

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:

***** 2017 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 2017, 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 29	0 54	Jan 05	13 48	Jan 12	5 35	Jan 19	16 14
Jan 27	18 08	Feb 03	22 20	Feb 10	18 34	Feb 18	13 35
Feb 26	9 00	Mar 05	5 34	Mar 12	9 55	Mar 20	11 01
Mar 27	21 59	Apr 03	13 41	Apr 11	1 09	Apr 19	5 00
Apr 26	7 18	May 02	21 48	May 10	16 44	May 18	19 36
May 25	14 46	Jun 01	7 43	Jun 09	8 11	Jun 17	6 35
Jun 23	21 33	Jun 30	19 52	Jul 08	23 09	Jul 16	14 28
Jul 23	4 47	Jul 30	10 24	Aug 07	13 13	Aug 14	20 17
Aug 21	13 32	Aug 29	3 14	Sep 06	2 05	Sep 13	1 27
Sep 20	0 31	Sep 27	21 55	Oct 05	13 42	Oct 12	7 27
Oct 19	14 13	Oct 27	17 23	Nov 04	0 24	Nov 10	14 38
Nov 18	5 43	Nov 26	11 03	Dec 03	9 49	Dec 10	1 53
Dec 18	0 31	Dec 26	3 20	Jan 01	20 25	Jan 08	16 27

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.

***** 2017 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 56	17 46	19 19	6 32 8 05	1 15 12 30	.....	21 20	15	21 56.7	-12 08	11.2
Mon Jan 02/Tue Jan 03	6 00	17 47	19 20	6 33 8 05	1 20 12 34	.....	22 21	23	22 47.5	- 8 32	11.2
Tue Jan 03/Wed Jan 04	6 04	17 48	19 21	6 33 8 05	1 24 12 38	.....	23 23	32	23 38.4	- 4 28	11.2
Wed Jan 04/Thu Jan 05	6 08	17 49	19 21	6 33 8 05	1 29 12 42	.....	0 27	43	0 29.9	- 0 06	11.2
Thu Jan 05/Fri Jan 06	6 12	17 50	19 22	6 33 8 05	1 34 12 46	.....	1 31	54	1 22.5	4 21	11.2
Fri Jan 06/Sat Jan 07	6 16	17 51	19 23	6 33 8 05	1 38 12 50	.....	2 38	65	2 17.1	8 39	11.2
Sat Jan 07/Sun Jan 08	6 20	17 52	19 24	6 33 8 05	1 43 12 54	.....	3 46	76	3 14.1	12 32	11.2
Sun Jan 08/Mon Jan 09	6 24	17 52	19 25	6 33 8 05	1 48 12 58	.....	4 54	85	4 13.7	15 39	11.1
Mon Jan 09/Tue Jan 10	6 28	17 53	19 25	6 33 8 05	1 53 13 02	15 34	6 00	93	5 15.5	17 45	11.1
Tue Jan 10/Wed Jan 11	6 32	17 54	19 26	6 33 8 05	1 57 13 06	16 30	7 03	98	6 18.5	18 37	11.1
Wed Jan 11/Thu Jan 12	6 36	17 55	19 27	6 33 8 05	2 02 13 10	17 31	7 59	100	7 21.2	18 09	11.1
Thu Jan 12/Fri Jan 13	6 40	17 56	19 28	6 33 8 04	2 07 13 14	18 35	.....	99	8 22.1	16 28	11.1
Fri Jan 13/Sat Jan 14	6 44	17 57	19 29	6 33 8 04	2 12 13 18	19 40	.....	96	9 20.2	13 46	11.1
Sat Jan 14/Sun Jan 15	6 48	17 58	19 30	6 32 8 04	2 17 13 21	20 44	.....	90	10 15.0	10 21	11.0
Sun Jan 15/Mon Jan 16	6 52	17 59	19 31	6 32 8 03	2 22 13 25	21 46	.....	83	11 06.8	6 29	11.0
Mon Jan 16/Tue Jan 17	6 56	18 00	19 31	6 32 8 03	2 26 13 29	22 46	.....	74	11 56.0	2 27	11.0
Tue Jan 17/Wed Jan 18	7 00	18 01	19 32	6 32 8 03	2 31 13 32	23 44	.....	65	12 43.4	- 1 36	11.0
Wed Jan 18/Thu Jan 19	7 03	18 02	19 33	6 32 8 02	2 36 13 36	0 40	.....	56	13 29.7	- 5 29	11.0
Thu Jan 19/Fri Jan 20	7 07	18 03	19 34	6 31 8 02	2 41 13 40	1 35	.....	46	14 15.6	- 9 04	11.0
Fri Jan 20/Sat Jan 21	7 11	18 05	19 35	6 31 8 01	2 46 13 43	2 30	.....	37	15 01.8	-12 17	10.9
Sat Jan 21/Sun Jan 22	7 15	18 06	19 36	6 30 8 01	2 51 13 47	3 24	.....	28	15 48.7	-15 00	10.9
Sun Jan 22/Mon Jan 23	7 19	18 07	19 37	6 30 8 00	2 55 13 50	4 17	.....	20	16 36.7	-17 07	10.9
Mon Jan 23/Tue Jan 24	7 23	18 08	19 38	6 30 8 00	3 00 13 54	5 10	.....	13	17 26.0	-18 32	10.9
Tue Jan 24/Wed Jan 25	7 27	18 09	19 39	6 29 7 59	3 05 13 57	6 01	.....	7	18 16.6	-19 10	10.8
Wed Jan 25/Thu Jan 26	7 31	18 10	19 40	6 29 7 58	3 10 14 01	6 49	16 21	3	19 08.1	-18 56	10.8
Thu Jan 26/Fri Jan 27	7 35	18 11	19 41	6 28 7 58	3 15 14 04	7 34	17 15	1	20 00.1	-17 48	10.8
Fri Jan 27/Sat Jan 28	7 39	18 12	19 42	6 28 7 57	3 20 14 08	8 17	18 12	0	20 52.2	-15 49	10.8
Sat Jan 28/Sun Jan 29	7 43	18 13	19 43	6 27 7 56	3 25 14 11	.....	19 12	2	21 44.2	-13 01	10.7
Sun Jan 29/Mon Jan 30	7 47	18 14	19 43	6 26 7 55	3 30 14 14	.....	20 14	5	22 35.8	- 9 32	10.7
Mon Jan 30/Tue Jan 31	7 51	18 15	19 44	6 26 7 55	3 34 14 18	.....	21 16	11	23 27.2	- 5 32	10.7
Tue Jan 31/Wed Feb 01	7 55	18 16	19 45	6 25 7 54	3 39 14 21	.....	22 20	19	0 18.7	- 1 13	10.7

***** 2017 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 59	18 17	19 46	6 24 7 53	3 44 14 24	.....	23 24	28	1 10.8	3 12	10.6
Thu Feb 02/Fri Feb 03	8 03	18 19	19 47	6 24 7 52	3 49 14 27	.....	0 30	39	2 04.1	7 30	10.6
Fri Feb 03/Sat Feb 04	8 07	18 20	19 48	6 23 7 51	3 54 14 31	.....	1 36	50	2 59.0	11 25	10.6
Sat Feb 04/Sun Feb 05	8 11	18 21	19 49	6 22 7 50	3 59 14 34	.....	2 42	61	3 56.0	14 41	10.6
Sun Feb 05/Mon Feb 06	8 14	18 22	19 50	6 21 7 49	4 04 14 37	.....	3 47	72	4 55.0	17 04	10.5
Mon Feb 06/Tue Feb 07	8 18	18 23	19 51	6 20 7 48	4 09 14 40	.....	4 49	82	5 55.4	18 21	10.5
Tue Feb 07/Wed Feb 08	8 22	18 24	19 52	6 20 7 47	4 14 14 43	.....	5 46	90	6 56.4	18 24	10.5
Wed Feb 08/Thu Feb 09	8 26	18 25	19 53	6 19 7 46	4 18 14 46	16 17	6 38	96	7 56.7	17 15	10.4
Thu Feb 09/Fri Feb 10	8 30	18 26	19 54	6 18 7 45	4 23 14 49	17 21	7 25	99	8 55.3	15 01	10.4
Fri Feb 10/Sat Feb 11	8 34	18 27	19 55	6 17 7 44	4 28 14 52	18 25	8 06	100	9 51.4	11 55	10.4
Sat Feb 11/Sun Feb 12	8 38	18 28	19 56	6 16 7 43	4 33 14 55	19 28	.....	98	10 44.8	8 12	10.3
Sun Feb 12/Mon Feb 13	8 42	18 29	19 57	6 15 7 42	4 38 14 58	20 30	.....	94	11 35.8	4 10	10.3
Mon Feb 13/Tue Feb 14	8 46	18 30	19 58	6 14 7 41	4 43 15 01	21 29	.....	88	12 24.9	0 02	10.3
Tue Feb 14/Wed Feb 15	8 50	18 31	19 59	6 13 7 40	4 48 15 04	22 27	.....	81	13 12.6	- 4 00	10.2
Wed Feb 15/Thu Feb 16	8 54	18 32	19 59	6 12 7 39	4 53 15 07	23 24	.....	73	13 59.5	- 7 48	10.2
Thu Feb 16/Fri Feb 17	8 58	18 33	20 00	6 11 7 38	4 58 15 10	0 19	.....	64	14 46.2	-11 12	10.2
Fri Feb 17/Sat Feb 18	9 02	18 34	20 01	6 10 7 36	5 02 15 12	1 14	.....	55	15 33.3	-14 08	10.1
Sat Feb 18/Sun Feb 19	9 06	18 35	20 02	6 09 7 35	5 07 15 15	2 07	.....	45	16 21.1	-16 28	10.1
Sun Feb 19/Mon Feb 20	9 10	18 37	20 03	6 07 7 34	5 12 15 18	3 00	.....	36	17 10.0	-18 08	10.1
Mon Feb 20/Tue Feb 21	9 14	18 38	20 04	6 06 7 33	5 17 15 21	3 51	.....	27	17 59.9	-19 02	10.0
Tue Feb 21/Wed Feb 22	9 18	18 39	20 05	6 05 7 31	5 22 15 24	4 40	.....	19	18 50.9	-19 07	10.0
Wed Feb 22/Thu Feb 23	9 21	18 40	20 06	6 04 7 30	5 27 15 26	5 27	.....	12	19 42.7	-18 18	10.0
Thu Feb 23/Fri Feb 24	9 25	18 41	20 07	6 03 7 29	5 32 15 29	6 11	.....	6	20 34.9	-16 36	9.9
Fri Feb 24/Sat Feb 25	9 29	18 42	20 08	6 01 7 28	5 37 15 32	6 52	16 58	2	21 27.3	-14 03	9.9
Sat Feb 25/Sun Feb 26	9 33	18 43	20 09	6 00 7 26	5 42 15 34	7 31	18 00	0	22 19.6	-10 45	9.9
Sun Feb 26/Mon Feb 27	9 37	18 44	20 10	5 59 7 25	5 46 15 37	.....	19 03	0	23 12.0	- 6 50	9.8
Mon Feb 27/Tue Feb 28	9 41	18 44	20 11	5 57 7 24	5 51 15 40	.....	20 08	3	0 04.5	- 2 31	9.8
Tue Feb 28/Wed Mar 01	9 45	18 45	20 12	5 56 7 22	5 56 15 42	.....	21 14	8	0 57.4	1 59	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.

***** 2017 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	
Wed Mar 01/Thu Mar 02	9 49	18 46	20 13	5 55	7 21	6 01	15 45	.....	22 21	16	1 51.2	6 24	9.7
Thu Mar 02/Fri Mar 03	9 53	18 47	20 14	5 53	7 19	6 06	15 47	.....	23 28	25	2 46.3	10 28	9.7
Fri Mar 03/Sat Mar 04	9 57	18 48	20 14	5 52	7 18	6 11	15 50	.....	0 35	35	3 42.8	13 55	9.6
Sat Mar 04/Sun Mar 05	10 01	18 49	20 15	5 51	7 17	6 16	15 53	.....	1 40	47	4 40.9	16 30	9.6
Sun Mar 05/Mon Mar 06	10 05	18 50	20 16	5 49	7 15	6 21	15 55	.....	2 42	58	5 40.0	18 03	9.5
Mon Mar 06/Tue Mar 07	10 09	18 51	20 17	5 48	7 14	6 25	15 58	.....	3 40	69	6 39.4	18 26	9.5
Tue Mar 07/Wed Mar 08	10 13	18 52	20 18	5 46	7 12	6 30	16 00	.....	4 33	79	7 38.4	17 39	9.5
Wed Mar 08/Thu Mar 09	10 17	18 53	20 19	5 45	7 11	6 35	16 03	.....	5 20	87	8 36.0	15 48	9.4
Thu Mar 09/Fri Mar 10	10 21	18 54	20 20	5 44	7 10	6 40	16 05	.....	6 02	94	9 31.6	13 01	9.4
Fri Mar 10/Sat Mar 11	10 25	18 55	20 21	5 42	7 08	6 45	16 08	17 14	6 40	98	10 25.0	9 34	9.3
Sat Mar 11/Sun Mar 12*	10 29	18 56	20 22	6 41	8 07	6 50	16 10	18 15	8 15	100	11 16.4	5 39	9.3
Sun Mar 12/Mon Mar 13	9 32	19 57	21 23	6 39	8 05	6 55	16 12	20 15	.....	100	12 04.7	1 42	9.3
Mon Mar 13/Tue Mar 14	9 36	19 58	21 24	6 38	8 04	7 00	16 15	21 14	.....	97	12 53.0	- 2 25	9.2
Tue Mar 14/Wed Mar 15	9 40	19 59	21 25	6 36	8 02	7 05	16 17	22 12	.....	93	13 40.5	- 6 22	9.2
Wed Mar 15/Thu Mar 16	9 44	19 59	21 26	6 34	8 01	7 10	16 20	23 08	.....	87	14 27.7	- 9 59	9.1
Thu Mar 16/Fri Mar 17	9 48	20 00	21 27	6 33	7 59	7 15	16 22	0 03	.....	80	15 15.1	-13 09	9.1
Fri Mar 17/Sat Mar 18	9 52	20 01	21 28	6 31	7 58	7 19	16 24	0 58	.....	72	16 02.9	-15 45	9.1
Sat Mar 18/Sun Mar 19	9 56	20 02	21 29	6 30	7 56	7 24	16 27	1 51	.....	63	16 51.4	-17 41	9.0
Sun Mar 19/Mon Mar 20	10 00	20 03	21 30	6 28	7 55	7 29	16 29	2 42	.....	54	17 40.8	-18 53	9.0
Mon Mar 20/Tue Mar 21	10 04	20 04	21 31	6 27	7 53	7 34	16 32	3 32	.....	44	18 31.0	-19 17	8.9
Tue Mar 21/Wed Mar 22	10 08	20 05	21 32	6 25	7 52	7 39	16 34	4 19	.....	35	19 21.8	-18 50	8.9
Wed Mar 22/Thu Mar 23	10 12	20 06	21 33	6 23	7 50	7 44	16 36	5 03	.....	26	20 13.2	-17 30	8.8
Thu Mar 23/Fri Mar 24	10 16	20 07	21 34	6 22	7 49	7 49	16 39	5 45	.....	18	21 05.0	-15 19	8.8
Fri Mar 24/Sat Mar 25	10 20	20 07	21 35	6 20	7 48	7 54	16 41	6 24	16 42	10	21 57.0	-12 20	8.8
Sat Mar 25/Sun Mar 26	10 24	20 08	21 36	6 19	7 46	7 59	16 43	7 02	17 45	5	22 49.3	- 8 39	8.7
Sun Mar 26/Mon Mar 27	10 27	20 09	21 37	6 17	7 45	8 04	16 45	.....	18 50	1	23 42.1	- 4 26	8.7
Mon Mar 27/Tue Mar 28	10 31	20 10	21 38	6 15	7 43	8 09	16 48	.....	19 56	0	0 35.7	0 07	8.6
Tue Mar 28/Wed Mar 29	10 35	20 11	21 39	6 14	7 42	8 14	16 50	.....	21 04	2	1 30.3	4 44	8.6
Wed Mar 29/Thu Mar 30	10 39	20 12	21 40	6 12	7 40	8 19	16 52	.....	22 14	6	2 26.4	9 06	8.5
Thu Mar 30/Fri Mar 31	10 43	20 13	21 41	6 10	7 39	8 24	16 55	.....	23 23	13	3 24.0	12 54	8.5
Fri Mar 31/Sat Apr 01	10 47	20 14	21 42	6 09	7 37	8 29	16 57	.....	0 31	21	4 23.1	15 53	8.4

***** 2017 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	
Sat Apr 01/Sun Apr 02	10 51	20 15	21 43	6 07	7 36	8 34	16 59	.....	1 36	32	5 23.1	17 48	8.4
Sun Apr 02/Mon Apr 03	10 55	20 15	21 44	6 05	7 34	8 39	17 02	.....	2 36	43	6 23.2	18 31	8.4
Mon Apr 03/Tue Apr 04	10 59	20 16	21 45	6 04	7 33	8 44	17 04	.....	3 31	54	7 22.4	18 03	8.3
Tue Apr 04/Wed Apr 05	11 03	20 17	21 46	6 02	7 31	8 49	17 06	.....	4 19	65	8 20.0	16 29	8.3
Wed Apr 05/Thu Apr 06	11 07	20 18	21 48	6 00	7 30	8 54	17 08	.....	5 02	75	9 15.5	13 58	8.2
Thu Apr 06/Fri Apr 07	11 11	20 19	21 49	5 59	7 28	8 59	17 11	.....	5 41	84	10 08.6	10 44	8.2
Fri Apr 07/Sat Apr 08	11 15	20 20	21 50	5 57	7 27	9 04	17 13	17 07	6 16	91	10 59.7	6 59	8.1
Sat Apr 08/Sun Apr 09	11 19	20 21	21 51	5 55	7 26	9 09	17 15	18 06	6 49	96	11 49.1	2 56	8.1
Sun Apr 09/Mon Apr 10	11 23	20 22	21 52	5 54	7 24	9 14	17 17	19 05	.....	99	12 37.2	- 1 11	8.0
Mon Apr 10/Tue Apr 11	11 27	20 22	21 53	5 52	7 23	9 19	17 20	20 02	.....	100	13 24.7	- 5 14	8.0
Tue Apr 11/Wed Apr 12	11 31	20 23	21 54	5 50	7 21	9 24	17 22	20 59	.....	99	14 12.0	- 9 00	7.9
Wed Apr 12/Thu Apr 13	11 35	20 24	21 55	5 49	7 20	9 30	17 24	21 54	.....	96	14 59.5	-12 23	7.9
Thu Apr 13/Fri Apr 14	11 38	20 25	21 57	5 47	7 19	9 35	17 27	22 49	.....	92	15 47.5	-15 13	7.8
Fri Apr 14/Sat Apr 15	11 42	20 26	21 58	5 46	7 17	9 40	17 29	23 43	.....	86	16 36.1	-17 25	7.8
Sat Apr 15/Sun Apr 16	11 46	20 27	21 59	5 44	7 16	9 45	17 31	0 35	.....	78	17 25.5	-18 52	7.7
Sun Apr 16/Mon Apr 17	11 50	20 28	22 00	5 42	7 15	9 50	17 33	1 25	.....	70	18 15.4	-19 32	7.7
Mon Apr 17/Tue Apr 18	11 54	20 29	22 01	5 41	7 13	9 55	17 36	2 13	.....	61	19 05.9	-19 21	7.7
Tue Apr 18/Wed Apr 19	11 58	20 29	22 02	5 39	7 12	10 00	17 38	2 58	.....	52	19 56.6	-18 19	7.6
Wed Apr 19/Thu Apr 20	12 02	20 30	22 04	5 37	7 11	10 05	17 40	3 39	.....	42	20 47.4	-16 27	7.6
Thu Apr 20/Fri Apr 21	12 06	20 31	22 05	5 36	7 09	10 11	17 43	4 19	.....	32	21 38.4	-13 46	7.5
Fri Apr 21/Sat Apr 22	12 10	20 32	22 06	5 34	7 08	10 16	17 45	4 57	.....	23	22 29.6	-10 22	7.5
Sat Apr 22/Sun Apr 23	12 14	20 33	22 07	5 33	7 07	10 21	17 47	5 33	.....	14	23 21.3	- 6 22	7.4
Sun Apr 23/Mon Apr 24	12 18	20 34	22 09	5 31	7 06	10 26	17 50	6 10	17 34	8	0 13.9	- 1 56	7.4
Mon Apr 24/Tue Apr 25	12 22	20 35	22 10	5 29	7 04	10 31	17 52	.....	18 41	3	1 07.9	2 43	7.3
Tue Apr 25/Wed Apr 26	12 26	20 36	22 11	5 28	7 03	10 36	17 54	.....	19 51	0	2 03.8	7 18	7.3
Wed Apr 26/Thu Apr 27	12 30	20 37	22 12	5 26	7 02	10 42	17 57	.....	21 02	1	3 01.7	11 29	7.2
Thu Apr 27/Fri Apr 28	12 34	20 37	22 13	5 25	7 01	10 47	17 59	.....	22 13	4	4 01.6	14 55	7.2
Fri Apr 28/Sat Apr 29	12 38	20 38	22 15	5 23	7 00	10 52	18 02	.....	23 22	10	5 03.0	17 20	7.1
Sat Apr 29/Sun Apr 30	12 42	20 39	22 16	5 22	6 58	10 57	18 04	.....	0 27	19	6 04.9	18 30	7.1
Sun Apr 30/Mon May 01	12 45	20 40	22 17	5 20	6 57	11 02	18 07	.....	1 26	29	7 06.0	18 24	7.0

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.

***** 2017 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 49	20 41	22 19	5 19	6 56	11 08	18 09	.....	2 18	39	8 05.3	17 05	7.0
Tue May 02/Wed May 03	12 53	20 42	22 20	5 17	6 55	11 13	18 11	.....	3 03	51	9 01.9	14 46	7.0
Wed May 03/Thu May 04	12 57	20 43	22 21	5 16	6 54	11 18	18 14	.....	3 43	61	9 55.8	11 40	6.9
Thu May 04/Fri May 05	13 01	20 44	22 22	5 14	6 53	11 23	18 16	.....	4 19	71	10 47.1	8 01	6.9
Fri May 05/Sat May 06	13 05	20 44	22 24	5 13	6 52	11 29	18 19	.....	4 52	80	11 36.4	4 02	6.8
Sat May 06/Sun May 07	13 09	20 45	22 25	5 11	6 51	11 34	18 21	.....	5 24	88	12 24.3	- 0 05	6.8
Sun May 07/Mon May 08	13 13	20 46	22 26	5 10	6 50	11 39	18 24	17 56	5 55	93	13 11.4	- 4 10	6.7
Mon May 08/Tue May 09	13 17	20 47	22 27	5 09	6 49	11 44	18 27	18 52	6 26	97	13 58.3	- 8 03	6.7
Tue May 09/Wed May 10	13 21	20 48	22 29	5 07	6 48	11 49	18 29	19 48	.....	99	14 45.5	-11 35	6.6
Wed May 10/Thu May 11	13 25	20 49	22 30	5 06	6 47	11 55	18 32	20 43	.....	100	15 33.3	-14 38	6.6
Thu May 11/Fri May 12	13 29	20 50	22 31	5 05	6 46	12 00	18 34	21 37	.....	98	16 21.9	-17 05	6.6
Fri May 12/Sat May 13	13 33	20 51	22 33	5 03	6 45	12 05	18 37	22 30	.....	95	17 11.4	-18 48	6.5
Sat May 13/Sun May 14	13 37	20 51	22 34	5 02	6 45	12 10	18 40	23 21	.....	90	18 01.5	-19 44	6.5
Sun May 14/Mon May 15	13 41	20 52	22 35	5 01	6 44	12 15	18 42	0 10	.....	84	18 52.0	-19 49	6.4
Mon May 15/Tue May 16	13 45	20 53	22 36	5 00	6 43	12 21	18 45	0 55	.....	76	19 42.6	-19 02	6.4
Tue May 16/Wed May 17	13 49	20 54	22 37	4 59	6 42	12 26	18 48	1 38	.....	67	20 33.1	-17 25	6.4
Wed May 17/Thu May 18	13 52	20 55	22 39	4 57	6 41	12 31	18 51	2 17	.....	58	21 23.4	-15 00	6.3
Thu May 18/Fri May 19	13 56	20 56	22 40	4 56	6 41	12 36	18 54	2 54	.....	48	22 13.5	-11 52	6.3
Fri May 19/Sat May 20	14 00	20 56	22 41	4 55	6 40	12 41	18 56	3 30	.....	37	23 03.7	- 8 08	6.2
Sat May 20/Sun May 21	14 04	20 57	22 42	4 54	6 39	12 46	18 59	4 05	.....	27	23 54.6	- 3 54	6.2
Sun May 21/Mon May 22	14 08	20 58	22 44	4 53	6 39	12 52	19 02	4 41	.....	18	0 46.7	0 37	6.2
Mon May 22/Tue May 23	14 12	20 59	22 45	4 52	6 38	12 57	19 05	5 20	.....	10	1 40.7	5 14	6.1
Tue May 23/Wed May 24	14 16	20 59	22 46	4 51	6 38	13 02	19 08	6 01	18 37	4	2 37.0	9 38	6.1
Wed May 24/Thu May 25	14 20	21 00	22 47	4 50	6 37	13 07	19 11	.....	19 48	1	3 36.0	13 28	6.1
Thu May 25/Fri May 26	14 24	21 01	22 48	4 49	6 36	13 12	19 14	.....	21 00	0	4 37.4	16 26	6.0
Fri May 26/Sat May 27	14 28	21 02	22 49	4 49	6 36	13 17	19 17	.....	22 09	3	5 40.4	18 12	6.0
Sat May 27/Sun May 28	14 32	21 02	22 50	4 48	6 36	13 22	19 20	.....	23 13	8	6 43.5	18 39	6.0
Sun May 28/Mon May 29	14 36	21 03	22 51	4 47	6 35	13 27	19 24	.....	0 10	16	7 45.3	17 46	5.9
Mon May 29/Tue May 30	14 40	21 04	22 52	4 46	6 35	13 32	19 27	.....	1 00	25	8 44.5	15 43	5.9
Tue May 30/Wed May 31	14 44	21 05	22 53	4 45	6 34	13 37	19 30	.....	1 43	36	9 40.5	12 47	5.9
Wed May 31/Thu Jun 01	14 48	21 05	22 54	4 45	6 34	13 42	19 33	.....	2 21	46	10 33.5	9 12	5.8

***** 2017 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 52	21 06	22 55	4 44	6 34	13 47	19 37	.....	2 55	57	11 23.8	5 14	5.8
Fri Jun 02/Sat Jun 03	14 56	21 06	22 56	4 44	6 33	13 52	19 40	.....	3 27	67	12 12.1	1 06	5.8
Sat Jun 03/Sun Jun 04	15 00	21 07	22 57	4 43	6 33	13 56	19 43	.....	3 58	76	12 59.3	- 3 02	5.8
Sun Jun 04/Mon Jun 05	15 03	21 08	22 58	4 43	6 33	14 01	19 47	.....	4 30	84	13 45.9	- 7 00	5.7
Mon Jun 05/Tue Jun 06	15 07	21 08	22 59	4 42	6 33	14 06	19 50	17 43	5 02	90	14 32.7	-10 40	5.7
Tue Jun 06/Wed Jun 07	15 11	21 09	23 00	4 42	6 32	14 11	19 54	18 38	5 36	95	15 20.1	-13 54	5.7
Wed Jun 07/Thu Jun 08	15 15	21 09	23 00	4 41	6 32	14 15	19 57	19 32	6 12	98	16 08.4	-16 34	5.7
Thu Jun 08/Fri Jun 09	15 19	21 10	23 01	4 41	6 32	14 20	20 01	20 26	.....	100	16 57.8	-18 33	5.7
Fri Jun 09/Sat Jun 10	15 23	21 10	23 02	4 41	6 32	14 25	20 05	21 18	.....	99	17 48.0	-19 45	5.6
Sat Jun 10/Sun Jun 11	15 27	21 11	23 02	4 40	6 32	14 29	20 08	22 08	.....	97	18 38.8	-20 06	5.6
Sun Jun 11/Mon Jun 12	15 31	21 11	23 03	4 40	6 32	14 34	20 12	22 54	.....	93	19 29.9	-19 35	5.6
Mon Jun 12/Tue Jun 13	15 35	21 12	23 04	4 40	6 32	14 38	20 16	23 38	.....	88	20 20.7	-18 11	5.6
Tue Jun 13/Wed Jun 14	15 39	21 12	23 04	4 40	6 32	14 43	20 20	0 18	.....	81	21 11.1	-15 59	5.6
Wed Jun 14/Thu Jun 15	15 43	21 13	23 05	4 40	6 32	14 47	20 24	0 55	.....	72	22 01.0	-13 04	5.6
Thu Jun 15/Fri Jun 16	15 47	21 13	23 05	4 40	6 32	14 52	20 27	1 31	.....	63	22 50.5	- 9 31	5.6
Fri Jun 16/Sat Jun 17	15 51	21 13	23 06	4 40	6 32	14 56	20 31	2 05	.....	53	23 40.2	- 5 29	5.6
Sat Jun 17/Sun Jun 18	15 55	21 14	23 06	4 40	6 32	15 00	20 35	2 39	.....	42	0 30.5	- 1 07	5.6
Sun Jun 18/Mon Jun 19	15 59	21 14	23 06	4 40	6 32	15 05	20 40	3 15	.....	31	1 22.2	3 23	5.6
Mon Jun 19/Tue Jun 20	16 03	21 14	23 07	4 40	6 33	15 09	20 44	3 53	.....	21	2 16.0	7 48	5.6
Tue Jun 20/Wed Jun 21	16 07	21 14	23 07	4 40	6 33	15 13	20 48	4 36	.....	13	3 12.4	11 50	5.6
Wed Jun 21/Thu Jun 22	16 10	21 15	23 07	4 41	6 33	15 17	20 52	5 23	18 35	6	4 11.7	15 11	5.6
Thu Jun 22/Fri Jun 23	16 14	21 15	23 07	4 41	6 33	15 21	20 56	6 18	19 45	2	5 13.5	17 31	5.6
Fri Jun 23/Sat Jun 24	16 18	21 15	23 07	4 41	6 34	15 25	21 00	.....	20 52	0	6 16.8	18 35	5.6
Sat Jun 24/Sun Jun 25	16 22	21 15	23 07	4 42	6 34	15 29	21 05	.....	21 54	2	7 19.9	18 18	5.6
Sun Jun 25/Mon Jun 26	16 26	21 15	23 07	4 42	6 34	15 33	21 09	.....	22 49	6	8 21.4	16 43	5.6
Mon Jun 26/Tue Jun 27	16 30	21 15	23 07	4 43	6 35	15 37	21 14	.....	23 37	13	9 20.1	14 04	5.6
Tue Jun 27/Wed Jun 28	16 34	21 15	23 07	4 43	6 35	15 41	21 18	.....	0 19	21	10 15.5	10 37	5.6
Wed Jun 28/Thu Jun 29	16 38	21 15	23 07	4 44	6 35	15 45	21 22	.....	0 55	31	11 07.9	6 41	5.6
Thu Jun 29/Fri Jun 30	16 42	21 15	23 07	4 44	6 36	15 49	21 27	.....	1 29	41	11 57.7	2 30	5.6
Fri Jun 30/Sat Jul 01	16 46	21 15	23 07	4 45	6 36	15 52	21 32	.....	2 01	51	12 45.8	- 1 42	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.

***** 2017 JULY *****

Date (eve/morn)	LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----				Twi-Twi hours	
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	
Sat Jul 01/Sun Jul 02	16 50	21 15	23 06	4 45	6 37	15 56	21 36	.....	2 32	61	13 32.9	- 5 47	5.7
Sun Jul 02/Mon Jul 03	16 54	21 15	23 06	4 46	6 37	16 00	21 41	.....	3 04	71	14 19.6	- 9 34	5.7
Mon Jul 03/Tue Jul 04	16 58	21 15	23 06	4 47	6 38	16 03	21 45	.....	3 37	79	15 06.7	-12 58	5.7
Tue Jul 04/Wed Jul 05	17 02	21 15	23 05	4 48	6 38	16 07	21 50	.....	4 13	86	15 54.7	-15 50	5.7
Wed Jul 05/Thu Jul 06	17 06	21 14	23 05	4 48	6 39	16 10	21 55	18 21	4 52	92	16 43.6	-18 03	5.7
Thu Jul 06/Fri Jul 07	17 10	21 14	23 04	4 49	6 39	16 14	22 00	19 13	5 34	96	17 33.7	-19 31	5.7
Fri Jul 07/Sat Jul 08	17 14	21 14	23 04	4 50	6 40	16 17	22 04	20 04	6 21	99	18 24.7	-20 10	5.8
Sat Jul 08/Sun Jul 09	17 18	21 14	23 03	4 51	6 41	16 21	22 09	20 52	.....	100	19 16.1	-19 55	5.8
Sun Jul 09/Mon Jul 10	17 21	21 13	23 03	4 52	6 41	16 24	22 14	21 37	.....	99	20 07.6	-18 46	5.8
Mon Jul 10/Tue Jul 11	17 25	21 13	23 02	4 53	6 42	16 27	22 19	22 19	.....	96	20 58.8	-16 47	5.8
Tue Jul 11/Wed Jul 12	17 29	21 13	23 01	4 54	6 43	16 31	22 24	22 57	.....	91	21 49.3	-14 01	5.9
Wed Jul 12/Thu Jul 13	17 33	21 12	23 01	4 55	6 43	16 34	22 29	23 33	.....	84	22 39.2	-10 36	5.9
Thu Jul 13/Fri Jul 14	17 37	21 12	23 00	4 56	6 44	16 37	22 34	0 08	.....	76	23 28.8	- 6 41	5.9
Fri Jul 14/Sat Jul 15	17 41	21 11	22 59	4 57	6 45	16 40	22 39	0 41	.....	67	0 18.5	- 2 25	6.0
Sat Jul 15/Sun Jul 16	17 45	21 11	22 58	4 58	6 45	16 43	22 44	1 16	.....	56	1 09.0	2 00	6.0
Sun Jul 16/Mon Jul 17	17 49	21 10	22 57	4 59	6 46	16 46	22 49	1 52	.....	45	2 00.9	6 23	6.0
Mon Jul 17/Tue Jul 18	17 53	21 10	22 56	5 00	6 47	16 49	22 54	2 31	.....	34	2 54.9	10 28	6.1
Tue Jul 18/Wed Jul 19	17 57	21 09	22 55	5 01	6 47	16 52	22 59	3 14	.....	24	3 51.4	13 59	6.1
Wed Jul 19/Thu Jul 20	18 01	21 09	22 54	5 02	6 48	16 55	23 04	4 04	.....	14	4 50.6	16 40	6.1
Thu Jul 20/Fri Jul 21	18 05	21 08	22 53	5 03	6 49	16 58	23 09	4 59	18 32	7	5 51.9	18 15	6.2
Fri Jul 21/Sat Jul 22	18 09	21 07	22 52	5 04	6 50	17 01	23 14	6 01	19 36	2	6 54.3	18 32	6.2
Sat Jul 22/Sun Jul 23	18 13	21 07	22 51	5 06	6 50	17 04	23 19	.....	20 34	0	7 56.2	17 31	6.2
Sun Jul 23/Mon Jul 24	18 17	21 06	22 50	5 07	6 51	17 07	23 24	.....	21 26	1	8 56.3	15 18	6.3
Mon Jul 24/Tue Jul 25	18 21	21 05	22 49	5 08	6 52	17 09	23 29	.....	22 11	4	9 53.6	12 08	6.3
Tue Jul 25/Wed Jul 26	18 25	21 04	22 48	5 09	6 53	17 12	23 35	.....	22 51	10	10 48.0	8 19	6.4
Wed Jul 26/Thu Jul 27	18 28	21 04	22 47	5 10	6 54	17 15	23 40	.....	23 27	17	11 39.7	4 09	6.4
Thu Jul 27/Fri Jul 28	18 32	21 03	22 45	5 12	6 54	17 18	23 45	.....	0 01	26	12 29.3	- 0 08	6.4
Fri Jul 28/Sat Jul 29	18 36	21 02	22 44	5 13	6 55	17 20	23 50	.....	0 33	36	13 17.4	- 4 20	6.5
Sat Jul 29/Sun Jul 30	18 40	21 01	22 43	5 14	6 56	17 23	23 55	.....	1 05	45	14 04.7	- 8 17	6.5
Sun Jul 30/Mon Jul 31	18 44	21 00	22 42	5 15	6 57	17 26	0 00	.....	1 38	55	14 52.0	-11 51	6.6
Mon Jul 31/Tue Aug 01	18 48	20 59	22 40	5 16	6 58	17 28	0 05	.....	2 13	65	15 39.7	-14 54	6.6

***** 2017 AUGUST *****

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 Aug 01/Wed Aug 02	18 52	20 58	22 39	5 18	6 58	17 31	0 11	.....	2 50	73	16 28.3	-17 21	6.6
Wed Aug 02/Thu Aug 03	18 56	20 57	22 38	5 19	6 59	17 33	0 16	.....	3 31	81	17 17.9	-19 05	6.7
Thu Aug 03/Fri Aug 04	19 00	20 56	22 36	5 20	7 00	17 36	0 21	17 58	4 16	88	18 08.6	-20 01	6.7
Fri Aug 04/Sat Aug 05	19 04	20 55	22 35	5 21	7 01	17 38	0 26	18 47	5 05	94	19 00.0	-20 04	6.8
Sat Aug 05/Sun Aug 06	19 08	20 54	22 33	5 22	7 02	17 41	0 31	19 34	5 58	98	19 51.9	-19 13	6.8
Sun Aug 06/Mon Aug 07	19 12	20 53	22 32	5 24	7 02	17 43	0 36	20 17	.....	100	20 43.7	-17 28	6.9
Mon Aug 07/Tue Aug 08	19 16	20 52	22 30	5 25	7 03	17 46	0 42	20 57	.....	100	21 35.2	-14 54	6.9
Tue Aug 08/Wed Aug 09	19 20	20 51	22 29	5 26	7 04	17 48	0 47	21 35	.....	98	22 26.2	-11 36	7.0
Wed Aug 09/Thu Aug 10	19 24	20 50	22 27	5 27	7 05	17 51	0 52	22 10	.....	94	23 16.7	- 7 44	7.0
Thu Aug 10/Fri Aug 11	19 28	20 49	22 26	5 29	7 06	17 53	0 57	22 44	.....	87	0 07.1	- 3 29	7.0
Fri Aug 11/Sat Aug 12	19 32	20 48	22 24	5 30	7 07	17 56	1 02	23 18	.....	79	0 57.7	0 57	7.1
Sat Aug 12/Sun Aug 13	19 36	20 46	22 23	5 31	7 07	17 58	1 07	23 53	.....	70	1 49.3	5 21	7.1
Sun Aug 13/Mon Aug 14	19 39	20 45	22 21	5 32	7 08	18 00	1 12	0 31	.....	59	2 42.3	9 30	7.2
Mon Aug 14/Tue Aug 15	19 43	20 44	22 20	5 33	7 09	18 03	1 18	1 11	.....	48	3 37.2	13 08	7.2
Tue Aug 15/Wed Aug 16	19 47	20 43	22 18	5 34	7 10	18 05	1 23	1 57	.....	36	4 34.4	16 00	7.3
Wed Aug 16/Thu Aug 17	19 51	20 41	22 17	5 36	7 11	18 08	1 28	2 49	.....	26	5 33.5	17 53	7.3
Thu Aug 17/Fri Aug 18	19 55	20 40	22 15	5 37	7 12	18 10	1 33	3 46	17 22	16	6 33.9	18 35	7.4
Fri Aug 18/Sat Aug 19	19 59	20 39	22 13	5 38	7 12	18 12	1 38	4 49	18 21	9	7 34.5	18 01	7.4
Sat Aug 19/Sun Aug 20	20 03	20 38	22 12	5 39	7 13	18 14	1 43	5 55	19 14	3	8 34.1	16 16	7.5
Sun Aug 20/Mon Aug 21	20 07	20 36	22 10	5 40	7 14	18 17	1 48	.....	20 02	0	9 31.8	13 29	7.5
Mon Aug 21/Tue Aug 22	20 11	20 35	22 08	5 41	7 15	18 19	1 53	.....	20 44	0	10 27.0	9 55	7.6
Tue Aug 22/Wed Aug 23	20 15	20 34	22 07	5 43	7 16	18 21	1 58	.....	21 22	3	11 19.9	5 51	7.6
Wed Aug 23/Thu Aug 24	20 19	20 32	22 05	5 44	7 16	18 24	2 04	.....	21 57	7	12 10.6	1 33	7.6
Thu Aug 24/Fri Aug 25	20 23	20 31	22 03	5 45	7 17	18 26	2 09	.....	22 30	13	12 59.7	- 2 45	7.7
Fri Aug 25/Sat Aug 26	20 27	20 30	22 02	5 46	7 18	18 28	2 14	.....	23 03	21	13 47.8	- 6 52	7.7
Sat Aug 26/Sun Aug 27	20 31	20 28	22 00	5 47	7 19	18 30	2 19	.....	23 36	30	14 35.5	-10 37	7.8
Sun Aug 27/Mon Aug 28	20 35	20 27	21 58	5 48	7 20	18 33	2 24	.....	0 11	39	15 23.3	-13 53	7.8
Mon Aug 28/Tue Aug 29	20 39	20 25	21 57	5 49	7 21	18 35	2 29	.....	0 47	48	16 11.7	-16 33	7.9
Tue Aug 29/Wed Aug 30	20 43	20 24	21 55	5 50	7 21	18 37	2 34	.....	1 27	58	17 00.9	-18 32	7.9
Wed Aug 30/Thu Aug 31	20 46	20 23	21 53	5 51	7 22	18 39	2 39	.....	2 10	67	17 51.0	-19 45	8.0
Thu Aug 31/Fri Sep 01	20 50	20 21	21 52	5 52	7 23	18 42	2 44	.....	2 57	76	18 41.9	-20 06	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.

***** 2017 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	
Fri Sep 01/Sat Sep 02	20 54	20 20	21 50	5 53	7 24	18 44	2 49	17 28	3 48	83	19 33.5	-19 35	8.1
Sat Sep 02/Sun Sep 03	20 58	20 18	21 48	5 55	7 25	18 46	2 54	18 12	4 43	90	20 25.4	-18 09	8.1
Sun Sep 03/Mon Sep 04	21 02	20 17	21 47	5 56	7 25	18 48	2 59	18 54	5 41	95	21 17.3	-15 50	8.2
Mon Sep 04/Tue Sep 05	21 06	20 15	21 45	5 57	7 26	18 51	3 04	19 33	6 41	99	22 09.0	-12 44	8.2
Tue Sep 05/Wed Sep 06	21 10	20 14	21 43	5 58	7 27	18 53	3 09	20 09	.....	100	23 00.5	- 8 59	8.2
Wed Sep 06/Thu Sep 07	21 14	20 12	21 41	5 59	7 28	18 55	3 14	20 44	.....	99	23 51.9	- 4 44	8.3
Thu Sep 07/Fri Sep 08	21 18	20 11	21 40	6 00	7 29	18 57	3 19	21 19	.....	95	0 43.7	- 0 12	8.3
Fri Sep 08/Sat Sep 09	21 22	20 09	21 38	6 01	7 29	19 00	3 24	21 54	.....	90	1 36.1	4 21	8.4
Sat Sep 09/Sun Sep 10	21 26	20 08	21 36	6 02	7 30	19 02	3 29	22 31	.....	82	2 29.8	8 41	8.4
Sun Sep 10/Mon Sep 11	21 30	20 06	21 35	6 03	7 31	19 04	3 33	23 11	.....	72	3 25.0	12 30	8.5
Mon Sep 11/Tue Sep 12	21 34	20 05	21 33	6 04	7 32	19 06	3 38	23 55	.....	61	4 21.8	15 35	8.5
Tue Sep 12/Wed Sep 13	21 38	20 03	21 31	6 05	7 33	19 09	3 43	0 44	.....	50	5 20.2	17 41	8.6
Wed Sep 13/Thu Sep 14	21 42	20 02	21 30	6 06	7 33	19 11	3 48	1 39	.....	39	6 19.6	18 39	8.6
Thu Sep 14/Fri Sep 15	21 46	20 00	21 28	6 07	7 34	19 13	3 53	2 38	.....	28	7 19.0	18 24	8.6
Fri Sep 15/Sat Sep 16	21 50	19 59	21 26	6 07	7 35	19 15	3 58	3 41	17 08	18	8 17.6	16 59	8.7
Sat Sep 16/Sun Sep 17	21 53	19 57	21 25	6 08	7 36	19 18	4 03	4 46	17 56	11	9 14.5	14 32	8.7
Sun Sep 17/Mon Sep 18	21 57	19 56	21 23	6 09	7 37	19 20	4 08	5 51	18 39	5	10 09.3	11 14	8.8
Mon Sep 18/Tue Sep 19	22 01	19 54	21 21	6 10	7 37	19 22	4 13	6 55	19 18	1	11 02.0	7 21	8.8
Tue Sep 19/Wed Sep 20	22 05	19 53	21 20	6 11	7 38	19 25	4 18	.....	19 54	0	11 52.8	3 08	8.9
Wed Sep 20/Thu Sep 21	22 09	19 51	21 18	6 12	7 39	19 27	4 22	.....	20 28	1	12 42.2	- 1 12	8.9
Thu Sep 21/Fri Sep 22	22 13	19 50	21 16	6 13	7 40	19 29	4 27	.....	21 00	4	13 30.6	- 5 24	8.9
Fri Sep 22/Sat Sep 23	22 17	19 48	21 15	6 14	7 41	19 32	4 32	.....	21 33	9	14 18.5	- 9 20	9.0
Sat Sep 23/Sun Sep 24	22 21	19 47	21 13	6 15	7 42	19 34	4 37	.....	22 07	16	15 06.5	-12 49	9.0
Sun Sep 24/Mon Sep 25	22 25	19 45	21 12	6 16	7 42	19 36	4 42	.....	22 43	23	15 54.8	-15 44	9.1
Mon Sep 25/Tue Sep 26	22 29	19 44	21 10	6 17	7 43	19 39	4 47	.....	23 22	32	16 43.7	-17 58	9.1
Tue Sep 26/Wed Sep 27	22 33	19 42	21 08	6 18	7 44	19 41	4 52	.....	0 04	41	17 33.3	-19 27	9.2
Wed Sep 27/Thu Sep 28	22 37	19 41	21 07	6 18	7 45	19 43	4 56	.....	0 49	50	18 23.6	-20 07	9.2
Thu Sep 28/Fri Sep 29	22 41	19 39	21 05	6 19	7 46	19 46	5 01	.....	1 38	60	19 14.5	-19 55	9.2
Fri Sep 29/Sat Sep 30	22 45	19 38	21 04	6 20	7 47	19 48	5 06	.....	2 31	69	20 05.6	-18 49	9.3
Sat Sep 30/Sun Oct 01	22 49	19 36	21 02	6 21	7 47	19 50	5 11	16 49	3 27	78	20 57.0	-16 51	9.3

***** 2017 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	
Sun Oct 01/Mon Oct 02	22 53	19 35	21 01	6 22	7 48	19 53	5 16	17 28	4 26	86	21 48.4	-14 03	9.4
Mon Oct 02/Tue Oct 03	22 57	19 33	20 59	6 23	7 49	19 55	5 21	18 05	5 27	92	22 39.9	-10 30	9.4
Tue Oct 03/Wed Oct 04	23 01	19 32	20 58	6 24	7 50	19 58	5 25	18 41	6 29	97	23 31.7	- 6 22	9.4
Wed Oct 04/Thu Oct 05	23 04	19 30	20 56	6 25	7 51	20 00	5 30	19 16	7 34	99	0 24.0	- 1 49	9.5
Thu Oct 05/Fri Oct 06	23 08	19 29	20 55	6 26	7 52	20 03	5 35	19 52	.....	100	1 17.4	2 54	9.5
Fri Oct 06/Sat Oct 07	23 12	19 27	20 53	6 26	7 53	20 05	5 40	20 29	.....	97	2 12.2	7 30	9.6
Sat Oct 07/Sun Oct 08	23 16	19 26	20 52	6 27	7 53	20 08	5 45	21 08	.....	92	3 08.6	11 40	9.6
Sun Oct 08/Mon Oct 09	23 20	19 24	20 50	6 28	7 54	20 10	5 49	21 52	.....	84	4 06.8	15 07	9.6
Mon Oct 09/Tue Oct 10	23 24	19 23	20 49	6 29	7 55	20 13	5 54	22 40	.....	75	5 06.5	17 33	9.7
Tue Oct 10/Wed Oct 11	23 28	19 22	20 48	6 30	7 56	20 15	5 59	23 34	.....	64	6 06.8	18 49	9.7
Wed Oct 11/Thu Oct 12	23 32	19 20	20 46	6 31	7 57	20 18	6 04	0 32	.....	53	7 06.8	18 50	9.7
Thu Oct 12/Fri Oct 13	23 36	19 19	20 45	6 32	7 58	20 20	6 09	1 34	.....	42	8 05.5	17 39	9.8
Fri Oct 13/Sat Oct 14	23 40	19 17	20 44	6 33	7 59	20 23	6 14	2 38	.....	31	9 02.2	15 24	9.8
Sat Oct 14/Sun Oct 15	23 44	19 16	20 42	6 33	8 00	20 26	6 18	3 41	16 39	21	9 56.7	12 19	9.9
Sun Oct 15/Mon Oct 16	23 48	19 15	20 41	6 34	8 01	20 28	6 23	4 45	17 18	13	10 48.8	8 35	9.9
Mon Oct 16/Tue Oct 17	23 52	19 13	20 40	6 35	8 02	20 31	6 28	5 47	17 53	7	11 39.1	4 29	9.9
Tue Oct 17/Wed Oct 18	23 56	19 12	20 38	6 36	8 02	20 34	6 33	6 47	18 27	3	12 27.9	0 12	10.0
Wed Oct 18/Thu Oct 19	24 00	19 11	20 37	6 37	8 03	20 36	6 38	7 47	18 59	0	13 15.8	- 4 03	10.0
Thu Oct 19/Fri Oct 20	0 04	19 09	20 36	6 38	8 04	20 39	6 42	.....	19 32	0	14 03.4	- 8 06	10.0
Fri Oct 20/Sat Oct 21	0 08	19 08	20 35	6 39	8 05	20 42	6 47	.....	20 05	2	14 51.1	-11 45	10.1
Sat Oct 21/Sun Oct 22	0 11	19 07	20 33	6 39	8 06	20 44	6 52	.....	20 40	6	15 39.2	-14 54	10.1
Sun Oct 22/Mon Oct 23	0 15	19 06	20 32	6 40	8 07	20 47	6 57	.....	21 17	11	16 27.8	-17 24	10.1
Mon Oct 23/Tue Oct 24	0 19	19 04	20 31	6 41	8 08	20 50	7 02	.....	21 58	17	17 17.1	-19 09	10.2
Tue Oct 24/Wed Oct 25	0 23	19 03	20 30	6 42	8 09	20 53	7 07	.....	22 42	25	18 07.0	-20 06	10.2
Wed Oct 25/Thu Oct 26	0 27	19 02	20 29	6 43	8 10	20 56	7 11	.....	23 29	33	18 57.2	-20 12	10.2
Thu Oct 26/Fri Oct 27	0 31	19 01	20 28	6 44	8 11	20 59	7 16	.....	0 20	42	19 47.5	-19 25	10.3
Fri Oct 27/Sat Oct 28	0 35	19 00	20 27	6 45	8 12	21 01	7 21	.....	1 14	52	20 37.9	-17 47	10.3
Sat Oct 28/Sun Oct 29	0 39	18 59	20 26	6 46	8 13	21 04	7 26	.....	2 11	62	21 28.2	-15 20	10.3
Sun Oct 29/Mon Oct 30	0 43	18 57	20 25	6 47	8 14	21 07	7 31	16 01	3 09	71	22 18.6	-12 07	10.4
Mon Oct 30/Tue Oct 31	0 47	18 56	20 24	6 47	8 15	21 10	7 35	16 37	4 10	80	23 09.3	- 8 15	10.4
Tue Oct 31/Wed Nov 01	0 51	18 55	20 23	6 48	8 16	21 13	7 40	17 11	5 13	88	0 00.7	- 3 52	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.

***** 2017 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 55	18 54	20 22	6 49	8 17	21 16	7 45	17 46	6 19	94	0 53.5	0 51	10.5
Thu Nov 02/Fri Nov 03	0 59	18 53	20 21	6 50	8 18	21 19	7 50	18 22	7 27	98	1 48.0	5 39	10.5
Fri Nov 03/Sat Nov 04	1 03	18 52	20 20	6 51	8 19	21 22	7 55	19 01	.....	100	2 44.9	10 11	10.5
Sat Nov 04/Sun Nov 05*	1 07	18 51	20 19	5 52	7 20	21 25	8 00	19 44	.....	98	3 44.2	14 07	10.5
Sun Nov 05/Mon Nov 06	2 11	17 50	19 19	5 53	7 21	21 29	8 04	19 31	.....	94	4 47.6	17 15	10.6
Mon Nov 06/Tue Nov 07	2 15	17 49	19 18	5 54	7 22	21 32	8 09	20 24	.....	87	5 50.4	18 59	10.6
Tue Nov 07/Wed Nov 08	2 19	17 48	19 17	5 55	7 23	21 35	8 14	21 23	.....	78	6 53.2	19 21	10.6
Wed Nov 08/Thu Nov 09	2 23	17 47	19 16	5 55	7 24	21 38	8 19	22 26	.....	67	7 54.4	18 24	10.7
Thu Nov 09/Fri Nov 10	2 27	17 47	19 15	5 56	7 25	21 41	8 24	23 30	.....	56	8 53.1	16 17	10.7
Fri Nov 10/Sat Nov 11	2 31	17 46	19 15	5 57	7 26	21 45	8 29	0 35	.....	45	9 48.7	13 15	10.7
Sat Nov 11/Sun Nov 12	2 34	17 45	19 14	5 58	7 27	21 48	8 34	1 38	.....	34	10 41.4	9 34	10.7
Sun Nov 12/Mon Nov 13	2 38	17 44	19 14	5 59	7 28	21 51	8 38	2 40	.....	25	11 31.7	5 29	10.8
Mon Nov 13/Tue Nov 14	2 42	17 43	19 13	6 00	7 29	21 54	8 43	3 40	.....	17	12 20.2	1 13	10.8
Tue Nov 14/Wed Nov 15	2 46	17 43	19 12	6 01	7 31	21 58	8 48	4 39	16 02	10	13 07.6	- 3 02	10.8
Wed Nov 15/Thu Nov 16	2 50	17 42	19 12	6 02	7 32	22 01	8 53	5 37	16 33	5	13 54.5	- 7 07	10.8
Thu Nov 16/Fri Nov 17	2 54	17 41	19 11	6 03	7 33	22 05	8 58	6 35	17 06	2	14 41.5	-10 53	10.9
Fri Nov 17/Sat Nov 18	2 58	17 41	19 11	6 03	7 34	22 08	9 03	7 31	17 39	0	15 28.9	-14 09	10.9
Sat Nov 18/Sun Nov 19	3 02	17 40	19 10	6 04	7 35	22 12	9 07	8 26	18 15	1	16 17.1	-16 50	10.9
Sun Nov 19/Mon Nov 20	3 06	17 40	19 10	6 05	7 36	22 15	9 12	.....	18 54	3	17 06.0	-18 48	10.9
Mon Nov 20/Tue Nov 21	3 10	17 39	19 10	6 06	7 37	22 19	9 17	.....	19 37	7	17 55.4	-19 58	10.9
Tue Nov 21/Wed Nov 22	3 14	17 39	19 09	6 07	7 38	22 22	9 22	.....	20 23	12	18 45.2	-20 18	11.0
Wed Nov 22/Thu Nov 23	3 18	17 38	19 09	6 08	7 39	22 26	9 27	.....	21 13	19	19 35.0	-19 46	11.0
Thu Nov 23/Fri Nov 24	3 22	17 38	19 09	6 09	7 40	22 30	9 31	.....	22 05	26	20 24.6	-18 24	11.0
Fri Nov 24/Sat Nov 25	3 26	17 37	19 08	6 09	7 41	22 33	9 36	.....	23 00	35	21 13.8	-16 13	11.0
Sat Nov 25/Sun Nov 26	3 30	17 37	19 08	6 10	7 42	22 37	9 41	.....	23 56	45	22 02.7	-13 18	11.0
Sun Nov 26/Mon Nov 27	3 34	17 37	19 08	6 11	7 43	22 41	9 46	.....	0 55	55	22 51.6	- 9 45	11.1
Mon Nov 27/Tue Nov 28	3 38	17 36	19 08	6 12	7 44	22 44	9 51	.....	1 55	65	23 41.0	- 5 39	11.1
Tue Nov 28/Wed Nov 29	3 41	17 36	19 08	6 13	7 45	22 48	9 55	.....	2 57	75	0 31.5	- 1 08	11.1
Wed Nov 29/Thu Nov 30	3 45	17 36	19 07	6 14	7 46	22 52	10 00	.....	4 03	84	1 23.9	3 35	11.1
Thu Nov 30/Fri Dec 01	3 49	17 36	19 07	6 14	7 46	22 56	10 05	15 52	5 10	91	2 18.8	8 15	11.1

***** 2017 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 53	17 35	19 07	6 15	7 47	23 00	10 10	16 32	6 21	97	3 16.8	12 34	11.1
Sat Dec 02/Sun Dec 03	3 57	17 35	19 07	6 16	7 48	23 04	10 14	17 17	7 32	100	4 18.1	16 08	11.1
Sun Dec 03/Mon Dec 04	4 01	17 35	19 07	6 17	7 49	23 08	10 19	18 08	.....	99	5 22.0	18 34	11.2
Mon Dec 04/Tue Dec 05	4 05	17 35	19 07	6 18	7 50	23 12	10 24	19 06	.....	96	6 27.3	19 37	11.2
Tue Dec 05/Wed Dec 06	4 09	17 35	19 07	6 18	7 51	23 16	10 29	20 09	.....	90	7 32.0	19 12	11.2
Wed Dec 06/Thu Dec 07	4 13	17 35	19 07	6 19	7 52	23 20	10 33	21 16	.....	81	8 34.4	17 25	11.2
Thu Dec 07/Fri Dec 08	4 17	17 35	19 08	6 20	7 53	23 24	10 38	22 23	.....	71	9 33.4	14 32	11.2
Fri Dec 08/Sat Dec 09	4 21	17 35	19 08	6 21	7 53	23 28	10 43	23 29	.....	61	10 28.7	10 53	11.2
Sat Dec 09/Sun Dec 10	4 25	17 35	19 08	6 21	7 54	23 32	10 47	0 33	.....	50	11 20.8	6 46	11.2
Sun Dec 10/Mon Dec 11	4 29	17 35	19 08	6 22	7 55	23 36	10 52	1 34	.....	40	12 10.3	2 27	11.2
Mon Dec 11/Tue Dec 12	4 33	17 36	19 08	6 23	7 56	23 40	10 56	2 34	.....	30	12 58.1	- 1 53	11.2
Tue Dec 12/Wed Dec 13	4 37	17 36	19 09	6 23	7 56	23 45	11 01	3 32	.....	21	13 45.0	- 6 03	11.2
Wed Dec 13/Thu Dec 14	4 41	17 36	19 09	6 24	7 57	23 49	11 06	4 29	.....	14	14 31.6	- 9 54	11.3
Thu Dec 14/Fri Dec 15	4 45	17 36	19 09	6 25	7 58	23 53	11 10	5 25	15 41	8	15 18.5	-13 19	11.3
Fri Dec 15/Sat Dec 16	4 48	17 37	19 10	6 25	7 58	23 57	11 15	6 21	16 16	4	16 06.0	-16 10	11.3
Sat Dec 16/Sun Dec 17	4 52	17 37	19 10	6 26	7 59	0 02	11 19	7 15	16 54	1	16 54.5	-18 20	11.3
Sun Dec 17/Mon Dec 18	4 56	17 37	19 10	6 26	8 00	0 06	11 24	8 06	17 35	0	17 43.6	-19 45	11.3
Mon Dec 18/Tue Dec 19	5 00	17 38	19 11	6 27	8 00	0 10	11 28	.....	18 19	1	18 33.3	-20 20	11.3
Tue Dec 19/Wed Dec 20	5 04	17 38	19 11	6 28	8 01	0 15	11 33	.....	19 08	3	19 23.1	-20 03	11.3
Wed Dec 20/Thu Dec 21	5 08	17 39	19 12	6 28	8 01	0 19	11 37	.....	19 59	7	20 12.6	-18 54	11.3
Thu Dec 21/Fri Dec 22	5 12	17 39	19 12	6 29	8 02	0 24	11 42	.....	20 53	13	21 01.6	-16 58	11.3
Fri Dec 22/Sat Dec 23	5 16	17 40	19 13	6 29	8 02	0 28	11 46	.....	21 49	20	21 50.0	-14 17	11.3
Sat Dec 23/Sun Dec 24	5 20	17 40	19 13	6 29	8 03	0 33	11 51	.....	22 46	28	22 37.9	-10 58	11.3
Sun Dec 24/Mon Dec 25	5 24	17 41	19 14	6 30	8 03	0 37	11 55	.....	23 44	38	23 25.7	- 7 08	11.3
Mon Dec 25/Tue Dec 26	5 28	17 41	19 14	6 30	8 03	0 42	11 59	.....	0 43	48	0 14.1	- 2 53	11.3
Tue Dec 26/Wed Dec 27	5 32	17 42	19 15	6 31	8 04	0 46	12 04	.....	1 45	58	1 03.7	1 37	11.3
Wed Dec 27/Thu Dec 28	5 36	17 43	19 16	6 31	8 04	0 51	12 08	.....	2 49	69	1 55.3	6 11	11.3
Thu Dec 28/Fri Dec 29	5 40	17 43	19 16	6 31	8 04	0 55	12 12	.....	3 56	79	2 49.8	10 35	11.3
Fri Dec 29/Sat Dec 30	5 44	17 44	19 17	6 32	8 05	1 00	12 16	.....	5 05	88	3 47.9	14 28	11.2
Sat Dec 30/Sun Dec 31	5 48	17 45	19 18	6 32	8 05	1 04	12 21	15 51	6 15	95	4 49.6	17 31	11.2
Sun Dec 31/Mon Jan 01	5 52	17 45	19 18	6 32	8 05	1 09	12 25	16 45	7 23	99	5 54.2	19 20	11.2