

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:

***** 2024 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 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 2024, 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 12 17 32	Dec 19 12 40	Dec 26 18 34	Jan 03 21 33
Jan 11 5 58	Jan 17 21 54	Jan 25 11 55	Feb 02 17 20
Feb 09 17 01	Feb 16 9 02	Feb 24 6 31	Mar 03 9 25
Mar 10 4 03	Mar 16 23 12	Mar 25 2 02	Apr 01 22 16
Apr 08 13 23	Apr 15 14 14	Apr 23 18 51	May 01 6 28
May 07 22 24	May 15 6 50	May 23 8 56	May 30 12 14
Jun 06 7 40	Jun 14 0 20	Jun 21 20 11	Jun 28 16 55
Jul 05 17 59	Jul 13 17 50	Jul 21 5 20	Jul 27 21 54
Aug 04 6 14	Aug 12 10 20	Aug 19 13 29	Aug 26 4 29
Sep 02 20 57	Sep 11 1 07	Sep 17 21 37	Sep 24 13 53
Oct 02 13 51	Oct 10 13 56	Oct 17 6 28	Oct 24 3 05
Nov 01 7 48	Nov 08 23 57	Nov 15 15 30	Nov 22 19 30
Dec 01 0 22	Dec 08 9 28	Dec 15 3 03	Dec 22 16 20
Dec 30 16 28	Jan 06 17 58	Jan 13 16 28	Jan 21 14 32

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.

***** 2024 JANUARY *****

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 Jan 01/Tue Jan 02	5 54	17 46	19 19	6 32	8 05	1 12	12 27	23 17	.....	67	11 33.0	5 28	11.2
Tue Jan 02/Wed Jan 03	5 58	17 47	19 19	6 32	8 05	1 16	12 31	0 14	.....	58	12 14.9	- 0 06	11.2
Wed Jan 03/Thu Jan 04	6 02	17 47	19 20	6 33	8 05	1 21	12 35	1 11	.....	48	12 57.1	- 5 43	11.2
Thu Jan 04/Fri Jan 05	6 06	17 48	19 21	6 33	8 05	1 26	12 39	2 11	.....	39	13 40.7	-11 12	11.2
Fri Jan 05/Sat Jan 06	6 10	17 49	19 22	6 33	8 05	1 30	12 43	3 13	.....	29	14 26.9	-16 23	11.2
Sat Jan 06/Sun Jan 07	6 13	17 50	19 22	6 33	8 05	1 35	12 47	4 19	.....	21	15 16.7	-21 02	11.2
Sun Jan 07/Mon Jan 08	6 17	17 51	19 23	6 33	8 05	1 40	12 51	5 28	.....	13	16 10.9	-24 48	11.2
Mon Jan 08/Tue Jan 09	6 21	17 52	19 24	6 33	8 05	1 45	12 55	6 37	.....	7	17 09.7	-27 21	11.1
Tue Jan 09/Wed Jan 10	6 25	17 53	19 25	6 33	8 05	1 49	12 59	7 42	15 51	2	18 12.2	-28 19	11.1	
Wed Jan 10/Thu Jan 11	6 29	17 54	19 26	6 33	8 05	1 54	13 03	.....	16 56	0	19 16.3	-27 28	11.1
Thu Jan 11/Fri Jan 12	6 33	17 55	19 27	6 33	8 05	1 59	13 07	.....	18 09	1	20 19.6	-24 46	11.1
Fri Jan 12/Sat Jan 13	6 37	17 56	19 27	6 33	8 04	2 04	13 11	.....	19 27	4	21 20.1	-20 26	11.1
Sat Jan 13/Sun Jan 14	6 41	17 57	19 28	6 33	8 04	2 09	13 15	.....	20 44	10	22 17.1	-14 52	11.1
Sun Jan 14/Mon Jan 15	6 45	17 58	19 29	6 33	8 04	2 13	13 19	.....	21 58	18	23 10.8	- 8 31	11.1
Mon Jan 15/Tue Jan 16	6 49	17 59	19 30	6 32	8 04	2 18	13 22	.....	23 09	28	0 02.1	- 1 48	11.0
Tue Jan 16/Wed Jan 17	6 53	18 00	19 31	6 32	8 03	2 23	13 26	.....	0 19	39	0 52.3	4 54	11.0
Wed Jan 17/Thu Jan 18	6 57	18 01	19 32	6 32	8 03	2 28	13 30	.....	1 28	50	1 42.6	11 14	11.0
Thu Jan 18/Fri Jan 19	7 01	18 02	19 33	6 32	8 03	2 33	13 34	.....	2 37	61	2 34.1	16 56	11.0
Fri Jan 19/Sat Jan 20	7 05	18 03	19 34	6 31	8 02	2 37	13 37	.....	3 46	71	3 27.5	21 41	11.0
Sat Jan 20/Sun Jan 21	7 09	18 04	19 34	6 31	8 02	2 42	13 41	.....	4 53	80	4 23.2	25 15	10.9
Sun Jan 21/Mon Jan 22	7 13	18 05	19 35	6 31	8 01	2 47	13 44	.....	5 56	88	5 20.6	27 25	10.9
Mon Jan 22/Tue Jan 23	7 17	18 06	19 36	6 30	8 01	2 52	13 48	.....	6 52	94	6 18.6	28 03	10.9
Tue Jan 23/Wed Jan 24	7 20	18 07	19 37	6 30	8 00	2 57	13 51	16 06	7 40	98	7 15.7	27 11	10.9	
Wed Jan 24/Thu Jan 25	7 24	18 08	19 38	6 29	7 59	3 02	13 55	17 06	8 20	100	8 10.4	24 57	10.9	
Thu Jan 25/Fri Jan 26	7 28	18 09	19 39	6 29	7 59	3 07	13 58	18 08	.....	100	9 02.1	21 32	10.8
Fri Jan 26/Sat Jan 27	7 32	18 10	19 40	6 28	7 58	3 12	14 02	19 10	.....	98	9 50.4	17 15	10.8
Sat Jan 27/Sun Jan 28	7 36	18 11	19 41	6 28	7 57	3 16	14 05	20 10	.....	94	10 36.0	12 19	10.8
Sun Jan 28/Mon Jan 29	7 40	18 12	19 42	6 27	7 57	3 21	14 09	21 08	.....	89	11 19.3	6 57	10.8
Mon Jan 29/Tue Jan 30	7 44	18 13	19 43	6 27	7 56	3 26	14 12	22 05	.....	82	12 01.5	1 23	10.7
Tue Jan 30/Wed Jan 31	7 48	18 15	19 44	6 26	7 55	3 31	14 15	23 02	.....	74	12 43.4	- 4 15	10.7
Wed Jan 31/Thu Feb 01	7 52	18 16	19 45	6 26	7 54	3 36	14 19	24 00	.....	66	13 26.2	- 9 46	10.7

***** 2024 FEBRUARY *****

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 Feb 01/Fri Feb 02	7 56	18 17	19 46	6 25	7 54	3 41	14 22	1 00	.....	56	14 10.9	-15 01	10.7
Fri Feb 02/Sat Feb 03	8 00	18 18	19 47	6 24	7 53	3 46	14 25	2 02	.....	47	14 58.5	-19 47	10.6
Sat Feb 03/Sun Feb 04	8 04	18 19	19 47	6 23	7 52	3 51	14 28	3 08	.....	37	15 50.0	-23 48	10.6
Sun Feb 04/Mon Feb 05	8 08	18 20	19 48	6 23	7 51	3 56	14 31	4 16	.....	27	16 46.0	-26 46	10.6
Mon Feb 05/Tue Feb 06	8 12	18 21	19 49	6 22	7 50	4 00	14 35	5 21	.....	18	17 46.0	-28 20	10.5
Tue Feb 06/Wed Feb 07	8 16	18 22	19 50	6 21	7 49	4 05	14 38	6 22	.....	10	18 48.9	-28 13	10.5
Wed Feb 07/Thu Feb 08	8 20	18 23	19 51	6 20	7 48	4 10	14 41	7 14	.....	4	19 52.5	-26 15	10.5
Thu Feb 08/Fri Feb 09	8 24	18 24	19 52	6 19	7 47	4 15	14 44	7 57	16 57	1	20 54.7	-22 30	10.5	
Fri Feb 09/Sat Feb 10	8 27	18 25	19 53	6 18	7 46	4 20	14 47	.....	18 16	0	21 54.0	-17 17	10.4
Sat Feb 10/Sun Feb 11	8 31	18 26	19 54	6 18	7 45	4 25	14 50	.....	19 34	2	22 50.1	-11 00	10.4
Sun Feb 11/Mon Feb 12	8 35	18 27	19 55	6 17	7 44	4 30	14 53	.....	20 50	7	23 43.7	- 4 07	10.4
Mon Feb 12/Tue Feb 13	8 39	18 29	19 56	6 16	7 43	4 35	14 56	.....	22 03	15	0 35.7	2 52	10.3
Tue Feb 13/Wed Feb 14	8 43	18 30	19 57	6 15	7 42	4 40	14 59	.....	23 15	24	1 27.3	9 34	10.3
Wed Feb 14/Thu Feb 15	8 47	18 31	19 58	6 14	7 41	4 44	15 02	.....	0 27	34	2 19.6	15 38	10.3
Thu Feb 15/Fri Feb 16	8 51	18 32	19 59	6 13	7 40	4 49	15 05	.....	1 37	45	3 13.4	20 44	10.2
Fri Feb 16/Sat Feb 17	8 55	18 33	20 00	6 12	7 38	4 54	15 08	.....	2 46	56	4 09.0	24 39	10.2
Sat Feb 17/Sun Feb 18	8 59	18 34	20 01	6 10	7 37	4 59	15 10	.....	3 51	66	5 06.1	27 09	10.2
Sun Feb 18/Mon Feb 19	9 03	18 35	20 02	6 09	7 36	5 04	15 13	.....	4 49	75	6 03.8	28 08	10.1
Mon Feb 19/Tue Feb 20	9 07	18 36	20 03	6 08	7 35	5 09	15 16	.....	5 39	84	7 00.7	27 37	10.1
Tue Feb 20/Wed Feb 21	9 11	18 37	20 03	6 07	7 34	5 14	15 19	.....	6 21	90	7 55.6	25 42	10.1
Wed Feb 21/Thu Feb 22	9 15	18 38	20 04	6 06	7 32	5 19	15 22	.....	6 56	95	8 47.6	22 35	10.0
Thu Feb 22/Fri Feb 23	9 19	18 39	20 05	6 05	7 31	5 23	15 24	17 02	7 25	98	9 36.6	18 30	10.0	
Fri Feb 23/Sat Feb 24	9 23	18 40	20 06	6 03	7 30	5 28	15 27	18 02	7 50	100	10 22.7	13 41	10.0	
Sat Feb 24/Sun Feb 25	9 27	18 41	20 07	6 02	7 28	5 33	15 30	19 01	.....	99	11 06.6	8 23	9.9
Sun Feb 25/Mon Feb 26	9 31	18 42	20 08	6 01	7 27	5 38	15 33	19 58	.....	97	11 49.2	2 48	9.9
Mon Feb 26/Tue Feb 27	9 35	18 43	20 09	6 00	7 26	5 43	15 35	20 55	.....	93	12 31.3	- 2 54	9.8
Tue Feb 27/Wed Feb 28	9 38	18 44	20 10	5 58	7 24	5 48	15 38	21 52	.....	88	13 13.8	- 8 31	9.8
Wed Feb 28/Thu Feb 29	9 42	18 45	20 11	5 57	7 23	5 53	15 40	22 51	.....	81	13 57.8	-13 53	9.8
Thu Feb 29/Fri Mar 01	9 46	18 46	20 12	5 56	7 22	5 58	15 43	23 52	.....	72	14 44.2	-18 47	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.

***** 2024 MARCH *****

Date (eve/morn)	LMST midn	----- Sun: -----			LST twilight:		----- Moon: -----				RA	Dec	Twi-Twi hours
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum			
Fri Mar 01/Sat Mar 02	9 50	18 47	20 13	5 54	7 20	6 03	15 46	0 56	.....	63	15 33.9	-23 00	9.7
Sat Mar 02/Sun Mar 03	9 54	18 48	20 14	5 53	7 19	6 07	15 48	2 01	.....	53	16 27.5	-26 16	9.7
Sun Mar 03/Mon Mar 04	9 58	18 49	20 15	5 52	7 18	6 12	15 51	3 06	.....	43	17 24.9	-28 17	9.6
Mon Mar 04/Tue Mar 05	10 02	18 50	20 16	5 50	7 16	6 17	15 53	4 07	.....	33	18 25.3	-28 45	9.6
Tue Mar 05/Wed Mar 06	10 06	18 51	20 17	5 49	7 15	6 22	15 56	5 01	.....	23	19 27.3	-27 31	9.5
Wed Mar 06/Thu Mar 07	10 10	18 51	20 18	5 47	7 13	6 27	15 58	5 48	.....	14	20 28.8	-24 31	9.5
Thu Mar 07/Fri Mar 08	10 14	18 52	20 19	5 46	7 12	6 32	16 01	6 26	.....	7	21 28.4	-19 56	9.5
Fri Mar 08/Sat Mar 09	10 18	18 53	20 19	5 45	7 11	6 37	16 03	7 00	17 03	2	22 25.4	-14 03	9.4
Sat Mar 09/Sun Mar 10*	10 22	18 54	20 20	6 43	8 09	6 42	16 06	8 30	18 21	0	23 20.2	- 7 19	9.4
Sun Mar 10/Mon Mar 11	9 26	19 55	21 21	6 42	8 08	6 47	16 08	.....	20 36	1	0 10.6	- 0 29	9.3
Mon Mar 11/Tue Mar 12	9 30	19 56	21 22	6 40	8 06	6 51	16 11	.....	21 51	5	1 03.5	6 36	9.3
Tue Mar 12/Wed Mar 13	9 33	19 57	21 23	6 39	8 05	6 56	16 13	.....	23 06	11	1 57.0	13 13	9.3
Wed Mar 13/Thu Mar 14	9 37	19 58	21 24	6 37	8 03	7 01	16 16	.....	0 20	19	2 51.9	18 58	9.2
Thu Mar 14/Fri Mar 15	9 41	19 59	21 25	6 36	8 02	7 06	16 18	.....	1 32	29	3 48.7	23 30	9.2
Fri Mar 15/Sat Mar 16	9 45	20 00	21 26	6 34	8 00	7 11	16 20	.....	2 41	39	4 46.9	26 35	9.1
Sat Mar 16/Sun Mar 17	9 49	20 01	21 27	6 32	7 59	7 16	16 23	.....	3 43	50	5 45.7	28 05	9.1
Sun Mar 17/Mon Mar 18	9 53	20 02	21 28	6 31	7 57	7 21	16 25	.....	4 37	60	6 43.7	28 01	9.0
Mon Mar 18/Tue Mar 19	9 57	20 02	21 29	6 29	7 56	7 26	16 28	.....	5 21	70	7 39.6	26 29	9.0
Tue Mar 19/Wed Mar 20	10 01	20 03	21 30	6 28	7 54	7 31	16 30	.....	5 58	78	8 32.5	23 40	9.0
Wed Mar 20/Thu Mar 21	10 05	20 04	21 31	6 26	7 53	7 36	16 32	.....	6 29	86	9 22.1	19 50	8.9
Thu Mar 21/Fri Mar 22	10 09	20 05	21 32	6 25	7 52	7 41	16 35	16 55	6 55	92	10 08.8	15 13	8.9
Fri Mar 22/Sat Mar 23	10 13	20 06	21 33	6 23	7 50	7 46	16 37	17 54	7 18	96	10 53.2	10 02	8.8
Sat Mar 23/Sun Mar 24	10 17	20 07	21 34	6 21	7 49	7 51	16 39	18 52	.....	99	11 36.0	4 29	8.8
Sun Mar 24/Mon Mar 25	10 21	20 08	21 35	6 20	7 47	7 56	16 42	19 49	.....	100	12 18.3	- 1 14	8.7
Mon Mar 25/Tue Mar 26	10 25	20 09	21 36	6 18	7 46	8 01	16 44	20 46	.....	99	13 00.8	- 6 56	8.7
Tue Mar 26/Wed Mar 27	10 29	20 10	21 37	6 16	7 44	8 06	16 46	21 45	.....	96	13 44.5	-12 27	8.7
Wed Mar 27/Thu Mar 28	10 33	20 10	21 38	6 15	7 43	8 10	16 49	22 45	.....	92	14 30.4	-17 33	8.6
Thu Mar 28/Fri Mar 29	10 37	20 11	21 39	6 13	7 41	8 15	16 51	23 48	.....	86	15 19.1	-22 01	8.6
Fri Mar 29/Sat Mar 30	10 41	20 12	21 40	6 12	7 40	8 20	16 53	0 52	.....	78	16 11.3	-25 34	8.5
Sat Mar 30/Sun Mar 31	10 44	20 13	21 41	6 10	7 38	8 25	16 55	1 57	.....	69	17 07.0	-27 58	8.5
Sun Mar 31/Mon Apr 01	10 48	20 14	21 42	6 08	7 37	8 30	16 58	2 58	.....	59	18 05.6	-28 56	8.4

***** 2024 APRIL *****

Date (eve/morn)	LMST midn	----- Sun: -----			LST twilight:		----- Moon: -----				RA	Dec	Twi-Twi hours
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum			
Mon Apr 01/Tue Apr 02	10 52	20 15	21 44	6 07	7 35	8 35	17 00	3 53	.....	49	19 05.6	-28 17	8.4
Tue Apr 02/Wed Apr 03	10 56	20 16	21 45	6 05	7 34	8 41	17 02	4 41	.....	38	20 05.6	-25 59	8.3
Wed Apr 03/Thu Apr 04	11 00	20 17	21 46	6 03	7 32	8 46	17 05	5 21	.....	27	21 04.1	-22 07	8.3
Thu Apr 04/Fri Apr 05	11 04	20 17	21 47	6 02	7 31	8 51	17 07	5 56	.....	18	22 00.4	-16 55	8.2
Fri Apr 05/Sat Apr 06	11 08	20 18	21 48	6 00	7 29	8 56	17 09	6 26	.....	10	22 54.7	-10 41	8.2
Sat Apr 06/Sun Apr 07	11 12	20 19	21 49	5 58	7 28	9 01	17 11	6 55	18 08	4	23 47.6	- 3 47	8.2
Sun Apr 07/Mon Apr 08	11 16	20 20	21 50	5 57	7 27	9 06	17 14	.....	19 23	1	0 40.1	3 20	8.1
Mon Apr 08/Tue Apr 09	11 20	20 21	21 51	5 55	7 25	9 11	17 16	.....	20 38	0	1 33.4	10 14	8.1
Tue Apr 09/Wed Apr 10	11 24	20 22	21 52	5 53	7 24	9 16	17 18	.....	21 53	3	2 28.2	16 29	8.0
Wed Apr 10/Thu Apr 11	11 28	20 23	21 53	5 52	7 22	9 21	17 20	.....	23 09	8	3 25.3	21 40	8.0
Thu Apr 11/Fri Apr 12	11 32	20 24	21 55	5 50	7 21	9 26	17 23	.....	0 22	15	4 24.4	25 27	7.9
Fri Apr 12/Sat Apr 13	11 36	20 24	21 56	5 48	7 20	9 31	17 25	.....	1 30	24	5 24.7	27 36	7.9
Sat Apr 13/Sun Apr 14	11 40	20 25	21 57	5 47	7 18	9 36	17 27	.....	2 29	33	6 24.4	28 05	7.8
Sun Apr 14/Mon Apr 15	11 44	20 26	21 58	5 45	7 17	9 41	17 30	.....	3 18	44	7 22.1	26 59	7.8
Mon Apr 15/Tue Apr 16	11 48	20 27	21 59	5 43	7 16	9 46	17 32	.....	3 58	54	8 16.6	24 30	7.7
Tue Apr 16/Wed Apr 17	11 51	20 28	22 00	5 42	7 14	9 52	17 34	.....	4 31	63	9 07.5	20 56	7.7
Wed Apr 17/Thu Apr 18	11 55	20 29	22 02	5 40	7 13	9 57	17 36	.....	4 59	72	9 55.1	16 31	7.6
Thu Apr 18/Fri Apr 19	11 59	20 30	22 03	5 38	7 12	10 02	17 39	.....	5 23	80	10 40.0	11 28	7.6
Fri Apr 19/Sat Apr 20	12 03	20 31	22 04	5 37	7 10	10 07	17 41	.....	5 45	87	11 23.2	6 01	7.5
Sat Apr 20/Sun Apr 21	12 07	20 31	22 05	5 35	7 09	10 12	17 43	17 42	6 06	93	12 05.5	0 20	7.5
Sun Apr 21/Mon Apr 22	12 11	20 32	22 06	5 34	7 08	10 17	17 46	18 39	6 27	97	12 48.0	- 5 25	7.5
Mon Apr 22/Tue Apr 23	12 15	20 33	22 08	5 32	7 06	10 23	17 48	19 37	.....	99	13 31.6	-11 03	7.4
Tue Apr 23/Wed Apr 24	12 19	20 34	22 09	5 30	7 05	10 28	17 50	20 37	.....	100	14 17.3	-16 21	7.4
Wed Apr 24/Thu Apr 25	12 23	20 35	22 10	5 29	7 04	10 33	17 53	21 40	.....	98	15 05.9	-21 04	7.3
Thu Apr 25/Fri Apr 26	12 27	20 36	22 11	5 27	7 03	10 38	17 55	22 45	.....	95	15 58.0	-24 55	7.3
Fri Apr 26/Sat Apr 27	12 31	20 37	22 13	5 26	7 02	10 43	17 58	23 50	.....	89	16 53.6	-27 39	7.2
Sat Apr 27/Sun Apr 28	12 35	20 38	22 14	5 24	7 00	10 48	18 00	0 52	.....	82	17 52.0	-28 58	7.2
Sun Apr 28/Mon Apr 29	12 39	20 39	22 15	5 23	6 59	10 54	18 02	1 49	.....	73	18 51.8	-28 42	7.1
Mon Apr 29/Tue Apr 30	12 43	20 39	22 16	5 21	6 58	10 59	18 05	2 39	.....	63	19 51.4	-26 47	7.1
Tue Apr 30/Wed May 01	12 47	20 40	22 18	5 20	6 57	11 04	18 07	3 20	53	20 49.4	-23 21	7.0

Calendar for Okie-Tex, west longitude (h.m.s) = 6 51 48, latitude (d.m) = 36 53.9
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***** 2024 MAY *****

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 May 01/Thu May 02	12 51	20 41	22 19	5 18	6 56	11 09	18 10	3 55	.....	41	21 44.9	-18 36	7.0
Thu May 02/Fri May 03	12 55	20 42	22 20	5 17	6 55	11 14	18 12	4 26	.....	30	22 38.1	-12 49	6.9
Fri May 03/Sat May 04	12 59	20 43	22 21	5 15	6 54	11 20	18 15	4 54	.....	20	23 29.7	- 6 19	6.9
Sat May 04/Sun May 05	13 02	20 44	22 23	5 14	6 53	11 25	18 17	5 21	.....	12	0 20.7	0 33	6.9
Sun May 05/Mon May 06	13 06	20 45	22 24	5 12	6 52	11 30	18 20	5 49	18 13	5	1 12.3	7 24	6.8
Mon May 06/Tue May 07	13 10	20 46	22 25	5 11	6 51	11 35	18 22	6 20	19 27	1	2 05.6	13 51	6.8
Tue May 07/Wed May 08	13 14	20 46	22 27	5 10	6 50	11 41	18 25	.....	20 42	0	3 01.4	19 27	6.7
Wed May 08/Thu May 09	13 18	20 47	22 28	5 08	6 49	11 46	18 27	.....	21 57	1	3 59.8	23 51	6.7
Thu May 09/Fri May 10	13 22	20 48	22 29	5 07	6 48	11 51	18 30	.....	23 09	5	5 00.3	26 41	6.6
Fri May 10/Sat May 11	13 26	20 49	22 30	5 06	6 47	11 56	18 33	.....	0 14	11	6 01.3	27 50	6.6
Sat May 11/Sun May 12	13 30	20 50	22 32	5 04	6 46	12 01	18 35	.....	1 09	19	7 00.9	27 17	6.5
Sun May 12/Mon May 13	13 34	20 51	22 33	5 03	6 45	12 07	18 38	.....	1 54	28	7 57.5	25 15	6.5
Mon May 13/Tue May 14	13 38	20 52	22 34	5 02	6 44	12 12	18 41	.....	2 30	37	8 50.3	21 59	6.5
Tue May 14/Wed May 15	13 42	20 52	22 35	5 01	6 44	12 17	18 43	.....	3 00	47	9 39.4	17 47	6.4
Wed May 15/Thu May 16	13 46	20 53	22 37	4 59	6 43	12 22	18 46	.....	3 26	57	10 25.3	12 55	6.4
Thu May 16/Fri May 17	13 50	20 54	22 38	4 58	6 42	12 27	18 49	.....	3 48	66	11 08.9	7 35	6.3
Fri May 17/Sat May 18	13 54	20 55	22 39	4 57	6 41	12 33	18 52	.....	4 10	75	11 51.3	1 58	6.3
Sat May 18/Sun May 19	13 58	20 56	22 40	4 56	6 41	12 38	18 54	.....	4 31	82	12 33.6	- 3 45	6.3
Sun May 19/Mon May 20	14 02	20 57	22 42	4 55	6 40	12 43	18 57	.....	4 53	89	13 16.7	- 9 25	6.2
Mon May 20/Tue May 21	14 06	20 57	22 43	4 54	6 39	12 48	19 00	18 27	5 18	94	14 01.9	-14 51	6.2
Tue May 21/Wed May 22	14 09	20 58	22 44	4 53	6 39	12 53	19 03	19 29	5 47	98	14 49.9	-19 48	6.1
Wed May 22/Thu May 23	14 13	20 59	22 45	4 52	6 38	12 58	19 06	20 34	6 21	100	15 41.6	-23 59	6.1
Thu May 23/Fri May 24	14 17	21 00	22 46	4 51	6 37	13 03	19 09	21 40	.....	99	16 37.2	-27 06	6.1
Fri May 24/Sat May 25	14 21	21 00	22 47	4 50	6 37	13 08	19 12	22 44	.....	97	17 36.1	-28 50	6.0
Sat May 25/Sun May 26	14 25	21 01	22 48	4 49	6 36	13 13	19 15	23 44	.....	92	18 37.0	-28 58	6.0
Sun May 26/Mon May 27	14 29	21 02	22 50	4 48	6 36	13 18	19 18	0 36	.....	85	19 37.8	-27 24	6.0
Mon May 27/Tue May 28	14 33	21 03	22 51	4 47	6 35	13 24	19 21	1 20	.....	76	20 36.8	-24 15	5.9
Tue May 28/Wed May 29	14 37	21 03	22 52	4 47	6 35	13 29	19 25	1 57	.....	66	21 32.9	-19 44	5.9
Wed May 29/Thu May 30	14 41	21 04	22 53	4 46	6 35	13 33	19 28	2 28	.....	55	22 26.2	-14 11	5.9
Thu May 30/Fri May 31	14 45	21 05	22 54	4 45	6 34	13 38	19 31	2 56	.....	44	23 17.3	- 7 56	5.9
Fri May 31/Sat Jun 01	14 49	21 05	22 55	4 45	6 34	13 43	19 34	3 23	.....	33	0 07.2	- 1 17	5.8

***** 2024 JUNE *****

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 Jun 01/Sun Jun 02	14 53	21 06	22 56	4 44	6 34	13 48	19 38	3 50	.....	23	0 57.3	5 25	5.8
Sun Jun 02/Mon Jun 03	14 57	21 07	22 56	4 43	6 33	13 53	19 41	4 18	.....	14	1 48.5	11 49	5.8
Mon Jun 03/Tue Jun 04	15 01	21 07	22 57	4 43	6 33	13 58	19 44	4 51	18 22	7	2 42.1	17 34	5.8
Tue Jun 04/Wed Jun 05	15 05	21 08	22 58	4 42	6 33	14 03	19 48	5 30	19 35	2	3 38.6	22 17	5.7
Wed Jun 05/Thu Jun 06	15 09	21 08	22 59	4 42	6 33	14 07	19 51	6 16	20 48	0	4 37.7	25 38	5.7
Thu Jun 06/Fri Jun 07	15 13	21 09	23 00	4 42	6 32	14 12	19 55	.....	21 57	1	5 38.3	27 23	5.7
Fri Jun 07/Sat Jun 08	15 16	21 10	23 01	4 41	6 32	14 17	19 58	.....	22 56	3	6 38.6	27 25	5.7
Sat Jun 08/Sun Jun 09	15 20	21 10	23 01	4 41	6 32	14 22	20 02	.....	23 46	8	7 36.7	25 53	5.7
Sun Jun 09/Mon Jun 10	15 24	21 11	23 02	4 41	6 32	14 26	20 06	.....	0 27	15	8 31.3	22 59	5.6
Mon Jun 10/Tue Jun 11	15 28	21 11	23 03	4 40	6 32	14 31	20 09	.....	0 59	22	9 22.0	19 02	5.6
Tue Jun 11/Wed Jun 12	15 32	21 11	23 03	4 40	6 32	14 35	20 13	.....	1 27	31	10 09.2	14 20	5.6
Wed Jun 12/Thu Jun 13	15 36	21 12	23 04	4 40	6 32	14 40	20 17	.....	1 51	40	10 53.6	9 08	5.6
Thu Jun 13/Fri Jun 14	15 40	21 12	23 04	4 40	6 32	14 44	20 21	.....	2 13	50	11 36.3	3 37	5.6
Fri Jun 14/Sat Jun 15	15 44	21 13	23 05	4 40	6 32	14 49	20 25	.....	2 34	59	12 18.3	- 2 03	5.6
Sat Jun 15/Sun Jun 16	15 48	21 13	23 05	4 40	6 32	14 53	20 29	.....	2 56	68	13 00.8	- 7 43	5.6
Sun Jun 16/Mon Jun 17	15 52	21 13	23 06	4 40	6 32	14 58	20 33	.....	3 19	77	13 44.9	-13 11	5.6
Mon Jun 17/Tue Jun 18	15 56	21 14	23 06	4 40	6 32	15 02	20 37	.....	3 46	85	14 31.6	-18 17	5.6
Tue Jun 18/Wed Jun 19	16 00	21 14	23 06	4 40	6 33	15 06	20 41	18 19	4 18	91	15 22.0	-22 45	5.6
Wed Jun 19/Thu Jun 20	16 04	21 14	23 07	4 40	6 33	15 10	20 45	19 25	4 57	96	16 16.6	-26 17	5.6
Thu Jun 20/Fri Jun 21	16 08	21 14	23 07	4 41	6 33	15 14	20 49	20 31	5 45	99	17 15.2	-28 31	5.6
Fri Jun 21/Sat Jun 22	16 12	21 15	23 07	4 41	6 33	15 19	20 53	21 34	.....	100	18 16.9	-29 10	5.6
Sat Jun 22/Sun Jun 23	16 16	21 15	23 07	4 41	6 33	15 23	20 58	22 30	.....	98	19 19.4	-28 04	5.6
Sun Jun 23/Mon Jun 24	16 20	21 15	23 07	4 41	6 34	15 27	21 02	23 18	.....	94	20 20.6	-25 15	5.6
Mon Jun 24/Tue Jun 25	16 24	21 15	23 07	4 42	6 34	15 31	21 06	23 57	.....	87	21 18.9	-20 56	5.6
Tue Jun 25/Wed Jun 26	16 27	21 15	23 07	4 42	6 34	15 35	21 11	0 31	.....	79	22 14.0	-15 27	5.6
Wed Jun 26/Thu Jun 27	16 31	21 15	23 07	4 43	6 35	15 39	21 15	1 00	.....	69	23 06.2	- 9 13	5.6
Thu Jun 27/Fri Jun 28	16 35	21 15	23 07	4 43	6 35	15 42	21 19	1 27	.....	58	23 56.5	- 2 35	5.6
Fri Jun 28/Sat Jun 29	16 39	21 15	23 07	4 44	6 36	15 46	21 24	1 53	.....	46	0 46.2	4 06	5.6
Sat Jun 29/Sun Jun 30	16 43	21 15	23 07	4 44	6 36	15 50	21 28	2 20	.....	35	1 36.6	10 30	5.6
Sun Jun 30/Mon Jul 01	16 47	21 15	23 07	4 45	6 37	15 54	21 33	2 51	.....	25	2 28.6	16 19	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.

***** 2024 JULY *****

Date (eve/morn)	LMST midn	----- Sun: ----- set twi.end twi.beg rise						LST twilight: eve morn		----- Moon: ----- rise set %illum RA Dec					Twi-Twi hours
Mon Jul 01/Tue Jul 02	16 51	21 15	23 06	4 46	6 37	15 57	21 38	3 26	.....	16	3 23.2	21 12	5.7	
Tue Jul 02/Wed Jul 03	16 55	21 15	23 06	4 46	6 37	16 01	21 42	4 09	18 33	9	4 20.4	24 50	5.7		
Wed Jul 03/Thu Jul 04	16 59	21 15	23 06	4 47	6 38	16 04	21 47	4 59	19 42	4	5 19.6	26 59	5.7		
Thu Jul 04/Fri Jul 05	17 03	21 15	23 05	4 48	6 39	16 08	21 52	5 57	20 45	1	6 19.4	27 30	5.7		
Fri Jul 05/Sat Jul 06	17 07	21 14	23 05	4 49	6 39	16 11	21 56	.....	21 38	0	7 17.7	26 24	5.7	
Sat Jul 06/Sun Jul 07	17 11	21 14	23 04	4 50	6 40	16 15	22 01	.....	22 22	2	8 13.2	23 54	5.8	
Sun Jul 07/Mon Jul 08	17 15	21 14	23 04	4 50	6 40	16 18	22 06	.....	22 58	5	9 05.1	20 15	5.8	
Mon Jul 08/Tue Jul 09	17 19	21 14	23 03	4 51	6 41	16 22	22 11	.....	23 27	10	9 53.3	15 44	5.8	
Tue Jul 09/Wed Jul 10	17 23	21 13	23 03	4 52	6 41	16 25	22 16	.....	23 52	17	10 38.5	10 39	5.8	
Wed Jul 10/Thu Jul 11	17 27	21 13	23 02	4 53	6 42	16 28	22 21	.....	0 15	25	11 21.6	5 12	5.9	
Thu Jul 11/Fri Jul 12	17 31	21 13	23 01	4 54	6 43	16 32	22 25	.....	0 36	33	12 03.6	- 0 25	5.9	
Fri Jul 12/Sat Jul 13	17 34	21 12	23 00	4 55	6 43	16 35	22 30	.....	0 58	43	12 45.4	- 6 03	5.9	
Sat Jul 13/Sun Jul 14	17 38	21 12	23 00	4 56	6 44	16 38	22 35	.....	1 20	52	13 28.4	-11 32	5.9	
Sun Jul 14/Mon Jul 15	17 42	21 11	22 59	4 57	6 45	16 41	22 40	.....	1 45	62	14 13.4	-16 43	6.0	
Mon Jul 15/Tue Jul 16	17 46	21 11	22 58	4 58	6 45	16 44	22 45	.....	2 14	71	15 01.7	-21 22	6.0	
Tue Jul 16/Wed Jul 17	17 50	21 10	22 57	4 59	6 46	16 47	22 50	.....	2 49	80	15 54.1	-25 14	6.0	
Wed Jul 17/Thu Jul 18	17 54	21 10	22 56	5 00	6 47	16 50	22 55	18 14	3 33	87	16 50.9	-27 58	6.1		
Thu Jul 18/Fri Jul 19	17 58	21 09	22 55	5 01	6 48	16 53	23 00	19 18	4 28	94	17 51.6	-29 14	6.1		
Fri Jul 19/Sat Jul 20	18 02	21 08	22 54	5 03	6 48	16 56	23 05	20 18	5 32	98	18 54.6	-28 47	6.1		
Sat Jul 20/Sun Jul 21	18 06	21 08	22 53	5 04	6 49	16 59	23 11	21 10	.....	100	19 57.6	-26 31	6.2	
Sun Jul 21/Mon Jul 22	18 10	21 07	22 52	5 05	6 50	17 02	23 16	21 54	.....	99	20 58.6	-22 34	6.2	
Mon Jul 22/Tue Jul 23	18 14	21 06	22 51	5 06	6 51	17 05	23 21	22 30	.....	95	21 56.4	-17 14	6.3	
Tue Jul 23/Wed Jul 24	18 18	21 06	22 50	5 07	6 51	17 08	23 26	23 01	.....	89	22 51.1	-10 57	6.3	
Wed Jul 24/Thu Jul 25	18 22	21 05	22 49	5 08	6 52	17 10	23 31	23 29	.....	81	23 43.4	- 4 10	6.3	
Thu Jul 25/Fri Jul 26	18 26	21 04	22 48	5 10	6 53	17 13	23 36	23 56	.....	71	0 34.4	2 44	6.4	
Fri Jul 26/Sat Jul 27	18 30	21 03	22 46	5 11	6 54	17 16	23 41	0 23	.....	60	1 25.4	9 22	6.4	
Sat Jul 27/Sun Jul 28	18 34	21 02	22 45	5 12	6 55	17 18	23 46	0 53	.....	49	2 17.5	15 23	6.4	
Sun Jul 28/Mon Jul 29	18 38	21 02	22 44	5 13	6 55	17 21	23 52	1 27	.....	38	3 11.5	20 28	6.5	
Mon Jul 29/Tue Jul 30	18 42	21 01	22 43	5 14	6 56	17 24	23 57	2 06	.....	27	4 07.8	24 20	6.5	
Tue Jul 30/Wed Jul 31	18 45	21 00	22 41	5 16	6 57	17 26	0 02	2 53	17 34	18	5 06.0	26 46	6.6		
Wed Jul 31/Thu Aug 01	18 49	20 59	22 40	5 17	6 58	17 29	0 07	3 48	18 37	11	6 04.9	27 37	6.6		

***** 2024 AUGUST *****

Date (eve/morn)	LMST midn	----- Sun: ----- set twi.end twi.beg rise						LST twilight: eve morn		----- Moon: ----- rise set %illum RA Dec					Twi-Twi hours
Thu Aug 01/Fri Aug 02	18 53	20 58	22 39	5 18	6 59	17 32	0 12	4 49	19 33	5	7 02.8	26 54	6.7		
Fri Aug 02/Sat Aug 03	18 57	20 57	22 37	5 19	6 59	17 34	0 17	5 54	20 19	2	7 58.4	24 43	6.7		
Sat Aug 03/Sun Aug 04	19 01	20 56	22 36	5 20	7 00	17 37	0 23	.....	20 57	0	8 50.6	21 21	6.7	
Sun Aug 04/Mon Aug 05	19 05	20 55	22 34	5 22	7 01	17 39	0 28	.....	21 28	1	9 39.4	17 03	6.8	
Mon Aug 05/Tue Aug 06	19 09	20 54	22 33	5 23	7 02	17 42	0 33	.....	21 55	3	10 25.2	12 06	6.8	
Tue Aug 06/Wed Aug 07	19 13	20 53	22 31	5 24	7 03	17 44	0 38	.....	22 18	7	11 08.6	6 44	6.9	
Wed Aug 07/Thu Aug 08	19 17	20 52	22 30	5 25	7 04	17 47	0 43	.....	22 40	12	11 50.6	1 09	6.9	
Thu Aug 08/Fri Aug 09	19 21	20 51	22 28	5 26	7 04	17 49	0 48	.....	23 01	19	12 32.1	- 4 28	7.0	
Fri Aug 09/Sat Aug 10	19 25	20 49	22 27	5 28	7 05	17 52	0 53	.....	23 22	27	13 14.1	- 9 59	7.0	
Sat Aug 10/Sun Aug 11	19 29	20 48	22 25	5 29	7 06	17 54	0 59	.....	23 46	36	13 57.8	-15 13	7.1	
Sun Aug 11/Mon Aug 12	19 33	20 47	22 24	5 30	7 07	17 56	1 04	.....	0 13	45	14 44.0	-19 59	7.1	
Mon Aug 12/Tue Aug 13	19 37	20 46	22 22	5 31	7 08	17 59	1 09	.....	0 45	55	15 33.8	-24 04	7.1	
Tue Aug 13/Wed Aug 14	19 41	20 45	22 21	5 32	7 09	18 01	1 14	.....	1 24	65	16 27.8	-27 11	7.2	
Wed Aug 14/Thu Aug 15	19 45	20 44	22 19	5 34	7 09	18 04	1 19	.....	2 12	75	17 25.9	-29 02	7.2	
Thu Aug 15/Fri Aug 16	19 49	20 42	22 18	5 35	7 10	18 06	1 24	18 03	3 11	83	18 27.2	-29 18	7.3		
Fri Aug 16/Sat Aug 17	19 52	20 41	22 16	5 36	7 11	18 08	1 29	18 58	4 20	91	19 29.9	-27 47	7.3		
Sat Aug 17/Sun Aug 18	19 56	20 40	22 14	5 37	7 12	18 11	1 35	19 45	5 34	96	20 32.0	-24 30	7.4		
Sun Aug 18/Mon Aug 19	20 00	20 39	22 13	5 38	7 13	18 13	1 40	20 25	.....	99	21 31.9	-19 37	7.4	
Mon Aug 19/Tue Aug 20	20 04	20 37	22 11	5 40	7 13	18 15	1 45	20 59	.....	100	22 29.1	-13 30	7.5	
Tue Aug 20/Wed Aug 21	20 08	20 36	22 10	5 41	7 14	18 17	1 50	21 29	.....	97	23 23.8	- 6 36	7.5	
Wed Aug 21/Thu Aug 22	20 12	20 35	22 08	5 42	7 15	18 20	1 55	21 57	.....	91	0 16.9	0 35	7.6	
Thu Aug 22/Fri Aug 23	20 16	20 33	22 06	5 43	7 16	18 22	2 00	22 25	.....	83	1 09.7	7 38	7.6	
Fri Aug 23/Sat Aug 24	20 20	20 32	22 05	5 44	7 17	18 24	2 05	22 54	.....	73	2 03.2	14 05	7.7	
Sat Aug 24/Sun Aug 25	20 24	20 31	22 03	5 45	7 18	18 27	2 10	23 27	.....	63	2 58.3	19 36	7.7	
Sun Aug 25/Mon Aug 26	20 28	20 29	22 01	5 46	7 18	18 29	2 15	0 05	.....	52	3 55.3	23 52	7.8	
Mon Aug 26/Tue Aug 27	20 32	20 28	22 00	5 47	7 19	18 31	2 20	0 50	.....	41	4 53.8	26 38	7.8	
Tue Aug 27/Wed Aug 28	20 36	20 26	21 58	5 48	7 20	18 33	2 25	1 43	.....	30	5 52.9	27 48	7.8	
Wed Aug 28/Thu Aug 29	20 40	20 25	21 56	5 50	7 21	18 36	2 30	2 42	17 30	21	6 51.0	27 22	7.9		
Thu Aug 29/Fri Aug 30	20 44	20 24	21 55	5 51	7 22	18 38	2 35	3 45	18 19	14	7 46.7	25 28	7.9		
Fri Aug 30/Sat Aug 31	20 48	20 22	21 53	5 52	7 22	18 40	2 40	4 49	18 58	8	8 39.1	22 21	8.0		
Sat Aug 31/Sun Sep 01	20 52	20 21	21 51	5 53	7 23	18 42	2 45	5 52	19 31	3	9 28.2	18 16	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.

***** 2024 SEPTEMBER *****

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 Sep 01/Mon Sep 02	20 56	20 19	21 49	5 54	7 24	18 45	2 50	6 53	19 59	1	10 14.1	13 27	8.1
Mon Sep 02/Tue Sep 03	21 00	20 18	21 48	5 55	7 25	18 47	2 55	.....	20 23	0	10 57.7	8 11	8.1
Tue Sep 03/Wed Sep 04	21 03	20 16	21 46	5 56	7 26	18 49	3 00	.....	20 45	1	11 39.7	2 39	8.2
Wed Sep 04/Thu Sep 05	21 07	20 15	21 44	5 57	7 26	18 51	3 05	.....	21 06	4	12 21.0	- 2 59	8.2
Thu Sep 05/Fri Sep 06	21 11	20 13	21 43	5 58	7 27	18 54	3 10	.....	21 27	8	13 02.6	- 8 31	8.3
Fri Sep 06/Sat Sep 07	21 15	20 12	21 41	5 59	7 28	18 56	3 15	.....	21 49	14	13 45.3	-13 49	8.3
Sat Sep 07/Sun Sep 08	21 19	20 10	21 39	6 00	7 29	18 58	3 20	.....	22 14	21	14 30.2	-18 41	8.3
Sun Sep 08/Mon Sep 09	21 23	20 09	21 38	6 01	7 30	19 00	3 25	.....	22 44	30	15 18.0	-22 56	8.4
Mon Sep 09/Tue Sep 10	21 27	20 07	21 36	6 02	7 30	19 03	3 30	.....	23 19	39	16 09.4	-26 19	8.4
Tue Sep 10/Wed Sep 11	21 31	20 06	21 34	6 03	7 31	19 05	3 35	.....	0 02	49	17 04.6	-28 33	8.5
Wed Sep 11/Thu Sep 12	21 35	20 04	21 33	6 04	7 32	19 07	3 40	.....	0 55	59	18 03.1	-29 24	8.5
Thu Sep 12/Fri Sep 13	21 39	20 03	21 31	6 05	7 33	19 09	3 45	16 46	1 58	70	19 03.7	-28 38	8.6
Fri Sep 13/Sat Sep 14	21 43	20 01	21 29	6 06	7 34	19 12	3 50	17 36	3 08	79	20 04.6	-26 08	8.6
Sat Sep 14/Sun Sep 15	21 47	20 00	21 27	6 07	7 35	19 14	3 55	18 18	4 23	88	21 04.4	-22 00	8.7
Sun Sep 15/Mon Sep 16	21 51	19 58	21 26	6 08	7 35	19 16	4 00	18 54	5 39	94	22 02.3	-16 26	8.7
Mon Sep 16/Tue Sep 17	21 55	19 57	21 24	6 09	7 36	19 18	4 04	19 25	6 55	99	22 58.2	- 9 48	8.7
Tue Sep 17/Wed Sep 18	21 59	19 55	21 23	6 10	7 37	19 21	4 09	19 54	.....	100	23 52.7	- 2 33	8.8
Wed Sep 18/Thu Sep 19	22 03	19 54	21 21	6 11	7 38	19 23	4 14	20 23	.....	98	0 47.0	4 50	8.8
Thu Sep 19/Fri Sep 20	22 07	19 52	21 19	6 12	7 39	19 25	4 19	20 52	.....	93	1 42.0	11 51	8.9
Fri Sep 20/Sat Sep 21	22 10	19 51	21 18	6 12	7 39	19 28	4 24	21 24	.....	86	2 38.6	18 00	8.9
Sat Sep 21/Sun Sep 22	22 14	19 49	21 16	6 13	7 40	19 30	4 29	22 01	.....	77	3 37.3	22 54	9.0
Sun Sep 22/Mon Sep 23	22 18	19 48	21 14	6 14	7 41	19 32	4 34	22 45	.....	66	4 37.7	26 15	9.0
Mon Sep 23/Tue Sep 24	22 22	19 46	21 13	6 15	7 42	19 35	4 38	23 37	.....	56	5 38.5	27 52	9.0
Tue Sep 24/Wed Sep 25	22 26	19 45	21 11	6 16	7 43	19 37	4 43	0 35	.....	45	6 38.2	27 48	9.1
Wed Sep 25/Thu Sep 26	22 30	19 43	21 10	6 17	7 43	19 39	4 48	1 38	.....	35	7 35.2	26 11	9.1
Thu Sep 26/Fri Sep 27	22 34	19 42	21 08	6 18	7 44	19 42	4 53	2 42	17 00	26	8 28.6	23 17	9.2
Fri Sep 27/Sat Sep 28	22 38	19 40	21 06	6 19	7 45	19 44	4 58	3 45	17 34	18	9 18.3	19 22	9.2
Sat Sep 28/Sun Sep 29	22 42	19 39	21 05	6 20	7 46	19 46	5 03	4 46	18 03	11	10 04.6	14 43	9.2
Sun Sep 29/Mon Sep 30	22 46	19 37	21 03	6 21	7 47	19 49	5 08	5 45	18 28	6	10 48.4	9 33	9.3
Mon Sep 30/Tue Oct 01	22 50	19 36	21 02	6 21	7 48	19 51	5 12	6 43	18 50	2	11 30.4	4 04	9.3

***** 2024 OCTOBER *****

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 Oct 01/Wed Oct 02	22 54	19 34	21 00	6 22	7 49	19 54	5 17	.....	19 11	0	12 11.6	- 1 32	9.4
Wed Oct 02/Thu Oct 03	22 58	19 33	20 59	6 23	7 49	19 56	5 22	.....	19 32	0	12 52.9	- 7 06	9.4
Thu Oct 03/Fri Oct 04	23 02	19 31	20 57	6 24	7 50	19 58	5 27	.....	19 54	2	13 35.2	-12 28	9.4
Fri Oct 04/Sat Oct 05	23 06	19 30	20 56	6 25	7 51	20 01	5 32	.....	20 18	5	14 19.3	-17 26	9.5
Sat Oct 05/Sun Oct 06	23 10	19 28	20 54	6 26	7 52	20 03	5 36	.....	20 46	10	15 06.0	-21 50	9.5
Sun Oct 06/Mon Oct 07	23 14	19 27	20 53	6 27	7 53	20 06	5 41	.....	21 19	16	15 56.0	-25 24	9.6
Mon Oct 07/Tue Oct 08	23 17	19 25	20 51	6 28	7 54	20 08	5 46	.....	21 59	24	16 49.2	-27 56	9.6
Tue Oct 08/Wed Oct 09	23 21	19 24	20 50	6 28	7 55	20 11	5 51	.....	22 47	33	17 45.5	-29 10	9.6
Wed Oct 09/Thu Oct 10	23 25	19 23	20 49	6 29	7 55	20 13	5 56	.....	23 45	43	18 43.7	-28 54	9.7
Thu Oct 10/Fri Oct 11	23 29	19 21	20 47	6 30	7 56	20 16	6 01	.....	0 50	54	19 42.6	-27 04	9.7
Fri Oct 11/Sat Oct 12	23 33	19 20	20 46	6 31	7 57	20 19	6 05	16 12	2 01	65	20 40.7	-23 39	9.8
Sat Oct 12/Sun Oct 13	23 37	19 18	20 44	6 32	7 58	20 21	6 10	16 49	3 14	75	21 37.3	-18 49	9.8
Sun Oct 13/Mon Oct 14	23 41	19 17	20 43	6 33	7 59	20 24	6 15	17 22	4 28	84	22 32.4	-12 47	9.8
Mon Oct 14/Tue Oct 15	23 45	19 16	20 42	6 34	8 00	20 26	6 20	17 51	5 42	92	23 26.3	- 5 55	9.9
Tue Oct 15/Wed Oct 16	23 49	19 14	20 41	6 35	8 01	20 29	6 25	18 19	6 56	98	0 20.1	1 24	9.9
Wed Oct 16/Thu Oct 17	23 53	19 13	20 39	6 35	8 02	20 32	6 29	18 48	.....	100	1 15.0	8 42	9.9
Thu Oct 17/Fri Oct 18	23 57	19 12	20 38	6 36	8 03	20 34	6 34	19 19	.....	99	2 11.9	15 26	10.0
Fri Oct 18/Sat Oct 19	0 01	19 10	20 37	6 37	8 04	20 37	6 39	19 54	.....	95	3 11.5	21 06	10.0
Sat Oct 19/Sun Oct 20	0 05	19 09	20 36	6 38	8 05	20 40	6 44	20 36	.....	89	4 13.5	25 15	10.0
Sun Oct 20/Mon Oct 21	0 09	19 08	20 34	6 39	8 06	20 43	6 49	21 26	.....	81	5 16.8	27 37	10.1
Mon Oct 21/Tue Oct 22	0 13	19 07	20 33	6 40	8 07	20 45	6 54	22 23	.....	71	6 19.5	28 07	10.1
Tue Oct 22/Wed Oct 23	0 17	19 05	20 32	6 41	8 08	20 48	6 58	23 27	.....	61	7 19.4	26 54	10.1
Wed Oct 23/Thu Oct 24	0 21	19 04	20 31	6 41	8 08	20 51	7 03	0 32	.....	51	8 15.2	24 15	10.2
Thu Oct 24/Fri Oct 25	0 25	19 03	20 30	6 42	8 09	20 54	7 08	1 37	.....	41	9 06.7	20 30	10.2
Fri Oct 25/Sat Oct 26	0 28	19 02	20 29	6 43	8 10	20 57	7 13	2 39	16 06	31	9 54.3	15 57	10.2
Sat Oct 26/Sun Oct 27	0 32	19 00	20 28	6 44	8 11	20 59	7 18	3 39	16 32	23	10 38.7	10 52	10.3
Sun Oct 27/Mon Oct 28	0 36	18 59	20 27	6 45	8 12	21 02	7 22	4 36	16 55	15	11 21.0	5 27	10.3
Mon Oct 28/Tue Oct 29	0 40	18 58	20 26	6 46	8 13	21 05	7 27	5 33	17 17	9	12 02.3	- 0 07	10.3
Tue Oct 29/Wed Oct 30	0 44	18 57	20 25	6 47	8 14	21 08	7 32	6 30	17 38	5	12 43.4	- 5 41	10.4
Wed Oct 30/Thu Oct 31	0 48	18 56	20 24	6 48	8 15	21 11	7 37	7 28	17 59	2	13 25.4	-11 05	10.4
Thu Oct 31/Fri Nov 01	0 52	18 55	20 23	6 49	8 16	21 14	7 42	.....	18 23	0	14 09.1	-16 09	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.

***** 2024 NOVEMBER *****

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 Nov 01/Sat Nov 02	0 56	18 54	20 22	6 49	8 17	21 17	7 47	.....	18 49	1	14 55.3	-20 42	10.5
Sat Nov 02/Sun Nov 03*	1 00	18 53	20 21	5 50	7 18	21 20	7 51	.....	19 21	3	15 44.6	-24 28	10.5
Sun Nov 03/Mon Nov 04	2 04	17 52	19 20	5 51	7 19	21 23	7 56	.....	18 59	7	16 39.9	-27 15	10.5
Mon Nov 04/Tue Nov 05	2 08	17 51	19 19	5 52	7 20	21 26	8 01	.....	19 45	13	17 35.2	-28 42	10.6
Tue Nov 05/Wed Nov 06	2 12	17 50	19 18	5 53	7 22	21 29	8 06	.....	20 39	20	18 32.3	-28 43	10.6
Wed Nov 06/Thu Nov 07	2 16	17 49	19 17	5 54	7 23	21 33	8 11	.....	21 41	29	19 29.7	-27 13	10.6
Thu Nov 07/Fri Nov 08	2 20	17 48	19 17	5 55	7 24	21 36	8 16	.....	22 49	39	20 26.2	-24 15	10.6
Fri Nov 08/Sat Nov 09	2 24	17 47	19 16	5 56	7 25	21 39	8 20	.....	23 59	49	21 21.1	-19 56	10.7
Sat Nov 09/Sun Nov 10	2 28	17 46	19 15	5 57	7 26	21 42	8 25	.....	1 09	60	22 14.2	-14 28	10.7
Sun Nov 10/Mon Nov 11	2 32	17 46	19 15	5 57	7 27	21 46	8 30	.....	2 20	71	23 06.2	- 8 08	10.7
Mon Nov 11/Tue Nov 12	2 36	17 45	19 14	5 58	7 28	21 49	8 35	.....	3 32	81	23 57.9	- 1 13	10.7
Tue Nov 12/Wed Nov 13	2 40	17 44	19 13	5 59	7 29	21 52	8 40	15 45	4 45	90	0 50.6	5 54	10.8	
Wed Nov 13/Thu Nov 14	2 44	17 43	19 13	6 00	7 30	21 55	8 45	16 13	6 01	96	1 45.5	12 46	10.8	
Thu Nov 14/Fri Nov 15	2 47	17 43	19 12	6 01	7 31	21 59	8 49	16 46	7 19	99	2 43.6	18 54	10.8	
Fri Nov 15/Sat Nov 16	2 51	17 42	19 12	6 02	7 32	22 02	8 54	17 24	.....	100	3 45.3	23 48	10.8
Sat Nov 16/Sun Nov 17	2 55	17 41	19 11	6 03	7 33	22 06	8 59	18 11	.....	97	4 49.7	27 00	10.9
Sun Nov 17/Mon Nov 18	2 59	17 41	19 11	6 04	7 34	22 09	9 04	19 06	.....	92	5 55.0	28 15	10.9
Mon Nov 18/Tue Nov 19	3 03	17 40	19 10	6 05	7 35	22 13	9 09	20 09	.....	85	6 58.4	27 36	10.9
Tue Nov 19/Wed Nov 20	3 07	17 39	19 10	6 05	7 36	22 16	9 14	21 16	.....	76	7 57.9	25 17	10.9
Wed Nov 20/Thu Nov 21	3 11	17 39	19 09	6 06	7 37	22 20	9 18	22 23	.....	67	8 52.6	21 42	10.9
Thu Nov 21/Fri Nov 22	3 15	17 38	19 09	6 07	7 38	22 23	9 23	23 28	.....	57	9 42.5	17 12	11.0
Fri Nov 22/Sat Nov 23	3 19	17 38	19 09	6 08	7 39	22 27	9 28	0 29	.....	47	10 28.7	12 07	11.0
Sat Nov 23/Sun Nov 24	3 23	17 38	19 08	6 09	7 40	22 31	9 33	1 28	.....	38	11 12.0	6 42	11.0
Sun Nov 24/Mon Nov 25	3 27	17 37	19 08	6 10	7 41	22 34	9 38	2 25	.....	29	11 53.8	1 07	11.0
Mon Nov 25/Tue Nov 26	3 31	17 37	19 08	6 11	7 42	22 38	9 42	3 22	.....	21	12 35.1	- 4 28	11.0
Tue Nov 26/Wed Nov 27	3 35	17 36	19 08	6 11	7 43	22 42	9 47	4 20	.....	14	13 16.9	- 9 54	11.1
Wed Nov 27/Thu Nov 28	3 39	17 36	19 08	6 12	7 44	22 46	9 52	5 19	.....	8	14 00.3	-15 02	11.1
Thu Nov 28/Fri Nov 29	3 43	17 36	19 08	6 13	7 45	22 49	9 57	6 20	15 52	4	14 46.1	-19 40	11.1	
Fri Nov 29/Sat Nov 30	3 47	17 36	19 07	6 14	7 46	22 53	10 02	7 23	16 21	1	15 34.9	-23 35	11.1	
Sat Nov 30/Sun Dec 01	3 51	17 35	19 07	6 15	7 47	22 57	10 06	8 26	16 58	0	16 27.1	-26 32	11.1	

***** 2024 DECEMBER *****

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 Dec 01/Mon Dec 02	3 54	17 35	19 07	6 16	7 48	23 01	10 11	.....	17 41	1	17 22.3	-28 16	11.1
Mon Dec 02/Tue Dec 03	3 58	17 35	19 07	6 16	7 49	23 05	10 16	.....	18 34	4	18 19.5	-28 35	11.2
Tue Dec 03/Wed Dec 04	4 02	17 35	19 07	6 17	7 49	23 09	10 21	.....	19 35	9	19 17.2	-27 23	11.2
Wed Dec 04/Thu Dec 05	4 06	17 35	19 07	6 18	7 50	23 13	10 25	.....	20 41	16	20 13.8	-24 42	11.2
Thu Dec 05/Fri Dec 06	4 10	17 35	19 07	6 19	7 51	23 17	10 30	.....	21 51	24	21 08.5	-20 41	11.2
Fri Dec 06/Sat Dec 07	4 14	17 35	19 08	6 19	7 52	23 21	10 35	.....	23 00	34	22 01.0	-15 33	11.2
Sat Dec 07/Sun Dec 08	4 18	17 35	19 08	6 20	7 53	23 25	10 39	.....	0 09	45	22 51.8	- 9 34	11.2
Sun Dec 08/Mon Dec 09	4 22	17 35	19 08	6 21	7 54	23 29	10 44	.....	1 18	56	23 41.7	- 3 02	11.2
Mon Dec 09/Tue Dec 10	4 26	17 35	19 08	6 22	7 54	23 33	10 49	.....	2 28	67	0 32.0	3 46	11.2
Tue Dec 10/Wed Dec 11	4 30	17 35	19 08	6 22	7 55	23 37	10 53	.....	3 39	78	1 24.0	10 29	11.2
Wed Dec 11/Thu Dec 12	4 34	17 36	19 08	6 23	7 56	23 42	10 58	.....	4 54	87	2 18.8	16 42	11.2
Thu Dec 12/Fri Dec 13	4 38	17 36	19 09	6 24	7 57	23 46	11 02	.....	6 10	94	3 17.5	21 59	11.2
Fri Dec 13/Sat Dec 14	4 42	17 36	19 09	6 24	7 57	23 50	11 07	15 58	7 25	98	4 19.9	25 52	11.3	
Sat Dec 14/Sun Dec 15	4 46	17 36	19 09	6 25	7 58	23 54	11 12	16 48	8 35	100	5 24.8	27 57	11.3	
Sun Dec 15/Mon Dec 16	4 50	17 37	19 10	6 25	7 59	23 59	11 16	17 48	.....	99	6 29.8	28 06	11.3
Mon Dec 16/Tue Dec 17	4 54	17 37	19 10	6 26	7 59	0 03	11 21	18 55	.....	95	7 32.3	26 25	11.3
Tue Dec 17/Wed Dec 18	4 58	17 37	19 11	6 27	8 00	0 07	11 25	20 04	.....	90	8 30.3	23 12	11.3
Wed Dec 18/Thu Dec 19	5 02	17 38	19 11	6 27	8 00	0 12	11 30	21 11	.....	82	9 23.4	18 53	11.3
Thu Dec 19/Fri Dec 20	5 05	17 38	19 11	6 28	8 01	0 16	11 34	22 16	.....	74	10 12.1	13 50	11.3
Fri Dec 20/Sat Dec 21	5 09	17 39	19 12	6 28	8 01	0 20	11 39	23 17	.....	65	10 57.3	8 23	11.3
Sat Dec 21/Sun Dec 22	5 13	17 39	19 12	6 29	8 02	0 25	11 43	0 15	.....	56	11 40.2	2 44	11.3
Sun Dec 22/Mon Dec 23	5 17	17 40	19 13	6 29	8 02	0 29	11 47	1 12	.....	46	12 22.0	- 2 56	11.3
Mon Dec 23/Tue Dec 24	5 21	17 40	19 13	6 30	8 03	0 34	11 52	2 09	.....	37	13 03.9	- 8 26	11.3
Tue Dec 24/Wed Dec 25	5 25	17 41	19 14	6 30	8 03	0 38	11 56	3 08	.....	28	13 46.8	-13 40	11.3
Wed Dec 25/Thu Dec 26	5 29	17 41	19 15	6 30	8 03	0 43	12 01	4 08	.....	20	14 31.8	-18 26	11.3
Thu Dec 26/Fri Dec 27	5 33	17 42	19 15	6 31	8 04	0 47	12 05	5 10	.....	13	15 19.7	-22 34	11.3
Fri Dec 27/Sat Dec 28	5 37	17 43	19 16	6 31	8 04	0 52	12 09	6 13	.....	7	16 11.1	-25 47	11.3
Sat Dec 28/Sun Dec 29	5 41	17 43	19 16	6 31	8 04	0 57	12 13	7 16	15 35	3	17 05.8	-27 52	11.2	
Sun Dec 29/Mon Dec 30	5 45	17 44	19 17	6 32	8 05	1 01	12 18	8 14	16 25	1	18 03.1	-28 34	11.2	
Mon Dec 30/Tue Dec 31	5 49	17 45	19 18	6 32	8 05	1 06	12 22	.....	17 24	0	19 01.6	-27 44	11.2
Tue Dec 31/Wed Jan 01	5 53	17 46	19 19	6 32	8 05	1 11	12 26	.....	18 30	2	19 59.4	-25 20	11.2