:42	6:29	18:09	7:03	17:35
12/17/2014	7:44	17:01	6:00	18:44	6:33	18:11	7:08	17:37
12/24/2014	7:47	17:04	6:04	18:47	6:37	18:14	7:11	17:40
12/31/2014	7:49	17:09	6:06	18:52	6:39	18:19	7:13	17:45