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Observer's Almanac -- 2002 -- Multiple Mirror Telescope Observatory

Latitude=+31d 41m 19.6s Longitude= 110d 53m 04.4s  
 Elevation=2600 m (8585 ft) Time Zone=+7h  
 Craig Foltz, December 12, 2001

2002	Sun	Sun	Sun	RA 3H	RA 3H	Sun	Sun	Sun	Moon	Moon	Moon			
Age	Sunset	6 Deg	12 Deg	18 Deg	West at	Sid Time	East at	18 Deg	12 Deg	6 Deg	Sunrise	rise	set	at
Midnight	W Hr	W Hr	W Hr	18 Deg	Midnight	18 Deg	E Hr	E Hr	E Hr	E Hr				
Jan 1	17 31	17 58	18 28	18 58	22 20	6 23 27	15 22	5 57	6 27	6 57	7 24	20 14		-10.7
Jan 2	17 32	17 59	18 29	18 58	22 25	6 27 23	15 26	5 57	6 27	6 57	7 24	21 23		-9.7
Jan 3	17 33	17 59	18 30	18 59	22 30	6 31 20	15 30	5 58	6 27	6 57	7 24	22 31		-8.8
Jan 4	17 33	18 00	18 30	19 00	22 34	6 35 16	15 34	5 58	6 27	6 58	7 24	23 36		-7.8
Jan 5	17 34	18 01	18 31	19 00	22 39	6 39 13	15 38	5 58	6 28	6 58	7 24	0 42		-6.9
Jan 6	17 35	18 02	18 32	19 01	22 44	6 43 09	15 42	5 58	6 28	6 58	7 24	1 46		-5.9
Jan 7	17 36	18 02	18 32	19 02	22 48	6 47 06	15 46	5 58	6 28	6 58	7 24	2 49		-5.0
Jan 8	17 37	18 03	18 33	19 03	22 53	6 51 02	15 50	5 58	6 28	6 58	7 24	3 52		-4.0
Jan 9	17 37	18 04	18 34	19 03	22 58	6 54 59	15 54	5 59	6 28	6 58	7 24	4 54		-3.1
Jan 10	17 38	18 05	18 35	19 04	23 02	6 58 56	15 58	5 59	6 28	6 58	7 24	5 54		-2.2
Jan 11	17 39	18 06	18 36	19 05	23 07	7 02 52	16 02	5 59	6 28	6 58	7 24	6 50		-1.2
Jan 12	17 40	18 06	18 36	19 06	23 12	7 06 49	16 06	5 59	6 28	6 58	7 24			-0.3
Jan 13	17 41	18 07	18 37	19 06	23 16	7 10 45	16 10	5 59	6 28	6 58	7 24		17 57	0.7
Jan 14	17 42	18 08	18 38	19 07	23 21	7 14 42	16 14	5 58	6 28	6 58	7 24		18 54	1.6
Jan 15	17 43	18 09	18 39	19 08	23 26	7 18 38	16 18	5 58	6 28	6 57	7 24		19 51	2.6
Jan 16	17 44	18 10	18 40	19 09	23 30	7 22 35	16 22	5 58	6 27	6 57	7 23		20 46	3.5
Jan 17	17 44	18 11	18 40	19 09	23 35	7 26 31	16 26	5 58	6 27	6 57	7 23		21 40	4.5
Jan 18	17 45	18 11	18 41	19 10	23 40	7 30 28	16 29	5 58	6 27	6 57	7 23		22 34	5.4
Jan 19	17 46	18 12	18 42	19 11	23 45	7 34 25	16 33	5 58	6 27	6 56	7 23		23 25	6.4
Jan 20	17 47	18 13	18 43	19 12	23 49	7 38 21	16 37	5 58	6 27	6 56	7 22		0 20	7.3
Jan 21	17 48	18 14	18 44	19 13	23 54	7 42 18	16 41	5 57	6 26	6 56	7 22		1 16	8.3
Jan 22	17 49	18 15	18 44	19 13	23 59	7 46 14	16 44	5 57	6 26	6 56	7 21		2 14	9.2
Jan 23	17 50	18 16	18 45	19 14	0 04	7 50 11	16 48	5 57	6 26	6 55	7 21		3 14	10.2
Jan 24	17 51	18 17	18 46	19 15	0 08	7 54 07	16 52	5 56	6 25	6 55	7 21		4 18	11.1
Jan 25	17 52	18 18	18 47	19 16	0 13	7 58 04	16 55	5 56	6 25	6 54	7 20		5 21	12.1
Jan 26	17 53	18 18	18 48	19 17	0 18	8 02 00	16 59	5 56	6 25	6 54	7 20		6 23	13.0
Jan 27	17 54	18 19	18 49	19 17	0 23	8 05 57	17 02	5 55	6 24	6 53	7 19			14.0
Jan 28	17 54	18 20	18 49	19 18	0 27	8 09 54	17 06	5 55	6 24	6 53	7 18	17 52		-13.1
Jan 29	17 55	18 21	18 50	19 19	0 32	8 13 50	17 09	5 54	6 23	6 52	7 18	19 03		-12.1
Jan 30	17 56	18 22	18 51	19 20	0 37	8 17 47	17 13	5 54	6 23	6 52	7 17	20 14		-11.2
Jan 31	17 57	18 23	18 52	19 20	0 41	8 21 43	17 16	5 53	6 22	6 51	7 17	21 23		-10.2

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Latitude=+31d 41m 19.6s Longitude= 110d 53m 04.4s  
 Elevation=2600 m (8585 ft) Time Zone=+7h  
 Craig Foltz, December 12, 2001

2002	Sun	Sun	Sun	RA 3H	RA 3H	Sun	Sun	Sun		Moon	Moon	Moon		
Age	Sunset	6 Deg	12 Deg	18 Deg	West at	Sid Time	East at	18 Deg	12 Deg	6 Deg	Sunrise	rise	set	at
Date		W Hrzs	W Hrzs	W Hrzs	18 Deg	Midnight	18 Deg	E Hrzs	E Hrzs	E Hrzs				
Midnight														
Feb 1	17 58	18 24	18 53	19 21	0 46	8 25 40	17 20	5 53	6 22	6 51	7 16	22 31		-9.3
Feb 2	17 59	18 24	18 53	19 22	0 51	8 29 36	17 23	5 52	6 21	6 50	7 15	23 36		-8.3
Feb 3	18 00	18 25	18 54	19 23	0 56	8 33 33	17 26	5 52	6 20	6 49	7 15	0 41		-7.4
Feb 4	18 01	18 26	18 55	19 24	1 00	8 37 29	17 30	5 51	6 20	6 49	7 14	1 46		-6.4
Feb 5	18 02	18 27	18 56	19 24	1 05	8 41 26	17 33	5 51	6 19	6 48	7 13	2 48		-5.5
Feb 6	18 03	18 28	18 57	19 25	1 10	8 45 23	17 36	5 50	6 18	6 47	7 12	3 49		-4.6
Feb 7	18 04	18 29	18 57	19 26	1 14	8 49 19	17 39	5 49	6 18	6 46	7 12	4 45		-3.6
Feb 8	18 04	18 30	18 58	19 27	1 19	8 53 16	17 43	5 48	6 17	6 46	7 11	5 37		-2.7
Feb 9	18 05	18 30	18 59	19 27	1 24	8 57 12	17 46	5 48	6 16	6 45	7 10	6 24		-1.7
Feb 10	18 06	18 31	19 00	19 28	1 29	9 01 09	17 49	5 47	6 15	6 44	7 09			-0.8
Feb 11	18 07	18 32	19 01	19 29	1 33	9 05 05	17 52	5 46	6 15	6 43	7 08			0.2
Feb 12	18 08	18 33	19 01	19 30	1 38	9 09 02	17 55	5 45	6 14	6 42	7 07		18 38	1.1
Feb 13	18 09	18 34	19 02	19 30	1 43	9 12 58	17 59	5 45	6 13	6 41	7 06		19 33	2.1
Feb 14	18 10	18 34	19 03	19 31	1 47	9 16 55	18 02	5 44	6 12	6 41	7 05		20 27	3.0
Feb 15	18 10	18 35	19 04	19 32	1 52	9 20 52	18 05	5 43	6 11	6 40	7 04		21 20	4.0
Feb 16	18 11	18 36	19 04	19 33	1 57	9 24 48	18 08	5 42	6 10	6 39	7 03		22 13	4.9
Feb 17	18 12	18 37	19 05	19 33	2 01	9 28 45	18 11	5 41	6 09	6 38	7 02		23 05	5.9
Feb 18	18 13	18 38	19 06	19 34	2 06	9 32 41	18 14	5 40	6 08	6 37	7 01		0 03	6.8
Feb 19	18 14	18 38	19 07	19 35	2 11	9 36 38	18 17	5 39	6 07	6 36	7 00		1 01	7.8
Feb 20	18 15	18 39	19 07	19 36	2 16	9 40 34	18 20	5 38	6 06	6 35	6 59		2 02	8.7
Feb 21	18 15	18 40	19 08	19 36	2 20	9 44 31	18 23	5 37	6 05	6 34	6 58		3 03	9.7
Feb 22	18 16	18 41	19 09	19 37	2 25	9 48 27	18 26	5 36	6 04	6 33	6 57		4 05	10.6
Feb 23	18 17	18 41	19 10	19 38	2 30	9 52 24	18 29	5 35	6 03	6 32	6 56		5 03	11.6
Feb 24	18 18	18 42	19 10	19 39	2 34	9 56 21	18 32	5 34	6 02	6 31	6 55		5 56	12.5
Feb 25	18 18	18 43	19 11	19 39	2 39	10 00 17	18 34	5 33	6 01	6 30	6 54			13.5
Feb 26	18 19	18 44	19 12	19 40	2 44	10 04 14	18 37	5 32	6 00	6 28	6 53	17 49		-13.6
Feb 27	18 20	18 44	19 13	19 41	2 48	10 08 10	18 40	5 31	5 59	6 27	6 52	19 01		-12.6
Feb 28	18 21	18 45	19 13	19 42	2 53	10 12 07	18 43	5 30	5 58	6 26	6 51	20 11		-11.7

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2002	Sun	Sun	Sun	RA 3H	RA 3H	Sun	Sun	Sun		Moon	Moon	Moon		
Age	Sunset	6 Deg	12 Deg	18 Deg	West at	Sid Time	East at	18 Deg	12 Deg	6 Deg	Sunrise	rise	set	at
Date		W Hrzs	W Hrzs	W Hrzs	18 Deg	Midnight	18 Deg	E Hrzs	E Hrzs	E Hrzs				
Midnight														
Mar 1	18 22	18 46	19 14	19 42	2 58	10 16 03	18 46	5 29	5 57	6 25	6 49	21 20		-10.7
Mar 2	18 22	18 47	19 15	19 43	3 02	10 19 60	18 49	5 28	5 56	6 24	6 48	22 27		-9.8
Mar 3	18 23	18 47	19 16	19 44	3 07	10 23 56	18 51	5 26	5 55	6 23	6 47	23 33		-8.8
Mar 4	18 24	18 48	19 16	19 44	3 12	10 27 53	18 54	5 25	5 53	6 22	6 46	0 40		-7.9
Mar 5	18 25	18 49	19 17	19 45	3 16	10 31 50	18 57	5 24	5 52	6 20	6 45	1 43		-7.0
Mar 6	18 25	18 50	19 18	19 46	3 21	10 35 46	18 60	5 23	5 51	6 19	6 44	2 42		-6.0
Mar 7	18 26	18 50	19 18	19 47	3 26	10 39 43	19 02	5 22	5 50	6 18	6 42	3 35		-5.1
Mar 8	18 27	18 51	19 19	19 47	3 30	10 43 39	19 05	5 21	5 49	6 17	6 41	4 23		-4.1
Mar 9	18 27	18 52	19 20	19 48	3 35	10 47 36	19 08	5 19	5 47	6 16	6 40	5 05		-3.2
Mar 10	18 28	18 52	19 21	19 49	3 40	10 51 32	19 10	5 18	5 46	6 14	6 39	5 42		-2.2
Mar 11	18 29	18 53	19 21	19 49	3 44	10 55 29	19 13	5 17	5 45	6 13	6 37			-1.3
Mar 12	18 30	18 54	19 22	19 50	3 49	10 59 25	19 16	5 15	5 44	6 12	6 36			-0.3
Mar 13	18 30	18 54	19 23	19 51	3 54	11 03 22	19 18	5 14	5 43	6 11	6 35		18 21	0.6
Mar 14	18 31	18 55	19 23	19 52	3 58	11 07 19	19 21	5 13	5 41	6 09	6 34		19 14	1.6
Mar 15	18 32	18 56	19 24	19 52	4 03	11 11 15	19 24	5 12	5 40	6 08	6 32		20 08	2.5
Mar 16	18 32	18 57	19 25	19 53	4 08	11 15 12	19 26	5 10	5 39	6 07	6 31		21 02	3.5
Mar 17	18 33	18 57	19 25	19 54	4 12	11 19 08	19 29	5 09	5 37	6 06	6 30		21 57	4.4
Mar 18	18 34	18 58	19 26	19 55	4 17	11 23 05	19 32	5 08	5 36	6 04	6 29		22 54	5.4
Mar 19	18 34	18 59	19 27	19 55	4 22	11 27 01	19 34	5 06	5 35	6 03	6 27		23 51	6.3
Mar 20	18 35	18 59	19 28	19 56	4 26	11 30 58	19 37	5 05	5 34	6 02	6 26		0 52	7.3
Mar 21	18 36	19 00	19 28	19 57	4 31	11 34 54	19 39	5 04	5 32	6 01	6 25		1 52	8.2
Mar 22	18 36	19 01	19 29	19 58	4 36	11 38 51	19 42	5 02	5 31	5 59	6 24		2 50	9.2
Mar 23	18 37	19 01	19 30	19 58	4 40	11 42 48	19 45	5 01	5 30	5 58	6 22		3 43	10.1
Mar 24	18 38	19 02	19 30	19 59	4 45	11 46 44	19 47	5 00	5 28	5 57	6 21		4 32	11.1
Mar 25	18 38	19 03	19 31	20 00	4 50	11 50 41	19 50	4 58	5 27	5 55	6 20		5 16	12.0
Mar 26	18 39	19 03	19 32	20 01	4 55	11 54 37	19 52	4 57	5 26	5 54	6 18		5 55	13.0
Mar 27	18 40	19 04	19 33	20 01	4 59	11 58 34	19 55	4 55	5 24	5 53	6 17			13.9
Mar 28	18 40	19 05	19 33	20 02	5 04	12 02 30	19 57	4 54	5 23	5 51	6 16	18 55		-13.1
Mar 29	18 41	19 05	19 34	20 03	5 09	12 06 27	19 60	4 53	5 22	5 50	6 15	20 05		-12.2
Mar 30	18 42	19 06	19 35	20 04	5 14	12 10 23	20 02	4 51	5 20	5 49	6 13	21 14		-11.2
Mar 31	18 42	19 07	19 35	20 05	5 18	12 14 20	20 05	4 50	5 19	5 48	6 12	22 23		-10.3

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2002	Sun	Sun	Sun	RA 3H	RA 3H	Sun	Sun	Sun		Moon	Moon	Moon		
Age	Sunset	6 Deg	12 Deg	18 Deg	West at	Sid Time	East at	18 Deg	12 Deg	6 Deg	Sunrise	rise	set	at
Date		W Hrzs	W Hrzs	W Hrzs	18 Deg	Midnight	18 Deg	E Hrzs	E Hrzs	E Hrzs				
Midnight														
Apr 1	18 43	19 07	19 36	20 05	5 23	12 18 17	20 07	4 48	5 18	5 46	6 11	23 29		-9.4
Apr 2	18 44	19 08	19 37	20 06	5 28	12 22 13	20 10	4 47	5 16	5 45	6 10	0 33		-8.4
Apr 3	18 44	19 09	19 38	20 07	5 33	12 26 10	20 13	4 46	5 15	5 44	6 08	1 30		-7.5
Apr 4	18 45	19 10	19 38	20 08	5 37	12 30 06	20 15	4 44	5 14	5 43	6 07	2 21		-6.5
Apr 5	18 46	19 10	19 39	20 09	5 42	12 34 03	20 18	4 43	5 12	5 41	6 06	3 05		-5.6
Apr 6	18 46	19 11	19 40	20 09	5 47	12 37 59	20 20	4 41	5 11	5 40	6 05	3 44		-4.6
Apr 7	18 47	19 12	19 41	20 10	5 52	12 41 56	20 23	4 40	5 10	5 39	6 03	4 18		-3.7
Apr 8	18 48	19 12	19 41	20 11	5 56	12 45 52	20 25	4 39	5 08	5 37	6 02	4 49		-2.7
Apr 9	18 48	19 13	19 42	20 12	6 01	12 49 49	20 28	4 37	5 07	5 36	6 01	5 18		-1.8
Apr 10	18 49	19 14	19 43	20 13	6 06	12 53 46	20 30	4 36	5 06	5 35	6 00			-0.8
Apr 11	18 50	19 14	19 44	20 14	6 11	12 57 42	20 33	4 34	5 04	5 34	5 59			0.1
Apr 12	18 50	19 15	19 45	20 15	6 16	13 01 39	20 35	4 33	5 03	5 32	5 57		18 57	1.1
Apr 13	18 51	19 16	19 45	20 15	6 20	13 05 35	20 38	4 32	5 02	5 31	5 56		19 52	2.0
Apr 14	18 52	19 17	19 46	20 16	6 25	13 09 32	20 40	4 30	5 01	5 30	5 55		20 49	3.0
Apr 15	18 52	19 17	19 47	20 17	6 30	13 13 28	20 43	4 29	4 59	5 29	5 54		21 47	3.9
Apr 16	18 53	19 18	19 48	20 18	6 35	13 17 25	20 46	4 27	4 58	5 28	5 53		22 47	4.9
Apr 17	18 54	19 19	19 48	20 19	6 40	13 21 21	20 48	4 26	4 57	5 26	5 52		23 45	5.8
Apr 18	18 54	19 20	19 49	20 20	6 45	13 25 18	20 51	4 25	4 56	5 25	5 50		0 43	6.8
Apr 19	18 55	19 20	19 50	20 21	6 50	13 29 15	20 53	4 23	4 54	5 24	5 49		1 37	7.7
Apr 20	18 56	19 21	19 51	20 22	6 54	13 33 11	20 56	4 22	4 53	5 23	5 48		2 25	8.7
Apr 21	18 56	19 22	19 52	20 23	6 59	13 37 08	20 59	4 21	4 52	5 22	5 47		3 09	9.6
Apr 22	18 57	19 22	19 53	20 24	7 04	13 41 04	21 01	4 19	4 51	5 21	5 46		3 49	10.6
Apr 23	18 58	19 23	19 53	20 25	7 09	13 45 01	21 04	4 18	4 49	5 20	5 45		4 26	11.5
Apr 24	18 59	19 24	19 54	20 26	7 14	13 48 57	21 06	4 17	4 48	5 19	5 44			12.5
Apr 25	18 59	19 25	19 55	20 27	7 19	13 52 54	21 09	4 16	4 47	5 17	5 43			13.4
Apr 26	19 00	19 25	19 56	20 27	7 24	13 56 50	21 12	4 14	4 46	5 16	5 42	18 50		-13.6
Apr 27	19 01	19 26	19 57	20 28	7 29	14 00 47	21 14	4 13	4 45	5 15	5 41	20 00		-12.7
Apr 28	19 01	19 27	19 58	20 29	7 34	14 04 44	21 17	4 12	4 44	5 14	5 40	21 09		-11.8
Apr 29	19 02	19 28	19 58	20 30	7 38	14 08 40	21 20	4 10	4 42	5 13	5 39	22 16		-10.8
Apr 30	19 03	19 28	19 59	20 31	7 43	14 12 37	21 23	4 09	4 41	5 12	5 38	23 16		-9.9

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Age	Sunset	6 Deg	12 Deg	18 Deg	West at	Sid Time	East at	18 Deg	12 Deg	6 Deg	Sunrise	rise	set	at
Date		W Hrzs	W Hrzs	W Hrzs	18 Deg	Midnight	18 Deg	E Hrzs	E Hrzs	E Hrzs				
Midnight														
May 1	19 03	19 29	20 00	20 32	7 48	14 16 33	21 25	4 08	4 40	5 11	5 37	0 13		-8.9
May 2	19 04	19 30	20 01	20 33	7 53	14 20 30	21 28	4 07	4 39	5 10	5 36	1 02		-8.0
May 3	19 05	19 31	20 02	20 34	7 58	14 24 26	21 31	4 06	4 38	5 09	5 35	1 43		-7.0
May 4	19 05	19 32	20 03	20 35	8 03	14 28 23	21 34	4 04	4 37	5 08	5 34	2 19		-6.1
May 5	19 06	19 32	20 04	20 36	8 08	14 32 19	21 36	4 03	4 36	5 07	5 34	2 51		-5.1
May 6	19 07	19 33	20 04	20 37	8 13	14 36 16	21 39	4 02	4 35	5 07	5 33	3 20		-4.2
May 7	19 08	19 34	20 05	20 38	8 18	14 40 13	21 42	4 01	4 34	5 06	5 32	3 48		-3.2
May 8	19 08	19 35	20 06	20 39	8 23	14 44 09	21 45	4 00	4 33	5 05	5 31	4 15		-2.3
May 9	19 09	19 35	20 07	20 40	8 28	14 48 06	21 48	3 59	4 32	5 04	5 30	4 43		-1.3
May 10	19 10	19 36	20 08	20 41	8 33	14 52 02	21 51	3 58	4 31	5 03	5 30			-0.4
May 11	19 10	19 37	20 09	20 42	8 38	14 55 59	21 53	3 57	4 30	5 02	5 29			0.6
May 12	19 11	19 38	20 09	20 43	8 43	14 59 55	21 56	3 56	4 30	5 02	5 28		19 41	1.5
May 13	19 12	19 38	20 10	20 44	8 47	15 03 52	21 59	3 55	4 29	5 01	5 27		20 41	2.5
May 14	19 12	19 39	20 11	20 45	8 52	15 07 48	22 02	3 54	4 28	5 00	5 27		21 41	3.4
May 15	19 13	19 40	20 12	20 46	8 57	15 11 45	22 05	3 53	4 27	4 59	5 26		22 40	4.4
May 16	19 14	19 41	20 13	20 47	9 02	15 15 42	22 08	3 52	4 26	4 59	5 25		23 33	5.3
May 17	19 14	19 41	20 14	20 48	9 07	15 19 38	22 11	3 51	4 26	4 58	5 25		0 24	6.3
May 18	19 15	19 42	20 15	20 49	9 12	15 23 35	22 14	3 50	4 25	4 57	5 24		1 08	7.2
May 19	19 16	19 43	20 15	20 50	9 17	15 27 31	22 18	3 49	4 24	4 57	5 24		1 48	8.2
May 20	19 16	19 43	20 16	20 51	9 22	15 31 28	22 21	3 49	4 23	4 56	5 23		2 24	9.1
May 21	19 17	19 44	20 17	20 52	9 27	15 35 24	22 24	3 48	4 23	4 56	5 23		2 59	10.1
May 22	19 18	19 45	20 18	20 53	9 32	15 39 21	22 27	3 47	4 22	4 55	5 22		3 33	11.0
May 23	19 18	19 46	20 19	20 54	9 36	15 43 17	22 30	3 46	4 21	4 54	5 22		4 09	12.0
May 24	19 19	19 46	20 19	20 54	9 41	15 47 14	22 34	3 46	4 21	4 54	5 21		4 48	12.9
May 25	19 20	19 47	20 20	20 55	9 46	15 51 11	22 37	3 45	4 20	4 53	5 21			13.9
May 26	19 20	19 48	20 21	20 56	9 51	15 55 07	22 40	3 44	4 20	4 53	5 20	19 55		-13.2
May 27	19 21	19 48	20 22	20 57	9 56	15 59 04	22 43	3 44	4 19	4 53	5 20	21 00		-12.3
May 28	19 21	19 49	20 22	20 58	10 00	16 03 00	22 47	3 43	4 19	4 52	5 20	22 00		-11.3
May 29	19 22	19 50	20 23	20 59	10 05	16 06 57	22 50	3 43	4 18	4 52	5 19	22 53		-10.4
May 30	19 23	19 50	20 24	21 00	10 10	16 10 53	22 54	3 42	4 18	4 51	5 19	23 36		-9.4
May 31	19 23	19 51	20 24	21 00	10 15	16 14 50	22 57	3 42	4 18	4 51	5 19	0 17		-8.5

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2002	Sun	Sun	Sun	RA 3H	RA 3H	Sun	Sun	Sun		Moon	Moon	Moon		
Age	Sunset	6 Deg	12 Deg	18 Deg	West at	Sid Time	East at	18 Deg	12 Deg	6 Deg	Sunrise	rise	set	at
Date		W Hrzs	W Hrzs	W Hrzs	18 Deg	Midnight	18 Deg	E Hrzs	E Hrzs	E Hrzs				
Midnight														
Jun 1	19 24	19 51	20 25	21 01	10 19	16 18 46	23 01	3 41	4 17	4 51	5 19	0 51		-7.5
Jun 2	19 24	19 52	20 26	21 02	10 24	16 22 43	23 04	3 41	4 17	4 51	5 18	1 22		-6.6
Jun 3	19 25	19 53	20 26	21 03	10 29	16 26 40	23 08	3 40	4 17	4 50	5 18	1 50		-5.6
Jun 4	19 25	19 53	20 27	21 03	10 33	16 30 36	23 11	3 40	4 16	4 50	5 18	2 17		-4.7
Jun 5	19 26	19 54	20 28	21 04	10 38	16 34 33	23 15	3 40	4 16	4 50	5 18	2 44		-3.7
Jun 6	19 26	19 54	20 28	21 05	10 43	16 38 29	23 18	3 39	4 16	4 50	5 18	3 13		-2.8
Jun 7	19 27	19 55	20 29	21 05	10 47	16 42 26	23 22	3 39	4 16	4 50	5 18	3 44		-1.8
Jun 8	19 27	19 55	20 29	21 06	10 52	16 46 22	23 26	3 39	4 16	4 50	5 18	4 20		-0.9
Jun 9	19 28	19 56	20 30	21 06	10 56	16 50 19	23 30	3 39	4 15	4 50	5 17			0.1
Jun 10	19 28	19 56	20 30	21 07	11 01	16 54 15	23 33	3 39	4 15	4 50	5 17		19 32	1.0
Jun 11	19 29	19 57	20 31	21 08	11 05	16 58 12	23 37	3 39	4 15	4 49	5 17		20 33	2.0
Jun 12	19 29	19 57	20 31	21 08	11 10	17 02 08	23 41	3 38	4 15	4 49	5 17		21 30	2.9
Jun 13	19 29	19 57	20 32	21 09	11 14	17 06 05	23 45	3 38	4 15	4 50	5 18		22 22	3.9
Jun 14	19 30	19 58	20 32	21 09	11 19	17 10 02	23 49	3 38	4 15	4 50	5 18		23 08	4.8
Jun 15	19 30	19 58	20 32	21 09	11 23	17 13 58	23 53	3 38	4 15	4 50	5 18		23 46	5.8
Jun 16	19 30	19 58	20 33	21 10	11 27	17 17 55	23 57	3 38	4 15	4 50	5 18		0 26	6.7
Jun 17	19 31	19 59	20 33	21 10	11 31	17 21 51	0 01	3 39	4 16	4 50	5 18		1 01	7.7
Jun 18	19 31	19 59	20 33	21 10	11 36	17 25 48	0 05	3 39	4 16	4 50	5 18		1 34	8.6
Jun 19	19 31	19 59	20 34	21 11	11 40	17 29 44	0 09	3 39	4 16	4 50	5 18		2 08	9.6
Jun 20	19 31	20 00	20 34	21 11	11 44	17 33 41	0 13	3 39	4 16	4 50	5 19		2 44	10.5
Jun 21	19 32	20 00	20 34	21 11	11 48	17 37 37	0 18	3 39	4 16	4 51	5 19		3 24	11.5
Jun 22	19 32	20 00	20 34	21 11	11 52	17 41 34	0 22	3 40	4 17	4 51	5 19		4 08	12.4
Jun 23	19 32	20 00	20 34	21 11	11 57	17 45 31	0 26	3 40	4 17	4 51	5 19		4 58	13.3
Jun 24	19 32	20 00	20 35	21 12	12 01	17 49 27	0 30	3 40	4 17	4 51	5 20	19 46		-13.7
Jun 25	19 32	20 00	20 35	21 12	12 05	17 53 24	0 35	3 41	4 18	4 52	5 20	20 42		-12.8
Jun 26	19 32	20 01	20 35	21 12	12 09	17 57 20	0 39	3 41	4 18	4 52	5 20	21 31		-11.8
Jun 27	19 33	20 01	20 35	21 12	12 13	18 01 17	0 43	3 41	4 18	4 52	5 20	22 13		-10.9
Jun 28	19 33	20 01	20 35	21 12	12 16	18 05 13	0 48	3 42	4 19	4 53	5 21	22 50		-9.9
Jun 29	19 33	20 01	20 35	21 12	12 20	18 09 10	0 52	3 42	4 19	4 53	5 21	23 21		-9.0
Jun 30	19 33	20 01	20 35	21 12	12 24	18 13 06	0 56	3 43	4 20	4 54	5 22	23 47		-8.0

Observer's Almanac -- 2002 -- Multiple Mirror Telescope Observatory

Latitude=+31d 41m 19.6s Longitude= 110d 53m 04.4s  
 Elevation=2600 m (8585 ft) Time Zone=+7h  
 Craig Foltz, December 12, 2001

2002	Sun	Sun	Sun	RA 3H	RA 3H	Sun	Sun	Sun		Moon	Moon	Moon		
Age	Sunset	6 Deg	12 Deg	18 Deg	West at	Sid Time	East at	18 Deg	12 Deg	6 Deg	Sunrise	rise	set	at
Date		W Hrzs	W Hrzs	W Hrzs	18 Deg	Midnight	18 Deg	E Hrzs	E Hrzs	E Hrzs				
Midnight														
Jul 1	19 33	20 01	20 35	21 11	12 28	18 17 03	1 01	3 43	4 20	4 54	5 22	0 18		-7.1
Jul 2	19 33	20 00	20 35	21 11	12 32	18 20 60	1 05	3 44	4 21	4 55	5 22	0 45		-6.1
Jul 3	19 33	20 00	20 34	21 11	12 36	18 24 56	1 10	3 44	4 21	4 55	5 23	1 13		-5.2
Jul 4	19 32	20 00	20 34	21 11	12 39	18 28 53	1 15	3 45	4 22	4 56	5 23	1 42		-4.2
Jul 5	19 32	20 00	20 34	21 11	12 43	18 32 49	1 19	3 46	4 22	4 56	5 24	2 16		-3.3
Jul 6	19 32	20 00	20 34	21 10	12 47	18 36 46	1 24	3 46	4 23	4 57	5 24	2 54		-2.3
Jul 7	19 32	20 00	20 34	21 10	12 50	18 40 42	1 28	3 47	4 23	4 57	5 25	3 39		-1.4
Jul 8	19 32	20 00	20 33	21 10	12 54	18 44 39	1 33	3 48	4 24	4 58	5 25	4 31		-0.4
Jul 9	19 32	19 59	20 33	21 09	12 57	18 48 35	1 38	3 48	4 25	4 58	5 26		19 19	0.5
Jul 10	19 31	19 59	20 33	21 09	13 01	18 52 32	1 42	3 49	4 25	4 59	5 26		20 15	1.5
Jul 11	19 31	19 59	20 32	21 08	13 04	18 56 29	1 47	3 50	4 26	4 59	5 27		21 04	2.4
Jul 12	19 31	19 58	20 32	21 08	13 08	19 00 25	1 52	3 51	4 26	5 00	5 27		21 48	3.4
Jul 13	19 30	19 58	20 31	21 07	13 11	19 04 22	1 56	3 51	4 27	5 01	5 28		22 27	4.3
Jul 14	19 30	19 58	20 31	21 07	13 14	19 08 18	2 01	3 52	4 28	5 01	5 29		23 03	5.3
Jul 15	19 30	19 57	20 30	21 06	13 18	19 12 15	2 06	3 53	4 29	5 02	5 29		23 33	6.2
Jul 16	19 29	19 57	20 30	21 05	13 21	19 16 11	2 11	3 54	4 29	5 02	5 30		0 10	7.2
Jul 17	19 29	19 56	20 29	21 05	13 24	19 20 08	2 16	3 55	4 30	5 03	5 30		0 45	8.1
Jul 18	19 28	19 56	20 29	21 04	13 28	19 24 04	2 20	3 56	4 31	5 04	5 31		1 23	9.1
Jul 19	19 28	19 55	20 28	21 03	13 31	19 28 01	2 25	3 56	4 31	5 04	5 32		2 05	10.0
Jul 20	19 27	19 55	20 27	21 02	13 34	19 31 58	2 30	3 57	4 32	5 05	5 32		2 52	10.9
Jul 21	19 27	19 54	20 27	21 02	13 37	19 35 54	2 35	3 58	4 33	5 06	5 33		3 44	11.9
Jul 22	19 26	19 53	20 26	21 01	13 40	19 39 51	2 40	3 59	4 34	5 06	5 33		4 41	12.8
Jul 23	19 26	19 53	20 25	21 00	13 43	19 43 47	2 44	4 00	4 35	5 07	5 34	19 24		13.8
Jul 24	19 25	19 52	20 25	20 59	13 46	19 47 44	2 49	4 01	4 35	5 08	5 35	20 09		-13.3
Jul 25	19 25	19 51	20 24	20 58	13 49	19 51 40	2 54	4 02	4 36	5 08	5 35	20 47		-12.3
Jul 26	19 24	19 51	20 23	20 57	13 52	19 55 37	2 59	4 03	4 37	5 09	5 36	21 21		-11.4
Jul 27	19 23	19 50	20 22	20 56	13 55	19 59 33	3 04	4 04	4 38	5 10	5 37	21 51		-10.4
Jul 28	19 23	19 49	20 21	20 55	13 58	20 03 30	3 09	4 05	4 39	5 11	5 37	22 19		-9.5
Jul 29	19 22	19 49	20 21	20 54	14 01	20 07 27	3 14	4 06	4 39	5 11	5 38	22 46		-8.5
Jul 30	19 21	19 48	20 20	20 53	14 04	20 11 23	3 19	4 07	4 40	5 12	5 39	23 13		-7.6
Jul 31	19 20	19 47	20 19	20 52	14 07	20 15 20	3 23	4 07	4 41	5 13	5 39	23 38		-6.6

Observer's Almanac -- 2002 -- Multiple Mirror Telescope Observatory

Latitude=+31d 41m 19.6s Longitude= 110d 53m 04.4s  
 Elevation=2600 m (8585 ft) Time Zone=+7h  
 Craig Foltz, December 12, 2001

2002	Sun	Sun	Sun	RA 3H	RA 3H	Sun	Sun	Sun		Moon	Moon	Moon		
Age	Sunset	6 Deg	12 Deg	18 Deg	West at	Sid Time	East at	18 Deg	12 Deg	6 Deg	Sunrise	rise	set	at
Date		W Hrzs	W Hrzs	W Hrzs	18 Deg	Midnight	18 Deg	E Hrzs	E Hrzs	E Hrzs				
Midnight														
Aug 1	19 20	19 46	20 18	20 51	14 10	20 19 16	3 28	4 08	4 42	5 13	5 40	0 13		-5.7
Aug 2	19 19	19 45	20 17	20 50	14 13	20 23 13	3 33	4 09	4 43	5 14	5 40	0 48		-4.7
Aug 3	19 18	19 44	20 16	20 49	14 16	20 27 09	3 38	4 10	4 43	5 15	5 41	1 29		-3.8
Aug 4	19 17	19 43	20 15	20 48	14 19	20 31 06	3 43	4 11	4 44	5 16	5 42	2 17		-2.8
Aug 5	19 16	19 43	20 14	20 47	14 21	20 35 02	3 48	4 12	4 45	5 16	5 42	3 13		-1.9
Aug 6	19 16	19 42	20 13	20 46	14 24	20 38 59	3 53	4 13	4 46	5 17	5 43	4 16		-0.9
Aug 7	19 15	19 41	20 12	20 44	14 27	20 42 56	3 58	4 14	4 47	5 18	5 44			0.0
Aug 8	19 14	19 40	20 11	20 43	14 30	20 46 52	4 03	4 15	4 47	5 18	5 44		19 41	1.0
Aug 9	19 13	19 39	20 10	20 42	14 32	20 50 49	4 07	4 16	4 48	5 19	5 45		20 23	1.9
Aug 10	19 12	19 38	20 09	20 41	14 35	20 54 45	4 12	4 17	4 49	5 20	5 46		21 01	2.9
Aug 11	19 11	19 37	20 07	20 40	14 38	20 58 42	4 17	4 18	4 50	5 21	5 46		21 36	3.8
Aug 12	19 10	19 36	20 06	20 38	14 40	21 02 38	4 22	4 19	4 51	5 21	5 47		22 11	4.8
Aug 13	19 09	19 35	20 05	20 37	14 43	21 06 35	4 27	4 20	4 51	5 22	5 48		22 46	5.7
Aug 14	19 08	19 33	20 04	20 36	14 46	21 10 31	4 32	4 20	4 52	5 23	5 48		23 21	6.7
Aug 15	19 07	19 32	20 03	20 34	14 48	21 14 28	4 37	4 21	4 53	5 23	5 49		0 04	7.6
Aug 16	19 06	19 31	20 02	20 33	14 51	21 18 25	4 41	4 22	4 54	5 24	5 50		0 49	8.5
Aug 17	19 05	19 30	20 00	20 32	14 54	21 22 21	4 46	4 23	4 55	5 25	5 50		1 40	9.5
Aug 18	19 04	19 29	19 59	20 31	14 56	21 26 18	4 51	4 24	4 55	5 25	5 51		2 34	10.4
Aug 19	19 03	19 28	19 58	20 29	14 59	21 30 14	4 56	4 25	4 56	5 26	5 51		3 32	11.4
Aug 20	19 01	19 27	19 57	20 28	15 01	21 34 11	5 01	4 26	4 57	5 27	5 52		4 31	12.3
Aug 21	19 00	19 26	19 56	20 26	15 04	21 38 07	5 06	4 27	4 58	5 28	5 53			13.3
Aug 22	18 59	19 24	19 54	20 25	15 07	21 42 04	5 10	4 28	4 58	5 28	5 53	19 22		-13.8
Aug 23	18 58	19 23	19 53	20 24	15 09	21 46 00	5 15	4 28	4 59	5 29	5 54	19 53		-12.8
Aug 24	18 57	19 22	19 52	20 22	15 12	21 49 57	5 20	4 29	5 00	5 30	5 55	20 21		-11.9
Aug 25	18 56	19 21	19 50	20 21	15 14	21 53 54	5 25	4 30	5 01	5 30	5 55	20 48		-10.9
Aug 26	18 55	19 20	19 49	20 20	15 17	21 57 50	5 30	4 31	5 01	5 31	5 56	21 15		-10.0
Aug 27	18 53	19 18	19 48	20 18	15 19	22 01 47	5 34	4 32	5 02	5 32	5 56	21 43		-9.0
Aug 28	18 52	19 17	19 46	20 17	15 22	22 05 43	5 39	4 33	5 03	5 32	5 57	22 12		-8.1
Aug 29	18 51	19 16	19 45	20 15	15 24	22 09 40	5 44	4 33	5 04	5 33	5 58	22 45		-7.1
Aug 30	18 50	19 15	19 44	20 14	15 27	22 13 36	5 49	4 34	5 04	5 34	5 58	23 20		-6.2
Aug 31	18 48	19 13	19 42	20 12	15 29	22 17 33	5 53	4 35	5 05	5 34	5 59	0 07		-5.2

Observer's Almanac -- 2002 -- Multiple Mirror Telescope Observatory

Latitude=+31d 41m 19.6s Longitude= 110d 53m 04.4s  
 Elevation=2600 m (8585 ft) Time Zone=+7h  
 Craig Foltz, December 12, 2001

2002	Sun	Sun	Sun	RA 3H	RA 3H	Sun	Sun	Sun		Moon	Moon	Moon		
Age	Sunset	6 Deg	12 Deg	18 Deg	West at	Sid Time	East at	18 Deg	12 Deg	6 Deg	Sunrise	rise	set	at
Date		W Hrzs	W Hrzs	W Hrzs	18 Deg	Midnight	18 Deg	E Hrzs	E Hrzs	E Hrzs				
Midnight														
Sep 1	18 47	19 12	19 41	20 11	15 32	22 21 29	5 58	4 36	5 06	5 35	6 00	0 58		-4.3
Sep 2	18 46	19 11	19 40	20 10	15 34	22 25 26	6 03	4 37	5 06	5 35	6 00	1 56		-3.3
Sep 3	18 45	19 09	19 38	20 08	15 37	22 29 23	6 08	4 37	5 07	5 36	6 01	3 01		-2.4
Sep 4	18 43	19 08	19 37	20 07	15 39	22 33 19	6 12	4 38	5 08	5 37	6 01	4 10		-1.4
Sep 5	18 42	19 07	19 36	20 05	15 42	22 37 16	6 17	4 39	5 08	5 37	6 02	5 21		-0.5
Sep 6	18 41	19 05	19 34	20 04	15 44	22 41 12	6 22	4 40	5 09	5 38	6 03		18 54	0.5
Sep 7	18 40	19 04	19 33	20 02	15 47	22 45 09	6 26	4 40	5 10	5 39	6 03		19 31	1.4
Sep 8	18 38	19 03	19 32	20 01	15 49	22 49 05	6 31	4 41	5 11	5 39	6 04		20 07	2.4
Sep 9	18 37	19 02	19 30	20 00	15 52	22 53 02	6 36	4 42	5 11	5 40	6 04		20 43	3.3
Sep 10	18 36	19 00	19 29	19 58	15 54	22 56 58	6 40	4 43	5 12	5 41	6 05		21 20	4.3
Sep 11	18 34	18 59	19 28	19 57	15 57	23 00 55	6 45	4 43	5 13	5 41	6 06		22 01	5.2
Sep 12	18 33	18 58	19 26	19 55	15 59	23 04 52	6 50	4 44	5 13	5 42	6 06		22 46	6.1
Sep 13	18 32	18 56	19 25	19 54	16 02	23 08 48	6 54	4 45	5 14	5 42	6 07		23 35	7.1
Sep 14	18 31	18 55	19 23	19 52	16 04	23 12 45	6 59	4 46	5 15	5 43	6 07		0 30	8.0
Sep 15	18 29	18 54	19 22	19 51	16 07	23 16 41	7 04	4 46	5 15	5 44	6 08		1 28	9.0
Sep 16	18 28	18 52	19 21	19 50	16 09	23 20 38	7 08	4 47	5 16	5 44	6 09		2 26	9.9
Sep 17	18 27	18 51	19 19	19 48	16 12	23 24 34	7 13	4 48	5 16	5 45	6 09		3 24	10.9
Sep 18	18 25	18 50	19 18	19 47	16 15	23 28 31	7 18	4 48	5 17	5 45	6 10		4 21	11.8
Sep 19	18 24	18 48	19 17	19 45	16 17	23 32 27	7 22	4 49	5 18	5 46	6 10		5 16	12.8
Sep 20	18 23	18 47	19 15	19 44	16 20	23 36 24	7 27	4 50	5 18	5 47	6 11			13.7
Sep 21	18 21	18 46	19 14	19 43	16 22	23 40 21	7 32	4 51	5 19	5 47	6 12	18 51		-13.3
Sep 22	18 20	18 44	19 13	19 41	16 25	23 44 17	7 36	4 51	5 20	5 48	6 12	19 18		-12.4
Sep 23	18 19	18 43	19 11	19 40	16 27	23 48 14	7 41	4 52	5 20	5 49	6 13	19 46		-11.4
Sep 24	18 17	18 42	19 10	19 38	16 30	23 52 10	7 46	4 53	5 21	5 49	6 13	20 14		-10.5
Sep 25	18 16	18 40	19 09	19 37	16 32	23 56 07	7 50	4 53	5 22	5 50	6 14	20 46		-9.5
Sep 26	18 15	18 39	19 07	19 36	16 35	0 00 03	7 55	4 54	5 22	5 50	6 15	21 21		-8.6
Sep 27	18 14	18 38	19 06	19 34	16 38	0 03 60	7 59	4 55	5 23	5 51	6 15	22 02		-7.6
Sep 28	18 12	18 36	19 05	19 33	16 40	0 07 56	8 04	4 55	5 24	5 52	6 16	22 49		-6.7
Sep 29	18 11	18 35	19 03	19 32	16 43	0 11 53	8 09	4 56	5 24	5 52	6 17	23 41		-5.7
Sep 30	18 10	18 34	19 02	19 30	16 45	0 15 50	8 13	4 57	5 25	5 53	6 17	0 43		-4.8

Observer's Almanac -- 2002 -- Multiple Mirror Telescope Observatory

Latitude=+31d 41m 19.6s Longitude= 110d 53m 04.4s  
 Elevation=2600 m (8585 ft) Time Zone=+7h  
 Craig Foltz, December 12, 2001

2002	Sun	Sun	Sun	RA 3H	RA 3H	Sun	Sun	Sun		Moon	Moon	Moon		
Age	Sunset	6 Deg	12 Deg	18 Deg	West at	Sid Time	East at	18 Deg	12 Deg	6 Deg	Sunrise	rise	set	at
Date		W Hrzs	W Hrzs	W Hrzs	18 Deg	Midnight	18 Deg	E Hrzs	E Hrzs	E Hrzs				
Midnight														
Oct 1	18 08	18 33	19 01	19 29	16 48	0 19 46	8 18	4 57	5 25	5 54	6 18	1 49		-3.8
Oct 2	18 07	18 31	19 00	19 28	16 51	0 23 43	8 22	4 58	5 26	5 54	6 18	2 57		-2.9
Oct 3	18 06	18 30	18 58	19 26	16 53	0 27 39	8 27	4 59	5 27	5 55	6 19	4 07		-1.9
Oct 4	18 05	18 29	18 57	19 25	16 56	0 31 36	8 32	4 59	5 27	5 56	6 20	5 16		-1.0
Oct 5	18 03	18 28	18 56	19 24	16 59	0 35 32	8 36	5 00	5 28	5 56	6 20			0.0
Oct 6	18 02	18 26	18 55	19 23	17 01	0 39 29	8 41	5 01	5 29	5 57	6 21		18 35	0.9
Oct 7	18 01	18 25	18 53	19 21	17 04	0 43 25	8 45	5 01	5 29	5 57	6 22		19 13	1.9
Oct 8	18 00	18 24	18 52	19 20	17 07	0 47 22	8 50	5 02	5 30	5 58	6 22		19 53	2.8
Oct 9	17 58	18 23	18 51	19 19	17 10	0 51 19	8 55	5 03	5 31	5 59	6 23		20 38	3.7
Oct 10	17 57	18 22	18 50	19 18	17 12	0 55 15	8 59	5 03	5 31	5 59	6 24		21 28	4.7
Oct 11	17 56	18 20	18 49	19 17	17 15	0 59 12	9 04	5 04	5 32	6 00	6 25		22 22	5.6
Oct 12	17 55	18 19	18 47	19 16	17 18	1 03 08	9 08	5 04	5 33	6 01	6 25		23 19	6.6
Oct 13	17 54	18 18	18 46	19 14	17 21	1 07 05	9 13	5 05	5 33	6 01	6 26		0 20	7.5
Oct 14	17 52	18 17	18 45	19 13	17 24	1 11 01	9 18	5 06	5 34	6 02	6 27		1 19	8.5
Oct 15	17 51	18 16	18 44	19 12	17 26	1 14 58	9 22	5 06	5 35	6 03	6 27		2 16	9.4
Oct 16	17 50	18 15	18 43	19 11	17 29	1 18 54	9 27	5 07	5 35	6 04	6 28		3 11	10.4
Oct 17	17 49	18 14	18 42	19 10	17 32	1 22 51	9 32	5 08	5 36	6 04	6 29		4 06	11.3
Oct 18	17 48	18 13	18 41	19 09	17 35	1 26 48	9 36	5 09	5 37	6 05	6 30		4 59	12.3
Oct 19	17 47	18 11	18 40	19 08	17 38	1 30 44	9 41	5 09	5 37	6 06	6 30		5 52	13.2
Oct 20	17 46	18 10	18 39	19 07	17 41	1 34 41	9 45	5 10	5 38	6 06	6 31	17 49		-13.8
Oct 21	17 45	18 09	18 38	19 06	17 44	1 38 37	9 50	5 11	5 39	6 07	6 32	18 17		-12.9
Oct 22	17 44	18 08	18 37	19 05	17 47	1 42 34	9 55	5 11	5 39	6 08	6 33	18 48		-11.9
Oct 23	17 43	18 07	18 36	19 04	17 50	1 46 30	9 59	5 12	5 40	6 09	6 33	19 22		-11.0
Oct 24	17 42	18 06	18 35	19 03	17 53	1 50 27	10 04	5 13	5 41	6 09	6 34	20 01		-10.0
Oct 25	17 41	18 05	18 34	19 02	17 56	1 54 23	10 09	5 13	5 42	6 10	6 35	20 45		-9.1
Oct 26	17 40	18 04	18 33	19 01	17 59	1 58 20	10 13	5 14	5 42	6 11	6 36	21 36		-8.1
Oct 27	17 39	18 04	18 32	19 00	18 02	2 02 17	10 18	5 15	5 43	6 12	6 36	22 33		-7.2
Oct 28	17 38	18 03	18 31	19 00	18 05	2 06 13	10 22	5 15	5 44	6 12	6 37	23 34		-6.2
Oct 29	17 37	18 02	18 30	18 59	18 08	2 10 10	10 27	5 16	5 44	6 13	6 38	0 40		-5.3
Oct 30	17 36	18 01	18 30	18 58	18 11	2 14 06	10 32	5 17	5 45	6 14	6 39	1 47		-4.3
Oct 31	17 35	18 00	18 29	18 57	18 14	2 18 03	10 36	5 18	5 46	6 15	6 40	2 55		-3.4

Observer's Almanac -- 2002 -- Multiple Mirror Telescope Observatory

Latitude=+31d 41m 19.6s Longitude= 110d 53m 04.4s  
 Elevation=2600 m (8585 ft) Time Zone=+7h  
 Craig Foltz, December 12, 2001

2002	Sun	Sun	Sun	RA 3H	RA 3H	Sun	Sun	Sun		Moon	Moon	Moon		
Age	Sunset	6 Deg	12 Deg	18 Deg	West at	Sid Time	East at	18 Deg	12 Deg	6 Deg	Sunrise	rise	set	at
Date		W Hrzs	W Hrzs	W Hrzs	18 Deg	Midnight	18 Deg	E Hrzs	E Hrzs	E Hrzs				
Midnight														
Nov 1	17 34	17 59	18 28	18 56	18 17	2 21 59	10 41	5 18	5 47	6 15	6 41	4 03		-2.4
Nov 2	17 33	17 58	18 27	18 56	18 21	2 25 56	10 46	5 19	5 47	6 16	6 41	5 12		-1.5
Nov 3	17 32	17 58	18 26	18 55	18 24	2 29 52	10 50	5 20	5 48	6 17	6 42			-0.5
Nov 4	17 32	17 57	18 26	18 54	18 27	2 33 49	10 55	5 20	5 49	6 18	6 43		17 42	0.4
Nov 5	17 31	17 56	18 25	18 54	18 30	2 37 46	10 60	5 21	5 50	6 19	6 44		18 25	1.4
Nov 6	17 30	17 55	18 24	18 53	18 34	2 41 42	11 04	5 22	5 50	6 19	6 45		19 13	2.3
Nov 7	17 29	17 55	18 24	18 52	18 37	2 45 39	11 09	5 23	5 51	6 20	6 46		20 08	3.2
Nov 8	17 29	17 54	18 23	18 52	18 40	2 49 35	11 14	5 23	5 52	6 21	6 46		21 06	4.2
Nov 9	17 28	17 53	18 22	18 51	18 44	2 53 32	11 18	5 24	5 53	6 22	6 47		22 08	5.1
Nov 10	17 27	17 53	18 22	18 51	18 47	2 57 28	11 23	5 25	5 53	6 23	6 48		23 08	6.1
Nov 11	17 27	17 52	18 21	18 50	18 51	3 01 25	11 28	5 26	5 54	6 23	6 49		0 08	7.0
Nov 12	17 26	17 52	18 21	18 50	18 54	3 05 21	11 33	5 26	5 55	6 24	6 50		1 05	8.0
Nov 13	17 25	17 51	18 20	18 49	18 58	3 09 18	11 37	5 27	5 56	6 25	6 51		2 00	8.9
Nov 14	17 25	17 51	18 20	18 49	19 01	3 13 15	11 42	5 28	5 57	6 26	6 52		2 53	9.9
Nov 15	17 24	17 50	18 19	18 48	19 05	3 17 11	11 47	5 29	5 57	6 27	6 53		3 46	10.8
Nov 16	17 24	17 50	18 19	18 48	19 08	3 21 08	11 51	5 29	5 58	6 28	6 53		4 40	11.8
Nov 17	17 23	17 49	18 19	18 48	19 12	3 25 04	11 56	5 30	5 59	6 28	6 54		5 34	12.7
Nov 18	17 23	17 49	18 18	18 47	19 15	3 29 01	12 01	5 31	6 00	6 29	6 55			13.7
Nov 19	17 22	17 48	18 18	18 47	19 19	3 32 57	12 05	5 32	6 01	6 30	6 56			-13.4
Nov 20	17 22	17 48	18 18	18 47	19 23	3 36 54	12 10	5 32	6 01	6 31	6 57	17 59		-12.4
Nov 21	17 22	17 48	18 17	18 46	19 26	3 40 50	12 15	5 33	6 02	6 32	6 58	18 43		-11.5
Nov 22	17 21	17 47	18 17	18 46	19 30	3 44 47	12 19	5 34	6 03	6 33	6 59	19 32		-10.5
Nov 23	17 21	17 47	18 17	18 46	19 34	3 48 44	12 24	5 35	6 04	6 33	7 00	20 28		-9.6
Nov 24	17 21	17 47	18 17	18 46	19 38	3 52 40	12 29	5 35	6 04	6 34	7 00	21 28		-8.6
Nov 25	17 21	17 47	18 16	18 46	19 41	3 56 37	12 34	5 36	6 05	6 35	7 01	22 31		-7.7
Nov 26	17 20	17 47	18 16	18 46	19 45	4 00 33	12 38	5 37	6 06	6 36	7 02	23 36		-6.7
Nov 27	17 20	17 46	18 16	18 46	19 49	4 04 30	12 43	5 38	6 07	6 37	7 03	0 41		-5.8
Nov 28	17 20	17 46	18 16	18 45	19 53	4 08 26	12 48	5 38	6 08	6 37	7 04	1 47		-4.8
Nov 29	17 20	17 46	18 16	18 45	19 57	4 12 23	12 52	5 39	6 08	6 38	7 05	2 53		-3.9
Nov 30	17 20	17 46	18 16	18 45	20 01	4 16 19	12 57	5 40	6 09	6 39	7 05	4 01		-2.9

Observer's Almanac -- 2002 -- Multiple Mirror Telescope Observatory

Latitude=+31d 41m 19.6s Longitude= 110d 53m 04.4s  
 Elevation=2600 m (8585 ft) Time Zone=+7h  
 Craig Foltz, December 12, 2001

2002	Sun	Sun	Sun	RA 3H	RA 3H	Sun	Sun	Sun		Moon	Moon	Moon		
Age	Sunset	6 Deg	12 Deg	18 Deg	West at	Sid Time	East at	18 Deg	12 Deg	6 Deg	Sunrise	rise	set	at
Midnight		W Hrzs	W Hrzs	W Hrzs	18 Deg	Midnight	18 Deg	E Hrzs	E Hrzs	E Hrzs				
Dec 1	17 20	17 46	18 16	18 45	20 05	4 20 16	13 02	5 40	6 10	6 40	7 06	5 11		-2.0
Dec 2	17 20	17 46	18 16	18 45	20 09	4 24 13	13 06	5 41	6 11	6 41	7 07	6 22		-1.0
Dec 3	17 20	17 46	18 16	18 46	20 13	4 28 09	13 11	5 42	6 11	6 41	7 08			-0.1
Dec 4	17 20	17 46	18 16	18 46	20 17	4 32 06	13 16	5 43	6 12	6 42	7 09		17 50	0.8
Dec 5	17 20	17 46	18 16	18 46	20 21	4 36 02	13 20	5 43	6 13	6 43	7 09		18 47	1.8
Dec 6	17 20	17 46	18 16	18 46	20 25	4 39 59	13 25	5 44	6 13	6 44	7 10		19 49	2.7
Dec 7	17 20	17 46	18 17	18 46	20 29	4 43 55	13 29	5 45	6 14	6 44	7 11		20 52	3.7
Dec 8	17 20	17 47	18 17	18 46	20 33	4 47 52	13 34	5 45	6 15	6 45	7 12		21 54	4.6
Dec 9	17 20	17 47	18 17	18 47	20 38	4 51 48	13 39	5 46	6 16	6 46	7 12		22 54	5.6
Dec 10	17 20	17 47	18 17	18 47	20 42	4 55 45	13 43	5 47	6 16	6 46	7 13		23 49	6.5
Dec 11	17 20	17 47	18 17	18 47	20 46	4 59 42	13 48	5 47	6 17	6 47	7 14		0 45	7.5
Dec 12	17 21	17 47	18 18	18 47	20 50	5 03 38	13 52	5 48	6 17	6 48	7 15		1 39	8.4
Dec 13	17 21	17 48	18 18	18 48	20 54	5 07 35	13 57	5 48	6 18	6 48	7 15		2 32	9.4
Dec 14	17 21	17 48	18 18	18 48	20 59	5 11 31	14 02	5 49	6 19	6 49	7 16		3 26	10.3
Dec 15	17 22	17 48	18 19	18 48	21 03	5 15 28	14 06	5 50	6 19	6 50	7 16		4 21	11.3
Dec 16	17 22	17 49	18 19	18 49	21 07	5 19 24	14 11	5 50	6 20	6 50	7 17		5 19	12.2
Dec 17	17 22	17 49	18 20	18 49	21 12	5 23 21	14 15	5 51	6 20	6 51	7 18		6 18	13.2
Dec 18	17 23	17 50	18 20	18 50	21 16	5 27 17	14 20	5 51	6 21	6 51	7 18			-13.9
Dec 19	17 23	17 50	18 20	18 50	21 20	5 31 14	14 24	5 52	6 22	6 52	7 19	17 26		-12.9
Dec 20	17 24	17 51	18 21	18 51	21 25	5 35 11	14 29	5 52	6 22	6 52	7 19	18 20		-12.0
Dec 21	17 24	17 51	18 21	18 51	21 29	5 39 07	14 33	5 53	6 23	6 53	7 20	19 20		-11.0
Dec 22	17 25	17 52	18 22	18 52	21 34	5 43 04	14 37	5 53	6 23	6 53	7 20	20 24		-10.1
Dec 23	17 25	17 52	18 22	18 52	21 38	5 47 00	14 42	5 54	6 24	6 54	7 21	21 29		-9.1
Dec 24	17 26	17 53	18 23	18 53	21 43	5 50 57	14 46	5 54	6 24	6 54	7 21	22 34		-8.2
Dec 25	17 26	17 53	18 24	18 53	21 47	5 54 53	14 51	5 55	6 24	6 55	7 22	23 38		-7.2
Dec 26	17 27	17 54	18 24	18 54	21 52	5 58 50	14 55	5 55	6 25	6 55	7 22	0 43		-6.3
Dec 27	17 28	17 54	18 25	18 54	21 56	6 02 46	14 59	5 56	6 25	6 55	7 22	1 49		-5.3
Dec 28	17 28	17 55	18 25	18 55	22 01	6 06 43	15 04	5 56	6 25	6 56	7 23	2 56		-4.4
Dec 29	17 29	17 56	18 26	18 56	22 05	6 10 40	15 08	5 56	6 26	6 56	7 23	4 04		-3.4
Dec 30	17 30	17 56	18 27	18 56	22 10	6 14 36	15 12	5 57	6 26	6 56	7 23	5 14		-2.5
Dec 31	17 30	17 57	18 27	18 57	22 15	6 18 33	15 16	5 57	6 26	6 57	7 23	6 22		-1.6