

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:

***** 2023 Night-time Astronomical Calendar for Okie-Tex *****

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. DAYLIGHT SAVINGS time is used using conventions for the USA; for 2007+, 2nd Sunday in March to first Sunday in November.

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 hemispheres. 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 2023, at Okie-Tex

Times and dates are given in local time, zone = 6 hr West.
 They are generally better than +- 2 minutes.
 Daylight savings time used.

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

NEW		1ST		FULL		LAST	
Dec 23	4 18	Dec 29	19 23	Jan 06	17 10	Jan 14	20 13
Jan 21	14 56	Jan 28	9 20	Feb 05	12 31	Feb 13	10 03
Feb 20	1 09	Feb 27	2 07	Mar 07	6 43	Mar 14	21 10
Mar 21	12 27	Mar 28	21 33	Apr 05	23 37	Apr 13	4 13
Apr 19	23 16	Apr 27	16 21	May 05	12 37	May 12	9 29
May 19	10 56	May 27	10 24	Jun 03	22 44	Jun 10	14 32
Jun 17	23 39	Jun 26	2 51	Jul 03	6 41	Jul 09	20 49
Jul 17	13 33	Jul 25	17 08	Aug 01	13 33	Aug 08	5 30
Aug 16	4 39	Aug 24	4 58	Aug 30	20 37	Sep 06	17 23
Sep 14	20 40	Sep 22	14 33	Sep 29	4 58	Oct 06	8 49
Oct 14	12 55	Oct 21	22 30	Oct 28	15 24	Nov 05	2 39
Nov 13	3 27	Nov 20	4 51	Nov 27	3 17	Dec 04	23 52
Dec 12	17 32	Dec 19	12 40	Dec 26	18 34	Jan 03	21 33

Calendar for Okie-Tex, west longitude (h.m.s) = 6 51 48, latitude (d.m) = 36 53.9
 Rise/set times in Central time (6 hr W), uncorrected for elevation, DAYLIGHT time used, * shows clock reset.
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

***** 2023 JANUARY *****

Date (eve/morn)	LMST midn	----- set	Sun: ----- twi.end twi.beg	rise	LST twilight: eve morn	----- rise	Moon: ----- set %illum	RA	Dec	Twi-Twi hours
Sun Jan 01/Mon Jan 02	5 55	17 46	19 19	6 32 8 05	1 13 12 28	.....	4 20	80	3 04.7 17 51	11.2
Mon Jan 02/Tue Jan 03	5 59	17 47	19 20	6 32 8 05	1 17 12 32	.....	5 22	88	3 55.1 21 55	11.2
Tue Jan 03/Wed Jan 04	6 03	17 48	19 20	6 33 8 05	1 22 12 36	.....	6 23	93	4 47.4 24 56	11.2
Wed Jan 04/Thu Jan 05	6 07	17 49	19 21	6 33 8 05	1 27 12 40	15 51	7 21	97	5 41.2 26 45	11.2
Thu Jan 05/Fri Jan 06	6 10	17 49	19 22	6 33 8 05	1 32 12 44	16 38	8 13	99	6 35.7 27 15	11.2
Fri Jan 06/Sat Jan 07	6 14	17 50	19 23	6 33 8 05	1 36 12 48	17 32	.....	100	7 29.6 26 26	11.2
Sat Jan 07/Sun Jan 08	6 18	17 51	19 23	6 33 8 05	1 41 12 52	18 29	.....	98	8 22.1 24 23	11.2
Sun Jan 08/Mon Jan 09	6 22	17 52	19 24	6 33 8 05	1 46 12 56	19 28	.....	95	9 12.2 21 15	11.1
Mon Jan 09/Tue Jan 10	6 26	17 53	19 25	6 33 8 05	1 51 13 00	20 28	.....	90	10 00.0 17 14	11.1
Tue Jan 10/Wed Jan 11	6 30	17 54	19 26	6 33 8 05	1 55 13 04	21 27	.....	84	10 45.7 12 31	11.1
Wed Jan 11/Thu Jan 12	6 34	17 55	19 27	6 33 8 05	2 00 13 08	22 26	.....	76	11 30.0 7 17	11.1
Thu Jan 12/Fri Jan 13	6 38	17 56	19 28	6 33 8 04	2 05 13 12	23 25	.....	67	12 13.7 1 43	11.1
Fri Jan 13/Sat Jan 14	6 42	17 57	19 28	6 33 8 04	2 10 13 16	0 25	.....	58	12 57.9 - 4 01	11.1
Sat Jan 14/Sun Jan 15	6 46	17 58	19 29	6 33 8 04	2 15 13 20	1 27	.....	48	13 43.7 - 9 44	11.1
Sun Jan 15/Mon Jan 16	6 50	17 59	19 30	6 32 8 04	2 19 13 23	2 33	.....	37	14 32.4 -15 11	11.0
Mon Jan 16/Tue Jan 17	6 54	18 00	19 31	6 32 8 03	2 24 13 27	3 42	.....	27	15 25.1 -20 06	11.0
Tue Jan 17/Wed Jan 18	6 58	18 01	19 32	6 32 8 03	2 29 13 31	4 55	.....	18	16 22.6 -24 06	11.0
Wed Jan 18/Thu Jan 19	7 02	18 02	19 33	6 32 8 02	2 34 13 34	6 09	.....	10	17 25.0 -26 45	11.0
Thu Jan 19/Fri Jan 20	7 06	18 03	19 34	6 31 8 02	2 39 13 38	7 17	.....	4	18 31.0 -27 38	11.0
Fri Jan 20/Sat Jan 21	7 10	18 04	19 35	6 31 8 01	2 44 13 42	8 16	16 39	1	19 38.1 -26 32	10.9
Sat Jan 21/Sun Jan 22	7 14	18 05	19 36	6 31 8 01	2 48 13 45	.....	17 56	0	20 43.3 -23 30	10.9
Sun Jan 22/Mon Jan 23	7 17	18 06	19 36	6 30 8 00	2 53 13 49	.....	19 15	3	21 44.8 -18 54	10.9
Mon Jan 23/Tue Jan 24	7 21	18 07	19 37	6 30 8 00	2 58 13 52	.....	20 33	8	22 41.8 -13 13	10.9
Tue Jan 24/Wed Jan 25	7 25	18 08	19 38	6 29 7 59	3 03 13 56	.....	21 46	16	23 35.0 - 6 55	10.9
Wed Jan 25/Thu Jan 26	7 29	18 09	19 39	6 29 7 59	3 08 13 59	.....	22 56	25	0 25.3 - 0 27	10.8
Thu Jan 26/Fri Jan 27	7 33	18 10	19 40	6 28 7 58	3 13 14 03	.....	0 03	35	1 14.0 5 50	10.8
Fri Jan 27/Sat Jan 28	7 37	18 12	19 41	6 28 7 57	3 18 14 06	.....	1 08	45	2 02.4 11 40	10.8
Sat Jan 28/Sun Jan 29	7 41	18 13	19 42	6 27 7 57	3 22 14 09	.....	2 12	56	2 51.2 16 50	10.8
Sun Jan 29/Mon Jan 30	7 45	18 14	19 43	6 27 7 56	3 27 14 13	.....	3 16	65	3 41.4 21 09	10.7
Mon Jan 30/Tue Jan 31	7 49	18 15	19 44	6 26 7 55	3 32 14 16	.....	4 17	74	4 33.2 24 26	10.7
Tue Jan 31/Wed Feb 01	7 53	18 16	19 45	6 25 7 54	3 37 14 19	.....	5 16	82	5 26.5 26 31	10.7

***** 2023 FEBRUARY *****

Date (eve/morn)	LMST midn	----- set	Sun: ----- twi.end twi.beg	rise	LST twilight: eve morn	----- rise	Moon: ----- set %illum	RA	Dec	Twi-Twi hours
Wed Feb 01/Thu Feb 02	7 57	18 17	19 46	6 25 7 53	3 42 14 23	.....	6 09	89	6 20.6 27 20	10.6
Thu Feb 02/Fri Feb 03	8 01	18 18	19 47	6 24 7 53	3 47 14 26	.....	6 56	94	7 14.6 26 50	10.6
Fri Feb 03/Sat Feb 04	8 05	18 19	19 48	6 23 7 52	3 52 14 29	16 22	7 37	98	8 07.4 25 04	10.6
Sat Feb 04/Sun Feb 05	8 09	18 20	19 49	6 22 7 51	3 57 14 32	17 21	8 11	100	8 58.3 22 10	10.6
Sun Feb 05/Mon Feb 06	8 13	18 21	19 50	6 22 7 50	4 02 14 35	18 21	.....	100	9 46.9 18 18	10.5
Mon Feb 06/Tue Feb 07	8 17	18 22	19 51	6 21 7 49	4 06 14 39	19 21	.....	98	10 33.4 13 40	10.5
Tue Feb 07/Wed Feb 08	8 21	18 23	19 51	6 20 7 48	4 11 14 42	20 20	.....	94	11 18.2 8 28	10.5
Wed Feb 08/Thu Feb 09	8 25	18 25	19 52	6 19 7 47	4 16 14 45	21 19	.....	89	12 02.2 2 54	10.4
Thu Feb 09/Fri Feb 10	8 28	18 26	19 53	6 18 7 46	4 21 14 48	22 18	.....	82	12 46.2 - 2 50	10.4
Fri Feb 10/Sat Feb 11	8 32	18 27	19 54	6 17 7 45	4 26 14 51	23 19	.....	73	13 31.2 - 8 33	10.4
Sat Feb 11/Sun Feb 12	8 36	18 28	19 55	6 16 7 44	4 31 14 54	0 22	.....	64	14 18.3 -14 03	10.4
Sun Feb 12/Mon Feb 13	8 40	18 29	19 56	6 15 7 43	4 36 14 57	1 28	.....	54	15 08.7 -19 03	10.3
Mon Feb 13/Tue Feb 14	8 44	18 30	19 57	6 14 7 42	4 41 15 00	2 38	.....	43	16 03.2 -23 15	10.3
Tue Feb 14/Wed Feb 15	8 48	18 31	19 58	6 13 7 40	4 46 15 03	3 48	.....	32	17 02.2 -26 16	10.3
Wed Feb 15/Thu Feb 16	8 52	18 32	19 59	6 12 7 39	4 50 15 05	4 57	.....	22	18 05.1 -27 46	10.2
Thu Feb 16/Fri Feb 17	8 56	18 33	20 00	6 11 7 38	4 55 15 08	5 59	.....	13	19 10.3 -27 26	10.2
Fri Feb 17/Sat Feb 18	9 00	18 34	20 01	6 10 7 37	5 00 15 11	6 51	.....	6	20 15.3 -25 11	10.2
Sat Feb 18/Sun Feb 19	9 04	18 35	20 02	6 09 7 36	5 05 15 14	7 34	16 43	2	21 17.8 -21 13	10.1
Sun Feb 19/Mon Feb 20	9 08	18 36	20 03	6 08 7 34	5 10 15 17	.....	18 02	0	22 16.7 -15 54	10.1
Mon Feb 20/Tue Feb 21	9 12	18 37	20 04	6 07 7 33	5 15 15 20	.....	19 19	1	23 11.9 - 9 41	10.1
Tue Feb 21/Wed Feb 22	9 16	18 38	20 05	6 06 7 32	5 20 15 22	.....	20 32	5	0 04.3 - 3 05	10.0
Wed Feb 22/Thu Feb 23	9 20	18 39	20 06	6 04 7 31	5 25 15 25	.....	21 43	12	0 54.7 3 31	10.0
Thu Feb 23/Fri Feb 24	9 24	18 40	20 07	6 03 7 29	5 30 15 28	.....	22 51	19	1 44.4 9 45	9.9
Fri Feb 24/Sat Feb 25	9 28	18 41	20 07	6 02 7 28	5 34 15 30	.....	23 59	29	2 34.2 15 20	9.9
Sat Feb 25/Sun Feb 26	9 32	18 42	20 08	6 01 7 27	5 39 15 33	.....	1 04	38	3 25.1 20 03	9.9
Sun Feb 26/Mon Feb 27	9 35	18 43	20 09	5 59 7 26	5 44 15 36	.....	2 09	48	4 17.2 23 43	9.8
Mon Feb 27/Tue Feb 28	9 39	18 44	20 10	5 58 7 24	5 49 15 38	.....	3 09	58	5 10.6 26 11	9.8
Tue Feb 28/Wed Mar 01	9 43	18 45	20 11	5 57 7 23	5 54 15 41	.....	4 05	68	6 04.8 27 22	9.8

Calendar for Okie-Tex, west longitude (h.m.s) = 6 51 48, latitude (d.m) = 36 53.9
 Rise/set times in Central time (6 hr W), uncorrected for elevation, DAYLIGHT time used, * shows clock reset.
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

***** 2023 MARCH *****

Date (eve/morn)	LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----				Twi-Twi	
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Wed Mar 01/Thu Mar 02	9 47	18 46	20 12	5 55	7 21	5 59	15 44	.....	4 54	76	6 59.0	27 12	9.7
Thu Mar 02/Fri Mar 03	9 51	18 47	20 13	5 54	7 20	6 04	15 46	.....	5 37	84	7 52.1	25 46	9.7
Fri Mar 03/Sat Mar 04	9 55	18 48	20 14	5 53	7 19	6 09	15 49	.....	6 13	90	8 43.4	23 08	9.6
Sat Mar 04/Sun Mar 05	9 59	18 49	20 15	5 51	7 17	6 13	15 51	.....	6 44	95	9 32.7	19 29	9.6
Sun Mar 05/Mon Mar 06	10 03	18 50	20 16	5 50	7 16	6 18	15 54	17 13	7 11	98	10 19.8	15 00	9.6
Mon Mar 06/Tue Mar 07	10 07	18 51	20 17	5 49	7 15	6 23	15 56	18 13	7 36	100	11 05.4	9 51	9.5
Tue Mar 07/Wed Mar 08	10 11	18 52	20 18	5 47	7 13	6 28	15 59	19 12	.....	99	11 50.0	4 16	9.5
Wed Mar 08/Thu Mar 09	10 15	18 53	20 19	5 46	7 12	6 33	16 01	20 12	.....	97	12 34.4	- 1 34	9.4
Thu Mar 09/Fri Mar 10	10 19	18 54	20 20	5 44	7 10	6 38	16 04	21 13	.....	93	13 19.5	- 7 25	9.4
Fri Mar 10/Sat Mar 11	10 23	18 54	20 21	5 43	7 09	6 43	16 06	22 15	.....	86	14 06.5	-13 04	9.4
Sat Mar 11/Sun Mar 12*	10 27	18 55	20 22	6 41	8 07	6 48	16 09	23 21	.....	78	14 56.2	-18 15	9.3
Sun Mar 12/Mon Mar 13	9 31	19 56	21 23	6 40	8 06	6 53	16 11	1 28	.....	69	15 47.2	-22 26	9.3
Mon Mar 13/Tue Mar 14	9 34	19 57	21 24	6 38	8 04	6 58	16 14	2 38	.....	59	16 44.0	-25 47	9.2
Tue Mar 14/Wed Mar 15	9 38	19 58	21 25	6 37	8 03	7 02	16 16	3 46	.....	48	17 44.5	-27 44	9.2
Wed Mar 15/Thu Mar 16	9 42	19 59	21 25	6 35	8 02	7 07	16 19	4 48	.....	37	18 47.3	-28 00	9.2
Thu Mar 16/Fri Mar 17	9 46	20 00	21 26	6 34	8 00	7 12	16 21	5 42	.....	26	19 50.5	-26 29	9.1
Fri Mar 17/Sat Mar 18	9 50	20 01	21 27	6 32	7 59	7 17	16 23	6 27	.....	17	20 52.1	-23 14	9.1
Sat Mar 18/Sun Mar 19	9 54	20 02	21 28	6 31	7 57	7 22	16 26	7 05	16 36	9	21 50.9	-18 32	9.0
Sun Mar 19/Mon Mar 20	9 58	20 03	21 29	6 29	7 56	7 27	16 28	.....	17 52	4	22 46.5	-12 45	9.0
Mon Mar 20/Tue Mar 21	10 02	20 04	21 30	6 27	7 54	7 32	16 30	.....	19 06	1	23 39.5	- 6 19	8.9
Tue Mar 21/Wed Mar 22	10 06	20 04	21 31	6 26	7 53	7 37	16 33	.....	20 18	0	0 30.6	0 23	8.9
Wed Mar 22/Thu Mar 23	10 10	20 05	21 32	6 24	7 51	7 42	16 35	.....	21 28	3	1 20.9	6 55	8.9
Thu Mar 23/Fri Mar 24	10 14	20 06	21 33	6 23	7 50	7 47	16 37	.....	22 38	7	2 11.4	12 58	8.8
Fri Mar 24/Sat Mar 25	10 18	20 07	21 34	6 21	7 48	7 52	16 40	.....	23 46	14	3 02.8	18 14	8.8
Sat Mar 25/Sun Mar 26	10 22	20 08	21 35	6 19	7 47	7 57	16 42	.....	0 53	22	3 55.6	22 29	8.7
Sun Mar 26/Mon Mar 27	10 26	20 09	21 36	6 18	7 45	8 02	16 44	.....	1 57	31	4 49.7	25 31	8.7
Mon Mar 27/Tue Mar 28	10 30	20 10	21 37	6 16	7 44	8 07	16 47	.....	2 57	41	5 44.6	27 12	8.6
Tue Mar 28/Wed Mar 29	10 34	20 11	21 39	6 14	7 42	8 12	16 49	.....	3 49	50	6 39.5	27 32	8.6
Wed Mar 29/Thu Mar 30	10 38	20 11	21 40	6 13	7 41	8 17	16 51	.....	4 35	60	7 33.4	26 31	8.6
Thu Mar 30/Fri Mar 31	10 41	20 12	21 41	6 11	7 39	8 22	16 54	.....	5 13	69	8 25.6	24 16	8.5
Fri Mar 31/Sat Apr 01	10 45	20 13	21 42	6 10	7 38	8 27	16 56	.....	5 46	78	9 15.5	20 57	8.5

***** 2023 APRIL *****

Date (eve/morn)	LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----				Twi-Twi	
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Sat Apr 01/Sun Apr 02	10 49	20 14	21 43	6 08	7 36	8 32	16 58	.....	6 14	85	10 03.2	16 43	8.4
Sun Apr 02/Mon Apr 03	10 53	20 15	21 44	6 06	7 35	8 37	17 00	17 03	6 39	91	10 49.3	11 45	8.4
Mon Apr 03/Tue Apr 04	10 57	20 16	21 45	6 05	7 33	8 42	17 03	18 02	7 03	96	11 34.2	6 15	8.3
Tue Apr 04/Wed Apr 05	11 01	20 17	21 46	6 03	7 32	8 47	17 05	19 02	.....	99	12 18.9	0 24	8.3
Wed Apr 05/Thu Apr 06	11 05	20 18	21 47	6 01	7 31	8 52	17 07	20 03	.....	100	13 04.2	- 5 34	8.2
Thu Apr 06/Fri Apr 07	11 09	20 18	21 48	6 00	7 29	8 57	17 10	21 06	.....	99	13 51.2	-11 27	8.2
Fri Apr 07/Sat Apr 08	11 13	20 19	21 49	5 58	7 28	9 02	17 12	22 12	.....	95	14 40.9	-16 55	8.1
Sat Apr 08/Sun Apr 09	11 17	20 20	21 50	5 56	7 26	9 07	17 14	23 20	.....	90	15 33.9	-21 41	8.1
Sun Apr 09/Mon Apr 10	11 21	20 21	21 51	5 55	7 25	9 12	17 16	0 30	.....	82	16 30.7	-25 24	8.1
Mon Apr 10/Tue Apr 11	11 25	20 22	21 53	5 53	7 23	9 17	17 19	1 39	.....	73	17 31.0	-27 42	8.0
Tue Apr 11/Wed Apr 12	11 29	20 23	21 54	5 51	7 22	9 22	17 21	2 43	.....	63	18 33.5	-28 22	8.0
Wed Apr 12/Thu Apr 13	11 33	20 24	21 55	5 50	7 21	9 27	17 23	3 38	.....	51	19 36.1	-27 15	7.9
Thu Apr 13/Fri Apr 14	11 37	20 25	21 56	5 48	7 19	9 32	17 26	4 25	.....	40	20 37.1	-24 27	7.9
Fri Apr 14/Sat Apr 15	11 41	20 26	21 57	5 46	7 18	9 37	17 28	5 04	.....	29	21 35.2	-20 12	7.8
Sat Apr 15/Sun Apr 16	11 45	20 26	21 58	5 45	7 17	9 43	17 30	5 37	.....	19	22 30.1	-14 50	7.8
Sun Apr 16/Mon Apr 17	11 48	20 27	22 00	5 43	7 15	9 48	17 32	6 06	.....	11	23 22.2	- 8 42	7.7
Mon Apr 17/Tue Apr 18	11 52	20 28	22 01	5 41	7 14	9 53	17 35	6 33	17 58	5	0 12.5	- 2 12	7.7
Tue Apr 18/Wed Apr 19	11 56	20 29	22 02	5 40	7 13	9 58	17 37	.....	19 07	1	1 02.0	4 20	7.6
Wed Apr 19/Thu Apr 20	12 00	20 30	22 03	5 38	7 11	10 03	17 39	.....	20 16	0	1 51.8	10 33	7.6
Thu Apr 20/Fri Apr 21	12 04	20 31	22 04	5 36	7 10	10 08	17 42	.....	21 25	1	2 42.6	16 10	7.5
Fri Apr 21/Sat Apr 22	12 08	20 32	22 06	5 35	7 09	10 13	17 44	.....	22 34	5	3 35.0	20 51	7.5
Sat Apr 22/Sun Apr 23	12 12	20 33	22 07	5 33	7 07	10 19	17 46	.....	23 41	10	4 29.0	24 24	7.4
Sun Apr 23/Mon Apr 24	12 16	20 33	22 08	5 32	7 06	10 24	17 49	.....	0 43	17	5 24.3	26 38	7.4
Mon Apr 24/Tue Apr 25	12 20	20 34	22 09	5 30	7 05	10 29	17 51	.....	1 40	25	6 19.9	27 29	7.3
Tue Apr 25/Wed Apr 26	12 24	20 35	22 10	5 29	7 04	10 34	17 53	.....	2 29	34	7 14.6	26 55	7.3
Wed Apr 26/Thu Apr 27	12 28	20 36	22 12	5 27	7 02	10 39	17 56	.....	3 11	43	8 07.6	25 05	7.3
Thu Apr 27/Fri Apr 28	12 32	20 37	22 13	5 25	7 01	10 44	17 58	.....	3 46	53	8 58.2	22 07	7.2
Fri Apr 28/Sat Apr 29	12 36	20 38	22 14	5 24	7 00	10 50	18 01	.....	4 15	62	9 46.4	18 12	7.2
Sat Apr 29/Sun Apr 30	12 40	20 39	22 15	5 22	6 59	10 55	18 03	.....	4 42	71	10 32.6	13 30	7.1
Sun Apr 30/Mon May 01	12 44	20 40	22 17	5 21	6 58	11 00	18 05	.....	5 06	80	11 17.5	8 12	7.1

Calendar for Okie-Tex, west longitude (h.m.s) = 6 51 48, latitude (d.m) = 36 53.9
 Rise/set times in Central time (6 hr W), uncorrected for elevation, DAYLIGHT time used, * shows clock reset.
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

***** 2023 MAY *****

Date (eve/morn)	LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----				Twi-Twi	
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Mon May 01/Tue May 02	12 48	20 41	22 18	5 19	6 57	11 05	18 08	.....	5 29	87	12 02.0	2 28	7.0
Tue May 02/Wed May 03	12 52	20 41	22 19	5 18	6 56	11 11	18 10	17 50	5 52	93	12 47.1	- 3 30	7.0
Wed May 03/Thu May 04	12 56	20 42	22 21	5 16	6 55	11 16	18 13	18 52	6 17	97	13 33.7	- 9 30	6.9
Thu May 04/Fri May 05	12 59	20 43	22 22	5 15	6 54	11 21	18 15	19 57	.....	100	14 23.1	-15 15	6.9
Fri May 05/Sat May 06	13 03	20 44	22 23	5 14	6 52	11 26	18 18	21 06	.....	100	15 16.0	-20 24	6.8
Sat May 06/Sun May 07	13 07	20 45	22 24	5 12	6 51	11 31	18 20	22 17	.....	97	16 13.2	-24 35	6.8
Sun May 07/Mon May 08	13 11	20 46	22 26	5 11	6 50	11 37	18 23	23 28	.....	92	17 14.3	-27 24	6.8
Mon May 08/Tue May 09	13 15	20 47	22 27	5 09	6 49	11 42	18 25	0 36	.....	85	18 18.0	-28 32	6.7
Tue May 09/Wed May 10	13 19	20 48	22 28	5 08	6 49	11 47	18 28	1 35	.....	76	19 22.2	-27 49	6.7
Wed May 10/Thu May 11	13 23	20 48	22 29	5 07	6 48	11 52	18 31	2 25	.....	65	20 24.4	-25 20	6.6
Thu May 11/Fri May 12	13 27	20 49	22 31	5 05	6 47	11 57	18 33	3 06	.....	54	21 23.4	-21 21	6.6
Fri May 12/Sat May 13	13 31	20 50	22 32	5 04	6 46	12 03	18 36	3 40	.....	43	22 18.5	-16 13	6.5
Sat May 13/Sun May 14	13 35	20 51	22 33	5 03	6 45	12 08	18 39	4 09	.....	32	23 10.4	-10 20	6.5
Sun May 14/Mon May 15	13 39	20 52	22 34	5 02	6 44	12 13	18 41	4 36	.....	22	24 00.0	- 4 01	6.5
Mon May 15/Tue May 16	13 43	20 53	22 36	5 00	6 43	12 18	18 44	5 02	.....	13	0 48.5	2 23	6.4
Tue May 16/Wed May 17	13 47	20 54	22 37	4 59	6 43	12 23	18 47	5 29	18 01	7	1 36.9	8 35	6.4
Wed May 17/Thu May 18	13 51	20 54	22 38	4 58	6 42	12 29	18 50	5 58	19 09	2	2 26.3	14 18	6.3
Thu May 18/Fri May 19	13 55	20 55	22 39	4 57	6 41	12 34	18 52	.....	20 17	0	3 17.4	19 14	6.3
Fri May 19/Sat May 20	13 59	20 56	22 41	4 56	6 40	12 39	18 55	.....	21 24	0	4 10.5	23 09	6.3
Sat May 20/Sun May 21	14 03	20 57	22 42	4 55	6 40	12 44	18 58	.....	22 29	2	5 05.2	25 50	6.2
Sun May 21/Mon May 22	14 06	20 58	22 43	4 54	6 39	12 49	19 01	.....	23 29	6	6 00.7	27 09	6.2
Mon May 22/Tue May 23	14 10	20 58	22 44	4 53	6 38	12 54	19 04	.....	0 21	12	6 55.9	27 03	6.1
Tue May 23/Wed May 24	14 14	20 59	22 45	4 52	6 38	12 59	19 07	.....	1 06	19	7 49.6	25 38	6.1
Wed May 24/Thu May 25	14 18	21 00	22 46	4 51	6 37	13 05	19 10	.....	1 44	27	8 40.9	23 02	6.1
Thu May 25/Fri May 26	14 22	21 01	22 48	4 50	6 37	13 10	19 13	.....	2 16	36	9 29.7	19 26	6.0
Fri May 26/Sat May 27	14 26	21 01	22 49	4 49	6 36	13 15	19 16	.....	2 43	46	10 16.1	15 01	6.0
Sat May 27/Sun May 28	14 30	21 02	22 50	4 48	6 36	13 20	19 19	.....	3 07	55	11 00.9	9 59	6.0
Sun May 28/Mon May 29	14 34	21 03	22 51	4 47	6 35	13 25	19 22	.....	3 31	65	11 44.8	4 28	5.9
Mon May 29/Tue May 30	14 38	21 04	22 52	4 47	6 35	13 30	19 25	.....	3 53	74	12 28.9	- 1 21	5.9
Tue May 30/Wed May 31	14 42	21 04	22 53	4 46	6 34	13 35	19 29	.....	4 17	82	13 14.3	- 7 17	5.9
Wed May 31/Thu Jun 01	14 46	21 05	22 54	4 45	6 34	13 40	19 32	17 39	4 44	90	14 02.2	-13 08	5.9

***** 2023 JUNE *****

Date (eve/morn)	LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----				Twi-Twi	
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Thu Jun 01/Fri Jun 02	14 50	21 06	22 55	4 44	6 34	13 45	19 35	18 46	5 14	95	14 53.7	-18 34	5.8
Fri Jun 02/Sat Jun 03	14 54	21 06	22 56	4 44	6 33	13 49	19 38	19 57	5 52	99	15 49.9	-23 14	5.8
Sat Jun 03/Sun Jun 04	14 58	21 07	22 57	4 43	6 33	13 54	19 42	21 09	.....	100	16 50.8	-26 40	5.8
Sun Jun 04/Mon Jun 05	15 02	21 07	22 58	4 43	6 33	13 59	19 45	22 21	.....	98	17 55.7	-28 27	5.8
Mon Jun 05/Tue Jun 06	15 06	21 08	22 58	4 42	6 33	14 04	19 49	23 25	.....	94	19 02.1	-28 19	5.7
Tue Jun 06/Wed Jun 07	15 10	21 09	22 59	4 42	6 32	14 09	19 52	0 20	.....	87	20 07.2	-26 15	5.7
Wed Jun 07/Thu Jun 08	15 14	21 09	23 00	4 41	6 32	14 13	19 56	1 05	.....	78	21 09.0	-22 31	5.7
Thu Jun 08/Fri Jun 09	15 17	21 10	23 01	4 41	6 32	14 18	19 59	1 42	.....	68	22 06.3	-17 30	5.7
Fri Jun 09/Sat Jun 10	15 21	21 10	23 01	4 41	6 32	14 23	20 03	2 13	.....	56	22 59.6	-11 38	5.7
Sat Jun 10/Sun Jun 11	15 25	21 11	23 02	4 41	6 32	14 27	20 07	2 40	.....	45	23 49.9	- 5 21	5.6
Sun Jun 11/Mon Jun 12	15 29	21 11	23 03	4 40	6 32	14 32	20 10	3 06	.....	34	0 38.4	1 02	5.6
Mon Jun 12/Tue Jun 13	15 33	21 12	23 03	4 40	6 32	14 36	20 14	3 32	.....	25	1 26.3	7 13	5.6
Tue Jun 13/Wed Jun 14	15 37	21 12	23 04	4 40	6 32	14 41	20 18	4 00	.....	16	2 14.7	12 58	5.6
Wed Jun 14/Thu Jun 15	15 41	21 12	23 04	4 40	6 32	14 45	20 22	4 30	18 06	9	3 04.5	18 00	5.6
Thu Jun 15/Fri Jun 16	15 45	21 13	23 05	4 40	6 32	14 50	20 26	5 06	19 12	4	3 56.2	22 07	5.6
Fri Jun 16/Sat Jun 17	15 49	21 13	23 05	4 40	6 32	14 54	20 30	5 47	20 17	1	4 49.8	25 05	5.6
Sat Jun 17/Sun Jun 18	15 53	21 13	23 06	4 40	6 32	14 59	20 34	.....	21 19	0	5 44.6	26 44	5.6
Sun Jun 18/Mon Jun 19	15 57	21 14	23 06	4 40	6 32	15 03	20 38	.....	22 14	1	6 39.6	27 02	5.6
Mon Jun 19/Tue Jun 20	16 01	21 14	23 06	4 40	6 33	15 07	20 42	.....	23 02	4	7 33.5	25 58	5.6
Tue Jun 20/Wed Jun 21	16 05	21 14	23 07	4 40	6 33	15 11	20 46	.....	23 42	8	8 25.4	23 41	5.6
Wed Jun 21/Thu Jun 22	16 09	21 14	23 07	4 41	6 33	15 15	20 50	.....	0 16	14	9 14.6	20 22	5.6
Thu Jun 22/Fri Jun 23	16 13	21 15	23 07	4 41	6 33	15 20	20 54	.....	0 44	22	10 01.4	16 13	5.6
Fri Jun 23/Sat Jun 24	16 17	21 15	23 07	4 41	6 34	15 24	20 59	.....	1 10	30	10 46.0	11 24	5.6
Sat Jun 24/Sun Jun 25	16 21	21 15	23 07	4 42	6 34	15 28	21 03	.....	1 33	39	11 29.4	6 07	5.6
Sun Jun 25/Mon Jun 26	16 24	21 15	23 07	4 42	6 34	15 32	21 07	.....	1 55	49	12 12.5	0 30	5.6
Mon Jun 26/Tue Jun 27	16 28	21 15	23 07	4 42	6 35	15 36	21 12	.....	2 18	58	12 56.3	- 5 18	5.6
Tue Jun 27/Wed Jun 28	16 32	21 15	23 07	4 43	6 35	15 39	21 16	.....	2 42	68	13 42.1	-11 04	5.6
Wed Jun 28/Thu Jun 29	16 36	21 15	23 07	4 43	6 35	15 43	21 20	.....	3 10	78	14 31.1	-16 35	5.6
Thu Jun 29/Fri Jun 30	16 40	21 15	23 07	4 44	6 36	15 47	21 25	17 34	3 44	86	15 24.6	-21 32	5.6
Fri Jun 30/Sat Jul 01	16 44	21 15	23 07	4 45	6 36	15 51	21 30	18 46	4 26	93	16 23.2	-25 30	5.6

Calendar for Okie-Tex, west longitude (h.m.s) = 6 51 48, latitude (d.m) = 36 53.9
 Rise/set times in Central time (6 hr W), uncorrected for elevation, DAYLIGHT time used, * shows clock reset.
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

***** 2023 JULY *****

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 Jul 01/Sun Jul 02	16 48	21 15	23 07	4 45	6 37	15 55	21 34	19 58	5 19	98	17 26.9	-28 02	5.6
Sun Jul 02/Mon Jul 03	16 52	21 15	23 06	4 46	6 37	15 58	21 39	21 07	6 23	100	18 34.0	-28 42	5.7
Mon Jul 03/Tue Jul 04	16 56	21 15	23 06	4 47	6 38	16 02	21 43	22 08	.....	99	19 41.7	-27 20	5.7
Tue Jul 04/Wed Jul 05	17 00	21 15	23 06	4 47	6 38	16 05	21 48	22 59	.....	95	20 47.0	-24 02	5.7
Wed Jul 05/Thu Jul 06	17 04	21 15	23 05	4 48	6 39	16 09	21 53	23 40	.....	89	21 48.0	-19 11	5.7
Thu Jul 06/Fri Jul 07	17 08	21 14	23 05	4 49	6 39	16 12	21 58	0 14	.....	80	22 44.5	-13 18	5.7
Fri Jul 07/Sat Jul 08	17 12	21 14	23 04	4 50	6 40	16 16	22 02	0 43	.....	70	23 37.1	- 6 53	5.8
Sat Jul 08/Sun Jul 09	17 16	21 14	23 04	4 51	6 40	16 19	22 07	1 10	.....	59	0 27.2	- 0 19	5.8
Sun Jul 09/Mon Jul 10	17 20	21 13	23 03	4 51	6 41	16 23	22 12	1 36	.....	48	1 15.9	6 03	5.8
Mon Jul 10/Tue Jul 11	17 24	21 13	23 02	4 52	6 42	16 26	22 17	2 03	.....	38	2 04.6	11 57	5.8
Tue Jul 11/Wed Jul 12	17 28	21 13	23 02	4 53	6 42	16 29	22 22	2 32	.....	28	2 54.1	17 08	5.9
Wed Jul 12/Thu Jul 13	17 31	21 12	23 01	4 54	6 43	16 32	22 27	3 06	.....	19	3 45.2	21 25	5.9
Thu Jul 13/Fri Jul 14	17 35	21 12	23 00	4 55	6 44	16 35	22 32	3 45	18 10	12	4 37.9	24 35	5.9
Fri Jul 14/Sat Jul 15	17 39	21 12	22 59	4 56	6 44	16 39	22 37	4 31	19 12	6	5 32.0	26 29	5.9
Sat Jul 15/Sun Jul 16	17 43	21 11	22 59	4 57	6 45	16 42	22 42	5 22	20 09	2	6 26.5	27 02	6.0
Sun Jul 16/Mon Jul 17	17 47	21 11	22 58	4 58	6 46	16 45	22 47	6 19	20 58	0	7 20.3	26 16	6.0
Mon Jul 17/Tue Jul 18	17 51	21 10	22 57	5 00	6 46	16 48	22 52	.....	21 41	0	8 12.3	24 15	6.0
Tue Jul 18/Wed Jul 19	17 55	21 09	22 56	5 01	6 47	16 51	22 57	.....	22 16	2	9 01.9	21 09	6.1
Wed Jul 19/Thu Jul 20	17 59	21 09	22 55	5 02	6 48	16 54	23 02	.....	22 46	5	9 49.0	17 11	6.1
Thu Jul 20/Fri Jul 21	18 03	21 08	22 54	5 03	6 49	16 57	23 07	.....	23 13	10	10 33.8	12 32	6.1
Fri Jul 21/Sat Jul 22	18 07	21 08	22 53	5 04	6 49	17 00	23 12	.....	23 36	17	11 17.0	7 23	6.2
Sat Jul 22/Sun Jul 23	18 11	21 07	22 52	5 05	6 50	17 03	23 17	.....	23 58	24	11 59.4	1 55	6.2
Sun Jul 23/Mon Jul 24	18 15	21 06	22 51	5 06	6 51	17 05	23 22	.....	0 20	33	12 42.1	- 3 44	6.3
Mon Jul 24/Tue Jul 25	18 19	21 05	22 50	5 07	6 52	17 08	23 27	.....	0 44	42	13 26.0	- 9 24	6.3
Tue Jul 25/Wed Jul 26	18 23	21 05	22 48	5 09	6 52	17 11	23 32	.....	1 09	53	14 12.5	-14 52	6.3
Wed Jul 26/Thu Jul 27	18 27	21 04	22 47	5 10	6 53	17 14	23 37	.....	1 39	63	15 02.7	-19 55	6.4
Thu Jul 27/Fri Jul 28	18 31	21 03	22 46	5 11	6 54	17 16	23 42	.....	2 16	73	15 57.7	-24 11	6.4
Fri Jul 28/Sat Jul 29	18 35	21 02	22 45	5 12	6 55	17 19	23 48	17 35	3 03	82	16 58.0	-27 17	6.5
Sat Jul 29/Sun Jul 30	18 39	21 01	22 44	5 13	6 56	17 22	23 53	18 45	4 01	90	18 02.9	-28 46	6.5
Sun Jul 30/Mon Jul 31	18 42	21 00	22 42	5 15	6 56	17 24	23 58	19 50	5 10	96	19 10.5	-28 18	6.5
Mon Jul 31/Tue Aug 01	18 46	21 00	22 41	5 16	6 57	17 27	0 03	20 46	6 27	99	20 17.6	-25 46	6.6

***** 2023 AUGUST *****

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 Aug 01/Wed Aug 02	18 50	20 59	22 40	5 17	6 58	17 30	0 08	21 32	.....	99	21 21.8	-21 25	6.6
Wed Aug 02/Thu Aug 03	18 54	20 58	22 38	5 18	6 59	17 32	0 13	22 10	.....	97	22 21.8	-15 42	6.7
Thu Aug 03/Fri Aug 04	18 58	20 57	22 37	5 19	7 00	17 35	0 19	22 42	.....	91	23 17.7	- 9 09	6.7
Fri Aug 04/Sat Aug 05	19 02	20 56	22 35	5 21	7 00	17 37	0 24	23 10	.....	83	0 10.5	- 2 18	6.8
Sat Aug 05/Sun Aug 06	19 06	20 55	22 34	5 22	7 01	17 40	0 29	23 37	.....	73	1 01.4	4 26	6.8
Sun Aug 06/Mon Aug 07	19 10	20 54	22 33	5 23	7 02	17 42	0 34	0 05	.....	63	1 51.6	10 42	6.8
Mon Aug 07/Tue Aug 08	19 14	20 53	22 31	5 24	7 03	17 45	0 39	0 34	.....	52	2 42.1	16 14	6.9
Tue Aug 08/Wed Aug 09	19 18	20 51	22 30	5 26	7 04	17 47	0 44	1 07	.....	42	3 33.7	20 48	6.9
Wed Aug 09/Thu Aug 10	19 22	20 50	22 28	5 27	7 05	17 50	0 50	1 44	.....	32	4 26.7	24 13	7.0
Thu Aug 10/Fri Aug 11	19 26	20 49	22 27	5 28	7 05	17 52	0 55	2 28	.....	23	5 20.7	26 23	7.0
Fri Aug 11/Sat Aug 12	19 30	20 48	22 25	5 29	7 06	17 55	1 00	3 18	18 05	15	6 15.1	27 11	7.1
Sat Aug 12/Sun Aug 13	19 34	20 47	22 24	5 30	7 07	17 57	1 05	4 13	18 57	9	7 08.9	26 39	7.1
Sun Aug 13/Mon Aug 14	19 38	20 46	22 22	5 32	7 08	17 59	1 10	5 12	19 41	4	8 01.1	24 51	7.2
Mon Aug 14/Tue Aug 15	19 42	20 45	22 20	5 33	7 09	18 02	1 15	6 12	20 18	1	8 51.0	21 58	7.2
Tue Aug 15/Wed Aug 16	19 46	20 43	22 19	5 34	7 10	18 04	1 20	.....	20 50	0	9 38.3	18 09	7.3
Wed Aug 16/Thu Aug 17	19 49	20 42	22 17	5 35	7 10	18 06	1 26	.....	21 17	1	10 23.4	13 37	7.3
Thu Aug 17/Fri Aug 18	19 53	20 41	22 16	5 36	7 11	18 09	1 31	.....	21 41	3	11 06.7	8 33	7.3
Fri Aug 18/Sat Aug 19	19 57	20 40	22 14	5 37	7 12	18 11	1 36	.....	22 03	7	11 49.0	3 08	7.4
Sat Aug 19/Sun Aug 20	20 01	20 38	22 12	5 39	7 13	18 13	1 41	.....	22 25	12	12 31.2	- 2 28	7.4
Sun Aug 20/Mon Aug 21	20 05	20 37	22 11	5 40	7 14	18 16	1 46	.....	22 47	19	13 14.1	- 8 06	7.5
Mon Aug 21/Tue Aug 22	20 09	20 36	22 09	5 41	7 14	18 18	1 51	.....	23 11	28	13 58.9	-13 33	7.5
Tue Aug 22/Wed Aug 23	20 13	20 34	22 07	5 42	7 15	18 20	1 56	.....	23 39	37	14 46.7	-18 38	7.6
Wed Aug 23/Thu Aug 24	20 17	20 33	22 06	5 43	7 16	18 23	2 01	.....	0 12	47	15 38.5	-23 03	7.6
Thu Aug 24/Fri Aug 25	20 21	20 32	22 04	5 44	7 17	18 25	2 06	.....	0 53	58	16 35.1	-26 28	7.7
Fri Aug 25/Sat Aug 26	20 25	20 30	22 03	5 45	7 18	18 27	2 11	.....	1 44	69	17 36.3	-28 31	7.7
Sat Aug 26/Sun Aug 27	20 29	20 29	22 01	5 47	7 19	18 29	2 16	17 33	2 46	79	18 41.1	-28 51	7.8
Sun Aug 27/Mon Aug 28	20 33	20 27	21 59	5 48	7 19	18 32	2 21	18 32	3 59	88	19 47.2	-27 13	7.8
Mon Aug 28/Tue Aug 29	20 37	20 26	21 57	5 49	7 20	18 34	2 26	19 21	5 17	94	20 52.0	-23 40	7.9
Tue Aug 29/Wed Aug 30	20 41	20 25	21 56	5 50	7 21	18 36	2 32	20 02	6 36	99	21 53.8	-18 29	7.9
Wed Aug 30/Thu Aug 31	20 45	20 23	21 54	5 51	7 22	18 38	2 37	20 37	.....	100	22 52.1	-12 09	7.9
Thu Aug 31/Fri Sep 01	20 49	20 22	21 52	5 52	7 23	18 41	2 42	21 07	.....	98	23 47.2	- 5 11	8.0

Calendar for Okie-Tex, west longitude (h.m.s) = 6 51 48, latitude (d.m) = 36 53.9
 Rise/set times in Central time (6 hr W), uncorrected for elevation, DAYLIGHT time used, * shows clock reset.
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

***** 2023 SEPTEMBER *****

Date (eve/morn)	LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----				Twilight	
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Fri Sep 01/Sat Sep 02	20 53	20 20	21 51	5 53	7 23	18 43	2 47	21 36	.....	93	0 40.3	1 55	8.0
Sat Sep 02/Sun Sep 03	20 57	20 19	21 49	5 54	7 24	18 45	2 52	22 04	.....	86	1 32.5	8 40	8.1
Sun Sep 03/Mon Sep 04	21 00	20 17	21 47	5 55	7 25	18 47	2 57	22 33	.....	77	2 24.8	14 44	8.1
Mon Sep 04/Tue Sep 05	21 04	20 16	21 46	5 56	7 26	18 50	3 02	23 05	.....	67	3 17.8	19 49	8.2
Tue Sep 05/Wed Sep 06	21 08	20 15	21 44	5 57	7 27	18 52	3 06	23 41	.....	57	4 12.1	23 42	8.2
Wed Sep 06/Thu Sep 07	21 12	20 13	21 42	5 58	7 27	18 54	3 11	0 24	.....	47	5 07.2	26 15	8.3
Thu Sep 07/Fri Sep 08	21 16	20 12	21 41	5 59	7 28	18 56	3 16	1 12	.....	37	6 02.5	27 23	8.3
Fri Sep 08/Sat Sep 09	21 20	20 10	21 39	6 00	7 29	18 59	3 21	2 07	16 54	28	6 57.1	27 08	8.4
Sat Sep 09/Sun Sep 10	21 24	20 09	21 37	6 01	7 30	19 01	3 26	3 05	17 41	20	7 49.9	25 34	8.4
Sun Sep 10/Mon Sep 11	21 28	20 07	21 35	6 02	7 31	19 03	3 31	4 05	18 20	13	8 40.3	22 53	8.4
Mon Sep 11/Tue Sep 12	21 32	20 06	21 34	6 03	7 31	19 05	3 36	5 05	18 53	7	9 28.1	19 14	8.5
Tue Sep 12/Wed Sep 13	21 36	20 04	21 32	6 04	7 32	19 08	3 41	6 05	19 21	3	10 13.5	14 49	8.5
Wed Sep 13/Thu Sep 14	21 40	20 03	21 30	6 05	7 33	19 10	3 46	7 03	19 46	1	10 57.1	9 49	8.6
Thu Sep 14/Fri Sep 15	21 44	20 01	21 29	6 06	7 34	19 12	3 51	.....	20 08	0	11 39.6	4 26	8.6
Fri Sep 15/Sat Sep 16	21 48	20 00	21 27	6 07	7 35	19 14	3 56	.....	20 30	1	12 21.7	- 1 11	8.7
Sat Sep 16/Sun Sep 17	21 52	19 58	21 25	6 08	7 36	19 17	4 01	.....	20 52	4	13 04.3	- 6 50	8.7
Sun Sep 17/Mon Sep 18	21 56	19 56	21 24	6 09	7 36	19 19	4 06	.....	21 16	9	13 48.5	-12 21	8.8
Mon Sep 18/Tue Sep 19	22 00	19 55	21 22	6 10	7 37	19 21	4 10	.....	21 42	15	14 35.2	-17 31	8.8
Tue Sep 19/Wed Sep 20	22 04	19 53	21 20	6 11	7 38	19 24	4 15	.....	22 13	23	15 25.2	-22 04	8.8
Wed Sep 20/Thu Sep 21	22 07	19 52	21 19	6 12	7 39	19 26	4 20	.....	22 50	32	16 19.4	-25 43	8.9
Thu Sep 21/Fri Sep 22	22 11	19 50	21 17	6 13	7 40	19 28	4 25	.....	23 36	43	17 17.7	-28 07	8.9
Fri Sep 22/Sat Sep 23	22 15	19 49	21 16	6 14	7 40	19 30	4 30	.....	0 32	54	18 19.4	-28 58	9.0
Sat Sep 23/Sun Sep 24	22 19	19 47	21 14	6 14	7 41	19 33	4 35	.....	1 39	65	19 22.9	-28 02	9.0
Sun Sep 24/Mon Sep 25	22 23	19 46	21 12	6 15	7 42	19 35	4 40	17 13	2 52	76	20 26.1	-25 17	9.1
Mon Sep 25/Tue Sep 26	22 27	19 44	21 11	6 16	7 43	19 37	4 45	17 56	4 09	85	21 27.2	-20 51	9.1
Tue Sep 26/Wed Sep 27	22 31	19 43	21 09	6 17	7 44	19 40	4 49	18 32	5 26	93	22 25.6	-15 05	9.1
Wed Sep 27/Thu Sep 28	22 35	19 41	21 08	6 18	7 45	19 42	4 54	19 04	6 41	98	23 21.3	- 8 23	9.2
Thu Sep 28/Fri Sep 29	22 39	19 40	21 06	6 19	7 45	19 45	4 59	19 33	.....	100	0 15.2	- 1 16	9.2
Fri Sep 29/Sat Sep 30	22 43	19 38	21 04	6 20	7 46	19 47	5 04	20 01	.....	99	1 08.3	5 49	9.3
Sat Sep 30/Sun Oct 01	22 47	19 37	21 03	6 21	7 47	19 49	5 09	20 29	.....	95	2 01.6	12 24	9.3

***** 2023 OCTOBER *****

Date (eve/morn)	LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----				Twilight	
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Sun Oct 01/Mon Oct 02	22 51	19 35	21 01	6 22	7 48	19 52	5 14	21 01	.....	89	2 55.9	18 07	9.3
Mon Oct 02/Tue Oct 03	22 55	19 34	21 00	6 23	7 49	19 54	5 18	21 36	.....	82	3 51.6	22 39	9.4
Tue Oct 03/Wed Oct 04	22 59	19 32	20 58	6 23	7 50	19 57	5 23	22 17	.....	73	4 48.4	25 48	9.4
Wed Oct 04/Thu Oct 05	23 03	19 31	20 57	6 24	7 50	19 59	5 28	23 04	.....	63	5 45.5	27 26	9.5
Thu Oct 05/Fri Oct 06	23 07	19 29	20 55	6 25	7 51	20 02	5 33	23 58	.....	53	6 41.7	27 35	9.5
Fri Oct 06/Sat Oct 07	23 11	19 28	20 54	6 26	7 52	20 04	5 38	0 55	.....	43	7 36.1	26 21	9.5
Sat Oct 07/Sun Oct 08	23 15	19 27	20 53	6 27	7 53	20 06	5 42	1 56	16 19	34	8 27.7	23 54	9.6
Sun Oct 08/Mon Oct 09	23 18	19 25	20 51	6 28	7 54	20 09	5 47	2 56	16 55	25	9 16.4	20 27	9.6
Mon Oct 09/Tue Oct 10	23 22	19 24	20 50	6 29	7 55	20 12	5 52	3 56	17 24	18	10 02.5	16 11	9.6
Tue Oct 10/Wed Oct 11	23 26	19 22	20 48	6 30	7 56	20 14	5 57	4 55	17 50	11	10 46.5	11 19	9.7
Wed Oct 11/Thu Oct 12	23 30	19 21	20 47	6 30	7 57	20 17	6 02	5 53	18 13	6	11 29.1	5 59	9.7
Thu Oct 12/Fri Oct 13	23 34	19 19	20 46	6 31	7 57	20 19	6 07	6 51	18 35	2	12 11.3	0 23	9.8
Fri Oct 13/Sat Oct 14	23 38	19 18	20 44	6 32	7 58	20 22	6 11	.....	18 57	0	12 53.9	- 5 19	9.8
Sat Oct 14/Sun Oct 15	23 42	19 17	20 43	6 33	7 59	20 24	6 16	.....	19 20	0	13 37.9	-10 56	9.8
Sun Oct 15/Mon Oct 16	23 46	19 15	20 42	6 34	8 00	20 27	6 21	.....	19 46	2	14 24.2	-16 15	9.9
Mon Oct 16/Tue Oct 17	23 50	19 14	20 40	6 35	8 01	20 30	6 26	.....	20 15	6	15 13.7	-21 00	9.9
Tue Oct 17/Wed Oct 18	23 54	19 13	20 39	6 36	8 02	20 32	6 31	.....	20 50	12	16 07.0	-24 53	9.9
Wed Oct 18/Thu Oct 19	23 58	19 11	20 38	6 36	8 03	20 35	6 35	.....	21 34	19	17 04.1	-27 35	10.0
Thu Oct 19/Fri Oct 20	0 02	19 10	20 36	6 37	8 04	20 38	6 40	.....	22 26	29	18 04.4	-28 48	10.0
Fri Oct 20/Sat Oct 21	0 06	19 09	20 35	6 38	8 05	20 40	6 45	.....	23 29	39	19 06.3	-28 20	10.0
Sat Oct 21/Sun Oct 22	0 10	19 07	20 34	6 39	8 06	20 43	6 50	.....	0 38	50	20 07.9	-26 08	10.1
Sun Oct 22/Mon Oct 23	0 14	19 06	20 33	6 40	8 07	20 46	6 55	.....	1 52	61	21 07.6	-22 19	10.1
Mon Oct 23/Tue Oct 24	0 18	19 05	20 32	6 41	8 08	20 49	7 00	16 31	3 06	72	22 04.7	-17 08	10.2
Tue Oct 24/Wed Oct 25	0 22	19 04	20 31	6 42	8 09	20 52	7 04	17 03	4 20	82	22 59.4	-10 57	10.2
Wed Oct 25/Thu Oct 26	0 25	19 03	20 29	6 43	8 10	20 54	7 09	17 31	5 32	90	23 52.3	- 4 09	10.2
Thu Oct 26/Fri Oct 27	0 29	19 01	20 28	6 43	8 11	20 57	7 14	17 59	6 43	96	0 44.5	2 52	10.3
Fri Oct 27/Sat Oct 28	0 33	19 00	20 27	6 44	8 12	21 00	7 19	18 26	7 56	99	1 37.1	9 40	10.3
Sat Oct 28/Sun Oct 29	0 37	18 59	20 26	6 45	8 13	21 03	7 24	18 56	.....	100	2 31.0	15 50	10.3
Sun Oct 29/Mon Oct 30	0 41	18 58	20 25	6 46	8 14	21 06	7 28	19 29	.....	97	3 26.8	21 00	10.3
Mon Oct 30/Tue Oct 31	0 45	18 57	20 24	6 47	8 15	21 09	7 33	20 08	.....	93	4 24.5	24 50	10.4
Tue Oct 31/Wed Nov 01	0 49	18 56	20 23	6 48	8 16	21 12	7 38	20 53	.....	86	5 23.1	27 08	10.4

Calendar for Okie-Tex, west longitude (h.m.s) = 6 51 48, latitude (d.m) = 36 53.9
 Rise/set times in Central time (6 hr W), uncorrected for elevation, DAYLIGHT time used, * shows clock reset.
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

***** 2023 NOVEMBER *****

Date (eve/morn)	LMST midn	----- Sun: -----			LST twilight:		----- Moon: -----				Twilight		
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Wed Nov 01/Thu Nov 02	0 53	18 55	20 22	6 49	8 17	21 15	7 43	21 45	.....	78	6 21.4	27 51	10.4
Thu Nov 02/Fri Nov 03	0 57	18 54	20 21	6 50	8 18	21 18	7 48	22 43	.....	70	7 18.0	27 04	10.5
Fri Nov 03/Sat Nov 04	1 01	18 53	20 21	6 51	8 19	21 21	7 53	23 43	.....	60	8 11.6	24 57	10.5
Sat Nov 04/Sun Nov 05*	1 05	18 52	20 20	5 51	7 20	21 24	7 57	0 45	.....	51	9 02.0	21 44	10.5
Sun Nov 05/Mon Nov 06	2 09	17 51	19 19	5 52	7 21	21 27	8 02	0 45	.....	41	9 51.5	17 31	10.6
Mon Nov 06/Tue Nov 07	2 13	17 50	19 18	5 53	7 22	21 30	8 07	1 44	.....	32	10 36.2	12 45	10.6
Tue Nov 07/Wed Nov 08	2 17	17 49	19 17	5 54	7 23	21 33	8 12	2 42	.....	23	11 19.2	7 31	10.6
Wed Nov 08/Thu Nov 09	2 21	17 48	19 17	5 55	7 24	21 37	8 17	3 40	.....	16	12 01.4	1 58	10.6
Thu Nov 09/Fri Nov 10	2 25	17 47	19 16	5 56	7 25	21 40	8 22	4 39	16 00	10	12 43.9	- 3 43	10.7
Fri Nov 10/Sat Nov 11	2 29	17 46	19 15	5 57	7 26	21 43	8 26	5 40	16 23	5	13 27.6	- 9 24	10.7
Sat Nov 11/Sun Nov 12	2 33	17 45	19 14	5 58	7 27	21 46	8 31	6 43	16 48	1	14 13.6	-14 49	10.7
Sun Nov 12/Mon Nov 13	2 37	17 45	19 14	5 59	7 28	21 50	8 36	7 50	17 16	0	15 02.8	-19 45	10.7
Mon Nov 13/Tue Nov 14	2 41	17 44	19 13	5 59	7 29	21 53	8 41	.....	17 49	1	15 55.8	-23 53	10.8
Tue Nov 14/Wed Nov 15	2 44	17 43	19 13	6 00	7 30	21 56	8 46	.....	18 30	4	16 52.8	-26 52	10.8
Wed Nov 15/Thu Nov 16	2 48	17 42	19 12	6 01	7 31	22 00	8 51	.....	19 21	9	17 53.1	-28 23	10.8
Thu Nov 16/Fri Nov 17	2 52	17 42	19 12	6 02	7 32	22 03	8 55	.....	20 22	16	18 55.0	-28 13	10.8
Fri Nov 17/Sat Nov 18	2 56	17 41	19 11	6 03	7 33	22 07	9 00	.....	21 30	25	19 56.5	-26 20	10.9
Sat Nov 18/Sun Nov 19	3 00	17 40	19 11	6 04	7 34	22 10	9 05	.....	22 43	36	20 55.8	-22 50	10.9
Sun Nov 19/Mon Nov 20	3 04	17 40	19 10	6 05	7 35	22 14	9 10	.....	23 56	47	21 52.2	-18 01	10.9
Mon Nov 20/Tue Nov 21	3 08	17 39	19 10	6 06	7 36	22 17	9 15	.....	1 08	58	22 45.7	-12 13	10.9
Tue Nov 21/Wed Nov 22	3 12	17 39	19 09	6 07	7 37	22 21	9 20	.....	2 18	69	23 37.2	- 5 46	11.0
Wed Nov 22/Thu Nov 23	3 16	17 38	19 09	6 07	7 38	22 24	9 24	.....	3 27	79	0 27.7	0 59	11.0
Thu Nov 23/Fri Nov 24	3 20	17 38	19 09	6 08	7 39	22 28	9 29	.....	4 37	88	1 18.5	7 40	11.0
Fri Nov 24/Sat Nov 25	3 24	17 37	19 08	6 09	7 40	22 32	9 34	15 55	5 47	94	2 10.6	13 55	11.0
Sat Nov 25/Sun Nov 26	3 28	17 37	19 08	6 10	7 41	22 35	9 39	16 25	6 59	98	3 04.9	19 23	11.0
Sun Nov 26/Mon Nov 27	3 32	17 37	19 08	6 11	7 42	22 39	9 44	17 01	8 09	100	4 01.6	23 42	11.0
Mon Nov 27/Tue Nov 28	3 36	17 36	19 08	6 12	7 43	22 43	9 48	17 43	.....	99	5 00.3	26 36	11.1
Tue Nov 28/Wed Nov 29	3 40	17 36	19 08	6 12	7 44	22 46	9 53	18 33	.....	96	5 59.8	27 54	11.1
Wed Nov 29/Thu Nov 30	3 44	17 36	19 07	6 13	7 45	22 50	9 58	19 28	.....	91	6 58.3	27 37	11.1
Thu Nov 30/Fri Dec 01	3 48	17 36	19 07	6 14	7 46	22 54	10 03	20 29	.....	84	7 54.2	25 52	11.1

***** 2023 DECEMBER *****

Date (eve/morn)	LMST midn	----- Sun: -----			LST twilight:		----- Moon: -----				Twilight		
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Fri Dec 01/Sat Dec 02	3 52	17 35	19 07	6 15	7 47	22 58	10 07	21 31	.....	76	8 46.7	22 54	11.1
Sat Dec 02/Sun Dec 03	3 55	17 35	19 07	6 16	7 48	23 02	10 12	22 32	.....	68	9 35.6	18 59	11.1
Sun Dec 03/Mon Dec 04	3 59	17 35	19 07	6 17	7 49	23 06	10 17	23 32	.....	59	10 21.4	14 22	11.2
Mon Dec 04/Tue Dec 05	4 03	17 35	19 07	6 17	7 50	23 10	10 22	0 31	.....	49	11 05.0	9 15	11.2
Tue Dec 05/Wed Dec 06	4 07	17 35	19 07	6 18	7 50	23 14	10 26	1 28	.....	40	11 47.3	3 49	11.2
Wed Dec 06/Thu Dec 07	4 11	17 35	19 07	6 19	7 51	23 18	10 31	2 26	.....	31	12 29.4	- 1 49	11.2
Thu Dec 07/Fri Dec 08	4 15	17 35	19 08	6 20	7 52	23 22	10 36	3 25	.....	22	13 12.4	- 7 28	11.2
Fri Dec 08/Sat Dec 09	4 19	17 35	19 08	6 20	7 53	23 26	10 40	4 27	.....	15	13 57.3	-12 57	11.2
Sat Dec 09/Sun Dec 10	4 23	17 35	19 08	6 21	7 54	23 30	10 45	5 32	.....	8	14 45.3	-18 04	11.2
Sun Dec 10/Mon Dec 11	4 27	17 35	19 08	6 22	7 55	23 34	10 50	6 40	15 45	4	15 37.3	-22 30	11.2
Mon Dec 11/Tue Dec 12	4 31	17 35	19 08	6 22	7 55	23 38	10 54	7 50	16 24	1	16 33.6	-25 54	11.2
Tue Dec 12/Wed Dec 13	4 35	17 36	19 09	6 23	7 56	23 43	10 59	.....	17 11	0	17 34.0	-27 55	11.2
Wed Dec 13/Thu Dec 14	4 39	17 36	19 09	6 24	7 57	23 47	11 04	.....	18 09	2	18 36.9	-28 15	11.2
Thu Dec 14/Fri Dec 15	4 43	17 36	19 09	6 24	7 57	23 51	11 08	.....	19 17	7	19 40.0	-26 46	11.3
Fri Dec 15/Sat Dec 16	4 47	17 36	19 09	6 25	7 58	23 55	11 13	.....	20 31	13	20 41.1	-23 35	11.3
Sat Dec 16/Sun Dec 17	4 51	17 37	19 10	6 26	7 59	24 00	11 17	.....	21 46	22	21 38.9	-18 58	11.3
Sun Dec 17/Mon Dec 18	4 55	17 37	19 10	6 26	7 59	0 04	11 22	.....	22 59	32	22 33.4	-13 19	11.3
Mon Dec 18/Tue Dec 19	4 59	17 37	19 11	6 27	8 00	0 08	11 26	.....	0 10	43	23 25.0	- 7 00	11.3
Tue Dec 19/Wed Dec 20	5 02	17 38	19 11	6 27	8 00	0 13	11 31	.....	1 19	55	0 15.0	- 0 23	11.3
Wed Dec 20/Thu Dec 21	5 06	17 38	19 12	6 28	8 01	0 17	11 35	.....	2 27	66	1 04.6	6 11	11.3
Thu Dec 21/Fri Dec 22	5 10	17 39	19 12	6 28	8 01	0 22	11 40	.....	3 36	76	1 55.0	12 24	11.3
Fri Dec 22/Sat Dec 23	5 14	17 39	19 12	6 29	8 02	0 26	11 44	.....	4 45	85	2 47.2	17 58	11.3
Sat Dec 23/Sun Dec 24	5 18	17 40	19 13	6 29	8 02	0 30	11 49	.....	5 54	92	3 41.9	22 32	11.3
Sun Dec 24/Mon Dec 25	5 22	17 40	19 14	6 30	8 03	0 35	11 53	15 37	7 01	96	4 39.0	25 50	11.3
Mon Dec 25/Tue Dec 26	5 26	17 41	19 14	6 30	8 03	0 39	11 57	16 23	8 03	99	5 37.8	27 40	11.3
Tue Dec 26/Wed Dec 27	5 30	17 42	19 15	6 30	8 04	0 44	12 02	17 16	.....	100	6 36.5	27 54	11.3
Wed Dec 27/Thu Dec 28	5 34	17 42	19 15	6 31	8 04	0 49	12 06	18 15	.....	98	7 33.6	26 37	11.3
Thu Dec 28/Fri Dec 29	5 38	17 43	19 16	6 31	8 04	0 53	12 10	19 17	.....	95	8 27.8	24 01	11.3
Fri Dec 29/Sat Dec 30	5 42	17 44	19 17	6 31	8 04	0 58	12 14	20 20	.....	90	9 18.4	20 20	11.2
Sat Dec 30/Sun Dec 31	5 46	17 44	19 17	6 32	8 05	1 02	12 19	21 20	.....	83	10 05.7	15 52	11.2
Sun Dec 31/Mon Jan 01	5 50	17 45	19 18	6 32	8 05	1 07	12 23	22 19	.....	75	10 50.2	10 51	11.2