

Jan 2018 Solar Lunar Data



Date	Nautical Twilight Begin	Civil Twilight Begin	Sunrise	Sunset	Civil Twilight End	Nautical Twilight End	Moon Rise	Moon Set	% Illumination @ 0Z
2018-01-01	12:43	13:16	13:46	23:15	23:45	00:18	23:14	13:03	98.02%
2018-01-02	12:43	13:16	13:46	23:16	23:46	00:19	No Event	14:07	99.92%
2018-01-03	12:43	13:17	13:46	23:17	23:47	00:20	00:20	15:03	98.74%
2018-01-04	12:43	13:17	13:46	23:18	23:48	00:20	01:31	15:51	94.65%
2018-01-05	12:43	13:17	13:46	23:19	23:49	00:21	02:41	16:33	88.08%
2018-01-06	12:43	13:17	13:46	23:20	23:50	00:22	03:50	17:09	79.65%
2018-01-07	12:43	13:17	13:46	23:21	23:50	00:23	04:56	17:42	70.01%
2018-01-08	12:43	13:17	13:46	23:22	23:51	00:24	05:59	18:14	59.78%
2018-01-09	12:43	13:16	13:46	23:23	23:52	00:25	07:00	18:44	49.47%
2018-01-10	12:43	13:16	13:46	23:24	23:53	00:25	07:59	19:16	39.48%
2018-01-11	12:43	13:16	13:46	23:25	23:54	00:26	08:57	19:49	30.14%
2018-01-12	12:43	13:16	13:45	23:26	23:55	00:27	09:54	20:24	21.72%
2018-01-13	12:43	13:16	13:45	23:27	23:56	00:28	10:49	21:03	14.42%
2018-01-14	12:43	13:16	13:45	23:28	23:57	00:29	11:42	21:46	8.45%
2018-01-15	12:42	13:15	13:45	23:29	23:58	00:30	12:32	22:33	3.97%
2018-01-16	12:42	13:15	13:44	23:30	23:59	00:31	13:19	23:24	1.13%
2018-01-17	12:42	13:15	13:44	23:31	No Event	00:32	14:02	No Event	0.03%
2018-01-18	12:41	13:14	13:43	23:32	00:00	00:33	14:41	00:17	0.74%
2018-01-19	12:41	13:14	13:43	23:33	00:01	00:34	15:16	01:14	3.29%
2018-01-20	12:41	13:13	13:42	23:34	00:02	00:35	15:50	02:11	7.62%
2018-01-21	12:40	13:13	13:42	23:36	00:03	00:36	16:21	03:10	13.66%
2018-01-22	12:40	13:12	13:41	23:37	00:04	00:37	16:52	04:09	21.24%
2018-01-23	12:39	13:12	13:40	23:38	00:05	00:38	17:23	05:10	30.17%
2018-01-24	12:39	13:11	13:40	23:39	00:07	00:39	17:55	06:13	40.17%
2018-01-25	12:38	13:10	13:39	23:40	00:08	00:40	18:31	07:17	50.88%
2018-01-26	12:38	13:10	13:38	23:41	00:09	00:41	19:12	08:24	61.85%
2018-01-27	12:37	13:09	13:38	23:42	00:10	00:42	19:59	09:32	72.54%
2018-01-28	12:36	13:08	13:37	23:44	00:11	00:43	20:53	10:40	82.31%
2018-01-29	12:36	13:08	13:36	23:45	00:12	00:44	21:55	11:45	90.47%
2018-01-30	12:35	13:07	13:35	23:46	00:13	00:45	23:03	12:44	96.37%
2018-01-31	12:34	13:06	13:34	23:47	00:14	00:46	No Event	13:37	99.53%

Feb 2018 Solar Lunar Data



Date	Nautical Twilight Begin	Civil Twilight Begin	Sunrise	Sunset	Civil Twilight End	Nautical Twilight End	Moon Rise	Moon Set	% Illumination @ 0Z
2018-02-01	12:33	13:05	13:34	23:48	00:15	00:47	00:14	14:23	99.72%
2018-02-02	12:33	13:04	13:33	23:49	00:16	00:48	01:26	15:03	97.03%
2018-02-03	12:32	13:04	13:32	23:51	00:18	00:49	02:35	15:39	91.83%
2018-02-04	12:31	13:03	13:31	23:52	00:19	00:50	03:42	16:12	84.62%
2018-02-05	12:30	13:02	13:30	23:53	00:20	00:52	04:46	16:44	76.01%
2018-02-06	12:29	13:01	13:29	23:54	00:21	00:53	05:48	17:16	66.54%
2018-02-07	12:28	13:00	13:28	23:55	00:22	00:54	06:48	17:49	56.69%
2018-02-08	12:27	12:59	13:27	23:56	00:23	00:55	07:46	18:24	46.84%
2018-02-09	12:26	12:58	13:25	23:58	00:24	00:56	08:42	19:01	37.32%
2018-02-10	12:25	12:57	13:24	23:59	00:25	00:57	09:36	19:43	28.40%
2018-02-11	12:24	12:56	13:23	No Event	00:26	00:58	10:27	20:28	20.32%
2018-02-12	12:23	12:55	13:22	00:00	00:27	00:59	11:15	21:18	13.29%
2018-02-13	12:22	12:53	13:21	00:01	00:29	01:00	11:59	22:11	7.55%
2018-02-14	12:21	12:52	13:20	00:02	00:30	01:01	12:40	23:06	3.30%
2018-02-15	12:20	12:51	13:18	00:03	00:31	01:02	13:17	No Event	0.74%
2018-02-16	12:19	12:50	13:17	00:04	00:32	01:03	13:51	00:04	0.03%
2018-02-17	12:17	12:49	13:16	00:06	00:33	01:04	14:24	01:03	1.28%
2018-02-18	12:16	12:47	13:15	00:07	00:34	01:05	14:55	02:03	4.53%
2018-02-19	12:15	12:46	13:13	00:08	00:35	01:06	15:26	03:04	9.75%
2018-02-20	12:14	12:45	13:12	00:09	00:36	01:07	15:58	04:06	16.80%
2018-02-21	12:13	12:44	13:11	00:10	00:37	01:08	16:32	05:10	25.47%
2018-02-22	12:11	12:42	13:09	00:11	00:38	01:09	17:10	06:15	35.45%
2018-02-23	12:10	12:41	13:08	00:12	00:39	01:10	17:53	07:20	46.31%
2018-02-24	12:09	12:40	13:07	00:13	00:40	01:11	18:42	08:26	57.57%
2018-02-25	12:07	12:38	13:05	00:14	00:41	01:12	19:39	09:30	68.64%
2018-02-26	12:06	12:37	13:04	00:15	00:42	01:13	20:42	10:30	78.89%
2018-02-27	12:05	12:36	13:02	00:17	00:43	01:14	21:50	11:24	87.65%
2018-02-28	12:03	12:34	13:01	00:18	00:45	01:15	23:00	12:12	94.35%
2018-03-01	12:02	12:33	12:59	00:19	00:46	01:16	No Event	12:54	98.52%

Mar 2018 Solar Lunar Data



Date	Nautical Twilight Begin	Civil Twilight Begin	Sunrise	Sunset	Civil Twilight End	Nautical Twilight End	Moon Rise	Moon Set	% Illumination @ 0Z
2018-03-01	12:02	12:33	12:59	00:19	00:46	01:16	No Event	12:54	98.52%
2018-03-02	12:00	12:31	12:58	00:20	00:47	01:18	00:11	13:32	99.96%
2018-03-03	11:59	12:30	12:57	00:21	00:48	01:19	01:20	14:07	98.69%
2018-03-04	11:58	12:28	12:55	00:22	00:49	01:20	02:26	14:40	94.96%
2018-03-05	11:56	12:27	12:54	00:23	00:50	01:21	03:31	15:13	89.18%
2018-03-06	11:55	12:25	12:52	00:24	00:51	01:22	04:33	15:46	81.81%
2018-03-07	11:53	12:24	12:51	00:25	00:52	01:23	05:33	16:20	73.33%
2018-03-08	11:52	12:22	12:49	00:26	00:53	01:24	06:32	16:58	64.16%
2018-03-09	11:50	12:21	12:48	00:27	00:54	01:25	07:27	17:38	54.65%
2018-03-10	11:49	12:19	12:46	00:28	00:55	01:26	08:20	18:22	45.13%
2018-03-11	11:47	12:18	12:45	00:29	00:56	01:27	09:10	19:10	35.86%
2018-03-12	11:45	12:16	12:43	00:30	00:57	01:28	09:55	20:02	27.11%
2018-03-13	11:44	12:15	12:41	00:31	00:58	01:29	10:37	20:57	19.13%
2018-03-14	11:42	12:13	12:40	00:32	00:59	01:30	11:15	21:54	12.18%
2018-03-15	11:41	12:12	12:38	00:33	01:00	01:31	11:51	22:53	6.56%
2018-03-16	11:39	12:10	12:37	00:34	01:01	01:32	12:24	23:53	2.54%
2018-03-17	11:38	12:09	12:35	00:35	01:02	01:33	12:56	No Event	0.39%
2018-03-18	11:36	12:07	12:34	00:36	01:03	01:34	13:27	00:55	0.34%
2018-03-19	11:34	12:05	12:32	00:37	01:04	01:35	13:59	01:58	2.50%
2018-03-20	11:33	12:04	12:30	00:38	01:05	01:36	14:33	03:02	6.91%
2018-03-21	11:31	12:02	12:29	00:39	01:06	01:37	15:10	04:08	13.45%
2018-03-22	11:29	12:01	12:27	00:40	01:07	01:38	15:51	05:14	21.87%
2018-03-23	11:28	11:59	12:26	00:41	01:08	01:39	16:38	06:20	31.79%
2018-03-24	11:26	11:57	12:24	00:42	01:09	01:40	17:32	07:24	42.73%
2018-03-25	11:24	11:56	12:23	00:43	01:10	01:41	18:31	08:24	54.12%
2018-03-26	11:23	11:54	12:21	00:44	01:11	01:42	19:36	09:18	65.36%
2018-03-27	11:21	11:53	12:19	00:45	01:12	01:43	20:43	10:06	75.82%
2018-03-28	11:20	11:51	12:18	00:46	01:13	01:44	21:52	10:49	84.90%
2018-03-29	11:18	11:49	12:16	00:47	01:14	01:45	23:00	11:28	92.10%
2018-03-30	11:16	11:48	12:15	00:48	01:15	01:46	No Event	12:03	97.05%
2018-03-31	11:15	11:46	12:13	00:49	01:16	01:48	00:07	12:36	99.55%

Apr 2018 Solar Lunar Data



Date	Nautical Twilight Begin	Civil Twilight Begin	Sunrise	Sunset	Civil Twilight End	Nautical Twilight End	Moon Rise	Moon Set	% Illumination @ 0Z
2018-04-01	11:13	11:45	12:12	00:50	01:17	01:49	01:12	13:09	99.57%
2018-04-02	11:11	11:43	12:10	00:51	01:18	01:50	02:16	13:42	97.29%
2018-04-03	11:10	11:41	12:08	00:52	01:19	01:51	03:18	14:16	92.97%
2018-04-04	11:08	11:40	12:07	00:53	01:20	01:52	04:18	14:52	86.96%
2018-04-05	11:06	11:38	12:05	00:54	01:21	01:53	05:16	15:32	79.62%
2018-04-06	11:05	11:37	12:04	00:55	01:22	01:54	06:11	16:15	71.31%
2018-04-07	11:03	11:35	12:02	00:56	01:23	01:55	07:03	17:01	62.34%
2018-04-08	11:01	11:34	12:01	00:57	01:24	01:56	07:50	17:52	53.01%
2018-04-09	11:00	11:32	11:59	00:58	01:25	01:57	08:33	18:45	43.58%
2018-04-10	10:58	11:30	11:58	00:59	01:26	01:58	09:13	19:41	34.33%
2018-04-11	10:56	11:29	11:56	01:00	01:27	02:00	09:49	20:39	25.52%
2018-04-12	10:55	11:27	11:55	01:01	01:28	02:01	10:23	21:39	17.49%
2018-04-13	10:53	11:26	11:53	01:01	01:29	02:02	10:55	22:40	10.56%
2018-04-14	10:51	11:24	11:52	01:02	01:30	02:03	11:26	23:43	5.13%
2018-04-15	10:50	11:23	11:50	01:03	01:31	02:04	11:58	No Event	1.55%
2018-04-16	10:48	11:21	11:49	01:04	01:32	02:05	12:31	00:48	0.19%
2018-04-17	10:47	11:20	11:47	01:05	01:33	02:06	13:08	01:55	1.26%
2018-04-18	10:45	11:18	11:46	01:06	01:34	02:08	13:48	03:03	4.86%
2018-04-19	10:43	11:17	11:45	01:07	01:35	02:09	14:34	04:11	10.88%
2018-04-20	10:42	11:15	11:43	01:08	01:36	02:10	15:27	05:17	19.04%
2018-04-21	10:40	11:14	11:42	01:09	01:37	02:11	16:25	06:20	28.86%
2018-04-22	10:39	11:12	11:40	01:10	01:38	02:12	17:28	07:16	39.78%
2018-04-23	10:37	11:11	11:39	01:11	01:39	02:13	18:34	08:06	51.18%
2018-04-24	10:35	11:10	11:38	01:12	01:40	02:15	19:41	08:50	62.42%
2018-04-25	10:34	11:08	11:36	01:13	01:42	02:16	20:48	09:28	72.91%
2018-04-26	10:32	11:07	11:35	01:14	01:43	02:17	21:54	10:03	82.14%
2018-04-27	10:31	11:05	11:34	01:15	01:44	02:18	22:59	10:36	89.69%
2018-04-28	10:29	11:04	11:33	01:16	01:45	02:19	No Event	11:08	95.24%
2018-04-29	10:28	11:03	11:31	01:17	01:46	02:20	00:02	11:40	98.63%
2018-04-30	10:26	11:01	11:30	01:18	01:47	02:22	01:04	12:13	99.81%
2018-05-01	10:25	11:00	11:29	01:19	01:48	02:23	02:05	12:48	98.85%

May 2018 Solar Lunar Data



Date	Nautical Twilight Begin	Civil Twilight Begin	Sunrise	Sunset	Civil Twilight End	Nautical Twilight End	Moon Rise	Moon Set	% Illumination @ 0Z
2018-05-01	10:25	11:00	11:29	01:19	01:48	02:23	02:05	12:48	98.85%
2018-05-02	10:24	10:59	11:28	01:20	01:49	02:24	03:05	13:26	95.91%
2018-05-03	10:22	10:58	11:27	01:21	01:50	02:25	04:02	14:08	91.24%
2018-05-04	10:21	10:56	11:25	01:22	01:51	02:26	04:55	14:53	85.09%
2018-05-05	10:19	10:55	11:24	01:23	01:52	02:28	05:45	15:42	77.72%
2018-05-06	10:18	10:54	11:23	01:24	01:53	02:29	06:30	16:35	69.42%
2018-05-07	10:17	10:53	11:22	01:25	01:54	02:30	07:11	17:29	60.42%
2018-05-08	10:15	10:51	11:21	01:26	01:55	02:31	07:48	18:26	50.99%
2018-05-09	10:14	10:50	11:20	01:27	01:56	02:32	08:22	19:24	41.40%
2018-05-10	10:13	10:49	11:19	01:28	01:57	02:34	08:53	20:24	31.94%
2018-05-11	10:12	10:48	11:18	01:29	01:58	02:35	09:24	21:26	22.96%
2018-05-12	10:10	10:47	11:17	01:30	01:59	02:36	09:55	22:30	14.85%
2018-05-13	10:09	10:46	11:16	01:30	02:00	02:37	10:28	23:36	8.09%
2018-05-14	10:08	10:45	11:15	01:31	02:01	02:38	11:03	No Event	3.16%
2018-05-15	10:07	10:44	11:14	01:32	02:02	02:39	11:41	00:44	0.52%
2018-05-16	10:06	10:43	11:13	01:33	02:03	02:41	12:26	01:54	0.53%
2018-05-17	10:05	10:42	11:12	01:34	02:04	02:42	13:17	03:04	3.32%
2018-05-18	10:04	10:41	11:12	01:35	02:05	02:43	14:15	04:10	8.80%
2018-05-19	10:03	10:40	11:11	01:36	02:06	02:44	15:18	05:11	16.63%
2018-05-20	10:02	10:40	11:10	01:37	02:07	02:45	16:25	06:05	26.27%
2018-05-21	10:01	10:39	11:09	01:38	02:08	02:46	17:33	06:51	37.05%
2018-05-22	10:00	10:38	11:09	01:39	02:09	02:47	18:41	07:31	48.32%
2018-05-23	09:59	10:37	11:08	01:39	02:10	02:48	19:46	08:07	59.45%
2018-05-24	09:58	10:36	11:07	01:40	02:11	02:49	20:50	08:40	69.89%
2018-05-25	09:57	10:36	11:07	01:41	02:12	02:51	21:53	09:11	79.20%
2018-05-26	09:56	10:35	11:06	01:42	02:13	02:52	22:55	09:42	87.02%
2018-05-27	09:56	10:34	11:05	01:43	02:14	02:53	23:56	10:13	93.10%
2018-05-28	09:55	10:34	11:05	01:43	02:15	02:54	No Event	10:47	97.28%
2018-05-29	09:54	10:33	11:04	01:44	02:15	02:54	00:55	11:24	99.48%
2018-05-30	09:53	10:33	11:04	01:45	02:16	02:55	01:53	12:03	99.71%
2018-05-31	09:53	10:32	11:04	01:46	02:17	02:56	02:48	12:47	98.05%

Jun 2018 Solar Lunar Data



Date	Nautical Twilight Begin	Civil Twilight Begin	Sunrise	Sunset	Civil Twilight End	Nautical Twilight End	Moon Rise	Moon Set	% Illumination @ 0Z
2018-06-01	09:52	10:32	11:03	01:46	02:18	02:57	03:40	13:35	94.62%
2018-06-02	09:52	10:31	11:03	01:47	02:19	02:58	04:27	14:26	89.60%
2018-06-03	09:51	10:31	11:02	01:48	02:19	02:59	05:09	15:20	83.18%
2018-06-04	09:51	10:30	11:02	01:48	02:20	03:00	05:47	16:16	75.57%
2018-06-05	09:50	10:30	11:02	01:49	02:21	03:01	06:22	17:13	66.99%
2018-06-06	09:50	10:30	11:02	01:50	02:21	03:01	06:54	18:11	57.68%
2018-06-07	09:50	10:29	11:01	01:50	02:22	03:02	07:24	19:10	47.88%
2018-06-08	09:49	10:29	11:01	01:51	02:23	03:03	07:54	20:12	37.91%
2018-06-09	09:49	10:29	11:01	01:51	02:23	03:03	08:25	21:15	28.13%
2018-06-10	09:49	10:29	11:01	01:52	02:24	03:04	08:58	22:22	19.01%
2018-06-11	09:48	10:29	11:01	01:52	02:24	03:05	09:34	23:31	11.08%
2018-06-12	09:48	10:29	11:01	01:53	02:25	03:05	10:15	No Event	4.94%
2018-06-13	09:48	10:29	11:01	01:53	02:25	03:06	11:03	00:42	1.14%
2018-06-14	09:48	10:29	11:01	01:54	02:26	03:06	11:59	01:51	0.14%
2018-06-15	09:48	10:29	11:01	01:54	02:26	03:07	13:02	02:57	2.12%
2018-06-16	09:48	10:29	11:01	01:55	02:27	03:07	14:10	03:56	7.00%
2018-06-17	09:48	10:29	11:01	01:55	02:27	03:08	15:20	04:47	14.38%
2018-06-18	09:48	10:29	11:01	01:55	02:27	03:08	16:30	05:31	23.66%
2018-06-19	09:48	10:29	11:01	01:56	02:28	03:08	17:38	06:09	34.14%
2018-06-20	09:48	10:29	11:01	01:56	02:28	03:09	18:43	06:43	45.14%
2018-06-21	09:49	10:29	11:01	01:56	02:28	03:09	19:47	07:15	56.06%
2018-06-22	09:49	10:30	11:02	01:56	02:29	03:09	20:49	07:46	66.41%
2018-06-23	09:49	10:30	11:02	01:57	02:29	03:09	21:49	08:17	75.79%
2018-06-24	09:49	10:30	11:02	01:57	02:29	03:09	22:49	08:49	83.89%
2018-06-25	09:50	10:30	11:03	01:57	02:29	03:10	23:47	09:24	90.49%
2018-06-26	09:50	10:31	11:03	01:57	02:29	03:10	No Event	10:02	95.42%
2018-06-27	09:51	10:31	11:03	01:57	02:29	03:10	00:42	10:44	98.58%
2018-06-28	09:51	10:32	11:04	01:57	02:29	03:10	01:35	11:31	99.90%
2018-06-29	09:52	10:32	11:04	01:57	02:29	03:09	02:24	12:20	99.41%
2018-06-30	09:52	10:32	11:05	01:57	02:29	03:09	03:08	13:13	97.13%
2018-07-01	09:53	10:33	11:05	01:57	02:29	03:09	03:47	14:08	93.17%

Jul 2018 Solar Lunar Data



Date	Nautical Twilight Begin	Civil Twilight Begin	Sunrise	Sunset	Civil Twilight End	Nautical Twilight End	Moon Rise	Moon Set	% Illumination @ 0Z
2018-07-01	09:53	10:33	11:05	01:57	02:29	03:09	03:47	14:08	93.17%
2018-07-02	09:53	10:33	11:05	01:57	02:29	03:09	04:23	15:05	87.65%
2018-07-03	09:54	10:34	11:06	01:57	02:29	03:09	04:56	16:02	80.72%
2018-07-04	09:55	10:35	11:07	01:56	02:28	03:08	05:26	17:00	72.57%
2018-07-05	09:55	10:35	11:07	01:56	02:28	03:08	05:56	17:59	63.41%
2018-07-06	09:56	10:36	11:08	01:56	02:28	03:08	06:25	19:00	53.49%
2018-07-07	09:57	10:37	11:08	01:56	02:28	03:07	06:56	20:04	43.13%
2018-07-08	09:57	10:37	11:09	01:56	02:27	03:07	07:29	21:09	32.74%
2018-07-09	09:58	10:38	11:10	01:55	02:27	03:06	08:06	22:18	22.80%
2018-07-10	09:59	10:39	11:10	01:55	02:26	03:06	08:50	23:27	13.92%
2018-07-11	10:00	10:39	11:11	01:54	02:26	03:05	09:41	No Event	6.76%
2018-07-12	10:01	10:40	11:12	01:54	02:25	03:05	10:40	00:35	1.97%
2018-07-13	10:02	10:41	11:12	01:54	02:25	03:04	11:47	01:39	0.04%
2018-07-14	10:03	10:42	11:13	01:53	02:24	03:03	12:58	02:35	1.20%
2018-07-15	10:03	10:42	11:14	01:53	02:24	03:03	14:11	03:24	5.35%
2018-07-16	10:04	10:43	11:14	01:52	02:23	03:02	15:22	04:06	12.08%
2018-07-17	10:05	10:44	11:15	01:52	02:23	03:01	16:31	04:43	20.77%
2018-07-18	10:06	10:45	11:16	01:51	02:22	03:00	17:37	05:16	30.73%
2018-07-19	10:07	10:46	11:17	01:50	02:21	03:00	18:41	05:48	41.30%
2018-07-20	10:08	10:47	11:18	01:50	02:20	02:59	19:42	06:20	51.93%
2018-07-21	10:09	10:48	11:18	01:49	02:20	02:58	20:43	06:52	62.15%
2018-07-22	10:10	10:49	11:19	01:48	02:19	02:57	21:41	07:26	71.61%
2018-07-23	10:12	10:49	11:20	01:47	02:18	02:56	22:37	08:03	80.02%
2018-07-24	10:13	10:50	11:21	01:47	02:17	02:55	23:31	08:43	87.16%
2018-07-25	10:14	10:51	11:22	01:46	02:16	02:54	No Event	09:28	92.86%
2018-07-26	10:15	10:52	11:23	01:45	02:15	02:53	00:21	10:16	96.96%
2018-07-27	10:16	10:53	11:23	01:44	02:14	02:52	01:06	11:08	99.35%
2018-07-28	10:17	10:54	11:24	01:43	02:13	02:51	01:48	12:03	99.98%
2018-07-29	10:18	10:55	11:25	01:42	02:12	02:49	02:25	12:59	98.81%
2018-07-30	10:19	10:56	11:26	01:41	02:11	02:48	02:58	13:56	95.86%
2018-07-31	10:20	10:57	11:27	01:40	02:10	02:47	03:30	14:54	91.19%

Aug 2018 Solar Lunar Data



Date	Nautical Twilight Begin	Civil Twilight Begin	Sunrise	Sunset	Civil Twilight End	Nautical Twilight End	Moon Rise	Moon Set	% Illumination @ 0Z
2018-08-01	10:21	10:58	11:28	01:39	02:09	02:46	03:59	15:52	84.91%
2018-08-02	10:23	10:59	11:29	01:38	02:08	02:45	04:28	16:52	77.18%
2018-08-03	10:24	11:00	11:30	01:37	02:07	02:43	04:57	17:53	68.19%
2018-08-04	10:25	11:01	11:30	01:36	02:06	02:42	05:29	18:56	58.21%
2018-08-05	10:26	11:02	11:31	01:35	02:05	02:41	06:03	20:01	47.57%
2018-08-06	10:27	11:03	11:32	01:34	02:03	02:39	06:42	21:08	36.71%
2018-08-07	10:28	11:04	11:33	01:33	02:02	02:38	07:28	22:14	26.17%
2018-08-08	10:29	11:05	11:34	01:32	02:01	02:37	08:21	23:19	16.58%
2018-08-09	10:31	11:06	11:35	01:31	02:00	02:35	09:23	No Event	8.66%
2018-08-10	10:32	11:07	11:36	01:29	01:58	02:34	10:32	00:18	3.05%
2018-08-11	10:33	11:08	11:37	01:28	01:57	02:32	11:45	01:11	0.27%
2018-08-12	10:34	11:09	11:38	01:27	01:56	02:31	12:58	01:57	0.55%
2018-08-13	10:35	11:10	11:39	01:26	01:55	02:29	14:10	02:37	3.79%
2018-08-14	10:36	11:11	11:40	01:24	01:53	02:28	15:20	03:13	9.62%
2018-08-15	10:37	11:12	11:40	01:23	01:52	02:26	16:27	03:47	17.45%
2018-08-16	10:38	11:13	11:41	01:22	01:50	02:25	17:31	04:19	26.64%
2018-08-17	10:40	11:14	11:42	01:21	01:49	02:23	18:34	04:52	36.61%
2018-08-18	10:41	11:15	11:43	01:19	01:48	02:22	19:34	05:26	46.82%
2018-08-19	10:42	11:16	11:44	01:18	01:46	02:20	20:31	06:02	56.86%
2018-08-20	10:43	11:17	11:45	01:16	01:45	02:19	21:26	06:42	66.39%
2018-08-21	10:44	11:18	11:46	01:15	01:43	02:17	22:17	07:25	75.13%
2018-08-22	10:45	11:19	11:47	01:14	01:42	02:15	23:04	08:12	82.86%
2018-08-23	10:46	11:20	11:48	01:12	01:40	02:14	23:47	09:03	89.36%
2018-08-24	10:47	11:21	11:49	01:11	01:39	02:12	No Event	09:57	94.45%
2018-08-25	10:48	11:22	11:50	01:09	01:37	02:10	00:25	10:53	97.96%
2018-08-26	10:50	11:23	11:50	01:08	01:36	02:09	01:00	11:50	99.74%
2018-08-27	10:51	11:24	11:51	01:06	01:34	02:07	01:32	12:48	99.70%
2018-08-28	10:52	11:25	11:52	01:05	01:33	02:06	02:02	13:47	97.77%
2018-08-29	10:53	11:26	11:53	01:03	01:31	02:04	02:31	14:46	93.96%
2018-08-30	10:54	11:27	11:54	01:02	01:29	02:02	03:01	15:46	88.32%
2018-08-31	10:55	11:28	11:55	01:00	01:28	02:01	03:31	16:48	80.99%

Sep 2018 Solar Lunar Data



Date	Nautical Twilight Begin	Civil Twilight Begin	Sunrise	Sunset	Civil Twilight End	Nautical Twilight End	Moon Rise	Moon Set	% Illumination @ 0Z
2018-09-01	10:56	11:28	11:56	00:59	01:26	01:59	04:04	17:52	72.18%
2018-09-02	10:57	11:29	11:57	00:57	01:25	01:57	04:40	18:56	62.17%
2018-09-03	10:58	11:30	11:58	00:56	01:23	01:56	05:22	20:01	51.35%
2018-09-04	10:59	11:31	11:59	00:54	01:22	01:54	06:11	21:05	40.18%
2018-09-05	11:00	11:32	11:59	00:53	01:20	01:52	07:07	22:04	29.24%
2018-09-06	11:01	11:33	12:00	00:51	01:18	01:50	08:11	22:58	19.20%
2018-09-07	11:02	11:34	12:01	00:50	01:17	01:49	09:20	23:46	10.72%
2018-09-08	11:03	11:35	12:02	00:48	01:15	01:47	10:33	No Event	4.46%
2018-09-09	11:04	11:36	12:03	00:46	01:13	01:45	11:45	00:29	0.88%
2018-09-10	11:05	11:37	12:04	00:45	01:12	01:44	12:57	01:07	0.19%
2018-09-11	11:06	11:38	12:05	00:43	01:10	01:42	14:06	01:42	2.34%
2018-09-12	11:07	11:39	12:06	00:42	01:09	01:40	15:14	02:15	7.00%
2018-09-13	11:08	11:40	12:07	00:40	01:07	01:39	16:19	02:48	13.70%
2018-09-14	11:09	11:41	12:08	00:38	01:05	01:37	17:22	03:22	21.88%
2018-09-15	11:10	11:42	12:08	00:37	01:04	01:35	18:22	03:59	31.02%
2018-09-16	11:11	11:43	12:09	00:35	01:02	01:33	19:19	04:38	40.67%
2018-09-17	11:12	11:44	12:10	00:34	01:00	01:32	20:12	05:20	50.43%
2018-09-18	11:13	11:44	12:11	00:32	00:59	01:30	21:01	06:06	59.98%
2018-09-19	11:14	11:45	12:12	00:30	00:57	01:28	21:45	06:56	69.04%
2018-09-20	11:15	11:46	12:13	00:29	00:55	01:27	22:24	07:49	77.38%
2018-09-21	11:16	11:47	12:14	00:27	00:54	01:25	23:00	08:44	84.74%
2018-09-22	11:17	11:48	12:15	00:26	00:52	01:23	23:33	09:41	90.90%
2018-09-23	11:18	11:49	12:16	00:24	00:51	01:22	No Event	10:40	95.61%
2018-09-24	11:19	11:50	12:17	00:22	00:49	01:20	00:04	11:39	98.66%
2018-09-25	11:20	11:51	12:18	00:21	00:47	01:18	00:34	12:38	99.85%
2018-09-26	11:21	11:52	12:18	00:19	00:46	01:17	01:03	13:39	99.03%
2018-09-27	11:22	11:53	12:19	00:18	00:44	01:15	01:33	14:42	96.13%
2018-09-28	11:23	11:54	12:20	00:16	00:43	01:13	02:05	15:45	91.17%
2018-09-29	11:24	11:55	12:21	00:14	00:41	01:12	02:41	16:50	84.26%
2018-09-30	11:25	11:56	12:22	00:13	00:39	01:10	03:20	17:55	75.65%
2018-10-01	11:25	11:56	12:23	00:11	00:38	01:09	04:06	18:58	65.65%

Oct 2018 Solar Lunar Data



Date	Nautical Twilight Begin	Civil Twilight Begin	Sunrise	Sunset	Civil Twilight End	Nautical Twilight End	Moon Rise	Moon Set	% Illumination @ 0Z
2018-10-01	11:25	11:56	12:23	00:11	00:38	01:09	04:06	18:58	65.65%
2018-10-02	11:26	11:57	12:24	00:10	00:36	01:07	04:59	19:58	54.73%
2018-10-03	11:27	11:58	12:25	00:08	00:35	01:05	05:59	20:52	43.39%
2018-10-04	11:28	11:59	12:26	00:06	00:33	01:04	07:05	21:40	32.24%
2018-10-05	11:29	12:00	12:27	00:05	00:31	01:02	08:14	22:23	21.93%
2018-10-06	11:30	12:01	12:28	00:03	00:30	01:01	09:24	23:02	13.10%
2018-10-07	11:31	12:02	12:29	00:02	00:28	00:59	10:35	23:37	6.29%
2018-10-08	11:32	12:03	12:30	23:59	00:27	00:58	11:45	No Event	1.93%
2018-10-09	11:33	12:04	12:31	23:57	00:25	00:56	12:53	00:10	0.21%
2018-10-10	11:34	12:05	12:32	23:56	00:24	00:55	14:00	00:43	1.10%
2018-10-11	11:35	12:06	12:33	23:54	00:22	00:53	15:05	01:17	4.40%
2018-10-12	11:36	12:07	12:34	23:53	00:21	00:52	16:08	01:53	9.73%
2018-10-13	11:37	12:08	12:35	23:51	00:19	00:50	17:07	02:31	16.67%
2018-10-14	11:38	12:09	12:36	23:50	00:18	00:49	18:03	03:13	24.79%
2018-10-15	11:39	12:10	12:37	23:48	00:17	00:48	18:55	03:58	33.69%
2018-10-16	11:40	12:11	12:38	23:47	00:15	00:46	19:41	04:47	43.02%
2018-10-17	11:41	12:12	12:39	23:45	00:14	00:45	20:23	05:39	52.48%
2018-10-18	11:42	12:13	12:40	23:44	00:12	00:43	21:00	06:34	61.79%
2018-10-19	11:43	12:14	12:41	23:43	00:11	00:42	21:33	07:30	70.70%
2018-10-20	11:44	12:15	12:42	23:41	00:10	00:41	22:05	08:28	78.94%
2018-10-21	11:45	12:16	12:43	23:40	00:08	00:39	22:34	09:27	86.22%
2018-10-22	11:46	12:17	12:44	23:39	00:07	00:38	23:04	10:26	92.24%
2018-10-23	11:47	12:18	12:45	23:37	00:06	00:37	23:33	11:27	96.69%
2018-10-24	11:47	12:19	12:46	23:36	00:04	00:36	No Event	12:30	99.27%
2018-10-25	11:48	12:20	12:47	23:35	00:03	00:34	00:05	13:35	99.71%
2018-10-26	11:49	12:21	12:48	23:33	00:02	00:33	00:40	14:41	97.85%
2018-10-27	11:50	12:22	12:49	23:32	00:01	00:32	01:18	15:48	93.66%
2018-10-28	11:51	12:23	12:50	23:31	23:58	00:31	02:03	16:53	87.24%
2018-10-29	11:52	12:24	12:51	23:30	23:57	00:30	02:54	17:54	78.88%
2018-10-30	11:53	12:25	12:52	23:28	23:56	00:29	03:52	18:50	68.97%
2018-10-31	11:54	12:26	12:54	23:27	23:55	00:27	04:56	19:40	58.03%

Nov 2018 Solar Lunar Data



Date	Nautical Twilight Begin	Civil Twilight Begin	Sunrise	Sunset	Civil Twilight End	Nautical Twilight End	Moon Rise	Moon Set	% Illumination @ 0Z
2018-11-01	11:55	12:27	12:55	23:26	23:54	00:26	06:03	20:23	46.65%
2018-11-02	11:56	12:28	12:56	23:25	23:53	00:25	07:12	21:02	35.44%
2018-11-03	11:57	12:29	12:57	23:24	23:52	00:24	08:21	21:37	25.01%
2018-11-04	11:58	12:30	12:58	23:23	23:51	00:23	09:29	22:09	15.92%
2018-11-05	11:59	12:31	12:59	23:22	23:50	00:22	10:36	22:41	8.63%
2018-11-06	12:00	12:32	13:00	23:21	23:49	00:21	11:42	23:14	3.50%
2018-11-07	12:01	12:33	13:01	23:20	23:48	00:21	12:48	23:48	0.72%
2018-11-08	12:02	12:34	13:02	23:19	23:47	00:20	13:52	No Event	0.30%
2018-11-09	12:03	12:35	13:03	23:18	23:46	00:19	14:54	00:25	2.12%
2018-11-10	12:04	12:36	13:05	23:17	23:45	00:18	15:52	01:05	5.95%
2018-11-11	12:05	12:37	13:06	23:16	23:44	00:17	16:47	01:49	11.48%
2018-11-12	12:06	12:38	13:07	23:15	23:44	00:16	17:36	02:37	18.40%
2018-11-13	12:07	12:39	13:08	23:14	23:43	00:16	18:19	03:29	26.36%
2018-11-14	12:08	12:41	13:09	23:14	23:42	00:15	18:58	04:23	35.09%
2018-11-15	12:09	12:42	13:10	23:13	23:41	00:14	19:33	05:18	44.29%
2018-11-16	12:10	12:43	13:11	23:12	23:41	00:14	20:05	06:15	53.71%
2018-11-17	12:11	12:44	13:12	23:11	23:40	00:13	20:35	07:13	63.08%
2018-11-18	12:12	12:45	13:13	23:11	23:39	00:12	21:03	08:11	72.12%
2018-11-19	12:13	12:46	13:15	23:10	23:39	00:12	21:32	09:11	80.50%
2018-11-20	12:14	12:47	13:16	23:09	23:38	00:11	22:03	10:13	87.87%
2018-11-21	12:15	12:48	13:17	23:09	23:38	00:11	22:36	11:17	93.81%
2018-11-22	12:16	12:49	13:18	23:08	23:37	00:10	23:13	12:24	97.91%
2018-11-23	12:17	12:50	13:19	23:08	23:37	00:10	23:56	13:32	99.78%
2018-11-24	12:18	12:51	13:20	23:07	23:36	00:10	No Event	14:40	99.13%
2018-11-25	12:19	12:52	13:21	23:07	23:36	00:09	00:46	15:46	95.87%
2018-11-26	12:20	12:53	13:22	23:06	23:36	00:09	01:43	16:46	90.08%
2018-11-27	12:21	12:54	13:23	23:06	23:35	00:09	02:47	17:39	82.10%
2018-11-28	12:22	12:55	13:24	23:06	23:35	00:08	03:54	18:25	72.40%
2018-11-29	12:23	12:56	13:25	23:05	23:35	00:08	05:04	19:04	61.58%
2018-11-30	12:24	12:57	13:26	23:05	23:35	00:08	06:12	19:40	50.28%
2018-12-01	12:24	12:58	13:27	23:05	23:34	00:08	07:20	20:12	39.12%

Dec 2018 Solar Lunar Data



Date	Nautical Twilight Begin	Civil Twilight Begin	Sunrise	Sunset	Civil Twilight End	Nautical Twilight End	Moon Rise	Moon Set	% Illumination @ 0Z
2018-12-01	12:24	12:58	13:27	23:05	23:34	00:08	07:20	20:12	39.12%
2018-12-02	12:25	12:59	13:28	23:05	23:34	00:08	08:26	20:44	28.65%
2018-12-03	12:26	12:59	13:29	23:05	23:34	00:07	09:31	21:15	19.35%
2018-12-04	12:27	13:00	13:30	23:04	23:34	00:07	10:36	21:47	11.63%
2018-12-05	12:28	13:01	13:31	23:04	23:34	00:07	11:39	22:22	5.76%
2018-12-06	12:29	13:02	13:32	23:04	23:34	00:07	12:41	23:00	1.93%
2018-12-07	12:30	13:03	13:33	23:04	23:34	00:07	13:41	23:42	0.20%
2018-12-08	12:30	13:04	13:34	23:04	23:34	00:07	14:37	No Event	0.55%
2018-12-09	12:31	13:05	13:34	23:04	23:34	00:08	15:29	00:29	2.84%
2018-12-10	12:32	13:05	13:35	23:05	23:34	00:08	16:15	01:19	6.89%
2018-12-11	12:33	13:06	13:36	23:05	23:35	00:08	16:56	02:12	12.49%
2018-12-12	12:33	13:07	13:37	23:05	23:35	00:08	17:33	03:07	19.38%
2018-12-13	12:34	13:08	13:38	23:05	23:35	00:08	18:05	04:04	27.32%
2018-12-14	12:35	13:08	13:38	23:05	23:35	00:09	18:35	05:01	36.07%
2018-12-15	12:35	13:09	13:39	23:06	23:36	00:09	19:04	05:58	45.40%
2018-12-16	12:36	13:10	13:40	23:06	23:36	00:09	19:32	06:56	55.04%
2018-12-17	12:37	13:10	13:40	23:06	23:36	00:09	20:01	07:56	64.71%
2018-12-18	12:37	13:11	13:41	23:07	23:37	00:10	20:31	08:57	74.06%
2018-12-19	12:38	13:11	13:41	23:07	23:37	00:10	21:06	10:02	82.69%
2018-12-20	12:38	13:12	13:42	23:07	23:38	00:11	21:45	11:09	90.09%
2018-12-21	12:39	13:12	13:43	23:08	23:38	00:11	22:32	12:18	95.75%
2018-12-22	12:39	13:13	13:43	23:08	23:39	00:12	23:27	13:26	99.15%
2018-12-23	12:40	13:13	13:43	23:09	23:39	00:12	No Event	14:31	99.88%
2018-12-24	12:40	13:14	13:44	23:10	23:40	00:13	00:29	15:30	97.73%
2018-12-25	12:41	13:14	13:44	23:10	23:40	00:13	01:38	16:20	92.79%
2018-12-26	12:41	13:15	13:45	23:11	23:41	00:14	02:50	17:04	85.41%
2018-12-27	12:41	13:15	13:45	23:11	23:42	00:14	04:01	17:42	76.13%
2018-12-28	12:42	13:15	13:45	23:12	23:42	00:15	05:11	18:16	65.63%
2018-12-29	12:42	13:16	13:46	23:13	23:43	00:16	06:19	18:48	54.57%
2018-12-30	12:42	13:16	13:46	23:14	23:44	00:16	07:24	19:19	43.55%
2018-12-31	12:43	13:16	13:46	23:14	23:44	00:17	08:28	19:50	33.10%