

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:

***** 2015 Night-time Astronomical Calendar for OU Norman *****

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 -0.1 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
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[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 2015, at OU Norman

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 21	19 36	Dec 28	12 33	Jan 04	22 54	Jan 13	3 49
Jan 20	7 15	Jan 26	22 50	Feb 03	17 10	Feb 11	21 52
Feb 18	17 49	Feb 25	11 15	Mar 05	12 07	Mar 13	12 49
Mar 20	4 39	Mar 27	2 44	Apr 04	7 07	Apr 11	22 45
Apr 18	13 59	Apr 25	18 57	May 03	22 45	May 11	5 37
May 17	23 16	May 25	12 21	Jun 02	11 22	Jun 09	10 43
Jun 16	9 08	Jun 24	6 04	Jul 01	21 22	Jul 08	15 26
Jul 15	20 26	Jul 23	23 05	Jul 31	5 46	Aug 06	21 06
Aug 14	9 55	Aug 22	14 32	Aug 29	13 38	Sep 05	4 57
Sep 13	1 43	Sep 21	4 00	Sep 27	21 52	Oct 04	16 08
Oct 12	19 07	Oct 20	15 32	Oct 27	7 06	Nov 03	6 26
Nov 11	11 48	Nov 19	0 28	Nov 25	16 45	Dec 03	1 42
Dec 11	4 30	Dec 18	9 15	Dec 25	5 12	Jan 01	23 32

Calendar for OU Norman, west longitude (h.m.s) = 6 29 47, latitude (d.m) = 35 12.2
 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.

***** 2015 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
Thu Jan 01/Fri Jan 02	6 16	17 28	18 59	6 08	7 38	1 15	12 25	.....	5 10	91	4 21.8	17 17	11.1
Fri Jan 02/Sat Jan 03	6 20	17 29	19 00	6 08	7 39	1 19	12 30	15 46	6 04	96	5 16.4	18 16	11.1
Sat Jan 03/Sun Jan 04	6 24	17 30	19 01	6 08	7 39	1 24	12 34	16 37	6 54	99	6 10.6	18 16	11.1
Sun Jan 04/Mon Jan 05	6 28	17 31	19 01	6 08	7 39	1 29	12 38	17 29	7 40	100	7 03.6	17 20	11.1
Mon Jan 05/Tue Jan 06	6 32	17 32	19 02	6 09	7 39	1 33	12 42	18 24	8 21	99	7 55.1	15 35	11.1
Tue Jan 06/Wed Jan 07	6 36	17 33	19 03	6 09	7 39	1 38	12 46	19 18	.....	96	8 44.8	13 07	11.1
Wed Jan 07/Thu Jan 08	6 40	17 33	19 04	6 09	7 39	1 43	12 50	20 13	.....	91	9 32.7	10 07	11.1
Thu Jan 08/Fri Jan 09	6 44	17 34	19 04	6 09	7 39	1 48	12 54	21 06	.....	85	10 19.2	6 44	11.1
Fri Jan 09/Sat Jan 10	6 48	17 35	19 05	6 09	7 39	1 52	12 58	22 00	.....	78	11 04.7	3 05	11.1
Sat Jan 10/Sun Jan 11	6 52	17 36	19 06	6 09	7 39	1 57	13 02	22 53	.....	69	11 49.8	- 0 41	11.0
Sun Jan 11/Mon Jan 12	6 56	17 37	19 07	6 09	7 38	2 02	13 06	23 47	.....	60	12 35.1	- 4 27	11.0
Mon Jan 12/Tue Jan 13	7 00	17 38	19 08	6 09	7 38	2 07	13 10	0 42	.....	51	13 21.4	- 8 06	11.0
Tue Jan 13/Wed Jan 14	7 04	17 39	19 08	6 09	7 38	2 11	13 13	1 38	.....	41	14 09.4	-11 29	11.0
Wed Jan 14/Thu Jan 15	7 08	17 40	19 09	6 09	7 38	2 16	13 17	2 36	.....	31	14 59.5	-14 26	11.0
Thu Jan 15/Fri Jan 16	7 12	17 41	19 10	6 08	7 38	2 21	13 21	3 35	.....	22	15 52.4	-16 47	11.0
Fri Jan 16/Sat Jan 17	7 16	17 42	19 11	6 08	7 37	2 26	13 25	4 35	.....	14	16 48.0	-18 20	11.0
Sat Jan 17/Sun Jan 18	7 20	17 43	19 12	6 08	7 37	2 31	13 29	5 34	.....	7	17 46.2	-18 52	10.9
Sun Jan 18/Mon Jan 19	7 23	17 44	19 13	6 08	7 37	2 35	13 32	6 30	16 08	3	18 46.0	-18 17	10.9
Mon Jan 19/Tue Jan 20	7 27	17 45	19 13	6 08	7 36	2 40	13 36	7 23	17 13	0	19 46.4	-16 31	10.9
Tue Jan 20/Wed Jan 21	7 31	17 46	19 14	6 07	7 36	2 45	13 40	8 11	18 21	1	20 46.4	-13 39	10.9
Wed Jan 21/Thu Jan 22	7 35	17 47	19 15	6 07	7 35	2 50	13 43	.....	19 31	4	21 45.2	- 9 55	10.9
Thu Jan 22/Fri Jan 23	7 39	17 48	19 16	6 07	7 35	2 55	13 47	.....	20 41	10	22 42.4	- 5 36	10.8
Fri Jan 23/Sat Jan 24	7 43	17 49	19 17	6 06	7 34	2 59	13 50	.....	21 50	18	23 38.1	- 1 01	10.8
Sat Jan 24/Sun Jan 25	7 47	17 50	19 18	6 06	7 34	3 04	13 54	.....	22 57	28	0 32.8	3 32	10.8
Sun Jan 25/Mon Jan 26	7 51	17 51	19 19	6 05	7 33	3 09	13 57	.....	0 02	39	1 26.8	7 46	10.8
Mon Jan 26/Tue Jan 27	7 55	17 52	19 20	6 05	7 33	3 14	14 01	.....	1 05	50	2 20.6	11 28	10.8
Tue Jan 27/Wed Jan 28	7 59	17 53	19 21	6 04	7 32	3 19	14 04	.....	2 06	60	3 14.4	14 28	10.7
Wed Jan 28/Thu Jan 29	8 03	17 54	19 21	6 04	7 31	3 24	14 08	.....	3 05	71	4 08.4	16 38	10.7
Thu Jan 29/Fri Jan 30	8 07	17 55	19 22	6 03	7 31	3 28	14 11	.....	3 59	79	5 02.3	17 53	10.7
Fri Jan 30/Sat Jan 31	8 11	17 56	19 23	6 03	7 30	3 33	14 15	.....	4 50	87	5 55.7	18 11	10.7
Sat Jan 31/Sun Feb 01	8 15	17 57	19 24	6 02	7 29	3 38	14 18	.....	5 37	93	6 48.4	17 34	10.6

***** 2015 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
Sun Feb 01/Mon Feb 02	8 19	17 58	19 25	6 02	7 28	3 43	14 21	16 17	6 20	97	7 39.8	16 07	10.6
Mon Feb 02/Tue Feb 03	8 23	17 59	19 26	6 01	7 28	3 48	14 25	17 11	6 59	99	8 29.7	13 55	10.6
Tue Feb 03/Wed Feb 04	8 27	18 00	19 27	6 00	7 27	3 53	14 28	18 05	7 34	100	9 18.2	11 07	10.6
Wed Feb 04/Thu Feb 05	8 31	18 01	19 28	5 59	7 26	3 57	14 31	18 59	8 08	98	10 05.2	7 52	10.5
Thu Feb 05/Fri Feb 06	8 34	18 02	19 28	5 59	7 25	4 02	14 34	19 53	.....	95	10 51.2	4 18	10.5
Fri Feb 06/Sat Feb 07	8 38	18 03	19 29	5 58	7 24	4 07	14 37	20 47	.....	90	11 36.7	0 34	10.5
Sat Feb 07/Sun Feb 08	8 42	18 04	19 30	5 57	7 23	4 12	14 41	21 40	.....	84	12 22.0	- 3 12	10.4
Sun Feb 08/Mon Feb 09	8 46	18 05	19 31	5 56	7 22	4 17	14 44	22 34	.....	76	13 07.9	- 6 52	10.4
Mon Feb 09/Tue Feb 10	8 50	18 06	19 32	5 56	7 21	4 22	14 47	23 29	.....	68	13 54.8	-10 18	10.4
Tue Feb 10/Wed Feb 11	8 54	18 07	19 33	5 55	7 20	4 26	14 50	0 25	.....	58	14 43.5	-13 22	10.4
Wed Feb 11/Thu Feb 12	8 58	18 08	19 34	5 54	7 19	4 31	14 53	1 21	.....	48	15 34.2	-15 53	10.3
Thu Feb 12/Fri Feb 13	9 02	18 09	19 35	5 53	7 18	4 36	14 56	2 19	.....	38	16 27.5	-17 43	10.3
Fri Feb 13/Sat Feb 14	9 06	18 10	19 36	5 52	7 17	4 41	14 59	3 16	.....	28	17 23.1	-18 40	10.3
Sat Feb 14/Sun Feb 15	9 10	18 11	19 36	5 51	7 16	4 46	15 02	4 13	.....	19	18 20.9	-18 35	10.2
Sun Feb 15/Mon Feb 16	9 14	18 12	19 37	5 50	7 15	4 50	15 05	5 06	.....	11	19 20.1	-17 23	10.2
Mon Feb 16/Tue Feb 17	9 18	18 13	19 38	5 49	7 14	4 55	15 08	5 57	.....	5	20 19.9	-15 04	10.2
Tue Feb 17/Wed Feb 18	9 22	18 14	19 39	5 48	7 13	5 00	15 11	6 43	17 05	1	21 19.4	-11 45	10.1
Wed Feb 18/Thu Feb 19	9 26	18 15	19 40	5 47	7 12	5 05	15 14	7 27	18 16	0	22 18.1	- 7 39	10.1
Thu Feb 19/Fri Feb 20	9 30	18 16	19 41	5 46	7 11	5 10	15 16	.....	19 27	2	23 15.8	- 3 05	10.1
Fri Feb 20/Sat Feb 21	9 34	18 17	19 42	5 45	7 09	5 15	15 19	.....	20 37	7	0 12.5	1 36	10.1
Sat Feb 21/Sun Feb 22	9 38	18 18	19 43	5 44	7 08	5 19	15 22	.....	21 46	15	1 08.5	6 05	10.0
Sun Feb 22/Mon Feb 23	9 41	18 19	19 43	5 43	7 07	5 24	15 25	.....	22 52	24	2 04.0	10 05	10.0
Mon Feb 23/Tue Feb 24	9 45	18 20	19 44	5 41	7 06	5 29	15 28	.....	23 56	34	2 59.2	13 23	10.0
Tue Feb 24/Wed Feb 25	9 49	18 21	19 45	5 40	7 05	5 34	15 31	.....	0 57	44	3 54.0	15 50	9.9
Wed Feb 25/Thu Feb 26	9 53	18 22	19 46	5 39	7 03	5 39	15 33	.....	1 54	55	4 48.4	17 22	9.9
Thu Feb 26/Fri Feb 27	9 57	18 22	19 47	5 38	7 02	5 43	15 36	.....	2 47	65	5 42.1	17 56	9.8
Fri Feb 27/Sat Feb 28	10 01	18 23	19 48	5 37	7 01	5 48	15 39	.....	3 35	74	6 34.8	17 35	9.8
Sat Feb 28/Sun Mar 01	10 05	18 24	19 49	5 35	7 00	5 53	15 41	.....	4 19	82	7 26.1	16 22	9.8

Calendar for OU Norman, west longitude (h.m.s) = 6 29 47, latitude (d.m) = 35 12.2

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.

***** 2015 MAY *****

Table for May 2015 showing date (eve/morn), LMST midn, Sun: (set, twi.end, twi.beg, rise), LST twilight: (eve, morn), Moon: (rise, set, %illum, RA, Dec), and Twi-Twi hours. Rows include dates from Fri May 01/Sat May 02 to Sun May 31/Mon Jun 01.

***** 2015 JUNE *****

Table for June 2015 showing date (eve/morn), LMST midn, Sun: (set, twi.end, twi.beg, rise), LST twilight: (eve, morn), Moon: (rise, set, %illum, RA, Dec), and Twi-Twi hours. Rows include dates from Mon Jun 01/Tue Jun 02 to Tue Jun 30/Wed Jul 01.

