

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:

***** 2025 Night-time Astronomical Calendar for Cerro Tololo *****

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, with a non-USA convention.

The rise/set times printed are the times at which the center of the object is 50 arcminutes below the geometrical horizon. At the given twilight, the center of the sun is 0.0 degrees below the geometrical horizon.

The moon positions (and rise/set times) are generated by an implementation of the Low-Precision formulae in the Astronomical Almanac. The Almanac states that the error seldom exceeds 0.3 degrees. Topocentric corrections are included. Comparisons with tables for Kitt Peak in the NOAO Newsletter indicate that the rise-set times are good to +/- 2 min or so. The moon's RA, Dec, and illuminated fraction are given for local midnight, regardless of whether the moon is actually up at that time. Note that the moonrise and moonset times are not printed if they occur near mid-day.

The LST at evening and morning twilight are tabulated. This gives an accurate idea of the range of RA's accessible during the night.

The JD is given (severely rounded off) for local midnight. Again, this avoids any ambiguity.

Some credits: The sidereal time and Julian date routines were originally coded in PL/I by Steve Maker of Dartmouth College. The algorithms originated in the old American Ephemeris. The routine to convert JD back to calendar date is adapted from Numerical Recipes in C, by Press et al.

CAUTIONS: I believe that the program which generates these tables is reasonably accurate. However, it has not been exhaustively tested, so you should be sure to run 'sanity checks' on the results. Also, in view of the approximations used, the results should not be used when high precision is needed. Extension to dates far from the present (1990) should be done with great caution. The code has not been tested for the eastern or southern hemishpheres. Rise/set times are slightly inaccurate and rather confusing at circumpolar latitudes, where the concept of a 'night' is blurry.

The daylight savings time conventions (if used) are quite specific (to U. S., post-1986) and subject to change. I know that the code has many infelicities; if you should find actual errors, please notify
John.Thorstensen@dartmouth.edu

[This output comes from a (hopefully) portable, completely self-contained program in the c language. It is available from the author and may be used freely for scientific or educational purposes. If you use it for profit, please contact the author to arrange a (modest!) fee.
Source code is copyright John Thorstensen, 1990.]

MOON PHASES FOR 2025, at Cerro Tololo

Times and dates are given in local time, zone = 4 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 30 19 28	Jan 06 20 58	Jan 13 19 28	Jan 21 17 32
Jan 29 9 37	Feb 05 5 04	Feb 12 10 54	Feb 20 14 35
Feb 27 21 47	Mar 06 13 34	Mar 14 2 56	Mar 22 7 32
Mar 29 7 00	Apr 04 22 17	Apr 12 20 24	Apr 20 21 38
Apr 27 15 33	May 04 9 53	May 12 12 58	May 20 8 01
May 26 23 04	Jun 02 23 42	Jun 11 3 46	Jun 18 15 21
Jun 25 6 34	Jul 02 15 30	Jul 10 16 39	Jul 17 20 40
Jul 24 15 12	Aug 01 8 41	Aug 09 3 57	Aug 16 1 14
Aug 23 2 07	Aug 31 2 26	Sep 07 14 11	Sep 14 6 35
Sep 21 15 55	Sep 29 19 55	Oct 06 23 49	Oct 13 15 15
Oct 21 9 26	Oct 29 13 22	Nov 05 10 20	Nov 12 2 30
Nov 20 3 48	Nov 28 4 00	Dec 04 20 15	Dec 11 17 53
Dec 19 22 44	Dec 27 16 11	Jan 03 7 04	Jan 10 12 49

Calendar for Cerro Tololo, west longitude (h.m.s) = 4 43 16, latitude (d.m) = -30 09.9
 Rise/set times in Chilean time (4 hr W), for 2215 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.

***** 2025 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	
Wed	Jan 01/Thu	Jan 02	5 05	20 56	22 24	5 10	6 38	3 29	10 16	.....	22 45	5	20 47.9	-21 08	6.8
Thu	Jan 02/Fri	Jan 03	5 09	20 56	22 25	5 11	6 39	3 33	10 21	.....	23 23	11	21 41.9	-16 14	6.8
Fri	Jan 03/Sat	Jan 04	5 13	20 57	22 25	5 12	6 40	3 37	10 26	.....	23 56	19	22 33.5	-10 25	6.8
Sat	Jan 04/Sun	Jan 05	5 17	20 57	22 24	5 13	6 41	3 41	10 30	.....	0 28	29	23 23.6	- 4 00	6.8
Sun	Jan 05/Mon	Jan 06	5 21	20 57	22 24	5 14	6 41	3 45	10 35	.....	0 58	40	0 13.2	2 42	6.8
Mon	Jan 06/Tue	Jan 07	5 24	20 57	22 24	5 15	6 42	3 49	10 40	.....	1 30	51	1 03.5	9 21	6.8
Tue	Jan 07/Wed	Jan 08	5 28	20 57	22 24	5 16	6 43	3 52	10 45	.....	2 04	62	1 55.8	15 37	6.9
Wed	Jan 08/Thu	Jan 09	5 32	20 57	22 24	5 17	6 44	3 56	10 50	.....	2 43	73	2 51.2	21 07	6.9
Thu	Jan 09/Fri	Jan 10	5 36	20 57	22 24	5 18	6 45	4 00	10 55	.....	3 27	83	3 50.3	25 28	6.9
Fri	Jan 10/Sat	Jan 11	5 40	20 57	22 24	5 19	6 46	4 04	11 00	18 00	4 20	90	4 52.6	28 17	6.9
Sat	Jan 11/Sun	Jan 12	5 44	20 57	22 23	5 20	6 46	4 07	11 05	19 06	5 19	96	5 56.5	29 18	6.9
Sun	Jan 12/Mon	Jan 13	5 48	20 57	22 23	5 21	6 47	4 11	11 10	20 05	6 24	99	6 59.8	28 29	7.0
Mon	Jan 13/Tue	Jan 14	5 52	20 57	22 23	5 22	6 48	4 14	11 15	20 57	.....	100	8 00.0	26 00	7.0
Tue	Jan 14/Wed	Jan 15	5 56	20 56	22 22	5 23	6 49	4 18	11 20	21 40	.....	98	8 55.9	22 10	7.0
Wed	Jan 15/Thu	Jan 16	6 00	20 56	22 22	5 24	6 50	4 21	11 25	22 16	.....	94	9 47.3	17 22	7.0
Thu	Jan 16/Fri	Jan 17	6 04	20 56	22 21	5 26	6 51	4 25	11 30	22 47	.....	89	10 34.7	11 59	7.1
Fri	Jan 17/Sat	Jan 18	6 08	20 56	22 21	5 27	6 52	4 28	11 35	23 14	.....	82	11 19.3	6 17	7.1
Sat	Jan 18/Sun	Jan 19	6 12	20 56	22 20	5 28	6 53	4 32	11 41	23 40	.....	74	12 02.1	0 31	7.1
Sun	Jan 19/Mon	Jan 20	6 16	20 55	22 20	5 29	6 54	4 35	11 46	0 06	.....	66	12 44.2	- 5 10	7.2
Mon	Jan 20/Tue	Jan 21	6 20	20 55	22 19	5 30	6 54	4 39	11 51	0 32	.....	56	13 26.7	-10 35	7.2
Tue	Jan 21/Wed	Jan 22	6 24	20 55	22 19	5 31	6 55	4 42	11 56	1 00	.....	47	14 10.6	-15 35	7.2
Wed	Jan 22/Thu	Jan 23	6 28	20 54	22 18	5 32	6 56	4 45	12 01	1 31	.....	38	14 56.9	-20 01	7.2
Thu	Jan 23/Fri	Jan 24	6 32	20 54	22 17	5 34	6 57	4 48	12 06	2 07	.....	29	15 46.2	-23 40	7.3
Fri	Jan 24/Sat	Jan 25	6 35	20 53	22 17	5 35	6 58	4 52	12 11	2 51	.....	20	16 39.0	-26 17	7.3
Sat	Jan 25/Sun	Jan 26	6 39	20 53	22 16	5 36	6 59	4 55	12 16	3 42	18 02	13	17 34.9	-27 37	7.3
Sun	Jan 26/Mon	Jan 27	6 43	20 52	22 15	5 37	7 00	4 58	12 21	4 40	18 59	7	18 33.0	-27 29	7.4
Mon	Jan 27/Tue	Jan 28	6 47	20 52	22 14	5 38	7 01	5 01	12 27	5 45	19 52	3	19 31.6	-25 45	7.4
Tue	Jan 28/Wed	Jan 29	6 51	20 51	22 13	5 40	7 02	5 04	12 32	.....	20 39	0	20 29.3	-22 28	7.4
Wed	Jan 29/Thu	Jan 30	6 55	20 51	22 13	5 41	7 03	5 08	12 37	.....	21 19	0	21 24.9	-17 49	7.5
Thu	Jan 30/Fri	Jan 31	6 59	20 50	22 12	5 42	7 04	5 11	12 42	.....	21 56	3	22 18.3	-12 05	7.5
Fri	Jan 31/Sat	Feb 01	7 03	20 50	22 11	5 43	7 04	5 14	12 47	.....	22 29	8	23 09.8	- 5 38	7.5

***** 2025 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	
Sat	Feb 01/Sun	Feb 02	7 07	20 49	22 10	5 44	7 05	5 17	12 52	.....	23 00	16	0 00.3	1 10	7.6
Sun	Feb 02/Mon	Feb 03	7 11	20 48	22 09	5 45	7 06	5 20	12 57	.....	23 32	25	0 51.0	7 58	7.6
Mon	Feb 03/Tue	Feb 04	7 15	20 48	22 08	5 46	7 07	5 23	13 02	.....	0 05	36	1 43.0	14 24	7.6
Tue	Feb 04/Wed	Feb 05	7 19	20 47	22 07	5 48	7 08	5 26	13 07	.....	0 42	47	2 37.3	20 05	7.7
Wed	Feb 05/Thu	Feb 06	7 23	20 46	22 06	5 49	7 09	5 29	13 12	.....	1 25	58	3 34.8	24 40	7.7
Thu	Feb 06/Fri	Feb 07	7 27	20 45	22 05	5 50	7 10	5 32	13 18	.....	2 14	69	4 35.2	27 49	7.7
Fri	Feb 07/Sat	Feb 08	7 31	20 45	22 04	5 51	7 11	5 34	13 23	.....	3 10	79	5 37.5	29 18	7.8
Sat	Feb 08/Sun	Feb 09	7 35	20 44	22 03	5 52	7 11	5 37	13 28	17 57	4 12	87	6 39.7	29 01	7.8
Sun	Feb 09/Mon	Feb 10	7 39	20 43	22 02	5 53	7 12	5 40	13 33	18 50	5 16	93	7 39.8	27 02	7.9
Mon	Feb 10/Tue	Feb 11	7 42	20 42	22 01	5 54	7 13	5 43	13 38	19 35	6 19	98	8 36.4	23 38	7.9
Tue	Feb 11/Wed	Feb 12	7 46	20 41	22 00	5 55	7 14	5 46	13 43	20 13	.....	100	9 28.8	19 09	7.9
Wed	Feb 12/Thu	Feb 13	7 50	20 40	21 59	5 56	7 15	5 49	13 48	20 46	.....	100	10 17.5	13 55	8.0
Thu	Feb 13/Fri	Feb 14	7 54	20 40	21 58	5 58	7 16	5 52	13 53	21 15	.....	98	11 03.2	8 14	8.0
Fri	Feb 14/Sat	Feb 15	7 58	20 39	21 57	5 59	7 16	5 54	13 58	21 41	.....	94	11 46.8	2 23	8.0
Sat	Feb 15/Sun	Feb 16	8 02	20 38	21 55	6 00	7 17	5 57	14 03	22 07	.....	88	12 29.4	- 3 26	8.1
Sun	Feb 16/Mon	Feb 17	8 06	20 37	21 54	6 01	7 18	6 00	14 08	22 32	.....	81	13 12.1	- 9 02	8.1
Mon	Feb 17/Tue	Feb 18	8 10	20 36	21 53	6 02	7 19	6 03	14 13	22 59	.....	73	13 55.7	-14 14	8.1
Tue	Feb 18/Wed	Feb 19	8 14	20 35	21 52	6 03	7 20	6 05	14 18	23 29	.....	65	14 41.3	-18 54	8.2
Wed	Feb 19/Thu	Feb 20	8 18	20 34	21 51	6 04	7 20	6 08	14 23	0 03	.....	55	15 29.4	-22 48	8.2
Thu	Feb 20/Fri	Feb 21	8 22	20 33	21 49	6 05	7 21	6 11	14 28	0 42	.....	46	16 20.6	-25 45	8.3
Fri	Feb 21/Sat	Feb 22	8 26	20 32	21 48	6 06	7 22	6 14	14 32	1 29	.....	36	17 14.8	-27 32	8.3
Sat	Feb 22/Sun	Feb 23	8 30	20 31	21 47	6 07	7 23	6 16	14 37	2 23	.....	27	18 11.4	-27 56	8.3
Sun	Feb 23/Mon	Feb 24	8 34	20 30	21 46	6 08	7 24	6 19	14 42	3 25	17 39	18	19 09.3	-26 47	8.4
Mon	Feb 24/Tue	Feb 25	8 38	20 29	21 44	6 08	7 24	6 22	14 47	4 31	18 28	11	20 06.9	-24 06	8.4
Tue	Feb 25/Wed	Feb 26	8 42	20 28	21 43	6 09	7 25	6 24	14 52	5 40	19 12	5	21 03.3	-19 56	8.4
Wed	Feb 26/Thu	Feb 27	8 46	20 27	21 42	6 10	7 26	6 27	14 57	6 49	19 50	1	21 57.8	-14 32	8.5
Thu	Feb 27/Fri	Feb 28	8 50	20 25	21 41	6 11	7 27	6 30	15 02	.....	20 25	0	22 50.6	- 8 12	8.5
Fri	Feb 28/Sat	Mar 01	8 53	20 24	21 39	6 12	7 27	6 33	15 07	.....	20 58	2	23 42.4	- 1 18	8.5

Calendar for Cerro Tololo, west longitude (h.m.s) = 4 43 16, latitude (d.m) = -30 09.9
 Rise/set times in Chilean time (4 hr W), for 2215 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.

***** 2025 MARCH *****

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 Mar 01/Sun Mar 02	8 57	20 23	21 38	6 13	7 28	6 35	15 11	.....	21 30	6	0 34.1	5 45	8.6
Sun Mar 02/Mon Mar 03	9 01	20 22	21 37	6 14	7 29	6 38	15 16	.....	22 04	13	1 27.0	12 31	8.6
Mon Mar 03/Tue Mar 04	9 05	20 21	21 36	6 15	7 29	6 40	15 21	.....	22 41	22	2 21.9	18 37	8.7
Tue Mar 04/Wed Mar 05	9 09	20 20	21 34	6 16	7 30	6 43	15 26	.....	23 22	32	3 19.6	23 38	8.7
Wed Mar 05/Thu Mar 06	9 13	20 19	21 33	6 16	7 31	6 46	15 31	.....	0 10	43	4 20.0	27 12	8.7
Thu Mar 06/Fri Mar 07	9 17	20 18	21 32	6 17	7 31	6 48	15 35	.....	1 05	54	5 22.1	29 06	8.8
Fri Mar 07/Sat Mar 08	9 21	20 16	21 30	6 18	7 32	6 51	15 40	.....	2 05	65	6 24.1	29 14	8.8
Sat Mar 08/Sun Mar 09*	9 25	20 15	21 29	5 19	6 33	6 54	15 45	.....	2 08	75	7 24.2	27 41	8.8
Sun Mar 09/Mon Mar 10	10 29	19 14	20 28	5 20	6 33	6 56	15 50	.....	3 11	84	8 22.3	24 28	8.9
Mon Mar 10/Tue Mar 11	10 33	19 13	20 27	5 20	6 34	6 59	15 54	17 14	4 13	90	9 14.9	20 17	8.9
Tue Mar 11/Wed Mar 12	10 37	19 12	20 25	5 21	6 35	7 02	15 59	17 48	5 11	96	10 03.8	15 16	8.9
Wed Mar 12/Thu Mar 13	10 41	19 10	20 24	5 22	6 35	7 04	16 04	18 17	6 08	99	10 49.8	9 44	9.0
Thu Mar 13/Fri Mar 14	10 45	19 09	20 23	5 23	6 36	7 07	16 08	18 44	7 02	100	11 33.8	3 54	9.0
Fri Mar 14/Sat Mar 15	10 49	19 08	20 21	5 23	6 37	7 10	16 13	19 09	.....	99	12 16.7	- 1 58	9.0
Sat Mar 15/Sun Mar 16	10 53	19 07	20 20	5 24	6 37	7 12	16 18	19 35	.....	97	12 59.5	- 7 42	9.1
Sun Mar 16/Mon Mar 17	10 57	19 06	20 19	5 25	6 38	7 15	16 22	20 01	.....	92	13 43.2	-13 06	9.1
Mon Mar 17/Tue Mar 18	11 01	19 04	20 17	5 26	6 39	7 18	16 27	20 30	.....	87	14 28.5	-17 58	9.1
Tue Mar 18/Wed Mar 19	11 05	19 03	20 16	5 26	6 39	7 20	16 32	21 02	.....	80	15 16.2	-22 08	9.2
Wed Mar 19/Thu Mar 20	11 09	19 02	20 15	5 27	6 40	7 23	16 36	21 38	.....	71	16 06.7	-25 22	9.2
Thu Mar 20/Fri Mar 21	11 12	19 01	20 14	5 28	6 41	7 25	16 41	22 21	.....	62	16 59.9	-27 28	9.2
Fri Mar 21/Sat Mar 22	11 16	19 00	20 12	5 28	6 41	7 28	16 46	23 11	.....	52	17 55.4	-28 15	9.3
Sat Mar 22/Sun Mar 23	11 20	18 58	20 11	5 29	6 42	7 31	16 50	0 09	.....	42	18 52.1	-27 34	9.3
Sun Mar 23/Mon Mar 24	11 24	18 57	20 10	5 30	6 42	7 33	16 55	1 11	.....	32	19 48.9	-25 24	9.3
Mon Mar 24/Tue Mar 25	11 28	18 56	20 09	5 30	6 43	7 36	16 59	2 17	.....	23	20 44.6	-21 46	9.4
Tue Mar 25/Wed Mar 26	11 32	18 55	20 07	5 31	6 44	7 39	17 04	3 25	16 43	14	21 38.9	-16 51	9.4
Wed Mar 26/Thu Mar 27	11 36	18 54	20 06	5 32	6 44	7 42	17 09	4 33	17 19	7	22 31.6	-10 53	9.4
Thu Mar 27/Fri Mar 28	11 40	18 52	20 05	5 32	6 45	7 44	17 13	5 41	17 52	2	23 23.5	- 4 10	9.5
Fri Mar 28/Sat Mar 29	11 44	18 51	20 04	5 33	6 45	7 47	17 18	6 50	18 25	0	0 15.5	2 55	9.5
Sat Mar 29/Sun Mar 30	11 48	18 50	20 02	5 33	6 46	7 50	17 22	.....	18 58	1	1 08.6	9 56	9.5
Sun Mar 30/Mon Mar 31	11 52	18 49	20 01	5 34	6 47	7 52	17 27	.....	19 35	4	2 03.9	16 27	9.5
Mon Mar 31/Tue Apr 01	11 56	18 48	20 00	5 35	6 47	7 55	17 31	.....	20 16	11	3 02.1	21 59	9.6

***** 2025 APRIL *****

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 Apr 01/Wed Apr 02	12 00	18 46	19 59	5 35	6 48	7 58	17 36	.....	21 03	19	4 03.3	26 06	9.6
Wed Apr 02/Thu Apr 03	12 04	18 45	19 58	5 36	6 48	8 01	17 40	.....	21 57	29	5 06.5	28 31	9.6
Thu Apr 03/Fri Apr 04	12 08	18 44	19 56	5 36	6 49	8 03	17 45	.....	22 57	39	6 09.7	29 05	9.7
Fri Apr 04/Sat Apr 05	12 12	18 43	19 55	5 37	6 50	8 06	17 50	.....	0 00	50	7 10.8	27 53	9.7
Sat Apr 05/Sun Apr 06	12 16	18 42	19 54	5 38	6 50	8 09	17 54	.....	1 04	61	8 08.4	25 09	9.7
Sun Apr 06/Mon Apr 07	12 19	18 40	19 53	5 38	6 51	8 12	17 59	.....	2 07	70	9 01.7	21 14	9.8
Mon Apr 07/Tue Apr 08	12 23	18 39	19 52	5 39	6 51	8 15	18 03	.....	3 06	79	9 51.1	16 27	9.8
Tue Apr 08/Wed Apr 09	12 27	18 38	19 51	5 39	6 52	8 17	18 08	.....	4 02	87	10 37.3	11 05	9.8
Wed Apr 09/Thu Apr 10	12 31	18 37	19 50	5 40	6 53	8 20	18 12	16 48	4 57	93	11 21.3	5 23	9.8
Thu Apr 10/Fri Apr 11	12 35	18 36	19 49	5 40	6 53	8 23	18 17	17 14	5 51	97	12 04.1	- 0 27	9.9
Fri Apr 11/Sat Apr 12	12 39	18 35	19 47	5 41	6 54	8 26	18 21	17 39	6 44	99	12 46.7	- 6 12	9.9
Sat Apr 12/Sun Apr 13	12 43	18 34	19 46	5 42	6 54	8 29	18 26	18 05	7 38	100	13 30.1	-11 43	9.9
Sun Apr 13/Mon Apr 14	12 47	18 33	19 45	5 42	6 55	8 32	18 30	18 32	.....	99	14 15.1	-16 46	9.9
Mon Apr 14/Tue Apr 15	12 51	18 31	19 44	5 43	6 56	8 35	18 35	19 03	.....	96	15 02.3	-21 09	10.0
Tue Apr 15/Wed Apr 16	12 55	18 30	19 43	5 43	6 56	8 37	18 39	19 38	.....	91	15 52.3	-24 41	10.0
Wed Apr 16/Thu Apr 17	12 59	18 29	19 42	5 44	6 57	8 40	18 44	20 19	.....	85	16 44.9	-27 07	10.0
Thu Apr 17/Fri Apr 18	13 03	18 28	19 41	5 44	6 57	8 43	18 48	21 06	.....	77	17 39.8	-28 16	10.1
Fri Apr 18/Sat Apr 19	13 07	18 27	19 40	5 45	6 58	8 46	18 53	22 00	.....	68	18 35.8	-28 00	10.1
Sat Apr 19/Sun Apr 20	13 11	18 26	19 39	5 45	6 59	8 49	18 57	22 59	.....	58	19 31.8	-26 18	10.1
Sun Apr 20/Mon Apr 21	13 15	18 25	19 38	5 46	6 59	8 52	19 02	0 02	.....	48	20 26.8	-23 11	10.1
Mon Apr 21/Tue Apr 22	13 19	18 24	19 37	5 47	7 00	8 55	19 06	1 07	.....	38	21 20.1	-18 48	10.2
Tue Apr 22/Wed Apr 23	13 23	18 23	19 36	5 47	7 00	8 58	19 11	2 13	.....	27	22 12.0	-13 21	10.2
Wed Apr 23/Thu Apr 24	13 27	18 22	19 36	5 48	7 01	9 01	19 15	3 19	.....	18	23 02.8	- 7 04	10.2
Thu Apr 24/Fri Apr 25	13 30	18 21	19 35	5 48	7 02	9 04	19 20	4 26	16 20	10	23 53.6	- 0 14	10.2
Fri Apr 25/Sat Apr 26	13 34	18 20	19 34	5 49	7 02	9 07	19 24	5 35	16 52	4	0 45.6	6 46	10.2
Sat Apr 26/Sun Apr 27	13 38	18 19	19 33	5 49	7 03	9 11	19 28	6 46	17 27	1	1 39.8	13 31	10.3
Sun Apr 27/Mon Apr 28	13 42	18 18	19 32	5 50	7 04	9 14	19 33	.....	18 05	0	2 37.2	19 33	10.3
Mon Apr 28/Tue Apr 29	13 46	18 17	19 31	5 50	7 04	9 17	19 37	.....	18 50	3	3 38.3	24 22	10.3
Tue Apr 29/Wed Apr 30	13 50	18 17	19 30	5 51	7 05	9 20	19 42	.....	19 42	8	4 42.4	27 32	10.3
Wed Apr 30/Thu May 01	13 54	18 16	19 30	5 51	7 05	9 23	19 46	.....	20 42	16	5 47.5	28 47	10.4

Calendar for Cerro Tololo, west longitude (h.m.s) = 4 43 16, latitude (d.m) = -30 09.9
 Rise/set times in Chilean time (4 hr W), for 2215 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.

***** 2025 MAY *****

Date (eve/morn)	LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----				Twilight	
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Thu May 01/Fri May 02	13 58	18 15	19 29	5 52	7 06	9 26	19 51	.....	21 47	25	6 51.2	28 08	10.4
Fri May 02/Sat May 03	14 02	18 14	19 28	5 52	7 07	9 29	19 55	.....	22 53	35	7 51.3	25 48	10.4
Sat May 03/Sun May 04	14 06	18 13	19 28	5 53	7 07	9 33	20 00	.....	23 58	45	8 46.7	22 08	10.4
Sun May 04/Mon May 05	14 10	18 12	19 27	5 53	7 08	9 36	20 04	.....	0 59	55	9 37.7	17 32	10.4
Mon May 05/Tue May 06	14 14	18 12	19 26	5 54	7 09	9 39	20 09	.....	1 57	65	10 24.8	12 17	10.5
Tue May 06/Wed May 07	14 18	18 11	19 25	5 54	7 09	9 42	20 13	.....	2 52	74	11 09.3	6 40	10.5
Wed May 07/Thu May 08	14 22	18 10	19 25	5 55	7 10	9 46	20 18	.....	3 46	82	11 52.1	0 54	10.5
Thu May 08/Fri May 09	14 26	18 09	19 24	5 55	7 10	9 49	20 22	.....	4 39	89	12 34.6	- 4 51	10.5
Fri May 09/Sat May 10	14 30	18 09	19 24	5 56	7 11	9 52	20 27	16 08	5 33	94	13 17.5	-10 23	10.5
Sat May 10/Sun May 11	14 34	18 08	19 23	5 57	7 12	9 56	20 31	16 35	6 28	98	14 02.0	-15 33	10.6
Sun May 11/Mon May 12	14 37	18 07	19 22	5 57	7 12	9 59	20 36	17 05	7 25	100	14 48.7	-20 08	10.6
Mon May 12/Tue May 13	14 41	18 07	19 22	5 58	7 13	10 03	20 40	17 39	.....	100	15 38.2	-23 54	10.6
Tue May 13/Wed May 14	14 45	18 06	19 21	5 58	7 14	10 06	20 44	18 18	.....	98	16 30.6	-26 38	10.6
Wed May 14/Thu May 15	14 49	18 05	19 21	5 59	7 14	10 09	20 49	19 03	.....	94	17 25.4	-28 07	10.6
Thu May 15/Fri May 16	14 53	18 05	19 20	5 59	7 15	10 13	20 53	19 55	.....	89	18 21.6	-28 12	10.6
Fri May 16/Sat May 17	14 57	18 04	19 20	6 00	7 15	10 16	20 58	20 53	.....	81	19 17.7	-26 50	10.7
Sat May 17/Sun May 18	15 01	18 04	19 20	6 00	7 16	10 20	21 02	21 54	.....	73	20 12.7	-24 04	10.7
Sun May 18/Mon May 19	15 05	18 03	19 19	6 01	7 17	10 23	21 07	22 57	.....	63	21 05.9	-20 03	10.7
Mon May 19/Tue May 20	15 09	18 03	19 19	6 01	7 17	10 27	21 11	0 01	.....	53	21 57.1	-14 58	10.7
Tue May 20/Wed May 21	15 13	18 02	19 18	6 02	7 18	10 31	21 16	1 04	.....	42	22 46.9	- 9 04	10.7
Wed May 21/Thu May 22	15 17	18 02	19 18	6 02	7 18	10 34	21 20	2 08	.....	31	23 36.2	- 2 36	10.7
Thu May 22/Fri May 23	15 21	18 01	19 18	6 03	7 19	10 38	21 24	3 14	.....	21	0 26.2	4 10	10.7
Fri May 23/Sat May 24	15 25	18 01	19 17	6 03	7 20	10 41	21 29	4 22	.....	12	1 18.1	10 51	10.8
Sat May 24/Sun May 25	15 29	18 01	19 17	6 04	7 20	10 45	21 33	5 33	15 57	6	2 13.2	17 05	10.8
Sun May 25/Mon May 26	15 33	18 00	19 17	6 04	7 21	10 49	21 38	6 47	16 37	2	3 12.2	22 22	10.8
Mon May 26/Tue May 27	15 37	18 00	19 17	6 04	7 21	10 52	21 42	8 02	17 26	0	4 15.2	26 13	10.8
Tue May 27/Wed May 28	15 41	18 00	19 16	6 05	7 22	10 56	21 46	.....	18 23	2	5 20.7	28 15	10.8
Wed May 28/Thu May 29	15 44	17 59	19 16	6 05	7 22	11 00	21 51	.....	19 27	6	6 26.2	28 20	10.8
Thu May 29/Fri May 30	15 48	17 59	19 16	6 06	7 23	11 04	21 55	.....	20 35	12	7 29.0	26 32	10.8
Fri May 30/Sat May 31	15 52	17 59	19 16	6 06	7 23	11 07	22 00	.....	21 43	20	8 27.4	23 13	10.8
Sat May 31/Sun Jun 01	15 56	17 59	19 16	6 07	7 24	11 11	22 04	.....	22 47	30	9 20.9	18 48	10.9

***** 2025 JUNE *****

Date (eve/morn)	LMST midn	----- Sun: -----				LST twilight:		----- Moon: -----				Twilight	
		set	twi.end	twi.beg	rise	eve	morn	rise	set	%illum	RA	Dec	hours
Sun Jun 01/Mon Jun 02	16 00	17 58	19 16	6 07	7 24	11 15	22 08	.....	23 48	39	10 10.0	13 38	10.9
Mon Jun 02/Tue Jun 03	16 04	17 58	19 15	6 08	7 25	11 19	22 13	.....	0 45	49	10 55.7	8 03	10.9
Tue Jun 03/Wed Jun 04	16 08	17 58	19 15	6 08	7 25	11 23	22 17	.....	1 40	59	11 39.2	2 17	10.9
Wed Jun 04/Thu Jun 05	16 12	17 58	19 15	6 08	7 26	11 27	22 22	.....	2 34	68	12 21.8	- 3 28	10.9
Thu Jun 05/Fri Jun 06	16 16	17 58	19 15	6 09	7 26	11 30	22 26	.....	3 27	77	13 04.5	- 9 03	10.9
Fri Jun 06/Sat Jun 07	16 20	17 58	19 15	6 09	7 27	11 34	22 30	.....	4 22	84	13 48.4	-14 18	10.9
Sat Jun 07/Sun Jun 08	16 24	17 58	19 15	6 10	7 27	11 38	22 35	.....	5 18	91	14 34.3	-19 02	10.9
Sun Jun 08/Mon Jun 09	16 28	17 58	19 15	6 10	7 28	11 42	22 39	.....	6 16	95	15 23.1	-23 02	10.9
Mon Jun 09/Tue Jun 10	16 32	17 58	19 15	6 10	7 28	11 46	22 43	16 17	7 14	99	16 15.0	-26 03	10.9
Tue Jun 10/Wed Jun 11	16 36	17 58	19 15	6 11	7 28	11 50	22 47	17 00	8 12	100	17 09.7	-27 53	10.9
Wed Jun 11/Thu Jun 12	16 40	17 58	19 15	6 11	7 29	11 54	22 52	17 51	.....	99	18 06.2	-28 19	10.9
Thu Jun 12/Fri Jun 13	16 44	17 58	19 15	6 11	7 29	11 58	22 56	18 47	.....	96	19 03.2	-27 17	10.9
Fri Jun 13/Sat Jun 14	16 48	17 58	19 16	6 12	7 29	12 02	23 00	19 48	.....	92	19 59.2	-24 47	10.9
Sat Jun 14/Sun Jun 15	16 52	17 58	19 16	6 12	7 30	12 06	23 04	20 51	.....	85	20 53.2	-21 00	10.9
Sun Jun 15/Mon Jun 16	16 55	17 58	19 16	6 12	7 30	12 10	23 09	21 54	.....	77	21 44.9	-16 07	10.9
Mon Jun 16/Tue Jun 17	16 59	17 58	19 16	6 13	7 30	12 15	23 13	22 57	.....	67	22 34.7	-10 24	10.9
Tue Jun 17/Wed Jun 18	17 03	17 58	19 16	6 13	7 31	12 19	23 17	24 00	.....	56	23 23.4	- 4 07	10.9
Wed Jun 18/Thu Jun 19	17 07	17 58	19 16	6 13	7 31	12 23	23 21	1 03	.....	45	0 12.2	2 27	10.9
Thu Jun 19/Fri Jun 20	17 11	17 59	19 16	6 13	7 31	12 27	23 26	2 07	.....	34	1 02.2	9 01	10.9
Fri Jun 20/Sat Jun 21	17 15	17 59	19 17	6 13	7 31	12 31	23 30	3 15	.....	24	1 54.7	15 14	10.9
Sat Jun 21/Sun Jun 22	17 19	17 59	19 17	6 14	7 32	12 35	23 34	4 26	.....	14	2 50.9	20 42	10.9
Sun Jun 22/Mon Jun 23	17 23	17 59	19 17	6 14	7 32	12 39	23 38	5 38	.....	7	3 51.2	24 58	10.9
Mon Jun 23/Tue Jun 24	17 27	17 59	19 17	6 14	7 32	12 44	23 42	6 50	16 06	2	4 54.9	27 38	10.9
Tue Jun 24/Wed Jun 25	17 31	18 00	19 18	6 14	7 32	12 48	23 46	7 56	17 06	0	6 00.2	28 26	10.9
Wed Jun 25/Thu Jun 26	17 35	18 00	19 18	6 14	7 32	12 52	23 50	.....	18 13	1	7 04.4	27 18	10.9
Thu Jun 26/Fri Jun 27	17 39	18 00	19 18	6 14	7 32	12 56	23 54	.....	19 22	4	8 05.0	24 28	10.9
Fri Jun 27/Sat Jun 28	17 43	18 01	19 18	6 15	7 32	13 00	23 58	.....	20 30	9	9 01.0	20 20	10.9
Sat Jun 28/Sun Jun 29	17 47	18 01	19 19	6 15	7 32	13 05	0 02	.....	21 34	16	9 52.3	15 18	10.9
Sun Jun 29/Mon Jun 30	17 51	18 01	19 19	6 15	7 32	13 09	0 06	.....	22 34	24	10 39.7	9 44	10.9
Mon Jun 30/Tue Jul 01	17 55	18 02	19 19	6 15	7 32	13 13	0 10	.....	23 30	33	11 24.4	3 56	10.9

Calendar for Cerro Tololo, west longitude (h.m.s) = 4 43 16, latitude (d.m) = -30 09.9
 Rise/set times in Chilean time (4 hr W), for 2215 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.

***** 2025 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
Tue Jul 01/Wed	Jul 02	17 59	18 02	19 20	6 15	7 32	13 18	0 14	.....	0 25	43	12 07.6	- 1 53	10.9
Wed Jul 02/Thu	Jul 03	18 02	18 03	19 20	6 15	7 32	13 22	0 18	.....	1 19	53	12 50.3	- 7 34	10.9
Thu Jul 03/Fri	Jul 04	18 06	18 03	19 21	6 15	7 32	13 26	0 22	.....	2 14	62	13 33.8	-12 55	10.9
Fri Jul 04/Sat	Jul 05	18 10	18 03	19 21	6 15	7 32	13 30	0 26	.....	3 09	71	14 19.0	-17 48	10.9
Sat Jul 05/Sun	Jul 06	18 14	18 04	19 21	6 15	7 32	13 35	0 30	.....	4 07	79	15 06.7	-22 00	10.9
Sun Jul 06/Mon	Jul 07	18 18	18 04	19 22	6 15	7 32	13 39	0 34	.....	5 05	87	15 57.5	-25 20	10.9
Mon Jul 07/Tue	Jul 08	18 22	18 05	19 22	6 15	7 32	13 43	0 38	.....	6 03	92	16 51.4	-27 32	10.9
Tue Jul 08/Wed	Jul 09	18 26	18 05	19 22	6 15	7 32	13 48	0 42	.....	6 59	97	17 47.8	-28 23	10.9
Wed Jul 09/Thu	Jul 10	18 30	18 06	19 23	6 14	7 32	13 52	0 46	16 39	7 50	99	18 45.4	-27 46	10.9
Thu Jul 10/Fri	Jul 11	18 34	18 06	19 23	6 14	7 31	13 57	0 49	17 39	.....	100	19 42.6	-25 37	10.9
Fri Jul 11/Sat	Jul 12	18 38	18 07	19 24	6 14	7 31	14 01	0 53	18 43	.....	98	20 38.2	-22 05	10.8
Sat Jul 12/Sun	Jul 13	18 42	18 07	19 24	6 14	7 31	14 05	0 57	19 47	.....	94	21 31.4	-17 20	10.8
Sun Jul 13/Mon	Jul 14	18 46	18 08	19 24	6 14	7 30	14 10	1 01	20 51	.....	88	22 22.5	-11 41	10.8
Mon Jul 14/Tue	Jul 15	18 50	18 08	19 25	6 13	7 30	14 14	1 04	21 54	.....	79	23 11.9	- 5 24	10.8
Tue Jul 15/Wed	Jul 16	18 54	18 09	19 25	6 13	7 30	14 18	1 08	22 56	.....	70	0 00.8	1 11	10.8
Wed Jul 16/Thu	Jul 17	18 58	18 09	19 26	6 13	7 29	14 23	1 12	24 00	.....	59	0 50.2	7 46	10.8
Thu Jul 17/Fri	Jul 18	19 02	18 10	19 26	6 13	7 29	14 27	1 15	1 05	.....	48	1 41.5	14 01	10.8
Fri Jul 18/Sat	Jul 19	19 06	18 10	19 27	6 12	7 29	14 32	1 19	2 13	.....	36	2 35.8	19 35	10.8
Sat Jul 19/Sun	Jul 20	19 10	18 11	19 27	6 12	7 28	14 36	1 23	3 23	.....	26	3 33.7	24 06	10.7
Sun Jul 20/Mon	Jul 21	19 13	18 11	19 28	6 12	7 28	14 40	1 26	4 34	.....	16	4 35.1	27 10	10.7
Mon Jul 21/Tue	Jul 22	19 17	18 12	19 28	6 11	7 27	14 45	1 30	5 40	.....	9	5 38.8	28 29	10.7
Tue Jul 22/Wed	Jul 23	19 21	18 12	19 29	6 11	7 27	14 49	1 33	6 40	15 55	4	6 42.4	27 57	10.7
Wed Jul 23/Thu	Jul 24	19 25	18 13	19 29	6 10	7 26	14 54	1 37	7 31	17 02	1	7 43.7	25 40	10.7
Thu Jul 24/Fri	Jul 25	19 29	18 14	19 29	6 10	7 26	14 58	1 40	.....	18 11	0	8 41.0	21 57	10.7
Fri Jul 25/Sat	Jul 26	19 33	18 14	19 30	6 10	7 25	15 02	1 44	.....	19 16	2	9 33.9	17 10	10.7
Sat Jul 26/Sun	Jul 27	19 37	18 15	19 30	6 09	7 25	15 07	1 47	.....	20 19	6	10 22.8	11 42	10.6
Sun Jul 27/Mon	Jul 28	19 41	18 15	19 31	6 09	7 24	15 11	1 51	.....	21 18	12	11 08.6	5 53	10.6
Mon Jul 28/Tue	Jul 29	19 45	18 16	19 31	6 08	7 23	15 16	1 54	.....	22 14	19	11 52.5	- 0 01	10.6
Tue Jul 29/Wed	Jul 30	19 49	18 16	19 32	6 07	7 23	15 20	1 57	.....	23 09	27	12 35.5	- 5 49	10.6
Wed Jul 30/Thu	Jul 31	19 53	18 17	19 32	6 07	7 22	15 24	2 01	.....	0 04	36	13 18.8	-11 19	10.6
Thu Jul 31/Fri	Aug 01	19 57	18 18	19 33	6 06	7 21	15 29	2 04	.....	0 59	46	14 03.3	-16 22	10.6

***** 2025 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
Fri Aug 01/Sat	Aug 02	20 01	18 18	19 33	6 06	7 21	15 33	2 07	.....	1 56	55	14 49.9	-20 47	10.5
Sat Aug 02/Sun	Aug 03	20 05	18 19	19 34	6 05	7 20	15 38	2 11	.....	2 54	65	15 39.3	-24 24	10.5
Sun Aug 03/Mon	Aug 04	20 09	18 19	19 34	6 04	7 19	15 42	2 14	.....	3 52	74	16 31.7	-26 59	10.5
Mon Aug 04/Tue	Aug 05	20 13	18 20	19 35	6 04	7 18	15 46	2 17	.....	4 49	82	17 27.0	-28 18	10.5
Tue Aug 05/Wed	Aug 06	20 17	18 20	19 35	6 03	7 18	15 51	2 21	.....	5 42	89	18 24.1	-28 12	10.5
Wed Aug 06/Thu	Aug 07	20 20	18 21	19 36	6 02	7 17	15 55	2 24	.....	6 30	95	19 21.7	-26 34	10.4
Thu Aug 07/Fri	Aug 08	20 24	18 22	19 36	6 02	7 16	16 00	2 27	16 29	7 12	98	20 18.4	-23 26	10.4
Fri Aug 08/Sat	Aug 09	20 28	18 22	19 37	6 01	7 15	16 04	2 30	17 34	7 49	100	21 13.3	-18 58	10.4
Sat Aug 09/Sun	Aug 10	20 32	18 23	19 37	6 00	7 14	16 09	2 33	18 39	.....	99	22 06.1	-13 26	10.4
Sun Aug 10/Mon	Aug 11	20 36	18 23	19 37	5 59	7 13	16 13	2 36	19 44	.....	96	22 57.1	- 7 07	10.4
Mon Aug 11/Tue	Aug 12	20 40	18 24	19 38	5 58	7 12	16 17	2 40	20 48	.....	90	23 47.3	- 0 24	10.3
Tue Aug 12/Wed	Aug 13	20 44	18 24	19 38	5 58	7 11	16 22	2 43	21 52	.....	82	0 37.6	6 23	10.3
Wed Aug 13/Thu	Aug 14	20 48	18 25	19 39	5 57	7 10	16 26	2 46	22 58	.....	72	1 29.3	12 53	10.3
Thu Aug 14/Fri	Aug 15	20 52	18 26	19 39	5 56	7 10	16 31	2 49	0 05	.....	61	2 23.3	18 42	10.3
Fri Aug 15/Sat	Aug 16	20 56	18 26	19 40	5 55	7 09	16 35	2 52	1 15	.....	50	3 20.5	23 29	10.3
Sat Aug 16/Sun	Aug 17	21 00	18 27	19 40	5 54	7 08	16 40	2 55	2 24	.....	38	4 20.8	26 51	10.2
Sun Aug 17/Mon	Aug 18	21 04	18 27	19 41	5 53	7 07	16 44	2 58	3 31	.....	28	5 23.2	28 34	10.2
Mon Aug 18/Tue	Aug 19	21 08	18 28	19 41	5 52	7 06	16 48	3 01	4 32	.....	18	6 26.0	28 28	10.2
Tue Aug 19/Wed	Aug 20	21 12	18 28	19 42	5 51	7 05	16 53	3 04	5 24	.....	11	7 26.9	26 39	10.2
Wed Aug 20/Thu	Aug 21	21 16	18 29	19 42	5 50	7 03	16 57	3 07	6 09	.....	5	8 24.3	23 20	10.1
Thu Aug 21/Fri	Aug 22	21 20	18 29	19 43	5 49	7 02	17 02	3 10	6 46	17 02	1	9 17.7	18 52	10.1
Fri Aug 22/Sat	Aug 23	21 24	18 30	19 43	5 48	7 01	17 06	3 13	7 19	18 05	0	10 07.3	13 37	10.1
Sat Aug 23/Sun	Aug 24	21 28	18 31	19 44	5 47	7 00	17 10	3 16	.....	19 05	1	10 53.7	7 54	10.1
Sun Aug 24/Mon	Aug 25	21 31	18 31	19 44	5 46	6 59	17 15	3 19	.....	20 02	4	11 38.1	1 59	10.0
Mon Aug 25/Tue	Aug 26	21 35	18 32	19 45	5 45	6 58	17 19	3 22	.....	20 58	8	12 21.3	- 3 53	10.0
Tue Aug 26/Wed	Aug 27	21 39	18 32	19 45	5 44	6 57	17 24	3 24	.....	21 53	14	13 04.5	- 9 32	10.0
Wed Aug 27/Thu	Aug 28	21 43	18 33	19 46	5 43	6 56	17 28	3 27	.....	22 49	22	13 48.5	-14 45	10.0
Thu Aug 28/Fri	Aug 29	21 47	18 33	19 46	5 42	6 55	17 33	3 30	.....	23 45	30	14 34.1	-19 23	9.9
Fri Aug 29/Sat	Aug 30	21 51	18 34	19 47	5 41	6 54	17 37	3 33	.....	0 43	39	15 22.2	-23 16	9.9
Sat Aug 30/Sun	Aug 31	21 55	18 34	19 47	5 40	6 52	17 42	3 36	.....	1 41	48	16 13.0	-26 11	9.9
Sun Aug 31/Mon	Sep 01	21 59	18 35	19 48	5 39	6 51	17 46	3 39	.....	2 37	58	17 06.5	-27 56	9.8

Calendar for Cerro Tololo, west longitude (h.m.s) = 4 43 16, latitude (d.m) = -30 09.9
 Rise/set times in Chilean time (4 hr W), for 2215 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.

***** 2025 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
Mon Sep 01/Tue Sep 02	22 03	18 35	19 48	5 37	6 50	17 50	3 41	.....	3 31	67	18 02.1	-28 22	9.8
Tue Sep 02/Wed Sep 03	22 07	18 36	19 49	5 36	6 49	17 55	3 44	.....	4 21	77	18 58.8	-27 20	9.8
Wed Sep 03/Thu Sep 04	22 11	18 37	19 49	5 35	6 48	17 59	3 47	.....	5 05	85	19 55.3	-24 48	9.8
Thu Sep 04/Fri Sep 05	22 15	18 37	19 50	5 34	6 46	18 04	3 50	.....	5 45	92	20 50.7	-20 51	9.7
Fri Sep 05/Sat Sep 06	22 19	18 38	19 50	5 33	6 45	18 08	3 52	.....	6 20	97	21 44.5	-15 41	9.7
Sat Sep 06/Sun Sep 07	22 23	18 38	19 51	5 32	6 44	18 13	3 55	17 27	6 53	100	22 36.8	- 9 33	9.7
Sun Sep 07/Mon Sep 08	22 27	18 39	19 51	5 30	6 43	18 17	3 58	18 33	7 24	100	23 28.3	- 2 46	9.7
Mon Sep 08/Tue Sep 09	22 31	18 39	19 52	5 29	6 42	18 22	4 01	19 39	.....	97	0 19.9	4 15	9.6
Tue Sep 09/Wed Sep 10	22 35	18 40	19 52	5 28	6 40	18 26	4 03	20 46	.....	92	1 12.7	11 07	9.6
Wed Sep 10/Thu Sep 11	22 38	18 40	19 53	5 27	6 39	18 31	4 06	21 54	.....	84	2 07.7	17 23	9.6
Thu Sep 11/Fri Sep 12	22 42	18 41	19 53	5 25	6 38	18 35	4 09	23 05	.....	74	3 05.7	22 37	9.5
Fri Sep 12/Sat Sep 13	22 46	18 41	19 54	5 24	6 37	18 40	4 11	0 16	.....	64	4 06.7	26 26	9.5
Sat Sep 13/Sun Sep 14	22 50	18 42	19 54	5 23	6 35	18 44	4 14	1 24	.....	52	5 09.7	28 34	9.5
Sun Sep 14/Mon Sep 15	22 54	18 42	19 55	5 22	6 34	18 49	4 17	2 27	.....	41	6 12.8	28 51	9.4
Mon Sep 15/Tue Sep 16	22 58	18 43	19 56	5 20	6 33	18 53	4 19	3 22	.....	31	7 14.0	27 23	9.4
Tue Sep 16/Wed Sep 17	23 02	18 43	19 56	5 19	6 32	18 58	4 22	4 08	.....	21	8 11.7	24 24	9.4
Wed Sep 17/Thu Sep 18	23 06	18 44	19 57	5 18	6 30	19 02	4 25	4 46	.....	13	9 05.3	20 13	9.4
Thu Sep 18/Fri Sep 19	23 10	18 45	19 57	5 16	6 29	19 07	4 27	5 20	.....	7	9 55.0	15 12	9.3
Fri Sep 19/Sat Sep 20	23 14	18 45	19 58	5 15	6 28	19 11	4 30	5 49	16 55	3	10 41.6	9 39	9.3
Sat Sep 20/Sun Sep 21	23 18	18 46	19 58	5 14	6 27	19 16	4 33	6 16	17 53	0	11 26.0	3 49	9.3
Sun Sep 21/Mon Sep 22	23 22	18 46	19 59	5 13	6 25	19 20	4 35	6 43	18 49	0	12 09.1	- 2 03	9.2
Mon Sep 22/Tue Sep 23	23 26	18 47	20 00	5 11	6 24	19 25	4 38	7 09	19 44	2	12 52.0	- 7 45	9.2
Tue Sep 23/Wed Sep 24	23 30	18 47	20 00	5 10	6 23	19 29	4 40	.....	20 39	5	13 35.5	-13 06	9.2
Wed Sep 24/Thu Sep 25	23 34	18 48	20 01	5 09	6 22	19 34	4 43	.....	21 36	10	14 20.5	-17 55	9.1
Thu Sep 25/Fri Sep 26	23 38	18 48	20 02	5 07	6 20	19 39	4 46	.....	22 33	16	15 07.5	-22 01	9.1
Fri Sep 26/Sat Sep 27	23 42	18 49	20 02	5 06	6 19	19 43	4 48	.....	23 30	24	15 57.0	-25 13	9.1
Sat Sep 27/Sun Sep 28	23 45	18 50	20 03	5 05	6 18	19 48	4 51	.....	0 27	32	16 49.0	-27 19	9.0
Sun Sep 28/Mon Sep 29	23 49	18 50	20 04	5 03	6 17	19 52	4 53	.....	1 22	41	17 42.9	-28 11	9.0
Mon Sep 29/Tue Sep 30	23 53	18 51	20 04	5 02	6 15	19 57	4 56	.....	2 12	51	18 38.0	-27 41	9.0
Tue Sep 30/Wed Oct 01	23 57	18 51	20 05	5 01	6 14	20 02	4 59	.....	2 58	61	19 33.2	-25 45	8.9

***** 2025 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
Wed Oct 01/Thu Oct 02	0 01	18 52	20 06	4 59	6 13	20 06	5 01	.....	3 39	71	20 27.7	-22 27	8.9
Thu Oct 02/Fri Oct 03	0 05	18 52	20 06	4 58	6 12	20 11	5 04	.....	4 15	80	21 21.0	-17 53	8.9
Fri Oct 03/Sat Oct 04	0 09	18 53	20 07	4 57	6 10	20 16	5 06	.....	4 48	88	22 13.1	-12 13	8.8
Sat Oct 04/Sun Oct 05	0 13	18 54	20 08	4 55	6 09	20 20	5 09	.....	5 20	94	23 04.5	- 5 44	8.8
Sun Oct 05/Mon Oct 06	0 17	18 54	20 09	4 54	6 08	20 25	5 12	17 17	5 52	99	23 56.3	1 16	8.8
Mon Oct 06/Tue Oct 07	0 21	18 55	20 09	4 53	6 07	20 30	5 14	18 25	6 25	100	0 49.4	8 22	8.7
Tue Oct 07/Wed Oct 08	0 25	18 56	20 10	4 51	6 06	20 34	5 17	19 34	7 02	98	1 45.0	15 07	8.7
Wed Oct 08/Thu Oct 09	0 29	18 56	20 11	4 50	6 04	20 39	5 20	20 46	.....	94	2 43.9	21 00	8.7
Thu Oct 09/Fri Oct 10	0 33	18 57	20 12	4 49	6 03	20 44	5 22	22 00	.....	86	3 46.4	25 30	8.6
Fri Oct 10/Sat Oct 11	0 37	18 57	20 12	4 47	6 02	20 49	5 25	23 12	.....	77	4 51.3	28 16	8.6
Sat Oct 11/Sun Oct 12*	0 41	18 58	20 13	4 46	6 01	20 53	5 27	0 19	.....	67	5 56.8	29 04	8.5
Sun Oct 12/Mon Oct 13	23 44	19 59	21 14	5 45	7 00	20 58	5 30	2 18	.....	56	6 57.5	27 57	8.5
Mon Oct 13/Tue Oct 14	23 48	19 59	21 15	5 43	6 59	21 03	5 33	3 07	.....	45	7 56.9	25 19	8.5
Tue Oct 14/Wed Oct 15	23 52	20 00	21 16	5 42	6 58	21 08	5 35	3 48	.....	35	8 51.8	21 24	8.4
Wed Oct 15/Thu Oct 16	23 56	20 01	21 17	5 41	6 56	21 12	5 38	4 22	.....	26	9 42.3	16 36	8.4
Thu Oct 16/Fri Oct 17	0 00	20 01	21 17	5 39	6 55	21 17	5 41	4 52	.....	17	10 29.2	11 13	8.4
Fri Oct 17/Sat Oct 18	0 04	20 02	21 18	5 38	6 54	21 22	5 43	5 20	.....	10	11 13.6	5 31	8.3
Sat Oct 18/Sun Oct 19	0 08	20 03	21 19	5 37	6 53	21 27	5 46	5 46	17 43	5	11 56.6	- 0 17	8.3
Sun Oct 19/Mon Oct 20	0 12	20 04	21 20	5 36	6 52	21 32	5 49	6 12	18 38	2	12 39.1	- 5 59	8.3
Mon Oct 20/Tue Oct 21	0 16	20 04	21 21	5 34	6 51	21 37	5 51	6 39	19 32	0	13 22.2	-11 24	8.2
Tue Oct 21/Wed Oct 22	0 20	20 05	21 22	5 33	6 50	21 41	5 54	.....	20 28	0	14 06.5	-16 22	8.2
Wed Oct 22/Thu Oct 23	0 24	20 06	21 23	5 32	6 49	21 46	5 57	.....	21 25	2	14 52.8	-20 40	8.2
Thu Oct 23/Fri Oct 24	0 28	20 06	21 24	5 31	6 48	21 51	5 59	.....	22 22	6	15 41.4	-24 09	8.1
Fri Oct 24/Sat Oct 25	0 32	20 07	21 25	5 30	6 47	21 56	6 02	.....	23 19	11	16 32.4	-26 35	8.1
Sat Oct 25/Sun Oct 26	0 36	20 08	21 26	5 28	6 46	22 01	6 05	.....	0 15	18	17 25.3	-27 51	8.0
Sun Oct 26/Mon Oct 27	0 40	20 09	21 27	5 27	6 45	22 06	6 08	.....	1 06	25	18 19.3	-27 47	8.0
Mon Oct 27/Tue Oct 28	0 44	20 09	21 28	5 26	6 44	22 11	6 10	.....	1 53	34	19 13.5	-26 22	8.0
Tue Oct 28/Wed Oct 29	0 48	20 10	21 29	5 25	6 43	22 16	6 13	.....	2 34	44	20 06.9	-23 38	7.9
Wed Oct 29/Thu Oct 30	0 51	20 11	21 30	5 24	6 42	22 21	6 16	.....	3 11	54	20 59.0	-19 40	7.9
Thu Oct 30/Fri Oct 31	0 55	20 12	21 31	5 23	6 42	22 26	6 19	.....	3 44	64	21 49.9	-14 37	7.9
Fri Oct 31/Sat Nov 01	0 59	20 13	21 32	5 21	6 41	22 31	6 22	.....	4 16	74	22 40.0	- 8 41	7.8

Calendar for Cerro Tololo, west longitude (h.m.s) = 4 43 16, latitude (d.m) = -30 09.9
 Rise/set times in Chilean time (4 hr W), for 2215 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.

***** 2025 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
Sat Nov 01/Sun Nov 02	1 03	20 13	21 33	5 20	6 40	22 36	6 25	.....	4 46	84	23 30.2	- 2 04	7.8
Sun Nov 02/Mon Nov 03	1 07	20 14	21 34	5 19	6 39	22 41	6 27	.....	5 18	91	0 21.7	4 53	7.8
Mon Nov 03/Tue Nov 04	1 11	20 15	21 35	5 18	6 38	22 46	6 30	18 08	5 53	97	1 15.8	11 49	7.7
Tue Nov 04/Wed Nov 05	1 15	20 16	21 36	5 17	6 38	22 51	6 33	19 19	6 33	100	2 13.5	18 13	7.7
Wed Nov 05/Thu Nov 06	1 19	20 17	21 37	5 16	6 37	22 56	6 36	20 34	.....	99	3 15.5	23 32	7.7
Thu Nov 06/Fri Nov 07	1 23	20 17	21 38	5 15	6 36	23 01	6 39	21 49	.....	96	4 21.6	27 13	7.6
Fri Nov 07/Sat Nov 08	1 27	20 18	21 39	5 14	6 35	23 06	6 42	23 02	.....	90	5 29.6	28 55	7.6
Sat Nov 08/Sun Nov 09	1 31	20 19	21 40	5 13	6 35	23 11	6 45	0 07	.....	81	6 36.6	28 30	7.5
Sun Nov 09/Mon Nov 10	1 35	20 20	21 42	5 12	6 34	23 16	6 48	1 01	.....	72	7 39.9	26 14	7.5
Mon Nov 10/Tue Nov 11	1 39	20 21	21 43	5 12	6 33	23 21	6 51	1 46	.....	61	8 38.0	22 31	7.5
Tue Nov 11/Wed Nov 12	1 43	20 22	21 44	5 11	6 33	23 26	6 54	2 24	.....	51	9 30.8	17 47	7.4
Wed Nov 12/Thu Nov 13	1 47	20 23	21 45	5 10	6 32	23 31	6 57	2 55	.....	40	10 19.2	12 25	7.4
Thu Nov 13/Fri Nov 14	1 51	20 23	21 46	5 09	6 32	23 36	7 00	3 24	.....	31	11 04.4	6 44	7.4
Fri Nov 14/Sat Nov 15	1 55	20 24	21 47	5 08	6 31	23 41	7 04	3 50	.....	22	11 47.7	0 58	7.4
Sat Nov 15/Sun Nov 16	1 59	20 25	21 48	5 07	6 31	23 46	7 07	4 16	.....	15	12 30.1	- 4 44	7.3
Sun Nov 16/Mon Nov 17	2 02	20 26	21 49	5 07	6 30	23 52	7 10	4 43	.....	9	13 12.8	-10 10	7.3
Mon Nov 17/Tue Nov 18	2 06	20 27	21 51	5 06	6 30	23 57	7 13	5 11	18 22	4	13 56.5	-15 11	7.3
Tue Nov 18/Wed Nov 19	2 10	20 28	21 52	5 05	6 29	0 02	7 16	5 43	19 19	1	14 42.2	-19 36	7.2
Wed Nov 19/Thu Nov 20	2 14	20 29	21 53	5 05	6 29	0 07	7 20	6 19	20 16	0	15 30.1	-23 13	7.2
Thu Nov 20/Fri Nov 21	2 18	20 29	21 54	5 04	6 28	0 12	7 23	.....	21 13	1	16 20.5	-25 52	7.2
Fri Nov 21/Sat Nov 22	2 22	20 30	21 55	5 03	6 28	0 17	7 26	.....	22 09	3	17 12.9	-27 22	7.1
Sat Nov 22/Sun Nov 23	2 26	20 31	21 56	5 03	6 28	0 22	7 30	.....	23 02	7	18 06.4	-27 36	7.1
Sun Nov 23/Mon Nov 24	2 30	20 32	21 57	5 02	6 27	0 27	7 33	.....	23 50	13	19 00.1	-26 29	7.1
Mon Nov 24/Tue Nov 25	2 34	20 33	21 58	5 02	6 27	0 32	7 37	.....	0 32	20	19 52.8	-24 06	7.1
Tue Nov 25/Wed Nov 26	2 38	20 34	21 59	5 01	6 27	0 37	7 40	.....	1 10	28	20 44.1	-20 31	7.0
Wed Nov 26/Thu Nov 27	2 42	20 35	22 01	5 01	6 27	0 42	7 44	.....	1 43	37	21 33.8	-15 54	7.0
Thu Nov 27/Fri Nov 28	2 46	20 36	22 02	5 01	6 27	0 47	7 47	.....	2 14	48	22 22.3	-10 25	7.0
Fri Nov 28/Sat Nov 29	2 50	20 36	22 03	5 00	6 27	0 52	7 51	.....	2 44	59	23 10.5	- 4 17	7.0
Sat Nov 29/Sun Nov 30	2 54	20 37	22 04	5 00	6 26	0 57	7 54	.....	3 14	69	23 59.3	2 17	6.9
Sun Nov 30/Mon Dec 01	2 58	20 38	22 05	5 00	6 26	1 02	7 58	.....	3 46	79	0 50.3	9 00	6.9

***** 2025 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
Mon Dec 01/Tue Dec 02	3 02	20 39	22 06	4 59	6 26	1 07	8 02	.....	4 22	88	1 44.7	15 29	6.9
Tue Dec 02/Wed Dec 03	3 06	20 40	22 07	4 59	6 26	1 12	8 05	18 05	5 04	95	2 43.8	21 16	6.9
Wed Dec 03/Thu Dec 04	3 09	20 40	22 08	4 59	6 26	1 17	8 09	19 20	5 55	99	3 47.9	25 45	6.9
Thu Dec 04/Fri Dec 05	3 13	20 41	22 09	4 59	6 26	1 22	8 13	20 35	.....	100	4 56.2	28 26	6.8
Fri Dec 05/Sat Dec 06	3 17	20 42	22 10	4 59	6 26	1 27	8 17	21 45	.....	98	6 05.8	28 58	6.8
Sat Dec 06/Sun Dec 07	3 21	20 43	22 11	4 59	6 26	1 32	8 21	22 47	.....	93	7 13.3	27 23	6.8
Sun Dec 07/Mon Dec 08	3 25	20 44	22 11	4 59	6 27	1 36	8 25	23 38	.....	86	8 16.0	24 02	6.8
Mon Dec 08/Tue Dec 09	3 29	20 44	22 12	4 59	6 27	1 41	8 29	0 20	.....	77	9 12.9	19 24	6.8
Tue Dec 09/Wed Dec 10	3 33	20 45	22 13	4 59	6 27	1 46	8 33	0 55	.....	67	10 04.5	14 00	6.8
Wed Dec 10/Thu Dec 11	3 37	20 46	22 14	4 59	6 27	1 51	8 37	1 25	.....	57	10 52.0	8 12	6.7
Thu Dec 11/Fri Dec 12	3 41	20 46	22 15	4 59	6 27	1 56	8 41	1 53	.....	47	11 36.7	2 18	6.7
Fri Dec 12/Sat Dec 13	3 45	20 47	22 16	4 59	6 28	2 00	8 45	2 19	.....	37	12 19.9	- 3 30	6.7
Sat Dec 13/Sun Dec 14	3 49	20 48	22 16	4 59	6 28	2 05	8 49	2 46	.....	28	13 02.8	- 9 02	6.7
Sun Dec 14/Mon Dec 15	3 53	20 48	22 17	4 59	6 28	2 10	8 53	3 14	.....	20	13 46.4	-14 08	6.7
Mon Dec 15/Tue Dec 16	3 57	20 49	22 18	5 00	6 29	2 14	8 57	3 44	.....	13	14 31.6	-18 40	6.7
Tue Dec 16/Wed Dec 17	4 01	20 50	22 18	5 00	6 29	2 19	9 02	4 19	18 09	8	15 18.9	-22 27	6.7
Wed Dec 17/Thu Dec 18	4 05	20 50	22 19	5 00	6 29	2 24	9 06	4 59	19 07	4	16 08.7	-25 17	6.7
Thu Dec 18/Fri Dec 19	4 09	20 51	22 20	5 01	6 30	2 28	9 10	5 45	20 03	1	17 00.8	-27 01	6.7
Fri Dec 19/Sat Dec 20	4 13	20 51	22 20	5 01	6 30	2 33	9 15	.....	20 57	0	17 54.2	-27 29	6.7
Sat Dec 20/Sun Dec 21	4 17	20 52	22 21	5 02	6 31	2 37	9 19	.....	21 47	1	18 48.0	-26 38	6.7
Sun Dec 21/Mon Dec 22	4 20	20 52	22 21	5 02	6 31	2 42	9 24	.....	22 32	4	19 41.1	-24 28	6.7
Mon Dec 22/Tue Dec 23	4 24	20 53	22 22	5 03	6 32	2 46	9 28	.....	23 11	8	20 32.6	-21 07	6.7
Tue Dec 23/Wed Dec 24	4 28	20 53	22 22	5 03	6 32	2 50	9 33	.....	23 45	15	21 22.2	-16 43	6.7
Wed Dec 24/Thu Dec 25	4 32	20 54	22 23	5 04	6 33	2 55	9 37	.....	0 16	23	22 10.1	-11 29	6.7
Thu Dec 25/Fri Dec 26	4 36	20 54	22 23	5 05	6 33	2 59	9 42	.....	0 46	32	22 57.2	- 5 38	6.7
Fri Dec 26/Sat Dec 27	4 40	20 54	22 23	5 05	6 34	3 03	9 46	.....	1 15	42	23 44.2	0 39	6.7
Sat Dec 27/Sun Dec 28	4 44	20 55	22 24	5 06	6 35	3 07	9 51	.....	1 45	53	0 32.6	7 06	6.7
Sun Dec 28/Mon Dec 29	4 48	20 55	22 24	5 07	6 35	3 12	9 56	.....	2 18	64	1 23.5	13 25	6.7
Mon Dec 29/Tue Dec 30	4 52	20 55	22 24	5 08	6 36	3 16	10 00	.....	2 55	75	2 18.5	19 16	6.7
Tue Dec 30/Wed Dec 31	4 56	20 56	22 24	5 08	6 37	3 20	10 05	.....	3 40	84	3 18.4	24 09	6.7
Wed Dec 31/Thu Jan 01	5 00	20 56	22 24	5 09	6 37	3 24	10 10	18 08	4 34	92	4 23.3	27 35	6.7