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:

***** 2021 Night-time Astronomical Calendar for Cape Cod Schmidt Observatory *****

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 incaccurate 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

MOON PHASES FOR 2021, at Cape Cod Schmidt Observatory

Times and dates are given in local time, zone = 5 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 14	11 19	Dec 21	18 43	Dec 29	22 30	Jan 06	4 39
Jan 13	0 03	Jan 20	16 04	Jan 28	14 19	Feb 04	12 39
Feb 11	14 08	Feb 19	13 49	Feb 27	3 20	Mar 05	20 32
Mar 13	5 24	Mar 21	10 42	Mar 28	14 50	Apr 04	6 04
Apr 11	22 33	Apr 20	3 00	Apr 26	23 33	May 03	15 52
May 11	15 02	May 19	15 13	May 26	7 15	Jun 02	3 26
Jun 10	6 54	Jun 17	23 55	Jun 24	14 40	Jul 01	17 13
Jul 09	21 18	Jul 17	6 12	Jul 23	22 37	Jul 31	9 18
Aug 08	9 51	Aug 15	11 21	Aug 22	8 02	Aug 30	3 15
Sep 06	20 52	Sep 13	16 41	Sep 20	19 55	Sep 28	21 58
Oct 06	7 06	Oct 12	23 28	Oct 20	10 58	Oct 28	16 07
Nov 04	17 15	Nov 11	7 48	Nov 19	4 00	Nov 27	7 30
Dec 04	2 45	Dec 10	20 38	Dec 18	23 38	Dec 26	21 26
Jan 02	13 36	Jan 09	13 13	Jan 17	18 51	Jan 25	8 43

Calendar for Cape Cod Schmidt Observatory, west longitude (h.m.s) = 4 40 47, latitude (d.m) = 41 40.7
Rise/set times in Eastern time (5 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.

***** 2021 JANUARY *****

Date (eve/morn)	LMST	Sun:				LST twilight:		Moon:					Twi-Twi
	midn	set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Fri Jan 01/Sat Jan 02	7 07	16 21	18 01	5 28	7 08	1 08	12 36	18 56	.....	90	9 32.2	19 04	11.4
Sat Jan 02/Sun Jan 03	7 11	16 22	18 02	5 28	7 08	1 13	12 40	20 06	.....	82	10 26.2	14 53	11.4
Sun Jan 03/Mon Jan 04	7 15	16 23	18 03	5 28	7 08	1 17	12 44	21 16	.....	73	11 18.4	9 51	11.4
Mon Jan 04/Tue Jan 05	7 19	16 24	18 04	5 28	7 08	1 22	12 49	22 26	.....	63	12 09.6	4 16	11.4
Tue Jan 05/Wed Jan 06	7 23	16 25	18 05	5 28	7 08	1 27	12 52	23 37	.....	51	13 00.4	- 1 36	11.4
Wed Jan 06/Thu Jan 07	7 27	16 26	18 06	5 28	7 08	1 32	12 56	0 49	.....	40	13 51.8	- 7 26	11.4
Thu Jan 07/Fri Jan 08	7 31	16 27	18 06	5 28	7 08	1 37	13 00	2 03	.....	29	14 44.9	-12 57	11.4
Fri Jan 08/Sat Jan 09	7 35	16 28	18 07	5 28	7 07	1 41	13 04	3 18	.....	19	15 40.5	-17 48	11.3
Sat Jan 09/Sun Jan 10	7 39	16 29	18 08	5 28	7 07	1 46	13 08	4 33	.....	11	16 38.9	-21 38	11.3
Sun Jan 10/Mon Jan 11	7 43	16 30	18 09	5 28	7 07	1 51	13 12	5 44	.....	5	17 39.6	-24 09	11.3
Mon Jan 11/Tue Jan 12	7 47	16 31	18 10	5 28	7 06	1 56	13 16	6 49	.....	1	18 41.4	-25 09	11.3
Tue Jan 12/Wed Jan 13	7 51	16 32	18 11	5 28	7 06	2 01	13 19	7 43	15 55	0	19 42.5	-24 34	11.3
Wed Jan 13/Thu Jan 14	7 55	16 33	18 12	5 27	7 06	2 06	13 23	8 27	17 02	1	20 41.2	-22 32	11.3
Thu Jan 14/Fri Jan 15	7 59	16 35	18 13	5 27	7 05	2 11	13 27	.....	18 11	5	21 36.4	-19 20	11.2
Fri Jan 15/Sat Jan 16	8 03	16 36	18 14	5 27	7 05	2 16	13 30	.....	19 19	10	22 28.0	-15 16	11.2
Sat Jan 16/Sun Jan 17	8 07	16 37	18 15	5 26	7 04	2 21	13 34	.....	20 25	17	23 16.2	-10 38	11.2
Sun Jan 17/Mon Jan 18	8 11	16 38	18 16	5 26	7 04	2 26	13 38	.....	21 29	25	0 01.8	- 5 41	11.2
Mon Jan 18/Tue Jan 19	8 14	16 39	18 17	5 26	7 03	2 31	13 41	.....	22 30	34	0 45.9	- 0 37	11.1
Tue Jan 19/Wed Jan 20	8 18	16 40	18 18	5 25	7 03	2 35	13 45	.....	23 30	43	1 29.2	4 23	11.1
Wed Jan 20/Thu Jan 21	8 22	16 42	18 19	5 25	7 02	2 40	13 48	.....	0 29	52	2 12.9	9 11	11.1
Thu Jan 21/Fri Jan 22	8 26	16 43	18 20	5 24	7 01	2 45	13 51	.....	1 29	62	2 57.8	13 38	11.1
Fri Jan 22/Sat Jan 23	8 30	16 44	18 21	5 24	7 00	2 50	13 55	.....	2 30	71	3 44.7	17 35	11.0
Sat Jan 23/Sun Jan 24	8 34	16 45	18 22	5 23	7 00	2 55	13 58	.....	3 32	79	4 34.1	20 50	11.0
Sun Jan 24/Mon Jan 25	8 38	16 47	18 23	5 23	6 59	3 00	14 02	.....	4 32	86	5 26.5	23 12	11.0
Mon Jan 25/Tue Jan 26	8 42	16 48	18 24	5 22	6 58	3 05	14 05	.....	5 30	93	6 21.6	24 26	11.0
Tue Jan 26/Wed Jan 27	8 46	16 49	18 25	5 21	6 57	3 11	14 08	.....	6 23	97	7 18.6	24 23	10.9
Wed Jan 27/Thu Jan 28	8 50	16 50	18 27	5 20	6 56	3 16	14 11	15 36	7 09	100	8 16.4	22 57	10.9
Thu Jan 28/Fri Jan 29	8 54	16 52	18 28	5 20	6 55	3 21	14 15	16 42	7 48	100	9 13.7	20 09	10.9
Fri Jan 29/Sat Jan 30	8 58	16 53	18 29	5 19	6 55	3 26	14 18	17 53	8 22	97	10 09.5	16 08	10.8
Sat Jan 30/Sun Jan 31	9 02	16 54	18 30	5 18	6 54	3 31	14 21	19 05	.....	93	11 03.6	11 10	10.8
Sun Jan 31/Mon Feb 01	9 06	16 55	18 31	5 17	6 53	3 36	14 24	20 17	.....	86	11 56.2	5 32	10.8

***** 2021 FEBRUARY *****

Date (eve/morn)	LMST	Sun:				LST twilight:		Moon:					Twi-Twi
	midn	set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Mon Feb 01/Tue Feb 02	9 10	16 57	18 32	5 16	6 52	3 41	14 27	21 29	.....	77	12 48.0	- 0 25	10.7
Tue Feb 02/Wed Feb 03	9 14	16 58	18 33	5 16	6 50	3 46	14 30	22 41	.....	66	13 39.7	- 6 22	10.7
Wed Feb 03/Thu Feb 04	9 18	16 59	18 34	5 15	6 49	3 51	14 33	23 54	.....	55	14 32.5	-11 59	10.7
Thu Feb 04/Fri Feb 05	9 21	17 01	18 35	5 14	6 48	3 56	14 36	1 07	.....	44	15 27.1	-16 58	10.6
Fri Feb 05/Sat Feb 06	9 25	17 02	18 36	5 13	6 47	4 01	14 39	2 21	.....	33	16 23.9	-21 00	10.6
Sat Feb 06/Sun Feb 07	9 29	17 03	18 38	5 12	6 46	4 06	14 42	3 32	.....	23	17 22.8	-23 48	10.6
Sun Feb 07/Mon Feb 08	9 33	17 04	18 39	5 11	6 45	4 11	14 45	4 37	.....	14	18 23.1	-25 11	10.5
Mon Feb 08/Tue Feb 09	9 37	17 06	18 40	5 10	6 44	4 16	14 48	5 34	.....	8	19 23.3	-25 02	10.5
Tue Feb 09/Wed Feb 10	9 41	17 07	18 41	5 09	6 42	4 21	14 51	6 21	.....	3	20 21.8	-23 26	10.5
Wed Feb 10/Thu Feb 11	9 45	17 08	18 42	5 07	6 41	4 26	14 53	7 00	15 52	1	21 17.6	-20 36	10.4
Thu Feb 11/Fri Feb 12	9 49	17 09	18 43	5 06	6 40	4 31	14 56	7 32	17 01	0	22 10.0	-16 47	10.4
Fri Feb 12/Sat Feb 13	9 53	17 11	18 44	5 05	6 38	4 37	14 59	7 59	18 08	2	22 59.3	-12 17	10.3
Sat Feb 13/Sun Feb 14	9 57	17 12	18 46	5 04	6 37	4 42	15 02	.....	19 13	6	23 45.9	- 7 22	10.3
Sun Feb 14/Mon Feb 15	10 01	17 13	18 47	5 03	6 36	4 47	15 04	.....	20 16	12	0 30.6	- 2 16	10.3
Mon Feb 15/Tue Feb 16	10 05	17 15	18 48	5 01	6 34	4 52	15 07	.....	21 17	18	1 14.3	2 49	10.2
Tue Feb 16/Wed Feb 17	10 09	17 16	18 49	5 00	6 33	4 57	15 10	.....	22 17	26	1 57.9	7 44	10.2
Wed Feb 17/Thu Feb 18	10 13	17 17	18 50	4 59	6 32	5 02	15 12	.....	23 17	35	2 42.2	12 19	10.1
Thu Feb 18/Fri Feb 19	10 17	17 18	18 51	4 57	6 30	5 07	15 15	.....	0 18	44	3 28.0	16 26	10.1
Fri Feb 19/Sat Feb 20	10 21	17 19	18 52	4 56	6 29	5 12	15 18	.....	1 19	53	4 15.9	19 55	10.1
Sat Feb 20/Sun Feb 21	10 25	17 21	18 53	4 55	6 27	5 17	15 20	.....	2 19	63	5 06.5	22 34	10.0
Sun Feb 21/Mon Feb 22	10 29	17 22	18 55	4 53	6 26	5 22	15 23	.....	3 17	72	5 59.8	24 12	10.0
Mon Feb 22/Tue Feb 23	10 32	17 23	18 56	4 52	6 24	5 27	15 25	.....	4 12	81	6 55.3	24 38	9.9
Tue Feb 23/Wed Feb 24	10 36	17 24	18 57	4 50	6 23	5 33	15 28	.....	5 00	88	7 52.4	23 44	9.9
Wed Feb 24/Thu Feb 25	10 40	17 26	18 58	4 49	6 21	5 38	15 30	.....	5 43	94	8 49.9	21 26	9.8
Thu Feb 25/Fri Feb 26	10 44	17 27	18 59	4 48	6 20	5 43	15 33	.....	6 19	98	9 46.7	17 49	9.8
Fri Feb 26/Sat Feb 27	10 48	17 28	19 00	4 46	6 18	5 48	15 35	16 44	6 51	100	10 42.4	13 03	9.8
Sat Feb 27/Sun Feb 28	10 52	17 29	19 02	4 45	6 17	5 53	15 37	17 58	7 20	99	11 36.8	7 26	9.7
Sun Feb 28/Mon Mar 01	10 56	17 30	19 03	4 43	6 15	5 58	15 40	19 13	7 48	95	12 30.3	1 20	9.7

Calendar for Cape Cod Schmidt Observatory, west longitude (h.m.s) = 4 40 47, latitude (d.m) = 41 40.7
Rise/set times in Eastern time (5 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.

***** 2021 MARCH *****

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 Mar 01/Tue Mar 02	11 00	17 32	19 04	4 41	6 14	6 03	15 42	20 27	.....	89	13 23.7	- 4 55	9.6
Tue Mar 02/Wed Mar 03	11 04	17 33	19 05	4 40	6 12	6 08	15 45	21 42	.....	80	14 17.8	-10 53	9.6
Wed Mar 03/Thu Mar 04	11 08	17 34	19 06	4 38	6 10	6 13	15 47	22 58	.....	70	15 13.3	-16 13	9.5
Thu Mar 04/Fri Mar 05	11 12	17 35	19 07	4 37	6 09	6 18	15 49	0 12	.....	59	16 10.7	-20 34	9.5
Fri Mar 05/Sat Mar 06	11 16	17 36	19 09	4 35	6 07	6 24	15 52	1 25	.....	48	17 09.8	-23 41	9.4
Sat Mar 06/Sun Mar 07	11 20	17 37	19 10	4 33	6 05	6 29	15 54	2 32	.....	37	18 09.9	-25 21	9.4
Sun Mar 07/Mon Mar 08	11 24	17 39	19 11	4 32	6 04	6 34	15 56	3 30	.....	27	19 09.7	-25 30	9.3
Mon Mar 08/Tue Mar 09	11 28	17 40	19 12	4 30	6 02	6 39	15 58	4 19	.....	18	20 08.0	-24 13	9.3
Tue Mar 09/Wed Mar 10	11 32	17 41	19 13	4 28	6 01	6 44	16 01	5 00	.....	11	21 03.6	-21 40	9.2
Wed Mar 10/Thu Mar 11	11 36	17 42	19 15	4 27	5 59	6 49	16 03	5 33	.....	5	21 56.1	-18 05	9.2
Thu Mar 11/Fri Mar 12	11 39	17 43	19 16	4 25	5 57	6 54	16 05	6 01	.....	2	22 45.5	-13 45	9.2
Fri Mar 12/Sat Mar 13	11 43	17 44	19 17	4 23	5 56	7 00	16 07	6 26	17 00	0	23 32.3	- 8 55	9.1
Sat Mar 13/Sun Mar 14*	11 47	17 45	19 18	5 21	6 54	7 05	16 09	7 49	18 03	1	0 17.2	- 3 50	9.1
Sun Mar 14/Mon Mar 15	10 51	18 47	20 19	5 20	6 52	7 10	16 12	.....	20 05	3	0 58.5	1 06	9.0
Mon Mar 15/Tue Mar 16	10 55	18 48	20 21	5 18	6 50	7 15	16 14	.....	21 06	7	1 42.1	6 08	9.0
Tue Mar 16/Wed Mar 17	10 59	18 49	20 22	5 16	6 49	7 20	16 16	.....	22 06	12	2 26.0	10 54	8.9
Wed Mar 17/Thu Mar 18	11 03	18 50	20 23	5 14	6 47	7 25	16 18	.....	23 07	19	3 11.2	15 13	8.9
Thu Mar 18/Fri Mar 19	11 07	18 51	20 24	5 12	6 45	7 31	16 20	.....	0 08	27	3 58.1	18 57	8.8
Fri Mar 19/Sat Mar 20	11 11	18 52	20 26	5 10	6 44	7 36	16 22	.....	1 08	36	4 47.2	21 54	8.7
Sat Mar 20/Sun Mar 21	11 15	18 53	20 27	5 09	6 42	7 41	16 24	.....	2 07	45	5 38.7	23 55	8.7
Sun Mar 21/Mon Mar 22	11 19	18 54	20 28	5 07	6 40	7 46	16 26	.....	3 02	55	6 32.5	24 50	8.6
Mon Mar 22/Tue Mar 23	11 23	18 56	20 29	5 05	6 39	7 51	16 28	.....	3 52	65	7 27.8	24 29	8.6
Tue Mar 23/Wed Mar 24	11 27	18 57	20 31	5 03	6 37	7 57	16 31	.....	4 36	74	8 24.1	22 47	8.5
Wed Mar 24/Thu Mar 25	11 31	18 58	20 32	5 01	6 35	8 02	16 33	.....	5 15	83	9 20.3	19 46	8.5
Thu Mar 25/Fri Mar 26	11 35	18 59	20 33	4 59	6 33	8 07	16 35	.....	5 48	91	10 15.8	15 31	8.4
Fri Mar 26/Sat Mar 27	11 38	19 00	20 34	4 57	6 32	8 12	16 37	.....	6 18	96	11 10.7	10 13	8.4
Sat Mar 27/Sun Mar 28	11 42	19 01	20 36	4 55	6 30	8 18	16 39	17 48	6 46	99	12 05.0	4 11	8.3
Sun Mar 28/Mon Mar 29	11 46	19 02	20 37	4 54	6 28	8 23	16 41	19 04	.....	100	12 59.3	- 2 14	8.3
Mon Mar 29/Tue Mar 30	11 50	19 03	20 38	4 52	6 27	8 28	16 43	20 21	.....	97	13 54.6	- 8 37	8.2
Tue Mar 30/Wed Mar 31	11 54	19 04	20 40	4 50	6 25	8 33	16 45	21 39	.....	91	14 51.3	-14 30	8.2
Wed Mar 31/Thu Apr 01	11 58	19 05	20 41	4 48	6 23	8 39	16 47	22 57	.....	84	15 50.1	-19 28	8.1

***** 2021 APRIL *****

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 Apr 01/Fri Apr 02	12 02	19 06	20 42	4 46	6 22	8 44	16 49	0 14	.....	74	16 50.7	-23 10	8.1
Fri Apr 02/Sat Apr 03	12 06	19 08	20 44	4 44	6 20	8 49	16 51	1 25	.....	63	17 52.4	-25 21	8.0
Sat Apr 03/Sun Apr 04	12 10	19 09	20 45	4 42	6 18	8 55	16 53	2 27	.....	52	18 53.8	-25 56	7.9
Sun Apr 04/Mon Apr 05	12 14	19 10	20 46	4 40	6 17	9 00	16 55	3 20	.....	41	19 53.2	-24 59	7.9
Mon Apr 05/Tue Apr 06	12 18	19 11	20 48	4 38	6 15	9 05	16 57	4 02	.....	31	20 49.7	-22 42	7.8
Tue Apr 06/Wed Apr 07	12 22	19 12	20 49	4 36	6 13	9 11	16 59	4 37	.....	22	21 42.7	-19 20	7.8
Wed Apr 07/Thu Apr 08	12 26	19 13	20 51	4 34	6 12	9 16	17 01	5 06	.....	14	22 32.4	-15 11	7.7
Thu Apr 08/Fri Apr 09	12 30	19 14	20 52	4 32	6 10	9 21	17 03	5 31	.....	8	23 19.2	-10 29	7.7
Fri Apr 09/Sat Apr 10	12 34	19 15	20 54	4 30	6 08	9 27	17 05	5 53	.....	4	0 04.1	- 5 28	7.6
Sat Apr 10/Sun Apr 11	12 38	19 16	20 55	4 28	6 07	9 32	17 07	6 15	17 56	1	0 47.7	- 0 19	7.6
Sun Apr 11/Mon Apr 12	12 42	19 17	20 56	4 26	6 05	9 37	17 09	6 37	18 57	0	1 30.9	4 47	7.5
Mon Apr 12/Tue Apr 13	12 45	19 19	20 58	4 24	6 04	9 43	17 10	.....	19 57	1	2 14.4	9 39	7.4
Tue Apr 13/Wed Apr 14	12 49	19 20	20 59	4 22	6 02	9 48	17 12	.....	20 58	4	2 59.0	14 08	7.4
Wed Apr 14/Thu Apr 15	12 53	19 21	21 01	4 20	6 00	9 54	17 14	.....	21 59	8	3 45.2	18 03	7.3
Thu Apr 15/Fri Apr 16	12 57	19 22	21 02	4 18	5 59	9 59	17 16	.....	23 00	14	4 33.4	21 14	7.3
Fri Apr 16/Sat Apr 17	13 01	19 23	21 04	4 16	5 57	10 05	17 18	.....	23 59	21	5 23.7	23 32	7.2
Sat Apr 17/Sun Apr 18	13 05	19 24	21 05	4 14	5 56	10 10	17 20	.....	0 55	29	6 16.1	24 46	7.2
Sun Apr 18/Mon Apr 19	13 09	19 25	21 07	4 13	5 54	10 16	17 22	.....	1 47	38	7 09.9	24 50	7.1
Mon Apr 19/Tue Apr 20	13 13	19 26	21 08	4 11	5 53	10 21	17 24	.....	2 32	48	8 04.4	23 37	7.0
Tue Apr 20/Wed Apr 21	13 17	19 27	21 10	4 09	5 51	10 26	17 26	.....	3 11	59	8 59.0	21 08	7.0
Wed Apr 21/Thu Apr 22	13 21	19 28	21 11	4 07	5 50	10 32	17 28	.....	3 46	69	9 53.2	17 27	6.9
Thu Apr 22/Fri Apr 23	13 25	19 29	21 13	4 05	5 48	10 37	17 30	.....	4 16	79	10 46.7	12 40	6.9
Fri Apr 23/Sat Apr 24	13 29	19 31	21 15	4 03	5 47	10 43	17 32	.....	4 44	87	11 39.9	7 00	6.8
Sat Apr 24/Sun Apr 25	13 33	19 32	21 16	4 01	5 45	10 49	17 34	.....	5 11	94	12 33.4	0 44	6.7
Sun Apr 25/Mon Apr 26	13 37	19 33	21 18	3 59	5 44	10 54	17 36	17 51	5 39	99	13 28.0	- 5 46	6.7
Mon Apr 26/Tue Apr 27	13 41	19 34	21 19	3 57	5 43	11 00	17 38	19 10	6 10	100	14 24.7	-12 04	6.6
Tue Apr 27/Wed Apr 28	13 45	19 35	21 21	3 55	5 41	11 05	17 40	20 30	.....	98	15 24.0	-17 41	6.6
Wed Apr 28/Thu Apr 29	13 49	19 36	21 23	3 53	5 40	11 11	17 43	21 51	.....	94	16 26.0	-22 08	6.5
Thu Apr 29/Fri Apr 30	13 53	19 37	21 24	3 51	5 38	11 16	17 45	23 08	.....	86	17 30.0	-25 04	6.5
Fri Apr 30/Sat May 01	13 56	19 38	21 26	3 50	5 37	11 22	17 47	0 17	.....	77	18 34.3	-26 15	6.4

Calendar for Cape Cod Schmidt Observatory, west longitude (h.m.s) = 4 40 47, latitude (d.m) = 41 40.7
Rise/set times in Eastern time (5 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.

***** 2021 MAY *****

Date (eve/morn)	LMST	Sun:				LST twilight:		Moon:					Twi-Twi
	midn	set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Sat May 01/Sun May 02	14 00	19 39	21 27	3 48	5 36	11 27	17 49	1 16	.....	67	19 36.8	-25 44	6.3
Sun May 02/Mon May 03	14 04	19 40	21 29	3 46	5 35	11 33	17 51	2 02	.....	57	20 36.1	-23 42	6.3
Mon May 03/Tue May 04	14 08	19 41	21 31	3 44	5 33	11 39	17 53	2 40	.....	46	21 31.2	-20 30	6.2
Tue May 04/Wed May 05	14 12	19 42	21 32	3 42	5 32	11 44	17 55	3 11	.....	36	22 22.2	-16 25	6.2
Wed May 05/Thu May 06	14 16	19 44	21 34	3 40	5 31	11 50	17 57	3 37	.....	27	23 09.9	-11 46	6.1
Thu May 06/Fri May 07	14 20	19 45	21 36	3 39	5 30	11 55	17 59	4 00	.....	18	23 55.0	- 6 46	6.1
Fri May 07/Sat May 08	14 24	19 46	21 37	3 37	5 28	12 01	18 02	4 21	.....	12	0 38.6	- 1 38	6.0
Sat May 08/Sun May 09	14 28	19 47	21 39	3 35	5 27	12 06	18 04	4 43	.....	6	1 21.5	3 29	5.9
Sun May 09/Mon May 10	14 32	19 48	21 41	3 33	5 26	12 12	18 06	5 05	17 50	3	2 04.6	8 26	5.9
Mon May 10/Tue May 11	14 36	19 49	21 42	3 32	5 25	12 18	18 08	5 29	18 50	0	2 48.7	13 01	5.8
Tue May 11/Wed May 12	14 40	19 50	21 44	3 30	5 24	12 23	18 11	5 56	19 51	0	3 34.3	17 06	5.8
Wed May 12/Thu May 13	14 44	19 51	21 45	3 28	5 23	12 29	18 13	6 27	20 52	2	4 21.9	20 30	5.7
Thu May 13/Fri May 14	14 48	19 52	21 47	3 27	5 22	12 34	18 15	.....	21 53	5	5 11.6	23 02	5.7
Fri May 14/Sat May 15	14 52	19 53	21 49	3 25	5 21	12 40	18 17	.....	22 50	10	6 03.3	24 33	5.6
Sat May 15/Sun May 16	14 56	19 54	21 50	3 24	5 20	12 46	18 20	.....	23 43	16	6 56.3	24 55	5.6
Sun May 16/Mon May 17	15 00	19 55	21 52	3 22	5 19	12 51	18 22	.....	0 30	24	7 50.0	24 03	5.5
Mon May 17/Tue May 18	15 03	19 56	21 54	3 21	5 18	12 57	18 25	.....	1 11	33	8 43.5	21 58	5.5
Tue May 18/Wed May 19	15 07	19 57	21 55	3 19	5 17	13 02	18 27	.....	1 46	43	9 36.3	18 43	5.4
Wed May 19/Thu May 20	15 11	19 58	21 57	3 18	5 16	13 08	18 30	.....	2 17	54	10 28.2	14 25	5.3
Thu May 20/Fri May 21	15 15	19 59	21 58	3 16	5 16	13 13	18 32	.....	2 44	64	11 19.6	9 13	5.3
Fri May 21/Sat May 22	15 19	20 00	22 00	3 15	5 15	13 19	18 35	.....	3 11	75	12 11.0	3 21	5.3
Sat May 22/Sun May 23	15 23	20 01	22 01	3 13	5 14	13 24	18 37	.....	3 37	84	13 03.3	- 2 56	5.2
Sun May 23/Mon May 24	15 27	20 02	22 03	3 12	5 13	13 30	18 40	.....	4 05	92	13 57.7	- 9 16	5.2
Mon May 24/Tue May 25	15 31	20 03	22 04	3 11	5 13	13 35	18 42	17 59	4 37	97	14 55.0	-15 14	5.1
Tue May 25/Wed May 26	15 35	20 03	22 06	3 10	5 12	13 40	18 45	19 20	5 15	100	15 56.0	-20 20	5.1
Wed May 26/Thu May 27	15 39	20 04	22 07	3 08	5 11	13 46	18 48	20 41	6 01	99	17 00.2	-24 06	5.0
Thu May 27/Fri May 28	15 43	20 05	22 09	3 07	5 11	13 51	18 51	21 56	.....	95	18 06.4	-26 09	5.0
Fri May 28/Sat May 29	15 47	20 06	22 10	3 06	5 10	13 57	18 54	23 02	.....	89	19 12.2	-26 20	4.9
Sat May 29/Sun May 30	15 51	20 07	22 11	3 05	5 10	14 02	18 56	23 56	.....	81	20 15.2	-24 48	4.9
Sun May 30/Mon May 31	15 55	20 08	22 13	3 04	5 09	14 07	18 59	0 39	.....	72	21 14.0	-21 51	4.9
Mon May 31/Tue Jun 01	15 59	20 08	22 14	3 03	5 09	14 12	19 02	1 13	.....	61	22 08.0	-17 52	4.8

***** 2021 JUNE *****

Date (eve/morn)	LMST	Sun:				LST twilight:		Moon:					Twi-Twi
	midn	set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Tue Jun 01/Wed Jun 02	16 03	20 09	22 15	3 02	5 08	14 18	19 05	1 41	.....	51	22 57.8	-13 13	4.8
Wed Jun 02/Thu Jun 03	16 07	20 10	22 16	3 01	5 08	14 23	19 08	2 05	.....	41	23 44.4	- 8 11	4.7
Thu Jun 03/Fri Jun 04	16 11	20 11	22 18	3 00	5 08	14 28	19 11	2 27	.....	32	0 28.7	- 2 59	4.7
Fri Jun 04/Sat Jun 05	16 14	20 11	22 19	3 00	5 07	14 33	19 15	2 48	.....	23	1 11.9	2 12	4.7
Sat Jun 05/Sun Jun 06	16 18	20 12	22 20	2 59	5 07	14 38	19 18	3 10	.....	16	1 55.0	7 12	4.7
Sun Jun 06/Mon Jun 07	16 22	20 13	22 21	2 58	5 07	14 43	19 21	3 33	.....	9	2 38.7	11 54	4.6
Mon Jun 07/Tue Jun 08	16 26	20 13	22 22	2 58	5 06	14 48	19 24	3 59	17 44	5	3 23.9	16 07	4.6
Tue Jun 08/Wed Jun 09	16 30	20 14	22 23	2 57	5 06	14 53	19 28	4 29	18 45	2	4 11.0	19 41	4.6
Wed Jun 09/Thu Jun 10	16 34	20 14	22 24	2 57	5 06	14 58	19 31	5 05	19 46	0	5 00.3	22 27	4.5
Thu Jun 10/Fri Jun 11	16 38	20 15	22 25	2 56	5 06	15 02	19 35	5 47	20 45	0	5 51.6	24 13	4.5
Fri Jun 11/Sat Jun 12	16 42	20 15	22 25	2 56	5 06	15 07	19 38	.....	21 40	3	6 44.5	24 51	4.5
Sat Jun 12/Sun Jun 13	16 46	20 16	22 26	2 56	5 06	15 12	19 42	.....	22 29	7	7 38.1	24 16	4.5
Sun Jun 13/Mon Jun 14	16 50	20 16	22 27	2 55	5 06	15 16	19 46	.....	23 12	12	8 31.5	22 27	4.5
Mon Jun 14/Tue Jun 15	16 54	20 17	22 27	2 55	5 06	15 21	19 49	.....	23 48	20	9 23.9	19 29	4.5
Tue Jun 15/Wed Jun 16	16 58	20 17	22 28	2 55	5 06	15 25	19 53	.....	0 20	29	10 15.1	15 30	4.5
Wed Jun 16/Thu Jun 17	17 02	20 17	22 28	2 55	5 06	15 30	19 57	.....	0 47	39	11 05.3	10 38	4.4
Thu Jun 17/Fri Jun 18	17 06	20 18	22 29	2 55	5 06	15 34	20 01	.....	1 13	50	11 55.0	5 07	4.4
Fri Jun 18/Sat Jun 19	17 10	20 18	22 29	2 55	5 06	15 39	20 05	.....	1 38	61	12 45.1	- 0 50	4.4
Sat Jun 19/Sun Jun 20	17 14	20 18	22 30	2 55	5 06	15 43	20 09	.....	2 04	72	13 36.6	- 6 58	4.4
Sun Jun 20/Mon Jun 21	17 18	20 19	22 30	2 55	5 07	15 47	20 13	.....	2 33	82	14 30.7	-12 55	4.4
Mon Jun 21/Tue Jun 22	17 21	20 19	22 30	2 56	5 07	15 51	20 18	.....	3 07	90	15 28.4	-18 18	4.4
Tue Jun 22/Wed Jun 23	17 25	20 19	22 30	2 56	5 07	15 55	20 22	18 12	3 48	96	16 30.2	-22 39	4.4
Wed Jun 23/Thu Jun 24	17 29	20 19	22 30	2 56	5 07	15 59	20 26	19 30	4 39	99	17 35.3	-25 29	4.4
Thu Jun 24/Fri Jun 25	17 33	20 19	22 30	2 57	5 08	16 03	20 31	20 41	5 40	100	18 42.0	-26 32	4.4
Fri Jun 25/Sat Jun 26	17 37	20 19	22 30	2 57	5 08	16 07	20 35	21 42	.....	97	19 47.7	-25 44	4.5
Sat Jun 26/Sun Jun 27	17 41	20 19	22 30	2 58	5 08	16 11	20 40	22 31	.....	92	20 49.9	-23 16	4.5
Sun Jun 27/Mon Jun 28	17 45	20 19	22 30	2 58	5 09	16 15	20 44	23 10	.....	85	21 47.6	-19 32	4.5
Mon Jun 28/Tue Jun 29	17 49	20 19	22 30	2 59	5 09	16 18	20 49	23 41	.....	76	22 40.6	-14 57	4.5
Tue Jun 29/Wed Jun 30	17 53	20 19	22 29	3 00	5 10	16 22	20 53	0 08	.....	67	23 29.6	- 9 51	4.5
Wed Jun 30/Thu Jul 01	17 57	20 19	22 29	3 01	5 10	16 26	20 58	0 31	.....	57	0 15.6	- 4 32	4.5

Calendar for Cape Cod Schmidt Observatory, west longitude (h.m.s) = 4 40 47, latitude (d.m) = 41 40.7
Rise/set times in Eastern time (5 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.

***** 2021 JULY *****

Date (eve/morn)	LMST	Sun:				LST twilight:		Moon:					Twi-Twi
	midn	set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Thu Jul 01/Fri Jul 02	18 01	20 19	22 28	3 01	5 11	16 29	21 03	0 53	.....	47	0 59.9	0 46	4.6
Fri Jul 02/Sat Jul 03	18 05	20 19	22 28	3 02	5 11	16 32	21 08	1 14	.....	37	1 43.5	5 55	4.6
Sat Jul 03/Sun Jul 04	18 09	20 19	22 27	3 03	5 12	16 36	21 13	1 37	.....	28	2 27.4	10 44	4.6
Sun Jul 04/Mon Jul 05	18 13	20 18	22 27	3 04	5 13	16 39	21 18	2 02	.....	20	3 12.3	15 06	4.6
Mon Jul 05/Tue Jul 06	18 17	20 18	22 26	3 05	5 13	16 42	21 22	2 30	.....	13	3 59.0	18 51	4.7
Tue Jul 06/Wed Jul 07	18 21	20 18	22 25	3 06	5 14	16 46	21 27	3 04	17 37	8	4 47.8	21 49	4.7
Wed Jul 07/Thu Jul 08	18 25	20 17	22 24	3 07	5 15	16 49	21 33	3 44	18 37	3	5 38.9	23 50	4.7
Thu Jul 08/Fri Jul 09	18 28	20 17	22 24	3 09	5 15	16 52	21 38	4 32	19 34	1	6 31.7	24 45	4.7
Fri Jul 09/Sat Jul 10	18 32	20 17	22 23	3 10	5 16	16 55	21 43	5 28	20 26	0	7 25.5	24 26	4.8
Sat Jul 10/Sun Jul 11	18 36	20 16	22 22	3 11	5 17	16 58	21 48	6 29	21 11	1	8 19.3	22 53	4.8
Sun Jul 11/Mon Jul 12	18 40	20 16	22 21	3 12	5 17	17 01	21 53	.....	21 50	5	9 12.3	20 08	4.9
Mon Jul 12/Tue Jul 13	18 44	20 15	22 20	3 14	5 18	17 04	21 58	.....	22 23	10	10 03.9	16 19	4.9
Tue Jul 13/Wed Jul 14	18 48	20 15	22 19	3 15	5 19	17 07	22 04	.....	22 51	17	10 54.2	11 38	4.9
Wed Jul 14/Thu Jul 15	18 52	20 14	22 18	3 16	5 20	17 09	22 09	.....	23 18	26	11 43.4	6 17	5.0
Thu Jul 15/Fri Jul 16	18 56	20 13	22 16	3 18	5 21	17 12	22 14	.....	23 42	36	12 32.5	0 31	5.0
Fri Jul 16/Sat Jul 17	19 00	20 13	22 15	3 19	5 21	17 15	22 20	.....	0 07	47	13 22.3	- 5 27	5.1
Sat Jul 17/Sun Jul 18	19 04	20 12	22 14	3 20	5 22	17 18	22 25	.....	0 34	58	14 13.9	-11 18	5.1
Sun Jul 18/Mon Jul 19	19 08	20 11	22 13	3 22	5 23	17 20	22 30	.....	1 05	69	15 08.5	-16 42	5.2
Mon Jul 19/Tue Jul 20	19 12	20 11	22 11	3 23	5 24	17 23	22 36	.....	1 41	79	16 06.7	-21 17	5.2
Tue Jul 20/Wed Jul 21	19 16	20 10	22 10	3 25	5 25	17 25	22 41	.....	2 26	88	17 08.8	-24 37	5.3
Wed Jul 21/Thu Jul 22	19 20	20 09	22 08	3 26	5 26	17 28	22 47	18 21	3 21	95	18 13.6	-26 22	5.3
Thu Jul 22/Fri Jul 23	19 24	20 08	22 07	3 28	5 27	17 30	22 52	19 26	4 27	99	19 19.1	-26 19	5.3
Fri Jul 23/Sat Jul 24	19 28	20 07	22 06	3 29	5 28	17 33	22 58	20 20	5 38	100	20 22.9	-24 30	5.4
Sat Jul 24/Sun Jul 25	19 32	20 06	22 04	3 31	5 29	17 35	23 03	21 04	.....	98	21 23.1	-21 13	5.4
Sun Jul 25/Mon Jul 26	19 36	20 06	22 03	3 33	5 30	17 38	23 09	21 39	.....	94	22 18.8	-16 51	5.5
Mon Jul 26/Tue Jul 27	19 39	20 05	22 01	3 34	5 30	17 40	23 14	22 07	.....	88	23 10.4	-11 47	5.6
Tue Jul 27/Wed Jul 28	19 43	20 04	21 59	3 36	5 31	17 42	23 20	22 32	.....	81	23 58.6	- 6 23	5.6
Wed Jul 28/Thu Jul 29	19 47	20 03	21 58	3 37	5 32	17 45	23 25	22 55	.....	72	0 44.5	- 0 54	5.7
Thu Jul 29/Fri Jul 30	19 51	20 02	21 56	3 39	5 33	17 47	23 31	23 17	.....	63	1 29.2	4 26	5.7
Fri Jul 30/Sat Jul 31	19 55	20 00	21 54	3 40	5 34	17 49	23 36	23 39	.....	53	2 13.6	9 28	5.8
Sat Jul 31/Sun Aug 01	19 59	19 59	21 53	3 42	5 35	17 52	23 42	0 03	.....	44	2 58.6	14 02	5.8

***** 2021 AUGUST *****

Date (eve/morn)	LMST	Sun:				LST twilight:		Moon:					Twi-Twi
	midn	set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Sun Aug 01/Mon Aug 02	20 03	19 58	21 51	3 44	5 36	17 54	23 47	0 30	.....	35	3 45.1	18 00	5.9
Mon Aug 02/Tue Aug 03	20 07	19 57	21 49	3 45	5 37	17 56	23 53	1 02	.....	26	4 33.5	21 13	5.9
Tue Aug 03/Wed Aug 04	20 11	19 56	21 48	3 47	5 38	17 58	23 58	1 40	.....	18	5 24.0	23 30	6.0
Wed Aug 04/Thu Aug 05	20 15	19 55	21 46	3 48	5 39	18 00	0 04	2 25	.....	11	6 16.5	24 43	6.0
Thu Aug 05/Fri Aug 06	20 19	19 53	21 44	3 50	5 40	18 02	0 09	3 18	18 19	6	7 10.4	24 43	6.1
Fri Aug 06/Sat Aug 07	20 23	19 52	21 42	3 51	5 41	18 05	0 15	4 18	19 07	2	8 04.6	23 27	6.2
Sat Aug 07/Sun Aug 08	20 27	19 51	21 40	3 53	5 42	18 07	0 20	5 24	19 48	0	8 58.4	20 58	6.2
Sun Aug 08/Mon Aug 09	20 31	19 50	21 38	3 55	5 43	18 09	0 26	.....	20 24	1	9 50.9	17 20	6.3
Mon Aug 09/Tue Aug 10	20 35	19 48	21 37	3 56	5 44	18 11	0 31	.....	20 54	3	10 42.1	12 45	6.3
Tue Aug 10/Wed Aug 11	20 39	19 47	21 35	3 58	5 45	18 13	0 37	.....	21 21	8	11 32.0	7 27	6.4
Wed Aug 11/Thu Aug 12	20 43	19 46	21 33	3 59	5 46	18 15	0 43	.....	21 47	14	12 21.4	1 41	6.4
Thu Aug 12/Fri Aug 13	20 46	19 44	21 31	4 01	5 48	18 17	0 48	.....	22 11	23	13 10.9	- 4 17	6.5
Fri Aug 13/Sat Aug 14	20 50	19 43	21 29	4 02	5 49	18 19	0 53	.....	22 37	33	14 01.7	-10 09	6.6
Sat Aug 14/Sun Aug 15	20 54	19 42	21 27	4 04	5 50	18 21	0 59	.....	23 06	44	14 54.7	-15 36	6.6
Sun Aug 15/Mon Aug 16	20 58	19 40	21 25	4 05	5 51	18 23	1 04	.....	23 40	56	15 50.8	-20 19	6.7
Mon Aug 16/Tue Aug 17	21 02	19 39	21 23	4 07	5 52	18 25	1 10	.....	0 21	67	16 50.2	-23 54	6.7
Tue Aug 17/Wed Aug 18	21 06	19 37	21 21	4 08	5 53	18 27	1 15	.....	1 11	77	17 52.4	-26 04	6.8
Wed Aug 18/Thu Aug 19	21 10	19 36	21 19	4 10	5 54	18 29	1 21	.....	2 11	86	18 56.1	-26 35	6.8
Thu Aug 19/Fri Aug 20	21 14	19 34	21 17	4 11	5 55	18 31	1 26	18 11	3 19	93	19 59.2	-25 22	6.9
Fri Aug 20/Sat Aug 21	21 18	19 33	21 15	4 13	5 56	18 33	1 32	18 58	4 31	97	20 59.7	-22 37	7.0
Sat Aug 21/Sun Aug 22	21 22	19 31	21 13	4 14	5 57	18 35	1 37	19 35	5 43	100	21 56.6	-18 37	7.0
Sun Aug 22/Mon Aug 23	21 26	19 30	21 12	4 16	5 58	18 37	1 42	20 06	.....	99	22 49.7	-13 45	7.1
Mon Aug 23/Tue Aug 24	21 30	19 28	21 10	4 17	5 59	18 39	1 48	20 33	.....	97	23 39.5	- 8 22	7.1
Tue Aug 24/Wed Aug 25	21 34	19 27	21 08	4 19	6 00	18 41	1 53	20 56	.....	92	0 26.7	- 2 46	7.2
Wed Aug 25/Thu Aug 26	21 38	19 25	21 06	4 20	6 01	18 43	1 59	21 19	.....	85	1 12.4	2 45	7.2
Thu Aug 26/Fri Aug 27	21 42	19 23	21 04	4 22	6 02	18 45	2 04	21 41	.....	78	1 57.6	8 02	7.3
Fri Aug 27/Sat Aug 28	21 46	19 22	21 02	4 23	6 03	18 47	2 09	22 04	.....	69	2 43.0	12 52	7.4
Sat Aug 28/Sun Aug 29	21 50	19 20	21 00	4 24	6 04	18 49	2 15	22 30	.....	60	3 29.5	17 06	7.4
Sun Aug 29/Mon Aug 30	21 54	19 18	20 58	4 26	6 05	18 51	2 20	23 00	.....	51	4 17.5	20 36	7.5
Mon Aug 30/Tue Aug 31	21 57	19 17	20 56	4 27	6 06	18 53	2 25	23 35	.....	41	5 07.6	23 11	7.5
Tue Aug 31/Wed Sep 01	22 01	19 15	20 54	4 29	6 07	18 54	2 31	0 16	.....	32	5 59.5	24 44	7.6

Calendar for Cape Cod Schmidt Observatory, west longitude (h.m.s) = 4 40 47, latitude (d.m) = 41 40.7
Rise/set times in Eastern time (5 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.

***** 2021 SEPTEMBER *****

Date (eve/morn)	LMST	Sun:				LST twilight:		Moon:					Twi-Twi
	midn	set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Wed Sep 01/Thu Sep 02	22 05	19 14	20 52	4 30	6 08	18 56	2 36	1 06	.....	23	6 52.9	25 07	7.6
Thu Sep 02/Fri Sep 03	22 09	19 12	20 50	4 31	6 09	18 58	2 41	2 03	.....	16	7 47.0	24 14	7.7
Fri Sep 03/Sat Sep 04	22 13	19 10	20 48	4 33	6 10	19 00	2 47	3 07	17 44	9	8 41.0	22 05	7.7
Sat Sep 04/Sun Sep 05	22 17	19 09	20 46	4 34	6 11	19 02	2 52	4 15	18 22	4	9 34.2	18 45	7.8
Sun Sep 05/Mon Sep 06	22 21	19 07	20 44	4 35	6 12	19 04	2 57	5 25	18 54	1	10 26.3	14 22	7.9
Mon Sep 06/Tue Sep 07	22 25	19 05	20 42	4 37	6 13	19 06	3 02	6 37	19 23	0	11 17.2	9 08	7.9
Tue Sep 07/Wed Sep 08	22 29	19 03	20 40	4 38	6 14	19 08	3 08	.....	19 49	2	12 07.5	3 19	8.0
Wed Sep 08/Thu Sep 09	22 33	19 02	20 38	4 39	6 15	19 10	3 13	.....	20 14	6	12 57.8	- 2 46	8.0
Thu Sep 09/Fri Sep 10	22 37	19 00	20 36	4 40	6 16	19 12	3 18	.....	20 40	12	13 49.0	- 8 50	8.1
Fri Sep 10/Sat Sep 11	22 41	18 58	20 34	4 42	6 17	19 14	3 23	.....	21 08	21	14 42.1	-14 31	8.1
Sat Sep 11/Sun Sep 12	22 45	18 57	20 32	4 43	6 18	19 16	3 28	.....	21 41	31	15 37.7	-19 28	8.2
Sun Sep 12/Mon Sep 13	22 49	18 55	20 30	4 44	6 19	19 18	3 34	.....	22 19	42	16 36.2	-23 20	8.2
Mon Sep 13/Tue Sep 14	22 53	18 53	20 28	4 45	6 20	19 20	3 39	.....	23 06	53	17 37.3	-25 49	8.3
Tue Sep 14/Wed Sep 15	22 57	18 51	20 26	4 47	6 21	19 22	3 44	.....	0 02	64	18 39.7	-26 42	8.3
Wed Sep 15/Thu Sep 16	23 01	18 50	20 24	4 48	6 22	19 24	3 49	.....	1 07	74	19 41.7	-25 56	8.4
Thu Sep 16/Fri Sep 17	23 04	18 48	20 22	4 49	6 23	19 26	3 54	16 56	2 17	83	20 41.6	-23 37	8.5
Fri Sep 17/Sat Sep 18	23 08	18 46	20 20	4 50	6 24	19 28	4 00	17 35	3 28	91	21 38.3	-20 01	8.5
Sat Sep 18/Sun Sep 19	23 12	18 44	20 18	4 51	6 25	19 30	4 05	18 07	4 38	96	22 31.6	-15 26	8.6
Sun Sep 19/Mon Sep 20	23 16	18 43	20 16	4 53	6 26	19 32	4 10	18 35	5 46	99	23 21.7	-10 13	8.6
Mon Sep 20/Tue Sep 21	23 20	18 41	20 14	4 54	6 27	19 34	4 15	18 59	6 52	100	0 09.4	- 4 39	8.7
Tue Sep 21/Wed Sep 22	23 24	18 39	20 13	4 55	6 28	19 36	4 20	19 21	.....	98	0 55.5	0 59	8.7
Wed Sep 22/Thu Sep 23	23 28	18 38	20 11	4 56	6 30	19 38	4 25	19 43	.....	95	1 41.0	6 26	8.8
Thu Sep 23/Fri Sep 24	23 32	18 36	20 09	4 57	6 31	19 40	4 30	20 06	.....	90	2 26.6	11 32	8.8
Fri Sep 24/Sat Sep 25	23 36	18 34	20 07	4 59	6 32	19 42	4 35	20 30	.....	84	3 13.1	16 04	8.9
Sat Sep 25/Sun Sep 26	23 40	18 32	20 05	5 00	6 33	19 44	4 40	20 58	.....	76	4 01.0	19 53	8.9
Sun Sep 26/Mon Sep 27	23 44	18 31	20 03	5 01	6 34	19 47	4 46	21 31	.....	67	4 50.7	22 49	9.0
Mon Sep 27/Tue Sep 28	23 48	18 29	20 01	5 02	6 35	19 49	4 51	22 09	.....	58	5 42.1	24 43	9.0
Tue Sep 28/Wed Sep 29	23 52	18 27	20 00	5 03	6 36	19 51	4 56	22 55	.....	49	6 34.9	25 29	9.1
Wed Sep 29/Thu Sep 30	23 56	18 25	19 58	5 04	6 37	19 53	5 01	23 49	.....	39	7 28.5	25 02	9.1
Thu Sep 30/Fri Oct 01	24 00	18 24	19 56	5 05	6 38	19 55	5 06	0 49	.....	30	8 22.2	23 19	9.2

***** 2021 OCTOBER *****

Date (eve/morn)	LMST	Sun:				LST twilight:		Moon:					Twi-Twi
	midn	set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Fri Oct 01/Sat Oct 02	0 04	18 22	19 54	5 07	6 39	19 57	5 11	1 55	.....	21	9 15.2	20 23	9.2
Sat Oct 02/Sun Oct 03	0 08	18 20	19 53	5 08	6 40	19 59	5 16	3 04	16 52	13	10 07.3	16 21	9.3
Sun Oct 03/Mon Oct 04	0 11	18 19	19 51	5 09	6 41	20 02	5 21	4 15	17 22	7	10 58.5	11 23	9.3
Mon Oct 04/Tue Oct 05	0 15	18 17	19 49	5 10	6 42	20 04	5 26	5 27	17 49	2	11 49.1	5 40	9.3
Tue Oct 05/Wed Oct 06	0 19	18 15	19 47	5 11	6 43	20 06	5 31	6 41	18 14	0	12 39.9	- 0 29	9.4
Wed Oct 06/Thu Oct 07	0 23	18 14	19 46	5 12	6 44	20 08	5 36	.....	18 40	1	13 31.6	- 6 45	9.4
Thu Oct 07/Fri Oct 08	0 27	18 12	19 44	5 13	6 45	20 11	5 41	.....	19 08	4	14 25.2	-12 47	9.5
Fri Oct 08/Sat Oct 09	0 31	18 10	19 42	5 14	6 47	20 13	5 46	.....	19 39	10	15 21.4	-18 10	9.5
Sat Oct 09/Sun Oct 10	0 35	18 09	19 41	5 15	6 48	20 15	5 51	.....	20 16	18	16 20.5	-22 30	9.6
Sun Oct 10/Mon Oct 11	0 39	18 07	19 39	5 16	6 49	20 18	5 56	.....	21 01	28	17 22.1	-25 26	9.6
Mon Oct 11/Tue Oct 12	0 43	18 05	19 38	5 18	6 50	20 20	6 01	.....	21 56	38	18 25.0	-26 43	9.7
Tue Oct 12/Wed Oct 13	0 47	18 04	19 36	5 19	6 51	20 22	6 06	.....	22 59	50	19 27.4	-26 20	9.7
Wed Oct 13/Thu Oct 14	0 51	18 02	19 34	5 20	6 52	20 25	6 12	.....	0 07	61	20 27.6	-24 21	9.8
Thu Oct 14/Fri Oct 15	0 55	18 01	19 33	5 21	6 53	20 27	6 17	.....	1 18	71	21 24.3	-21 03	9.8
Fri Oct 15/Sat Oct 16	0 59	17 59	19 31	5 22	6 54	20 29	6 22	16 11	2 28	80	22 17.5	-16 44	9.8
Sat Oct 16/Sun Oct 17	1 03	17 58	19 30	5 23	6 56	20 32	6 27	16 39	3 35	88	23 07.4	-11 43	9.9
Sun Oct 17/Mon Oct 18	1 07	17 56	19 28	5 24	6 57	20 34	6 32	17 03	4 41	94	23 54.9	- 6 17	9.9
Mon Oct 18/Tue Oct 19	1 11	17 54	19 27	5 25	6 58	20 37	6 37	17 25	5 44	98	0 40.7	- 0 41	10.0
Tue Oct 19/Wed Oct 20	1 15	17 53	19 26	5 26	6 59	20 39	6 42	17 47	6 47	100	1 25.9	4 51	10.0
Wed Oct 20/Thu Oct 21	1 19	17 51	19 24	5 27	7 00	20 42	6 47	18 09	7 49	100	2 11.3	10 06	10.1
Thu Oct 21/Fri Oct 22	1 22	17 50	19 23	5 28	7 01	20 44	6 52	18 32	.....	98	2 57.5	14 53	10.1
Fri Oct 22/Sat Oct 23	1 26	17 49	19 21	5 29	7 02	20 47	6 57	18 59	.....	94	3 45.2	19 00	10.1
Sat Oct 23/Sun Oct 24	1 30	17 47	19 20	5 31	7 04	20 50	7 02	19 29	.....	89	4 34.6	22 16	10.2
Sun Oct 24/Mon Oct 25	1 34	17 46	19 19	5 32	7 05	20 52	7 07	20 05	.....	82	5 25.7	24 33	10.2
Mon Oct 25/Tue Oct 26	1 38	17 44	19 17	5 33	7 06	20 55	7 12	20 48	.....	74	6 18.2	25 42	10.3
Tue Oct 26/Wed Oct 27	1 42	17 43	19 16	5 34	7 07	20 57	7 17	21 38	.....	65	7 11.4	25 38	10.3
Wed Oct 27/Thu Oct 28	1 46	17 41	19 15	5 35	7 08	21 00	7 22	22 35	.....	56	8 04.6	24 21	10.3
Thu Oct 28/Fri Oct 29	1 50	17 40	19 14	5 36	7 10	21 03	7 27	23 37	.....	46	8 57.1	21 51	10.4
Fri Oct 29/Sat Oct 30	1 54	17 39	19 12	5 37	7 11	21 06	7 32	0 43	.....	36	9 48.6	18 15	10.4
Sat Oct 30/Sun Oct 31	1 58	17 38	19 11	5 38	7 12	21 08	7 37	1 52	.....	26	10 39.1	13 40	10.4
Sun Oct 31/Mon Nov 01	2 02	17 36	19 10	5 39	7 13	21 11	7 42	3 02	15 48	18	11 28.9	8 18	10.5

Calendar for Cape Cod Schmidt Observatory, west longitude (h.m.s) = 4 40 47, latitude (d.m) = 41 40.7
Rise/set times in Eastern time (5 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.

***** 2021 NOVEMBER *****

Date (eve/morn)	LMST	Sun:				LST twilight:		Moon:					Twi-Twi
	midn	set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Mon Nov 01/Tue Nov 02	2 06	17 35	19 09	5 40	7 14	21 14	7 47	4 14	16 14	10	12 18.9	2 20	10.5
Tue Nov 02/Wed Nov 03	2 10	17 34	19 08	5 41	7 16	21 17	7 52	5 29	16 39	4	13 09.9	- 3 57	10.6
Wed Nov 03/Thu Nov 04	2 14	17 33	19 07	5 42	7 17	21 20	7 57	6 46	17 05	1	14 02.9	-10 12	10.6
Thu Nov 04/Fri Nov 05	2 18	17 31	19 06	5 43	7 18	21 23	8 02	8 06	17 35	0	14 58.8	-16 02	10.6
Fri Nov 05/Sat Nov 06	2 22	17 30	19 05	5 44	7 19	21 26	8 07	.....	18 09	2	15 58.1	-20 57	10.7
Sat Nov 06/Sun Nov 07*	2 26	17 29	19 04	4 45	6 20	21 29	8 12	.....	18 52	7	17 00.7	-24 33	10.7
Sun Nov 07/Mon Nov 08	3 30	16 28	18 03	4 47	6 22	21 32	8 17	.....	18 44	15	18 08.6	-26 27	10.7
Mon Nov 08/Tue Nov 09	3 34	16 27	18 02	4 48	6 23	21 35	8 22	.....	19 46	25	19 12.9	-26 29	10.8
Tue Nov 09/Wed Nov 10	3 38	16 26	18 01	4 49	6 24	21 38	8 27	.....	20 56	35	20 14.8	-24 49	10.8
Wed Nov 10/Thu Nov 11	3 41	16 25	18 00	4 50	6 25	21 41	8 32	.....	22 08	46	21 13.0	-21 45	10.8
Thu Nov 11/Fri Nov 12	3 45	16 24	18 00	4 51	6 27	21 44	8 37	.....	23 19	56	22 06.9	-17 36	10.9
Fri Nov 12/Sat Nov 13	3 49	16 23	17 59	4 52	6 28	21 47	8 42	.....	0 27	67	22 57.1	-12 43	10.9
Sat Nov 13/Sun Nov 14	3 53	16 22	17 58	4 53	6 29	21 50	8 47	.....	1 33	76	23 44.5	- 7 23	10.9
Sun Nov 14/Mon Nov 15	3 57	16 21	17 57	4 54	6 30	21 54	8 52	.....	2 36	84	0 29.9	- 1 52	10.9
Mon Nov 15/Tue Nov 16	4 01	16 20	17 57	4 55	6 31	21 57	8 57	.....	3 39	91	1 14.5	3 38	11.0
Tue Nov 16/Wed Nov 17	4 05	16 19	17 56	4 56	6 33	22 00	9 02	.....	4 41	96	1 59.2	8 56	11.0
Wed Nov 17/Thu Nov 18	4 09	16 19	17 55	4 57	6 34	22 03	9 07	15 37	5 43	99	2 44.8	13 50	11.0
Thu Nov 18/Fri Nov 19	4 13	16 18	17 55	4 58	6 35	22 07	9 12	16 02	6 45	100	3 31.9	18 09	11.1
Fri Nov 19/Sat Nov 20	4 17	16 17	17 54	4 59	6 36	22 10	9 17	16 30	7 47	99	4 20.9	21 41	11.1
Sat Nov 20/Sun Nov 21	4 21	16 16	17 54	5 00	6 37	22 14	9 22	17 04	.....	97	5 11.9	24 16	11.1
Sun Nov 21/Mon Nov 22	4 25	16 16	17 53	5 01	6 39	22 17	9 27	17 45	.....	93	6 04.5	25 44	11.1
Mon Nov 22/Tue Nov 23	4 29	16 15	17 53	5 02	6 40	22 20	9 32	18 32	.....	87	6 57.9	26 00	11.2
Tue Nov 23/Wed Nov 24	4 33	16 15	17 52	5 03	6 41	22 24	9 37	19 26	.....	80	7 51.2	25 01	11.2
Wed Nov 24/Thu Nov 25	4 37	16 14	17 52	5 04	6 42	22 28	9 41	20 26	.....	72	8 43.8	22 50	11.2
Thu Nov 25/Fri Nov 26	4 41	16 13	17 52	5 05	6 43	22 31	9 46	21 30	.....	62	9 35.0	19 33	11.2
Fri Nov 26/Sat Nov 27	4 45	16 13	17 51	5 06	6 44	22 35	9 51	22 35	.....	52	10 24.8	15 18	11.2
Sat Nov 27/Sun Nov 28	4 49	16 13	17 51	5 07	6 45	22 38	9 56	23 43	.....	42	11 13.6	10 16	11.3
Sun Nov 28/Mon Nov 29	4 52	16 12	17 51	5 08	6 46	22 42	10 01	0 51	.....	32	12 02.2	4 36	11.3
Mon Nov 29/Tue Nov 30	4 56	16 12	17 50	5 09	6 47	22 46	10 06	2 02	.....	22	12 51.5	- 1 28	11.3
Tue Nov 30/Wed Dec 01	5 00	16 11	17 50	5 10	6 49	22 50	10 11	3 16	.....	13	13 42.6	- 7 40	11.3

***** 2021 DECEMBER *****

Date (eve/morn)	LMST	Sun:				LST twilight:		Moon:					Twi-Twi
	midn	set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Wed Dec 01/Thu Dec 02	5 04	16 11	17 50	5 10	6 50	22 53	10 16	4 34	.....	6	14 36.6	-13 38	11.3
Thu Dec 02/Fri Dec 03	5 08	16 11	17 50	5 11	6 51	22 57	10 20	5 55	.....	2	15 34.3	-18 58	11.4
Fri Dec 03/Sat Dec 04	5 12	16 11	17 50	5 12	6 52	23 01	10 25	7 16	15 39	0	16 36.2	-23 11	11.4
Sat Dec 04/Sun Dec 05	5 16	16 10	17 50	5 13	6 53	23 05	10 30	8 33	16 27	1	17 41.4	-25 49	11.4
Sun Dec 05/Mon Dec 06	5 20	16 10	17 50	5 14	6 54	23 09	10 35	.....	17 26	5	18 47.8	-26 36	11.4
Mon Dec 06/Tue Dec 07	5 24	16 10	17 50	5 15	6 54	23 13	10 40	.....	18 35	12	19 52.9	-25 31	11.4
Tue Dec 07/Wed Dec 08	5 28	16 10	17 50	5 15	6 55	23 17	10 44	.....	19 49	20	20 54.3	-22 48	11.4
Wed Dec 08/Thu Dec 09	5 32	16 10	17 50	5 16	6 56	23 21	10 49	.....	21 04	30	21 51.2	-18 51	11.4
Thu Dec 09/Fri Dec 10	5 36	16 10	17 50	5 17	6 57	23 25	10 54	.....	22 16	40	22 43.5	-14 02	11.4
Fri Dec 10/Sat Dec 11	5 40	16 10	17 50	5 18	6 58	23 29	10 58	.....	23 24	51	23 32.2	- 8 44	11.5
Sat Dec 11/Sun Dec 12	5 44	16 10	17 51	5 18	6 59	23 33	11 03	.....	0 29	61	0 18.3	- 3 13	11.5
Sun Dec 12/Mon Dec 13	5 48	16 11	17 51	5 19	6 59	23 37	11 08	.....	1 32	70	1 03.0	2 19	11.5
Mon Dec 13/Tue Dec 14	5 52	16 11	17 51	5 20	7 00	23 42	11 12	.....	2 33	79	1 47.3	7 39	11.5
Tue Dec 14/Wed Dec 15	5 56	16 11	17 51	5 21	7 01	23 46	11 17	.....	3 35	86	2 32.2	12 38	11.5
Wed Dec 15/Thu Dec 16	5 59	16 11	17 52	5 21	7 02	23 50	11 22	.....	4 37	92	3 18.5	17 05	11.5
Thu Dec 16/Fri Dec 17	6 03	16 12	17 52	5 22	7 02	23 54	11 26	.....	5 39	96	4 06.8	20 50	11.5
Fri Dec 17/Sat Dec 18	6 07	16 12	17 52	5 22	7 03	23 59	11 31	15 05	6 39	99	4 57.2	23 41	11.5
Sat Dec 18/Sun Dec 19	6 11	16 12	17 53	5 23	7 03	0 03	11 35	15 43	7 37	100	5 49.5	25 28	11.5
Sun Dec 19/Mon Dec 20	6 15	16 13	17 53	5 24	7 04	0 07	11 40	16 28	8 28	99	6 43.0	26 04	11.5
Mon Dec 20/Tue Dec 21	6 19	16 13	17 54	5 24	7 05	0 12	11 44	17 21	.....	96	7 36.8	25 24	11.5
Tue Dec 21/Wed Dec 22	6 23	16 14	17 54	5 25	7 05	0 16	11 49	18 19	.....	92	8 29.9	23 31	11.5
Wed Dec 22/Thu Dec 23	6 27	16 14	17 55	5 25	7 05	0 21	11 53	19 22	.....	85	9 21.5	20 29	11.5
Thu Dec 23/Fri Dec 24	6 31	16 15	17 55	5 25	7 06	0 25	11 57	20 26	.....	78	10 11.5	16 29	11.5
Fri Dec 24/Sat Dec 25	6 35	16 15	17 56	5 26	7 06	0 30	12 02	21 32	.....	69	10 59.9	11 41	11.5
Sat Dec 25/Sun Dec 26	6 39	16 16	17 56	5 26	7 07	0 34	12 06	22 38	.....	59	11 47.6	6 17	11.5
Sun Dec 26/Mon Dec 27	6 43	16 17	17 57	5 27	7 07	0 39	12 10	23 46	.....	48	12 35.2	0 28	11.5
Mon Dec 27/Tue Dec 28	6 47	16 17	17 58	5 27	7 07	0 43	12 15	0 55	.....	37	13 24.0	- 5 31	11.5
Tue Dec 28/Wed Dec 29	6 51	16 18	17 58	5 27	7 07	0 48	12 19	2 08	.....	27	14 15.1	-11 25	11.5
Wed Dec 29/Thu Dec 30	6 55	16 19	17 59	5 27	7 08	0 53	12 23	3 25	.....	17	15 09.7	-16 53	11.5
Thu Dec 30/Fri Dec 31	6 59	16 20	18 00	5 28	7 08	0 57	12 27	4 44	.....	9	16 08.5	-21 31	11.5
Fri Dec 31/Sat Jan 01	7 03	16 20	18 00	5 28	7 08	1 02	12 31	6 03	.....	4	17 11.5	-24 50	11.5