

All times and dates are in MST. Add 1 hour on days marked with an asterisk if MDT is needed.

Moon's illumination at midnight and its elevation and the magnitude and elevation of each visible planet at the specified times are listed.

Night of	Pct.					Moon elev.	Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.									
01/01/2016 Fri	16:58	23:57	6:56	6:49	50 39.5M		-0.3 8.1E	-4.0 19.2M	1.2 36.0M	-2.2 15.6m 49.8T 40.4M	0.5 14.5M	1	1	4
01/02/2016 Sat	16:59	23:57	6:56	6:54	40 37.2M		-0.2 8.0E	-4.0 18.9M	1.2 35.9M	-2.2 16.4m 49.8T 39.8M	0.5 14.9M	1	1	4
01/03/2016 Sun	17:00	23:58	6:56	6:58	31 33.4M		0.0 7.8E	-4.0 18.6M	1.2 35.7T 35.7M	-2.2 17.2m 49.8T 39.3M	0.5 15.3M	1	1	4
01/04/2016 Mon	17:00	23:58	6:56	7:02	23 28.4M		0.3 7.4E	-4.0 18.2M	1.2 35.5T 35.5M	-2.2 17.9m 49.8T 38.8M	0.5 15.7M	1	1	4
01/05/2016 Tue	17:01	23:59	6:56	7:07	15 22.4M		0.6 6.9E	-4.0 17.9M	1.2 35.3T 35.3M	-2.2 18.7m 49.8T 38.3M	0.6 16.1M	1	1	4
01/06/2016 Wed	17:02	23:59	6:56	7:11	9 15.6M		0.9 6.3E	-4.0 17.6M	1.2 35.1T 35.1M	-2.2 19.5m 49.8T 37.8M	0.6 16.4M	1	1	4
01/07/2016 Thr	17:03	0:00	6:55	7:15	4 8.3M		1.4 5.4E	-4.0 17.3M	1.2 34.9T 34.9M	-2.2 20.2m 49.8T 37.2M	0.6 16.8M	1	1	4
01/08/2016 Fri	17:04	0:00	6:55	7:20	1 1.0M		1.9 4.4E	-4.0 16.9M	1.2 34.7T 34.7M	-2.2 21.0m 49.8T 36.7M	0.6 17.1M	1	1	4
01/09/2016 Sat	17:05	0:00	6:55	7:24	0		2.6 3.3E	-4.0 16.6M	1.1 34.5T 34.5M	-2.2 21.7m 49.8T 36.2M	0.6 17.5M	1	1	4
01/10/2016 Sun	17:06	0:01	6:55	7:29	2 5.2E			-4.0 16.3M	1.1 34.4T 34.3M	-2.2 22.5m 49.8T 35.6M	0.6 17.8M	0	1	4
01/11/2016 Mon	17:08	0:01	6:55	7:33	6 15.0E			-4.0 16.0M	1.1 34.2T 34.1M	-2.2 23.2m 49.8T 35.1M	0.6 18.1M	0	1	4
01/12/2016 Tue	17:09	0:02	6:54	7:37	13 24.8E			-4.0 15.7M	1.1 34.0T 33.9M	-2.2 24.0m 49.8T 34.6M	0.6 18.4M	0	1	4
01/13/2016 Wed	17:10	0:02	6:54	7:42	21 34.1E			-4.0 15.4M	1.1 33.8T 33.7M	-2.3 24.7m 49.8T 34.0M	0.6 18.7M	0	1	4
01/14/2016 Thr	17:11	0:02	6:53	7:46	31 42.3E			-4.0 15.0M	1.1 33.6T 33.5M	-2.3 25.5m 49.8T 33.5M	0.6 19.0M	0	1	4
01/15/2016 Fri	17:12	0:03	6:53	7:50	42 48.6E			-4.0 14.7M	1.1 33.5T 33.3M	-2.3 26.2m 49.8T 33.0M	0.6 19.2M	0	1	4
01/16/2016 Sat	17:13	0:03	6:52	7:54	54 52.0E 6.1m			-4.0 14.4M	1.1 33.3T 33.1M	-2.3 27.0m 49.9T 32.4M	0.6 19.5M	0	1	4
01/17/2016 Sun	17:14	0:03	6:52	7:59	65 51.5E 17.6m			-4.0 14.1M	1.0 33.1T 32.9M	-2.3 27.7m 49.9T 31.9M	0.6 19.8M	0	1	4
01/18/2016 Mon	17:16	0:04	6:51	8:03	75 47.4E 29.0m	2.5 3.2M		-4.0 13.8M	1.0 33.0T 32.7M	-2.3 28.4m 49.9T 31.4M	0.6 20.0M	0	1	5
01/19/2016 Tue	17:17	0:04	6:51	8:07	84 40.7E 39.7m	2.0 4.2M		-4.0 13.5M	1.0 32.8T 32.5M	-2.3 29.2m 49.9T 30.8M	0.6 20.3M	0	1	5
01/20/2016 Wed	17:18	0:04	6:50	8:11	91 32.3E 49.3m	1.6 5.0M		-4.0 13.2M	1.0 32.6T 32.3M	-2.3 29.9m 49.9T 30.3M	0.6 20.5M	0	1	5
01/21/2016 Thr	17:19	0:05	6:49	8:16	96 23.1E 56.9m	1.3 5.7M		-4.0 13.0M	1.0 32.5T 32.1M	-2.3 30.6m 49.9T 29.8M	0.6 20.7M	0	1	5
01/22/2016 Fri	17:20	0:05	6:49	8:20	99 13.4E 61.1m	1.0 6.3M		-4.0 12.7M	1.0 32.3T 31.9M	-2.3 31.3m 50.0T 29.2M	0.6 20.9M	0	1	5
01/23/2016 Sat	17:22	0:05	6:48	8:24	100 3.7E 60.5m 5.3M	0.7 6.8M		-4.0 12.4M	1.0 32.1T 31.7M	-2.3 32.0m 50.0T 28.7M	0.6 21.1M	0	1	5
01/24/2016 Sun	17:23	0:05	6:47	8:28	98 55.7m 11.7M	0.6 7.2M		-3.9 12.1M	0.9 32.0T 31.5M	-2.3 32.7m 50.0T 28.2M	0.6 21.3M	0	1	5
01/25/2016 Mon	17:24	0:06	6:46	8:32	95 48.3m 17.6M	0.4 7.5M		-3.9 11.8M	0.9 31.8T 31.3M	-2.3 33.4m 50.0T 27.6M	0.6 21.5M	0	1	5
01/26/2016 Tue	17:25	0:06	6:46	8:37	90 39.6m 22.8M	0.3 7.7M		-3.9 11.5M	0.9 31.7T 31.1M	-2.3 34.1m 50.1T 27.1M	0.6 21.7M	0	1	5
01/27/2016 Wed	17:27	0:06	6:45	8:41	83 30.4m 27.1M	0.2 7.8M		-3.9 11.3M	0.9 31.5T 31.0M	-2.3 34.8m 50.1T 26.6M	0.6 21.9M	0	1	5
01/28/2016 Thr	17:28	0:06	6:44	8:45	76 21.0m 30.2M	0.1 7.9M		-3.9 11.0M	0.9 31.4T 30.8M	-2.3 35.4m 50.1T 26.1M	0.6 22.1M	0	1	5
01/29/2016 Fri	17:29	0:06	6:43	8:49	67 11.5m 32.2M	0.1 7.9M		-3.9 10.7M	0.9 31.2T 30.6M	-2.4 36.1m 50.2T 25.6M	0.6 22.3M	0	1	5
01/30/2016 Sat	17:31	0:07	6:42	8:53	58 2.1m 32.7M	0.0 7.9M		-3.9 10.5M	0.8 31.1T 30.4M	-2.4 36.8m 50.2T 25.0M	0.6 22.4M	0	1	5
01/31/2016 Sun	17:32	0:07	6:41	8:57	49 31.9M	0.0 7.9M		-3.9 10.2M	0.8 30.9T 30.2M	-2.4 37.4m 50.2T 24.5M	0.6 22.6M	0	1	5
02/01/2016 Mon	17:33	0:07	6:40	9:01	39 29.8M	-0.1 7.8M		-3.9 9.9M	0.8 30.8T 30.1M	-2.4 38.1m 50.3T 24.0M	0.6 22.7M	0	1	5
02/02/2016 Tue	17:34	0:07	6:39	9:05	30 26.3M	-0.1 7.6M		-3.9 9.7M	0.8 30.6T 29.9M	-2.4 38.7m 50.3T 23.5M	0.6 22.9M	0	1	5
02/03/2016 Wed	17:36	0:07	6:38	9:09	21 21.7M	-0.1 7.4M		-3.9 9.4M	0.8 30.5T 29.7M	-2.4 39.3m 50.3T 23.0M	0.6 23.0M	0	1	5
02/04/2016 Thr	17:37	0:07	6:36	9:13	13 16.2M	-0.1 7.3M		-3.9 9.2M	0.8 30.4T 29.5M	-2.4 39.9m 50.4T 22.5M	0.6 23.1M	0	1	5
02/05/2016 Fri	17:38	0:07	6:35	9:17	7 9.9M	-0.1 7.0M		-3.9 8.9M	0.7 30.2T 29.4M	-2.4 40.5m 50.4T 22.0M	0.6 23.2M	0	1	5
02/06/2016 Sat	17:40	0:07	6:34	9:21	2 3.2M	-0.1 6.8M		-3.9 8.7M	0.7 30.1T 29.2M	-2.4 41.1m 50.4T 21.5M	0.6 23.4M	0	1	5
02/07/2016 Sun	17:41	0:07	6:33	9:25	0	-0.1 6.6M		-3.9 8.4M	0.7 29.9T 29.0M	-2.4 41.7m 50.5T 21.0M	0.6 23.5M	0	1	5
02/08/2016 Mon	17:42	0:07	6:32	9:29	1	-0.1 6.3M		-3.9 8.2M	0.7 29.8T 28.9M	-2.4 42.3m 50.5T 20.5M	0.6 23.6M	0	1	5
02/09/2016 Tue	17:44	0:07	6:30	9:33	4 10.9E	-0.1 6.0M		-3.9 8.0M	0.7 29.7T 28.7M	-2.4 42.8m 50.6T 20.0M	0.6 23.7M	0	1	5
02/10/2016 Wed	17:45	0:07	6:29	9:37	10 22.5E	-0.1 5.8M		-3.9 7.7M	0.7 29.5T 28.6M	-2.4 43.4m 50.6T 19.5M	0.6 23.8M	0	1	5
02/11/2016 Thr	17:46	0:07	6:28	9:41	18 33.8E	-0.1 5.5M		-3.9 7.5M	0.6 29.4T 28.4M	-2.4 43.9m 50.6T 19.0M	0.6 23.9M	0	1	5
02/12/2016 Fri	17:48	0:07	6:26	9:45	28 44.4E	-0.1 5.2M		-3.9 7.3M	0.6 29.3T 28.2M	-2.4 44.4m 50.7T 18.5M	0.6 24.0M	0	1	5
02/13/2016 Sat	17:49	0:07	6:25	9:49	39 53.2E	-0.1 4.9M		-3.9 7.0M	0.6 29.2T 28.1M	-2.4 45.0m 50.7T 18.0M	0.6 24.1M	0	1	5
02/14/2016 Sun	17:50	0:07	6:24	9:53	50 59.2E 6.6m	-0.1 4.6M		-3.9 6.8M	0.6 29.1T 27.9M	-2.4 45.5m 50.8T 17.5M	0.5 24.1M	0	1	5
02/15/2016 Mon	17:52	0:07	6:22	9:57	61 60.5E 17.4m	-0.1 4.3M		-3.9 6.6M	0.6 28.9T 27.8M	-2.4 45.9m 50.8T 17.0M	0.5 24.2M	0	1	5
02/16/2016 Tue	17:53	0:07	6:21	10:01	71 57.0E 27.7m	-0.1 4.0M		-3.9 6.4M	0.5 28.8T 27.6M	-2.4 46.4m 50.9T 16.5M	0.5 24.3M	0	1	5
02/17/2016 Wed	17:54	0:07	6:19	10:05	80 50.0E 37.2m	-0.1 3.6M		-3.9 6.2M	0.5 28.7T 27.5M	-2.4 46.8m 50.9T 16.1M	0.5 24.4M	0	1	5
02/18/2016 Thr	17:55	0:07	6:18	10:09	88 41.3E 45.5m	-0.1 3.3M		-3.9 6.0M	0.5 28.6T 27.4M	-2.4 47.3m 51.0T 15.6M	0.5 24.4M	0	1	5

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar Illum.								
02/19/2016 Fri	17:57	0:07	6:16	10:12	94 31.7E 51.8m	-0.1 3.0M	-3.9 5.8M	0.5 28.5T 27.2M	-2.5 47.7m 51.0T 15.1M	0.5 24.5M	0	1	5
02/20/2016 Sat	17:58	0:07	6:15	10:16	98 21.8E 55.3m		-3.9 5.6M	0.5 28.4T 27.1M	-2.5 48.1m 51.1T 14.6M	0.5 24.5M	0	1	4
02/21/2016 Sun	17:59	0:07	6:13	10:20	100 11.7E 55.2m 2.6M		-3.9 5.4M	0.4 28.2T 26.9M	-2.5 48.5m 51.1T 14.2M	0.5 24.6M	0	1	4
02/22/2016 Mon	18:01	0:07	6:12	10:24	100 1.9E 51.9m 8.1M		-3.9 5.2M	0.4 28.1T 26.8M	-2.5 48.8m 51.2T 13.7M	0.5 24.6M	0	1	4
02/23/2016 Tue	18:02	0:06	6:10	10:28	98 46.1m 13.3M		-3.9 5.0M	0.4 28.0T 26.7M	-2.5 49.2m 51.2T 13.2M	0.5 24.7M	0	1	4
02/24/2016 Wed	18:03	0:06	6:09	10:32	94 38.8m 18.0M		-3.9 4.8M	0.4 27.9T 26.5M	-2.5 49.5m 51.3T 12.8M	0.5 24.7M	0	1	4
02/25/2016 Thr	18:05	0:06	6:07	10:35	89 30.7m 22.1M		-3.9 4.6M	0.4 27.8T 26.4M	-2.5 49.8m 51.3T 12.3M	0.5 24.8M	0	1	4
02/26/2016 Fri	18:06	0:06	6:05	10:39	82 22.1m 25.3M		-3.9 4.4M	0.3 27.7T 26.3M	-2.5 50.1m 51.4T 11.9M	0.5 24.8M	0	1	4
02/27/2016 Sat	18:07	0:06	6:04	10:43	75 13.2m 27.5M		-3.9 4.2M	0.3 27.6T 26.1M	-2.5 50.4m 51.4T 11.4M	0.5 24.8M	0	1	4
02/28/2016 Sun	18:08	0:06	6:02	10:47	66 4.3m 28.6M		-3.9 4.1M	0.3 27.5T 26.0M	-2.5 50.6m 51.5T 10.9M	0.5 24.8M	0	1	4
02/29/2016 Mon	18:10	0:05	6:01	10:50	57 28.5M		-3.9 3.9M	0.3 27.4T 25.9M	-2.5 50.9m 51.5T 10.5M	0.5 24.9M	0	1	4
03/01/2016 Tue	18:11	0:05	5:59	10:54	47 27.1M		-3.9 3.7M	0.2 27.3T 25.8M	-2.5 51.1m 51.6T 10.0M	0.5 24.9M	0	1	4
03/02/2016 Wed	18:12	0:05	5:57	10:58	37 24.5M		-3.8 3.5M	0.2 27.3T 25.6M	-2.5 51.3m 51.6T 9.6M	0.5 24.9M	0	1	4
03/03/2016 Thr	18:13	0:05	5:55	11:02	27 20.7M		-3.8 3.4M	0.2 27.2T 25.5M	-2.5 51.4m 51.7T 9.1M	0.5 24.9M	0	1	4
03/04/2016 Fri	18:15	0:05	5:54	11:05	18 15.9M		-3.8 3.2M	0.2 27.1T 25.4M	-2.5 3.1E 51.6m 51.7T 8.7M	0.5 24.9M	1	1	4
03/05/2016 Sat	18:16	0:04	5:52	11:09	11 10.1M		-3.8 3.0M	0.2 27.0T 25.3M	-2.5 4.1E 51.7m 51.8T 8.3M	0.5 24.9M	1	1	4
03/06/2016 Sun	18:17	0:04	5:50	11:13	5 3.9M			0.1 26.9T 25.2M	-2.5 5.2E 51.8m 51.8T 7.8M	0.5 24.9M	1	1	3
03/07/2016 Mon	18:19	0:04	5:49	11:16	1			0.1 26.8T 25.0M	-2.5 6.2E 51.9m 51.9T 7.4M	0.5 24.9T 24.9M	1	1	3
03/08/2016 Tue	18:20	0:04	5:47	11:20	0			0.1 26.7T 24.9M	-2.5 7.2E 51.9m 51.9T 7.0M	0.5 24.9T 24.9M	1	1	3
03/09/2016 Wed	18:21	0:03	5:45	11:24	2 5.6E			0.1 26.7T 24.8M	-2.5 8.3E 52.0m 52.0T 6.5M	0.5 24.9T 24.9M	1	1	3
03/10/2016 Thr	18:22	0:03	5:43	11:27	7 18.1E			0.0 26.6T 24.7M	-2.5 9.3E 52.0m 52.0T 6.1M	0.5 24.9T 24.9M	1	1	3
03/11/2016 Fri	18:24	0:03	5:41	11:31	15 30.3E			0.0 26.5T 24.6M	-2.5 10.4E 52.0m 52.1T 5.7M	0.5 24.9T 24.9M	1	1	3
03/12/2016 Sat	18:25	0:03	5:40	11:35	24 41.8E			0.0 26.4T 24.4M	-2.5 11.4E 51.9m 52.1T 5.2M	0.5 24.9T 24.9M	1	1	3
03/13/2016 Sun*	18:26	0:02	5:38	11:38	35 52.0E			0.0 26.3T 24.3M	-2.5 12.5E 51.9m 52.2T 4.8M	0.5 24.9T 24.8M	1	1	3
03/14/2016 Mon*	18:27	0:02	5:36	11:42	46 59.9E 7.1m			-0.1 26.3T 24.2M	-2.5 13.5E 51.8m 52.2T 4.4M	0.5 24.9T 24.8M	1	1	3
03/15/2016 Tue*	18:29	0:02	5:34	11:46	56 63.6E 16.7m			-0.1 3.0m 26.2T 24.1M	-2.5 14.5E 51.7m 52.3T 4.0M	0.5 24.9T 24.8M	1	2	3
03/16/2016 Wed*	18:30	0:01	5:32	11:49	67 62.0E 25.6m			-0.1 3.3m 26.1T 24.0M	-2.5 15.6E 51.6m 52.3T 3.6M	0.5 24.9T 24.8M	1	2	3
03/17/2016 Thr*	18:31	0:01	5:31	11:53	76 56.2E 33.6m			-0.1 3.6m 26.1T 23.9M	-2.5 16.6E 51.5m 52.4T 3.2M	0.4 24.9T 24.7M	1	2	3
03/18/2016 Fri*	18:32	0:01	5:29	11:57	84 48.1E 40.3m			-0.2 3.9m 26.0T 23.7M	-2.5 17.7E 51.3m 52.4T	0.4 24.9T 24.7M	1	2	2
03/19/2016 Sat*	18:34	0:01	5:27	12:00	91 38.9E 45.2m			-0.2 4.2m 25.9T 23.6M	-2.5 18.7E 51.1m 52.5T	0.4 24.9T 24.7M	1	2	2
03/20/2016 Sun*	18:35	0:00	5:25	12:04	96 29.3E 47.9m			-0.2 4.6m 25.9T 23.5M	-2.5 19.7E 50.9m 52.5T	0.4 24.9T 24.6M	1	2	2
03/21/2016 Mon*	18:36	0:00	5:23	12:08	99 19.6E 48.0m 1.3M			-0.3 4.9m 25.8T 23.4M	-2.5 20.8E 50.7m 52.6T	0.4 24.9T 24.6M	1	2	2
03/22/2016 Tue*	18:37	0:00	5:21	12:11	100 9.8E 45.7m 6.2M			-0.3 5.2m 25.7T 23.3M	-2.5 21.8E 50.5m 52.6T	0.4 24.9T 24.5M	1	2	2
03/23/2016 Wed*	18:39	23:59	5:19	12:15	99 0.4E 41.3m 11.1M			-0.3 5.5m 25.7T 23.1M	-2.5 22.8E 50.2m 52.7T	0.4 24.9T 24.5M	1	2	2
03/24/2016 Thr*	18:40	23:59	5:18	12:19	97 35.5m 15.6M			-0.3 5.9m 25.6T 23.0M	-2.5 23.8E 49.9m 52.7T	0.4 24.9T 24.4M	1	2	2
03/25/2016 Fri*	18:41	23:59	5:16	12:22	93 28.7m 19.6M			-0.4 6.2m 25.6T 22.9M	-2.4 24.8E 49.6m 52.8T	0.4 24.9T 24.3M	1	2	2
03/26/2016 Sat*	18:42	23:58	5:14	12:26	88 21.2m 22.9M			-0.4 6.5m 25.5T 22.8M	-2.4 25.8E 49.3m 52.8T	0.4 24.9T 24.3M	1	2	2
03/27/2016 Sun*	18:44	23:58	5:12	12:29	81 13.4m 25.3M			-0.4 6.9m 25.4T 22.6M	-2.4 26.8E 49.0m 52.8T	0.4 24.9T 24.2M	1	2	2
03/28/2016 Mon*	18:45	23:58	5:10	12:33	73 5.3m 26.7M			-0.5 7.2m 25.4T 22.5M	-2.4 27.8E 48.7m 52.9T	0.4 24.9T 24.1M	1	2	2
03/29/2016 Tue*	18:46	23:58	5:08	12:37	64 26.9M			-0.5 7.6m 25.3T 22.4M	-2.4 28.8E 48.3m 52.9T	0.4 24.9T 24.1M	1	2	2
03/30/2016 Wed*	18:47	23:57	5:06	12:40	54 26.0M			-0.5 7.9m 25.3T 22.2M	-2.4 29.8E 47.9m 53.0T	0.4 24.9T 24.0M	1	2	2
03/31/2016 Thr*	18:49	23:57	5:05	12:44	43 23.7M			-0.5 8.3m 25.2T 22.1M	-2.4 30.7E 47.5m 53.0T	0.4 24.9T 23.9M	1	2	2
04/01/2016 Fri*	18:50	23:57	5:03	12:48	33 20.2M	-1.4 3.3E		-0.6 8.6m 25.2T 21.9M	-2.4 31.7E 47.1m 53.0T	0.4 3.1m 25.0T 23.8M	2	3	2
04/02/2016 Sat*	18:51	23:56	5:01	12:51	23 15.7M	-1.4 4.2E		-0.6 9.0m 25.1T 21.8M	-2.4 32.6E 46.7m 53.1T	0.4 3.7m 25.0T 23.7M	2	3	2
04/03/2016 Sun*	18:53	23:56	4:59	12:55	14 10.2M	-1.3 5.2E		-0.6 9.4m 25.1T 21.7M	-2.4 33.6E 46.3m 53.1T	0.4 4.2m 25.0T 23.6M	2	3	2
04/04/2016 Mon*	18:54	23:56	4:57	12:59	7 4.1M	-1.2 6.1E		-0.7 9.7m 25.0T 21.5M	-2.4 34.5E 45.8m 53.2T	0.4 4.7m 25.0T 23.5M	2	3	2
04/05/2016 Tue*	18:55	23:56	4:55	13:02	2	-1.2 7.0E		-0.7 10.1m 25.0T 21.3M	-2.4 35.4E 45.4m 53.2T	0.4 5.3m 25.0T 23.4M	2	3	2
04/06/2016 Wed*	18:56	23:55	4:53	13:06	0	-1.1 7.8E		-0.7 10.5m 25.0T 21.2M	-2.4 36.3E 44.9m 53.2T	0.3 5.8m 25.0T 23.3M	2	3	2
04/07/2016 Thr*	18:58	23:55	4:52	13:10	1 0.3E	-1.0 8.7E		-0.7 10.9m 24.9T 21.0M	-2.4 37.2E 44.4m 53.3T	0.3 6.3m 25.0T 23.2M	2	3	2
04/08/2016 Fri*	18:59	23:55	4:50	13:13	5 12.3E	-0.9 9.4E		-0.8 11.2m 24.9T 20.8M	-2.4 38.1E 44.0m 53.3T	0.3 6.9m 25.0T 23.1M	2	3	2
04/09/2016 Sat*	19:00	23:54	4:48	13:17	12 24.4E	-0.9 10.1E		-0.8 11.6m 24.8T 20.7M	-2.4 39.0E 43.5m 53.3T	0.3 7.4m 25.0T 23.0M	2	3	2
04/10/2016 Sun*	19:02	23:54	4:46	13:21	20 35.7E	-0.8 10.7E		-0.8 12.0m 24.8T 20.5M	-2.4 39.8E 42.9m 53.4T	0.3 7.9m 25.0T 22.9M	2	3	2

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.								
04/11/2016 Mon*	19:03	23:54	4:44	13:24	30 45.9E	-0.7 11.3E	-0.9 12.4m 24.8T 20.3M	-2.4 40.6E 42.4m 53.4T	0.3 8.4m 25.0T 22.8M	2	3	2	
04/12/2016 Tue*	19:04	23:54	4:43	13:28	41 54.1E 5.8m	-0.6 11.8E	-0.9 12.8m 24.7T 20.1M	-2.4 41.5E 41.9m 53.4T	0.3 9.0m 25.0T 22.6M	2	3	2	
04/13/2016 Wed*	19:05	23:53	4:41	13:32	51 59.2E 13.8m	-0.5 12.2E	-0.9 13.2m 24.7T 19.9M	-2.4 42.3E 41.4m 53.4T	0.3 9.5m 25.0T 22.5M	2	3	2	
04/14/2016 Thr*	19:07	23:53	4:39	13:35	62 60.3E 21.2m	-0.4 12.5E	-1.0 13.6m 24.6T 19.7M	-2.4 43.0E 40.8m 53.5T	0.3 10.0m 25.0T 22.4M	2	3	2	
04/15/2016 Fri*	19:08	23:53	4:37	13:39	71 57.2E 27.6m	-0.3 12.8E	-1.0 14.0m 24.6T 19.5M	-2.3 43.8E 40.2m 53.5T	0.3 10.5m 25.0T 22.2M	2	3	2	
04/16/2016 Sat*	19:09	23:53	4:36	13:43	80 51.3E 33.0m	-0.1 13.0E	-1.0 14.4m 24.6T 19.3M	-2.3 44.5E 39.7m 53.5T	0.3 11.0m 25.0T 22.1M	2	3	2	
04/17/2016 Sun*	19:11	23:52	4:34	13:47	87 43.6E 37.0m	0.0 13.0E	-1.1 14.8m 24.5T 19.1M	-2.3 45.3E 39.1m 53.5T	0.3 11.5m 25.0T 21.9M	2	3	2	
04/18/2016 Mon*	19:12	23:52	4:32	13:50	92 35.2E 39.3m	0.2 13.0E	-1.1 15.2m 24.5T 18.8M	-2.3 46.0E 38.5m 53.6T	0.3 12.0m 25.0T 21.8M	2	3	2	
04/19/2016 Tue*	19:13	23:52	4:30	13:54	97 26.3E 39.9m	0.3 12.9E	-1.1 15.6m 24.5T 18.6M	-2.3 46.6E 37.9m 53.6T	0.3 12.5m 25.0T 21.6M	2	3	2	
04/20/2016 Wed*	19:15	23:52	4:29	13:58	99 17.1E 38.7m 4.7M	0.5 12.7E	-1.2 16.0m 24.5T 18.3M	-2.3 47.3E 37.3m 53.6T	0.3 13.0m 25.0T 21.4M	2	3	2	
04/21/2016 Thr*	19:16	23:52	4:27	14:02	100 7.9E 35.8m 9.5M	0.7 12.4E	-1.2 16.3m 24.4T 18.1M	-2.3 47.9E 36.7m 53.6T	0.3 13.4m 25.0T 21.2M	2	3	2	
04/22/2016 Fri*	19:17	23:51	4:25	14:05	99 31.6m 14.1M	0.9 12.0E	-1.2 16.7m 24.4T 17.8M	-2.3 48.5E 36.1m 53.6T	0.2 13.9m 25.0T 21.1M	2	3	2	
04/23/2016 Sat*	19:18	23:51	4:24	14:09	96 26.4m 18.3M	1.1 11.6E	-1.3 17.1m 24.4T 17.5M	-2.3 49.1E 35.5m 53.7T	0.2 14.4m 25.1T 20.9M	2	3	2	
04/24/2016 Sun*	19:20	23:51	4:22	14:13	92 20.4m 21.9M	1.3 11.0E	-1.3 17.5m 24.3T 17.2M	-2.3 49.6E 34.9m 53.7T	0.2 14.8m 25.1T 20.7M	2	3	2	
04/25/2016 Mon*	19:21	23:51	4:20	14:17	85 13.8m 24.7M	1.6 10.3E	-1.3 17.9m 24.3T 17.0M	-2.3 50.1E 34.3m 53.7T	0.2 15.3m 25.1T 20.5M	2	3	2	
04/26/2016 Tue*	19:22	23:51	4:19	14:20	78 7.0m 26.5M	1.9 9.6E	-1.4 18.3m 24.3T 16.6M	-2.3 50.6E 33.7m 53.7T	0.2 15.7m 25.1T 20.3M	2	3	2	
04/27/2016 Wed*	19:24	23:51	4:17	14:24	69 0.2m 27.1M	2.2 8.7E	-1.4 18.6m 24.3T 16.3M	-2.3 51.1E 33.0m 53.7T	0.2 16.2m 25.1T 20.1M	2	3	2	
04/28/2016 Thr*	19:25	23:51	4:15	14:28	59 26.5M	2.5 7.8E	-1.4 19.0m 24.3T 16.0M	-2.3 51.5E 32.4m 53.7T	0.2 16.6m 25.1T 19.9M	2	3	2	
04/29/2016 Fri*	19:26	23:50	4:14	14:32	49 24.5M	2.8 6.8E	-1.5 19.4m 24.2T 15.7M	-2.3 51.9E 31.7m 53.7T	0.2 17.1m 25.1T 19.7M	2	3	2	
04/30/2016 Sat*	19:28	23:50	4:12	14:36	38 21.2M	3.1 5.7E	-1.5 19.7m 24.2T 15.3M	-2.3 52.2E 31.1m 53.7T	0.2 17.5m 25.1T 19.4M	2	3	2	
05/01/2016 Sun*	19:29	23:50	4:11	14:39	27 16.7M	3.5 4.6E	-1.5 20.1m 24.2T 15.0M	-2.3 52.5E 30.4m 53.7T	0.2 17.9m 25.1T 19.2M	2	3	2	
05/02/2016 Mon*	19:30	23:50	4:09	14:43	18 11.2M	3.9 3.4E	-1.5 20.4m 24.2T 14.6M	-2.2 52.8E 29.8m 53.7T	0.2 18.3m 25.1T 19.0M	2	3	2	
05/03/2016 Tue*	19:32	23:50	4:08	14:47	9 5.0M		-1.6 20.8m 24.2T 14.2M	-2.2 53.1E 29.1m 53.7T	0.2 18.7m 25.1T 18.7M	1	3	2	
05/04/2016 Wed*	19:33	23:50	4:06	14:51	4		-1.6 21.1m 24.2T 13.8M	-2.2 53.3E 28.5m 53.7T	0.2 19.1m 25.1T 18.5M	1	3	2	
05/05/2016 Thr*	19:34	23:50	4:05	14:55	1		-1.6 21.4m 24.2T 13.4M	-2.2 53.4E 27.8m 53.7T	0.2 19.5m 25.1T 18.2M	1	3	2	
05/06/2016 Fri*	19:36	23:50	4:03	14:59	1		-1.7 21.7m 24.2T 13.0M	-2.2 53.6E 27.1m 53.7T	0.2 19.8m 25.1T 17.9M	1	3	2	
05/07/2016 Sat*	19:37	23:50	4:02	15:03	3 5.7E		-1.7 22.0m 24.2T 12.5M	-2.2 53.7E 26.4m 53.7T	0.2 20.2m 25.1T 17.7M	1	3	2	
05/08/2016 Sun*	19:38	23:50	4:01	15:07	9 16.6E		-1.7 22.3m 24.2T 12.1M	-2.2 53.7E 25.8m 53.7T	0.1 20.6m 25.2T 17.4M	1	3	2	
05/09/2016 Mon*	19:39	23:50	3:59	15:10	17 26.7E		-1.8 22.5m 24.2T 11.6M	-2.2 53.7E 25.1m 53.7T	0.1 20.9m 25.2T 17.1M	1	3	2	
05/10/2016 Tue*	19:41	23:50	3:58	15:14	26 35.8E		-1.8 22.8m 24.2T 11.1M	-2.2 53.7E 24.4m	0.1 21.2m 25.2T 16.8M	1	3	2	
05/11/2016 Wed*	19:42	23:50	3:57	15:18	36 43.3E 1.2m		-1.8 23.0m 24.2T 10.7M	-2.2 53.7E 23.7m	0.1 21.5m 25.2T 16.5M	1	3	2	
05/12/2016 Thr*	19:43	23:50	3:55	15:22	46 48.6E 7.4m		-1.8 23.2m 24.2T 10.1M	-2.2 53.6E 23.0m	0.1 21.9m 25.2T 16.2M	1	3	2	
05/13/2016 Fri*	19:44	23:50	3:54	15:26	56 51.4E 13.4m		-1.9 23.4m 24.2T 9.6M	-2.2 53.5E 22.3m	0.1 22.2m 25.2T 15.9M	1	3	2	
05/14/2016 Sat*	19:46	23:50	3:53	15:30	65 51.2E 18.7m		-1.9 23.6m 24.2T 9.1M	-2.2 53.3E 21.6m	0.1 22.4m 25.2T 15.5M	1	3	2	
05/15/2016 Sun*	19:47	23:50	3:52	15:34	74 48.5E 23.3m		-1.9 23.8m 24.2T 8.6M	-2.2 53.1E 20.9m	0.1 22.7m 25.2T 15.2M	1	3	2	
05/16/2016 Mon*	19:48	23:50	3:51	15:38	82 43.6E 27.0m		-1.9 23.9m 24.2T 8.0M	-2.1 52.9E 20.2m	0.1 23.0m 25.2T 14.8M	1	3	2	
05/17/2016 Tue*	19:49	23:50	3:50	15:42	89 37.4E 29.7m		-2.0 24.0m 24.2T 7.5M	-2.1 52.6E 19.5m	0.1 23.2m 25.2T 14.5M	1	3	2	
05/18/2016 Wed*	19:50	23:50	3:49	15:46	94 30.3E 31.2m		-2.0 24.1m 24.2T 6.9M	-2.1 52.3E 18.8m	0.1 23.5m 25.2T 14.1M	1	3	2	
05/19/2016 Thr*	19:52	23:50	3:47	15:50	98 22.6E 31.5m 1.9M		-2.0 3.1E 24.2m 24.2T 6.3M	-2.1 52.0E 18.1m	0.1 23.7m 25.2T 13.8M	2	3	2	
05/20/2016 Fri*	19:53	23:50	3:46	15:54	100 14.5E 30.6m 7.1M		-2.0 4.1E 24.2m 24.3T 5.7M	-2.1 51.7E 17.4m	0.1 23.9m 25.2T 13.4M	2	3	2	
05/21/2016 Sat*	19:54	23:50	3:45	15:58	100 6.3E 28.4m 12.3M		-2.1 5.0E 24.3m 24.3T 5.1M	-2.1 51.3E 16.7m	0.1 24.1m 25.3T 13.0M	2	3	2	
05/22/2016 Sun*	19:55	23:50	3:44	16:02	98 25.2m 17.3M		-2.1 6.0E 24.3m 24.3T 4.5M	-2.1 50.9E 16.0m	0.1 24.3m 25.3T 12.6M	2	3	2	
05/23/2016 Mon*	19:56	23:50	3:44	16:06	94 21.1m 21.8M		-2.1 6.9E 24.3m 24.3T 3.8M	-2.1 50.5E 15.3m	0.1 24.5m 25.3T 12.2M	2	3	2	
05/24/2016 Tue*	19:57	23:50	3:43	16:10	89 16.3m 25.5M		-2.1 7.8E 24.2m 24.3T 3.2M	-2.1 50.1E 14.6m	0.1 24.6m 25.3T 11.8M	2	3	2	
05/25/2016 Wed*	19:58	23:50	3:42	16:14	82 10.9m 28.3M		-2.0 8.7E 24.2m 24.4T	-2.1 49.6E 13.9m	0.0 24.8m 25.3T 11.3M	2	3	1	
05/26/2016 Thr*	19:59	23:50	3:41	16:18	73 5.2m 29.8M		-2.0 9.6E 24.1m 24.4T	-2.1 49.1E 13.2m	0.0 24.9m 25.3T 10.9M	2	3	1	
05/27/2016 Fri*	20:00	23:50	3:40	16:22	63 29.9M		-2.0 10.4E 24.0m 24.4T	-2.1 48.6E 12.5m	0.0 25.0m 25.3T 10.4M	2	3	1	
05/28/2016 Sat*	20:01	23:51	3:40	16:26	53 28.4M		-2.0 11.3E 23.8m 24.4T	-2.1 48.1E 11.8m	0.0 3.5E 25.1m 25.3T 10.0M	3	3	1	
05/29/2016 Sun*	20:02	23:51	3:39	16:30	41 25.2M		-2.0 12.1E 23.7m 24.5T	-2.1 47.6E 11.1m	0.0 4.3E 25.2m 25.3T 9.5M	3	3	1	
05/30/2016 Mon*	20:03	23:51	3:38	16:35	30 20.7M		-2.0 12.9E 23.5m 24.5T	-2.1 47.0E 10.4m	0.0 5.0E 25.2m 25.3T 9.0M	3	3	1	
05/31/2016 Tue*	20:04	23:51	3:38	16:39	20 14.9M		-2.0 13.6E 23.3m 24.5T	-2.0 46.5E 9.7m	0.0 5.8E 25.3m 25.3T 8.5M	3	3	1	
06/01/2016 Wed*	20:05	23:51	3:37	16:43	12 8.3M		-2.0 14.4E 23.1m 24.5T	-2.0 45.9E 9.0m	0.0 6.5E 25.3m 25.3T 8.0M	3	3	1	

Night of	Pct.					Moon elev.	Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.									
06/02/2016 Thr*	20:06	23:51	3:36	16:47	5 1.4M		0.6 3.0M	-2.0 15.1E 22.8m 24.6T	-2.0 45.3E 8.3m	0.0 7.3E 25.3m 25.3T 7.5M	3	3	2	
06/03/2016 Fri*	20:07	23:52	3:36	16:51	1		0.5 3.2M	-1.9 15.8E 22.6m 24.6T	-2.0 44.7E 7.6m	0.0 8.0E 25.4m 25.4T 7.0M	3	3	2	
06/04/2016 Sat*	20:08	23:52	3:36	16:55	0		0.5 3.4M	-1.9 16.5E 22.3m 24.6T	-2.0 44.1E 6.9m	0.0 8.7E 25.3m 25.4T 6.5M	3	3	2	
06/05/2016 Sun*	20:09	23:52	3:35	16:59	2		0.4 3.6M	-1.9 17.1E 22.0m 24.7T	-2.0 43.5E 6.2m	0.0 9.4E 25.3m 25.4T 6.0M	3	3	2	
06/06/2016 Mon*	20:09	23:52	3:35	17:03	7 8.1E		0.3 3.7M	-1.9 17.7E 21.6m 24.7T	-2.0 42.9E 5.5m	0.0 10.0E 25.3m 25.4T 5.4M	3	3	2	
06/07/2016 Tue*	20:10	23:52	3:34	17:07	13 16.5E		0.2 3.9M	-1.9 18.3E 21.3m 24.7T	-2.0 42.3E 4.8m	0.0 10.7E 25.2m 25.4T 4.9M	3	3	2	
06/08/2016 Wed*	20:11	23:52	3:34	17:12	21 24.0E		0.1 4.0M	-1.9 18.9E 20.9m 24.7T	-2.0 41.6E 4.1m	0.0 11.4E 25.1m 25.4T 4.3M	3	3	2	
06/09/2016 Thr*	20:11	23:53	3:34	17:16	30 30.5E		0.1 4.1M	-1.8 19.4E 20.5m 24.8T	-2.0 41.0E 3.4m	0.0 12.0E 25.0m 25.4T 3.7M	3	3	2	
06/10/2016 Fri*	20:12	23:53	3:34	17:20	40 35.5E		0.0 4.2M	-1.8 19.9E 20.1m 24.8T	-2.0 40.4E	0.0 12.6E 24.9m 25.4T 3.1M	3	2	2	
06/11/2016 Sat*	20:13	23:53	3:34	17:24	50 38.9E 2.7m		-0.1 4.2M	-1.8 20.4E 19.7m 24.8T	-2.0 39.7E	0.0 13.2E 24.8m 25.4T	3	2	1	
06/12/2016 Sun*	20:13	23:53	3:33	17:28	59 40.5E 7.4m		-0.1 4.3M	-1.8 20.9E 19.3m 24.8T	-2.0 39.1E	0.1 13.8E 24.7m 25.4T	3	2	1	
06/13/2016 Mon*	20:14	23:54	3:33	17:32	68 40.2E 11.9m		-0.2 4.3M	-1.8 21.3E 18.9m 24.9T	-2.0 38.4E	0.1 14.4E 24.5m 25.4T	3	2	1	
06/14/2016 Tue*	20:14	23:54	3:33	17:36	77 38.3E 16.0m		-0.3 4.2M	-1.7 21.7E 18.4m 24.9T	-2.0 37.8E	0.1 14.9E 24.3m 25.4T	3	2	1	
06/15/2016 Wed*	20:15	23:54	3:33	17:41	84 34.8E 19.6m		-0.4 4.2M	-1.7 22.0E 17.9m 24.9T	-2.0 37.1E	0.1 15.5E 24.1m 25.4T	3	2	1	
06/16/2016 Thr*	20:15	23:54	3:33	17:45	90 30.1E 22.5m		-0.4 4.1M	-1.7 22.4E 17.5m 24.9T	-1.9 36.5E	0.1 16.0E 23.9m 25.5T	3	2	1	
06/17/2016 Fri*	20:15	23:54	3:33	17:49	95 24.5E 24.8m		-0.5 4.0M	-1.7 22.7E 17.0m 24.9T	-1.9 35.9E	0.1 16.5E 23.7m 25.5T	3	2	1	
06/18/2016 Sat*	20:16	23:55	3:34	17:53	98 18.1E 26.2m 2.5M		-0.6 3.9M	-1.7 23.0E 16.5m 24.9T	-1.9 35.2E	0.1 17.0E 23.5m 25.5T	3	2	1	
06/19/2016 Sun*	20:16	23:55	3:34	17:57	100 11.3E 26.6m 8.9M		-0.6 3.7M	-1.6 23.2E 16.0m 24.9T	-1.9 34.6E	0.1 17.5E 23.3m 25.5T	3	2	1	
06/20/2016 Mon*	20:16	23:55	3:34	18:01	99 4.3E 25.9m 15.5M		-0.7 3.5M	-1.6 23.5E 15.5m 24.9T	-1.9 34.0E	0.1 18.0E 23.0m 25.5T	3	2	1	
06/21/2016 Tue*	20:16	23:55	3:34	18:06	96 24.2m 21.8M		-0.8 3.3M	-1.6 23.7E 14.9m 24.9T	-1.9 33.3E	0.1 18.4E 22.7m 25.5T	3	2	1	
06/22/2016 Wed*	20:16	23:55	3:35	18:10	92 21.4m 27.6M		-0.9 3.0M	-1.6 23.9E 14.4m 24.9T	-1.9 32.7E	0.1 18.8E 22.4m 25.5T	3	2	1	
06/23/2016 Thr*	20:16	23:56	3:35	18:14	85 17.7m 32.4M			-1.6 24.1E 13.9m 24.9T	-1.9 32.1E	0.1 19.2E 22.1m 25.5T	3	2	0	
06/24/2016 Fri*	20:17	23:56	3:35	18:18	76 13.2m 35.8M			-1.5 24.2E 13.4m 24.9T	-1.9 31.5E	0.1 19.7E 21.8m 25.5T	3	2	0	
06/25/2016 Sat*	20:17	23:56	3:36	18:22	66 8.2m 37.4M			-1.5 24.3E 12.8m 24.9T	-1.9 30.9E	0.1 20.0E 21.5m 25.5T	3	2	0	
06/26/2016 Sun*	20:17	23:56	3:36	18:26	55 2.9m 36.9M			-1.5 24.4E 12.3m 24.9T	-1.9 30.2E	0.1 20.4E 21.1m 25.5T	3	2	0	
06/27/2016 Mon*	20:16	23:56	3:37	18:31	44 34.1M			-1.5 24.5E 11.7m 24.9T	-1.9 29.6E	0.1 20.8E 20.8m 25.5T	3	2	0	
06/28/2016 Tue*	20:16	23:57	3:37	18:35	33 29.2M			-1.4 24.6E 11.2m 24.9T	-1.9 29.0E	0.1 21.1E 20.4m 25.5T	3	2	0	
06/29/2016 Wed*	20:16	23:57	3:38	18:39	22 22.8M			-1.4 24.7E 10.6m 24.9T	-1.9 28.4E	0.2 21.4E 20.0m 25.5T	3	2	0	
06/30/2016 Thr*	20:16	23:57	3:38	18:43	13 15.3M			-1.4 24.7E 10.1m 24.8T	-1.9 27.9E	0.2 21.7E 19.6m 25.5T	3	2	0	
07/01/2016 Fri*	20:16	23:57	3:39	18:47	7 7.1M			-1.4 24.7E 9.5m 24.8T	-1.9 27.3E	0.2 22.0E 19.2m 25.6T	3	2	0	
07/02/2016 Sat*	20:15	23:57	3:40	18:51	2			-1.4 24.7E 9.0m 24.8T	-1.9 26.7E	0.2 22.3E 18.8m 25.6T	3	2	0	
07/03/2016 Sun*	20:15	23:58	3:40	18:55	0			-1.3 24.7E 8.4m 24.8T	-1.9 26.1E	0.2 22.6E 18.4m 25.6T	3	2	0	
07/04/2016 Mon*	20:15	23:58	3:41	18:59	1			-1.3 24.7E 7.9m 24.7T	-1.9 25.6E	0.2 22.8E 18.0m 25.6T	3	2	0	
07/05/2016 Tue*	20:14	23:58	3:42	19:04	4 1.8E			-1.3 24.7E 7.3m 24.7T	-1.8 25.0E	0.2 23.1E 17.5m 25.6T	3	2	0	
07/06/2016 Wed*	20:14	23:58	3:43	19:08	10 8.5E			-1.3 24.7E 6.8m	-1.8 24.5E	0.2 23.3E 17.1m 25.6T	3	2	0	
07/07/2016 Thr*	20:13	23:58	3:43	19:12	17 14.8E			-1.2 24.6E 6.2m	-1.8 23.9E	0.2 23.5E 16.6m 25.6T	3	2	0	
07/08/2016 Fri*	20:13	23:58	3:44	19:16	25 20.3E			-1.2 24.6E 5.7m	-1.8 23.4E	0.2 23.7E 16.1m 25.6T	3	2	0	
07/09/2016 Sat*	20:12	23:59	3:45	19:20	34 25.0E			-1.2 24.5E 5.2m	-1.8 22.9E	0.2 23.9E 15.7m 25.6T	3	2	0	
07/10/2016 Sun*	20:12	23:59	3:46	19:24	43 28.6E			-1.2 24.4E 4.6m	-1.8 22.3E	0.2 24.1E 15.2m 25.6T	3	2	0	
07/11/2016 Mon*	20:11	23:59	3:47	19:28	53 31.0E			-1.2 24.4E 4.1m	-1.8 21.8E	0.2 24.3E 14.7m 25.6T	3	2	0	
07/12/2016 Tue*	20:10	23:59	3:48	19:32	62 32.1E 0.8m			-1.1 24.3E 3.6m	-1.8 21.3E	0.2 24.4E 14.2m 25.6T	3	2	0	
07/13/2016 Wed*	20:10	23:59	3:49	19:36	71 31.9E 5.5m			-1.1 24.2E 3.1m	-1.8 20.8E	0.2 24.6E 13.7m 25.6T	3	2	0	
07/14/2016 Thr*	20:09	23:59	3:50	19:40	79 30.4E 10.4m			-1.1 24.1E	-1.8 20.3E	0.3 24.7E 13.2m 25.6T	3	1	0	
07/15/2016 Fri*	20:08	23:59	3:51	19:44	86 27.7E 15.1m			-1.1 24.0E	-1.8 19.8E	0.3 24.8E 12.6m 25.6T	3	1	0	
07/16/2016 Sat*	20:07	23:59	3:52	19:48	92 23.8E 19.5m			-1.1 23.9E	-1.8 19.3E	0.3 25.0E 12.1m 25.6T	3	1	0	
07/17/2016 Sun*	20:06	23:59	3:53	19:52	97 19.0E 23.4m			-1.0 23.8E	-1.8 18.9E	0.3 25.1E 11.6m 25.6T	3	1	0	
07/18/2016 Mon*	20:05	0:00	3:54	19:56	99 13.4E 26.6m 3.2M			-1.0 23.7E	-1.8 18.4E	0.3 25.1E 11.0m 25.6T	3	1	0	
07/19/2016 Tue*	20:04	0:00	3:55	20:00	100 7.3E 28.6m 11.9M			-1.0 23.5E	-1.8 17.9E	0.3 25.2E 10.5m 25.6T	3	1	0	
07/20/2016 Wed*	20:03	0:00	3:56	20:04	98 1.1E 29.4m 20.7M			-1.0 23.4E	-1.8 17.5E	0.3 25.3E 9.9m 25.6T	3	1	0	
07/21/2016 Thr*	20:02	0:00	3:57	20:08	94 28.6m 29.2M			-1.0 23.3E	-1.8 17.0E	0.3 25.4E 9.4m 25.6T	3	1	0	
07/22/2016 Fri*	20:01	0:00	3:58	20:12	87 26.3m 37.0M		-0.6 3.1E	-0.9 23.2E	-1.8 16.6E	0.3 25.4E 8.8m 25.6T	4	1	0	
07/23/2016 Sat*	20:00	0:00	4:00	20:16	79 22.6m 43.4M		-0.5 3.3E	-0.9 23.1E	-1.8 16.1E	0.3 25.5E 8.3m 25.6T	4	1	0	

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar Illum.								
07/24/2016 Sun*	19:59	0:00	4:01	20:20	69 17.7m 47.5M	-0.4 3.5E		-0.9 22.9E	-1.8 15.7E	0.3 25.5E 7.7m 25.6T	4	1	0
07/25/2016 Mon*	19:58	0:00	4:02	20:24	58 12.0m 48.5M	-0.4 3.7E		-0.9 22.8E	-1.8 15.3E	0.3 25.6E 7.1m 25.6T	4	1	0
07/26/2016 Tue*	19:57	0:00	4:03	20:28	46 5.7m 46.1M	-0.3 3.9E		-0.9 22.7E	-1.8 14.9E	0.3 25.6E 6.5m 25.6T	4	1	0
07/27/2016 Wed*	19:56	0:00	4:04	20:32	35 40.7M	-0.3 4.0E		-0.8 22.6E	-1.8 14.4E	0.3 25.6E 6.0m 25.6T	4	1	0
07/28/2016 Thr*	19:54	0:00	4:05	20:36	24 33.3M	-0.3 4.1E		-0.8 22.4E	-1.7 14.0E	0.3 25.6E 5.4m 25.6T	4	1	0
07/29/2016 Fri*	19:53	0:00	4:07	20:40	15 24.5M	-0.2 4.2E		-0.8 22.3E	-1.7 13.6E	0.3 25.6E 4.8m 25.6T	4	1	0
07/30/2016 Sat*	19:52	0:00	4:08	20:44	8 15.1M	-0.2 4.3E		-0.8 22.2E	-1.7 13.2E	0.3 25.6E 4.2m	4	1	0
07/31/2016 Sun*	19:50	23:59	4:09	20:48	3 5.4M	-0.1 4.4E		-0.8 22.1E	-1.7 12.8E	0.4 25.6E 3.7m	4	1	0
08/01/2016 Mon*	19:49	23:59	4:10	20:51	0	-0.1 4.4E		-0.8 22.0E	-1.7 12.4E	0.4 25.6E 3.1m	4	1	0
08/02/2016 Tue*	19:48	23:59	4:11	20:55	0	-0.1 4.4E		-0.7 21.8E	-1.7 12.0E	0.4 25.6E	4	0	0
08/03/2016 Wed*	19:46	23:59	4:13	20:59	2	-0.1 4.4E		-0.7 21.7E	-1.7 11.7E	0.4 25.6E	4	0	0
08/04/2016 Thr*	19:45	23:59	4:14	21:03	6 4.2E	0.0 4.4E		-0.7 21.6E	-1.7 11.3E	0.4 25.5E	4	0	0
08/05/2016 Fri*	19:43	23:59	4:15	21:07	12 9.7E	0.0 4.4E		-0.7 21.5E	-1.7 10.9E	0.4 25.5E	4	0	0
08/06/2016 Sat*	19:42	23:59	4:16	21:11	19 14.7E	0.0 4.4E		-0.7 21.4E	-1.7 10.6E	0.4 25.5E	4	0	0
08/07/2016 Sun*	19:40	23:59	4:18	21:14	27 19.2E	0.0 4.3E		-0.6 21.3E	-1.7 10.2E	0.4 25.4E	4	0	0
08/08/2016 Mon*	19:39	23:59	4:19	21:18	36 22.8E	0.1 4.2E		-0.6 21.2E	-1.7 9.8E	0.4 25.4E	4	0	0
08/09/2016 Tue*	19:37	23:59	4:20	21:22	46 25.6E	0.1 4.2E		-0.6 21.1E	-1.7 9.5E	0.4 25.3E	4	0	0
08/10/2016 Wed*	19:36	23:58	4:21	21:26	55 27.4E	0.1 4.1E		-0.6 20.9E	-1.7 9.1E	0.4 25.3E	4	0	0
08/11/2016 Thr*	19:34	23:58	4:23	21:30	65 28.1E	0.1 4.0E		-0.6 20.8E	-1.7 8.8E	0.4 25.2E	4	0	0
08/12/2016 Fri*	19:33	23:58	4:24	21:33	74 27.5E 3.8m	0.1 3.8E		-0.6 20.7E	-1.7 8.4E	0.4 25.1E	4	0	0
08/13/2016 Sat*	19:31	23:58	4:25	21:37	82 25.8E 10.2m	0.2 3.7E	-3.8 3.0E	-0.6 20.7E	-1.7 8.1E	0.4 25.1E	5	0	0
08/14/2016 Sun*	19:29	23:58	4:26	21:41	89 22.9E 16.8m	0.2 3.5E	-3.8 3.0E	-0.5 20.6E	-1.7 7.8E	0.4 25.0E	5	0	0
08/15/2016 Mon*	19:28	23:57	4:28	21:45	95 18.8E 23.0m	0.2 3.3E	-3.8 3.1E	-0.5 20.5E	-1.7 7.4E	0.4 24.9E	5	0	0
08/16/2016 Tue*	19:26	23:57	4:29	21:48	98 13.9E 28.7m	0.2 3.2E	-3.8 3.2E	-0.5 20.4E	-1.7 7.1E	0.4 24.8E	5	0	0
08/17/2016 Wed*	19:24	23:57	4:30	21:52	100 8.3E 33.3m 6.8M	0.3 3.0E	-3.8 3.2E	-0.5 20.3E	-1.7 6.8E	0.4 24.8E	5	0	0
08/18/2016 Thr*	19:23	23:57	4:31	21:56	99 2.3E 36.1m 17.6M		-3.8 3.3E	-0.5 20.2E	-1.7 6.5E	0.4 24.7E	4	0	0
08/19/2016 Fri*	19:21	23:57	4:33	21:59	95 36.8m 28.5M		-3.8 3.4E	-0.5 20.1E	-1.7 6.2E	0.5 24.6E	4	0	0
08/20/2016 Sat*	19:19	23:56	4:34	22:03	89 35.1m 38.9M		-3.8 3.4E	-0.4 20.1E	-1.7 5.8E	0.5 24.5E	4	0	0
08/21/2016 Sun*	19:17	23:56	4:35	22:07	81 31.2m 48.2M		-3.8 3.5E	-0.4 20.0E	-1.7 5.5E	0.5 24.4E	4	0	0
08/22/2016 Mon*	19:16	23:56	4:36	22:11	71 25.5m 55.2M		-3.8 3.5E	-0.4 19.9E	-1.7 5.2E	0.5 24.3E	4	0	0
08/23/2016 Tue*	19:14	23:55	4:38	22:14	60 18.6m 58.4M		-3.8 3.6E	-0.4 19.8E	-1.7 4.9E	0.5 24.2E	4	0	0
08/24/2016 Wed*	19:12	23:55	4:39	22:18	49 10.9m 56.7M		-3.8 3.7E	-0.4 19.8E	-1.7 4.6E	0.5 24.1E	4	0	0
08/25/2016 Thr*	19:10	23:55	4:40	22:22	37 3.0m 50.8M		-3.8 3.7E	-0.4 19.7E	-1.7 4.3E	0.5 24.0E	4	0	0
08/26/2016 Fri*	19:09	23:55	4:41	22:25	27 42.5M		-3.8 3.8E	-0.4 19.7E	-1.7 4.0E	0.5 23.9E	4	0	0
08/27/2016 Sat*	19:07	23:54	4:43	22:29	18 33.0M		-3.8 3.9E	-0.3 19.6E	-1.7 3.7E	0.5 23.8E	4	0	0
08/28/2016 Sun*	19:05	23:54	4:44	22:32	10 22.8M		-3.8 3.9E	-0.3 19.6E	-1.7 3.4E	0.5 23.7E	4	0	0
08/29/2016 Mon*	19:03	23:54	4:45	22:36	5 12.5M		-3.8 4.0E	-0.3 19.5E	-1.7 3.2E	0.5 23.5E	4	0	0
08/30/2016 Tue*	19:01	23:53	4:46	22:40	1 2.3M		-3.8 4.0E	-0.3 19.5E		0.5 23.4E	3	0	0
08/31/2016 Wed*	18:59	23:53	4:47	22:43	0		-3.8 4.1E	-0.3 19.4E		0.5 23.3E	3	0	0
09/01/2016 Thr*	18:58	23:53	4:49	22:47	1		-3.8 4.2E	-0.3 19.4E		0.5 23.2E	3	0	0
09/02/2016 Fri*	18:56	23:52	4:50	22:51	4 2.3E		-3.8 4.2E	-0.3 19.3E		0.5 23.1E	3	0	0
09/03/2016 Sat*	18:54	23:52	4:51	22:54	8 7.3E		-3.8 4.3E	-0.2 19.3E		0.5 22.9E	3	0	0
09/04/2016 Sun*	18:52	23:52	4:52	22:58	14 12.1E		-3.8 4.3E	-0.2 19.3E		0.5 22.8E	3	0	0
09/05/2016 Mon*	18:50	23:51	4:53	23:01	21 16.5E		-3.8 4.4E	-0.2 19.2E		0.5 22.7E	3	0	0
09/06/2016 Tue*	18:48	23:51	4:55	23:05	30 20.3E		-3.8 4.5E	-0.2 19.2E		0.5 22.5E	3	0	0
09/07/2016 Wed*	18:46	23:51	4:56	23:09	39 23.3E		-3.8 4.5E	-0.2 19.2E		0.5 22.4E	3	0	0
09/08/2016 Thr*	18:44	23:50	4:57	23:12	48 25.4E		-3.8 4.6E	-0.2 19.2E		0.5 22.3E	3	0	0
09/09/2016 Fri*	18:43	23:50	4:58	23:16	58 26.6E		-3.8 4.6E	-0.2 19.2E		0.5 22.1E	3	0	0
09/10/2016 Sat*	18:41	23:50	4:59	23:19	67 26.5E 0.3m		-3.8 4.7E	-0.2 19.1E		0.5 22.0E	3	0	0
09/11/2016 Sun*	18:39	23:49	5:01	23:23	77 25.2E 8.2m		-3.8 4.8E	-0.1 19.1E		0.5 21.8E	3	0	0
09/12/2016 Mon*	18:37	23:49	5:02	23:27	85 22.7E 16.5m		-3.8 4.8E	-0.1 19.1E		0.5 21.7E	3	0	0
09/13/2016 Tue*	18:35	23:49	5:03	23:30	92 19.0E 24.8m		-3.9 4.9E	-0.1 19.1E		0.5 21.5E	3	0	0

Night of	Pct.					Moon elev.	Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.									
09/14/2016 Wed*	18:33	23:48	5:04	23:34	97 14.2E 32.7m			-3.9 5.0E	-0.1 19.1E		0.5 21.4E	3	0	0
09/15/2016 Thr*	18:31	23:48	5:05	23:37	100 8.6E 39.3m 1.4M			-3.9 5.0E	-0.1 19.1E		0.5 21.2E	3	0	0
09/16/2016 Fri*	18:29	23:48	5:07	23:41	100 2.5E 43.8m 13.3M			-3.9 5.1E	-0.1 19.1E		0.5 21.1E	3	0	0
09/17/2016 Sat*	18:27	23:47	5:08	23:45	97 45.2m 25.5M	2.9 3.1M		-3.9 5.2E	-0.1 19.1E		0.5 20.9E	3	0	1
09/18/2016 Sun*	18:26	23:47	5:09	23:48	91 43.1m 37.4M	2.3 4.5M		-3.9 5.2E	-0.1 19.1E		0.5 20.8E	3	0	1
09/19/2016 Mon*	18:24	23:47	5:10	23:52	83 37.9m 48.4M	1.8 5.8M		-3.9 5.3E	-0.1 19.2E		0.6 20.6E	3	0	1
09/20/2016 Tue*	18:22	23:46	5:11	23:55	74 30.6m 57.5M	1.4 7.0M		-3.9 5.4E	0.0 19.2E		0.6 20.5E	3	0	1
09/21/2016 Wed*	18:20	23:46	5:12	23:59	63 22.1m 62.9M	1.0 8.1M		-3.9 5.4E	0.0 19.2E		0.6 20.3E	3	0	1
09/22/2016 Thr*	18:18	23:45	5:14	0:02	52 13.0m 62.7M	0.6 9.0M		-3.9 5.5E	0.0 19.2E		0.6 20.1E	3	0	1
09/23/2016 Fri*	18:16	23:45	5:15	0:06	41 3.8m 57.4M	0.3 9.7M		-3.9 5.6E	0.0 19.3E		0.6 20.0E	3	0	1
09/24/2016 Sat*	18:14	23:45	5:16	0:10	30 49.2M	0.1 10.3M		-3.9 5.7E	0.0 19.3E		0.6 19.8E	3	0	1
09/25/2016 Sun*	18:12	23:44	5:17	0:13	21 39.6M	-0.1 10.8M		-3.9 5.7E	0.0 19.3E		0.6 19.6E	3	0	1
09/26/2016 Mon*	18:11	23:44	5:18	0:17	13 29.6M	-0.3 11.0M		-3.9 5.8E	0.0 19.3E		0.6 19.4E	3	0	1
09/27/2016 Tue*	18:09	23:44	5:19	0:20	7 19.3M	-0.5 11.2M		-3.9 5.9E	0.0 19.4E		0.6 19.3E	3	0	1
09/28/2016 Wed*	18:07	23:43	5:21	0:24	3 9.1M	-0.6 11.2M		-3.9 6.0E	0.0 19.4E		0.6 19.1E	3	0	1
09/29/2016 Thr*	18:05	23:43	5:22	0:28	1	-0.7 11.1M		-3.9 6.0E	0.1 19.5E		0.6 18.9E	3	0	1
09/30/2016 Fri*	18:03	23:43	5:23	0:31	0	-0.8 11.0M		-3.9 6.1E	0.1 19.5E		0.6 18.7E	3	0	1
10/01/2016 Sat*	18:01	23:42	5:24	0:35	2 1.0E	-0.8 10.7M		-3.9 6.2E	0.1 19.6E		0.6 18.5E	3	0	1
10/02/2016 Sun*	18:00	23:42	5:25	0:39	5 5.9E	-0.9 10.3M		-3.9 6.3E	0.1 19.6E		0.6 18.4E	3	0	1
10/03/2016 Mon*	17:58	23:42	5:27	0:42	10 10.7E	-0.9 9.9M		-3.9 6.4E	0.1 19.7E		0.6 18.2E	3	0	1
10/04/2016 Tue*	17:56	23:42	5:28	0:46	16 15.2E	-1.0 9.4M		-3.9 6.5E	0.1 19.7E		0.6 18.0E	3	0	1
10/05/2016 Wed*	17:54	23:41	5:29	0:49	23 19.3E	-1.0 8.8M		-3.9 6.6E	0.1 19.8E		0.6 17.8E	3	0	1
10/06/2016 Thr*	17:52	23:41	5:30	0:53	32 22.7E	-1.0 8.3M		-3.9 6.7E	0.1 19.9E		0.6 17.6E	3	0	1
10/07/2016 Fri*	17:51	23:41	5:31	0:57	41 25.2E	-1.0 7.6M		-3.9 6.8E	0.1 19.9E	-1.7 3.4M	0.6 17.4E	3	0	2
10/08/2016 Sat*	17:49	23:40	5:33	1:00	51 26.8E	-1.0 7.0M		-3.9 6.8E	0.2 20.0E	-1.7 4.1M	0.6 17.2E	3	0	2
10/09/2016 Sun*	17:47	23:40	5:34	1:04	61 27.2E	-1.1 6.3M		-3.9 6.9E	0.2 20.1E	-1.7 4.8M	0.6 17.0E	3	0	2
10/10/2016 Mon*	17:46	23:40	5:35	1:08	71 26.3E 7.9m	-1.1 5.6M		-3.9 7.1E	0.2 20.2E	-1.7 5.5M	0.6 16.8E	3	0	2
10/11/2016 Tue*	17:44	23:40	5:36	1:12	80 23.9E 17.8m	-1.1 4.9M		-3.9 7.2E	0.2 20.3E	-1.7 6.2M	0.6 16.6E	3	0	2
10/12/2016 Wed*	17:42	23:39	5:37	1:15	88 20.3E 27.7m	-1.1 4.3M		-3.9 7.3E	0.2 20.3E	-1.7 6.9M	0.6 16.4E	3	0	2
10/13/2016 Thr*	17:40	23:39	5:39	1:19	95 15.4E 37.3m	-1.1 3.6M		-3.9 7.4E	0.2 20.4E	-1.7 7.6M	0.6 16.1E	3	0	2
10/14/2016 Fri*	17:39	23:39	5:40	1:23	99 9.5E 45.7m			-3.9 7.5E	0.2 20.5E	-1.7 8.3M	0.6 15.9E	3	0	1
10/15/2016 Sat*	17:37	23:39	5:41	1:26	100 3.1E 51.5m 8.1M			-3.9 7.6E	0.2 20.6E	-1.7 9.0M	0.6 15.7E	3	0	1
10/16/2016 Sun*	17:36	23:38	5:42	1:30	98 53.1m 20.7M			-3.9 7.7E	0.2 20.7E	-1.7 9.7M	0.6 15.5E	3	0	1
10/17/2016 Mon*	17:34	23:38	5:43	1:34	93 49.8m 33.0M			-3.9 7.8E	0.2 20.8E	-1.7 10.4M	0.6 15.2E	3	0	1
10/18/2016 Tue*	17:32	23:38	5:45	1:38	86 42.9m 44.3M			-3.9 8.0E	0.3 20.9E	-1.7 11.1M	0.6 15.0E	3	0	1
10/19/2016 Wed*	17:31	23:38	5:46	1:41	77 33.9m 54.0M			-3.9 8.1E	0.3 21.0E	-1.7 11.8M	0.6 14.8E	3	0	1
10/20/2016 Thr*	17:29	23:38	5:47	1:45	67 23.9m 60.7M			-3.9 8.2E	0.3 21.1E	-1.7 12.5M	0.6 14.5E	3	0	1
10/21/2016 Fri*	17:28	23:38	5:48	1:49	56 13.7m 62.7M			-4.0 8.3E	0.3 21.3E	-1.7 13.2M	0.6 14.3E	3	0	1
10/22/2016 Sat*	17:26	23:37	5:50	1:53	45 3.6m 59.5M			-4.0 8.5E	0.3 21.4E	-1.7 13.9M	0.6 14.0E	3	0	1
10/23/2016 Sun*	17:25	23:37	5:51	1:57	35 52.8M			-4.0 8.6E	0.3 21.5E	-1.7 14.6M	0.6 13.8E	3	0	1
10/24/2016 Mon*	17:23	23:37	5:52	2:00	26 44.4M			-4.0 8.8E	0.3 21.6E	-1.7 15.3M	0.6 13.5E	3	0	1
10/25/2016 Tue*	17:22	23:37	5:53	2:04	17 35.2M			-4.0 8.9E	0.3 21.8E	-1.7 16.0M	0.6 13.3E	3	0	1
10/26/2016 Wed*	17:20	23:37	5:55	2:08	11 25.7M			-4.0 9.0E	0.3 21.9E	-1.7 16.7M	0.6 13.0E	3	0	1
10/27/2016 Thr*	17:19	23:37	5:56	2:12	5 16.1M			-4.0 9.2E	0.3 22.0E	-1.7 17.3M	0.6 12.8E	3	0	1
10/28/2016 Fri*	17:17	23:37	5:57	2:16	2 6.5M			-4.0 9.3E	0.3 22.2E	-1.7 18.0M	0.6 12.5E	3	0	1
10/29/2016 Sat*	17:16	23:37	5:58	2:20	0			-4.0 9.5E	0.4 22.3E	-1.7 18.7M	0.6 12.2E	3	0	1
10/30/2016 Sun*	17:15	23:37	6:00	2:24	0			-4.0 9.7E	0.4 22.4E	-1.7 19.3M	0.6 11.9E	3	0	1
10/31/2016 Mon*	17:13	23:37	6:01	2:28	2 4.0E			-4.0 9.8E	0.4 22.6E	-1.7 20.0M	0.6 11.6E	3	0	1
11/01/2016 Tue*	17:12	23:37	6:02	2:31	6 9.3E			-4.0 10.0E	0.4 22.7E	-1.7 20.7M	0.5 11.4E	3	0	1
11/02/2016 Wed*	17:11	23:37	6:03	2:35	11 14.3E			-4.0 10.2E	0.4 22.9E	-1.7 21.3M	0.5 11.1E	3	0	1
11/03/2016 Thr*	17:10	23:37	6:05	2:39	18 19.1E			-4.0 10.4E	0.4 23.1E	-1.7 22.0M	0.5 10.8E	3	0	1
11/04/2016 Fri*	17:08	23:37	6:06	2:43	26 23.2E			-4.0 10.5E	0.4 23.2E	-1.7 22.6M	0.5 10.5E	3	0	1

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.								
11/05/2016 Sat*	17:07	23:37	6:07	2:47	35 26.6E		-4.0 10.7E	0.4 23.4E	-1.7 23.2M	0.5 10.1E	3	0	1
11/06/2016 Sun	17:06	23:37	6:08	2:51	44 29.0E		-4.0 10.9E	0.4 23.5E	-1.7 23.8M	0.5 9.8E	3	0	1
11/07/2016 Mon	17:05	23:37	6:10	2:55	55 30.1E		-4.0 11.1E	0.4 23.7E	-1.7 24.5M	0.5 9.5E	3	0	1
11/08/2016 Tue	17:04	23:37	6:11	2:59	65 29.6E 7.9m		-4.0 11.3E	0.4 23.9E	-1.7 25.1M	0.5 9.2E	3	0	1
11/09/2016 Wed	17:03	23:37	6:12	3:03	75 27.6E 18.9m		-4.0 11.5E	0.5 24.1E	-1.7 25.7M	0.5 8.9E	3	0	1
11/10/2016 Thr	17:02	23:37	6:13	3:07	85 23.9E 30.1m		-4.1 11.7E	0.5 24.2E	-1.7 26.3M	0.5 8.5E	3	0	1
11/11/2016 Fri	17:01	23:37	6:15	3:11	92 18.7E 41.1m		-4.1 11.9E	0.5 24.4E	-1.7 26.8M	0.5 8.2E	3	0	1
11/12/2016 Sat	17:00	23:38	6:16	3:16	97 12.4E 50.9m		-4.1 12.1E	0.5 24.6E	-1.7 27.4M	0.5 7.8E	3	0	1
11/13/2016 Sun	16:59	23:38	6:17	3:20	100 5.3E 58.0m 2.5M		-4.1 12.4E	0.5 24.8E	-1.7 28.0M	0.5 7.5E	3	0	1
11/14/2016 Mon	16:58	23:38	6:18	3:24	99 59.7m 14.3M		-4.1 12.6E	0.5 25.0E	-1.7 28.5M	0.5 7.1E	3	0	1
11/15/2016 Tue	16:57	23:38	6:19	3:28	95 55.4m 25.9M		-4.1 12.8E	0.5 25.2E	-1.7 29.1M	0.5 6.7E	3	0	1
11/16/2016 Wed	16:56	23:38	6:21	3:32	89 47.0m 36.5M		-4.1 13.0E	0.5 25.4E	-1.7 29.6M	0.5 6.4E	3	0	1
11/17/2016 Thr	16:55	23:38	6:22	3:36	81 36.9m 45.5M		-4.1 13.3E	0.5 25.6E	-1.7 30.1M	0.5 6.0E	3	0	1
11/18/2016 Fri	16:55	23:39	6:23	3:40	72 26.1m 52.2M		-4.1 13.5E	0.5 25.8E	-1.7 30.6M	0.5 5.6E	3	0	1
11/19/2016 Sat	16:54	23:39	6:24	3:45	61 15.3m 55.6M		-4.1 13.8E	0.5 26.0E	-1.7 31.1M	0.5 5.2E	3	0	1
11/20/2016 Sun	16:53	23:39	6:25	3:49	51 4.8m 55.2M		-4.1 14.0E	0.6 26.2E	-1.7 31.6M	0.5 4.8E	3	0	1
11/21/2016 Mon	16:53	23:39	6:27	3:53	41 51.5M		-4.1 14.3E	0.6 26.4E	-1.8 32.1M	0.5 4.4E	3	0	1
11/22/2016 Tue	16:52	23:40	6:28	3:57	31 45.6M		-4.1 14.5E	0.6 26.6E	-1.8 32.6M	0.5 4.0E	3	0	1
11/23/2016 Wed	16:51	23:40	6:29	4:01	23 38.3M		-4.1 14.8E	0.6 26.8E	-1.8 33.0M	0.5 3.6E	3	0	1
11/24/2016 Thr	16:51	23:40	6:30	4:06	15 30.2M		-4.1 15.1E	0.6 27.1E	-1.8 33.4M	0.5 3.2E	3	0	1
11/25/2016 Fri	16:50	23:41	6:31	4:10	9 21.8M		-4.1 15.3E	0.6 27.3E	-1.8 33.9M		2	0	1
11/26/2016 Sat	16:50	23:41	6:32	4:14	5 13.2M		-4.2 15.6E	0.6 27.5E	-1.8 34.3M		2	0	1
11/27/2016 Sun	16:49	23:41	6:33	4:18	2 4.6M		-4.2 15.9E	0.6 27.7E	-1.8 34.7M		2	0	1
11/28/2016 Mon	16:49	23:42	6:35	4:23	0		-4.2 16.2E	0.6 27.9E	-1.8 35.0M		2	0	1
11/29/2016 Tue	16:49	23:42	6:36	4:27	1 0.7E		-4.2 16.5E	0.6 28.2E	-1.8 35.4M		2	0	1
11/30/2016 Wed	16:48	23:42	6:37	4:31	3 6.7E	-0.5 3.1E	-4.2 16.8E	0.6 28.4E	-1.8 35.7M		3	0	1
12/01/2016 Thr	16:48	23:43	6:38	4:36	7 12.9E	-0.5 3.4E	-4.2 17.1E	0.6 28.6E	-1.8 36.1M		3	0	1
12/02/2016 Fri	16:48	23:43	6:39	4:40	13 19.0E	-0.5 3.7E	-4.2 17.4E	0.7 28.9E	-1.8 36.4M		3	0	1
12/03/2016 Sat	16:48	23:43	6:40	4:44	20 24.7E	-0.5 4.0E	-4.2 17.7E	0.7 29.1E	-1.8 36.7M		3	0	1
12/04/2016 Sun	16:47	23:44	6:41	4:49	29 29.6E	-0.5 4.3E	-4.2 18.0E	0.7 29.3E	-1.8 37.0M		3	0	1
12/05/2016 Mon	16:47	23:44	6:42	4:53	39 33.6E	-0.5 4.6E	-4.2 18.3E	0.7 29.6E	-1.8 37.2M		3	0	1
12/06/2016 Tue	16:47	23:45	6:43	4:57	49 36.0E	-0.5 4.9E	-4.2 18.6E	0.7 29.8E	-1.8 37.5M		3	0	1
12/07/2016 Wed	16:47	23:45	6:43	5:02	60 36.6E 7.0m	-0.5 5.2E	-4.2 19.0E	0.7 30.0E	-1.8 37.7M		3	0	1
12/08/2016 Thr	16:47	23:46	6:44	5:06	71 35.1E 18.7m	-0.5 5.4E	-4.2 19.3E	0.7 30.3E	-1.8 37.9M		3	0	1
12/09/2016 Fri	16:47	23:46	6:45	5:11	81 31.3E 30.6m	-0.5 5.7E	-4.2 19.6E	0.7 30.5E	-1.8 38.1M		3	0	1
12/10/2016 Sat	16:47	23:47	6:46	5:15	89 25.6E 42.3m	-0.5 5.9E	-4.3 19.9E	0.7 30.7E	-1.8 38.3M		3	0	1
12/11/2016 Sun	16:47	23:47	6:47	5:19	95 18.4E 53.1m	-0.5 6.1E	-4.3 20.3E	0.7 31.0E	-1.8 38.5M		3	0	1
12/12/2016 Mon	16:48	23:47	6:48	5:24	99 10.2E 61.2m	-0.5 6.3E	-4.3 20.6E	0.7 31.2E	-1.8 38.6M		3	0	1
12/13/2016 Tue	16:48	23:48	6:48	5:28	100 1.7E 63.9m 7.8M	-0.4 6.4E	-4.3 21.0E	0.7 31.4E	-1.8 38.7M		3	0	1
12/14/2016 Wed	16:48	23:48	6:49	5:33	97 59.6m 17.7M	-0.3 6.4E	-4.3 21.3E	0.8 31.7E	-1.9 38.8M		3	0	1
12/15/2016 Thr	16:48	23:49	6:50	5:37	93 51.0m 26.8M	-0.2 6.4E	-4.3 21.7E	0.8 31.9E	-1.9 38.9M		3	0	1
12/16/2016 Fri	16:49	23:49	6:50	5:42	86 40.6m 34.6M	-0.1 6.3E	-4.3 22.0E	0.8 32.1E	-1.9 39.0M		3	0	1
12/17/2016 Sat	16:49	23:50	6:51	5:46	77 29.7m 40.6M	0.0 6.2E	-4.3 22.4E	0.8 32.4E	-1.9 39.1M		3	0	1
12/18/2016 Sun	16:49	23:50	6:51	5:50	68 18.9m 44.4M	0.3 5.9E	-4.3 22.7E	0.8 32.6E	-1.9 39.1M		3	0	1
12/19/2016 Mon	16:50	23:51	6:52	5:55	58 8.3m 45.7M	0.5 5.5E	-4.3 23.1E	0.8 32.8E	-1.9 39.2M		3	0	1
12/20/2016 Tue	16:50	23:51	6:53	5:59	48 44.6M	0.9 4.9E	-4.3 23.4E	0.8 33.0E	-1.9 39.2M		3	0	1
12/21/2016 Wed	16:51	23:52	6:53	6:04	39 41.4M	1.3 4.3E	-4.3 23.8E	0.8 33.3E	-1.9 39.2M		3	0	1
12/22/2016 Thr	16:51	23:52	6:53	6:08	30 36.6M	1.8 3.5E	-4.4 24.1E	0.8 33.5E	-1.9 39.2M	0.5 3.3M	3	0	2
12/23/2016 Fri	16:52	23:53	6:54	6:13	21 30.8M		-4.4 24.5E	0.8 33.7E	-1.9 39.1M	0.5 3.8M	2	0	2
12/24/2016 Sat	16:52	23:53	6:54	6:17	14 24.2M		-4.4 24.8E	0.8 33.9E	-1.9 39.1T 39.1M	0.5 4.4M	2	0	2
12/25/2016 Sun	16:53	23:54	6:55	6:21	8 17.0M		-4.4 25.2E	0.8 34.1E	-1.9 39.1T 39.0M	0.5 4.9M	2	0	2
12/26/2016 Mon	16:54	23:54	6:55	6:26	4 9.6M		-4.4 25.5E	0.8 34.3E	-1.9 39.0T 39.0M	0.5 5.4M	2	0	2

Night of	Pct.					Moon elev.	Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.									
12/27/2016 Tue	16:54	23:55	6:55	6:30	1 2.1M			-4.4 25.9E	0.9 34.5E	-1.9 39.0T 38.9M	0.5 5.9M	2	0	2
12/28/2016 Wed	16:55	23:55	6:55	6:35	0			-4.4 26.3E	0.9 34.7E	-1.9 38.9T 38.8M	0.5 6.4M	2	0	2
12/29/2016 Thr	16:56	23:56	6:55	6:39	1 1.9E			-4.4 26.6E	0.9 34.9E	-1.9 38.9T 38.7M	0.5 6.9M	2	0	2
12/30/2016 Fri	16:57	23:56	6:56	6:44	4 9.8E			-4.4 27.0E	0.9 35.1E	-1.9 38.9T 38.6M	0.5 7.4M	2	0	2
12/31/2016 Sat	16:58	23:57	6:56	6:48	9 17.9E			-4.4 27.3E	0.9 35.3E	-1.9 38.8T 38.4M	0.5 7.9M	2	0	2
01/01/2017 Sun	16:58	23:57	6:56	6:52	16 25.8E		2.4 3.5M	-4.4 27.6E	0.9 35.4E	-2.0 38.8T 38.3M	0.5 8.3M	2	0	3
01/02/2017 Mon	16:59	23:58	6:56	6:57	24 33.2E		1.9 4.7M	-4.5 28.0E	0.9 35.6E	-2.0 38.8T 38.2M	0.5 8.8M	2	0	3
01/03/2017 Tue	17:00	23:58	6:56	7:01	34 39.6E		1.5 5.7M	-4.5 28.3E	0.9 35.8E	-2.0 38.7T 38.0M	0.5 9.2M	2	0	3
01/04/2017 Wed	17:01	23:59	6:56	7:06	44 44.5E		1.1 6.5M	-4.5 28.7E	0.9 35.9E	-2.0 38.7T 37.8M	0.5 9.7M	2	0	3
01/05/2017 Thr	17:02	23:59	6:56	7:10	55 46.9E 5.9m		0.8 7.3M	-4.5 29.0E	0.9 36.1E	-2.0 38.7T 37.6M	0.5 10.1M	2	0	3
01/06/2017 Fri	17:03	23:59	6:56	7:14	66 46.2E 17.7m		0.6 7.9M	-4.5 29.3E	0.9 36.2E	-2.0 38.6T 37.5M	0.5 10.5M	2	0	3
01/07/2017 Sat	17:04	0:00	6:55	7:19	77 42.4E 29.7m		0.4 8.3M	-4.5 29.6E	0.9 36.4E	-2.0 38.6T 37.3M	0.5 10.9M	2	0	3
01/08/2017 Sun	17:05	0:00	6:55	7:23	86 35.9E 41.3m		0.2 8.7M	-4.5 29.9E	0.9 36.5E	-2.0 38.6T 37.1M	0.5 11.3M	2	0	3
01/09/2017 Mon	17:06	0:01	6:55	7:28	93 27.5E 52.0m		0.1 9.0M	-4.5 30.3E	1.0 36.6E	-2.0 38.6T 36.8M	0.5 11.7M	2	0	3
01/10/2017 Tue	17:07	0:01	6:55	7:32	98 18.0E 60.3m		0.0 9.1M	-4.5 30.6E	1.0 36.7E	-2.0 38.5T 36.6M	0.5 12.1M	2	0	3
01/11/2017 Wed	17:08	0:02	6:54	7:36	100 7.9E 63.7m 3.2M		-0.1 9.2M	-4.5 30.8E	1.0 36.9E	-2.0 38.5T 36.4M	0.5 12.4M	2	0	3
01/12/2017 Thr	17:09	0:02	6:54	7:41	99 60.7m 11.3M		-0.1 9.3M	-4.6 31.1E	1.0 37.0E	-2.0 38.5T 36.2M	0.5 12.8M	2	0	3
01/13/2017 Fri	17:11	0:02	6:53	7:45	96 53.1m 18.8M		-0.2 9.2M	-4.6 31.4E	1.0 37.0E	-2.0 38.5T 35.9M	0.5 13.2M	2	0	3
01/14/2017 Sat	17:12	0:03	6:53	7:49	90 43.5m 25.3M		-0.2 9.2M	-4.6 31.7E	1.0 37.1E	-2.0 38.4T 35.7M	0.5 13.5M	2	0	3
01/15/2017 Sun	17:13	0:03	6:53	7:53	83 33.1m 30.5M		-0.2 9.0M	-4.6 32.0E	1.0 37.2E	-2.0 38.4T 35.4M	0.5 13.8M	2	0	3
01/16/2017 Mon	17:14	0:03	6:52	7:58	75 22.7m 34.2M		-0.2 8.9M	-4.6 32.2E	1.0 37.3E	-2.0 38.4T 35.2M	0.5 14.2M	2	0	3
01/17/2017 Tue	17:15	0:04	6:51	8:02	66 12.4m 36.2M		-0.2 8.7M	-4.6 32.5E	1.0 37.4E	-2.1 38.4T 34.9M	0.5 14.5M	2	0	3
01/18/2017 Wed	17:16	0:04	6:51	8:06	56 2.5m 36.4M		-0.2 8.4M	-4.6 32.7E	1.0 37.4E	-2.1 38.4T 34.6M	0.5 14.8M	2	0	3
01/19/2017 Thr	17:18	0:04	6:50	8:10	47 35.1M		-0.2 8.2M	-4.6 32.9E	1.0 37.5E	-2.1 38.3T 34.4M	0.6 15.1M	2	0	3
01/20/2017 Fri	17:19	0:04	6:50	8:15	37 32.3M		-0.2 7.9M	-4.6 33.1E	1.0 37.5E	-2.1 3.5m 38.3T 34.1M	0.6 15.4M	2	1	3
01/21/2017 Sat	17:20	0:05	6:49	8:19	28 28.3M		-0.2 7.6M	-4.6 33.3E	1.0 37.5E	-2.1 4.2m 38.3T 33.8M	0.6 15.7M	2	1	3
01/22/2017 Sun	17:21	0:05	6:48	8:23	20 23.4M		-0.2 7.3M	-4.7 33.5E	1.1 37.6E	-2.1 4.9m 38.3T 33.5M	0.6 16.0M	2	1	3
01/23/2017 Mon	17:23	0:05	6:47	8:27	13 17.7M		-0.2 7.0M	-4.7 33.7E	1.1 37.6E	-2.1 5.5m 38.3T 33.2M	0.6 16.3M	2	1	3
01/24/2017 Tue	17:24	0:05	6:47	8:31	7 11.5M		-0.2 6.7M	-4.7 33.9E	1.1 37.6E	-2.1 6.2m 38.3T 32.9M	0.6 16.5M	2	1	3
01/25/2017 Wed	17:25	0:06	6:46	8:36	3 5.0M		-0.2 6.3M	-4.7 34.0E	1.1 37.6E	-2.1 6.9m 38.3T 32.7M	0.6 16.8M	2	1	3
01/26/2017 Thr	17:26	0:06	6:45	8:40	1		-0.2 6.0M	-4.7 34.1E	1.1 37.6E	-2.1 7.5m 38.3T 32.4M	0.6 17.0M	2	1	3
01/27/2017 Fri	17:28	0:06	6:44	8:44	0		-0.2 5.7M	-4.7 34.3E	1.1 37.6E	-2.1 8.2m 38.3T 32.1M	0.6 17.3M	2	1	3
01/28/2017 Sat	17:29	0:06	6:43	8:48	2 4.4E		-0.2 5.3M	-4.7 34.4E	1.1 37.5E	-2.1 8.9m 38.3T 31.8M	0.6 17.5M	2	1	3
01/29/2017 Sun	17:30	0:06	6:42	8:52	6 14.4E		-0.2 4.9M	-4.7 34.5E	1.1 37.5E	-2.1 9.5m 38.2T 31.5M	0.6 17.8M	2	1	3
01/30/2017 Mon	17:32	0:07	6:41	8:56	12 24.5E		-0.2 4.6M	-4.7 34.5E	1.1 37.5E	-2.1 10.2m 38.2T 31.1M	0.6 18.0M	2	1	3
01/31/2017 Tue	17:33	0:07	6:40	9:00	20 34.4E		-0.2 4.2M	-4.7 34.6E	1.1 37.4E	-2.2 10.9m 38.2T 30.8M	0.6 18.2M	2	1	3
02/01/2017 Wed	17:34	0:07	6:39	9:04	29 43.6E		-0.2 3.9M	-4.8 34.6E	1.1 37.4E	-2.2 11.5m 38.2T 30.5M	0.6 18.4M	2	1	3
02/02/2017 Thr	17:35	0:07	6:38	9:08	40 51.4E		-0.2 3.5M	-4.8 34.7E	1.1 37.3E	-2.2 12.2m 38.2T 30.2M	0.6 18.6M	2	1	3
02/03/2017 Fri	17:37	0:07	6:37	9:12	51 56.4E 6.2m		-0.2 3.1M	-4.8 34.7E	1.1 37.3E	-2.2 12.8m 38.2T 29.9M	0.6 18.8M	2	1	3
02/04/2017 Sat	17:38	0:07	6:36	9:16	63 57.3E 17.7m		-0.2 2.8M	-4.8 34.6E	1.1 37.2E	-2.2 13.5m 38.2T 29.6M	0.6 19.0M	2	1	2
02/05/2017 Sun	17:39	0:07	6:34	9:21	74 53.4E 29.1m		-0.2 2.5M	-4.8 34.6E	1.2 37.1E	-2.2 14.1m 38.2T 29.3M	0.6 19.2M	2	1	2
02/06/2017 Mon	17:41	0:07	6:33	9:25	83 46.1E 39.9m		-0.2 2.2M	-4.8 34.5E	1.2 37.0E	-2.2 14.8m 38.3T 28.9M	0.6 19.4M	2	1	2
02/07/2017 Tue	17:42	0:07	6:32	9:28	91 36.7E 49.4m		-0.2 1.9M	-4.8 34.5E	1.2 36.9E	-2.2 15.4m 38.3T 28.6M	0.6 19.6M	2	1	2
02/08/2017 Wed	17:43	0:07	6:31	9:32	96 26.3E 56.5m		-0.2 1.6M	-4.8 34.4E	1.2 36.8E	-2.2 16.1m 38.3T 28.3M	0.6 19.8M	2	1	2
02/09/2017 Thr	17:45	0:07	6:29	9:36	99 15.5E 59.5m 1.3M		-0.2 1.3M	-4.8 34.2E	1.2 36.7E	-2.2 16.7m 38.3T 28.0M	0.6 20.0M	2	1	2
02/10/2017 Fri	17:46	0:07	6:28	9:40	100 4.6E 57.4m 7.8M		-0.2 1.0M	-4.8 34.1E	1.2 36.6E	-2.2 17.3m 38.3T 27.7M	0.6 20.1M	2	1	2
02/11/2017 Sat	17:47	0:07	6:27	9:44	98 51.4m 14.1M		-0.2 0.7M	-4.8 33.9E	1.2 36.5E	-2.2 18.0m 38.3T 27.3M	0.6 20.3M	2	1	2
02/12/2017 Sun	17:49	0:07	6:25	9:48	94 43.2m 19.6M		-0.2 0.4M	-4.8 33.7E	1.2 36.4E	-2.2 18.6m 38.3T 27.0M	0.6 20.4M	2	1	2
02/13/2017 Mon	17:50	0:07	6:24	9:52	88 34.0m 24.2M		-0.2 0.1M	-4.8 33.5E	1.2 36.2E	-2.2 19.2m 38.3T 26.7M	0.6 20.6M	2	1	2
02/14/2017 Tue	17:51	0:07	6:23	9:56	81 24.4m 27.6M		-0.2 0.0M	-4.8 33.3E	1.2 36.1E	-2.2 19.8m 38.3T 26.3M	0.6 20.8M	2	1	2
02/15/2017 Wed	17:53	0:07	6:21	10:00	73 14.8m 29.8M		-0.2 0.0M	-4.8 33.0E	1.2 35.9E	-2.3 20.4m 38.3T 26.0M	0.6 20.9M	2	1	2
02/16/2017 Thr	17:54	0:07	6:20	10:04	64 5.3m 30.6M		-0.2 0.0M	-4.8 32.7E	1.2 35.8E	-2.3 21.0m 38.4T 25.7M	0.6 21.0M	2	1	2

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar Illum.								
02/17/2017 Fri	17:55	0:07	6:18	10:08	55 30.2M		-4.8 32.3E	1.2 35.6E	-2.3 21.6m 38.4T 25.3M	0.6 21.2M	2	1	2
02/18/2017 Sat	17:56	0:07	6:17	10:11	46 28.5M		-4.8 32.0E	1.2 35.5E	-2.3 22.2m 38.4T 25.0M	0.6 21.3M	2	1	2
02/19/2017 Sun	17:58	0:07	6:15	10:15	36 25.6M		-4.8 31.6E	1.2 35.3E	-2.3 22.8m 38.4T 24.7M	0.6 21.4M	2	1	2
02/20/2017 Mon	17:59	0:07	6:14	10:19	27 21.8M		-4.8 31.1E	1.3 35.1E	-2.3 23.4m 38.4T 24.3M	0.6 21.6M	2	1	2
02/21/2017 Tue	18:00	0:07	6:12	10:23	19 17.1M		-4.8 30.7E	1.3 35.0E	-2.3 24.0m 38.5T 24.0M	0.6 21.7M	2	1	2
02/22/2017 Wed	18:02	0:07	6:11	10:27	12 11.8M		-4.8 30.2E	1.3 34.8E	-2.3 24.5m 38.5T 23.6M	0.6 21.8M	2	1	2
02/23/2017 Thr	18:03	0:06	6:09	10:31	6 5.9M		-4.8 29.6E	1.3 34.6E	-2.3 25.1m 38.5T 23.3M	0.6 21.9M	2	1	2
02/24/2017 Fri	18:04	0:06	6:07	10:34	2 0.1M		-4.8 29.1E	1.3 34.4E	-2.3 25.7m 38.5T 23.0M	0.6 22.0M	2	1	2
02/25/2017 Sat	18:06	0:06	6:06	10:38	0		-4.8 28.5E	1.3 34.2E	-2.3 26.2m 38.6T 22.6M	0.6 22.1M	2	1	2
02/26/2017 Sun	18:07	0:06	6:04	10:42	1		-4.8 27.8E	1.3 34.0E	-2.3 26.8m 38.6T 22.3M	0.5 22.2M	2	1	2
02/27/2017 Mon	18:08	0:06	6:03	10:46	4 9.3E		-4.8 27.2E	1.3 33.8E	-2.3 27.3m 38.6T 21.9M	0.5 22.3M	2	1	2
02/28/2017 Tue	18:09	0:06	6:01	10:49	9 20.8E		-4.8 26.4E	1.3 33.6E	-2.3 27.8m 38.6T 21.6M	0.5 22.4M	2	1	2
03/01/2017 Wed	18:11	0:05	5:59	10:53	17 32.3E		-4.8 25.7E	1.3 33.4E	-2.3 28.4m 38.7T 21.2M	0.5 22.5M	2	1	2
03/02/2017 Thr	18:12	0:05	5:58	10:57	26 43.3E		-4.8 24.9E	1.3 33.2E	-2.3 28.9m 38.7T 20.9M	0.5 22.6M	2	1	2
03/03/2017 Fri	18:13	0:05	5:56	11:01	37 53.2E		-4.7 24.0E	1.3 33.0E	-2.3 29.4m 38.7T 20.5M	0.5 22.7M	2	1	2
03/04/2017 Sat	18:14	0:05	5:54	11:04	48 60.7E 7.9m		-4.7 23.2E	1.3 32.8E	-2.4 29.9m 38.8T 20.2M	0.5 22.8M	2	1	2
03/05/2017 Sun	18:16	0:04	5:52	11:08	59 63.6E 18.5m		-4.7 22.2E	1.3 32.5E	-2.4 30.4m 38.8T 19.8M	0.5 22.9M	2	1	2
03/06/2017 Mon	18:17	0:04	5:51	11:12	70 60.7E 28.7m		-4.7 21.3E	1.3 32.3E	-2.4 30.9m 38.8T 19.5M	0.5 22.9M	2	1	2
03/07/2017 Tue	18:18	0:04	5:49	11:15	80 53.4E 37.9m		-4.7 20.3E	1.3 32.1E	-2.4 31.4m 38.9T 19.1M	0.5 23.0M	2	1	2
03/08/2017 Wed	18:20	0:04	5:47	11:19	88 43.9E 45.6m		-4.6 19.2E	1.4 31.9E	-2.4 31.8m 38.9T 18.8M	0.5 23.1M	2	1	2
03/09/2017 Thr	18:21	0:03	5:45	11:23	94 33.4E 50.9m		-4.6 18.1E	1.4 31.6E	-2.4 32.3m 38.9T 18.4M	0.5 23.1M	2	1	2
03/10/2017 Fri	18:22	0:03	5:44	11:27	98 22.6E 52.8m 0.7M		-4.6 17.0E	1.4 31.4E	-2.4 32.7m 39.0T 18.0M	0.5 23.2M	2	1	2
03/11/2017 Sat	18:23	0:03	5:42	11:30	100 11.8E 51.2m 6.2M		-4.5 15.8E	1.4 31.1E	-2.4 33.2m 39.0T 17.7M	0.5 23.3M	2	1	2
03/12/2017 Sun*	18:25	0:03	5:40	11:34	99 1.3E 46.5m 11.6M		-4.5 14.6E	1.4 30.9E	-2.4 33.6m 39.1T 17.3M	0.5 23.3M	2	1	2
03/13/2017 Mon*	18:26	0:02	5:38	11:38	97 39.9m 16.5M		-4.4 13.4E	1.4 30.6E	-2.4 34.0m 39.1T 16.9M	0.5 23.4M	2	1	2
03/14/2017 Tue*	18:27	0:02	5:36	11:41	93 32.2m 20.6M		-4.4 12.1E	1.4 30.4E	-2.4 34.4m 39.1T 16.6M	0.5 23.4M	2	1	2
03/15/2017 Wed*	18:28	0:02	5:35	11:45	87 23.8m 23.8M		-4.3 10.8E	1.4 30.1E	-2.4 34.8m 39.2T 16.2M	0.5 23.5M	2	1	2
03/16/2017 Thr*	18:30	0:02	5:33	11:49	80 15.3m 26.1M	-1.4 3.2E	-4.3 9.4E	1.4 29.9E	-2.4 35.2m 39.2T 15.8M	0.5 23.5M	3	1	2
03/17/2017 Fri*	18:31	0:01	5:31	11:52	72 6.7m 27.2M	-1.3 4.1E	-4.2 8.0E	1.4 29.6E	-2.4 35.6m 39.3T 15.5M	0.5 23.6M	3	1	2
03/18/2017 Sat*	18:32	0:01	5:29	11:56	63 27.2M	-1.3 5.0E	-4.2 6.6E	1.4 29.4E	-2.4 36.0m 39.3T 15.1M	0.5 23.6M	3	1	2
03/19/2017 Sun*	18:33	0:01	5:27	11:59	54 26.1M	-1.2 5.9E	-4.1 5.2E	1.4 29.1E	-2.4 36.3m 39.3T 14.7M	0.5 23.6M	3	1	2
03/20/2017 Mon*	18:35	0:00	5:25	12:03	44 23.9M	-1.2 6.8E	-4.2 3.8E	1.4 28.8E	-2.4 36.7m 39.4T 14.3M	0.5 23.7M	3	1	2
03/21/2017 Tue*	18:36	0:00	5:24	12:07	35 20.7M	-1.1 7.6E		1.4 28.6E	-2.4 37.0m 39.4T 14.0M	0.5 23.7M	2	1	2
03/22/2017 Wed*	18:37	0:00	5:22	12:10	25 16.6M	-1.1 8.4E		1.4 28.3E	-2.4 37.3m 39.5T 13.6M	0.5 23.7M	2	1	2
03/23/2017 Thr*	18:38	23:59	5:20	12:14	17 11.7M	-1.0 9.1E		1.4 28.0E	-2.4 37.6m 39.5T 13.2M	0.5 23.8M	2	1	2
03/24/2017 Fri*	18:40	23:59	5:18	12:18	10 6.3M	-0.9 9.8E		1.4 27.8E	-2.4 37.9m 39.6T 12.8M	0.5 23.8M	2	1	2
03/25/2017 Sat*	18:41	23:59	5:16	12:21	4 0.6M	-0.9 10.5E		1.4 27.5E	-2.4 38.1m 39.6T 12.4M	0.5 23.8M	2	1	2
03/26/2017 Sun*	18:42	23:59	5:14	12:25	1	-0.8 11.0E	-4.2 3.0M	1.4 27.2E	-2.4 38.4m 39.7T 12.1M	0.5 23.8M	2	1	3
03/27/2017 Mon*	18:43	23:58	5:12	12:29	0	-0.7 11.5E	-4.2 3.5M	1.5 26.9E	-2.5 38.6m 39.7T 11.7M	0.5 23.8M	2	1	3
03/28/2017 Tue*	18:45	23:58	5:11	12:32	2 3.7E	-0.6 11.9E	-4.2 4.0M	1.5 26.7E	-2.5 38.9m 39.8T 11.3M	0.5 23.8M	2	1	3
03/29/2017 Wed*	18:46	23:58	5:09	12:36	7 15.9E	-0.5 12.2E	-4.1 4.4M	1.5 26.4E	-2.5 39.1m 39.8T 10.9M	0.5 23.8M	2	1	3
03/30/2017 Thr*	18:47	23:57	5:07	12:40	14 28.0E	-0.3 12.4E	-4.1 4.8M	1.5 26.1E	-2.5 39.3m 39.9T 10.5M	0.4 23.9M	2	1	3
03/31/2017 Fri*	18:48	23:57	5:05	12:43	23 39.6E	-0.2 12.5E	-4.2 5.2M	1.5 25.8E	-2.5 39.5m 39.9T 10.1M	0.4 23.9T 23.9M	2	1	3
04/01/2017 Sat*	18:50	23:57	5:03	12:47	33 50.2E	0.0 12.5E	-4.2 5.6M	1.5 25.5E	-2.5 39.6m 39.9T 9.7M	0.4 23.9T 23.8M	2	1	3
04/02/2017 Sun*	18:51	23:56	5:01	12:50	45 58.6E 8.9m	0.2 12.4E	-4.3 6.0M	1.5 25.2E	-2.5 39.8m 40.0T 9.3M	0.4 23.9T 23.8M	2	1	3
04/03/2017 Mon*	18:52	23:56	4:59	12:54	56 63.2E 18.1m	0.4 12.2E	-4.3 6.4M	1.5 24.9E	-2.5 39.9m 40.0T 8.9M	0.4 23.9T 23.8M	2	1	3
04/04/2017 Tue*	18:54	23:56	4:58	12:58	67 62.2E 26.6m	0.6 11.9E	-4.4 6.7M	1.5 24.6E	-2.5 3.9E 40.0m 40.1T 8.5M	0.4 23.9T 23.8M	3	1	3
04/05/2017 Wed*	18:55	23:56	4:56	13:01	76 56.5E 33.9m	0.8 11.5E	-4.4 7.0M	1.5 24.3E	-2.5 4.9E 40.1m 40.1T 8.1M	0.4 23.9T 23.8M	3	1	3
04/06/2017 Thr*	18:56	23:55	4:54	13:05	85 48.2E 39.7m	1.1 10.9E	-4.4 7.3M	1.5 24.0E	-2.5 5.9E 40.2m 40.2T 7.7M	0.4 23.9T 23.8M	3	1	3
04/07/2017 Fri*	18:57	23:55	4:52	13:09	91 38.6E 43.4m	1.4 10.3E	-4.5 7.6M	1.5 23.7E	-2.5 6.9E 40.2m 40.2T 7.3M	0.4 23.9T 23.8M	3	1	3
04/08/2017 Sat*	18:59	23:55	4:50	13:12	96 28.6E 44.7m 0.1M	1.7 9.5E	-4.5 7.9M	1.5 23.4E	-2.5 7.9E 40.3m 40.3T 6.9M	0.4 23.9T 23.7M	3	1	3
04/09/2017 Sun*	19:00	23:54	4:48	13:16	99 18.5E 43.6m 4.9M	2.0 8.6E	-4.5 8.2M	1.5 23.1E	-2.5 8.9E 40.3m 40.3T 6.5M	0.4 23.9T 23.7M	3	1	3

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M	
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.									Moon elev.
04/10/2017 Mon*	19:01	23:54	4:47	13:20	100	8.4E 40.3m 9.9M	2.4 7.7E	-4.6 8.4M	1.5 22.8E	-2.5 9.9E 40.3m 40.4T 6.1M	0.4 23.9T 23.7M	3	1	3
04/11/2017 Tue*	19:02	23:54	4:45	13:23	99	35.3m 14.4M	2.8 6.6E	-4.6 8.6M	1.5 22.5E	-2.5 10.9E 40.3m 40.4T 5.7M	0.4 23.9T 23.6M	3	1	3
04/12/2017 Wed*	19:04	23:54	4:43	13:27	96	29.2m 18.4M	3.2 5.4E	-4.6 8.8M	1.5 22.2E	-2.5 11.9E 40.3m 40.5T 5.2M	0.4 23.9T 23.6M	3	1	3
04/13/2017 Thr*	19:05	23:53	4:41	13:31	91	22.5m 21.6M	3.6 4.2E	-4.6 9.0M	1.5 21.9E	-2.5 12.9E 40.2m 40.5T 4.8M	0.4 23.9T 23.5M	3	1	3
04/14/2017 Fri*	19:06	23:53	4:39	13:35	86	15.3m 24.1M		-4.7 9.2M	1.5 21.6E	-2.5 13.9E 40.2m 40.6T 4.4M	0.4 23.9T 23.5M	2	1	3
04/15/2017 Sat*	19:08	23:53	4:38	13:38	78	7.9m 25.6M		-4.7 9.4M	1.5 21.3E	-2.5 14.9E 40.1m 40.6T 4.0M	0.4 23.9T 23.4M	2	1	3
04/16/2017 Sun*	19:09	23:53	4:36	13:42	70	0.7m 26.0M		-4.7 9.5M	1.5 21.0E	-2.5 15.8E 40.0m 40.7T 3.6M	0.4 3.1m 23.9T 23.4M	2	2	3
04/17/2017 Mon*	19:10	23:53	4:34	13:46	61	25.4M		-4.7 9.7M	1.5 20.7E	-2.5 16.8E 39.9m 40.7T 3.2M	0.4 3.7m 23.9T 23.3M	2	2	3
04/18/2017 Tue*	19:12	23:52	4:32	13:49	51	23.7M		-4.7 9.8M	1.6 20.4E	-2.5 17.8E 39.7m 40.8T	0.3 4.2m 23.9T 23.2M	2	2	2
04/19/2017 Wed*	19:13	23:52	4:31	13:53	41	20.9M		-4.7 9.9M	1.6 20.1E	-2.4 18.7E 39.6m 40.8T	0.3 4.7m 23.9T 23.2M	2	2	2
04/20/2017 Thr*	19:14	23:52	4:29	13:57	32	17.2M		-4.7 10.1M	1.6 19.8E	-2.4 19.6E 39.4m 40.8T	0.3 5.3m 23.9T 23.1M	2	2	2
04/21/2017 Fri*	19:16	23:52	4:27	14:01	22	12.6M		-4.7 10.2M	1.6 19.4E	-2.4 20.6E 39.2m 40.9T	0.3 5.8m 23.9T 23.0M	2	2	2
04/22/2017 Sat*	19:17	23:51	4:26	14:04	14	7.3M		-4.7 10.3M	1.6 19.1E	-2.4 21.5E 39.0m 40.9T	0.3 6.3m 23.9T 22.9M	2	2	2
04/23/2017 Sun*	19:18	23:51	4:24	14:08	7	1.6M		-4.7 10.4M	1.6 18.8E	-2.4 22.4E 38.8m 41.0T	0.3 6.9m 23.9T 22.8M	2	2	2
04/24/2017 Mon*	19:19	23:51	4:22	14:12	2			-4.7 10.5M	1.6 18.5E	-2.4 23.3E 38.5m 41.0T	0.3 7.4m 23.9T 22.7M	2	2	2
04/25/2017 Tue*	19:21	23:51	4:21	14:16	0			-4.7 10.6M	1.6 18.2E	-2.4 24.2E 38.3m 41.1T	0.3 7.9m 23.9T 22.6M	2	2	2
04/26/2017 Wed*	19:22	23:51	4:19	14:19	1			-4.7 10.7M	1.6 17.8E	-2.4 25.0E 38.0m 41.1T	0.3 8.4m 23.9T 22.5M	2	2	2
04/27/2017 Thr*	19:23	23:51	4:17	14:23	5	10.1E		-4.7 10.8M	1.6 17.5E	-2.4 25.9E 37.7m 41.1T	0.3 9.0m 23.9T 22.4M	2	2	2
04/28/2017 Fri*	19:25	23:51	4:16	14:27	11	21.8E		-4.7 10.8M	1.6 17.2E	-2.4 26.7E 37.4m 41.2T	0.3 9.5m 23.9T 22.3M	2	2	2
04/29/2017 Sat*	19:26	23:50	4:14	14:31	20	33.0E		-4.7 10.9M	1.6 16.9E	-2.4 27.6E 37.1m 41.2T	0.3 10.0m 23.9T 22.1M	2	2	2
04/30/2017 Sun*	19:27	23:50	4:13	14:35	30	42.9E		-4.7 11.0M	1.6 16.6E	-2.4 28.4E 36.8m 41.3T	0.3 10.5m 23.9T 22.0M	2	2	2
05/01/2017 Mon*	19:29	23:50	4:11	14:38	41	50.9E 6.7m		-4.7 11.1M	1.6 16.2E	-2.4 29.2E 36.4m 41.3T	0.3 11.0m 23.9T 21.9M	2	2	2
05/02/2017 Tue*	19:30	23:50	4:10	14:42	52	55.9E 14.2m		-4.7 11.1M	1.6 15.9E	-2.4 29.9E 36.0m 41.3T	0.3 11.5m 23.9T 21.7M	2	2	2
05/03/2017 Wed*	19:31	23:50	4:08	14:46	63	57.0E 20.9m		-4.7 11.2M	1.6 15.6E	-2.4 30.7E 35.7m 41.4T	0.3 12.0m 23.9T 21.6M	2	2	2
05/04/2017 Thr*	19:33	23:50	4:07	14:50	72	54.1E 26.7m		-4.7 11.3M	1.6 15.3E	-2.4 31.4E 35.3m 41.4T	0.2 12.5m 23.9T 21.4M	2	2	2
05/05/2017 Fri*	19:34	23:50	4:05	14:54	81	48.4E 31.2m		-4.7 11.4M	1.6 14.9E	-2.4 32.2E 34.9m 41.4T	0.2 12.9m 23.9T 21.2M	2	2	2
05/06/2017 Sat*	19:35	23:50	4:04	14:58	88	41.0E 34.2m		-4.7 11.4M	1.6 14.6E	-2.4 32.9E 34.4m 41.5T	0.2 13.4m 23.9T 21.1M	2	2	2
05/07/2017 Sun*	19:36	23:50	4:02	15:02	94	32.7E 35.7m		-4.7 11.5M	1.6 14.3E	-2.4 33.5E 34.0m 41.5T	0.2 13.9m 23.9T 20.9M	2	2	2
05/08/2017 Mon*	19:38	23:50	4:01	15:06	97	23.9E 35.5m 2.7M		-4.7 11.6M	1.6 14.0E	-2.4 34.2E 33.5m 41.5T	0.2 14.3m 23.9T 20.7M	2	2	2
05/09/2017 Tue*	19:39	23:50	4:00	15:09	99	15.0E 33.8m 7.5M		-4.7 11.7M	1.6 13.6E	-2.4 34.8E 33.1m 41.6T	0.2 14.8m 23.9T 20.5M	2	2	2
05/10/2017 Wed*	19:40	23:50	3:58	15:13	100	6.1E 30.8m 12.2M		-4.7 11.7M	1.6 13.3E	-2.4 35.4E 32.6m 41.6T	0.2 15.2m 23.9T 20.3M	2	2	2
05/11/2017 Thr*	19:42	23:50	3:57	15:17	98	26.7m 16.5M		-4.7 11.8M	1.6 13.0E	-2.4 36.0E 32.1m 41.6T	0.2 15.7m 23.9T 20.1M	2	2	2
05/12/2017 Fri*	19:43	23:50	3:56	15:21	95	21.8m 20.2M		-4.7 11.9M	1.6 12.7E	-2.4 36.6E 31.6m 41.7T	0.2 16.1m 23.9T 19.9M	2	2	2
05/13/2017 Sat*	19:44	23:50	3:55	15:25	90	16.4m 23.3M		-4.6 12.0M	1.6 12.3E	-2.4 37.1E 31.1m 41.7T	0.2 16.5m 23.9T 19.7M	2	2	2
05/14/2017 Sun*	19:45	23:50	3:53	15:29	84	10.6m 25.5M		-4.6 12.1M	1.6 12.0E	-2.3 37.6E 30.6m 41.7T	0.2 16.9m 23.9T 19.4M	2	2	2
05/15/2017 Mon*	19:47	23:50	3:52	15:33	76	4.6m 26.8M		-4.6 12.2M	1.6 11.7E	-2.3 38.1E 30.0m 41.7T	0.2 17.3m 23.9T 19.2M	2	2	2
05/16/2017 Tue*	19:48	23:50	3:51	15:37	67	27.0M		-4.6 12.3M	1.6 11.4E	-2.3 38.6E 29.5m 41.8T	0.2 17.7m 23.9T 18.9M	2	2	2
05/17/2017 Wed*	19:49	23:50	3:50	15:41	58	26.0M		-4.6 12.4M	1.6 11.1E	-2.3 39.0E 28.9m 41.8T	0.2 18.1m 23.9T 18.7M	2	2	2
05/18/2017 Thr*	19:50	23:50	3:49	15:45	47	23.8M		-4.6 12.5M	1.6 10.7E	-2.3 39.4E 28.4m 41.8T	0.2 18.5m 23.9T 18.4M	2	2	2
05/19/2017 Fri*	19:51	23:50	3:48	15:49	37	20.4M		-4.6 12.6M	1.6 10.4E	-2.3 39.8E 27.8m 41.8T	0.2 18.9m 23.9T 18.1M	2	2	2
05/20/2017 Sat*	19:53	23:50	3:47	15:53	27	16.0M		-4.6 12.7M	1.7 10.1E	-2.3 40.1E 27.2m 41.8T	0.1 19.2m 23.9T 17.8M	2	2	2
05/21/2017 Sun*	19:54	23:50	3:46	15:57	18	10.6M		-4.6 12.8M	1.7 9.8E	-2.3 40.4E 26.6m 41.9T	0.1 19.6m 23.9T 17.6M	2	2	2
05/22/2017 Mon*	19:55	23:50	3:45	16:01	10	4.5M		-4.6 12.9M	1.7 9.5E	-2.3 40.7E 26.0m 41.9T	0.1 19.9m 23.9T 17.2M	2	2	2
05/23/2017 Tue*	19:56	23:50	3:44	16:05	4			-4.5 13.0M	1.7 9.2E	-2.3 41.0E 25.4m 41.9T	0.1 20.2m 23.9T 16.9M	2	2	2
05/24/2017 Wed*	19:57	23:50	3:43	16:09	1			-4.5 13.1M	1.7 8.9E	-2.3 41.2E 24.8m 41.9T	0.1 20.5m 23.9T 16.6M	2	2	2
05/25/2017 Thr*	19:58	23:50	3:42	16:13	1			-4.5 13.2M	1.7 8.6E	-2.3 41.4E 24.2m 41.9T	0.1 20.8m 23.9T 16.3M	2	2	2
05/26/2017 Fri*	19:59	23:50	3:41	16:17	3	4.0E		-4.5 13.4M	1.7 8.3E	-2.3 41.6E 23.6m 41.9T	0.1 21.1m 23.9T 15.9M	2	2	2
05/27/2017 Sat*	20:00	23:50	3:40	16:21	9	14.3E		-4.5 13.5M	1.7 8.0E	-2.3 41.7E 22.9m 41.9T	0.1 21.4m 23.9T 15.6M	2	2	2
05/28/2017 Sun*	20:01	23:51	3:40	16:25	17	24.0E		-4.5 13.6M	1.7 7.7E	-2.3 41.8E 22.3m 42.0T	0.1 21.7m 23.9T 15.2M	2	2	2
05/29/2017 Mon*	20:02	23:51	3:39	16:29	27	32.5E		-4.5 13.8M	1.7 7.4E	-2.3 41.9E 21.6m 42.0T	0.1 21.9m 23.9T 14.8M	2	2	2
05/30/2017 Tue*	20:03	23:51	3:38	16:34	37	39.3E 0.5m		-4.5 13.9M	1.7 7.1E	-2.3 41.9E 21.0m 42.0T	0.1 22.2m 23.9T 14.4M	2	2	2
05/31/2017 Wed*	20:04	23:51	3:38	16:38	48	44.1E 6.2m		-4.5 14.1M	1.7 6.8E	-2.2 42.0E 20.3m 42.0T	0.1 22.4m 23.9T 14.0M	2	2	2

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.								
06/01/2017 Thr*	20:05	23:51	3:37	16:42	58 46.3E 11.6m								
06/02/2017 Fri*	20:06	23:51	3:37	16:46	68 45.8E 16.4m								
06/03/2017 Sat*	20:07	23:52	3:36	16:50	77 43.1E 20.5m								
06/04/2017 Sun*	20:08	23:52	3:36	16:54	84 38.5E 23.8m								
06/05/2017 Mon*	20:08	23:52	3:35	16:58	91 32.8E 26.1m								
06/06/2017 Tue*	20:09	23:52	3:35	17:02	95 26.2E 27.5m								
06/07/2017 Wed*	20:10	23:52	3:34	17:06	98 19.1E 27.8m 3.2M								
06/08/2017 Thr*	20:11	23:52	3:34	17:11	100 11.7E 27.1m 8.5M								
06/09/2017 Fri*	20:11	23:53	3:34	17:15	99 4.3E 25.5m 13.8M								
06/10/2017 Sat*	20:12	23:53	3:34	17:19	97 23.0m 18.9M								
06/11/2017 Sun*	20:12	23:53	3:34	17:23	93 19.7m 23.4M								
06/12/2017 Mon*	20:13	23:53	3:33	17:27	88 15.9m 27.3M								
06/13/2017 Tue*	20:13	23:53	3:33	17:31	81 11.5m 30.3M								
06/14/2017 Wed*	20:14	23:54	3:33	17:35	72 6.7m 32.0M								
06/15/2017 Thr*	20:14	23:54	3:33	17:40	63 1.8m 32.4M								
06/16/2017 Fri*	20:15	23:54	3:33	17:44	52 31.1M								
06/17/2017 Sat*	20:15	23:54	3:33	17:48	41 28.2M								
06/18/2017 Sun*	20:15	23:55	3:34	17:52	31 23.8M								
06/19/2017 Mon*	20:16	23:55	3:34	17:56	21 17.9M								
06/20/2017 Tue*	20:16	23:55	3:34	18:00	12 11.0M								
06/21/2017 Wed*	20:16	23:55	3:34	18:05	5 3.5M								
06/22/2017 Thr*	20:16	23:55	3:34	18:09	1								
06/23/2017 Fri*	20:16	23:56	3:35	18:13	0								
06/24/2017 Sat*	20:17	23:56	3:35	18:17	2								
06/25/2017 Sun*	20:17	23:56	3:36	18:21	7 7.6E								
06/26/2017 Mon*	20:17	23:56	3:36	18:25	14 15.5E								
06/27/2017 Tue*	20:17	23:56	3:36	18:30	23 22.5E								
06/28/2017 Wed*	20:16	23:57	3:37	18:34	32 28.2E								
06/29/2017 Thr*	20:16	23:57	3:38	18:38	43 32.5E								
06/30/2017 Fri*	20:16	23:57	3:38	18:42	53 35.1E 0.4m								
07/01/2017 Sat*	20:16	23:57	3:39	18:46	62 36.1E 4.8m								
07/02/2017 Sun*	20:16	23:57	3:39	18:50	72 35.3E 9.2m								
07/03/2017 Mon*	20:15	23:58	3:40	18:54	80 33.1E 13.4m	-0.8 3.3E							
07/04/2017 Tue*	20:15	23:58	3:41	18:58	87 29.6E 17.1m	-0.7 3.7E							
07/05/2017 Wed*	20:15	23:58	3:42	19:03	92 25.2E 20.4m	-0.7 4.0E							
07/06/2017 Thr*	20:14	23:58	3:42	19:07	97 19.9E 23.0m	-0.6 4.4E							
07/07/2017 Fri*	20:14	23:58	3:43	19:11	99 14.2E 24.9m 2.4M	-0.5 4.7E							
07/08/2017 Sat*	20:13	23:58	3:44	19:15	100 8.1E 26.0m 9.4M	-0.5 4.9E							
07/09/2017 Sun*	20:12	23:59	3:45	19:19	99 2.0E 26.1m 16.4M	-0.4 5.2E							
07/10/2017 Mon*	20:12	23:59	3:46	19:23	96 25.2m 23.4M	-0.4 5.4E							
07/11/2017 Tue*	20:11	23:59	3:47	19:27	91 23.3m 29.8M	-0.3 5.6E							
07/12/2017 Wed*	20:11	23:59	3:48	19:31	84 20.4m 35.5M	-0.3 5.7E							
07/13/2017 Thr*	20:10	23:59	3:49	19:35	76 16.7m 40.0M	-0.2 5.8E							
07/14/2017 Fri*	20:09	23:59	3:50	19:39	66 12.2m 42.6M	-0.2 5.9E							
07/15/2017 Sat*	20:08	23:59	3:51	19:43	56 7.1m 42.9M	-0.2 6.0E							
07/16/2017 Sun*	20:07	23:59	3:52	19:47	45 1.7m 40.5M	-0.1 6.1E							
07/17/2017 Mon*	20:07	23:59	3:53	19:51	34 35.7M	-0.1 6.1E							
07/18/2017 Tue*	20:06	23:59	3:54	19:55	23 28.8M	0.0 6.1E							
07/19/2017 Wed*	20:05	0:00	3:55	19:59	14 20.5M	0.0 6.1E							
07/20/2017 Thr*	20:04	0:00	3:56	20:03	7 11.1M	0.0 6.0E							
07/21/2017 Fri*	20:03	0:00	3:57	20:07	2 1.6M	0.1 5.9E							
07/22/2017 Sat*	20:02	0:00	3:58	20:11	0	0.1 5.9E							

Night of	Pct.					Moon elev.	Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.									
07/23/2017 Sun*	20:01	0:00	3:59	20:15	1		0.1 5.7E	-4.0 23.6M		-1.9 24.2E	0.2 22.1E 13.5m 24.0T	3	1	1
07/24/2017 Mon*	19:59	0:00	4:00	20:19	5 3.6E		0.2 5.6E	-4.0 23.7M		-1.9 23.8E	0.2 22.3E 13.0m 24.0T	3	1	1
07/25/2017 Tue*	19:58	0:00	4:02	20:23	11 10.1E		0.2 5.5E	-4.0 23.8M		-1.9 23.4E	0.2 22.4E 12.5m 24.0T	3	1	1
07/26/2017 Wed*	19:57	0:00	4:03	20:27	19 16.0E		0.2 5.3E	-4.0 23.9M		-1.9 23.1E	0.3 22.5E 12.0m 24.0T	3	1	1
07/27/2017 Thr*	19:56	0:00	4:04	20:31	27 21.0E		0.2 5.1E	-4.0 24.0M		-1.9 22.7E	0.3 22.7E 11.5m 24.0T	3	1	1
07/28/2017 Fri*	19:55	0:00	4:05	20:35	37 25.0E		0.3 4.9E	-4.0 24.1M		-1.9 22.3E	0.3 22.8E 11.0m 24.0T	3	1	1
07/29/2017 Sat*	19:53	0:00	4:06	20:39	47 27.8E		0.3 4.6E	-4.0 24.1M		-1.9 21.9E	0.3 22.9E 10.5m 24.0T	3	1	1
07/30/2017 Sun*	19:52	0:00	4:08	20:43	56 29.3E		0.4 4.4E	-4.0 24.2M		-1.9 21.6E	0.3 23.0E 10.0m 24.0T	3	1	1
07/31/2017 Mon*	19:51	0:00	4:09	20:47	66 29.6E		0.4 4.1E	-4.0 24.3M		-1.9 21.2E	0.3 23.1E 9.4m 24.0T	3	1	1
08/01/2017 Tue*	19:49	23:59	4:10	20:51	74 28.6E 4.9m		0.4 3.8E	-4.0 24.3M		-1.9 20.8E	0.3 23.2E 8.9m 24.0T	3	1	1
08/02/2017 Wed*	19:48	23:59	4:11	20:54	82 26.5E 10.2m		0.5 3.5E	-4.0 24.4M		-1.9 20.5E	0.3 23.3E 8.4m 24.0T	3	1	1
08/03/2017 Thr*	19:47	23:59	4:12	20:58	89 23.3E 15.4m		0.5 3.2E	-4.0 24.4M		-1.9 20.1E	0.3 23.4E 7.8m 24.0T	3	1	1
08/04/2017 Fri*	19:45	23:59	4:14	21:02	94 19.3E 20.3m			-4.0 24.4M		-1.8 19.8E	0.3 23.5E 7.3m 24.0T	2	1	1
08/05/2017 Sat*	19:44	23:59	4:15	21:06	98 14.6E 24.7m			-4.0 24.5M		-1.8 19.4E	0.3 23.6E 6.8m 24.0T	2	1	1
08/06/2017 Sun*	19:42	23:59	4:16	21:10	100 9.4E 28.3m 3.1M			-4.0 24.5M		-1.8 19.1E	0.3 23.6E 6.2m 24.0T	2	1	1
08/07/2017 Mon*	19:41	23:59	4:17	21:14	100 3.9E 30.9m 12.1M			-4.0 24.5M		-1.8 18.7E	0.3 23.7E 5.7m 24.0T	2	1	1
08/08/2017 Tue*	19:39	23:59	4:19	21:17	98 32.2m 21.3M			-4.0 24.5M		-1.8 18.4E	0.3 23.7E 5.1m 24.0T	2	1	1
08/09/2017 Wed*	19:38	23:59	4:20	21:21	93 31.9m 30.5M			-4.0 24.5M		-1.8 18.0E	0.3 23.8E 4.6m 24.0T	2	1	1
08/10/2017 Thr*	19:36	23:58	4:21	21:25	87 30.0m 39.1M			-4.0 24.5M		-1.8 17.7E	0.3 23.8E 4.1m 24.0T	2	1	1
08/11/2017 Fri*	19:35	23:58	4:22	21:29	79 26.5m 46.7M			-4.0 24.5M		-1.8 17.4E	0.3 23.9E 3.5m 24.0T	2	1	1
08/12/2017 Sat*	19:33	23:58	4:24	21:32	69 21.7m 52.4M			-4.0 24.5M		-1.8 17.0E	0.4 23.9E 3.0m 24.0T	2	1	1
08/13/2017 Sun*	19:31	23:58	4:25	21:36	59 15.8m 54.8M			-4.0 24.5M		-1.8 16.7E	0.4 23.9E 24.0T	2	0	1
08/14/2017 Mon*	19:30	23:58	4:26	21:40	47 9.0m 53.1M			-4.0 24.4M		-1.8 16.4E	0.4 23.9E 24.0T	2	0	1
08/15/2017 Tue*	19:28	23:57	4:27	21:44	36 1.9m 47.5M			-3.9 24.4M		-1.8 16.1E	0.4 24.0E 24.0T	2	0	1
08/16/2017 Wed*	19:26	23:57	4:29	21:47	25 39.3M			-3.9 24.3M		-1.8 15.8E	0.4 24.0E 24.0T	2	0	1
08/17/2017 Thr*	19:25	23:57	4:30	21:51	16 29.5M			-3.9 24.3M		-1.8 15.4E	0.4 24.0E 24.0T	2	0	1
08/18/2017 Fri*	19:23	23:57	4:31	21:55	8 18.8M			-3.9 24.2M		-1.8 15.1E	0.4 24.0E 24.0T	2	0	1
08/19/2017 Sat*	19:21	23:57	4:32	21:59	3 7.7M			-3.9 24.2M		-1.8 14.8E	0.4 24.0E	2	0	1
08/20/2017 Sun*	19:20	23:56	4:34	22:02	0			-3.9 24.1M		-1.8 14.5E	0.4 24.0E	2	0	1
08/21/2017 Mon*	19:18	23:56	4:35	22:06	0			-3.9 24.0M		-1.8 14.2E	0.4 24.0E	2	0	1
08/22/2017 Tue*	19:16	23:56	4:36	22:10	3 1.9E			-3.9 23.9M		-1.8 13.9E	0.4 23.9E	2	0	1
08/23/2017 Wed*	19:14	23:56	4:37	22:13	8 7.5E			-3.9 23.9M	1.8 3.0M	-1.8 13.6E	0.4 23.9E	2	0	2
08/24/2017 Thr*	19:13	23:55	4:39	22:17	14 12.7E			-3.9 23.8M	1.8 3.2M	-1.8 13.3E	0.4 23.9E	2	0	2
08/25/2017 Fri*	19:11	23:55	4:40	22:21	22 17.3E			-3.9 23.7M	1.8 3.5M	-1.8 13.0E	0.4 23.9E	2	0	2
08/26/2017 Sat*	19:09	23:55	4:41	22:24	31 21.1E			-3.9 23.6M	1.8 3.8M	-1.8 12.7E	0.4 23.9E	2	0	2
08/27/2017 Sun*	19:07	23:54	4:42	22:28	40 23.9E			-3.9 23.4M	1.8 4.2M	-1.8 12.4E	0.4 23.8E	2	0	2
08/28/2017 Mon*	19:05	23:54	4:44	22:32	50 25.8E			-3.9 23.3M	1.8 4.5M	-1.8 12.1E	0.4 23.8E	2	0	2
08/29/2017 Tue*	19:04	23:54	4:45	22:35	59 26.5E			-3.9 23.2M	1.8 4.8M	-1.7 11.9E	0.4 23.8E	2	0	2
08/30/2017 Wed*	19:02	23:54	4:46	22:39	68 26.2E			-3.9 23.1M	1.8 5.1M	-1.7 11.6E	0.4 23.7E	2	0	2
08/31/2017 Thr*	19:00	23:53	4:47	22:43	77 24.7E 6.2m			-3.9 23.0M	1.8 5.4M	-1.7 11.3E	0.4 23.7E	2	0	2
09/01/2017 Fri*	18:58	23:53	4:48	22:46	84 22.3E 13.1m		2.7 3.4M	-3.9 22.8M	1.8 5.7M	-1.7 11.0E	0.5 23.6E	2	0	3
09/02/2017 Sat*	18:56	23:53	4:50	22:50	91 18.9E 20.0m		2.2 4.8M	-3.9 22.7M	1.8 6.0M	-1.7 10.7E	0.5 23.6E	2	0	3
09/03/2017 Sun*	18:54	23:52	4:51	22:53	96 14.8E 26.6m		1.8 6.0M	-3.9 22.5M	1.8 6.3M	-1.7 10.4E	0.5 23.5E	2	0	3
09/04/2017 Mon*	18:52	23:52	4:52	22:57	99 10.0E 32.4m		1.4 7.0M	-3.9 22.4M	1.8 6.6M	-1.7 10.2E	0.5 23.5E	2	0	3
09/05/2017 Tue*	18:51	23:52	4:53	23:01	100 4.7E 37.2m 6.6M		1.0 8.0M	-3.9 22.3M	1.8 7.0M	-1.7 9.9E	0.5 23.4E	2	0	3
09/06/2017 Wed*	18:49	23:51	4:54	23:04	99 40.1m 17.5M		0.7 8.8M	-3.9 22.1M	1.8 7.3M	-1.7 9.6E	0.5 23.3E	2	0	3
09/07/2017 Thr*	18:47	23:51	4:56	23:08	95 40.8m 28.4M		0.4 9.5M	-3.9 21.9M	1.8 7.6M	-1.7 9.3E	0.5 23.3E	2	0	3
09/08/2017 Fri*	18:45	23:51	4:57	23:11	89 38.9m 39.2M		0.2 10.1M	-3.9 21.8M	1.8 7.9M	-1.7 9.1E	0.5 23.2E	2	0	3
09/09/2017 Sat*	18:43	23:50	4:58	23:15	82 34.7m 49.2M		0.0 10.5M	-3.9 21.6M	1.8 8.2M	-1.7 8.8E	0.5 23.1E	2	0	3
09/10/2017 Sun*	18:41	23:50	4:59	23:19	72 28.5m 57.6M		-0.2 10.8M	-3.9 21.4M	1.8 8.6M	-1.7 8.5E	0.5 23.1E	2	0	3
09/11/2017 Mon*	18:39	23:49	5:00	23:22	61 21.0m 62.4M		-0.4 10.9M	-3.9 21.3M	1.8 8.9M	-1.7 8.2E	0.5 23.0E	2	0	3
09/12/2017 Tue*	18:37	23:49	5:02	23:26	50 12.5m 61.7M		-0.5 10.9M	-3.9 21.1M	1.8 9.2M	-1.7 8.0E	0.5 22.9E	2	0	3

Night of	Pct.					Moon elev.	Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.									
09/13/2017 Wed*	18:35	23:49	5:03	23:29	39 3.7m	55.7M	-0.6 10.9M	-3.9 20.9M	1.8 9.5M	-1.7 7.7E	0.5 22.8E	2	0	3
09/14/2017 Thr*	18:34	23:48	5:04	23:33	28 46.7M		-0.7 10.7M	-3.9 20.7M	1.8 9.9M	-1.7 7.4E	0.5 22.7E	2	0	3
09/15/2017 Fri*	18:32	23:48	5:05	23:36	18 36.2M		-0.8 10.4M	-3.9 20.5M	1.8 10.2M	-1.7 7.1E	0.5 22.7E	2	0	3
09/16/2017 Sat*	18:30	23:48	5:06	23:40	10 25.0M		-0.9 10.0M	-3.9 20.3M	1.8 10.5M	-1.7 6.9E	0.5 22.6E	2	0	3
09/17/2017 Sun*	18:28	23:47	5:07	23:44	5 13.7M		-0.9 9.6M	-3.9 20.2M	1.8 10.8M	-1.7 6.6E	0.5 22.5E	2	0	3
09/18/2017 Mon*	18:26	23:47	5:09	23:47	1 2.5M		-1.0 9.0M	-3.9 20.0M	1.8 11.2M	-1.7 6.3E	0.5 22.4E	2	0	3
09/19/2017 Tue*	18:24	23:47	5:10	23:51	0		-1.0 8.5M	-3.9 19.8M	1.8 11.5M	-1.7 6.1E	0.5 22.3E	2	0	3
09/20/2017 Wed*	18:22	23:46	5:11	23:54	1 0.8E		-1.1 7.8M	-3.9 19.6M	1.8 11.8M	-1.7 5.8E	0.5 22.2E	2	0	3
09/21/2017 Thr*	18:20	23:46	5:12	23:58	5 5.8E		-1.1 7.2M	-3.9 19.4M	1.8 12.1M	-1.7 5.5E	0.5 22.1E	2	0	3
09/22/2017 Fri*	18:18	23:46	5:13	0:02	10 10.7E		-1.1 6.5M	-3.9 19.1M	1.8 12.5M	-1.7 5.3E	0.5 22.0E	2	0	3
09/23/2017 Sat*	18:17	23:45	5:15	0:05	17 15.2E		-1.2 5.8M	-3.9 18.9M	1.8 12.8M	-1.7 5.0E	0.5 21.9E	2	0	3
09/24/2017 Sun*	18:15	23:45	5:16	0:09	24 19.0E		-1.2 5.0M	-3.9 18.7M	1.8 13.1M	-1.7 4.7E	0.5 21.8E	2	0	3
09/25/2017 Mon*	18:13	23:45	5:17	0:12	33 22.0E		-1.2 4.3M	-3.9 18.5M	1.8 13.4M	-1.7 4.5E	0.5 21.7E	2	0	3
09/26/2017 Tue*	18:11	23:44	5:18	0:16	42 24.2E		-1.3 3.5M	-3.9 18.3M	1.8 13.8M	-1.7 4.2E	0.5 21.5E	2	0	3
09/27/2017 Wed*	18:09	23:44	5:19	0:20	52 25.4E			-3.9 18.1M	1.8 14.1M	-1.7 3.9E	0.5 21.4E	2	0	2
09/28/2017 Thr*	18:07	23:44	5:20	0:23	61 25.6E			-3.9 17.9M	1.8 14.4M	-1.7 3.6E	0.5 21.3E	2	0	2
09/29/2017 Fri*	18:06	23:43	5:22	0:27	70 24.7E	4.2m		-3.9 17.6M	1.8 14.7M	-1.7 3.4E	0.5 21.2E	2	0	2
09/30/2017 Sat*	18:04	23:43	5:23	0:30	79 22.7E	12.6m		-3.9 17.4M	1.8 15.1M	-1.7 3.1E	0.5 21.1E	2	0	2
10/01/2017 Sun*	18:02	23:43	5:24	0:34	86 19.7E	21.2m		-3.9 17.2M	1.8 15.4M		0.6 20.9E	1	0	2
10/02/2017 Mon*	18:00	23:42	5:25	0:38	93 15.8E	29.7m		-3.9 17.0M	1.8 15.7M		0.6 20.8E	1	0	2
10/03/2017 Tue*	17:58	23:42	5:26	0:41	97 11.1E	37.5m		-3.9 16.7M	1.8 16.0M		0.6 20.7E	1	0	2
10/04/2017 Wed*	17:56	23:42	5:27	0:45	100 5.8E	44.1m	0.9M	-3.9 16.5M	1.8 16.3M		0.6 20.5E	1	0	2
10/05/2017 Thr*	17:55	23:41	5:29	0:49	100 0.4E	48.5m	12.5M	-3.9 16.3M	1.8 16.7M		0.6 20.4E	1	0	2
10/06/2017 Fri*	17:53	23:41	5:30	0:52	97 49.4m	24.4M		-3.9 16.1M	1.8 17.0M		0.6 20.3E	1	0	2
10/07/2017 Sat*	17:51	23:41	5:31	0:56	92 46.6m	36.2M		-3.9 15.8M	1.8 17.3M		0.6 20.1E	1	0	2
10/08/2017 Sun*	17:49	23:40	5:32	1:00	84 40.6m	47.4M		-3.9 15.6M	1.8 17.6M		0.6 20.0E	1	0	2
10/09/2017 Mon*	17:48	23:40	5:33	1:03	75 32.4m	57.1M		-3.9 15.3M	1.8 17.9M		0.6 19.8E	1	0	2
10/10/2017 Tue*	17:46	23:40	5:35	1:07	64 23.0m	63.7M		-3.9 15.1M	1.8 18.2M		0.6 19.7E	1	0	2
10/11/2017 Wed*	17:44	23:40	5:36	1:11	53 13.0m	64.5M		-3.9 14.9M	1.8 18.6M		0.6 19.5E	1	0	2
10/12/2017 Thr*	17:43	23:39	5:37	1:14	42 2.9m	59.5M		-3.9 14.6M	1.8 18.9M		0.6 19.4E	1	0	2
10/13/2017 Fri*	17:41	23:39	5:38	1:18	31 50.9M			-3.9 14.4M	1.8 19.2M		0.6 19.2E	1	0	2
10/14/2017 Sat*	17:39	23:39	5:39	1:22	21 40.8M			-3.9 14.1M	1.8 19.5M		0.6 19.0E	1	0	2
10/15/2017 Sun*	17:38	23:39	5:41	1:25	13 30.1M			-3.9 13.9M	1.8 19.8M		0.6 18.9E	1	0	2
10/16/2017 Mon*	17:36	23:39	5:42	1:29	7 19.3M			-3.9 13.7M	1.8 20.1M		0.6 18.7E	1	0	2
10/17/2017 Tue*	17:34	23:38	5:43	1:33	3 8.5M			-3.9 13.4M	1.8 20.4M		0.6 18.5E	1	0	2
10/18/2017 Wed*	17:33	23:38	5:44	1:37	0			-3.9 13.2M	1.8 20.7M		0.6 18.4E	1	0	2
10/19/2017 Thr*	17:31	23:38	5:46	1:40	0			-3.9 12.9M	1.8 21.0M		0.6 18.2E	1	0	2
10/20/2017 Fri*	17:30	23:38	5:47	1:44	2 3.9E			-3.9 12.7M	1.8 21.3M		0.6 18.0E	1	0	2
10/21/2017 Sat*	17:28	23:38	5:48	1:48	6 8.8E			-3.9 12.4M	1.8 21.6M		0.6 17.8E	1	0	2
10/22/2017 Sun*	17:27	23:38	5:49	1:52	12 13.5E			-3.9 12.2M	1.8 21.9M		0.6 17.6E	1	0	2
10/23/2017 Mon*	17:25	23:37	5:51	1:56	18 17.7E			-3.9 11.9M	1.8 22.2M		0.6 17.4E	1	0	2
10/24/2017 Tue*	17:24	23:37	5:52	1:59	26 21.3E			-3.9 11.7M	1.8 22.5M		0.6 17.2E	1	0	2
10/25/2017 Wed*	17:22	23:37	5:53	2:03	35 24.1E			-3.9 11.4M	1.8 22.7M		0.6 17.0E	1	0	2
10/26/2017 Thr*	17:21	23:37	5:54	2:07	44 26.0E			-3.9 11.2M	1.8 23.0M		0.6 16.8E	1	0	2
10/27/2017 Fri*	17:19	23:37	5:55	2:11	53 26.9E			-3.9 10.9M	1.8 23.3M		0.6 16.6E	1	0	2
10/28/2017 Sat*	17:18	23:37	5:57	2:15	63 26.7E	2.8m		-3.9 10.7M	1.8 23.6M		0.6 16.4E	1	0	2
10/29/2017 Sun*	17:16	23:37	5:58	2:19	72 25.3E	12.5m		-3.9 10.4M	1.8 23.8M		0.6 16.2E	1	0	2
10/30/2017 Mon*	17:15	23:37	5:59	2:23	81 22.7E	22.5m		-3.9 10.1M	1.8 24.1M		0.6 15.9E	1	0	2
10/31/2017 Tue*	17:14	23:37	6:00	2:27	89 18.9E	32.5m		-3.9 9.9M	1.8 24.4M		0.6 15.7E	1	0	2
11/01/2017 Wed*	17:12	23:37	6:02	2:30	95 14.1E	42.1m		-3.9 9.6M	1.8 24.6M		0.6 15.5E	1	0	2
11/02/2017 Thr*	17:11	23:37	6:03	2:34	99 8.4E	50.6m		-3.9 9.4M	1.8 24.9M		0.6 15.2E	1	0	2
11/03/2017 Fri*	17:10	23:37	6:04	2:38	100 2.3E	56.2m	6.8M	-3.9 9.1M	1.8 25.1M		0.6 15.0E	1	0	2

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.								
11/04/2017 Sat*	17:09	23:37	6:05	2:42	98 57.2m 18.9M		-3.9 8.9M	1.8 25.4M		0.6 14.7E	1	0	2
11/05/2017 Sun	17:08	23:37	6:07	2:46	94 52.8m 30.8M		-3.9 8.6M	1.8 25.6M		0.6 14.5E	1	0	2
11/06/2017 Mon	17:06	23:37	6:08	2:50	87 44.7m 41.9M		-3.9 8.3M	1.8 25.8M	-1.7 3.0M	0.6 14.2E	1	0	3
11/07/2017 Tue	17:05	23:37	6:09	2:54	78 34.7m 51.5M		-3.9 8.1M	1.8 26.1M	-1.7 3.6M	0.6 14.0E	1	0	3
11/08/2017 Wed	17:04	23:37	6:11	2:58	68 23.8m 58.4M		-3.9 7.8M	1.8 26.3M	-1.7 4.3M	0.6 13.7E	1	0	3
11/09/2017 Thr	17:03	23:37	6:12	3:02	57 12.7m 60.7M		-3.9 7.6M	1.8 26.5M	-1.7 4.9M	0.6 13.4E	1	0	3
11/10/2017 Fri	17:02	23:37	6:13	3:06	46 1.8m 58.0M		-3.9 7.3M	1.8 26.7M	-1.7 5.6M	0.6 13.1E	1	0	3
11/11/2017 Sat	17:01	23:37	6:14	3:10	35 51.5M		-3.9 7.0M	1.8 26.9M	-1.7 6.2M	0.6 12.8E	1	0	3
11/12/2017 Sun	17:00	23:37	6:15	3:15	25 43.1M		-3.9 6.8M	1.8 27.1M	-1.7 6.8M	0.6 12.5E	1	0	3
11/13/2017 Mon	16:59	23:38	6:17	3:19	17 33.8M		-3.9 6.5M	1.8 27.3M	-1.7 7.5M	0.6 12.2E	1	0	3
11/14/2017 Tue	16:58	23:38	6:18	3:23	10 24.2M		-3.9 6.3M	1.8 27.5M	-1.7 8.1M	0.6 11.9E	1	0	3
11/15/2017 Wed	16:57	23:38	6:19	3:27	5 14.4M		-3.9 6.0M	1.7 27.7M	-1.7 8.8M	0.5 11.6E	1	0	3
11/16/2017 Thr	16:56	23:38	6:20	3:31	2 4.8M		-3.9 5.8M	1.7 27.9M	-1.7 9.4M	0.5 11.3E	2	0	3
11/17/2017 Fri	16:56	23:38	6:22	3:35	0	-0.4 3.0E	-3.9 5.5M	1.7 28.1M	-1.7 10.0M	0.5 11.0E	2	0	3
11/18/2017 Sat	16:55	23:39	6:23	3:39	1 0.7E	-0.4 3.4E	-3.9 5.2M	1.7 28.2M	-1.7 10.6M	0.5 10.6E	2	0	3
11/19/2017 Sun	16:54	23:39	6:24	3:44	3 6.0E	-0.4 3.6E	-3.9 5.0M	1.7 28.4M	-1.7 11.2M	0.5 10.3E	2	0	3
11/20/2017 Mon	16:53	23:39	6:25	3:48	7 11.4E	-0.4 3.8E	-3.9 4.7M	1.7 28.5M	-1.7 11.8M	0.5 9.9E	2	0	3
11/21/2017 Tue	16:53	23:39	6:26	3:52	13 16.6E	-0.4 4.0E	-3.9 4.5M	1.7 28.7M	-1.7 12.4M	0.5 9.6E	2	0	3
11/22/2017 Wed	16:52	23:40	6:28	3:56	19 21.3E	-0.4 4.1E	-3.9 4.2M	1.7 28.8M	-1.7 13.0M	0.5 9.2E	2	0	3
11/23/2017 Thr	16:52	23:40	6:29	4:00	27 25.4E	-0.4 4.3E	-3.9 4.0M	1.7 29.0M	-1.7 13.6M	0.5 8.8E	2	0	3
11/24/2017 Fri	16:51	23:40	6:30	4:05	36 28.7E	-0.4 4.4E	-3.9 3.7M	1.7 29.1M	-1.7 14.1M	0.5 8.5E	2	0	3
11/25/2017 Sat	16:50	23:40	6:31	4:09	46 31.0E	-0.4 4.5E	-3.9 3.5M	1.7 29.2M	-1.7 14.7M	0.5 8.1E	2	0	3
11/26/2017 Sun	16:50	23:41	6:32	4:13	56 32.0E 0.8m	-0.3 4.6E	-3.9 3.2M	1.7 29.3M	-1.7 15.3M	0.5 7.7E	2	0	3
11/27/2017 Mon	16:50	23:41	6:33	4:17	66 31.5E 11.1m	-0.3 4.7E	-3.9 3.0M	1.7 29.4M	-1.7 15.8M	0.5 7.3E	2	0	3
11/28/2017 Tue	16:49	23:41	6:34	4:22	76 29.4E 22.1m	-0.2 4.7E		1.7 29.5M	-1.7 16.3M	0.5 6.9E	2	0	2
11/29/2017 Wed	16:49	23:42	6:35	4:26	84 25.6E 33.3m	-0.1 4.6E		1.7 29.6M	-1.7 16.9M	0.5 6.4E	2	0	2
11/30/2017 Thr	16:48	23:42	6:36	4:30	92 20.4E 44.4m	0.0 4.5E		1.7 29.7M	-1.7 17.4M	0.5 6.0E	2	0	2
12/01/2017 Fri	16:48	23:43	6:37	4:35	97 13.9E 54.4m	0.1 4.4E		1.7 29.7M	-1.7 17.9M	0.5 5.6E	2	0	2
12/02/2017 Sat	16:48	23:43	6:38	4:39	100 6.6E 61.7m 1.4M	0.3 4.1E		1.7 29.8M	-1.7 18.4M	0.5 5.1E	2	0	2
12/03/2017 Sun	16:48	23:43	6:39	4:43	99 63.1m 12.6M	0.5 3.8E		1.7 29.9M	-1.7 18.9M	0.5 4.7E	2	0	2
12/04/2017 Mon	16:47	23:44	6:40	4:48	96 57.7m 23.6M	0.8 3.4E		1.7 29.9M	-1.7 19.3M	0.5 4.2E	2	0	2
12/05/2017 Tue	16:47	23:44	6:41	4:52	90 48.2m 33.6M			1.7 30.0M	-1.7 19.8M	0.5 3.8E	1	0	2
12/06/2017 Wed	16:47	23:45	6:42	4:56	82 37.0m 42.1M			1.6 30.0M	-1.7 20.2M	0.5 3.3E	1	0	2
12/07/2017 Thr	16:47	23:45	6:43	5:01	72 25.4m 48.2M			1.6 30.0M	-1.7 20.7M		0	0	2
12/08/2017 Fri	16:47	23:46	6:44	5:05	61 13.8m 51.1M			1.6 30.1M	-1.7 21.1M		0	0	2
12/09/2017 Sat	16:47	23:46	6:45	5:10	51 2.6m 50.5M			1.6 30.1M	-1.7 21.5M		0	0	2
12/10/2017 Sun	16:47	23:46	6:46	5:14	40 46.8M			1.6 30.1M	-1.7 21.9M		0	0	2
12/11/2017 Mon	16:47	23:47	6:47	5:18	30 41.1M			1.6 30.1M	-1.7 22.3M		0	0	2
12/12/2017 Tue	16:48	23:47	6:47	5:23	22 34.0M			1.6 30.1M	-1.7 22.7M		0	0	2
12/13/2017 Wed	16:48	23:48	6:48	5:27	14 26.3M			1.6 30.1M	-1.7 23.1M		0	0	2
12/14/2017 Thr	16:48	23:48	6:49	5:32	8 18.2M			1.6 30.0M	-1.7 23.5M		0	0	2
12/15/2017 Fri	16:48	23:49	6:49	5:36	4 10.0M			1.6 30.0M	-1.7 23.8M		0	0	2
12/16/2017 Sat	16:49	23:49	6:50	5:40	1 1.9M		2.5 3.5M	1.6 30.0M	-1.8 24.1M		0	0	3
12/17/2017 Sun	16:49	23:50	6:51	5:45	0	1.9 4.8M		1.6 29.9M	-1.8 24.5M		0	0	3
12/18/2017 Mon	16:49	23:50	6:51	5:49	1 1.3E	1.4 6.0M		1.6 29.9M	-1.8 24.8M		0	0	3
12/19/2017 Tue	16:50	23:51	6:52	5:54	4 7.9E	1.0 7.1M		1.6 29.9M	-1.8 25.1M		0	0	3
12/20/2017 Wed	16:50	23:51	6:52	5:58	8 14.7E	0.7 8.0M		1.6 29.8M	-1.8 25.4M		0	0	3
12/21/2017 Thr	16:51	23:52	6:53	6:03	14 21.2E	0.4 8.7M		1.6 29.7M	-1.8 25.6M		0	0	3
12/22/2017 Fri	16:51	23:52	6:53	6:07	21 27.4E	0.2 9.3M		1.5 29.7M	-1.8 25.9M		0	0	3
12/23/2017 Sat	16:52	23:53	6:54	6:12	29 33.0E	0.1 9.7M		1.5 29.6M	-1.8 26.2M		0	0	3
12/24/2017 Sun	16:52	23:53	6:54	6:16	39 37.6E	0.0 10.1M		1.5 29.5M	-1.8 26.4M		0	0	3
12/25/2017 Mon	16:53	23:54	6:54	6:20	49 40.7E	-0.1 10.3M		1.5 29.5M	-1.8 26.6M		0	0	3

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.								
12/26/2017 Tue	16:54	23:54	6:55	6:25	60 41.8E 8.6m	-0.2 10.4M	1.5 29.4M	-1.8 26.9M			0	0	3
12/27/2017 Wed	16:54	23:55	6:55	6:29	70 40.5E 20.1m	-0.3 10.5M	1.5 29.3M	-1.8 27.1M			0	0	3
12/28/2017 Thr	16:55	23:55	6:55	6:34	80 36.7E 31.9m	-0.3 10.5M	1.5 29.2M	-1.8 27.3M			0	0	3
12/29/2017 Fri	16:56	23:56	6:55	6:38	88 30.7E 43.6m	-0.3 10.4M	1.5 29.1M	-1.8 27.4M			0	0	3
12/30/2017 Sat	16:57	23:56	6:56	6:43	95 22.9E 54.6m	-0.3 10.2M	1.5 29.0M	-1.8 27.6M			0	0	3
12/31/2017 Sun	16:57	23:57	6:56	6:47	99 13.9E 63.0m	-0.3 10.1M	1.5 28.9M	-1.8 27.8M			0	0	3
01/01/2018 Mon	16:58	23:57	6:56	6:51	100 4.2E 65.4m 7.5M	-0.4 9.8M	1.5 28.8M	-1.8 27.9M			0	0	3
01/02/2018 Tue	16:59	23:58	6:56	6:56	98 60.2m 16.9M	-0.4 9.6M	1.5 28.7M	-1.8 28.1M			0	0	3
01/03/2018 Wed	17:00	23:58	6:56	7:00	93 50.6m 25.3M	-0.3 9.3M	1.5 28.6M	-1.8 28.2M			0	0	3
01/04/2018 Thr	17:01	23:58	6:56	7:05	86 39.4m 32.4M	-0.3 9.0M	1.4 28.5M	-1.8 28.3M	0.5 3.2M		0	0	4
01/05/2018 Fri	17:02	23:59	6:56	7:09	77 27.7m 37.5M	-0.3 8.6M	1.4 28.4M	-1.8 28.5M	0.5 3.6M		0	0	4
01/06/2018 Sat	17:03	23:59	6:56	7:13	67 16.2m 40.3M	-0.3 8.3M	1.4 28.3M	-1.8 28.6M	0.5 4.1M		0	0	4
01/07/2018 Sun	17:04	0:00	6:55	7:18	57 5.1m 40.8M	-0.3 7.9M	1.4 28.1M	-1.8 28.7M	0.5 4.6M		0	0	4
01/08/2018 Mon	17:05	0:00	6:55	7:22	46 39.0M	-0.3 7.6M	1.4 28.0M	-1.8 28.7M	0.5 5.0M		0	0	4
01/09/2018 Tue	17:06	0:01	6:55	7:26	37 35.5M	-0.3 7.2M	1.4 27.9M	-1.9 28.8M	0.5 5.5M		0	0	4
01/10/2018 Wed	17:07	0:01	6:55	7:31	28 30.7M	-0.3 6.8M	1.4 27.8M	-1.9 28.9M	0.5 5.9M		0	0	4
01/11/2018 Thr	17:08	0:01	6:54	7:35	19 25.0M	-0.3 6.4M	1.4 27.7M	-1.9 28.9M	0.5 6.3M		0	0	4
01/12/2018 Fri	17:09	0:02	6:54	7:39	13 18.6M	-0.3 6.0M	1.4 27.5M	-1.9 29.0M	0.5 6.7M		0	0	4
01/13/2018 Sat	17:10	0:02	6:54	7:44	7 12.0M	-0.3 5.6M	1.4 27.4M	-1.9 29.0M	0.5 7.1M		0	0	4
01/14/2018 Sun	17:11	0:03	6:53	7:48	3 5.2M	-0.3 5.2M	1.4 27.3M	-1.9 29.1M	0.5 7.5M		0	0	4
01/15/2018 Mon	17:13	0:03	6:53	7:52	1	-0.3 4.8M	1.3 27.2M	-1.9 29.1M	0.5 7.9M		0	0	4
01/16/2018 Tue	17:14	0:03	6:52	7:57	0	-0.3 4.3M	1.3 27.0M	-1.9 29.1M	0.5 8.3M		0	0	4
01/17/2018 Wed	17:15	0:04	6:52	8:01	1 2.1E	-0.3 3.9M	1.3 26.9M	-1.9 29.2M	0.5 8.7M		0	0	4
01/18/2018 Thr	17:16	0:04	6:51	8:05	4 10.5E	-0.3 3.5M	1.3 26.8M	-1.9 29.2M	0.5 9.1M		0	0	4
01/19/2018 Fri	17:17	0:04	6:50	8:09	9 19.1E	-0.3 3.1M	1.3 26.7M	-1.9 29.2M	0.5 9.4M		0	0	4
01/20/2018 Sat	17:19	0:04	6:50	8:14	16 27.7E		1.3 26.5M	-1.9 29.2M	0.5 9.8M		0	0	3
01/21/2018 Sun	17:20	0:05	6:49	8:18	24 35.9E		1.3 26.4M	-1.9 29.2M	0.5 10.2M		0	0	3
01/22/2018 Mon	17:21	0:05	6:48	8:22	33 43.4E		1.3 26.3M	-1.9 29.1M	0.5 10.5M		0	0	3
01/23/2018 Tue	17:22	0:05	6:48	8:26	43 49.5E		1.3 26.2M	-1.9 29.1M	0.5 10.8M		0	0	3
01/24/2018 Wed	17:24	0:05	6:47	8:30	54 53.1E 7.0m		1.3 26.0M	-1.9 29.1M	0.6 11.2M		0	0	3
01/25/2018 Thr	17:25	0:06	6:46	8:35	65 53.3E 18.6m		1.2 25.9M	-1.9 29.1T 29.1M	0.6 11.5M		0	0	3
01/26/2018 Fri	17:26	0:06	6:45	8:39	76 49.5E 30.4m		1.2 25.8M	-1.9 29.0T 29.0M	0.6 11.8M		0	0	3
01/27/2018 Sat	17:27	0:06	6:44	8:43	85 42.4E 41.9m		1.2 25.7M	-2.0 29.0T 29.0M	0.6 12.1M		0	0	3
01/28/2018 Sun	17:29	0:06	6:43	8:47	92 33.1E 52.5m		1.2 25.6M	-2.0 29.0T 28.9M	0.6 12.4M		0	0	3
01/29/2018 Mon	17:30	0:06	6:42	8:51	98 22.5E 60.4m		1.2 25.4M	-2.0 29.0T 28.9M	0.6 12.7M		0	0	3
01/30/2018 Tue	17:31	0:07	6:41	8:55	100 11.1E 62.9m 4.9M		1.2 25.3M	-2.0 28.9T 28.8M	0.6 13.0M		0	0	3
01/31/2018 Wed	17:33	0:07	6:40	8:59	99 58.7m 12.6M		1.2 25.2M	-2.0 28.9T 28.8M	0.6 13.3M		0	0	3
02/01/2018 Thr	17:34	0:07	6:39	9:03	96 50.2m 19.6M		1.2 25.1M	-2.0 28.9T 28.7M	0.6 13.6M		0	0	3
02/02/2018 Fri	17:35	0:07	6:38	9:07	90 39.8m 25.3M		1.2 25.0M	-2.0 28.9T 28.7M	0.6 13.8M		0	0	3
02/03/2018 Sat	17:36	0:07	6:37	9:11	82 28.8m 29.6M		1.1 24.9M	-2.0 28.8T 28.6M	0.6 14.1M		0	0	3
02/04/2018 Sun	17:38	0:07	6:36	9:16	73 17.9m 32.2M		1.1 24.8M	-2.0 28.8T 28.5M	0.6 14.4M		0	0	3
02/05/2018 Mon	17:39	0:07	6:35	9:20	64 7.2m 33.0M		1.1 24.7M	-2.0 28.8T 28.4M	0.6 14.6M		0	0	3
02/06/2018 Tue	17:40	0:07	6:33	9:24	54 32.3M		1.1 24.6M	-2.0 28.8T 28.3M	0.6 14.9M		0	0	3
02/07/2018 Wed	17:42	0:07	6:32	9:28	44 30.0M		1.1 24.4M	-2.0 28.8T 28.3M	0.6 15.1M		0	0	3
02/08/2018 Thr	17:43	0:07	6:31	9:31	35 26.6M		1.1 24.3M	-2.0 28.7T 28.2M	0.6 15.4M		0	0	3
02/09/2018 Fri	17:44	0:07	6:30	9:35	26 22.4M		1.1 24.2M	-2.0 28.7T 28.1M	0.6 15.6M		0	0	3
02/10/2018 Sat	17:46	0:07	6:28	9:39	18 17.4M		1.1 24.1M	-2.0 28.7T 28.0M	0.6 15.8M		0	0	3
02/11/2018 Sun	17:47	0:07	6:27	9:43	11 12.0M		1.0 24.0M	-2.0 28.7T 27.9M	0.6 16.0M		0	0	3
02/12/2018 Mon	17:48	0:07	6:26	9:47	6 6.2M		1.0 23.9M	-2.1 28.7T 27.8M	0.6 16.3M		0	0	3
02/13/2018 Tue	17:50	0:07	6:24	9:51	2 0.6M		1.0 23.8M	-2.1 28.7T 27.7M	0.6 16.5M		0	0	3
02/14/2018 Wed	17:51	0:07	6:23	9:55	0		1.0 23.8M	-2.1 28.6T 27.6M	0.6 16.7M		0	0	3
02/15/2018 Thr	17:52	0:07	6:22	9:59	0		1.0 23.7M	-2.1 28.6T 27.5M	0.6 16.9M		0	0	3

Night of	Pct.					Moon elev.	Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.									
02/16/2018 Fri	17:54	0:07	6:20	10:03	2 4.4E			1.0 23.6M	-2.1 28.6T 27.4M	0.6 17.1M	0	0	3	
02/17/2018 Sat	17:55	0:07	6:19	10:07	6 14.5E			1.0 23.5M	-2.1 28.6T 27.2M	0.6 17.3M	0	0	3	
02/18/2018 Sun	17:56	0:07	6:17	10:11	12 24.8E			0.9 23.4M	-2.1 28.6T 27.1M	0.6 17.5M	0	0	3	
02/19/2018 Mon	17:57	0:07	6:16	10:14	19 35.0E		-3.9 3.0E	0.9 23.3M	-2.1 28.6T 27.0M	0.6 17.7M	1	0	3	
02/20/2018 Tue	17:59	0:07	6:14	10:18	28 44.8E		-3.9 3.2E	0.9 23.2M	-2.1 28.6T 26.9M	0.6 17.9M	1	0	3	
02/21/2018 Wed	18:00	0:07	6:13	10:22	39 53.7E		-3.9 3.4E	0.9 23.2M	-2.1 28.6T 26.7M	0.6 18.1M	1	0	3	
02/22/2018 Thr	18:01	0:07	6:11	10:26	50 60.3E 7.8m		-3.9 3.7E	0.9 23.1M	-2.1 28.6T 26.6M	0.6 18.2M	1	0	3	
02/23/2018 Fri	18:03	0:06	6:09	10:30	61 62.7E 19.0m		-3.9 3.9E	0.9 23.0M	-2.1 28.5T 26.5M	0.6 18.4M	1	0	3	
02/24/2018 Sat	18:04	0:06	6:08	10:33	72 59.3E 30.0m		-3.9 4.1E	0.9 22.9M	-2.1 28.5T 26.4M	0.6 18.6M	1	0	3	
02/25/2018 Sun	18:05	0:06	6:06	10:37	82 51.5E 40.5m		-3.9 4.4E	0.8 22.9M	-2.1 28.5T 26.2M	0.6 18.8M	1	0	3	
02/26/2018 Mon	18:06	0:06	6:05	10:41	90 41.2E 49.4m		-3.9 4.6E	0.8 22.8M	-2.2 28.5T 26.1M	0.6 18.9M	1	0	3	
02/27/2018 Tue	18:08	0:06	6:03	10:45	96 29.8E 55.6m		-3.9 4.8E	0.8 22.7M	-2.2 28.5T 25.9M	0.6 19.1M	1	0	3	
02/28/2018 Wed	18:09	0:06	6:01	10:49	99 17.8E 57.0m 4.0M	-1.3 3.2E	-3.9 5.1E	0.8 22.7M	-2.2 28.5T 25.8M	0.6 19.2M	2	0	3	
03/01/2018 Thr	18:10	0:05	6:00	10:52	100 5.8E 53.4m 10.4M	-1.3 4.1E	-3.9 5.3E	0.8 22.6M	-2.2 3.0m 28.5T 25.6M	0.6 19.4M	2	1	3	
03/02/2018 Fri	18:12	0:05	5:58	10:56	98 46.3m 16.2M	-1.2 4.9E	-3.9 5.5E	0.8 22.5M	-2.2 3.6m 28.5T 25.5M	0.6 19.6M	2	1	3	
03/03/2018 Sat	18:13	0:05	5:56	11:00	93 37.3m 21.1M	-1.2 5.8E	-3.9 5.8E	0.8 22.5M	-2.2 4.1m 28.5T 25.3M	0.6 19.7M	2	1	3	
03/04/2018 Sun	18:14	0:05	5:55	11:03	87 27.5m 24.7M	-1.2 6.6E	-3.9 6.0E	0.7 22.4M	-2.2 4.7m 28.5T 25.2M	0.6 19.9M	2	1	3	
03/05/2018 Mon	18:15	0:04	5:53	11:07	79 17.7m 27.1M	-1.1 7.4E	-3.9 6.3E	0.7 22.4M	-2.2 5.2m 28.5T 25.0M	0.6 20.0M	2	1	3	
03/06/2018 Tue	18:17	0:04	5:51	11:11	71 7.9m 28.1M	-1.1 8.1E	-3.9 6.5E	0.7 22.3M	-2.2 5.8m 28.5T 24.9M	0.6 20.1M	2	1	3	
03/07/2018 Wed	18:18	0:04	5:49	11:15	61 27.8M	-1.0 8.9E	-3.9 6.7E	0.7 22.3M	-2.2 6.3m 28.5T 24.7M	0.6 20.3M	2	1	3	
03/08/2018 Thr	18:19	0:04	5:48	11:18	52 26.3M	-1.0 9.5E	-3.9 7.0E	0.7 22.2M	-2.2 6.9m 28.5T 24.5M	0.6 20.4M	2	1	3	
03/09/2018 Fri	18:20	0:04	5:46	11:22	42 23.7M	-0.9 10.1E	-3.9 7.2E	0.7 22.2M	-2.2 7.4m 28.5T 24.4M	0.6 20.5M	2	1	3	
03/10/2018 Sat	18:22	0:03	5:44	11:26	33 20.3M	-0.8 10.7E	-3.9 7.4E	0.6 22.1M	-2.2 8.0m 28.5T 24.2M	0.6 20.7M	2	1	3	
03/11/2018 Sun*	18:23	0:03	5:42	11:29	25 16.2M	-0.8 11.1E	-3.9 7.7E	0.6 22.1M	-2.2 8.5m 28.5T 24.0M	0.6 20.8M	2	1	3	
03/12/2018 Mon*	18:24	0:03	5:40	11:33	17 11.6M	-0.7 11.5E	-3.9 7.9E	0.6 22.0M	-2.2 9.1m 28.5T 23.8M	0.6 20.9M	2	1	3	
03/13/2018 Tue*	18:25	0:02	5:39	11:37	10 6.5M	-0.5 11.8E	-3.9 8.2E	0.6 22.0M	-2.3 9.6m 28.5T 23.7M	0.6 21.0M	2	1	3	
03/14/2018 Wed*	18:27	0:02	5:37	11:40	5 1.4M	-0.4 11.9E	-3.9 8.4E	0.6 21.9M	-2.3 10.2m 28.5T 23.5M	0.6 21.2M	2	1	3	
03/15/2018 Thr*	18:28	0:02	5:35	11:44	2	-0.2 12.0E	-3.9 8.6E	0.6 21.9M	-2.3 10.7m 28.5T 23.3M	0.6 21.3M	2	1	3	
03/16/2018 Fri*	18:29	0:02	5:33	11:48	0	-0.1 11.9E	-3.9 8.9E	0.5 21.9M	-2.3 11.3m 28.6T 23.1M	0.6 21.4M	2	1	3	
03/17/2018 Sat*	18:31	0:01	5:31	11:51	1	0.1 11.7E	-3.9 9.1E	0.5 21.8M	-2.3 11.8m 28.6T 22.9M	0.6 21.5M	2	1	3	
03/18/2018 Sun*	18:32	0:01	5:30	11:55	4 8.7E	0.4 11.4E	-3.9 9.3E	0.5 21.8M	-2.3 12.3m 28.6T 22.7M	0.6 21.6M	2	1	3	
03/19/2018 Mon*	18:33	0:01	5:28	11:59	9 19.9E	0.6 11.0E	-3.9 9.6E	0.5 21.8M	-2.3 12.8m 28.6T 22.5M	0.5 21.7M	2	1	3	
03/20/2018 Tue*	18:34	0:00	5:26	12:02	16 31.2E	0.9 10.4E	-3.9 9.8E	0.5 21.8M	-2.3 13.4m 28.6T 22.3M	0.5 21.8M	2	1	3	
03/21/2018 Wed*	18:36	0:00	5:24	12:06	25 42.3E	1.2 9.7E	-3.9 10.0E	0.5 21.7M	-2.3 13.9m 28.6T 22.1M	0.5 21.9M	2	1	3	
03/22/2018 Thr*	18:37	0:00	5:22	12:10	35 52.6E	1.6 8.9E	-3.9 10.2E	0.4 21.7M	-2.3 14.4m 28.6T 21.9M	0.5 22.0M	2	1	3	
03/23/2018 Fri*	18:38	0:00	5:20	12:13	46 61.1E 9.7m	2.0 7.9E	-3.9 10.5E	0.4 21.7M	-2.3 14.9m 28.6T 21.7M	0.5 22.1M	2	1	3	
03/24/2018 Sat*	18:39	23:59	5:18	12:17	57 65.5E 19.8m	2.4 6.9E	-3.9 10.7E	0.4 21.7M	-2.3 15.4m 28.7T 21.5M	0.5 22.2M	2	1	3	
03/25/2018 Sun*	18:41	23:59	5:17	12:20	69 63.6E 29.4m	2.8 5.7E	-3.9 10.9E	0.4 21.7M	-2.3 15.9m 28.7T 21.2M	0.5 22.3M	2	1	3	
03/26/2018 Mon*	18:42	23:59	5:15	12:24	79 56.3E 38.0m	3.3 4.4E	-3.9 11.2E	0.4 21.7M	-2.3 16.4m 28.7T 21.0M	0.5 22.4M	2	1	3	
03/27/2018 Tue*	18:43	23:58	5:13	12:28	87 46.3E 44.7m	3.8 3.0E	-3.9 11.4E	0.4 21.6M	-2.3 16.9m 28.7T 20.8M	0.5 22.5M	2	1	3	
03/28/2018 Wed*	18:44	23:58	5:11	12:31	94 35.1E 48.7m		-3.9 11.6E	0.3 21.6M	-2.4 17.4m 28.7T 20.6M	0.5 22.6M	1	1	3	
03/29/2018 Thr*	18:46	23:58	5:09	12:35	98 23.5E 49.1m 3.5M		-3.9 11.8E	0.3 21.6M	-2.4 17.9m 28.7T 20.3M	0.5 22.7M	1	1	3	
03/30/2018 Fri*	18:47	23:57	5:07	12:39	100 11.9E 46.0m 9.0M		-3.9 12.0E	0.3 21.6M	-2.4 18.4m 28.8T 20.1M	0.5 22.7M	1	1	3	
03/31/2018 Sat*	18:48	23:57	5:05	12:42	99 0.7E 40.4m 14.0M		-3.9 12.3E	0.3 21.6M	-2.4 18.8m 28.8T 19.8M	0.5 22.8M	1	1	3	
04/01/2018 Sun*	18:49	23:57	5:04	12:46	96 33.1m 18.3M		-3.9 12.5E	0.3 21.6M	-2.4 19.3m 28.8T 19.6M	0.5 22.9M	1	1	3	
04/02/2018 Mon*	18:51	23:57	5:02	12:50	91 25.0m 21.6M		-3.9 12.7E	0.2 21.6M	-2.4 19.8m 28.8T 19.3M	0.5 22.9M	1	1	3	
04/03/2018 Tue*	18:52	23:56	5:00	12:53	85 16.6m 23.9M		-3.9 12.9E	0.2 21.6M	-2.4 20.2m 28.8T 19.1M	0.5 23.0M	1	1	3	
04/04/2018 Wed*	18:53	23:56	4:58	12:57	77 8.2m 25.1M		-3.9 13.1E	0.2 21.6M	-2.4 20.7m 28.9T 18.8M	0.5 23.1M	1	1	3	
04/05/2018 Thr*	18:54	23:56	4:56	13:01	69 0.2m 25.3M		-3.9 13.3E	0.2 21.6M	-2.4 21.1m 28.9T 18.6M	0.5 23.1M	1	1	3	
04/06/2018 Fri*	18:56	23:55	4:54	13:04	60 24.3M		-3.9 13.5E	0.2 21.6M	-2.4 21.5m 28.9T 18.3M	0.5 23.2M	1	1	3	
04/07/2018 Sat*	18:57	23:55	4:53	13:08	50 22.4M		-3.9 13.8E	0.1 21.7M	-2.4 22.0m 28.9T 18.0M	0.5 23.3M	1	1	3	
04/08/2018 Sun*	18:58	23:55	4:51	13:12	41 19.7M		-3.9 14.0E	0.1 21.7M	-2.4 22.4m 28.9T 17.8M	0.5 23.3M	1	1	3	

Night of	Pct.					Moon elev.	Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.									
04/09/2018 Mon*	19:00	23:55	4:49	13:15	32 16.2M			-3.9 14.2E	0.1 21.7M	-2.4 22.8m 29.0T 17.5M	0.5 23.4M	1	1	3
04/10/2018 Tue*	19:01	23:54	4:47	13:19	23 12.1M			-3.9 14.4E	0.1 21.7M	-2.4 23.2m 29.0T 17.2M	0.5 23.4M	1	1	3
04/11/2018 Wed*	19:02	23:54	4:45	13:23	15 7.5M			-3.9 14.6E	0.1 21.7M	-2.4 23.6m 29.0T 16.9M	0.5 23.4M	1	1	3
04/12/2018 Thr*	19:03	23:54	4:43	13:26	9 2.6M			-3.9 14.8E	0.0 21.7M	-2.4 24.0m 29.0T 16.6M	0.5 23.5M	1	1	3
04/13/2018 Fri*	19:05	23:54	4:42	13:30	4			-3.9 15.0E	0.0 21.8M	-2.4 24.4m 29.1T 16.3M	0.5 23.5M	1	1	3
04/14/2018 Sat*	19:06	23:53	4:40	13:34	1			-3.9 15.1E	0.0 21.8M	-2.4 24.7m 29.1T 16.0M	0.5 23.6M	1	1	3
04/15/2018 Sun*	19:07	23:53	4:38	13:37	0			-3.9 15.3E	0.0 21.8M	-2.5 25.1m 29.1T 15.7M	0.4 23.6M	1	1	3
04/16/2018 Mon*	19:09	23:53	4:36	13:41	2 2.8E			-3.9 15.5E	-0.1 21.8M	-2.5 25.4m 29.2T 15.4M	0.4 23.6M	1	1	3
04/17/2018 Tue*	19:10	23:53	4:35	13:45	6 14.3E			-3.9 15.7E	-0.1 21.9M	-2.5 25.8m 29.2T 15.0M	0.4 23.6M	1	1	3
04/18/2018 Wed*	19:11	23:52	4:33	13:48	13 25.9E			-3.9 15.9E	-0.1 21.9M	-2.5 26.1m 29.2T 14.7M	0.4 23.7M	1	1	3
04/19/2018 Thr*	19:13	23:52	4:31	13:52	22 37.1E			-3.9 16.1E	-0.1 21.9M	-2.5 26.4m 29.2T 14.4M	0.4 23.7M	1	1	3
04/20/2018 Fri*	19:14	23:52	4:29	13:56	32 47.4E 1.1m			-3.9 16.2E	-0.1 22.0M	-2.5 26.7m 29.3T 14.1M	0.4 23.7M	1	1	3
04/21/2018 Sat*	19:15	23:52	4:28	14:00	43 56.0E 9.8m			-3.9 16.4E	-0.2 22.0M	-2.5 27.0m 29.3T 13.7M	0.4 23.7M	1	1	3
04/22/2018 Sun*	19:17	23:52	4:26	14:03	54 61.2E 18.2m			-3.9 16.6E	-0.2 22.1M	-2.5 27.3m 29.3T 13.4M	0.4 23.7M	1	1	3
04/23/2018 Mon*	19:18	23:51	4:24	14:07	66 61.1E 25.9m			-3.9 16.8E	-0.2 22.1M	-2.5 27.6m 29.4T 13.0M	0.4 23.7T 23.7M	1	1	3
04/24/2018 Tue*	19:19	23:51	4:23	14:11	76 56.0E 32.4m			-3.9 16.9E	-0.2 22.1M	-2.5 27.8m 29.4T 12.7M	0.4 23.7T 23.7M	1	1	3
04/25/2018 Wed*	19:20	23:51	4:21	14:15	84 47.8E 37.2m			-3.9 17.1E	-0.3 22.2M	-2.5 28.1m 29.4T 12.3M	0.4 23.7T 23.7M	1	1	3
04/26/2018 Thr*	19:22	23:51	4:19	14:19	91 38.1E 39.8m			-3.9 17.2E	-0.3 22.2M	-2.5 28.3m 29.5T 11.9M	0.4 23.7T 23.7M	1	1	3
04/27/2018 Fri*	19:23	23:51	4:18	14:22	96 27.8E 40.0m 2.0M			-3.9 17.4E	-0.3 22.3M	-2.5 28.5m 29.5T 11.6M	0.4 23.7T 23.6M	1	1	3
04/28/2018 Sat*	19:24	23:51	4:16	14:26	99 17.4E 38.0m 7.0M			-3.9 17.5E	-0.3 22.3M	-2.5 28.7m 29.5T 11.2M	0.4 23.7T 23.6M	1	1	3
04/29/2018 Sun*	19:26	23:50	4:15	14:30	100 7.0E 34.1m 11.7M			-3.9 17.7E	-0.4 22.4M	-2.5 28.9m 29.6T 10.8M	0.4 23.7T 23.6M	1	1	3
04/30/2018 Mon*	19:27	23:50	4:13	14:34	98 28.9m 15.9M			-3.9 17.8E	-0.4 22.4M	-2.5 29.1m 29.6T 10.4M	0.4 3.4m 23.7T 23.6M	1	2	3
05/01/2018 Tue*	19:28	23:50	4:12	14:38	95 22.8m 19.4M			-3.9 18.0E	-0.4 22.5M	-2.5 29.2m 29.6T 10.0M	0.4 4.0m 23.7T 23.5M	1	2	3
05/02/2018 Wed*	19:30	23:50	4:10	14:41	90 16.3m 22.0M			-3.9 18.1E	-0.4 22.5M	-2.5 29.4m 29.7T 9.6M	0.4 4.5m 23.7T 23.5M	1	2	3
05/03/2018 Thr*	19:31	23:50	4:09	14:45	83 9.6m 23.8M			-3.9 18.2E	-0.5 22.6M	-2.5 29.5m 29.7T 9.2M	0.3 5.0m 23.7T 23.4M	1	2	3
05/04/2018 Fri*	19:32	23:50	4:07	14:49	75 2.9m 24.7M			-3.9 18.3E	-0.5 22.7M	-2.5 3.2E 29.6m 29.7T 8.8M	0.3 5.6m 23.7T 23.4M	2	2	3
05/05/2018 Sat*	19:34	23:50	4:06	14:53	67 24.5M			-3.9 18.5E	-0.5 22.7M	-2.5 4.1E 29.7m 29.8T 8.3M	0.3 6.1m 23.7T 23.3M	2	2	3
05/06/2018 Sun*	19:35	23:50	4:04	14:57	58 23.4M			-3.9 18.6E	-0.5 22.8M	-2.5 5.0E 29.8m 29.8T 7.9M	0.3 6.7m 23.7T 23.2M	2	2	3
05/07/2018 Mon*	19:36	23:50	4:03	15:01	48 21.4M			-3.9 18.7E	-0.6 22.8M	-2.5 5.9E 29.8m 29.8T 7.5M	0.3 7.2m 23.7T 23.2M	2	2	3
05/08/2018 Tue*	19:37	23:50	4:01	15:05	39 18.5M			-3.9 18.8E	-0.6 22.9M	-2.5 6.9E 29.9m 29.9T 7.0M	0.3 7.8m 23.7T 23.1M	2	2	3
05/09/2018 Wed*	19:39	23:50	4:00	15:08	29 14.8M			-3.9 18.9E	-0.6 23.0M	-2.5 7.8E 29.9m 29.9T 6.6M	0.3 8.3m 23.7T 23.0M	2	2	3
05/10/2018 Thr*	19:40	23:50	3:59	15:12	21 10.5M			-3.9 19.0E	-0.6 23.0M	-2.5 8.6E 29.9m 29.9T 6.1M	0.3 8.8m 23.7T 22.9M	2	2	3
05/11/2018 Fri*	19:41	23:50	3:57	15:16	13 5.6M			-3.9 19.1E	-0.7 23.1M	-2.5 9.5E 29.9m 30.0T 5.7M	0.3 9.3m 23.7T 22.8M	2	2	3
05/12/2018 Sat*	19:43	23:50	3:56	15:20	6 0.5M			-3.9 19.2E	-0.7 23.2M	-2.5 10.4E 29.9m 30.0T 5.2M	0.3 9.9m 23.7T 22.7M	2	2	3
05/13/2018 Sun*	19:44	23:50	3:55	15:24	2			-3.9 19.2E	-0.7 23.2M	-2.5 11.3E 29.8m 30.0T 4.7M	0.3 10.4m 23.7T 22.6M	2	2	3
05/14/2018 Mon*	19:45	23:50	3:54	15:28	0			-3.9 19.3E	-0.7 23.3M	-2.5 12.1E 29.8m 30.1T 4.3M	0.3 10.9m 23.7T 22.4M	2	2	3
05/15/2018 Tue*	19:46	23:50	3:52	15:32	1			-3.9 19.4E	-0.8 23.3M	-2.5 12.9E 29.7m 30.1T 3.8M	0.3 11.4m 23.7T 22.3M	2	2	3
05/16/2018 Wed*	19:48	23:50	3:51	15:36	5 8.4E			-3.9 19.5E	-0.8 23.4M	-2.5 13.8E 29.6m 30.1T 3.3M	0.3 11.9m 23.6T 22.2M	2	2	3
05/17/2018 Thr*	19:49	23:50	3:50	15:40	11 19.3E			-3.9 19.5E	-0.8 23.5M	-2.5 14.6E 29.5m 30.2T	0.3 12.4m 23.6T 22.0M	2	2	2
05/18/2018 Fri*	19:50	23:50	3:49	15:44	19 29.6E			-3.9 19.6E	-0.8 23.5M	-2.5 15.4E 29.3m 30.2T	0.3 12.9m 23.6T 21.9M	2	2	2
05/19/2018 Sat*	19:51	23:50	3:48	15:48	29 38.9E			-3.9 19.6E	-0.9 23.6M	-2.5 16.1E 29.2m 30.2T	0.2 13.3m 23.6T 21.7M	2	2	2
05/20/2018 Sun*	19:52	23:50	3:47	15:52	40 46.3E 5.7m			-3.9 19.6E	-0.9 23.7M	-2.5 16.9E 29.0m 30.3T	0.2 13.8m 23.6T 21.5M	2	2	2
05/21/2018 Mon*	19:53	23:50	3:46	15:56	52 51.0E 12.4m			-3.9 19.7E	-0.9 23.7M	-2.5 17.7E 28.9m 30.3T	0.2 14.3m 23.6T 21.3M	2	2	2
05/22/2018 Tue*	19:55	23:50	3:45	16:00	63 52.1E 18.3m			-3.9 19.7E	-1.0 23.8M	-2.5 18.4E 28.7m 30.3T	0.2 14.7m 23.6T 21.1M	2	2	2
05/23/2018 Wed*	19:56	23:50	3:44	16:04	73 49.6E 23.3m			-3.9 19.7E	-1.0 23.8M	-2.5 19.1E 28.4m 30.4T	0.2 15.2m 23.6T 20.9M	2	2	2
05/24/2018 Thr*	19:57	23:50	3:43	16:08	82 44.4E 27.1m			-3.9 19.8E	-1.0 23.9M	-2.5 19.8E 28.2m 30.4T	0.2 15.6m 23.6T 20.7M	2	2	2
05/25/2018 Fri*	19:58	23:50	3:42	16:12	89 37.3E 29.5m			-3.9 19.8E	-1.0 23.9M	-2.5 20.5E 28.0m 30.4T	0.2 16.1m 23.6T 20.5M	2	2	2
05/26/2018 Sat*	19:59	23:50	3:41	16:16	94 29.3E 30.6m			-3.9 19.8E	-1.1 24.0M	-2.5 21.1E 27.7m 30.4T	0.2 16.5m 23.6T 20.3M	2	2	2
05/27/2018 Sun*	20:00	23:50	3:41	16:20	98 20.8E 30.2m 3.3M			-3.9 19.8E	-1.1 3.3m 24.0M	-2.5 21.8E 27.4m 30.5T	0.2 16.9m 23.6T 20.0M	2	3	2
05/28/2018 Mon*	20:01	23:51	3:40	16:24	100 12.2E 28.5m 8.2M			-3.9 19.8E	-1.1 3.7m 24.1M	-2.5 22.4E 27.1m 30.5T	0.2 17.3m 23.6T 19.7M	2	3	2
05/29/2018 Tue*	20:02	23:51	3:39	16:28	99 3.7E 25.8m 13.0M			-3.9 19.8E	-1.2 4.1m 24.1M	-2.5 23.0E 26.8m 30.5T	0.2 17.7m 23.6T 19.5M	2	3	2
05/30/2018 Wed*	20:03	23:51	3:39	16:33	97 22.2m 17.4M			-3.9 19.8E	-1.2 4.5m 24.1M	-2.5 23.5E 26.5m 30.6T	0.2 18.1m 23.6T 19.2M	2	3	2

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.								
05/31/2018 Thr*	20:04	23:51	3:38	16:37	93 18.0m 21.1M		-3.9 19.7E	-1.2 4.9m 24.2M	-2.5 24.1E 26.1m 30.6T	0.2 18.4m 23.6T 18.9M	2	3	2
06/01/2018 Fri*	20:05	23:51	3:37	16:41	88 13.3m 24.2M		-3.9 19.7E	-1.3 5.3m 24.2M	-2.5 24.6E 25.8m 30.6T	0.2 18.8m 23.6T 18.6M	2	3	2
06/02/2018 Sat*	20:06	23:51	3:37	16:45	81 8.4m 26.5M		-4.0 19.7E	-1.3 5.7m 24.2M	-2.5 25.2E 25.4m 30.6T	0.2 19.2m 23.6T 18.3M	2	3	2
06/03/2018 Sun*	20:07	23:51	3:36	16:49	73 3.5m 27.7M		-4.0 19.6E	-1.3 6.1m 24.2M	-2.4 25.6E 25.0m 30.7T	0.1 19.5m 23.6T 18.0M	2	3	2
06/04/2018 Mon*	20:07	23:52	3:36	16:53	64 28.0M		-4.0 19.6E	-1.3 6.5m 24.2M	-2.4 26.1E 24.6m 30.7T	0.1 19.8m 23.6T 17.6M	2	3	2
06/05/2018 Tue*	20:08	23:52	3:35	16:57	55 27.1M		-4.0 19.6E	-1.4 6.9m 24.2T 24.2M	-2.4 26.6E 24.2m 30.7T	0.1 20.1m 23.6T 17.3M	2	3	2
06/06/2018 Wed*	20:09	23:52	3:35	17:01	45 25.0M		-4.0 19.5E	-1.4 7.4m 24.2T 24.2M	-2.4 27.0E 23.8m 30.7T	0.1 20.4m 23.6T 16.9M	2	3	2
06/07/2018 Thr*	20:10	23:52	3:35	17:05	35 21.8M		-4.0 19.5E	-1.4 7.8m 24.2T 24.2M	-2.4 27.4E 23.3m 30.8T	0.1 20.7m 23.6T 16.5M	2	3	2
06/08/2018 Fri*	20:10	23:52	3:34	17:10	25 17.5M		-4.0 19.4E	-1.5 8.2m 24.2T 24.2M	-2.4 27.8E 22.9m 30.8T	0.1 21.0m 23.6T 16.1M	2	3	2
06/09/2018 Sat*	20:11	23:53	3:34	17:14	17 12.3M		-4.0 19.3E	-1.5 8.6m 24.2T 24.1M	-2.4 28.1E 22.4m 30.8T	0.1 21.3m 23.6T 15.7M	2	3	2
06/10/2018 Sun*	20:12	23:53	3:34	17:18	9 6.3M		-4.0 19.3E	-1.5 9.0m 24.2T 24.1M	-2.4 28.5E 21.9m 30.8T	0.1 21.5m 23.6T 15.3M	2	3	2
06/11/2018 Mon*	20:12	23:53	3:34	17:22	4 0.1M		-4.0 19.2E	-1.6 9.5m 24.1T 24.0M	-2.4 28.8E 21.4m 30.8T	0.1 21.7m 23.5T 14.9M	2	3	2
06/12/2018 Tue*	20:13	23:53	3:33	17:26	1		-4.0 19.1E	-1.6 9.9m 24.1T 23.9M	-2.4 29.1E 20.9m 30.9T	0.1 22.0m 23.5T 14.5M	2	3	2
06/13/2018 Wed*	20:13	23:53	3:33	17:30	0		-4.0 19.0E	-1.6 10.3m 24.1T 23.9M	-2.4 29.4E 20.4m 30.9T	0.1 22.2m 23.5T 14.0M	2	3	2
06/14/2018 Thr*	20:14	23:54	3:33	17:34	3 3.3E		-4.0 18.9E	-1.7 10.7m 24.1T 23.8M	-2.4 29.6E 19.9m 30.9T	0.1 22.4m 23.5T 13.5M	2	3	2
06/15/2018 Fri*	20:14	23:54	3:33	17:39	9 12.6E	-1.1 3.1E	-4.0 18.8E	-1.7 11.1m 24.0T 23.7M	-2.4 29.8E 19.4m 30.9T	0.1 22.5m 23.5T 13.0M	3	3	2
06/16/2018 Sat*	20:15	23:54	3:33	17:43	17 21.3E	-1.0 3.7E	-4.0 18.8E	-1.7 11.5m 24.0T 23.5M	-2.4 30.0E 18.8m 30.9T	0.1 22.7m 23.5T 12.5M	3	3	2
06/17/2018 Sun*	20:15	23:54	3:33	17:47	27 28.9E	-0.9 4.3E	-4.0 18.7E	-1.8 11.9m 23.9T 23.4M	-2.4 30.2E 18.3m 31.0T	0.1 22.8m 23.5T 12.0M	3	3	2
06/18/2018 Mon*	20:15	23:55	3:34	17:51	37 34.9E	-0.8 4.8E	-4.0 18.6E	-1.8 12.3m 23.9T 23.2M	-2.4 30.4E 17.7m 31.0T	0.1 23.0m 23.5T 11.5M	3	3	2
06/19/2018 Tue*	20:16	23:55	3:34	17:55	48 38.9E 2.6m	-0.8 5.3E	-4.0 18.5E	-1.8 12.7m 23.9T 23.1M	-2.4 30.5E 17.2m 31.0T	0.1 23.1m 23.5T 11.0M	3	3	2
06/20/2018 Wed*	20:16	23:55	3:34	17:59	59 40.5E 7.5m	-0.7 5.7E	-4.0 18.3E	-1.8 13.1m 23.8T 22.9M	-2.4 30.7E 16.6m 31.0T	0.0 3.0E 23.2m 23.5T 10.4M	4	3	2
06/21/2018 Thr*	20:16	23:55	3:34	18:04	69 39.8E 12.0m	-0.6 6.1E	-4.0 18.2E	-1.9 13.5m 23.7T 22.7M	-2.4 30.8E 16.0m 31.0T	0.0 3.6E 23.3m 23.5T 9.8M	4	3	2
06/22/2018 Fri*	20:16	23:55	3:34	18:08	78 37.0E 16.0m	-0.5 6.5E	-4.0 18.1E	-1.9 13.9m 23.7T 22.5M	-2.4 30.9E 15.4m 31.0T	0.0 4.2E 23.4m 23.5T 9.3M	4	3	2
06/23/2018 Sat*	20:16	23:56	3:35	18:12	86 32.7E 19.2m	-0.5 6.8E	-4.0 18.0E	-1.9 14.3m 23.6T 22.2M	-2.3 30.9E 14.8m 31.0T	0.0 4.8E 23.4m 23.5T 8.7M	4	3	2
06/24/2018 Sun*	20:17	23:56	3:35	18:16	92 27.2E 21.8m	-0.4 7.1E	-4.0 17.9E	-2.0 14.6m 23.6T 22.0M	-2.3 31.0E 14.2m 31.0T	0.0 5.4E 23.4m 23.5T 8.1M	4	3	2
06/25/2018 Mon*	20:17	23:56	3:35	18:20	97 21.1E 23.5m	-0.4 7.3E	-4.1 17.8E	-2.0 15.0m 23.5T 21.7M	-2.3 31.0E 13.6m 31.1T	0.0 6.0E 23.5m 23.5T 7.4M	4	3	2
06/26/2018 Tue*	20:17	23:56	3:36	18:24	99 14.5E 24.4m 2.6M	-0.3 7.6E	-4.1 17.7E	-2.0 15.4m 23.4T 21.4M	-2.3 31.1E 13.0m 31.1T	0.0 6.5E 23.5m 23.5T 6.8M	4	3	2
06/27/2018 Wed*	20:17	23:56	3:36	18:29	100 7.8E 24.4m 8.6M	-0.3 7.7E	-4.1 17.5E	-2.1 15.7m 23.3T 21.0M	-2.3 31.1E 12.4m	0.0 7.1E 23.5m 23.5T 6.2M	4	3	2
06/28/2018 Thr*	20:16	23:57	3:37	18:33	99 1.2E 23.5m 14.7M	-0.2 7.9E	-4.1 17.4E	-2.1 16.1m 23.3T 20.7M	-2.3 31.1E 11.8m	0.0 7.7E 23.4m 23.5T 5.5M	4	3	2
06/29/2018 Fri*	20:16	23:57	3:37	18:37	96 21.9m 20.4M	-0.2 8.0E	-4.1 17.3E	-2.1 16.4m 23.2T 20.3M	-2.3 31.0E 11.1m	0.0 8.2E 23.4m 23.5T 4.9M	4	3	2
06/30/2018 Sat*	20:16	23:57	3:38	18:41	92 19.6m 25.7M	-0.1 8.0E	-4.1 17.1E	-2.2 16.7m 23.1T 19.9M	-2.3 31.0E 10.5m	0.0 8.7E 23.3m 23.5T 4.2M	4	3	2
07/01/2018 Sun*	20:16	23:57	3:39	18:45	86 16.7m 30.4M	-0.1 8.1E	-4.1 17.0E	-2.2 17.0m 23.0T 19.5M	-2.3 31.0E 9.9m	0.0 9.2E 23.3m 23.5T 3.5M	4	3	2
07/02/2018 Mon*	20:16	23:57	3:39	18:49	78 13.2m 34.1M	0.0 8.1E	-4.1 16.9E	-2.2 17.3m 22.9T 19.1M	-2.3 30.9E 9.2m	0.1 9.7E 23.2m 23.5T	4	3	1
07/03/2018 Tue*	20:15	23:58	3:40	18:53	70 9.3m 36.6M	0.0 8.0E	-4.1 16.8E	-2.3 17.6m 22.8T 18.6M	-2.3 30.8E 8.6m	0.1 10.2E 23.1m 23.4T	4	3	1
07/04/2018 Wed*	20:15	23:58	3:41	18:57	61 5.1m 37.5M	0.1 8.0E	-4.1 16.6E	-2.3 17.9m 22.7T 18.2M	-2.3 30.7E 7.9m	0.1 10.7E 23.0m 23.4T	4	3	1
07/05/2018 Thr*	20:15	23:58	3:41	19:02	51 0.8m 36.7M	0.1 7.9E	-4.1 16.5E	-2.3 18.2m 22.6T 17.7M	-2.3 30.6E 7.3m	0.1 11.2E 22.8m 23.4T	4	3	1
07/06/2018 Fri*	20:14	23:58	3:42	19:06	40 34.0M	0.2 7.8E	-4.1 16.3E	-2.3 18.4m 22.5T 17.1M	-2.3 30.5E 6.6m	0.1 11.6E 22.7m 23.4T	4	3	1
07/07/2018 Sat*	20:14	23:58	3:43	19:10	30 29.5M	0.2 7.6E	-4.1 16.2E	-2.4 18.7m 22.4T 16.6M	-2.3 30.4E 6.0m	0.1 12.1E 22.5m 23.4T	4	3	1
07/08/2018 Sun*	20:13	23:58	3:44	19:14	20 23.3M	0.2 7.4E	-4.1 16.1E	-2.4 18.9m 22.3T 16.0M	-2.3 30.3E 5.3m	0.1 12.5E 22.2m 23.4T	4	3	1
07/09/2018 Mon*	20:13	23:59	3:45	19:18	12 15.9M	0.3 7.2E	-4.1 15.9E	-2.4 19.1m 22.2T 15.4M	-2.2 30.1E 4.7m	0.1 12.9E 22.4m 23.4T	4	3	1
07/10/2018 Tue*	20:12	23:59	3:46	19:22	5 7.5M	0.3 7.0E	-4.1 15.8E	-2.5 19.3m 22.1T 14.8M	-2.2 30.0E 4.1m	0.1 13.3E 22.0m 23.4T	4	3	1
07/11/2018 Wed*	20:11	23:59	3:46	19:26	1	0.4 6.7E	-4.1 15.6E	-2.5 19.5m 22.0T 14.1M	-2.2 29.8E 3.4m	0.1 13.7E 21.8m 23.4T	4	3	1
07/12/2018 Thr*	20:11	23:59	3:47	19:30	0	0.4 6.4E	-4.2 15.5E	-2.5 19.7m 21.9T 13.4M	-2.2 29.7E	0.1 14.1E 21.5m 23.4T	4	2	1
07/13/2018 Fri*	20:10	23:59	3:48	19:34	2 0.5E	0.5 6.1E	-4.2 15.4E	-2.5 19.9m 21.8T 12.7M	-2.2 29.5E	0.1 14.5E 21.3m 23.4T	4	2	1
07/14/2018 Sat*	20:09	23:59	3:49	19:38	7 7.9E	0.6 5.7E	-4.2 15.2E	-2.6 20.0m 21.7T 12.0M	-2.2 29.3E	0.1 14.9E 21.0m 23.4T	4	2	1
07/15/2018 Sun*	20:08	23:59	3:50	19:42	14 15.1E	0.6 5.4E	-4.2 15.1E	-2.6 20.1m 21.6T 11.3M	-2.2 29.2E	0.1 15.2E 20.8m 23.4T	4	2	1
07/16/2018 Mon*	20:08	23:59	3:51	19:46	24 21.3E	0.7 5.0E	-4.2 14.9E	-2.6 20.2m 21.5T 10.5M	-2.2 29.0E	0.1 15.6E 20.5m 23.4T	4	2	1
07/17/2018 Tue*	20:07	23:59	3:52	19:50	34 26.3E	0.8 4.5E	-4.2 14.8E	-2.6 20.3m 21.3T 9.7M	-2.2 28.8E	0.1 15.9E 20.2m 23.4T	4	2	1
07/18/2018 Wed*	20:06	23:59	3:53	19:54	44 29.7E	0.8 4.1E	-4.2 14.6E	-2.7 20.4m 21.2T 8.9M	-2.2 28.6E	0.1 16.2E 19.9m 23.4T	4	2	1
07/19/2018 Thr*	20:05	0:00	3:55	19:58	55 31.5E	0.9 3.6E	-4.2 14.5E	-2.7 20.5m 21.1T 8.1M	-2.2 28.4E	0.1 16.5E 19.6m 23.4T	4	2	1
07/20/2018 Fri*	20:04	0:00	3:56	20:02	65 31.6E 1.4m	1.0 3.1E	-4.2 14.3E	-2.7 20.5m 21.0T 7.3M	-2.2 28.2E	0.2 16.9E 19.2m 23.4T	4	2	1
07/21/2018 Sat*	20:03	0:00	3:57	20:06	74 30.3E 6.1m		-4.2 14.2E	-2.7 20.5m 20.9T 6.4M	-2.2 28.0E	0.2 17.1E 18.9m 23.4T	3	2	1

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar Illum.								
07/22/2018 Sun*	20:02	0:00	3:58	20:10	82 27.6E 10.7m		-4.2 14.1E	-2.7 20.5m 20.8T 5.6M	-2.2 27.8E	0.2 17.4E 18.5m 23.4T	3	2	1
07/23/2018 Mon*	20:01	0:00	3:59	20:14	89 24.0E 15.1m		-4.2 13.9E	-2.8 20.5m 20.7T 4.7M	-2.2 27.6E	0.2 17.7E 18.2m 23.4T	3	2	1
07/24/2018 Tue*	20:00	0:00	4:00	20:18	94 19.6E 19.0m		-4.2 13.8E	-2.8 20.5m 20.6T 3.8M	-2.2 27.4E	0.2 18.0E 17.8m 23.4T	3	2	1
07/25/2018 Wed*	19:59	0:00	4:01	20:22	98 14.6E 22.4m		-4.3 13.6E	-2.8 20.5m 20.5T	-2.1 27.1E	0.2 18.2E 17.4m 23.4T	3	2	0
07/26/2018 Thr*	19:57	0:00	4:02	20:26	100 9.3E 25.0m 2.3M		-4.3 13.5E	-2.8 20.4m 20.4T	-2.1 26.9E	0.2 18.5E 17.1m 23.4T	3	2	0
07/27/2018 Fri*	19:56	0:00	4:04	20:30	100 3.8E 26.8m 10.1M		-4.3 13.3E	-2.8 20.3m 20.3T	-2.1 26.7E	0.2 18.7E 16.7m 23.3T	3	2	0
07/28/2018 Sat*	19:55	0:00	4:05	20:34	98 27.7m 18.1m		-4.3 13.2E	-2.8 20.2m 20.2T	-2.1 26.5E	0.2 19.0E 16.3m 23.3T	3	2	0
07/29/2018 Sun*	19:54	0:00	4:06	20:38	95 27.5m 25.9M		-4.3 13.0E	-2.8 20.1m 20.2T	-2.1 26.2E	0.2 19.2E 15.9m 23.3T	3	2	0
07/30/2018 Mon*	19:52	0:00	4:07	20:42	90 26.3m 33.3M		-4.3 12.9E	-2.8 20.0m 20.1T	-2.1 26.0E	0.2 19.4E 15.4m 23.3T	3	2	0
07/31/2018 Tue*	19:51	0:00	4:08	20:46	83 24.0m 40.1M		-4.3 12.7E	-2.8 19.9m 20.0T	-2.1 25.8E	0.2 19.6E 15.0m 23.3T	3	2	0
08/01/2018 Wed*	19:50	23:59	4:10	20:50	75 20.6m 45.7M		-4.3 12.6E	-2.8 3.1E 19.7m 19.9T	-2.1 25.6E	0.2 19.8E 14.6m 23.3T	4	2	0
08/02/2018 Thr*	19:48	23:59	4:11	20:53	65 16.4m 49.5M		-4.3 12.4E	-2.7 3.5E 19.6m 19.9T	-2.1 25.3E	0.2 20.0E 14.1m 23.3T	4	2	0
08/03/2018 Fri*	19:47	23:59	4:12	20:57	55 11.4m 50.5M		-4.3 12.3E	-2.7 3.9E 19.4m 19.8T	-2.1 25.1E	0.2 20.2E 13.7m 23.3T	4	2	0
08/04/2018 Sat*	19:46	23:59	4:13	21:01	44 5.7m 48.3M		-4.3 12.1E	-2.7 4.3E 19.2m 19.8T	-2.1 24.9E	0.2 20.4E 13.2m 23.3T	4	2	0
08/05/2018 Sun*	19:44	23:59	4:15	21:05	34 43.1M		-4.4 12.0E	-2.7 4.7E 19.0m 19.7T	-2.1 24.6E	0.2 20.5E 12.8m 23.3T	4	2	0
08/06/2018 Mon*	19:43	23:59	4:16	21:09	23 35.5M		-4.4 11.8E	-2.7 5.1E 18.8m 19.6T	-2.1 24.4E	0.3 20.7E 12.3m 23.3T	4	2	0
08/07/2018 Tue*	19:41	23:59	4:17	21:13	14 26.1M		-4.4 11.7E	-2.7 5.5E 18.6m 19.6T	-2.1 24.2E	0.3 20.9E 11.8m 23.3T	4	2	0
08/08/2018 Wed*	19:40	23:59	4:18	21:16	7 15.6M		-4.4 11.5E	-2.6 5.9E 18.3m 19.6T	-2.1 23.9E	0.3 21.0E 11.3m 23.3T	4	2	0
08/09/2018 Thr*	19:38	23:59	4:20	21:20	2 4.6M		-4.4 11.4E	-2.6 6.3E 18.1m 19.5T	-2.0 23.7E	0.3 21.2E 10.7m 23.3T	4	2	0
08/10/2018 Fri*	19:37	23:58	4:21	21:24	0		-4.4 11.2E	-2.6 6.7E 17.8m 19.5T	-2.0 23.5E	0.3 21.3E 10.4m 23.3T	4	2	0
08/11/2018 Sat*	19:35	23:58	4:22	21:28	1		-4.4 11.1E	-2.6 7.0E 17.6m 19.5T	-2.0 23.2E	0.3 21.4E 9.9m 23.3T	4	2	0
08/12/2018 Sun*	19:33	23:58	4:23	21:32	5 5.6E		-4.4 10.9E	-2.6 7.4E 17.3m 19.5T	-2.0 23.0E	0.3 21.6E 9.4m 23.3T	4	2	0
08/13/2018 Mon*	19:32	23:58	4:25	21:35	12 11.7E		-4.4 10.8E	-2.5 7.7E 17.0m 19.4T	-2.0 22.8E	0.3 21.7E 8.9m 23.3T	4	2	0
08/14/2018 Tue*	19:30	23:58	4:26	21:39	20 17.0E		-4.4 10.6E	-2.5 8.1E 16.8m 19.4T	-2.0 22.5E	0.3 21.8E 8.4m 23.3T	4	2	0
08/15/2018 Wed*	19:28	23:58	4:27	21:43	29 21.3E		-4.4 10.5E	-2.5 8.4E 16.5m 19.4T	-2.0 22.3E	0.3 21.9E 7.9m 23.3T	4	2	0
08/16/2018 Thr*	19:27	23:57	4:28	21:47	40 24.4E	2.3 4.0M	-4.5 10.3E	-2.5 8.8E 16.2m 19.4T	-2.0 22.1E	0.3 22.0E 7.3m 23.3T	4	2	1
08/17/2018 Fri*	19:25	23:57	4:30	21:50	50 26.2E	2.0 5.1M	-4.5 10.2E	-2.5 9.1E 15.9m 19.4T	-2.0 21.8E	0.3 22.1E 6.8m 23.3T	4	2	1
08/18/2018 Sat*	19:23	23:57	4:31	21:54	60 26.8E	1.6 6.1M	-4.5 10.0E	-2.4 9.4E 15.6m 19.5T	-2.0 21.6E	0.3 22.2E 6.3m 23.3T	4	2	1
08/19/2018 Sun*	19:22	23:57	4:32	21:58	69 26.1E	1.3 7.1M	-4.5 9.9E	-2.4 9.7E 15.3m 19.5T	-2.0 21.4E	0.3 22.3E 5.8m 23.3T	4	2	1
08/20/2018 Mon*	19:20	23:56	4:33	22:01	77 24.4E 5.3m	1.0 7.9M	-4.5 9.7E	-2.4 10.0E 15.0m 19.5T	-2.0 21.2E	0.3 22.4E 5.3m 23.3T	4	2	1
08/21/2018 Tue*	19:18	23:56	4:35	22:05	85 21.7E 11.4m	0.7 8.6M	-4.5 9.5E	-2.4 10.3E 14.7m 19.5T	-2.0 20.9E	0.3 22.5E 4.7m 23.3T	4	2	1
08/22/2018 Wed*	19:17	23:56	4:36	22:09	91 18.3E 17.3m	0.5 9.2M	-4.5 9.4E	-2.3 10.6E 14.4m 19.5T	-2.0 20.7E	0.3 22.5E 4.2m 23.3T	4	2	1
08/23/2018 Thr*	19:15	23:56	4:37	22:12	96 14.3E 22.8m	0.2 9.7M	-4.5 9.2E	-2.3 10.9E 14.1m 19.6T	-2.0 20.5E	0.4 22.6E 3.7m 23.3T	4	2	1
08/24/2018 Fri*	19:13	23:55	4:38	22:16	99 9.8E 27.7m	0.0 10.1M	-4.5 9.1E	-2.3 11.2E 13.8m 19.6T	-2.0 20.2E	0.4 22.7E 3.2m 23.3T	4	2	1
08/25/2018 Sat*	19:11	23:55	4:40	22:20	100 5.0E 31.8m 4.1M	-0.1 10.4M	-4.6 8.9E	-2.3 11.4E 13.5m 19.7T	-2.0 20.0E	0.4 22.7E 23.3T	4	1	1
08/26/2018 Sun*	19:09	23:55	4:41	22:23	99 0.3E 34.8m 13.6M	-0.3 10.5M	-4.6 8.7E	-2.2 11.7E 13.2m 19.7T	-2.0 19.8E	0.4 22.8E 23.3T	4	1	1
08/27/2018 Mon*	19:08	23:54	4:42	22:27	97 36.3m 23.2M	-0.4 10.6M	-4.6 8.6E	-2.2 12.0E 12.9m 19.8T	-1.9 19.6E	0.4 22.8E 23.2T	4	1	1
08/28/2018 Tue*	19:06	23:54	4:43	22:31	93 36.2m 32.8M	-0.6 10.5M	-4.6 8.4E	-2.2 12.2E 12.6m 19.8T	-1.9 19.3E	0.4 22.9E 23.2T	4	1	1
08/29/2018 Wed*	19:04	23:54	4:44	22:34	86 34.2m 42.0M	-0.7 10.3M	-4.6 8.2E	-2.2 12.5E 12.3m 19.9T	-1.9 19.1E	0.4 22.9E 23.2T	4	1	1
08/30/2018 Thr*	19:02	23:54	4:46	22:38	79 30.6m 50.6M	-0.8 10.1M	-4.6 8.0E	-2.1 12.7E 12.1m 19.9T	-1.9 18.9E	0.4 23.0E 23.2T	4	1	1
08/31/2018 Fri*	19:00	23:53	4:47	22:42	69 25.4m 57.4M	-0.9 9.7M	-4.6 7.9E	-2.1 13.0E 11.8m 20.0T	-1.9 18.7E	0.4 23.0E 23.2T	4	1	1
09/01/2018 Sat*	18:58	23:53	4:48	22:45	59 19.1m 61.0M	-0.9 9.3M	-4.6 7.7E	-2.1 13.2E 11.5m 20.1T	-1.9 18.4E	0.4 23.1E 23.2T	4	1	1
09/02/2018 Sun*	18:57	23:53	4:49	22:49	48 11.8m 59.8M	-1.0 8.8M	-4.6 7.5E	-2.0 13.4E 11.2m 20.1T	-1.9 18.2E	0.4 23.1E 23.2T	4	1	1
09/03/2018 Mon*	18:55	23:52	4:50	22:52	37 3.9m 53.9M	-1.0 8.2M	-4.6 7.3E	-2.0 13.7E 10.9m 20.2T	-1.9 18.0E	0.4 23.1E 23.2T	4	1	1
09/04/2018 Tue*	18:53	23:52	4:52	22:56	26 44.8M	-1.1 7.6M	-4.7 7.2E	-2.0 13.9E 10.7m 20.3T	-1.9 17.8E	0.4 23.1E 23.2T	4	1	1
09/05/2018 Wed*	18:51	23:52	4:53	23:00	17 34.0M	-1.1 6.9M	-4.7 7.0E	-2.0 14.1E 10.4m 20.4T	-1.9 17.5E	0.4 23.2E 23.2T	4	1	1
09/06/2018 Thr*	18:49	23:51	4:54	23:03	9 22.2M	-1.2 6.1M	-4.7 6.8E	-1.9 14.3E 10.1m 20.5T	-1.9 17.3E	0.4 23.2E 23.2T	4	1	1
09/07/2018 Fri*	18:47	23:51	4:55	23:07	3 10.0M	-1.2 5.4M	-4.7 6.6E	-1.9 14.5E 9.9m 20.5T	-1.9 17.1E	0.4 23.2E 23.2T	4	1	1
09/08/2018 Sat*	18:45	23:51	4:56	23:11	0	-1.3 4.6M	-4.7 6.4E	-1.9 14.7E 9.6m 20.6T	-1.9 16.9E	0.4 23.2E 23.2T	4	1	1
09/09/2018 Sun*	18:43	23:50	4:58	23:14	1	-1.3 3.8M	-4.7 6.2E	-1.9 15.0E 9.4m 20.7T	-1.9 16.7E	0.4 23.2E 23.2T	4	1	1
09/10/2018 Mon*	18:42	23:50	4:59	23:18	3 4.2E	-1.4 3.0M	-4.7 6.0E	-1.8 15.2E 9.1m 20.8T	-1.9 16.4E	0.4 23.2E 23.2T	4	1	1
09/11/2018 Tue*	18:40	23:50	5:00	23:21	9 9.6E		-4.7 5.8E	-1.8 15.4E 8.9m 20.9T	-1.9 16.2E	0.5 23.2E 23.2T	4	1	0

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar Illum.								
09/12/2018 Wed*	18:38	23:49	5:01	23:25	16 14.4E		-4.7 5.6E	-1.8 15.6E 8.6m 21.0T	-1.9 16.0E	0.5 23.2E	4	1	0
09/13/2018 Thr*	18:36	23:49	5:02	23:28	24 18.4E		-4.7 5.4E	-1.7 15.8E 8.4m 21.2T	-1.9 15.8E	0.5 23.2E	4	1	0
09/14/2018 Fri*	18:34	23:48	5:04	23:32	34 21.4E		-4.7 5.1E	-1.7 16.0E 8.2m 21.3T	-1.9 15.5E	0.5 23.2E	4	1	0
09/15/2018 Sat*	18:32	23:48	5:05	23:36	43 23.4E		-4.7 4.9E	-1.7 16.2E 7.9m 21.4T	-1.9 15.3E	0.5 23.2E	4	1	0
09/16/2018 Sun*	18:30	23:48	5:06	23:39	53 24.3E		-4.8 4.7E	-1.7 16.4E 7.7m 21.5T	-1.9 15.1E	0.5 23.2E	4	1	0
09/17/2018 Mon*	18:28	23:47	5:07	23:43	63 24.2E		-4.8 4.5E	-1.6 16.5E 7.5m 21.6T	-1.8 14.9E	0.5 23.1E	4	1	0
09/18/2018 Tue*	18:26	23:47	5:08	23:46	71 23.1E 2.6m		-4.8 4.2E	-1.6 16.7E 7.3m 21.7T	-1.8 14.7E	0.5 23.1E	4	1	0
09/19/2018 Wed*	18:25	23:47	5:10	23:50	80 21.1E 10.1m		-4.8 4.0E	-1.6 16.9E 7.1m 21.9T	-1.8 14.4E	0.5 23.1E	4	1	0
09/20/2018 Thr*	18:23	23:46	5:11	23:54	87 18.3E 17.7m		-4.8 3.7E	-1.6 17.1E 6.9m 22.0T	-1.8 14.2E	0.5 23.1E	4	1	0
09/21/2018 Fri*	18:21	23:46	5:12	23:57	92 14.8E 25.0m		-4.8 3.5E	-1.5 17.3E 6.7m 22.1T	-1.8 14.0E	0.5 23.0E	4	1	0
09/22/2018 Sat*	18:19	23:46	5:13	0:01	97 10.8E 31.9m		-4.8 3.2E	-1.5 17.5E 6.5m 22.2T	-1.8 13.8E	0.5 23.0E	4	1	0
09/23/2018 Sun*	18:17	23:45	5:14	0:04	99 6.3E 38.0m		-4.8 3.0E	-1.5 17.7E 6.3m 22.4T	-1.8 13.6E	0.5 23.0E	4	1	0
09/24/2018 Mon*	18:15	23:45	5:15	0:08	100 1.7E 42.7m 7.7M			-1.5 17.9E 6.1m 22.5T	-1.8 13.3E	0.5 22.9E	3	1	0
09/25/2018 Tue*	18:13	23:45	5:17	0:12	98 45.5m 18.4M			-1.4 18.0E 5.9m 22.7T	-1.8 13.1E	0.5 22.9E	3	1	0
09/26/2018 Wed*	18:11	23:44	5:18	0:15	95 45.7m 29.2M			-1.4 18.2E 5.7m 22.8T	-1.8 12.9E	0.5 22.9E	3	1	0
09/27/2018 Thr*	18:10	23:44	5:19	0:19	89 43.2m 39.9M			-1.4 18.4E 5.6m 22.9T	-1.8 12.7E	0.5 22.8E	3	1	0
09/28/2018 Fri*	18:08	23:44	5:20	0:22	82 38.2m 50.2M			-1.4 18.6E 5.4m 23.1T	-1.8 12.4E	0.5 22.8E	3	1	0
09/29/2018 Sat*	18:06	23:43	5:21	0:26	73 31.3m 59.3M			-1.3 18.8E 5.3m 23.2T	-1.8 12.2E	0.5 22.7E	3	1	0
09/30/2018 Sun*	18:04	23:43	5:22	0:30	63 23.0m 65.3M			-1.3 19.0E 5.1m 23.4T	-1.8 12.0E	0.5 22.7E	3	1	0
10/01/2018 Mon*	18:02	23:43	5:24	0:33	52 13.8m 65.7M			-1.3 19.2E 4.9m 23.6T	-1.8 11.7E	0.5 22.6E	3	1	0
10/02/2018 Tue*	18:00	23:42	5:25	0:37	40 4.1m 59.8M			-1.3 19.4E 4.8m 23.7T	-1.8 11.5E	0.5 22.5E	3	1	0
10/03/2018 Wed*	17:59	23:42	5:26	0:40	29 50.3M			-1.2 19.5E 4.6m 23.9T	-1.8 11.3E	0.5 22.5E	3	1	0
10/04/2018 Thr*	17:57	23:42	5:27	0:44	19 39.1M			-1.2 19.7E 4.5m 24.0T	-1.8 11.1E	0.5 22.4E	3	1	0
10/05/2018 Fri*	17:55	23:41	5:28	0:48	11 27.1M			-1.2 19.9E 4.3m 24.2T	-1.8 10.8E	0.5 22.3E	3	1	0
10/06/2018 Sat*	17:53	23:41	5:30	0:51	5 14.9M			-1.2 20.1E 4.2m 24.4T	-1.8 10.6E	0.5 22.3E	3	1	0
10/07/2018 Sun*	17:52	23:41	5:31	0:55	1 2.8M			-1.1 20.3E 4.0m 24.5T	-1.8 10.3E	0.5 22.2E	3	1	0
10/08/2018 Mon*	17:50	23:41	5:32	0:59	0			-1.1 20.5E 3.9m 24.7T	-1.8 10.1E	0.5 22.1E	3	1	0
10/09/2018 Tue*	17:48	23:40	5:33	1:02	2 2.6E			-1.1 20.7E 3.8m 24.9T	-1.8 9.9E	0.5 22.0E	3	1	0
10/10/2018 Wed*	17:46	23:40	5:34	1:06	6 7.6E			-1.1 20.9E 3.6m 25.1T	-1.8 9.6E	0.5 21.9E	3	1	0
10/11/2018 Thr*	17:45	23:40	5:36	1:10	12 12.4E			-1.0 21.1E 3.5m 25.2T	-1.8 9.4E	0.6 21.8E	3	1	0
10/12/2018 Fri*	17:43	23:39	5:37	1:13	19 16.5E			-1.0 21.3E 3.4m 25.4T	-1.8 9.1E	0.6 21.8E	3	1	0
10/13/2018 Sat*	17:41	23:39	5:38	1:17	27 19.8E			-1.0 21.5E 3.3m 25.6T	-1.8 8.9E	0.6 21.7E	3	1	0
10/14/2018 Sun*	17:40	23:39	5:39	1:21	36 22.3E			-1.0 21.7E 3.1m 25.8T	-1.8 8.6E	0.6 21.6E	3	1	0
10/15/2018 Mon*	17:38	23:39	5:40	1:25	46 23.8E			-1.0 21.9E 3.0m 26.0T	-1.8 8.4E	0.6 21.5E	3	1	0
10/16/2018 Tue*	17:36	23:39	5:42	1:28	55 24.4E			-0.9 22.1E 26.2T	-1.8 8.1E	0.6 21.4E	3	0	0
10/17/2018 Wed*	17:35	23:38	5:43	1:32	64 24.0E 1.1m			-0.9 22.3E 26.4T	-1.8 7.9E	0.6 21.2E	3	0	0
10/18/2018 Thr*	17:33	23:38	5:44	1:36	73 22.7E 9.7m			-0.9 22.5E 26.6T	-1.8 7.6E	0.6 21.1E	3	0	0
10/19/2018 Fri*	17:32	23:38	5:45	1:40	81 20.4E 18.6m			-0.9 22.7E 26.8T	-1.8 7.4E	0.6 21.0E	3	0	0
10/20/2018 Sat*	17:30	23:38	5:46	1:43	88 17.3E 27.5m			-0.8 23.0E 27.0T	-1.8 7.1E	0.6 20.9E	3	0	0
10/21/2018 Sun*	17:28	23:38	5:48	1:47	94 13.5E 36.1m			-0.8 23.2E 27.2T	-1.8 6.9E	0.6 20.8E	3	0	0
10/22/2018 Mon*	17:27	23:38	5:49	1:51	98 9.1E 44.0m			-0.8 23.4E 27.4T	-1.8 6.6E	0.6 20.7E	3	0	0
10/23/2018 Tue*	17:25	23:37	5:50	1:55	100 4.2E 50.5m 1.5M			-0.8 23.6E 27.6T	-1.7 6.3E	0.6 20.5E	3	0	0
10/24/2018 Wed*	17:24	23:37	5:51	1:59	99 54.3m 12.5M			-0.8 23.9E 27.8T	-1.7 6.0E	0.6 20.4E	3	0	0
10/25/2018 Thr*	17:22	23:37	5:53	2:02	97 54.4m 23.9M			-0.7 24.1E 28.0T	-1.7 5.8E	0.6 20.3E	3	0	0
10/26/2018 Fri*	17:21	23:37	5:54	2:06	92 50.5m 35.1M			-0.7 24.3E 28.2T	-1.7 5.5E	0.6 20.1E	3	0	0
10/27/2018 Sat*	17:20	23:37	5:55	2:10	85 43.4m 46.0M			-0.7 24.5E 28.4T	-1.7 5.2E	0.6 20.0E	3	0	0
10/28/2018 Sun*	17:18	23:37	5:56	2:14	76 34.3m 55.7M			-0.7 24.8E 28.7T	-1.7 4.9E	0.6 19.8E	3	0	0
10/29/2018 Mon*	17:17	23:37	5:58	2:18	66 24.1m 62.7M			-0.6 25.0E 28.9T	-1.7 4.6E	0.6 19.7E	3	0	0
10/30/2018 Tue*	17:15	23:37	5:59	2:22	55 13.3m 64.6M			-0.6 25.3E 29.1T	-1.7 4.4E	0.6 19.5E	3	0	0
10/31/2018 Wed*	17:14	23:37	6:00	2:26	44 2.4m 60.4M			-0.6 25.5E 29.3T	-1.7 4.1E	0.6 19.3E	3	0	0
11/01/2018 Thr*	17:13	23:37	6:01	2:30	32 52.0M			-0.6 25.8E 29.5T	-1.7 3.8E	0.6 19.2E	3	0	0
11/02/2018 Fri*	17:11	23:37	6:03	2:33	22 41.8M		-4.2 3.5M	-0.6 26.0E 29.8T	-1.7 3.5E	0.6 19.0E	3	0	1

Night of	Pct.					Moon elev.	Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.									
11/03/2018 Sat*	17:10	23:37	6:04	2:37	14 30.7M			-4.3 4.8M	-0.5 26.3E 30.0T	-1.7 3.2E	0.6 18.8E	3	0	1
11/04/2018 Sun	17:09	23:37	6:05	2:41	7 19.3M			-4.3 6.1M	-0.5 26.5E 30.2T		0.6 18.6E	2	0	1
11/05/2018 Mon	17:08	23:37	6:06	2:45	2 8.0M			-4.4 7.4M	-0.5 26.8E 30.5T		0.6 18.4E	3	0	1
11/06/2018 Tue	17:07	23:37	6:08	2:49	0			-4.4 8.7M	-0.5 27.1E 30.7T		0.6 18.2E	3	0	1
11/07/2018 Wed	17:06	23:37	6:09	2:53	1			-4.5 9.9M	-0.5 27.3E 30.9T		0.6 18.0E	3	0	1
11/08/2018 Thr	17:04	23:37	6:10	2:57	3 4.9E			-4.5 11.1M	-0.4 27.6E 31.2T		0.6 17.8E	3	0	1
11/09/2018 Fri	17:03	23:37	6:11	3:01	7 10.1E			-4.6 12.2M	-0.4 27.9E 31.4T		0.6 17.6E	3	0	1
11/10/2018 Sat	17:02	23:37	6:13	3:05	13 14.9E			-4.6 13.3M	-0.4 28.1E 31.7T		0.6 17.4E	3	0	1
11/11/2018 Sun	17:01	23:37	6:14	3:09	21 19.1E			-4.6 14.4M	-0.4 28.4E 31.9T		0.6 17.2E	3	0	1
11/12/2018 Mon	17:00	23:37	6:15	3:14	29 22.7E			-4.7 15.4M	-0.4 28.7E 32.2T		0.6 16.9E	3	0	1
11/13/2018 Tue	16:59	23:38	6:16	3:18	38 25.4E			-4.7 16.4M	-0.3 29.0E 32.4T		0.6 16.7E	3	0	1
11/14/2018 Wed	16:58	23:38	6:18	3:22	47 27.2E			-4.7 17.3M	-0.3 29.3E 32.6T		0.6 16.5E	2	0	1
11/15/2018 Thr	16:58	23:38	6:19	3:26	56 27.9E			-4.7 18.2M	-0.3 29.6E 32.9T		0.6 16.2E	2	0	1
11/16/2018 Fri	16:57	23:38	6:20	3:30	66 27.5E 8.3m			-4.8 19.0M	-0.3 29.9E 33.2T		0.6 15.9E	2	0	1
11/17/2018 Sat	16:56	23:38	6:21	3:34	75 26.0E 18.2m			-4.8 19.8M	-0.3 30.2E 33.4T		0.6 15.7E	2	0	1
11/18/2018 Sun	16:55	23:39	6:23	3:38	83 23.3E 28.3m			-4.8 20.6M	-0.2 30.5E 33.7T		0.6 15.4E	2	0	1
11/19/2018 Mon	16:54	23:39	6:24	3:42	90 19.5E 38.4m			-4.8 21.3M	-0.2 30.8E 33.9T		0.6 15.1E	2	0	1
11/20/2018 Tue	16:54	23:39	6:25	3:47	95 14.8E 48.0m			-4.8 22.0M	-0.2 31.1E 34.2T		0.6 14.8E	2	0	1
11/21/2018 Wed	16:53	23:39	6:26	3:51	99 9.2E 56.4m			-4.8 22.6M	-0.2 31.4E 34.4T		0.6 14.6E	2	0	1
11/22/2018 Thr	16:52	23:40	6:27	3:55	100 3.2E 61.7m 6.4M			-4.8 23.2M	-0.2 31.8E 34.7T		0.6 14.3E	2	0	1
11/23/2018 Fri	16:52	23:40	6:28	3:59	98 61.7m 17.6M			-4.9 23.7M	-0.2 32.1E 35.0T		0.6 13.9E	2	0	1
11/24/2018 Sat	16:51	23:40	6:30	4:04	95 56.1m 28.6M			-4.9 24.2M	-0.1 32.4E 35.2T		0.6 13.6E	2	0	1
11/25/2018 Sun	16:51	23:40	6:31	4:08	88 46.9m 38.9M			-4.9 24.7M	-0.1 32.7E 35.5T		0.6 13.3E	2	0	1
11/26/2018 Mon	16:50	23:41	6:32	4:12	80 36.1m 47.8M			-4.9 25.2M	-0.1 33.1E 35.8T		0.6 13.0E	2	0	1
11/27/2018 Tue	16:50	23:41	6:33	4:16	69 24.5m 54.2M			-4.9 25.6M	-0.1 33.4E 36.0T		0.6 12.6E	2	0	1
11/28/2018 Wed	16:49	23:41	6:34	4:21	58 12.6m 56.7M			-4.9 25.9M	-0.1 33.7E 36.3T		0.6 12.3E	2	0	1
11/29/2018 Thr	16:49	23:42	6:35	4:25	47 1.1m 54.5M			-4.9 26.3M	0.0 34.1E 36.6T		0.6 11.9E	2	0	1
11/30/2018 Fri	16:48	23:42	6:36	4:29	36 48.7M		2.8 3.1M	-4.9 26.6M	0.0 34.4E 36.8T		0.6 11.6E	2	0	2
12/01/2018 Sat	16:48	23:42	6:37	4:34	26 40.7M		2.1 4.6M	-4.9 26.8M	0.0 34.8E 37.1T		0.6 11.2E	2	0	2
12/02/2018 Sun	16:48	23:43	6:38	4:38	17 31.5M		1.5 6.0M	-4.9 27.1M	0.0 35.1E 37.4T		0.6 10.8E	2	0	2
12/03/2018 Mon	16:48	23:43	6:39	4:42	10 21.9M		1.1 7.3M	-4.9 27.3M	0.0 35.5E 37.7T		0.6 10.4E	2	0	2
12/04/2018 Tue	16:48	23:44	6:40	4:47	4 12.1M		0.7 8.3M	-4.9 27.5M	0.0 35.8E 37.9T		0.5 10.0E	2	0	2
12/05/2018 Wed	16:47	23:44	6:41	4:51	1 2.6M		0.4 9.2M	-4.8 27.7M	0.1 36.2E 38.2T		0.5 9.6E	2	0	2
12/06/2018 Thr	16:47	23:45	6:42	4:55	0		0.2 9.9M	-4.8 27.8M	0.1 36.5E 38.5T		0.5 9.2E	2	0	2
12/07/2018 Fri	16:47	23:45	6:43	5:00	1 0.7E		0.0 10.4M	-4.8 27.9M	0.1 36.9E 38.8T		0.5 8.7E	2	0	2
12/08/2018 Sat	16:47	23:45	6:44	5:04	4 6.8E		-0.1 10.8M	-4.8 28.0M	0.1 37.3E 39.0T		0.5 8.3E	2	0	2
12/09/2018 Sun	16:47	23:46	6:45	5:08	8 12.9E		-0.2 11.1M	-4.8 28.1M	0.1 37.6E 39.3T	-1.7 3.3M	0.5 7.8E	2	0	3
12/10/2018 Mon	16:47	23:46	6:46	5:13	14 18.8E		-0.3 11.3M	-4.8 28.2M	0.1 38.0E 39.6T	-1.7 3.8M	0.5 7.4E	2	0	3
12/11/2018 Tue	16:47	23:47	6:46	5:17	22 24.1E		-0.4 11.4M	-4.8 28.2M	0.2 38.4E 39.9T	-1.7 4.3M	0.5 6.9E	2	0	3
12/12/2018 Wed	16:48	23:47	6:47	5:22	30 28.8E		-0.4 11.4M	-4.8 28.2M	0.2 38.7E 40.2T	-1.7 4.9M	0.5 6.4E	2	0	3
12/13/2018 Thr	16:48	23:48	6:48	5:26	39 32.6E		-0.5 11.3M	-4.8 28.2M	0.2 39.1E 40.5T	-1.7 5.4M	0.5 6.0E	2	0	3
12/14/2018 Fri	16:48	23:48	6:49	5:31	48 35.3E		-0.5 11.2M	-4.8 28.2M	0.2 39.5E 40.7T	-1.7 5.9M	0.5 5.5E	2	0	3
12/15/2018 Sat	16:48	23:49	6:49	5:35	58 36.5E 4.9m		-0.5 11.0M	-4.8 28.2M	0.2 39.8E 41.0T	-1.7 6.4M	0.5 5.0E	2	0	3
12/16/2018 Sun	16:48	23:49	6:50	5:39	67 36.1E 15.4m		-0.5 10.7M	-4.8 28.1M	0.2 40.2E 41.3T	-1.7 6.8M	0.5 4.5E	2	0	3
12/17/2018 Mon	16:49	23:50	6:51	5:44	77 33.9E 26.3m		-0.5 10.4M	-4.8 28.0M	0.3 40.6E 41.6T	-1.7 7.3M	0.5 3.9E	2	0	3
12/18/2018 Tue	16:49	23:50	6:51	5:48	85 30.0E 37.3m		-0.5 10.1M	-4.7 28.0M	0.3 40.9E 41.9T	-1.8 7.8M	0.5 3.4E	2	0	3
12/19/2018 Wed	16:50	23:51	6:52	5:53	92 24.5E 48.2m		-0.5 9.8M	-4.7 27.9M	0.3 41.3E 42.2T	-1.8 8.2M		1	0	3
12/20/2018 Thr	16:50	23:51	6:52	5:57	97 17.6E 58.2m		-0.5 9.4M	-4.7 27.8M	0.3 41.7E 42.4T	-1.8 8.7M		1	0	3
12/21/2018 Fri	16:51	23:52	6:53	6:02	100 9.8E 65.3m 1.9M		-0.5 9.0M	-4.7 27.6M	0.3 42.0E 42.7T	-1.8 9.1M		1	0	3
12/22/2018 Sat	16:51	23:52	6:53	6:06	100 1.4E 66.1m 11.9M		-0.4 8.6M	-4.7 27.5M	0.3 42.4E 43.0T	-1.8 9.6M		1	0	3
12/23/2018 Sun	16:52	23:53	6:54	6:10	97 59.6m 21.8M		-0.4 8.2M	-4.7 27.4M	0.3 42.7E 43.3T	-1.8 10.0M		1	0	3
12/24/2018 Mon	16:52	23:53	6:54	6:15	91 49.3m 30.8M		-0.4 7.8M	-4.7 27.2M	0.4 43.1E 43.6T	-1.8 10.4M		1	0	3

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.								
12/25/2018 Tue	16:53	23:54	6:54	6:19	83 37.5m 38.2M	-0.4 7.3M	-4.7 27.1M	0.4 43.4E 43.9T	-1.8 10.8M		1	0	3
12/26/2018 Wed	16:53	23:54	6:55	6:24	73 25.3m 43.3M	-0.4 6.9M	-4.7 26.9M	0.4 43.8E 44.2T	-1.8 11.2M		1	0	3
12/27/2018 Thr	16:54	23:55	6:55	6:28	62 13.0m 45.5M	-0.4 6.4M	-4.7 26.7M	0.4 44.1E 44.5T	-1.8 11.6M		1	0	3
12/28/2018 Fri	16:55	23:55	6:55	6:33	51 1.3m 44.5M	-0.4 6.0M	-4.6 26.5M	0.4 44.5E 44.7T	-1.8 12.0M		1	0	3
12/29/2018 Sat	16:56	23:56	6:55	6:37	40 40.9M	-0.4 5.5M	-4.6 26.3M	0.4 44.8E 45.0T	-1.8 12.3M		1	0	3
12/30/2018 Sun	16:56	23:56	6:56	6:41	30 35.4M	-0.4 5.1M	-4.6 26.1M	0.5 45.2E 45.3T	-1.8 12.7M		1	0	3
12/31/2018 Mon	16:57	23:57	6:56	6:46	21 28.6M	-0.4 4.6M	-4.6 25.9M	0.5 45.5E 45.6T	-1.8 13.1M		1	0	3
01/01/2019 Tue	16:58	23:57	6:56	6:50	13 21.2M	-0.4 4.2M	-4.6 25.7M	0.5 45.8E 45.9T	-1.8 13.4M		1	0	3
01/02/2019 Wed	16:59	23:57	6:56	6:55	7 13.4M	-0.4 3.7M	-4.6 25.5M	0.5 46.1E 46.2T	-1.8 13.7M		1	0	3
01/03/2019 Thr	17:00	23:58	6:56	6:59	3 5.6M	-0.4 3.3M	-4.6 25.3M	0.5 46.4E 46.5T	-1.8 14.1M		1	0	3
01/04/2019 Fri	17:01	23:58	6:56	7:04	1		-4.6 25.0M	0.5 46.7E 46.8T	-1.8 14.4M		1	0	2
01/05/2019 Sat	17:02	23:59	6:56	7:08	0		-4.6 24.8M	0.5 47.0E 47.0T	-1.8 14.7M		1	0	2
01/06/2019 Sun	17:03	23:59	6:56	7:12	1 1.6E		-4.6 24.6M	0.6 47.3E 47.3T	-1.8 15.0M		1	0	2
01/07/2019 Mon	17:04	0:00	6:55	7:17	4 9.2E		-4.5 24.3M	0.6 47.6E	-1.8 15.3M		1	0	2
01/08/2019 Tue	17:05	0:00	6:55	7:21	9 17.0E		-4.5 24.1M	0.6 47.9E	-1.8 15.6M		1	0	2
01/09/2019 Wed	17:06	0:01	6:55	7:25	15 24.6E		-4.5 23.8M	0.6 48.2E	-1.8 15.9M		1	0	2
01/10/2019 Thr	17:07	0:01	6:55	7:30	23 31.7E		-4.5 23.6M	0.6 48.4E	-1.8 16.1M		1	0	2
01/11/2019 Fri	17:08	0:01	6:54	7:34	31 38.3E		-4.5 23.3M	0.6 48.7E	-1.8 16.4M		1	0	2
01/12/2019 Sat	17:09	0:02	6:54	7:38	40 43.8E		-4.5 23.1M	0.6 48.9E	-1.8 16.6M		1	0	2
01/13/2019 Sun	17:10	0:02	6:54	7:43	50 47.7E 1.3m		-4.5 22.8M	0.7 49.2E	-1.8 16.9M		1	0	2
01/14/2019 Mon	17:11	0:02	6:53	7:47	60 49.3E 12.0m		-4.5 22.5M	0.7 49.4E	-1.8 17.1M		1	0	2
01/15/2019 Tue	17:12	0:03	6:53	7:51	70 48.0E 23.1m		-4.5 22.3M	0.7 49.6E	-1.8 17.4M		1	0	2
01/16/2019 Wed	17:13	0:03	6:52	7:56	80 43.8E 34.5m		-4.5 22.0M	0.7 49.8E	-1.8 17.6M		1	0	2
01/17/2019 Thr	17:15	0:03	6:52	8:00	88 37.1E 45.9m		-4.4 21.8M	0.7 50.0E	-1.8 17.8M		1	0	2
01/18/2019 Fri	17:16	0:04	6:51	8:04	95 28.4E 56.4m		-4.4 21.5M	0.7 50.2E	-1.8 18.0M	0.5 3.3M	1	0	3
01/19/2019 Sat	17:17	0:04	6:51	8:08	99 18.4E 64.2m 0.1M		-4.4 21.2M	0.7 50.3E	-1.8 18.2M	0.5 3.7M	1	0	3
01/20/2019 Sun	17:18	0:04	6:50	8:13	100 7.6E 65.6m 8.5M		-4.4 21.0M	0.7 50.5E	-1.8 18.4M	0.5 4.1M	1	0	3
01/21/2019 Mon	17:19	0:05	6:49	8:17	98 59.6m 16.8M		-4.4 20.7M	0.8 50.7E	-1.8 18.6M	0.5 4.5M	1	0	3
01/22/2019 Tue	17:21	0:05	6:49	8:21	94 49.4m 24.2M		-4.4 20.4M	0.8 50.8E	-1.8 18.8M	0.5 4.8M	1	0	3
01/23/2019 Wed	17:22	0:05	6:48	8:25	86 37.6m 30.1M		-4.4 20.2M	0.8 50.9E	-1.8 19.0M	0.5 5.2M	1	0	3
01/24/2019 Thr	17:23	0:05	6:47	8:29	77 25.4m 34.0M		-4.4 19.9M	0.8 51.1E	-1.9 19.2M	0.6 5.6M	1	0	3
01/25/2019 Fri	17:24	0:06	6:46	8:34	67 13.4m 35.8M		-4.4 19.7M	0.8 51.2E	-1.9 19.3M	0.6 6.0M	1	0	3
01/26/2019 Sat	17:26	0:06	6:45	8:38	56 1.9m 35.3M		-4.4 19.4M	0.8 51.3E	-1.9 19.5M	0.6 6.3M	1	0	3
01/27/2019 Sun	17:27	0:06	6:44	8:42	46 32.9M		-4.4 19.1M	0.8 51.3E	-1.9 19.7M	0.6 6.7M	1	0	3
01/28/2019 Mon	17:28	0:06	6:43	8:46	36 29.0M		-4.3 18.9M	0.8 51.4E	-1.9 19.8M	0.6 7.0M	1	0	3
01/29/2019 Tue	17:30	0:06	6:43	8:50	26 24.1M		-4.3 18.6M	0.9 51.5E	-1.9 20.0M	0.6 7.4M	1	0	3
01/30/2019 Wed	17:31	0:07	6:42	8:54	18 18.5M		-4.3 18.3M	0.9 51.5E	-1.9 20.1M	0.6 7.7M	1	0	3
01/31/2019 Thr	17:32	0:07	6:41	8:58	11 12.4M		-4.3 18.1M	0.9 51.6E	-1.9 20.2M	0.6 8.1M	1	0	3
02/01/2019 Fri	17:34	0:07	6:39	9:02	6 6.2M		-4.3 17.8M	0.9 51.6E	-1.9 20.4M	0.6 8.4M	1	0	3
02/02/2019 Sat	17:35	0:07	6:38	9:06	2 0.3M		-4.3 17.6M	0.9 51.6E	-1.9 20.5M	0.6 8.7M	1	0	3
02/03/2019 Sun	17:36	0:07	6:37	9:11	0		-4.3 17.3M	0.9 51.6E	-1.9 20.6M	0.6 9.0M	1	0	3
02/04/2019 Mon	17:37	0:07	6:36	9:15	0		-4.3 17.1M	0.9 51.6E	-1.9 20.8M	0.6 9.4M	1	0	3
02/05/2019 Tue	17:39	0:07	6:35	9:19	2 3.2E		-4.3 16.8M	0.9 51.6E	-1.9 20.9M	0.6 9.7M	1	0	3
02/06/2019 Wed	17:40	0:07	6:34	9:23	5 12.3E		-4.3 16.6M	1.0 51.6E	-1.9 21.0M	0.6 10.0M	1	0	3
02/07/2019 Thr	17:41	0:07	6:33	9:27	10 21.6E		-4.3 16.3M	1.0 51.5E	-1.9 21.1M	0.6 10.3M	1	0	3
02/08/2019 Fri	17:43	0:07	6:31	9:31	17 30.8E		-4.2 16.1M	1.0 51.5E	-1.9 21.2M	0.6 10.6M	1	0	3
02/09/2019 Sat	17:44	0:07	6:30	9:35	25 39.7E		-4.2 15.8M	1.0 51.4E	-1.9 21.3M	0.6 10.8M	1	0	3
02/10/2019 Sun	17:45	0:07	6:29	9:38	34 48.1E		-4.2 15.6M	1.0 51.3E	-1.9 21.4M	0.6 11.1M	1	0	3
02/11/2019 Mon	17:47	0:07	6:27	9:42	44 55.2E 0.1m		-4.2 15.3M	1.0 51.3E	-1.9 21.5M	0.6 11.4M	1	0	3
02/12/2019 Tue	17:48	0:07	6:26	9:46	54 59.9E 10.5m	-1.2 3.4E	-4.2 15.1M	1.0 51.2E	-1.9 21.6M	0.6 11.7M	2	0	3
02/13/2019 Wed	17:49	0:07	6:25	9:50	65 60.6E 21.6m	-1.2 4.2E	-4.2 14.8M	1.0 51.1E	-1.9 21.7M	0.6 11.9M	2	0	3
02/14/2019 Thr	17:51	0:07	6:23	9:54	75 56.4E 32.7m	-1.1 5.0E	-4.2 14.6M	1.0 51.0E	-2.0 21.8M	0.6 12.2M	2	0	3

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.								
02/15/2019 Fri	17:52	0:07	6:22	9:58	84 48.4E 43.6m	-1.1 5.7E	-4.2 14.4M	1.1 50.9E	-2.0 21.9M	0.6 12.5M	2	0	3
02/16/2019 Sat	17:53	0:07	6:20	10:02	92 38.1E 53.2m	-1.1 6.5E	-4.2 14.1M	1.1 50.7E	-2.0 22.0M	0.6 12.7M	2	0	3
02/17/2019 Sun	17:55	0:07	6:19	10:06	97 26.4E 59.8m	-1.1 7.2E	-4.2 13.9M	1.1 50.6E	-2.0 22.0M	0.6 13.0M	2	0	3
02/18/2019 Mon	17:56	0:07	6:18	10:10	100 14.0E 60.7m 6.9M	-1.0 7.9E	-4.2 13.7M	1.1 50.5E	-2.0 22.1M	0.6 13.2M	2	0	3
02/19/2019 Tue	17:57	0:07	6:16	10:13	99 1.6E 55.3m 13.8M	-1.0 8.6E	-4.2 13.5M	1.1 50.3E	-2.0 22.2M	0.6 13.5M	2	0	3
02/20/2019 Wed	17:58	0:07	6:15	10:17	96 46.0m 19.8M	-1.0 9.2E	-4.2 13.2M	1.1 50.1E	-2.0 22.3M	0.6 13.7M	2	0	3
02/21/2019 Thr	18:00	0:07	6:13	10:21	90 35.0m 24.6M	-0.9 9.8E	-4.1 13.0M	1.1 50.0E	-2.0 22.3M	0.6 13.9M	2	0	3
02/22/2019 Fri	18:01	0:07	6:11	10:25	82 23.6m 27.7M	-0.9 10.3E	-4.1 12.8M	1.1 49.8E	-2.0 22.4M	0.6 14.2M	2	0	3
02/23/2019 Sat	18:02	0:06	6:10	10:29	72 12.3m 29.1M	-0.8 10.7E	-4.1 12.6M	1.1 49.6E	-2.0 22.5M	0.6 14.4M	2	0	3
02/24/2019 Sun	18:04	0:06	6:08	10:33	62 1.6m 28.9M	-0.7 11.1E	-4.1 12.4M	1.1 49.4E	-2.0 22.5M	0.6 14.6M	2	0	3
02/25/2019 Mon	18:05	0:06	6:07	10:36	52 27.1M	-0.6 11.3E	-4.1 12.1M	1.2 49.2E	-2.0 22.6M	0.6 14.9M	2	0	3
02/26/2019 Tue	18:06	0:06	6:05	10:40	42 24.2M	-0.5 11.5E	-4.1 11.9M	1.2 49.0E	-2.0 22.6M	0.6 15.1M	2	0	3
02/27/2019 Wed	18:07	0:06	6:03	10:44	32 20.5M	-0.3 11.5E	-4.1 11.7M	1.2 48.8E	-2.0 22.7M	0.6 15.3M	2	0	3
02/28/2019 Thr	18:09	0:06	6:02	10:48	24 16.0M	-0.1 11.4E	-4.1 11.5M	1.2 48.6E	-2.0 22.7M	0.6 15.5M	2	0	3
03/01/2019 Fri	18:10	0:05	6:00	10:51	16 11.2M	0.1 11.2E	-4.1 11.3M	1.2 48.4E	-2.0 22.8M	0.6 15.7M	2	0	3
03/02/2019 Sat	18:11	0:05	5:58	10:55	10 6.1M	0.3 10.8E	-4.1 11.1M	1.2 48.2E	-2.0 22.8M	0.6 15.9M	2	0	3
03/03/2019 Sun	18:13	0:05	5:57	10:59	5 1.0M	0.6 10.3E	-4.1 10.9M	1.2 47.9E	-2.1 22.9M	0.6 16.1M	2	0	3
03/04/2019 Mon	18:14	0:05	5:55	11:03	2	0.9 9.6E	-4.1 10.7M	1.2 47.7E	-2.1 22.9M	0.6 16.3M	2	0	3
03/05/2019 Tue	18:15	0:05	5:53	11:06	0	1.3 8.8E	-4.1 10.5M	1.2 47.5E	-2.1 22.9M	0.6 16.5M	2	0	3
03/06/2019 Wed	18:16	0:04	5:52	11:10	1	1.7 7.8E	-4.1 10.3M	1.2 47.2E	-2.1 23.0M	0.6 16.7M	2	0	3
03/07/2019 Thr	18:18	0:04	5:50	11:14	3 5.8E	2.2 6.7E	-4.1 10.1M	1.3 47.0E	-2.1 23.0M	0.6 16.9M	2	0	3
03/08/2019 Fri	18:19	0:04	5:48	11:17	7 16.0E	2.7 5.4E	-4.1 10.0M	1.3 46.7E	-2.1 23.0M	0.6 17.1M	2	0	3
03/09/2019 Sat	18:20	0:04	5:46	11:21	12 26.2E	3.2 4.0E	-4.0 9.8M	1.3 46.4E	-2.1 23.1M	0.6 17.3M	2	0	3
03/10/2019 Sun*	18:21	0:03	5:45	11:25	19 36.5E		-4.0 9.6M	1.3 46.2E	-2.1 23.1M	0.6 17.5M	1	0	3
03/11/2019 Mon*	18:23	0:03	5:43	11:28	28 46.5E		-4.0 9.4M	1.3 45.9E	-2.1 23.1M	0.6 17.7M	1	0	3
03/12/2019 Tue*	18:24	0:03	5:41	11:32	38 55.9E 1.1m		-4.0 9.2M	1.3 45.6E	-2.1 23.2M	0.6 17.8M	1	0	3
03/13/2019 Wed*	18:25	0:03	5:39	11:36	49 63.5E 11.2m		-4.0 9.1M	1.3 45.3E	-2.1 23.2M	0.6 18.0M	1	0	3
03/14/2019 Thr*	18:26	0:02	5:37	11:39	60 66.9E 21.6m		-4.0 8.9M	1.3 45.1E	-2.1 23.2M	0.6 18.2M	1	0	3
03/15/2019 Fri*	18:28	0:02	5:36	11:43	70 63.8E 31.8m		-4.0 8.7M	1.3 44.8E	-2.1 23.2M	0.6 18.4M	1	0	3
03/16/2019 Sat*	18:29	0:02	5:34	11:47	80 55.6E 41.2m		-4.0 8.6M	1.3 44.5E	-2.1 23.2M	0.6 18.5M	1	0	3
03/17/2019 Sun*	18:30	0:01	5:32	11:50	89 44.7E 48.8m		-4.0 8.4M	1.3 44.2E	-2.1 23.2M	0.6 18.7M	1	0	3
03/18/2019 Mon*	18:31	0:01	5:30	11:54	95 32.4E 53.2m 0.1M		-4.0 8.2M	1.3 43.9E	-2.2 23.3M	0.6 18.9M	1	0	3
03/19/2019 Tue*	18:33	0:01	5:28	11:58	99 19.7E 52.9m 6.0M		-4.0 8.1M	1.4 43.6E	-2.2 23.3M	0.6 19.1M	1	0	3
03/20/2019 Wed*	18:34	0:01	5:26	12:01	100 6.8E 48.0m 11.8M		-4.0 7.9M	1.4 43.3E	-2.2 23.3M	0.6 19.2M	1	0	3
03/21/2019 Thr*	18:35	0:00	5:24	12:05	98 40.0m 16.9M		-4.0 7.8M	1.4 43.0E	-2.2 23.3M	0.6 19.4M	1	0	3
03/22/2019 Fri*	18:37	0:00	5:23	12:09	93 30.6m 20.9M		-4.0 7.6M	1.4 42.7E	-2.2 23.3M	0.6 19.5M	1	0	3
03/23/2019 Sat*	18:38	0:00	5:21	12:12	86 20.6m 23.5M		-4.0 7.5M	1.4 42.4E	-2.2 23.3T 23.3M	0.6 19.7M	1	0	3
03/24/2019 Sun*	18:39	23:59	5:19	12:16	78 10.6m 24.9M		-4.0 7.3M	1.4 42.0E	-2.2 23.3T 23.3M	0.6 19.9M	1	0	3
03/25/2019 Mon*	18:40	23:59	5:17	12:20	69 1.1m 24.9M		-4.0 7.2M	1.4 41.7E	-2.2 23.3T 23.3M	0.6 20.0M	1	0	3
03/26/2019 Tue*	18:42	23:59	5:15	12:23	59 23.7M		-4.0 7.1M	1.4 41.4E	-2.2 23.3T 23.2M	0.6 20.2M	1	0	3
03/27/2019 Wed*	18:43	23:58	5:13	12:27	49 21.5M	1.3 3.0M	-4.0 6.9M	1.4 41.1E	-2.2 23.3T 23.2M	0.6 20.3M	1	0	4
03/28/2019 Thr*	18:44	23:58	5:11	12:30	39 18.5M	1.2 3.1M	-3.9 6.8M	1.4 40.7E	-2.2 23.3T 23.2M	0.6 20.5M	1	0	4
03/29/2019 Fri*	18:45	23:58	5:10	12:34	30 14.9M	1.0 3.2M	-3.9 6.6M	1.4 40.4E	-2.2 23.3T 23.2M	0.6 20.6M	1	0	4
03/30/2019 Sat*	18:47	23:58	5:08	12:38	22 10.9M	0.9 3.3M	-3.9 6.5M	1.4 40.1E	-2.2 23.3T 23.2M	0.6 20.7M	1	0	4
03/31/2019 Sun*	18:48	23:57	5:06	12:41	15 6.6M	0.8 3.3M	-3.9 6.4M	1.4 39.7E	-2.2 23.3T 23.2M	0.6 20.9M	1	0	4
04/01/2019 Mon*	18:49	23:57	5:04	12:45	9 2.1M	0.7 3.3M	-3.9 6.3M	1.5 39.4E	-2.3 23.3T 23.1M	0.6 21.0M	1	0	4
04/02/2019 Tue*	18:50	23:57	5:02	12:49	4	0.6 3.3M	-3.9 6.1M	1.5 39.0E	-2.3 23.3T 23.1M	0.6 21.2M	1	0	4
04/03/2019 Wed*	18:52	23:56	5:00	12:52	1	0.6 3.3M	-3.9 6.0M	1.5 38.7E	-2.3 23.3T 23.1M	0.6 21.3M	1	0	4
04/04/2019 Thr*	18:53	23:56	4:59	12:56	0	0.5 3.3M	-3.9 5.9M	1.5 38.4E	-2.3 23.2T 23.0M	0.6 21.4M	1	0	4
04/05/2019 Fri*	18:54	23:56	4:57	13:00	1	0.5 3.3M	-3.9 5.8M	1.5 38.0E	-2.3 23.2T 23.0M	0.6 21.6M	1	0	4
04/06/2019 Sat*	18:55	23:55	4:55	13:03	4 9.4E	0.4 3.2M	-3.9 5.7M	1.5 37.7E	-2.3 23.2T 22.9M	0.6 21.7M	1	0	4
04/07/2019 Sun*	18:57	23:55	4:53	13:07	9 20.1E	0.4 3.2M	-3.9 5.6M	1.5 37.3E	-2.3 23.2T 22.9M	0.6 21.8M	1	0	4

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar Illum.								
04/08/2019 Mon*	18:58	23:55	4:51	13:11	15 30.9E	0.3 3.1M	-3.9 5.5M	1.5 36.9E	-2.3 23.2T 22.8M	0.6 21.9M	1	0	4
04/09/2019 Tue*	18:59	23:55	4:49	13:14	24 41.5E	0.3 3.0M	-3.9 5.4M	1.5 36.6E	-2.3 23.2T 22.8M	0.6 22.1M	1	0	4
04/10/2019 Wed*	19:01	23:54	4:48	13:18	34 51.6E 2.6m		-3.9 5.3M	1.5 36.2E	-2.3 23.2T 22.7M	0.6 22.2M	1	0	3
04/11/2019 Thr*	19:02	23:54	4:46	13:22	44 60.2E 11.7m		-3.9 5.2M	1.5 35.9E	-2.3 23.2T 22.7M	0.6 22.3M	1	0	3
04/12/2019 Fri*	19:03	23:54	4:44	13:25	56 65.3E 20.8m		-3.9 5.1M	1.5 35.5E	-2.3 23.2T 22.6M	0.5 22.4M	1	0	3
04/13/2019 Sat*	19:04	23:54	4:42	13:29	67 64.4E 29.3m		-3.9 5.0M	1.5 35.1E	-2.3 23.2T 22.5M	0.5 22.5M	1	0	3
04/14/2019 Sun*	19:06	23:53	4:40	13:33	77 57.6E 36.6m		-3.9 4.9M	1.5 34.8E	-2.3 3.4m 23.3T 22.5M	0.5 22.6M	1	1	3
04/15/2019 Mon*	19:07	23:53	4:39	13:36	86 47.6E 41.9m		-3.9 4.8M	1.6 34.4E	-2.4 4.0m 23.3T 22.4M	0.5 22.8M	1	1	3
04/16/2019 Tue*	19:08	23:53	4:37	13:40	93 36.1E 44.4m		-3.9 4.7M	1.6 34.0E	-2.4 4.5m 23.3T 22.3M	0.5 22.9M	1	1	3
04/17/2019 Wed*	19:10	23:53	4:35	13:44	98 24.0E 43.5m 4.6M		-3.9 4.6M	1.6 33.6E	-2.4 5.0m 23.3T 22.2M	0.5 23.0M	1	1	3
04/18/2019 Thr*	19:11	23:52	4:33	13:48	100 11.8E 39.6m 9.7M		-3.9 4.6M	1.6 33.3E	-2.4 5.5m 23.3T 22.1M	0.5 23.1M	1	1	3
04/19/2019 Fri*	19:12	23:52	4:32	13:51	99 0.2E 33.4m 14.3M		-3.9 4.5M	1.6 32.9E	-2.4 6.1m 23.3T 22.0M	0.5 23.2M	1	1	3
04/20/2019 Sat*	19:14	23:52	4:30	13:55	96 26.0m 18.0M		-3.9 4.4M	1.6 32.5E	-2.4 6.6m 23.3T 21.9M	0.5 23.3M	1	1	3
04/21/2019 Sun*	19:15	23:52	4:28	13:59	90 17.9m 20.8M		-3.9 4.3M	1.6 32.1E	-2.4 7.1m 23.3T 21.8M	0.5 23.4M	1	1	3
04/22/2019 Mon*	19:16	23:52	4:26	14:03	83 9.7m 22.4M		-3.9 4.3M	1.6 31.7E	-2.4 7.6m 23.3T 21.7M	0.5 23.4M	1	1	3
04/23/2019 Tue*	19:18	23:51	4:25	14:06	75 1.8m 23.0M		-3.9 4.2M	1.6 31.4E	-2.4 8.1m 23.3T 21.6M	0.5 23.5M	1	1	3
04/24/2019 Wed*	19:19	23:51	4:23	14:10	66 22.5M		-3.9 4.1M	1.6 31.0E	-2.4 8.7m 23.3T 21.4M	0.5 23.6M	1	1	3
04/25/2019 Thr*	19:20	23:51	4:21	14:14	56 21.2M		-3.9 4.1M	1.6 30.6E	-2.4 9.2m 23.3T 21.3M	0.5 23.7M	1	1	3
04/26/2019 Fri*	19:21	23:51	4:20	14:18	47 19.0M		-3.9 4.0M	1.6 30.2E	-2.4 9.7m 23.3T 21.2M	0.5 23.8M	1	1	3
04/27/2019 Sat*	19:23	23:51	4:18	14:21	37 16.2M		-3.8 4.0M	1.6 29.8E	-2.4 10.2m 23.3T 21.0M	0.5 23.8M	1	1	3
04/28/2019 Sun*	19:24	23:51	4:17	14:25	29 12.8M		-3.8 3.9M	1.6 29.4E	-2.4 10.7m 23.3T 20.9M	0.5 23.9M	1	1	3
04/29/2019 Mon*	19:25	23:50	4:15	14:29	20 9.0M		-3.8 3.8M	1.6 29.0E	-2.4 11.2m 23.3T 20.7M	0.5 24.0M	1	1	3
04/30/2019 Tue*	19:27	23:50	4:13	14:33	13 4.8M		-3.8 3.8M	1.6 28.6E	-2.5 11.7m 23.3T 20.6M	0.5 24.0M	1	1	3
05/01/2019 Wed*	19:28	23:50	4:12	14:37	7 0.6M		-3.8 3.7M	1.6 28.2E	-2.5 12.1m 23.3T 20.4M	0.5 24.1M	1	1	3
05/02/2019 Thr*	19:29	23:50	4:10	14:40	3		-3.8 3.7M	1.6 27.8E	-2.5 12.6m 23.3T 20.2M	0.5 24.2M	1	1	3
05/03/2019 Fri*	19:31	23:50	4:09	14:44	1		-3.8 3.7M	1.6 27.4E	-2.5 13.1m 23.3T 20.0M	0.5 24.2M	1	1	3
05/04/2019 Sat*	19:32	23:50	4:07	14:48	0		-3.8 3.6M	1.7 27.0E	-2.5 13.6m 23.3T 19.8M	0.4 24.2M	1	1	3
05/05/2019 Sun*	19:33	23:50	4:06	14:52	2 3.1E		-3.8 3.6M	1.7 26.6E	-2.5 14.0m 23.3T 19.6M	0.4 24.3M	1	1	3
05/06/2019 Mon*	19:35	23:50	4:05	14:56	6 13.6E		-3.8 3.5M	1.7 26.2E	-2.5 14.5m 23.3T 19.4M	0.4 24.3M	1	1	3
05/07/2019 Tue*	19:36	23:50	4:03	15:00	13 24.2E		-3.8 3.5M	1.7 25.8E	-2.5 14.9m 23.3T 19.2M	0.4 24.3M	1	1	3
05/08/2019 Wed*	19:37	23:50	4:02	15:04	21 34.5E		-3.8 3.5M	1.7 25.4E	-2.5 15.4m 23.3T 19.0M	0.4 24.4M	1	1	3
05/09/2019 Thr*	19:38	23:50	4:00	15:08	31 44.0E 1.8m		-3.8 3.4M	1.7 25.0E	-2.5 15.8m 23.3T 18.8M	0.4 24.4M	1	1	3
05/10/2019 Fri*	19:40	23:50	3:59	15:11	41 51.9E 9.3m		-3.8 3.4M	1.7 24.6E	-2.5 16.2m 23.3T 18.5M	0.4 24.4M	1	1	3
05/11/2019 Sat*	19:41	23:50	3:58	15:15	53 56.8E 16.5m		-3.8 3.4M	1.7 24.2E	-2.5 16.7m 23.3T 18.3M	0.4 24.4M	1	1	3
05/12/2019 Sun*	19:42	23:50	3:56	15:19	64 57.2E 23.0m		-3.8 3.3M	1.7 23.8E	-2.5 17.1m 23.3T 18.0M	0.4 3.5m 24.4M	1	2	3
05/13/2019 Mon*	19:44	23:50	3:55	15:23	75 53.1E 28.4m		-3.8 3.3M	1.7 23.4E	-2.5 17.5m 23.3T 17.8M	0.4 4.0m 24.4T 24.4M	1	2	3
05/14/2019 Tue*	19:45	23:50	3:54	15:27	84 45.6E 32.1m		-3.8 3.3M	1.7 23.0E	-2.5 17.9m 23.3T 17.5M	0.4 4.6m 24.4T 24.4M	1	2	3
05/15/2019 Wed*	19:46	23:50	3:53	15:31	91 36.2E 33.9m		-3.8 3.2M	1.7 22.6E	-2.5 18.2m 23.3T 17.2M	0.4 5.2m 24.4T 24.4M	1	2	3
05/16/2019 Thr*	19:47	23:50	3:52	15:35	97 26.0E 33.7m 1.6M		-3.8 3.2M	1.7 22.2E	-2.5 18.6m 23.3T 16.9M	0.4 5.7m 24.4T 24.4M	1	2	3
05/17/2019 Fri*	19:48	23:50	3:50	15:39	99 15.5E 31.4m 6.6M		-3.8 3.2M	1.7 21.7E	-2.5 19.0m 23.3T 16.6M	0.4 6.3m 24.4T 24.3M	1	2	3
05/18/2019 Sat*	19:50	23:50	3:49	15:43	100 5.2E 27.6m 11.3M		-3.8 3.2M	1.7 21.3E	-2.6 19.3m 23.3T 16.3M	0.4 6.9m 24.4T 24.3M	1	2	3
05/19/2019 Sun*	19:51	23:50	3:48	15:47	98 22.8m 15.6M		-3.8 3.2M	1.7 20.9E	-2.6 19.6m 23.3T 16.0M	0.4 7.4m 24.4T 24.2M	1	2	3
05/20/2019 Mon*	19:52	23:50	3:47	15:51	94 17.2m 19.1M		-3.8 3.1M	1.7 20.5E	-2.6 20.0m 23.4T 15.7M	0.4 8.0m 24.4T 24.2M	1	2	3
05/21/2019 Tue*	19:53	23:50	3:46	15:55	88 11.4m 21.8M		-3.8 3.1M	1.7 20.1E	-2.6 20.3m 23.4T 15.3M	0.3 8.5m 24.4T 24.1M	1	2	3
05/22/2019 Wed*	19:54	23:50	3:45	15:59	80 5.5m 23.5M		-3.8 3.1M	1.7 19.7E	-2.6 20.6m 23.4T 15.0M	0.3 9.1m 24.4T 24.0M	1	2	3
05/23/2019 Thr*	19:55	23:50	3:44	16:03	72 0.0m 24.3M		-3.8 3.1M	1.7 19.3E	-2.6 20.9m 23.4T 14.6M	0.3 9.6m 24.4T 24.0M	1	2	3
05/24/2019 Fri*	19:57	23:50	3:43	16:07	63 24.2M		-3.8 3.1M	1.7 18.9E	-2.6 21.1m 23.4T 14.2M	0.3 10.2m 24.4T 23.9M	1	2	3
05/25/2019 Sat*	19:58	23:50	3:42	16:11	54 23.1M		-3.8 3.1M	1.7 18.5E	-2.6 21.4m 23.4T 13.8M	0.3 10.7m 24.3T 23.8M	1	2	3
05/26/2019 Sun*	19:59	23:50	3:42	16:15	44 21.2M		-3.8 3.0M	1.7 18.1E	-2.6 21.7m 23.4T 13.5M	0.3 11.2m 24.3T 23.7M	1	2	3
05/27/2019 Mon*	20:00	23:50	3:41	16:19	35 18.5M		-3.8 3.0M	1.7 17.8E	-2.6 21.9m 23.4T 13.0M	0.3 11.7m 24.3T 23.5M	1	2	3
05/28/2019 Tue*	20:01	23:51	3:40	16:23	26 15.0M		-3.8 3.0M	1.7 17.4E	-2.6 22.1m 23.4T 12.6M	0.3 12.3m 24.3T 23.4M	1	2	3
05/29/2019 Wed*	20:02	23:51	3:39	16:27	18 11.0M		-3.8 3.0M	1.8 17.0E	-2.6 22.3m 23.4T 12.2M	0.3 12.8m 24.3T 23.3M	1	2	3

Night of	Pct.					Moon elev.	Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.									
05/30/2019 Thr*	20:03	23:51	3:39	16:32	11 6.4M		-1.2 3.7E	-3.8 3.0M	1.8 16.6E	-2.6 22.5m 23.4T 11.8M	0.3 13.3m 24.3T 23.1M	2	2	3
05/31/2019 Fri*	20:04	23:51	3:38	16:36	5 1.5M		-1.1 4.4E	-3.8 3.0M	1.8 16.2E	-2.6 22.7m 23.4T 11.3M	0.3 13.8m 24.3T 23.0M	2	2	3
06/01/2019 Sat*	20:05	23:51	3:37	16:40	2		-1.0 5.1E	-3.8 3.0M	1.8 15.8E	-2.6 22.8m 23.4T 10.8M	0.3 14.2m 24.3T 22.8M	2	2	3
06/02/2019 Sun*	20:05	23:51	3:37	16:44	0		-0.9 5.8E	-3.8 3.0M	1.8 15.4E	-2.6 23.0m 23.4T 10.4M	0.3 14.7m 24.3T 22.6M	2	2	3
06/03/2019 Mon*	20:06	23:51	3:36	16:48	1		-0.8 6.4E		1.8 15.1E	-2.6 23.1m 23.4T 9.9M	0.3 15.2m 24.3T 22.4M	2	2	2
06/04/2019 Tue*	20:07	23:52	3:36	16:52	4 7.7E		-0.8 7.0E		1.8 14.7E	-2.6 23.2m 23.5T 9.4M	0.3 15.6m 24.3T 22.2M	2	2	2
06/05/2019 Wed*	20:08	23:52	3:35	16:56	10 17.2E		-0.7 7.5E		1.8 14.3E	-2.6 3.3E 23.3m 23.5T 8.9M	0.3 16.1m 24.3T 22.0M	3	2	2
06/06/2019 Thr*	20:09	23:52	3:35	17:00	18 26.2E		-0.6 8.0E		1.8 13.9E	-2.6 4.0E 23.4m 23.5T 8.3M	0.2 16.5m 24.3T 21.7M	3	2	2
06/07/2019 Fri*	20:10	23:52	3:35	17:04	28 34.2E		-0.6 8.4E		1.8 13.6E	-2.6 4.7E 23.4m 23.5T 7.8M	0.2 17.0m 24.2T 21.5M	3	2	2
06/08/2019 Sat*	20:10	23:52	3:34	17:09	39 40.5E 2.4m		-0.5 8.8E		1.8 13.2E	-2.6 5.4E 23.5m 23.5T 7.2M	0.2 17.4m 24.2T 21.2M	3	2	2
06/09/2019 Sun*	20:11	23:53	3:34	17:13	51 44.5E 7.9m		-0.4 9.1E		1.8 12.9E	-2.6 6.2E 23.5m 23.5T 6.7M	0.2 17.8m 24.2T 20.9M	3	2	2
06/10/2019 Mon*	20:12	23:53	3:34	17:17	62 45.4E 12.9m		-0.4 9.4E		1.8 12.5E	-2.6 6.9E 23.5m 23.5T 6.1M	0.2 18.2m 24.2T 20.7M	3	2	2
06/11/2019 Tue*	20:12	23:53	3:34	17:21	72 43.2E 17.3m		-0.3 9.6E		1.8 12.1E	-2.6 7.5E 23.5m 23.5T 5.5M	0.2 18.6m 24.2T 20.4M	3	2	2
06/12/2019 Wed*	20:13	23:53	3:34	17:25	82 38.6E 20.8m		-0.2 9.8E		1.8 11.8E	-2.6 8.2E 23.5m 23.5T 4.9M	0.2 19.0m 24.2T 20.0M	3	2	2
06/13/2019 Thr*	20:13	23:53	3:33	17:29	90 32.1E 23.2m		-0.2 10.0E		1.8 11.5E	-2.6 8.9E 23.4m 23.5T 4.3M	0.2 19.3m 24.2T 19.7M	3	2	2
06/14/2019 Fri*	20:14	23:54	3:33	17:33	95 24.6E 24.5m		-0.1 10.1E		1.8 11.1E	-2.6 9.5E 23.3m 23.5T 3.7M	0.2 19.7m 24.2T 19.4M	3	2	2
06/15/2019 Sat*	20:14	23:54	3:33	17:38	99 16.6E 24.7m 1.5M		0.0 10.2E		1.8 10.8E	-2.6 10.2E 23.3m 23.5T 3.1M	0.2 20.0m 24.2T 19.0M	3	2	2
06/16/2019 Sun*	20:15	23:54	3:33	17:42	100 8.5E 23.7m 7.2M		0.0 10.2E		1.8 10.4E	-2.6 10.8E 23.2m 23.5T	0.2 20.3m 24.2T 18.6M	3	2	1
06/17/2019 Mon*	20:15	23:54	3:33	17:46	99 0.7E 21.9m 12.9M		0.1 10.1E		1.8 10.1E	-2.6 11.4E 23.2m 23.6T	0.2 20.7m 24.1T 18.2M	3	2	1
06/18/2019 Tue*	20:15	23:54	3:34	17:50	96 19.3m 18.1M		0.1 10.1E		1.8 9.8E	-2.6 12.0E 22.9m 23.6T	0.2 21.0m 24.1T 17.8M	3	2	1
06/19/2019 Wed*	20:16	23:55	3:34	17:54	92 16.1m 22.7M		0.2 10.0E		1.8 9.5E	-2.6 12.5E 22.8m 23.6T	0.2 21.2m 24.1T 17.4M	3	2	1
06/20/2019 Thr*	20:16	23:55	3:34	17:58	85 12.5m 26.6M		0.3 9.8E		1.8 9.2E	-2.6 13.1E 22.6m 23.6T	0.2 21.5m 24.1T 17.0M	3	2	1
06/21/2019 Fri*	20:16	23:55	3:34	18:03	78 8.6m 29.6M		0.3 9.6E		1.8 8.8E	-2.6 13.6E 22.4m 23.6T	0.1 21.8m 24.1T 16.5M	3	2	1
06/22/2019 Sat*	20:16	23:55	3:34	18:07	70 4.7m 31.5M		0.4 9.4E		1.8 8.5E	-2.6 14.1E 22.2m 23.6T	0.1 22.0m 24.1T 16.0M	3	2	1
06/23/2019 Sun*	20:16	23:56	3:35	18:11	61 0.8m 32.2M		0.5 9.1E		1.8 8.2E	-2.6 14.7E 22.0m 23.6T	0.1 22.3m 24.1T 15.6M	3	2	1
06/24/2019 Mon*	20:17	23:56	3:35	18:15	51 31.6M		0.5 8.8E		1.8 7.9E	-2.6 15.1E 21.8m 23.6T	0.1 22.5m 24.1T 15.1M	3	2	1
06/25/2019 Tue*	20:17	23:56	3:35	18:19	42 29.7M		0.6 8.5E		1.8 7.6E	-2.6 15.6E 21.5m 23.6T	0.1 22.7m 24.1T 14.5M	3	2	1
06/26/2019 Wed*	20:17	23:56	3:36	18:23	32 26.5M		0.7 8.1E		1.8 7.4E	-2.6 16.1E 21.3m 23.6T	0.1 22.9m 24.1T 14.0M	3	2	1
06/27/2019 Thr*	20:17	23:56	3:36	18:28	23 22.1M		0.8 7.7E		1.8 7.1E	-2.6 16.5E 21.0m 23.6T	0.1 23.0m 24.0T 13.5M	3	2	1
06/28/2019 Fri*	20:16	23:57	3:37	18:32	15 16.6M		0.8 7.2E		1.8 6.8E	-2.6 17.0E 20.7m 23.6T	0.1 23.2m 24.0T 12.9M	3	2	1
06/29/2019 Sat*	20:16	23:57	3:37	18:36	8 10.2M		0.9 6.7E		1.8 6.5E	-2.6 17.4E 20.4m 23.7T	0.1 23.3m 24.0T 12.3M	3	2	1
06/30/2019 Sun*	20:16	23:57	3:38	18:40	3 3.2M		1.0 6.2E		1.8 6.3E	-2.6 17.8E 20.1m 23.7T	0.1 23.5m 24.0T 11.7M	3	2	1
07/01/2019 Mon*	20:16	23:57	3:38	18:44	0		1.2 5.6E		1.8 6.0E	-2.6 18.1E 19.8m 23.7T	0.1 23.6m 24.0T 11.1M	3	2	1
07/02/2019 Tue*	20:16	23:57	3:39	18:48	0		1.3 5.0E		1.8 5.7E	-2.6 18.5E 19.4m 23.7T	0.1 23.7m 24.0T 10.5M	3	2	1
07/03/2019 Wed*	20:15	23:58	3:40	18:52	3 3.7E		1.4 4.4E		1.8 5.5E	-2.6 18.9E 19.1m 23.7T	0.1 3.4E 23.8m 24.0T 9.9M	4	2	1
07/04/2019 Thr*	20:15	23:58	3:41	18:56	9 11.7E		1.5 3.7E		1.8 5.2E	-2.6 19.2E 18.7m 23.7T	0.1 4.0E 23.8m 24.0T 9.2M	4	2	1
07/05/2019 Fri*	20:15	23:58	3:41	19:01	16 19.1E		1.7 3.0E		1.8 5.0E	-2.6 19.5E 18.3m 23.7T	0.1 4.5E 23.9m 24.0T 8.6M	4	2	1
07/06/2019 Sat*	20:14	23:58	3:42	19:05	26 25.5E				1.8 4.7E	-2.6 19.8E 17.9m 23.7T	0.1 5.0E 23.9m 23.9T 7.9M	3	2	1
07/07/2019 Sun*	20:14	23:58	3:43	19:09	37 30.4E				1.8 4.5E	-2.5 20.1E 17.5m 23.7T	0.1 5.6E 23.9m 23.9T 7.2M	3	2	1
07/08/2019 Mon*	20:13	23:58	3:44	19:13	48 33.4E				1.8 4.3E	-2.5 20.4E 17.1m 23.7T	0.1 6.1E 23.9m 23.9T 6.5M	3	2	1
07/09/2019 Tue*	20:13	23:59	3:44	19:17	59 34.4E 1.6m				1.8 4.0E	-2.5 20.7E 16.7m 23.7T	0.1 6.6E 23.9m 23.9T 5.8M	3	2	1
07/10/2019 Wed*	20:12	23:59	3:45	19:21	70 33.4E 6.1m				1.8 3.8E	-2.5 20.9E 16.2m 23.7T	0.1 7.1E 23.9m 23.9T 5.1M	3	2	1
07/11/2019 Thr*	20:12	23:59	3:46	19:25	79 30.6E 10.5m				1.8 3.6E	-2.5 21.2E 15.8m 23.7T	0.1 7.5E 23.8m 23.9T 4.3M	3	2	1
07/12/2019 Fri*	20:11	23:59	3:47	19:29	87 26.4E 14.4m				1.8 3.4E	-2.5 21.4E 15.3m 23.7T	0.1 8.0E 23.8m 23.9T 3.6M	3	2	1
07/13/2019 Sat*	20:10	23:59	3:48	19:33	93 21.2E 17.8m				1.8 3.2E	-2.5 21.6E 14.9m 23.8T	0.1 8.5E 23.7m 23.9T	3	2	0
07/14/2019 Sun*	20:09	23:59	3:49	19:37	97 15.5E 20.5m				1.8 3.0E	-2.5 21.8E 14.4m 23.8T	0.1 8.9E 23.6m 23.9T	3	2	0
07/15/2019 Mon*	20:09	23:59	3:50	19:41	100 9.4E 22.4m 1.6M					-2.5 22.0E 13.9m 23.8T	0.1 9.4E 23.5m 23.8T	2	2	0
07/16/2019 Tue*	20:08	23:59	3:51	19:45	100 3.3E 23.5m 8.9M					-2.5 22.2E 13.4m 23.8T	0.1 9.8E 23.4m 23.8T	2	2	0
07/17/2019 Wed*	20:07	23:59	3:52	19:49	98 23.8m 16.3M					-2.5 22.3E 12.9m 23.8T	0.1 10.2E 23.3m 23.8T	2	2	0
07/18/2019 Thr*	20:06	23:59	3:53	19:53	95 23.2m 23.4M					-2.5 22.5E 12.4m 23.8T	0.1 10.6E 23.1m 23.8T	2	2	0
07/19/2019 Fri*	20:05	0:00	3:54	19:57	90 21.8m 30.0M					-2.5 22.6E 11.9m 23.8T	0.1 11.0E 23.0m 23.8T	2	2	0
07/20/2019 Sat*	20:04	0:00	3:55	20:01	83 19.6m 35.9M					-2.5 22.8E 11.4m 23.8T	0.1 11.4E 22.8m 23.8T	2	2	0

Night of	Pct.					Moon elev.	Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar Illum.									
07/21/2019 Sun*	20:03	0:00	3:56	20:05	76	16.8m 40.8M				-2.5 22.9E 10.9m 23.8T	0.1 11.8E 22.6m 23.8T	2	2	0
07/22/2019 Mon*	20:02	0:00	3:58	20:09	67	13.4m 44.2M				-2.5 23.0E 10.4m 23.8T	0.1 12.2E 22.4m 23.8T	2	2	0
07/23/2019 Tue*	20:01	0:00	3:59	20:13	58	9.5m 45.7M				-2.5 23.1E 9.8m 23.8T	0.1 12.5E 22.2m 23.8T	2	2	0
07/24/2019 Wed*	20:00	0:00	4:00	20:17	48	5.1m 44.9M				-2.5 23.2E 9.3m 23.8T	0.1 12.9E 22.0m 23.8T	2	2	0
07/25/2019 Thr*	19:59	0:00	4:01	20:21	38	0.6m 41.8M				-2.5 23.3E 8.8m 23.8T	0.1 13.3E 21.7m 23.7T	2	2	0
07/26/2019 Fri*	19:58	0:00	4:02	20:25	28	36.6M				-2.4 23.4E 8.2m 23.8T	0.1 13.6E 21.5m 23.7T	2	2	0
07/27/2019 Sat*	19:56	0:00	4:03	20:29	19	29.5M				-2.4 23.5E 7.7m 23.8T	0.1 13.9E 21.2m 23.7T	2	2	0
07/28/2019 Sun*	19:55	0:00	4:05	20:33	11	21.1M				-2.4 23.5E 7.1m 23.8T	0.2 14.2E 21.0m 23.7T	2	2	0
07/29/2019 Mon*	19:54	0:00	4:06	20:37	5	11.6M				-2.4 23.6E 6.6m 23.8T	0.2 14.6E 20.7m 23.7T	2	2	0
07/30/2019 Tue*	19:53	0:00	4:07	20:41	1	1.6M				-2.4 23.6E 6.0m 23.8T	0.2 14.9E 20.4m 23.7T	2	2	1
07/31/2019 Wed*	19:51	0:00	4:08	20:45	0		2.2 3.4M			-2.4 23.7E 5.5m 23.8T	0.2 15.2E 20.1m 23.7T	2	2	1
08/01/2019 Thr*	19:50	0:00	4:09	20:49	2	1.9E	1.9 4.4M			-2.4 23.7E 4.9m 23.8T	0.2 15.5E 19.8m 23.7T	2	2	1
08/02/2019 Fri*	19:49	23:59	4:11	20:53	7	8.5E	1.6 5.3M			-2.4 23.7E 4.4m 23.8T	0.2 15.8E 19.4m 23.7T	2	2	1
08/03/2019 Sat*	19:47	23:59	4:12	20:56	14	14.7E	1.4 6.2M			-2.4 23.8E 3.8m 23.8T	0.2 16.0E 19.1m 23.7T	2	2	1
08/04/2019 Sun*	19:46	23:59	4:13	21:00	24	19.9E	1.1 6.9M			-2.4 23.8E 3.2m 23.8T	0.2 16.3E 18.7m 23.7T	2	2	1
08/05/2019 Mon*	19:44	23:59	4:14	21:04	34	23.9E	0.9 7.6M			-2.4 23.8E 23.8T	0.2 16.6E 18.4m 23.6T	2	1	1
08/06/2019 Tue*	19:43	23:59	4:16	21:08	45	26.4E	0.6 8.2M			-2.4 23.8E 23.8T	0.2 16.8E 18.0m 23.6T	2	1	1
08/07/2019 Wed*	19:42	23:59	4:17	21:12	56	27.4E	0.4 8.7M			-2.4 23.8E 23.8T	0.2 17.1E 17.7m 23.6T	2	1	1
08/08/2019 Thr*	19:40	23:59	4:18	21:16	67	26.9E	0.3 9.1M			-2.4 23.8E	0.2 17.3E 17.3m 23.6T	2	1	1
08/09/2019 Fri*	19:38	23:59	4:19	21:19	76	25.1E 3.4m	0.1 9.5M			-2.4 23.8E	0.2 17.6E 16.9m 23.6T	2	1	1
08/10/2019 Sat*	19:37	23:58	4:21	21:23	84	22.2E 9.1m	-0.1 9.7M			-2.4 23.8E	0.2 17.8E 16.5m 23.6T	2	1	1
08/11/2019 Sun*	19:35	23:58	4:22	21:27	91	18.4E 14.5m	-0.2 9.8M			-2.3 23.8E	0.2 18.0E 16.1m 23.6T	2	1	1
08/12/2019 Mon*	19:34	23:58	4:23	21:31	95	14.1E 19.5m	-0.4 9.9M			-2.3 23.8E	0.2 18.2E 15.7m 23.6T	2	1	1
08/13/2019 Tue*	19:32	23:58	4:24	21:34	99	9.4E 23.9m	-0.5 9.8M			-2.3 23.7E	0.2 18.4E 15.3m 23.6T	2	1	1
08/14/2019 Wed*	19:31	23:58	4:26	21:38	100	4.6E 27.6m 3.4M	-0.6 9.7M			-2.3 23.7E	0.2 18.6E 14.8m 23.6T	2	1	1
08/15/2019 Thr*	19:29	23:58	4:27	21:42	99	30.2m 12.3M	-0.7 9.5M			-2.3 23.6E	0.2 18.8E 14.4m 23.6T	2	1	1
08/16/2019 Fri*	19:27	23:57	4:28	21:46	97	31.7m 21.3M	-0.8 9.2M			-2.3 23.6E	0.3 19.0E 14.0m 23.6T	2	1	1
08/17/2019 Sat*	19:26	23:57	4:29	21:49	93	32.0m 30.1M	-0.9 8.8M			-2.3 23.5E	0.3 19.2E 13.5m 23.6T	2	1	1
08/18/2019 Sun*	19:24	23:57	4:31	21:53	88	30.9m 38.5M	-0.9 8.3M			-2.3 23.5E	0.3 19.4E 13.1m 23.5T	2	1	1
08/19/2019 Mon*	19:22	23:57	4:32	21:57	81	28.6m 46.3M	-1.0 7.8M			-2.3 23.4E	0.3 19.6E 12.6m 23.5T	2	1	1
08/20/2019 Tue*	19:20	23:56	4:33	22:01	73	25.1m 53.0M	-1.1 7.2M			-2.3 23.4E	0.3 19.8E 12.2m 23.5T	2	1	1
08/21/2019 Wed*	19:19	23:56	4:34	22:04	63	20.5m 57.5M	-1.1 6.6M			-2.3 23.3E	0.3 19.9E 11.7m 23.5T	2	1	1
08/22/2019 Thr*	19:17	23:56	4:36	22:08	54	15.0m 58.7M	-1.2 5.9M			-2.3 23.3E	0.3 20.1E 11.2m 23.5T	2	1	1
08/23/2019 Fri*	19:15	23:56	4:37	22:12	43	8.8m 55.9M	-1.3 5.1M			-2.3 23.2E	0.3 20.3E 10.7m 23.5T	2	1	1
08/24/2019 Sat*	19:13	23:55	4:38	22:15	33	2.0m 49.7M	-1.3 4.4M			-2.3 23.2E	0.3 20.4E 10.3m 23.5T	2	1	1
08/25/2019 Sun*	19:12	23:55	4:39	22:19	23	40.9M	-1.4 3.6M			-2.3 23.1E	0.3 20.6E 9.8m 23.5T	2	1	0
08/26/2019 Mon*	19:10	23:55	4:40	22:23	14	30.4M				-2.2 23.0E	0.3 20.7E 9.3m 23.5T	2	1	0
08/27/2019 Tue*	19:08	23:55	4:42	22:26	7	18.9M				-2.2 22.9E	0.3 20.8E 8.8m 23.5T	2	1	0
08/28/2019 Wed*	19:06	23:54	4:43	22:30	2	6.8M				-2.2 22.9E	0.3 21.0E 8.3m 23.5T	2	1	0
08/29/2019 Thr*	19:04	23:54	4:44	22:33	0					-2.2 22.8E	0.3 21.1E 7.8m 23.5T	2	1	0
08/30/2019 Fri*	19:03	23:54	4:45	22:37	1	1.0E				-2.2 22.8E	0.3 21.2E 7.3m 23.5T	2	1	0
08/31/2019 Sat*	19:01	23:53	4:47	22:41	5	6.7E				-2.2 22.7E	0.3 21.4E 6.8m 23.5T	2	1	0
09/01/2019 Sun*	18:59	23:53	4:48	22:44	12	12.0E				-2.2 22.6E	0.4 21.5E 6.3m 23.5T	2	1	0
09/02/2019 Mon*	18:57	23:53	4:49	22:48	21	16.6E				-2.2 22.5E	0.4 21.6E 5.8m 23.5T	2	1	0
09/03/2019 Tue*	18:55	23:52	4:50	22:52	31	20.1E				-2.2 22.4E	0.4 21.7E 5.3m 23.5T	2	1	0
09/04/2019 Wed*	18:53	23:52	4:51	22:55	41	22.4E				-2.2 22.4E	0.4 21.8E 4.8m 23.5T	2	1	0
09/05/2019 Thr*	18:51	23:52	4:53	22:59	52	23.5E				-2.2 22.3E	0.4 21.9E 4.2m 23.5T	2	1	0
09/06/2019 Fri*	18:50	23:51	4:54	23:02	62	23.4E				-2.2 22.2E	0.4 22.0E 3.7m 23.5T	2	1	0
09/07/2019 Sat*	18:48	23:51	4:55	23:06	71	22.2E 0.3m				-2.2 22.1E	0.4 22.1E 3.2m 23.4T	2	1	0
09/08/2019 Sun*	18:46	23:51	4:56	23:10	80	20.1E 7.3m				-2.2 22.0E	0.4 22.2E 23.4T	2	0	0
09/09/2019 Mon*	18:44	23:50	4:57	23:13	87	17.2E 14.4m				-2.2 21.9E	0.4 22.3E 23.4T	2	0	0
09/10/2019 Tue*	18:42	23:50	4:59	23:17	93	13.8E 21.3m				-2.2 21.8E	0.4 22.4E 23.4T	2	0	0

Night of	Pct.					Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.								
09/11/2019 Wed*	18:40	23:50	5:00	23:20	97	10.0E 27.6m			-2.1 21.6E	0.4 22.4E 23.4T	2	0	0
09/12/2019 Thr*	18:38	23:49	5:01	23:24	99	5.8E 33.2M			-2.1 21.5E	0.4 22.5E 23.4T	2	0	0
09/13/2019 Fri*	18:36	23:49	5:02	23:28	100	1.7E 37.8m 6.6M			-2.1 21.4E	0.4 22.6E 23.4T	2	0	0
09/14/2019 Sat*	18:34	23:49	5:03	23:31	99	40.9m 16.4M			-2.1 21.3E	0.4 22.7E 23.4T	2	0	0
09/15/2019 Sun*	18:33	23:48	5:05	23:35	96	42.3m 26.4M			-2.1 21.2E	0.4 22.7E 23.4T	2	0	0
09/16/2019 Mon*	18:31	23:48	5:06	23:38	91	41.6m 36.2M			-2.1 21.1E	0.4 22.8E 23.4T	2	0	0
09/17/2019 Tue*	18:29	23:47	5:07	23:42	85	38.9m 45.8M			-2.1 21.0E	0.4 22.9E 23.4T	2	0	0
09/18/2019 Wed*	18:27	23:47	5:08	23:45	78	34.4m 54.9M			-2.1 20.9E	0.4 22.9E 23.4T	2	0	0
09/19/2019 Thr*	18:25	23:47	5:09	23:49	69	28.3m 62.4M			-2.1 20.7E	0.4 23.0E 23.4T	2	0	0
09/20/2019 Fri*	18:23	23:46	5:10	23:53	59	21.1m 66.6M			-2.1 20.6E	0.4 23.0E 23.4T	2	0	0
09/21/2019 Sat*	18:21	23:46	5:12	23:56	48	13.0m 65.2M			-2.1 20.5E	0.5 23.1E 23.4T	2	0	0
09/22/2019 Sun*	18:19	23:46	5:13	24:00:00	38	4.2m 58.4M			-2.1 20.4E	0.5 23.1E 23.4T	2	0	0
09/23/2019 Mon*	18:18	23:45	5:14	0:03	27	48.5M			-2.1 20.3E	0.5 23.2E 23.4T	2	0	0
09/24/2019 Tue*	18:16	23:45	5:15	0:07	17	36.9M			-2.1 20.2E	0.5 23.2E 23.4T	2	0	0
09/25/2019 Wed*	18:14	23:45	5:16	0:11	9	24.4M			-2.1 20.0E	0.5 23.2E 23.4T	2	0	0
09/26/2019 Thr*	18:12	23:44	5:17	0:14	4	11.5M			-2.1 19.9E	0.5 23.3E 23.4T	2	0	0
09/27/2019 Fri*	18:10	23:44	5:19	0:18	1				-2.1 19.8E	0.5 23.3E 23.4T	2	0	0
09/28/2019 Sat*	18:08	23:44	5:20	0:21	1		1.8 3.1M		-2.0 19.7E	0.5 23.3E 23.4T	2	0	1
09/29/2019 Sun*	18:06	23:43	5:21	0:25	4	4.8E	1.8 3.4M		-2.0 19.6E	0.5 23.3E 23.4T	2	0	1
09/30/2019 Mon*	18:05	23:43	5:22	0:29	9	9.9E	1.8 3.7M		-2.0 19.4E	0.5 23.4E 23.4T	2	0	1
10/01/2019 Tue*	18:03	23:43	5:23	0:32	17	14.2E	1.8 4.0M		-2.0 19.3E	0.5 23.4E 23.4T	2	0	1
10/02/2019 Wed*	18:01	23:42	5:25	0:36	26	17.8E	1.8 4.3M		-2.0 19.2E	0.5 23.4E 23.4T	2	0	1
10/03/2019 Thr*	17:59	23:42	5:26	0:40	36	20.3E	1.8 4.6M		-2.0 19.0E	0.5 23.4E 23.4T	2	0	1
10/04/2019 Fri*	17:57	23:42	5:27	0:43	46	21.8E	1.8 4.9M		-2.0 18.9E	0.5 23.4E 23.4T	2	0	1
10/05/2019 Sat*	17:56	23:41	5:28	0:47	56	22.3E	1.8 5.3M		-2.0 18.8E	0.5 23.4E 23.4T	2	0	1
10/06/2019 Sun*	17:54	23:41	5:29	0:50	65	21.8E	1.8 5.6M		-2.0 18.6E	0.5 23.4E	2	0	1
10/07/2019 Mon*	17:52	23:41	5:30	0:54	74	20.5E 7.4m	1.8 5.9M		-2.0 18.5E	0.5 23.4E	2	0	1
10/08/2019 Tue*	17:50	23:41	5:32	0:58	82	18.3E 15.9m	1.8 6.2M		-2.0 18.4E	0.5 23.4E	2	0	1
10/09/2019 Wed*	17:49	23:40	5:33	1:01	89	15.5E 24.2m	1.8 6.5M		-2.0 18.2E	0.5 23.4E	2	0	1
10/10/2019 Thr*	17:47	23:40	5:34	1:05	94	12.2E 32.1m	1.8 6.8M		-2.0 18.1E	0.5 23.4E	2	0	1
10/11/2019 Fri*	17:45	23:40	5:35	1:09	97	8.4E 39.4m	1.8 7.1M		-2.0 17.9E	0.5 23.4E	2	0	1
10/12/2019 Sat*	17:43	23:40	5:36	1:12	99	4.4E 45.6m 0.1M	1.8 7.4M		-2.0 17.8E	0.5 23.4E	2	0	1
10/13/2019 Sun*	17:42	23:39	5:38	1:16	100	0.4E 50.1m 10.0M	1.8 7.7M		-2.0 17.7E	0.5 23.3E	2	0	1
10/14/2019 Mon*	17:40	23:39	5:39	1:20	98	52.2m 20.4M	1.8 8.0M		-2.0 17.5E	0.5 23.3E	2	0	1
10/15/2019 Tue*	17:38	23:39	5:40	1:24	94	51.2m 30.8M	1.8 8.3M		-2.0 17.4E	0.5 23.3E	2	0	1
10/16/2019 Wed*	17:37	23:39	5:41	1:27	89	47.3m 41.2M	1.8 8.6M		-2.0 17.2E	0.5 23.3E	2	0	1
10/17/2019 Thr*	17:35	23:38	5:42	1:31	82	41.0m 51.2M	1.8 8.9M		-2.0 17.0E	0.6 23.2E	2	0	1
10/18/2019 Fri*	17:33	23:38	5:44	1:35	73	33.0m 60.2M	1.8 9.2M		-2.0 16.9E	0.6 23.2E	2	0	1
10/19/2019 Sat*	17:32	23:38	5:45	1:39	64	23.8m 66.6M	1.8 9.5M		-1.9 16.7E	0.6 23.2E	2	0	1
10/20/2019 Sun*	17:30	23:38	5:46	1:42	53	13.8m 67.4M	1.8 9.8M		-1.9 16.6E	0.6 23.1E	2	0	1
10/21/2019 Mon*	17:29	23:38	5:47	1:46	42	3.4m 61.8M	1.8 10.1M		-1.9 16.4E	0.6 23.1E	2	0	1
10/22/2019 Tue*	17:27	23:38	5:49	1:50	31	52.3M	1.8 10.4M		-1.9 16.2E	0.6 23.0E	2	0	1
10/23/2019 Wed*	17:26	23:37	5:50	1:54	21	40.8M	1.8 10.7M		-1.9 16.1E	0.6 23.0E	2	0	1
10/24/2019 Thr*	17:24	23:37	5:51	1:58	12	28.5M	1.8 11.0M		-1.9 15.9E	0.6 22.9E	2	0	1
10/25/2019 Fri*	17:23	23:37	5:52	2:01	5	15.7M	1.8 11.3M		-1.9 15.7E	0.6 22.8E	2	0	1
10/26/2019 Sat*	17:21	23:37	5:54	2:05	1	3.0M	1.8 11.6M		-1.9 15.5E	0.6 22.8E	2	0	1
10/27/2019 Sun*	17:20	23:37	5:55	2:09	0			-3.8 3.1E	1.8 11.8M	0.6 22.7E	3	0	1
10/28/2019 Mon*	17:18	23:37	5:56	2:13	2	2.3E	1.8 12.1M		-1.9 15.2E	0.6 22.6E	3	0	1
10/29/2019 Tue*	17:17	23:37	5:57	2:17	6	7.5E	1.8 12.4M		-1.9 15.0E	0.6 22.5E	3	0	1
10/30/2019 Wed*	17:16	23:37	5:59	2:21	13	12.4E	1.8 12.7M		-1.9 14.8E	0.6 22.5E	3	0	1
10/31/2019 Thr*	17:14	23:37	6:00	2:25	20	16.6E	1.8 12.9M		-1.9 14.6E	0.6 22.4E	3	0	1
11/01/2019 Fri*	17:13	23:37	6:01	2:29	29	20.0E	1.8 13.2M		-1.9 14.4E	0.6 22.3E	3	0	1

Night of	Pct.					Moon elev.	Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar illum.									
11/02/2019 Sat*	17:12	23:37	6:02	2:32	39 22.4E			-3.8 3.8E	1.8 13.5M	-1.9 14.2E	0.6 22.2E	3	0	1
11/03/2019 Sun	17:11	23:37	6:04	2:36	49 23.9E			-3.8 4.0E	1.8 13.7M	-1.9 14.0E	0.6 22.1E	3	0	1
11/04/2019 Mon	17:09	23:37	6:05	2:40	58 24.4E			-3.8 4.1E	1.8 14.0M	-1.9 13.8E	0.6 22.0E	3	0	1
11/05/2019 Tue	17:08	23:37	6:06	2:44	67 24.0E 7.2m			-3.8 4.3E	1.8 14.3M	-1.9 13.6E	0.6 21.8E	3	0	1
11/06/2019 Wed	17:07	23:37	6:07	2:48	76 22.6E 16.6m			-3.8 4.4E	1.8 14.5M	-1.9 13.4E	0.6 21.7E	3	0	1
11/07/2019 Thr	17:06	23:37	6:09	2:52	83 20.3E 26.0m			-3.8 4.6E	1.8 14.8M	-1.9 13.1E	0.6 21.6E	3	0	1
11/08/2019 Fri	17:05	23:37	6:10	2:56	90 17.3E 35.2m			-3.8 4.7E	1.8 15.0M	-1.9 12.9E	0.6 21.5E	3	0	1
11/09/2019 Sat	17:04	23:37	6:11	3:00	95 13.6E 44.1m			-3.8 4.9E	1.8 15.3M	-1.9 12.7E	0.6 21.3E	3	0	1
11/10/2019 Sun	17:03	23:37	6:12	3:04	98 9.3E 52.0m			-3.8 5.1E	1.8 15.5M	-1.9 12.5E	0.6 21.2E	3	0	1
11/11/2019 Mon	17:02	23:37	6:14	3:08	100 4.7E 58.1m 3.2M			-3.8 5.2E	1.8 15.7M	-1.9 12.2E	0.6 21.0E	3	0	1
11/12/2019 Tue	17:01	23:37	6:15	3:13	99 61.0m 13.5M			-3.8 5.4E	1.8 16.0M	-1.9 12.0E	0.6 20.9E	3	0	1
11/13/2019 Wed	17:00	23:38	6:16	3:17	97 59.4m 24.0M			-3.8 5.6E	1.8 16.2M	-1.9 11.7E	0.6 20.7E	3	0	1
11/14/2019 Thr	16:59	23:38	6:17	3:21	92 53.8m 34.4M			-3.9 5.7E	1.8 16.4M	-1.9 11.5E	0.6 20.6E	3	0	1
11/15/2019 Fri	16:58	23:38	6:19	3:25	86 45.4m 44.3M	2.3 4.1M		-3.9 5.9E	1.7 16.6M	-1.9 11.2E	0.6 20.4E	3	0	2
11/16/2019 Sat	16:57	23:38	6:20	3:29	78 35.4m 53.1M	1.7 5.7M		-3.9 6.1E	1.7 16.8M	-1.9 11.0E	0.6 20.2E	3	0	2
11/17/2019 Sun	16:56	23:38	6:21	3:33	68 24.6m 59.5M	1.2 7.0M		-3.9 6.3E	1.7 17.0M	-1.9 10.7E	0.6 20.0E	3	0	2
11/18/2019 Mon	16:55	23:38	6:22	3:37	57 13.2m 61.6M	0.8 8.2M		-3.9 6.5E	1.7 17.2M	-1.9 10.4E	0.6 19.8E	3	0	2
11/19/2019 Tue	16:54	23:39	6:23	3:41	46 1.7m 58.3M	0.5 9.2M		-3.9 6.7E	1.7 17.4M	-1.9 10.1E	0.6 19.6E	3	0	2
11/20/2019 Wed	16:54	23:39	6:25	3:46	34 50.9M	0.2 10.0M		-3.9 6.9E	1.7 17.6M	-1.9 9.9E	0.6 19.4E	3	0	2
11/21/2019 Thr	16:53	23:39	6:26	3:50	24 41.0M	0.0 10.7M		-3.9 7.1E	1.7 17.8M	-1.9 9.6E	0.6 19.2E	3	0	2
11/22/2019 Fri	16:52	23:39	6:27	3:54	15 30.1M			-0.2 11.2M -3.9 7.3E	1.7 18.0M	-1.9 9.3E	0.6 19.0E	3	0	2
11/23/2019 Sat	16:52	23:40	6:28	3:58	7 18.6M			-0.3 11.5M -3.9 7.5E	1.7 18.2M	-1.8 9.0E	0.6 18.7E	3	0	2
11/24/2019 Sun	16:51	23:40	6:29	4:02	3 7.1M			-0.4 11.7M -3.9 7.7E	1.7 18.3M	-1.8 8.7E	0.6 18.5E	3	0	2
11/25/2019 Mon	16:51	23:40	6:30	4:07	0			-0.5 11.8M -3.9 7.9E	1.7 18.5M	-1.8 8.3E	0.6 18.3E	3	0	2
11/26/2019 Tue	16:50	23:41	6:32	4:11	1			-0.5 11.9M -3.9 8.2E	1.7 18.7M	-1.8 8.0E	0.6 18.0E	3	0	2
11/27/2019 Wed	16:50	23:41	6:33	4:15	3 4.4E			-0.6 11.8M -3.9 8.4E	1.7 18.8M	-1.8 7.7E	0.6 17.7E	3	0	2
11/28/2019 Thr	16:49	23:41	6:34	4:20	8 10.4E			-0.6 11.6M -3.9 8.6E	1.7 19.0M	-1.8 7.4E	0.6 17.5E	3	0	2
11/29/2019 Fri	16:49	23:42	6:35	4:24	15 16.1E			-0.6 11.4M -3.9 8.9E	1.7 19.1M	-1.8 7.0E	0.6 17.2E	3	0	2
11/30/2019 Sat	16:49	23:42	6:36	4:28	23 21.1E			-0.6 11.2M -3.9 9.1E	1.7 19.2M	-1.8 6.7E	0.6 16.9E	3	0	2
12/01/2019 Sun	16:48	23:42	6:37	4:32	31 25.3E			-0.6 10.9M -3.9 9.3E	1.7 19.4M	-1.8 6.3E	0.6 16.6E	3	0	2
12/02/2019 Mon	16:48	23:43	6:38	4:37	41 28.6E			-0.6 10.5M -3.9 9.6E	1.7 19.5M	-1.8 6.0E	0.6 16.3E	3	0	2
12/03/2019 Tue	16:48	23:43	6:39	4:41	50 30.8E			-0.6 10.2M -3.9 9.8E	1.7 19.6M	-1.8 5.6E	0.6 16.0E	3	0	2
12/04/2019 Wed	16:48	23:44	6:40	4:46	59 31.7E 4.7m			-0.6 9.8M -3.9 10.1E	1.7 19.7M	-1.8 5.2E	0.6 15.6E	3	0	2
12/05/2019 Thr	16:47	23:44	6:41	4:50	68 31.4E 14.7m			-0.6 9.3M -3.9 10.4E	1.7 19.8M	-1.8 4.8E	0.6 15.3E	3	0	2
12/06/2019 Fri	16:47	23:44	6:42	4:54	77 29.8E 24.8m			-0.6 8.9M -3.9 10.6E	1.7 19.9M	-1.8 4.5E	0.6 14.9E	3	0	2
12/07/2019 Sat	16:47	23:45	6:43	4:59	85 26.9E 34.9m			-0.6 8.4M -3.9 10.9E	1.7 20.0M	-1.8 4.1E	0.6 14.6E	3	0	2
12/08/2019 Sun	16:47	23:45	6:44	5:03	91 22.9E 44.9m			-0.6 7.9M -3.9 11.2E	1.7 20.1M	-1.8 3.7E	0.6 14.2E	3	0	2
12/09/2019 Mon	16:47	23:46	6:44	5:07	96 17.8E 54.5m			-0.6 7.5M -3.9 11.5E	1.7 20.2M	-1.8 3.3E	0.6 13.8E	3	0	2
12/10/2019 Tue	16:47	23:46	6:45	5:12	99 11.9E 62.5m			-0.6 7.0M -3.9 11.7E	1.7 20.2M		0.6 13.4E	2	0	2
12/11/2019 Wed	16:47	23:47	6:46	5:16	100 5.4E 67.0m 7.6M			-0.6 6.5M -3.9 12.0E	1.7 20.3M		0.6 13.0E	2	0	2
12/12/2019 Thr	16:47	23:47	6:47	5:21	99 65.4m 17.4M			-0.6 6.0M -3.9 12.3E	1.7 20.4M		0.6 12.6E	2	0	2
12/13/2019 Fri	16:48	23:48	6:48	5:25	95 58.3m 27.0M			-0.6 5.5M -3.9 12.6E	1.7 20.4M		0.6 12.2E	2	0	2
12/14/2019 Sat	16:48	23:48	6:48	5:29	89 48.3m 35.8M			-0.6 5.0M -3.9 12.9E	1.7 20.5M		0.6 11.8E	2	0	2
12/15/2019 Sun	16:48	23:49	6:49	5:34	81 36.9m 43.3M			-0.6 4.5M -3.9 13.2E	1.6 20.5M		0.6 11.3E	2	0	2
12/16/2019 Mon	16:48	23:49	6:50	5:38	71 25.0m 48.5M			-0.6 4.0M -3.9 13.5E	1.6 20.6M		0.6 10.9E	2	0	2
12/17/2019 Tue	16:49	23:50	6:50	5:43	61 12.8m 50.4M			-0.6 3.5M -3.9 13.8E	1.6 20.6M		0.6 10.4E	2	0	2
12/18/2019 Wed	16:49	23:50	6:51	5:47	49 0.8m 48.5M			-0.6 3.0M -3.9 14.1E	1.6 20.7M		0.6 9.9E	2	0	2
12/19/2019 Thr	16:49	23:50	6:52	5:52	38 43.5M			-3.9 14.4E	1.6 20.7M		0.6 9.5E	2	0	1
12/20/2019 Fri	16:50	23:51	6:52	5:56	27 36.2M			-3.9 14.7E	1.6 20.7M		0.6 9.0E	2	0	1
12/21/2019 Sat	16:50	23:51	6:53	6:00	18 27.5M			-3.9 15.1E	1.6 20.7M		0.6 8.5E	2	0	1
12/22/2019 Sun	16:51	23:52	6:53	6:05	10 18.3M			-3.9 15.4E	1.6 20.7M		0.6 7.9E	2	0	1
12/23/2019 Mon	16:51	23:52	6:54	6:09	4 8.8M			-3.9 15.7E	1.6 20.7M		0.6 7.4E	2	0	1

Night of	Pct.					Moon elev.	Mercury	Venus	Mars	Jupiter	Saturn	#E	#m	#M
	Dusk (E)	Midnight (m)	Dawn (M)	Sidereal (m)	Lunar Illum.									
12/24/2019 Tue	16:52	23:53	6:54	6:14	1			-3.9 16.0E	1.6 20.7M		0.6 6.9E	2	0	1
12/25/2019 Wed	16:53	23:53	6:54	6:18	0			-3.9 16.4E	1.6 20.7M		0.6 6.3E	2	0	1
12/26/2019 Thr	16:53	23:54	6:55	6:23	1 0.1E			-3.9 16.7E	1.6 20.7M		0.6 5.8E	2	0	1
12/27/2019 Fri	16:54	23:54	6:55	6:27	5 7.5E			-3.9 17.0E	1.6 20.7M		0.6 5.2E	2	0	1
12/28/2019 Sat	16:55	23:55	6:55	6:32	10 15.1E			-3.9 17.4E	1.6 20.7M		0.6 4.6E	2	0	1
12/29/2019 Sun	16:55	23:55	6:55	6:36	16 22.3E			-4.0 17.7E	1.6 20.7M		0.5 4.1E	2	0	1
12/30/2019 Mon	16:56	23:56	6:56	6:40	24 29.0E			-4.0 18.0E	1.6 20.6M		0.5 3.5E	2	0	1
12/31/2019 Tue	16:57	23:56	6:56	6:45	32 34.8E			-4.0 18.4E	1.6 20.6M			1	0	1

Program planetview2.py ver 160329c gglib version 160629a