

I slightly modified Thorstensen's code to print out the time between evening twilight and morning twilight. For Okie-Tex site (site code = o) near Kenton OK I used same time zone as for Oklahoma City.

W. Romanishin- August 2013 - email: wromanishin at ou.edu - Here is stuff from John T. intro:

***** 2025 Night-time Astronomical Calendar for Kitt Peak *****

By John Thorstensen, Dartmouth College

This calendar is designed to provide information useful for the planning of nighttime observations. The format should minimize confusion; each line gives the phenomena for a single (local!) night, and each line is labeled with both evening and morning (local) day and date. Note that all times given are LOCAL CIVIL (zone) times.

The rise/set times printed are the times at which the center of the object is 50 arcminutes below the geometrical horizon. At the given twilight, the center of the sun is 0.0 degrees below the geometrical horizon.

The moon positions (and rise/set times) are generated by an implementation of the Low-Precision formulae in the Astronomical Almanac. The Almanac states that the error seldom exceeds 0.3 degrees. Topocentric corrections are included. Comparisons with tables for Kitt Peak in the NOAO Newsletter indicate that the rise-set times are good to +- 2 min or so. The moon's RA, Dec, and illuminated fraction are given for local midnight, regardless of whether the moon is actually up at that time. Note that the moonrise and moonset times are not printed if they occur near mid-day.

The LST at evening and morning twilight are tabulated. This gives an accurate idea of the range of RA's accessible during the night.

The JD is given (severely rounded off) for local midnight. Again, this avoids any ambiguity.

Some credits: The sidereal time and Julian date routines were originally coded in PL/I by Steve Maker of Dartmouth College. The algorithms originated in the old American Ephemeris. The routine to convert JD back to calendar date is adapted from Numerical Recipes in C, by Press et al.

CAUTIONS: I believe that the program which generates these tables is reasonably accurate. However, it has not been exhaustively tested, so you should be sure to run 'sanity checks' on the results. Also, in view of the approximations used, the results should not be used when high precision is needed. Extension to dates far from the present (1990) should be done with great caution. The code has not been tested for the eastern or southern hemishpheres. Rise/set times are slightly inaccurate and rather confusing at circumpolar latitudes, where the concept of a 'night' is blurry.

The daylight savings time conventions (if used) are quite specific (to U. S., post-1986) and subject to change. I know that the code has many infelicities; if you should find actual errors, please notify
John.Thorstensen@dartmouth.edu

[This output comes from a (hopefully) portable, completely self-contained program in the c language. It is available from the author and may be used freely for scientific or educational purposes. If you use it for profit, please contact the author to arrange a (modest!) fee. Source code is copyright John Thorstensen, 1990.]

MOON PHASES FOR 2025, at Kitt Peak

Times and dates are given in local time, zone = 7 hr West.
They are generally better than +/- 2 minutes.

The end of the previous year and the beginning of the next
are included for continuity.

NEW		1ST		FULL		LAST	
Dec 30	15 28	Jan 06	16 58	Jan 13	15 28	Jan 21	13 32
Jan 29	5 37	Feb 05	1 04	Feb 12	6 54	Feb 20	10 35
Feb 27	17 47	Mar 06	9 34	Mar 13	23 56	Mar 22	4 32
Mar 29	4 00	Apr 04	19 17	Apr 12	17 24	Apr 20	18 38
Apr 27	12 33	May 04	6 53	May 12	9 58	May 20	5 01
May 26	20 04	Jun 02	20 42	Jun 11	0 46	Jun 18	12 21
Jun 25	3 34	Jul 02	12 30	Jul 10	13 39	Jul 17	17 40
Jul 24	12 12	Aug 01	5 41	Aug 09	0 57	Aug 15	22 14
Aug 22	23 07	Aug 30	23 26	Sep 07	11 11	Sep 14	3 35
Sep 21	12 55	Sep 29	16 55	Oct 06	20 49	Oct 13	11 15
Oct 21	5 26	Oct 29	9 22	Nov 05	6 20	Nov 11	22 30
Nov 19	23 48	Nov 27	24 00	Dec 04	16 15	Dec 11	13 53
Dec 19	18 44	Dec 27	12 11	Jan 03	3 04	Jan 10	8 49

Calendar for Kitt Peak, west longitude (h.m.s) = 7 26 28, latitude (d.m) = 31 57.2
 Rise/set times in Mountain time (7 hr W), for 500 m above surroundings, in standard time all year.
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

***** 2025 JANUARY *****

Date (eve/morn)		LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----					Twi-Twi hours
			set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	
Wed	Jan 01/Thu Jan 02	6 22	17 37	19 01	6 00	7 23	1 22	12 23	.....	19 34	6	20 57.9	-21 15	11.0
Thu	Jan 02/Fri Jan 03	6 26	17 38	19 01	6 00	7 24	1 27	12 28	.....	20 41	12	21 51.2	-16 13	11.0
Fri	Jan 03/Sat Jan 04	6 30	17 39	19 02	6 01	7 24	1 31	12 32	.....	21 47	21	22 42.4	-10 19	11.0
Sat	Jan 04/Sun Jan 05	6 34	17 40	19 03	6 01	7 24	1 36	12 36	.....	22 53	30	23 32.1	- 3 53	11.0
Sun	Jan 05/Mon Jan 06	6 38	17 41	19 04	6 01	7 24	1 41	12 40	.....	23 58	41	0 21.5	2 48	11.0
Mon	Jan 06/Tue Jan 07	6 42	17 41	19 04	6 01	7 24	1 45	12 44	.....	1 04	53	1 11.8	9 23	10.9
Tue	Jan 07/Wed Jan 08	6 46	17 42	19 05	6 01	7 24	1 50	12 48	.....	2 12	64	2 04.3	15 33	10.9
Wed	Jan 08/Thu Jan 09	6 50	17 43	19 06	6 01	7 24	1 55	12 52	.....	3 22	74	3 00.0	20 54	10.9
Thu	Jan 09/Fri Jan 10	6 54	17 44	19 06	6 01	7 24	1 59	12 56	.....	4 32	84	3 59.5	25 03	10.9
Fri	Jan 10/Sat Jan 11	6 58	17 45	19 07	6 01	7 24	2 04	13 00	.....	5 41	91	5 02.0	27 38	10.9
Sat	Jan 11/Sun Jan 12	7 02	17 45	19 08	6 01	7 24	2 09	13 04	.....	6 44	96	6 05.9	28 24	10.9
Sun	Jan 12/Mon Jan 13	7 06	17 46	19 09	6 01	7 24	2 14	13 08	16 25	7 37	99	7 08.8	27 19	10.9
Mon	Jan 13/Tue Jan 14	7 10	17 47	19 09	6 01	7 24	2 18	13 12	17 31	.....	100	8 08.5	24 35	10.9
Tue	Jan 14/Wed Jan 15	7 13	17 48	19 10	6 01	7 23	2 23	13 16	18 37	.....	98	9 03.8	20 33	10.9
Wed	Jan 15/Thu Jan 16	7 17	17 49	19 11	6 01	7 23	2 28	13 20	19 40	.....	94	9 54.6	15 38	10.8
Thu	Jan 16/Fri Jan 17	7 21	17 50	19 12	6 01	7 23	2 32	13 23	20 41	.....	88	10 41.7	10 09	10.8
Fri	Jan 17/Sat Jan 18	7 25	17 51	19 13	6 01	7 23	2 37	13 27	21 38	.....	81	11 26.1	4 24	10.8
Sat	Jan 18/Sun Jan 19	7 29	17 52	19 13	6 01	7 22	2 42	13 31	22 33	.....	73	12 08.8	- 1 23	10.8
Sun	Jan 19/Mon Jan 20	7 33	17 53	19 14	6 01	7 22	2 47	13 35	23 27	.....	64	12 51.1	- 7 02	10.8
Mon	Jan 20/Tue Jan 21	7 37	17 53	19 15	6 00	7 22	2 51	13 38	0 22	.....	55	13 33.9	-12 24	10.8
Tue	Jan 21/Wed Jan 22	7 41	17 54	19 16	6 00	7 21	2 56	13 42	1 18	.....	45	14 18.4	-17 20	10.7
Wed	Jan 22/Thu Jan 23	7 45	17 55	19 17	6 00	7 21	3 01	13 46	2 15	.....	36	15 05.4	-21 38	10.7
Thu	Jan 23/Fri Jan 24	7 49	17 56	19 17	6 00	7 20	3 06	13 49	3 15	.....	27	15 55.5	-25 06	10.7
Fri	Jan 24/Sat Jan 25	7 53	17 57	19 18	5 59	7 20	3 10	13 53	4 16	.....	19	16 49.0	-27 31	10.7
Sat	Jan 25/Sun Jan 26	7 57	17 58	19 19	5 59	7 20	3 15	13 57	5 15	.....	12	17 45.6	-28 36	10.7
Sun	Jan 26/Mon Jan 27	8 01	17 59	19 20	5 58	7 19	3 20	14 00	6 09	.....	6	18 43.9	-28 11	10.6
Mon	Jan 27/Tue Jan 28	8 05	18 00	19 21	5 58	7 18	3 25	14 04	6 59	16 09	2	19 42.5	-26 11	10.6
Tue	Jan 28/Wed Jan 29	8 09	18 01	19 21	5 58	7 18	3 29	14 07	7 41	17 16	0	20 39.9	-22 40	10.6
Wed	Jan 29/Thu Jan 30	8 13	18 02	19 22	5 57	7 17	3 34	14 11	.....	18 26	1	21 35.0	-17 51	10.6
Thu	Jan 30/Fri Jan 31	8 17	18 03	19 23	5 57	7 17	3 39	14 14	.....	19 34	4	22 27.9	-12 00	10.6
Fri	Jan 31/Sat Feb 01	8 21	18 04	19 24	5 56	7 16	3 43	14 18	.....	20 42	9	23 19.0	- 5 30	10.5

***** 2025 FEBRUARY *****

Date (eve/morn)		LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----					Twi-Twi hours
			set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	
Sat	Feb 01/Sun Feb 02	8 24	18 04	19 25	5 56	7 15	3 48	14 21	.....	21 49	17	0 09.2	1 18	10.5
Sun	Feb 02/Mon Feb 03	8 28	18 05	19 25	5 55	7 15	3 53	14 24	.....	22 56	27	0 59.8	8 02	10.5
Mon	Feb 03/Tue Feb 04	8 32	18 06	19 26	5 54	7 14	3 58	14 28	.....	0 04	37	1 51.9	14 21	10.5
Tue	Feb 04/Wed Feb 05	8 36	18 07	19 27	5 54	7 13	4 02	14 31	.....	1 14	49	2 46.5	19 53	10.4
Wed	Feb 05/Thu Feb 06	8 40	18 08	19 28	5 53	7 12	4 07	14 34	.....	2 24	60	3 44.2	24 16	10.4
Thu	Feb 06/Fri Feb 07	8 44	18 09	19 28	5 52	7 12	4 12	14 38	.....	3 32	71	4 44.7	27 12	10.4
Fri	Feb 07/Sat Feb 08	8 48	18 10	19 29	5 52	7 11	4 17	14 41	.....	4 35	80	5 46.9	28 25	10.4
Sat	Feb 08/Sun Feb 09	8 52	18 11	19 30	5 51	7 10	4 21	14 44	.....	5 31	88	6 48.8	27 52	10.4
Sun	Feb 09/Mon Feb 10	8 56	18 12	19 31	5 50	7 09	4 26	14 47	.....	6 18	94	7 48.3	25 39	10.3
Mon	Feb 10/Tue Feb 11	9 00	18 12	19 32	5 49	7 08	4 31	14 50	16 23	6 57	98	8 44.2	22 03	10.3
Tue	Feb 11/Wed Feb 12	9 04	18 13	19 32	5 49	7 07	4 35	14 54	17 27	7 30	100	9 36.1	17 25	10.3
Wed	Feb 12/Thu Feb 13	9 08	18 14	19 33	5 48	7 07	4 40	14 57	18 28	.....	99	10 24.3	12 05	10.2
Thu	Feb 13/Fri Feb 14	9 12	18 15	19 34	5 47	7 06	4 45	15 00	19 26	.....	97	11 09.7	6 21	10.2
Fri	Feb 14/Sat Feb 15	9 16	18 16	19 35	5 46	7 05	4 50	15 03	20 22	.....	93	11 53.2	0 28	10.2
Sat	Feb 15/Sun Feb 16	9 20	18 17	19 35	5 45	7 04	4 54	15 06	21 17	.....	87	12 35.9	- 5 20	10.2
Sun	Feb 16/Mon Feb 17	9 24	18 18	19 36	5 44	7 03	4 59	15 09	22 12	.....	80	13 18.8	-10 53	10.1
Mon	Feb 17/Tue Feb 18	9 28	18 18	19 37	5 43	7 02	5 04	15 12	23 07	.....	72	14 02.9	-16 01	10.1
Tue	Feb 18/Wed Feb 19	9 31	18 19	19 38	5 43	7 01	5 08	15 15	0 04	.....	63	14 49.0	-20 34	10.1
Wed	Feb 19/Thu Feb 20	9 35	18 20	19 38	5 42	7 00	5 13	15 18	1 02	.....	53	15 37.8	-24 19	10.1
Thu	Feb 20/Fri Feb 21	9 39	18 21	19 39	5 41	6 59	5 18	15 21	2 02	.....	44	16 29.8	-27 05	10.0
Fri	Feb 21/Sat Feb 22	9 43	18 22	19 40	5 40	6 58	5 22	15 24	3 00	.....	34	17 24.7	-28 38	10.0
Sat	Feb 22/Sun Feb 23	9 47	18 23	19 41	5 39	6 57	5 27	15 27	3 56	.....	25	18 21.9	-28 47	10.0
Sun	Feb 23/Mon Feb 24	9 51	18 23	19 41	5 38	6 55	5 32	15 30	4 48	.....	17	19 20.0	-27 22	9.9
Mon	Feb 24/Tue Feb 25	9 55	18 24	19 42	5 37	6 54	5 36	15 33	5 33	.....	10	20 17.6	-24 26	9.9
Tue	Feb 25/Wed Feb 26	9 59	18 25	19 43	5 35	6 53	5 41	15 35	6 13	.....	4	21 13.6	-20 03	9.9
Wed	Feb 26/Thu Feb 27	10 03	18 26	19 44	5 34	6 52	5 46	15 38	6 48	17 12	1	22 07.8	-14 30	9.8
Thu	Feb 27/Fri Feb 28	10 07	18 26	19 44	5 33	6 51	5 51	15 41	7 20	18 22	0	23 00.3	- 8 04	9.8
Fri	Feb 28/Sat Mar 01	10 11	18 27	19 45	5 32	6 50	5 55	15 44	.....	19 31	2	23 51.9	- 1 09	9.8

Calendar for Kitt Peak, west longitude (h.m.s) = 7 26 28, latitude (d.m) = 31 57.2
 Rise/set times in Mountain time (7 hr W), for 500 m above surroundings, in standard time all year.
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

***** 2025 MARCH *****

Date (eve/morn)	LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----				Twilight	
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Sat Mar 01/Sun Mar 02	10 15	18 28	19 46	5 31	6 49	6 00	15 47	.....	20 40	7	0 43.7	5 52	9.8
Sun Mar 02/Mon Mar 03	10 19	18 29	19 47	5 30	6 47	6 05	15 50	.....	21 51	14	1 36.6	12 33	9.7
Mon Mar 03/Tue Mar 04	10 23	18 30	19 47	5 29	6 46	6 09	15 52	.....	23 02	23	2 31.8	18 29	9.7
Tue Mar 04/Wed Mar 05	10 27	18 30	19 48	5 27	6 45	6 14	15 55	.....	0 14	34	3 29.7	23 17	9.7
Wed Mar 05/Thu Mar 06	10 31	18 31	19 49	5 26	6 44	6 19	15 58	.....	1 25	45	4 30.1	26 37	9.6
Thu Mar 06/Fri Mar 07	10 35	18 32	19 49	5 25	6 43	6 23	16 01	.....	2 30	56	5 32.0	28 15	9.6
Fri Mar 07/Sat Mar 08	10 38	18 32	19 50	5 24	6 41	6 28	16 03	.....	3 28	67	6 33.6	28 07	9.6
Sat Mar 08/Sun Mar 09	10 42	18 33	19 51	5 23	6 40	6 33	16 06	.....	4 17	76	7 33.0	26 19	9.5
Sun Mar 09/Mon Mar 10	10 46	18 34	19 52	5 21	6 39	6 37	16 09	.....	4 58	85	8 28.9	23 06	9.5
Mon Mar 10/Tue Mar 11	10 50	18 35	19 52	5 20	6 38	6 42	16 11	.....	5 32	91	9 21.0	18 46	9.5
Tue Mar 11/Wed Mar 12	10 54	18 35	19 53	5 19	6 37	6 47	16 14	.....	6 02	96	10 09.5	13 40	9.4
Wed Mar 12/Thu Mar 13	10 58	18 36	19 54	5 18	6 35	6 51	16 17	17 17	6 28	99	10 55.1	8 04	9.4
Thu Mar 13/Fri Mar 14	11 02	18 37	19 55	5 16	6 34	6 56	16 19	18 14	6 53	100	11 38.9	2 14	9.4
Fri Mar 14/Sat Mar 15	11 06	18 37	19 55	5 15	6 33	7 01	16 22	19 09	7 17	99	12 21.8	- 3 38	9.3
Sat Mar 15/Sun Mar 16	11 10	18 38	19 56	5 14	6 31	7 05	16 25	20 03	.....	96	13 04.7	- 9 19	9.3
Sun Mar 16/Mon Mar 17	11 14	18 39	19 57	5 12	6 30	7 10	16 27	20 59	.....	92	13 48.5	-14 39	9.3
Mon Mar 17/Tue Mar 18	11 18	18 40	19 58	5 11	6 29	7 15	16 30	21 55	.....	86	14 34.2	-19 26	9.2
Tue Mar 18/Wed Mar 19	11 22	18 40	19 58	5 10	6 28	7 20	16 32	22 52	.....	78	15 22.2	-23 28	9.2
Wed Mar 19/Thu Mar 20	11 26	18 41	19 59	5 08	6 26	7 24	16 35	23 51	.....	70	16 13.1	-26 33	9.2
Thu Mar 20/Fri Mar 21	11 30	18 42	20 00	5 07	6 25	7 29	16 38	0 49	.....	61	17 06.7	-28 30	9.1
Fri Mar 21/Sat Mar 22	11 34	18 42	20 01	5 06	6 24	7 34	16 40	1 45	.....	51	18 02.4	-29 06	9.1
Sat Mar 22/Sun Mar 23	11 38	18 43	20 01	5 04	6 23	7 38	16 43	2 37	.....	41	18 59.3	-28 15	9.0
Sun Mar 23/Mon Mar 24	11 42	18 44	20 02	5 03	6 21	7 43	16 45	3 24	.....	31	19 56.0	-25 55	9.0
Mon Mar 24/Tue Mar 25	11 46	18 44	20 03	5 01	6 20	7 48	16 48	4 05	.....	22	20 51.7	-22 09	9.0
Tue Mar 25/Wed Mar 26	11 49	18 45	20 04	5 00	6 19	7 53	16 50	4 42	.....	13	21 45.7	-17 07	8.9
Wed Mar 26/Thu Mar 27	11 53	18 46	20 05	4 59	6 17	7 57	16 53	5 15	.....	7	22 38.3	-11 04	8.9
Thu Mar 27/Fri Mar 28	11 57	18 46	20 05	4 57	6 16	8 02	16 55	5 47	17 06	2	23 30.2	- 4 19	8.9
Fri Mar 28/Sat Mar 29	12 01	18 47	20 06	4 56	6 15	8 07	16 58	6 19	18 16	0	0 22.3	2 47	8.8
Sat Mar 29/Sun Mar 30	12 05	18 48	20 07	4 54	6 14	8 12	17 00	6 52	19 27	1	1 15.6	9 47	8.8
Sun Mar 30/Mon Mar 31	12 09	18 49	20 08	4 53	6 12	8 16	17 03	.....	20 41	5	2 11.3	16 13	8.8
Mon Mar 31/Tue Apr 01	12 13	18 49	20 09	4 52	6 11	8 21	17 06	.....	21 55	11	3 09.9	21 37	8.7

***** 2025 APRIL *****

Date (eve/morn)	LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----				Twilight	
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Tue Apr 01/Wed Apr 02	12 17	18 50	20 09	4 50	6 10	8 26	17 08	.....	23 10	20	4 11.3	25 34	8.7
Wed Apr 02/Thu Apr 03	12 21	18 51	20 10	4 49	6 08	8 31	17 11	.....	0 20	30	5 14.5	27 46	8.6
Thu Apr 03/Fri Apr 04	12 25	18 51	20 11	4 47	6 07	8 35	17 13	.....	1 22	41	6 17.5	28 07	8.6
Fri Apr 04/Sat Apr 05	12 29	18 52	20 12	4 46	6 06	8 40	17 16	.....	2 15	51	7 18.2	26 43	8.6
Sat Apr 05/Sun Apr 06	12 33	18 53	20 13	4 45	6 05	8 45	17 18	.....	2 59	62	8 15.2	23 49	8.5
Sun Apr 06/Mon Apr 07	12 37	18 53	20 14	4 43	6 03	8 50	17 21	.....	3 35	72	9 08.0	19 46	8.5
Mon Apr 07/Tue Apr 08	12 41	18 54	20 14	4 42	6 02	8 55	17 23	.....	4 05	80	9 56.9	14 52	8.5
Tue Apr 08/Wed Apr 09	12 45	18 55	20 15	4 40	6 01	8 59	17 26	.....	4 32	88	10 42.7	9 27	8.4
Wed Apr 09/Thu Apr 10	12 49	18 55	20 16	4 39	6 00	9 04	17 28	.....	4 57	93	11 26.5	3 43	8.4
Thu Apr 10/Fri Apr 11	12 53	18 56	20 17	4 38	5 59	9 09	17 31	17 03	5 22	97	12 09.2	- 2 07	8.3
Fri Apr 11/Sat Apr 12	12 56	18 57	20 18	4 36	5 57	9 14	17 33	17 57	5 46	100	12 51.9	- 7 50	8.3
Sat Apr 12/Sun Apr 13	13 00	18 57	20 19	4 35	5 56	9 19	17 36	18 52	6 12	100	13 35.4	-13 17	8.3
Sun Apr 13/Mon Apr 14	13 04	18 58	20 20	4 33	5 55	9 24	17 38	19 48	6 41	98	14 20.6	-18 15	8.2
Mon Apr 14/Tue Apr 15	13 08	18 59	20 21	4 32	5 54	9 28	17 41	20 45	.....	95	15 08.2	-22 31	8.2
Tue Apr 15/Wed Apr 16	13 12	18 59	20 22	4 31	5 53	9 33	17 44	21 43	.....	90	15 58.5	-25 54	8.1
Wed Apr 16/Thu Apr 17	13 16	19 00	20 23	4 29	5 51	9 38	17 46	22 42	.....	84	16 51.5	-28 11	8.1
Thu Apr 17/Fri Apr 18	13 20	19 01	20 23	4 28	5 50	9 43	17 49	23 38	.....	76	17 46.6	-29 10	8.1
Fri Apr 18/Sat Apr 19	13 24	19 02	20 24	4 26	5 49	9 48	17 51	0 31	.....	67	18 42.7	-28 44	8.0
Sat Apr 19/Sun Apr 20	13 28	19 02	20 25	4 25	5 48	9 53	17 54	1 18	.....	57	19 38.7	-26 52	8.0
Sun Apr 20/Mon Apr 21	13 32	19 03	20 26	4 24	5 47	9 58	17 56	2 00	.....	47	20 33.5	-23 37	8.0
Mon Apr 21/Tue Apr 22	13 36	19 04	20 27	4 22	5 46	10 03	17 59	2 38	.....	37	21 26.8	-19 07	7.9
Tue Apr 22/Wed Apr 23	13 40	19 04	20 28	4 21	5 45	10 07	18 02	3 11	.....	26	22 18.5	-13 35	7.9
Wed Apr 23/Thu Apr 24	13 44	19 05	20 29	4 20	5 44	10 12	18 04	3 42	.....	17	23 09.3	- 7 14	7.8
Thu Apr 24/Fri Apr 25	13 48	19 06	20 30	4 18	5 43	10 17	18 07	4 13	.....	9	0 00.2	- 0 23	7.8
Fri Apr 25/Sat Apr 26	13 52	19 07	20 31	4 17	5 42	10 22	18 10	4 46	.....	4	0 52.4	6 37	7.8
Sat Apr 26/Sun Apr 27	13 56	19 07	20 32	4 16	5 41	10 27	18 12	5 21	18 13	0	1 47.0	13 19	7.7
Sun Apr 27/Mon Apr 28	14 00	19 08	20 33	4 15	5 40	10 32	18 15	6 01	19 28	0	2 44.9	19 15	7.7
Mon Apr 28/Tue Apr 29	14 04	19 09	20 34	4 13	5 39	10 37	18 18	.....	20 44	3	3 46.5	23 55	7.7
Tue Apr 29/Wed Apr 30	14 07	19 09	20 35	4 12	5 38	10 42	18 20	.....	21 59	9	4 50.8	26 52	7.6
Wed Apr 30/Thu May 01	14 11	19 10	20 36	4 11	5 37	10 47	18 23	.....	23 08	17	5 55.8	27 54	7.6

Calendar for Kitt Peak, west longitude (h.m.s) = 7 26 28, latitude (d.m) = 31 57.2
 Rise/set times in Mountain time (7 hr W), for 500 m above surroundings, in standard time all year.
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

***** 2025 MAY *****

Date (eve/morn)	LMST midn	----- Sun: -----			LST twilight:		----- Moon: -----				Twi-Twi hours		
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	
Thu May 01/Fri May 02	14 15	19 11	20 37	4 10	5 36	10 52	18 26	.....	0 07	26	6 59.1	27 01	7.5
Fri May 02/Sat May 03	14 19	19 12	20 38	4 08	5 35	10 57	18 28	.....	0 55	36	7 58.5	24 30	7.5
Sat May 03/Sun May 04	14 23	19 12	20 39	4 07	5 34	11 02	18 31	.....	1 35	46	8 53.4	20 41	7.5
Sun May 04/Mon May 05	14 27	19 13	20 40	4 06	5 33	11 07	18 34	.....	2 08	57	9 43.7	15 58	7.4
Mon May 05/Tue May 06	14 31	19 14	20 41	4 05	5 32	11 12	18 37	.....	2 36	67	10 30.4	10 39	7.4
Tue May 06/Wed May 07	14 35	19 14	20 42	4 04	5 31	11 16	18 39	.....	3 02	75	11 14.6	5 00	7.4
Wed May 07/Thu May 08	14 39	19 15	20 43	4 03	5 31	11 21	18 42	.....	3 26	83	11 57.3	- 0 46	7.3
Thu May 08/Fri May 09	14 43	19 16	20 44	4 02	5 30	11 26	18 45	.....	3 50	90	12 39.7	- 6 29	7.3
Fri May 09/Sat May 10	14 47	19 17	20 45	4 00	5 29	11 31	18 48	.....	4 16	95	13 22.8	-11 58	7.3
Sat May 10/Sun May 11	14 51	19 17	20 46	3 59	5 28	11 36	18 51	17 42	4 44	98	14 07.5	-17 03	7.2
Sun May 11/Mon May 12	14 55	19 18	20 47	3 58	5 27	11 41	18 54	18 39	5 15	100	14 54.5	-21 31	7.2
Mon May 12/Tue May 13	14 59	19 19	20 48	3 57	5 27	11 46	18 57	19 37	5 52	99	15 44.4	-25 09	7.2
Tue May 13/Wed May 14	15 03	19 19	20 49	3 56	5 26	11 51	19 00	20 36	.....	97	16 37.1	-27 44	7.1
Wed May 14/Thu May 15	15 07	19 20	20 50	3 55	5 25	11 56	19 03	21 33	.....	93	17 32.1	-29 03	7.1
Thu May 15/Fri May 16	15 11	19 21	20 51	3 55	5 25	12 01	19 06	22 27	.....	88	18 28.4	-28 58	7.1
Fri May 16/Sat May 17	15 14	19 21	20 52	3 54	5 24	12 06	19 09	23 16	.....	81	19 24.5	-27 26	7.0
Sat May 17/Sun May 18	15 18	19 22	20 53	3 53	5 23	12 11	19 12	23 59	.....	72	20 19.4	-24 32	7.0
Sun May 18/Mon May 19	15 22	19 23	20 54	3 52	5 23	12 16	19 15	0 37	.....	62	21 12.3	-20 24	7.0
Mon May 19/Tue May 20	15 26	19 24	20 55	3 51	5 22	12 21	19 18	1 10	.....	52	22 03.3	-15 14	6.9
Tue May 20/Wed May 21	15 30	19 24	20 56	3 50	5 22	12 25	19 21	1 41	.....	41	22 53.1	- 9 17	6.9
Wed May 21/Thu May 22	15 34	19 25	20 57	3 49	5 21	12 30	19 24	2 11	.....	30	23 42.5	- 2 46	6.9
Thu May 22/Fri May 23	15 38	19 26	20 58	3 49	5 21	12 35	19 27	2 41	.....	20	0 32.7	4 00	6.9
Fri May 23/Sat May 24	15 42	19 26	20 59	3 48	5 20	12 40	19 31	3 14	.....	12	1 25.0	10 40	6.8
Sat May 24/Sun May 25	15 46	19 27	20 59	3 47	5 20	12 45	19 34	3 51	.....	5	2 20.6	16 50	6.8
Sun May 25/Mon May 26	15 50	19 27	21 00	3 47	5 19	12 50	19 37	4 35	18 16	1	3 20.2	21 59	6.8
Mon May 26/Tue May 27	15 54	19 28	21 01	3 46	5 19	12 55	19 40	5 27	19 32	0	4 23.5	25 39	6.7
Tue May 27/Wed May 28	15 58	19 29	21 02	3 45	5 19	12 59	19 44	6 28	20 46	2	5 29.2	27 28	6.7
Wed May 28/Thu May 29	16 02	19 29	21 03	3 45	5 18	13 04	19 47	.....	21 51	7	6 34.5	27 18	6.7
Thu May 29/Fri May 30	16 06	19 30	21 04	3 44	5 18	13 09	19 51	.....	22 45	13	7 36.8	25 17	6.7
Fri May 30/Sat May 31	16 10	19 31	21 05	3 44	5 18	13 14	19 54	.....	23 30	22	8 34.6	21 48	6.7
Sat May 31/Sun Jun 01	16 14	19 31	21 05	3 43	5 17	13 18	19 57	.....	0 06	31	9 27.4	17 14	6.6

***** 2025 JUNE *****

Date (eve/morn)	LMST midn	----- Sun: -----			LST twilight:		----- Moon: -----				Twi-Twi hours		
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	
Sun Jun 01/Mon Jun 02	16 18	19 32	21 06	3 43	5 17	13 23	20 01	.....	0 37	41	10 15.9	12 00	6.6
Mon Jun 02/Tue Jun 03	16 21	19 32	21 07	3 42	5 17	13 28	20 04	.....	1 04	51	11 01.2	6 23	6.6
Tue Jun 03/Wed Jun 04	16 25	19 33	21 08	3 42	5 17	13 33	20 08	.....	1 29	61	11 44.5	0 37	6.6
Wed Jun 04/Thu Jun 05	16 29	19 33	21 08	3 42	5 17	13 37	20 12	.....	1 54	70	12 27.0	- 5 07	6.6
Thu Jun 05/Fri Jun 06	16 33	19 34	21 09	3 41	5 16	13 42	20 15	.....	2 19	78	13 09.8	-10 39	6.5
Fri Jun 06/Sat Jun 07	16 37	19 34	21 10	3 41	5 16	13 46	20 19	.....	2 46	85	13 53.8	-15 49	6.5
Sat Jun 07/Sun Jun 08	16 41	19 35	21 10	3 41	5 16	13 51	20 23	.....	3 16	91	14 40.1	-20 26	6.5
Sun Jun 08/Mon Jun 09	16 45	19 35	21 11	3 41	5 16	13 55	20 26	.....	3 51	96	15 29.2	-24 18	6.5
Mon Jun 09/Tue Jun 10	16 49	19 36	21 11	3 40	5 16	14 00	20 30	18 28	4 32	99	16 21.4	-27 11	6.5
Tue Jun 10/Wed Jun 11	16 53	19 36	21 12	3 40	5 16	14 05	20 34	19 27	5 20	100	17 16.4	-28 51	6.5
Wed Jun 11/Thu Jun 12	16 57	19 36	21 12	3 40	5 16	14 09	20 38	20 22	6 14	99	18 13.1	-29 07	6.5
Thu Jun 12/Fri Jun 13	17 01	19 37	21 13	3 40	5 16	14 13	20 42	21 13	.....	96	19 10.0	-27 55	6.5
Fri Jun 13/Sat Jun 14	17 05	19 37	21 13	3 40	5 16	14 18	20 46	21 58	.....	91	20 05.9	-25 17	6.4
Sat Jun 14/Sun Jun 15	17 09	19 38	21 14	3 40	5 16	14 22	20 50	22 37	.....	84	20 59.6	-21 22	6.4
Sun Jun 15/Mon Jun 16	17 13	19 38	21 14	3 40	5 16	14 27	20 54	23 12	.....	76	21 51.1	-16 24	6.4
Mon Jun 16/Tue Jun 17	17 17	19 38	21 15	3 40	5 17	14 31	20 58	23 43	.....	66	22 40.8	-10 37	6.4
Tue Jun 17/Wed Jun 18	17 21	19 39	21 15	3 40	5 17	14 35	21 02	0 13	.....	55	23 29.5	- 4 18	6.4
Wed Jun 18/Thu Jun 19	17 25	19 39	21 15	3 41	5 17	14 39	21 06	0 42	.....	44	0 18.3	2 17	6.4
Thu Jun 19/Fri Jun 20	17 29	19 39	21 15	3 41	5 17	14 44	21 10	1 12	.....	33	1 08.6	8 50	6.4
Fri Jun 20/Sat Jun 21	17 32	19 39	21 16	3 41	5 17	14 48	21 14	1 46	.....	23	2 01.6	15 00	6.4
Sat Jun 21/Sun Jun 22	17 36	19 40	21 16	3 41	5 18	14 52	21 18	2 25	.....	14	2 58.4	20 22	6.4
Sun Jun 22/Mon Jun 23	17 40	19 40	21 16	3 41	5 18	14 56	21 22	3 12	.....	7	3 59.2	24 29	6.4
Mon Jun 23/Tue Jun 24	17 44	19 40	21 16	3 42	5 18	15 00	21 27	4 08	18 22	2	5 03.3	26 57	6.4
Tue Jun 24/Wed Jun 25	17 48	19 40	21 16	3 42	5 18	15 04	21 31	5 13	19 31	0	6 08.7	27 30	6.4
Wed Jun 25/Thu Jun 26	17 52	19 40	21 16	3 42	5 19	15 08	21 35	6 22	20 31	1	7 12.5	26 08	6.4
Thu Jun 26/Fri Jun 27	17 56	19 40	21 16	3 43	5 19	15 12	21 40	.....	21 21	5	8 12.6	23 06	6.4
Fri Jun 27/Sat Jun 28	18 00	19 40	21 16	3 43	5 19	15 16	21 44	.....	22 01	10	9 07.9	18 49	6.4
Sat Jun 28/Sun Jun 29	18 04	19 40	21 16	3 44	5 20	15 20	21 48	.....	22 35	17	9 58.6	13 41	6.5
Sun Jun 29/Mon Jun 30	18 08	19 40	21 16	3 44	5 20	15 24	21 53	.....	23 04	26	10 45.6	8 04	6.5
Mon Jun 30/Tue Jul 01	18 12	19 40	21 16	3 45	5 21	15 28	21 57	.....	23 30	35	11 30.0	2 15	6.5

Calendar for Kitt Peak, west longitude (h.m.s) = 7 26 28, latitude (d.m) = 31 57.2
 Rise/set times in Mountain time (7 hr W), for 500 m above surroundings, in standard time all year.
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

***** 2025 JULY *****

Date (eve/morn)		LMST	----- Sun: -----					LST twilight:		----- Moon: -----					Twi-Twi
		midn	set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours	
Tue Jul 01/Wed Jul 02		18 16	19 40	21 16	3 45	5 21	15 31	22 02	.....	23 56	45	12 13.0	- 3 33	6.5
Wed Jul 02/Thu Jul 03		18 20	19 40	21 16	3 46	5 21	15 35	22 06	.....	0 21	54	12 55.7	- 9 10	6.5
Thu Jul 03/Fri Jul 04		18 24	19 40	21 16	3 46	5 22	15 39	22 11	.....	0 47	63	13 39.3	-14 27	6.5
Fri Jul 04/Sat Jul 05		18 28	19 40	21 15	3 47	5 22	15 42	22 15	.....	1 16	72	14 24.7	-19 14	6.5
Sat Jul 05/Sun Jul 06		18 32	19 40	21 15	3 48	5 23	15 46	22 20	.....	1 49	80	15 12.8	-23 19	6.5
Sun Jul 06/Mon Jul 07		18 36	19 40	21 15	3 48	5 23	15 50	22 25	.....	2 28	87	16 03.9	-26 30	6.6
Mon Jul 07/Tue Jul 08		18 39	19 40	21 14	3 49	5 24	15 53	22 29	.....	3 13	93	16 58.2	-28 32	6.6
Tue Jul 08/Wed Jul 09		18 43	19 39	21 14	3 50	5 24	15 57	22 34	18 15	4 06	97	17 54.7	-29 13	6.6	
Wed Jul 09/Thu Jul 10		18 47	19 39	21 13	3 51	5 25	16 00	22 39	19 08	5 05	99	18 52.3	-28 26	6.6	
Thu Jul 10/Fri Jul 11		18 51	19 39	21 13	3 51	5 25	16 04	22 43	19 55	6 07	100	19 49.4	-26 08	6.6	
Fri Jul 11/Sat Jul 12		18 55	19 38	21 12	3 52	5 26	16 07	22 48	20 37	.....	98	20 44.7	-22 28	6.7
Sat Jul 12/Sun Jul 13		18 59	19 38	21 12	3 53	5 27	16 11	22 53	21 13	.....	93	21 37.7	-17 38	6.7
Sun Jul 13/Mon Jul 14		19 03	19 38	21 11	3 54	5 27	16 14	22 57	21 46	.....	87	22 28.5	-11 54	6.7
Mon Jul 14/Tue Jul 15		19 07	19 37	21 11	3 54	5 28	16 17	23 02	22 16	.....	79	23 17.8	- 5 36	6.7
Tue Jul 15/Wed Jul 16		19 11	19 37	21 10	3 55	5 28	16 21	23 07	22 45	.....	69	0 06.8	1 00	6.8
Wed Jul 16/Thu Jul 17		19 15	19 37	21 09	3 56	5 29	16 24	23 12	23 14	.....	58	0 56.4	7 35	6.8
Thu Jul 17/Fri Jul 18		19 19	19 36	21 09	3 57	5 30	16 27	23 17	23 46	.....	46	1 48.1	13 48	6.8
Fri Jul 18/Sat Jul 19		19 23	19 36	21 08	3 58	5 30	16 30	23 21	0 22	.....	35	2 42.9	19 17	6.8
Sat Jul 19/Sun Jul 20		19 27	19 35	21 07	3 59	5 31	16 34	23 26	1 05	.....	25	3 41.3	23 40	6.9
Sun Jul 20/Mon Jul 21		19 31	19 35	21 06	4 00	5 31	16 37	23 31	1 56	.....	15	4 43.2	26 33	6.9
Mon Jul 21/Tue Jul 22		19 35	19 34	21 06	4 01	5 32	16 40	23 36	2 56	.....	8	5 47.0	27 39	6.9
Tue Jul 22/Wed Jul 23		19 39	19 34	21 05	4 01	5 33	16 43	23 41	4 02	18 18	3	6 50.5	26 53	6.9	
Wed Jul 23/Thu Jul 24		19 43	19 33	21 04	4 02	5 33	16 46	23 46	5 12	19 11	0	7 51.3	24 23	7.0	
Thu Jul 24/Fri Jul 25		19 47	19 32	21 03	4 03	5 34	16 49	23 50	6 20	19 55	0	8 48.1	20 29	7.0	
Fri Jul 25/Sat Jul 26		19 50	19 32	21 02	4 04	5 35	16 52	23 55	.....	20 32	3	9 40.4	15 34	7.0
Sat Jul 26/Sun Jul 27		19 54	19 31	21 01	4 05	5 35	16 55	0 00	.....	21 03	7	10 28.9	10 02	7.1
Sun Jul 27/Mon Jul 28		19 58	19 30	21 00	4 06	5 36	16 58	0 05	.....	21 30	13	11 14.4	4 12	7.1
Mon Jul 28/Tue Jul 29		20 02	19 30	20 59	4 07	5 37	17 01	0 10	.....	21 56	20	11 58.1	- 1 42	7.1
Tue Jul 29/Wed Jul 30		20 06	19 29	20 58	4 08	5 37	17 04	0 15	.....	22 21	29	12 41.0	- 7 26	7.2
Wed Jul 30/Thu Jul 31		20 10	19 28	20 57	4 09	5 38	17 07	0 20	.....	22 47	38	13 24.4	-12 52	7.2
Thu Jul 31/Fri Aug 01		20 14	19 27	20 56	4 10	5 39	17 10	0 25	.....	23 15	47	14 09.1	-17 50	7.2

***** 2025 AUGUST *****

Date (eve/morn)		LMST	----- Sun: -----					LST twilight:		----- Moon: -----					Twi-Twi
		midn	set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours	
Fri Aug 01/Sat Aug 02		20 18	19 27	20 55	4 11	5 39	17 13	0 30	.....	23 47	57	14 55.9	-22 08	7.3
Sat Aug 02/Sun Aug 03		20 22	19 26	20 54	4 12	5 40	17 15	0 34	.....	0 23	66	15 45.6	-25 36	7.3
Sun Aug 03/Mon Aug 04		20 26	19 25	20 53	4 13	5 41	17 18	0 39	.....	1 06	75	16 38.4	-28 01	7.3
Mon Aug 04/Tue Aug 05		20 30	19 24	20 52	4 14	5 41	17 21	0 44	.....	1 55	83	17 33.9	-29 11	7.4
Tue Aug 05/Wed Aug 06		20 34	19 23	20 50	4 15	5 42	17 24	0 49	.....	2 51	90	18 31.1	-28 54	7.4
Wed Aug 06/Thu Aug 07		20 38	19 22	20 49	4 16	5 43	17 26	0 54	17 49	3 53	95	19 28.7	-27 06	7.4	
Thu Aug 07/Fri Aug 08		20 42	19 21	20 48	4 17	5 43	17 29	0 59	18 33	4 58	99	20 25.2	-23 51	7.5	
Fri Aug 08/Sat Aug 09		20 46	19 20	20 47	4 17	5 44	17 32	1 04	19 12	6 04	100	21 19.8	-19 16	7.5	
Sat Aug 09/Sun Aug 10		20 50	19 19	20 46	4 18	5 45	17 35	1 09	19 46	.....	99	22 12.3	-13 40	7.5
Sun Aug 10/Mon Aug 11		20 54	19 18	20 44	4 19	5 45	17 37	1 14	20 17	.....	95	23 03.2	- 7 19	7.6
Mon Aug 11/Tue Aug 12		20 57	19 17	20 43	4 20	5 46	17 40	1 18	20 47	.....	89	23 53.3	- 0 34	7.6
Tue Aug 12/Wed Aug 13		21 01	19 16	20 42	4 21	5 47	17 43	1 23	21 17	.....	81	0 43.8	6 13	7.7
Wed Aug 13/Thu Aug 14		21 05	19 15	20 40	4 22	5 47	17 45	1 28	21 48	.....	71	1 35.7	12 40	7.7
Thu Aug 14/Fri Aug 15		21 09	19 14	20 39	4 23	5 48	17 48	1 33	22 23	.....	60	2 30.2	18 25	7.7
Fri Aug 15/Sat Aug 16		21 13	19 13	20 38	4 24	5 49	17 51	1 38	23 03	.....	49	3 27.8	23 05	7.8
Sat Aug 16/Sun Aug 17		21 17	19 12	20 37	4 25	5 49	17 53	1 43	23 51	.....	37	4 28.5	26 18	7.8
Sun Aug 17/Mon Aug 18		21 21	19 11	20 35	4 26	5 50	17 56	1 48	0 46	.....	27	5 31.2	27 48	7.8
Mon Aug 18/Tue Aug 19		21 25	19 10	20 34	4 27	5 50	17 58	1 53	1 50	.....	17	6 33.9	27 29	7.9
Tue Aug 19/Wed Aug 20		21 29	19 09	20 32	4 28	5 51	18 01	1 57	2 57	.....	10	7 34.5	25 27	7.9
Wed Aug 20/Thu Aug 21		21 33	19 08	20 31	4 28	5 52	18 03	2 02	4 05	17 51	4	8 31.5	21 57	8.0	
Thu Aug 21/Fri Aug 22		21 37	19 07	20 30	4 29	5 52	18 06	2 07	5 11	18 29	1	9 24.4	17 20	8.0	
Fri Aug 22/Sat Aug 23		21 41	19 06	20 28	4 30	5 53	18 09	2 12	6 13	19 02	0	10 13.5	11 59	8.0	
Sat Aug 23/Sun Aug 24		21 45	19 04	20 27	4 31	5 54	18 11	2 17	.....	19 31	1	10 59.6	6 13	8.1
Sun Aug 24/Mon Aug 25		21 49	19 03	20 26	4 32	5 54	18 14	2 21	.....	19 57	4	11 43.8	0 18	8.1
Mon Aug 25/Tue Aug 26		21 53	19 02	20 24	4 33	5 55	18 16	2 26	.....	20 23	9	12 26.9	- 5 32	8.1
Tue Aug 26/Wed Aug 27		21 57	19 01	20 23	4 34	5 56	18 19	2 31	.....	20 48	15	13 10.1	-11 07	8.2
Wed Aug 27/Thu Aug 28		22 01	19 00	20 21	4 34	5 56	18 21	2 36	.....	21 15	23	13 54.2	-16 15	8.2
Thu Aug 28/Fri Aug 29		22 05	18 58	20 20	4 35	5 57	18 24	2 41	.....	21 45	31	14 40.1	-20 46	8.3
Fri Aug 29/Sat Aug 30		22 08	18 57	20 18	4 36	5 57	18 26	2 45	.....	22 19	40	15 28.5	-24 30	8.3
Sat Aug 30/Sun Aug 31		22 12	18 56	20 17	4 37	5 58	18 29	2 50	.....	22 59	50	16 19.6	-27 16	8.3
Sun Aug 31/Mon Sep 01		22 16	18 55	20 16	4 38	5 59	18 31	2 55	.....	23 45	59	17 13.3	-28 52	8.4

Calendar for Kitt Peak, west longitude (h.m.s) = 7 26 28, latitude (d.m) = 31 57.2
 Rise/set times in Mountain time (7 hr W), for 500 m above surroundings, in standard time all year.
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

***** 2025 SEPTEMBER *****

Date (eve/morn)	LMST midn	----- Sun: -----					LST twilight:		----- Moon: -----					RA	Dec	Twi-Twi hours
		set	twi.end	twi.beg	rise	rise	eve	morn	rise	set	%illum					
Mon Sep 01/Tue Sep 02	22 20	18 53	20 14	4 39	5 59	18 34	3 00	.....	0 38	69	18 09.1	-29 07	8.4		
Tue Sep 02/Wed Sep 03	22 24	18 52	20 13	4 39	6 00	18 36	3 04	.....	1 37	77	19 05.8	-27 55	8.4		
Wed Sep 03/Thu Sep 04	22 28	18 51	20 11	4 40	6 01	18 39	3 09	.....	2 40	86	20 02.2	-25 15	8.5		
Thu Sep 04/Fri Sep 05	22 32	18 50	20 10	4 41	6 01	18 41	3 14	17 07	3 46	92	20 57.3	-21 11	8.5			
Fri Sep 05/Sat Sep 06	22 36	18 48	20 08	4 42	6 02	18 44	3 19	17 43	4 52	97	21 50.9	-15 56	8.6			
Sat Sep 06/Sun Sep 07	22 40	18 47	20 07	4 42	6 02	18 46	3 23	18 16	5 59	100	22 43.0	- 9 44	8.6			
Sun Sep 07/Mon Sep 08	22 44	18 46	20 05	4 43	6 03	18 49	3 28	18 47	7 05	100	23 34.4	- 2 56	8.6			
Mon Sep 08/Tue Sep 09	22 48	18 44	20 04	4 44	6 04	18 51	3 33	19 17	.....	97	0 26.1	4 06	8.7		
Tue Sep 09/Wed Sep 10	22 52	18 43	20 02	4 45	6 04	18 54	3 37	19 48	.....	91	1 19.2	10 55	8.7		
Wed Sep 10/Thu Sep 11	22 56	18 42	20 01	4 45	6 05	18 56	3 42	20 23	.....	83	2 14.6	17 07	8.7		
Thu Sep 11/Fri Sep 12	23 00	18 40	20 00	4 46	6 05	18 59	3 47	21 02	.....	73	3 13.0	22 15	8.8		
Fri Sep 12/Sat Sep 13	23 04	18 39	19 58	4 47	6 06	19 01	3 51	21 48	.....	62	4 14.4	25 55	8.8		
Sat Sep 13/Sun Sep 14	23 08	18 38	19 57	4 48	6 07	19 04	3 56	22 41	.....	51	5 17.5	27 50	8.8		
Sun Sep 14/Mon Sep 15	23 12	18 36	19 55	4 48	6 07	19 06	4 01	23 42	.....	40	6 20.6	27 55	8.9		
Mon Sep 15/Tue Sep 16	23 15	18 35	19 54	4 49	6 08	19 09	4 05	0 48	.....	29	7 21.5	26 14	8.9		
Tue Sep 16/Wed Sep 17	23 19	18 34	19 52	4 50	6 08	19 11	4 10	1 55	.....	20	8 18.8	23 04	9.0		
Wed Sep 17/Thu Sep 18	23 23	18 33	19 51	4 51	6 09	19 14	4 15	3 01	.....	12	9 11.9	18 44	9.0		
Thu Sep 18/Fri Sep 19	23 27	18 31	19 50	4 51	6 10	19 16	4 19	4 03	17 04	6	10 01.2	13 37	9.0			
Fri Sep 19/Sat Sep 20	23 31	18 30	19 48	4 52	6 10	19 19	4 24	5 03	17 33	2	10 47.5	8 00	9.1			
Sat Sep 20/Sun Sep 21	23 35	18 29	19 47	4 53	6 11	19 21	4 29	6 01	18 00	0	11 31.6	2 09	9.1			
Sun Sep 21/Mon Sep 22	23 39	18 27	19 45	4 53	6 12	19 24	4 33	6 57	18 25	0	12 14.7	- 3 42	9.1			
Mon Sep 22/Tue Sep 23	23 43	18 26	19 44	4 54	6 12	19 26	4 38	.....	18 50	2	12 57.6	- 9 21	9.2		
Tue Sep 23/Wed Sep 24	23 47	18 25	19 43	4 55	6 13	19 29	4 43	.....	19 17	6	13 41.3	-14 37	9.2		
Wed Sep 24/Thu Sep 25	23 51	18 23	19 41	4 55	6 13	19 31	4 47	.....	19 46	11	14 26.5	-19 20	9.2		
Thu Sep 25/Fri Sep 26	23 55	18 22	19 40	4 56	6 14	19 34	4 52	.....	20 18	17	15 13.8	-23 18	9.3		
Fri Sep 26/Sat Sep 27	23 59	18 21	19 38	4 57	6 15	19 37	4 56	.....	20 55	25	16 03.6	-26 21	9.3		
Sat Sep 27/Sun Sep 28	0 03	18 19	19 37	4 57	6 15	19 39	5 01	.....	21 38	33	16 55.7	-28 18	9.3		
Sun Sep 28/Mon Sep 29	0 07	18 18	19 36	4 58	6 16	19 42	5 06	.....	22 27	43	17 49.8	-29 00	9.4		
Mon Sep 29/Tue Sep 30	0 11	18 17	19 34	4 59	6 17	19 44	5 10	.....	23 23	52	18 44.9	-28 20	9.4		
Tue Sep 30/Wed Oct 01	0 15	18 15	19 33	4 59	6 17	19 47	5 15	.....	0 23	62	19 40.0	-26 15	9.4		

***** 2025 OCTOBER *****

Date (eve/morn)	LMST midn	----- Sun: -----					LST twilight:		----- Moon: -----					RA	Dec	Twi-Twi hours
		set	twi.end	twi.beg	rise	rise	eve	morn	rise	set	%illum					
Wed Oct 01/Thu Oct 02	0 19	18 14	19 32	5 00	6 18	19 50	5 20	.....	1 27	72	20 34.3	-22 50	9.5		
Thu Oct 02/Fri Oct 03	0 22	18 13	19 30	5 01	6 19	19 52	5 24	.....	2 31	81	21 27.4	-18 09	9.5		
Fri Oct 03/Sat Oct 04	0 26	18 12	19 29	5 01	6 19	19 55	5 29	.....	3 37	89	22 19.3	-12 26	9.5		
Sat Oct 04/Sun Oct 05	0 30	18 10	19 28	5 02	6 20	19 58	5 33	16 43	4 43	95	23 10.7	- 5 54	9.6			
Sun Oct 05/Mon Oct 06	0 34	18 09	19 27	5 03	6 21	20 00	5 38	17 14	5 51	99	0 02.6	1 07	9.6			
Mon Oct 06/Tue Oct 07	0 38	18 08	19 25	5 03	6 21	20 03	5 43	17 45	7 01	100	0 55.9	8 12	9.6			
Tue Oct 07/Wed Oct 08	0 42	18 07	19 24	5 04	6 22	20 06	5 47	18 19	.....	98	1 51.9	14 54	9.7		
Wed Oct 08/Thu Oct 09	0 46	18 05	19 23	5 05	6 23	20 08	5 52	18 57	.....	93	2 51.3	20 40	9.7		
Thu Oct 09/Fri Oct 10	0 50	18 04	19 22	5 05	6 23	20 11	5 56	19 41	.....	86	3 54.1	25 02	9.7		
Fri Oct 10/Sat Oct 11	0 54	18 03	19 21	5 06	6 24	20 14	6 01	20 34	.....	76	4 59.4	27 35	9.8		
Sat Oct 11/Sun Oct 12	0 58	18 02	19 19	5 07	6 25	20 17	6 06	21 34	.....	66	6 04.7	28 10	9.8		
Sun Oct 12/Mon Oct 13	1 02	18 01	19 18	5 07	6 25	20 19	6 10	22 40	.....	54	7 07.8	26 51	9.8		
Mon Oct 13/Tue Oct 14	1 06	17 59	19 17	5 08	6 26	20 22	6 15	23 48	.....	43	8 06.8	23 57	9.9		
Tue Oct 14/Wed Oct 15	1 10	17 58	19 16	5 09	6 27	20 25	6 19	0 54	.....	33	9 01.2	19 50	9.9		
Wed Oct 15/Thu Oct 16	1 14	17 57	19 15	5 10	6 27	20 28	6 24	1 57	.....	24	9 51.1	14 52	9.9		
Thu Oct 16/Fri Oct 17	1 18	17 56	19 14	5 10	6 28	20 31	6 29	2 57	.....	16	10 37.7	9 23	9.9		
Fri Oct 17/Sat Oct 18	1 22	17 55	19 13	5 11	6 29	20 34	6 33	3 54	.....	9	11 21.8	3 37	10.0		
Sat Oct 18/Sun Oct 19	1 26	17 54	19 12	5 12	6 30	20 36	6 38	4 50	16 29	4	12 04.7	- 2 10	10.0			
Sun Oct 19/Mon Oct 20	1 30	17 53	19 11	5 12	6 30	20 39	6 43	5 46	16 54	1	12 47.3	- 7 49	10.0			
Mon Oct 20/Tue Oct 21	1 33	17 51	19 10	5 13	6 31	20 42	6 47	6 42	17 20	0	13 30.5	-13 09	10.1			
Tue Oct 21/Wed Oct 22	1 37	17 50	19 09	5 14	6 32	20 45	6 52	7 39	17 48	1	14 15.1	-17 59	10.1			
Wed Oct 22/Thu Oct 23	1 41	17 49	19 08	5 14	6 33	20 48	6 56	.....	18 19	3	15 01.7	-22 07	10.1		
Thu Oct 23/Fri Oct 24	1 45	17 48	19 07	5 15	6 33	20 51	7 01	.....	18 54	7	15 50.6	-25 24	10.1		
Fri Oct 24/Sat Oct 25	1 49	17 47	19 06	5 16	6 34	20 54	7 06	.....	19 35	12	16 41.8	-27 37	10.2		
Sat Oct 25/Sun Oct 26	1 53	17 46	19 05	5 16	6 35	20 57	7 10	.....	20 22	19	17 34.8	-28 38	10.2		
Sun Oct 26/Mon Oct 27	1 57	17 45	19 04	5 17	6 36	21 00	7 15	.....	21 15	27	18 28.7	-28 21	10.2		
Mon Oct 27/Tue Oct 28	2 01	17 44	19 03	5 18	6 37	21 03	7 20	.....	22 12	36	19 22.5	-26 44	10.2		
Tue Oct 28/Wed Oct 29	2 05	17 43	19 02	5 18	6 37	21 06	7 24	.....	23 13	45	20 15.5	-23 50	10.3		
Wed Oct 29/Thu Oct 30	2 09	17 42	19 01	5 19	6 38	21 09	7 29	.....	0 15	55	21 07.2	-19 44	10.3		
Thu Oct 30/Fri Oct 31	2 13	17 42	19 01	5 20	6 39	21 13	7 34	.....	1 18	66	21 57.7	-14 36	10.3		
Fri Oct 31/Sat Nov 01	2 17	17 41	19 00	5 21	6 40	21 16	7 38	.....	2 22	76	22 47.5	- 8 35	10.3		

Calendar for Kitt Peak, west longitude (h.m.s) = 7 26 28, latitude (d.m) = 31 57.2
 Rise/set times in Mountain time (7 hr W), for 500 m above surroundings, in standard time all year.
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

***** 2025 NOVEMBER *****

Date (eve/morn)	LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----				RA	Dec	Twilight hours
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum				
Sat Nov 01/Sun Nov 02	2 21	17 40	18 59	5 21	6 41	21 19	7 43	.....	3 27	85	23 37.8	- 1 57	10.4
Sun Nov 02/Mon Nov 03	2 25	17 39	18 58	5 22	6 42	21 22	7 48	.....	4 35	92	0 29.4	5 00	10.4
Mon Nov 03/Tue Nov 04	2 29	17 38	18 58	5 23	6 42	21 25	7 52	16 12	5 47	97	1 23.9	11 53	10.4	
Tue Nov 04/Wed Nov 05	2 33	17 37	18 57	5 24	6 43	21 29	7 57	16 48	7 02	100	2 22.3	18 11	10.4	
Wed Nov 05/Thu Nov 06	2 37	17 37	18 56	5 24	6 44	21 32	8 02	17 30	.....	99	3 25.1	23 20	10.5
Thu Nov 06/Fri Nov 07	2 40	17 36	18 56	5 25	6 45	21 35	8 06	18 20	.....	95	4 31.7	26 47	10.5
Fri Nov 07/Sat Nov 08	2 44	17 35	18 55	5 26	6 46	21 39	8 11	19 19	.....	88	5 40.1	28 11	10.5
Sat Nov 08/Sun Nov 09	2 48	17 34	18 54	5 26	6 47	21 42	8 16	20 26	.....	80	6 46.9	27 28	10.5
Sun Nov 09/Mon Nov 10	2 52	17 34	18 54	5 27	6 47	21 45	8 20	21 36	.....	70	7 49.7	24 55	10.6
Mon Nov 10/Tue Nov 11	2 56	17 33	18 53	5 28	6 48	21 49	8 25	22 44	.....	59	8 47.2	20 58	10.6
Tue Nov 11/Wed Nov 12	3 00	17 32	18 53	5 29	6 49	21 52	8 30	23 50	.....	49	9 39.4	16 04	10.6
Wed Nov 12/Thu Nov 13	3 04	17 32	18 52	5 29	6 50	21 56	8 35	0 51	.....	38	10 27.4	10 36	10.6
Thu Nov 13/Fri Nov 14	3 08	17 31	18 52	5 30	6 51	21 59	8 39	1 49	.....	29	11 12.4	4 51	10.6
Fri Nov 14/Sat Nov 15	3 12	17 31	18 51	5 31	6 52	22 03	8 44	2 45	.....	20	11 55.5	- 0 56	10.7
Sat Nov 15/Sun Nov 16	3 16	17 30	18 51	5 32	6 53	22 06	8 49	3 41	.....	13	12 38.0	- 6 35	10.7
Sun Nov 16/Mon Nov 17	3 20	17 30	18 51	5 32	6 54	22 10	8 53	4 36	.....	8	13 20.9	-11 57	10.7
Mon Nov 17/Tue Nov 18	3 24	17 29	18 50	5 33	6 54	22 13	8 58	5 32	15 51	4	14 05.0	-16 51	10.7	
Tue Nov 18/Wed Nov 19	3 28	17 29	18 50	5 34	6 55	22 17	9 03	6 30	16 21	1	14 51.1	-21 07	10.7	
Wed Nov 19/Thu Nov 20	3 32	17 28	18 50	5 35	6 56	22 21	9 07	7 27	16 55	0	15 39.5	-24 33	10.8	
Thu Nov 20/Fri Nov 21	3 36	17 28	18 49	5 36	6 57	22 24	9 12	.....	17 34	1	16 30.2	-26 59	10.8
Fri Nov 21/Sat Nov 22	3 40	17 28	18 49	5 36	6 58	22 28	9 17	.....	18 19	4	17 22.7	-28 15	10.8
Sat Nov 22/Sun Nov 23	3 44	17 27	18 49	5 37	6 59	22 32	9 21	.....	19 10	8	18 16.2	-28 14	10.8
Sun Nov 23/Mon Nov 24	3 48	17 27	18 49	5 38	7 00	22 35	9 26	.....	20 06	14	19 09.6	-26 55	10.8
Mon Nov 24/Tue Nov 25	3 51	17 27	18 49	5 39	7 01	22 39	9 31	.....	21 05	21	20 01.9	-24 20	10.8
Tue Nov 25/Wed Nov 26	3 55	17 26	18 48	5 39	7 01	22 43	9 36	.....	22 06	29	20 52.7	-20 37	10.8
Wed Nov 26/Thu Nov 27	3 59	17 26	18 48	5 40	7 02	22 47	9 40	.....	23 07	39	21 41.9	-15 54	10.9
Thu Nov 27/Fri Nov 28	4 03	17 26	18 48	5 41	7 03	22 51	9 45	.....	0 08	49	22 30.1	-10 22	10.9
Fri Nov 28/Sat Nov 29	4 07	17 26	18 48	5 41	7 04	22 55	9 50	.....	1 11	60	23 18.1	- 4 12	10.9
Sat Nov 29/Sun Nov 30	4 11	17 26	18 48	5 42	7 05	22 59	9 54	.....	2 14	71	0 07.0	2 22	10.9
Sun Nov 30/Mon Dec 01	4 15	17 26	18 48	5 43	7 06	23 02	9 59	.....	3 21	80	0 58.2	9 03	10.9

***** 2025 DECEMBER *****

Date (eve/morn)	LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----				RA	Dec	Twilight hours
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum				
Mon Dec 01/Tue Dec 02	4 19	17 26	18 48	5 44	7 06	23 06	10 04	.....	4 33	89	1 53.2	15 28	10.9
Tue Dec 02/Wed Dec 03	4 23	17 26	18 48	5 44	7 07	23 10	10 08	.....	5 48	95	2 52.9	21 06	10.9
Wed Dec 03/Thu Dec 04	4 27	17 26	18 48	5 45	7 08	23 14	10 13	16 03	7 05	99	3 57.8	25 23	10.9	
Thu Dec 04/Fri Dec 05	4 31	17 26	18 49	5 46	7 09	23 19	10 18	16 58	8 19	100	5 06.5	27 47	11.0	
Fri Dec 05/Sat Dec 06	4 35	17 26	18 49	5 46	7 10	23 23	10 22	18 02	.....	97	6 16.1	28 00	11.0
Sat Dec 06/Sun Dec 07	4 39	17 26	18 49	5 47	7 10	23 27	10 27	19 13	.....	92	7 23.2	26 06	11.0
Sun Dec 07/Mon Dec 08	4 43	17 26	18 49	5 48	7 11	23 31	10 32	20 26	.....	84	8 25.3	22 30	11.0
Mon Dec 08/Tue Dec 09	4 47	17 26	18 49	5 49	7 12	23 35	10 36	21 35	.....	75	9 21.5	17 41	11.0
Tue Dec 09/Wed Dec 10	4 51	17 26	18 49	5 49	7 13	23 39	10 41	22 40	.....	65	10 12.6	12 09	11.0
Wed Dec 10/Thu Dec 11	4 55	17 26	18 50	5 50	7 13	23 43	10 45	23 41	.....	55	10 59.7	6 18	11.0
Thu Dec 11/Fri Dec 12	4 58	17 27	18 50	5 50	7 14	23 48	10 50	0 39	.....	45	11 44.3	0 23	11.0
Fri Dec 12/Sat Dec 13	5 02	17 27	18 50	5 51	7 15	23 52	10 54	1 35	.....	35	12 27.5	- 5 24	11.0
Sat Dec 13/Sun Dec 14	5 06	17 27	18 51	5 52	7 15	23 56	10 59	2 31	.....	27	13 10.6	-10 52	11.0
Sun Dec 14/Mon Dec 15	5 10	17 27	18 51	5 52	7 16	0 00	11 04	3 26	.....	19	13 54.6	-15 52	11.0
Mon Dec 15/Tue Dec 16	5 14	17 28	18 51	5 53	7 16	0 05	11 08	4 23	.....	12	14 40.2	-20 16	11.0
Tue Dec 16/Wed Dec 17	5 18	17 28	18 52	5 53	7 17	0 09	11 13	5 21	.....	7	15 28.1	-23 52	11.0
Wed Dec 17/Thu Dec 18	5 22	17 29	18 52	5 54	7 18	0 13	11 17	6 18	.....	3	16 18.4	-26 30	11.0
Thu Dec 18/Fri Dec 19	5 26	17 29	18 53	5 55	7 18	0 18	11 22	7 14	16 16	1	17 10.7	-27 59	11.0	
Fri Dec 19/Sat Dec 20	5 30	17 29	18 53	5 55	7 19	0 22	11 26	8 06	17 06	0	18 04.3	-28 13	11.0	
Sat Dec 20/Sun Dec 21	5 34	17 30	18 54	5 56	7 19	0 27	11 31	.....	18 01	1	18 58.0	-27 08	11.0
Sun Dec 21/Mon Dec 22	5 38	17 30	18 54	5 56	7 20	0 31	11 35	.....	19 00	5	19 50.7	-24 46	11.0
Mon Dec 22/Tue Dec 23	5 42	17 31	18 55	5 57	7 20	0 36	11 39	.....	20 00	9	20 41.7	-21 15	11.0
Tue Dec 23/Wed Dec 24	5 46	17 31	18 55	5 57	7 21	0 40	11 44	.....	21 01	16	21 30.8	-16 45	11.0
Wed Dec 24/Thu Dec 25	5 50	17 32	18 56	5 57	7 21	0 45	11 48	.....	22 02	24	22 18.3	-11 27	11.0
Thu Dec 25/Fri Dec 26	5 54	17 33	18 56	5 58	7 21	0 49	11 53	.....	23 02	33	23 05.1	- 5 33	11.0
Fri Dec 26/Sat Dec 27	5 58	17 33	18 57	5 58	7 22	0 54	11 57	.....	0 04	44	23 52.1	0 43	11.0
Sat Dec 27/Sun Dec 28	6 02	17 34	18 57	5 59	7 22	0 58	12 01	.....	1 07	55	0 40.5	7 08	11.0
Sun Dec 28/Mon Dec 29	6 05	17 34	18 58	5 59	7 22	1 03	12 05	.....	2 14	66	1 31.8	13 23	11.0
Mon Dec 29/Tue Dec 30	6 09	17 35	18 59	5 59	7 23	1 07	12 10	.....	3 24	76	2 27.3	19 06	11.0
Tue Dec 30/Wed Dec 31	6 13	17 36	18 59	6 00	7 23	1 12	12 14	.....	4 38	86	3 27.8	23 49	11.0
Wed Dec 31/Thu Jan 01	6 17	17 37	19 00	6 00	7 23	1 16	12 18	.....	5 52	93	4 33.3	26 59	11.0