

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:

***** 2022 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 2022, 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 04	1 45	Dec 10	19 38	Dec 18	22 38	Dec 26	20 26
Jan 02	12 36	Jan 09	12 13	Jan 17	17 51	Jan 25	7 43
Jan 31	23 49	Feb 08	7 52	Feb 16	11 00	Feb 23	16 35
Mar 02	11 38	Mar 10	4 46	Mar 18	2 21	Mar 25	0 39
Apr 01	1 28	Apr 09	1 48	Apr 16	13 58	Apr 23	6 58
Apr 30	15 31	May 08	19 22	May 15	23 16	May 22	13 45
May 30	6 32	Jun 07	9 49	Jun 14	6 53	Jun 20	22 12
Jun 28	21 53	Jul 06	21 15	Jul 13	13 38	Jul 20	9 19
Jul 28	12 55	Aug 05	6 08	Aug 11	20 36	Aug 18	23 37
Aug 27	3 17	Sep 03	13 09	Sep 10	4 59	Sep 17	16 52
Sep 25	16 54	Oct 02	19 15	Oct 09	15 55	Oct 17	12 16
Oct 25	5 48	Nov 01	1 39	Nov 08	5 03	Nov 16	7 29
Nov 23	16 57	Nov 30	8 39	Dec 07	22 10	Dec 16	2 59
Dec 23	4 18	Dec 29	19 23	Jan 06	17 10	Jan 14	20 13

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.

***** 2022 JANUARY *****

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 Jan 01/Sun Jan 02	5 56	17 46	19 19	6 32	8 05	1 14	12 29	8 14	16 38	0	18 19.3	-26 23	11.2
Sun Jan 02/Mon Jan 03	6 00	17 47	19 20	6 33	8 05	1 19	12 33	.....	17 43	0	19 25.8	-26 03	11.2
Mon Jan 03/Tue Jan 04	6 04	17 48	19 21	6 33	8 05	1 23	12 37	.....	18 56	3	20 30.1	-23 54	11.2
Tue Jan 04/Wed Jan 05	6 07	17 49	19 21	6 33	8 05	1 28	12 41	.....	20 10	9	21 30.3	-20 15	11.2
Wed Jan 05/Thu Jan 06	6 11	17 50	19 22	6 33	8 05	1 33	12 45	.....	21 23	16	22 25.9	-15 32	11.2
Thu Jan 06/Fri Jan 07	6 15	17 50	19 23	6 33	8 05	1 37	12 49	.....	22 31	25	23 17.2	-10 11	11.2
Fri Jan 07/Sat Jan 08	6 19	17 51	19 24	6 33	8 05	1 42	12 53	.....	23 35	34	0 05.3	- 4 33	11.2
Sat Jan 08/Sun Jan 09	6 23	17 52	19 24	6 33	8 05	1 47	12 57	.....	0 37	44	0 51.2	1 07	11.1
Sun Jan 09/Mon Jan 10	6 27	17 53	19 25	6 33	8 05	1 52	13 01	.....	1 37	54	1 36.2	6 35	11.1
Mon Jan 10/Tue Jan 11	6 31	17 54	19 26	6 33	8 05	1 56	13 05	.....	2 36	64	2 21.3	11 42	11.1
Tue Jan 11/Wed Jan 12	6 35	17 55	19 27	6 33	8 05	2 01	13 09	.....	3 35	73	3 07.3	16 18	11.1
Wed Jan 12/Thu Jan 13	6 39	17 56	19 28	6 33	8 04	2 06	13 13	.....	4 34	81	3 55.1	20 12	11.1
Thu Jan 13/Fri Jan 14	6 43	17 57	19 29	6 33	8 04	2 11	13 17	.....	5 32	88	4 44.9	23 15	11.1
Fri Jan 14/Sat Jan 15	6 47	17 58	19 30	6 33	8 04	2 16	13 20	.....	6 29	93	5 36.8	25 16	11.1
Sat Jan 15/Sun Jan 16	6 51	17 59	19 30	6 32	8 03	2 20	13 24	15 57	7 22	97	6 30.3	26 07	11.0
Sun Jan 16/Mon Jan 17	6 55	18 00	19 31	6 32	8 03	2 25	13 28	16 48	8 09	99	7 24.4	25 43	11.0
Mon Jan 17/Tue Jan 18	6 59	18 01	19 32	6 32	8 03	2 30	13 32	17 45	.....	100	8 18.2	24 02	11.0
Tue Jan 18/Wed Jan 19	7 03	18 02	19 33	6 32	8 02	2 35	13 35	18 45	.....	98	9 10.7	21 11	11.0
Wed Jan 19/Thu Jan 20	7 07	18 03	19 34	6 31	8 02	2 40	13 39	19 47	.....	95	10 01.5	17 18	11.0
Thu Jan 20/Fri Jan 21	7 11	18 04	19 35	6 31	8 01	2 45	13 43	20 50	.....	89	10 50.5	12 35	10.9
Fri Jan 21/Sat Jan 22	7 14	18 05	19 36	6 31	8 01	2 50	13 46	21 53	.....	82	11 38.3	7 15	10.9
Sat Jan 22/Sun Jan 23	7 18	18 06	19 37	6 30	8 00	2 54	13 50	22 56	.....	73	12 25.6	1 31	10.9
Sun Jan 23/Mon Jan 24	7 22	18 07	19 38	6 30	8 00	2 59	13 53	24 00	.....	63	13 13.3	- 4 23	10.9
Mon Jan 24/Tue Jan 25	7 26	18 09	19 39	6 29	7 59	3 04	13 57	1 06	.....	53	14 02.6	-10 11	10.8
Tue Jan 25/Wed Jan 26	7 30	18 10	19 39	6 29	7 58	3 09	14 00	2 15	.....	42	14 54.6	-15 37	10.8
Wed Jan 26/Thu Jan 27	7 34	18 11	19 40	6 28	7 58	3 14	14 04	3 27	.....	31	15 50.2	-20 20	10.8
Thu Jan 27/Fri Jan 28	7 38	18 12	19 41	6 28	7 57	3 19	14 07	4 41	.....	21	16 49.9	-23 57	10.8
Fri Jan 28/Sat Jan 29	7 42	18 13	19 42	6 27	7 56	3 24	14 10	5 52	.....	12	17 53.1	-26 06	10.7
Sat Jan 29/Sun Jan 30	7 46	18 14	19 43	6 27	7 56	3 29	14 14	6 57	.....	6	18 58.2	-26 29	10.7
Sun Jan 30/Mon Jan 31	7 50	18 15	19 44	6 26	7 55	3 33	14 17	7 52	16 29	2	20 02.7	-25 02	10.7
Mon Jan 31/Tue Feb 01	7 54	18 16	19 45	6 25	7 54	3 38	14 20	.....	17 43	0	21 04.6	-21 57	10.7

***** 2022 FEBRUARY *****

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 Feb 01/Wed Feb 02	7 58	18 17	19 46	6 25	7 53	3 43	14 23	.....	18 57	2	22 02.4	-17 34	10.6
Wed Feb 02/Thu Feb 03	8 02	18 18	19 47	6 24	7 52	3 48	14 27	.....	20 09	5	22 56.1	-12 20	10.6
Thu Feb 03/Fri Feb 04	8 06	18 19	19 48	6 23	7 51	3 53	14 30	.....	21 17	11	23 46.2	- 6 38	10.6
Fri Feb 04/Sat Feb 05	8 10	18 20	19 49	6 22	7 51	3 58	14 33	.....	22 21	19	0 33.8	- 0 48	10.6
Sat Feb 05/Sun Feb 06	8 14	18 22	19 50	6 21	7 50	4 03	14 36	.....	23 24	27	1 19.9	4 53	10.5
Sun Feb 06/Mon Feb 07	8 18	18 23	19 51	6 21	7 49	4 08	14 39	.....	0 24	37	2 05.6	10 14	10.5
Mon Feb 07/Tue Feb 08	8 22	18 24	19 52	6 20	7 48	4 13	14 42	.....	1 25	46	2 51.8	15 04	10.5
Tue Feb 08/Wed Feb 09	8 25	18 25	19 53	6 19	7 47	4 17	14 45	.....	2 24	56	3 39.3	19 14	10.4
Wed Feb 09/Thu Feb 10	8 29	18 26	19 54	6 18	7 46	4 22	14 48	.....	3 23	65	4 28.5	22 33	10.4
Thu Feb 10/Fri Feb 11	8 33	18 27	19 55	6 17	7 45	4 27	14 51	.....	4 21	74	5 19.7	24 53	10.4
Fri Feb 11/Sat Feb 12	8 37	18 28	19 55	6 16	7 43	4 32	14 54	.....	5 15	82	6 12.6	26 05	10.3
Sat Feb 12/Sun Feb 13	8 41	18 29	19 56	6 15	7 42	4 37	14 57	.....	6 05	88	7 06.5	26 03	10.3
Sun Feb 13/Mon Feb 14	8 45	18 30	19 57	6 14	7 41	4 42	15 00	.....	6 49	94	8 00.6	24 45	10.3
Mon Feb 14/Tue Feb 15	8 49	18 31	19 58	6 13	7 40	4 47	15 03	16 35	7 27	98	8 53.9	22 12	10.2
Tue Feb 15/Wed Feb 16	8 53	18 32	19 59	6 12	7 39	4 52	15 06	17 37	8 01	100	9 45.7	18 31	10.2
Wed Feb 16/Thu Feb 17	8 57	18 33	20 00	6 11	7 38	4 57	15 09	18 41	.....	99	10 36.0	13 54	10.2
Thu Feb 17/Fri Feb 18	9 01	18 34	20 01	6 10	7 37	5 01	15 12	19 45	.....	97	11 25.0	8 34	10.1
Fri Feb 18/Sat Feb 19	9 05	18 35	20 02	6 09	7 35	5 06	15 15	20 49	.....	93	12 13.2	2 46	10.1
Sat Feb 19/Sun Feb 20	9 09	18 36	20 03	6 08	7 34	5 11	15 17	21 53	.....	86	13 01.5	- 3 15	10.1
Sun Feb 20/Mon Feb 21	9 13	18 37	20 04	6 06	7 33	5 16	15 20	22 59	.....	78	13 50.8	- 9 12	10.0
Mon Feb 21/Tue Feb 22	9 17	18 38	20 05	6 05	7 32	5 21	15 23	0 07	.....	68	14 42.3	-14 47	10.0
Tue Feb 22/Wed Feb 23	9 21	18 39	20 06	6 04	7 30	5 26	15 26	1 18	.....	57	15 36.7	-19 40	10.0
Wed Feb 23/Thu Feb 24	9 25	18 40	20 07	6 03	7 29	5 31	15 28	2 29	.....	46	16 34.5	-23 30	9.9
Thu Feb 24/Fri Feb 25	9 29	18 41	20 08	6 02	7 28	5 36	15 31	3 39	.....	35	17 35.5	-25 59	9.9
Fri Feb 25/Sat Feb 26	9 32	18 42	20 09	6 00	7 27	5 40	15 34	4 45	.....	24	18 38.5	-26 49	9.9
Sat Feb 26/Sun Feb 27	9 36	18 43	20 10	5 59	7 25	5 45	15 36	5 41	.....	15	19 41.7	-25 56	9.8
Sun Feb 27/Mon Feb 28	9 40	18 44	20 11	5 58	7 24	5 50	15 39	6 29	.....	8	20 43.0	-23 23	9.8
Mon Feb 28/Tue Mar 01	9 44	18 45	20 11	5 56	7 22	5 55	15 42	7 09	16 34	3	21 41.1	-19 28	9.7

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.

***** 2022 MARCH *****

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	
Tue Mar 01/Wed Mar 02	9 48	18 46	20 12	5 55	7 21	6 00	15 44	7 42	17 46	1	22 35.5	-14 31	9.7
Wed Mar 02/Thu Mar 03	9 52	18 47	20 13	5 54	7 20	6 05	15 47	.....	18 56	0	23 26.6	- 8 56	9.7
Thu Mar 03/Fri Mar 04	9 56	18 48	20 14	5 52	7 18	6 10	15 49	.....	20 02	3	0 15.1	- 3 03	9.6
Fri Mar 04/Sat Mar 05	10 00	18 49	20 15	5 51	7 17	6 15	15 52	.....	21 07	7	1 02.1	2 49	9.6
Sat Mar 05/Sun Mar 06	10 04	18 50	20 16	5 50	7 16	6 20	15 55	.....	22 09	13	1 48.3	8 25	9.6
Sun Mar 06/Mon Mar 07	10 08	18 51	20 17	5 48	7 14	6 24	15 57	.....	23 11	21	2 34.8	13 32	9.5
Mon Mar 07/Tue Mar 08	10 12	18 52	20 18	5 47	7 13	6 29	16 00	.....	0 12	29	3 22.2	18 01	9.5
Tue Mar 08/Wed Mar 09	10 16	18 53	20 19	5 45	7 11	6 34	16 02	.....	1 12	38	4 11.1	21 41	9.4
Wed Mar 09/Thu Mar 10	10 20	18 54	20 20	5 44	7 10	6 39	16 05	.....	2 11	47	5 01.7	24 22	9.4
Thu Mar 10/Fri Mar 11	10 24	18 55	20 21	5 42	7 08	6 44	16 07	.....	3 07	57	5 54.0	25 57	9.4
Fri Mar 11/Sat Mar 12	10 28	18 56	20 22	5 41	7 07	6 49	16 09	.....	3 58	66	6 47.3	26 20	9.3
Sat Mar 12/Sun Mar 13*	10 32	18 57	20 23	6 39	8 06	6 54	16 12	.....	5 44	75	7 41.0	25 27	9.3
Sun Mar 13/Mon Mar 14	9 35	19 57	21 24	6 38	8 04	6 59	16 14	.....	6 25	83	8 32.9	23 28	9.2
Mon Mar 14/Tue Mar 15	9 39	19 58	21 25	6 36	8 03	7 04	16 17	.....	7 00	90	9 25.2	20 11	9.2
Tue Mar 15/Wed Mar 16	9 43	19 59	21 26	6 35	8 01	7 09	16 19	17 26	.....	95	10 16.2	15 51	9.2
Wed Mar 16/Thu Mar 17	9 47	20 00	21 27	6 33	8 00	7 13	16 22	18 30	.....	99	11 06.1	10 40	9.1
Thu Mar 17/Fri Mar 18	9 51	20 01	21 28	6 32	7 58	7 18	16 24	19 35	.....	100	11 55.2	4 52	9.1
Fri Mar 18/Sat Mar 19	9 55	20 02	21 29	6 30	7 57	7 23	16 26	20 41	.....	99	12 44.3	- 1 18	9.0
Sat Mar 19/Sun Mar 20	9 59	20 03	21 30	6 29	7 55	7 28	16 29	21 48	.....	95	13 34.4	- 7 29	9.0
Sun Mar 20/Mon Mar 21	10 03	20 04	21 31	6 27	7 54	7 33	16 31	22 57	.....	89	14 26.3	-13 24	8.9
Mon Mar 21/Tue Mar 22	10 07	20 05	21 32	6 25	7 52	7 38	16 33	0 09	.....	81	15 20.9	-18 40	8.9
Tue Mar 22/Wed Mar 23	10 11	20 06	21 33	6 24	7 51	7 43	16 36	1 21	.....	72	16 18.6	-22 54	8.9
Wed Mar 23/Thu Mar 24	10 15	20 06	21 34	6 22	7 49	7 48	16 38	2 32	.....	61	17 19.3	-25 47	8.8
Thu Mar 24/Fri Mar 25	10 19	20 07	21 35	6 21	7 48	7 53	16 40	3 39	.....	50	18 21.8	-27 03	8.8
Fri Mar 25/Sat Mar 26	10 23	20 08	21 36	6 19	7 46	7 58	16 43	4 38	.....	39	19 24.3	-26 37	8.7
Sat Mar 26/Sun Mar 27	10 27	20 09	21 37	6 17	7 45	8 03	16 45	5 27	.....	28	20 25.2	-24 32	8.7
Sun Mar 27/Mon Mar 28	10 31	20 10	21 38	6 16	7 43	8 08	16 47	6 08	.....	19	21 22.9	-21 03	8.6
Mon Mar 28/Tue Mar 29	10 35	20 11	21 39	6 14	7 42	8 13	16 50	6 42	.....	11	22 17.1	-16 28	8.6
Tue Mar 29/Wed Mar 30	10 38	20 12	21 40	6 12	7 40	8 18	16 52	7 12	17 40	5	23 08.1	-11 09	8.5
Wed Mar 30/Thu Mar 31	10 42	20 13	21 41	6 11	7 39	8 23	16 54	.....	18 46	2	23 56.6	- 5 24	8.5
Thu Mar 31/Fri Apr 01	10 46	20 13	21 42	6 09	7 37	8 28	16 56	.....	19 51	0	0 43.5	0 29	8.5

***** 2022 APRIL *****

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	
Fri Apr 01/Sat Apr 02	10 50	20 14	21 43	6 07	7 36	8 33	16 59	.....	20 54	1	1 29.6	6 14	8.4
Sat Apr 02/Sun Apr 03	10 54	20 15	21 44	6 06	7 35	8 38	17 01	.....	21 56	4	2 15.9	11 37	8.4
Sun Apr 03/Mon Apr 04	10 58	20 16	21 45	6 04	7 33	8 43	17 03	.....	22 58	8	3 03.1	16 26	8.3
Mon Apr 04/Tue Apr 05	11 02	20 17	21 46	6 02	7 32	8 48	17 06	.....	23 59	15	3 51.7	20 29	8.3
Tue Apr 05/Wed Apr 06	11 06	20 18	21 47	6 01	7 30	8 53	17 08	.....	1 00	22	4 42.0	23 36	8.2
Wed Apr 06/Thu Apr 07	11 10	20 19	21 48	5 59	7 29	8 58	17 10	.....	1 57	30	5 33.8	25 38	8.2
Thu Apr 07/Fri Apr 08	11 14	20 20	21 50	5 57	7 27	9 03	17 12	.....	2 51	39	6 26.7	26 29	8.1
Fri Apr 08/Sat Apr 09	11 18	20 20	21 51	5 56	7 26	9 08	17 15	.....	3 39	49	7 20.1	26 06	8.1
Sat Apr 09/Sun Apr 10	11 22	20 21	21 52	5 54	7 25	9 13	17 17	.....	4 21	58	8 13.0	24 27	8.0
Sun Apr 10/Mon Apr 11	11 26	20 22	21 53	5 53	7 23	9 18	17 19	.....	4 58	68	9 05.1	21 37	8.0
Mon Apr 11/Tue Apr 12	11 30	20 23	21 54	5 51	7 22	9 23	17 22	.....	5 30	77	9 55.9	17 42	7.9
Tue Apr 12/Wed Apr 13	11 34	20 24	21 55	5 49	7 20	9 28	17 24	.....	6 00	85	10 45.6	12 51	7.9
Wed Apr 13/Thu Apr 14	11 38	20 25	21 56	5 48	7 19	9 34	17 26	17 17	6 27	92	11 34.7	7 15	7.9
Thu Apr 14/Fri Apr 15	11 42	20 26	21 57	5 46	7 18	9 39	17 28	18 23	6 54	97	12 24.0	1 08	7.8
Fri Apr 15/Sat Apr 16	11 46	20 27	21 59	5 44	7 16	9 44	17 31	19 30	.....	100	13 14.2	- 5 13	7.8
Sat Apr 16/Sun Apr 17	11 49	20 27	22 00	5 43	7 15	9 49	17 33	20 39	.....	100	14 06.5	-11 28	7.7
Sun Apr 17/Mon Apr 18	11 53	20 28	22 01	5 41	7 14	9 54	17 35	21 52	.....	97	15 01.8	-17 12	7.7
Mon Apr 18/Tue Apr 19	11 57	20 29	22 02	5 39	7 12	9 59	17 38	23 07	.....	92	16 00.5	-22 00	7.6
Tue Apr 19/Wed Apr 20	12 01	20 30	22 03	5 38	7 11	10 04	17 40	0 21	.....	84	17 02.5	-25 27	7.6
Wed Apr 20/Thu Apr 21	12 05	20 31	22 05	5 36	7 10	10 10	17 42	1 32	.....	75	18 06.6	-27 13	7.5
Thu Apr 21/Fri Apr 22	12 09	20 32	22 06	5 34	7 08	10 15	17 45	2 34	.....	64	19 10.9	-27 10	7.5
Fri Apr 22/Sat Apr 23	12 13	20 33	22 07	5 33	7 07	10 20	17 47	3 27	.....	53	20 13.0	-25 23	7.4
Sat Apr 23/Sun Apr 24	12 17	20 34	22 08	5 31	7 06	10 25	17 49	4 10	.....	42	21 11.7	-22 09	7.4
Sun Apr 24/Mon Apr 25	12 21	20 35	22 09	5 30	7 05	10 30	17 52	4 45	.....	31	22 06.3	-17 47	7.3
Mon Apr 25/Tue Apr 26	12 25	20 35	22 11	5 28	7 03	10 35	17 54	5 15	.....	22	22 57.2	-12 38	7.3
Tue Apr 26/Wed Apr 27	12 29	20 36	22 12	5 27	7 02	10 41	17 56	5 42	.....	14	23 45.3	- 7 02	7.2
Wed Apr 27/Thu Apr 28	12 33	20 37	22 13	5 25	7 01	10 46	17 59	6 08	17 40	7	0 31.6	- 1 14	7.2
Thu Apr 28/Fri Apr 29	12 37	20 38	22 14	5 24	7 00	10 51	18 01	6 33	18 43	3	1 17.0	4 30	7.2
Fri Apr 29/Sat Apr 30	12 41	20 39	22 16	5 22	6 59	10 56	18 04	.....	19 44	1	2 02.5	9 57	7.1
Sat Apr 30/Sun May 01	12 45	20 40	22 17	5 20	6 58	11 01	18 06	.....	20 46	0	2 48.9	14 56	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.

***** 2022 MAY *****

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 May 01/Mon May 02	12 49	20 41	22 18	5 19 6 56	11 07 18 08	.....	21 47 2	3 36.7	19 14	7.0
Mon May 02/Tue May 03	12 53	20 42	22 20	5 18 6 55	11 12 18 11	.....	22 48 5	4 26.3	22 39	7.0
Tue May 03/Wed May 04	12 56	20 43	22 21	5 16 6 54	11 17 18 13	.....	23 48 10	5 17.5	25 03	6.9
Wed May 04/Thu May 05	13 00	20 43	22 22	5 15 6 53	11 22 18 16	.....	0 43 16	6 09.9	26 17	6.9
Thu May 05/Fri May 06	13 04	20 44	22 23	5 13 6 52	11 27 18 18	.....	1 33 24	7 02.8	26 18	6.8
Fri May 06/Sat May 07	13 08	20 45	22 25	5 12 6 51	11 33 18 21	.....	2 18 32	7 55.4	25 04	6.8
Sat May 07/Sun May 08	13 12	20 46	22 26	5 10 6 50	11 38 18 23	.....	2 56 42	8 47.0	22 40	6.7
Sun May 08/Mon May 09	13 16	20 47	22 27	5 09 6 49	11 43 18 26	.....	3 30 52	9 37.2	19 12	6.7
Mon May 09/Tue May 10	13 20	20 48	22 28	5 08 6 48	11 48 18 29	.....	3 59 61	10 26.2	14 46	6.7
Tue May 10/Wed May 11	13 24	20 49	22 30	5 06 6 47	11 54 18 31	.....	4 27 71	11 14.4	9 33	6.6
Wed May 11/Thu May 12	13 28	20 49	22 31	5 05 6 46	11 59 18 34	.....	4 53 80	12 02.5	3 43	6.6
Thu May 12/Fri May 13	13 32	20 50	22 32	5 04 6 46	12 04 18 37	.....	5 20 88	12 51.5	- 2 30	6.5
Fri May 13/Sat May 14	13 36	20 51	22 34	5 02 6 45	12 09 18 39	18 16	5 48 95	13 42.6	- 8 51	6.5
Sat May 14/Sun May 15	13 40	20 52	22 35	5 01 6 44	12 14 18 42	19 27	6 20 99	14 36.8	-14 56	6.4
Sun May 15/Mon May 16	13 44	20 53	22 36	5 00 6 43	12 20 18 45	20 42	..... 100	15 35.1	-20 18	6.4
Mon May 16/Tue May 17	13 48	20 54	22 37	4 59 6 42	12 25 18 47	21 59	..... 98	16 37.7	-24 29	6.4
Tue May 17/Wed May 18	13 52	20 55	22 38	4 58 6 42	12 30 18 50	23 15	..... 94	17 43.6	-27 00	6.3
Wed May 18/Thu May 19	13 56	20 55	22 40	4 57 6 41	12 35 18 53	0 23	..... 86	18 50.7	-27 35	6.3
Thu May 19/Fri May 20	14 00	20 56	22 41	4 55 6 40	12 40 18 56	1 22	..... 77	19 56.1	-26 15	6.2
Fri May 20/Sat May 21	14 03	20 57	22 42	4 54 6 40	12 45 18 59	2 09	..... 67	20 57.7	-23 16	6.2
Sat May 21/Sun May 22	14 07	20 58	22 43	4 53 6 39	12 51 19 02	2 47	..... 56	21 54.6	-19 01	6.2
Sun May 22/Mon May 23	14 11	20 59	22 44	4 52 6 38	12 56 19 05	3 19	..... 45	22 47.1	-13 56	6.1
Mon May 23/Tue May 24	14 15	20 59	22 46	4 51 6 38	13 01 19 08	3 47	..... 35	23 35.9	- 8 21	6.1
Tue May 24/Wed May 25	14 19	21 00	22 47	4 50 6 37	13 06 19 11	4 13	..... 25	0 22.4	- 2 35	6.1
Wed May 25/Thu May 26	14 23	21 01	22 48	4 50 6 37	13 11 19 14	4 37	..... 17	1 07.5	3 08	6.0
Thu May 26/Fri May 27	14 27	21 02	22 49	4 49 6 36	13 16 19 17	5 02	17 37 10	1 52.4	8 37	6.0
Fri May 27/Sat May 28	14 31	21 02	22 50	4 48 6 36	13 21 19 20	5 29	18 38 5	2 38.0	13 40	6.0
Sat May 28/Sun May 29	14 35	21 03	22 51	4 47 6 35	13 26 19 23	5 59	19 39 2	3 24.9	18 05	5.9
Sun May 29/Mon May 30	14 39	21 04	22 52	4 46 6 35	13 31 19 26	.....	20 40 0	4 13.5	21 43	5.9
Mon May 30/Tue May 31	14 43	21 04	22 53	4 46 6 34	13 36 19 29	.....	21 39 0	5 04.0	24 22	5.9
Tue May 31/Wed Jun 01	14 47	21 05	22 54	4 45 6 34	13 41 19 33	.....	22 36 3	5 55.9	25 55	5.8

***** 2022 JUNE *****

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 Jun 01/Thu Jun 02	14 51	21 06	22 55	4 44 6 34	13 46 19 36	.....	23 28 6	6 48.4	26 15	5.8
Thu Jun 02/Fri Jun 03	14 55	21 06	22 56	4 44 6 33	13 51 19 39	.....	0 15 12	7 40.8	25 22	5.8
Fri Jun 03/Sat Jun 04	14 59	21 07	22 57	4 43 6 33	13 55 19 43	.....	0 55 19	8 32.2	23 18	5.8
Sat Jun 04/Sun Jun 05	15 03	21 08	22 58	4 43 6 33	14 00 19 46	.....	1 30 27	9 22.0	20 11	5.7
Sun Jun 05/Mon Jun 06	15 07	21 08	22 59	4 42 6 33	14 05 19 50	.....	2 00 36	10 10.3	16 07	5.7
Mon Jun 06/Tue Jun 07	15 11	21 09	22 59	4 42 6 32	14 10 19 53	.....	2 28 45	10 57.5	11 16	5.7
Tue Jun 07/Wed Jun 08	15 14	21 09	23 00	4 41 6 32	14 14 19 57	.....	2 54 56	11 44.1	5 47	5.7
Wed Jun 08/Thu Jun 09	15 18	21 10	23 01	4 41 6 32	14 19 20 00	.....	3 19 66	12 31.2	- 0 08	5.7
Thu Jun 09/Fri Jun 10	15 22	21 10	23 02	4 41 6 32	14 24 20 04	.....	3 46 76	13 20.0	- 6 18	5.7
Fri Jun 10/Sat Jun 11	15 26	21 11	23 02	4 40 6 32	14 28 20 08	.....	4 15 85	14 11.5	-12 24	5.6
Sat Jun 11/Sun Jun 12	15 30	21 11	23 03	4 40 6 32	14 33 20 11	18 15	4 50 92	15 07.2	-18 05	5.6
Sun Jun 12/Mon Jun 13	15 34	21 12	23 04	4 40 6 32	14 38 20 15	19 31	5 32 98	16 07.8	-22 52	5.6
Mon Jun 13/Tue Jun 14	15 38	21 12	23 04	4 40 6 32	14 42 20 19	20 48	6 24 100	17 13.1	-26 13	5.6
Tue Jun 14/Wed Jun 15	15 42	21 12	23 05	4 40 6 32	14 46 20 23	22 02	..... 99	18 21.6	-27 41	5.6
Wed Jun 15/Thu Jun 16	15 46	21 13	23 05	4 40 6 32	14 51 20 27	23 08	..... 95	19 30.3	-27 06	5.6
Thu Jun 16/Fri Jun 17	15 50	21 13	23 05	4 40 6 32	14 55 20 31	0 02	..... 89	20 36.0	-24 35	5.6
Fri Jun 17/Sat Jun 18	15 54	21 14	23 06	4 40 6 32	15 00 20 35	0 45	..... 80	21 36.9	-20 33	5.6
Sat Jun 18/Sun Jun 19	15 58	21 14	23 06	4 40 6 32	15 04 20 39	1 20	..... 70	22 32.6	-15 29	5.6
Sun Jun 19/Mon Jun 20	16 02	21 14	23 06	4 40 6 33	15 08 20 43	1 50	..... 60	23 23.9	- 9 50	5.6
Mon Jun 20/Tue Jun 21	16 06	21 14	23 07	4 40 6 33	15 12 20 47	2 17	..... 49	0 11.9	- 3 57	5.6
Tue Jun 21/Wed Jun 22	16 10	21 15	23 07	4 41 6 33	15 16 20 51	2 42	..... 39	0 57.9	1 53	5.6
Wed Jun 22/Thu Jun 23	16 14	21 15	23 07	4 41 6 33	15 21 20 55	3 07	..... 29	1 43.0	7 28	5.6
Thu Jun 23/Fri Jun 24	16 18	21 15	23 07	4 41 6 34	15 25 21 00	3 33	..... 21	2 28.4	12 37	5.6
Fri Jun 24/Sat Jun 25	16 21	21 15	23 07	4 42 6 34	15 29 21 04	4 02	17 32 13	3 14.8	17 09	5.6
Sat Jun 25/Sun Jun 26	16 25	21 15	23 07	4 42 6 34	15 33 21 08	4 34	18 33 8	4 02.8	20 56	5.6
Sun Jun 26/Mon Jun 27	16 29	21 15	23 07	4 42 6 35	15 37 21 13	5 12	19 33 3	4 52.6	23 47	5.6
Mon Jun 27/Tue Jun 28	16 33	21 15	23 07	4 43 6 35	15 40 21 17	5 56	20 31 1	5 43.9	25 33	5.6
Tue Jun 28/Wed Jun 29	16 37	21 15	23 07	4 44 6 35	15 44 21 22	.....	21 24 0	6 36.2	26 08	5.6
Wed Jun 29/Thu Jun 30	16 41	21 15	23 07	4 44 6 36	15 48 21 26	.....	22 13 1	7 28.5	25 31	5.6
Thu Jun 30/Fri Jul 01	16 45	21 15	23 07	4 45 6 36	15 52 21 31	.....	22 55 4	8 19.9	23 43	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.

***** 2022 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
Fri Jul 01/Sat Jul 02		16 49	21 15	23 06	4 45	6 37	15 55	21 35	.....	23 31	8	9 09.8	20 50	5.6
Sat Jul 02/Sun Jul 03		16 53	21 15	23 06	4 46	6 37	15 59	21 40	.....	0 03	14	9 58.0	17 00	5.7
Sun Jul 03/Mon Jul 04		16 57	21 15	23 06	4 47	6 38	16 03	21 44	.....	0 31	22	10 44.7	12 24	5.7
Mon Jul 04/Tue Jul 05		17 01	21 15	23 05	4 47	6 38	16 06	21 49	.....	0 56	31	11 30.4	7 10	5.7
Tue Jul 05/Wed Jul 06		17 05	21 14	23 05	4 48	6 39	16 10	21 54	.....	1 21	40	12 16.0	1 31	5.7
Wed Jul 06/Thu Jul 07		17 09	21 14	23 05	4 49	6 39	16 13	21 59	.....	1 46	51	13 02.6	- 4 24	5.7
Thu Jul 07/Fri Jul 08		17 13	21 14	23 04	4 50	6 40	16 17	22 03	.....	2 13	62	13 51.3	-10 21	5.8
Fri Jul 08/Sat Jul 09		17 17	21 14	23 03	4 51	6 41	16 20	22 08	.....	2 44	72	14 43.5	-16 03	5.8
Sat Jul 09/Sun Jul 10		17 21	21 13	23 03	4 52	6 41	16 23	22 13	.....	3 21	82	15 40.3	-21 06	5.8
Sun Jul 10/Mon Jul 11		17 25	21 13	23 02	4 53	6 42	16 27	22 18	18 21	4 07	90	16 42.4	-25 02	5.8
Mon Jul 11/Tue Jul 12		17 29	21 13	23 02	4 54	6 42	16 30	22 23	19 36	5 04	96	17 49.0	-27 22	5.9
Tue Jul 12/Wed Jul 13		17 32	21 12	23 01	4 55	6 43	16 33	22 28	20 46	6 12	99	18 58.2	-27 42	5.9
Wed Jul 13/Thu Jul 14		17 36	21 12	23 00	4 56	6 44	16 36	22 33	21 47	.....	99	20 06.5	-25 59	5.9
Thu Jul 14/Fri Jul 15		17 40	21 11	22 59	4 57	6 44	16 39	22 38	22 36	.....	96	21 11.3	-22 26	6.0
Fri Jul 15/Sat Jul 16		17 44	21 11	22 58	4 58	6 45	16 42	22 43	23 16	.....	91	22 11.0	-17 33	6.0
Sat Jul 16/Sun Jul 17		17 48	21 10	22 58	4 59	6 46	16 46	22 48	23 49	.....	83	23 05.7	-11 50	6.0
Sun Jul 17/Mon Jul 18		17 52	21 10	22 57	5 00	6 47	16 49	22 53	0 18	.....	74	23 56.5	- 5 45	6.1
Mon Jul 18/Tue Jul 19		17 56	21 09	22 56	5 01	6 47	16 52	22 58	0 44	.....	64	0 44.6	0 20	6.1
Tue Jul 19/Wed Jul 20		18 00	21 09	22 55	5 02	6 48	16 55	23 03	1 10	.....	54	1 31.1	6 10	6.1
Wed Jul 20/Thu Jul 21		18 04	21 08	22 54	5 03	6 49	16 57	23 08	1 36	.....	43	2 17.3	11 33	6.2
Thu Jul 21/Fri Jul 22		18 08	21 07	22 53	5 04	6 49	17 00	23 13	2 04	.....	34	3 04.0	16 18	6.2
Fri Jul 22/Sat Jul 23		18 12	21 07	22 52	5 05	6 50	17 03	23 18	2 35	.....	25	3 51.9	20 16	6.2
Sat Jul 23/Sun Jul 24		18 16	21 06	22 50	5 07	6 51	17 06	23 23	3 11	.....	17	4 41.4	23 19	6.3
Sun Jul 24/Mon Jul 25		18 20	21 05	22 49	5 08	6 52	17 09	23 28	3 53	18 25	11	5 32.4	25 18	6.3
Mon Jul 25/Tue Jul 26		18 24	21 04	22 48	5 09	6 53	17 12	23 33	4 41	19 20	6	6 24.5	26 07	6.3
Tue Jul 26/Wed Jul 27		18 28	21 04	22 47	5 10	6 53	17 14	23 39	5 35	20 10	2	7 16.8	25 44	6.4
Wed Jul 27/Thu Jul 28		18 32	21 03	22 46	5 11	6 54	17 17	23 44	.....	20 54	0	8 08.4	24 09	6.4
Thu Jul 28/Fri Jul 29		18 36	21 02	22 44	5 12	6 55	17 20	23 49	.....	21 32	0	8 58.7	21 27	6.5
Fri Jul 29/Sat Jul 30		18 39	21 01	22 43	5 14	6 56	17 22	23 54	.....	22 05	2	9 47.2	17 47	6.5
Sat Jul 30/Sun Jul 31		18 43	21 00	22 42	5 15	6 57	17 25	23 59	.....	22 34	6	10 34.1	13 19	6.6
Sun Jul 31/Mon Aug 01		18 47	20 59	22 41	5 16	6 57	17 28	0 04	.....	23 00	11	11 19.7	8 13	6.6

***** 2022 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
Mon Aug 01/Tue Aug 02		18 51	20 58	22 39	5 17	6 58	17 30	0 10	.....	23 25	18	12 04.8	2 40	6.6
Tue Aug 02/Wed Aug 03		18 55	20 57	22 38	5 19	6 59	17 33	0 15	.....	23 50	26	12 50.3	- 3 07	6.7
Wed Aug 03/Thu Aug 04		18 59	20 56	22 36	5 20	7 00	17 35	0 20	.....	0 15	36	13 37.2	- 8 57	6.7
Thu Aug 04/Fri Aug 05		19 03	20 55	22 35	5 21	7 01	17 38	0 25	.....	0 44	47	14 26.8	-14 35	6.8
Fri Aug 05/Sat Aug 06		19 07	20 54	22 34	5 22	7 01	17 40	0 30	.....	1 17	58	15 20.2	-19 42	6.8
Sat Aug 06/Sun Aug 07		19 11	20 53	22 32	5 23	7 02	17 43	0 35	.....	1 57	69	16 18.3	-23 55	6.9
Sun Aug 07/Mon Aug 08		19 15	20 52	22 31	5 25	7 03	17 45	0 41	.....	2 47	79	17 21.3	-26 47	6.9
Mon Aug 08/Tue Aug 09		19 19	20 51	22 29	5 26	7 04	17 48	0 46	18 26	3 49	88	18 27.9	-27 55	6.9
Tue Aug 09/Wed Aug 10		19 23	20 50	22 28	5 27	7 05	17 50	0 51	19 30	5 00	95	19 35.7	-27 04	7.0
Wed Aug 10/Thu Aug 11		19 27	20 49	22 26	5 28	7 06	17 53	0 56	20 24	6 16	99	20 41.8	-24 16	7.0
Thu Aug 11/Fri Aug 12		19 31	20 48	22 25	5 29	7 06	17 55	1 01	21 08	.....	100	21 44.1	-19 52	7.1
Fri Aug 12/Sat Aug 13		19 35	20 47	22 23	5 31	7 07	17 58	1 06	21 44	.....	98	22 41.9	-14 19	7.1
Sat Aug 13/Sun Aug 14		19 39	20 45	22 22	5 32	7 08	18 00	1 11	22 16	.....	93	23 35.5	- 8 09	7.2
Sun Aug 14/Mon Aug 15		19 43	20 44	22 20	5 33	7 09	18 02	1 17	22 43	.....	87	0 25.9	- 1 48	7.2
Mon Aug 15/Tue Aug 16		19 47	20 43	22 18	5 34	7 10	18 05	1 22	23 10	.....	78	1 14.4	4 22	7.3
Tue Aug 16/Wed Aug 17		19 50	20 42	22 17	5 35	7 11	18 07	1 27	23 36	.....	69	2 02.1	10 07	7.3
Wed Aug 17/Thu Aug 18		19 54	20 40	22 15	5 37	7 11	18 09	1 32	0 04	.....	59	2 49.8	15 13	7.4
Thu Aug 18/Fri Aug 19		19 58	20 39	22 14	5 38	7 12	18 12	1 37	0 35	.....	49	3 38.4	19 31	7.4
Fri Aug 19/Sat Aug 20		20 02	20 38	22 12	5 39	7 13	18 14	1 42	1 09	.....	40	4 28.3	22 52	7.4
Sat Aug 20/Sun Aug 21		20 06	20 37	22 10	5 40	7 14	18 16	1 47	1 49	.....	31	5 19.5	25 08	7.5
Sun Aug 21/Mon Aug 22		20 10	20 35	22 09	5 41	7 15	18 19	1 52	2 35	17 15	22	6 11.6	26 14	7.5
Mon Aug 22/Tue Aug 23		20 14	20 34	22 07	5 42	7 16	18 21	1 57	3 27	18 07	15	7 04.0	26 06	7.6
Tue Aug 23/Wed Aug 24		20 18	20 33	22 05	5 43	7 16	18 23	2 02	4 24	18 53	9	7 55.9	24 46	7.6
Wed Aug 24/Thu Aug 25		20 22	20 31	22 04	5 45	7 17	18 25	2 08	5 24	19 32	4	8 46.6	22 17	7.7
Thu Aug 25/Fri Aug 26		20 26	20 30	22 02	5 46	7 18	18 28	2 13	6 25	20 07	1	9 35.7	18 47	7.7
Fri Aug 26/Sat Aug 27		20 30	20 29	22 00	5 47	7 19	18 30	2 18	.....	20 37	0	10 23.1	14 26	7.8
Sat Aug 27/Sun Aug 28		20 34	20 27	21 59	5 48	7 20	18 32	2 23	.....	21 04	1	11 09.2	9 23	7.8
Sun Aug 28/Mon Aug 29		20 38	20 26	21 57	5 49	7 20	18 34	2 28	.....	21 29	3	11 54.5	3 52	7.9
Mon Aug 29/Tue Aug 30		20 42	20 24	21 55	5 50	7 21	18 37	2 33	.....	21 54	8	12 39.9	- 1 56	7.9
Tue Aug 30/Wed Aug 31		20 46	20 23	21 54	5 51	7 22	18 39	2 38	.....	22 19	15	13 26.3	- 7 48	8.0
Wed Aug 31/Thu Sep 01		20 50	20 21	21 52	5 52	7 23	18 41	2 43	.....	22 46	23	14 14.8	-13 28	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.

***** 2022 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
Thu Sep 01/Fri Sep 02	20 54	20 20	21 50	5 53	7 24	18 43	2 48	.....	23 18	33	15 06.4	-18 40	8.0
Fri Sep 02/Sat Sep 03	20 57	20 19	21 49	5 54	7 24	18 46	2 53	.....	23 55	43	16 02.0	-23 03	8.1
Sat Sep 03/Sun Sep 04	21 01	20 17	21 47	5 55	7 25	18 48	2 58	.....	0 40	55	17 01.9	-26 15	8.1
Sun Sep 04/Mon Sep 05	21 05	20 16	21 45	5 56	7 26	18 50	3 03	.....	1 35	66	18 05.4	-27 53	8.2
Mon Sep 05/Tue Sep 06	21 09	20 14	21 44	5 57	7 27	18 52	3 08	17 18	2 40	76	19 10.9	-27 42	8.2
Tue Sep 06/Wed Sep 07	21 13	20 13	21 42	5 58	7 28	18 55	3 13	18 14	3 53	86	20 15.9	-25 38	8.3
Wed Sep 07/Thu Sep 08	21 17	20 11	21 40	5 59	7 28	18 57	3 18	19 01	5 08	93	21 18.3	-21 53	8.3
Thu Sep 08/Fri Sep 09	21 21	20 10	21 38	6 00	7 29	18 59	3 23	19 39	6 23	98	22 17.0	-16 47	8.4
Fri Sep 09/Sat Sep 10	21 25	20 08	21 37	6 01	7 30	19 01	3 27	20 12	.....	100	23 12.0	-10 48	8.4
Sat Sep 10/Sun Sep 11	21 29	20 07	21 35	6 02	7 31	19 04	3 32	20 41	.....	99	0 04.0	- 4 24	8.5
Sun Sep 11/Mon Sep 12	21 33	20 05	21 33	6 03	7 32	19 06	3 37	21 08	.....	96	0 53.9	2 02	8.5
Mon Sep 12/Tue Sep 13	21 37	20 04	21 32	6 04	7 32	19 08	3 42	21 35	.....	90	1 42.8	8 09	8.5
Tue Sep 13/Wed Sep 14	21 41	20 02	21 30	6 05	7 33	19 10	3 47	22 02	.....	83	2 31.7	13 41	8.6
Wed Sep 14/Thu Sep 15	21 45	20 01	21 28	6 06	7 34	19 13	3 52	22 32	.....	75	3 21.2	18 26	8.6
Thu Sep 15/Fri Sep 16	21 49	19 59	21 27	6 07	7 35	19 15	3 57	23 06	.....	66	4 11.8	22 13	8.7
Fri Sep 16/Sat Sep 17	21 53	19 58	21 25	6 08	7 36	19 17	4 02	23 44	.....	56	5 03.6	24 53	8.7
Sat Sep 17/Sun Sep 18	21 57	19 56	21 23	6 09	7 37	19 20	4 07	0 28	.....	47	5 56.2	26 21	8.8
Sun Sep 18/Mon Sep 19	22 01	19 55	21 22	6 10	7 37	19 22	4 12	1 18	.....	37	6 49.1	26 34	8.8
Mon Sep 19/Tue Sep 20	22 04	19 53	21 20	6 11	7 38	19 24	4 17	2 14	16 49	28	7 41.4	25 33	8.8
Tue Sep 20/Wed Sep 21	22 08	19 52	21 18	6 12	7 39	19 26	4 21	3 12	17 31	20	8 32.6	23 21	8.9
Wed Sep 21/Thu Sep 22	22 12	19 50	21 17	6 13	7 40	19 29	4 26	4 13	18 07	13	9 22.1	20 06	8.9
Thu Sep 22/Fri Sep 23	22 16	19 48	21 15	6 14	7 41	19 31	4 31	5 15	18 39	7	10 10.0	15 55	9.0
Fri Sep 23/Sat Sep 24	22 20	19 47	21 14	6 15	7 41	19 33	4 36	6 17	19 07	3	10 56.5	11 00	9.0
Sat Sep 24/Sun Sep 25	22 24	19 45	21 12	6 16	7 42	19 36	4 41	7 19	19 32	1	11 42.2	5 31	9.1
Sun Sep 25/Mon Sep 26	22 28	19 44	21 10	6 17	7 43	19 38	4 46	.....	19 57	0	12 27.9	- 0 20	9.1
Mon Sep 26/Tue Sep 27	22 32	19 42	21 09	6 17	7 44	19 40	4 51	.....	20 22	2	13 14.5	- 6 19	9.1
Tue Sep 27/Wed Sep 28	22 36	19 41	21 07	6 18	7 45	19 43	4 55	.....	20 49	6	14 02.9	-12 10	9.2
Wed Sep 28/Thu Sep 29	22 40	19 39	21 06	6 19	7 46	19 45	5 00	.....	21 19	12	14 54.1	-17 34	9.2
Thu Sep 29/Fri Sep 30	22 44	19 38	21 04	6 20	7 46	19 48	5 05	.....	21 55	20	15 48.9	-22 12	9.3
Fri Sep 30/Sat Oct 01	22 48	19 36	21 03	6 21	7 47	19 50	5 10	.....	22 37	29	16 47.6	-25 42	9.3

***** 2022 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
Sat Oct 01/Sun Oct 02	22 52	19 35	21 01	6 22	7 48	19 52	5 15	.....	23 29	40	17 49.7	-27 42	9.3
Sun Oct 02/Mon Oct 03	22 56	19 33	21 00	6 23	7 49	19 55	5 20	.....	0 30	52	18 53.6	-27 58	9.4
Mon Oct 03/Tue Oct 04	23 00	19 32	20 58	6 24	7 50	19 57	5 24	.....	1 39	63	19 57.2	-26 27	9.4
Tue Oct 04/Wed Oct 05	23 04	19 31	20 57	6 25	7 51	20 00	5 29	16 58	2 52	74	20 58.6	-23 14	9.5
Wed Oct 05/Thu Oct 06	23 08	19 29	20 55	6 25	7 51	20 02	5 34	17 38	4 05	83	21 56.8	-18 39	9.5
Thu Oct 06/Fri Oct 07	23 12	19 28	20 54	6 26	7 52	20 05	5 39	18 11	5 17	91	22 51.5	-13 03	9.5
Fri Oct 07/Sat Oct 08	23 15	19 26	20 52	6 27	7 53	20 07	5 44	18 41	6 26	96	23 43.4	- 6 51	9.6
Sat Oct 08/Sun Oct 09	23 19	19 25	20 51	6 28	7 54	20 10	5 48	19 08	7 33	99	0 33.4	- 0 26	9.6
Sun Oct 09/Mon Oct 10	23 23	19 23	20 49	6 29	7 55	20 12	5 53	19 34	.....	100	1 22.5	5 53	9.7
Mon Oct 10/Tue Oct 11	23 27	19 22	20 48	6 30	7 56	20 15	5 58	20 01	.....	98	2 11.6	11 45	9.7
Tue Oct 11/Wed Oct 12	23 31	19 20	20 47	6 31	7 57	20 17	6 03	20 30	.....	94	3 01.4	16 56	9.7
Wed Oct 12/Thu Oct 13	23 35	19 19	20 45	6 31	7 58	20 20	6 08	21 02	.....	88	3 52.5	21 12	9.8
Thu Oct 13/Fri Oct 14	23 39	19 18	20 44	6 32	7 59	20 22	6 13	21 38	.....	81	4 44.9	24 21	9.8
Fri Oct 14/Sat Oct 15	23 43	19 16	20 43	6 33	8 00	20 25	6 17	22 20	.....	72	5 38.3	26 17	9.8
Sat Oct 15/Sun Oct 16	23 47	19 15	20 41	6 34	8 00	20 28	6 22	23 09	.....	63	6 31.9	26 56	9.9
Sun Oct 16/Mon Oct 17	23 51	19 14	20 40	6 35	8 01	20 30	6 27	0 02	.....	54	7 25.0	26 17	9.9
Mon Oct 17/Tue Oct 18	23 55	19 12	20 39	6 36	8 02	20 33	6 32	1 00	.....	45	8 16.7	24 27	10.0
Tue Oct 18/Wed Oct 19	23 59	19 11	20 37	6 37	8 03	20 36	6 37	2 00	16 06	35	9 06.6	21 31	10.0
Wed Oct 19/Thu Oct 20	0 03	19 10	20 36	6 38	8 04	20 38	6 41	3 01	16 38	27	9 54.8	17 37	10.0
Thu Oct 20/Fri Oct 21	0 07	19 08	20 35	6 38	8 05	20 41	6 46	4 02	17 07	18	10 41.4	12 56	10.1
Fri Oct 21/Sat Oct 22	0 11	19 07	20 34	6 39	8 06	20 44	6 51	5 04	17 34	11	11 27.2	7 37	10.1
Sat Oct 22/Sun Oct 23	0 15	19 06	20 33	6 40	8 07	20 47	6 56	6 07	17 59	6	12 12.8	1 50	10.1
Sun Oct 23/Mon Oct 24	0 19	19 05	20 31	6 41	8 08	20 49	7 01	7 12	18 24	2	12 59.2	- 4 11	10.2
Mon Oct 24/Tue Oct 25	0 22	19 03	20 30	6 42	8 09	20 52	7 06	.....	18 50	0	13 47.4	-10 12	10.2
Tue Oct 25/Wed Oct 26	0 26	19 02	20 29	6 43	8 10	20 55	7 10	.....	19 19	1	14 38.5	-15 53	10.2
Wed Oct 26/Thu Oct 27	0 30	19 01	20 28	6 44	8 11	20 58	7 15	.....	19 53	4	15 33.3	-20 54	10.3
Thu Oct 27/Fri Oct 28	0 34	19 00	20 27	6 45	8 12	21 01	7 20	.....	20 34	9	16 32.0	-24 50	10.3
Fri Oct 28/Sat Oct 29	0 38	18 59	20 26	6 45	8 13	21 04	7 25	.....	21 23	17	17 34.3	-27 17	10.3
Sat Oct 29/Sun Oct 30	0 42	18 58	20 25	6 46	8 14	21 07	7 30	.....	22 23	26	18 38.5	-28 00	10.4
Sun Oct 30/Mon Oct 31	0 46	18 57	20 24	6 47	8 15	21 10	7 34	.....	23 30	37	19 42.4	-26 53	10.4
Mon Oct 31/Tue Nov 01	0 50	18 55	20 23	6 48	8 16	21 13	7 39	.....	0 42	48	20 44.0	-24 04	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.

***** 2022 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
Tue Nov 01/Wed Nov 02	0 54	18 54	20 22	6 49	8 17	21 16	7 44	.....	1 55	60	21 42.0	-19 51	10.4
Wed Nov 02/Thu Nov 03	0 58	18 53	20 21	6 50	8 18	21 19	7 49	16 14	3 05	71	22 36.4	-14 36	10.5
Thu Nov 03/Fri Nov 04	1 02	18 52	20 20	6 51	8 19	21 22	7 54	16 44	4 13	80	23 27.7	- 8 40	10.5
Fri Nov 04/Sat Nov 05	1 06	18 51	20 20	6 52	8 20	21 25	7 59	17 11	5 20	88	0 16.9	- 2 25	10.5
Sat Nov 05/Sun Nov 06*	1 10	18 50	20 19	5 53	7 21	21 28	8 03	17 36	5 24	94	1 05.2	3 51	10.6
Sun Nov 06/Mon Nov 07	2 14	17 49	19 18	5 53	7 22	21 31	8 08	17 02	6 29	98	1 54.7	10 05	10.6
Mon Nov 07/Tue Nov 08	2 18	17 49	19 17	5 54	7 23	21 34	8 13	17 29	7 34	100	2 43.9	15 30	10.6
Tue Nov 08/Wed Nov 09	2 22	17 48	19 16	5 55	7 24	21 37	8 18	18 00	.....	99	3 34.7	20 06	10.6
Wed Nov 09/Thu Nov 10	2 26	17 47	19 16	5 56	7 25	21 41	8 23	18 34	.....	97	4 27.1	23 41	10.7
Thu Nov 10/Fri Nov 11	2 30	17 46	19 15	5 57	7 26	21 44	8 28	19 14	.....	92	5 20.9	26 04	10.7
Fri Nov 11/Sat Nov 12	2 34	17 45	19 14	5 57	7 27	21 47	8 32	20 00	.....	86	6 15.4	27 08	10.7
Sat Nov 12/Sun Nov 13	2 38	17 44	19 14	5 58	7 28	21 50	8 37	20 52	.....	79	7 09.5	26 52	10.8
Sun Nov 13/Mon Nov 14	2 41	17 44	19 13	6 00	7 29	21 54	8 42	21 48	.....	71	8 02.1	25 21	10.8
Mon Nov 14/Tue Nov 15	2 45	17 43	19 12	6 01	7 30	21 57	8 47	22 47	.....	62	8 52.8	22 42	10.8
Tue Nov 15/Wed Nov 16	2 49	17 42	19 12	6 01	7 31	22 01	8 52	23 47	.....	52	9 41.4	19 04	10.8
Wed Nov 16/Thu Nov 17	2 53	17 42	19 11	6 02	7 32	22 04	8 57	0 47	.....	43	10 28.1	14 37	10.8
Thu Nov 17/Fri Nov 18	2 57	17 41	19 11	6 03	7 33	22 07	9 01	1 48	.....	33	11 13.5	9 32	10.9
Fri Nov 18/Sat Nov 19	3 01	17 40	19 10	6 04	7 34	22 11	9 06	2 49	.....	24	11 58.5	3 56	10.9
Sat Nov 19/Sun Nov 20	3 05	17 40	19 10	6 05	7 35	22 14	9 11	3 52	.....	16	12 44.1	- 1 58	10.9
Sun Nov 20/Mon Nov 21	3 09	17 39	19 10	6 06	7 36	22 18	9 16	4 58	15 49	9	13 31.4	- 7 59	10.9
Mon Nov 21/Tue Nov 22	3 13	17 39	19 09	6 07	7 37	22 22	9 21	6 07	16 16	4	14 21.4	-13 49	11.0
Tue Nov 22/Wed Nov 23	3 17	17 38	19 09	6 08	7 38	22 25	9 26	7 20	16 48	1	15 15.3	-19 08	11.0
Wed Nov 23/Thu Nov 24	3 21	17 38	19 09	6 08	7 39	22 29	9 30	.....	17 26	0	16 13.7	-23 31	11.0
Thu Nov 24/Fri Nov 25	3 25	17 37	19 08	6 09	7 40	22 32	9 35	.....	18 13	2	17 16.3	-26 30	11.0
Fri Nov 25/Sat Nov 26	3 29	17 37	19 08	6 10	7 41	22 36	9 40	.....	19 10	7	18 21.7	-27 43	11.0
Sat Nov 26/Sun Nov 27	3 33	17 37	19 08	6 11	7 42	22 40	9 45	.....	20 17	14	19 27.3	-27 02	11.1
Sun Nov 27/Mon Nov 28	3 37	17 36	19 08	6 12	7 43	22 44	9 50	.....	21 31	24	20 30.6	-24 32	11.1
Mon Nov 28/Tue Nov 29	3 41	17 36	19 08	6 13	7 44	22 47	9 54	.....	22 45	34	21 30.1	-20 33	11.1
Tue Nov 29/Wed Nov 30	3 45	17 36	19 07	6 13	7 45	22 51	9 59	.....	23 57	45	22 25.3	-15 27	11.1
Wed Nov 30/Thu Dec 01	3 49	17 36	19 07	6 14	7 46	22 55	10 04	.....	1 06	56	23 16.8	- 9 40	11.1

***** 2022 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
Thu Dec 01/Fri Dec 02	3 52	17 35	19 07	6 15	7 47	22 59	10 09	.....	2 12	67	0 05.8	- 3 33	11.1
Fri Dec 02/Sat Dec 03	3 56	17 35	19 07	6 16	7 48	23 03	10 13	.....	3 16	77	0 53.3	2 37	11.1
Sat Dec 03/Sun Dec 04	4 00	17 35	19 07	6 17	7 49	23 07	10 18	.....	4 20	85	1 40.6	8 34	11.2
Sun Dec 04/Mon Dec 05	4 04	17 35	19 07	6 17	7 50	23 11	10 23	15 32	5 23	92	2 28.6	14 04	11.2
Mon Dec 05/Tue Dec 06	4 08	17 35	19 07	6 18	7 51	23 15	10 28	16 01	6 27	96	3 18.1	18 52	11.2
Tue Dec 06/Wed Dec 07	4 12	17 35	19 07	6 19	7 52	23 19	10 32	16 33	7 30	99	4 09.6	22 44	11.2
Wed Dec 07/Thu Dec 08	4 16	17 35	19 08	6 20	7 52	23 23	10 37	17 11	8 30	100	5 02.8	25 30	11.2
Thu Dec 08/Fri Dec 09	4 20	17 35	19 08	6 20	7 53	23 27	10 42	17 54	.....	99	5 57.3	26 59	11.2
Fri Dec 09/Sat Dec 10	4 24	17 35	19 08	6 21	7 54	23 31	10 46	18 44	.....	96	6 51.9	27 08	11.2
Sat Dec 10/Sun Dec 11	4 28	17 35	19 08	6 22	7 55	23 35	10 51	19 38	.....	91	7 45.4	25 59	11.2
Sun Dec 11/Mon Dec 12	4 32	17 35	19 08	6 23	7 55	23 39	10 55	20 37	.....	85	8 37.0	23 39	11.2
Mon Dec 12/Tue Dec 13	4 36	17 36	19 09	6 23	7 56	23 44	11 00	21 36	.....	78	9 26.3	20 18	11.2
Tue Dec 13/Wed Dec 14	4 40	17 36	19 09	6 24	7 57	23 48	11 05	22 36	.....	69	10 13.3	16 06	11.2
Wed Dec 14/Thu Dec 15	4 44	17 36	19 09	6 25	7 58	23 52	11 09	23 35	.....	60	10 58.6	11 15	11.3
Thu Dec 15/Fri Dec 16	4 48	17 36	19 10	6 25	7 58	23 56	11 14	0 35	.....	50	11 42.9	5 53	11.3
Fri Dec 16/Sat Dec 17	4 52	17 37	19 10	6 26	7 59	0 01	11 18	1 35	.....	41	12 27.3	0 11	11.3
Sat Dec 17/Sun Dec 18	4 56	17 37	19 10	6 26	7 59	0 05	11 23	2 37	.....	31	13 12.8	- 5 40	11.3
Sun Dec 18/Mon Dec 19	4 59	17 38	19 11	6 27	8 00	0 09	11 27	3 43	.....	21	14 00.6	-11 29	11.3
Mon Dec 19/Tue Dec 20	5 03	17 38	19 11	6 27	8 01	0 14	11 32	4 53	.....	13	14 52.0	-16 57	11.3
Tue Dec 20/Wed Dec 21	5 07	17 38	19 12	6 28	8 01	0 18	11 36	6 07	.....	7	15 48.1	-21 43	11.3
Wed Dec 21/Thu Dec 22	5 11	17 39	19 12	6 28	8 02	0 23	11 41	7 23	15 58	2	16 49.1	-25 19	11.3
Thu Dec 22/Fri Dec 23	5 15	17 39	19 13	6 29	8 02	0 27	11 45	8 35	16 51	0	17 54.3	-27 19	11.3
Fri Dec 23/Sat Dec 24	5 19	17 40	19 13	6 29	8 02	0 32	11 50	.....	17 55	1	19 01.4	-27 23	11.3
Sat Dec 24/Sun Dec 25	5 23	17 41	19 14	6 30	8 03	0 36	11 54	.....	19 08	5	20 07.7	-25 27	11.3
Sun Dec 25/Mon Dec 26	5 27	17 41	19 14	6 30	8 03	0 41	11 58	.....	20 26	11	21 10.5	-21 48	11.3
Mon Dec 26/Tue Dec 27	5 31	17 42	19 15	6 31	8 04	0 45	12 03	.....	21 42	20	22 08.7	-16 51	11.3
Tue Dec 27/Wed Dec 28	5 35	17 42	19 16	6 31	8 04	0 50	12 07	.....	22 55	30	23 02.5	-11 05	11.3
Wed Dec 28/Thu Dec 29	5 39	17 43	19 16	6 31	8 04	0 54	12 11	.....	0 04	40	23 53.0	- 4 54	11.3
Thu Dec 29/Fri Dec 30	5 43	17 44	19 17	6 32	8 04	0 59	12 15	.....	1 09	51	0 41.2	1 20	11.2
Fri Dec 30/Sat Dec 31	5 47	17 45	19 17	6 32	8 05	1 03	12 20	.....	2 13	62	1 28.5	7 21	11.2
Sat Dec 31/Sun Jan 01	5 51	17 45	19 18	6 32	8 05	1 08	12 24	.....	3 17	72	2 16.1	12 56	11.2