

retrograde	13600 Mar 08 04:24	16° $\mathring{A}$ 24'07		evening set	13605 Nov 20 01:36	26° $\mathring{A}$ 44'29	
opposition	13600 May 26 12:28	14° $\mathring{A}$ 59'21	-0°04'21				
min. Earth dist.	13600 May 25 23:21	15° $\mathring{A}$ 00'17	28.83960 AU	conjunction	13605 Dec 06 02:29	27° $\mathring{A}$ 20'19	0°03'48
direct	13600 Aug 12 16:36	13° $\mathring{A}$ 35'26		minimum elong	13605 Dec 06 02:28	27° $\mathring{A}$ 20'19	0°04'50
evening set	13600 Nov 08 08:13	15° $\mathring{A}$ 29'38		behind sun begin	13605 Dec 05 20:04	27° $\mathring{A}$ 19'44	
				behind sun end	13605 Dec 06 08:51	27° $\mathring{A}$ 20'53	
conjunction	13600 Nov 24 07:55	16° $\mathring{A}$ 05'26	-0°03'29	max. Earth dist.	13605 Dec 06 13:29	27° $\mathring{A}$ 21'20	30.88418 AU
minimum elong	13600 Nov 24 07:55	16° $\mathring{A}$ 05'26	0°02'30	morning rise	13605 Dec 22 04:59	27° $\mathring{A}$ 56'17	
behind sun begin	13600 Nov 24 01:23	16° $\mathring{A}$ 04'51		retrograde	13606 Mar 22 07:24	29° $\mathring{A}$ 53'23	
behind sun end	13600 Nov 24 14:26	16° $\mathring{A}$ 06'01		opposition	13606 Jun 09 10:45	28° $\mathring{A}$ 28'52	0°04'49
max. Earth dist.	13600 Nov 24 22:05	16° $\mathring{A}$ 06'46	30.84443 AU	min. Earth dist.	13606 Jun 09 00:20	28° $\mathring{A}$ 29'35	28.88753 AU
morning rise	13600 Dec 10 09:27	16° $\mathring{A}$ 41'26		direct	13606 Aug 26 14:07	27° $\mathring{A}$ 04'50	
retrograde	13601 Mar 10 17:23	18° $\mathring{A}$ 38'58		evening set	13606 Nov 22 14:23	28° $\mathring{A}$ 59'03	
min. Earth dist.	13601 May 28 10:40	17° $\mathring{A}$ 15'15	28.84933 AU				
opposition	13601 May 29 00:13	17° $\mathring{A}$ 14'18	-0°02'49	conjunction	13606 Dec 08 15:39	29° $\mathring{A}$ 34'52	0°05'12
direct	13601 Aug 15 04:10	15° $\mathring{A}$ 50'24		minimum elong	13606 Dec 08 15:39	29° $\mathring{A}$ 34'52	0°06'15
evening set	13601 Nov 10 21:12	17° $\mathring{A}$ 44'38		behind sun begin	13606 Dec 08 09:27	29° $\mathring{A}$ 34'19	
				behind sun end	13606 Dec 08 21:50	29° $\mathring{A}$ 35'26	
conjunction	13601 Nov 26 21:05	18° $\mathring{A}$ 20'27	-0°02'02	max. Earth dist.	13606 Dec 09 03:25	29° $\mathring{A}$ 35'58	30.89076 AU
minimum elong	13601 Nov 26 21:06	18° $\mathring{A}$ 20'27	0°01'02		13606 Dec 19 20:18	0° $\mathring{A}$	
behind sun begin	13601 Nov 26 14:34	18° $\mathring{A}$ 19'52		morning rise	13606 Dec 24 18:11	0° $\mathring{A}$ 10'50	
behind sun end	13601 Nov 27 03:39	18° $\mathring{A}$ 21'02		retrograde	13607 Mar 24 19:51	2° $\mathring{A}$ 07'49	
max. Earth dist.	13601 Nov 27 11:06	18° $\mathring{A}$ 21'45	30.85390 AU	opposition	13607 Jun 11 22:10	0° $\mathring{A}$ 43'17	0°06'20
morning rise	13601 Dec 12 22:47	18° $\mathring{A}$ 56'27		min. Earth dist.	13607 Jun 11 12:00	0° $\mathring{A}$ 44'00	28.89421 AU
retrograde	13602 Mar 13 05:08	20° $\mathring{A}$ 53'57			13607 Jul 08 21:28	30° $\mathring{A}$	
opposition	13602 May 31 12:09	19° $\mathring{A}$ 29'20	-0°01'17	direct	13607 Aug 29 04:04	29° $\mathring{A}$ 19'13	
min. Earth dist.	13602 May 31 00:02	19° $\mathring{A}$ 30'11	28.85856 AU		13607 Oct 18 00:19	0° $\mathring{A}$	
direct	13602 Aug 17 14:23	18° $\mathring{A}$ 05'28		evening set	13607 Nov 25 03:28	1° $\mathring{A}$ 13'24	
evening set	13602 Nov 13 10:16	19° $\mathring{A}$ 59'43					
				conjunction	13607 Dec 11 04:49	1° $\mathring{A}$ 49'13	0°06'36
conjunction	13602 Nov 29 10:30	20° $\mathring{A}$ 35'32	-0°00'32	minimum elong	13607 Dec 11 04:48	1° $\mathring{A}$ 49'13	0°07'38
minimum elong	13602 Nov 29 10:30	20° $\mathring{A}$ 35'32	0°00'29	behind sun begin	13607 Dec 10 22:53	1° $\mathring{A}$ 48'41	
behind sun begin	13602 Nov 29 03:59	20° $\mathring{A}$ 34'57		behind sun end	13607 Dec 11 10:44	1° $\mathring{A}$ 49'45	
behind sun end	13602 Nov 29 17:01	20° $\mathring{A}$ 36'07		max. Earth dist.	13607 Dec 11 15:07	1° $\mathring{A}$ 50'10	30.89780 AU
max. Earth dist.	13602 Nov 29 23:57	20° $\mathring{A}$ 36'47	30.86280 AU	morning rise	13607 Dec 27 07:40	2° $\mathring{A}$ 25'11	
morning rise	13602 Dec 15 12:22	21° $\mathring{A}$ 11'32		retrograde	13608 Mar 26 09:54	4° $\mathring{A}$ 22'01	
retrograde	13603 Mar 15 18:08	23° $\mathring{A}$ 08'57		opposition	13608 Jun 13 09:23	2° $\mathring{A}$ 57'29	0°07'49
asc. node	13603 Apr 09 17:50	22° $\mathring{A}$ 58'50		min. Earth dist.	13608 Jun 12 23:13	2° $\mathring{A}$ 58'12	28.90167 AU
opposition	13603 Jun 02 23:52	21° $\mathring{A}$ 44'24	0°00'15	direct	13608 Aug 30 16:38	1° $\mathring{A}$ 33'22	
min. Earth dist.	13603 Jun 02 11:17	21° $\mathring{A}$ 45'17	28.86694 AU	evening set	13608 Nov 26 16:23	3° $\mathring{A}$ 27'33	
direct	13603 Aug 20 02:07	20° $\mathring{A}$ 20'30					
evening set	13603 Nov 15 23:25	22° $\mathring{A}$ 14'46		conjunction	13608 Dec 12 18:02	4° $\mathring{A}$ 03'22	0°07'59
				minimum elong	13608 Dec 12 18:03	4° $\mathring{A}$ 03'22	0°09'03
conjunction	13603 Dec 01 23:50	22° $\mathring{A}$ 50'35	0°00'56	behind sun begin	13608 Dec 12 12:29	4° $\mathring{A}$ 02'52	
minimum elong	13603 Dec 01 23:50	22° $\mathring{A}$ 50'35	0°01'57	behind sun end	13608 Dec 12 23:37	4° $\mathring{A}$ 03'52	
behind sun begin	13603 Dec 01 17:17	22° $\mathring{A}$ 50'00		max. Earth dist.	13608 Dec 13 05:02	4° $\mathring{A}$ 04'23	30.90560 AU
behind sun end	13603 Dec 02 06:23	22° $\mathring{A}$ 51'11		morning rise	13608 Dec 28 20:53	4° $\mathring{A}$ 39'19	
max. Earth dist.	13603 Dec 02 12:07	22° $\mathring{A}$ 51'44	30.87064 AU	retrograde	13609 Mar 28 20:35	6° $\mathring{A}$ 36'01	
morning rise	13603 Dec 18 01:59	23° $\mathring{A}$ 26'35		opposition	13609 Jun 15 20:43	5° $\mathring{A}$ 11'31	0°09'18
retrograde	13604 Mar 17 06:01	25° $\mathring{A}$ 23'55		min. Earth dist.	13609 Jun 15 11:22	5° $\mathring{A}$ 12'10	28.91000 AU
opposition	13604 Jun 04 11:41	23° $\mathring{A}$ 59'23	0°01'47	direct	13609 Sep 02 04:56	3° $\mathring{A}$ 47'22	
min. Earth dist.	13604 Jun 04 00:35	24° $\mathring{A}$ 00'10	28.87435 AU	evening set	13609 Nov 29 05:13	5° $\mathring{A}$ 41'31	
direct	13604 Aug 21 13:47	22° $\mathring{A}$ 35'28					
evening set	13604 Nov 17 12:28	24° $\mathring{A}$ 29'43		conjunction	13609 Dec 15 06:59	6° $\mathring{A}$ 17'20	0°09'22
				minimum elong	13609 Dec 15 06:59	6° $\mathring{A}$ 17'20	0°10'24
conjunction	13604 Dec 03 13:15	25° $\mathring{A}$ 05'32	0°02'23	behind sun begin	13609 Dec 15 01:52	6° $\mathring{A}$ 16'53	
minimum elong	13604 Dec 03 13:15	25° $\mathring{A}$ 05'32	0°03'25	behind sun end	13609 Dec 15 12:06	6° $\mathring{A}$ 17'48	
behind sun begin	13604 Dec 03 06:45	25° $\mathring{A}$ 04'57		max. Earth dist.	13609 Dec 15 17:10	6° $\mathring{A}$ 18'17	30.91461 AU
behind sun end	13604 Dec 03 19:46	25° $\mathring{A}$ 06'07		morning rise	13609 Dec 31 10:02	6° $\mathring{A}$ 53'17	
max. Earth dist.	13604 Dec 04 01:44	25° $\mathring{A}$ 06'42	30.87767 AU	retrograde	13610 Mar 31 09:38	8° $\mathring{A}$ 49'52	
morning rise	13604 Dec 19 15:27	25° $\mathring{A}$ 41'31		opposition	13610 Jun 18 07:56	7° $\mathring{A}$ 25'24	0°10'47
retrograde	13605 Mar 19 18:25	27° $\mathring{A}$ 38'44		min. Earth dist.	13610 Jun 17 21:53	7° $\mathring{A}$ 26'06	28.91963 AU
opposition	13605 Jun 06 23:10	26° $\mathring{A}$ 14'13	0°03'18	direct	13610 Sep 04 16:59	6° $\mathring{A}$ 01'14	
min. Earth dist.	13605 Jun 06 11:56	26° $\mathring{A}$ 15'00	28.88098 AU	evening set	13610 Dec 01 18:08	7° $\mathring{A}$ 55'23	
direct	13605 Aug 24 03:12	24° $\mathring{A}$ 50'15					

conjunction	13610 Dec 17 20:06	8°31'12	0°10'43	conjunction	13616 Dec 31 03:25	21°35'34	0°18'29
minimum elong	13610 Dec 17 20:07	8°31'12	0°11'47	minimum elong	13616 Dec 31 03:25	21°35'34	0°19'30
behind sun begin	13610 Dec 17 15:34	8°30'48		max. Earth dist.	13616 Dec 31 09:16	21°35'06	30.99238 AU
behind sun end	13610 Dec 18 00:39	8°31'37		morning rise	13617 Jan 16 07:02	22°30'26	
max. Earth dist.	13610 Dec 18 06:27	8°32'09	30.92480 AU	retrograde	13617 Apr 15 22:55	24°26'21	
morning rise	13611 Jan 02 23:14	9°30'08		opposition	13617 Jul 03 13:44	23°30'21	0°20'27
retrograde	13611 Apr 02 21:08	11°30'37		min. Earth dist.	13617 Jul 03 07:43	23°30'46	28.99679 AU
opposition	13611 Jun 20 19:10	9°39'12	0°12'14	direct	13617 Sep 20 01:48	21°38'11	
min. Earth dist.	13611 Jun 20 10:17	9°39'50	28.93050 AU	evening set	13617 Dec 17 13:28	23°32'31	
direct	13611 Sep 07 03:30	8°31'02					
evening set	13611 Dec 04 07:02	10°30'12		conjunction	13618 Jan 02 16:30	24°30'18	0°19'41
				minimum elong	13618 Jan 02 16:30	24°30'18	0°20'40
conjunction	13611 Dec 20 09:16	10°34'50	0°12'04	max. Earth dist.	13618 Jan 02 22:40	24°30'52	31.00086 AU
minimum elong	13611 Dec 20 09:16	10°34'50	0°13'07	morning rise	13618 Jan 18 20:00	24°34'09	
behind sun begin	13611 Dec 20 05:27	10°34'41		retrograde	13618 Apr 18 09:37	26°39'58	
behind sun end	13611 Dec 20 13:05	10°34'52		opposition	13618 Jul 06 00:45	25°31'59	0°21'43
max. Earth dist.	13611 Dec 20 19:17	10°34'57	30.93632 AU	min. Earth dist.	13618 Jul 05 19:58	25°31'19	29.00495 AU
morning rise	13612 Jan 05 12:31	11°32'05		direct	13618 Sep 22 14:10	23°35'47	
retrograde	13612 Apr 04 09:15	13°31'20		evening set	13618 Dec 20 02:28	25°34'06	
opposition	13612 Jun 22 06:16	11°33'00	0°13'40				
min. Earth dist.	13612 Jun 21 20:41	11°33'41	28.94235 AU	conjunction	13619 Jan 05 05:33	26°32'15	0°20'51
direct	13612 Sep 08 15:16	10°32'51		minimum elong	13619 Jan 05 05:33	26°32'15	0°21'51
evening set	13612 Dec 05 20:06	12°32'03		max. Earth dist.	13619 Jan 05 10:22	26°32'19	31.00893 AU
				morning rise	13619 Jan 21 09:12	26°35'43	
conjunction	13612 Dec 21 22:23	12°35'52	0°13'24	retrograde	13619 Apr 20 22:49	28°35'23	
minimum elong	13612 Dec 21 22:23	12°35'52	0°14'27	opposition	13619 Jul 08 11:25	27°32'25	0°22'57
behind sun begin	13612 Dec 21 19:35	12°35'37		min. Earth dist.	13619 Jul 08 06:25	27°32'46	29.01292 AU
behind sun end	13612 Dec 22 01:10	12°35'07		direct	13619 Sep 25 02:40	26°30'10	
max. Earth dist.	13612 Dec 22 07:34	12°35'43	30.94842 AU	evening set	13619 Dec 22 15:24	27°35'29	
morning rise	13613 Jan 07 01:45	13°34'47					
retrograde	13613 Apr 06 20:21	15°31'06		conjunction	13620 Jan 07 18:36	28°35'16	0°21'59
opposition	13613 Jun 24 17:25	14°30'51	0°15'04	minimum elong	13620 Jan 07 18:36	28°35'16	0°22'57
min. Earth dist.	13613 Jun 24 09:14	14°30'26	28.95467 AU	max. Earth dist.	13620 Jan 07 23:18	28°35'41	31.01682 AU
direct	13613 Sep 11 01:35	12°34'23		morning rise	13620 Jan 23 22:11	29°31'05	
evening set	13613 Dec 08 09:06	14°33'58			13620 Feb 16 21:26	0°30'	
				retrograde	13620 Apr 22 10:07	1°30'06	37'
conjunction	13613 Dec 24 11:39	15°31'24	0°14'42		13620 Jun 29 13:18	30°30'	
minimum elong	13613 Dec 24 11:39	15°31'24	0°15'44	opposition	13620 Jul 09 22:16	29°34'24	0°24'09
behind sun begin	13613 Dec 24 10:52	15°31'24		min. Earth dist.	13620 Jul 09 18:41	29°34'25	29.02098 AU
behind sun end	13613 Dec 24 12:26	15°31'25		direct	13620 Sep 26 13:50	28°31'8	23'
max. Earth dist.	13613 Dec 24 21:02	15°31'38	30.96073 AU		13620 Dec 18 06:28	0°30'	
morning rise	13614 Jan 09 14:58	15°34'41		evening set	13620 Dec 24 04:10	0°31'12	41'
retrograde	13614 Apr 09 08:20	17°34'45					
opposition	13614 Jun 27 04:31	16°32'04	0°16'28	conjunction	13621 Jan 09 07:27	0°34'48	27'
min. Earth dist.	13614 Jun 26 20:17	16°32'10	28.96670 AU	minimum elong	13621 Jan 09 07:27	0°34'48	27'
direct	13614 Sep 13 13:40	14°35'39		max. Earth dist.	13621 Jan 09 11:39	0°34'48	50'
evening set	13614 Dec 10 22:14	16°35'05		morning rise	13621 Jan 25 11:01	1°34'24	15'
				retrograde	13621 Apr 24 20:59	3°34'19	39'
conjunction	13614 Dec 27 00:47	17°32'44	0°16'00	opposition	13621 Jul 12 08:49	1°35'55	44'
minimum elong	13614 Dec 27 00:47	17°32'44	0°17'02	min. Earth dist.	13621 Jul 12 04:32	1°35'56	02'
max. Earth dist.	13614 Dec 27 08:28	17°32'26	30.97237 AU	direct	13621 Sep 29 02:01	0°33'31	25'
morning rise	13615 Jan 12 04:19	18°30'23		evening set	13621 Dec 26 16:58	2°32'25	42'
retrograde	13615 Apr 11 21:10	19°35'47					
opposition	13615 Jun 29 15:43	18°33'41	0°17'49	conjunction	13622 Jan 11 20:13	3°30'01	27'
min. Earth dist.	13615 Jun 29 08:38	18°33'51	28.97792 AU	minimum elong	13622 Jan 11 20:13	3°30'01	27'
direct	13615 Sep 15 23:58	17°31'03		max. Earth dist.	13622 Jan 11 23:42	3°30'01	46'
evening set	13615 Dec 13 11:22	19°30'45		morning rise	13622 Jan 27 23:47	3°33'37	14'
				retrograde	13622 Apr 27 06:53	5°33'32	31'
conjunction	13615 Dec 29 14:13	19°34'04	0°17'15	opposition	13622 Jul 14 19:30	4°33'08	38'
minimum elong	13615 Dec 29 14:13	19°34'04	0°18'15	min. Earth dist.	13622 Jul 14 16:20	4°33'08	51'
max. Earth dist.	13615 Dec 29 22:05	19°34'12	30.98295 AU	direct	13622 Oct 01 12:02	2°33'44	17'
morning rise	13616 Jan 14 17:38	20°31'34		evening set	13622 Dec 29 05:33	4°33'38	35'
retrograde	13616 Apr 13 09:12	22°31'23					
opposition	13616 Jul 01 02:42	20°34'8	0°19'09	conjunction	13623 Jan 14 09:00	5°33'14	19'
min. Earth dist.	13616 Jun 30 20:19	20°34'01	28.98783 AU	minimum elong	13623 Jan 14 09:00	5°33'14	19'
direct	13616 Sep 17 13:26	19°32'42		max. Earth dist.	13623 Jan 14 12:55	5°33'14	40'
evening set	13616 Dec 15 00:36	21°31'8	46'	morning rise	13623 Jan 30 12:28	5°33'50	04'

retrograde	13623 Apr 29 17:42	7° $\approx$ 45'14	evening set	13630 Jan 13 22:58	20° $\approx$ 07'44	
opposition	13623 Jul 17 06:03	6° $\approx$ 21'25 0°27'30				
min. Earth dist.	13623 Jul 17 02:29	6° $\approx$ 21'40 29.05026 AU	conjunction	13630 Jan 30 02:20	20° $\approx$ 43'22 0°31'17	
direct	13623 Oct 03 23:12	4° $\approx$ 57'03	minimum elong	13630 Jan 30 02:20	20° $\approx$ 43'22 0°32'02	
evening set	13623 Dec 31 18:25	6° $\approx$ 51'22	max. Earth dist.	13630 Jan 30 01:23	20° $\approx$ 43'16 31.12743 AU	
			morning rise	13630 Feb 15 05:14	21° $\approx$ 18'58	
conjunction	13624 Jan 16 21:44	7° $\approx$ 27'05 0°26'11	retrograde	13630 May 15 03:13	23° $\approx$ 13'25	
minimum elong	13624 Jan 16 21:44	7° $\approx$ 27'05 0°27'04	opposition	13630 Aug 01 07:37	21° $\approx$ 50'01 0°33'51	
max. Earth dist.	13624 Jan 17 00:23	7° $\approx$ 27'20 31.05612 AU	min. Earth dist.	13630 Aug 01 08:05	21° $\approx$ 49'59 29.13206 AU	
morning rise	13624 Feb 02 01:17	8° $\approx$ 02'50	direct	13630 Oct 19 09:24	20° $\approx$ 25'39	
retrograde	13624 May 01 05:06	9° $\approx$ 57'54	evening set	13631 Jan 16 11:38	22° $\approx$ 20'04	
opposition	13624 Jul 18 16:32	8° $\approx$ 34'09 0°28'33				
min. Earth dist.	13624 Jul 18 13:40	8° $\approx$ 34'21 29.06242 AU	conjunction	13631 Feb 01 14:55	22° $\approx$ 55'41 0°31'59	
direct	13624 Oct 05 08:47	7° $\approx$ 09'47	minimum elong	13631 Feb 01 14:56	22° $\approx$ 55'41 0°32'43	
evening set	13625 Jan 02 07:04	9° $\approx$ 04'08	max. Earth dist.	13631 Feb 01 12:52	22° $\approx$ 55'30 31.13632 AU	
			morning rise	13631 Feb 17 17:45	23° $\approx$ 31'17	
conjunction	13625 Jan 18 10:35	9° $\approx$ 39'51 0°27'09	retrograde	13631 May 17 13:27	25° $\approx$ 25'35	
minimum elong	13625 Jan 18 10:35	9° $\approx$ 39'51 0°28'02	opposition	13631 Aug 03 18:05	24° $\approx$ 02'13 0°34'34	
max. Earth dist.	13625 Jan 18 13:57	9° $\approx$ 40'09 31.06875 AU	min. Earth dist.	13631 Aug 03 20:03	24° $\approx$ 02'04 29.14068 AU	
morning rise	13625 Feb 03 13:54	10° $\approx$ 15'34	direct	13631 Oct 21 19:44	22° $\approx$ 37'48	
retrograde	13625 May 03 15:51	12° $\approx$ 10'33	evening set	13632 Jan 19 00:11	24° $\approx$ 32'12	
opposition	13625 Jul 21 03:06	10° $\approx$ 46'52 0°29'33				
min. Earth dist.	13625 Jul 21 00:36	10° $\approx$ 47'03 29.07531 AU	conjunction	13632 Feb 04 03:32	25° $\approx$ 07'49 0°32'38	
direct	13625 Oct 07 21:22	9° $\approx$ 22'33	minimum elong	13632 Feb 04 03:32	25° $\approx$ 07'49 0°33'18	
evening set	13626 Jan 04 19:46	11° $\approx$ 16'55	max. Earth dist.	13632 Feb 04 01:29	25° $\approx$ 07'37 31.14473 AU	
			morning rise	13632 Feb 20 06:08	25° $\approx$ 43'22	
conjunction	13626 Jan 20 23:07	11° $\approx$ 52'37 0°28'04	retrograde	13632 May 18 23:37	27° $\approx$ 37'33	
minimum elong	13626 Jan 20 23:07	11° $\approx$ 52'37 0°28'54	opposition	13632 Aug 05 04:18	26° $\approx$ 14'12 0°35'13	
max. Earth dist.	13626 Jan 21 00:52	11° $\approx$ 52'46 31.08188 AU	min. Earth dist.	13632 Aug 05 06:15	26° $\approx$ 14'04 29.14889 AU	
morning rise	13626 Feb 06 02:33	12° $\approx$ 28'19	direct	13632 Oct 23 07:24	24° $\approx$ 49'45	
retrograde	13626 May 06 04:46	14° $\approx$ 23'13	evening set	13633 Jan 20 12:45	26° $\approx$ 44'08	
opposition	13626 Jul 23 13:38	12° $\approx$ 59'37 0°30'30				
min. Earth dist.	13626 Jul 23 11:21	12° $\approx$ 59'47 29.08847 AU	conjunction	13633 Feb 05 15:53	27° $\approx$ 19'43 0°33'14	
direct	13626 Oct 10 08:37	11° $\approx$ 35'18	minimum elong	13633 Feb 05 15:53	27° $\approx$ 19'43 0°33'54	
evening set	13627 Jan 07 08:33	13° $\approx$ 29'43	max. Earth dist.	13633 Feb 05 12:26	27° $\approx$ 19'24 31.15296 AU	
			morning rise	13633 Feb 21 18:27	27° $\approx$ 55'15	
conjunction	13627 Jan 23 12:03	14° $\approx$ 05'25 0°28'56	retrograde	13633 May 21 10:01	29° $\approx$ 49'19	
minimum elong	13627 Jan 23 12:03	14° $\approx$ 05'25 0°29'46	opposition	13633 Aug 07 14:37	28° $\approx$ 25'59 0°35'50	
max. Earth dist.	13627 Jan 23 14:03	14° $\approx$ 05'36 31.09473 AU	min. Earth dist.	13633 Aug 07 17:17	28° $\approx$ 25'48 29.15736 AU	
morning rise	13627 Feb 08 15:13	14° $\approx$ 41'06	direct	13633 Oct 25 17:13	27° $\approx$ 01'30	
	13627 Feb 17 12:11	15° $\approx$	evening set	13634 Jan 23 00:54	28° $\approx$ 55'53	
retrograde	13627 May 08 15:33	16° $\approx$ 35'54				
opposition	13627 Jul 26 00:09	15° $\approx$ 12'22 0°31'25	conjunction	13634 Feb 08 04:08	29° $\approx$ 31'26 0°33'47	
min. Earth dist.	13627 Jul 25 23:19	15° $\approx$ 12'26 29.10096 AU	minimum elong	13634 Feb 08 04:08	29° $\approx$ 31'26 0°34'23	
	13627 Aug 02 09:23	15° $\approx$	max. Earth dist.	13634 Feb 08 01:27	29° $\approx$ 31'12 31.16162 AU	
direct	13627 Oct 12 20:07	13° $\approx$ 48'04		13634 Feb 21 01:47	0° $\approx$	
	13627 Dec 20 05:11	15° $\approx$	morning rise	13634 Feb 24 06:24	0° $\approx$ 06'57	
evening set	13628 Jan 09 21:30	15° $\approx$ 42'30	retrograde	13634 May 23 19:25	2° $\approx$ 00'55	
			opposition	13634 Aug 10 00:54	0° $\approx$ 37'36 0°36'24	
conjunction	13628 Jan 26 00:53	16° $\approx$ 18'10 0°29'46	min. Earth dist.	13634 Aug 10 03:53	0° $\approx$ 37'24 29.16631 AU	
minimum elong	13628 Jan 26 00:53	16° $\approx$ 18'10 0°30'34		13634 Sep 02 06:13	30° $\approx$	
max. Earth dist.	13628 Jan 26 01:14	16° $\approx$ 18'12 31.10679 AU	direct	13634 Oct 28 05:21	29° $\approx$ 13'06	
morning rise	13628 Feb 11 04:05	16° $\approx$ 53'50		13634 Dec 21 16:35	0° $\approx$	
retrograde	13628 May 10 05:04	18° $\approx$ 48'31	evening set	13635 Jan 25 13:21	1° $\approx$ 07'29	
opposition	13628 Jul 27 10:39	17° $\approx$ 25'03 0°32'16				
min. Earth dist.	13628 Jul 27 09:45	17° $\approx$ 25'07 29.11246 AU	conjunction	13635 Feb 10 16:20	1° $\approx$ 43'01 0°34'17	
direct	13628 Oct 14 09:06	16° $\approx$ 00'44	minimum elong	13635 Feb 10 16:20	1° $\approx$ 43'02 0°34'53	
evening set	13629 Jan 11 10:15	17° $\approx$ 55'11	max. Earth dist.	13635 Feb 10 12:09	1° $\approx$ 42'38 31.17106 AU	
			morning rise	13635 Feb 26 18:36	2° $\approx$ 18'30	
conjunction	13629 Jan 27 13:38	18° $\approx$ 30'51 0°30'33	retrograde	13635 May 26 07:15	4° $\approx$ 12'22	
minimum elong	13629 Jan 27 13:38	18° $\approx$ 30'51 0°31'20	opposition	13635 Aug 12 11:00	2° $\approx$ 49'06 0°36'54	
max. Earth dist.	13629 Jan 27 13:36	18° $\approx$ 30'51 31.11759 AU	min. Earth dist.	13635 Aug 12 13:48	2° $\approx$ 48'54 29.17632 AU	
morning rise	13629 Feb 12 16:36	19° $\approx$ 06'29	direct	13635 Oct 30 15:53	1° $\approx$ 24'35	
retrograde	13629 May 12 15:59	21° $\approx$ 01'03	evening set	13636 Jan 28 01:37	3° $\approx$ 19'01	
opposition	13629 Jul 29 21:16	19° $\approx$ 37'37 0°33'05				
min. Earth dist.	13629 Jul 29 22:03	19° $\approx$ 37'34 29.12274 AU	conjunction	13636 Feb 13 04:38	3° $\approx$ 54'32 0°34'44	
direct	13629 Oct 16 20:50	18° $\approx$ 13'17	minimum elong	13636 Feb 13 04:38	3° $\approx$ 54'32 0°35'17	

max. Earth dist.	13636 Feb 13 01:09	3° <del>✕</del> 54'13	31.18155 AU	conjunction	13643 Feb 28 17:31	19° <del>✕</del> 16'23	0°36'25
morning rise	13636 Feb 29 06:34	4° <del>✕</del> 30'00		minimum elong	13643 Feb 28 17:31	19° <del>✕</del> 16'23	0°36'44
retrograde	13636 May 27 17:20	6° <del>✕</del> 23'47		max. Earth dist.	13643 Feb 28 09:47	19° <del>✕</del> 15'40	31.25574 AU
opposition	13636 Aug 13 21:18	5° <del>✕</del> 00'35	0°37'21	morning rise	13643 Mar 16 17:56	19° <del>✕</del> 51'41	
min. Earth dist.	13636 Aug 14 01:03	5° <del>✕</del> 00'19	29.18736 AU	retrograde	13643 Jun 12 20:21	21° <del>✕</del> 44'59	
direct	13636 Nov 01 02:49	3° <del>✕</del> 36'06		opposition	13643 Aug 29 21:06	20° <del>✕</del> 22'15	0°38'57
evening set	13637 Jan 29 13:49	5° <del>✕</del> 30'33		min. Earth dist.	13643 Aug 30 04:49	20° <del>✕</del> 21'42	29.25917 AU
				direct	13643 Nov 17 10:30	18° <del>✕</del> 57'53	
				evening set	13644 Feb 15 03:44	20° <del>✕</del> 52'29	
conjunction	13637 Feb 14 16:36	6° <del>✕</del> 06'03	0°35'08				
minimum elong	13637 Feb 14 16:36	6° <del>✕</del> 06'03	0°35'40				
max. Earth dist.	13637 Feb 14 12:06	6° <del>✕</del> 05'38	31.19319 AU	conjunction	13644 Mar 02 05:26	21° <del>✕</del> 27'52	0°36'27
morning rise	13637 Mar 02 18:28	6° <del>✕</del> 41'29		minimum elong	13644 Mar 02 05:26	21° <del>✕</del> 27'52	0°36'43
retrograde	13637 May 30 06:24	8° <del>✕</del> 35'13		max. Earth dist.	13644 Mar 01 19:54	21° <del>✕</del> 26'59	31.26212 AU
opposition	13637 Aug 16 07:28	7° <del>✕</del> 12'06	0°37'45	morning rise	13644 Mar 18 05:47	22° <del>✕</del> 03'08	
min. Earth dist.	13637 Aug 16 10:37	7° <del>✕</del> 11'53	29.19937 AU	retrograde	13644 Jun 14 07:39	23° <del>✕</del> 56'20	
direct	13637 Nov 03 15:25	5° <del>✕</del> 47'40		opposition	13644 Aug 31 07:19	22° <del>✕</del> 33'36	0°38'57
evening set	13638 Feb 01 02:04	7° <del>✕</del> 42'10		min. Earth dist.	13644 Aug 31 15:06	22° <del>✕</del> 33'04	29.26515 AU
				direct	13644 Nov 18 20:36	21° <del>✕</del> 09'12	
				evening set	13645 Feb 16 15:34	23° <del>✕</del> 03'46	
conjunction	13638 Feb 17 04:47	8° <del>✕</del> 17'39	0°35'29				
minimum elong	13638 Feb 17 04:47	8° <del>✕</del> 17'39	0°35'58				
max. Earth dist.	13638 Feb 17 00:23	8° <del>✕</del> 17'15	31.20541 AU	conjunction	13645 Mar 04 17:13	23° <del>✕</del> 39'08	0°36'26
morning rise	13638 Mar 05 06:22	8° <del>✕</del> 53'04		minimum elong	13645 Mar 04 17:14	23° <del>✕</del> 39'08	0°36'40
retrograde	13638 Jun 01 17:25	10° <del>✕</del> 46'45		max. Earth dist.	13645 Mar 04 08:10	23° <del>✕</del> 38'18	31.26768 AU
opposition	13638 Aug 18 17:42	9° <del>✕</del> 23'43	0°38'05	morning rise	13645 Mar 20 17:10	24° <del>✕</del> 14'23	
min. Earth dist.	13638 Aug 18 22:22	9° <del>✕</del> 23'24	29.21174 AU	retrograde	13645 Jun 16 16:36	26° <del>✕</del> 07'29	
direct	13638 Nov 06 02:34	7° <del>✕</del> 59'20		opposition	13645 Sep 02 17:38	24° <del>✕</del> 44'45	0°38'53
evening set	13639 Feb 03 14:21	9° <del>✕</del> 53'53		min. Earth dist.	13645 Sep 03 02:37	24° <del>✕</del> 44'07	29.27049 AU
				direct	13645 Nov 21 07:49	23° <del>✕</del> 20'18	
				evening set	13646 Feb 19 03:32	25° <del>✕</del> 14'51	
conjunction	13639 Feb 19 16:57	10° <del>✕</del> 29'22	0°35'46				
minimum elong	13639 Feb 19 16:57	10° <del>✕</del> 29'22	0°36'14				
max. Earth dist.	13639 Feb 19 11:51	10° <del>✕</del> 28'54	31.21771 AU	conjunction	13646 Mar 07 04:53	25° <del>✕</del> 50'11	0°36'22
morning rise	13639 Mar 07 18:23	11° <del>✕</del> 04'45		minimum elong	13646 Mar 07 04:53	25° <del>✕</del> 50'11	0°36'33
retrograde	13639 Jun 04 04:47	12° <del>✕</del> 58'22		max. Earth dist.	13646 Mar 06 18:42	25° <del>✕</del> 49'15	31.27301 AU
opposition	13639 Aug 21 03:53	11° <del>✕</del> 35'27	0°38'22	morning rise	13646 Mar 23 04:44	26° <del>✕</del> 25'24	
min. Earth dist.	13639 Aug 21 08:12	11° <del>✕</del> 35'09	29.22364 AU	retrograde	13646 Jun 19 04:21	28° <del>✕</del> 18'24	
direct	13639 Nov 08 14:51	10° <del>✕</del> 11'06		opposition	13646 Sep 05 03:38	26° <del>✕</del> 55'39	0°38'47
evening set	13640 Feb 06 02:46	12° <del>✕</del> 05'42		min. Earth dist.	13646 Sep 05 12:05	26° <del>✕</del> 55'04	29.27585 AU
				direct	13646 Nov 23 20:40	25° <del>✕</del> 31'10	
				evening set	13647 Feb 21 15:21	27° <del>✕</del> 25'42	
conjunction	13640 Feb 22 05:09	12° <del>✕</del> 41'09	0°36'01				
minimum elong	13640 Feb 22 05:09	12° <del>✕</del> 41'09	0°36'25				
max. Earth dist.	13640 Feb 21 22:55	12° <del>✕</del> 40'35	31.22908 AU	conjunction	13647 Mar 09 16:35	28° <del>✕</del> 01'01	0°36'14
morning rise	13640 Mar 09 06:20	13° <del>✕</del> 16'32		minimum elong	13647 Mar 09 16:36	28° <del>✕</del> 01'01	0°36'23
retrograde	13640 Jun 05 15:36	15° <del>✕</del> 10'05		max. Earth dist.	13647 Mar 09 06:34	28° <del>✕</del> 00'05	31.27843 AU
opposition	13640 Aug 22 14:14	13° <del>✕</del> 47'14	0°38'36	morning rise	13647 Mar 25 16:05	28° <del>✕</del> 36'12	
min. Earth dist.	13640 Aug 22 20:03	13° <del>✕</del> 46'50	29.23456 AU		13647 May 10 14:20	0° <del>°</del> <del>°</del>	
direct	13640 Nov 10 01:04	12° <del>✕</del> 22'55		retrograde	13647 Jun 21 14:15	0° <del>°</del> <del>°</del> 29'07	
evening set	13641 Feb 07 15:02	14° <del>✕</del> 17'31			13647 Aug 03 13:04	30° <del>°</del> <del>°</del> <del>°</del> <del>°</del>	
				opposition	13647 Sep 07 13:55	29° <del>✕</del> 06'22	0°38'37
				min. Earth dist.	13647 Sep 07 23:34	29° <del>✕</del> 05'42	29.28161 AU
conjunction	13641 Feb 23 17:21	14° <del>✕</del> 52'58	0°36'12	direct	13647 Nov 26 07:58	27° <del>✕</del> 41'52	
minimum elong	13641 Feb 23 17:22	14° <del>✕</del> 52'58	0°36'35	evening set	13648 Feb 24 03:06	29° <del>✕</del> 36'23	
max. Earth dist.	13641 Feb 23 11:00	14° <del>✕</del> 52'23	31.23936 AU		13648 Mar 05 21:52	0° <del>°</del> <del>°</del>	
morning rise	13641 Mar 11 18:15	15° <del>✕</del> 28'19					
retrograde	13641 Jun 08 02:07	17° <del>✕</del> 21'48					
opposition	13641 Aug 25 00:33	15° <del>✕</del> 59'00	0°38'46	conjunction	13648 Mar 11 04:06	0° <del>°</del> <del>°</del> 11'40	0°36'04
min. Earth dist.	13641 Aug 25 06:31	15° <del>✕</del> 58'35	29.24409 AU	minimum elong	13648 Mar 11 04:06	0° <del>°</del> <del>°</del> 11'40	0°36'09
direct	13641 Nov 12 12:40	14° <del>✕</del> 34'41		max. Earth dist.	13648 Mar 10 17:51	0° <del>°</del> <del>°</del> 10'44	31.28459 AU
evening set	13642 Feb 10 03:17	16° <del>✕</del> 29'18		morning rise	13648 Mar 27 03:21	0° <del>°</del> <del>°</del> 46'49	
				retrograde	13648 Jun 23 01:08	2° <del>°</del> <del>°</del> 39'40	
conjunction	13642 Feb 26 05:19	17° <del>✕</del> 04'44	0°36'20	opposition	13648 Sep 09 00:02	1° <del>°</del> <del>°</del> 16'57	0°38'24
minimum elong	13642 Feb 26 05:19	17° <del>✕</del> 04'44	0°36'40	min. Earth dist.	13648 Sep 09 08:47	1° <del>°</del> <del>°</del> 16'20	29.28814 AU
max. Earth dist.	13642 Feb 25 21:18	17° <del>✕</del> 03'59	31.24821 AU		13648 Nov 06 03:46	30° <del>°</del> <del>°</del> <del>°</del>	
morning rise	13642 Mar 14 06:07	17° <del>✕</del> 40'04		direct	13648 Nov 27 20:28	29° <del>✕</del> 52'27	
retrograde	13642 Jun 10 11:58	19° <del>✕</del> 33'27			13648 Dec 19 07:01	0° <del>°</del> <del>°</del>	
opposition	13642 Aug 27 10:54	18° <del>✕</del> 10'42	0°38'53	evening set	13649 Feb 25 14:50	1° <del>°</del> <del>°</del> 46'58	
min. Earth dist.	13642 Aug 27 17:48	18° <del>✕</del> 10'13	29.25233 AU				
direct	13642 Nov 14 22:49	16° <del>✕</del> 46'22		conjunction	13649 Mar 13 15:34	2° <del>°</del> <del>°</del> 22'14	0°35'50
evening set	13643 Feb 12 15:28	18° <del>✕</del> 40'58		minimum elong	13649 Mar 13 15:34	2° <del>°</del> <del>°</del> 22'15	0°35'54

max. Earth dist.	13649 Mar 13 04:46	2°♈21'15	31.29157 AU	conjunction	13656 Mar 28 23:21	17°♈37'30	0°32'49
morning rise	13649 Mar 29 14:34	2°♈57'22		minimum elong	13656 Mar 28 23:21	17°♈37'30	0°32'36
retrograde	13649 Jun 25 12:02	4°♈50'10		max. Earth dist.	13656 Mar 28 09:39	17°♈36'14	31.33098 AU
opposition	13649 Sep 11 10:17	3°♈27'29	0°38'08	morning rise	13656 Apr 13 20:19	18°♈12'30	
min. Earth dist.	13649 Sep 11 19:54	3°♈26'49	29.29563 AU	retrograde	13656 Jul 10 10:57	20°♈05'06	
direct	13649 Nov 30 06:57	2°♈03'01		opposition	13656 Sep 26 10:39	18°♈42'43	0°34'42
evening set	13650 Feb 28 02:20	3°♈57'34		min. Earth dist.	13656 Sep 26 23:48	18°♈41'49	29.33176 AU
				direct	13656 Dec 15 11:44	17°♈18'22	
conjunction	13650 Mar 16 02:59	4°♈32'49	0°35'33	evening set	13657 Mar 15 11:41	19°♈13'03	
minimum elong	13650 Mar 16 03:00	4°♈32'49	0°35'34				
max. Earth dist.	13650 Mar 15 16:42	4°♈31'52	31.29940 AU	conjunction	13657 Mar 31 10:31	19°♈48'11	0°32'11
morning rise	13650 Apr 01 01:41	5°♈07'56		minimum elong	13657 Mar 31 10:31	19°♈48'11	0°31'57
retrograde	13650 Jun 27 22:08	7°♈00'41		max. Earth dist.	13657 Mar 30 20:27	19°♈46'53	31.33193 AU
opposition	13650 Sep 13 20:29	5°♈38'05	0°37'48	morning rise	13657 Apr 16 07:15	20°♈23'10	
min. Earth dist.	13650 Sep 14 05:57	5°♈37'25	29.30346 AU	retrograde	13657 Jul 12 21:40	22°♈15'43	
direct	13650 Dec 02 18:57	4°♈13'39		opposition	13657 Sep 28 20:55	20°♈53'20	0°34'00
evening set	13651 Mar 02 14:09	6°♈08'13		min. Earth dist.	13657 Sep 29 09:28	20°♈52'28	29.33223 AU
				direct	13657 Dec 18 00:28	19°♈28'57	
conjunction	13651 Mar 18 14:24	6°♈43'28	0°35'13	evening set	13658 Mar 17 22:59	21°♈23'37	
minimum elong	13651 Mar 18 14:25	6°♈43'28	0°35'13				
max. Earth dist.	13651 Mar 18 02:50	6°♈42'24	31.30723 AU	conjunction	13658 Apr 02 21:32	21°♈58'44	0°31'32
morning rise	13651 Apr 03 12:57	7°♈18'34		minimum elong	13658 Apr 02 21:32	21°♈58'44	0°31'14
retrograde	13651 Jun 30 08:17	9°♈11'18		max. Earth dist.	13658 Apr 02 06:44	21°♈57'22	31.33208 AU
opposition	13651 Sep 16 06:39	7°♈48'45	0°37'25	morning rise	13658 Apr 18 18:02	22°♈33'42	
min. Earth dist.	13651 Sep 16 16:44	7°♈48'03	29.31118 AU	retrograde	13658 Jul 15 08:46	24°♈26'12	
direct	13651 Dec 05 04:40	6°♈24'22		opposition	13658 Oct 01 07:20	23°♈03'47	0°33'16
evening set	13652 Mar 04 01:48	8°♈18'59		min. Earth dist.	13658 Oct 01 20:48	23°♈02'52	29.33230 AU
				direct	13658 Dec 20 11:57	21°♈39'23	
conjunction	13652 Mar 20 01:58	8°♈54'12	0°34'50	evening set	13659 Mar 20 10:11	23°♈34'02	
minimum elong	13652 Mar 20 01:58	8°♈54'12	0°34'46				
max. Earth dist.	13652 Mar 19 15:02	8°♈53'12	31.31454 AU	conjunction	13659 Apr 05 08:34	24°♈09'08	0°30'49
morning rise	13652 Apr 05 00:03	9°♈29'17		minimum elong	13659 Apr 05 08:34	24°♈09'08	0°30'29
retrograde	13652 Jul 01 16:55	11°♈22'00		max. Earth dist.	13659 Apr 04 18:24	24°♈07'50	31.33213 AU
opposition	13652 Sep 17 17:05	9°♈59'31	0°36'58	morning rise	13659 Apr 21 04:41	24°♈44'04	
min. Earth dist.	13652 Sep 18 03:51	9°♈58'46	29.31796 AU	retrograde	13659 Jul 17 18:19	26°♈36'32	
direct	13652 Dec 06 15:47	8°♈35'10		opposition	13659 Oct 03 17:38	25°♈14'06	0°32'29
evening set	13653 Mar 06 13:26	10°♈29'48		min. Earth dist.	13659 Oct 04 06:48	25°♈13'12	29.33241 AU
				direct	13659 Dec 23 00:57	23°♈49'40	
conjunction	13653 Mar 22 13:11	11°♈05'01	0°34'24	evening set	13660 Mar 21 21:27	25°♈44'19	
minimum elong	13653 Mar 22 13:11	11°♈05'01	0°34'19				
max. Earth dist.	13653 Mar 22 00:37	11°♈03'51	31.32078 AU	conjunction	13660 Apr 06 19:22	26°♈19'23	0°30'04
morning rise	13653 Apr 07 11:09	11°♈40'05		minimum elong	13660 Apr 06 19:23	26°♈19'23	0°29'42
retrograde	13653 Jul 04 04:16	13°♈32'46		max. Earth dist.	13660 Apr 06 04:20	26°♈18'00	31.33258 AU
opposition	13653 Sep 20 03:26	12°♈10'21	0°36'29	morning rise	13660 Apr 22 15:19	26°♈54'19	
min. Earth dist.	13653 Sep 20 14:07	12°♈09'36	29.32361 AU	retrograde	13660 Jul 19 03:54	28°♈46'44	
direct	13653 Dec 09 01:23	10°♈46'00		opposition	13660 Oct 05 04:05	27°♈24'19	0°31'40
evening set	13654 Mar 09 01:02	12°♈40'40		min. Earth dist.	13660 Oct 05 17:09	27°♈23'25	29.33340 AU
				direct	13660 Dec 24 11:04	25°♈59'52	
conjunction	13654 Mar 25 00:41	13°♈15'52	0°33'55	evening set	13661 Mar 24 08:18	27°♈54'30	
minimum elong	13654 Mar 25 00:42	13°♈15'52	0°33'47				
max. Earth dist.	13654 Mar 24 12:26	13°♈14'44	31.32563 AU	conjunction	13661 Apr 09 06:08	28°♈29'34	0°29'17
morning rise	13654 Apr 09 22:13	13°♈50'55		minimum elong	13661 Apr 09 06:08	28°♈29'34	0°28'53
retrograde	13654 Jul 06 13:16	15°♈43'35		max. Earth dist.	13661 Apr 08 16:22	28°♈28'18	31.33400 AU
opposition	13654 Sep 22 13:48	14°♈21'11	0°35'56	morning rise	13661 Apr 25 01:38	29°♈04'28	
min. Earth dist.	13654 Sep 23 01:56	14°♈20'21	29.32771 AU		13661 May 22 20:35	0°♄	
direct	13654 Dec 11 12:08	12°♈56'51		retrograde	13661 Jul 21 11:48	0°♄56'53	
evening set	13655 Mar 11 12:46	14°♈51'32			13661 Sep 21 21:51	30°♄♈	
				opposition	13661 Oct 07 14:34	29°♈34'28	0°30'48
conjunction	13655 Mar 27 12:04	15°♈26'42	0°33'23	min. Earth dist.	13661 Oct 08 03:48	29°♈33'34	29.33525 AU
minimum elong	13655 Mar 27 12:04	15°♈26'42	0°33'13	direct	13661 Dec 26 22:24	28°♈10'03	
max. Earth dist.	13655 Mar 26 22:28	15°♈25'27	31.32907 AU		13662 Mar 24 15:16	0°♄	
morning rise	13655 Apr 12 09:26	16°♈01'44		evening set	13662 Mar 26 19:27	0°♄04'41	
retrograde	13655 Jul 09 01:02	17°♈54'22					
opposition	13655 Sep 25 00:09	16°♈31'59	0°35'20	conjunction	13662 Apr 11 16:51	0°♄39'45	0°28'27
min. Earth dist.	13655 Sep 25 11:52	16°♈31'11	29.33039 AU	minimum elong	13662 Apr 11 16:51	0°♄39'45	0°28'00
direct	13655 Dec 14 00:42	15°♈07'39		max. Earth dist.	13662 Apr 11 02:04	0°♄38'23	31.33640 AU
evening set	13656 Mar 13 00:16	17°♈02'20		morning rise	13662 Apr 27 12:14	1°♄14'38	

retrograde	13662 Jul 23 23:00	3°07'02		evening set	13669 Apr 11 00:31	15°08'17"34	
opposition	13662 Oct 10 00:50	1°08'44"40	0°29'53				
min. Earth dist.	13662 Oct 10 13:23	1°08'43"48	29.33800 AU	conjunction	13669 Apr 26 19:54	15°08'52"31	0°21'31
direct	13662 Dec 29 07:43	0°08'20"16		minimum elong	13669 Apr 26 19:54	15°08'52"31	0°20'51
evening set	13663 Mar 29 06:28	2°08'14"56		max. Earth dist.	13669 Apr 26 03:42	15°08'51"02	31.34146 AU
				morning rise	13669 May 12 13:17	16°08'27"19	
conjunction	13663 Apr 14 03:44	2°08'49"59	0°27'34	retrograde	13669 Aug 07 23:19	18°08'19"48	
minimum elong	13663 Apr 14 03:44	2°08'49"59	0°27'06	opposition	13669 Oct 25 03:50	16°08'57"31	0°22'20
max. Earth dist.	13663 Apr 13 13:48	2°08'48"41	31.33930 AU	min. Earth dist.	13669 Oct 25 18:15	16°08'56"31	29.33985 AU
morning rise	13663 Apr 29 22:40	3°08'24"51		direct	13670 Jan 13 15:14	15°08'33"12	
retrograde	13663 Jul 26 07:20	5°08'17"17		evening set	13670 Apr 13 11:19	17°08'27"54	
opposition	13663 Oct 12 11:26	3°08'54"57	0°28'55				
min. Earth dist.	13663 Oct 13 01:00	3°08'54"01	29.34094 AU	conjunction	13670 Apr 29 06:37	18°08'02"51	0°20'24
direct	13663 Dec 31 18:11	2°08'30"36		minimum elong	13670 Apr 29 06:36	18°08'02"51	0°19'42
evening set	13664 Mar 30 17:30	4°08'25"17		max. Earth dist.	13670 Apr 28 15:22	18°08'01"26	31.33768 AU
				morning rise	13670 May 14 23:33	18°08'37"37	
conjunction	13664 Apr 15 14:21	5°08'00"18	0°26'39	retrograde	13670 Aug 10 07:31	20°08'30"06	
minimum elong	13664 Apr 15 14:21	5°08'00"18	0°26'08	opposition	13670 Oct 27 14:35	19°08'07"47	0°21'07
max. Earth dist.	13664 Apr 14 23:44	4°08'58"57	31.34222 AU	min. Earth dist.	13670 Oct 28 05:31	19°08'06"46	29.33566 AU
morning rise	13664 May 01 09:06	5°08'35"10		direct	13671 Jan 16 03:26	17°08'43"27	
retrograde	13664 Jul 27 18:22	7°08'27"36		evening set	13671 Apr 15 22:13	19°08'38"08	
opposition	13664 Oct 13 21:58	6°08'05"19	0°27'55				
min. Earth dist.	13664 Oct 14 10:44	6°08'04"26	29.34360 AU	conjunction	13671 May 01 17:02	20°08'13"04	0°19'15
direct	13665 Jan 02 05:30	4°08'40"59		minimum elong	13671 May 01 17:02	20°08'13"04	0°18'32
evening set	13665 Apr 02 04:33	6°08'35"42		max. Earth dist.	13671 May 01 00:49	20°08'11"34	31.33337 AU
max. Earth dist.	13665 Apr 17 10:39	7°08'09"22	31.34445 AU	morning rise	13671 May 17 09:52	20°08'47"50	
				retrograde	13671 Aug 12 18:35	22°08'40"18	
conjunction	13665 Apr 18 01:09	7°08'10"43	0°25'42	opposition	13671 Oct 30 01:25	21°08'17"58	0°19'53
minimum elong	13665 Apr 18 01:09	7°08'10"43	0°25'09	min. Earth dist.	13671 Oct 30 15:30	21°08'17"00	29.33135 AU
morning rise	13665 May 03 19:32	7°08'45"34		direct	13672 Jan 18 13:48	19°08'53"36	
retrograde	13665 Jul 30 04:26	9°08'38"02		evening set	13672 Apr 17 08:44	21°08'48"16	
opposition	13665 Oct 16 08:39	8°08'15"45	0°26'52				
min. Earth dist.	13665 Oct 16 22:41	8°08'14"47	29.34546 AU	conjunction	13672 May 03 03:23	22°08'23"11	0°18'05
direct	13666 Jan 04 15:12	6°08'51"27		minimum elong	13672 May 03 03:23	22°08'23"11	0°17'19
evening set	13666 Apr 04 15:34	8°08'46"11		max. Earth dist.	13672 May 02 12:16	22°08'21"47	31.32912 AU
				morning rise	13672 May 18 19:47	22°08'57"57	
conjunction	13666 Apr 20 11:55	9°08'21"10	0°24'42	retrograde	13672 Aug 14 02:39	24°08'50"27	
minimum elong	13666 Apr 20 11:55	9°08'21"10	0°24'07	opposition	13672 Oct 31 12:27	23°08'28"05	0°18'36
max. Earth dist.	13666 Apr 19 21:13	9°08'19"49	31.34578 AU	min. Earth dist.	13672 Nov 01 03:08	23°08'27"05	29.32743 AU
morning rise	13666 May 06 06:03	9°08'56"01		direct	13673 Jan 20 00:37	22°08'03"44	
retrograde	13666 Aug 01 15:29	11°08'48"29		evening set	13673 Apr 19 19:24	23°08'58"23	
opposition	13666 Oct 18 19:19	10°08'26"14	0°25'47				
min. Earth dist.	13666 Oct 19 08:45	10°08'25"18	29.34605 AU	conjunction	13673 May 05 13:40	24°08'33"17	0°16'53
direct	13667 Jan 07 04:01	9°08'01"56		minimum elong	13673 May 05 13:40	24°08'33"17	0°16'06
evening set	13667 Apr 07 02:42	10°08'56"40		max. Earth dist.	13673 May 04 22:23	24°08'31"52	31.32568 AU
				morning rise	13673 May 21 05:55	25°08'08"02	
conjunction	13667 Apr 22 22:40	11°08'31"39	0°23'40	retrograde	13673 Aug 16 13:20	27°08'00"34	
minimum elong	13667 Apr 22 22:40	11°08'31"39	0°23'04	opposition	13673 Nov 02 23:13	25°08'38"12	0°17'18
max. Earth dist.	13667 Apr 22 07:05	11°08'30"13	31.34564 AU	min. Earth dist.	13673 Nov 03 12:34	25°08'37"18	29.32444 AU
morning rise	13667 May 08 16:32	12°08'06"28		direct	13674 Jan 22 11:30	24°08'13"52	
retrograde	13667 Aug 04 03:05	13°08'58"57		evening set	13674 Apr 22 06:00	26°08'08"33	
opposition	13667 Oct 21 06:08	12°08'36"42	0°24'40	max. Earth dist.	13674 May 07 09:17	26°08'42"05	31.32313 AU
min. Earth dist.	13667 Oct 21 20:29	12°08'35"43	29.34531 AU				
direct	13668 Jan 09 15:23	11°08'12"25		conjunction	13674 May 08 00:02	26°08'43"27	0°15'40
evening set	13668 Apr 08 13:39	13°08'07"09		minimum elong	13674 May 08 00:02	26°08'43"27	0°14'51
				behind sun begin	13674 May 07 21:29	26°08'43"13	
conjunction	13668 Apr 24 09:27	13°08'42"07	0°22'37	behind sun end	13674 May 08 02:36	26°08'43"41	
minimum elong	13668 Apr 24 09:27	13°08'42"07	0°21'58	morning rise	13674 May 23 15:59	27°08'18"11	
max. Earth dist.	13668 Apr 23 18:23	13°08'40"44	31.34422 AU	retrograde	13674 Aug 18 23:33	29°08'10"47	
morning rise	13668 May 10 02:56	14°08'16"55		opposition	13674 Nov 05 10:17	27°08'48"26	0°15'59
	13668 May 31 01:44	15°08'		min. Earth dist.	13674 Nov 06 00:19	27°08'47"29	29.32235 AU
retrograde	13668 Aug 05 12:53	16°08'09"24		direct	13675 Jan 24 20:33	26°08'24"08	
	13668 Oct 14 20:54	15°08'		evening set	13675 Apr 24 16:34	28°08'18"51	
opposition	13668 Oct 22 16:59	14°08'47"09	0°23'31				
min. Earth dist.	13668 Oct 23 07:15	14°08'46"10	29.34312 AU	conjunction	13675 May 10 10:20	28°08'53"45	0°14'25
direct	13669 Jan 11 04:35	13°08'22"51		minimum elong	13675 May 10 10:20	28°08'53"45	0°13'34
	13669 Apr 02 18:37	15°08'		behind sun begin	13675 May 10 06:45	28°08'53"25	

behind sun end	13675 May 10 13:55	28° <b>8</b> 54'04		opposition	13680 Nov 18 05:53	10° <b>II</b> 53'17	0°07'36
max. Earth dist.	13675 May 09 20:07	28° <b>8</b> 52'26	31.32141 AU	min. Earth dist.	13680 Nov 18 18:43	10° <b>II</b> 52'24	29.30356 AU
morning rise	13675 May 26 02:00	29° <b>8</b> 28'29		direct	13681 Feb 06 19:36	9° <b>II</b> 29'11	
	13675 Jun 10 01:50	0° <b>II</b>		evening set	13681 May 07 08:27	11° <b>II</b> 24'02	
retrograde	13675 Aug 21 10:37	1° <b>II</b> 21'08		max. Earth dist.	13681 May 22 10:35	11° <b>II</b> 57'35	31.29987 AU
opposition	13675 Nov 07 21:16	29° <b>8</b> 58'50	0°14'38				
	13675 Nov 07 04:12	30° <b>8</b>		conjunction	13681 May 23 00:35	11° <b>II</b> 58'53	0°06'33
min. Earth dist.	13675 Nov 08 10:11	29° <b>8</b> 57'57	29.32072 AU	minimum elong	13681 May 23 00:34	11° <b>II</b> 58'53	0°05'36
direct	13676 Jan 27 09:00	28° <b>8</b> 34'35		behind sun begin	13681 May 22 18:21	11° <b>II</b> 58'20	
	13676 Apr 12 04:33	0° <b>II</b>		behind sun end	13681 May 23 06:47	11° <b>II</b> 59'26	
evening set	13676 Apr 26 03:14	0° <b>II</b> 29'21		morning rise	13681 Jun 07 14:45	12° <b>II</b> 33'36	
				retrograde	13681 Sep 03 02:20	14° <b>II</b> 26'39	
conjunction	13676 May 11 20:37	1° <b>II</b> 04'14	0°13'09	opposition	13681 Nov 20 17:22	13° <b>II</b> 04'21	0°06'09
minimum elong	13676 May 11 20:37	1° <b>II</b> 04'14	0°12'16	min. Earth dist.	13681 Nov 21 07:15	13° <b>II</b> 03'24	29.29612 AU
behind sun begin	13676 May 11 16:18	1° <b>II</b> 03'51		direct	13682 Feb 09 06:52	11° <b>II</b> 40'15	
behind sun end	13676 May 12 00:56	1° <b>II</b> 04'37		evening set	13682 May 09 19:09	13° <b>II</b> 35'04	
max. Earth dist.	13676 May 11 06:00	1° <b>II</b> 02'53	31.31987 AU				
morning rise	13676 May 27 12:06	1° <b>II</b> 38'58		conjunction	13682 May 25 10:58	14° <b>II</b> 09'55	0°05'12
retrograde	13676 Aug 22 23:14	3° <b>II</b> 31'42		minimum elong	13682 May 25 10:57	14° <b>II</b> 09'55	0°04'13
opposition	13676 Nov 09 08:28	2° <b>II</b> 09'25	0°13'16	behind sun begin	13682 May 25 04:36	14° <b>II</b> 09'21	
min. Earth dist.	13676 Nov 09 21:49	2° <b>II</b> 08'31	29.31923 AU	behind sun end	13682 May 25 17:19	14° <b>II</b> 10'29	
direct	13677 Jan 28 19:54	0° <b>II</b> 45'14		max. Earth dist.	13682 May 24 20:32	14° <b>II</b> 08'34	31.29186 AU
evening set	13677 Apr 28 13:41	2° <b>II</b> 40'02		morning rise	13682 Jun 10 01:02	14° <b>II</b> 44'37	
				retrograde	13682 Sep 05 12:40	16° <b>II</b> 37'42	
conjunction	13677 May 14 06:57	3° <b>II</b> 14'54	0°11'51	opposition	13682 Nov 23 04:49	15° <b>II</b> 15'21	0°04'42
minimum elong	13677 May 14 06:56	3° <b>II</b> 14'54	0°10'58	min. Earth dist.	13682 Nov 23 17:40	15° <b>II</b> 14'28	29.28745 AU
behind sun begin	13677 May 14 02:03	3° <b>II</b> 14'28		direct	13683 Feb 11 18:15	13° <b>II</b> 51'12	
behind sun end	13677 May 14 11:50	3° <b>II</b> 15'21		evening set	13683 May 12 05:38	15° <b>II</b> 45'59	
max. Earth dist.	13677 May 13 17:20	3° <b>II</b> 13'39	31.31816 AU				
morning rise	13677 May 29 22:05	3° <b>II</b> 49'38		conjunction	13683 May 27 21:11	16° <b>II</b> 20'50	0°03'50
retrograde	13677 Aug 25 09:35	5° <b>II</b> 42'27		minimum elong	13683 May 27 21:12	16° <b>II</b> 20'50	0°02'51
opposition	13677 Nov 11 19:42	4° <b>II</b> 20'12	0°11'52	behind sun begin	13683 May 27 14:45	16° <b>II</b> 20'15	
min. Earth dist.	13677 Nov 12 08:49	4° <b>II</b> 19'18	29.31706 AU	behind sun end	13683 May 28 03:38	16° <b>II</b> 21'24	
direct	13678 Jan 31 08:47	2° <b>II</b> 56'04		max. Earth dist.	13683 May 27 07:03	16° <b>II</b> 19'31	31.28269 AU
evening set	13678 May 01 00:29	4° <b>II</b> 50'53		morning rise	13683 Jun 12 11:01	16° <b>II</b> 55'32	
				retrograde	13683 Sep 07 22:34	18° <b>II</b> 48'39	
conjunction	13678 May 16 17:17	5° <b>II</b> 25'46	0°10'33	opposition	13683 Nov 25 16:27	17° <b>II</b> 26'14	0°03'14
minimum elong	13678 May 16 17:17	5° <b>II</b> 25'46	0°09'38	min. Earth dist.	13683 Nov 26 06:04	17° <b>II</b> 25'18	29.27809 AU
behind sun begin	13678 May 16 11:56	5° <b>II</b> 25'17		direct	13684 Feb 14 03:46	16° <b>II</b> 02'02	
behind sun end	13678 May 16 22:38	5° <b>II</b> 26'14		evening set	13684 May 13 16:03	17° <b>II</b> 56'47	
max. Earth dist.	13678 May 16 02:39	5° <b>II</b> 24'24	31.31556 AU				
morning rise	13678 Jun 01 08:19	6° <b>II</b> 00'29		conjunction	13684 May 29 07:24	18° <b>II</b> 31'37	0°02'27
retrograde	13678 Aug 27 20:56	7° <b>II</b> 53'22		minimum elong	13684 May 29 07:24	18° <b>II</b> 31'37	0°01'26
opposition	13678 Nov 14 06:55	6° <b>II</b> 31'08	0°10'28	behind sun begin	13684 May 29 00:57	18° <b>II</b> 31'02	
min. Earth dist.	13678 Nov 14 20:01	6° <b>II</b> 30'15	29.31398 AU	behind sun end	13684 May 29 13:51	18° <b>II</b> 32'11	
direct	13679 Feb 02 19:19	5° <b>II</b> 07'02		max. Earth dist.	13684 May 28 18:00	18° <b>II</b> 30'22	31.27331 AU
evening set	13679 May 03 11:09	7° <b>II</b> 01'53		morning rise	13684 Jun 13 21:01	19° <b>II</b> 06'19	
				retrograde	13684 Sep 09 09:06	20° <b>II</b> 59'28	
conjunction	13679 May 19 03:51	7° <b>II</b> 36'45	0°09'14	opposition	13684 Nov 27 03:59	19° <b>II</b> 36'59	0°01'47
minimum elong	13679 May 19 03:50	7° <b>II</b> 36'45	0°08'18	min. Earth dist.	13684 Nov 27 16:18	19° <b>II</b> 36'08	29.26876 AU
behind sun begin	13679 May 18 22:07	7° <b>II</b> 36'14		direct	13685 Feb 15 16:49	18° <b>II</b> 12'45	
behind sun end	13679 May 19 09:33	7° <b>II</b> 37'16		evening set	13685 May 16 02:24	20° <b>II</b> 07'29	
max. Earth dist.	13679 May 18 14:14	7° <b>II</b> 35'30	31.31178 AU				
morning rise	13679 Jun 03 18:26	8° <b>II</b> 11'28		conjunction	13685 May 31 17:25	20° <b>II</b> 42'18	0°01'02
retrograde	13679 Aug 30 06:26	10° <b>II</b> 04'25		minimum elong	13685 May 31 17:25	20° <b>II</b> 42'18	0°00'01
opposition	13679 Nov 16 18:27	8° <b>II</b> 42'11	0°09'02	behind sun begin	13685 May 31 12:56	20° <b>II</b> 41'55	
min. Earth dist.	13679 Nov 17 08:03	8° <b>II</b> 41'15	29.30947 AU	behind sun end	13685 May 31 21:55	20° <b>II</b> 42'40	
direct	13680 Feb 05 08:20	7° <b>II</b> 18'06		max. Earth dist.	13685 May 31 03:50	20° <b>II</b> 41'02	31.26421 AU
evening set	13680 May 04 21:50	9° <b>II</b> 12'57		morning rise	13685 Jun 16 06:56	21° <b>II</b> 17'00	
				retrograde	13685 Sep 11 21:06	23° <b>II</b> 10'12	
conjunction	13680 May 20 14:04	9° <b>II</b> 47'49	0°07'54	opposition	13685 Nov 29 15:38	21° <b>II</b> 47'39	0°00'19
minimum elong	13680 May 20 14:04	9° <b>II</b> 47'49	0°06'57	min. Earth dist.	13685 Nov 30 03:55	21° <b>II</b> 46'49	29.26013 AU
behind sun begin	13680 May 20 08:04	9° <b>II</b> 47'16		direct	13686 Feb 18 03:19	20° <b>II</b> 23'25	
behind sun end	13680 May 20 20:04	9° <b>II</b> 48'21		desc. node	13686 Feb 20 13:22	20° <b>II</b> 23'30	
max. Earth dist.	13680 May 19 23:26	9° <b>II</b> 46'27	31.30660 AU	evening set	13686 May 18 12:43	22° <b>II</b> 18'08	
morning rise	13680 Jun 05 04:37	10° <b>II</b> 22'32					
retrograde	13680 Aug 31 18:22	12° <b>II</b> 15'32		conjunction	13686 Jun 03 03:39	22° <b>II</b> 52'57	-0°00'23

minimum elong	13686 Jun 03 03:38	22° $\Pi$ 52'57	0°01'25	morning rise	13691 Jun 29 18:52	4° $\mathfrak{D}$ 22'56	
behind sun begin	13686 Jun 02 21:11	22° $\Pi$ 52'22		retrograde	13691 Sep 25 14:30	6° $\mathfrak{D}$ 16'45	
behind sun end	13686 Jun 03 10:05	22° $\Pi$ 53'31		opposition	13691 Dec 13 14:37	4° $\mathfrak{D}$ 54'10	-0°08'26
max. Earth dist.	13686 Jun 02 15:30	22° $\Pi$ 51'49	31.25599 AU	min. Earth dist.	13691 Dec 13 23:54	4° $\mathfrak{D}$ 53'32	29.21697 AU
morning rise	13686 Jun 18 16:49	23° $\Pi$ 27'38		direct	13692 Mar 03 01:12	3° $\mathfrak{D}$ 30'09	
retrograde	13686 Sep 14 07:11	25° $\Pi$ 20'55		evening set	13692 May 31 03:18	5° $\mathfrak{D}$ 25'00	
opposition	13686 Dec 02 03:13	23° $\Pi$ 58'20	-0°01'09				
min. Earth dist.	13686 Dec 02 14:46	23° $\Pi$ 57'33	29.25226 AU	conjunction	13692 Jun 15 16:46	5° $\mathfrak{D}$ 59'50	-0°08'33
direct	13687 Feb 20 15:54	22° $\Pi$ 34'07		minimum elong	13692 Jun 15 16:46	5° $\mathfrak{D}$ 59'50	0°09'36
evening set	13687 May 20 23:12	24° $\Pi$ 28'51		behind sun begin	13692 Jun 15 11:25	5° $\mathfrak{D}$ 59'21	
				behind sun end	13692 Jun 15 22:07	6° $\mathfrak{D}$ 00'18	
conjunction	13687 Jun 05 13:42	25° $\Pi$ 03'39	-0°01'47	max. Earth dist.	13692 Jun 15 06:23	5° $\mathfrak{D}$ 58'52	31.21244 AU
minimum elong	13687 Jun 05 13:42	25° $\Pi$ 03'39	0°02'48	morning rise	13692 Jul 01 05:04	6° $\mathfrak{D}$ 34'34	
behind sun begin	13687 Jun 05 07:16	25° $\Pi$ 03'05		retrograde	13692 Sep 27 01:23	8° $\mathfrak{D}$ 28'30	
behind sun end	13687 Jun 05 20:08	25° $\Pi$ 04'14		opposition	13692 Dec 15 02:47	7° $\mathfrak{D}$ 05'54	-0°09'52
max. Earth dist.	13687 Jun 05 01:08	25° $\Pi$ 02'29	31.24865 AU	min. Earth dist.	13692 Dec 15 12:55	7° $\mathfrak{D}$ 05'12	29.20782 AU
morning rise	13687 Jun 21 02:51	25° $\Pi$ 38'21		direct	13693 Mar 05 10:24	5° $\mathfrak{D}$ 41'53	
retrograde	13687 Sep 16 19:26	27° $\Pi$ 31'43		evening set	13693 Jun 02 13:47	7° $\mathfrak{D}$ 36'45	
opposition	13687 Dec 04 14:58	26° $\Pi$ 09'08	-0°02'37				
min. Earth dist.	13687 Dec 05 01:49	26° $\Pi$ 08'24	29.24534 AU	conjunction	13693 Jun 18 03:09	8° $\mathfrak{D}$ 11'35	-0°09'53
direct	13688 Feb 23 02:35	24° $\Pi$ 44'56		minimum elong	13693 Jun 18 03:08	8° $\mathfrak{D}$ 11'35	0°10'56
evening set	13688 May 22 09:21	26° $\Pi$ 39'42		behind sun begin	13693 Jun 17 22:14	8° $\mathfrak{D}$ 11'08	
				behind sun end	13693 Jun 18 08:02	8° $\mathfrak{D}$ 12'01	
conjunction	13688 Jun 06 23:47	27° $\Pi$ 14'30	-0°03'09	max. Earth dist.	13693 Jun 17 17:19	8° $\mathfrak{D}$ 10'40	31.20265 AU
minimum elong	13688 Jun 06 23:47	27° $\Pi$ 14'30	0°04'11	morning rise	13693 Jul 03 15:18	8° $\mathfrak{D}$ 46'19	
behind sun begin	13688 Jun 06 17:26	27° $\Pi$ 13'56		retrograde	13693 Sep 29 12:28	10° $\mathfrak{D}$ 40'21	
behind sun end	13688 Jun 07 06:09	27° $\Pi$ 15'04		opposition	13693 Dec 17 14:55	9° $\mathfrak{D}$ 17'43	-0°11'17
max. Earth dist.	13688 Jun 06 12:53	27° $\Pi$ 13'30	31.24195 AU	min. Earth dist.	13693 Dec 18 00:02	9° $\mathfrak{D}$ 17'06	29.19724 AU
morning rise	13688 Jun 22 12:37	27° $\Pi$ 49'12		direct	13694 Mar 07 23:28	7° $\mathfrak{D}$ 53'42	
retrograde	13688 Sep 18 05:41	29° $\Pi$ 42'40		evening set	13694 Jun 05 00:25	9° $\mathfrak{D}$ 48'35	
opposition	13688 Dec 06 02:50	28° $\Pi$ 20'05	-0°04'05				
min. Earth dist.	13688 Dec 06 13:44	28° $\Pi$ 19'21	29.23873 AU	conjunction	13694 Jun 20 13:28	10° $\mathfrak{D}$ 23'24	-0°11'11
direct	13689 Feb 24 15:30	26° $\Pi$ 55'57		minimum elong	13694 Jun 20 13:28	10° $\mathfrak{D}$ 23'24	0°12'14
evening set	13689 May 24 19:49	28° $\Pi$ 50'43		behind sun begin	13694 Jun 20 09:07	10° $\mathfrak{D}$ 23'01	
				behind sun end	13694 Jun 20 17:49	10° $\mathfrak{D}$ 23'48	
conjunction	13689 Jun 09 09:54	29° $\Pi$ 25'32	-0°04'31	max. Earth dist.	13694 Jun 20 03:00	10° $\mathfrak{D}$ 22'26	31.19140 AU
minimum elong	13689 Jun 09 09:54	29° $\Pi$ 25'32	0°05'33	morning rise	13694 Jul 06 01:35	10° $\mathfrak{D}$ 58'09	
behind sun begin	13689 Jun 09 03:42	29° $\Pi$ 24'59		retrograde	13694 Oct 02 01:04	12° $\mathfrak{D}$ 52'17	
behind sun end	13689 Jun 09 16:06	29° $\Pi$ 26'05		opposition	13694 Dec 20 03:08	11° $\mathfrak{D}$ 29'35	-0°12'41
max. Earth dist.	13689 Jun 08 22:28	29° $\Pi$ 24'28	31.23546 AU	min. Earth dist.	13694 Dec 20 12:34	11° $\mathfrak{D}$ 28'56	29.18547 AU
morning rise	13689 Jun 24 22:45	0° $\mathfrak{D}$ 00'15		direct	13695 Mar 10 09:44	10° $\mathfrak{D}$ 05'33	
	13689 Jun 24 20:06	0° $\mathfrak{D}$		evening set	13695 Jun 07 10:51	12° $\mathfrak{D}$ 00'25	
retrograde	13689 Sep 20 18:10	1° $\mathfrak{D}$ 53'49					
opposition	13689 Dec 08 14:30	0° $\mathfrak{D}$ 31'15	-0°05'33	conjunction	13695 Jun 22 23:53	12° $\mathfrak{D}$ 35'14	-0°12'29
min. Earth dist.	13689 Dec 09 00:17	0° $\mathfrak{D}$ 30'34	29.23216 AU	minimum elong	13695 Jun 22 23:53	12° $\mathfrak{D}$ 35'14	0°13'32
	13689 Dec 28 03:45	30° $\mathfrak{R}$ $\Pi$		behind sun begin	13695 Jun 22 20:15	12° $\mathfrak{D}$ 34'54	
direct	13690 Feb 27 02:42	29° $\Pi$ 07'08		behind sun end	13695 Jun 23 03:31	12° $\mathfrak{D}$ 35'34	
	13690 Apr 26 03:08	0° $\mathfrak{D}$		max. Earth dist.	13695 Jun 22 14:42	12° $\mathfrak{D}$ 34'23	31.17918 AU
evening set	13690 May 27 06:16	1° $\mathfrak{D}$ 01'57		morning rise	13695 Jul 08 11:46	13° $\mathfrak{D}$ 09'59	
				retrograde	13695 Oct 04 11:30	15° $\mathfrak{D}$ 04'12	
conjunction	13690 Jun 11 20:13	1° $\mathfrak{D}$ 36'46	-0°05'52	opposition	13695 Dec 22 15:25	13° $\mathfrak{D}$ 41'25	-0°14'03
minimum elong	13690 Jun 11 20:14	1° $\mathfrak{D}$ 36'46	0°06'55	min. Earth dist.	13695 Dec 23 00:16	13° $\mathfrak{D}$ 40'49	29.17282 AU
behind sun begin	13690 Jun 11 14:14	1° $\mathfrak{D}$ 36'14		direct	13696 Mar 11 22:12	12° $\mathfrak{D}$ 17'21	
behind sun end	13690 Jun 12 02:14	1° $\mathfrak{D}$ 37'18		evening set	13696 Jun 08 21:14	14° $\mathfrak{D}$ 12'12	
max. Earth dist.	13690 Jun 11 09:43	1° $\mathfrak{D}$ 35'48	31.22859 AU				
morning rise	13690 Jun 27 08:47	2° $\mathfrak{D}$ 11'29		conjunction	13696 Jun 24 09:56	14° $\mathfrak{D}$ 47'00	-0°13'45
retrograde	13690 Sep 23 03:21	4° $\mathfrak{D}$ 05'11		minimum elong	13696 Jun 24 09:56	14° $\mathfrak{D}$ 47'00	0°14'48
opposition	13690 Dec 11 02:35	2° $\mathfrak{D}$ 42'37	-0°07'00	behind sun begin	13696 Jun 24 07:16	14° $\mathfrak{D}$ 46'46	
min. Earth dist.	13690 Dec 11 13:06	2° $\mathfrak{D}$ 41'54	29.22500 AU	behind sun end	13696 Jun 24 12:36	14° $\mathfrak{D}$ 47'15	
direct	13691 Mar 01 13:54	1° $\mathfrak{D}$ 18'33		max. Earth dist.	13696 Jun 24 00:17	14° $\mathfrak{D}$ 46'07	31.16644 AU
evening set	13691 May 29 16:45	3° $\mathfrak{D}$ 13'24		morning rise	13696 Jul 09 21:55	15° $\mathfrak{D}$ 21'46	
				retrograde	13696 Oct 06 00:17	17° $\mathfrak{D}$ 16'03	
conjunction	13691 Jun 14 06:25	3° $\mathfrak{D}$ 48'13	-0°07'13	opposition	13696 Dec 24 03:39	15° $\mathfrak{D}$ 53'11	-0°15'25
minimum elong	13691 Jun 14 06:24	3° $\mathfrak{D}$ 48'13	0°08'16	min. Earth dist.	13696 Dec 24 11:50	15° $\mathfrak{D}$ 52'38	29.16017 AU
behind sun begin	13691 Jun 14 00:42	3° $\mathfrak{D}$ 47'42		direct	13697 Mar 14 09:39	14° $\mathfrak{D}$ 29'06	
behind sun end	13691 Jun 14 12:07	3° $\mathfrak{D}$ 48'43		evening set	13697 Jun 11 07:32	16° $\mathfrak{D}$ 23'55	
max. Earth dist.	13691 Jun 13 19:52	3° $\mathfrak{D}$ 47'14	31.22109 AU				



conjunction	13697 Jun 26 20:14	16°☾58'44 -0°15'01	max. Earth dist.	13703 Jul 11 04:48	0°☾09'57 31.09739 AU
minimum elong	13697 Jun 26 20:14	16°☾58'44 0°16'03	morning rise	13703 Jul 26 21:16	0°☾45'14
behind sun begin	13697 Jun 26 19:29	16°☾58'40	retrograde	13703 Oct 23 07:35	2°☾40'18
behind sun end	13697 Jun 26 20:59	16°☾58'48	opposition	13704 Jan 10 18:27	1°☾17'10 -0°24'13
max. Earth dist.	13697 Jun 26 12:17	16°☾57'59 31.15390 AU	min. Earth dist.	13704 Jan 10 22:27	1°☾16'54 29.09319 AU
morning rise	13697 Jul 12 07:58	17°☾33'29		13704 Mar 10 07:49	30°☾☾
retrograde	13697 Oct 08 11:18	19°☾27'51	direct	13704 Mar 30 18:44	29°☾53'12
opposition	13697 Dec 26 15:48	18°☾04'54 -0°16'45		13704 Apr 20 01:04	0°☾
min. Earth dist.	13697 Dec 26 23:50	18°☾04'22 29.14800 AU	evening set	13704 Jun 27 08:21	1°☾48'02
direct	13698 Mar 16 23:22	16°☾40'48			
evening set	13698 Jun 13 17:59	18°☾35'36	conjunction	13704 Jul 12 20:12	2°☾22'54 -0°23'09
			minimum elong	13704 Jul 12 20:13	2°☾22'54 0°24'06
conjunction	13698 Jun 29 06:23	19°☾10'25 -0°16'15	max. Earth dist.	13704 Jul 12 16:43	2°☾22'34 31.08862 AU
minimum elong	13698 Jun 29 06:23	19°☾10'25 0°17'16	morning rise	13704 Jul 28 07:37	2°☾57'45
max. Earth dist.	13698 Jun 28 22:16	19°☾09'40 31.14231 AU	retrograde	13704 Oct 24 18:51	4°☾52'56
morning rise	13698 Jul 14 18:10	19°☾45'11	opposition	13705 Jan 12 07:10	3°☾29'47 -0°25'21
retrograde	13698 Oct 10 23:55	21°☾39'38	min. Earth dist.	13705 Jan 12 10:39	3°☾29'32 29.08393 AU
opposition	13698 Dec 29 04:03	20°☾16'38 -0°18'04	direct	13705 Apr 02 06:51	2°☾05'50
min. Earth dist.	13698 Dec 29 10:27	20°☾16'12 29.13699 AU	evening set	13705 Jun 29 19:10	4°☾00'41
direct	13699 Mar 19 11:03	18°☾52'31			
evening set	13699 Jun 16 04:12	20°☾47'19	conjunction	13705 Jul 15 06:46	4°☾35'32 -0°24'12
			minimum elong	13705 Jul 15 06:46	4°☾35'32 0°25'07
conjunction	13699 Jul 01 16:33	21°☾22'08 -0°17'28	max. Earth dist.	13705 Jul 15 02:30	4°☾35'08 31.07889 AU
minimum elong	13699 Jul 01 16:33	21°☾22'08 0°18'29	morning rise	13705 Jul 30 18:20	5°☾10'24
max. Earth dist.	13699 Jul 01 09:48	21°☾21'31 31.13180 AU	retrograde	13705 Oct 27 08:34	7°☾05'42
morning rise	13699 Jul 17 04:09	21°☾56'55	opposition	13706 Jan 14 19:50	5°☾42'31 -0°26'27
retrograde	13699 Oct 13 09:25	23°☾51'29	min. Earth dist.	13706 Jan 14 22:56	5°☾42'18 29.07370 AU
opposition	13699 Dec 31 16:30	22°☾28'26 -0°19'21	direct	13706 Apr 04 18:02	4°☾18'34
min. Earth dist.	13699 Dec 31 23:04	22°☾27'59 29.12710 AU	evening set	13706 Jul 02 05:52	6°☾13'25
direct	13700 Mar 21 22:56	21°☾04'21			
evening set	13700 Jun 18 14:33	22°☾59'08	conjunction	13706 Jul 17 17:32	6°☾48'18 -0°25'12
			minimum elong	13706 Jul 17 17:33	6°☾48'18 0°26'06
conjunction	13700 Jul 04 02:44	23°☾33'58 -0°18'39	max. Earth dist.	13706 Jul 17 14:33	6°☾48'01 31.06800 AU
minimum elong	13700 Jul 04 02:44	23°☾33'58 0°19'40	morning rise	13706 Aug 02 04:57	7°☾23'10
max. Earth dist.	13700 Jul 03 20:32	23°☾33'23 31.12253 AU	retrograde	13706 Oct 29 20:31	9°☾18'35
morning rise	13700 Jul 19 14:21	24°☾08'45	opposition	13707 Jan 17 08:46	7°☾55'19 -0°27'30
retrograde	13700 Oct 15 21:07	26°☾03'25	min. Earth dist.	13707 Jan 17 12:03	7°☾55'06 29.06219 AU
opposition	13701 Jan 03 04:42	24°☾40'22 -0°20'37	direct	13707 Apr 07 07:20	6°☾31'23
min. Earth dist.	13701 Jan 03 09:35	24°☾40'02 29.11821 AU	evening set	13707 Jul 04 16:33	8°☾26'13
direct	13701 Mar 24 10:53	23°☾16'17			
evening set	13701 Jun 21 00:55	25°☾11'06	conjunction	13707 Jul 20 04:03	9°☾01'05 -0°26'10
			minimum elong	13707 Jul 20 04:03	9°☾01'05 0°27'04
conjunction	13701 Jul 06 13:00	25°☾45'56 -0°19'49	max. Earth dist.	13707 Jul 20 00:35	9°☾00'46 31.05606 AU
minimum elong	13701 Jul 06 13:00	25°☾45'56 0°20'49	morning rise	13707 Aug 04 15:38	9°☾35'59
max. Earth dist.	13701 Jul 06 07:20	25°☾45'25 31.11393 AU	retrograde	13707 Nov 01 09:50	11°☾31'29
morning rise	13701 Jul 22 00:36	26°☾20'45	opposition	13708 Jan 19 21:37	10°☾08'09 -0°28'31
retrograde	13701 Oct 18 08:17	28°☾15'32	min. Earth dist.	13708 Jan 19 23:40	10°☾08'01 29.04980 AU
opposition	13702 Jan 05 17:14	26°☾52'27 -0°21'51	direct	13708 Apr 08 19:19	8°☾44'12
min. Earth dist.	13702 Jan 05 22:32	26°☾52'06 29.10989 AU	evening set	13708 Jul 06 03:11	10°☾39'00
direct	13702 Mar 26 20:53	25°☾28'25			
evening set	13702 Jun 23 11:19	27°☾23'14	conjunction	13708 Jul 21 14:44	11°☾13'53 -0°27'06
			minimum elong	13708 Jul 21 14:44	11°☾13'53 0°27'58
conjunction	13702 Jul 08 23:20	27°☾58'05 -0°20'58	max. Earth dist.	13708 Jul 21 12:16	11°☾13'39 31.04331 AU
minimum elong	13702 Jul 08 23:20	27°☾58'05 0°21'57	morning rise	13708 Aug 06 02:17	11°☾48'47
max. Earth dist.	13702 Jul 08 18:46	27°☾57'39 31.10574 AU	retrograde	13708 Nov 02 20:36	13°☾44'23
morning rise	13702 Jul 24 10:49	28°☾32'54	opposition	13709 Jan 21 10:25	12°☾20'58 -0°29'30
	13702 Sep 09 17:10	0°☾	min. Earth dist.	13709 Jan 21 12:57	12°☾20'48 29.03698 AU
retrograde	13702 Oct 20 19:01	0°☾27'49	direct	13709 Apr 11 07:56	10°☾56'59
	13702 Dec 02 07:48	30°☾☾	evening set	13709 Jul 08 13:50	12°☾51'46
opposition	13703 Jan 08 05:43	29°☾04'43 -0°23'03			
min. Earth dist.	13703 Jan 08 09:40	29°☾04'27 29.10162 AU	conjunction	13709 Jul 24 01:20	13°☾26'39 -0°28'00
direct	13703 Mar 29 09:19	27°☾40'44	minimum elong	13709 Jul 24 01:20	13°☾26'39 0°28'51
evening set	13703 Jun 25 21:56	29°☾35'33	max. Earth dist.	13709 Jul 23 23:20	13°☾26'28 31.03063 AU
	13703 Jul 06 19:39	0°☾	morning rise	13709 Aug 08 12:59	14°☾01'34
				13709 Sep 06 07:05	15°☾
conjunction	13703 Jul 11 09:42	0°☾10'24 -0°22'04	retrograde	13709 Nov 05 09:13	15°☾57'15
minimum elong	13703 Jul 11 09:42	0°☾10'24 0°23'02		13710 Jan 07 17:15	15°☾☾

opposition	13710 Jan 23 23:10	14°Ω33'46	-0°30'26	minimum elong	13716 Aug 08 04:25	28°Ω59'11	0°33'40
min. Earth dist.	13710 Jan 24 00:01	14°Ω33'42	29.02449 AU	max. Earth dist.	13716 Aug 08 07:03	28°Ω59'26	30.96561 AU
direct	13710 Apr 13 20:56	13°Ω09'46		morning rise	13716 Aug 23 16:44	29°Ω34'15	
	13710 Jul 08 23:15	15°Ω			13716 Sep 04 14:36	0°Π	
evening set	13710 Jul 11 00:27	15°Ω04'31		retrograde	13716 Nov 20 23:57	1°Π30'51	
				opposition	13717 Feb 08 17:50	0°Π07'09	-0°35'38
conjunction	13710 Jul 26 11:52	15°Ω39'26	-0°28'51	min. Earth dist.	13717 Feb 08 14:10	0°Π07'24	28.96164 AU
minimum elong	13710 Jul 26 11:52	15°Ω39'26	0°29'40		13717 Feb 13 02:15	30°RΩ	
max. Earth dist.	13710 Jul 26 10:29	15°Ω39'18	31.01844 AU	direct	13717 Apr 29 03:18	28°Ω43'23	
morning rise	13710 Aug 10 23:33	16°Ω14'22			13717 Jul 08 02:58	0°Π	
retrograde	13710 Nov 07 20:29	18°Ω10'10		evening set	13717 Jul 26 03:58	0°Π38'13	
opposition	13711 Jan 26 12:08	16°Ω46'36	-0°31'19				
min. Earth dist.	13711 Jan 26 13:10	16°Ω46'31	29.01292 AU	conjunction	13717 Aug 10 15:36	1°Π13'13	-0°33'34
direct	13711 Apr 16 07:47	15°Ω22'36		minimum elong	13717 Aug 10 15:36	1°Π13'13	0°34'10
evening set	13711 Jul 13 11:02	17°Ω17'21		max. Earth dist.	13717 Aug 10 18:59	1°Π13'32	30.95719 AU
				morning rise	13717 Aug 26 03:58	1°Π48'18	
conjunction	13711 Jul 28 22:32	17°Ω52'16	-0°29'40	retrograde	13717 Nov 23 12:39	3°Π45'01	
minimum elong	13711 Jul 28 22:32	17°Ω52'16	0°30'27	opposition	13718 Feb 11 07:08	2°Π21'16	-0°36'10
max. Earth dist.	13711 Jul 28 22:33	17°Ω52'16	31.00750 AU	min. Earth dist.	13718 Feb 11 04:07	2°Π21'28	28.95278 AU
morning rise	13711 Aug 13 10:13	18°Ω27'13		direct	13718 May 01 16:31	0°Π57'31	
retrograde	13711 Nov 10 07:19	20°Ω23'08		evening set	13718 Jul 28 15:03	2°Π52'21	
opposition	13712 Jan 29 00:57	18°Ω59'32	-0°32'10				
min. Earth dist.	13712 Jan 29 00:16	18°Ω59'35	29.00255 AU	conjunction	13718 Aug 13 02:44	3°Π27'21	-0°34'02
direct	13712 Apr 17 20:18	17°Ω35'34		minimum elong	13718 Aug 13 02:44	3°Π27'21	0°34'36
evening set	13712 Jul 14 21:41	19°Ω30'18		max. Earth dist.	13718 Aug 13 06:16	3°Π27'41	30.94784 AU
				morning rise	13718 Aug 28 15:15	4°Π02'28	
conjunction	13712 Jul 30 09:04	20°Ω05'14	-0°30'26	retrograde	13718 Nov 26 03:09	5°Π59'17	
minimum elong	13712 Jul 30 09:04	20°Ω05'14	0°31'11	opposition	13719 Feb 13 20:23	4°Π35'28	-0°36'39
max. Earth dist.	13712 Jul 30 09:00	20°Ω05'14	30.99772 AU	min. Earth dist.	13719 Feb 13 16:02	4°Π35'46	28.94280 AU
morning rise	13712 Aug 14 20:58	20°Ω40'13		direct	13719 May 04 06:21	3°Π11'44	
retrograde	13712 Nov 11 19:45	22°Ω36'16		evening set	13719 Jul 31 02:18	5°Π06'32	
opposition	13713 Jan 30 13:52	21°Ω12'37	-0°32'57				
min. Earth dist.	13713 Jan 30 12:57	21°Ω12'41	28.99339 AU	conjunction	13719 Aug 15 14:01	5°Π41'33	-0°34'28
direct	13713 Apr 20 05:30	19°Ω48'41		minimum elong	13719 Aug 15 14:02	5°Π41'33	0°35'00
evening set	13713 Jul 17 08:19	21°Ω43'27		max. Earth dist.	13719 Aug 15 17:34	5°Π41'53	30.93724 AU
				morning rise	13719 Aug 31 02:45	6°Π16'41	
conjunction	13713 Aug 01 19:52	22°Ω18'23	-0°31'09	retrograde	13719 Nov 28 14:58	8°Π13'35	
minimum elong	13713 Aug 01 19:52	22°Ω18'23	0°31'53	opposition	13720 Feb 16 09:43	6°Π49'42	-0°37'05
max. Earth dist.	13713 Aug 01 21:32	22°Ω18'33	30.98901 AU	min. Earth dist.	13720 Feb 16 06:08	6°Π49'57	28.93174 AU
morning rise	13713 Aug 17 07:42	22°Ω53'23		direct	13720 May 05 18:09	5°Π25'55	
retrograde	13713 Nov 14 07:13	24°Ω49'34		evening set	13720 Aug 01 13:21	7°Π20'40	
opposition	13714 Feb 02 02:41	23°Ω25'55	-0°33'42				
min. Earth dist.	13714 Feb 02 00:52	23°Ω26'03	28.98499 AU	conjunction	13720 Aug 17 01:19	7°Π55'43	-0°34'50
direct	13714 Apr 22 17:17	22°Ω02'02		minimum elong	13720 Aug 17 01:19	7°Π55'43	0°35'20
evening set	13714 Jul 19 19:12	23°Ω56'49		max. Earth dist.	13720 Aug 17 05:47	7°Π56'08	30.92579 AU
				morning rise	13720 Sep 01 14:09	8°Π30'52	
conjunction	13714 Aug 04 06:36	24°Ω31'46	-0°31'50	retrograde	13720 Nov 30 02:24	10°Π27'49	
minimum elong	13714 Aug 04 06:36	24°Ω31'46	0°32'31	opposition	13721 Feb 17 22:51	9°Π03'50	-0°37'27
max. Earth dist.	13714 Aug 04 07:56	24°Ω31'53	30.98101 AU	min. Earth dist.	13721 Feb 17 18:02	9°Π04'10	28.91988 AU
morning rise	13714 Aug 19 18:42	25°Ω06'47		direct	13721 May 08 07:45	7°Π40'02	
retrograde	13714 Nov 16 21:20	27°Ω03'07		evening set	13721 Aug 04 00:33	9°Π34'43	
opposition	13715 Feb 04 15:44	25°Ω39'27	-0°34'24				
min. Earth dist.	13715 Feb 04 13:11	25°Ω39'37	28.97728 AU	conjunction	13721 Aug 19 12:28	10°Π09'47	-0°35'10
direct	13715 Apr 25 03:58	24°Ω15'36		minimum elong	13721 Aug 19 12:28	10°Π09'47	0°35'37
evening set	13715 Jul 22 05:51	26°Ω10'24		max. Earth dist.	13721 Aug 19 16:32	10°Π10'10	30.91379 AU
				morning rise	13721 Sep 04 01:36	10°Π44'57	
conjunction	13715 Aug 06 17:26	26°Ω45'22	-0°32'27	retrograde	13721 Dec 02 14:50	12°Π41'58	
minimum elong	13715 Aug 06 17:26	26°Ω45'22	0°33'08	opposition	13722 Feb 20 12:01	11°Π17'53	-0°37'46
max. Earth dist.	13715 Aug 06 20:26	26°Ω45'39	30.97334 AU	min. Earth dist.	13722 Feb 20 07:16	11°Π18'12	28.90805 AU
morning rise	13715 Aug 22 05:30	27°Ω20'24		direct	13722 May 10 18:37	9°Π54'01	
retrograde	13715 Nov 19 09:53	29°Ω16'53		evening set	13722 Aug 06 11:35	11°Π48'40	
opposition	13716 Feb 07 04:53	27°Ω53'11	-0°35'03				
min. Earth dist.	13716 Feb 07 02:19	27°Ω53'22	28.96958 AU	conjunction	13722 Aug 21 23:46	12°Π23'44	-0°35'26
direct	13716 Apr 26 16:17	26°Ω29'24		minimum elong	13722 Aug 21 23:46	12°Π23'44	0°35'51
evening set	13716 Jul 23 16:54	28°Ω24'13		max. Earth dist.	13722 Aug 22 05:32	12°Π24'17	30.90220 AU
				morning rise	13722 Sep 06 12:56	12°Π58'55	
conjunction	13716 Aug 08 04:25	28°Ω59'11	-0°33'02	retrograde	13722 Dec 05 01:59	14°Π56'01	

opposition	13723 Feb 23 01:12	13° <u>17</u> 31'50	-0°38'01	max. Earth dist.	13729 Sep 06 17:37	28° <u>17</u> 04'06	30.84995 AU
min. Earth dist.	13723 Feb 22 19:24	13° <u>17</u> 32'14	28.89683 AU	morning rise	13729 Sep 21 22:21	28° <u>17</u> 38'31	
direct	13723 May 13 07:34	12° <u>17</u> 07'57			13729 Nov 03 12:11	0° <u>17</u>	
evening set	13723 Aug 08 22:40	14° <u>17</u> 02'33		retrograde	13729 Dec 20 22:48	0° <u>17</u> 36'18	
					13730 Feb 07 23:36	30° <u>17</u>	
conjunction	13723 Aug 24 10:49	14° <u>17</u> 37'38	-0°35'39	opposition	13730 Mar 10 21:14	29° <u>17</u> 11'55	-0°38'13
minimum elong	13723 Aug 24 10:49	14° <u>17</u> 37'38	0°36'02	min. Earth dist.	13730 Mar 10 11:16	29° <u>17</u> 12'36	28.84715 AU
max. Earth dist.	13723 Aug 24 16:20	14° <u>17</u> 38'09	30.89155 AU	direct	13730 May 28 19:29	27° <u>17</u> 48'13	
morning rise	13723 Sep 09 00:22	15° <u>17</u> 12'51		evening set	13730 Aug 24 06:01	29° <u>17</u> 42'51	
retrograde	13723 Dec 07 15:01	17° <u>17</u> 10'01			13730 Aug 31 21:10	0° <u>17</u>	
opposition	13724 Feb 25 14:22	15° <u>17</u> 45'45	-0°38'14				
min. Earth dist.	13724 Feb 25 07:49	15° <u>17</u> 46'13	28.88685 AU	conjunction	13730 Sep 08 19:20	0° <u>17</u> 18'04	-0°35'40
direct	13724 May 14 18:12	14° <u>17</u> 21'51		minimum elong	13730 Sep 08 19:21	0° <u>17</u> 18'04	0°35'45
evening set	13724 Aug 10 09:45	16° <u>17</u> 16'26		max. Earth dist.	13730 Sep 09 04:42	0° <u>17</u> 18'57	30.84387 AU
				morning rise	13730 Sep 24 10:30	0° <u>17</u> 53'28	
conjunction	13724 Aug 25 22:12	16° <u>17</u> 51'32	-0°35'49	retrograde	13730 Dec 23 12:49	2° <u>17</u> 51'21	
minimum elong	13724 Aug 25 22:13	16° <u>17</u> 51'32	0°36'09	opposition	13731 Mar 13 10:37	1° <u>17</u> 26'56	-0°38'01
max. Earth dist.	13724 Aug 26 05:28	16° <u>17</u> 52'13	30.88212 AU	min. Earth dist.	13731 Mar 13 01:06	1° <u>17</u> 27'35	28.84079 AU
morning rise	13724 Sep 10 11:48	17° <u>17</u> 26'46		direct	13731 May 31 06:39	0° <u>17</u> 03'15	
retrograde	13724 Dec 09 02:39	19° <u>17</u> 24'01		evening set	13731 Aug 26 17:35	1° <u>17</u> 57'52	
opposition	13725 Feb 27 03:23	17° <u>17</u> 59'43	-0°38'22				
min. Earth dist.	13725 Feb 26 20:33	18° <u>17</u> 00'11	28.87805 AU	conjunction	13731 Sep 11 07:19	2° <u>17</u> 33'07	-0°35'27
direct	13725 May 17 05:56	16° <u>17</u> 35'49		minimum elong	13731 Sep 11 07:19	2° <u>17</u> 33'07	0°35'31
evening set	13725 Aug 12 21:00	18° <u>17</u> 30'24		max. Earth dist.	13731 Sep 11 17:48	2° <u>17</u> 34'07	30.83702 AU
				morning rise	13731 Sep 26 22:36	3° <u>17</u> 08'33	
conjunction	13725 Aug 28 09:30	19° <u>17</u> 05'31	-0°35'56	retrograde	13731 Dec 26 00:23	5° <u>17</u> 06'29	
minimum elong	13725 Aug 28 09:30	19° <u>17</u> 05'31	0°36'15	opposition	13732 Mar 14 23:52	3° <u>17</u> 42'02	-0°37'45
max. Earth dist.	13725 Aug 28 16:39	19° <u>17</u> 06'11	30.87404 AU	min. Earth dist.	13732 Mar 14 13:48	3° <u>17</u> 42'44	28.83337 AU
morning rise	13725 Sep 12 23:26	19° <u>17</u> 40'46		direct	13732 Jun 01 20:04	2° <u>17</u> 18'21	
retrograde	13725 Dec 11 16:56	21° <u>17</u> 38'07		evening set	13732 Aug 28 05:25	4° <u>17</u> 12'57	
opposition	13726 Mar 01 16:29	20° <u>17</u> 13'47	-0°38'28				
min. Earth dist.	13726 Mar 01 08:13	20° <u>17</u> 14'21	28.87058 AU	conjunction	13732 Sep 12 19:13	4° <u>17</u> 48'12	-0°35'10
direct	13726 May 19 16:51	18° <u>17</u> 49'54		minimum elong	13732 Sep 12 19:14	4° <u>17</u> 48'12	0°35'11
evening set	13726 Aug 15 08:06	20° <u>17</u> 44'29		max. Earth dist.	13732 Sep 13 04:46	4° <u>17</u> 49'06	30.82925 AU
				morning rise	13732 Sep 28 10:57	5° <u>17</u> 23'40	
conjunction	13726 Aug 30 20:48	21° <u>17</u> 19'37	-0°35'59	retrograde	13732 Dec 27 13:05	7° <u>17</u> 21'39	
minimum elong	13726 Aug 30 20:48	21° <u>17</u> 19'37	0°36'15	opposition	13733 Mar 17 12:57	5° <u>17</u> 57'08	-0°37'26
max. Earth dist.	13726 Aug 31 05:09	21° <u>17</u> 20'24	30.86703 AU	min. Earth dist.	13733 Mar 17 02:49	5° <u>17</u> 57'50	28.82530 AU
morning rise	13726 Sep 15 10:53	21° <u>17</u> 54'54		direct	13733 Jun 04 06:54	4° <u>17</u> 33'25	
retrograde	13726 Dec 14 05:56	23° <u>17</u> 52'22		evening set	13733 Aug 30 17:03	6° <u>17</u> 27'58	
opposition	13727 Mar 04 05:47	22° <u>17</u> 28'00	-0°38'29				
min. Earth dist.	13727 Mar 03 21:44	22° <u>17</u> 28'33	28.86408 AU	conjunction	13733 Sep 15 07:15	7° <u>17</u> 03'15	-0°34'51
direct	13727 May 22 05:32	21° <u>17</u> 04'10		minimum elong	13733 Sep 15 07:15	7° <u>17</u> 03'15	0°34'50
evening set	13727 Aug 17 19:24	22° <u>17</u> 58'46		max. Earth dist.	13733 Sep 15 18:08	7° <u>17</u> 04'17	30.82095 AU
				morning rise	13733 Sep 30 23:07	7° <u>17</u> 38'43	
conjunction	13727 Sep 02 08:17	23° <u>17</u> 33'55	-0°35'59	retrograde	13733 Dec 30 00:28	9° <u>17</u> 36'45	
minimum elong	13727 Sep 02 08:17	23° <u>17</u> 33'55	0°36'14	opposition	13734 Mar 20 02:10	8° <u>17</u> 12'09	-0°37'03
max. Earth dist.	13727 Sep 02 17:07	23° <u>17</u> 34'45	30.86105 AU	min. Earth dist.	13734 Mar 19 16:03	8° <u>17</u> 12'51	28.81696 AU
morning rise	13727 Sep 17 22:38	24° <u>17</u> 09'13		direct	13734 Jun 06 18:42	6° <u>17</u> 48'24	
retrograde	13727 Dec 16 20:56	26° <u>17</u> 06'47		evening set	13734 Sep 02 04:39	8° <u>17</u> 42'54	
opposition	13728 Mar 05 18:49	24° <u>17</u> 42'25	-0°38'28				
min. Earth dist.	13728 Mar 05 09:17	24° <u>17</u> 43'04	28.85838 AU	conjunction	13734 Sep 17 18:58	9° <u>17</u> 18'12	-0°34'29
direct	13728 May 23 18:30	23° <u>17</u> 18'38		minimum elong	13734 Sep 17 18:58	9° <u>17</u> 18'12	0°34'25
evening set	13728 Aug 19 06:50	25° <u>17</u> 13'14		max. Earth dist.	13734 Sep 18 05:33	9° <u>17</u> 19'12	30.81290 AU
				morning rise	13734 Oct 03 11:15	9° <u>17</u> 53'42	
conjunction	13728 Sep 03 19:50	25° <u>17</u> 48'25	-0°35'56	retrograde	13735 Jan 01 14:20	11° <u>17</u> 51'45	
minimum elong	13728 Sep 03 19:51	25° <u>17</u> 48'25	0°36'07	opposition	13735 Mar 22 15:16	10° <u>17</u> 27'05	-0°36'38
max. Earth dist.	13728 Sep 04 04:57	25° <u>17</u> 49'17	30.85547 AU	min. Earth dist.	13735 Mar 22 04:01	10° <u>17</u> 27'52	28.80928 AU
morning rise	13728 Sep 19 10:30	26° <u>17</u> 23'45		direct	13735 Jun 09 05:57	9° <u>17</u> 03'17	
retrograde	13728 Dec 18 09:42	28° <u>17</u> 21'27		evening set	13735 Sep 04 16:18	10° <u>17</u> 57'45	
opposition	13729 Mar 08 08:07	26° <u>17</u> 57'04	-0°38'22				
min. Earth dist.	13729 Mar 07 23:17	26° <u>17</u> 57'40	28.85292 AU	conjunction	13735 Sep 20 06:56	11° <u>17</u> 33'04	-0°34'03
direct	13729 May 26 05:56	25° <u>17</u> 33'19		minimum elong	13735 Sep 20 06:56	11° <u>17</u> 33'04	0°33'58
evening set	13729 Aug 21 18:17	27° <u>17</u> 27'57		max. Earth dist.	13735 Sep 20 18:34	11° <u>17</u> 34'10	30.80559 AU
				morning rise	13735 Oct 05 23:26	12° <u>17</u> 08'35	
conjunction	13729 Sep 06 07:35	28° <u>17</u> 03'09	-0°35'49	retrograde	13736 Jan 04 02:35	14° <u>17</u> 06'40	
minimum elong	13729 Sep 06 07:35	28° <u>17</u> 03'09	0°35'58	opposition	13736 Mar 24 04:17	12° <u>17</u> 41'56	-0°36'09

min. Earth dist.	13736 Mar 23 17:20	12° <u>0</u> 42'41	28.80263 AU	morning rise	13742 Oct 21 14:25	27° <u>0</u> 53'25	
direct	13736 Jun 10 18:33	11° <u>0</u> 18'06		retrograde	13743 Jan 20 00:12	29° <u>0</u> 51'47	
evening set	13736 Sep 06 03:58	13° <u>0</u> 12'33		opposition	13743 Apr 09 23:06	28° <u>0</u> 26'57	-0°31'14
				min. Earth dist.	13743 Apr 09 09:27	28° <u>0</u> 27'54	28.78996 AU
conjunction	13736 Sep 21 18:53	13° <u>0</u> 47'52	-0°33'35	direct	13743 Jun 27 08:31	27° <u>0</u> 03'16	
minimum elong	13736 Sep 21 18:53	13° <u>0</u> 47'52	0°33'26	evening set	13743 Sep 22 15:34	28° <u>0</u> 57'39	
max. Earth dist.	13736 Sep 22 06:53	13° <u>0</u> 49'00	30.79968 AU				
morning rise	13736 Oct 07 11:43	14° <u>0</u> 23'24		conjunction	13743 Oct 08 08:23	29° <u>0</u> 33'07	-0°28'50
retrograde	13737 Jan 05 16:49	16° <u>0</u> 21'31		minimum elong	13743 Oct 08 08:23	29° <u>0</u> 33'07	0°28'26
opposition	13737 Mar 26 17:11	14° <u>0</u> 56'44	-0°35'36	max. Earth dist.	13743 Oct 08 22:28	29° <u>0</u> 34'27	30.78942 AU
min. Earth dist.	13737 Mar 26 04:40	14° <u>0</u> 57'36	28.79740 AU		13743 Oct 20 04:40	0° <u>0</u>	
direct	13737 Jun 13 07:00	13° <u>0</u> 32'53		morning rise	13743 Oct 24 03:27	0° <u>0</u> 08'50	
evening set	13737 Sep 08 15:40	15° <u>0</u> 27'19		retrograde	13744 Jan 22 14:06	2° <u>0</u> 07'12	
				opposition	13744 Apr 11 11:58	0° <u>0</u> 42'23	-0°30'20
conjunction	13737 Sep 24 06:45	16° <u>0</u> 02'39	-0°33'03	min. Earth dist.	13744 Apr 10 21:52	0° <u>0</u> 43'21	28.78898 AU
minimum elong	13737 Sep 24 06:45	16° <u>0</u> 02'39	0°32'52		13744 May 08 02:04	30° <u>0</u> 0	
max. Earth dist.	13737 Sep 24 19:12	16° <u>0</u> 03'50	30.79509 AU	direct	13744 Jun 28 19:55	29° <u>0</u> 18'40	
morning rise	13737 Oct 09 23:54	16° <u>0</u> 38'12			13744 Aug 17 17:23	0° <u>0</u>	
retrograde	13738 Jan 08 05:40	18° <u>0</u> 36'22		evening set	13744 Sep 24 03:55	1° <u>0</u> 13'03	
opposition	13738 Mar 29 06:15	17° <u>0</u> 11'32	-0°35'01				
min. Earth dist.	13738 Mar 28 18:11	17° <u>0</u> 12'22	28.79365 AU	conjunction	13744 Oct 09 21:06	1° <u>0</u> 48'33	-0°27'58
direct	13738 Jun 15 18:24	15° <u>0</u> 47'42		minimum elong	13744 Oct 09 21:06	1° <u>0</u> 48'33	0°27'31
evening set	13738 Sep 11 03:21	17° <u>0</u> 42'06		max. Earth dist.	13744 Oct 10 11:33	1° <u>0</u> 49'55	30.78788 AU
				morning rise	13744 Oct 25 16:24	2° <u>0</u> 24'16	
conjunction	13738 Sep 26 18:50	18° <u>0</u> 17'28	-0°32'28	retrograde	13745 Jan 24 01:52	4° <u>0</u> 22'39	
minimum elong	13738 Sep 26 18:50	18° <u>0</u> 17'28	0°32'15	min. Earth dist.	13745 Apr 13 11:45	2° <u>0</u> 58'43	28.78700 AU
max. Earth dist.	13738 Sep 27 08:26	18° <u>0</u> 18'45	30.79218 AU	opposition	13745 Apr 14 00:59	2° <u>0</u> 57'48	-0°29'23
morning rise	13738 Oct 12 12:12	18° <u>0</u> 53'03		direct	13745 Jul 01 08:01	1° <u>0</u> 34'05	
retrograde	13739 Jan 10 19:55	20° <u>0</u> 51'14		evening set	13745 Sep 26 16:08	3° <u>0</u> 28'26	
opposition	13739 Mar 31 19:08	19° <u>0</u> 26'23	-0°34'22				
min. Earth dist.	13739 Mar 31 05:38	19° <u>0</u> 27'19	28.79139 AU	conjunction	13745 Oct 12 09:37	4° <u>0</u> 03'56	-0°27'04
direct	13739 Jun 18 08:28	18° <u>0</u> 02'34		minimum elong	13745 Oct 12 09:37	4° <u>0</u> 03'56	0°26'35
evening set	13739 Sep 13 15:11	19° <u>0</u> 56'57		max. Earth dist.	13745 Oct 12 23:49	4° <u>0</u> 05'17	30.78568 AU
				morning rise	13745 Oct 28 05:17	4° <u>0</u> 39'40	
conjunction	13739 Sep 29 06:49	20° <u>0</u> 32'21	-0°31'51	retrograde	13746 Jan 26 15:49	6° <u>0</u> 38'03	
minimum elong	13739 Sep 29 06:49	20° <u>0</u> 32'21	0°31'35	opposition	13746 Apr 16 13:48	5° <u>0</u> 13'10	-0°28'23
max. Earth dist.	13739 Sep 29 20:05	20° <u>0</u> 33'36	30.79057 AU	min. Earth dist.	13746 Apr 15 23:34	5° <u>0</u> 14'09	28.78455 AU
morning rise	13739 Oct 15 00:39	21° <u>0</u> 07'57		direct	13746 Jul 03 20:14	3° <u>0</u> 49'24	
retrograde	13740 Jan 13 10:20	23° <u>0</u> 06'11		evening set	13746 Sep 29 04:29	5° <u>0</u> 43'44	
opposition	13740 Apr 02 08:11	21° <u>0</u> 41'20	-0°33'40				
min. Earth dist.	13740 Apr 01 18:58	21° <u>0</u> 42'15	28.79040 AU	conjunction	13746 Oct 14 22:13	6° <u>0</u> 19'15	-0°26'07
direct	13740 Jun 19 20:12	20° <u>0</u> 17'32		minimum elong	13746 Oct 14 22:13	6° <u>0</u> 19'15	0°25'35
evening set	13740 Sep 15 03:03	22° <u>0</u> 11'55		max. Earth dist.	13746 Oct 15 12:25	6° <u>0</u> 20'35	30.78315 AU
				morning rise	13746 Oct 30 18:14	6° <u>0</u> 55'00	
conjunction	13740 Sep 30 19:07	22° <u>0</u> 47'20	-0°31'10	retrograde	13747 Jan 29 04:36	8° <u>0</u> 53'22	
minimum elong	13740 Sep 30 19:08	22° <u>0</u> 47'20	0°30'51	opposition	13747 Apr 19 02:38	7° <u>0</u> 28'26	-0°27'21
max. Earth dist.	13740 Oct 01 09:45	22° <u>0</u> 48'43	30.79002 AU	min. Earth dist.	13747 Apr 18 13:21	7° <u>0</u> 29'21	28.78222 AU
morning rise	13740 Oct 16 13:07	23° <u>0</u> 22'58		direct	13747 Jul 06 07:46	6° <u>0</u> 04'39	
retrograde	13741 Jan 14 22:12	25° <u>0</u> 21'14		evening set	13747 Oct 01 16:38	7° <u>0</u> 58'56	
opposition	13741 Apr 04 20:58	23° <u>0</u> 56'24	-0°32'54				
min. Earth dist.	13741 Apr 04 07:04	23° <u>0</u> 57'22	28.79012 AU	conjunction	13747 Oct 17 10:50	8° <u>0</u> 34'29	-0°25'08
direct	13741 Jun 22 09:18	22° <u>0</u> 32'39		minimum elong	13747 Oct 17 10:50	8° <u>0</u> 34'29	0°24'34
evening set	13741 Sep 17 15:12	24° <u>0</u> 27'02		max. Earth dist.	13747 Oct 18 01:46	8° <u>0</u> 35'53	30.78113 AU
				morning rise	13747 Nov 02 07:07	9° <u>0</u> 10'15	
conjunction	13741 Oct 03 07:23	25° <u>0</u> 02'28	-0°30'26	retrograde	13748 Jan 31 18:53	11° <u>0</u> 08'35	
minimum elong	13741 Oct 03 07:23	25° <u>0</u> 02'28	0°30'06	opposition	13748 Apr 20 15:13	9° <u>0</u> 43'37	-0°26'16
max. Earth dist.	13741 Oct 03 21:12	25° <u>0</u> 03'46	30.79002 AU	min. Earth dist.	13748 Apr 20 00:50	9° <u>0</u> 44'37	28.78050 AU
morning rise	13741 Oct 19 01:50	25° <u>0</u> 38'08		direct	13748 Jul 07 22:02	8° <u>0</u> 19'48	
retrograde	13742 Jan 17 12:03	27° <u>0</u> 36'26		evening set	13748 Oct 03 05:03	10° <u>0</u> 14'04	
opposition	13742 Apr 07 10:02	26° <u>0</u> 11'37	-0°32'06				
min. Earth dist.	13742 Apr 06 20:05	26° <u>0</u> 12'35	28.79025 AU	conjunction	13748 Oct 18 23:23	10° <u>0</u> 49'38	-0°24'07
direct	13742 Jun 24 20:21	24° <u>0</u> 47'53		minimum elong	13748 Oct 18 23:24	10° <u>0</u> 49'38	0°23'29
evening set	13742 Sep 20 03:12	26° <u>0</u> 42'17		max. Earth dist.	13748 Oct 19 13:45	10° <u>0</u> 50'59	30.77984 AU
				morning rise	13748 Nov 03 20:06	11° <u>0</u> 25'26	
conjunction	13742 Oct 05 19:48	27° <u>0</u> 17'44	-0°29'40	retrograde	13749 Feb 02 08:49	13° <u>0</u> 23'45	
minimum elong	13742 Oct 05 19:48	27° <u>0</u> 17'44	0°29'16	opposition	13749 Apr 23 03:49	11° <u>0</u> 58'45	-0°25'09
max. Earth dist.	13742 Oct 06 10:50	27° <u>0</u> 19'10	30.78999 AU	min. Earth dist.	13749 Apr 22 13:58	11° <u>0</u> 59'43	28.77988 AU

direct	13749 Jul 10 09:59	10° $\mathbb{M}$ 34'55		minimum elong	13755 Nov 04 16:59	26° $\mathbb{M}$ 36'45	0°15'11
evening set	13749 Oct 05 17:17	12° $\mathbb{M}$ 29'11		behind sun begin	13755 Nov 04 14:55	26° $\mathbb{M}$ 36'34	
				behind sun end	13755 Nov 04 19:03	26° $\mathbb{M}$ 36'56	
conjunction	13749 Oct 21 12:06	13° $\mathbb{M}$ 04'46	-0°23'03	max. Earth dist.	13755 Nov 05 08:22	26° $\mathbb{M}$ 38'12	30.80271 AU
minimum elong	13749 Oct 21 12:06	13° $\mathbb{M}$ 04'46	0°22'25	morning rise	13755 Nov 20 15:49	27° $\mathbb{M}$ 12'40	
max. Earth dist.	13749 Oct 22 03:43	13° $\mathbb{M}$ 06'14	30.77986 AU	retrograde	13756 Feb 19 02:41	29° $\mathbb{M}$ 10'53	
morning rise	13749 Nov 06 08:57	13° $\mathbb{M}$ 40'34		opposition	13756 May 08 19:20	27° $\mathbb{M}$ 46'04	-0°16'20
	13749 Dec 17 15:47	15° $\mathbb{M}$		min. Earth dist.	13756 May 08 05:28	27° $\mathbb{M}$ 47'03	28.80490 AU
retrograde	13750 Feb 04 21:07	15° $\mathbb{M}$ 38'52		direct	13756 Jul 25 20:17	26° $\mathbb{M}$ 22'21	
	13750 Mar 27 13:14	15° $\mathbb{R}$ $\mathbb{M}$		evening set	13756 Oct 21 09:10	28° $\mathbb{M}$ 16'38	
opposition	13750 Apr 25 16:22	14° $\mathbb{M}$ 13'52	-0°24'00				
min. Earth dist.	13750 Apr 25 01:39	14° $\mathbb{M}$ 14'54	28.78053 AU	conjunction	13756 Nov 06 06:12	28° $\mathbb{M}$ 52'20	-0°14'44
direct	13750 Jul 12 23:12	12° $\mathbb{M}$ 50'02		minimum elong	13756 Nov 06 06:11	28° $\mathbb{M}$ 52'20	0°13'52
evening set	13750 Oct 08 05:35	14° $\mathbb{M}$ 44'17		behind sun begin	13756 Nov 06 02:52	28° $\mathbb{M}$ 52'02	
	13750 Oct 15 06:17	15° $\mathbb{M}$		behind sun end	13756 Nov 06 09:31	28° $\mathbb{M}$ 52'38	
				max. Earth dist.	13756 Nov 06 21:34	28° $\mathbb{M}$ 53'47	30.80650 AU
conjunction	13750 Oct 24 00:34	15° $\mathbb{M}$ 19'53	-0°21'57	morning rise	13756 Nov 22 05:13	29° $\mathbb{M}$ 28'15	
minimum elong	13750 Oct 24 00:34	15° $\mathbb{M}$ 19'53	0°21'17		13756 Dec 07 02:11	0° $\mathbb{A}$	
max. Earth dist.	13750 Oct 24 15:26	15° $\mathbb{M}$ 21'17	30.78128 AU	retrograde	13757 Feb 20 16:17	1° $\mathbb{A}$ 26'25	
morning rise	13750 Nov 08 21:56	15° $\mathbb{M}$ 55'43		opposition	13757 May 11 07:39	0° $\mathbb{A}$ 01'36	-0°14'58
retrograde	13751 Feb 07 11:32	17° $\mathbb{M}$ 54'00		min. Earth dist.	13757 May 10 17:13	0° $\mathbb{A}$ 02'37	28.80810 AU
opposition	13751 Apr 28 04:59	16° $\mathbb{M}$ 29'01	-0°22'48		13757 May 12 06:37	30° $\mathbb{R}$ $\mathbb{M}$	
min. Earth dist.	13751 Apr 27 14:10	16° $\mathbb{M}$ 30'03	28.78270 AU	direct	13757 Jul 28 10:03	28° $\mathbb{M}$ 37'51	
direct	13751 Jul 15 10:55	15° $\mathbb{M}$ 05'12			13757 Oct 08 19:28	0° $\mathbb{A}$	
evening set	13751 Oct 10 17:56	16° $\mathbb{M}$ 59'26		evening set	13757 Oct 23 22:06	0° $\mathbb{A}$ 32'07	
conjunction	13751 Oct 26 13:24	17° $\mathbb{M}$ 35'04	-0°20'49	conjunction	13757 Nov 08 19:17	1° $\mathbb{A}$ 07'50	-0°13'26
minimum elong	13751 Oct 26 13:24	17° $\mathbb{M}$ 35'04	0°20'08	minimum elong	13757 Nov 08 19:18	1° $\mathbb{A}$ 07'50	0°12'35
max. Earth dist.	13751 Oct 27 05:37	17° $\mathbb{M}$ 36'36	30.78407 AU	behind sun begin	13757 Nov 08 15:09	1° $\mathbb{A}$ 07'27	
morning rise	13751 Nov 11 10:56	18° $\mathbb{M}$ 10'55		behind sun end	13757 Nov 08 23:27	1° $\mathbb{A}$ 08'12	
retrograde	13752 Feb 09 23:46	20° $\mathbb{M}$ 09'10		max. Earth dist.	13757 Nov 09 09:32	1° $\mathbb{A}$ 09'10	30.80924 AU
opposition	13752 Apr 29 17:22	18° $\mathbb{M}$ 44'13	-0°21'34	morning rise	13757 Nov 24 18:44	1° $\mathbb{A}$ 43'45	
min. Earth dist.	13752 Apr 29 02:37	18° $\mathbb{M}$ 45'15	28.78608 AU	retrograde	13758 Feb 23 05:37	3° $\mathbb{A}$ 41'51	
direct	13752 Jul 16 23:20	17° $\mathbb{M}$ 20'26		opposition	13758 May 13 20:07	2° $\mathbb{A}$ 17'01	-0°13'34
evening set	13752 Oct 12 06:27	19° $\mathbb{M}$ 14'41		min. Earth dist.	13758 May 13 06:48	2° $\mathbb{A}$ 17'57	28.81053 AU
				direct	13758 Jul 30 21:36	0° $\mathbb{A}$ 53'13	
conjunction	13752 Oct 28 02:08	19° $\mathbb{M}$ 50'19	-0°19'40	evening set	13758 Oct 26 10:43	2° $\mathbb{A}$ 47'26	
minimum elong	13752 Oct 28 02:08	19° $\mathbb{M}$ 50'19	0°18'56				
max. Earth dist.	13752 Oct 28 17:36	19° $\mathbb{M}$ 51'47	30.78812 AU	conjunction	13758 Nov 11 08:26	3° $\mathbb{A}$ 23'09	-0°12'08
morning rise	13752 Nov 13 00:06	20° $\mathbb{M}$ 26'11		minimum elong	13758 Nov 11 08:26	3° $\mathbb{A}$ 23'09	0°11'14
retrograde	13753 Feb 11 13:05	22° $\mathbb{M}$ 24'27		behind sun begin	13758 Nov 11 03:38	3° $\mathbb{A}$ 22'44	
opposition	13753 May 02 05:51	20° $\mathbb{M}$ 59'32	-0°20'19	behind sun end	13758 Nov 11 13:14	3° $\mathbb{A}$ 23'35	
min. Earth dist.	13753 May 01 14:29	21° $\mathbb{M}$ 00'36	28.79060 AU	max. Earth dist.	13758 Nov 11 23:21	3° $\mathbb{A}$ 24'33	30.81143 AU
direct	13753 Jul 19 10:39	19° $\mathbb{M}$ 35'46		morning rise	13758 Nov 27 08:02	3° $\mathbb{A}$ 59'05	
evening set	13753 Oct 14 18:51	21° $\mathbb{M}$ 30'02		retrograde	13759 Feb 25 18:30	5° $\mathbb{A}$ 57'05	
				opposition	13759 May 16 08:19	4° $\mathbb{A}$ 32'14	-0°12'09
conjunction	13753 Oct 30 14:54	22° $\mathbb{M}$ 05'41	-0°18'28	min. Earth dist.	13759 May 15 18:41	4° $\mathbb{A}$ 33'11	28.81247 AU
minimum elong	13753 Oct 30 14:54	22° $\mathbb{M}$ 05'41	0°17'43	direct	13759 Aug 02 11:27	3° $\mathbb{A}$ 08'22	
max. Earth dist.	13753 Oct 31 07:08	22° $\mathbb{M}$ 07'13	30.79290 AU	evening set	13759 Oct 28 23:38	5° $\mathbb{A}$ 02'33	
morning rise	13753 Nov 15 13:04	22° $\mathbb{M}$ 41'34					
retrograde	13754 Feb 14 00:15	24° $\mathbb{M}$ 39'50		conjunction	13759 Nov 13 21:29	5° $\mathbb{A}$ 38'17	-0°10'48
opposition	13754 May 04 18:25	23° $\mathbb{M}$ 14'57	-0°19'01	minimum elong	13759 Nov 13 21:29	5° $\mathbb{A}$ 38'17	0°09'54
min. Earth dist.	13754 May 04 03:51	23° $\mathbb{M}$ 15'58	28.79560 AU	behind sun begin	13759 Nov 13 16:12	5° $\mathbb{A}$ 37'48	
direct	13754 Jul 21 21:52	21° $\mathbb{M}$ 51'14		behind sun end	13759 Nov 14 02:46	5° $\mathbb{A}$ 38'46	
evening set	13754 Oct 17 07:31	23° $\mathbb{M}$ 45'30		max. Earth dist.	13759 Nov 14 11:05	5° $\mathbb{A}$ 39'33	30.81343 AU
				morning rise	13759 Nov 29 21:32	6° $\mathbb{A}$ 14'14	
conjunction	13754 Nov 02 03:52	24° $\mathbb{M}$ 21'11	-0°17'15	retrograde	13760 Feb 28 08:59	8° $\mathbb{A}$ 12'07	
minimum elong	13754 Nov 02 03:52	24° $\mathbb{M}$ 21'11	0°16'27	opposition	13760 May 17 20:21	6° $\mathbb{A}$ 47'14	-0°10'43
max. Earth dist.	13754 Nov 02 19:38	24° $\mathbb{M}$ 22'40	30.79806 AU	min. Earth dist.	13760 May 17 07:08	6° $\mathbb{A}$ 48'09	28.81467 AU
morning rise	13754 Nov 18 02:24	24° $\mathbb{M}$ 57'05		direct	13760 Aug 03 23:58	5° $\mathbb{A}$ 23'19	
retrograde	13755 Feb 16 14:38	26° $\mathbb{M}$ 55'19		evening set	13760 Oct 30 12:20	7° $\mathbb{A}$ 17'28	
opposition	13755 May 07 06:46	25° $\mathbb{M}$ 30'29	-0°17'41				
min. Earth dist.	13755 May 06 15:30	25° $\mathbb{M}$ 31'33	28.80063 AU	conjunction	13760 Nov 15 10:38	7° $\mathbb{A}$ 53'13	-0°09'28
direct	13755 Jul 24 08:49	24° $\mathbb{M}$ 06'46		minimum elong	13760 Nov 15 10:38	7° $\mathbb{A}$ 53'13	0°08'32
evening set	13755 Oct 19 20:21	26° $\mathbb{M}$ 01'04		behind sun begin	13760 Nov 15 04:56	7° $\mathbb{A}$ 52'42	
				behind sun end	13760 Nov 15 16:20	7° $\mathbb{A}$ 53'43	
conjunction	13755 Nov 04 16:59	26° $\mathbb{M}$ 36'45	-0°16'00	max. Earth dist.	13760 Nov 16 01:16	7° $\mathbb{A}$ 54'35	30.81582 AU

morning rise	13760 Dec 01 10:46	8°♏29'09		conjunction	13766 Nov 29 16:42	21°♏20'57	-0°01'11
retrograde	13761 Mar 01 20:34	10°♏26'57		minimum elong	13766 Nov 29 16:42	21°♏20'57	0°00'08
opposition	13761 May 20 08:24	9°♏02'02	-0°09'17	behind sun begin	13766 Nov 29 10:17	21°♏20'22	
min. Earth dist.	13761 May 19 19:24	9°♏02'57	28.81740 AU	behind sun end	13766 Nov 29 23:08	21°♏21'31	
direct	13761 Aug 06 13:19	7°♏38'05		max. Earth dist.	13766 Nov 30 06:10	21°♏22'12	30.85444 AU
evening set	13761 Nov 02 00:58	9°♏32'12		morning rise	13766 Dec 15 18:25	21°♏56'55	
				retrograde	13767 Mar 15 23:32	23°♏54'21	
conjunction	13761 Nov 17 23:25	10°♏07'57	-0°08'08	opposition	13767 Jun 03 07:19	22°♏29'41	-0°00'25
minimum elong	13761 Nov 17 23:26	10°♏07'57	0°07'11	min. Earth dist.	13767 Jun 02 19:06	22°♏30'33	28.85921 AU
behind sun begin	13761 Nov 17 17:25	10°♏07'24		direct	13767 Aug 20 09:08	21°♏05'44	
behind sun end	13761 Nov 18 05:26	10°♏08'29		asc. node	13767 Sep 26 10:03	21°♏28'45	
max. Earth dist.	13761 Nov 18 13:10	10°♏09'14	30.81912 AU	evening set	13767 Nov 16 05:52	22°♏59'58	
morning rise	13761 Dec 03 23:58	10°♏43'54					
retrograde	13762 Mar 04 09:51	12°♏41'37		conjunction	13767 Dec 02 06:08	23°♏35'46	0°00'16
opposition	13762 May 22 20:21	11°♏16'42	-0°07'50	minimum elong	13767 Dec 02 06:07	23°♏35'46	0°01'18
min. Earth dist.	13762 May 22 06:52	11°♏17'39	28.82131 AU	behind sun begin	13767 Dec 01 23:34	23°♏35'11	
direct	13762 Aug 09 01:05	9°♏52'42		behind sun end	13767 Dec 02 12:39	23°♏36'21	
evening set	13762 Nov 04 13:40	11°♏46'48		max. Earth dist.	13767 Dec 02 19:56	23°♏37'03	30.86369 AU
				morning rise	13767 Dec 18 07:52	24°♏11'45	
conjunction	13762 Nov 20 12:29	12°♏22'34	-0°06'46	retrograde	13768 Mar 17 12:37	26°♏09'06	
minimum elong	13762 Nov 20 12:29	12°♏22'34	0°05'48	opposition	13768 Jun 04 18:53	24°♏44'31	0°01'04
behind sun begin	13762 Nov 20 06:14	12°♏22'00		min. Earth dist.	13768 Jun 04 06:37	24°♏45'23	28.86814 AU
behind sun end	13762 Nov 20 18:45	12°♏23'08		direct	13768 Aug 21 22:17	23°♏20'36	
max. Earth dist.	13762 Nov 21 02:59	12°♏23'55	30.82356 AU	evening set	13768 Nov 17 19:04	25°♏14'51	
morning rise	13762 Dec 06 13:11	12°♏58'31					
retrograde	13763 Mar 06 20:54	14°♏56'09		conjunction	13768 Dec 03 19:22	25°♏50'40	0°01'41
opposition	13763 May 25 08:13	13°♏31'15	-0°06'22	minimum elong	13768 Dec 03 19:23	25°♏50'40	0°02'44
min. Earth dist.	13763 May 24 19:26	13°♏32'09	28.82645 AU	behind sun begin	13768 Dec 03 12:51	25°♏50'05	
direct	13763 Aug 11 12:40	12°♏07'15		behind sun end	13768 Dec 04 01:55	25°♏51'15	
evening set	13763 Nov 07 02:26	14°♏01'20		max. Earth dist.	13768 Dec 04 07:29	25°♏51'47	30.87227 AU
				morning rise	13768 Dec 19 21:28	26°♏26'38	
conjunction	13763 Nov 23 01:33	14°♏37'07	-0°05'24	retrograde	13769 Mar 20 03:31	28°♏23'56	
minimum elong	13763 Nov 23 01:32	14°♏37'07	0°04'26	opposition	13769 Jun 07 06:40	26°♏59'23	0°02'33
behind sun begin	13763 Nov 22 19:07	14°♏36'32		min. Earth dist.	13769 Jun 06 19:10	27°♏00'12	28.87636 AU
behind sun end	13763 Nov 23 07:57	14°♏37'41		direct	13769 Aug 24 10:36	25°♏35'27	
max. Earth dist.	13763 Nov 23 15:32	14°♏38'25	30.82950 AU	evening set	13769 Nov 20 07:57	27°♏29'43	
morning rise	13763 Dec 09 02:32	15°♏13'04					
retrograde	13764 Mar 08 10:36	17°♏10'38		conjunction	13769 Dec 06 08:41	28°♏05'32	0°03'05
opposition	13764 May 26 19:58	15°♏45'46	-0°04'53	minimum elong	13769 Dec 06 08:40	28°♏05'32	0°04'07
min. Earth dist.	13764 May 26 06:13	15°♏46'44	28.83306 AU	behind sun begin	13769 Dec 06 02:13	28°♏04'57	
direct	13764 Aug 12 23:50	14°♏21'45		behind sun end	13769 Dec 06 15:08	28°♏06'07	
evening set	13764 Nov 08 15:11	16°♏15'52		max. Earth dist.	13769 Dec 06 21:17	28°♏06'42	30.87997 AU
				morning rise	13769 Dec 22 10:47	28°♏41'31	
conjunction	13764 Nov 24 14:30	16°♏51'39	-0°04'01		13770 Feb 01 13:14	0°♏	
minimum elong	13764 Nov 24 14:30	16°♏51'39	0°03'01	retrograde	13770 Mar 22 15:06	0°♏38'43	
behind sun begin	13764 Nov 24 07:59	16°♏51'03			13770 May 11 23:07	30°♏	
behind sun end	13764 Nov 24 21:01	16°♏52'14		opposition	13770 Jun 09 18:22	29°♏14'12	0°04'02
max. Earth dist.	13764 Nov 25 04:34	16°♏52'57	30.83670 AU	min. Earth dist.	13770 Jun 09 07:31	29°♏14'57	28.88355 AU
morning rise	13764 Dec 10 15:42	17°♏27'37		direct	13770 Aug 26 23:57	27°♏50'14	
retrograde	13765 Mar 10 21:29	19°♏25'07		evening set	13770 Nov 22 21:05	29°♏44'29	
opposition	13765 May 29 07:48	18°♏00'19	-0°03'24		13770 Nov 29 21:16	0°♏	
min. Earth dist.	13765 May 28 19:07	18°♏01'12	28.84094 AU				
direct	13765 Aug 15 10:37	16°♏36'19		conjunction	13770 Dec 08 21:55	0°♏20'18	0°04'27
evening set	13765 Nov 11 03:57	18°♏30'27		minimum elong	13770 Dec 08 21:56	0°♏20'18	0°05'31
				behind sun begin	13770 Dec 08 15:38	0°♏19'44	
conjunction	13765 Nov 27 03:40	19°♏06'14	-0°02'37	behind sun end	13770 Dec 09 04:14	0°♏20'52	
minimum elong	13765 Nov 27 03:38	19°♏06'14	0°01'36	max. Earth dist.	13770 Dec 09 08:58	0°♏21'20	30.88689 AU
behind sun begin	13765 Nov 26 21:06	19°♏05'39		morning rise	13770 Dec 25 00:23	0°♏56'17	
behind sun end	13765 Nov 27 10:11	19°♏06'50		retrograde	13771 Mar 25 04:56	2°♏53'21	
max. Earth dist.	13765 Nov 27 17:59	19°♏07'35	30.84526 AU	opposition	13771 Jun 12 05:47	1°♏28'51	0°05'31
morning rise	13765 Dec 13 05:01	19°♏42'13		min. Earth dist.	13771 Jun 11 19:06	1°♏29'36	28.89020 AU
retrograde	13766 Mar 13 10:32	21°♏39'40		direct	13771 Aug 29 12:00	0°♏04'51	
opposition	13766 May 31 19:30	20°♏14'56	-0°01'55	evening set	13771 Nov 25 10:05	1°♏59'05	
min. Earth dist.	13766 May 31 06:03	20°♏15'53	28.84986 AU				
direct	13766 Aug 17 22:55	18°♏50'58		conjunction	13771 Dec 11 11:16	2°♏34'55	0°05'49
evening set	13766 Nov 13 16:52	20°♏45'09		minimum elong	13771 Dec 11 11:16	2°♏34'55	0°06'52
				behind sun begin	13771 Dec 11 05:11	2°♏34'22	

behind sun end	13771 Dec 11 17:21	2°33'27		evening set	13777 Dec 08 15:11	15°32'49	
max. Earth dist.	13771 Dec 11 22:35	2°33'58	30.89329 AU				
morning rise	13771 Dec 27 13:46	3°31'053		conjunction	13777 Dec 24 17:22	15°35'36	0°13'45
retrograde	13772 Mar 26 16:34	5°30'749		minimum elong	13777 Dec 24 17:22	15°35'36	0°14'47
opposition	13772 Jun 13 17:17	3°34'320	0°06'58	behind sun begin	13777 Dec 24 14:55	15°35'23	
min. Earth dist.	13772 Jun 13 07:44	3°34'400	28.89653 AU	behind sun end	13777 Dec 24 19:49	15°35'50	
direct	13772 Aug 31 00:33	2°31'917		max. Earth dist.	13777 Dec 25 02:17	15°35'26	30.94597 AU
evening set	13772 Nov 26 22:58	4°31'329		morning rise	13778 Jan 09 20:43	16°33'431	
				retrograde	13778 Apr 09 15:14	18°33'046	
conjunction	13772 Dec 13 00:18	4°34'918	0°07'11	opposition	13778 Jun 27 12:19	17°30'628	0°15'25
minimum elong	13772 Dec 13 00:18	4°34'918	0°08'15	min. Earth dist.	13778 Jun 27 03:37	17°30'704	28.95236 AU
behind sun begin	13772 Dec 12 18:31	4°34'847		direct	13778 Sep 13 20:56	15°34'215	
behind sun end	13772 Dec 13 06:05	4°34'950		evening set	13778 Dec 11 04:03	17°33'628	
max. Earth dist.	13772 Dec 13 10:42	4°35'016	30.89978 AU				
morning rise	13772 Dec 29 03:01	5°32'516		conjunction	13778 Dec 27 06:34	18°31'215	0°15'01
retrograde	13773 Mar 29 05:33	7°32'205		minimum elong	13778 Dec 27 06:34	18°31'215	0°16'03
opposition	13773 Jun 16 04:33	5°35'736	0°08'25	max. Earth dist.	13778 Dec 27 16:14	18°31'309	30.95877 AU
min. Earth dist.	13773 Jun 15 18:21	5°35'819	28.90319 AU	morning rise	13779 Jan 12 09:49	18°34'809	
direct	13773 Sep 02 12:39	4°33'329		retrograde	13779 Apr 12 02:40	20°34'419	
evening set	13773 Nov 29 11:53	6°32'741		opposition	13779 Jun 29 23:14	19°32'006	0°16'46
				min. Earth dist.	13779 Jun 29 15:10	19°32'040	28.96533 AU
conjunction	13773 Dec 15 13:24	7°30'329	0°08'31	direct	13779 Sep 16 09:08	17°35'555	
minimum elong	13773 Dec 15 13:24	7°30'329	0°09'34	evening set	13779 Dec 13 17:09	19°35'010	
behind sun begin	13773 Dec 15 08:00	7°30'300					
behind sun end	13773 Dec 15 18:49	7°30'359		conjunction	13779 Dec 29 19:39	20°32'557	0°16'15
max. Earth dist.	13773 Dec 15 23:40	7°30'426	30.90668 AU	minimum elong	13779 Dec 29 19:39	20°32'557	0°17'17
morning rise	13773 Dec 31 16:14	7°33'927		max. Earth dist.	13779 Dec 30 03:44	20°32'642	30.97187 AU
retrograde	13774 Mar 31 15:11	9°33'608		morning rise	13780 Jan 14 23:07	21°30'150	
opposition	13774 Jun 18 15:52	8°31'139	0°09'51	retrograde	13780 Apr 13 16:50	22°35'755	
min. Earth dist.	13774 Jun 18 06:56	8°31'217	28.91060 AU	opposition	13780 Jul 01 10:15	21°33'347	0°18'05
direct	13774 Sep 04 23:34	6°34'730		min. Earth dist.	13780 Jul 01 02:23	21°33'420	28.97833 AU
evening set	13774 Dec 02 00:40	8°34'140		direct	13780 Sep 17 20:52	20°30'938	
				evening set	13780 Dec 15 06:06	22°30'354	
conjunction	13774 Dec 18 02:29	9°31'729	0°09'51				
minimum elong	13774 Dec 18 02:29	9°31'729	0°10'55	conjunction	13780 Dec 31 08:48	22°33'942	0°17'28
behind sun begin	13774 Dec 17 21:33	9°31'702		minimum elong	13780 Dec 31 08:48	22°33'942	0°18'30
behind sun end	13774 Dec 18 07:24	9°31'755		max. Earth dist.	13780 Dec 31 17:04	22°34'027	30.98444 AU
max. Earth dist.	13774 Dec 18 12:47	9°31'826	30.91464 AU	morning rise	13781 Jan 16 12:08	23°31'534	
morning rise	13775 Jan 03 05:25	9°35'325		retrograde	13781 Apr 16 04:44	25°31'133	
retrograde	13775 Apr 03 03:05	11°34'959		opposition	13781 Jul 03 21:24	23°34'730	0°19'22
opposition	13775 Jun 21 02:59	10°32'531	0°11'16	min. Earth dist.	13781 Jul 03 14:55	23°34'757	28.99049 AU
min. Earth dist.	13775 Jun 20 17:18	10°32'612	28.91903 AU	direct	13781 Sep 20 09:22	22°32'321	
direct	13775 Sep 07 11:27	9°30'120		evening set	13781 Dec 17 19:13	24°31'739	
evening set	13775 Dec 04 13:39	10°35'529					
				conjunction	13782 Jan 02 21:59	24°35'326	0°18'40
conjunction	13775 Dec 20 15:30	11°33'117	0°11'10	minimum elong	13782 Jan 02 21:59	24°35'326	0°19'40
minimum elong	13775 Dec 20 15:30	11°33'117	0°12'13	max. Earth dist.	13782 Jan 03 04:47	24°35'403	30.99616 AU
behind sun begin	13775 Dec 20 11:10	11°33'054		morning rise	13782 Jan 19 01:28	25°32'917	
behind sun end	13775 Dec 20 19:50	11°33'141		retrograde	13782 Apr 18 17:53	27°32'510	
max. Earth dist.	13775 Dec 21 01:00	11°33'210	30.92364 AU	opposition	13782 Jul 06 08:18	26°30'110	0°20'37
morning rise	13776 Jan 05 18:36	12°30'713		min. Earth dist.	13782 Jul 06 01:36	26°30'139	29.00165 AU
retrograde	13776 Apr 04 14:29	14°30'340		direct	13782 Sep 22 21:39	24°33'701	
opposition	13776 Jun 22 14:07	12°33'914	0°12'41	evening set	13782 Dec 20 08:19	26°33'119	
min. Earth dist.	13776 Jun 22 05:25	12°33'951	28.92881 AU				
direct	13776 Sep 08 20:56	11°31'501		conjunction	13783 Jan 05 11:13	27°30'706	0°19'49
evening set	13776 Dec 06 02:24	13°30'911		minimum elong	13783 Jan 05 11:13	27°30'706	0°20'49
				max. Earth dist.	13783 Jan 05 17:20	27°30'740	31.00669 AU
conjunction	13776 Dec 22 04:35	13°34'459	0°12'28	morning rise	13783 Jan 21 14:42	27°34'257	
minimum elong	13776 Dec 22 04:34	13°34'459	0°13'31	retrograde	13783 Apr 21 04:16	29°33'843	
behind sun begin	13776 Dec 22 01:01	13°34'440		opposition	13783 Jul 08 19:22	28°31'446	0°21'50
behind sun end	13776 Dec 22 08:07	13°34'518		min. Earth dist.	13783 Jul 08 14:24	28°31'507	29.01169 AU
max. Earth dist.	13776 Dec 22 14:44	13°34'555	30.93414 AU	direct	13783 Sep 25 08:39	26°35'035	
morning rise	13777 Jan 07 07:39	14°32'054		evening set	13783 Dec 22 21:20	28°34'453	
retrograde	13777 Apr 07 01:56	16°31'714					
opposition	13777 Jun 25 01:11	14°32'522	0°14'04	conjunction	13784 Jan 08 00:22	29°32'039	0°20'57
min. Earth dist.	13777 Jun 24 16:00	14°33'330	28.93993 AU	minimum elong	13784 Jan 08 00:22	29°32'039	0°21'55
direct	13777 Sep 11 09:56	13°32'839		max. Earth dist.	13784 Jan 08 05:53	29°32'110	31.01634 AU

morning rise	13784 Jan 24 03:50	29° <del>3</del> 56'29	opposition	13790 Jul 23 21:57	13° <del>4</del> 45'45	0°29'20
	13784 Jan 25 18:43	0° <del>4</del>	min. Earth dist.	13790 Jul 23 19:54	13° <del>4</del> 45'54	29.08195 AU
retrograde	13784 Apr 22 16:12	1° <del>4</del> 52'07	direct	13790 Oct 10 17:39	12° <del>4</del> 21'27	
opposition	13784 Jul 10 06:05	0° <del>4</del> 28'13 0°23'02	evening set	13791 Jan 07 14:41	14° <del>4</del> 15'48	
min. Earth dist.	13784 Jul 10 00:52	0° <del>4</del> 28'35 29.02090 AU				
	13784 Jul 27 08:18	30° <del>8</del> 3	conjunction	13791 Jan 23 18:03	14° <del>4</del> 51'29	0°27'51
direct	13784 Sep 26 20:34	29° <del>3</del> 04'00	minimum elong	13791 Jan 23 18:03	14° <del>4</del> 51'29	0°28'40
	13784 Nov 25 05:07	0° <del>4</del>	max. Earth dist.	13791 Jan 23 20:04	14° <del>4</del> 51'40	31.08843 AU
evening set	13784 Dec 24 10:20	0° <del>4</del> 58'18		13791 Jan 27 13:44	15° <del>4</del>	
			morning rise	13791 Feb 08 21:22	15° <del>4</del> 27'10	
conjunction	13785 Jan 09 13:21	1° <del>4</del> 34'03 0°22'02	retrograde	13791 May 09 01:17	17° <del>4</del> 22'02	
minimum elong	13785 Jan 09 13:21	1° <del>4</del> 34'03 0°23'00	opposition	13791 Jul 26 08:25	15° <del>4</del> 58'27	0°30'15
max. Earth dist.	13785 Jan 09 17:44	1° <del>4</del> 34'27 31.02531 AU	min. Earth dist.	13791 Jul 26 05:50	15° <del>4</del> 58'38	29.09506 AU
morning rise	13785 Jan 25 16:53	2° <del>4</del> 09'52		13791 Sep 02 19:06	15° <del>4</del> 8	
retrograde	13785 Apr 25 02:55	4° <del>4</del> 05'23	direct	13791 Oct 13 05:49	14° <del>4</del> 34'10	
opposition	13785 Jul 12 16:58	2° <del>4</del> 41'30 0°24'11		13791 Nov 21 21:03	15° <del>4</del>	
min. Earth dist.	13785 Jul 12 13:06	2° <del>4</del> 41'46 29.02983 AU	evening set	13792 Jan 10 03:25	16° <del>4</del> 28'34	
direct	13785 Sep 29 06:00	1° <del>4</del> 17'15				
evening set	13785 Dec 26 23:00	3° <del>4</del> 11'33	conjunction	13792 Jan 26 06:46	17° <del>4</del> 04'14	0°28'40
			minimum elong	13792 Jan 26 06:46	17° <del>4</del> 04'14	0°29'28
conjunction	13786 Jan 12 02:16	3° <del>4</del> 47'17 0°23'06	max. Earth dist.	13792 Jan 26 08:29	17° <del>4</del> 04'23	31.10155 AU
minimum elong	13786 Jan 12 02:16	3° <del>4</del> 47'17 0°24'02	morning rise	13792 Feb 11 09:54	17° <del>4</del> 39'54	
max. Earth dist.	13786 Jan 12 06:56	3° <del>4</del> 47'43 31.03422 AU	retrograde	13792 May 10 12:06	19° <del>4</del> 34'41	
morning rise	13786 Jan 28 05:42	4° <del>4</del> 23'05	opposition	13792 Jul 27 19:00	18° <del>4</del> 11'11	0°31'06
retrograde	13786 Apr 27 13:18	6° <del>4</del> 18'28	min. Earth dist.	13792 Jul 27 18:01	18° <del>4</del> 11'15	29.10818 AU
opposition	13786 Jul 15 03:38	4° <del>4</del> 54'37 0°25'17	direct	13792 Oct 14 16:33	16° <del>4</del> 46'56	
min. Earth dist.	13786 Jul 14 23:41	4° <del>4</del> 54'54 29.03871 AU	evening set	13793 Jan 11 16:09	18° <del>4</del> 41'21	
direct	13786 Oct 01 19:01	3° <del>4</del> 30'20				
evening set	13786 Dec 29 11:57	5° <del>4</del> 24'37	conjunction	13793 Jan 27 19:31	19° <del>4</del> 17'01	0°29'27
			minimum elong	13793 Jan 27 19:31	19° <del>4</del> 17'01	0°30'14
conjunction	13787 Jan 14 15:07	6° <del>4</del> 00'21 0°24'08	max. Earth dist.	13793 Jan 27 20:39	19° <del>4</del> 17'07	31.11449 AU
minimum elong	13787 Jan 14 15:07	6° <del>4</del> 00'21 0°25'02	morning rise	13793 Feb 12 22:34	19° <del>4</del> 52'40	
max. Earth dist.	13787 Jan 14 18:12	6° <del>4</del> 00'38 31.04328 AU	retrograde	13793 May 13 00:47	21° <del>4</del> 47'21	
morning rise	13787 Jan 30 18:40	6° <del>4</del> 36'07	opposition	13793 Jul 30 05:29	20° <del>4</del> 23'57	0°31'55
retrograde	13787 Apr 30 01:17	8° <del>4</del> 31'24	min. Earth dist.	13793 Jul 30 04:19	20° <del>4</del> 24'01	29.12067 AU
opposition	13787 Jul 17 14:11	7° <del>4</del> 07'34 0°26'22	direct	13793 Oct 17 04:38	18° <del>4</del> 59'42	
min. Earth dist.	13787 Jul 17 10:51	7° <del>4</del> 07'48 29.04814 AU	evening set	13794 Jan 14 04:55	20° <del>4</del> 54'08	
direct	13787 Oct 04 05:33	5° <del>4</del> 43'14				
evening set	13788 Jan 01 00:39	7° <del>4</del> 37'33	conjunction	13794 Jan 30 08:11	21° <del>4</del> 29'47	0°30'12
			minimum elong	13794 Jan 30 08:11	21° <del>4</del> 29'47	0°30'56
conjunction	13788 Jan 17 04:02	8° <del>4</del> 13'16 0°25'07	max. Earth dist.	13794 Jan 30 08:01	21° <del>4</del> 29'46	31.12639 AU
minimum elong	13788 Jan 17 04:02	8° <del>4</del> 13'16 0°26'00	morning rise	13794 Feb 15 11:11	22° <del>4</del> 05'25	
max. Earth dist.	13788 Jan 17 07:50	8° <del>4</del> 13'37 31.05300 AU	retrograde	13794 May 15 10:58	24° <del>4</del> 00'01	
morning rise	13788 Feb 02 07:22	8° <del>4</del> 49'01	opposition	13794 Aug 01 16:06	22° <del>4</del> 36'39	0°32'41
retrograde	13788 May 01 11:46	10° <del>4</del> 44'10	min. Earth dist.	13794 Aug 01 16:30	22° <del>4</del> 36'38	29.13203 AU
opposition	13788 Jul 19 00:49	9° <del>4</del> 20'23 0°27'24	direct	13794 Oct 19 14:23	21° <del>4</del> 12'24	
min. Earth dist.	13788 Jul 18 21:57	9° <del>4</del> 20'35 29.05827 AU	evening set	13795 Jan 16 17:40	23° <del>4</del> 06'51	
direct	13788 Oct 05 17:13	7° <del>4</del> 56'02				
evening set	13789 Jan 02 13:18	9° <del>4</del> 50'21	conjunction	13795 Feb 01 21:02	23° <del>4</del> 42'29	0°30'54
			minimum elong	13795 Feb 01 21:03	23° <del>4</del> 42'29	0°31'36
conjunction	13789 Jan 18 16:33	10° <del>4</del> 26'03 0°26'04	max. Earth dist.	13795 Feb 01 20:42	23° <del>4</del> 42'27	31.13706 AU
minimum elong	13789 Jan 18 16:33	10° <del>4</del> 26'03 0°26'56	morning rise	13795 Feb 17 23:49	24° <del>4</del> 18'05	
max. Earth dist.	13789 Jan 18 19:03	10° <del>4</del> 26'17 31.06372 AU	retrograde	13795 May 17 20:33	26° <del>4</del> 12'33	
morning rise	13789 Feb 03 20:00	11° <del>4</del> 01'47	opposition	13795 Aug 04 02:29	24° <del>4</del> 49'15	0°33'24
retrograde	13789 May 04 01:08	12° <del>4</del> 56'50	min. Earth dist.	13795 Aug 04 03:11	24° <del>4</del> 49'12	29.14194 AU
opposition	13789 Jul 21 11:25	11° <del>4</del> 33'05 0°28'23	direct	13795 Oct 22 03:01	23° <del>4</del> 24'58	
min. Earth dist.	13789 Jul 21 08:16	11° <del>4</del> 33'18 29.06960 AU	evening set	13796 Jan 19 06:31	25° <del>4</del> 19'24	
direct	13789 Oct 08 05:07	10° <del>4</del> 08'45				
evening set	13790 Jan 05 01:56	12° <del>4</del> 03'05	conjunction	13796 Feb 04 09:41	25° <del>4</del> 55'01	0°31'32
			minimum elong	13796 Feb 04 09:41	25° <del>4</del> 55'01	0°32'13
conjunction	13790 Jan 21 05:21	12° <del>4</del> 38'46 0°26'58	max. Earth dist.	13796 Feb 04 07:24	25° <del>4</del> 54'48	31.14637 AU
minimum elong	13790 Jan 21 05:21	12° <del>4</del> 38'46 0°27'49	morning rise	13796 Feb 20 12:27	26° <del>4</del> 30'36	
max. Earth dist.	13790 Jan 21 08:27	12° <del>4</del> 39'03 31.07555 AU	retrograde	13796 May 19 07:43	28° <del>4</del> 24'57	
morning rise	13790 Feb 06 08:36	13° <del>4</del> 14'28	opposition	13796 Aug 05 13:00	27° <del>4</del> 01'39	0°34'04
	13790 Apr 12 18:40	15° <del>4</del>	min. Earth dist.	13796 Aug 05 14:32	27° <del>4</del> 01'33	29.15077 AU
retrograde	13790 May 06 12:34	15° <del>4</del> 09'26	direct	13796 Oct 23 12:52	25° <del>4</del> 37'20	
	13790 May 30 10:58	15° <del>4</del> 8	evening set	13797 Jan 20 18:55	27° <del>4</del> 31'45	



conjunction	13797 Feb 05 22:12	28° <del>00</del> '07"21	0°32'08	retrograde	13803 Jun 05 11:34	13° <del>00</del> '46'07	
minimum elong	13797 Feb 05 22:12	28° <del>00</del> '07"21	0°32'47	opposition	13803 Aug 22 12:44	12° <del>00</del> '23'01	0°37'16
max. Earth dist.	13797 Feb 05 20:19	28° <del>00</del> '07"10	31.15467 AU	min. Earth dist.	13803 Aug 22 17:23	12° <del>00</del> '22'42	29.21011 AU
morning rise	13797 Feb 22 00:41	28° <del>00</del> '42'54		direct	13803 Nov 09 21:45	10° <del>00</del> '58'34	
	13797 Apr 03 23:01	0° <del>00</del> '		evening set	13804 Feb 07 09:12	12° <del>00</del> '53'01	
retrograde	13797 May 21 17:24	0° <del>00</del> '37'08					
	13797 Jul 09 18:35	30° <del>00</del> ' <del>00</del>		conjunction	13804 Feb 23 11:48	13° <del>00</del> '28'29	0°35'00
opposition	13797 Aug 07 23:27	29° <del>00</del> '13'51	0°34'40	minimum elong	13804 Feb 23 11:48	13° <del>00</del> '28'29	0°35'24
min. Earth dist.	13797 Aug 08 01:51	29° <del>00</del> '13'41	29.15858 AU	max. Earth dist.	13804 Feb 23 06:58	13° <del>00</del> '28'03	31.21556 AU
direct	13797 Oct 26 00:32	27° <del>00</del> '49'29		morning rise	13804 Mar 10 13:05	14° <del>00</del> '03'52	
evening set	13798 Jan 23 07:35	29° <del>00</del> '43'53		retrograde	13804 Jun 06 21:02	15° <del>00</del> '57'25	
	13798 Jan 30 16:20	0° <del>00</del> '		opposition	13804 Aug 23 22:55	14° <del>00</del> '34'26	0°37'31
				min. Earth dist.	13804 Aug 24 03:33	14° <del>00</del> '34'06	29.22121 AU
conjunction	13798 Feb 08 10:38	0° <del>00</del> '19'27	0°32'42	direct	13804 Nov 11 09:30	13° <del>00</del> '10'01	
minimum elong	13798 Feb 08 10:39	0° <del>00</del> '19'27	0°33'19	evening set	13805 Feb 08 21:21	15° <del>00</del> '04'31	
max. Earth dist.	13798 Feb 08 07:03	0° <del>00</del> '19'07	31.16226 AU				
morning rise	13798 Feb 24 13:10	0° <del>00</del> '54'59		conjunction	13805 Feb 24 23:38	15° <del>00</del> '39'58	0°35'12
retrograde	13798 May 24 05:23	2° <del>00</del> '49'05		minimum elong	13805 Feb 24 23:39	15° <del>00</del> '39'58	0°35'34
opposition	13798 Aug 10 09:39	1° <del>00</del> '25'48	0°35'14	max. Earth dist.	13805 Feb 24 17:18	15° <del>00</del> '39'23	31.22666 AU
min. Earth dist.	13798 Aug 10 12:10	1° <del>00</del> '25'38	29.16601 AU	morning rise	13805 Mar 13 00:53	16° <del>00</del> '15'20	
direct	13798 Oct 28 12:23	0° <del>00</del> '01'22		retrograde	13805 Jun 09 08:08	18° <del>00</del> '08'51	
evening set	13799 Jan 25 20:01	1° <del>00</del> '55'46		opposition	13805 Aug 26 09:11	16° <del>00</del> '45'56	0°37'43
				min. Earth dist.	13805 Aug 26 14:25	16° <del>00</del> '45'34	29.23218 AU
conjunction	13799 Feb 10 23:09	2° <del>00</del> '31'19	0°33'12	direct	13805 Nov 13 18:20	15° <del>00</del> '21'33	
minimum elong	13799 Feb 10 23:09	2° <del>00</del> '31'19	0°33'47	evening set	13806 Feb 11 09:32	17° <del>00</del> '16'06	
max. Earth dist.	13799 Feb 10 19:55	2° <del>00</del> '31'02	31.16950 AU				
morning rise	13799 Feb 27 01:22	3° <del>00</del> '06'49		conjunction	13806 Feb 27 11:51	17° <del>00</del> '51'32	0°35'22
retrograde	13799 May 26 15:32	5° <del>00</del> '00'48		minimum elong	13806 Feb 27 11:51	17° <del>00</del> '51'32	0°35'42
opposition	13799 Aug 12 20:00	3° <del>00</del> '37'31	0°35'45	max. Earth dist.	13806 Feb 27 05:54	17° <del>00</del> '50'59	31.23717 AU
min. Earth dist.	13799 Aug 12 23:47	3° <del>00</del> '37'15	29.17328 AU	morning rise	13806 Mar 15 12:42	18° <del>00</del> '26'53	
direct	13799 Oct 31 00:43	2° <del>00</del> '13'03		retrograde	13806 Jun 11 17:39	20° <del>00</del> '20'20	
evening set	13800 Jan 28 08:23	4° <del>00</del> '07'27		opposition	13806 Aug 28 19:23	18° <del>00</del> '57'30	0°37'51
				min. Earth dist.	13806 Aug 29 01:38	18° <del>00</del> '57'04	29.24216 AU
conjunction	13800 Feb 13 11:18	4° <del>00</del> '42'58	0°33'39	direct	13806 Nov 16 05:00	17° <del>00</del> '33'09	
minimum elong	13800 Feb 13 11:19	4° <del>00</del> '42'58	0°34'13	evening set	13807 Feb 13 21:54	19° <del>00</del> '27'43	
max. Earth dist.	13800 Feb 13 07:00	4° <del>00</del> '42'34	31.17698 AU				
morning rise	13800 Mar 01 13:27	5° <del>00</del> '18'26		conjunction	13807 Mar 01 23:54	20° <del>00</del> '03'08	0°35'28
retrograde	13800 May 29 03:23	7° <del>00</del> '12'18		minimum elong	13807 Mar 01 23:54	20° <del>00</del> '03'08	0°35'45
opposition	13800 Aug 15 06:09	5° <del>00</del> '49'02	0°36'13	max. Earth dist.	13807 Mar 01 16:06	20° <del>00</del> '02'25	31.24661 AU
min. Earth dist.	13800 Aug 15 09:14	5° <del>00</del> '48'49	29.18103 AU	morning rise	13807 Mar 18 00:41	20° <del>00</del> '38'28	
direct	13800 Nov 02 13:01	4° <del>00</del> '24'32		retrograde	13807 Jun 14 05:23	22° <del>00</del> '31'52	
evening set	13801 Jan 30 20:38	6° <del>00</del> '18'55		opposition	13807 Aug 31 05:39	21° <del>00</del> '09'04	0°37'56
				min. Earth dist.	13807 Aug 31 12:00	21° <del>00</del> '08'38	29.25100 AU
conjunction	13801 Feb 15 23:29	6° <del>00</del> '54'26	0°34'04	direct	13807 Nov 18 16:29	19° <del>00</del> '44'44	
minimum elong	13801 Feb 15 23:30	6° <del>00</del> '54'26	0°34'35	evening set	13808 Feb 16 09:57	21° <del>00</del> '39'19	
max. Earth dist.	13801 Feb 15 19:08	6° <del>00</del> '54'02	31.18505 AU				
morning rise	13801 Mar 04 01:23	7° <del>00</del> '29'52		conjunction	13808 Mar 03 11:54	22° <del>00</del> '14'43	0°35'31
retrograde	13801 May 31 13:47	9° <del>00</del> '23'38		minimum elong	13808 Mar 03 11:54	22° <del>00</del> '14'43	0°35'47
opposition	13801 Aug 17 16:25	8° <del>00</del> '00'24	0°36'37	max. Earth dist.	13808 Mar 03 04:18	22° <del>00</del> '14'01	31.25469 AU
min. Earth dist.	13801 Aug 17 20:43	8° <del>00</del> '00'06	29.18969 AU	morning rise	13808 Mar 19 12:16	22° <del>00</del> '50'01	
direct	13801 Nov 04 23:59	6° <del>00</del> '35'54		retrograde	13808 Jun 15 15:12	24° <del>00</del> '43'21	
evening set	13802 Feb 02 08:47	8° <del>00</del> '30'17		opposition	13808 Sep 01 16:03	23° <del>00</del> '20'35	0°37'57
				min. Earth dist.	13808 Sep 01 23:51	23° <del>00</del> '20'02	29.25846 AU
conjunction	13802 Feb 18 11:35	9° <del>00</del> '05'47	0°34'25	direct	13808 Nov 20 04:13	21° <del>00</del> '56'14	
minimum elong	13802 Feb 18 11:35	9° <del>00</del> '05'47	0°34'54	evening set	13809 Feb 17 22:04	23° <del>00</del> '50'49	
max. Earth dist.	13802 Feb 18 07:04	9° <del>00</del> '05'22	31.19431 AU				
morning rise	13802 Mar 06 13:20	9° <del>00</del> '41'12		conjunction	13809 Mar 05 23:45	24° <del>00</del> '26'12	0°35'31
retrograde	13802 Jun 03 01:41	11° <del>00</del> '34'52		minimum elong	13809 Mar 05 23:46	24° <del>00</del> '26'12	0°35'44
opposition	13802 Aug 20 02:34	10° <del>00</del> '11'42	0°36'58	max. Earth dist.	13809 Mar 05 14:49	24° <del>00</del> '25'23	31.26164 AU
min. Earth dist.	13802 Aug 20 06:10	10° <del>00</del> '11'27	29.19939 AU	morning rise	13809 Mar 22 00:02	25° <del>00</del> '01'28	
direct	13802 Nov 07 12:18	8° <del>00</del> '47'13		retrograde	13809 Jun 18 02:54	26° <del>00</del> '54'43	
evening set	13803 Feb 04 21:05	10° <del>00</del> '41'38		opposition	13809 Sep 04 02:08	25° <del>00</del> '31'58	0°37'56
				min. Earth dist.	13809 Sep 04 09:33	25° <del>00</del> '31'27	29.26484 AU
conjunction	13803 Feb 20 23:40	11° <del>00</del> '17'06	0°34'44	direct	13809 Nov 22 16:08	24° <del>00</del> '07'36	
minimum elong	13803 Feb 20 23:41	11° <del>00</del> '17'07	0°35'10	evening set	13810 Feb 20 10:03	26° <del>00</del> '02'11	
max. Earth dist.	13803 Feb 20 18:24	11° <del>00</del> '16'37	31.20451 AU				
morning rise	13803 Mar 09 01:16	11° <del>00</del> '52'31		conjunction	13810 Mar 08 11:37	26° <del>00</del> '37'32	0°35'28

minimum elong	13810 Mar 08 11:37	26° $\mathbf{\text{X}}$ 37'32	0°35'39	opposition	13816 Sep 19 01:22	10° $\mathbf{\text{Y}}$ 47'01	0°36'15
max. Earth dist.	13810 Mar 08 02:15	26° $\mathbf{\text{X}}$ 36'41	31.26747 AU	min. Earth dist.	13816 Sep 19 10:41	10° $\mathbf{\text{Y}}$ 46'22	29.30748 AU
morning rise	13810 Mar 24 11:36	27° $\mathbf{\text{X}}$ 12'47		direct	13816 Dec 07 22:46	9° $\mathbf{\text{Y}}$ 22'34	
retrograde	13810 Jun 20 13:33	29° $\mathbf{\text{X}}$ 05'56		evening set	13817 Mar 07 19:47	11° $\mathbf{\text{Y}}$ 17'07	
opposition	13810 Sep 06 12:27	27° $\mathbf{\text{X}}$ 43'12	0°37'51				
min. Earth dist.	13810 Sep 06 21:24	27° $\mathbf{\text{X}}$ 42'34	29.27029 AU	conjunction	13817 Mar 23 19:54	11° $\mathbf{\text{Y}}$ 52'20	0°33'45
direct	13810 Nov 25 03:59	26° $\mathbf{\text{X}}$ 18'47		minimum elong	13817 Mar 23 19:54	11° $\mathbf{\text{Y}}$ 52'20	0°33'38
evening set	13811 Feb 22 21:58	28° $\mathbf{\text{X}}$ 13'21		max. Earth dist.	13817 Mar 23 09:15	11° $\mathbf{\text{Y}}$ 51'21	31.31137 AU
				morning rise	13817 Apr 08 18:00	12° $\mathbf{\text{Y}}$ 27'24	
conjunction	13811 Mar 10 23:21	28° $\mathbf{\text{X}}$ 48'41	0°35'23	retrograde	13817 Jul 05 10:34	14° $\mathbf{\text{Y}}$ 20'06	
minimum elong	13811 Mar 10 23:22	28° $\mathbf{\text{X}}$ 48'41	0°35'30	opposition	13817 Sep 21 11:37	12° $\mathbf{\text{Y}}$ 57'33	0°35'48
max. Earth dist.	13811 Mar 10 13:36	28° $\mathbf{\text{X}}$ 47'48	31.27265 AU	min. Earth dist.	13817 Sep 21 22:14	12° $\mathbf{\text{Y}}$ 56'49	29.31551 AU
morning rise	13811 Mar 26 23:06	29° $\mathbf{\text{X}}$ 23'54		direct	13817 Dec 10 09:04	11° $\mathbf{\text{Y}}$ 33'10	
	13811 Apr 13 09:11	0° $\mathbf{\text{Y}}$		evening set	13818 Mar 10 07:27	13° $\mathbf{\text{Y}}$ 27'45	
retrograde	13811 Jun 23 01:07	1° $\mathbf{\text{Y}}$ 16'57					
	13811 Sep 05 11:09	30° $\mathbf{\text{X}}$		conjunction	13818 Mar 26 07:15	14° $\mathbf{\text{Y}}$ 02'56	0°33'18
opposition	13811 Sep 08 22:29	29° $\mathbf{\text{X}}$ 54'13	0°37'43	minimum elong	13818 Mar 26 07:15	14° $\mathbf{\text{Y}}$ 02'56	0°33'09
min. Earth dist.	13811 Sep 09 07:03	29° $\mathbf{\text{X}}$ 53'37	29.27518 AU	max. Earth dist.	13818 Mar 25 19:33	14° $\mathbf{\text{Y}}$ 01'52	31.31919 AU
direct	13811 Nov 27 17:27	28° $\mathbf{\text{X}}$ 29'46		morning rise	13818 Apr 11 05:12	14° $\mathbf{\text{Y}}$ 38'00	
	13812 Feb 13 20:22	0° $\mathbf{\text{Y}}$		retrograde	13818 Jul 07 22:17	16° $\mathbf{\text{Y}}$ 30'40	
evening set	13812 Feb 25 09:49	0° $\mathbf{\text{Y}}$ 24'19		opposition	13818 Sep 23 21:51	15° $\mathbf{\text{Y}}$ 08'12	0°35'17
				min. Earth dist.	13818 Sep 24 07:55	15° $\mathbf{\text{Y}}$ 07'30	29.32286 AU
conjunction	13812 Mar 12 10:55	0° $\mathbf{\text{Y}}$ 59'38	0°35'14	direct	13818 Dec 12 20:31	13° $\mathbf{\text{Y}}$ 43'50	
minimum elong	13812 Mar 12 10:56	0° $\mathbf{\text{Y}}$ 59'38	0°35'20	evening set	13819 Mar 12 19:05	15° $\mathbf{\text{Y}}$ 38'27	
max. Earth dist.	13812 Mar 12 00:21	0° $\mathbf{\text{Y}}$ 58'39	31.27746 AU				
morning rise	13812 Mar 28 10:27	1° $\mathbf{\text{Y}}$ 34'49		conjunction	13819 Mar 28 18:38	16° $\mathbf{\text{Y}}$ 13'38	0°32'48
retrograde	13812 Jun 24 10:26	3° $\mathbf{\text{Y}}$ 27'46		minimum elong	13819 Mar 28 18:38	16° $\mathbf{\text{Y}}$ 13'38	0°32'36
opposition	13812 Sep 10 08:43	2° $\mathbf{\text{Y}}$ 05'01	0°37'32	max. Earth dist.	13819 Mar 28 06:34	16° $\mathbf{\text{Y}}$ 12'32	31.32589 AU
min. Earth dist.	13812 Sep 10 18:12	2° $\mathbf{\text{Y}}$ 04'22	29.28019 AU	morning rise	13819 Apr 13 16:12	16° $\mathbf{\text{Y}}$ 48'41	
direct	13812 Nov 29 03:47	0° $\mathbf{\text{Y}}$ 40'33		retrograde	13819 Jul 10 09:03	18° $\mathbf{\text{Y}}$ 41'20	
evening set	13813 Feb 26 21:20	2° $\mathbf{\text{Y}}$ 35'04		opposition	13819 Sep 26 08:18	17° $\mathbf{\text{Y}}$ 18'54	0°34'44
				min. Earth dist.	13819 Sep 26 19:52	17° $\mathbf{\text{Y}}$ 18'06	29.32902 AU
conjunction	13813 Mar 14 22:22	3° $\mathbf{\text{Y}}$ 10'21	0°35'02	direct	13819 Dec 15 07:49	15° $\mathbf{\text{Y}}$ 54'35	
minimum elong	13813 Mar 14 22:23	3° $\mathbf{\text{Y}}$ 10'21	0°35'05	evening set	13820 Mar 14 06:40	17° $\mathbf{\text{Y}}$ 49'13	
max. Earth dist.	13813 Mar 14 12:28	3° $\mathbf{\text{Y}}$ 09'26	31.28266 AU				
morning rise	13813 Mar 30 21:34	3° $\mathbf{\text{Y}}$ 45'31		conjunction	13820 Mar 30 06:00	18° $\mathbf{\text{Y}}$ 24'23	0°32'16
retrograde	13813 Jun 26 19:20	5° $\mathbf{\text{Y}}$ 38'22		minimum elong	13820 Mar 30 06:00	18° $\mathbf{\text{Y}}$ 24'23	0°32'02
opposition	13813 Sep 12 18:52	4° $\mathbf{\text{Y}}$ 15'38	0°37'17	max. Earth dist.	13820 Mar 29 17:33	18° $\mathbf{\text{Y}}$ 23'15	31.33141 AU
min. Earth dist.	13813 Sep 13 04:08	4° $\mathbf{\text{Y}}$ 15'00	29.28562 AU	morning rise	13820 Apr 15 03:17	18° $\mathbf{\text{Y}}$ 59'24	
direct	13813 Dec 01 16:09	2° $\mathbf{\text{Y}}$ 51'08		retrograde	13820 Jul 11 20:42	20° $\mathbf{\text{Y}}$ 52'02	
evening set	13814 Mar 01 09:07	4° $\mathbf{\text{Y}}$ 45'38		opposition	13820 Sep 27 18:41	19° $\mathbf{\text{Y}}$ 29'39	0°34'07
				min. Earth dist.	13820 Sep 28 05:57	19° $\mathbf{\text{Y}}$ 28'52	29.33375 AU
conjunction	13814 Mar 17 09:47	5° $\mathbf{\text{Y}}$ 20'54	0°34'47	direct	13820 Dec 16 21:01	18° $\mathbf{\text{Y}}$ 05'20	
minimum elong	13814 Mar 17 09:47	5° $\mathbf{\text{Y}}$ 20'54	0°34'48	evening set	13821 Mar 16 18:11	20° $\mathbf{\text{Y}}$ 00'00	
max. Earth dist.	13814 Mar 16 22:39	5° $\mathbf{\text{Y}}$ 19'53	31.28854 AU				
morning rise	13814 Apr 02 08:51	5° $\mathbf{\text{Y}}$ 56'02		conjunction	13821 Apr 01 17:12	20° $\mathbf{\text{Y}}$ 35'09	0°31'40
retrograde	13814 Jun 29 05:50	7° $\mathbf{\text{Y}}$ 48'50		minimum elong	13821 Apr 01 17:12	20° $\mathbf{\text{Y}}$ 35'09	0°31'24
opposition	13814 Sep 15 04:56	6° $\mathbf{\text{Y}}$ 26'07	0°37'00	max. Earth dist.	13821 Apr 01 03:40	20° $\mathbf{\text{Y}}$ 33'54	31.33537 AU
min. Earth dist.	13814 Sep 15 14:15	6° $\mathbf{\text{Y}}$ 25'28	29.29208 AU	morning rise	13821 Apr 17 14:16	21° $\mathbf{\text{Y}}$ 10'09	
direct	13814 Dec 04 01:29	5° $\mathbf{\text{Y}}$ 01'36		retrograde	13821 Jul 14 06:45	23° $\mathbf{\text{Y}}$ 02'45	
evening set	13815 Mar 03 20:42	6° $\mathbf{\text{Y}}$ 56'06		opposition	13821 Sep 30 05:11	21° $\mathbf{\text{Y}}$ 40'23	0°33'28
				min. Earth dist.	13821 Sep 30 17:34	21° $\mathbf{\text{Y}}$ 39'32	29.33705 AU
conjunction	13815 Mar 19 21:19	7° $\mathbf{\text{Y}}$ 31'22	0°34'29	direct	13821 Dec 19 07:28	20° $\mathbf{\text{Y}}$ 16'05	
minimum elong	13815 Mar 19 21:20	7° $\mathbf{\text{Y}}$ 31'22	0°34'27	evening set	13822 Mar 19 05:41	22° $\mathbf{\text{Y}}$ 10'45	
max. Earth dist.	13815 Mar 19 11:08	7° $\mathbf{\text{Y}}$ 30'25	31.29546 AU				
morning rise	13815 Apr 04 19:57	8° $\mathbf{\text{Y}}$ 06'29		conjunction	13822 Apr 04 04:34	22° $\mathbf{\text{Y}}$ 45'53	0°31'02
retrograde	13815 Jul 01 14:22	9° $\mathbf{\text{Y}}$ 59'13		minimum elong	13822 Apr 04 04:34	22° $\mathbf{\text{Y}}$ 45'53	0°30'44
opposition	13815 Sep 17 15:12	8° $\mathbf{\text{Y}}$ 36'33	0°36'39	max. Earth dist.	13822 Apr 03 15:20	22° $\mathbf{\text{Y}}$ 44'40	31.33794 AU
min. Earth dist.	13815 Sep 18 01:00	8° $\mathbf{\text{Y}}$ 35'52	29.29940 AU	morning rise	13822 Apr 20 01:15	23° $\mathbf{\text{Y}}$ 20'52	
direct	13815 Dec 06 12:26	7° $\mathbf{\text{Y}}$ 12'04		retrograde	13822 Jul 16 15:55	25° $\mathbf{\text{Y}}$ 13'25	
evening set	13816 Mar 05 08:16	9° $\mathbf{\text{Y}}$ 06'35		opposition	13822 Oct 02 15:32	23° $\mathbf{\text{Y}}$ 51'05	0°32'46
				min. Earth dist.	13822 Oct 03 04:08	23° $\mathbf{\text{Y}}$ 50'12	29.33884 AU
conjunction	13816 Mar 21 08:28	9° $\mathbf{\text{Y}}$ 41'49	0°34'09	direct	13822 Dec 21 20:10	22° $\mathbf{\text{Y}}$ 26'46	
minimum elong	13816 Mar 21 08:29	9° $\mathbf{\text{Y}}$ 41'49	0°34'05	evening set	13823 Mar 21 17:14	24° $\mathbf{\text{Y}}$ 21'25	
max. Earth dist.	13816 Mar 20 21:11	9° $\mathbf{\text{Y}}$ 40'46	31.30327 AU				
morning rise	13816 Apr 06 07:00	10° $\mathbf{\text{Y}}$ 16'54		conjunction	13823 Apr 06 15:42	24° $\mathbf{\text{Y}}$ 56'33	0°30'22
retrograde	13816 Jul 03 01:06	12° $\mathbf{\text{Y}}$ 09'37		minimum elong	13823 Apr 06 15:43	24° $\mathbf{\text{Y}}$ 56'33	0°30'01

max. Earth dist.	13823 Apr 06 00:58	24° $\Upsilon$ 55'11	31.33919 AU	min. Earth dist.	13829 Oct 18 05:38	9° $\Sigma$ 02'49	29.34629 AU
morning rise	13823 Apr 22 12:15	25° $\Upsilon$ 31'30		direct	13830 Jan 06 01:02	7° $\Sigma$ 39'24	
retrograde	13823 Jul 19 02:42	27° $\Upsilon$ 24'02		evening set	13830 Apr 05 22:48	9° $\Sigma$ 34'06	
opposition	13823 Oct 05 01:59	26° $\Upsilon$ 01'41	0°32'01				
min. Earth dist.	13823 Oct 05 14:48	26° $\Upsilon$ 00'48	29.33966 AU	conjunction	13830 Apr 21 19:21	10° $\Sigma$ 09'07	0°24'30
direct	13823 Dec 24 06:04	24° $\Upsilon$ 37'21		minimum elong	13830 Apr 21 19:22	10° $\Sigma$ 09'07	0°23'55
evening set	13824 Mar 23 04:20	26° $\Upsilon$ 31'59		max. Earth dist.	13830 Apr 21 04:33	10° $\Sigma$ 07'45	31.34719 AU
				morning rise	13830 May 07 13:52	10° $\Sigma$ 43'58	
conjunction	13824 Apr 08 02:42	27° $\Upsilon$ 07'05	0°29'38	retrograde	13830 Aug 03 01:11	12° $\Sigma$ 36'27	
minimum elong	13824 Apr 08 02:42	27° $\Upsilon$ 07'05	0°29'16	opposition	13830 Oct 20 03:28	11° $\Sigma$ 14'11	0°25'35
max. Earth dist.	13824 Apr 07 12:48	27° $\Upsilon$ 05'48	31.33958 AU	min. Earth dist.	13830 Oct 20 17:00	11° $\Sigma$ 13'16	29.34823 AU
morning rise	13824 Apr 23 22:47	27° $\Upsilon$ 42'02		direct	13831 Jan 08 11:07	9° $\Sigma$ 49'56	
retrograde	13824 Jul 20 10:44	29° $\Upsilon$ 34'31		evening set	13831 Apr 08 09:49	11° $\Sigma$ 44'39	
opposition	13824 Oct 06 12:29	28° $\Upsilon$ 12'10	0°31'13				
min. Earth dist.	13824 Oct 07 02:00	28° $\Upsilon$ 11'14	29.33976 AU	conjunction	13831 Apr 24 06:13	12° $\Sigma$ 19'39	0°23'31
direct	13824 Dec 25 17:35	26° $\Upsilon$ 47'49		minimum elong	13831 Apr 24 06:13	12° $\Sigma$ 19'39	0°22'53
evening set	13825 Mar 25 15:36	28° $\Upsilon$ 42'26		max. Earth dist.	13831 Apr 23 16:08	12° $\Sigma$ 18'21	31.34871 AU
				morning rise	13831 May 10 00:18	12° $\Sigma$ 54'29	
conjunction	13825 Apr 10 13:33	29° $\Upsilon$ 17'31	0°28'53	retrograde	13831 Aug 05 11:16	14° $\Sigma$ 46'59	
minimum elong	13825 Apr 10 13:33	29° $\Upsilon$ 17'31	0°28'28	opposition	13831 Oct 22 14:16	13° $\Sigma$ 24'45	0°24'31
max. Earth dist.	13825 Apr 09 22:33	29° $\Upsilon$ 16'08	31.33965 AU	min. Earth dist.	13831 Oct 23 03:51	13° $\Sigma$ 23'49	29.34917 AU
morning rise	13825 Apr 26 09:32	29° $\Upsilon$ 52'26		direct	13832 Jan 11 00:16	12° $\Sigma$ 00'32	
	13825 Apr 29 21:52	0° $\Sigma$		evening set	13832 Apr 09 20:50	13° $\Sigma$ 55'15	
retrograde	13825 Jul 22 20:39	1° $\Sigma$ 44'53					
opposition	13825 Oct 08 22:45	0° $\Sigma$ 22'31	0°30'23	conjunction	13832 Apr 25 16:46	14° $\Sigma$ 30'15	0°22'29
min. Earth dist.	13825 Oct 09 11:39	0° $\Sigma$ 21'38	29.33991 AU	minimum elong	13832 Apr 25 16:46	14° $\Sigma$ 30'15	0°21'50
	13825 Oct 22 17:39	30° $\Upsilon$		max. Earth dist.	13832 Apr 25 01:21	14° $\Sigma$ 28'49	31.34907 AU
direct	13825 Dec 28 04:02	28° $\Upsilon$ 58'08			13832 May 09 02:56	15° $\Sigma$	
	13826 Mar 01 19:44	0° $\Sigma$		morning rise	13832 May 11 10:44	15° $\Sigma$ 05'04	
evening set	13826 Mar 28 02:41	0° $\Sigma$ 52'45		retrograde	13832 Aug 06 22:46	16° $\Sigma$ 57'35	
max. Earth dist.	13826 Apr 12 10:19	1° $\Sigma$ 26'31	31.33989 AU	opposition	13832 Oct 24 01:05	15° $\Sigma$ 35'22	0°23'24
				min. Earth dist.	13832 Oct 24 14:41	15° $\Sigma$ 34'26	29.34895 AU
conjunction	13826 Apr 13 00:30	1° $\Sigma$ 27'50	0°28'05		13832 Nov 15 05:08	15° $\Upsilon$ $\Sigma$	
minimum elong	13826 Apr 13 00:30	1° $\Sigma$ 27'50	0°27'38	direct	13833 Jan 12 11:05	14° $\Sigma$ 11'08	
morning rise	13826 Apr 28 20:02	2° $\Sigma$ 02'44			13833 Mar 09 12:12	15° $\Sigma$	
retrograde	13826 Jul 25 05:27	3° $\Sigma$ 55'10		evening set	13833 Apr 12 07:48	16° $\Sigma$ 05'53	
opposition	13826 Oct 11 09:18	2° $\Sigma$ 32'47	0°29'31				
min. Earth dist.	13826 Oct 11 23:04	2° $\Sigma$ 31'50	29.34049 AU	conjunction	13833 Apr 28 03:38	16° $\Sigma$ 40'51	0°21'26
direct	13826 Dec 30 13:52	1° $\Sigma$ 08'24		minimum elong	13833 Apr 28 03:38	16° $\Sigma$ 40'51	0°20'44
evening set	13827 Mar 30 13:45	3° $\Sigma$ 03'01		max. Earth dist.	13833 Apr 27 12:57	16° $\Sigma$ 39'30	31.34806 AU
				morning rise	13833 May 13 21:09	17° $\Sigma$ 15'40	
conjunction	13827 Apr 15 11:10	3° $\Sigma$ 38'04	0°27'15	retrograde	13833 Aug 09 06:57	19° $\Sigma$ 08'11	
minimum elong	13827 Apr 15 11:10	3° $\Sigma$ 38'04	0°26'45	opposition	13833 Oct 26 11:52	17° $\Sigma$ 45'58	0°22'15
max. Earth dist.	13827 Apr 14 20:36	3° $\Sigma$ 36'43	31.34091 AU	min. Earth dist.	13833 Oct 27 02:23	17° $\Sigma$ 44'58	29.34715 AU
morning rise	13827 May 01 06:31	4° $\Sigma$ 12'58		direct	13834 Jan 14 22:56	16° $\Sigma$ 21'45	
retrograde	13827 Jul 27 16:25	6° $\Sigma$ 05'24		evening set	13834 Apr 14 18:57	18° $\Sigma$ 16'28	
opposition	13827 Oct 13 19:45	4° $\Sigma$ 43'02	0°28'36				
min. Earth dist.	13827 Oct 14 08:17	4° $\Sigma$ 42'10	29.34187 AU	conjunction	13834 Apr 30 14:21	18° $\Sigma$ 51'26	0°20'21
direct	13828 Jan 02 00:57	3° $\Sigma$ 18'39		minimum elong	13834 Apr 30 14:21	18° $\Sigma$ 51'26	0°19'39
evening set	13828 Apr 01 00:45	5° $\Sigma$ 13'18		max. Earth dist.	13834 Apr 29 22:21	18° $\Sigma$ 49'57	31.34558 AU
				morning rise	13834 May 16 07:44	19° $\Sigma$ 26'14	
conjunction	13828 Apr 16 21:56	5° $\Sigma$ 48'20	0°26'22	retrograde	13834 Aug 11 17:04	21° $\Sigma$ 18'45	
minimum elong	13828 Apr 16 21:56	5° $\Sigma$ 48'20	0°25'51	opposition	13834 Oct 28 22:43	19° $\Sigma$ 56'31	0°21'05
max. Earth dist.	13828 Apr 16 07:33	5° $\Sigma$ 47'00	31.34267 AU	min. Earth dist.	13834 Oct 29 12:43	19° $\Sigma$ 55'34	29.34392 AU
morning rise	13828 May 02 16:56	6° $\Sigma$ 23'12		direct	13835 Jan 17 09:41	18° $\Sigma$ 32'16	
retrograde	13828 Jul 29 03:13	8° $\Sigma$ 15'39		evening set	13835 Apr 17 05:48	20° $\Sigma$ 26'59	
opposition	13828 Oct 15 06:19	6° $\Sigma$ 53'19	0°27'38	max. Earth dist.	13835 May 02 09:35	21° $\Sigma$ 00'31	31.34158 AU
min. Earth dist.	13828 Oct 15 19:45	6° $\Sigma$ 52'24	29.34402 AU				
direct	13829 Jan 03 12:07	5° $\Sigma$ 28'59		conjunction	13835 May 03 01:01	21° $\Sigma$ 01'56	0°19'15
evening set	13829 Apr 03 11:39	7° $\Sigma$ 23'39		minimum elong	13835 May 03 01:01	21° $\Sigma$ 01'56	0°18'29
				morning rise	13835 May 18 17:58	21° $\Sigma$ 36'43	
conjunction	13829 Apr 19 08:37	7° $\Sigma$ 58'40	0°25'27	retrograde	13835 Aug 14 01:55	23° $\Sigma$ 29'15	
minimum elong	13829 Apr 19 08:37	7° $\Sigma$ 58'40	0°24'53	opposition	13835 Oct 31 09:44	22° $\Sigma$ 06'59	0°19'53
max. Earth dist.	13829 Apr 18 18:32	7° $\Sigma$ 57'22	31.34506 AU	min. Earth dist.	13835 Nov 01 00:53	22° $\Sigma$ 05'57	29.33933 AU
morning rise	13829 May 05 03:22	8° $\Sigma$ 33'32		direct	13836 Jan 19 19:54	20° $\Sigma$ 42'42	
retrograde	13829 Jul 31 14:43	10° $\Sigma$ 26'00		evening set	13836 Apr 18 16:40	22° $\Sigma$ 37'24	
opposition	13829 Oct 17 16:51	9° $\Sigma$ 03'42	0°26'38				

conjunction	13836 May 04 11:32	23° <b>8</b> 12'20	0°18'07	retrograde	13841 Aug 26 18:11	6° <b>II</b> 30'34	
minimum elong	13836 May 04 11:32	23° <b>8</b> 12'20	0°17'21	opposition	13841 Nov 13 03:20	5° <b>II</b> 08'11	0°12'10
max. Earth dist.	13836 May 03 19:36	23° <b>8</b> 10'51	31.33657 AU	min. Earth dist.	13841 Nov 13 16:21	5° <b>II</b> 07'18	29.31151 AU
morning rise	13836 May 20 04:21	23° <b>8</b> 47'06		direct	13842 Feb 01 17:12	3° <b>II</b> 43'55	
retrograde	13836 Aug 15 12:26	25° <b>8</b> 39'37		evening set	13842 May 02 08:12	5° <b>II</b> 38'39	
opposition	13836 Nov 01 20:30	24° <b>8</b> 17'19	0°18'39	max. Earth dist.	13842 May 17 11:50	6° <b>II</b> 12'16	31.31002 AU
min. Earth dist.	13836 Nov 02 10:40	24° <b>8</b> 16'21	29.33388 AU				
direct	13837 Jan 21 07:29	22° <b>8</b> 53'00		conjunction	13842 May 18 01:30	6° <b>II</b> 13'32	0°10'51
evening set	13837 Apr 21 03:22	24° <b>8</b> 47'40		minimum elong	13842 May 18 01:30	6° <b>II</b> 13'32	0°09'57
				behind sun begin	13842 May 17 20:15	6° <b>II</b> 13'04	
conjunction	13837 May 06 21:59	25° <b>8</b> 22'35	0°16'57	behind sun end	13842 May 18 06:45	6° <b>II</b> 14'00	
minimum elong	13837 May 06 22:00	25° <b>8</b> 22'35	0°16'08	morning rise	13842 Jun 02 16:40	6° <b>II</b> 48'16	
max. Earth dist.	13837 May 06 06:05	25° <b>8</b> 21'07	31.33082 AU	retrograde	13842 Aug 29 02:57	8° <b>II</b> 41'02	
morning rise	13837 May 22 14:32	25° <b>8</b> 57'21		opposition	13842 Nov 15 14:36	7° <b>II</b> 18'42	0°10'48
retrograde	13837 Aug 17 22:43	27° <b>8</b> 49'53		min. Earth dist.	13842 Nov 16 04:04	7° <b>II</b> 17'47	29.30872 AU
opposition	13837 Nov 04 07:29	26° <b>8</b> 27'31	0°17'24	direct	13843 Feb 04 04:51	5° <b>II</b> 54'29	
min. Earth dist.	13837 Nov 04 22:31	26° <b>8</b> 26'30	29.32809 AU	evening set	13843 May 04 18:45	7° <b>II</b> 49'15	
direct	13838 Jan 23 18:33	25° <b>8</b> 03'10					
evening set	13838 Apr 23 14:02	26° <b>8</b> 57'50		conjunction	13843 May 20 11:37	8° <b>II</b> 24'08	0°09'34
				minimum elong	13843 May 20 11:37	8° <b>II</b> 24'08	0°08'38
conjunction	13838 May 09 08:24	27° <b>8</b> 32'44	0°15'46	behind sun begin	13843 May 20 05:59	8° <b>II</b> 23'38	
minimum elong	13838 May 09 08:24	27° <b>8</b> 32'44	0°14'57	behind sun end	13843 May 20 17:14	8° <b>II</b> 24'38	
behind sun begin	13838 May 09 05:58	27° <b>8</b> 32'31		max. Earth dist.	13843 May 19 21:17	8° <b>II</b> 22'48	31.30719 AU
behind sun end	13838 May 09 10:50	27° <b>8</b> 32'57		morning rise	13843 Jun 05 02:41	8° <b>II</b> 58'52	
max. Earth dist.	13838 May 08 17:06	27° <b>8</b> 31'19	31.32513 AU	retrograde	13843 Aug 31 13:24	10° <b>II</b> 51'43	
morning rise	13838 May 25 00:38	28° <b>8</b> 07'29		opposition	13843 Nov 18 01:48	9° <b>II</b> 29'24	0°09'26
	13838 Aug 19 08:23	0° <b>II</b>		min. Earth dist.	13843 Nov 18 14:20	9° <b>II</b> 28'33	29.30566 AU
retrograde	13838 Aug 20 09:23	0° <b>II</b> 00'01		direct	13844 Feb 06 15:21	8° <b>II</b> 05'14	
	13838 Aug 21 10:22	30° <b>R</b> <b>8</b>		evening set	13844 May 06 05:18	10° <b>II</b> 00'02	
opposition	13838 Nov 06 18:20	28° <b>8</b> 37'38	0°16'08				
min. Earth dist.	13838 Nov 07 08:23	28° <b>8</b> 36'40	29.32256 AU	conjunction	13844 May 21 21:59	10° <b>II</b> 34'54	0°08'17
direct	13839 Jan 26 07:19	27° <b>8</b> 13'16		minimum elong	13844 May 21 21:59	10° <b>II</b> 34'55	0°07'20
evening set	13839 Apr 26 00:43	29° <b>8</b> 07'55		behind sun begin	13844 May 21 16:04	10° <b>II</b> 34'23	
				behind sun end	13844 May 22 03:55	10° <b>II</b> 35'26	
conjunction	13839 May 11 18:41	29° <b>8</b> 42'49	0°14'34	max. Earth dist.	13844 May 21 08:25	10° <b>II</b> 33'39	31.30371 AU
minimum elong	13839 May 11 18:41	29° <b>8</b> 42'49	0°13'42	morning rise	13844 Jun 06 12:42	11° <b>II</b> 09'38	
behind sun begin	13839 May 11 15:12	29° <b>8</b> 42'30		retrograde	13844 Sep 01 23:02	13° <b>II</b> 02'34	
behind sun end	13839 May 11 22:10	29° <b>8</b> 43'07		opposition	13844 Nov 19 13:10	11° <b>II</b> 40'17	0°08'02
max. Earth dist.	13839 May 11 03:05	29° <b>8</b> 41'22	31.32000 AU	min. Earth dist.	13844 Nov 20 02:42	11° <b>II</b> 39'21	29.30180 AU
	13839 May 19 11:29	0° <b>II</b>		direct	13845 Feb 08 00:51	10° <b>II</b> 16'09	
morning rise	13839 May 27 10:43	0° <b>II</b> 17'33		evening set	13845 May 08 15:57	12° <b>II</b> 10'58	
retrograde	13839 Aug 22 20:08	2° <b>II</b> 10'08					
opposition	13839 Nov 09 05:25	0° <b>II</b> 47'43	0°14'50	conjunction	13845 May 24 08:21	12° <b>II</b> 45'50	0°06'59
min. Earth dist.	13839 Nov 09 19:28	0° <b>II</b> 46'45	29.31804 AU	minimum elong	13845 May 24 08:20	12° <b>II</b> 45'50	0°06'00
	13839 Dec 10 01:52	30° <b>R</b> <b>8</b>		behind sun begin	13845 May 24 02:11	12° <b>II</b> 45'17	
direct	13840 Jan 28 17:23	29° <b>8</b> 23'22		behind sun end	13845 May 24 14:30	12° <b>II</b> 46'23	
	13840 Mar 16 22:03	0° <b>II</b>		max. Earth dist.	13845 May 23 18:27	12° <b>II</b> 44'33	31.29938 AU
evening set	13840 Apr 27 11:04	1° <b>II</b> 18'02		morning rise	13845 Jun 08 22:55	13° <b>II</b> 20'34	
				retrograde	13845 Sep 04 09:52	15° <b>II</b> 13'34	
conjunction	13840 May 13 04:56	1° <b>II</b> 52'55	0°13'21	opposition	13845 Nov 22 00:32	13° <b>II</b> 51'17	0°06'38
minimum elong	13840 May 13 04:55	1° <b>II</b> 52'55	0°12'29	min. Earth dist.	13845 Nov 22 13:01	13° <b>II</b> 50'26	29.29679 AU
behind sun begin	13840 May 13 00:42	1° <b>II</b> 52'32		direct	13846 Feb 10 12:21	12° <b>II</b> 27'10	
behind sun end	13840 May 13 09:08	1° <b>II</b> 53'17		evening set	13846 May 11 02:38	14° <b>II</b> 22'00	
max. Earth dist.	13840 May 12 14:44	1° <b>II</b> 51'36	31.31597 AU				
morning rise	13840 May 28 20:35	2° <b>II</b> 27'39		conjunction	13846 May 26 18:42	14° <b>II</b> 56'52	0°05'40
retrograde	13840 Aug 24 06:14	4° <b>II</b> 20'16		minimum elong	13846 May 26 18:43	14° <b>II</b> 56'52	0°04'41
opposition	13840 Nov 10 16:27	2° <b>II</b> 57'53	0°13'30	behind sun begin	13846 May 26 12:24	14° <b>II</b> 56'18	
min. Earth dist.	13840 Nov 11 06:00	2° <b>II</b> 56'57	29.31438 AU	behind sun end	13846 May 27 01:02	14° <b>II</b> 57'26	
direct	13841 Jan 30 06:30	1° <b>II</b> 33'33		max. Earth dist.	13846 May 26 04:38	14° <b>II</b> 55'34	31.29363 AU
evening set	13841 Apr 29 21:42	3° <b>II</b> 28'15		morning rise	13846 Jun 11 09:01	15° <b>II</b> 31'36	
				retrograde	13846 Sep 06 20:35	17° <b>II</b> 24'41	
conjunction	13841 May 15 15:07	4° <b>II</b> 03'08	0°12'07	opposition	13846 Nov 24 12:06	16° <b>II</b> 02'22	0°05'13
minimum elong	13841 May 15 15:07	4° <b>II</b> 03'08	0°11'12	min. Earth dist.	13846 Nov 25 01:31	16° <b>II</b> 01'27	29.29045 AU
behind sun begin	13841 May 15 10:19	4° <b>II</b> 02'43		direct	13847 Feb 12 22:54	14° <b>II</b> 38'15	
behind sun end	13841 May 15 19:55	4° <b>II</b> 03'34		evening set	13847 May 13 13:15	16° <b>II</b> 33'06	
max. Earth dist.	13841 May 15 00:09	4° <b>II</b> 01'45	31.31279 AU				
morning rise	13841 May 31 06:42	4° <b>II</b> 37'52		conjunction	13847 May 29 05:09	17° <b>II</b> 07'57	0°04'21

minimum elong	13847 May 29 05:09	17°II07'57	0°03'20	retrograde	13852 Sep 19 13:33	0°☿30'25	
behind sun begin	13847 May 28 22:44	17°II07'23			13852 Nov 02 22:24	30°♁II	
behind sun end	13847 May 29 11:34	17°II08'31		opposition	13852 Dec 07 09:36	29°II07'48	-0°03'20
max. Earth dist.	13847 May 28 15:33	17°II06'41	31.28669 AU	min. Earth dist.	13852 Dec 07 20:08	29°II07'05	29.23916 AU
morning rise	13847 Jun 13 19:11	17°II42'40		direct	13853 Feb 25 23:01	27°II43'34	
retrograde	13847 Sep 09 07:33	19°II35'48		evening set	13853 May 26 03:46	29°II38'18	
opposition	13847 Nov 26 23:39	18°II13'28	0°03'48		13853 Jun 04 22:13	0°☿	
min. Earth dist.	13847 Nov 27 12:19	18°II12'36	29.28276 AU				
direct	13848 Feb 15 11:00	16°II49'20		conjunction	13853 Jun 10 18:13	0°☿13'08	-0°03'48
evening set	13848 May 14 23:47	18°II44'10		minimum elong	13853 Jun 10 18:13	0°☿13'08	0°04'52
				behind sun begin	13853 Jun 10 11:56	0°☿12'34	
conjunction	13848 May 30 15:20	19°II19'00	0°03'00	behind sun end	13853 Jun 11 00:31	0°☿13'41	
minimum elong	13848 May 30 15:20	19°II19'00	0°02'00	max. Earth dist.	13853 Jun 10 06:59	0°☿12'05	31.23562 AU
behind sun begin	13848 May 30 08:53	19°II18'26		morning rise	13853 Jun 26 07:10	0°☿47'50	
behind sun end	13848 May 30 21:48	19°II19'35		retrograde	13853 Sep 21 23:38	2°☿41'18	
max. Earth dist.	13848 May 30 01:05	19°II17'41	31.27842 AU	opposition	13853 Dec 09 21:26	1°☿18'40	-0°04'46
morning rise	13848 Jun 15 05:18	19°II53'44		min. Earth dist.	13853 Dec 10 08:27	1°☿17'55	29.23248 AU
retrograde	13848 Sep 10 18:55	21°II46'55			13854 Feb 09 18:57	30°♁II	
opposition	13848 Nov 28 11:14	20°II24'30	0°02'22	direct	13854 Feb 28 09:32	29°II54'28	
min. Earth dist.	13848 Nov 29 00:15	20°II23'37	29.27405 AU		13854 Mar 18 18:28	0°☿	
direct	13849 Feb 16 21:33	19°II00'21		evening set	13854 May 28 14:07	1°☿49'13	
evening set	13849 May 17 10:15	20°II55'09					
				conjunction	13854 Jun 13 04:18	2°☿24'02	-0°05'08
conjunction	13849 Jun 02 01:45	21°II29'59	0°01'38	minimum elong	13854 Jun 13 04:18	2°☿24'02	0°06'11
minimum elong	13849 Jun 02 01:43	21°II29'59	0°00'36	behind sun begin	13854 Jun 12 22:11	2°☿23'29	
behind sun begin	13849 Jun 01 19:17	21°II29'25		behind sun end	13854 Jun 13 10:25	2°☿24'35	
behind sun end	13849 Jun 02 08:09	21°II30'33		max. Earth dist.	13854 Jun 12 17:26	2°☿23'02	31.22934 AU
max. Earth dist.	13849 Jun 01 12:39	21°II28'47	31.26929 AU	morning rise	13854 Jun 28 17:07	2°☿58'45	
morning rise	13849 Jun 17 15:21	22°II04'42		retrograde	13854 Sep 24 10:19	4°☿52'19	
retrograde	13849 Sep 13 05:36	23°II57'55		opposition	13854 Dec 12 09:12	3°☿29'41	-0°06'11
opposition	13849 Nov 30 22:42	22°II35'27	0°00'57	min. Earth dist.	13854 Dec 12 18:40	3°☿29'02	29.22633 AU
min. Earth dist.	13849 Dec 01 11:28	22°II34'34	29.26458 AU	direct	13855 Mar 02 21:06	2°☿05'32	
direct	13850 Feb 19 11:34	21°II11'15		evening set	13855 May 31 00:33	4°☿00'19	
evening set	13850 May 19 20:48	23°II06'01					
				conjunction	13855 Jun 15 14:29	4°☿35'08	-0°06'27
conjunction	13850 Jun 04 11:51	23°II40'51	0°00'15	minimum elong	13855 Jun 15 14:29	4°☿35'08	0°07'31
minimum elong	13850 Jun 04 11:51	23°II40'51	0°00'47	behind sun begin	13855 Jun 15 08:36	4°☿34'36	
behind sun begin	13850 Jun 04 05:24	23°II40'17		behind sun end	13855 Jun 15 20:22	4°☿35'39	
behind sun end	13850 Jun 04 18:17	23°II41'25		max. Earth dist.	13855 Jun 15 03:51	4°☿34'09	31.22327 AU
max. Earth dist.	13850 Jun 03 22:04	23°II39'34	31.25983 AU	morning rise	13855 Jul 01 03:10	5°☿09'51	
morning rise	13850 Jun 20 01:27	24°II15'33		retrograde	13855 Sep 26 21:19	7°☿03'32	
desc. node	13850 Aug 14 12:56	25°II51'33		opposition	13855 Dec 14 21:12	5°☿40'55	-0°07'36
retrograde	13850 Sep 15 17:45	26°II08'49		min. Earth dist.	13855 Dec 15 07:11	5°☿40'14	29.22034 AU
opposition	13850 Dec 03 10:20	24°II46'16	-0°00'29	direct	13856 Mar 04 06:44	4°☿16'48	
min. Earth dist.	13850 Dec 03 22:17	24°II45'27	29.25532 AU	evening set	13856 Jun 01 10:51	6°☿11'37	
direct	13851 Feb 21 23:17	23°II22'02					
evening set	13851 May 22 07:00	25°II16'48		conjunction	13856 Jun 17 00:41	6°☿46'26	-0°07'45
				minimum elong	13856 Jun 17 00:41	6°☿46'26	0°08'49
conjunction	13851 Jun 06 21:55	25°II51'37	-0°01'07	behind sun begin	13856 Jun 16 19:07	6°☿45'56	
minimum elong	13851 Jun 06 21:56	25°II51'37	0°02'11	behind sun end	13856 Jun 17 06:15	6°☿46'56	
behind sun begin	13851 Jun 06 15:30	25°II51'02		max. Earth dist.	13856 Jun 16 15:00	6°☿45'32	31.21714 AU
behind sun end	13851 Jun 07 04:23	25°II52'11		morning rise	13856 Jul 02 13:11	7°☿21'09	
max. Earth dist.	13851 Jun 06 09:46	25°II50'29	31.25077 AU	retrograde	13856 Sep 28 08:31	9°☿14'57	
morning rise	13851 Jun 22 11:11	26°II26'19		opposition	13856 Dec 16 09:10	7°☿52'21	-0°09'00
retrograde	13851 Sep 18 02:36	28°II19'38		min. Earth dist.	13856 Dec 16 18:14	7°☿51'43	29.21382 AU
opposition	13851 Dec 05 22:05	26°II57'02	-0°01'55	direct	13857 Mar 06 18:14	6°☿28'17	
min. Earth dist.	13851 Dec 06 10:04	26°II56'13	29.24668 AU	evening set	13857 Jun 03 21:29	8°☿23'07	
direct	13852 Feb 24 11:29	25°II32'48					
evening set	13852 May 23 17:26	27°II27'32		conjunction	13857 Jun 19 10:58	8°☿57'56	-0°09'03
				minimum elong	13857 Jun 19 10:58	8°☿57'56	0°10'07
conjunction	13852 Jun 08 08:01	28°II02'21	-0°02'28	behind sun begin	13857 Jun 19 05:47	8°☿57'28	
minimum elong	13852 Jun 08 08:00	28°II02'21	0°03'30	behind sun end	13857 Jun 19 16:09	8°☿58'24	
behind sun begin	13852 Jun 08 01:36	28°II01'46		max. Earth dist.	13857 Jun 19 00:41	8°☿56'59	31.21022 AU
behind sun end	13852 Jun 08 14:24	28°II02'55		morning rise	13857 Jul 04 23:25	9°☿32'41	
max. Earth dist.	13852 Jun 07 19:38	28°II01'12	31.24272 AU	retrograde	13857 Sep 30 20:55	11°☿26'36	
morning rise	13852 Jun 23 21:13	28°II37'03		opposition	13857 Dec 18 21:14	10°☿03'59	-0°10'23
	13852 Aug 07 14:08	0°☿		min. Earth dist.	13857 Dec 19 06:31	10°☿03'21	29.20652 AU

direct	13858 Mar 09 04:21	8° $\overline{53}$ 39'57	min. Earth dist.	13864 Jan 02 05:41	23° $\overline{58}$ 15'17	29.13952 AU
evening set	13858 Jun 06 08:00	10° $\overline{58}$ 34'50	direct	13864 Mar 22 06:30	21° $\overline{58}$ 51'40	
			evening set	13864 Jun 18 22:59	23° $\overline{58}$ 46'29	
conjunction	13858 Jun 21 21:26	11° $\overline{58}$ 09'39 -0°10'21				
minimum elong	13858 Jun 21 21:26	11° $\overline{58}$ 09'39 0°11'23	conjunction	13864 Jul 04 11:22	24° $\overline{58}$ 21'19 -0°17'42	
behind sun begin	13858 Jun 21 16:43	11° $\overline{58}$ 09'13	minimum elong	13864 Jul 04 11:22	24° $\overline{58}$ 21'19 0°18'42	
behind sun end	13858 Jun 22 02:09	11° $\overline{58}$ 10'04	max. Earth dist.	13864 Jul 04 03:52	24° $\overline{58}$ 20'37	31.13361 AU
max. Earth dist.	13858 Jun 21 12:23	11° $\overline{58}$ 08'49 31.20232 AU	morning rise	13864 Jul 19 23:08	24° $\overline{58}$ 56'07	
morning rise	13858 Jul 07 09:35	11° $\overline{58}$ 44'23	retrograde	13864 Oct 16 03:23	26° $\overline{58}$ 50'42	
retrograde	13858 Oct 03 08:40	13° $\overline{58}$ 38'26	opposition	13865 Jan 03 11:30	25° $\overline{58}$ 27'42 -0°19'34	
opposition	13858 Dec 21 09:30	12° $\overline{58}$ 15'48 -0°11'46	min. Earth dist.	13865 Jan 03 18:17	25° $\overline{58}$ 27'15 29.12818 AU	
min. Earth dist.	13858 Dec 21 18:33	12° $\overline{58}$ 15'11 29.19792 AU	direct	13865 Mar 24 16:27	24° $\overline{58}$ 03'38	
direct	13859 Mar 11 17:45	10° $\overline{58}$ 51'48	evening set	13865 Jun 21 09:22	25° $\overline{58}$ 58'27	
evening set	13859 Jun 08 18:34	12° $\overline{58}$ 46'42				
conjunction	13859 Jun 24 07:39	13° $\overline{58}$ 21'31 -0°11'37	conjunction	13865 Jul 06 21:42	26° $\overline{58}$ 33'17 -0°18'50	
minimum elong	13859 Jun 24 07:38	13° $\overline{58}$ 21'31 0°12'41	minimum elong	13865 Jul 06 21:42	26° $\overline{58}$ 33'17 0°19'50	
behind sun begin	13859 Jun 24 03:31	13° $\overline{58}$ 21'09	max. Earth dist.	13865 Jul 06 15:34	26° $\overline{58}$ 32'43 31.12279 AU	
behind sun end	13859 Jun 24 11:46	13° $\overline{58}$ 21'53	morning rise	13865 Jul 22 09:19	27° $\overline{58}$ 08'05	
max. Earth dist.	13859 Jun 23 21:41	13° $\overline{58}$ 20'35 31.19310 AU	retrograde	13865 Oct 18 14:12	29° $\overline{58}$ 02'47	
morning rise	13859 Jul 09 19:52	13° $\overline{58}$ 56'16	opposition	13866 Jan 05 23:49	27° $\overline{58}$ 39'45 -0°20'47	
retrograde	13859 Oct 05 21:56	15° $\overline{58}$ 50'25	min. Earth dist.	13866 Jan 06 05:10	27° $\overline{58}$ 39'23 29.11776 AU	
opposition	13859 Dec 23 21:48	14° $\overline{58}$ 27'45 -0°13'07	direct	13866 Mar 27 03:36	26° $\overline{58}$ 15'42	
min. Earth dist.	13859 Dec 24 06:17	14° $\overline{58}$ 27'10 29.18806 AU	evening set	13866 Jun 23 19:53	28° $\overline{58}$ 10'31	
direct	13860 Mar 13 05:19	13° $\overline{58}$ 03'45	conjunction	13866 Jul 09 07:57	28° $\overline{58}$ 45'22 -0°19'58	
evening set	13860 Jun 10 05:06	14° $\overline{58}$ 58'40	minimum elong	13866 Jul 09 07:57	28° $\overline{58}$ 45'22 0°20'56	
conjunction	13860 Jun 25 18:11	15° $\overline{58}$ 33'29 -0°12'53	max. Earth dist.	13866 Jul 09 01:42	28° $\overline{58}$ 44'47 31.11290 AU	
minimum elong	13860 Jun 25 18:11	15° $\overline{58}$ 33'29 0°13'54	morning rise	13866 Jul 24 19:39	29° $\overline{58}$ 20'11	
behind sun begin	13860 Jun 25 14:48	15° $\overline{58}$ 33'11		13866 Aug 12 18:12	0° $\overline{59}$	
behind sun end	13860 Jun 25 21:34	15° $\overline{58}$ 33'47	retrograde	13866 Oct 21 02:51	1° $\overline{59}$ 15'00	
max. Earth dist.	13860 Jun 25 09:19	15° $\overline{58}$ 32'40 31.18247 AU		13867 Jan 03 13:54	30° $\overline{59}$	
morning rise	13860 Jul 11 06:09	16° $\overline{58}$ 08'14	opposition	13867 Jan 08 12:22	29° $\overline{58}$ 51'56 -0°21'58	
retrograde	13860 Oct 07 07:57	18° $\overline{58}$ 02'29	min. Earth dist.	13867 Jan 08 17:25	29° $\overline{58}$ 51'35 29.10836 AU	
opposition	13860 Dec 25 10:02	16° $\overline{58}$ 39'46 -0°14'27	direct	13867 Mar 29 13:55	28° $\overline{58}$ 27'54	
min. Earth dist.	13860 Dec 25 19:03	16° $\overline{58}$ 39'09 29.17672 AU		13867 Jun 15 16:53	0° $\overline{59}$	
direct	13861 Mar 15 17:48	15° $\overline{58}$ 15'46	evening set	13867 Jun 26 06:08	0° $\overline{59}$ 22'44	
evening set	13861 Jun 12 15:45	17° $\overline{58}$ 10'40	conjunction	13867 Jul 11 18:16	0° $\overline{59}$ 57'35 -0°21'03	
conjunction	13861 Jun 28 04:34	17° $\overline{58}$ 45'29 -0°14'07	minimum elong	13867 Jul 11 18:16	0° $\overline{59}$ 57'35 0°22'01	
minimum elong	13861 Jun 28 04:34	17° $\overline{58}$ 45'29 0°15'10	max. Earth dist.	13867 Jul 11 13:49	0° $\overline{59}$ 57'10 31.10379 AU	
behind sun begin	13861 Jun 28 02:16	17° $\overline{58}$ 45'17	morning rise	13867 Jul 27 05:48	1° $\overline{59}$ 32'25	
behind sun end	13861 Jun 28 06:52	17° $\overline{58}$ 45'42	retrograde	13867 Oct 23 14:43	3° $\overline{59}$ 27'22	
max. Earth dist.	13861 Jun 27 19:10	17° $\overline{58}$ 44'37 31.17067 AU	opposition	13868 Jan 11 00:56	2° $\overline{59}$ 04'16 -0°23'07	
morning rise	13861 Jul 13 16:35	18° $\overline{58}$ 20'15	min. Earth dist.	13868 Jan 11 05:20	2° $\overline{59}$ 03'58 29.09938 AU	
retrograde	13861 Oct 09 19:55	20° $\overline{58}$ 14'34	direct	13868 Mar 31 02:25	0° $\overline{59}$ 40'17	
opposition	13861 Dec 27 22:19	18° $\overline{58}$ 51'47 -0°15'46	evening set	13868 Jun 27 16:46	2° $\overline{59}$ 35'08	
min. Earth dist.	13861 Dec 28 06:10	18° $\overline{58}$ 51'15 29.16444 AU	conjunction	13868 Jul 13 04:38	3° $\overline{59}$ 09'59 -0°22'07	
direct	13862 Mar 18 06:33	17° $\overline{58}$ 27'46	minimum elong	13868 Jul 13 04:38	3° $\overline{59}$ 09'59 0°23'03	
evening set	13862 Jun 15 02:10	19° $\overline{58}$ 22'38	max. Earth dist.	13868 Jul 12 23:39	3° $\overline{59}$ 09'31 31.09499 AU	
conjunction	13862 Jun 30 14:52	19° $\overline{58}$ 57'28 -0°15'20	morning rise	13868 Jul 28 16:19	3° $\overline{59}$ 44'49	
minimum elong	13862 Jun 30 14:52	19° $\overline{58}$ 57'28 0°16'21	retrograde	13868 Oct 25 04:08	5° $\overline{59}$ 39'54	
max. Earth dist.	13862 Jun 30 06:26	19° $\overline{58}$ 56'41 31.15802 AU	opposition	13869 Jan 12 13:22	4° $\overline{59}$ 16'47 -0°24'14	
morning rise	13862 Jul 16 02:43	20° $\overline{58}$ 32'14	min. Earth dist.	13869 Jan 12 16:58	4° $\overline{59}$ 16'32 29.09063 AU	
retrograde	13862 Oct 12 06:38	22° $\overline{58}$ 26'39	direct	13869 Apr 02 12:59	2° $\overline{59}$ 52'49	
opposition	13862 Dec 30 10:47	21° $\overline{58}$ 03'47 -0°17'04	evening set	13869 Jun 30 03:20	4° $\overline{59}$ 47'41	
min. Earth dist.	13862 Dec 30 19:10	21° $\overline{58}$ 03'12 29.15176 AU	conjunction	13869 Jul 15 15:15	5° $\overline{59}$ 22'33 -0°23'09	
direct	13863 Mar 20 18:15	19° $\overline{58}$ 39'44	minimum elong	13869 Jul 15 15:15	5° $\overline{59}$ 22'33 0°24'05	
evening set	13863 Jun 17 12:36	21° $\overline{58}$ 34'34	max. Earth dist.	13869 Jul 15 11:38	5° $\overline{59}$ 22'13 31.08603 AU	
conjunction	13863 Jul 03 01:09	22° $\overline{58}$ 09'24 -0°16'31	morning rise	13869 Jul 31 02:45	5° $\overline{59}$ 57'24	
minimum elong	13863 Jul 03 01:09	22° $\overline{58}$ 09'24 0°17'33	retrograde	13869 Oct 27 15:31	7° $\overline{59}$ 52'37	
max. Earth dist.	13863 Jul 02 17:17	22° $\overline{58}$ 08'40 31.14552 AU	opposition	13870 Jan 15 02:10	6° $\overline{59}$ 29'28 -0°25'19	
morning rise	13863 Jul 18 12:57	22° $\overline{58}$ 44'11	min. Earth dist.	13870 Jan 15 06:01	6° $\overline{59}$ 29'12 29.08144 AU	
retrograde	13863 Oct 14 16:53	24° $\overline{58}$ 38'40	direct	13870 Apr 05 01:27	5° $\overline{59}$ 05'32	
opposition	13864 Jan 01 23:03	23° $\overline{58}$ 15'44 -0°18'20	evening set	13870 Jul 02 14:00	7° $\overline{59}$ 00'25	

conjunction	13870 Jul 18 01:42	7°Ω35'17 -0°24'08	retrograde	13876 Nov 12 02:17	23°Ω23'31
minimum elong	13870 Jul 18 01:42	7°Ω35'17 0°25'02	opposition	13877 Jan 30 20:03	21°Ω59'52 -0°31'46
max. Earth dist.	13870 Jul 17 21:50	7°Ω34'55 31.07661 AU	min. Earth dist.	13877 Jan 30 20:21	21°Ω59'51 28.99618 AU
morning rise	13870 Aug 02 13:19	8°Ω10'09	direct	13877 Apr 20 13:44	20°Ω35'50
retrograde	13870 Oct 30 05:15	10°Ω05'28	evening set	13877 Jul 17 17:01	22°Ω30'35
opposition	13871 Jan 17 14:57	8°Ω42'17 -0°26'22			
min. Earth dist.	13871 Jan 17 17:33	8°Ω42'07 29.07162 AU	conjunction	13877 Aug 02 04:29	23°Ω05'30 -0°30'02
direct	13871 Apr 07 14:31	7°Ω18'22	minimum elong	13877 Aug 02 04:29	23°Ω05'30 0°30'46
evening set	13871 Jul 05 00:45	9°Ω13'15	max. Earth dist.	13877 Aug 02 03:55	23°Ω05'27 30.99040 AU
			morning rise	13877 Aug 17 16:28	23°Ω40'29
conjunction	13871 Jul 20 12:26	9°Ω48'08 -0°25'06	retrograde	13877 Nov 14 15:48	25°Ω36'31
minimum elong	13871 Jul 20 12:26	9°Ω48'08 0°26'00	opposition	13878 Feb 02 08:57	24°Ω12'48 -0°32'31
max. Earth dist.	13871 Jul 20 09:16	9°Ω47'50 31.06621 AU	min. Earth dist.	13878 Feb 02 08:03	24°Ω12'52 28.98513 AU
morning rise	13871 Aug 04 23:58	10°Ω23'01	direct	13878 Apr 22 23:58	22°Ω48'47
retrograde	13871 Nov 01 17:02	12°Ω18'28	evening set	13878 Jul 20 03:32	24°Ω43'32
opposition	13872 Jan 20 03:50	10°Ω55'13 -0°27'22			
min. Earth dist.	13872 Jan 20 07:12	10°Ω55'00 29.06075 AU	conjunction	13878 Aug 04 15:08	25°Ω18'28 -0°30'43
direct	13872 Apr 09 02:32	9°Ω31'19	minimum elong	13878 Aug 04 15:08	25°Ω18'28 0°31'24
evening set	13872 Jul 06 11:31	11°Ω26'11	max. Earth dist.	13878 Aug 04 16:21	25°Ω18'35 30.97992 AU
			morning rise	13878 Aug 20 03:04	25°Ω53'28
conjunction	13872 Jul 21 23:11	12°Ω01'04 -0°26'01	retrograde	13878 Nov 17 03:42	27°Ω49'38
minimum elong	13872 Jul 21 23:11	12°Ω01'04 0°26'52	opposition	13879 Feb 04 21:59	26°Ω25'53 -0°33'13
max. Earth dist.	13872 Jul 21 20:14	12°Ω00'48 31.05480 AU	min. Earth dist.	13879 Feb 04 20:49	26°Ω25'58 28.97528 AU
morning rise	13872 Aug 06 10:47	12°Ω35'58	direct	13879 Apr 25 12:19	25°Ω01'54
retrograde	13872 Nov 03 04:25	14°Ω31'31	evening set	13879 Jul 22 14:19	26°Ω56'40
opposition	13873 Jan 21 16:37	13°Ω08'13 -0°28'20			
min. Earth dist.	13873 Jan 21 18:39	13°Ω08'04 29.04864 AU	conjunction	13879 Aug 07 01:51	27°Ω31'37 -0°31'21
direct	13873 Apr 11 15:26	11°Ω44'17	minimum elong	13879 Aug 07 01:52	27°Ω31'37 0°32'01
evening set	13873 Jul 08 22:20	13°Ω39'08	max. Earth dist.	13879 Aug 07 03:13	27°Ω31'45 30.97077 AU
			morning rise	13879 Aug 22 14:01	28°Ω06'38
conjunction	13873 Jul 24 09:52	14°Ω14'02 -0°26'54		13879 Nov 06 10:19	0°♊
minimum elong	13873 Jul 24 09:52	14°Ω14'02 0°27'45	retrograde	13879 Nov 19 18:21	0°♊02'56
max. Earth dist.	13873 Jul 24 06:47	14°Ω13'44 31.04206 AU		13879 Dec 03 01:53	30°♊
morning rise	13873 Aug 08 21:32	14°Ω48'57	opposition	13880 Feb 07 10:45	28°Ω39'09 -0°33'52
	13873 Aug 13 22:36	15°Ω	min. Earth dist.	13880 Feb 07 08:03	28°Ω39'20 28.96664 AU
retrograde	13873 Nov 05 15:35	16°Ω44'35	direct	13880 Apr 27 01:01	27°Ω15'13
opposition	13874 Jan 24 05:32	15°Ω21'12 -0°29'15	evening set	13880 Jul 24 01:05	29°Ω10'00
min. Earth dist.	13874 Jan 24 08:07	15°Ω21'01 29.03550 AU			
	13874 Feb 06 06:31	15°♊	conjunction	13880 Aug 08 12:43	29°Ω44'58 -0°31'56
direct	13874 Apr 14 02:28	13°Ω57'14	minimum elong	13880 Aug 08 12:43	29°Ω44'58 0°32'34
	13874 Jun 16 01:39	15°Ω	max. Earth dist.	13880 Aug 08 15:08	29°Ω45'12 30.96248 AU
evening set	13874 Jul 11 09:00	15°Ω52'03		13880 Aug 15 03:18	0°♊
			morning rise	13880 Aug 24 00:57	0°♊20'01
conjunction	13874 Jul 26 20:38	16°Ω26'57 -0°27'45	retrograde	13880 Nov 21 06:51	2°♊16'27
minimum elong	13874 Jul 26 20:38	16°Ω26'57 0°28'33	opposition	13881 Feb 08 23:50	0°♊52'39 -0°34'28
max. Earth dist.	13874 Jul 26 18:43	16°Ω26'46 31.02867 AU	min. Earth dist.	13881 Feb 08 21:32	0°♊52'49 28.95870 AU
morning rise	13874 Aug 11 08:16	17°Ω01'53		13881 Mar 15 12:16	30°♊
retrograde	13874 Nov 08 02:41	18°Ω57'36	direct	13881 Apr 29 12:47	29°Ω28'46
opposition	13875 Jan 26 18:25	17°Ω34'07 -0°30'08		13881 Jun 11 23:56	0°♊
min. Earth dist.	13875 Jan 26 19:45	17°Ω34'02 29.02187 AU	evening set	13881 Jul 26 11:53	1°♊23'34
direct	13875 Apr 16 14:48	16°Ω10'08			
evening set	13875 Jul 13 19:38	18°Ω04'54	conjunction	13881 Aug 10 23:34	1°♊58'33 -0°32'29
			minimum elong	13881 Aug 10 23:34	1°♊58'33 0°33'05
conjunction	13875 Jul 29 07:07	18°Ω39'48 -0°28'33	max. Earth dist.	13881 Aug 11 02:40	1°♊58'51 30.95482 AU
minimum elong	13875 Jul 29 07:07	18°Ω39'48 0°29'21	morning rise	13881 Aug 26 11:54	2°♊33'38
max. Earth dist.	13875 Jul 29 05:00	18°Ω39'36 31.01510 AU	retrograde	13881 Nov 23 19:14	4°♊30'11
morning rise	13875 Aug 13 18:59	19°Ω14'46	opposition	13882 Feb 11 12:49	3°♊06'23 -0°35'01
retrograde	13875 Nov 10 14:58	21°Ω10'34	min. Earth dist.	13882 Feb 11 08:55	3°♊06'40 28.95111 AU
opposition	13876 Jan 29 07:19	19°Ω47'00 -0°30'58	direct	13882 May 02 01:37	1°♊42'33
min. Earth dist.	13876 Jan 29 08:27	19°Ω46'55 29.00863 AU	evening set	13882 Jul 28 22:55	3°♊37'22
direct	13876 Apr 18 01:30	18°Ω22'59			
evening set	13876 Jul 15 06:14	20°Ω17'43	conjunction	13882 Aug 13 10:34	4°♊12'22 -0°32'58
			minimum elong	13882 Aug 13 10:34	4°♊12'22 0°33'31
conjunction	13876 Jul 30 17:52	20°Ω52'38 -0°29'19	max. Earth dist.	13882 Aug 13 13:45	4°♊12'40 30.94721 AU
minimum elong	13876 Jul 30 17:52	20°Ω52'38 0°30'03	morning rise	13882 Aug 28 23:05	4°♊47'28
max. Earth dist.	13876 Jul 30 17:34	20°Ω52'37 31.00218 AU	retrograde	13882 Nov 26 07:58	6°♊44'10
morning rise	13876 Aug 15 05:37	21°Ω27'36	opposition	13883 Feb 14 02:04	5°♊20'21 -0°35'31

min. Earth dist.	13883 Feb 13 22:37	5° <u>10</u> '20'35	28.94351 AU	morning rise	13889 Sep 13 07:06	20° <u>10</u> '26'40	
direct	13883 May 04 12:55	3° <u>10</u> '56'33		retrograde	13889 Dec 11 23:10	22° <u>10</u> '23'56	
evening set	13883 Jul 31 09:50	5° <u>10</u> '51'22		opposition	13890 Mar 01 22:17	20° <u>10</u> '59'38	-0°37'28
				min. Earth dist.	13890 Mar 01 15:49	21° <u>10</u> '00'04	28.87519 AU
conjunction	13883 Aug 15 21:42	6° <u>10</u> '26'24	-0°33'24	direct	13890 May 20 00:15	19° <u>10</u> '35'43	
minimum elong	13883 Aug 15 21:42	6° <u>10</u> '26'24	0°33'56	evening set	13890 Aug 15 16:06	21° <u>10</u> '30'20	
max. Earth dist.	13883 Aug 16 02:00	6° <u>10</u> '26'49	30.93939 AU				
morning rise	13883 Aug 31 10:16	7° <u>10</u> '01'31		conjunction	13890 Aug 31 04:44	22° <u>10</u> '05'26	-0°35'04
retrograde	13883 Nov 28 20:08	8° <u>10</u> '58'20		minimum elong	13890 Aug 31 04:44	22° <u>10</u> '05'26	0°35'19
opposition	13884 Feb 16 15:12	7° <u>10</u> '34'30	-0°35'57	max. Earth dist.	13890 Aug 31 12:15	22° <u>10</u> '06'09	30.87109 AU
min. Earth dist.	13884 Feb 16 10:41	7° <u>10</u> '34'49	28.93526 AU	morning rise	13890 Sep 15 18:39	22° <u>10</u> '40'42	
direct	13884 May 06 01:41	6° <u>10</u> '10'44		retrograde	13890 Dec 14 12:51	24° <u>10</u> '38'03	
evening set	13884 Aug 01 21:08	8° <u>10</u> '05'33		opposition	13891 Mar 04 11:18	23° <u>10</u> '13'41	-0°37'31
				min. Earth dist.	13891 Mar 04 03:02	23° <u>10</u> '14'15	28.86760 AU
conjunction	13884 Aug 17 08:55	8° <u>10</u> '40'35	-0°33'48	direct	13891 May 22 13:38	21° <u>10</u> '49'47	
minimum elong	13884 Aug 17 08:55	8° <u>10</u> '40'35	0°34'16	evening set	13891 Aug 18 03:18	23° <u>10</u> '44'23	
max. Earth dist.	13884 Aug 17 12:32	8° <u>10</u> '40'56	30.93068 AU				
morning rise	13884 Sep 01 21:46	9° <u>10</u> '15'44		conjunction	13891 Sep 02 16:02	24° <u>10</u> '19'31	-0°35'05
retrograde	13884 Nov 30 08:20	11° <u>10</u> '12'40		minimum elong	13891 Sep 02 16:02	24° <u>10</u> '19'31	0°35'19
opposition	13885 Feb 18 04:22	9° <u>10</u> '48'47	-0°36'21	max. Earth dist.	13891 Sep 02 23:49	24° <u>10</u> '20'15	30.86411 AU
min. Earth dist.	13885 Feb 18 00:07	9° <u>10</u> '49'04	28.92613 AU	morning rise	13891 Sep 18 06:17	24° <u>10</u> '54'48	
direct	13885 May 08 12:30	8° <u>10</u> '25'01		retrograde	13891 Dec 17 02:26	26° <u>10</u> '52'14	
evening set	13885 Aug 04 08:19	10° <u>10</u> '19'48		opposition	13892 Mar 06 00:31	25° <u>10</u> '27'50	-0°37'31
				min. Earth dist.	13892 Mar 05 16:30	25° <u>10</u> '28'23	28.86129 AU
conjunction	13885 Aug 19 20:21	10° <u>10</u> '54'52	-0°34'08	direct	13892 May 24 01:31	24° <u>10</u> '03'58	
minimum elong	13885 Aug 19 20:21	10° <u>10</u> '54'52	0°34'36	evening set	13892 Aug 19 14:32	25° <u>10</u> '58'33	
max. Earth dist.	13885 Aug 20 01:18	10° <u>10</u> '55'20	30.92100 AU				
morning rise	13885 Sep 04 09:12	11° <u>10</u> '30'02		conjunction	13892 Sep 04 03:34	26° <u>10</u> '33'42	-0°35'04
retrograde	13885 Dec 02 19:23	13° <u>10</u> '27'02		minimum elong	13892 Sep 04 03:34	26° <u>10</u> '33'42	0°35'14
opposition	13886 Feb 20 17:40	12° <u>10</u> '03'05	-0°36'41	max. Earth dist.	13892 Sep 04 12:42	26° <u>10</u> '34'34	30.85838 AU
min. Earth dist.	13886 Feb 20 12:58	12° <u>10</u> '03'25	28.91590 AU	morning rise	13892 Sep 19 17:54	27° <u>10</u> '09'01	
direct	13886 May 11 00:45	10° <u>10</u> '39'18		retrograde	13892 Dec 18 14:51	29° <u>10</u> '06'32	
evening set	13886 Aug 06 19:30	12° <u>10</u> '34'03		opposition	13893 Mar 08 13:31	27° <u>10</u> '42'08	-0°37'27
				min. Earth dist.	13893 Mar 08 04:06	27° <u>10</u> '42'47	28.85598 AU
conjunction	13886 Aug 22 07:29	13° <u>10</u> '09'07	-0°34'26	direct	13893 May 26 14:42	26° <u>10</u> '18'18	
minimum elong	13886 Aug 22 07:29	13° <u>10</u> '09'07	0°34'50	evening set	13893 Aug 22 01:59	28° <u>10</u> '12'53	
max. Earth dist.	13886 Aug 22 11:45	13° <u>10</u> '09'31	30.91048 AU				
morning rise	13886 Sep 06 20:42	13° <u>10</u> '44'18		conjunction	13893 Sep 06 15:02	28° <u>10</u> '48'04	-0°34'59
retrograde	13886 Dec 05 09:08	15° <u>10</u> '41'24		minimum elong	13893 Sep 06 15:02	28° <u>10</u> '48'04	0°35'08
opposition	13887 Feb 23 06:55	14° <u>10</u> '17'21	-0°36'57	max. Earth dist.	13893 Sep 06 23:53	28° <u>10</u> '48'54	30.85354 AU
min. Earth dist.	13887 Feb 23 01:34	14° <u>10</u> '17'43	28.90514 AU	morning rise	13893 Sep 22 05:46	29° <u>10</u> '23'25	
direct	13887 May 13 11:19	12° <u>10</u> '53'31			13893 Oct 09 09:54	0° <u>10</u> '	
evening set	13887 Aug 09 06:38	14° <u>10</u> '48'14		retrograde	13893 Dec 21 03:44	1° <u>10</u> '21'02	
					13894 Mar 09 01:53	30° <u>10</u> ' <u>R</u> '	
conjunction	13887 Aug 24 18:53	15° <u>10</u> '23'18	-0°34'40	opposition	13894 Mar 11 02:49	29° <u>10</u> '56'37	-0°37'20
minimum elong	13887 Aug 24 18:53	15° <u>10</u> '23'19	0°35'03	min. Earth dist.	13894 Mar 10 17:26	29° <u>10</u> '57'16	28.85155 AU
max. Earth dist.	13887 Aug 25 00:31	15° <u>10</u> '23'50	30.89954 AU	direct	13894 May 29 01:19	28° <u>10</u> '32'51	
morning rise	13887 Sep 09 08:10	15° <u>10</u> '58'31			13894 Aug 11 19:52	0° <u>10</u> '	
retrograde	13887 Dec 07 20:43	17° <u>10</u> '55'39		evening set	13894 Aug 24 13:16	0° <u>10</u> '27'26	
opposition	13888 Feb 25 19:59	16° <u>10</u> '31'31	-0°37'11				
min. Earth dist.	13888 Feb 25 14:43	16° <u>10</u> '31'53	28.89429 AU	conjunction	13894 Sep 09 02:41	1° <u>10</u> '02'38	-0°34'51
direct	13888 May 15 00:09	15° <u>10</u> '07'39		minimum elong	13894 Sep 09 02:41	1° <u>10</u> '02'38	0°34'56
evening set	13888 Aug 10 17:50	17° <u>10</u> '02'19		max. Earth dist.	13894 Sep 09 13:10	1° <u>10</u> '03'38	30.84929 AU
				morning rise	13894 Sep 24 17:31	1° <u>10</u> '03'8'00	
conjunction	13888 Aug 26 06:08	17° <u>10</u> '37'24	-0°34'51	retrograde	13894 Dec 23 15:26	3° <u>10</u> '03'54'44	
minimum elong	13888 Aug 26 06:08	17° <u>10</u> '37'24	0°35'11	opposition	13895 Mar 13 16:04	2° <u>10</u> '01'12'01	-0°37'10
max. Earth dist.	13888 Aug 26 11:44	17° <u>10</u> '37'56	30.88904 AU	min. Earth dist.	13895 Mar 13 06:09	2° <u>10</u> '01'12'01	28.84732 AU
morning rise	13888 Sep 10 19:43	18° <u>10</u> '12'37		direct	13895 May 31 13:30	0° <u>10</u> '04'7'36	
retrograde	13888 Dec 09 11:05	20° <u>10</u> '09'49		evening set	13895 Aug 27 00:59	2° <u>10</u> '04'2'12	
opposition	13889 Feb 27 09:03	18° <u>10</u> '45'35	-0°37'21				
min. Earth dist.	13889 Feb 27 02:20	18° <u>10</u> '46'03	28.88420 AU	conjunction	13895 Sep 11 14:26	3° <u>10</u> '04'17'26	-0°34'40
direct	13889 May 17 12:36	17° <u>10</u> '21'41		minimum elong	13895 Sep 11 14:27	3° <u>10</u> '04'17'26	0°34'43
evening set	13889 Aug 13 04:56	19° <u>10</u> '16'19		max. Earth dist.	13895 Sep 12 00:10	3° <u>10</u> '04'18'21	30.84507 AU
				morning rise	13895 Sep 27 05:42	3° <u>10</u> '04'52'50	
conjunction	13889 Aug 28 17:23	19° <u>10</u> '51'25	-0°34'59	retrograde	13895 Dec 26 05:50	5° <u>10</u> '04'50'40	
minimum elong	13889 Aug 28 17:23	19° <u>10</u> '51'25	0°35'17	opposition	13896 Mar 15 05:11	4° <u>10</u> '04'26'15	-0°36'56
max. Earth dist.	13889 Aug 29 00:06	19° <u>10</u> '52'03	30.87934 AU	min. Earth dist.	13896 Mar 14 18:56	4° <u>10</u> '04'26'58	28.84297 AU



direct	13896 Jun 01 23:46	3° <u>♂</u> 02'34	retrograde	13903 Jan 12 03:10	21° <u>♂</u> 36'51	
evening set	13896 Aug 28 12:42	4° <u>♂</u> 57'11	opposition	13903 Apr 02 01:30	20° <u>♂</u> 12'04	-0°33'45
			min. Earth dist.	13903 Apr 01 13:35	20° <u>♂</u> 12'54	28.79802 AU
conjunction	13896 Sep 13 02:29	5° <u>♂</u> 32'26 -0°34'25	direct	13903 Jun 19 15:40	18° <u>♂</u> 48'17	
minimum elong	13896 Sep 13 02:29	5° <u>♂</u> 32'26 0°34'25	evening set	13903 Sep 14 23:04	20° <u>♂</u> 42'42	
max. Earth dist.	13896 Sep 13 13:13	5° <u>♂</u> 33'27 30.84028 AU				
morning rise	13896 Sep 28 17:50	6° <u>♂</u> 07'51	conjunction	13903 Sep 30 14:37	21° <u>♂</u> 18'05	-0°31'18
retrograde	13896 Dec 27 17:46	8° <u>♂</u> 05'47	minimum elong	13903 Sep 30 14:38	21° <u>♂</u> 18'05	0°31'01
opposition	13897 Mar 17 18:33	6° <u>♂</u> 41'22 -0°36'38	max. Earth dist.	13903 Oct 01 03:55	21° <u>♂</u> 19'20	30.79575 AU
min. Earth dist.	13897 Mar 17 08:38	6° <u>♂</u> 42'03 28.83774 AU	morning rise	13903 Oct 16 08:01	21° <u>♂</u> 53'40	
direct	13897 Jun 04 12:14	5° <u>♂</u> 17'42	retrograde	13904 Jan 14 15:18	23° <u>♂</u> 51'51	
evening set	13897 Aug 31 00:28	7° <u>♂</u> 12'19	opposition	13904 Apr 03 14:17	22° <u>♂</u> 27'02	-0°33'05
			min. Earth dist.	13904 Apr 03 01:40	22° <u>♂</u> 27'55	28.79417 AU
conjunction	13897 Sep 15 14:22	7° <u>♂</u> 47'35 -0°34'07	direct	13904 Jun 21 04:54	21° <u>♂</u> 03'15	
minimum elong	13897 Sep 15 14:22	7° <u>♂</u> 47'35 0°34'06	evening set	13904 Sep 16 11:01	22° <u>♂</u> 57'39	
max. Earth dist.	13897 Sep 16 00:32	7° <u>♂</u> 48'32 30.83462 AU				
morning rise	13897 Oct 01 06:05	8° <u>♂</u> 23'02	conjunction	13904 Oct 02 02:42	23° <u>♂</u> 33'03	-0°30'39
retrograde	13897 Dec 30 08:28	10° <u>♂</u> 21'02	minimum elong	13904 Oct 02 02:42	23° <u>♂</u> 33'03	0°30'20
opposition	13898 Mar 20 07:52	8° <u>♂</u> 56'35 -0°36'17	max. Earth dist.	13904 Oct 02 15:25	23° <u>♂</u> 34'15	30.79265 AU
min. Earth dist.	13898 Mar 19 21:02	8° <u>♂</u> 57'20 28.83154 AU	morning rise	13904 Oct 17 20:33	24° <u>♂</u> 08'40	
direct	13898 Jun 07 00:13	7° <u>♂</u> 32'55	retrograde	13905 Jan 16 04:59	26° <u>♂</u> 06'53	
evening set	13898 Sep 02 12:18	9° <u>♂</u> 27'31	opposition	13905 Apr 06 03:15	24° <u>♂</u> 42'03	-0°32'23
			min. Earth dist.	13905 Apr 05 14:03	24° <u>♂</u> 42'58	28.79179 AU
conjunction	13898 Sep 18 02:28	10° <u>♂</u> 02'48 -0°33'46	direct	13905 Jun 23 15:51	23° <u>♂</u> 18'16	
minimum elong	13898 Sep 18 02:29	10° <u>♂</u> 02'48 0°33'42	evening set	13905 Sep 18 22:44	25° <u>♂</u> 12'39	
max. Earth dist.	13898 Sep 18 13:08	10° <u>♂</u> 03'48 30.82785 AU				
morning rise	13898 Oct 03 18:26	10° <u>♂</u> 38'16	conjunction	13905 Oct 04 14:48	25° <u>♂</u> 48'04	-0°29'58
retrograde	13899 Jan 01 20:52	12° <u>♂</u> 36'20	minimum elong	13905 Oct 04 14:48	25° <u>♂</u> 48'04	0°29'37
opposition	13899 Mar 22 21:10	11° <u>♂</u> 11'49 -0°35'53	max. Earth dist.	13905 Oct 05 04:58	25° <u>♂</u> 49'25	30.79082 AU
min. Earth dist.	13899 Mar 22 11:12	11° <u>♂</u> 12'30 28.82438 AU	morning rise	13905 Oct 20 08:50	26° <u>♂</u> 23'42	
direct	13899 Jun 09 11:33	9° <u>♂</u> 48'07	retrograde	13906 Jan 18 15:44	28° <u>♂</u> 21'58	
evening set	13899 Sep 05 00:02	11° <u>♂</u> 42'41	opposition	13906 Apr 08 16:15	26° <u>♂</u> 57'07	-0°31'37
			min. Earth dist.	13906 Apr 08 03:01	26° <u>♂</u> 58'03	28.79049 AU
conjunction	13899 Sep 20 14:31	12° <u>♂</u> 17'59 -0°33'22	direct	13906 Jun 26 03:58	25° <u>♂</u> 33'22	
minimum elong	13899 Sep 20 14:32	12° <u>♂</u> 17'59 0°33'16	evening set	13906 Sep 21 10:46	27° <u>♂</u> 27'45	
max. Earth dist.	13899 Sep 21 01:25	12° <u>♂</u> 19'01 30.82051 AU				
morning rise	13899 Oct 06 06:48	12° <u>♂</u> 53'29	conjunction	13906 Oct 07 03:03	28° <u>♂</u> 03'11	-0°29'14
retrograde	13900 Jan 04 11:24	14° <u>♂</u> 51'34	minimum elong	13906 Oct 07 03:04	28° <u>♂</u> 03'11	0°28'50
opposition	13900 Mar 25 10:15	13° <u>♂</u> 26'59 -0°35'26	max. Earth dist.	13906 Oct 07 16:52	28° <u>♂</u> 04'29	30.79011 AU
min. Earth dist.	13900 Mar 24 23:02	13° <u>♂</u> 27'46 28.81683 AU	morning rise	13906 Oct 22 21:31	28° <u>♂</u> 38'50	
direct	13900 Jun 12 01:46	12° <u>♂</u> 03'16		13906 Dec 04 05:43	0° <u>♂</u>	
evening set	13900 Sep 07 11:50	13° <u>♂</u> 57'47	retrograde	13907 Jan 21 05:55	0° <u>♂</u> 37'08	
				13907 Mar 11 19:46	30° <u>♂</u>	
conjunction	13900 Sep 23 02:28	14° <u>♂</u> 33'07 -0°32'56	opposition	13907 Apr 11 05:04	29° <u>♂</u> 12'18	-0°30'48
minimum elong	13900 Sep 23 02:28	14° <u>♂</u> 33'07 0°32'45	min. Earth dist.	13907 Apr 10 14:53	29° <u>♂</u> 13'17	28.79015 AU
max. Earth dist.	13900 Sep 23 13:18	14° <u>♂</u> 34'08 30.81293 AU	direct	13907 Jun 28 14:44	27° <u>♂</u> 48'33	
morning rise	13900 Oct 08 19:05	15° <u>♂</u> 08'38	evening set	13907 Sep 23 22:51	29° <u>♂</u> 42'57	
retrograde	13901 Jan 07 01:28	17° <u>♂</u> 06'45		13907 Oct 01 13:13	0° <u>♂</u>	
opposition	13901 Mar 27 23:23	15° <u>♂</u> 42'04 -0°34'55				
min. Earth dist.	13901 Mar 27 12:46	15° <u>♂</u> 42'48 28.80955 AU	conjunction	13907 Oct 09 15:29	0° <u>♂</u> 18'24	-0°28'27
direct	13901 Jun 14 14:25	14° <u>♂</u> 18'19	minimum elong	13907 Oct 09 15:29	0° <u>♂</u> 18'24	0°28'01
evening set	13901 Sep 09 23:33	16° <u>♂</u> 12'49	max. Earth dist.	13907 Oct 10 05:57	0° <u>♂</u> 19'46	30.78989 AU
			morning rise	13907 Oct 25 10:12	0° <u>♂</u> 54'05	
conjunction	13901 Sep 25 14:33	16° <u>♂</u> 48'09 -0°32'26	retrograde	13908 Jan 23 18:13	2° <u>♂</u> 52'25	
minimum elong	13901 Sep 25 14:33	16° <u>♂</u> 48'09 0°32'14	opposition	13908 Apr 12 18:04	1° <u>♂</u> 27'35	-0°29'56
max. Earth dist.	13901 Sep 26 02:35	16° <u>♂</u> 49'17 30.80606 AU	min. Earth dist.	13908 Apr 12 04:46	1° <u>♂</u> 28'31	28.79002 AU
morning rise	13901 Oct 11 07:20	17° <u>♂</u> 23'41	direct	13908 Jun 30 01:32	0° <u>♂</u> 03'53	
retrograde	13902 Jan 09 14:02	19° <u>♂</u> 21'49	evening set	13908 Sep 25 11:02	1° <u>♂</u> 58'16	
opposition	13902 Mar 30 12:25	17° <u>♂</u> 57'06 -0°34'22				
min. Earth dist.	13902 Mar 30 00:24	17° <u>♂</u> 57'56 28.80313 AU	conjunction	13908 Oct 11 03:57	2° <u>♂</u> 33'44	-0°27'38
direct	13902 Jun 17 04:14	16° <u>♂</u> 33'19	minimum elong	13908 Oct 11 03:57	2° <u>♂</u> 33'44	0°27'08
evening set	13902 Sep 12 11:19	18° <u>♂</u> 27'46	max. Earth dist.	13908 Oct 11 18:28	2° <u>♂</u> 35'07	30.78975 AU
			morning rise	13908 Oct 26 22:57	3° <u>♂</u> 09'26	
conjunction	13902 Sep 28 02:25	19° <u>♂</u> 03'07 -0°31'53	retrograde	13909 Jan 25 08:38	5° <u>♂</u> 07'48	
minimum elong	13902 Sep 28 02:26	19° <u>♂</u> 03'07 0°31'38	opposition	13909 Apr 15 06:56	3° <u>♂</u> 42'59	-0°29'02
max. Earth dist.	13902 Sep 28 14:07	19° <u>♂</u> 04'14 30.80023 AU	min. Earth dist.	13909 Apr 14 16:39	3° <u>♂</u> 43'58	28.78964 AU
morning rise	13902 Oct 13 19:41	19° <u>♂</u> 38'41	direct	13909 Jul 02 15:03	2° <u>♂</u> 19'16	

evening set	13909 Sep 27 23:26	4°M.13'40		max. Earth dist.	13915 Oct 28 10:57	18°M.21'39	30.77901 AU
				morning rise	13915 Nov 12 17:42	18°M.56'06	
conjunction	13909 Oct 13 16:33	4°M.49'09 -0°26'46		retrograde	13916 Feb 11 04:46	20°M.54'19	
minimum elong	13909 Oct 13 16:34	4°M.49'09 0°26'15		opposition	13916 Apr 30 23:56	19°M.29'18 -0°21'33	
max. Earth dist.	13909 Oct 14 06:38	4°M.50'29 30.78898 AU		min. Earth dist.	13916 Apr 30 09:11	19°M.30'20 28.77970 AU	
morning rise	13909 Oct 29 11:56	5°M.24'52		direct	13916 Jul 18 05:39	18°M.05'25	
retrograde	13910 Jan 27 22:24	7°M.23'15		evening set	13916 Oct 13 13:33	19°M.59'37	
opposition	13910 Apr 17 20:01	5°M.58'24 -0°28'05					
min. Earth dist.	13910 Apr 17 06:47	5°M.59'20 28.78855 AU		conjunction	13916 Oct 29 08:57	20°M.35'14 -0°19'40	
direct	13910 Jul 05 02:51	4°M.34'41		minimum elong	13916 Oct 29 08:57	20°M.35'14 0°18'56	
evening set	13910 Sep 30 11:40	6°M.29'04		max. Earth dist.	13916 Oct 30 00:22	20°M.36'41 30.78039 AU	
				morning rise	13916 Nov 14 06:30	21°M.11'05	
conjunction	13910 Oct 16 05:16	7°M.04'35 -0°25'51		retrograde	13917 Feb 12 16:03	23°M.09'17	
minimum elong	13910 Oct 16 05:16	7°M.04'35 0°25'18		opposition	13917 May 03 12:28	21°M.44'16 -0°20'21	
max. Earth dist.	13910 Oct 16 19:50	7°M.05'57 30.78749 AU		min. Earth dist.	13917 May 02 22:18	21°M.45'15 28.78189 AU	
morning rise	13910 Nov 01 00:53	7°M.40'19		direct	13917 Jul 20 16:20	20°M.20'24	
retrograde	13911 Jan 30 11:54	9°M.38'41		evening set	13917 Oct 16 01:53	22°M.14'36	
opposition	13911 Apr 20 08:52	8°M.13'48 -0°27'05					
min. Earth dist.	13911 Apr 19 18:51	8°M.14'47 28.78652 AU		conjunction	13917 Oct 31 21:38	22°M.50'13 -0°18'32	
direct	13911 Jul 07 16:44	6°M.50'04		minimum elong	13917 Oct 31 21:38	22°M.50'14 0°17'46	
evening set	13911 Oct 03 00:10	8°M.44'24		max. Earth dist.	13917 Nov 01 13:15	22°M.51'42 30.78348 AU	
				morning rise	13917 Nov 16 19:31	23°M.26'05	
conjunction	13911 Oct 18 17:55	9°M.19'56 -0°24'54		retrograde	13918 Feb 15 05:36	25°M.24'17	
minimum elong	13911 Oct 18 17:56	9°M.19'56 0°24'20		min. Earth dist.	13918 May 05 09:25	24°M.00'22 28.78568 AU	
max. Earth dist.	13911 Oct 19 07:29	9°M.21'13 30.78513 AU		opposition	13918 May 06 00:47	23°M.59'17 -0°19'06	
morning rise	13911 Nov 03 14:00	9°M.55'42		direct	13918 Jul 23 05:00	22°M.35'26	
retrograde	13912 Feb 02 01:52	11°M.54'02		evening set	13918 Oct 18 14:19	24°M.29'39	
opposition	13912 Apr 21 21:38	10°M.29'06 -0°26'03					
min. Earth dist.	13912 Apr 21 08:22	10°M.30'02 28.78400 AU		conjunction	13918 Nov 03 10:19	25°M.05'18 -0°17'22	
direct	13912 Jul 09 04:46	9°M.05'20		minimum elong	13918 Nov 03 10:19	25°M.05'18 0°16'33	
evening set	13912 Oct 04 12:26	10°M.59'38		max. Earth dist.	13918 Nov 04 01:54	25°M.06'46 30.78790 AU	
				morning rise	13918 Nov 19 08:35	25°M.41'11	
conjunction	13912 Oct 20 06:40	11°M.35'11 -0°23'56		retrograde	13919 Feb 17 18:33	27°M.39'22	
minimum elong	13912 Oct 20 06:40	11°M.35'11 0°23'18		opposition	13919 May 08 13:16	26°M.14'25 -0°17'50	
max. Earth dist.	13912 Oct 20 21:23	11°M.36'34 30.78255 AU		min. Earth dist.	13919 May 07 22:47	26°M.15'26 28.79071 AU	
morning rise	13912 Nov 05 02:54	12°M.10'57		direct	13919 Jul 25 15:29	24°M.50'36	
retrograde	13913 Feb 03 14:42	14°M.09'15		evening set	13919 Oct 21 02:48	26°M.44'50	
opposition	13913 Apr 24 10:21	12°M.44'17 -0°24'59					
min. Earth dist.	13913 Apr 23 20:39	12°M.45'14 28.78145 AU		conjunction	13919 Nov 05 23:14	27°M.20'30 -0°16'10	
direct	13913 Jul 11 18:48	11°M.20'28		minimum elong	13919 Nov 05 23:14	27°M.20'30 0°15'20	
evening set	13913 Oct 07 00:41	13°M.14'44		behind sun begin	13919 Nov 05 21:21	27°M.20'20	
				behind sun end	13919 Nov 06 01:07	27°M.20'41	
conjunction	13913 Oct 22 19:04	13°M.50'18 -0°22'55		max. Earth dist.	13919 Nov 06 15:25	27°M.22'02 30.79342 AU	
minimum elong	13913 Oct 22 19:04	13°M.50'18 0°22'16		morning rise	13919 Nov 21 21:40	27°M.56'24	
max. Earth dist.	13913 Oct 23 08:58	13°M.51'36 30.78033 AU		retrograde	13920 Feb 20 08:16	29°M.54'34	
morning rise	13913 Nov 07 15:48	14°M.26'05		min. Earth dist.	13920 May 09 10:06	28°M.30'45 28.79646 AU	
	13913 Nov 23 13:12	15°M.		opposition	13920 May 10 01:26	28°M.29'41 -0°16'32	
retrograde	13914 Feb 06 04:00	16°M.24'22		direct	13920 Jul 27 04:17	27°M.05'53	
opposition	13914 Apr 26 23:02	14°M.59'21 -0°23'52		evening set	13920 Oct 22 15:32	29°M.00'10	
min. Earth dist.	13914 Apr 26 09:09	15°M.00'19 28.77969 AU					
	13914 Apr 26 13:48	15°R.M.		conjunction	13920 Nov 07 12:05	29°M.35'50 -0°14'56	
direct	13914 Jul 14 06:22	13°M.35'30		minimum elong	13920 Nov 07 12:05	29°M.35'50 0°14'05	
	13914 Sep 25 15:30	15°M.		behind sun begin	13920 Nov 07 08:54	29°M.35'33	
evening set	13914 Oct 09 12:56	15°M.29'44		behind sun end	13920 Nov 07 15:16	29°M.36'08	
				max. Earth dist.	13920 Nov 08 03:20	29°M.37'16 30.79935 AU	
conjunction	13914 Oct 25 07:47	16°M.05'19 -0°21'52			13920 Nov 18 04:22	0°M.	
minimum elong	13914 Oct 25 07:47	16°M.05'19 0°21'11		morning rise	13920 Nov 23 10:56	0°M.11'45	
max. Earth dist.	13914 Oct 25 22:54	16°M.06'45 30.77899 AU		retrograde	13921 Feb 21 23:03	2°M.09'55	
morning rise	13914 Nov 10 04:41	16°M.41'08		opposition	13921 May 12 13:54	0°M.45'04 -0°15'12	
retrograde	13915 Feb 08 14:51	18°M.39'22		min. Earth dist.	13921 May 11 23:26	0°M.46'04 28.80249 AU	
opposition	13915 Apr 29 11:30	17°M.14'21 -0°22'44			13921 Jun 09 22:03	30°R.M.	
min. Earth dist.	13915 Apr 28 21:42	17°M.15'18 28.77895 AU		direct	13921 Jul 29 16:10	29°M.21'18	
direct	13915 Jul 16 18:49	15°M.50'28			13921 Sep 15 22:53	0°M.	
evening set	13915 Oct 12 01:18	17°M.44'41		evening set	13921 Oct 25 04:07	1°M.15'35	
conjunction	13915 Oct 27 20:22	18°M.20'17 -0°20'47		conjunction	13921 Nov 10 01:09	1°M.51'17 -0°13'41	
minimum elong	13915 Oct 27 20:22	18°M.20'17 0°20'04		minimum elong	13921 Nov 10 01:09	1°M.51'17 0°12'48	

behind sun begin	13921 Nov 09 21:07	1°♈50'55		direct	13927 Aug 12 19:29	12°♈52'16	
behind sun end	13921 Nov 10 05:10	1°♈51'39		evening set	13927 Nov 08 08:58	14°♈46'23	
max. Earth dist.	13921 Nov 10 17:14	1°♈52'48	30.80518 AU				
morning rise	13921 Nov 26 00:07	2°♈27'12		conjunction	13927 Nov 24 07:42	15°♈22'08	-0°05'52
retrograde	13922 Feb 24 12:42	4°♈25'20		minimum elong	13927 Nov 24 07:42	15°♈22'08	0°04'52
min. Earth dist.	13922 May 14 11:47	3°♈01'32	28.80793 AU	behind sun begin	13927 Nov 24 01:19	15°♈21'34	
opposition	13922 May 15 02:16	3°♈00'31	-0°13'51	behind sun end	13927 Nov 24 14:04	15°♈22'42	
direct	13922 Aug 01 06:25	1°♈36'46		max. Earth dist.	13927 Nov 24 21:30	15°♈23'25	30.82956 AU
evening set	13922 Oct 27 17:04	3°♈31'03		morning rise	13927 Dec 10 08:23	15°♈58'05	
				retrograde	13928 Mar 09 14:59	17°♈55'41	
conjunction	13922 Nov 12 14:16	4°♈06'46	-0°12'25	opposition	13928 May 28 02:49	16°♈30'50	-0°05'24
minimum elong	13922 Nov 12 14:16	4°♈06'46	0°11'31	min. Earth dist.	13928 May 27 14:19	16°♈31'43	28.83239 AU
behind sun begin	13922 Nov 12 09:36	4°♈06'20		direct	13928 Aug 14 05:37	15°♈06'50	
behind sun end	13922 Nov 12 18:56	4°♈07'11		evening set	13928 Nov 09 21:38	17°♈00'56	
max. Earth dist.	13922 Nov 13 04:50	4°♈08'08	30.81025 AU				
morning rise	13922 Nov 28 13:42	4°♈42'42		conjunction	13928 Nov 25 20:44	17°♈36'42	-0°04'32
retrograde	13923 Feb 27 02:19	6°♈40'46		minimum elong	13928 Nov 25 20:45	17°♈36'42	0°03'31
opposition	13923 May 17 14:30	5°♈15'58	-0°12'29	behind sun begin	13928 Nov 25 14:16	17°♈36'07	
min. Earth dist.	13923 May 17 00:30	5°♈16'57	28.81259 AU	behind sun end	13928 Nov 26 03:14	17°♈37'17	
direct	13923 Aug 03 17:52	3°♈52'11		max. Earth dist.	13928 Nov 26 11:02	17°♈38'02	30.83530 AU
evening set	13923 Oct 30 05:54	5°♈46'27		morning rise	13928 Dec 11 21:36	18°♈12'38	
				retrograde	13929 Mar 12 03:39	20°♈10'10	
conjunction	13923 Nov 15 03:34	6°♈22'11	-0°11'08	opposition	13929 May 30 14:35	18°♈45'20	-0°03'58
minimum elong	13923 Nov 15 03:33	6°♈22'11	0°10'13	min. Earth dist.	13929 May 30 01:06	18°♈46'16	28.83872 AU
behind sun begin	13923 Nov 14 22:22	6°♈21'43		direct	13929 Aug 16 18:28	17°♈21'18	
behind sun end	13923 Nov 15 08:44	6°♈22'39		evening set	13929 Nov 12 10:21	19°♈15'24	
max. Earth dist.	13923 Nov 15 18:39	6°♈23'36	30.81440 AU				
morning rise	13923 Dec 01 03:06	6°♈58'07		conjunction	13929 Nov 28 09:37	19°♈51'10	-0°03'10
retrograde	13924 Feb 29 14:26	8°♈56'06		minimum elong	13929 Nov 28 09:37	19°♈51'10	0°02'09
opposition	13924 May 19 02:47	7°♈31'18	-0°11'05	behind sun begin	13929 Nov 28 03:04	19°♈50'35	
min. Earth dist.	13924 May 18 13:25	7°♈32'15	28.81630 AU	behind sun end	13929 Nov 28 16:09	19°♈51'45	
direct	13924 Aug 05 07:25	6°♈07'30		max. Earth dist.	13929 Nov 28 23:05	19°♈52'25	30.84230 AU
evening set	13924 Oct 31 18:39	8°♈01'43		morning rise	13929 Dec 14 10:50	20°♈27'07	
				retrograde	13930 Mar 14 16:57	22°♈24'34	
conjunction	13924 Nov 16 16:30	8°♈37'28	-0°09'50	opposition	13930 Jun 02 02:28	20°♈59'46	-0°02'31
minimum elong	13924 Nov 16 16:30	8°♈37'28	0°08'53	min. Earth dist.	13930 Jun 01 13:41	21°♈00'39	28.84647 AU
behind sun begin	13924 Nov 16 10:54	8°♈36'57		direct	13930 Aug 19 05:43	19°♈35'44	
behind sun end	13924 Nov 16 22:06	8°♈37'58		evening set	13930 Nov 14 23:05	21°♈29'51	
max. Earth dist.	13924 Nov 17 06:26	8°♈38'46	30.81794 AU				
morning rise	13924 Dec 02 16:27	9°♈13'24		conjunction	13930 Nov 30 22:46	22°♈05'37	-0°01'47
retrograde	13925 Mar 03 04:34	11°♈11'18		minimum elong	13930 Nov 30 22:48	22°♈05'37	0°00'45
opposition	13925 May 21 14:56	9°♈46'29	-0°09'41	behind sun begin	13930 Nov 30 16:16	22°♈05'02	
min. Earth dist.	13925 May 21 01:10	9°♈47'27	28.81970 AU	behind sun end	13930 Dec 01 05:19	22°♈06'12	
direct	13925 Aug 07 19:29	8°♈22'37		max. Earth dist.	13930 Dec 01 13:14	22°♈06'58	30.85071 AU
evening set	13925 Nov 03 07:26	10°♈16'48		morning rise	13930 Dec 17 00:05	22°♈41'34	
				retrograde	13931 Mar 17 05:41	24°♈38'57	
conjunction	13925 Nov 19 05:38	10°♈52'33	-0°08'31	opposition	13931 Jun 04 14:04	23°♈14'12	-0°01'04
minimum elong	13925 Nov 19 05:38	10°♈52'33	0°07'34	min. Earth dist.	13931 Jun 04 01:01	23°♈15'07	28.85539 AU
behind sun begin	13925 Nov 18 23:42	10°♈52'01		direct	13931 Aug 21 19:01	21°♈50'12	
behind sun end	13925 Nov 19 11:33	10°♈53'05		evening set	13931 Nov 17 12:02	23°♈44'20	
max. Earth dist.	13925 Nov 19 19:58	10°♈53'53	30.82128 AU				
morning rise	13925 Dec 05 05:46	11°♈28'30		conjunction	13931 Dec 03 11:50	24°♈20'07	-0°00'22
retrograde	13926 Mar 05 14:57	13°♈26'18		minimum elong	13931 Dec 03 11:50	24°♈20'07	0°00'41
opposition	13926 May 24 03:01	12°♈01'27	-0°08'16	behind sun begin	13931 Dec 03 05:18	24°♈19'32	
min. Earth dist.	13926 May 23 14:19	12°♈02'20	28.82319 AU	behind sun end	13931 Dec 03 18:21	24°♈20'42	
direct	13926 Aug 10 07:09	10°♈37'32		max. Earth dist.	13931 Dec 04 01:04	24°♈21'21	30.86022 AU
evening set	13926 Nov 05 20:10	12°♈31'41		morning rise	13931 Dec 19 13:30	24°♈56'04	
				asc. node	13932 Mar 09 01:33	26°♈51'49	
conjunction	13926 Nov 21 18:41	13°♈07'26	-0°07'12	retrograde	13932 Mar 18 19:39	26°♈53'24	
minimum elong	13926 Nov 21 18:41	13°♈07'26	0°06'13	opposition	13932 Jun 06 01:49	25°♈28'43	0°00'24
behind sun begin	13926 Nov 21 12:31	13°♈06'52		min. Earth dist.	13932 Jun 05 13:03	25°♈29'37	28.86536 AU
behind sun end	13926 Nov 22 00:52	13°♈07'59		direct	13932 Aug 23 05:50	24°♈04'45	
max. Earth dist.	13926 Nov 22 08:43	13°♈08'44	30.82511 AU	evening set	13932 Nov 19 00:44	25°♈58'55	
morning rise	13926 Dec 07 19:09	13°♈43'23					
retrograde	13927 Mar 08 03:22	15°♈41'05		conjunction	13932 Dec 05 00:56	26°♈34'43	0°01'02
opposition	13927 May 26 14:55	14°♈16'13	-0°06'51	minimum elong	13932 Dec 05 00:55	26°♈34'43	0°02'05
min. Earth dist.	13927 May 26 01:22	14°♈17'10	28.82732 AU	behind sun begin	13932 Dec 04 18:22	26°♈34'08	

behind sun end	13932 Dec 05 07:28	26° $\nearrow$ 35'18		opposition	13938 Jun 19 23:22	8° $\searrow$ 56'46	0°09'00
max. Earth dist.	13932 Dec 05 15:01	26° $\nearrow$ 36'02	30.87039 AU	min. Earth dist.	13938 Jun 19 13:25	8° $\searrow$ 57'27	28.91584 AU
morning rise	13932 Dec 21 02:37	27° $\nearrow$ 10'40		direct	13938 Sep 06 05:27	7° $\searrow$ 32'44	
retrograde	13933 Mar 21 08:29	29° $\nearrow$ 07'57		evening set	13938 Dec 03 07:10	9° $\searrow$ 26'57	
opposition	13933 Jun 08 13:34	27° $\nearrow$ 43'21	0°01'51				
min. Earth dist.	13933 Jun 08 01:25	27° $\nearrow$ 44'12	28.87558 AU	conjunction	13938 Dec 19 08:34	10° $\searrow$ 02'45	0°09'03
direct	13933 Aug 25 19:04	26° $\nearrow$ 19'26		minimum elong	13938 Dec 19 08:34	10° $\searrow$ 02'45	0°10'06
evening set	13933 Nov 21 13:50	28° $\nearrow$ 13'38		behind sun begin	13938 Dec 19 03:20	10° $\searrow$ 02'17	
				behind sun end	13938 Dec 19 13:48	10° $\searrow$ 03'13	
conjunction	13933 Dec 07 14:08	28° $\nearrow$ 49'26	0°02'24	max. Earth dist.	13938 Dec 19 18:03	10° $\searrow$ 03'37	30.91903 AU
minimum elong	13933 Dec 07 14:08	28° $\nearrow$ 49'26	0°03'28	morning rise	13939 Jan 04 11:23	10° $\searrow$ 38'42	
behind sun begin	13933 Dec 07 07:38	28° $\nearrow$ 48'51		retrograde	13939 Apr 04 09:30	12° $\searrow$ 35'24	
behind sun end	13933 Dec 07 20:38	28° $\nearrow$ 50'01		opposition	13939 Jun 22 10:38	11° $\searrow$ 11'01	0°10'24
max. Earth dist.	13933 Dec 08 02:48	28° $\nearrow$ 50'37	30.88062 AU	min. Earth dist.	13939 Jun 22 01:49	11° $\searrow$ 11'38	28.92241 AU
morning rise	13933 Dec 23 16:09	29° $\nearrow$ 25'24		direct	13939 Sep 08 16:21	9° $\searrow$ 46'56	
	13934 Jan 09 01:28	0° $\searrow$		evening set	13939 Dec 05 20:01	11° $\searrow$ 41'08	
retrograde	13934 Mar 23 23:06	1° $\searrow$ 22'37					
	13934 Jun 09 22:02	30° $\nwarrow$		conjunction	13939 Dec 21 21:46	12° $\searrow$ 16'57	0°10'20
opposition	13934 Jun 11 01:10	29° $\nearrow$ 58'06	0°03'18	minimum elong	13939 Dec 21 21:46	12° $\searrow$ 16'57	0°11'24
min. Earth dist.	13934 Jun 10 12:57	29° $\nearrow$ 58'57	28.88558 AU	behind sun begin	13939 Dec 21 17:03	12° $\searrow$ 16'31	
direct	13934 Aug 28 06:53	28° $\nearrow$ 34'11		behind sun end	13939 Dec 22 02:30	12° $\searrow$ 17'22	
	13934 Nov 10 17:52	0° $\searrow$		max. Earth dist.	13939 Dec 22 07:54	12° $\searrow$ 17'53	30.92577 AU
evening set	13934 Nov 24 02:56	0° $\searrow$ 28'25		morning rise	13940 Jan 07 00:33	12° $\searrow$ 52'52	
				retrograde	13940 Apr 05 21:03	14° $\searrow$ 49'27	
conjunction	13934 Dec 10 03:34	1° $\searrow$ 04'14	0°03'46	opposition	13940 Jun 23 21:50	13° $\searrow$ 25'05	0°11'46
minimum elong	13934 Dec 10 03:33	1° $\searrow$ 04'14	0°04'49	min. Earth dist.	13940 Jun 23 12:54	13° $\searrow$ 25'42	28.92938 AU
behind sun begin	13934 Dec 09 21:10	1° $\searrow$ 03'40		direct	13940 Sep 10 05:09	12° $\searrow$ 00'57	
behind sun end	13934 Dec 10 09:57	1° $\searrow$ 04'49		evening set	13940 Dec 07 08:50	13° $\searrow$ 55'08	
max. Earth dist.	13934 Dec 10 16:11	1° $\searrow$ 05'25	30.89007 AU				
morning rise	13934 Dec 26 05:39	1° $\searrow$ 40'12		conjunction	13940 Dec 23 10:36	14° $\searrow$ 30'55	0°11'36
retrograde	13935 Mar 26 10:02	3° $\searrow$ 37'21		minimum elong	13940 Dec 23 10:36	14° $\searrow$ 30'55	0°12'39
opposition	13935 Jun 13 12:54	2° $\searrow$ 12'54	0°04'45	behind sun begin	13940 Dec 23 06:30	14° $\searrow$ 30'33	
min. Earth dist.	13935 Jun 13 02:10	2° $\searrow$ 13'39	28.89451 AU	behind sun end	13940 Dec 23 14:42	14° $\searrow$ 31'17	
direct	13935 Aug 30 18:34	0° $\searrow$ 48'59		max. Earth dist.	13940 Dec 23 19:27	14° $\searrow$ 31'44	30.93318 AU
evening set	13935 Nov 26 16:02	2° $\searrow$ 43'14		morning rise	13941 Jan 08 13:40	15° $\searrow$ 06'51	
				retrograde	13941 Apr 08 10:09	17° $\searrow$ 03'18	
conjunction	13935 Dec 12 16:51	3° $\searrow$ 19'03	0°05'06	opposition	13941 Jun 26 09:02	15° $\searrow$ 38'56	0°13'07
minimum elong	13935 Dec 12 16:52	3° $\searrow$ 19'03	0°06'10	min. Earth dist.	13941 Jun 26 00:24	15° $\searrow$ 39'33	28.93735 AU
behind sun begin	13935 Dec 12 10:39	3° $\searrow$ 18'29		direct	13941 Sep 12 16:03	14° $\searrow$ 14'46	
behind sun end	13935 Dec 12 23:04	3° $\searrow$ 19'36		evening set	13941 Dec 09 21:38	16° $\searrow$ 08'56	
max. Earth dist.	13935 Dec 13 04:28	3° $\searrow$ 20'07	30.89850 AU				
morning rise	13935 Dec 28 19:09	3° $\searrow$ 55'01		conjunction	13941 Dec 25 23:44	16° $\searrow$ 44'44	0°12'52
retrograde	13936 Mar 27 22:44	5° $\searrow$ 52'04		minimum elong	13941 Dec 25 23:44	16° $\searrow$ 44'44	0°13'54
opposition	13936 Jun 15 00:26	4° $\searrow$ 27'39	0°06'11	behind sun begin	13941 Dec 25 20:28	16° $\searrow$ 44'26	
min. Earth dist.	13936 Jun 14 13:22	4° $\searrow$ 28'26	28.90235 AU	behind sun end	13941 Dec 26 03:00	16° $\searrow$ 45'01	
direct	13936 Sep 01 06:41	3° $\searrow$ 03'43		max. Earth dist.	13941 Dec 26 09:27	16° $\searrow$ 45'37	30.94163 AU
evening set	13936 Nov 28 05:10	4° $\searrow$ 57'58		morning rise	13942 Jan 11 02:44	17° $\searrow$ 20'38	
				retrograde	13942 Apr 10 22:23	19° $\searrow$ 16'58	
conjunction	13936 Dec 14 06:10	5° $\searrow$ 33'47	0°06'26	opposition	13942 Jun 28 20:03	17° $\searrow$ 52'38	0°14'27
minimum elong	13936 Dec 14 06:10	5° $\searrow$ 33'47	0°07'29	min. Earth dist.	13942 Jun 28 11:54	17° $\searrow$ 53'12	28.94639 AU
behind sun begin	13936 Dec 14 00:12	5° $\searrow$ 33'15		direct	13942 Sep 15 05:49	16° $\searrow$ 28'26	
behind sun end	13936 Dec 14 12:07	5° $\searrow$ 34'19		evening set	13942 Dec 12 10:34	18° $\searrow$ 22'36	
max. Earth dist.	13936 Dec 14 17:04	5° $\searrow$ 34'47	30.90582 AU				
morning rise	13936 Dec 30 08:37	6° $\searrow$ 09'44		conjunction	13942 Dec 28 12:43	18° $\searrow$ 58'24	0°14'06
retrograde	13937 Mar 30 10:19	8° $\searrow$ 06'41		minimum elong	13942 Dec 28 12:43	18° $\searrow$ 58'24	0°15'07
opposition	13937 Jun 17 12:02	6° $\searrow$ 42'18	0°07'36	behind sun begin	13942 Dec 28 10:41	18° $\searrow$ 58'13	
min. Earth dist.	13937 Jun 17 02:31	6° $\searrow$ 42'58	28.90934 AU	behind sun end	13942 Dec 28 14:45	18° $\searrow$ 58'34	
direct	13937 Sep 03 16:21	5° $\searrow$ 18'19		max. Earth dist.	13942 Dec 28 21:09	18° $\searrow$ 59'10	30.95140 AU
evening set	13937 Nov 30 18:02	7° $\searrow$ 12'33		morning rise	13943 Jan 13 15:57	19° $\searrow$ 34'17	
				retrograde	13943 Apr 13 11:43	21° $\searrow$ 30'30	
conjunction	13937 Dec 16 19:22	7° $\searrow$ 48'21	0°07'45	opposition	13943 Jul 01 07:04	20° $\searrow$ 06'12	0°15'46
minimum elong	13937 Dec 16 19:23	7° $\searrow$ 48'21	0°08'49	min. Earth dist.	13943 Jun 30 22:28	20° $\searrow$ 06'48	28.95681 AU
behind sun begin	13937 Dec 16 13:45	7° $\searrow$ 47'51		direct	13943 Sep 17 17:55	18° $\searrow$ 41'59	
behind sun end	13937 Dec 17 01:00	7° $\searrow$ 48'52		evening set	13943 Dec 14 23:20	20° $\searrow$ 36'11	
max. Earth dist.	13937 Dec 17 06:08	7° $\searrow$ 49'21	30.91260 AU				
morning rise	13938 Jan 01 21:57	8° $\searrow$ 24'19		conjunction	13943 Dec 31 01:41	21° $\searrow$ 11'58	0°15'19
retrograde	13938 Apr 01 21:45	10° $\searrow$ 21'08		minimum elong	13943 Dec 31 01:41	21° $\searrow$ 11'58	0°16'21

max. Earth dist.	13943 Dec 31 10:37	21° $\overline{3}$ 12'47	30.96234 AU	retrograde	13950 Apr 28 21:22	7° $\approx$ 04'19	
morning rise	13944 Jan 16 04:51	21° $\overline{3}$ 47'51		opposition	13950 Jul 16 11:35	5° $\approx$ 40'25	0°24'09
retrograde	13944 Apr 14 22:44	23° $\overline{3}$ 43'58		min. Earth dist.	13950 Jul 16 07:23	5° $\approx$ 40'43	29.03355 AU
opposition	13944 Jul 02 18:09	22° $\overline{3}$ 19'44	0°17'03	direct	13950 Oct 03 00:58	4° $\approx$ 16'10	
min. Earth dist.	13944 Jul 02 10:37	22° $\overline{3}$ 20'16	28.96831 AU	evening set	13950 Dec 30 17:55	6° $\approx$ 10'26	
direct	13944 Sep 19 05:30	20° $\overline{3}$ 55'32					
evening set	13944 Dec 16 12:11	22° $\overline{3}$ 49'44		conjunction	13951 Jan 15 21:07	6° $\approx$ 46'10	0°23'03
				minimum elong	13951 Jan 15 21:07	6° $\approx$ 46'10	0°23'58
conjunction	13945 Jan 01 14:40	23° $\overline{3}$ 25'31	0°16'30	max. Earth dist.	13951 Jan 16 01:40	6° $\approx$ 46'35	31.03769 AU
minimum elong	13945 Jan 01 14:40	23° $\overline{3}$ 25'31	0°17'31	morning rise	13951 Feb 01 00:26	7° $\approx$ 21'57	
max. Earth dist.	13945 Jan 01 22:53	23° $\overline{3}$ 26'16	30.97441 AU	retrograde	13951 May 01 08:42	9° $\approx$ 17'19	
morning rise	13945 Jan 17 17:59	24° $\overline{3}$ 01'23		opposition	13951 Jul 18 22:21	7° $\approx$ 53'27	0°25'13
retrograde	13945 Apr 17 12:03	25° $\overline{3}$ 57'25		min. Earth dist.	13951 Jul 18 19:00	7° $\approx$ 53'41	29.04190 AU
opposition	13945 Jul 05 05:02	24° $\overline{3}$ 33'15	0°18'19	direct	13951 Oct 05 14:22	6° $\approx$ 29'09	
min. Earth dist.	13945 Jul 04 20:59	24° $\overline{3}$ 33'49	28.98063 AU	evening set	13952 Jan 02 06:41	8° $\approx$ 23'25	
direct	13945 Sep 21 17:31	23° $\overline{3}$ 09'05					
evening set	13945 Dec 19 01:07	25° $\overline{3}$ 03'18		conjunction	13952 Jan 18 09:46	8° $\approx$ 59'08	0°24'02
				minimum elong	13952 Jan 18 09:46	8° $\approx$ 59'08	0°24'56
conjunction	13946 Jan 04 03:42	25° $\overline{3}$ 39'05	0°17'40	max. Earth dist.	13952 Jan 18 12:46	8° $\approx$ 59'25	31.04607 AU
minimum elong	13946 Jan 04 03:42	25° $\overline{3}$ 39'05	0°18'41	morning rise	13952 Feb 03 13:13	9° $\approx$ 34'53	
max. Earth dist.	13946 Jan 04 11:28	25° $\overline{3}$ 39'48	30.98677 AU	retrograde	13952 May 02 21:17	11° $\approx$ 30'09	
morning rise	13946 Jan 20 07:04	26° $\overline{3}$ 14'57		opposition	13952 Jul 20 08:55	10° $\approx$ 06'17	0°26'14
retrograde	13946 Apr 19 23:32	28° $\overline{3}$ 10'53		min. Earth dist.	13952 Jul 20 05:21	10° $\approx$ 06'32	29.05040 AU
opposition	13946 Jul 07 16:06	26° $\overline{3}$ 46'49	0°19'33	direct	13952 Oct 07 02:23	8° $\approx$ 41'57	
min. Earth dist.	13946 Jul 07 09:41	26° $\overline{3}$ 47'16	28.99295 AU	evening set	13953 Jan 03 19:20	10° $\approx$ 36'14	
direct	13946 Sep 24 03:29	25° $\overline{3}$ 22'39					
evening set	13946 Dec 21 14:08	27° $\overline{3}$ 16'54		conjunction	13953 Jan 19 22:34	11° $\approx$ 11'56	0°24'58
				minimum elong	13953 Jan 19 22:34	11° $\approx$ 11'56	0°25'50
conjunction	13947 Jan 06 16:55	27° $\overline{3}$ 52'40	0°18'48	max. Earth dist.	13953 Jan 20 01:53	11° $\approx$ 12'14	31.05470 AU
minimum elong	13947 Jan 06 16:55	27° $\overline{3}$ 52'40	0°19'47	morning rise	13953 Feb 05 01:51	11° $\approx$ 47'40	
max. Earth dist.	13947 Jan 07 00:14	27° $\overline{3}$ 53'21	30.99883 AU	retrograde	13953 May 05 08:00	13° $\approx$ 42'47	
morning rise	13947 Jan 22 20:15	28° $\overline{3}$ 28'31		opposition	13953 Jul 22 19:30	12° $\approx$ 18'58	0°27'13
	13947 Mar 14 21:33	0° $\approx$		min. Earth dist.	13953 Jul 22 17:10	12° $\approx$ 19'08	29.05937 AU
retrograde	13947 Apr 22 10:38	0° $\approx$ 24'21		direct	13953 Oct 09 14:08	10° $\approx$ 54'36	
	13947 May 31 15:14	30° $\overline{R}$ $\overline{3}$		evening set	13954 Jan 06 07:59	12° $\approx$ 48'52	
opposition	13947 Jul 10 02:55	29° $\overline{3}$ 00'22	0°20'45				
min. Earth dist.	13947 Jul 09 20:17	29° $\overline{3}$ 00'49	29.00455 AU	conjunction	13954 Jan 22 11:14	13° $\approx$ 24'34	0°25'53
direct	13947 Sep 26 16:02	27° $\overline{3}$ 36'11		minimum elong	13954 Jan 22 11:14	13° $\approx$ 24'34	0°26'44
evening set	13947 Dec 24 03:16	29° $\overline{3}$ 30'28		max. Earth dist.	13954 Jan 22 13:45	13° $\approx$ 24'48	31.06414 AU
	13948 Jan 06 11:14	0° $\approx$		morning rise	13954 Feb 07 14:35	14° $\approx$ 00'16	
					13954 Mar 09 15:29	15° $\approx$	
conjunction	13948 Jan 09 06:00	0° $\approx$ 06'14	0°19'55	retrograde	13954 May 07 21:00	15° $\approx$ 55'17	
minimum elong	13948 Jan 09 06:00	0° $\approx$ 06'14	0°20'53		13954 Jul 07 22:53	15° $\overline{R}$ $\approx$	
max. Earth dist.	13948 Jan 09 11:46	0° $\approx$ 06'45	31.00991 AU	opposition	13954 Jul 25 05:56	14° $\approx$ 31'30	0°28'10
morning rise	13948 Jan 25 09:26	0° $\approx$ 42'04		min. Earth dist.	13954 Jul 25 02:57	14° $\approx$ 31'42	29.06926 AU
retrograde	13948 Apr 23 21:58	2° $\approx$ 37'48		direct	13954 Oct 12 02:40	13° $\approx$ 07'07	
opposition	13948 Jul 11 13:58	1° $\approx$ 13'51	0°21'55	evening set	13955 Jan 08 20:40	15° $\approx$ 01'23	
min. Earth dist.	13948 Jul 11 08:42	1° $\approx$ 14'13	29.01519 AU		13955 Jan 08 05:18	15° $\approx$	
	13948 Sep 03 02:31	30° $\overline{R}$ $\overline{3}$					
direct	13948 Sep 28 02:01	29° $\overline{3}$ 49'40		conjunction	13955 Jan 24 23:54	15° $\approx$ 37'05	0°26'45
	13948 Oct 22 21:54	0° $\approx$		minimum elong	13955 Jan 24 23:54	15° $\approx$ 37'05	0°27'33
evening set	13948 Dec 25 16:02	1° $\approx$ 43'56		max. Earth dist.	13955 Jan 25 02:11	15° $\approx$ 37'17	31.07449 AU
				morning rise	13955 Feb 10 03:07	16° $\approx$ 12'46	
conjunction	13949 Jan 10 19:02	2° $\approx$ 19'42	0°21'00	retrograde	13955 May 10 07:42	18° $\approx$ 07'40	
minimum elong	13949 Jan 10 19:03	2° $\approx$ 19'42	0°21'56	opposition	13955 Jul 27 16:26	16° $\approx$ 43'56	0°29'04
max. Earth dist.	13949 Jan 11 00:59	2° $\approx$ 20'14	31.02001 AU	min. Earth dist.	13955 Jul 27 14:41	16° $\approx$ 44'03	29.08030 AU
morning rise	13949 Jan 26 22:22	2° $\approx$ 55'30		direct	13955 Oct 14 12:46	15° $\approx$ 19'33	
retrograde	13949 Apr 26 09:01	4° $\approx$ 51'08		evening set	13956 Jan 11 09:12	17° $\approx$ 13'51	
opposition	13949 Jul 14 00:52	3° $\approx$ 27'13	0°23'03				
min. Earth dist.	13949 Jul 13 19:54	3° $\approx$ 27'34	29.02470 AU	conjunction	13956 Jan 27 12:32	17° $\approx$ 49'31	0°27'34
direct	13949 Sep 30 14:14	2° $\approx$ 03'00		minimum elong	13956 Jan 27 12:32	17° $\approx$ 49'31	0°28'22
evening set	13949 Dec 28 05:05	3° $\approx$ 57'17		max. Earth dist.	13956 Jan 27 14:50	17° $\approx$ 49'44	31.08624 AU
				morning rise	13956 Feb 12 15:39	18° $\approx$ 25'12	
conjunction	13950 Jan 13 08:02	4° $\approx$ 33'01	0°22'03	retrograde	13956 May 11 17:59	20° $\approx$ 20'00	
minimum elong	13950 Jan 13 08:02	4° $\approx$ 33'01	0°22'59	opposition	13956 Jul 29 02:51	18° $\approx$ 56'21	0°29'56
max. Earth dist.	13950 Jan 13 12:09	4° $\approx$ 33'24	31.02915 AU	min. Earth dist.	13956 Jul 29 00:24	18° $\approx$ 56'31	29.09258 AU
morning rise	13950 Jan 29 11:32	5° $\approx$ 08'49		direct	13956 Oct 16 00:55	17° $\approx$ 32'00	

evening set	13957 Jan 12 21:43	19° $\approx$ 26'19		max. Earth dist.	13963 Feb 12 01:44	3° $\mathbb{H}$ 16'38	31.16911 AU
				morning rise	13963 Feb 28 07:05	3° $\mathbb{H}$ 52'25	
conjunction	13957 Jan 29 00:57	20° $\approx$ 01'58	0°28'21	retrograde	13963 May 28 01:19	5° $\mathbb{H}$ 46'33	
minimum elong	13957 Jan 29 00:57	20° $\approx$ 01'58	0°29'07	opposition	13963 Aug 14 03:53	4° $\mathbb{H}$ 23'20	0°34'38
max. Earth dist.	13957 Jan 29 02:16	20° $\approx$ 02'05	31.09907 AU	min. Earth dist.	13963 Aug 14 05:56	4° $\mathbb{H}$ 23'11	29.17338 AU
morning rise	13957 Feb 14 04:06	20° $\approx$ 37'38		direct	13963 Nov 01 08:14	2° $\mathbb{H}$ 58'59	
retrograde	13957 May 14 04:51	22° $\approx$ 32'21		evening set	13964 Jan 29 14:10	4° $\mathbb{H}$ 53'24	
opposition	13957 Jul 31 13:22	21° $\approx$ 08'48	0°30'45				
min. Earth dist.	13957 Jul 31 11:56	21° $\approx$ 08'54	29.10587 AU	conjunction	13964 Feb 14 17:08	5° $\mathbb{H}$ 28'57	0°32'37
direct	13957 Oct 18 09:55	19° $\approx$ 44'28		minimum elong	13964 Feb 14 17:08	5° $\mathbb{H}$ 28'57	0°33'10
evening set	13958 Jan 15 10:19	21° $\approx$ 38'50		max. Earth dist.	13964 Feb 14 13:38	5° $\mathbb{H}$ 28'38	31.17732 AU
				morning rise	13964 Mar 01 19:19	6° $\mathbb{H}$ 04'26	
conjunction	13958 Jan 31 13:41	22° $\approx$ 14'29	0°29'06	retrograde	13964 May 29 11:33	7° $\mathbb{H}$ 58'27	
minimum elong	13958 Jan 31 13:41	22° $\approx$ 14'29	0°29'51	opposition	13964 Aug 15 14:17	6° $\mathbb{H}$ 35'14	0°35'06
max. Earth dist.	13958 Jan 31 15:25	22° $\approx$ 14'39	31.11259 AU	min. Earth dist.	13964 Aug 15 17:53	6° $\mathbb{H}$ 34'59	29.18144 AU
morning rise	13958 Feb 16 16:37	22° $\approx$ 50'07		direct	13964 Nov 02 19:19	5° $\mathbb{H}$ 10'51	
retrograde	13958 May 16 15:23	24° $\approx$ 44'46		evening set	13965 Jan 31 02:24	7° $\mathbb{H}$ 05'14	
opposition	13958 Aug 02 23:41	23° $\approx$ 21'19	0°31'31				
min. Earth dist.	13958 Aug 02 22:33	23° $\approx$ 21'23	29.11933 AU	conjunction	13965 Feb 16 05:22	7° $\mathbb{H}$ 40'46	0°33'02
direct	13958 Oct 20 20:47	21° $\approx$ 57'01		minimum elong	13965 Feb 16 05:22	7° $\mathbb{H}$ 40'46	0°33'31
evening set	13959 Jan 17 23:08	23° $\approx$ 51'25		max. Earth dist.	13965 Feb 16 01:38	7° $\mathbb{H}$ 40'25	31.18529 AU
				morning rise	13965 Mar 04 07:25	8° $\mathbb{H}$ 16'13	
conjunction	13959 Feb 03 02:18	24° $\approx$ 27'03	0°29'48	retrograde	13965 May 31 21:51	10° $\mathbb{H}$ 10'06	
minimum elong	13959 Feb 03 02:18	24° $\approx$ 27'03	0°30'30	opposition	13965 Aug 18 00:29	8° $\mathbb{H}$ 46'54	0°35'31
max. Earth dist.	13959 Feb 03 02:18	24° $\approx$ 27'03	31.12592 AU	min. Earth dist.	13965 Aug 18 03:42	8° $\mathbb{H}$ 46'41	29.18927 AU
morning rise	13959 Feb 19 05:16	25° $\approx$ 02'41		direct	13965 Nov 05 07:58	7° $\mathbb{H}$ 22'28	
retrograde	13959 May 19 03:02	26° $\approx$ 57'15		evening set	13966 Feb 02 14:49	9° $\mathbb{H}$ 16'51	
opposition	13959 Aug 05 10:11	25° $\approx$ 33'52	0°32'14				
min. Earth dist.	13959 Aug 05 09:45	25° $\approx$ 33'54	29.13244 AU	conjunction	13966 Feb 18 17:35	9° $\mathbb{H}$ 52'21	0°33'24
direct	13959 Oct 23 07:03	24° $\approx$ 09'36		minimum elong	13966 Feb 18 17:35	9° $\mathbb{H}$ 52'21	0°33'53
evening set	13960 Jan 20 11:40	26° $\approx$ 04'02		max. Earth dist.	13966 Feb 18 12:41	9° $\mathbb{H}$ 51'54	31.19315 AU
				morning rise	13966 Mar 06 19:32	10° $\mathbb{H}$ 27'47	
conjunction	13960 Feb 05 14:56	26° $\approx$ 39'39	0°30'27	retrograde	13966 Jun 03 08:19	12° $\mathbb{H}$ 21'33	
minimum elong	13960 Feb 05 14:56	26° $\approx$ 39'39	0°31'08	opposition	13966 Aug 20 10:40	10° $\mathbb{H}$ 58'22	0°35'53
max. Earth dist.	13960 Feb 05 15:17	26° $\approx$ 39'41	31.13846 AU	min. Earth dist.	13966 Aug 20 14:51	10° $\mathbb{H}$ 58'04	29.19744 AU
morning rise	13960 Feb 21 17:36	27° $\approx$ 15'15		direct	13966 Nov 07 17:46	9° $\mathbb{H}$ 33'54	
retrograde	13960 May 20 13:29	29° $\approx$ 09'44		evening set	13967 Feb 05 03:00	11° $\mathbb{H}$ 28'15	
opposition	13960 Aug 06 20:45	27° $\approx$ 46'26	0°32'55				
min. Earth dist.	13960 Aug 06 21:23	27° $\approx$ 46'23	29.14441 AU	conjunction	13967 Feb 21 05:47	12° $\mathbb{H}$ 03'45	0°33'44
direct	13960 Oct 24 19:33	26° $\approx$ 22'10		minimum elong	13967 Feb 21 05:47	12° $\mathbb{H}$ 03'45	0°34'09
evening set	13961 Jan 22 00:26	28° $\approx$ 16'36		max. Earth dist.	13967 Feb 21 01:27	12° $\mathbb{H}$ 03'21	31.20160 AU
				morning rise	13967 Mar 09 07:25	12° $\mathbb{H}$ 39'10	
conjunction	13961 Feb 07 03:31	28° $\approx$ 52'12	0°31'04	retrograde	13967 Jun 05 17:42	14° $\mathbb{H}$ 32'49	
minimum elong	13961 Feb 07 03:31	28° $\approx$ 52'12	0°31'42	opposition	13967 Aug 22 20:54	13° $\mathbb{H}$ 09'40	0°36'12
max. Earth dist.	13961 Feb 07 01:57	28° $\approx$ 52'04	31.14990 AU	min. Earth dist.	13967 Aug 23 01:03	13° $\mathbb{H}$ 09'22	29.20622 AU
morning rise	13961 Feb 23 06:14	29° $\approx$ 27'47		direct	13967 Nov 10 05:08	11° $\mathbb{H}$ 45'11	
	13961 Mar 10 16:01	0° $\mathbb{H}$		evening set	13968 Feb 07 15:07	13° $\mathbb{H}$ 39'33	
retrograde	13961 May 23 01:51	1° $\mathbb{H}$ 22'10					
	13961 Aug 08 15:14	30° $\mathbb{R}$		conjunction	13968 Feb 23 17:36	14° $\mathbb{H}$ 15'01	0°34'00
opposition	13961 Aug 09 07:07	29° $\approx$ 58'54	0°33'32	minimum elong	13968 Feb 23 17:36	14° $\mathbb{H}$ 15'01	0°34'24
min. Earth dist.	13961 Aug 09 07:49	29° $\approx$ 58'51	29.15525 AU	max. Earth dist.	13968 Feb 23 12:01	14° $\mathbb{H}$ 14'30	31.21090 AU
direct	13961 Oct 27 06:48	28° $\approx$ 34'36		morning rise	13968 Mar 10 19:11	14° $\mathbb{H}$ 50'24	
	13962 Jan 10 16:19	0° $\mathbb{H}$		retrograde	13968 Jun 07 04:18	16° $\mathbb{H}$ 43'59	
evening set	13962 Jan 24 13:03	0° $\mathbb{H}$ 29'04		opposition	13968 Aug 24 07:10	15° $\mathbb{H}$ 20'53	0°36'28
				min. Earth dist.	13968 Aug 24 11:25	15° $\mathbb{H}$ 20'35	29.21610 AU
conjunction	13962 Feb 09 16:14	1° $\mathbb{H}$ 04'39	0°31'38	direct	13968 Nov 11 15:04	13° $\mathbb{H}$ 56'25	
minimum elong	13962 Feb 09 16:14	1° $\mathbb{H}$ 04'39	0°32'15	evening set	13969 Feb 09 03:10	15° $\mathbb{H}$ 50'48	
max. Earth dist.	13962 Feb 09 14:31	1° $\mathbb{H}$ 04'29	31.16003 AU				
morning rise	13962 Feb 25 18:41	1° $\mathbb{H}$ 40'12		conjunction	13969 Feb 25 05:43	16° $\mathbb{H}$ 26'15	0°34'14
retrograde	13962 May 25 12:38	3° $\mathbb{H}$ 34'27		minimum elong	13969 Feb 25 05:43	16° $\mathbb{H}$ 26'15	0°34'35
opposition	13962 Aug 11 17:38	2° $\mathbb{H}$ 11'13	0°34'06	max. Earth dist.	13969 Feb 25 01:00	16° $\mathbb{H}$ 25'49	31.22121 AU
min. Earth dist.	13962 Aug 11 19:58	2° $\mathbb{H}$ 11'03	29.16479 AU	morning rise	13969 Mar 13 06:57	17° $\mathbb{H}$ 01'37	
direct	13962 Oct 29 18:53	0° $\mathbb{H}$ 46'54		retrograde	13969 Jun 09 13:49	18° $\mathbb{H}$ 55'08	
evening set	13963 Jan 27 01:40	2° $\mathbb{H}$ 41'20		opposition	13969 Aug 26 17:19	17° $\mathbb{H}$ 32'06	0°36'41
				min. Earth dist.	13969 Aug 26 22:18	17° $\mathbb{H}$ 31'45	29.22675 AU
conjunction	13963 Feb 12 04:42	3° $\mathbb{H}$ 16'54	0°32'09	direct	13969 Nov 14 02:17	16° $\mathbb{H}$ 07'41	
minimum elong	13963 Feb 12 04:42	3° $\mathbb{H}$ 16'54	0°32'43	evening set	13970 Feb 11 15:25	18° $\mathbb{H}$ 02'06	

conjunction	13970 Feb 27 17:41	18° $\mathbf{\text{H}}$ 37'32	0°34'24	retrograde	13976 Jun 24 18:17	4° $\mathbf{\text{Y}}$ 14'39	
minimum elong	13970 Feb 27 17:41	18° $\mathbf{\text{H}}$ 37'32	0°34'44	opposition	13976 Sep 10 17:13	2° $\mathbf{\text{Y}}$ 52'00	0°36'38
max. Earth dist.	13970 Feb 27 11:31	18° $\mathbf{\text{H}}$ 36'58	31.23222 AU	min. Earth dist.	13976 Sep 11 02:08	2° $\mathbf{\text{Y}}$ 51'23	29.28379 AU
morning rise	13970 Mar 15 18:54	19° $\mathbf{\text{H}}$ 12'53		direct	13976 Nov 29 10:49	1° $\mathbf{\text{Y}}$ 27'39	
retrograde	13970 Jun 12 01:54	21° $\mathbf{\text{H}}$ 06'21		evening set	13977 Feb 27 04:01	3° $\mathbf{\text{Y}}$ 22'12	
opposition	13970 Aug 29 03:28	19° $\mathbf{\text{H}}$ 43'25	0°36'50				
min. Earth dist.	13970 Aug 29 08:09	19° $\mathbf{\text{H}}$ 43'05	29.23784 AU	conjunction	13977 Mar 15 05:03	3° $\mathbf{\text{Y}}$ 57'31	0°34'12
direct	13970 Nov 16 12:37	18° $\mathbf{\text{H}}$ 19'02		minimum elong	13977 Mar 15 05:04	3° $\mathbf{\text{Y}}$ 57'31	0°34'14
evening set	13971 Feb 14 03:32	20° $\mathbf{\text{H}}$ 13'31		max. Earth dist.	13977 Mar 14 18:07	3° $\mathbf{\text{Y}}$ 56'31	31.28566 AU
				morning rise	13977 Mar 31 04:37	4° $\mathbf{\text{Y}}$ 32'43	
conjunction	13971 Mar 02 05:44	20° $\mathbf{\text{H}}$ 48'56	0°34'32	retrograde	13977 Jun 27 03:51	6° $\mathbf{\text{Y}}$ 25'43	
minimum elong	13971 Mar 02 05:44	20° $\mathbf{\text{H}}$ 48'56	0°34'48	opposition	13977 Sep 13 03:17	5° $\mathbf{\text{Y}}$ 03'03	0°36'25
max. Earth dist.	13971 Mar 01 23:48	20° $\mathbf{\text{H}}$ 48'23	31.24312 AU	min. Earth dist.	13977 Sep 13 12:35	5° $\mathbf{\text{Y}}$ 02'25	29.28769 AU
morning rise	13971 Mar 18 06:33	21° $\mathbf{\text{H}}$ 24'16		direct	13977 Dec 01 21:05	3° $\mathbf{\text{Y}}$ 38'40	
retrograde	13971 Jun 14 12:30	23° $\mathbf{\text{H}}$ 17'42		evening set	13978 Mar 01 15:46	5° $\mathbf{\text{Y}}$ 33'12	
opposition	13971 Aug 31 13:47	21° $\mathbf{\text{H}}$ 54'50	0°36'56				
min. Earth dist.	13971 Aug 31 19:58	21° $\mathbf{\text{H}}$ 54'24	29.24853 AU	conjunction	13978 Mar 17 16:47	6° $\mathbf{\text{Y}}$ 08'30	0°33'59
direct	13971 Nov 19 00:00	20° $\mathbf{\text{H}}$ 30'30		minimum elong	13978 Mar 17 16:48	6° $\mathbf{\text{Y}}$ 08'30	0°34'00
evening set	13972 Feb 16 15:44	22° $\mathbf{\text{H}}$ 25'01		max. Earth dist.	13978 Mar 17 06:33	6° $\mathbf{\text{Y}}$ 07'33	31.28932 AU
				morning rise	13978 Apr 02 15:56	6° $\mathbf{\text{Y}}$ 43'39	
conjunction	13972 Mar 03 17:42	23° $\mathbf{\text{H}}$ 00'25	0°34'36	retrograde	13978 Jun 29 12:03	8° $\mathbf{\text{Y}}$ 36'34	
minimum elong	13972 Mar 03 17:43	23° $\mathbf{\text{H}}$ 00'26	0°34'51	opposition	13978 Sep 15 13:33	7° $\mathbf{\text{Y}}$ 13'54	0°36'09
max. Earth dist.	13972 Mar 03 10:39	22° $\mathbf{\text{H}}$ 59'47	31.25347 AU	min. Earth dist.	13978 Sep 15 23:40	7° $\mathbf{\text{Y}}$ 13'12	29.29128 AU
morning rise	13972 Mar 19 18:24	23° $\mathbf{\text{H}}$ 35'44		direct	13978 Dec 04 08:04	5° $\mathbf{\text{Y}}$ 49'28	
retrograde	13972 Jun 16 01:21	25° $\mathbf{\text{H}}$ 29'07		evening set	13979 Mar 04 03:28	7° $\mathbf{\text{Y}}$ 43'58	
opposition	13972 Sep 01 23:58	24° $\mathbf{\text{H}}$ 06'20	0°36'59				
min. Earth dist.	13972 Sep 02 05:51	24° $\mathbf{\text{H}}$ 05'55	29.25833 AU	conjunction	13979 Mar 20 04:06	8° $\mathbf{\text{Y}}$ 19'15	0°33'43
direct	13972 Nov 20 12:55	22° $\mathbf{\text{H}}$ 42'01		minimum elong	13979 Mar 20 04:06	8° $\mathbf{\text{Y}}$ 19'15	0°33'40
evening set	13973 Feb 18 03:53	24° $\mathbf{\text{H}}$ 36'35		max. Earth dist.	13979 Mar 19 16:40	8° $\mathbf{\text{Y}}$ 18'11	31.29307 AU
				morning rise	13979 Apr 05 03:07	8° $\mathbf{\text{Y}}$ 54'23	
conjunction	13973 Mar 06 05:43	25° $\mathbf{\text{H}}$ 11'59	0°34'37	retrograde	13979 Jul 01 23:03	10° $\mathbf{\text{Y}}$ 47'13	
minimum elong	13973 Mar 06 05:43	25° $\mathbf{\text{H}}$ 11'59	0°34'48	opposition	13979 Sep 17 23:40	9° $\mathbf{\text{Y}}$ 24'32	0°35'50
max. Earth dist.	13973 Mar 05 22:00	25° $\mathbf{\text{H}}$ 11'16	31.26255 AU	min. Earth dist.	13979 Sep 18 09:05	9° $\mathbf{\text{Y}}$ 23'53	29.29532 AU
morning rise	13973 Mar 22 06:08	25° $\mathbf{\text{H}}$ 47'16		direct	13979 Dec 06 18:07	8° $\mathbf{\text{Y}}$ 00'04	
retrograde	13973 Jun 18 11:54	27° $\mathbf{\text{H}}$ 40'36		evening set	13980 Mar 05 15:00	9° $\mathbf{\text{Y}}$ 54'34	
opposition	13973 Sep 04 10:23	26° $\mathbf{\text{H}}$ 17'52	0°36'58				
min. Earth dist.	13973 Sep 04 17:56	26° $\mathbf{\text{H}}$ 17'20	29.26677 AU	conjunction	13980 Mar 21 15:31	10° $\mathbf{\text{Y}}$ 29'49	0°33'24
direct	13973 Nov 22 23:57	24° $\mathbf{\text{H}}$ 53'34		minimum elong	13980 Mar 21 15:31	10° $\mathbf{\text{Y}}$ 29'49	0°33'20
evening set	13974 Feb 20 16:03	26° $\mathbf{\text{H}}$ 48'09		max. Earth dist.	13980 Mar 21 04:41	10° $\mathbf{\text{Y}}$ 28'49	31.29741 AU
				morning rise	13980 Apr 06 14:09	11° $\mathbf{\text{Y}}$ 04'56	
conjunction	13974 Mar 08 17:46	27° $\mathbf{\text{H}}$ 23'31	0°34'35	retrograde	13980 Jul 03 08:19	12° $\mathbf{\text{Y}}$ 57'42	
minimum elong	13974 Mar 08 17:46	27° $\mathbf{\text{H}}$ 23'31	0°34'45	opposition	13980 Sep 19 09:53	11° $\mathbf{\text{Y}}$ 35'02	0°35'28
max. Earth dist.	13974 Mar 08 09:32	27° $\mathbf{\text{H}}$ 22'46	31.27027 AU	min. Earth dist.	13980 Sep 19 20:19	11° $\mathbf{\text{Y}}$ 34'18	29.30020 AU
morning rise	13974 Mar 24 17:56	27° $\mathbf{\text{H}}$ 58'47		direct	13980 Dec 08 05:32	10° $\mathbf{\text{Y}}$ 10'33	
retrograde	13974 Jun 20 22:21	29° $\mathbf{\text{H}}$ 52'02		evening set	13981 Mar 08 02:32	12° $\mathbf{\text{Y}}$ 05'03	
opposition	13974 Sep 06 20:34	28° $\mathbf{\text{H}}$ 29'21	0°36'55				
min. Earth dist.	13974 Sep 07 04:00	28° $\mathbf{\text{H}}$ 28'50	29.27367 AU	conjunction	13981 Mar 24 02:48	12° $\mathbf{\text{Y}}$ 40'16	0°33'02
direct	13974 Nov 25 12:37	27° $\mathbf{\text{H}}$ 05'04		minimum elong	13981 Mar 24 02:48	12° $\mathbf{\text{Y}}$ 40'16	0°32'54
evening set	13975 Feb 23 04:15	28° $\mathbf{\text{H}}$ 59'39		max. Earth dist.	13981 Mar 23 15:26	12° $\mathbf{\text{Y}}$ 39'13	31.30288 AU
				morning rise	13981 Apr 09 01:17	13° $\mathbf{\text{Y}}$ 15'22	
conjunction	13975 Mar 11 05:40	29° $\mathbf{\text{H}}$ 35'00	0°34'31	retrograde	13981 Jul 05 20:01	15° $\mathbf{\text{Y}}$ 08'05	
minimum elong	13975 Mar 11 05:40	29° $\mathbf{\text{H}}$ 35'00	0°34'37	opposition	13981 Sep 21 20:00	13° $\mathbf{\text{Y}}$ 45'26	0°35'03
max. Earth dist.	13975 Mar 10 19:59	29° $\mathbf{\text{H}}$ 34'07	31.27647 AU	min. Earth dist.	13981 Sep 22 05:32	13° $\mathbf{\text{Y}}$ 44'46	29.30605 AU
	13975 Mar 22 12:51	0° $\mathbf{\text{Y}}$		direct	13981 Dec 10 18:03	12° $\mathbf{\text{Y}}$ 20'58	
morning rise	13975 Mar 27 05:39	0° $\mathbf{\text{Y}}$ 10'14		evening set	13982 Mar 10 14:05	14° $\mathbf{\text{Y}}$ 15'29	
retrograde	13975 Jun 23 09:25	2° $\mathbf{\text{Y}}$ 03'25					
opposition	13975 Sep 09 06:56	0° $\mathbf{\text{Y}}$ 40'45	0°36'48	conjunction	13982 Mar 26 14:07	14° $\mathbf{\text{Y}}$ 50'41	0°32'37
min. Earth dist.	13975 Sep 09 15:29	0° $\mathbf{\text{Y}}$ 40'09	29.27932 AU	minimum elong	13982 Mar 26 14:07	14° $\mathbf{\text{Y}}$ 50'41	0°32'28
	13975 Oct 04 19:50	30° $\mathbf{\text{R}}$ $\mathbf{\text{H}}$		max. Earth dist.	13982 Mar 26 02:41	14° $\mathbf{\text{Y}}$ 49'38	31.30908 AU
direct	13975 Nov 27 22:53	29° $\mathbf{\text{H}}$ 16'26		morning rise	13982 Apr 11 12:16	15° $\mathbf{\text{Y}}$ 25'46	
	13976 Jan 19 12:57	0° $\mathbf{\text{Y}}$		retrograde	13982 Jul 08 06:13	17° $\mathbf{\text{Y}}$ 18'27	
evening set	13976 Feb 25 16:01	1° $\mathbf{\text{Y}}$ 11'00		opposition	13982 Sep 24 06:14	15° $\mathbf{\text{Y}}$ 55'51	0°34'35
				min. Earth dist.	13982 Sep 24 16:54	15° $\mathbf{\text{Y}}$ 55'07	29.31260 AU
conjunction	13976 Mar 12 17:24	1° $\mathbf{\text{Y}}$ 46'21	0°34'23	direct	13982 Dec 13 04:28	14° $\mathbf{\text{Y}}$ 31'25	
minimum elong	13976 Mar 12 17:24	1° $\mathbf{\text{Y}}$ 46'21	0°34'28	evening set	13983 Mar 13 01:33	16° $\mathbf{\text{Y}}$ 25'57	
max. Earth dist.	13976 Mar 12 08:03	1° $\mathbf{\text{Y}}$ 45'29	31.28154 AU				
morning rise	13976 Mar 28 17:03	2° $\mathbf{\text{Y}}$ 21'34		conjunction	13983 Mar 29 01:24	17° $\mathbf{\text{Y}}$ 01'09	0°32'10

minimum elong	13983 Mar 29 01:24	17° $\Upsilon$ 01'09	0°31'57	opposition	13989 Oct 09 06:53	1° $\mathcal{B}$ 09'34	0°29'58
max. Earth dist.	13983 Mar 28 14:09	17° $\Upsilon$ 00'07	31.31585 AU	min. Earth dist.	13989 Oct 09 20:29	1° $\mathcal{B}$ 08'38	29.33806 AU
morning rise	13983 Apr 13 23:16	17° $\Upsilon$ 36'12			13989 Nov 27 18:31	30° $\mathcal{R}\Upsilon$	
retrograde	13983 Jul 10 17:01	19° $\Upsilon$ 28'51		direct	13989 Dec 28 09:59	29° $\Upsilon$ 45'12	
opposition	13983 Sep 26 16:29	18° $\Upsilon$ 06'19	0°34'04		13990 Jan 27 17:41	0° $\mathcal{B}$	
min. Earth dist.	13983 Sep 27 02:39	18° $\Upsilon$ 05'37	29.31926 AU	evening set	13990 Mar 28 09:28	1° $\mathcal{B}$ 39'49	
direct	13983 Dec 15 17:00	16° $\Upsilon$ 41'55					
evening set	13984 Mar 14 12:58	18° $\Upsilon$ 36'29		conjunction	13990 Apr 13 07:28	2° $\mathcal{B}$ 14'54	0°27'43
				minimum elong	13990 Apr 13 07:28	2° $\mathcal{B}$ 14'54	0°27'15
conjunction	13984 Mar 30 12:28	19° $\Upsilon$ 11'40	0°31'39	max. Earth dist.	13990 Apr 12 16:48	2° $\mathcal{B}$ 13'32	31.33774 AU
minimum elong	13984 Mar 30 12:29	19° $\Upsilon$ 11'40	0°31'25	morning rise	13990 Apr 29 03:24	2° $\mathcal{B}$ 49'49	
max. Earth dist.	13984 Mar 30 00:10	19° $\Upsilon$ 10'32	31.32230 AU	retrograde	13990 Jul 25 15:27	4° $\mathcal{B}$ 42'18	
morning rise	13984 Apr 15 10:09	19° $\Upsilon$ 46'42		opposition	13990 Oct 11 17:12	3° $\mathcal{B}$ 19'53	0°29'08
retrograde	13984 Jul 12 04:28	21° $\Upsilon$ 39'21		min. Earth dist.	13990 Oct 12 06:03	3° $\mathcal{B}$ 19'00	29.33760 AU
opposition	13984 Sep 28 02:50	20° $\Upsilon$ 16'51	0°33'30	direct	13990 Dec 30 22:27	1° $\mathcal{B}$ 55'30	
min. Earth dist.	13984 Sep 28 13:51	20° $\Upsilon$ 16'05	29.32548 AU	evening set	13991 Mar 30 20:37	3° $\mathcal{B}$ 50'06	
direct	13984 Dec 17 03:32	18° $\Upsilon$ 52'30					
evening set	13985 Mar 17 00:27	20° $\Upsilon$ 47'05		conjunction	13991 Apr 15 18:19	4° $\mathcal{B}$ 25'10	0°26'55
				minimum elong	13991 Apr 15 18:20	4° $\mathcal{B}$ 25'10	0°26'24
conjunction	13985 Apr 01 23:51	21° $\Upsilon$ 22'15	0°31'06	max. Earth dist.	13991 Apr 15 03:35	4° $\mathcal{B}$ 23'48	31.33718 AU
minimum elong	13985 Apr 01 23:51	21° $\Upsilon$ 22'15	0°30'49	morning rise	13991 May 01 13:56	5° $\mathcal{B}$ 00'04	
max. Earth dist.	13985 Apr 01 11:59	21° $\Upsilon$ 21'09	31.32801 AU	retrograde	13991 Jul 28 01:30	6° $\mathcal{B}$ 52'32	
morning rise	13985 Apr 17 21:06	21° $\Upsilon$ 57'16		opposition	13991 Oct 14 03:43	5° $\mathcal{B}$ 30'06	0°28'16
retrograde	13985 Jul 14 13:27	23° $\Upsilon$ 49'53		min. Earth dist.	13991 Oct 14 17:30	5° $\mathcal{B}$ 29'09	29.33725 AU
opposition	13985 Sep 30 13:07	22° $\Upsilon$ 27'26	0°32'53	direct	13992 Jan 02 08:50	4° $\mathcal{B}$ 05'42	
min. Earth dist.	13985 Oct 01 00:35	22° $\Upsilon$ 26'39	29.33053 AU	evening set	13992 Apr 01 07:29	6° $\mathcal{B}$ 00'17	
direct	13985 Dec 19 15:35	21° $\Upsilon$ 03'06					
evening set	13986 Mar 19 12:07	22° $\Upsilon$ 57'42		conjunction	13992 Apr 17 05:00	6° $\mathcal{B}$ 35'20	0°26'05
				minimum elong	13992 Apr 17 05:00	6° $\mathcal{B}$ 35'20	0°25'33
conjunction	13986 Apr 04 11:05	23° $\Upsilon$ 32'51	0°30'31	max. Earth dist.	13992 Apr 16 14:50	6° $\mathcal{B}$ 34'02	31.33708 AU
minimum elong	13986 Apr 04 11:05	23° $\Upsilon$ 32'51	0°30'12	morning rise	13992 May 03 00:19	7° $\mathcal{B}$ 10'14	
max. Earth dist.	13986 Apr 03 21:36	23° $\Upsilon$ 31'37	31.33246 AU	retrograde	13992 Jul 29 11:53	9° $\mathcal{B}$ 02'39	
morning rise	13986 Apr 20 08:12	24° $\Upsilon$ 07'51		opposition	13992 Oct 15 14:09	7° $\mathcal{B}$ 40'14	0°27'21
retrograde	13986 Jul 16 23:44	26° $\Upsilon$ 00'27		min. Earth dist.	13992 Oct 16 03:06	7° $\mathcal{B}$ 39'21	29.33740 AU
opposition	13986 Oct 02 23:33	24° $\Upsilon$ 38'02	0°32'13	direct	13993 Jan 03 21:50	6° $\mathcal{B}$ 15'50	
min. Earth dist.	13986 Oct 03 11:15	24° $\Upsilon$ 37'14	29.33438 AU	evening set	13993 Apr 03 18:35	8° $\mathcal{B}$ 10'26	
direct	13986 Dec 22 01:42	23° $\Upsilon$ 13'42					
evening set	13987 Mar 21 23:26	25° $\Upsilon$ 08'19		conjunction	13993 Apr 19 15:43	8° $\mathcal{B}$ 45'28	0°25'13
				minimum elong	13993 Apr 19 15:43	8° $\mathcal{B}$ 45'28	0°24'38
conjunction	13987 Apr 06 22:17	25° $\Upsilon$ 43'27	0°29'52	max. Earth dist.	13993 Apr 19 00:49	8° $\mathcal{B}$ 44'05	31.33767 AU
minimum elong	13987 Apr 06 22:17	25° $\Upsilon$ 43'27	0°29'30	morning rise	13993 May 05 10:49	9° $\mathcal{B}$ 20'20	
max. Earth dist.	13987 Apr 06 09:26	25° $\Upsilon$ 42'16	31.33553 AU	retrograde	13993 Jul 31 23:36	11° $\mathcal{B}$ 12'45	
morning rise	13987 Apr 22 18:56	26° $\Upsilon$ 18'26		opposition	13993 Oct 18 00:34	9° $\mathcal{B}$ 50'21	0°26'24
retrograde	13987 Jul 19 08:06	28° $\Upsilon$ 11'00		min. Earth dist.	13993 Oct 18 13:43	9° $\mathcal{B}$ 49'27	29.33858 AU
opposition	13987 Oct 05 10:05	26° $\Upsilon$ 48'37	0°31'31	direct	13994 Jan 06 08:54	8° $\mathcal{B}$ 25'58	
min. Earth dist.	13987 Oct 05 22:48	26° $\Upsilon$ 47'44	29.33674 AU	evening set	13994 Apr 06 05:31	10° $\mathcal{B}$ 20'35	
direct	13987 Dec 24 12:32	25° $\Upsilon$ 24'17					
evening set	13988 Mar 23 10:55	27° $\Upsilon$ 18'54		conjunction	13994 Apr 22 02:31	10° $\mathcal{B}$ 55'37	0°24'18
				minimum elong	13994 Apr 22 02:31	10° $\mathcal{B}$ 55'37	0°23'42
conjunction	13988 Apr 08 09:22	27° $\Upsilon$ 54'01	0°29'11	max. Earth dist.	13994 Apr 21 12:44	10° $\mathcal{B}$ 54'21	31.33931 AU
minimum elong	13988 Apr 08 09:22	27° $\Upsilon$ 54'01	0°28'48	morning rise	13994 May 07 21:12	11° $\mathcal{B}$ 30'29	
max. Earth dist.	13988 Apr 07 19:05	27° $\Upsilon$ 52'42	31.33733 AU	retrograde	13994 Aug 03 08:24	13° $\mathcal{B}$ 22'55	
morning rise	13988 Apr 24 05:54	28° $\Upsilon$ 28'59		opposition	13994 Oct 20 11:09	12° $\mathcal{B}$ 00'33	0°25'24
	13988 Jun 14 22:00	0° $\mathcal{B}$		min. Earth dist.	13994 Oct 21 00:12	11° $\mathcal{B}$ 59'39	29.34051 AU
retrograde	13988 Jul 20 19:07	0° $\mathcal{B}$ 21'31		direct	13995 Jan 08 21:02	10° $\mathcal{B}$ 36'13	
	13988 Aug 26 11:26	30° $\mathcal{R}\Upsilon$		evening set	13995 Apr 08 16:25	12° $\mathcal{B}$ 30'51	
opposition	13988 Oct 06 20:22	28° $\Upsilon$ 59'08	0°30'46				
min. Earth dist.	13988 Oct 07 08:38	28° $\Upsilon$ 58'17	29.33794 AU	conjunction	13995 Apr 24 12:57	13° $\mathcal{B}$ 05'52	0°23'21
direct	13988 Dec 25 22:34	27° $\Upsilon$ 34'47		minimum elong	13995 Apr 24 12:57	13° $\mathcal{B}$ 05'52	0°22'43
evening set	13989 Mar 25 22:12	29° $\Upsilon$ 29'24		max. Earth dist.	13995 Apr 23 22:16	13° $\mathcal{B}$ 04'31	31.34160 AU
	13989 Apr 08 19:54	0° $\mathcal{B}$		morning rise	13995 May 10 07:31	13° $\mathcal{B}$ 40'43	
					13995 Jun 21 20:51	15° $\mathcal{B}$	
conjunction	13989 Apr 10 20:32	0° $\mathcal{B}$ 04'30	0°28'28	retrograde	13995 Aug 05 18:41	15° $\mathcal{B}$ 33'11	
minimum elong	13989 Apr 10 20:32	0° $\mathcal{B}$ 04'30	0°28'02		13995 Sep 20 23:39	15° $\mathcal{R}\mathcal{B}$	
max. Earth dist.	13989 Apr 10 06:28	0° $\mathcal{B}$ 03'12	31.33791 AU	opposition	13995 Oct 22 21:44	14° $\mathcal{B}$ 10'52	0°24'22
morning rise	13989 Apr 26 16:40	0° $\mathcal{B}$ 39'27		min. Earth dist.	13995 Oct 23 10:26	14° $\mathcal{B}$ 10'00	29.34298 AU
retrograde	13989 Jul 23 04:17	2° $\mathcal{B}$ 31'58		direct	13996 Jan 11 07:06	12° $\mathcal{B}$ 46'34	



evening set	13996 Apr 10 03:17	14°841'15		behind sun begin	14002 May 09 13:20	28°819'37	
	13996 Apr 18 16:29	15°8		behind sun end	14002 May 09 17:58	28°820'02	
				max. Earth dist.	14002 May 08 23:37	28°818'20	31.33619 AU
conjunction	13996 Apr 25 23:43	15°816'15	0°22'23	morning rise	14002 May 25 08:16	28°854'35	
minimum elong	13996 Apr 25 23:43	15°816'15	0°21'43		14002 Jun 27 18:40	0°II	
max. Earth dist.	13996 Apr 25 10:06	15°815'00	31.34400 AU	retrograde	14002 Aug 20 19:19	0°II47'10	
morning rise	13996 May 11 17:50	15°851'06			14002 Oct 16 00:05	30°R8	
retrograde	13996 Aug 07 03:17	17°843'35		opposition	14002 Nov 07 01:43	29°824'53	0°16'15
opposition	13996 Oct 24 08:20	16°821'19	0°23'18	min. Earth dist.	14002 Nov 07 16:09	29°823'53	29.33366 AU
min. Earth dist.	13996 Oct 24 21:53	16°820'23	29.34517 AU	direct	14003 Jan 26 13:13	28°800'37	
	13996 Dec 30 04:27	15°R8		evening set	14003 Apr 26 07:37	29°855'18	
direct	13997 Jan 12 17:34	14°857'04			14003 Apr 28 11:26	0°II	
	13997 Jan 26 03:06	15°8		max. Earth dist.	14003 May 11 11:09	0°II28'50	31.33069 AU
evening set	13997 Apr 12 14:21	16°851'46					
				conjunction	14003 May 12 02:04	0°II30'12	0°14'43
conjunction	13997 Apr 28 10:22	17°826'46	0°21'22	minimum elong	14003 May 12 02:04	0°II30'12	0°13'51
minimum elong	13997 Apr 28 10:22	17°826'46	0°20'39	behind sun begin	14003 May 11 22:41	0°II29'54	
max. Earth dist.	13997 Apr 27 19:39	17°825'24	31.34593 AU	behind sun end	14003 May 12 05:28	0°II30'30	
morning rise	13997 May 14 04:22	18°801'36		morning rise	14003 May 27 18:18	1°II04'58	
retrograde	13997 Aug 09 14:30	19°854'07		retrograde	14003 Aug 23 04:03	2°II57'33	
opposition	13997 Oct 26 19:02	18°831'53	0°22'12	opposition	14003 Nov 09 12:46	1°II35'13	0°15'00
min. Earth dist.	13997 Oct 27 07:52	18°831'01	29.34663 AU	min. Earth dist.	14003 Nov 10 03:12	1°II34'13	29.32789 AU
direct	13998 Jan 15 03:38	17°807'40		direct	14004 Jan 29 02:03	0°II10'55	
evening set	13998 Apr 15 01:19	19°802'23		evening set	14004 Apr 27 18:23	2°II05'34	
conjunction	13998 Apr 30 21:06	19°837'22	0°20'19	conjunction	14004 May 13 12:23	2°II40'28	0°13'32
minimum elong	13998 Apr 30 21:06	19°837'22	0°19'35	minimum elong	14004 May 13 12:23	2°II40'28	0°12'39
max. Earth dist.	13998 Apr 30 06:43	19°836'03	31.34671 AU	behind sun begin	14004 May 13 08:15	2°II40'06	
morning rise	13998 May 16 14:40	20°812'12		behind sun end	14004 May 13 16:30	2°II40'50	
retrograde	13998 Aug 11 23:19	22°804'45		max. Earth dist.	14004 May 12 20:37	2°II39'01	31.32496 AU
opposition	13998 Oct 29 05:58	20°842'32	0°21'04	morning rise	14004 May 29 04:31	3°II15'13	
min. Earth dist.	13998 Oct 29 20:04	20°841'34	29.34684 AU	retrograde	14004 Aug 24 14:41	5°II07'48	
direct	13999 Jan 17 14:26	19°818'20		opposition	14004 Nov 10 23:38	3°II45'26	0°13'43
evening set	13999 Apr 17 12:19	21°813'04		min. Earth dist.	14004 Nov 11 13:28	3°II44'29	29.32238 AU
				direct	14005 Jan 30 13:02	2°II21'06	
conjunction	13999 May 03 07:46	21°848'02	0°19'15	evening set	14005 Apr 30 04:58	4°II15'46	
minimum elong	13999 May 03 07:46	21°848'02	0°18'29				
max. Earth dist.	13999 May 02 16:52	21°846'39	31.34631 AU	conjunction	14005 May 15 22:50	4°II50'39	0°12'20
morning rise	13999 May 19 01:08	22°822'51		minimum elong	14005 May 15 22:51	4°II50'39	0°11'25
retrograde	13999 Aug 14 10:17	24°815'24		behind sun begin	14005 May 15 18:08	4°II50'14	
opposition	13999 Oct 31 16:47	22°853'12	0°19'54	behind sun end	14005 May 16 03:33	4°II51'05	
min. Earth dist.	13999 Nov 01 06:09	22°852'17	29.34566 AU	max. Earth dist.	14005 May 15 08:25	4°II49'19	31.31965 AU
direct	14000 Jan 20 01:55	21°829'00		morning rise	14005 May 31 14:33	5°II25'23	
evening set	14000 Apr 18 23:12	23°823'44		retrograde	14005 Aug 26 23:26	7°II18'01	
				opposition	14005 Nov 13 10:48	5°II55'37	0°12'25
conjunction	14000 May 04 18:23	23°858'42	0°18'09	min. Earth dist.	14005 Nov 14 00:59	5°II54'39	29.31743 AU
minimum elong	14000 May 04 18:23	23°858'42	0°17'22	direct	14006 Feb 02 00:25	4°II31'19	
max. Earth dist.	14000 May 04 03:05	23°857'17	31.34433 AU	evening set	14006 May 02 15:34	6°II25'58	
morning rise	14000 May 20 11:29	24°833'30					
retrograde	14000 Aug 15 20:48	26°826'05		conjunction	14006 May 18 09:01	7°II00'51	0°11'06
opposition	14000 Nov 02 03:49	25°803'51	0°18'43	minimum elong	14006 May 18 09:01	7°II00'51	0°10'11
min. Earth dist.	14000 Nov 02 18:20	25°802'52	29.34299 AU	behind sun begin	14006 May 18 03:50	7°II00'23	
direct	14001 Jan 21 12:02	23°839'38		behind sun end	14006 May 18 14:11	7°II01'18	
evening set	14001 Apr 21 10:08	25°834'22		max. Earth dist.	14006 May 17 18:10	6°II59'28	31.31520 AU
				morning rise	14006 Jun 03 00:36	7°II35'35	
conjunction	14001 May 07 05:07	26°809'18	0°17'02	retrograde	14006 Aug 29 10:24	9°II28'15	
minimum elong	14001 May 07 05:06	26°809'18	0°16'12	opposition	14006 Nov 15 21:52	8°II05'52	0°11'06
max. Earth dist.	14001 May 06 14:04	26°807'55	31.34094 AU	min. Earth dist.	14006 Nov 16 10:39	8°II05'00	29.31338 AU
morning rise	14001 May 22 21:53	26°844'05		direct	14007 Feb 04 10:58	6°II41'35	
retrograde	14001 Aug 18 07:24	28°836'40		evening set	14007 May 05 02:05	8°II36'16	
opposition	14001 Nov 04 14:40	27°814'25	0°17'30				
min. Earth dist.	14001 Nov 05 04:46	27°813'27	29.33880 AU	conjunction	14007 May 20 19:20	9°II11'09	0°09'52
direct	14002 Jan 24 01:38	25°850'11		minimum elong	14007 May 20 19:21	9°II11'09	0°08'55
evening set	14002 Apr 23 21:05	27°844'54		behind sun begin	14007 May 20 13:47	9°II10'39	
				behind sun end	14007 May 21 00:54	9°II11'38	
conjunction	14002 May 09 15:39	28°819'49	0°15'53	max. Earth dist.	14007 May 20 05:20	9°II09'51	31.31147 AU
minimum elong	14002 May 09 15:39	28°819'49	0°15'03	morning rise	14007 Jun 05 10:35	9°II45'53	

retrograde	14007 Aug 31 19:31	11°II38'38		minimum elong	14013 Jun 02 09:29	22°II16'36	0°01'08
opposition	14007 Nov 18 09:04	10°II16'16	0°09'46	behind sun begin	14013 Jun 02 03:02	22°II16'02	
min. Earth dist.	14007 Nov 18 22:36	10°II15'20	29.30997 AU	behind sun end	14013 Jun 02 15:56	22°II17'11	
direct	14008 Feb 06 21:07	8°II52'01		max. Earth dist.	14013 Jun 01 19:16	22°II15'17	31.28109 AU
evening set	14008 May 06 12:36	10°II46'44		morning rise	14013 Jun 17 23:31	22°II51'20	
				retrograde	14013 Sep 13 15:22	24°II44'33	
conjunction	14008 May 22 05:35	11°II21'37	0°08'37	opposition	14013 Dec 01 05:40	23°II22'13	0°01'30
minimum elong	14008 May 22 05:35	11°II21'37	0°07'39	min. Earth dist.	14013 Dec 01 18:12	23°II21'22	29.27671 AU
behind sun begin	14008 May 21 23:43	11°II21'05		direct	14014 Feb 19 18:08	21°II58'07	
behind sun end	14008 May 22 11:27	11°II22'08		evening set	14014 May 20 04:23	23°II52'59	
max. Earth dist.	14008 May 21 15:44	11°II20'20	31.30827 AU				
morning rise	14008 Jun 06 20:41	11°II56'21		conjunction	14014 Jun 04 19:50	24°II27'50	0°00'49
retrograde	14008 Sep 02 06:36	13°II49'11		minimum elong	14014 Jun 04 19:51	24°II27'50	0°00'14
opposition	14008 Nov 19 20:14	12°II26'51	0°08'25	behind sun begin	14014 Jun 04 13:28	24°II27'16	
min. Earth dist.	14008 Nov 20 08:39	12°II26'00	29.30662 AU	behind sun end	14014 Jun 05 02:14	24°II28'24	
direct	14009 Feb 08 07:57	11°II02'39		max. Earth dist.	14014 Jun 04 06:41	24°II26'37	31.27177 AU
evening set	14009 May 08 23:16	12°II57'25		morning rise	14014 Jun 20 09:30	25°II02'33	
				retrograde	14014 Sep 16 01:03	26°II55'50	
conjunction	14009 May 24 15:55	13°II32'17	0°07'21	opposition	14014 Dec 03 17:25	25°II33'26	0°00'07
minimum elong	14009 May 24 15:55	13°II32'17	0°06'22	min. Earth dist.	14014 Dec 04 06:36	25°II32'32	29.26679 AU
behind sun begin	14009 May 24 09:49	13°II31'45		desc. node	14015 Jan 03 17:37	24°II45'40	
behind sun end	14009 May 24 22:02	13°II32'50		direct	14015 Feb 22 06:47	24°II09'19	
max. Earth dist.	14009 May 24 01:59	13°II31'00	31.30472 AU	evening set	14015 May 22 14:58	26°II04'09	
morning rise	14009 Jun 09 06:46	14°II07'01					
retrograde	14009 Sep 04 17:39	15°II59'57		conjunction	14015 Jun 07 06:06	26°II38'59	-0°00'32
opposition	14009 Nov 22 07:35	14°II37'39	0°07'03	minimum elong	14015 Jun 07 06:05	26°II38'59	0°01'35
min. Earth dist.	14009 Nov 22 20:48	14°II36'44	29.30290 AU	behind sun begin	14015 Jun 06 23:38	26°II38'25	
direct	14010 Feb 10 17:15	13°II13'29		behind sun end	14015 Jun 07 12:32	26°II39'34	
evening set	14010 May 11 09:53	15°II08'18		max. Earth dist.	14015 Jun 06 16:24	26°II37'43	31.26152 AU
				morning rise	14015 Jun 22 19:43	27°II13'43	
conjunction	14010 May 27 02:22	15°II43'10	0°06'05	retrograde	14015 Sep 18 11:53	29°II07'02	
minimum elong	14010 May 27 02:21	15°II43'10	0°05'05	opposition	14015 Dec 06 04:56	27°II44'34	-0°01'16
behind sun begin	14010 May 26 20:04	15°II42'36		min. Earth dist.	14015 Dec 06 16:55	27°II43'45	29.25623 AU
behind sun end	14010 May 27 08:38	15°II43'43		direct	14016 Feb 24 18:32	26°II20'23	
max. Earth dist.	14010 May 26 13:08	15°II41'56	31.30064 AU	evening set	14016 May 24 01:20	28°II15'12	
morning rise	14010 Jun 11 16:53	16°II17'54					
retrograde	14010 Sep 07 05:02	18°II10'54		conjunction	14016 Jun 08 16:19	28°II50'02	-0°01'51
opposition	14010 Nov 24 19:02	16°II48'37	0°05'40	minimum elong	14016 Jun 08 16:19	28°II50'02	0°02'54
min. Earth dist.	14010 Nov 25 07:35	16°II47'46	29.29826 AU	behind sun begin	14016 Jun 08 09:53	28°II49'27	
direct	14011 Feb 13 06:26	15°II24'31		behind sun end	14016 Jun 08 22:45	28°II50'36	
evening set	14011 May 13 20:30	17°II19'21		max. Earth dist.	14016 Jun 08 03:21	28°II48'50	31.25075 AU
				morning rise	14016 Jun 24 05:42	29°II24'45	
conjunction	14011 May 29 12:34	17°II54'12	0°04'47		14016 Jul 11 00:15	0°☾	
minimum elong	14011 May 29 12:34	17°II54'12	0°03'47	retrograde	14016 Sep 19 20:16	1°☾18'07	
behind sun begin	14011 May 29 06:10	17°II53'38			14016 Dec 04 23:48	30°☿II	
behind sun end	14011 May 29 18:58	17°II54'47		opposition	14016 Dec 07 16:41	29°II55'34	-0°02'40
max. Earth dist.	14011 May 28 22:29	17°II52'54	31.29546 AU	min. Earth dist.	14016 Dec 08 05:17	29°II54'43	29.24555 AU
morning rise	14011 Jun 14 03:00	18°II28'56		direct	14017 Feb 26 05:24	28°II31'22	
retrograde	14011 Sep 09 18:05	20°II22'02			14017 May 14 04:50	0°☾	
opposition	14011 Nov 27 06:35	18°II59'44	0°04'17	evening set	14017 May 26 11:43	0°☾26'08	
min. Earth dist.	14011 Nov 27 19:21	18°II58'52	29.29255 AU				
direct	14012 Feb 15 17:44	17°II35'39		conjunction	14017 Jun 11 02:27	1°☾00'58	-0°03'09
evening set	14012 May 15 07:06	19°II30'31		minimum elong	14017 Jun 11 02:26	1°☾00'58	0°04'13
				behind sun begin	14017 Jun 10 20:05	1°☾00'24	
conjunction	14012 May 30 23:04	20°II05'22	0°03'29	behind sun end	14017 Jun 11 08:47	1°☾01'32	
minimum elong	14012 May 30 23:05	20°II05'22	0°02'29	max. Earth dist.	14017 Jun 10 14:00	0°☾59'49	31.24033 AU
behind sun begin	14012 May 30 16:38	20°II04'48		morning rise	14017 Jun 26 15:39	1°☾35'41	
behind sun end	14012 May 31 05:32	20°II05'57		retrograde	14017 Sep 22 06:31	3°☾29'05	
max. Earth dist.	14012 May 30 09:58	20°II04'10	31.28900 AU	opposition	14017 Dec 10 04:19	2°☾06'29	-0°04'03
morning rise	14012 Jun 15 13:10	20°II40'06		min. Earth dist.	14017 Dec 10 15:22	2°☾05'44	29.23546 AU
retrograde	14012 Sep 11 03:33	22°II33'16		direct	14018 Feb 28 16:34	0°☾42'15	
opposition	14012 Nov 28 18:04	21°II10'58	0°02'54	evening set	14018 May 28 22:09	2°☾37'00	
min. Earth dist.	14012 Nov 29 07:03	21°II10'05	29.28530 AU				
direct	14013 Feb 17 06:12	19°II46'53		conjunction	14018 Jun 13 12:34	3°☾11'50	-0°04'26
evening set	14013 May 17 17:55	21°II41'45		minimum elong	14018 Jun 13 12:34	3°☾11'50	0°05'30
				behind sun begin	14018 Jun 13 06:20	3°☾11'16	
conjunction	14013 Jun 02 09:29	22°II16'36	0°02'10	behind sun end	14018 Jun 13 18:47	3°☾12'23	

max. Earth dist.	14018 Jun 13 00:26	3°☾10'42	31.23072 AU	conjunction	14024 Jun 26 01:47	16°☾19'22	-0°11'59
morning rise	14018 Jun 29 01:37	3°☾46'33		minimum elong	14024 Jun 26 01:47	16°☾19'22	0°13'02
retrograde	14018 Sep 24 17:25	5°☾40'03		behind sun begin	14024 Jun 25 21:51	16°☾19'00	
opposition	14018 Dec 12 16:11	4°☾17'23	-0°05'25	behind sun end	14024 Jun 26 05:42	16°☾19'43	
min. Earth dist.	14018 Dec 13 03:24	4°☾16'37	29.22651 AU	max. Earth dist.	14024 Jun 25 16:25	16°☾18'30	31.18464 AU
direct	14019 Mar 03 02:06	2°☾53'09		morning rise	14024 Jul 11 14:03	16°☾54'07	
evening set	14019 May 31 08:18	4°☾47'54		retrograde	14024 Oct 07 15:14	18°☾48'15	
				opposition	14024 Dec 25 16:03	17°☾25'31	-0°13'30
conjunction	14019 Jun 15 22:37	5°☾22'43	-0°05'43	min. Earth dist.	14024 Dec 26 00:02	17°☾24'58	29.18010 AU
minimum elong	14019 Jun 15 22:38	5°☾22'43	0°06'47	direct	14025 Mar 16 01:10	16°☾01'28	
behind sun begin	14019 Jun 15 16:37	5°☾22'11		evening set	14025 Jun 12 23:08	17°☾56'21	
behind sun end	14019 Jun 16 04:39	5°☾23'16					
max. Earth dist.	14019 Jun 15 11:54	5°☾21'44	31.22233 AU	conjunction	14025 Jun 28 12:12	18°☾31'12	-0°13'12
morning rise	14019 Jul 01 11:28	5°☾57'27		minimum elong	14025 Jun 28 12:12	18°☾31'11	0°14'15
retrograde	14019 Sep 27 04:15	7°☾51'02		behind sun begin	14025 Jun 28 09:04	18°☾30'55	
opposition	14019 Dec 15 03:57	6°☾28'21	-0°06'48	behind sun end	14025 Jun 28 15:20	18°☾31'28	
min. Earth dist.	14019 Dec 15 13:58	6°☾27'40	29.21848 AU	max. Earth dist.	14025 Jun 28 03:17	18°☾30'22	31.17507 AU
direct	14020 Mar 04 14:50	5°☾04'08		morning rise	14025 Jul 14 00:16	19°☾05'58	
evening set	14020 Jun 01 18:45	6°☾58'54		retrograde	14025 Oct 10 00:58	21°☾00'12	
				opposition	14025 Dec 28 04:27	19°☾37'26	-0°14'47
conjunction	14020 Jun 17 08:44	7°☾33'43	-0°06'59	min. Earth dist.	14025 Dec 28 13:15	19°☾36'50	29.16996 AU
minimum elong	14020 Jun 17 08:44	7°☾33'43	0°08'03	direct	14026 Mar 18 12:18	18°☾13'24	
behind sun begin	14020 Jun 17 02:58	7°☾33'12		evening set	14026 Jun 15 09:45	20°☾08'17	
behind sun end	14020 Jun 17 14:29	7°☾34'14					
max. Earth dist.	14020 Jun 16 21:34	7°☾32'41	31.21473 AU	conjunction	14026 Jun 30 22:39	20°☾43'08	-0°14'24
morning rise	14020 Jul 02 21:33	8°☾08'26		minimum elong	14026 Jun 30 22:40	20°☾43'08	0°15'26
retrograde	14020 Sep 28 17:05	10°☾02'07		behind sun begin	14026 Jun 30 20:42	20°☾42'57	
opposition	14020 Dec 16 15:42	8°☾39'26	-0°08'10	behind sun end	14026 Jul 01 00:37	20°☾43'18	
min. Earth dist.	14020 Dec 17 01:26	8°☾38'46	29.21123 AU	max. Earth dist.	14026 Jun 30 14:02	20°☾42'20	31.16441 AU
direct	14021 Mar 07 01:00	7°☾15'14		morning rise	14026 Jul 16 10:39	21°☾17'54	
evening set	14021 Jun 04 05:06	9°☾10'02		retrograde	14026 Oct 12 12:05	23°☾12'14	
				opposition	14026 Dec 30 16:45	21°☾49'26	-0°16'03
conjunction	14021 Jun 19 19:01	9°☾44'51	-0°08'15	min. Earth dist.	14026 Dec 31 00:19	21°☾48'55	29.15865 AU
minimum elong	14021 Jun 19 19:01	9°☾44'51	0°09'19	direct	14027 Mar 20 23:53	20°☾25'24	
behind sun begin	14021 Jun 19 13:35	9°☾44'22		evening set	14027 Jun 17 20:15	22°☾20'16	
behind sun end	14021 Jun 20 00:27	9°☾45'21					
max. Earth dist.	14021 Jun 19 09:24	9°☾43'58	31.20762 AU	conjunction	14027 Jul 03 08:59	22°☾55'07	-0°15'35
morning rise	14021 Jul 05 07:32	10°☾19'35		minimum elong	14027 Jul 03 08:59	22°☾55'07	0°16'36
retrograde	14021 Oct 01 03:22	12°☾13'23		max. Earth dist.	14027 Jul 03 00:14	22°☾54'18	31.15258 AU
opposition	14021 Dec 19 03:43	10°☾50'41	-0°09'31	morning rise	14027 Jul 18 20:58	23°☾29'54	
min. Earth dist.	14021 Dec 19 13:12	10°☾50'02	29.20410 AU	retrograde	14027 Oct 14 23:20	25°☾24'20	
direct	14022 Mar 09 13:07	9°☾26'32		opposition	14028 Jan 02 05:09	24°☾01'27	-0°17'18
evening set	14022 Jun 06 15:31	11°☾21'21		min. Earth dist.	14028 Jan 02 13:16	24°☾00'54	29.14648 AU
				direct	14028 Mar 22 10:00	22°☾37'24	
conjunction	14022 Jun 22 05:04	11°☾56'10	-0°09'31	evening set	14028 Jun 19 06:43	24°☾32'15	
minimum elong	14022 Jun 22 05:04	11°☾56'10	0°10'34				
behind sun begin	14022 Jun 22 00:02	11°☾55'43		conjunction	14028 Jul 04 19:25	25°☾07'05	-0°16'44
behind sun end	14022 Jun 22 10:06	11°☾56'37		minimum elong	14028 Jul 04 19:25	25°☾07'05	0°17'43
max. Earth dist.	14022 Jun 21 18:54	11°☾55'14	31.20052 AU	max. Earth dist.	14028 Jul 04 11:53	25°☾06'23	31.14017 AU
morning rise	14022 Jul 07 17:36	12°☾30'55		morning rise	14028 Jul 20 07:14	25°☾41'53	
retrograde	14022 Oct 03 16:23	14°☾24'49		retrograde	14028 Oct 16 10:06	27°☾36'24	
opposition	14022 Dec 21 15:47	13°☾02'07	-0°10'51	opposition	14029 Jan 03 17:21	26°☾13'27	-0°18'31
min. Earth dist.	14022 Dec 22 00:25	13°☾01'31	29.19689 AU	min. Earth dist.	14029 Jan 04 00:26	26°☾12'58	29.13391 AU
direct	14023 Mar 12 00:52	11°☾38'00		direct	14029 Mar 24 22:51	24°☾49'22	
evening set	14023 Jun 09 01:57	13°☾32'51		evening set	14029 Jun 21 17:16	26°☾44'12	
conjunction	14023 Jun 24 15:27	14°☾07'41	-0°10'46	conjunction	14029 Jul 07 05:40	27°☾19'02	-0°17'51
minimum elong	14023 Jun 24 15:27	14°☾07'41	0°11'49	minimum elong	14029 Jul 07 05:40	27°☾19'02	0°18'51
behind sun begin	14023 Jun 24 10:54	14°☾07'16		max. Earth dist.	14029 Jul 06 21:46	27°☾18'18	31.12776 AU
behind sun end	14023 Jun 24 19:59	14°☾08'05		morning rise	14029 Jul 22 17:33	27°☾53'50	
max. Earth dist.	14023 Jun 24 06:33	14°☾06'52	31.19295 AU	retrograde	14029 Oct 18 23:04	29°☾48'28	
morning rise	14023 Jul 10 03:43	14°☾42'26		opposition	14030 Jan 06 05:48	28°☾25'26	-0°19'43
retrograde	14023 Oct 06 03:15	16°☾36'27		min. Earth dist.	14030 Jan 06 12:21	28°☾24'59	29.12193 AU
opposition	14023 Dec 24 03:53	15°☾13'44	-0°12'11	direct	14030 Mar 27 08:52	27°☾01'19	
min. Earth dist.	14023 Dec 24 13:06	15°☾13'06	29.18897 AU	evening set	14030 Jun 24 03:31	28°☾56'10	
direct	14024 Mar 13 13:14	13°☾49'40					
evening set	14024 Jun 10 12:34	15°☾44'32		conjunction	14030 Jul 09 15:56	29°☾31'00	-0°18'57

minimum elong	14030 Jul 09 15:56	29° $\overline{29}$ 31'00	0°19'56	retrograde	14036 Nov 03 10:09	15° $\Omega$ 16'04	
max. Earth dist.	14030 Jul 09 09:53	29° $\overline{29}$ 30'26	31.11616 AU		14036 Dec 05 06:28	15° $\overline{R}$ $\Omega$	
	14030 Jul 22 12:42	0° $\Omega$		opposition	14037 Jan 21 21:54	13° $\Omega$ 52'51	-0°27'12
morning rise	14030 Jul 25 03:36	0° $\Omega$ 05'48		min. Earth dist.	14037 Jan 22 00:40	13° $\Omega$ 52'40	29.05897 AU
retrograde	14030 Oct 21 09:34	2° $\Omega$ 00'32		direct	14037 Apr 11 19:55	12° $\Omega$ 28'58	
opposition	14031 Jan 08 18:15	0° $\Omega$ 37'27	-0°20'53	evening set	14037 Jul 09 05:31	14° $\Omega$ 23'52	
min. Earth dist.	14031 Jan 09 00:10	0° $\Omega$ 37'03	29.11084 AU				
	14031 Feb 01 09:51	30° $\overline{R}$ $\overline{29}$		conjunction	14037 Jul 24 17:18	14° $\Omega$ 58'46	-0°25'51
direct	14031 Mar 29 20:54	29° $\overline{29}$ 13'21		minimum elong	14037 Jul 24 17:18	14° $\Omega$ 58'46	0°26'40
	14031 May 22 22:34	0° $\Omega$		max. Earth dist.	14037 Jul 24 15:17	14° $\Omega$ 58'35	31.05409 AU
evening set	14031 Jun 26 14:01	1° $\Omega$ 08'11			14037 Jul 25 06:25	15° $\Omega$	
				morning rise	14037 Aug 09 04:54	15° $\Omega$ 33'41	
conjunction	14031 Jul 12 02:10	1° $\Omega$ 43'02	-0°20'02	retrograde	14037 Nov 05 21:02	17° $\Omega$ 29'16	
minimum elong	14031 Jul 12 02:10	1° $\Omega$ 43'02	0°20'59	opposition	14038 Jan 24 10:51	16° $\Omega$ 06'01	-0°28'07
max. Earth dist.	14031 Jul 11 19:54	1° $\Omega$ 42'27	31.10573 AU	min. Earth dist.	14038 Jan 24 12:42	16° $\Omega$ 05'53	29.04904 AU
morning rise	14031 Jul 27 13:58	2° $\Omega$ 17'51			14038 Mar 11 16:15	15° $\overline{R}$ $\Omega$	
retrograde	14031 Oct 23 23:23	4° $\Omega$ 12'41		direct	14038 Apr 14 08:28	14° $\Omega$ 42'08	
opposition	14032 Jan 11 06:31	2° $\Omega$ 49'34	-0°22'01		14038 May 17 03:27	15° $\Omega$	
min. Earth dist.	14032 Jan 11 11:12	2° $\Omega$ 49'15	29.10103 AU	evening set	14038 Jul 11 16:22	16° $\Omega$ 37'01	
direct	14032 Mar 31 08:55	1° $\Omega$ 25'29					
evening set	14032 Jun 28 00:25	3° $\Omega$ 20'20		conjunction	14038 Jul 27 03:57	17° $\Omega$ 11'56	-0°26'41
				minimum elong	14038 Jul 27 03:57	17° $\Omega$ 11'56	0°27'29
conjunction	14032 Jul 13 12:36	3° $\Omega$ 55'12	-0°21'05	max. Earth dist.	14038 Jul 27 01:10	17° $\Omega$ 11'40	31.04358 AU
minimum elong	14032 Jul 13 12:36	3° $\Omega$ 55'12	0°22'01	morning rise	14038 Aug 11 15:45	17° $\Omega$ 46'52	
max. Earth dist.	14032 Jul 13 07:56	3° $\Omega$ 54'46	31.09638 AU	retrograde	14038 Nov 08 10:07	19° $\Omega$ 42'34	
morning rise	14032 Jul 29 00:14	4° $\Omega$ 30'01		opposition	14039 Jan 26 23:52	18° $\Omega$ 19'14	-0°29'00
retrograde	14032 Oct 25 11:11	6° $\Omega$ 24'59		min. Earth dist.	14039 Jan 27 01:38	18° $\Omega$ 19'07	29.03798 AU
opposition	14033 Jan 12 19:06	5° $\Omega$ 01'50	-0°23'07	direct	14039 Apr 16 18:24	16° $\Omega$ 55'21	
min. Earth dist.	14033 Jan 12 23:53	5° $\Omega$ 01'30	29.09211 AU	evening set	14039 Jul 14 03:10	18° $\Omega$ 50'13	
direct	14033 Apr 02 21:31	3° $\Omega$ 37'48					
evening set	14033 Jun 30 10:53	5° $\Omega$ 32'40		conjunction	14039 Jul 29 14:55	19° $\Omega$ 25'08	-0°27'30
				minimum elong	14039 Jul 29 14:55	19° $\Omega$ 25'08	0°28'16
conjunction	14033 Jul 15 22:52	6° $\Omega$ 07'31	-0°22'06	max. Earth dist.	14039 Jul 29 13:25	19° $\Omega$ 24'59	31.03185 AU
minimum elong	14033 Jul 15 22:52	6° $\Omega$ 07'31	0°23'02	morning rise	14039 Aug 14 02:36	20° $\Omega$ 00'04	
max. Earth dist.	14033 Jul 15 18:20	6° $\Omega$ 07'06	31.08793 AU	retrograde	14039 Nov 10 21:14	21° $\Omega$ 55'52	
morning rise	14033 Jul 31 10:35	6° $\Omega$ 42'22		opposition	14040 Jan 29 12:42	20° $\Omega$ 32'27	-0°29'50
retrograde	14033 Oct 27 23:37	8° $\Omega$ 37'27		min. Earth dist.	14040 Jan 29 14:20	20° $\Omega$ 32'21	29.02562 AU
opposition	14034 Jan 15 07:38	7° $\Omega$ 14'18	-0°24'12	direct	14040 Apr 18 07:10	19° $\Omega$ 08'32	
min. Earth dist.	14034 Jan 15 10:45	7° $\Omega$ 14'05	29.08391 AU	evening set	14040 Jul 15 14:07	21° $\Omega$ 03'23	
direct	14034 Apr 05 09:28	5° $\Omega$ 50'18					
evening set	14034 Jul 02 21:25	7° $\Omega$ 45'11		conjunction	14040 Jul 31 01:42	21° $\Omega$ 38'18	-0°28'15
				minimum elong	14040 Jul 31 01:42	21° $\Omega$ 38'18	0°29'00
conjunction	14034 Jul 18 09:21	8° $\Omega$ 20'03	-0°23'06	max. Earth dist.	14040 Jul 30 23:35	21° $\Omega$ 38'06	31.01917 AU
minimum elong	14034 Jul 18 09:21	8° $\Omega$ 20'03	0°24'00	morning rise	14040 Aug 15 13:37	22° $\Omega$ 13'15	
max. Earth dist.	14034 Jul 18 05:38	8° $\Omega$ 19'43	31.07986 AU	retrograde	14040 Nov 12 11:14	24° $\Omega$ 09'07	
morning rise	14034 Aug 02 21:00	8° $\Omega$ 54'55		opposition	14041 Jan 31 01:39	22° $\Omega$ 45'37	-0°30'38
retrograde	14034 Oct 30 10:26	10° $\Omega$ 50'08		min. Earth dist.	14041 Jan 31 02:25	22° $\Omega$ 45'34	29.01270 AU
opposition	14035 Jan 17 20:24	9° $\Omega$ 26'58	-0°25'14	direct	14041 Apr 20 19:10	21° $\Omega$ 21'40	
min. Earth dist.	14035 Jan 17 23:59	9° $\Omega$ 26'43	29.07599 AU	evening set	14041 Jul 18 00:46	23° $\Omega$ 16'28	
direct	14035 Apr 07 21:06	8° $\Omega$ 03'01					
evening set	14035 Jul 05 07:57	9° $\Omega$ 57'54		conjunction	14041 Aug 02 12:26	23° $\Omega$ 51'24	-0°28'58
				minimum elong	14041 Aug 02 12:26	23° $\Omega$ 51'24	0°29'41
conjunction	14035 Jul 20 19:51	10° $\Omega$ 32'47	-0°24'03	max. Earth dist.	14041 Aug 02 11:48	23° $\Omega$ 51'20	31.00608 AU
minimum elong	14035 Jul 20 19:51	10° $\Omega$ 32'47	0°24'55	morning rise	14041 Aug 18 00:17	24° $\Omega$ 26'22	
max. Earth dist.	14035 Jul 20 16:49	10° $\Omega$ 32'30	31.07194 AU	retrograde	14041 Nov 14 22:52	26° $\Omega$ 22'19	
morning rise	14035 Aug 05 07:31	11° $\Omega$ 07'40		opposition	14042 Feb 02 14:44	24° $\Omega$ 58'43	-0°31'22
retrograde	14035 Nov 01 22:47	13° $\Omega$ 03'00		min. Earth dist.	14042 Feb 02 15:37	24° $\Omega$ 58'39	28.99974 AU
opposition	14036 Jan 20 09:04	11° $\Omega$ 39'49	-0°26'14	direct	14042 Apr 23 07:51	23° $\Omega$ 34'44	
min. Earth dist.	14036 Jan 20 11:16	11° $\Omega$ 39'40	29.06780 AU	evening set	14042 Jul 20 11:34	25° $\Omega$ 29'31	
direct	14036 Apr 09 09:31	10° $\Omega$ 15'54					
evening set	14036 Jul 06 18:45	12° $\Omega$ 10'48		conjunction	14042 Aug 04 23:10	26° $\Omega$ 04'27	-0°29'39
				minimum elong	14042 Aug 04 23:10	26° $\Omega$ 04'27	0°30'20
conjunction	14036 Jul 22 06:28	12° $\Omega$ 45'42	-0°24'58	max. Earth dist.	14042 Aug 04 22:45	26° $\Omega$ 04'24	30.99351 AU
minimum elong	14036 Jul 22 06:28	12° $\Omega$ 45'42	0°25'49	morning rise	14042 Aug 20 11:12	26° $\Omega$ 39'26	
max. Earth dist.	14036 Jul 22 03:19	12° $\Omega$ 45'24	31.06339 AU	retrograde	14042 Nov 17 12:02	28° $\Omega$ 35'29	
morning rise	14036 Aug 06 18:11	13° $\Omega$ 20'36		opposition	14043 Feb 05 03:33	27° $\Omega$ 11'48	-0°32'04
	14036 Oct 03 07:28	15° $\Omega$		min. Earth dist.	14043 Feb 05 02:42	27° $\Omega$ 11'51	28.98763 AU

direct	14043 Apr 25 20:10	25° $\Omega$ 47'48	minimum elong	14049 Aug 20 03:42	11° $\Pi$ 39'19	0°33'33
evening set	14043 Jul 22 22:18	27° $\Omega$ 42'33	max. Earth dist.	14049 Aug 20 07:31	11° $\Pi$ 39'41	30.92969 AU
			morning rise	14049 Sep 04 16:37	12° $\Pi$ 14'28	
conjunction	14043 Aug 07 09:56	28° $\Omega$ 17'30 -0°30'17	retrograde	14049 Dec 03 03:13	14° $\Pi$ 11'25	
minimum elong	14043 Aug 07 09:56	28° $\Omega$ 17'30 0°30'56	opposition	14050 Feb 20 23:00	12° $\Pi$ 47'32	-0°35'35
max. Earth dist.	14043 Aug 07 10:25	28° $\Omega$ 17'33 30.98181 AU	min. Earth dist.	14050 Feb 20 18:11	12° $\Pi$ 47'52	28.92547 AU
morning rise	14043 Aug 22 22:02	28° $\Omega$ 52'30	direct	14050 May 11 05:12	11° $\Pi$ 23'47	
	14043 Sep 25 20:31	0° $\Pi$	evening set	14050 Aug 07 03:03	13° $\Pi$ 18'37	
retrograde	14043 Nov 19 23:47	0° $\Pi$ 48'40				
	14044 Jan 16 16:40	30° $\kappa$ $\Omega$	conjunction	14050 Aug 22 15:08	13° $\Pi$ 53'41	-0°33'24
opposition	14044 Feb 07 16:35	29° $\Omega$ 24'55 -0°32'43	minimum elong	14050 Aug 22 15:08	13° $\Pi$ 53'41	0°33'49
min. Earth dist.	14044 Feb 07 15:56	29° $\Omega$ 24'58 28.97656 AU	max. Earth dist.	14050 Aug 22 20:03	13° $\Pi$ 54'08	30.92072 AU
direct	14044 Apr 27 08:29	28° $\Omega$ 00'56	morning rise	14050 Sep 07 04:06	14° $\Pi$ 28'51	
evening set	14044 Jul 24 09:03	29° $\Omega$ 55'41	retrograde	14050 Dec 05 15:21	16° $\Pi$ 25'54	
	14044 Jul 26 07:37	0° $\Pi$	opposition	14051 Feb 23 12:16	15° $\Pi$ 01'59	-0°35'52
			min. Earth dist.	14051 Feb 23 07:58	15° $\Pi$ 02'16	28.91603 AU
conjunction	14044 Aug 08 20:45	0° $\Pi$ 30'39 -0°30'52	direct	14051 May 13 16:57	13° $\Pi$ 38'13	
minimum elong	14044 Aug 08 20:45	0° $\Pi$ 30'39 0°31'29	evening set	14051 Aug 09 14:23	15° $\Pi$ 33'03	
max. Earth dist.	14044 Aug 08 22:12	0° $\Pi$ 30'47 30.97137 AU				
morning rise	14044 Aug 24 08:53	1° $\Pi$ 05'40	conjunction	14051 Aug 25 02:32	16° $\Pi$ 08'07	-0°33'39
retrograde	14044 Nov 21 12:43	3° $\Pi$ 01'56	minimum elong	14051 Aug 25 02:32	16° $\Pi$ 08'07	0°34'01
opposition	14045 Feb 09 05:25	1° $\Pi$ 38'10 -0°33'20	max. Earth dist.	14051 Aug 25 07:06	16° $\Pi$ 08'33	30.91083 AU
min. Earth dist.	14045 Feb 09 03:00	1° $\Pi$ 38'20 28.96662 AU	morning rise	14051 Sep 09 15:46	16° $\Pi$ 43'19	
direct	14045 Apr 29 21:25	0° $\Pi$ 14'12	retrograde	14051 Dec 08 05:39	18° $\Pi$ 40'27	
evening set	14045 Jul 26 19:57	2° $\Pi$ 08'58	opposition	14052 Feb 26 01:29	17° $\Pi$ 16'28	-0°36'07
			min. Earth dist.	14052 Feb 25 19:58	17° $\Pi$ 16'50	28.90557 AU
conjunction	14045 Aug 11 07:34	2° $\Pi$ 43'57 -0°31'25	direct	14052 May 15 05:36	15° $\Pi$ 52'41	
minimum elong	14045 Aug 11 07:34	2° $\Pi$ 43'57 0°32'00	evening set	14052 Aug 11 01:38	17° $\Pi$ 47'28	
max. Earth dist.	14045 Aug 11 09:16	2° $\Pi$ 44'06 30.96197 AU				
morning rise	14045 Aug 26 19:55	3° $\Pi$ 19'00	conjunction	14052 Aug 26 13:54	18° $\Pi$ 22'34	-0°33'51
retrograde	14045 Nov 24 00:22	5° $\Pi$ 15'24	minimum elong	14052 Aug 26 13:54	18° $\Pi$ 22'34	0°34'11
opposition	14046 Feb 11 18:32	3° $\Pi$ 51'36 -0°33'53	max. Earth dist.	14052 Aug 26 18:53	18° $\Pi$ 23'02	30.89983 AU
min. Earth dist.	14046 Feb 11 16:15	3° $\Pi$ 51'45 28.95780 AU	morning rise	14052 Sep 11 03:18	18° $\Pi$ 57'47	
direct	14046 May 02 07:56	2° $\Pi$ 27'41	retrograde	14052 Dec 09 18:40	20° $\Pi$ 54'59	
evening set	14046 Jul 29 06:37	4° $\Pi$ 22'27	opposition	14053 Feb 27 14:48	19° $\Pi$ 30'53	-0°36'18
			min. Earth dist.	14053 Feb 27 09:56	19° $\Pi$ 31'14	28.89429 AU
conjunction	14046 Aug 13 18:27	4° $\Pi$ 57'26 -0°31'55	direct	14053 May 17 19:02	18° $\Pi$ 07'05	
minimum elong	14046 Aug 13 18:27	4° $\Pi$ 57'26 0°32'27	evening set	14053 Aug 13 12:51	20° $\Pi$ 01'49	
max. Earth dist.	14046 Aug 13 21:46	4° $\Pi$ 57'45 30.95358 AU				
morning rise	14046 Aug 29 06:49	5° $\Pi$ 32'31	conjunction	14053 Aug 29 01:18	20° $\Pi$ 36'56	-0°34'00
retrograde	14046 Nov 26 11:30	7° $\Pi$ 29'03	minimum elong	14053 Aug 29 01:18	20° $\Pi$ 36'56	0°34'17
opposition	14047 Feb 14 07:32	6° $\Pi$ 05'14 -0°34'23	max. Earth dist.	14053 Aug 29 06:59	20° $\Pi$ 37'28	30.88853 AU
min. Earth dist.	14047 Feb 14 04:01	6° $\Pi$ 05'29 28.94963 AU	morning rise	14053 Sep 13 14:52	21° $\Pi$ 12'09	
direct	14047 May 04 20:14	4° $\Pi$ 41'22	retrograde	14053 Dec 12 08:22	23° $\Pi$ 09'25	
evening set	14047 Jul 31 17:42	6° $\Pi$ 36'10	opposition	14054 Mar 02 03:56	21° $\Pi$ 45'13	-0°36'25
			min. Earth dist.	14054 Mar 01 21:32	21° $\Pi$ 45'40	28.88299 AU
conjunction	14047 Aug 16 05:25	7° $\Pi$ 11'10 -0°32'22	direct	14054 May 20 09:00	20° $\Pi$ 21'22	
minimum elong	14047 Aug 16 05:26	7° $\Pi$ 11'10 0°32'52	evening set	14054 Aug 16 00:02	22° $\Pi$ 16'03	
max. Earth dist.	14047 Aug 16 08:16	7° $\Pi$ 11'26 30.94564 AU				
morning rise	14047 Aug 31 18:05	7° $\Pi$ 46'16	conjunction	14054 Aug 31 12:32	22° $\Pi$ 51'10	-0°34'06
retrograde	14047 Nov 29 00:54	9° $\Pi$ 42'57	minimum elong	14054 Aug 31 12:32	22° $\Pi$ 51'10	0°34'21
opposition	14048 Feb 16 20:31	8° $\Pi$ 19'07 -0°34'50	max. Earth dist.	14054 Aug 31 18:20	22° $\Pi$ 51'43	30.87742 AU
min. Earth dist.	14048 Feb 16 16:48	8° $\Pi$ 19'23 28.94188 AU	morning rise	14054 Sep 16 02:25	23° $\Pi$ 26'26	
direct	14048 May 06 05:30	6° $\Pi$ 55'18	retrograde	14054 Dec 14 19:55	25° $\Pi$ 23'45	
evening set	14048 Aug 02 04:42	8° $\Pi$ 50'06	opposition	14055 Mar 04 17:10	23° $\Pi$ 59'27	-0°36'30
			min. Earth dist.	14055 Mar 04 11:04	23° $\Pi$ 59'52	28.87235 AU
conjunction	14048 Aug 17 16:39	9° $\Pi$ 25'08 -0°32'46	direct	14055 May 22 20:27	22° $\Pi$ 35'34	
minimum elong	14048 Aug 17 16:39	9° $\Pi$ 25'08 0°33'14	evening set	14055 Aug 18 11:12	24° $\Pi$ 30'12	
max. Earth dist.	14048 Aug 17 21:01	9° $\Pi$ 25'33 30.93783 AU				
morning rise	14048 Sep 02 05:16	10° $\Pi$ 00'16	conjunction	14055 Sep 02 24:00	25° $\Pi$ 05'20	-0°34'09
retrograde	14048 Nov 30 12:38	11° $\Pi$ 57'05	minimum elong	14055 Sep 02 24:00	25° $\Pi$ 05'20	0°34'21
opposition	14049 Feb 18 09:43	10° $\Pi$ 33'14 -0°35'14	max. Earth dist.	14055 Sep 03 07:21	25° $\Pi$ 06'02	30.86728 AU
min. Earth dist.	14049 Feb 18 05:39	10° $\Pi$ 33'31 28.93389 AU	morning rise	14055 Sep 18 13:57	25° $\Pi$ 40'36	
direct	14049 May 08 17:59	9° $\Pi$ 09'27	retrograde	14055 Dec 17 07:30	27° $\Pi$ 37'58	
evening set	14049 Aug 04 15:50	11° $\Pi$ 04'17	opposition	14056 Mar 06 06:06	26° $\Pi$ 13'36	-0°36'32
			min. Earth dist.	14056 Mar 05 22:40	26° $\Pi$ 14'07	28.86278 AU
conjunction	14049 Aug 20 03:42	11° $\Pi$ 39'19 -0°33'07	direct	14056 May 24 10:00	24° $\Pi$ 49'42	

evening set	14056 Aug 19 22:33	26° <del>17</del> 44'18	max. Earth dist.	14062 Sep 18 20:09	10° <del>4</del> 47'18	30.82838 AU
			morning rise	14062 Oct 04 00:54	11° <del>4</del> 21'43	
conjunction	14056 Sep 04 11:19	27° <del>17</del> 19'27 -0°34'09	retrograde	14063 Jan 02 04:10	13° <del>4</del> 19'41	
minimum elong	14056 Sep 04 11:19	27° <del>17</del> 19'27 0°34'19	opposition	14063 Mar 23 02:08	11° <del>4</del> 55'10 -0°35'08	
max. Earth dist.	14056 Sep 04 18:23	27° <del>17</del> 20'07 30.85841 AU	min. Earth dist.	14063 Mar 22 14:58	11° <del>4</del> 55'56 28.82625 AU	
morning rise	14056 Sep 20 01:39	27° <del>17</del> 54'45	direct	14063 Jun 09 20:31	10° <del>4</del> 31'26	
retrograde	14056 Dec 18 20:48	29° <del>17</del> 52'11	evening set	14063 Sep 05 07:01	12° <del>4</del> 26'03	
opposition	14057 Mar 08 19:17	28° <del>17</del> 27'45 -0°36'30				
min. Earth dist.	14057 Mar 08 11:24	28° <del>17</del> 28'17 28.85473 AU	conjunction	14063 Sep 20 21:11	13° <del>4</del> 01'20 -0°32'42	
direct	14057 May 26 20:32	27° <del>17</del> 03'50	minimum elong	14063 Sep 20 21:11	13° <del>4</del> 01'20 0°32'33	
evening set	14057 Aug 22 09:38	28° <del>17</del> 58'25	max. Earth dist.	14063 Sep 21 07:41	13° <del>4</del> 02'19 30.82355 AU	
			morning rise	14063 Oct 06 13:15	13° <del>4</del> 36'49	
conjunction	14057 Sep 06 22:44	29° <del>17</del> 33'34 -0°34'06	retrograde	14064 Jan 04 17:10	15° <del>4</del> 34'50	
minimum elong	14057 Sep 06 22:44	29° <del>17</del> 33'34 0°34'13	opposition	14064 Mar 24 15:21	14° <del>4</del> 10'18 -0°34'43	
max. Earth dist.	14057 Sep 07 07:37	29° <del>17</del> 34'25 30.85105 AU	min. Earth dist.	14064 Mar 24 05:04	14° <del>4</del> 11'00 28.82104 AU	
	14057 Sep 18 13:45	0° <del>4</del>	direct	14064 Jun 11 08:06	12° <del>4</del> 46'35	
morning rise	14057 Sep 22 13:07	0° <del>4</del> 08'54	evening set	14064 Sep 06 18:50	14° <del>4</del> 41'10	
retrograde	14057 Dec 21 07:43	2° <del>4</del> 06'25				
opposition	14058 Mar 11 08:26	0° <del>4</del> 41'56 -0°36'25	conjunction	14064 Sep 22 09:24	15° <del>4</del> 16'28 -0°32'17	
min. Earth dist.	14058 Mar 10 23:47	0° <del>4</del> 42'32 28.84802 AU	minimum elong	14064 Sep 22 09:24	15° <del>4</del> 16'28 0°32'07	
	14058 Apr 06 19:27	30° <del>4</del>	max. Earth dist.	14064 Sep 22 20:51	15° <del>4</del> 17'33 30.81794 AU	
direct	14058 May 29 09:19	29° <del>17</del> 18'03	morning rise	14064 Oct 08 01:37	15° <del>4</del> 51'58	
	14058 Jul 18 18:26	0° <del>4</del>	retrograde	14065 Jan 06 06:30	17° <del>4</del> 50'02	
evening set	14058 Aug 24 21:02	1° <del>4</del> 12'36	opposition	14065 Mar 27 04:34	16° <del>4</del> 25'27 -0°34'15	
			min. Earth dist.	14065 Mar 26 17:25	16° <del>4</del> 26'13 28.81496 AU	
conjunction	14058 Sep 09 10:11	1° <del>4</del> 47'47 -0°34'00	direct	14065 Jun 13 22:20	15° <del>4</del> 01'44	
minimum elong	14058 Sep 09 10:11	1° <del>4</del> 47'47 0°34'05	evening set	14065 Sep 09 06:38	16° <del>4</del> 56'16	
max. Earth dist.	14058 Sep 09 18:46	1° <del>4</del> 48'36 30.84510 AU				
morning rise	14058 Sep 25 00:59	2° <del>4</del> 23'08	conjunction	14065 Sep 24 21:17	17° <del>4</del> 31'36 -0°31'49	
retrograde	14058 Dec 23 21:20	4° <del>4</del> 20'44	minimum elong	14065 Sep 24 21:18	17° <del>4</del> 31'36 0°31'36	
opposition	14059 Mar 13 21:25	2° <del>4</del> 56'14 -0°36'16	max. Earth dist.	14065 Sep 25 07:59	17° <del>4</del> 32'37 30.81167 AU	
min. Earth dist.	14059 Mar 13 11:51	2° <del>4</del> 56'54 28.84272 AU	morning rise	14065 Oct 10 14:00	18° <del>4</del> 07'08	
direct	14059 May 31 19:37	1° <del>4</del> 32'22	retrograde	14066 Jan 08 20:11	20° <del>4</del> 05'14	
evening set	14059 Aug 27 08:23	3° <del>4</del> 26'55	opposition	14066 Mar 29 17:47	18° <del>4</del> 40'35 -0°33'44	
			min. Earth dist.	14066 Mar 29 06:49	18° <del>4</del> 41'21 28.80864 AU	
conjunction	14059 Sep 11 21:51	4° <del>4</del> 02'08 -0°33'50	direct	14066 Jun 16 09:46	17° <del>4</del> 16'50	
minimum elong	14059 Sep 11 21:51	4° <del>4</del> 02'08 0°33'53	evening set	14066 Sep 11 18:23	19° <del>4</del> 11'20	
max. Earth dist.	14059 Sep 12 07:53	4° <del>4</del> 03'05 30.84023 AU				
morning rise	14059 Sep 27 12:47	4° <del>4</del> 37'30	conjunction	14066 Sep 27 09:29	19° <del>4</del> 46'41 -0°31'19	
retrograde	14059 Dec 26 09:21	6° <del>4</del> 35'11	minimum elong	14066 Sep 27 09:29	19° <del>4</del> 46'41 0°31'04	
opposition	14060 Mar 15 10:36	5° <del>4</del> 10'41 -0°36'04	max. Earth dist.	14066 Sep 27 21:34	19° <del>4</del> 47'50 30.80537 AU	
min. Earth dist.	14060 Mar 15 01:13	5° <del>4</del> 11'20 28.83826 AU	morning rise	14066 Oct 13 02:20	20° <del>4</del> 22'14	
direct	14060 Jun 02 06:46	3° <del>4</del> 46'51	retrograde	14067 Jan 11 06:56	22° <del>4</del> 20'21	
evening set	14060 Aug 28 19:50	5° <del>4</del> 41'25	opposition	14067 Apr 01 06:42	20° <del>4</del> 55'39 -0°33'09	
			min. Earth dist.	14067 Mar 31 19:19	20° <del>4</del> 56'26 28.80253 AU	
conjunction	14060 Sep 13 09:24	6° <del>4</del> 16'38 -0°33'38	direct	14067 Jun 18 23:02	19° <del>4</del> 31'53	
minimum elong	14060 Sep 13 09:25	6° <del>4</del> 16'38 0°33'38	evening set	14067 Sep 14 06:18	21° <del>4</del> 26'21	
max. Earth dist.	14060 Sep 13 19:28	6° <del>4</del> 17'35 30.83618 AU				
morning rise	14060 Sep 29 00:39	6° <del>4</del> 52'02	conjunction	14067 Sep 29 21:30	22° <del>4</del> 01'42 -0°30'45	
retrograde	14060 Dec 28 00:00	8° <del>4</del> 49'49	minimum elong	14067 Sep 29 21:30	22° <del>4</del> 01'42 0°30'28	
opposition	14061 Mar 17 23:43	7° <del>4</del> 25'19 -0°35'49	max. Earth dist.	14067 Sep 30 09:00	22° <del>4</del> 02'48 30.79969 AU	
min. Earth dist.	14061 Mar 17 13:00	7° <del>4</del> 26'03 28.83441 AU	morning rise	14067 Oct 15 14:48	22° <del>4</del> 37'17	
direct	14061 Jun 04 18:47	6° <del>4</del> 01'32	retrograde	14068 Jan 13 20:02	24° <del>4</del> 35'25	
evening set	14061 Aug 31 07:26	7° <del>4</del> 56'07	opposition	14068 Apr 02 19:43	23° <del>4</del> 10'39 -0°32'32	
			min. Earth dist.	14068 Apr 02 07:36	23° <del>4</del> 11'30 28.79739 AU	
conjunction	14061 Sep 15 21:13	8° <del>4</del> 31'21 -0°33'22	direct	14068 Jun 20 09:41	21° <del>4</del> 46'52	
minimum elong	14061 Sep 15 21:13	8° <del>4</del> 31'21 0°33'19	evening set	14068 Sep 15 17:58	23° <del>4</del> 41'18	
max. Earth dist.	14061 Sep 16 07:48	8° <del>4</del> 32'21 30.83234 AU				
morning rise	14061 Oct 01 12:42	9° <del>4</del> 06'47	conjunction	14068 Oct 01 09:32	24° <del>4</del> 16'41 -0°30'09	
retrograde	14061 Dec 30 13:41	11° <del>4</del> 04'40	minimum elong	14068 Oct 01 09:32	24° <del>4</del> 16'41 0°29'50	
opposition	14062 Mar 20 13:00	9° <del>4</del> 40'09 -0°35'30	max. Earth dist.	14068 Oct 01 22:29	24° <del>4</del> 17'55 30.79503 AU	
min. Earth dist.	14062 Mar 20 03:00	9° <del>4</del> 40'51 28.83060 AU	morning rise	14068 Oct 17 02:58	24° <del>4</del> 52'16	
direct	14062 Jun 07 07:05	8° <del>4</del> 16'25	retrograde	14069 Jan 15 07:42	26° <del>4</del> 50'27	
evening set	14062 Sep 02 19:06	10° <del>4</del> 11'00	opposition	14069 Apr 05 08:46	25° <del>4</del> 25'39 -0°31'52	
			min. Earth dist.	14069 Apr 04 20:43	25° <del>4</del> 26'29 28.79341 AU	
conjunction	14062 Sep 18 09:10	10° <del>4</del> 46'16 -0°33'04	direct	14069 Jun 22 20:52	24° <del>4</del> 01'51	
minimum elong	14062 Sep 18 09:10	10° <del>4</del> 46'16 0°32'58	evening set	14069 Sep 18 05:50	25° <del>4</del> 56'16	

conjunction	14069 Oct 03 21:37	26° <u>♂</u> 31'39	-0°29'30	retrograde	14076 Feb 01 06:53	12° <u>♂</u> 37'17	
minimum elong	14069 Oct 03 21:37	26° <u>♂</u> 31'39	0°29'08	opposition	14076 Apr 21 03:04	11° <u>♂</u> 12'29	-0°25'50
max. Earth dist.	14069 Oct 04 10:33	26° <u>♂</u> 32'53	30.79186 AU	min. Earth dist.	14076 Apr 20 13:11	11° <u>♂</u> 13'27	28.79377 AU
morning rise	14069 Oct 19 15:27	27° <u>♂</u> 07'16		direct	14076 Jul 08 11:50	9° <u>♂</u> 48'48	
retrograde	14070 Jan 17 21:25	29° <u>♂</u> 05'29		evening set	14076 Oct 03 18:53	11° <u>♂</u> 43'11	
opposition	14070 Apr 07 21:36	27° <u>♂</u> 40'39	-0°31'09				
min. Earth dist.	14070 Apr 07 08:13	27° <u>♂</u> 41'35	28.79099 AU	conjunction	14076 Oct 19 12:38	12° <u>♂</u> 18'43	-0°23'44
direct	14070 Jun 25 08:49	26° <u>♂</u> 16'51		minimum elong	14076 Oct 19 12:38	12° <u>♂</u> 18'43	0°23'07
evening set	14070 Sep 20 17:41	28° <u>♂</u> 11'15		max. Earth dist.	14076 Oct 20 02:32	12° <u>♂</u> 20'01	30.79340 AU
				morning rise	14076 Nov 04 08:42	12° <u>♂</u> 54'28	
conjunction	14070 Oct 06 09:46	28° <u>♂</u> 46'40	-0°28'49	retrograde	14077 Feb 02 20:58	14° <u>♂</u> 52'49	
minimum elong	14070 Oct 06 09:47	28° <u>♂</u> 46'40	0°28'25	opposition	14077 Apr 23 16:01	13° <u>♂</u> 27'59	-0°24'48
max. Earth dist.	14070 Oct 06 23:25	28° <u>♂</u> 47'57	30.79005 AU	min. Earth dist.	14077 Apr 23 02:03	13° <u>♂</u> 28'58	28.79311 AU
morning rise	14070 Oct 22 03:55	29° <u>♂</u> 22'18		direct	14077 Jul 10 23:38	12° <u>♂</u> 04'17	
	14070 Nov 08 21:26	0° <u>♂</u>		evening set	14077 Oct 06 07:17	13° <u>♂</u> 58'37	
retrograde	14071 Jan 20 10:10	1° <u>♂</u> 20'33					
	14071 Apr 07 20:42	30° <u>♀</u> <u>♂</u>		conjunction	14077 Oct 22 01:29	14° <u>♂</u> 34'11	-0°22'46
opposition	14071 Apr 10 10:36	29° <u>♂</u> 55'42	-0°30'22	minimum elong	14077 Oct 22 01:29	14° <u>♂</u> 34'11	0°22'06
min. Earth dist.	14071 Apr 09 21:42	29° <u>♂</u> 56'36	28.78988 AU	max. Earth dist.	14077 Oct 22 16:11	14° <u>♂</u> 35'34	30.79226 AU
direct	14071 Jun 27 20:25	28° <u>♂</u> 31'55			14077 Nov 02 10:50	15° <u>♂</u>	
	14071 Sep 11 00:41	0° <u>♂</u>		morning rise	14077 Nov 06 21:45	15° <u>♂</u> 09'57	
evening set	14071 Sep 23 05:36	0° <u>♂</u> 26'19		retrograde	14078 Feb 05 08:31	17° <u>♂</u> 08'16	
				opposition	14078 Apr 26 04:47	15° <u>♂</u> 43'24	-0°23'44
conjunction	14071 Oct 08 22:01	1° <u>♂</u> 01'45	-0°28'05	min. Earth dist.	14078 Apr 25 15:31	15° <u>♂</u> 44'19	28.79162 AU
minimum elong	14071 Oct 08 22:01	1° <u>♂</u> 01'45	0°27'37		14078 May 23 10:47	15° <u>♀</u> <u>♂</u>	
max. Earth dist.	14071 Oct 09 12:12	1° <u>♂</u> 03'05	30.78965 AU	direct	14078 Jul 13 11:54	14° <u>♂</u> 19'40	
morning rise	14071 Oct 24 16:25	1° <u>♂</u> 37'24			14078 Aug 31 17:58	15° <u>♂</u>	
retrograde	14072 Jan 23 00:12	3° <u>♂</u> 35'40		evening set	14078 Oct 08 19:42	16° <u>♂</u> 13'57	
opposition	14072 Apr 11 23:21	2° <u>♂</u> 10'50	-0°29'33				
min. Earth dist.	14072 Apr 11 09:03	2° <u>♂</u> 11'50	28.78997 AU	conjunction	14078 Oct 24 14:11	16° <u>♂</u> 49'31	-0°21'45
direct	14072 Jun 29 08:46	0° <u>♂</u> 47'05		minimum elong	14078 Oct 24 14:11	16° <u>♂</u> 49'31	0°21'04
evening set	14072 Sep 24 17:42	2° <u>♂</u> 41'29		max. Earth dist.	14078 Oct 25 04:13	16° <u>♂</u> 50'50	30.79071 AU
				morning rise	14078 Nov 09 10:52	17° <u>♂</u> 25'18	
conjunction	14072 Oct 10 10:17	3° <u>♂</u> 16'56	-0°27'17	retrograde	14079 Feb 07 21:29	19° <u>♂</u> 23'34	
minimum elong	14072 Oct 10 10:17	3° <u>♂</u> 16'56	0°26'49	opposition	14079 Apr 28 17:25	17° <u>♂</u> 58'40	-0°22'37
max. Earth dist.	14072 Oct 11 00:23	3° <u>♂</u> 18'16	30.79022 AU	min. Earth dist.	14079 Apr 28 03:24	17° <u>♂</u> 59'38	28.79001 AU
morning rise	14072 Oct 26 05:05	3° <u>♂</u> 52'37		direct	14079 Jul 16 00:01	16° <u>♂</u> 34'52	
retrograde	14073 Jan 24 14:07	5° <u>♂</u> 50'55		evening set	14079 Oct 11 08:06	18° <u>♂</u> 29'08	
opposition	14073 Apr 14 12:24	4° <u>♂</u> 26'05	-0°28'41				
min. Earth dist.	14073 Apr 13 22:46	4° <u>♂</u> 27'02	28.79101 AU	conjunction	14079 Oct 27 02:52	19° <u>♂</u> 04'42	-0°20'42
direct	14073 Jul 01 20:27	3° <u>♂</u> 02'22		minimum elong	14079 Oct 27 02:52	19° <u>♂</u> 04'42	0°19'58
evening set	14073 Sep 27 05:40	4° <u>♂</u> 56'46		max. Earth dist.	14079 Oct 27 17:17	19° <u>♂</u> 06'04	30.78910 AU
				morning rise	14079 Nov 11 23:48	19° <u>♂</u> 40'31	
conjunction	14073 Oct 12 22:42	5° <u>♂</u> 32'14	-0°26'28	retrograde	14080 Feb 10 09:02	21° <u>♂</u> 38'44	
minimum elong	14073 Oct 12 22:42	5° <u>♂</u> 32'14	0°25'56	opposition	14080 Apr 30 06:04	20° <u>♂</u> 13'48	-0°21'29
max. Earth dist.	14073 Oct 13 13:55	5° <u>♂</u> 33'41	30.79156 AU	min. Earth dist.	14080 Apr 29 16:52	20° <u>♂</u> 14'43	28.78871 AU
morning rise	14073 Oct 28 17:42	6° <u>♂</u> 07'56		direct	14080 Jul 17 11:22	18° <u>♂</u> 49'58	
retrograde	14074 Jan 27 04:45	8° <u>♂</u> 06'16		evening set	14080 Oct 12 20:26	20° <u>♂</u> 44'11	
min. Earth dist.	14074 Apr 16 10:51	6° <u>♂</u> 42'28	28.79236 AU				
opposition	14074 Apr 17 01:17	6° <u>♂</u> 41'28	-0°27'47	conjunction	14080 Oct 28 15:33	21° <u>♂</u> 19'47	-0°19'38
direct	14074 Jul 04 10:47	5° <u>♂</u> 17'46		minimum elong	14080 Oct 28 15:34	21° <u>♂</u> 19'47	0°18'53
evening set	14074 Sep 29 18:06	7° <u>♂</u> 12'10		max. Earth dist.	14080 Oct 29 06:13	21° <u>♂</u> 21'10	30.78829 AU
				morning rise	14080 Nov 13 12:47	21° <u>♂</u> 55'36	
conjunction	14074 Oct 15 11:15	7° <u>♂</u> 47'40	-0°25'36	retrograde	14081 Feb 11 22:37	23° <u>♂</u> 53'47	
minimum elong	14074 Oct 15 11:15	7° <u>♂</u> 47'40	0°25'03	opposition	14081 May 02 18:32	22° <u>♂</u> 28'49	-0°20'19
max. Earth dist.	14074 Oct 16 01:29	7° <u>♂</u> 49'01	30.79285 AU	min. Earth dist.	14081 May 02 04:04	22° <u>♂</u> 29'50	28.78837 AU
morning rise	14074 Oct 31 06:43	8° <u>♂</u> 23'24		direct	14081 Jul 19 23:31	21° <u>♂</u> 04'57	
retrograde	14075 Jan 29 18:39	10° <u>♂</u> 21'45		evening set	14081 Oct 15 08:48	22° <u>♂</u> 59'10	
opposition	14075 Apr 19 14:08	8° <u>♂</u> 56'57	-0°26'50				
min. Earth dist.	14075 Apr 19 00:19	8° <u>♂</u> 57'54	28.79353 AU	conjunction	14081 Oct 31 04:09	23° <u>♂</u> 34'46	-0°18'32
direct	14075 Jul 06 22:20	7° <u>♂</u> 33'16		minimum elong	14081 Oct 31 04:09	23° <u>♂</u> 34'46	0°17'44
evening set	14075 Oct 02 06:27	9° <u>♂</u> 27'40		max. Earth dist.	14081 Oct 31 18:39	23° <u>♂</u> 36'08	30.78848 AU
				morning rise	14081 Nov 16 01:47	24° <u>♂</u> 10'36	
conjunction	14075 Oct 18 00:04	10° <u>♂</u> 03'11	-0°24'41	retrograde	14082 Feb 14 11:47	26° <u>♂</u> 08'46	
minimum elong	14075 Oct 18 00:04	10° <u>♂</u> 03'11	0°24'05	opposition	14082 May 05 07:07	24° <u>♂</u> 43'47	-0°19'07
max. Earth dist.	14075 Oct 18 15:11	10° <u>♂</u> 04'37	30.79360 AU	min. Earth dist.	14082 May 04 17:24	24° <u>♂</u> 44'44	28.78926 AU
morning rise	14075 Nov 02 19:39	10° <u>♂</u> 38'56		direct	14082 Jul 22 11:17	23° <u>♂</u> 19'55	

evening set	14082 Oct 17 21:11	25° <del>11</del> 14'07		max. Earth dist.	14087 Nov 15 00:08	7° <del>27</del> 06'58	30.81404 AU
				morning rise	14087 Nov 30 08:35	7° <del>27</del> 41'30	
conjunction	14082 Nov 02 17:00	25° <del>11</del> 49'44	-0°17'24	retrograde	14088 Feb 28 20:08	9° <del>27</del> 39'32	
minimum elong	14082 Nov 02 17:00	25° <del>11</del> 49'44	0°16'36	opposition	14088 May 18 09:00	8° <del>27</del> 14'46	-0°11'23
max. Earth dist.	14082 Nov 03 08:28	25° <del>11</del> 51'11	30.79005 AU	min. Earth dist.	14088 May 17 18:36	8° <del>27</del> 15'46	28.81674 AU
morning rise	14082 Nov 18 14:48	26° <del>11</del> 25'35		direct	14088 Aug 04 13:22	6° <del>27</del> 51'00	
retrograde	14083 Feb 17 01:48	28° <del>11</del> 23'43		evening set	14088 Oct 31 00:54	8° <del>27</del> 45'17	
opposition	14083 May 07 19:19	26° <del>11</del> 58'44	-0°17'54				
min. Earth dist.	14083 May 07 04:40	26° <del>11</del> 59'45	28.79145 AU	conjunction	14088 Nov 15 22:25	9° <del>27</del> 21'00	-0°10'08
direct	14083 Jul 25 01:08	25° <del>11</del> 34'52		minimum elong	14088 Nov 15 22:26	9° <del>27</del> 21'00	0°09'11
evening set	14083 Oct 20 09:43	27° <del>11</del> 29'04		behind sun begin	14088 Nov 15 16:55	9° <del>27</del> 20'30	
				behind sun end	14088 Nov 16 03:56	9° <del>27</del> 21'30	
conjunction	14083 Nov 05 05:40	28° <del>11</del> 04'43	-0°16'15	max. Earth dist.	14088 Nov 16 13:17	9° <del>27</del> 22'24	30.81892 AU
minimum elong	14083 Nov 05 05:40	28° <del>11</del> 04'43	0°15'24	morning rise	14088 Dec 01 21:59	9° <del>27</del> 56'56	
behind sun begin	14083 Nov 05 03:53	28° <del>11</del> 04'33		retrograde	14089 Mar 02 07:54	11° <del>27</del> 54'55	
behind sun end	14083 Nov 05 07:27	28° <del>11</del> 04'52		opposition	14089 May 20 21:22	10° <del>27</del> 30'10	-0°10'02
max. Earth dist.	14083 Nov 05 20:24	28° <del>11</del> 06'06	30.79296 AU	min. Earth dist.	14089 May 20 08:15	10° <del>27</del> 31'05	28.82121 AU
morning rise	14083 Nov 21 03:55	28° <del>11</del> 40'34		direct	14089 Aug 07 00:10	9° <del>27</del> 06'24	
	14084 Jan 01 12:31	0° <del>27</del>		evening set	14089 Nov 02 13:41	11° <del>27</del> 00'39	
retrograde	14084 Feb 19 15:24	0° <del>27</del> 38'41					
	14084 Apr 10 03:03	30° <del>27</del> 11		conjunction	14089 Nov 18 11:36	11° <del>27</del> 36'23	-0°08'52
opposition	14084 May 09 07:48	29° <del>27</del> 13'44	-0°16'39	minimum elong	14089 Nov 18 11:35	11° <del>27</del> 36'23	0°07'53
min. Earth dist.	14084 May 08 17:28	29° <del>27</del> 14'44	28.79512 AU	behind sun begin	14089 Nov 18 05:44	11° <del>27</del> 35'51	
direct	14084 Jul 26 12:17	27° <del>27</del> 49'53		behind sun end	14089 Nov 18 17:26	11° <del>27</del> 36'54	
evening set	14084 Oct 21 21:59	29° <del>27</del> 44'06		max. Earth dist.	14089 Nov 19 01:56	11° <del>27</del> 37'43	30.82304 AU
	14084 Oct 29 01:06	0° <del>27</del>		morning rise	14089 Dec 04 11:27	12° <del>27</del> 12'19	
				retrograde	14090 Mar 04 21:02	14° <del>27</del> 10'13	
conjunction	14084 Nov 06 18:25	0° <del>27</del> 19'45	-0°15'04	opposition	14090 May 23 09:31	12° <del>27</del> 45'28	-0°08'39
minimum elong	14084 Nov 06 18:25	0° <del>27</del> 19'45	0°14'13	min. Earth dist.	14090 May 22 19:44	12° <del>27</del> 46'26	28.82484 AU
behind sun begin	14084 Nov 06 15:21	0° <del>27</del> 19'29		direct	14090 Aug 09 12:08	11° <del>27</del> 21'39	
behind sun end	14084 Nov 06 21:29	0° <del>27</del> 20'02		evening set	14090 Nov 05 02:37	13° <del>27</del> 15'52	
max. Earth dist.	14084 Nov 07 10:26	0° <del>27</del> 21'16	30.79725 AU				
morning rise	14084 Nov 22 16:48	0° <del>27</del> 55'38		conjunction	14090 Nov 21 00:44	13° <del>27</del> 51'37	-0°07'35
retrograde	14085 Feb 21 04:21	2° <del>27</del> 53'44		minimum elong	14090 Nov 21 00:43	13° <del>27</del> 51'37	0°06'36
opposition	14085 May 11 20:10	1° <del>27</del> 28'49	-0°15'22	behind sun begin	14090 Nov 20 18:36	13° <del>27</del> 51'03	
min. Earth dist.	14085 May 11 05:28	1° <del>27</del> 29'51	28.79990 AU	behind sun end	14090 Nov 21 06:50	13° <del>27</del> 52'10	
direct	14085 Jul 29 01:38	0° <del>27</del> 05'00		max. Earth dist.	14090 Nov 21 14:18	13° <del>27</del> 52'53	30.82631 AU
evening set	14085 Oct 24 10:37	1° <del>27</del> 59'14		morning rise	14090 Dec 07 00:53	14° <del>27</del> 27'34	
				retrograde	14091 Mar 07 08:36	16° <del>27</del> 25'22	
conjunction	14085 Nov 09 07:13	2° <del>27</del> 34'54	-0°13'52	opposition	14091 May 25 21:35	15° <del>27</del> 00'36	-0°07'16
minimum elong	14085 Nov 09 07:13	2° <del>27</del> 34'54	0°12'58	min. Earth dist.	14091 May 25 09:07	15° <del>27</del> 01'28	28.82798 AU
behind sun begin	14085 Nov 09 03:17	2° <del>27</del> 34'33		direct	14091 Aug 11 23:59	13° <del>27</del> 36'43	
behind sun end	14085 Nov 09 11:09	2° <del>27</del> 35'16		evening set	14091 Nov 07 15:20	15° <del>27</del> 30'54	
max. Earth dist.	14085 Nov 09 22:13	2° <del>27</del> 36'19	30.80259 AU				
morning rise	14085 Nov 25 06:05	3° <del>27</del> 10'48		conjunction	14091 Nov 23 13:52	16° <del>27</del> 06'39	-0°06'18
retrograde	14086 Feb 23 19:23	5° <del>27</del> 08'53		minimum elong	14091 Nov 23 13:52	16° <del>27</del> 06'39	0°05'17
opposition	14086 May 14 08:24	3° <del>27</del> 44'01	-0°14'04	behind sun begin	14091 Nov 23 07:33	16° <del>27</del> 06'05	
min. Earth dist.	14086 May 13 17:38	3° <del>27</del> 45'03	28.80561 AU	behind sun end	14091 Nov 23 20:11	16° <del>27</del> 07'13	
direct	14086 Jul 31 13:21	2° <del>27</del> 20'14		max. Earth dist.	14091 Nov 24 03:56	16° <del>27</del> 07'58	30.82949 AU
evening set	14086 Oct 26 23:16	4° <del>27</del> 14'29		morning rise	14091 Dec 09 14:10	16° <del>27</del> 42'35	
				retrograde	14092 Mar 08 21:16	18° <del>27</del> 40'18	
conjunction	14086 Nov 11 20:17	4° <del>27</del> 50'11	-0°12'38	opposition	14092 May 27 09:32	17° <del>27</del> 15'30	-0°05'53
minimum elong	14086 Nov 11 20:17	4° <del>27</del> 50'11	0°11'44	min. Earth dist.	14092 May 26 20:27	17° <del>27</del> 16'25	28.83119 AU
behind sun begin	14086 Nov 11 15:43	4° <del>27</del> 49'46		direct	14092 Aug 13 13:14	15° <del>27</del> 51'34	
behind sun end	14086 Nov 12 00:52	4° <del>27</del> 50'36		evening set	14092 Nov 09 04:01	17° <del>27</del> 45'43	
max. Earth dist.	14086 Nov 12 12:08	4° <del>27</del> 51'41	30.80838 AU				
morning rise	14086 Nov 27 19:17	5° <del>27</del> 26'06		conjunction	14092 Nov 25 02:41	18° <del>27</del> 21'28	-0°05'00
retrograde	14087 Feb 26 07:05	7° <del>27</del> 24'10		minimum elong	14092 Nov 25 02:40	18° <del>27</del> 21'28	0°04'00
opposition	14087 May 16 20:44	5° <del>27</del> 59'21	-0°12'44	behind sun begin	14092 Nov 24 20:13	18° <del>27</del> 20'53	
min. Earth dist.	14087 May 16 06:43	6° <del>27</del> 00'20	28.81137 AU	behind sun end	14092 Nov 25 09:07	18° <del>27</del> 22'02	
direct	14087 Aug 03 01:37	4° <del>27</del> 35'36		max. Earth dist.	14092 Nov 25 15:46	18° <del>27</del> 22'41	30.83295 AU
evening set	14087 Oct 29 12:02	6° <del>27</del> 29'52		morning rise	14092 Dec 11 03:23	18° <del>27</del> 57'24	
				retrograde	14093 Mar 11 10:18	20° <del>27</del> 55'01	
conjunction	14087 Nov 14 09:15	7° <del>27</del> 05'34	-0°11'24	opposition	14093 May 29 21:29	19° <del>27</del> 30'12	-0°04'29
minimum elong	14087 Nov 14 09:15	7° <del>27</del> 05'34	0°10'27	min. Earth dist.	14093 May 29 09:06	19° <del>27</del> 31'04	28.83509 AU
behind sun begin	14087 Nov 14 04:09	7° <del>27</del> 05'07		direct	14093 Aug 16 00:16	18° <del>27</del> 06'11	
behind sun end	14087 Nov 14 14:20	7° <del>27</del> 06'02		evening set	14093 Nov 11 16:40	20° <del>27</del> 00'19	



conjunction	14093 Nov 27 15:47	20° $\nearrow$ 36'04	-0°03'41	behind sun end	14098 Dec 09 15:12	1° $\searrow$ 48'11	
minimum elong	14093 Nov 27 15:47	20° $\nearrow$ 36'04	0°02'39	max. Earth dist.	14098 Dec 09 21:55	1° $\searrow$ 48'50	30.87839 AU
behind sun begin	14093 Nov 27 09:15	20° $\nearrow$ 35'29		morning rise	14098 Dec 25 10:38	2° $\searrow$ 23'34	
behind sun end	14093 Nov 27 22:18	20° $\nearrow$ 36'39		retrograde	14099 Mar 25 14:34	4° $\searrow$ 20'40	
max. Earth dist.	14093 Nov 28 05:52	20° $\nearrow$ 37'23	30.83726 AU	opposition	14099 Jun 12 19:12	2° $\searrow$ 56'05	0°03'58
morning rise	14093 Dec 13 16:34	21° $\nearrow$ 12'01		min. Earth dist.	14099 Jun 12 06:40	2° $\searrow$ 56'58	28.88385 AU
retrograde	14094 Mar 13 22:55	23° $\nearrow$ 09'31		direct	14099 Aug 30 00:44	1° $\searrow$ 32'05	
opposition	14094 Jun 01 09:07	21° $\nearrow$ 44'41	-0°03'05	evening set	14099 Nov 25 21:26	3° $\searrow$ 26'15	
min. Earth dist.	14094 May 31 20:32	21° $\nearrow$ 45'34	28.83990 AU				
direct	14094 Aug 18 14:08	20° $\nearrow$ 20'38		conjunction	14099 Dec 11 21:53	4° $\searrow$ 02'02	0°04'22
evening set	14094 Nov 14 05:30	22° $\nearrow$ 14'45		minimum elong	14099 Dec 11 21:54	4° $\searrow$ 02'02	0°05'26
				behind sun begin	14099 Dec 11 15:35	4° $\searrow$ 01'28	
conjunction	14094 Nov 30 04:44	22° $\nearrow$ 50'30	-0°02'20	behind sun end	14099 Dec 12 04:13	4° $\searrow$ 02'36	
minimum elong	14094 Nov 30 04:43	22° $\nearrow$ 50'30	0°01'19	max. Earth dist.	14099 Dec 12 10:22	4° $\searrow$ 03'12	30.88917 AU
behind sun begin	14094 Nov 29 22:11	22° $\nearrow$ 49'55		morning rise	14099 Dec 27 23:59	4° $\searrow$ 38'00	
behind sun end	14094 Nov 30 11:15	22° $\nearrow$ 51'05		retrograde	14100 Mar 28 02:02	6° $\searrow$ 35'03	
max. Earth dist.	14094 Nov 30 17:37	22° $\nearrow$ 51'42	30.84274 AU	opposition	14100 Jun 15 06:53	5° $\searrow$ 10'33	0°05'22
morning rise	14094 Dec 16 05:53	23° $\nearrow$ 26'26		min. Earth dist.	14100 Jun 14 19:48	5° $\searrow$ 11'20	28.89458 AU
retrograde	14095 Mar 16 13:14	25° $\nearrow$ 23'50		direct	14100 Sep 01 11:21	3° $\searrow$ 46'34	
opposition	14095 Jun 03 20:50	23° $\nearrow$ 59'01	-0°01'40	evening set	14100 Nov 28 10:18	5° $\searrow$ 40'46	
min. Earth dist.	14095 Jun 03 08:07	23° $\nearrow$ 59'54	28.84612 AU				
direct	14095 Aug 21 02:21	22° $\nearrow$ 34'57		conjunction	14100 Dec 14 11:08	6° $\searrow$ 16'34	0°05'40
evening set	14095 Nov 16 18:02	24° $\nearrow$ 29'02		minimum elong	14100 Dec 14 11:08	6° $\searrow$ 16'34	0°06'43
				behind sun begin	14100 Dec 14 05:01	6° $\searrow$ 16'01	
conjunction	14095 Dec 02 17:37	25° $\nearrow$ 04'48	-0°00'58	behind sun end	14100 Dec 14 17:14	6° $\searrow$ 17'07	
minimum elong	14095 Dec 02 17:38	25° $\nearrow$ 04'48	0°00'05	max. Earth dist.	14100 Dec 14 23:39	6° $\searrow$ 17'44	30.89961 AU
behind sun begin	14095 Dec 02 11:30	25° $\nearrow$ 04'15		morning rise	14100 Dec 30 13:17	6° $\searrow$ 52'31	
behind sun end	14095 Dec 02 23:46	25° $\nearrow$ 05'21		retrograde	14101 Mar 30 14:34	8° $\searrow$ 49'30	
max. Earth dist.	14095 Dec 03 07:35	25° $\nearrow$ 06'06	30.84958 AU	opposition	14101 Jun 17 18:26	7° $\searrow$ 25'04	0°06'46
morning rise	14095 Dec 18 18:50	25° $\nearrow$ 40'44		min. Earth dist.	14101 Jun 17 07:08	7° $\searrow$ 25'52	28.90450 AU
retrograde	14096 Mar 18 00:18	27° $\nearrow$ 38'03		direct	14101 Sep 03 23:36	6° $\searrow$ 01'06	
opposition	14096 Jun 05 08:33	26° $\nearrow$ 13'15	-0°00'16	evening set	14101 Nov 30 23:30	7° $\searrow$ 55'19	
min. Earth dist.	14096 Jun 04 20:14	26° $\nearrow$ 14'07	28.85368 AU				
asc. node	14096 Aug 17 14:40	24° $\nearrow$ 49'36		conjunction	14101 Dec 17 00:25	8° $\searrow$ 31'07	0°06'57
direct	14096 Aug 22 14:48	24° $\nearrow$ 49'11		minimum elong	14101 Dec 17 00:24	8° $\searrow$ 31'07	0°08'01
evening set	14096 Nov 18 06:48	26° $\nearrow$ 43'16		behind sun begin	14101 Dec 16 18:34	8° $\searrow$ 30'35	
				behind sun end	14101 Dec 17 06:15	8° $\searrow$ 31'38	
conjunction	14096 Dec 04 06:36	27° $\nearrow$ 19'02	0°00'23	max. Earth dist.	14101 Dec 17 11:20	8° $\searrow$ 32'07	30.90903 AU
minimum elong	14096 Dec 04 06:35	27° $\nearrow$ 19'02	0°01'26	morning rise	14102 Jan 02 02:52	9° $\searrow$ 07'03	
behind sun begin	14096 Dec 04 00:03	27° $\nearrow$ 18'27					
behind sun end	14096 Dec 04 13:07	27° $\nearrow$ 19'37					
max. Earth dist.	14096 Dec 04 19:46	27° $\nearrow$ 20'16	30.85802 AU				
morning rise	14096 Dec 20 08:08	27° $\nearrow$ 54'59					
retrograde	14097 Mar 20 13:53	29° $\nearrow$ 52'13					
opposition	14097 Jun 07 20:06	28° $\nearrow$ 27'28	0°01'09				
min. Earth dist.	14097 Jun 07 07:09	28° $\nearrow$ 28'23	28.86283 AU				
direct	14097 Aug 25 02:28	27° $\nearrow$ 03'24					
evening set	14097 Nov 20 19:33	28° $\nearrow$ 57'30					
conjunction	14097 Dec 06 19:38	29° $\nearrow$ 33'17	0°01'44				
minimum elong	14097 Dec 06 19:39	29° $\nearrow$ 33'17	0°02'48				
behind sun begin	14097 Dec 06 13:07	29° $\nearrow$ 32'42					
behind sun end	14097 Dec 07 02:10	29° $\nearrow$ 33'52					
max. Earth dist.	14097 Dec 07 09:14	29° $\nearrow$ 34'33	30.86772 AU				
	14097 Dec 18 17:09	0° $\searrow$					
morning rise	14097 Dec 22 21:21	0° $\searrow$ 09'14					
retrograde	14098 Mar 23 01:44	2° $\searrow$ 06'24					
opposition	14098 Jun 10 07:47	0° $\searrow$ 41'44	0°02'34				
min. Earth dist.	14098 Jun 09 19:55	0° $\searrow$ 42'34	28.87305 AU				
	14098 Jul 06 05:55	30° $\nearrow$					
direct	14098 Aug 27 13:13	29° $\nearrow$ 17'42					
	14098 Oct 17 06:56	0° $\searrow$					
evening set	14098 Nov 23 08:25	1° $\searrow$ 11'49					
conjunction	14098 Dec 09 08:46	1° $\searrow$ 47'37	0°03'03				
minimum elong	14098 Dec 09 08:45	1° $\searrow$ 47'37	0°04'06				
behind sun begin	14098 Dec 09 02:18	1° $\searrow$ 47'02					