

Midway, UT (JMC)      Latitude: 40°30'43" N    Longitude: 111°28'40" W  
Local Time = UT - 7.00 hours    Elevation: 1706 meters      Year 2018  
Page 1

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 1/1/2018 to 12/31/2018

January      2018

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



March 2018

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

April 2018

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

May                      2018

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

June                      2018

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

July                      2018

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



August 2018

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

September                      2018

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

October                      2018

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

November 2018

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

December                      2018

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

Midway, UT (JMC)      Latitude: 40°30'43" N    Longitude: 111°28'40" W  
Local Time = UT - 7.00 hours    Elevation: 1706 meters      Year 2018  
Page 14

#### Seasons Report for 2018

MEQ: 3/20/2018 9:14      Winter Length: 88.98 days  
JSO: 6/21/2018 3:07      Spring Length: 92.75 days  
SEQ: 9/22/2018 18:53      Summer Length: 93.66 days  
DSO: 12/21/2018 15:24      Autumn Length: 89.85 days

#### Dates of Easter Report for 2018

4/ 1/2018

#### Lunar Eclipse Report for 2018

Lunar eclipse on 1/31/2018

Moon rise: 18:13  
Moon set: 7:41  
Magnitude: 1.32  
Partial phase begins: 4:52  
Total phase begins: 5:55  
Time of maximum eclipse: 6:33  
Total phase ends: 7:11  
Partial phase ends: 8:14

Lunar eclipse on 7/27/2018

Moon rise: 19:52  
Moon set: 5:06  
Magnitude: 1.61  
Partial phase begins: 11:26  
Total phase begins: 12:32  
Time of maximum eclipse: 13:23  
Total phase ends: 14:15  
Partial phase ends: 15:20

#### Solar Eclipse Report for 2018

Solar eclipse on 2/15/2018

Sun rise: 7:19  
Sun set: 18:01  
Time of maximum eclipse: 13:53  
Eclipse is partial, maximum magnitude = 0.60  
Eclipse is visible in the southern hemisphere

Solar eclipse on 7/12/2018

Sun rise: 5:06  
Sun set: 19:57  
Time of maximum eclipse: 20:05  
Eclipse is partial, maximum magnitude = 0.34  
Eclipse is visible in the southern hemisphere

Solar eclipse on 8/11/2018

Sun rise: 5:33  
Sun set: 19:29  
Time of maximum eclipse: 2:46  
Eclipse is partial, maximum magnitude = 0.73  
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/ 1/2018 to 12/31/2018

Mercury

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2018	6:05	15:38	17h08m24s	-20°53'30"	22°38'21"	0.617	0.99888
1/ 8/2018	6:18	15:40	17h42m00s	-22°22'48"	21°49'19"	0.756	1.13064
1/15/2018	6:35	15:50	18h22m33s	-23°19'06"	19°35'53"	0.841	1.23497
1/22/2018	6:52	16:07	19h06m46s	-23°22'57"	16°38'13"	0.898	1.31292
1/29/2018	7:06	16:31	19h53m00s	-22°25'06"	13°08'43"	0.938	1.36656
2/ 5/2018	7:17	17:00	20h40m23s	-20°20'37"	9°09'07"	0.969	1.39662
2/12/2018	7:25	17:34	21h28m25s	-17°06'42"	4°42'04"	0.991	1.40126
2/19/2018	7:29	18:12	22h16m50s	-12°42'56"	2°15'24"	0.997	1.37484
2/26/2018	7:30	18:52	23h05m12s	-7°14'32"	7°22'01"	0.966	1.30682
3/ 5/2018	7:27	19:32	23h51m41s	-1°04'08"	13°18'53"	0.846	1.18446
3/12/2018	7:18	20:01	0h30m55s	4°47'47"	17°40'58"	0.602	1.00943
3/19/2018	6:58	20:06	0h53m59s	8°46'48"	17°41'57"	0.304	0.81966
3/26/2018	6:28	19:37	0h54m51s	9°35'42"	11°34'12"	0.081	0.67008
4/ 2/2018	5:53	18:42	0h38m45s	7°12'21"	2°49'54"	0.004	0.59523
4/ 9/2018	5:22	17:48	0h22m21s	3°36'30"	12°34'48"	0.066	0.59734
4/16/2018	5:00	17:12	0h18m44s	1°14'25"	21°10'53"	0.193	0.65417
4/23/2018	4:44	16:57	0h29m26s	0°55'49"	25°45'09"	0.324	0.74122
4/30/2018	4:34	16:58	0h51m12s	2°26'06"	27°01'18"	0.442	0.84355
5/ 7/2018	4:26	17:12	1h21m13s	5°19'14"	25°48'10"	0.551	0.95375
5/14/2018	4:22	17:37	1h58m15s	9°12'19"	22°34'54"	0.663	1.06708
5/21/2018	4:23	18:11	2h42m31s	13°43'37"	17°33'03"	0.785	1.17695
5/28/2018	4:31	18:56	3h35m08s	18°24'22"	10°46'17"	0.911	1.26938
6/ 4/2018	4:48	19:47	4h36m30s	22°26'38"	2°36'14"	0.994	1.31926
6/11/2018	5:17	20:35	5h42m49s	24°48'02"	6°13'20"	0.968	1.30347
6/18/2018	5:53	21:09	6h46m26s	24°57'13"	13°55'00"	0.852	1.22840
6/25/2018	6:28	21:27	7h41m41s	23°16'06"	19°54'36"	0.717	1.12198
7/ 2/2018	6:57	21:30	8h26m52s	20°26'31"	24°01'23"	0.592	1.00634
7/ 9/2018	7:17	21:22	9h01m47s	17°06'42"	26°09'50"	0.478	0.89252
7/16/2018	7:25	21:05	9h25m56s	13°50'13"	26°02'26"	0.363	0.78613
7/23/2018	7:18	20:38	9h37m46s	11°12'18"	23°04'09"	0.240	0.69291
7/30/2018	6:50	20:02	9h35m09s	9°53'55"	16°34'22"	0.115	0.62344
8/ 6/2018	6:03	19:20	9h18m59s	10°29'02"	7°16'31"	0.023	0.59647
8/13/2018	5:09	18:42	8h59m22s	12°39'36"	7°50'24"	0.032	0.63451
8/20/2018	4:28	18:20	8h53m18s	14°57'29"	15°34'08"	0.179	0.74754
8/27/2018	4:17	18:15	9h10m50s	15°48'18"	18°18'56"	0.438	0.91990
9/ 3/2018	4:36	18:22	9h49m21s	14°17'14"	15°48'23"	0.725	1.10894
9/10/2018	5:12	18:29	10h38m13s	10°29'12"	10°12'26"	0.918	1.26250
9/17/2018	5:52	18:32	11h27m44s	5°21'33"	3°58'36"	0.991	1.35707
9/24/2018	6:30	18:31	12h14m15s	-0°09'41"	2°44'30"	0.996	1.40018
10/ 1/2018	7:04	18:28	12h57m45s	-5°33'06"	7°41'35"	0.976	1.40558
10/ 8/2018	7:35	18:25	13h39m14s	-10°33'25"	12°10'09"	0.944	1.38239
10/15/2018	8:04	18:21	14h19m32s	-15°01'47"	16°02'14"	0.903	1.33488
10/22/2018	8:30	18:19	14h59m03s	-18°51'00"	19°18'08"	0.851	1.26416
10/29/2018	8:53	18:17	15h37m25s	-21°52'58"	21°50'47"	0.778	1.16949
11/ 5/2018	9:09	18:16	16h12m40s	-23°57'15"	23°14'59"	0.667	1.04981
11/12/2018	9:10	18:10	16h39m29s	-24°48'42"	22°23'02"	0.490	0.90785
11/19/2018	8:42	17:50	16h46m10s	-24°01'15"	16°40'12"	0.228	0.76334
11/26/2018	7:33	17:07	16h20m45s	-21°01'28"	3°18'22"	0.008	0.67951
12/ 3/2018	6:22	16:22	15h47m52s	-17°34'12"	12°18'49"	0.131	0.73309
12/10/2018	5:54	15:57	15h45m40s	-17°06'39"	19°59'20"	0.440	0.88503
12/17/2018	5:59	15:47	16h09m09s	-18°53'14"	21°11'48"	0.671	1.04689
12/24/2018	6:17	15:48	16h45m05s	-21°08'07"	19°34'17"	0.806	1.18170
12/31/2018	6:39	15:55	17h26m59s	-22°58'04"	16°50'07"	0.885	1.28406

Venus

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2018	7:46	16:58	18h37m16s	-23°37'44"	2°01'55"	0.999	1.70917
1/ 8/2018	7:54	17:12	19h15m34s	-23°01'41"	0°47'06"	1.000	1.71095
1/15/2018	7:59	17:27	19h53m21s	-21°51'00"	1°40'06"	1.000	1.71082
1/22/2018	8:01	17:44	20h30m21s	-20°08'05"	3°15'02"	0.999	1.70872
1/29/2018	8:00	18:01	21h06m23s	-17°56'19"	4°53'37"	0.997	1.70466
2/ 5/2018	7:58	18:19	21h41m23s	-15°19'38"	6°33'05"	0.994	1.69869
2/12/2018	7:53	18:36	22h15m25s	-12°22'18"	8°12'53"	0.991	1.69077
2/19/2018	7:47	18:53	22h48m35s	-9°08'44"	9°52'56"	0.986	1.68077
2/26/2018	7:40	19:10	23h21m02s	-5°43'24"	11°33'24"	0.981	1.66863
3/ 5/2018	7:32	19:26	23h53m00s	-2°10'41"	13°14'16"	0.975	1.65436
3/12/2018	7:24	19:43	0h24m44s	1°25'13"	14°55'28"	0.968	1.63792
3/19/2018	7:16	19:59	0h56m26s	5°00'06"	16°37'01"	0.960	1.61917
3/26/2018	7:08	20:16	1h28m23s	8°29'44"	18°19'01"	0.951	1.59800
4/ 2/2018	7:01	20:33	2h00m46s	11°49'50"	20°01'24"	0.940	1.57441
4/ 9/2018	6:55	20:50	2h33m47s	14°56'11"	21°43'56"	0.929	1.54840
4/16/2018	6:50	21:07	3h07m36s	17°44'34"	23°26'28"	0.916	1.51990
4/23/2018	6:48	21:24	3h42m16s	20°10'46"	25°08'56"	0.902	1.48882
4/30/2018	6:47	21:40	4h17m46s	22°10'45"	26°51'07"	0.887	1.45521
5/ 7/2018	6:49	21:55	4h53m59s	23°41'05"	28°32'34"	0.871	1.41915
5/14/2018	6:55	22:08	5h30m44s	24°38'58"	30°12'55"	0.853	1.38069
5/21/2018	7:02	22:19	6h07m41s	25°02'36"	31°51'56"	0.834	1.33983
5/28/2018	7:13	22:26	6h44m28s	24°51'24"	33°29'13"	0.814	1.29669
6/ 4/2018	7:25	22:31	7h20m44s	24°06'03"	35°04'06"	0.793	1.25145
6/11/2018	7:38	22:33	7h56m09s	22°48'20"	36°36'00"	0.770	1.20430
6/18/2018	7:53	22:31	8h30m30s	21°01'03"	38°04'27"	0.747	1.15532
6/25/2018	8:08	22:27	9h03m35s	18°47'43"	39°28'49"	0.722	1.10467
7/ 2/2018	8:22	22:21	9h35m20s	16°12'17"	40°48'09"	0.696	1.05260
7/ 9/2018	8:36	22:12	10h05m46s	13°18'45"	42°01'26"	0.669	0.99938
7/16/2018	8:49	22:02	10h34m58s	10°11'07"	43°07'44"	0.640	0.94515
7/23/2018	9:01	21:51	11h02m58s	6°53'24"	44°05'50"	0.611	0.89008
7/30/2018	9:12	21:38	11h29m52s	3°29'30"	44°53'56"	0.579	0.83443
8/ 6/2018	9:21	21:24	11h55m44s	0°03'05"	45°29'49"	0.546	0.77850
8/13/2018	9:30	21:10	12h20m35s	-3°22'22"	45°51'04"	0.512	0.72251
8/20/2018	9:38	20:54	12h44m23s	-6°43'16"	45°54'25"	0.474	0.66666
8/27/2018	9:44	20:38	13h06m56s	-9°55'53"	45°35'04"	0.434	0.61127
9/ 3/2018	9:48	20:20	13h27m58s	-12°56'27"	44°46'42"	0.391	0.55682
9/10/2018	9:49	20:01	13h46m58s	-15°41'06"	43°21'22"	0.343	0.50378
9/17/2018	9:47	19:41	14h03m14s	-18°05'07"	41°08'16"	0.291	0.45274
9/24/2018	9:39	19:17	14h15m37s	-20°02'18"	37°52'27"	0.234	0.40462
10/ 1/2018	9:23	18:51	14h22m47s	-21°24'10"	33°15'49"	0.172	0.36084
10/ 8/2018	8:57	18:21	14h23m26s	-21°59'21"	27°01'00"	0.110	0.32325
10/15/2018	8:21	17:48	14h16m55s	-21°34'10"	19°01'54"	0.053	0.29422
10/22/2018	7:33	17:15	14h04m22s	-19°59'55"	10°03'45"	0.015	0.27651
10/29/2018	6:41	16:43	13h49m31s	-17°28'03"	6°57'55"	0.007	0.27246
11/ 5/2018	5:51	16:15	13h37m23s	-14°36'27"	15°12'32"	0.034	0.28259
11/12/2018	5:10	15:51	13h31m29s	-12°09'03"	24°00'57"	0.085	0.30533
11/19/2018	4:39	15:31	13h32m53s	-10°32'10"	31°14'09"	0.148	0.33805
11/26/2018	4:17	15:14	13h40m58s	-9°51'18"	36°41'37"	0.213	0.37809
12/ 3/2018	4:04	15:00	13h54m34s	-9°59'42"	40°37'31"	0.274	0.42318
12/10/2018	3:58	14:48	14h12m29s	-10°45'59"	43°21'15"	0.330	0.47159
12/17/2018	3:56	14:37	14h33m45s	-11°58'42"	45°09'46"	0.381	0.52219
12/24/2018	3:58	14:29	14h57m45s	-13°27'50"	46°15'49"	0.426	0.57424
12/31/2018	4:03	14:22	15h24m04s	-15°04'39"	46°49'06"	0.468	0.62711



Midway, UT (JMC)      Latitude: 40°30'43" N Longitude: 111°28'40" W  
Local Time = UT - 7.00 hours      Elevation: 1706 meters      Year 2018  
Page 17

Mars

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2018	3:22	13:39	14h47m57s	-15°13'43"	56°20'39"	0.932	1.95578
1/ 8/2018	3:16	13:24	15h05m17s	-16°31'04"	59°06'56"	0.927	1.89375
1/15/2018	3:11	13:09	15h22m46s	-17°42'51"	61°54'04"	0.922	1.83023
1/22/2018	3:05	12:55	15h40m25s	-18°48'35"	64°42'00"	0.917	1.76542
1/29/2018	2:59	12:41	15h58m11s	-19°47'54"	67°30'31"	0.912	1.69963
2/ 5/2018	2:53	12:28	16h16m04s	-20°40'33"	70°19'31"	0.907	1.63310
2/12/2018	2:47	12:16	16h34m02s	-21°26'17"	73°09'16"	0.902	1.56598
2/19/2018	2:40	12:03	16h52m02s	-22°04'54"	76°00'02"	0.898	1.49847
2/26/2018	2:32	11:52	17h10m00s	-22°36'20"	78°51'47"	0.894	1.43089
3/ 5/2018	2:24	11:40	17h27m54s	-23°00'39"	81°44'32"	0.890	1.36347
3/12/2018	2:16	11:29	17h45m41s	-23°17'59"	84°38'49"	0.886	1.29636
3/19/2018	2:06	11:18	18h03m16s	-23°28'36"	87°35'19"	0.883	1.22975
3/26/2018	1:56	11:08	18h20m34s	-23°32'55"	90°34'27"	0.881	1.16392
4/ 2/2018	1:46	10:57	18h37m32s	-23°31'28"	93°36'35"	0.879	1.09911
4/ 9/2018	1:34	10:47	18h54m04s	-23°24'54"	96°42'43"	0.879	1.03545
4/16/2018	1:22	10:36	19h10m05s	-23°14'05"	99°54'14"	0.879	0.97309
4/23/2018	1:08	10:25	19h25m27s	-23°00'00"	103°12'25"	0.880	0.91230
4/30/2018	0:54	10:13	19h40m07s	-22°43'48"	106°38'23"	0.882	0.85333
5/ 7/2018	0:39	10:00	19h53m56s	-22°26'43"	110°13'59"	0.885	0.79631
5/14/2018	0:23	9:46	20h06m45s	-22°10'18"	114°01'59"	0.890	0.74142
5/21/2018	0:06	9:31	20h18m24s	-21°56'13"	118°05'06"	0.897	0.68898
5/28/2018	23:46	9:15	20h28m42s	-21°46'08"	122°25'52"	0.905	0.63930
6/ 4/2018	23:26	8:56	20h37m27s	-21°41'50"	127°07'34"	0.915	0.59263
6/11/2018	23:06	8:35	20h44m23s	-21°45'11"	132°14'33"	0.927	0.54930
6/18/2018	22:44	8:11	20h49m13s	-21°57'46"	137°50'45"	0.940	0.50982
6/25/2018	22:20	7:44	20h51m44s	-22°20'21"	143°58'24"	0.954	0.47475
7/ 2/2018	21:54	7:14	20h51m46s	-22°52'46"	150°38'09"	0.968	0.44461
7/ 9/2018	21:27	6:41	20h49m12s	-23°33'35"	157°47'26"	0.981	0.41997
7/16/2018	20:57	6:05	20h44m13s	-24°19'25"	165°12'15"	0.991	0.40153
7/23/2018	20:26	5:27	20h37m21s	-25°04'57"	171°50'16"	0.997	0.38981
7/30/2018	19:53	4:49	20h29m29s	-25°44'27"	172°37'32"	0.998	0.38503
8/ 6/2018	19:20	4:11	20h21m39s	-26°13'10"	166°22'18"	0.993	0.38716
8/13/2018	18:47	3:36	20h14m56s	-26°28'00"	158°49'14"	0.982	0.39599
8/20/2018	18:15	3:04	20h10m17s	-26°28'01"	151°24'32"	0.969	0.41099
8/27/2018	17:45	2:36	20h08m19s	-26°14'14"	144°28'45"	0.953	0.43139
9/ 3/2018	17:17	2:11	20h09m08s	-25°48'31"	138°07'18"	0.937	0.45647
9/10/2018	16:50	1:50	20h12m43s	-25°12'28"	132°20'39"	0.921	0.48566
9/17/2018	16:26	1:33	20h18m52s	-24°27'14"	127°07'25"	0.907	0.51839
9/24/2018	16:03	1:17	20h27m14s	-23°33'44"	122°24'11"	0.895	0.55410
10/ 1/2018	15:41	1:04	20h37m26s	-22°32'37"	118°06'14"	0.885	0.59242
10/ 8/2018	15:21	0:53	20h49m10s	-21°24'11"	114°09'33"	0.876	0.63315
10/15/2018	15:01	0:44	21h02m08s	-20°08'33"	110°31'10"	0.870	0.67606
10/22/2018	14:42	0:36	21h16m06s	-18°46'02"	107°08'11"	0.865	0.72090
10/29/2018	14:24	0:29	21h30m48s	-17°17'05"	103°57'26"	0.861	0.76753
11/ 5/2018	14:05	0:23	21h46m05s	-15°42'05"	100°56'24"	0.859	0.81591
11/12/2018	13:47	0:17	22h01m48s	-14°01'26"	98°03'35"	0.858	0.86595
11/19/2018	13:29	0:12	22h17m52s	-12°15'44"	95°17'40"	0.858	0.91746
11/26/2018	13:12	0:07	22h34m11s	-10°25'41"	92°37'04"	0.859	0.97035
12/ 3/2018	12:54	0:03	22h50m39s	-8°32'02"	90°00'23"	0.860	1.02460
12/10/2018	12:36	23:58	23h07m17s	-6°35'23"	87°27'01"	0.863	1.08011
12/17/2018	12:18	23:54	23h24m02s	-4°36'27"	84°56'33"	0.865	1.13670
12/24/2018	12:01	23:50	23h40m53s	-2°36'08"	82°28'17"	0.869	1.19423
12/31/2018	11:43	23:47	23h57m49s	-0°35'11"	80°01'30"	0.873	1.25263

Jupiter

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2018	3:34	13:47	14h59m08s	-15°53'05"	53°34'50"	0.995	5.95705
1/ 8/2018	3:13	13:22	15h03m42s	-16°11'32"	59°34'17"	0.994	5.86159
1/15/2018	2:50	12:58	15h07m56s	-16°28'06"	65°39'05"	0.993	5.76017
1/22/2018	2:27	12:33	15h11m47s	-16°42'39"	71°49'34"	0.993	5.65381
1/29/2018	2:04	12:08	15h15m12s	-16°55'08"	78°05'53"	0.992	5.54375
2/ 5/2018	1:40	11:43	15h18m09s	-17°05'31"	84°28'25"	0.992	5.43121
2/12/2018	1:16	11:17	15h20m35s	-17°13'43"	90°57'49"	0.992	5.31744
2/19/2018	0:50	10:51	15h22m28s	-17°19'42"	97°34'27"	0.992	5.20385
2/26/2018	0:24	10:25	15h23m47s	-17°23'25"	104°18'21"	0.992	5.09203
3/ 5/2018	23:54	9:58	15h24m29s	-17°24'53"	111°09'38"	0.993	4.98351
3/12/2018	23:26	9:30	15h24m34s	-17°24'05"	118°08'41"	0.993	4.87979
3/19/2018	22:58	9:03	15h24m01s	-17°21'02"	125°15'32"	0.994	4.78248
3/26/2018	22:28	8:34	15h22m51s	-17°15'47"	132°29'42"	0.995	4.69325
4/ 2/2018	21:59	8:05	15h21m07s	-17°08'28"	139°50'30"	0.996	4.61358
4/ 9/2018	21:28	7:36	15h18m51s	-16°59'14"	147°17'28"	0.997	4.54480
4/16/2018	20:57	7:07	15h16m07s	-16°48'17"	154°49'44"	0.998	4.48819
4/23/2018	20:26	6:37	15h13m01s	-16°35'54"	162°25'37"	0.999	4.44489
4/30/2018	19:54	6:07	15h09m38s	-16°22'29"	170°02'33"	1.000	4.41566
5/ 7/2018	19:22	5:37	15h06m06s	-16°08'27"	177°27'08"	1.000	4.40092
5/14/2018	18:50	5:06	15h02m31s	-15°54'15"	174°24'29"	1.000	4.40095
5/21/2018	18:18	4:36	14h59m02s	-15°40'24"	166°52'29"	1.000	4.41570
5/28/2018	17:47	4:06	14h55m44s	-15°27'25"	159°21'05"	0.999	4.44469
6/ 4/2018	17:15	3:36	14h52m46s	-15°15'45"	151°54'33"	0.998	4.48716
6/11/2018	16:45	3:07	14h50m10s	-15°05'50"	144°34'15"	0.997	4.54221
6/18/2018	16:15	2:38	14h48m02s	-14°58'02"	137°21'24"	0.996	4.60877
6/25/2018	15:45	2:09	14h46m26s	-14°52'37"	130°17'03"	0.995	4.68546
7/ 2/2018	15:17	1:41	14h45m23s	-14°49'44"	123°21'30"	0.994	4.77081
7/ 9/2018	14:49	1:13	14h44m55s	-14°49'30"	116°34'36"	0.993	4.86345
7/16/2018	14:22	0:45	14h45m02s	-14°51'56"	109°56'19"	0.992	4.96194
7/23/2018	13:55	0:18	14h45m43s	-14°56'59"	103°26'41"	0.992	5.06473
7/30/2018	13:30	23:48	14h46m59s	-15°04'32"	97°05'19"	0.991	5.17034
8/ 6/2018	13:04	23:21	14h48m47s	-15°14'26"	90°51'24"	0.991	5.27748
8/13/2018	12:40	22:55	14h51m06s	-15°26'30"	84°44'19"	0.991	5.38485
8/20/2018	12:16	22:30	14h53m56s	-15°40'32"	78°43'43"	0.991	5.49114
8/27/2018	11:53	22:05	14h57m12s	-15°56'18"	72°49'01"	0.992	5.59512
9/ 3/2018	11:30	21:40	15h00m55s	-16°13'33"	66°59'22"	0.993	5.69578
9/10/2018	11:08	21:15	15h05m02s	-16°32'04"	61°13'58"	0.993	5.79214
9/17/2018	10:46	20:51	15h09m31s	-16°51'38"	55°32'25"	0.994	5.88316
9/24/2018	10:25	20:27	15h14m21s	-17°11'59"	49°54'18"	0.995	5.96794
10/ 1/2018	10:04	20:03	15h19m28s	-17°32'53"	44°18'51"	0.996	6.04577
10/ 8/2018	9:43	19:40	15h24m53s	-17°54'09"	38°45'23"	0.997	6.11596
10/15/2018	9:23	19:17	15h30m33s	-18°15'33"	33°13'31"	0.997	6.17777
10/22/2018	9:03	18:54	15h36m25s	-18°36'54"	27°43'01"	0.998	6.23062
10/29/2018	8:42	18:31	15h42m29s	-18°57'58"	22°13'22"	0.999	6.27409
11/ 5/2018	8:22	18:08	15h48m43s	-19°18'38"	16°44'00"	0.999	6.30780
11/12/2018	8:03	17:46	15h55m04s	-19°38'42"	11°14'42"	1.000	6.33131
11/19/2018	7:43	17:23	16h01m32s	-19°58'03"	5°45'52"	1.000	6.34436
11/26/2018	7:23	17:01	16h08m03s	-20°16'31"	0°41'33"	1.000	6.34688
12/ 3/2018	7:03	16:39	16h14m36s	-20°34'01"	5°20'53"	1.000	6.33879
12/10/2018	6:43	16:17	16h21m10s	-20°50'27"	10°52'39"	1.000	6.32002
12/17/2018	6:23	15:55	16h27m41s	-21°05'43"	16°26'44"	0.999	6.29065
12/24/2018	6:03	15:33	16h34m08s	-21°19'47"	22°02'42"	0.999	6.25098
12/31/2018	5:43	15:11	16h40m29s	-21°32'36"	27°40'55"	0.998	6.20130

Saturn

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2018	7:07	16:26	18h05m42s	-22°31'31"	9°14'01"	1.000	11.05342
1/ 8/2018	6:43	16:02	18h09m14s	-22°31'13"	15°32'05"	1.000	11.02819
1/15/2018	6:19	15:38	18h12m41s	-22°30'35"	21°51'48"	1.000	10.99056
1/22/2018	5:54	15:14	18h16m02s	-22°29'40"	28°12'49"	0.999	10.94089
1/29/2018	5:30	14:50	18h19m15s	-22°28'28"	34°34'58"	0.999	10.87982
2/ 5/2018	5:05	14:25	18h22m19s	-22°27'04"	40°58'28"	0.999	10.80814
2/12/2018	4:41	14:01	18h25m12s	-22°25'29"	47°23'41"	0.999	10.72661
2/19/2018	4:16	13:36	18h27m53s	-22°23'49"	53°50'50"	0.998	10.63616
2/26/2018	3:50	13:11	18h30m19s	-22°22'07"	60°19'52"	0.998	10.53797
3/ 5/2018	3:25	12:46	18h32m30s	-22°20'26"	66°50'56"	0.998	10.43331
3/12/2018	2:59	12:20	18h34m24s	-22°18'50"	73°24'28"	0.998	10.32341
3/19/2018	2:33	11:54	18h36m01s	-22°17'24"	80°00'45"	0.998	10.20965
3/26/2018	2:07	11:28	18h37m18s	-22°16'10"	86°39'45"	0.998	10.09357
4/ 2/2018	1:40	11:02	18h38m16s	-22°15'11"	93°21'29"	0.998	9.97677
4/ 9/2018	1:13	10:35	18h38m53s	-22°14'31"	100°06'18"	0.998	9.86077
4/16/2018	0:46	10:08	18h39m09s	-22°14'10"	106°54'29"	0.998	9.74713
4/23/2018	0:18	9:40	18h39m05s	-22°14'10"	113°45'53"	0.998	9.63756
4/30/2018	23:46	9:12	18h38m40s	-22°14'31"	120°40'16"	0.998	9.53369
5/ 7/2018	23:18	8:44	18h37m56s	-22°15'12"	127°37'44"	0.998	9.43699
5/14/2018	22:49	8:15	18h36m52s	-22°16'12"	134°38'24"	0.999	9.34890
5/21/2018	22:21	7:46	18h35m32s	-22°17'29"	141°41'51"	0.999	9.27089
5/28/2018	21:52	7:17	18h33m56s	-22°19'00"	148°47'33"	0.999	9.20422
6/ 4/2018	21:22	6:47	18h32m07s	-22°20'42"	155°55'09"	1.000	9.14987
6/11/2018	20:53	6:18	18h30m07s	-22°22'32"	163°04'23"	1.000	9.10873
6/18/2018	20:23	5:48	18h28m00s	-22°24'26"	170°14'19"	1.000	9.08155
6/25/2018	19:54	5:18	18h25m48s	-22°26'22"	177°19'24"	1.000	9.06880
7/ 2/2018	19:24	4:48	18h23m35s	-22°28'16"	175°16'17"	1.000	9.07059
7/ 9/2018	18:55	4:18	18h21m24s	-22°30'07"	168°08'24"	1.000	9.08687
7/16/2018	18:25	3:49	18h19m18s	-22°31'54"	160°59'21"	1.000	9.11746
7/23/2018	17:56	3:19	18h17m21s	-22°33'35"	153°51'43"	1.000	9.16180
7/30/2018	17:27	2:50	18h15m35s	-22°35'10"	146°46'17"	0.999	9.21906
8/ 6/2018	16:58	2:20	18h14m02s	-22°36'38"	139°43'12"	0.999	9.28831
8/13/2018	16:29	1:52	18h12m46s	-22°38'02"	132°42'47"	0.999	9.36852
8/20/2018	16:01	1:23	18h11m47s	-22°39'19"	125°45'32"	0.998	9.45838
8/27/2018	15:33	0:55	18h11m07s	-22°40'31"	118°51'45"	0.998	9.55640
9/ 3/2018	15:05	0:27	18h10m47s	-22°41'38"	112°01'17"	0.998	9.66115
9/10/2018	14:38	23:55	18h10m47s	-22°42'40"	105°13'59"	0.998	9.77116
9/17/2018	14:11	23:28	18h11m09s	-22°43'36"	98°30'01"	0.998	9.88480
9/24/2018	13:44	23:01	18h11m51s	-22°44'25"	91°49'27"	0.998	10.00041
10/ 1/2018	13:17	22:35	18h12m53s	-22°45'06"	85°11'57"	0.998	10.11644
10/ 8/2018	12:51	22:09	18h14m15s	-22°45'37"	78°37'07"	0.998	10.23142
10/15/2018	12:26	21:43	18h15m55s	-22°45'57"	72°04'52"	0.998	10.34380
10/22/2018	12:00	21:17	18h17m53s	-22°46'03"	65°35'13"	0.998	10.45204
10/29/2018	11:35	20:52	18h20m08s	-22°45'53"	59°07'47"	0.998	10.55484
11/ 5/2018	11:10	20:27	18h22m37s	-22°45'26"	52°42'07"	0.998	10.65100
11/12/2018	10:45	20:02	18h25m21s	-22°44'39"	46°18'01"	0.999	10.73926
11/19/2018	10:20	19:38	18h28m16s	-22°43'31"	39°55'28"	0.999	10.81849
11/26/2018	9:56	19:14	18h31m22s	-22°42'01"	33°34'16"	0.999	10.88781
12/ 3/2018	9:31	18:50	18h34m37s	-22°40'07"	27°13'56"	0.999	10.94643
12/10/2018	9:07	18:26	18h37m59s	-22°37'48"	20°54'15"	1.000	10.99361
12/17/2018	8:43	18:02	18h41m27s	-22°35'06"	14°35'17"	1.000	11.02871
12/24/2018	8:18	17:38	18h44m58s	-22°32'01"	8°17'05"	1.000	11.05140
12/31/2018	7:54	17:14	18h48m32s	-22°28'33"	2°01'19"	1.000	11.06146

Uranus

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2018	12:38	1:48	1h31m53s	8°59'14"	104°03'15"	0.999	19.64282
1/ 8/2018	12:11	1:21	1h31m55s	8°59'43"	96°56'03"	0.999	19.76105
1/15/2018	11:43	0:53	1h32m07s	9°01'08"	89°51'22"	0.999	19.88112
1/22/2018	11:16	0:26	1h32m28s	9°03'28"	82°49'29"	0.999	20.00117
1/29/2018	10:49	23:56	1h32m59s	9°06'43"	75°50'48"	0.999	20.11936
2/ 5/2018	10:22	23:29	1h33m39s	9°10'48"	68°55'20"	0.999	20.23399
2/12/2018	9:55	23:03	1h34m27s	9°15'41"	62°02'54"	1.000	20.34353
2/19/2018	9:28	22:37	1h35m23s	9°21'19"	55°13'31"	1.000	20.44642
2/26/2018	9:01	22:10	1h36m26s	9°27'36"	48°27'26"	1.000	20.54119
3/ 5/2018	8:34	21:45	1h37m36s	9°34'29"	41°44'34"	1.000	20.62667
3/12/2018	8:07	21:19	1h38m51s	9°41'52"	35°04'35"	1.000	20.70184
3/19/2018	7:41	20:53	1h40m11s	9°49'40"	28°27'18"	1.000	20.76571
3/26/2018	7:14	20:27	1h41m35s	9°57'48"	21°52'47"	1.000	20.81748
4/ 2/2018	6:48	20:02	1h43m03s	10°06'11"	15°20'58"	1.000	20.85661
4/ 9/2018	6:21	19:36	1h44m33s	10°14'43"	8°51'34"	1.000	20.88274
4/16/2018	5:54	19:11	1h46m04s	10°23'20"	2°26'03"	1.000	20.89558
4/23/2018	5:28	18:45	1h47m35s	10°31'55"	4°05'44"	1.000	20.89496
4/30/2018	5:01	18:20	1h49m06s	10°40'25"	10°29'14"	1.000	20.88104
5/ 7/2018	4:35	17:54	1h50m36s	10°48'44"	16°52'34"	1.000	20.85410
5/14/2018	4:08	17:29	1h52m03s	10°56'47"	23°15'31"	1.000	20.81445
5/21/2018	3:42	17:03	1h53m28s	11°04'31"	29°38'09"	1.000	20.76257
5/28/2018	3:15	16:37	1h54m49s	11°11'50"	36°00'35"	1.000	20.69919
6/ 4/2018	2:48	16:11	1h56m05s	11°18'41"	42°23'14"	1.000	20.62516
6/11/2018	2:22	15:45	1h57m15s	11°25'00"	48°46'43"	1.000	20.54132
6/18/2018	1:55	15:19	1h58m20s	11°30'44"	55°11'17"	1.000	20.44866
6/25/2018	1:28	14:53	1h59m18s	11°35'49"	61°37'03"	0.999	20.34841
7/ 2/2018	1:01	14:26	2h00m08s	11°40'13"	68°04'21"	0.999	20.24186
7/ 9/2018	0:34	14:00	2h00m50s	11°43'53"	74°33'47"	0.999	20.13026
7/16/2018	0:07	13:33	2h01m24s	11°46'48"	81°05'40"	0.999	20.01501
7/23/2018	23:36	13:06	2h01m50s	11°48'54"	87°40'00"	0.999	19.89768
7/30/2018	23:08	12:39	2h02m06s	11°50'11"	94°17'00"	0.999	19.77985
8/ 6/2018	22:41	12:11	2h02m13s	11°50'40"	100°57'06"	0.999	19.66302
8/13/2018	22:13	11:44	2h02m11s	11°50'19"	107°40'36"	0.999	19.54877
8/20/2018	21:46	11:16	2h01m59s	11°49'08"	114°27'24"	0.999	19.43882
8/27/2018	21:18	10:48	2h01m39s	11°47'11"	121°17'25"	1.000	19.33477
9/ 3/2018	20:50	10:20	2h01m10s	11°44'28"	128°10'55"	1.000	19.23808
9/10/2018	20:22	9:51	2h00m33s	11°41'03"	135°08'04"	1.000	19.15023
9/17/2018	19:54	9:23	1h59m49s	11°36'59"	142°08'35"	1.000	19.07270
9/24/2018	19:26	8:54	1h58m58s	11°32'21"	149°12'05"	1.000	19.00675
10/ 1/2018	18:58	8:26	1h58m02s	11°27'14"	156°18'33"	1.000	18.95339
10/ 8/2018	18:30	7:57	1h57m02s	11°21'45"	163°27'54"	1.000	18.91355
10/15/2018	18:01	7:28	1h55m58s	11°15'58"	170°39'32"	1.000	18.88805
10/22/2018	17:33	6:59	1h54m53s	11°10'03"	177°50'08"	1.000	18.87738
10/29/2018	17:05	6:30	1h53m47s	11°04'06"	174°48'00"	1.000	18.88169
11/ 5/2018	16:37	6:01	1h52m42s	10°58'15"	167°31'57"	1.000	18.90101
11/12/2018	16:09	5:32	1h51m40s	10°52'38"	160°14'08"	1.000	18.93517
11/19/2018	15:40	5:03	1h50m41s	10°47'22"	152°55'54"	1.000	18.98364
11/26/2018	15:12	4:35	1h49m48s	10°42'34"	145°37'49"	1.000	19.04555
12/ 3/2018	14:44	4:06	1h49m00s	10°38'21"	138°20'05"	1.000	19.11996
12/10/2018	14:16	3:38	1h48m20s	10°34'47"	131°03'07"	1.000	19.20573
12/17/2018	13:48	3:09	1h47m47s	10°32'00"	123°47'36"	1.000	19.30144
12/24/2018	13:21	2:41	1h47m23s	10°30'01"	116°34'00"	1.000	19.40545
12/31/2018	12:53	2:14	1h47m09s	10°28'54"	109°22'24"	0.999	19.51615

Midway, UT (JMC) Latitude: 40°30'43" N Longitude: 111°28'40" W  
 Local Time = UT - 7.00 hours Elevation: 1706 meters Year 2018  
 Page 21

Neptune

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2018	11:00	22:09	22h54m40s	-7°56'12"	61°24'18"	1.000	30.40314
1/ 8/2018	10:32	21:43	22h55m17s	-7°52'21"	54°26'16"	1.000	30.50606
1/15/2018	10:05	21:16	22h55m58s	-7°48'00"	47°29'30"	1.000	30.60061
1/22/2018	9:38	20:49	22h56m44s	-7°43'14"	40°34'12"	1.000	30.68536
1/29/2018	9:11	20:23	22h57m33s	-7°38'04"	33°40'42"	1.000	30.75911
2/ 5/2018	8:44	19:57	22h58m26s	-7°32'36"	26°48'58"	1.000	30.82093
2/12/2018	8:17	19:31	22h59m22s	-7°26'52"	19°58'52"	1.000	30.87006
2/19/2018	7:51	19:04	23h00m19s	-7°20'57"	13°10'35"	1.000	30.90577
2/26/2018	7:24	18:38	23h01m18s	-7°14'55"	6°25'23"	1.000	30.92761
3/ 5/2018	6:57	18:12	23h02m17s	-7°08'50"	0°59'27"	1.000	30.93545
3/12/2018	6:30	17:46	23h03m16s	-7°02'46"	7°11'30"	1.000	30.92926
3/19/2018	6:03	17:20	23h04m15s	-6°56'47"	13°52'44"	1.000	30.90912
3/26/2018	5:36	16:53	23h05m12s	-6°50'57"	20°33'42"	1.000	30.87536
4/ 2/2018	5:09	16:27	23h06m08s	-6°45'21"	27°13'38"	1.000	30.82859
4/ 9/2018	4:42	16:01	23h07m01s	-6°40'02"	33°52'46"	1.000	30.76950
4/16/2018	4:15	15:34	23h07m50s	-6°35'02"	40°31'20"	1.000	30.69885
4/23/2018	3:48	15:08	23h08m37s	-6°30'27"	47°09'18"	1.000	30.61764
4/30/2018	3:21	14:41	23h09m19s	-6°26'18"	53°46'40"	1.000	30.52707
5/ 7/2018	2:54	14:14	23h09m56s	-6°22'38"	60°23'48"	1.000	30.42838
5/14/2018	2:27	13:48	23h10m29s	-6°19'30"	67°01'07"	1.000	30.32282
5/21/2018	2:00	13:21	23h10m56s	-6°16'56"	73°38'41"	1.000	30.21183
5/28/2018	1:32	12:54	23h11m18s	-6°14'57"	80°16'27"	1.000	30.09700
6/ 4/2018	1:05	12:26	23h11m34s	-6°13'34"	86°54'45"	1.000	29.97987
6/11/2018	0:38	11:59	23h11m44s	-6°12'49"	93°34'00"	1.000	29.86194
6/18/2018	0:10	11:32	23h11m49s	-6°12'40"	100°14'21"	1.000	29.74484
6/25/2018	23:39	11:04	23h11m47s	-6°13'10"	106°55'40"	1.000	29.63028
7/ 2/2018	23:11	10:36	23h11m39s	-6°14'15"	113°38'09"	1.000	29.51982
7/ 9/2018	22:43	10:08	23h11m26s	-6°15'55"	120°22'11"	1.000	29.41493
7/16/2018	22:16	9:40	23h11m08s	-6°18'08"	127°07'54"	1.000	29.31713
7/23/2018	21:48	9:12	23h10m44s	-6°20'52"	133°55'08"	1.000	29.22793
7/30/2018	21:20	8:44	23h10m16s	-6°24'04"	140°43'50"	1.000	29.14858
8/ 6/2018	20:52	8:16	23h09m44s	-6°27'40"	147°34'18"	1.000	29.08021
8/13/2018	20:24	7:48	23h09m08s	-6°31'36"	154°26'36"	1.000	29.02390
8/20/2018	19:56	7:19	23h08m30s	-6°35'48"	161°20'23"	1.000	28.98062
8/27/2018	19:29	6:51	23h07m49s	-6°40'12"	168°15'07"	1.000	28.95102
9/ 3/2018	19:01	6:22	23h07m07s	-6°44'43"	175°08'44"	1.000	28.93553
9/10/2018	18:33	5:54	23h06m24s	-6°49'15"	177°33'11"	1.000	28.93453
9/17/2018	18:05	5:25	23h05m41s	-6°53'44"	170°42'21"	1.000	28.94818
9/24/2018	17:37	4:57	23h05m00s	-6°58'04"	163°42'16"	1.000	28.97626
10/ 1/2018	17:09	4:28	23h04m20s	-7°02'11"	156°40'17"	1.000	29.01836
10/ 8/2018	16:41	4:00	23h03m43s	-7°06'00"	149°36'55"	1.000	29.07399
10/15/2018	16:13	3:32	23h03m09s	-7°09'26"	142°32'36"	1.000	29.14239
10/22/2018	15:45	3:04	23h02m39s	-7°12'26"	135°27'50"	1.000	29.22250
10/29/2018	15:17	2:35	23h02m14s	-7°14'56"	128°22'46"	1.000	29.31309
11/ 5/2018	14:50	2:08	23h01m53s	-7°16'52"	121°17'19"	1.000	29.41288
11/12/2018	14:22	1:40	23h01m39s	-7°18'13"	114°11'46"	1.000	29.52041
11/19/2018	13:54	1:12	23h01m30s	-7°18'57"	107°06'33"	1.000	29.63399
11/26/2018	13:27	0:44	23h01m27s	-7°19'02"	100°01'52"	1.000	29.75186
12/ 3/2018	12:59	0:17	23h01m31s	-7°18'28"	92°57'39"	1.000	29.87233
12/10/2018	12:32	23:46	23h01m41s	-7°17'15"	85°54'02"	1.000	29.99362
12/17/2018	12:04	23:19	23h01m57s	-7°15'23"	78°51'26"	1.000	30.11382
12/24/2018	11:37	22:52	23h02m20s	-7°12'53"	71°50'07"	1.000	30.23114
12/31/2018	11:10	22:25	23h02m48s	-7°09'48"	64°49'57"	1.000	30.34394

Pluto

Date	Rise	Set	RA	Dec	Elongation	Ill Fr	DIST(AU)
1/ 1/2018	8:18	17:45	19h21m04s	-21°40'11"	8°16'59"	1.000	34.44890
1/ 8/2018	7:52	17:18	19h22m05s	-21°38'51"	1°26'43"	1.000	34.46369
1/15/2018	7:25	16:52	19h23m06s	-21°37'29"	5°32'07"	1.000	34.46411
1/22/2018	6:58	16:25	19h24m07s	-21°36'06"	12°25'05"	1.000	34.45015
1/29/2018	6:32	15:59	19h25m07s	-21°34'43"	19°18'03"	1.000	34.42213
2/ 5/2018	6:05	15:33	19h26m04s	-21°33'23"	26°10'42"	1.000	34.38062
2/12/2018	5:38	15:06	19h26m59s	-21°32'07"	33°03'13"	1.000	34.32623
2/19/2018	5:12	14:39	19h27m50s	-21°30'56"	39°55'32"	1.000	34.25975
2/26/2018	4:45	14:13	19h28m38s	-21°29'51"	46°47'22"	1.000	34.18227
3/ 5/2018	4:18	13:46	19h29m21s	-21°28'55"	53°38'43"	1.000	34.09505
3/12/2018	3:51	13:19	19h30m00s	-21°28'09"	60°29'49"	1.000	33.99936
3/19/2018	3:24	12:52	19h30m33s	-21°27'33"	67°20'45"	1.000	33.89656
3/26/2018	2:57	12:25	19h31m01s	-21°27'09"	74°11'20"	1.000	33.78826
4/ 2/2018	2:30	11:58	19h31m22s	-21°26'58"	81°01'26"	1.000	33.67614
4/ 9/2018	2:02	11:31	19h31m38s	-21°27'00"	87°51'22"	1.000	33.56179
4/16/2018	1:35	11:03	19h31m47s	-21°27'16"	94°41'19"	1.000	33.44685
4/23/2018	1:08	10:36	19h31m50s	-21°27'45"	101°31'06"	1.000	33.33308
4/30/2018	0:40	10:08	19h31m47s	-21°28'29"	108°20'35"	1.000	33.22223
5/ 7/2018	0:12	9:40	19h31m38s	-21°29'25"	115°10'01"	1.000	33.11585
5/14/2018	23:41	9:13	19h31m24s	-21°30'35"	121°59'39"	1.000	33.01547
5/21/2018	23:13	8:45	19h31m03s	-21°31'57"	128°49'23"	1.000	32.92267
5/28/2018	22:45	8:17	19h30m38s	-21°33'30"	135°38'59"	1.000	32.83886
6/ 4/2018	22:17	7:48	19h30m08s	-21°35'13"	142°28'38"	1.000	32.76522
6/11/2018	21:49	7:20	19h29m35s	-21°37'05"	149°18'35"	1.000	32.70284
6/18/2018	21:21	6:52	19h28m58s	-21°39'04"	156°08'49"	1.000	32.65274
6/25/2018	20:53	6:24	19h28m18s	-21°41'08"	162°59'02"	1.000	32.61576
7/ 2/2018	20:25	5:55	19h27m36s	-21°43'16"	169°49'17"	1.000	32.59240
7/ 9/2018	19:57	5:27	19h26m53s	-21°45'27"	176°39'44"	1.000	32.58305
7/16/2018	19:29	4:58	19h26m10s	-21°47'37"	176°28'50"	1.000	32.58800
7/23/2018	19:01	4:30	19h25m27s	-21°49'47"	169°37'58"	1.000	32.60727
7/30/2018	18:33	4:02	19h24m45s	-21°51'53"	162°46'59"	1.000	32.64057
8/ 6/2018	18:05	3:33	19h24m06s	-21°53'55"	155°55'43"	1.000	32.68749
8/13/2018	17:37	3:05	19h23m28s	-21°55'52"	149°04'05"	1.000	32.74753
8/20/2018	17:09	2:37	19h22m54s	-21°57'41"	142°12'20"	1.000	32.81990
8/27/2018	16:41	2:09	19h22m25s	-21°59'21"	135°20'38"	1.000	32.90354
9/ 3/2018	16:13	1:41	19h21m59s	-22°00'53"	128°28'43"	1.000	32.99734
9/10/2018	15:45	1:13	19h21m39s	-22°02'14"	121°36'27"	1.000	33.10011
9/17/2018	15:18	0:45	19h21m25s	-22°03'23"	114°43'59"	1.000	33.21044
9/24/2018	14:50	0:17	19h21m16s	-22°04'22"	107°51'33"	1.000	33.32673
10/ 1/2018	14:23	23:46	19h21m13s	-22°05'08"	100°58'58"	1.000	33.44738
10/ 8/2018	13:55	23:18	19h21m16s	-22°05'41"	94°06'00"	1.000	33.57084
10/15/2018	13:28	22:51	19h21m26s	-22°06'03"	87°12'46"	1.000	33.69535
10/22/2018	13:01	22:24	19h21m42s	-22°06'11"	80°19'31"	1.000	33.81910
10/29/2018	12:34	21:56	19h22m04s	-22°06'08"	73°26'10"	1.000	33.94042
11/ 5/2018	12:06	21:29	19h22m32s	-22°05'52"	66°32'28"	1.000	34.05770
11/12/2018	11:39	21:02	19h23m06s	-22°05'24"	59°38'29"	1.000	34.16927
11/19/2018	11:13	20:36	19h23m45s	-22°04'46"	52°44'29"	1.000	34.27351
11/26/2018	10:46	20:09	19h24m28s	-22°03'56"	45°50'30"	1.000	34.36901
12/ 3/2018	10:19	19:42	19h25m16s	-22°02'58"	38°56'18"	1.000	34.45454
12/10/2018	9:52	19:16	19h26m08s	-22°01'50"	32°01'54"	1.000	34.52886
12/17/2018	9:25	18:49	19h27m03s	-22°00'35"	25°07'35"	1.000	34.59091
12/24/2018	8:59	18:23	19h28m01s	-21°59'13"	18°13'28"	1.000	34.63990
12/31/2018	8:32	17:56	19h29m00s	-21°57'47"	11°19'25"	1.000	34.67528

Midway, UT (JMC)      Latitude: 40°30'43" N    Longitude: 111°28'40" W  
Local Time = UT - 7.00 hours    Elevation: 1706 meters      Year 2018  
Page 23

Planet Apsides Report for 2018

Earth

1/ 3/2018	Perihelion	Distance from Sun:	0.98 AU
7/ 5/2018	Aphelion	Distance from Sun:	1.02 AU

Mercury

3/10/2018	Perihelion	Distance from Sun:	0.31 AU
6/ 6/2018	Perihelion	Distance from Sun:	0.31 AU
9/ 2/2018	Perihelion	Distance from Sun:	0.31 AU
11/29/2018	Perihelion	Distance from Sun:	0.31 AU
1/25/2018	Aphelion	Distance from Sun:	0.47 AU
4/23/2018	Aphelion	Distance from Sun:	0.47 AU
7/20/2018	Aphelion	Distance from Sun:	0.47 AU
10/16/2018	Aphelion	Distance from Sun:	0.47 AU

Venus

5/15/2018	Perihelion	Distance from Sun:	0.72 AU
12/26/2018	Perihelion	Distance from Sun:	0.72 AU
1/23/2018	Aphelion	Distance from Sun:	0.73 AU
9/ 5/2018	Aphelion	Distance from Sun:	0.73 AU

Mars

9/16/2018	Perihelion	Distance from Sun:	1.38 AU
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Jupiter

No Apsis

Saturn

4/ 3/2018	Aphelion	Distance from Sun:	10.08 AU
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Planet Conjunction/Opposition Report for 1/ 1/2018 to 12/31/2018

Mercury

Date	Hour	Event
2/17/2018	17	Superior Conjunction
4/ 1/2018	17	Inferior Conjunction
6/ 5/2018	19	Superior Conjunction
8/ 8/2018	19	Inferior Conjunction
9/20/2018	19	Superior Conjunction
11/27/2018	2	Inferior Conjunction

Venus

Date	Hour	Event
1/ 8/2018	23	Superior Conjunction
10/26/2018	17	Inferior Conjunction

Mars

Date	Hour	Event
7/26/2018	22	Opposition

Jupiter

Date	Hour	Event
11/26/2018	0	Conjunction
5/ 8/2018	18	Opposition

Saturn

Date	Hour	Event
6/27/2018	5	Opposition

Midway, UT (JMC) Latitude: 40°30'43" N Longitude: 111°28'40" W  
 Local Time = UT - 7.00 hours Elevation: 1706 meters Year 2018  
 Page 24

Uranus

Date	Hour	Event
4/18/2018	17	Conjunction
10/23/2018	18	Opposition

Neptune

Date	Hour	Event
3/ 4/2018	17	Conjunction
9/ 7/2018	17	Opposition

Pluto

Date	Hour	Event
1/ 9/2018	3	Conjunction
7/12/2018	3	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 2018  
 Page 25

Moon Apisdes Report for 1/ 1/2018 to 12/31/2018

Date	Hour	Apsis	Distance (km)	Diameter
1/ 1/2018	15	Perigee	356584	0.5585°
1/14/2018	19	Apogee	406466	0.4900°
1/30/2018	3	Perigee	358986	0.5548°
2/11/2018	7	Apogee	405712	0.4909°
2/27/2018	8	Perigee	363912	0.5473°
3/11/2018	2	Apogee	404693	0.4921°
3/26/2018	11	Perigee	369114	0.5396°
4/ 7/2018	23	Apogee	404140	0.4928°
4/20/2018	8	Perigee	368718	0.5401°
5/ 5/2018	17	Apogee	404456	0.4924°
5/17/2018	14	Perigee	363777	0.5475°
6/ 2/2018	10	Apogee	405334	0.4913°
6/14/2018	17	Perigee	359507	0.5540°
6/29/2018	20	Apogee	406047	0.4905°
7/13/2018	1	Perigee	357438	0.5572°
7/26/2018	22	Apogee	406199	0.4903°
8/10/2018	11	Perigee	358082	0.5562°
8/23/2018	4	Apogee	405762	0.4908°
9/ 7/2018	18	Perigee	361351	0.5511°
9/19/2018	18	Apogee	404876	0.4919°
10/ 5/2018	16	Perigee	366399	0.5436°
10/17/2018	12	Apogee	404215	0.4927°
10/31/2018	13	Perigee	370226	0.5379°
11/14/2018	9	Apogee	404345	0.4925°
11/26/2018	5	Perigee	366606	0.5432°
12/12/2018	5	Apogee	405181	0.4915°
12/24/2018	3	Perigee	361050	0.5516°

Moon Nodes Report for 1/ 1/2018 to 12/31/2018

Date	Time	Node	Illuminated Fraction
1/ 4/2018	0:47	Ascending	0.94
1/18/2018	7:27	Descending	0.01
1/31/2018	11:45	Ascending	1.00
2/14/2018	14:10	Descending	0.02
2/27/2018	22:02	Ascending	0.94
3/13/2018	20:47	Descending	0.13
3/27/2018	3:55	Ascending	0.77
4/10/2018	1:08	Descending	0.34
4/23/2018	5:19	Ascending	0.54
5/ 7/2018	3:23	Descending	0.59
5/20/2018	6:12	Ascending	0.29
6/ 3/2018	5:38	Descending	0.81
6/16/2018	10:49	Ascending	0.10
6/30/2018	9:43	Descending	0.96
7/13/2018	19:49	Ascending	0.01
7/27/2018	15:39	Descending	1.00
8/10/2018	6:39	Ascending	0.02
8/23/2018	21:50	Descending	0.94
9/ 6/2018	15:41	Ascending	0.13
9/20/2018	2:29	Descending	0.78
10/ 3/2018	20:09	Ascending	0.34
10/17/2018	5:02	Descending	0.54
10/30/2018	20:45	Ascending	0.60
11/13/2018	7:03	Descending	0.29
11/26/2018	22:17	Ascending	0.83
12/10/2018	10:56	Descending	0.09
12/24/2018	4:53	Ascending	0.97

Meteor Showers Report for 1/ 1/2018 to 12/31/2018

Date	Meteor Shower	ZHR	RA	DEC	Illum. Frac.	Longitude
1/ 3/2018	Quadrantids	80	15h28m	50°	0.96	283°
4/11/2018	Virginids	5	14h04m	-9°	0.20	22°
4/22/2018	Lyrids	12	18h08m	32°	0.48	33°
4/28/2018	alpha-Scorpiids	5	16h32m	-24°	0.98	38°
5/ 5/2018	eta-Aquarids	35	22h20m	-1°	0.72	45°
5/12/2018	alpha-Scorpiids	5	16h04m	-24°	0.10	52°
6/ 9/2018	Ophiuchids	5	17h56m	-23°	0.22	79°
6/20/2018	Ophiuchids	5	17h20m	-20°	0.53	89°
7/ 7/2018	Capricornids	5			0.36	106°
7/15/2018	Capricornids	5	20h44m	-15°	0.10	113°
7/20/2018	alpha-Cygnids	5	21h00m	48°	0.59	118°
7/25/2018	Capricornids	5	21h00m	-15°	0.96	123°
7/28/2018	delta-Aquarids	20	22h36m	-17°	0.99	126°
7/31/2018	Piscis Australids	5	22h40m	-30°	0.87	128°
8/ 2/2018	alpha-Capricornids	5	20h36m	-10°	0.71	130°
8/ 6/2018	iota-Aquarids	8	22h10m	-15°	0.29	134°
8/12/2018	Perseids	75	3h04m	58°	0.03	140°
8/20/2018	alpha-Cygnids	5	21h00m	48°	0.73	148°
9/ 8/2018	Piscids	10	0h36m	7°	0.02	166°
9/20/2018	Piscids	5	0h24m	0°	0.83	178°
10/13/2018	Piscids	??	1h44m	14°	0.22	200°
10/22/2018	Orionids	25	6h24m	15°	0.96	209°
11/ 3/2018	Taurids	8	3h44m	14°	0.18	221°
11/17/2018	Leonids	10	10h08m	22°	0.70	235°
12/ 8/2018	Puppids-Velids	15	9h00m	-48°	0.02	257°
12/13/2018	Geminids	75	7h28m	32°	0.33	262°
12/22/2018	Ursids	5	14h28m	78°	1.00	271°
12/25/2018	Puppids-Velids	15	9h20m	-65°	0.88	274°

Twilight Report for 1/ 1/2018 to 12/31/2018

Date	Sun		Astronomical		Nautical		Civil	
	Rise	Set	Begin	End	Begin	End	Begin	End
1/ 1/2018	7:49	17:10	6:07	18:53	6:40	18:20	7:14	17:46
1/ 8/2018	7:49	17:17	6:07	18:59	6:40	18:26	7:14	17:52
1/15/2018	7:47	17:24	6:06	19:05	6:39	18:32	7:12	17:59
1/22/2018	7:43	17:32	6:04	19:12	6:36	18:40	7:09	18:06
1/29/2018	7:38	17:41	6:00	19:19	6:32	18:47	7:04	18:14
2/ 5/2018	7:31	17:49	5:54	19:26	6:26	18:55	6:58	18:22
2/12/2018	7:23	17:58	5:47	19:34	6:18	19:02	6:50	18:30
2/19/2018	7:14	18:06	5:39	19:41	6:10	19:10	6:42	18:38
2/26/2018	7:04	18:14	5:29	19:49	6:01	19:18	6:32	18:46
3/ 5/2018	6:53	18:22	5:19	19:57	5:50	19:25	6:22	18:54
3/12/2018	6:42	18:30	5:07	20:05	5:39	19:33	6:11	19:01
3/19/2018	6:31	18:37	4:55	20:13	5:28	19:40	5:59	19:09
3/26/2018	6:19	18:44	4:43	20:21	5:16	19:48	5:48	19:16
4/ 2/2018	6:08	18:52	4:30	20:30	5:03	19:56	5:36	19:24
4/ 9/2018	5:57	18:59	4:17	20:39	4:51	20:04	5:24	19:31
4/16/2018	5:46	19:06	4:03	20:49	4:39	20:13	5:13	19:39
4/23/2018	5:36	19:14	3:50	20:59	4:27	20:22	5:02	19:47
4/30/2018	5:26	19:21	3:38	21:09	4:16	20:31	4:52	19:55
5/ 7/2018	5:18	19:28	3:25	21:20	4:06	20:40	4:43	20:03
5/14/2018	5:10	19:35	3:14	21:31	3:56	20:49	4:35	20:11
5/21/2018	5:04	19:41	3:04	21:41	3:48	20:57	4:28	20:18
5/28/2018	5:00	19:47	2:56	21:51	3:42	21:05	4:22	20:24
6/ 4/2018	4:56	19:52	2:50	21:59	3:37	21:11	4:19	20:30

Midway, UT (JMC) Latitude: 40°30'43" N Longitude: 111°28'40" W  
Local Time = UT - 7.00 hours Elevation: 1706 meters Year 2018

Page 27

6/11/2018	4:55	19:56	2:46	22:06	3:35	21:17	4:17	20:35
6/18/2018	4:55	19:59	2:45	22:10	3:35	21:20	4:17	20:38
6/25/2018	4:57	20:00	2:47	22:11	3:36	21:21	4:18	20:39
7/ 2/2018	5:00	20:00	2:51	22:09	3:40	21:20	4:22	20:38
7/ 9/2018	5:04	19:58	2:58	22:04	3:45	21:17	4:26	20:36
7/16/2018	5:09	19:55	3:06	21:58	3:52	21:12	4:32	20:32
7/23/2018	5:15	19:49	3:16	21:49	4:00	21:05	4:39	20:26
7/30/2018	5:21	19:43	3:26	21:38	4:08	20:56	4:46	20:18
8/ 6/2018	5:28	19:35	3:36	21:27	4:16	20:47	4:53	20:10
8/13/2018	5:35	19:26	3:47	21:14	4:25	20:36	5:01	20:00
8/20/2018	5:42	19:16	3:57	21:01	4:34	20:24	5:08	19:50
8/27/2018	5:48	19:06	4:06	20:48	4:42	20:12	5:16	19:38
9/ 3/2018	5:55	18:54	4:15	20:34	4:50	20:00	5:23	19:27
9/10/2018	6:02	18:43	4:24	20:21	4:58	19:47	5:30	19:15
9/17/2018	6:09	18:31	4:32	20:08	5:05	19:35	5:37	19:03
9/24/2018	6:16	18:20	4:40	19:55	5:12	19:23	5:44	18:51
10/ 1/2018	6:22	18:08	4:48	19:43	5:19	19:11	5:51	18:39
10/ 8/2018	6:30	17:57	4:55	19:31	5:26	19:00	5:58	18:28
10/15/2018	6:37	17:46	5:02	19:21	5:34	18:49	6:05	18:18
10/22/2018	6:45	17:35	5:09	19:11	5:41	18:39	6:12	18:08
10/29/2018	6:53	17:26	5:16	19:02	5:48	18:31	6:20	17:59
11/ 5/2018	7:01	17:18	5:23	18:55	5:55	18:23	6:28	17:51
11/12/2018	7:09	17:11	5:30	18:49	6:02	18:17	6:35	17:45
11/19/2018	7:17	17:05	5:37	18:45	6:10	18:13	6:43	17:40
11/26/2018	7:25	17:01	5:44	18:42	6:16	18:10	6:50	17:36
12/ 3/2018	7:32	16:59	5:50	18:41	6:23	18:08	6:57	17:35
12/10/2018	7:38	16:59	5:56	18:42	6:29	18:09	7:03	17:35
12/17/2018	7:44	17:01	6:00	18:44	6:33	18:11	7:08	17:37
12/24/2018	7:47	17:04	6:04	18:47	6:37	18:14	7:11	17:40
12/31/2018	7:49	17:09	6:06	18:52	6:39	18:19	7:13	17:45