

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:

\*\*\*\*\* 2023 Night-time Astronomical Calendar for CA iTel \*\*\*\*\*

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 2023, at CA iTel

Times and dates are given in local time, zone = 8 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 23	2 18	Dec 29	17 23	Jan 06	15 10	Jan 14	18 13
Jan 21	12 56	Jan 28	7 20	Feb 05	10 31	Feb 13	8 03
Feb 19	23 09	Feb 27	0 07	Mar 07	4 43	Mar 14	19 10
Mar 21	10 27	Mar 28	19 33	Apr 05	21 37	Apr 13	2 13
Apr 19	21 16	Apr 27	14 21	May 05	10 37	May 12	7 29
May 19	8 56	May 27	8 24	Jun 03	20 44	Jun 10	12 32
Jun 17	21 39	Jun 26	0 51	Jul 03	4 41	Jul 09	18 49
Jul 17	11 33	Jul 25	15 08	Aug 01	11 33	Aug 08	3 30
Aug 16	2 39	Aug 24	2 58	Aug 30	18 37	Sep 06	15 23
Sep 14	18 40	Sep 22	12 33	Sep 29	2 58	Oct 06	6 49
Oct 14	10 55	Oct 21	20 30	Oct 28	13 24	Nov 05	1 39
Nov 13	1 27	Nov 20	2 51	Nov 27	1 17	Dec 04	21 52
Dec 12	15 32	Dec 19	10 40	Dec 26	16 34	Jan 03	19 33

Calendar for CA iTel, west longitude (h.m.s) = 7 57 36, latitude (d.m) = 37 04.2  
 Rise/set times in Pacific time ( 8 hr W), for 1405 m above surroundings, DAYLIGHT time used, \* shows clock reset.  
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

\*\*\*\*\* 2023 JANUARY \*\*\*\*\*

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 Jan 01/Mon Jan 02	6 49	16 58	18 24	5 38	7 04	1 13	12 28	.....	3 36	81	3 08.4	18 11	11.2
Mon Jan 02/Tue Jan 03	6 53	16 59	18 25	5 39	7 05	1 17	12 33	.....	4 39	88	3 58.8	22 10	11.2
Tue Jan 03/Wed Jan 04	6 57	17 00	18 26	5 39	7 05	1 22	12 37	.....	5 40	94	4 51.1	25 06	11.2
Wed Jan 04/Thu Jan 05	7 01	17 01	18 27	5 39	7 05	1 27	12 41	.....	6 37	97	5 45.0	26 49	11.2
Thu Jan 05/Fri Jan 06	7 05	17 02	18 27	5 39	7 05	1 32	12 45	15 38	7 29	100	6 39.4	27 14	11.2
Fri Jan 06/Sat Jan 07	7 09	17 02	18 28	5 39	7 05	1 36	12 49	16 32	8 14	100	7 33.3	26 20	11.2
Sat Jan 07/Sun Jan 08	7 13	17 03	18 29	5 39	7 05	1 41	12 53	17 29	.....	98	8 25.6	24 11	11.2
Sun Jan 08/Mon Jan 09	7 17	17 04	18 30	5 39	7 05	1 46	12 57	18 29	.....	95	9 15.7	20 59	11.2
Mon Jan 09/Tue Jan 10	7 21	17 05	18 31	5 39	7 04	1 51	13 01	19 29	.....	90	10 03.4	16 54	11.1
Tue Jan 10/Wed Jan 11	7 25	17 06	18 32	5 39	7 04	1 55	13 05	20 29	.....	83	10 49.0	12 07	11.1
Wed Jan 11/Thu Jan 12	7 29	17 07	18 32	5 39	7 04	2 00	13 09	21 28	.....	75	11 33.3	6 51	11.1
Thu Jan 12/Fri Jan 13	7 33	17 08	18 33	5 39	7 04	2 05	13 12	22 27	.....	67	12 17.2	1 15	11.1
Fri Jan 13/Sat Jan 14	7 37	17 09	18 34	5 39	7 04	2 10	13 16	23 27	.....	57	13 01.6	- 4 31	11.1
Sat Jan 14/Sun Jan 15	7 40	17 10	18 35	5 39	7 03	2 15	13 20	0 30	.....	47	13 47.8	-10 14	11.1
Sun Jan 15/Mon Jan 16	7 44	17 11	18 36	5 38	7 03	2 19	13 24	1 35	.....	36	14 36.9	-15 40	11.0
Mon Jan 16/Tue Jan 17	7 48	17 12	18 37	5 38	7 03	2 24	13 27	2 45	.....	26	15 30.1	-20 32	11.0
Tue Jan 17/Wed Jan 18	7 52	17 13	18 38	5 38	7 02	2 29	13 31	3 58	.....	17	16 28.2	-24 26	11.0
Wed Jan 18/Thu Jan 19	7 56	17 14	18 38	5 38	7 02	2 34	13 35	5 11	.....	9	17 31.2	-26 56	11.0
Thu Jan 19/Fri Jan 20	8 00	17 15	18 39	5 37	7 02	2 39	13 38	6 19	.....	4	18 37.5	-27 38	11.0
Fri Jan 20/Sat Jan 21	8 04	17 16	18 40	5 37	7 01	2 44	13 42	7 17	15 55	1	19 44.5	-26 21	10.9
Sat Jan 21/Sun Jan 22	8 08	17 17	18 41	5 37	7 01	2 48	13 46	8 05	17 12	1	20 49.4	-23 10	10.9
Sun Jan 22/Mon Jan 23	8 12	17 18	18 42	5 36	7 00	2 53	13 49	.....	18 31	3	21 50.4	-18 26	10.9
Mon Jan 23/Tue Jan 24	8 16	17 19	18 43	5 36	6 59	2 58	13 53	.....	19 48	9	22 46.9	-12 41	10.9
Tue Jan 24/Wed Jan 25	8 20	17 20	18 44	5 35	6 59	3 03	13 56	.....	21 01	16	23 39.7	- 6 22	10.9
Wed Jan 25/Thu Jan 26	8 24	17 21	18 45	5 35	6 58	3 08	14 00	.....	22 11	26	0 29.7	0 05	10.8
Thu Jan 26/Fri Jan 27	8 28	17 22	18 46	5 34	6 58	3 13	14 03	.....	23 18	36	1 18.2	6 19	10.8
Fri Jan 27/Sat Jan 28	8 32	17 24	18 47	5 34	6 57	3 18	14 06	.....	0 24	46	2 06.4	12 05	10.8
Sat Jan 28/Sun Jan 29	8 36	17 25	18 48	5 33	6 56	3 23	14 10	.....	1 28	56	2 55.2	17 11	10.8
Sun Jan 29/Mon Jan 30	8 40	17 26	18 49	5 33	6 55	3 27	14 13	.....	2 32	66	3 45.4	21 24	10.7
Mon Jan 30/Tue Jan 31	8 44	17 27	18 50	5 32	6 55	3 32	14 16	.....	3 34	75	4 37.1	24 35	10.7
Tue Jan 31/Wed Feb 01	8 47	17 28	18 51	5 31	6 54	3 37	14 20	.....	4 33	83	5 30.4	26 35	10.7

\*\*\*\*\* 2023 FEBRUARY \*\*\*\*\*

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 Feb 01/Thu Feb 02	8 51	17 29	18 52	5 31	6 53	3 42	14 23	.....	5 26	89	6 24.4	27 18	10.7
Thu Feb 02/Fri Feb 03	8 55	17 30	18 52	5 30	6 52	3 47	14 26	.....	6 12	95	7 18.3	26 42	10.6
Fri Feb 03/Sat Feb 04	8 59	17 31	18 53	5 29	6 51	3 52	14 29	.....	6 52	98	8 11.0	24 51	10.6
Sat Feb 04/Sun Feb 05	9 03	17 32	18 54	5 28	6 50	3 57	14 32	16 22	7 26	100	9 01.7	21 53	10.6
Sun Feb 05/Mon Feb 06	9 07	17 33	18 55	5 28	6 49	4 02	14 36	17 22	7 55	100	9 50.1	17 57	10.5
Mon Feb 06/Tue Feb 07	9 11	17 34	18 56	5 27	6 49	4 07	14 39	18 23	.....	98	10 36.5	13 16	10.5
Tue Feb 07/Wed Feb 08	9 15	17 35	18 57	5 26	6 48	4 12	14 42	19 22	.....	94	11 21.4	8 02	10.5
Wed Feb 08/Thu Feb 09	9 19	17 36	18 58	5 25	6 47	4 16	14 45	20 21	.....	88	12 05.4	2 26	10.4
Thu Feb 09/Fri Feb 10	9 23	17 37	18 59	5 24	6 46	4 21	14 48	21 21	.....	81	12 49.5	- 3 19	10.4
Fri Feb 10/Sat Feb 11	9 27	17 39	19 00	5 23	6 45	4 26	14 51	22 21	.....	73	13 34.8	- 9 03	10.4
Sat Feb 11/Sun Feb 12	9 31	17 40	19 01	5 22	6 43	4 31	14 54	23 24	.....	63	14 22.3	-14 32	10.4
Sun Feb 12/Mon Feb 13	9 35	17 41	19 02	5 21	6 42	4 36	14 57	0 31	.....	53	15 13.1	-19 30	10.3
Mon Feb 13/Tue Feb 14	9 39	17 42	19 03	5 20	6 41	4 41	15 00	1 40	.....	42	16 08.1	-23 37	10.3
Tue Feb 14/Wed Feb 15	9 43	17 43	19 04	5 19	6 40	4 46	15 03	2 50	.....	31	17 07.7	-26 32	10.3
Wed Feb 15/Thu Feb 16	9 47	17 44	19 05	5 18	6 39	4 51	15 06	3 59	.....	21	18 11.1	-27 52	10.2
Thu Feb 16/Fri Feb 17	9 51	17 45	19 06	5 17	6 38	4 56	15 08	5 00	.....	13	19 16.5	-27 22	10.2
Fri Feb 17/Sat Feb 18	9 55	17 46	19 07	5 16	6 37	5 00	15 11	5 52	.....	6	20 21.4	-24 57	10.2
Sat Feb 18/Sun Feb 19	9 58	17 47	19 08	5 15	6 35	5 05	15 14	6 36	.....	2	21 23.6	-20 49	10.1
Sun Feb 19/Mon Feb 20	10 02	17 48	19 09	5 14	6 34	5 10	15 17	7 11	17 18	0	22 22.2	-15 24	10.1
Mon Feb 20/Tue Feb 21	10 06	17 49	19 10	5 12	6 33	5 15	15 20	7 42	18 35	2	23 17.1	- 9 08	10.0
Tue Feb 21/Wed Feb 22	10 10	17 50	19 10	5 11	6 32	5 20	15 22	.....	19 48	6	0 09.1	- 2 31	10.0
Wed Feb 22/Thu Feb 23	10 14	17 51	19 11	5 10	6 30	5 25	15 25	.....	20 58	12	0 59.4	4 03	10.0
Thu Feb 23/Fri Feb 24	10 18	17 52	19 12	5 09	6 29	5 30	15 28	.....	22 07	20	1 48.9	10 13	9.9
Fri Feb 24/Sat Feb 25	10 22	17 53	19 13	5 08	6 28	5 35	15 31	.....	23 14	29	2 38.7	15 43	9.9
Sat Feb 25/Sun Feb 26	10 26	17 54	19 14	5 06	6 27	5 40	15 33	.....	0 21	39	3 29.4	20 21	9.9
Sun Feb 26/Mon Feb 27	10 30	17 55	19 15	5 05	6 25	5 44	15 36	.....	1 25	49	4 21.5	23 54	9.8
Mon Feb 27/Tue Feb 28	10 34	17 56	19 16	5 04	6 24	5 49	15 39	.....	2 26	59	5 14.9	26 16	9.8
Tue Feb 28/Wed Mar 01	10 38	17 57	19 17	5 02	6 23	5 54	15 41	.....	3 22	68	6 09.0	27 20	9.8

Calendar for CA iTel, west longitude (h.m.s) = 7 57 36, latitude (d.m) = 37 04.2  
 Rise/set times in Pacific time ( 8 hr W), for 1405 m above surroundings, DAYLIGHT time used, \* shows clock reset.  
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

\*\*\*\*\* 2023 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	10 42	17 58	19 18	5 01	6 21	5 59	15 44	.....	4 11	77	7 02.9	27 04	9.7
Thu Mar 02/Fri Mar 03	10 46	17 59	19 19	5 00	6 20	6 04	15 46	.....	4 52	84	7 55.8	25 32	9.7
Fri Mar 03/Sat Mar 04	10 50	18 00	19 20	4 58	6 18	6 09	15 49	.....	5 28	91	8 46.9	22 50	9.6
Sat Mar 04/Sun Mar 05	10 54	18 01	19 21	4 57	6 17	6 14	15 51	.....	5 58	95	9 36.0	19 08	9.6
Sun Mar 05/Mon Mar 06	10 58	18 02	19 22	4 56	6 16	6 19	15 54	.....	6 25	99	10 23.0	14 35	9.6
Mon Mar 06/Tue Mar 07	11 02	18 03	19 23	4 54	6 14	6 24	15 56	17 15	6 49	100	11 08.4	9 24	9.5
Tue Mar 07/Wed Mar 08	11 05	18 03	19 24	4 53	6 13	6 28	15 59	18 15	7 12	99	11 53.0	3 47	9.5
Wed Mar 08/Thu Mar 09	11 09	18 04	19 25	4 51	6 11	6 33	16 01	19 14	.....	97	12 37.5	- 2 04	9.4
Thu Mar 09/Fri Mar 10	11 13	18 05	19 26	4 50	6 10	6 38	16 04	20 15	.....	92	13 22.8	- 7 55	9.4
Fri Mar 10/Sat Mar 11	11 17	18 06	19 27	4 48	6 09	6 43	16 06	21 18	.....	86	14 10.0	-13 34	9.4
Sat Mar 11/Sun Mar 12*	11 21	18 07	19 28	5 47	7 07	6 48	16 09	22 23	.....	78	15 00.1	-18 43	9.3
Sun Mar 12/Mon Mar 13	10 25	19 08	20 29	5 45	7 06	6 53	16 11	0 31	.....	69	15 51.8	-22 50	9.3
Mon Mar 13/Tue Mar 14	10 29	19 09	20 30	5 44	7 04	6 58	16 14	1 40	.....	58	16 49.1	-26 05	9.2
Tue Mar 14/Wed Mar 15	10 33	19 10	20 31	5 42	7 03	7 03	16 16	2 47	.....	47	17 50.0	-27 54	9.2
Wed Mar 15/Thu Mar 16	10 37	19 11	20 31	5 41	7 01	7 08	16 19	3 49	.....	36	18 53.1	-28 01	9.2
Thu Mar 16/Fri Mar 17	10 41	19 12	20 32	5 39	7 00	7 13	16 21	4 43	.....	25	19 56.4	-26 19	9.1
Fri Mar 17/Sat Mar 18	10 45	19 13	20 33	5 38	6 58	7 18	16 23	5 29	.....	16	20 57.9	-22 56	9.1
Sat Mar 18/Sun Mar 19	10 49	19 14	20 34	5 36	6 57	7 23	16 26	6 06	.....	8	21 56.4	-18 06	9.0
Sun Mar 19/Mon Mar 20	10 53	19 15	20 35	5 34	6 55	7 28	16 28	6 39	17 08	3	22 51.8	-12 14	9.0
Mon Mar 20/Tue Mar 21	10 57	19 15	20 36	5 33	6 54	7 32	16 30	7 07	18 22	0	23 44.5	- 5 45	8.9
Tue Mar 21/Wed Mar 22	11 01	19 16	20 37	5 31	6 52	7 37	16 33	.....	19 34	0	0 35.4	0 56	8.9
Wed Mar 22/Thu Mar 23	11 04	19 17	20 38	5 30	6 51	7 42	16 35	.....	20 44	3	1 25.6	7 26	8.9
Thu Mar 23/Fri Mar 24	11 08	19 18	20 39	5 28	6 49	7 47	16 37	.....	21 54	8	2 16.1	13 25	8.8
Fri Mar 24/Sat Mar 25	11 12	19 19	20 40	5 26	6 48	7 52	16 40	.....	23 02	15	3 07.5	18 35	8.8
Sat Mar 25/Sun Mar 26	11 16	19 20	20 42	5 25	6 46	7 57	16 42	.....	0 10	23	4 00.2	22 43	8.7
Sun Mar 26/Mon Mar 27	11 20	19 21	20 43	5 23	6 45	8 02	16 44	.....	1 14	32	4 54.2	25 37	8.7
Mon Mar 27/Tue Mar 28	11 24	19 22	20 44	5 22	6 43	8 07	16 47	.....	2 13	42	5 49.0	27 12	8.6
Tue Mar 28/Wed Mar 29	11 28	19 23	20 45	5 20	6 42	8 12	16 49	.....	3 06	51	6 43.8	27 25	8.6
Wed Mar 29/Thu Mar 30	11 32	19 23	20 46	5 18	6 40	8 17	16 51	.....	3 51	61	7 37.4	26 19	8.5
Thu Mar 30/Fri Mar 31	11 36	19 24	20 47	5 17	6 39	8 22	16 53	.....	4 28	70	8 29.2	23 59	8.5
Fri Mar 31/Sat Apr 01	11 40	19 25	20 48	5 15	6 37	8 27	16 56	.....	5 00	78	9 18.9	20 36	8.5

\*\*\*\*\* 2023 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	11 44	19 26	20 49	5 13	6 36	8 32	16 58	.....	5 28	86	10 06.4	16 19	8.4
Sun Apr 02/Mon Apr 03	11 48	19 27	20 50	5 12	6 34	8 37	17 00	.....	5 53	92	10 52.3	11 18	8.4
Mon Apr 03/Tue Apr 04	11 52	19 28	20 51	5 10	6 33	8 42	17 03	17 04	6 16	96	11 37.2	5 46	8.3
Tue Apr 04/Wed Apr 05	11 56	19 29	20 52	5 08	6 32	8 47	17 05	18 05	6 39	99	12 21.9	- 0 06	8.3
Wed Apr 05/Thu Apr 06	12 00	19 30	20 53	5 07	6 30	8 52	17 07	19 06	.....	100	13 07.4	- 6 05	8.2
Thu Apr 06/Fri Apr 07	12 04	19 31	20 54	5 05	6 29	8 57	17 09	20 09	.....	99	13 54.6	-11 56	8.2
Fri Apr 07/Sat Apr 08	12 08	19 31	20 55	5 03	6 27	9 03	17 12	21 14	.....	95	14 44.6	-17 23	8.1
Sat Apr 08/Sun Apr 09	12 11	19 32	20 57	5 02	6 26	9 08	17 14	22 22	.....	89	15 38.1	-22 06	8.1
Sun Apr 09/Mon Apr 10	12 15	19 33	20 58	5 00	6 24	9 13	17 16	23 32	.....	82	16 35.4	-25 43	8.0
Mon Apr 10/Tue Apr 11	12 19	19 34	20 59	4 58	6 23	9 18	17 18	0 41	.....	72	17 36.1	-27 55	8.0
Tue Apr 11/Wed Apr 12	12 23	19 35	21 00	4 57	6 21	9 23	17 21	1 44	.....	62	18 38.9	-28 25	7.9
Wed Apr 12/Thu Apr 13	12 27	19 36	21 01	4 55	6 20	9 28	17 23	2 40	.....	50	19 41.7	-27 09	7.9
Thu Apr 13/Fri Apr 14	12 31	19 37	21 02	4 53	6 19	9 33	17 25	3 26	.....	39	20 42.6	-24 12	7.8
Fri Apr 14/Sat Apr 15	12 35	19 38	21 03	4 52	6 17	9 38	17 27	4 05	.....	28	21 40.5	-19 50	7.8
Sat Apr 15/Sun Apr 16	12 39	19 39	21 05	4 50	6 16	9 43	17 30	4 38	.....	19	22 35.2	-14 22	7.8
Sun Apr 16/Mon Apr 17	12 43	19 40	21 06	4 48	6 15	9 48	17 32	5 07	.....	11	23 27.2	- 8 11	7.7
Mon Apr 17/Tue Apr 18	12 47	19 40	21 07	4 47	6 13	9 54	17 34	5 34	.....	5	0 17.4	- 1 39	7.7
Tue Apr 18/Wed Apr 19	12 51	19 41	21 08	4 45	6 12	9 59	17 37	6 01	18 23	1	1 06.9	4 52	7.6
Wed Apr 19/Thu Apr 20	12 55	19 42	21 09	4 43	6 11	10 04	17 39	6 29	19 32	0	1 56.6	11 02	7.6
Thu Apr 20/Fri Apr 21	12 59	19 43	21 11	4 42	6 09	10 09	17 41	.....	20 41	1	2 47.5	16 33	7.5
Fri Apr 21/Sat Apr 22	13 03	19 44	21 12	4 40	6 08	10 14	17 44	.....	21 50	5	3 39.9	21 09	7.5
Sat Apr 22/Sun Apr 23	13 07	19 45	21 13	4 38	6 07	10 19	17 46	.....	22 57	10	4 34.0	24 35	7.4
Sun Apr 23/Mon Apr 24	13 11	19 46	21 14	4 37	6 05	10 25	17 48	.....	0 00	17	5 29.2	26 41	7.4
Mon Apr 24/Tue Apr 25	13 15	19 47	21 16	4 35	6 04	10 30	17 51	.....	0 57	26	6 24.6	27 24	7.3
Tue Apr 25/Wed Apr 26	13 19	19 48	21 17	4 34	6 03	10 35	17 53	.....	1 45	34	7 19.0	26 44	7.3
Wed Apr 26/Thu Apr 27	13 22	19 49	21 18	4 32	6 02	10 40	17 55	.....	2 26	44	8 11.6	24 49	7.2
Thu Apr 27/Fri Apr 28	13 26	19 50	21 19	4 31	6 00	10 45	17 58	.....	3 00	53	9 01.9	21 46	7.2
Fri Apr 28/Sat Apr 29	13 30	19 50	21 21	4 29	5 59	10 51	18 00	.....	3 30	63	9 49.8	17 48	7.1
Sat Apr 29/Sun Apr 30	13 34	19 51	21 22	4 27	5 58	10 56	18 02	.....	3 55	72	10 35.8	13 03	7.1
Sun Apr 30/Mon May 01	13 38	19 52	21 23	4 26	5 57	11 01	18 05	.....	4 19	80	11 20.6	7 43	7.0

Calendar for CA iTel, west longitude (h.m.s) = 7 57 36, latitude (d.m) = 37 04.2  
 Rise/set times in Pacific time ( 8 hr W), for 1405 m above surroundings, DAYLIGHT time used, \* shows clock reset.  
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\*\*\*\*\* 2023 MAY \*\*\*\*\*

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	
Mon May 01/Tue May 02	13 42	19 53	21 24	4 24	5 56	11 06	18 07	.....	4 42	88	12 05.1	1 59	7.0
Tue May 02/Wed May 03	13 46	19 54	21 26	4 23	5 55	11 11	18 10	.....	5 05	94	12 50.2	- 4 00	7.0
Wed May 03/Thu May 04	13 50	19 55	21 27	4 21	5 54	11 17	18 12	17 54	5 30	98	13 37.0	-10 00	6.9
Thu May 04/Fri May 05	13 54	19 56	21 28	4 20	5 52	11 22	18 15	19 00	5 59	100	14 26.6	-15 43	6.9
Fri May 05/Sat May 06	13 58	19 57	21 30	4 19	5 51	11 27	18 17	20 08	.....	100	15 19.9	-20 49	6.8
Sat May 06/Sun May 07	14 02	19 58	21 31	4 17	5 50	11 32	18 20	21 19	.....	97	16 17.5	-24 56	6.8
Sun May 07/Mon May 08	14 06	19 59	21 32	4 16	5 49	11 38	18 22	22 30	.....	92	17 19.0	-27 38	6.7
Mon May 08/Tue May 09	14 10	19 59	21 33	4 14	5 48	11 43	18 25	23 37	.....	84	18 23.1	-28 38	6.7
Tue May 09/Wed May 10	14 14	20 00	21 35	4 13	5 47	11 48	18 27	0 36	.....	75	19 27.4	-27 46	6.6
Wed May 10/Thu May 11	14 18	20 01	21 36	4 12	5 46	11 53	18 30	1 26	.....	64	20 29.6	-25 08	6.6
Thu May 11/Fri May 12	14 22	20 02	21 37	4 10	5 45	11 58	18 33	2 07	.....	53	21 28.4	-21 01	6.6
Fri May 12/Sat May 13	14 26	20 03	21 39	4 09	5 45	12 04	18 35	2 41	.....	42	22 23.4	-15 48	6.5
Sat May 13/Sun May 14	14 29	20 04	21 40	4 08	5 44	12 09	18 38	3 10	.....	31	23 15.1	- 9 50	6.5
Sun May 14/Mon May 15	14 33	20 05	21 41	4 07	5 43	12 14	18 41	3 37	.....	21	0 04.7	- 3 30	6.4
Mon May 15/Tue May 16	14 37	20 06	21 42	4 05	5 42	12 19	18 43	4 03	.....	13	0 53.2	2 55	6.4
Tue May 16/Wed May 17	14 41	20 06	21 44	4 04	5 41	12 25	18 46	4 29	.....	6	1 41.7	9 05	6.3
Wed May 17/Thu May 18	14 45	20 07	21 45	4 03	5 40	12 30	18 49	4 58	18 25	2	2 31.3	14 44	6.3
Thu May 18/Fri May 19	14 49	20 08	21 46	4 02	5 40	12 35	18 52	5 30	19 33	0	3 22.5	19 35	6.3
Fri May 19/Sat May 20	14 53	20 09	21 47	4 01	5 39	12 40	18 54	6 08	20 41	0	4 15.7	23 23	6.2
Sat May 20/Sun May 21	14 57	20 10	21 48	4 00	5 38	12 45	18 57	.....	21 46	3	5 10.4	25 57	6.2
Sun May 21/Mon May 22	15 01	20 11	21 50	3 59	5 38	12 50	19 00	.....	22 45	7	6 05.8	27 07	6.1
Mon May 22/Tue May 23	15 05	20 11	21 51	3 58	5 37	12 55	19 03	.....	23 38	13	7 00.8	26 55	6.1
Tue May 23/Wed May 24	15 09	20 12	21 52	3 57	5 36	13 01	19 06	.....	0 22	20	7 54.1	25 23	6.1
Wed May 24/Thu May 25	15 13	20 13	21 53	3 56	5 36	13 06	19 09	.....	0 59	28	8 45.1	22 42	6.0
Thu May 25/Fri May 26	15 17	20 14	21 54	3 55	5 35	13 11	19 12	.....	1 30	37	9 33.5	19 02	6.0
Fri May 26/Sat May 27	15 21	20 15	21 55	3 54	5 35	13 16	19 15	.....	1 57	46	10 19.6	14 35	6.0
Sat May 27/Sun May 28	15 25	20 15	21 57	3 53	5 34	13 21	19 18	.....	2 21	56	11 04.2	9 31	5.9
Sun May 28/Mon May 29	15 29	20 16	21 58	3 52	5 34	13 26	19 21	.....	2 44	65	11 48.0	3 59	5.9
Mon May 29/Tue May 30	15 33	20 17	21 59	3 51	5 33	13 31	19 25	.....	3 06	75	12 32.0	- 1 50	5.9
Tue May 30/Wed May 31	15 36	20 17	22 00	3 51	5 33	13 36	19 28	.....	3 30	83	13 17.5	- 7 46	5.8
Wed May 31/Thu Jun 01	15 40	20 18	22 01	3 50	5 32	13 41	19 31	.....	3 57	90	14 05.6	-13 35	5.8

\*\*\*\*\* 2023 JUNE \*\*\*\*\*

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	
Thu Jun 01/Fri Jun 02	15 44	20 19	22 02	3 49	5 32	13 46	19 34	17 48	4 28	96	14 57.4	-18 59	5.8
Fri Jun 02/Sat Jun 03	15 48	20 19	22 03	3 49	5 32	13 51	19 38	18 59	5 06	99	15 54.0	-23 35	5.8
Sat Jun 03/Sun Jun 04	15 52	20 20	22 03	3 48	5 32	13 55	19 41	20 12	5 54	100	16 55.3	-26 55	5.7
Sun Jun 04/Mon Jun 05	15 56	20 21	22 04	3 48	5 31	14 00	19 44	21 22	.....	98	18 00.5	-28 35	5.7
Mon Jun 05/Tue Jun 06	16 00	20 21	22 05	3 47	5 31	14 05	19 48	22 27	.....	93	19 07.1	-28 18	5.7
Tue Jun 06/Wed Jun 07	16 04	20 22	22 06	3 47	5 31	14 10	19 51	23 22	.....	86	20 12.2	-26 05	5.7
Wed Jun 07/Thu Jun 08	16 08	20 22	22 07	3 46	5 31	14 15	19 55	0 06	.....	77	21 13.8	-22 13	5.7
Thu Jun 08/Fri Jun 09	16 12	20 23	22 08	3 46	5 30	14 19	19 58	0 43	.....	67	22 11.0	-17 05	5.6
Fri Jun 09/Sat Jun 10	16 16	20 23	22 08	3 46	5 30	14 24	20 02	1 14	.....	56	23 04.2	-11 10	5.6
Sat Jun 10/Sun Jun 11	16 20	20 24	22 09	3 45	5 30	14 29	20 06	1 41	.....	44	23 54.4	- 4 50	5.6
Sun Jun 11/Mon Jun 12	16 24	20 24	22 10	3 45	5 30	14 33	20 10	2 07	.....	33	0 42.8	1 33	5.6
Mon Jun 12/Tue Jun 13	16 28	20 25	22 10	3 45	5 30	14 38	20 13	2 33	.....	24	1 30.8	7 44	5.6
Tue Jun 13/Wed Jun 14	16 32	20 25	22 11	3 45	5 30	14 42	20 17	3 00	.....	15	2 19.4	13 26	5.6
Wed Jun 14/Thu Jun 15	16 36	20 26	22 11	3 45	5 30	14 47	20 21	3 30	.....	9	3 09.5	18 24	5.6
Thu Jun 15/Fri Jun 16	16 40	20 26	22 12	3 45	5 30	14 51	20 25	4 06	18 29	4	4 01.4	22 25	5.5
Fri Jun 16/Sat Jun 17	16 44	20 26	22 12	3 45	5 30	14 55	20 29	4 47	19 34	1	4 55.1	25 15	5.5
Sat Jun 17/Sun Jun 18	16 47	20 27	22 13	3 45	5 31	15 00	20 33	5 35	20 35	0	5 49.9	26 47	5.5
Sun Jun 18/Mon Jun 19	16 51	20 27	22 13	3 45	5 31	15 04	20 37	6 29	21 30	1	6 44.8	26 57	5.5
Mon Jun 19/Tue Jun 20	16 55	20 27	22 13	3 45	5 31	15 08	20 41	.....	22 18	4	7 38.5	25 46	5.5
Tue Jun 20/Wed Jun 21	16 59	20 28	22 14	3 45	5 31	15 13	20 45	.....	22 57	9	8 30.0	23 23	5.5
Wed Jun 21/Thu Jun 22	17 03	20 28	22 14	3 45	5 31	15 17	20 49	.....	23 30	15	9 18.9	20 00	5.5
Thu Jun 22/Fri Jun 23	17 07	20 28	22 14	3 46	5 32	15 21	20 53	.....	23 58	22	10 05.3	15 47	5.5
Fri Jun 23/Sat Jun 24	17 11	20 28	22 14	3 46	5 32	15 25	20 58	.....	0 23	31	10 49.7	10 56	5.5
Sat Jun 24/Sun Jun 25	17 15	20 28	22 14	3 46	5 32	15 29	21 02	.....	0 46	40	11 32.9	5 38	5.5
Sun Jun 25/Mon Jun 26	17 19	20 28	22 14	3 47	5 32	15 33	21 06	.....	1 08	49	12 15.9	0 01	5.5
Mon Jun 26/Tue Jun 27	17 23	20 28	22 14	3 47	5 33	15 37	21 11	.....	1 31	59	12 59.7	- 5 46	5.6
Tue Jun 27/Wed Jun 28	17 27	20 29	22 14	3 48	5 33	15 41	21 15	.....	1 56	69	13 45.6	-11 31	5.6
Wed Jun 28/Thu Jun 29	17 31	20 29	22 14	3 48	5 34	15 44	21 20	.....	2 24	78	14 34.8	-16 59	5.6
Thu Jun 29/Fri Jun 30	17 35	20 29	22 14	3 49	5 34	15 48	21 24	.....	2 58	86	15 28.5	-21 53	5.6
Fri Jun 30/Sat Jul 01	17 39	20 28	22 14	3 49	5 34	15 52	21 29	17 48	3 41	93	16 27.5	-25 45	5.6

Calendar for CA iTel, west longitude (h.m.s) = 7 57 36, latitude (d.m) = 37 04.2  
 Rise/set times in Pacific time ( 8 hr W), for 1405 m above surroundings, DAYLIGHT time used, \* shows clock reset.  
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

\*\*\*\*\* 2023 JULY \*\*\*\*\*

Date (eve/morn)	LMST midn	----- Sun: -----			LST twilight:		----- Moon: -----				Twilight		
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Sat Jul 01/Sun Jul 02	17 43	20 28	22 13	3 50	5 35	15 56	21 33	19 00	4 34	98	17 31.5	-28 10	5.6
Sun Jul 02/Mon Jul 03	17 47	20 28	22 13	3 51	5 35	15 59	21 38	20 09	5 39	100	18 38.9	-28 42	5.6
Mon Jul 03/Tue Jul 04	17 51	20 28	22 13	3 51	5 36	16 03	21 43	21 10	.....	99	19 46.6	-27 11	5.6
Tue Jul 04/Wed Jul 05	17 54	20 28	22 12	3 52	5 36	16 06	21 47	22 00	.....	95	20 51.7	-23 44	5.7
Wed Jul 05/Thu Jul 06	17 58	20 28	22 12	3 53	5 37	16 10	21 52	22 41	.....	88	21 52.6	-18 47	5.7
Thu Jul 06/Fri Jul 07	18 02	20 28	22 11	3 54	5 38	16 13	21 57	23 15	.....	79	22 48.8	-12 50	5.7
Fri Jul 07/Sat Jul 08	18 06	20 27	22 11	3 55	5 38	16 17	22 02	23 44	.....	69	23 41.4	- 6 21	5.7
Sat Jul 08/Sun Jul 09	18 10	20 27	22 10	3 55	5 39	16 20	22 06	0 10	.....	58	0 31.4	0 14	5.8
Sun Jul 09/Mon Jul 10	18 14	20 27	22 10	3 56	5 39	16 24	22 11	0 36	.....	47	1 20.3	6 35	5.8
Mon Jul 10/Tue Jul 11	18 18	20 26	22 09	3 57	5 40	16 27	22 16	1 03	.....	37	2 09.1	12 27	5.8
Tue Jul 11/Wed Jul 12	18 22	20 26	22 08	3 58	5 41	16 30	22 21	1 33	.....	27	2 58.8	17 34	5.8
Wed Jul 12/Thu Jul 13	18 26	20 26	22 08	3 59	5 41	16 33	22 26	2 06	.....	18	3 50.1	21 45	5.9
Thu Jul 13/Fri Jul 14	18 30	20 25	22 07	4 00	5 42	16 37	22 31	2 45	.....	11	4 43.1	24 48	5.9
Fri Jul 14/Sat Jul 15	18 34	20 25	22 06	4 01	5 43	16 40	22 36	3 30	18 29	6	5 37.3	26 35	5.9
Sat Jul 15/Sun Jul 16	18 38	20 24	22 05	4 02	5 43	16 43	22 41	4 22	19 25	2	6 31.8	27 01	6.0
Sun Jul 16/Mon Jul 17	18 42	20 24	22 04	4 03	5 44	16 46	22 46	5 20	20 15	0	7 25.4	26 07	6.0
Mon Jul 17/Tue Jul 18	18 46	20 23	22 03	4 04	5 45	16 49	22 51	6 20	20 56	0	8 17.2	24 00	6.0
Tue Jul 18/Wed Jul 19	18 50	20 22	22 03	4 06	5 46	16 52	22 56	.....	21 31	2	9 06.5	20 49	6.1
Wed Jul 19/Thu Jul 20	18 54	20 22	22 02	4 07	5 46	16 55	23 01	.....	22 01	6	9 53.2	16 47	6.1
Thu Jul 20/Fri Jul 21	18 58	20 21	22 01	4 08	5 47	16 58	23 06	.....	22 26	11	10 37.8	12 06	6.1
Fri Jul 21/Sat Jul 22	19 02	20 21	21 59	4 09	5 48	17 01	23 11	.....	22 49	17	11 20.7	6 55	6.2
Sat Jul 22/Sun Jul 23	19 05	20 20	21 58	4 10	5 49	17 04	23 16	.....	23 11	25	12 03.1	1 26	6.2
Sun Jul 23/Mon Jul 24	19 09	20 19	21 57	4 11	5 50	17 06	23 21	.....	23 33	34	12 45.7	- 4 12	6.2
Mon Jul 24/Tue Jul 25	19 13	20 18	21 56	4 12	5 50	17 09	23 27	.....	23 57	43	13 29.7	- 9 50	6.3
Tue Jul 25/Wed Jul 26	19 17	20 18	21 55	4 14	5 51	17 12	23 32	.....	0 23	53	14 16.2	-15 16	6.3
Wed Jul 26/Thu Jul 27	19 21	20 17	21 54	4 15	5 52	17 15	23 37	.....	0 53	64	15 06.7	-20 15	6.4
Thu Jul 27/Fri Jul 28	19 25	20 16	21 53	4 16	5 53	17 17	23 42	.....	1 31	74	16 01.9	-24 27	6.4
Fri Jul 28/Sat Jul 29	19 29	20 15	21 51	4 17	5 54	17 20	23 47	.....	2 18	83	17 02.5	-27 26	6.4
Sat Jul 29/Sun Jul 30	19 33	20 14	21 50	4 19	5 54	17 23	23 52	17 47	3 16	91	18 07.7	-28 47	6.5
Sun Jul 30/Mon Jul 31	19 37	20 13	21 49	4 20	5 55	17 25	23 57	18 52	4 26	96	19 15.3	-28 10	6.5
Mon Jul 31/Tue Aug 01	19 41	20 12	21 47	4 21	5 56	17 28	0 03	19 47	5 44	99	20 22.3	-25 30	6.6

\*\*\*\*\* 2023 AUGUST \*\*\*\*\*

Date (eve/morn)	LMST midn	----- Sun: -----			LST twilight:		----- Moon: -----				Twilight		
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Tue Aug 01/Wed Aug 02	19 45	20 11	21 46	4 22	5 57	17 31	0 08	20 33	.....	99	21 26.3	-21 02	6.6
Wed Aug 02/Thu Aug 03	19 49	20 10	21 45	4 23	5 58	17 33	0 13	21 11	.....	96	22 26.1	-15 13	6.6
Thu Aug 03/Fri Aug 04	19 53	20 09	21 43	4 25	5 59	17 36	0 18	21 43	.....	90	23 21.8	- 8 37	6.7
Fri Aug 04/Sat Aug 05	19 57	20 08	21 42	4 26	5 59	17 38	0 23	22 11	.....	82	0 14.6	- 1 44	6.7
Sat Aug 05/Sun Aug 06	20 01	20 07	21 40	4 27	6 00	17 41	0 28	22 38	.....	72	1 05.5	5 00	6.8
Sun Aug 06/Mon Aug 07	20 05	20 06	21 39	4 28	6 01	17 43	0 34	23 05	.....	62	1 55.8	11 14	6.8
Mon Aug 07/Tue Aug 08	20 09	20 05	21 37	4 30	6 02	17 46	0 39	23 34	.....	51	2 46.6	16 42	6.9
Tue Aug 08/Wed Aug 09	20 12	20 04	21 36	4 31	6 03	17 48	0 44	0 06	.....	41	3 38.4	21 11	6.9
Wed Aug 09/Thu Aug 10	20 16	20 03	21 34	4 32	6 04	17 51	0 49	0 44	.....	31	4 31.6	24 30	7.0
Thu Aug 10/Fri Aug 11	20 20	20 02	21 33	4 33	6 04	17 53	0 54	1 27	.....	22	5 25.9	26 32	7.0
Fri Aug 11/Sat Aug 12	20 24	20 01	21 31	4 34	6 05	17 55	0 59	2 18	.....	15	6 20.4	27 13	7.0
Sat Aug 12/Sun Aug 13	20 28	19 59	21 30	4 36	6 06	17 58	1 05	3 13	18 13	9	7 14.1	26 34	7.1
Sun Aug 13/Mon Aug 14	20 32	19 58	21 28	4 37	6 07	18 00	1 10	4 13	18 57	4	8 06.1	24 39	7.1
Mon Aug 14/Tue Aug 15	20 36	19 57	21 27	4 38	6 08	18 02	1 15	5 13	19 33	1	8 55.7	21 40	7.2
Tue Aug 15/Wed Aug 16	20 40	19 56	21 25	4 39	6 09	18 05	1 20	6 14	20 04	0	9 42.8	17 46	7.2
Wed Aug 16/Thu Aug 17	20 44	19 54	21 24	4 40	6 10	18 07	1 25	.....	20 30	1	10 27.7	13 11	7.3
Thu Aug 17/Fri Aug 18	20 48	19 53	21 22	4 42	6 10	18 09	1 30	.....	20 54	3	11 10.8	8 05	7.3
Fri Aug 18/Sat Aug 19	20 52	19 52	21 20	4 43	6 11	18 12	1 35	.....	21 16	7	11 53.0	2 39	7.4
Sat Aug 19/Sun Aug 20	20 56	19 51	21 19	4 44	6 12	18 14	1 41	.....	21 38	13	12 35.0	- 2 56	7.4
Sun Aug 20/Mon Aug 21	21 00	19 49	21 17	4 45	6 13	18 16	1 46	.....	22 00	20	13 18.0	- 8 32	7.5
Mon Aug 21/Tue Aug 22	21 04	19 48	21 15	4 46	6 14	18 19	1 51	.....	22 25	28	14 02.9	-13 57	7.5
Tue Aug 22/Wed Aug 23	21 08	19 47	21 14	4 47	6 15	18 21	1 56	.....	22 52	38	14 50.9	-18 58	7.6
Wed Aug 23/Thu Aug 24	21 12	19 45	21 12	4 49	6 15	18 23	2 01	.....	23 26	48	15 42.9	-23 18	7.6
Thu Aug 24/Fri Aug 25	21 16	19 44	21 10	4 50	6 16	18 25	2 06	.....	0 07	59	16 39.6	-26 38	7.7
Fri Aug 25/Sat Aug 26	21 20	19 42	21 09	4 51	6 17	18 28	2 11	.....	0 59	69	17 41.1	-28 33	7.7
Sat Aug 26/Sun Aug 27	21 23	19 41	21 07	4 52	6 18	18 30	2 16	.....	2 02	79	18 45.9	-28 44	7.7
Sun Aug 27/Mon Aug 28	21 27	19 40	21 05	4 53	6 19	18 32	2 21	17 33	3 15	88	19 51.8	-26 58	7.8
Mon Aug 28/Tue Aug 29	21 31	19 38	21 04	4 54	6 20	18 34	2 26	18 22	4 33	95	20 56.4	-23 17	7.8
Tue Aug 29/Wed Aug 30	21 35	19 37	21 02	4 55	6 20	18 37	2 31	19 04	5 52	99	21 58.0	-18 01	7.9
Wed Aug 30/Thu Aug 31	21 39	19 35	21 00	4 56	6 21	18 39	2 36	19 38	.....	100	22 56.0	-11 36	7.9
Thu Aug 31/Fri Sep 01	21 43	19 34	20 59	4 57	6 22	18 41	2 41	20 08	.....	98	23 51.1	- 4 36	8.0

Calendar for CA iTel, west longitude (h.m.s) = 7 57 36, latitude (d.m) = 37 04.2  
 Rise/set times in Pacific time ( 8 hr W), for 1405 m above surroundings, DAYLIGHT time used, \* shows clock reset.  
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

\*\*\*\*\* 2023 SEPTEMBER \*\*\*\*\*

Date (eve/morn)	LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----				Twilight	
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Fri Sep 01/Sat Sep 02	21 47	19 32	20 57	4 58	6 23	18 43	2 46	20 37	.....	93	0 44.2	2 30	8.0
Sat Sep 02/Sun Sep 03	21 51	19 31	20 55	5 00	6 24	18 46	2 51	21 04	.....	85	1 36.5	9 14	8.1
Sun Sep 03/Mon Sep 04	21 55	19 29	20 53	5 01	6 25	18 48	2 56	21 33	.....	76	2 28.9	15 15	8.1
Mon Sep 04/Tue Sep 05	21 59	19 28	20 52	5 02	6 25	18 50	3 01	22 05	.....	66	3 22.3	20 15	8.2
Tue Sep 05/Wed Sep 06	22 03	19 26	20 50	5 03	6 26	18 52	3 06	22 41	.....	56	4 16.8	24 02	8.2
Wed Sep 06/Thu Sep 07	22 07	19 25	20 48	5 04	6 27	18 55	3 11	23 23	.....	46	5 12.1	26 28	8.3
Thu Sep 07/Fri Sep 08	22 11	19 23	20 47	5 05	6 28	18 57	3 16	0 12	.....	36	6 07.6	27 29	8.3
Fri Sep 08/Sat Sep 09	22 15	19 22	20 45	5 06	6 29	18 59	3 21	1 07	.....	27	7 02.1	27 06	8.3
Sat Sep 09/Sun Sep 10	22 19	19 20	20 43	5 07	6 30	19 01	3 26	2 05	16 57	19	7 54.8	25 25	8.4
Sun Sep 10/Mon Sep 11	22 23	19 19	20 42	5 08	6 30	19 04	3 31	3 06	17 35	12	8 45.0	22 38	8.4
Mon Sep 11/Tue Sep 12	22 27	19 17	20 40	5 09	6 31	19 06	3 36	4 07	18 07	7	9 32.7	18 53	8.5
Tue Sep 12/Wed Sep 13	22 30	19 16	20 38	5 10	6 32	19 08	3 41	5 06	18 35	3	10 17.9	14 25	8.5
Wed Sep 13/Thu Sep 14	22 34	19 14	20 36	5 11	6 33	19 10	3 46	6 05	18 59	1	11 01.4	9 22	8.6
Thu Sep 14/Fri Sep 15	22 38	19 13	20 35	5 12	6 34	19 13	3 51	7 03	19 21	0	11 43.7	3 58	8.6
Fri Sep 15/Sat Sep 16	22 42	19 11	20 33	5 13	6 34	19 15	3 56	.....	19 43	1	12 25.8	- 1 39	8.7
Sat Sep 16/Sun Sep 17	22 46	19 10	20 31	5 14	6 35	19 17	4 01	.....	20 05	4	13 08.5	- 7 18	8.7
Sun Sep 17/Mon Sep 18	22 50	19 08	20 30	5 15	6 36	19 19	4 06	.....	20 29	9	13 52.7	-12 47	8.7
Mon Sep 18/Tue Sep 19	22 54	19 07	20 28	5 15	6 37	19 22	4 10	.....	20 55	16	14 39.5	-17 53	8.8
Tue Sep 19/Wed Sep 20	22 58	19 05	20 26	5 16	6 38	19 24	4 15	.....	21 26	24	15 29.8	-22 21	8.8
Wed Sep 20/Thu Sep 21	23 02	19 04	20 25	5 17	6 39	19 26	4 20	.....	22 04	33	16 24.1	-25 53	8.9
Thu Sep 21/Fri Sep 22	23 06	19 02	20 23	5 18	6 39	19 28	4 25	.....	22 51	44	17 22.6	-28 10	8.9
Fri Sep 22/Sat Sep 23	23 10	19 01	20 22	5 19	6 40	19 31	4 30	.....	23 48	55	18 24.3	-28 53	9.0
Sat Sep 23/Sun Sep 24	23 14	18 59	20 20	5 20	6 41	19 33	4 35	.....	0 55	66	19 27.7	-27 49	9.0
Sun Sep 24/Mon Sep 25	23 18	18 58	20 18	5 21	6 42	19 35	4 40	.....	2 08	76	20 30.6	-24 56	9.0
Mon Sep 25/Tue Sep 26	23 22	18 56	20 17	5 22	6 43	19 38	4 45	16 57	3 25	86	21 31.5	-20 24	9.1
Tue Sep 26/Wed Sep 27	23 26	18 55	20 15	5 23	6 43	19 40	4 49	17 33	4 42	93	22 29.6	-14 33	9.1
Wed Sep 27/Thu Sep 28	23 30	18 53	20 13	5 24	6 44	19 42	4 54	18 05	5 57	98	23 25.1	- 7 49	9.2
Thu Sep 28/Fri Sep 29	23 34	18 52	20 12	5 25	6 45	19 45	4 59	18 34	7 11	100	0 18.9	- 0 40	9.2
Fri Sep 29/Sat Sep 30	23 37	18 50	20 10	5 26	6 46	19 47	5 04	19 01	.....	99	1 12.1	6 24	9.3
Sat Sep 30/Sun Oct 01	23 41	18 49	20 09	5 26	6 47	19 50	5 09	19 30	.....	95	2 05.5	12 57	9.3

\*\*\*\*\* 2023 OCTOBER \*\*\*\*\*

Date (eve/morn)	LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----				Twilight	
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Sun Oct 01/Mon Oct 02	23 45	18 47	20 07	5 27	6 48	19 52	5 14	20 01	.....	89	3 00.1	18 36	9.3
Mon Oct 02/Tue Oct 03	23 49	18 46	20 06	5 28	6 49	19 54	5 18	20 36	.....	81	3 56.0	23 02	9.4
Tue Oct 03/Wed Oct 04	23 53	18 44	20 04	5 29	6 49	19 57	5 23	21 17	.....	72	4 53.0	26 04	9.4
Wed Oct 04/Thu Oct 05	23 57	18 43	20 03	5 30	6 50	19 59	5 28	22 04	.....	62	5 50.3	27 35	9.5
Thu Oct 05/Fri Oct 06	0 01	18 41	20 01	5 31	6 51	20 02	5 33	22 57	.....	52	6 46.6	27 37	9.5
Fri Oct 06/Sat Oct 07	0 05	18 40	20 00	5 32	6 52	20 04	5 38	23 56	.....	42	7 40.9	26 15	9.5
Sat Oct 07/Sun Oct 08	0 09	18 38	19 58	5 33	6 53	20 07	5 43	0 56	.....	33	8 32.3	23 42	9.6
Sun Oct 08/Mon Oct 09	0 13	18 37	19 57	5 34	6 54	20 09	5 47	1 57	.....	25	9 20.9	20 09	9.6
Mon Oct 09/Tue Oct 10	0 17	18 35	19 55	5 34	6 55	20 12	5 52	2 58	16 38	17	10 06.8	15 49	9.6
Tue Oct 10/Wed Oct 11	0 21	18 34	19 54	5 35	6 56	20 14	5 57	3 57	17 03	11	10 50.7	10 53	9.7
Wed Oct 11/Thu Oct 12	0 25	18 33	19 53	5 36	6 56	20 17	6 02	4 55	17 26	5	11 33.3	5 32	9.7
Thu Oct 12/Fri Oct 13	0 29	18 31	19 51	5 37	6 57	20 19	6 07	5 53	17 48	2	12 15.5	- 0 05	9.8
Fri Oct 13/Sat Oct 14	0 33	18 30	19 50	5 38	6 58	20 22	6 12	6 53	18 10	0	12 58.2	- 5 48	9.8
Sat Oct 14/Sun Oct 15	0 37	18 28	19 49	5 39	6 59	20 25	6 16	.....	18 33	0	13 42.3	-11 23	9.8
Sun Oct 15/Mon Oct 16	0 41	18 27	19 47	5 40	7 00	20 27	6 21	.....	18 59	2	14 28.8	-16 39	9.9
Mon Oct 16/Tue Oct 17	0 45	18 26	19 46	5 41	7 01	20 30	6 26	.....	19 29	6	15 18.6	-21 19	9.9
Tue Oct 17/Wed Oct 18	0 48	18 24	19 45	5 41	7 02	20 32	6 31	.....	20 05	12	16 12.0	-25 06	9.9
Wed Oct 18/Thu Oct 19	0 52	18 23	19 43	5 42	7 03	20 35	6 36	.....	20 48	20	17 09.3	-27 40	10.0
Thu Oct 19/Fri Oct 20	0 56	18 22	19 42	5 43	7 04	20 38	6 40	.....	21 42	29	18 09.6	-28 45	10.0
Fri Oct 20/Sat Oct 21	1 00	18 20	19 41	5 44	7 05	20 41	6 45	.....	22 45	40	19 11.3	-28 08	10.1
Sat Oct 21/Sun Oct 22	1 04	18 19	19 40	5 45	7 06	20 43	6 50	.....	23 54	51	20 12.6	-25 48	10.1
Sun Oct 22/Mon Oct 23	1 08	18 18	19 39	5 46	7 07	20 46	6 55	.....	1 08	62	21 12.0	-21 53	10.1
Mon Oct 23/Tue Oct 24	1 12	18 17	19 37	5 47	7 08	20 49	7 00	.....	2 22	73	22 08.8	-16 37	10.2
Tue Oct 24/Wed Oct 25	1 16	18 15	19 36	5 48	7 09	20 52	7 05	16 04	3 35	83	23 03.2	-10 23	10.2
Wed Oct 25/Thu Oct 26	1 20	18 14	19 35	5 48	7 10	20 54	7 09	16 32	4 47	91	23 55.9	- 3 34	10.2
Thu Oct 26/Fri Oct 27	1 24	18 13	19 34	5 49	7 10	20 57	7 14	17 00	5 59	97	0 48.1	3 27	10.3
Fri Oct 27/Sat Oct 28	1 28	18 12	19 33	5 50	7 11	21 00	7 19	17 27	7 12	100	1 40.8	10 13	10.3
Sat Oct 28/Sun Oct 29	1 32	18 11	19 32	5 51	7 12	21 03	7 24	17 56	.....	100	2 34.9	16 20	10.3
Sun Oct 29/Mon Oct 30	1 36	18 10	19 31	5 52	7 13	21 06	7 29	18 29	.....	97	3 30.9	21 24	10.4
Mon Oct 30/Tue Oct 31	1 40	18 09	19 30	5 53	7 14	21 09	7 34	19 08	.....	92	4 28.8	25 08	10.4
Tue Oct 31/Wed Nov 01	1 44	18 08	19 29	5 54	7 15	21 12	7 38	19 53	.....	86	5 27.6	27 20	10.4

Calendar for CA iTel, west longitude (h.m.s) = 7 57 36, latitude (d.m) = 37 04.2  
 Rise/set times in Pacific time ( 8 hr W), for 1405 m above surroundings, DAYLIGHT time used, \* shows clock reset.  
 Moon info is for local midnight, even if moon is down. Program: John Thorstensen, Dartmouth College.

\*\*\*\*\* 2023 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	1 48	18 06	19 28	5 55	7 16	21 15	7 43	20 45	.....	78	6 26.0	27 55	10.4
Thu Nov 02/Fri Nov 03	1 52	18 05	19 27	5 56	7 17	21 18	7 48	21 43	.....	69	7 22.6	27 01	10.5
Fri Nov 03/Sat Nov 04	1 55	18 04	19 26	5 56	7 18	21 21	7 53	22 44	.....	59	8 16.1	24 47	10.5
Sat Nov 04/Sun Nov 05*	1 59	18 03	19 25	4 57	6 19	21 24	7 58	23 46	.....	50	9 06.3	21 29	10.5
Sun Nov 05/Mon Nov 06	3 04	17 02	18 25	4 58	6 20	21 27	8 03	23 46	.....	40	9 55.6	17 11	10.6
Mon Nov 06/Tue Nov 07	3 07	17 02	18 24	4 59	6 22	21 30	8 07	0 46	.....	31	10 40.2	12 22	10.6
Tue Nov 07/Wed Nov 08	3 11	17 01	18 23	5 00	6 23	21 33	8 12	1 44	.....	23	11 23.2	7 05	10.6
Wed Nov 08/Thu Nov 09	3 15	17 00	18 22	5 01	6 24	21 37	8 17	2 42	.....	15	12 05.5	1 30	10.6
Thu Nov 09/Fri Nov 10	3 19	16 59	18 21	5 02	6 25	21 40	8 22	3 41	.....	9	12 48.1	- 4 13	10.7
Fri Nov 10/Sat Nov 11	3 23	16 58	18 21	5 03	6 26	21 43	8 27	4 42	.....	4	13 32.0	- 9 52	10.7
Sat Nov 11/Sun Nov 12	3 27	16 57	18 20	5 04	6 27	21 46	8 32	5 46	16 01	1	14 18.3	-15 16	10.7
Sun Nov 12/Mon Nov 13	3 31	16 56	18 19	5 05	6 28	21 50	8 37	6 52	16 29	0	15 07.8	-20 08	10.8
Mon Nov 13/Tue Nov 14	3 35	16 56	18 19	5 05	6 29	21 53	8 41	8 01	17 03	1	16 01.2	-24 10	10.8
Tue Nov 14/Wed Nov 15	3 39	16 55	18 18	5 06	6 30	21 56	8 46	.....	17 45	4	16 58.5	-27 01	10.8
Wed Nov 15/Thu Nov 16	3 43	16 54	18 18	5 07	6 31	22 00	8 51	.....	18 37	10	17 58.9	-28 23	10.8
Thu Nov 16/Fri Nov 17	3 47	16 54	18 17	5 08	6 32	22 03	8 56	.....	19 38	17	19 00.6	-28 04	10.8
Fri Nov 17/Sat Nov 18	3 51	16 53	18 17	5 09	6 33	22 07	9 01	.....	20 46	26	20 01.8	-26 01	10.9
Sat Nov 18/Sun Nov 19	3 55	16 52	18 16	5 10	6 34	22 10	9 06	.....	21 58	37	21 00.7	-22 25	10.9
Sun Nov 19/Mon Nov 20	3 59	16 52	18 16	5 11	6 35	22 14	9 10	.....	23 11	48	21 56.7	-17 31	10.9
Mon Nov 20/Tue Nov 21	4 03	16 51	18 15	5 12	6 36	22 17	9 15	.....	0 23	59	22 49.8	-11 40	10.9
Tue Nov 21/Wed Nov 22	4 07	16 51	18 15	5 13	6 37	22 21	9 20	.....	1 33	70	23 41.1	- 5 11	11.0
Wed Nov 22/Thu Nov 23	4 11	16 50	18 15	5 13	6 38	22 24	9 25	.....	2 43	80	0 31.4	1 32	11.0
Thu Nov 23/Fri Nov 24	4 15	16 50	18 14	5 14	6 39	22 28	9 30	.....	3 53	88	1 22.1	8 11	11.0
Fri Nov 24/Sat Nov 25	4 18	16 49	18 14	5 15	6 40	22 32	9 34	.....	5 03	95	2 14.3	14 23	11.0
Sat Nov 25/Sun Nov 26	4 22	16 49	18 14	5 16	6 41	22 35	9 39	.....	6 15	99	3 08.7	19 46	11.0
Sun Nov 26/Mon Nov 27	4 26	16 49	18 14	5 17	6 42	22 39	9 44	16 01	7 26	100	4 05.6	24 00	11.1
Mon Nov 27/Tue Nov 28	4 30	16 48	18 13	5 18	6 43	22 43	9 49	16 43	.....	99	5 04.5	26 47	11.1
Tue Nov 28/Wed Nov 29	4 34	16 48	18 13	5 19	6 44	22 46	9 54	17 32	.....	96	6 04.0	27 59	11.1
Wed Nov 29/Thu Nov 30	4 38	16 48	18 13	5 19	6 45	22 50	9 58	18 28	.....	90	7 02.4	27 34	11.1
Thu Nov 30/Fri Dec 01	4 42	16 48	18 13	5 20	6 46	22 54	10 03	19 29	.....	84	7 58.2	25 43	11.1

\*\*\*\*\* 2023 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	4 46	16 48	18 13	5 21	6 46	22 58	10 08	20 32	.....	76	8 50.6	22 40	11.1
Sat Dec 02/Sun Dec 03	4 50	16 47	18 13	5 22	6 47	23 02	10 13	21 34	.....	67	9 39.4	18 41	11.1
Sun Dec 03/Mon Dec 04	4 54	16 47	18 13	5 23	6 48	23 06	10 17	22 34	.....	58	10 25.1	14 00	11.2
Mon Dec 04/Tue Dec 05	4 58	16 47	18 13	5 23	6 49	23 10	10 22	23 32	.....	48	11 08.7	8 50	11.2
Tue Dec 05/Wed Dec 06	5 02	16 47	18 13	5 24	6 50	23 14	10 27	0 30	.....	39	11 51.1	3 21	11.2
Wed Dec 06/Thu Dec 07	5 06	16 47	18 13	5 25	6 51	23 18	10 32	1 28	.....	30	12 33.3	- 2 18	11.2
Thu Dec 07/Fri Dec 08	5 10	16 47	18 13	5 26	6 52	23 22	10 36	2 27	.....	22	13 16.5	- 7 57	11.2
Fri Dec 08/Sat Dec 09	5 14	16 47	18 13	5 26	6 52	23 26	10 41	3 29	.....	14	14 01.7	-13 26	11.2
Sat Dec 09/Sun Dec 10	5 18	16 47	18 13	5 27	6 53	23 30	10 46	4 34	.....	8	14 50.1	-18 30	11.2
Sun Dec 10/Mon Dec 11	5 22	16 47	18 14	5 28	6 54	23 34	10 50	5 42	.....	3	15 42.5	-22 51	11.2
Mon Dec 11/Tue Dec 12	5 25	16 48	18 14	5 28	6 55	23 38	10 55	6 52	15 38	1	16 39.3	-26 08	11.2
Tue Dec 12/Wed Dec 13	5 29	16 48	18 14	5 29	6 55	23 43	10 59	7 59	16 26	0	17 40.0	-28 00	11.3
Wed Dec 13/Thu Dec 14	5 33	16 48	18 14	5 30	6 56	23 47	11 04	.....	17 25	2	18 42.9	-28 10	11.3
Thu Dec 14/Fri Dec 15	5 37	16 48	18 15	5 30	6 57	23 51	11 09	.....	18 33	7	19 45.8	-26 31	11.3
Fri Dec 15/Sat Dec 16	5 41	16 49	18 15	5 31	6 58	23 55	11 13	.....	19 47	14	20 46.5	-23 11	11.3
Sat Dec 16/Sun Dec 17	5 45	16 49	18 15	5 32	6 58	24 00	11 18	.....	21 02	23	21 43.9	-18 29	11.3
Sun Dec 17/Mon Dec 18	5 49	16 49	18 16	5 32	6 59	0 04	11 22	.....	22 15	33	22 37.9	-12 46	11.3
Mon Dec 18/Tue Dec 19	5 53	16 50	18 16	5 33	6 59	0 08	11 27	.....	23 25	44	23 29.2	- 6 26	11.3
Tue Dec 19/Wed Dec 20	5 57	16 50	18 17	5 33	7 00	0 13	11 31	.....	0 34	55	0 19.0	0 10	11.3
Wed Dec 20/Thu Dec 21	6 01	16 51	18 17	5 34	7 00	0 17	11 36	.....	1 43	66	1 08.5	6 42	11.3
Thu Dec 21/Fri Dec 22	6 05	16 51	18 18	5 34	7 01	0 22	11 40	.....	2 51	76	1 58.8	12 52	11.3
Fri Dec 22/Sat Dec 23	6 09	16 52	18 18	5 35	7 01	0 26	11 45	.....	4 01	85	2 51.1	18 20	11.3
Sat Dec 23/Sun Dec 24	6 13	16 52	18 19	5 35	7 02	0 30	11 49	.....	5 11	92	3 45.9	22 49	11.3
Sun Dec 24/Mon Dec 25	6 17	16 53	18 19	5 36	7 02	0 35	11 53	.....	6 18	97	4 43.1	26 02	11.3
Mon Dec 25/Tue Dec 26	6 21	16 53	18 20	5 36	7 03	0 39	11 58	.....	7 20	99	5 41.9	27 44	11.3
Tue Dec 26/Wed Dec 27	6 25	16 54	18 20	5 36	7 03	0 44	12 02	16 16	8 14	100	6 40.6	27 52	11.3
Wed Dec 27/Thu Dec 28	6 29	16 54	18 21	5 37	7 03	0 49	12 06	17 15	.....	98	7 37.6	26 29	11.3
Thu Dec 28/Fri Dec 29	6 32	16 55	18 22	5 37	7 04	0 53	12 11	18 18	.....	94	8 31.5	23 47	11.3
Fri Dec 29/Sat Dec 30	6 36	16 56	18 22	5 37	7 04	0 58	12 15	19 21	.....	89	9 22.0	20 02	11.3
Sat Dec 30/Sun Dec 31	6 40	16 57	18 23	5 38	7 04	1 02	12 19	20 22	.....	82	10 09.1	15 30	11.2
Sun Dec 31/Mon Jan 01	6 44	16 57	18 24	5 38	7 04	1 07	12 23	21 21	.....	75	10 53.6	10 26	11.2