

max. Earth dist.	13100 Jan 07 15:01	29° $\overline{3}$ 56'14	36.42092 AU	conjunction	13106 Jan 21 23:53	11° $\approx$ 01'28	11°31'38
	13100 Jan 09 14:27	0° $\approx$		minimum elong	13106 Jan 21 23:37	11° $\approx$ 01'26	11°32'27
				morning rise	13106 Feb 01 07:48	11° $\approx$ 22'13	
conjunction	13100 Jan 10 03:27	0° $\approx$ 01'02	9°18'00	retrograde	13106 May 06 10:55	13° $\approx$ 16'37	
minimum elong	13100 Jan 10 03:13	0° $\approx$ 01'01	9°18'55	opposition	13106 Jul 24 01:49	12° $\approx$ 00'11	12°24'37
morning rise	13100 Jan 22 18:48	0° $\approx$ 24'59		min. Earth dist.	13106 Jul 26 07:55	11° $\approx$ 56'44	32.87096 AU
retrograde	13100 Apr 24 09:02	2° $\approx$ 08'14		direct	13106 Oct 11 12:29	10° $\approx$ 42'30	
opposition	13100 Jul 12 14:36	0° $\approx$ 54'09	10°02'36	evening set	13107 Jan 14 08:43	12° $\approx$ 38'20	
min. Earth dist.	13100 Jul 14 20:20	0° $\approx$ 50'52	34.32190 AU	max. Earth dist.	13107 Jan 21 17:24	12° $\approx$ 53'14	34.70938 AU
	13100 Aug 22 15:32	30° $\overline{R}$ $\overline{3}$					
direct	13100 Sep 30 12:55	29° $\overline{3}$ 39'08		conjunction	13107 Jan 24 06:06	12° $\approx$ 58'23	11°52'36
	13100 Nov 07 17:53	0° $\approx$		minimum elong	13107 Jan 24 05:50	12° $\approx$ 58'21	11°53'24
evening set	13100 Dec 30 20:59	1° $\approx$ 22'51		morning rise	13107 Feb 03 02:52	13° $\approx$ 18'23	
max. Earth dist.	13101 Jan 09 16:15	1° $\approx$ 41'33	36.16855 AU		13107 Apr 07 14:24	15° $\approx$	
				retrograde	13107 May 08 20:38	15° $\approx$ 14'53	
conjunction	13101 Jan 12 04:54	1° $\approx$ 46'24	9°40'59		13107 Jun 09 10:58	15° $\overline{R}$ $\approx$	
minimum elong	13101 Jan 12 04:39	1° $\approx$ 46'23	9°41'53	opposition	13107 Jul 26 06:26	13° $\approx$ 58'02	12°46'54
morning rise	13101 Jan 24 12:17	2° $\approx$ 09'57		min. Earth dist.	13107 Jul 28 12:16	13° $\approx$ 54'35	32.63683 AU
retrograde	13101 Apr 26 10:08	3° $\approx$ 54'52		direct	13107 Oct 13 16:53	12° $\approx$ 39'53	
opposition	13101 Jul 14 14:36	2° $\approx$ 40'23	10°27'03	evening set	13108 Jan 17 03:22	14° $\approx$ 37'58	
min. Earth dist.	13101 Jul 16 20:56	2° $\approx$ 37'01	34.07338 AU	max. Earth dist.	13108 Jan 24 00:20	14° $\approx$ 52'02	34.47358 AU
direct	13101 Oct 02 11:53	1° $\approx$ 24'55					
evening set	13102 Jan 02 07:37	3° $\approx$ 10'26		conjunction	13108 Jan 26 13:03	14° $\approx$ 57'13	12°13'06
max. Earth dist.	13102 Jan 11 19:18	3° $\approx$ 28'42	35.91913 AU	minimum elong	13108 Jan 26 12:48	14° $\approx$ 57'12	12°13'53
					13108 Jan 27 21:38	15° $\approx$	
conjunction	13102 Jan 14 07:08	3° $\approx$ 33'33	10°03'45	morning rise	13108 Feb 04 21:59	15° $\approx$ 16'25	
minimum elong	13102 Jan 14 06:54	3° $\approx$ 33'32	10°04'39	retrograde	13108 May 10 04:55	17° $\approx$ 15'05	
morning rise	13102 Jan 26 06:03	3° $\approx$ 56'38		opposition	13108 Jul 27 11:58	15° $\approx$ 57'48	13°08'39
retrograde	13102 Apr 28 13:44	5° $\approx$ 43'18		min. Earth dist.	13108 Jul 29 18:27	15° $\approx$ 54'16	32.40502 AU
opposition	13102 Jul 16 15:16	4° $\approx$ 28'26	10°51'14		13108 Sep 07 05:34	15° $\overline{R}$ $\approx$	
min. Earth dist.	13102 Jul 18 20:29	4° $\approx$ 25'07	33.82788 AU	direct	13108 Oct 14 21:53	14° $\approx$ 39'10	
direct	13102 Oct 04 11:13	3° $\approx$ 12'31			13108 Nov 20 22:03	15° $\approx$	
evening set	13103 Jan 04 19:25	4° $\approx$ 59'57		evening set	13109 Jan 18 23:52	16° $\approx$ 39'36	
max. Earth dist.	13103 Jan 13 21:18	5° $\approx$ 17'37	35.67254 AU	max. Earth dist.	13109 Jan 25 08:42	16° $\approx$ 52'45	34.24061 AU
conjunction	13103 Jan 16 10:00	5° $\approx$ 22'34	10°26'14	conjunction	13109 Jan 27 20:54	16° $\approx$ 57'57	12°33'02
minimum elong	13103 Jan 16 09:44	5° $\approx$ 22'33	10°27'06	minimum elong	13109 Jan 27 20:39	16° $\approx$ 57'56	12°33'47
morning rise	13103 Jan 28 00:03	5° $\approx$ 45'09		morning rise	13109 Feb 05 17:15	17° $\approx$ 16'15	
retrograde	13103 Apr 30 17:19	7° $\approx$ 33'39		retrograde	13109 May 12 14:25	19° $\approx$ 17'09	
opposition	13103 Jul 18 16:46	6° $\approx$ 18'24	11°15'08	opposition	13109 Jul 29 17:58	17° $\approx$ 59'27	13°29'48
min. Earth dist.	13103 Jul 20 22:56	6° $\approx$ 15'00	33.58528 AU	min. Earth dist.	13109 Jul 31 23:21	17° $\approx$ 55'58	32.17633 AU
direct	13103 Oct 06 08:36	5° $\approx$ 02'03		direct	13109 Oct 17 03:54	16° $\approx$ 40'19	
evening set	13104 Jan 07 08:34	6° $\approx$ 51'28		evening set	13110 Jan 21 21:45	18° $\approx$ 43'13	
max. Earth dist.	13104 Jan 16 02:14	7° $\approx$ 08'38	35.42868 AU	max. Earth dist.	13110 Jan 27 16:52	18° $\approx$ 55'18	34.01091 AU
conjunction	13104 Jan 18 13:48	7° $\approx$ 13'32	10°48'24	conjunction	13110 Jan 30 05:34	19° $\approx$ 00'35	12°52'21
minimum elong	13104 Jan 18 13:33	7° $\approx$ 13'31	10°49'16	minimum elong	13110 Jan 30 05:20	19° $\approx$ 00'34	12°53'06
morning rise	13104 Jan 29 18:17	7° $\approx$ 35'34		morning rise	13110 Feb 07 12:45	19° $\approx$ 17'54	
retrograde	13104 May 01 21:26	9° $\approx$ 25'58		retrograde	13110 May 14 22:48	21° $\approx$ 21'08	
opposition	13104 Jul 19 18:57	8° $\approx$ 10'21	11°38'41	opposition	13110 Aug 01 01:01	20° $\approx$ 03'00	13°50'16
min. Earth dist.	13104 Jul 22 00:22	8° $\approx$ 06'58	33.34518 AU	min. Earth dist.	13110 Aug 03 07:06	19° $\approx$ 59'27	31.95132 AU
direct	13104 Oct 07 09:51	6° $\approx$ 53'34		direct	13110 Oct 19 08:28	18° $\approx$ 43'23	
evening set	13105 Jan 08 23:07	8° $\approx$ 45'02		evening set	13111 Jan 24 21:14	20° $\approx$ 48'49	
max. Earth dist.	13105 Jan 17 05:32	9° $\approx$ 01'27	35.18709 AU	max. Earth dist.	13111 Jan 30 03:49	20° $\approx$ 59'55	33.78538 AU
conjunction	13105 Jan 19 18:16	9° $\approx$ 06'30	11°10'12	conjunction	13111 Feb 01 14:55	21° $\approx$ 05'07	13°10'59
minimum elong	13105 Jan 19 18:01	9° $\approx$ 06'29	11°11'02	minimum elong	13111 Feb 01 14:40	21° $\approx$ 05'06	13°11'42
morning rise	13105 Jan 30 12:54	9° $\approx$ 27'56		morning rise	13111 Feb 09 07:52	21° $\approx$ 21'21	
retrograde	13105 May 04 04:58	11° $\approx$ 20'18		retrograde	13111 May 17 08:27	23° $\approx$ 27'00	
opposition	13105 Jul 21 22:00	10° $\approx$ 04'17	12°01'51	opposition	13111 Aug 03 08:43	22° $\approx$ 08'27	14°09'59
min. Earth dist.	13105 Jul 24 04:01	10° $\approx$ 00'51	33.10722 AU	min. Earth dist.	13111 Aug 05 13:20	22° $\approx$ 04'58	31.73080 AU
direct	13105 Oct 09 09:56	8° $\approx$ 47'03		direct	13111 Oct 21 15:12	20° $\approx$ 48'22	
evening set	13106 Jan 11 15:09	10° $\approx$ 40'40		evening set	13112 Jan 27 22:19	22° $\approx$ 56'26	
max. Earth dist.	13106 Jan 19 11:45	10° $\approx$ 56'25	34.94726 AU	max. Earth dist.	13112 Feb 01 13:28	23° $\approx$ 06'16	33.56480 AU

conjunction	13112 Feb 04 00:59	23° $\approx$ 11'33	13°28'51	opposition	13118 Aug 18 13:42	7° $\mathbf{H}$ 43'05	15°59'51
minimum elong	13112 Feb 04 00:45	23° $\approx$ 11'32	13°29'33	min. Earth dist.	13118 Aug 20 12:19	7° $\mathbf{H}$ 39'53	30.35960 AU
morning rise	13112 Feb 11 03:05	23° $\approx$ 26'37		direct	13118 Nov 05 12:17	6° $\mathbf{H}$ 20'19	
retrograde	13112 May 18 19:33	25° $\approx$ 34'48		max. Earth dist.	13119 Feb 17 18:22	8° $\mathbf{H}$ 48'40	32.20014 AU
opposition	13112 Aug 04 17:15	24° $\approx$ 15'50	14°28'51				
min. Earth dist.	13112 Aug 06 21:57	24° $\approx$ 12'19	31.51572 AU	conjunction	13119 Feb 19 22:37	8° $\mathbf{H}$ 53'35	15°06'16
direct	13112 Oct 22 20:16	22° $\approx$ 55'17		minimum elong	13119 Feb 19 22:31	8° $\mathbf{H}$ 53'34	15°06'44
evening set	13113 Jan 30 01:17	25° $\approx$ 06'07		retrograde	13119 Jun 05 02:01	11° $\mathbf{H}$ 25'58	
max. Earth dist.	13113 Feb 03 02:23	25° $\approx$ 14'47	33.35002 AU	opposition	13119 Aug 21 04:05	10° $\mathbf{H}$ 04'42	16°10'41
				min. Earth dist.	13119 Aug 23 02:45	10° $\mathbf{H}$ 01'29	30.18892 AU
conjunction	13113 Feb 05 11:58	25° $\approx$ 19'56	13°45'53	direct	13119 Nov 08 00:26	8° $\mathbf{H}$ 41'35	
minimum elong	13113 Feb 05 11:45	25° $\approx$ 19'55	13°46'31	max. Earth dist.	13120 Feb 20 13:01	11° $\mathbf{H}$ 11'22	32.03109 AU
morning rise	13113 Feb 11 22:00	25° $\approx$ 33'44					
retrograde	13113 May 21 06:15	27° $\approx$ 44'33		conjunction	13120 Feb 22 15:12	11° $\mathbf{H}$ 16'08	15°15'29
opposition	13113 Aug 07 02:38	26° $\approx$ 25'11	14°46'48	minimum elong	13120 Feb 22 15:09	11° $\mathbf{H}$ 16'08	15°15'55
min. Earth dist.	13113 Aug 09 05:59	26° $\approx$ 21'45	31.30657 AU	retrograde	13120 Jun 06 19:59	13° $\mathbf{H}$ 49'37	
direct	13113 Oct 25 05:06	25° $\approx$ 04'12		opposition	13120 Aug 22 18:57	12° $\mathbf{H}$ 28'04	16°20'06
evening set	13114 Feb 02 06:20	27° $\approx$ 17'57		min. Earth dist.	13120 Aug 24 15:48	12° $\mathbf{H}$ 24'57	30.02467 AU
max. Earth dist.	13114 Feb 05 14:09	27° $\approx$ 25'09	33.14168 AU	direct	13120 Nov 09 15:03	11° $\mathbf{H}$ 04'36	
				max. Earth dist.	13121 Feb 22 06:19	13° $\mathbf{H}$ 35'35	31.86887 AU
conjunction	13114 Feb 07 23:40	27° $\approx$ 30'20	14°01'58				
minimum elong	13114 Feb 07 23:28	27° $\approx$ 30'19	14°02'36	conjunction	13121 Feb 24 08:23	13° $\mathbf{H}$ 40'21	15°23'20
morning rise	13114 Feb 13 16:33	27° $\approx$ 42'42		minimum elong	13121 Feb 24 08:20	13° $\mathbf{H}$ 40'21	15°23'43
retrograde	13114 May 23 20:18	29° $\approx$ 56'18		retrograde	13121 Jun 09 12:33	16° $\mathbf{H}$ 14'55	
opposition	13114 Aug 09 12:44	28° $\approx$ 36'34	15°03'43	opposition	13121 Aug 25 10:40	14° $\mathbf{H}$ 53'03	16°28'02
min. Earth dist.	13114 Aug 11 15:12	28° $\approx$ 33'10	31.10410 AU	min. Earth dist.	13121 Aug 27 07:07	14° $\mathbf{H}$ 49'57	29.86737 AU
direct	13114 Oct 27 13:54	27° $\approx$ 15'11		direct	13121 Nov 12 04:24	13° $\mathbf{H}$ 29'15	
evening set	13115 Feb 05 13:44	29° $\approx$ 32'01		max. Earth dist.	13122 Feb 25 02:43	16° $\mathbf{H}$ 01'33	31.71405 AU
max. Earth dist.	13115 Feb 08 04:36	29° $\approx$ 37'44	32.94014 AU				
				conjunction	13122 Feb 27 02:18	16° $\mathbf{H}$ 06'08	15°29'45
conjunction	13115 Feb 10 12:18	29° $\approx$ 42'48	14°17'04	minimum elong	13122 Feb 27 02:17	16° $\mathbf{H}$ 06'08	15°30'06
minimum elong	13115 Feb 10 12:06	29° $\approx$ 42'47	14°17'40	retrograde	13122 Jun 12 04:51	18° $\mathbf{H}$ 41'39	
morning rise	13115 Feb 15 10:22	29° $\approx$ 53'34		opposition	13122 Aug 28 02:55	17° $\mathbf{H}$ 19'31	16°34'23
	13115 Feb 18 09:16	0° $\mathbf{H}$		min. Earth dist.	13122 Aug 29 21:40	17° $\mathbf{H}$ 16'31	29.71747 AU
retrograde	13115 May 26 09:00	2° $\mathbf{H}$ 10'07		direct	13122 Nov 14 21:10	15° $\mathbf{H}$ 55'23	
opposition	13115 Aug 11 23:50	0° $\mathbf{H}$ 50'03	15°19'33	max. Earth dist.	13123 Feb 27 21:29	18° $\mathbf{H}$ 28'46	31.56739 AU
min. Earth dist.	13115 Aug 14 01:37	0° $\mathbf{H}$ 46'41	30.90833 AU				
	13115 Sep 14 03:18	30° $\mathbf{H}$		conjunction	13123 Mar 01 20:33	18° $\mathbf{H}$ 33'19	15°34'41
direct	13115 Oct 29 23:23	29° $\approx$ 28'18		minimum elong	13123 Mar 01 20:33	18° $\mathbf{H}$ 33'19	15°34'58
	13115 Dec 13 19:11	0° $\mathbf{H}$		retrograde	13123 Jun 14 23:40	21° $\mathbf{H}$ 09'45	
evening set	13116 Feb 09 00:08	1° $\mathbf{H}$ 48'27		opposition	13123 Aug 30 19:48	19° $\mathbf{H}$ 47'19	16°39'06
max. Earth dist.	13116 Feb 10 18:37	1° $\mathbf{H}$ 52'21	32.74559 AU	min. Earth dist.	13123 Sep 01 13:08	19° $\mathbf{H}$ 44'25	29.57599 AU
				direct	13123 Nov 17 12:35	18° $\mathbf{H}$ 22'52	
conjunction	13116 Feb 13 01:28	1° $\mathbf{H}$ 57'23	14°31'06	max. Earth dist.	13124 Mar 01 19:14	20° $\mathbf{H}$ 57'29	31.42963 AU
minimum elong	13116 Feb 13 01:18	1° $\mathbf{H}$ 57'22	14°31'41				
morning rise	13116 Feb 17 02:25	2° $\mathbf{H}$ 06'18		conjunction	13124 Mar 03 15:22	21° $\mathbf{H}$ 01'46	15°38'01
retrograde	13116 May 28 01:39	4° $\mathbf{H}$ 26'02		minimum elong	13124 Mar 03 15:25	21° $\mathbf{H}$ 01'47	15°38'17
opposition	13116 Aug 13 11:37	3° $\mathbf{H}$ 05'40	15°34'13	retrograde	13124 Jun 16 16:45	23° $\mathbf{H}$ 39'02	
min. Earth dist.	13116 Aug 15 11:57	3° $\mathbf{H}$ 02'23	30.71926 AU	opposition	13124 Sep 01 13:20	22° $\mathbf{H}$ 16'21	16°42'05
direct	13116 Oct 31 10:58	1° $\mathbf{H}$ 43'34		min. Earth dist.	13124 Sep 03 05:12	22° $\mathbf{H}$ 13'32	29.44345 AU
evening set	13117 Feb 11 15:33	4° $\mathbf{H}$ 07'25		direct	13124 Nov 19 05:12	20° $\mathbf{H}$ 51'36	
max. Earth dist.	13117 Feb 12 09:53	4° $\mathbf{H}$ 09'07	32.55747 AU	max. Earth dist.	13125 Mar 04 15:44	23° $\mathbf{H}$ 27'13	31.30164 AU
conjunction	13117 Feb 14 15:47	4° $\mathbf{H}$ 14'06	14°44'01	conjunction	13125 Mar 06 10:37	23° $\mathbf{H}$ 31'24	15°39'44
minimum elong	13117 Feb 14 15:38	4° $\mathbf{H}$ 14'05	14°44'33	minimum elong	13125 Mar 06 10:41	23° $\mathbf{H}$ 31'25	15°39'56
morning rise	13117 Feb 17 15:41	4° $\mathbf{H}$ 20'45		retrograde	13125 Jun 19 12:12	26° $\mathbf{H}$ 09'26	
retrograde	13117 May 30 17:06	6° $\mathbf{H}$ 44'02		opposition	13125 Sep 04 07:11	24° $\mathbf{H}$ 46'30	16°43'17
opposition	13117 Aug 16 00:15	5° $\mathbf{H}$ 23'22	15°47'40	min. Earth dist.	13125 Sep 05 20:42	24° $\mathbf{H}$ 43'51	29.32087 AU
min. Earth dist.	13117 Aug 18 00:41	5° $\mathbf{H}$ 20'03	30.53639 AU	direct	13125 Nov 22 00:03	23° $\mathbf{H}$ 21'30	
direct	13117 Nov 02 22:37	4° $\mathbf{H}$ 00'56		max. Earth dist.	13126 Mar 07 14:29	25° $\mathbf{H}$ 58'12	31.18408 AU
evening set	13118 Feb 15 19:16	6° $\mathbf{H}$ 29'32					
max. Earth dist.	13118 Feb 15 02:16	6° $\mathbf{H}$ 27'57	32.37575 AU	conjunction	13126 Mar 09 06:27	26° $\mathbf{H}$ 02'08	15°39'45
				minimum elong	13126 Mar 09 06:35	26° $\mathbf{H}$ 02'08	15°39'55
conjunction	13118 Feb 17 06:53	6° $\mathbf{H}$ 32'52	14°55'46	retrograde	13126 Jun 22 06:28	28° $\mathbf{H}$ 40'50	
minimum elong	13118 Feb 17 06:46	6° $\mathbf{H}$ 32'51	14°56'16	opposition	13126 Sep 07 01:50	27° $\mathbf{H}$ 17'42	16°42'37
morning rise	13118 Feb 18 18:17	6° $\mathbf{H}$ 36'10		min. Earth dist.	13126 Sep 08 14:04	27° $\mathbf{H}$ 15'09	29.20876 AU
retrograde	13118 Jun 02 09:54	9° $\mathbf{H}$ 04'03		direct	13126 Nov 24 18:29	25° $\mathbf{H}$ 52'31	

max. Earth dist.	13127 Mar 10 12:27	28° $\text{H}$ 30'09	31.07774 AU	retrograde	13134 Jul 13 03:48	19° $\text{Y}$ 18'29	
				opposition	13134 Sep 27 18:19	17° $\text{Y}$ 54'59	15°28'35
conjunction	13127 Mar 12 02:23	28° $\text{H}$ 33'53	15°38'00	min. Earth dist.	13134 Sep 28 13:37	17° $\text{Y}$ 53'36	28.68906 AU
minimum elong	13127 Mar 12 02:31	28° $\text{H}$ 33'54	15°38'08	direct	13134 Dec 15 14:14	16° $\text{Y}$ 29'23	
	13127 Apr 19 11:23	0° $\text{Y}$		evening set	13135 Mar 28 10:27	19° $\text{Y}$ 01'54	
retrograde	13127 Jun 25 03:31	1° $\text{Y}$ 13'13		max. Earth dist.	13135 Apr 01 08:49	19° $\text{Y}$ 11'19	30.61133 AU
	13127 Sep 03 22:38	30° $\text{R}$ $\text{H}$					
opposition	13127 Sep 09 20:46	29° $\text{H}$ 49'56	16°40'03	conjunction	13135 Apr 02 03:33	19° $\text{Y}$ 13'11	14°20'30
min. Earth dist.	13127 Sep 11 05:51	29° $\text{H}$ 47'36	29.10764 AU	minimum elong	13135 Apr 02 03:55	19° $\text{Y}$ 13'14	14°20'16
direct	13127 Nov 27 14:12	28° $\text{H}$ 24'36		morning rise	13135 Apr 06 21:11	19° $\text{Y}$ 24'32	
	13128 Feb 13 23:54	0° $\text{Y}$		retrograde	13135 Jul 15 22:29	21° $\text{Y}$ 54'06	
max. Earth dist.	13128 Mar 12 11:26	1° $\text{Y}$ 03'08	30.98258 AU	opposition	13135 Sep 30 15:03	20° $\text{Y}$ 30'37	15°10'55
				min. Earth dist.	13135 Oct 01 08:31	20° $\text{Y}$ 29'23	28.66974 AU
conjunction	13128 Mar 13 22:54	1° $\text{Y}$ 06'38	15°34'30	direct	13135 Dec 18 11:16	19° $\text{Y}$ 05'04	
minimum elong	13128 Mar 13 23:06	1° $\text{Y}$ 06'39	15°34'35	evening set	13136 Mar 29 09:42	21° $\text{Y}$ 35'11	
retrograde	13128 Jun 26 23:26	3° $\text{Y}$ 46'31		max. Earth dist.	13136 Apr 03 07:24	21° $\text{Y}$ 46'56	30.60018 AU
opposition	13128 Sep 11 16:08	2° $\text{Y}$ 23'08	16°35'34				
min. Earth dist.	13128 Sep 13 00:10	2° $\text{Y}$ 20'52	29.01739 AU	conjunction	13136 Apr 04 00:33	21° $\text{Y}$ 48'39	14°03'05
direct	13128 Nov 29 09:07	0° $\text{Y}$ 57'42		minimum elong	13136 Apr 04 00:57	21° $\text{Y}$ 48'41	14°02'48
max. Earth dist.	13129 Mar 15 10:47	3° $\text{Y}$ 37'03	30.89857 AU	morning rise	13136 Apr 09 16:00	22° $\text{Y}$ 02'09	
				retrograde	13136 Jul 17 17:50	24° $\text{Y}$ 29'17	
conjunction	13129 Mar 16 19:43	3° $\text{Y}$ 40'19	15°29'12	opposition	13136 Oct 02 11:25	23° $\text{Y}$ 05'51	14°51'29
minimum elong	13129 Mar 16 19:55	3° $\text{Y}$ 40'21	15°29'14	min. Earth dist.	13136 Oct 03 01:55	23° $\text{Y}$ 04'49	28.66146 AU
retrograde	13129 Jun 29 20:59	6° $\text{Y}$ 20'40		direct	13136 Dec 20 08:56	21° $\text{Y}$ 40'20	
opposition	13129 Sep 14 11:50	4° $\text{Y}$ 57'13	16°29'09	evening set	13137 Mar 31 10:38	24° $\text{Y}$ 08'11	
min. Earth dist.	13129 Sep 15 16:54	4° $\text{Y}$ 55'09	28.93766 AU				
direct	13129 Dec 02 06:37	3° $\text{Y}$ 31'42		conjunction	13137 Apr 06 21:27	24° $\text{Y}$ 23'36	13°44'02
max. Earth dist.	13130 Mar 18 09:41	6° $\text{Y}$ 11'44	30.82503 AU	minimum elong	13137 Apr 06 21:52	24° $\text{Y}$ 23'38	13°43'43
				max. Earth dist.	13137 Apr 06 07:57	24° $\text{Y}$ 22'15	30.60037 AU
conjunction	13130 Mar 19 16:46	6° $\text{Y}$ 14'49	15°22'07	morning rise	13137 Apr 13 08:41	24° $\text{Y}$ 39'03	
minimum elong	13130 Mar 19 17:01	6° $\text{Y}$ 14'51	15°22'07	retrograde	13137 Jul 20 11:13	27° $\text{Y}$ 03'51	
retrograde	13130 Jul 02 17:17	8° $\text{Y}$ 55'31		opposition	13137 Oct 05 07:54	25° $\text{Y}$ 40'29	14°30'18
opposition	13130 Sep 17 07:59	7° $\text{Y}$ 32'02	16°20'49	min. Earth dist.	13137 Oct 05 20:41	25° $\text{Y}$ 39'34	28.66460 AU
min. Earth dist.	13130 Sep 18 12:02	7° $\text{Y}$ 30'03	28.86810 AU	direct	13137 Dec 23 06:40	24° $\text{Y}$ 15'03	
direct	13130 Dec 05 01:48	6° $\text{Y}$ 06'29		evening set	13138 Apr 02 12:37	26° $\text{Y}$ 40'41	
max. Earth dist.	13131 Mar 21 09:58	8° $\text{Y}$ 47'10	30.76192 AU				
				conjunction	13138 Apr 09 17:46	26° $\text{Y}$ 57'53	13°23'24
conjunction	13131 Mar 22 14:04	8° $\text{Y}$ 49'58	15°13'16	minimum elong	13138 Apr 09 18:12	26° $\text{Y}$ 57'56	13°23'02
minimum elong	13131 Mar 22 14:20	8° $\text{Y}$ 50'00	15°13'13	max. Earth dist.	13138 Apr 09 06:23	26° $\text{Y}$ 56'45	30.61257 AU
retrograde	13131 Jul 05 14:54	11° $\text{Y}$ 30'55		morning rise	13138 Apr 16 23:23	27° $\text{Y}$ 15'09	
opposition	13131 Sep 20 04:21	10° $\text{Y}$ 07'25	16°10'34	retrograde	13138 Jul 23 07:00	29° $\text{Y}$ 37'42	
min. Earth dist.	13131 Sep 21 05:41	10° $\text{Y}$ 05'37	28.80846 AU	opposition	13138 Oct 08 04:03	28° $\text{Y}$ 14'25	14°07'25
direct	13131 Dec 07 23:41	8° $\text{Y}$ 41'50		min. Earth dist.	13138 Oct 08 13:03	28° $\text{Y}$ 13'47	28.67984 AU
max. Earth dist.	13132 Mar 23 08:37	11° $\text{Y}$ 22'55	30.70891 AU	direct	13138 Dec 26 03:55	26° $\text{Y}$ 49'06	
				evening set	13139 Apr 04 15:19	29° $\text{Y}$ 12'35	
conjunction	13132 Mar 24 11:22	11° $\text{Y}$ 25'35	15°02'40				
minimum elong	13132 Mar 24 11:41	11° $\text{Y}$ 25'37	15°02'33	conjunction	13139 Apr 12 13:55	29° $\text{Y}$ 31'27	13°01'15
retrograde	13132 Jul 07 11:48	14° $\text{Y}$ 06'42		minimum elong	13139 Apr 12 14:21	29° $\text{Y}$ 31'29	13°00'51
opposition	13132 Sep 22 00:57	12° $\text{Y}$ 43'10	15°58'26	max. Earth dist.	13139 Apr 12 06:00	29° $\text{Y}$ 30'40	30.63714 AU
min. Earth dist.	13132 Sep 23 00:46	12° $\text{Y}$ 41'29	28.75872 AU	morning rise	13139 Apr 20 12:47	29° $\text{Y}$ 50'22	
direct	13132 Dec 09 19:21	11° $\text{Y}$ 17'34			13139 Apr 24 14:52	0° $\text{B}$	
evening set	13133 Mar 25 00:14	13° $\text{Y}$ 55'47		retrograde	13139 Jul 26 00:07	2° $\text{B}$ 10'44	
max. Earth dist.	13133 Mar 26 09:22	13° $\text{Y}$ 59'06	30.66604 AU	opposition	13139 Oct 11 00:03	0° $\text{B}$ 47'35	13°42'55
				min. Earth dist.	13139 Oct 11 07:20	0° $\text{B}$ 47'05	28.70748 AU
conjunction	13133 Mar 27 08:56	14° $\text{Y}$ 01'27	14°50'19		13139 Nov 09 21:09	30° $\text{R}$ $\text{Y}$	
minimum elong	13133 Mar 27 09:16	14° $\text{Y}$ 01'29	14°50'10	direct	13139 Dec 29 00:50	29° $\text{Y}$ 22'27	
morning rise	13133 Mar 29 18:14	14° $\text{Y}$ 07'11			13140 Feb 14 17:30	0° $\text{B}$	
retrograde	13133 Jul 10 07:03	16° $\text{Y}$ 42'36		evening set	13140 Apr 05 18:45	1° $\text{B}$ 43'47	
opposition	13133 Sep 24 21:34	15° $\text{Y}$ 19'06	15°44'26				
min. Earth dist.	13133 Sep 25 19:07	15° $\text{Y}$ 17'33	28.71876 AU	conjunction	13140 Apr 14 09:35	2° $\text{B}$ 04'12	12°37'37
direct	13133 Dec 12 17:46	13° $\text{Y}$ 53'30		minimum elong	13140 Apr 14 10:01	2° $\text{B}$ 04'15	12°37'10
evening set	13134 Mar 26 14:08	16° $\text{Y}$ 28'35		max. Earth dist.	13140 Apr 14 04:16	2° $\text{B}$ 03'41	30.67435 AU
max. Earth dist.	13134 Mar 29 07:59	16° $\text{Y}$ 35'10	30.63341 AU	morning rise	13140 Apr 23 00:39	2° $\text{B}$ 24'40	
				retrograde	13140 Jul 27 19:08	4° $\text{B}$ 42'54	
conjunction	13134 Mar 30 06:19	16° $\text{Y}$ 37'24	14°36'15	opposition	13140 Oct 12 19:38	3° $\text{B}$ 19'56	13°16'53
minimum elong	13134 Mar 30 06:41	16° $\text{Y}$ 37'26	14°36'04	min. Earth dist.	13140 Oct 12 23:16	3° $\text{B}$ 19'40	28.74731 AU
morning rise	13134 Apr 02 23:10	16° $\text{Y}$ 46'16		direct	13140 Dec 30 23:36	1° $\text{B}$ 55'00	

evening set	13141 Apr 07 22:36	4° <b>8</b> 14'15		max. Earth dist.	13147 May 03 01:35	19° <b>8</b> 24'57	31.23705 AU
				morning rise	13147 May 14 22:55	19° <b>8</b> 52'11	
conjunction	13141 Apr 17 04:56	4° <b>8</b> 36'07	12°12'38	retrograde	13147 Aug 14 12:42	21° <b>8</b> 56'34	
minimum elong	13141 Apr 17 05:23	4° <b>8</b> 36'09	12°12'09	opposition	13147 Oct 31 01:59	20° <b>8</b> 35'18	9°40'36
max. Earth dist.	13141 Apr 17 02:29	4° <b>8</b> 35'52	30.72350 AU	min. Earth dist.	13147 Oct 30 13:44	20° <b>8</b> 36'08	29.32076 AU
morning rise	13141 Apr 26 11:23	4° <b>8</b> 58'00		direct	13148 Jan 18 18:20	19° <b>8</b> 12'15	
retrograde	13141 Jul 30 12:32	7° <b>8</b> 14'09		evening set	13148 Apr 21 10:49	21° <b>8</b> 17'40	
opposition	13141 Oct 15 14:58	5° <b>8</b> 51'24	12°49'25				
min. Earth dist.	13141 Oct 15 16:58	5° <b>8</b> 51'15	28.79892 AU	conjunction	13148 May 04 05:45	21° <b>8</b> 46'46	8°47'30
direct	13142 Jan 02 19:19	4° <b>8</b> 26'42		minimum elong	13148 May 04 06:07	21° <b>8</b> 46'48	8°46'46
evening set	13142 Apr 10 03:05	6° <b>8</b> 43'53		max. Earth dist.	13148 May 04 20:14	21° <b>8</b> 48'09	31.35466 AU
				morning rise	13148 May 16 23:55	22° <b>8</b> 15'49	
conjunction	13142 Apr 19 23:52	7° <b>8</b> 07'05	11°46'21	retrograde	13148 Aug 15 23:48	24° <b>8</b> 18'24	
minimum elong	13142 Apr 20 00:18	7° <b>8</b> 07'08	11°45'49	opposition	13148 Nov 01 18:00	22° <b>8</b> 57'23	9°06'07
max. Earth dist.	13142 Apr 20 00:22	7° <b>8</b> 07'08	30.78424 AU	min. Earth dist.	13148 Nov 01 04:34	22° <b>8</b> 58'18	29.43955 AU
morning rise	13142 Apr 29 20:37	7° <b>8</b> 30'18		direct	13149 Jan 20 12:01	21° <b>8</b> 34'38	
retrograde	13142 Aug 02 06:47	9° <b>8</b> 44'24		evening set	13149 Apr 23 16:34	23° <b>8</b> 38'13	
opposition	13142 Oct 18 09:57	8° <b>8</b> 21'52	12°20'37				
min. Earth dist.	13142 Oct 18 08:49	8° <b>8</b> 21'57	28.86153 AU	conjunction	13149 May 06 20:20	24° <b>8</b> 07'58	8°15'03
direct	13143 Jan 05 17:16	6° <b>8</b> 57'26		minimum elong	13149 May 06 20:42	24° <b>8</b> 08'00	8°14'17
evening set	13143 Apr 12 07:39	9° <b>8</b> 12'35		max. Earth dist.	13149 May 07 12:09	24° <b>8</b> 09'28	31.48105 AU
				morning rise	13149 May 19 23:28	24° <b>8</b> 37'40	
conjunction	13143 Apr 22 18:07	9° <b>8</b> 37'01	11°18'55	retrograde	13149 Aug 18 12:52	26° <b>8</b> 38'30	
minimum elong	13143 Apr 22 18:33	9° <b>8</b> 37'04	11°18'21	opposition	13149 Nov 04 09:10	25° <b>8</b> 17'44	8°31'02
max. Earth dist.	13143 Apr 22 20:40	9° <b>8</b> 37'16	30.85560 AU	min. Earth dist.	13149 Nov 03 16:32	25° <b>8</b> 18'51	29.56741 AU
morning rise	13143 May 03 04:34	10° <b>8</b> 01'27		direct	13150 Jan 23 04:56	23° <b>8</b> 55'16	
retrograde	13143 Aug 05 00:48	12° <b>8</b> 13'33		evening set	13150 Apr 25 22:08	25° <b>8</b> 57'05	
opposition	13143 Oct 21 04:37	10° <b>8</b> 51'15	11°50'36				
min. Earth dist.	13143 Oct 21 01:30	10° <b>8</b> 51'28	28.93463 AU	conjunction	13150 May 09 10:15	26° <b>8</b> 27'25	7°42'03
direct	13144 Jan 08 13:19	9° <b>8</b> 27'05		minimum elong	13150 May 09 10:35	26° <b>8</b> 27'26	7°41'16
evening set	13144 Apr 13 12:46	11° <b>8</b> 40'14		max. Earth dist.	13150 May 10 05:07	26° <b>8</b> 29'11	31.61648 AU
				morning rise	13150 May 22 21:29	26° <b>8</b> 57'40	
conjunction	13144 Apr 24 12:08	12° <b>8</b> 05'47	10°50'23	retrograde	13150 Aug 20 23:36	28° <b>8</b> 56'49	
minimum elong	13144 Apr 24 12:34	12° <b>8</b> 05'50	10°49'47	opposition	13150 Nov 06 23:57	27° <b>8</b> 36'20	7°55'27
max. Earth dist.	13144 Apr 24 17:45	12° <b>8</b> 06'20	30.93713 AU	min. Earth dist.	13150 Nov 06 05:52	27° <b>8</b> 37'32	29.70478 AU
morning rise	13144 May 05 11:11	12° <b>8</b> 31'20		direct	13151 Jan 25 20:05	26° <b>8</b> 14'11	
retrograde	13144 Aug 06 16:00	14° <b>8</b> 41'26		evening set	13151 Apr 28 03:40	28° <b>8</b> 14'17	
opposition	13144 Oct 22 22:39	13° <b>8</b> 19'24	11°19'29				
min. Earth dist.	13144 Oct 22 17:20	13° <b>8</b> 19'46	29.01740 AU	conjunction	13151 May 11 23:17	28° <b>8</b> 45'06	7°08'38
direct	13145 Jan 10 10:14	11° <b>8</b> 55'31		minimum elong	13151 May 11 23:36	28° <b>8</b> 45'08	7°07'49
evening set	13145 Apr 15 18:11	14° <b>8</b> 06'40		max. Earth dist.	13151 May 12 20:15	28° <b>8</b> 47'04	31.76148 AU
				morning rise	13151 May 25 17:59	29° <b>8</b> 15'51	
conjunction	13145 Apr 27 05:29	14° <b>8</b> 33'16	10°20'53		13151 Jun 15 20:42	0° <b>II</b>	
minimum elong	13145 Apr 27 05:55	14° <b>8</b> 33'18	10°20'16	retrograde	13151 Aug 23 11:28	1° <b>II</b> 13'23	
max. Earth dist.	13145 Apr 27 12:22	14° <b>8</b> 33'56	31.02808 AU		13151 Nov 05 07:49	30° <b>R8</b>	
morning rise	13145 May 08 16:38	14° <b>8</b> 59'50		opposition	13151 Nov 09 13:52	29° <b>8</b> 53'11	7°19'27
	13145 May 08 18:20	15° <b>8</b>		min. Earth dist.	13151 Nov 08 16:35	29° <b>8</b> 54'37	29.85176 AU
retrograde	13145 Aug 09 08:30	17° <b>8</b> 07'59		direct	13152 Jan 28 13:36	28° <b>8</b> 31'23	
opposition	13145 Oct 25 16:21	15° <b>8</b> 46'12	10°47'23		13152 Apr 15 06:33	0° <b>II</b>	
min. Earth dist.	13145 Oct 25 08:38	15° <b>8</b> 46'44	29.10961 AU	evening set	13152 Apr 29 09:18	0° <b>II</b> 29'52	
	13145 Nov 24 08:09	15° <b>R8</b>					
direct	13146 Jan 13 05:01	14° <b>8</b> 22'36		conjunction	13152 May 13 11:43	1° <b>II</b> 01'06	6°34'50
	13146 Mar 02 06:53	15° <b>8</b>		minimum elong	13152 May 13 12:00	1° <b>II</b> 01'08	6°34'00
evening set	13146 Apr 17 23:34	16° <b>8</b> 31'48		max. Earth dist.	13152 May 14 11:04	1° <b>II</b> 03'16	31.91584 AU
				morning rise	13152 May 27 13:13	1° <b>II</b> 32'16	
conjunction	13146 Apr 29 22:16	16° <b>8</b> 59'20	9°50'31	retrograde	13152 Aug 24 22:53	3° <b>II</b> 28'15	
minimum elong	13146 Apr 29 22:40	16° <b>8</b> 59'22	9°49'51	min. Earth dist.	13152 Nov 10 03:57	2° <b>II</b> 09'55	30.00835 AU
max. Earth dist.	13146 Apr 30 08:27	17° <b>8</b> 00'19	31.12815 AU	opposition	13152 Nov 11 03:06	2° <b>II</b> 08'23	6°43'07
morning rise	13146 May 11 20:22	17° <b>8</b> 26'49		direct	13153 Jan 30 03:49	0° <b>II</b> 46'58	
retrograde	13146 Aug 11 22:18	19° <b>8</b> 33'04		evening set	13153 May 01 14:51	2° <b>II</b> 43'53	
opposition	13146 Oct 28 09:35	18° <b>8</b> 11'32	10°14'23				
min. Earth dist.	13146 Oct 28 00:17	18° <b>8</b> 12'10	29.21072 AU	conjunction	13153 May 15 23:30	3° <b>II</b> 15'28	6°00'46
direct	13147 Jan 16 00:24	16° <b>8</b> 48'13		minimum elong	13153 May 15 23:46	3° <b>II</b> 15'29	5°59'56
evening set	13147 Apr 20 05:15	18° <b>8</b> 55'31		max. Earth dist.	13153 May 17 01:25	3° <b>II</b> 17'51	32.07947 AU
				morning rise	13153 May 30 06:59	3° <b>II</b> 46'58	
conjunction	13147 May 02 14:16	19° <b>8</b> 23'52	9°19'21	retrograde	13153 Aug 27 08:42	5° <b>II</b> 41'28	
minimum elong	13147 May 02 14:40	19° <b>8</b> 23'54	9°18'40	opposition	13153 Nov 13 15:45	4° <b>II</b> 21'58	6°06'33

min. Earth dist.	13153 Nov 12 14:16	4°II23'39	30.17386 AU	morning rise	13160 Jun 14 22:31	18°II42'42	
direct	13154 Feb 01 19:11	3°II00'57		retrograde	13160 Sep 10 10:22	20°II28'32	
evening set	13154 May 03 20:20	4°II56'22		min. Earth dist.	13160 Nov 27 00:49	19°II13'49	31.52048 AU
conjunction	13154 May 18 10:19	5°II28'14	5°26'32	opposition	13160 Nov 28 13:50	19°II11'29	1°51'28
minimum elong	13154 May 18 10:33	5°II28'15	5°25'39	direct	13161 Feb 17 05:43	17°II53'08	
max. Earth dist.	13154 May 19 13:42	5°II30'44	32.25143 AU	evening set	13161 May 17 09:04	19°II39'34	
morning rise	13154 Jun 01 23:21	6°II00'00		conjunction	13161 Jun 01 20:08	20°II11'37	1°28'01
retrograde	13154 Aug 29 19:57	7°II53'07		minimum elong	13161 Jun 01 20:12	20°II11'37	1°27'03
min. Earth dist.	13154 Nov 15 00:01	6°II35'48	30.34773 AU	max. Earth dist.	13161 Jun 03 10:28	20°II14'57	33.62712 AU
opposition	13154 Nov 16 03:47	6°II33'58	5°29'52	morning rise	13161 Jun 17 06:00	20°II43'33	
direct	13155 Feb 04 08:53	5°II13'22		retrograde	13161 Sep 12 16:00	22°II28'21	
evening set	13155 May 06 01:44	7°II07'21		min. Earth dist.	13161 Nov 29 06:56	21°II13'59	31.73322 AU
conjunction	13155 May 20 20:43	7°II39'25	4°52'11	opposition	13161 Nov 30 21:13	21°II11'35	1°15'58
minimum elong	13155 May 20 20:55	7°II39'26	4°51'18	direct	13162 Feb 19 13:04	19°II53'34	
max. Earth dist.	13155 May 22 02:56	7°II42'10	32.43107 AU	evening set	13162 May 19 13:26	21°II38'54	
morning rise	13155 Jun 04 14:21	8°II11'23		conjunction	13162 Jun 04 01:24	22°II10'46	0°54'51
retrograde	13155 Sep 01 04:17	10°II03'09		minimum elong	13162 Jun 04 01:26	22°II10'46	0°53'51
min. Earth dist.	13155 Nov 17 10:07	8°II46'17	30.52890 AU	max. Earth dist.	13162 Jun 05 17:41	22°II14'14	33.84277 AU
opposition	13155 Nov 18 15:02	8°II44'23	4°53'08	morning rise	13162 Jun 19 11:57	22°II42'32	
direct	13156 Feb 06 23:26	7°II24'11		retrograde	13162 Sep 14 18:58	24°II26'19	
evening set	13156 May 07 07:18	9°II16'48		min. Earth dist.	13162 Dec 01 12:13	23°II12'20	31.95085 AU
conjunction	13156 May 22 06:18	9°II49'00	4°17'49	opposition	13162 Dec 03 03:51	23°II09'51	0°40'52
minimum elong	13156 May 22 06:29	9°II49'01	4°16'54	direct	13163 Feb 21 22:52	21°II52'11	
max. Earth dist.	13156 May 23 13:13	9°II51'48	32.61739 AU	evening set	13163 May 21 17:51	23°II36'28	
morning rise	13156 Jun 06 04:15	10°II21'07		conjunction	13163 Jun 06 05:57	24°II08'07	0°22'02
retrograde	13156 Sep 02 12:45	12°II11'35		minimum elong	13163 Jun 06 05:57	24°II08'07	0°21'04
min. Earth dist.	13156 Nov 18 18:11	10°II55'14	30.71667 AU	max. Earth dist.	13163 Jun 07 22:59	24°II11'38	34.06332 AU
opposition	13156 Nov 20 01:42	10°II53'12	4°16'26	morning rise	13163 Jun 21 16:57	24°II39'40	
direct	13157 Feb 08 11:23	9°II33'24		retrograde	13163 Sep 16 23:45	26°II22'31	
evening set	13157 May 09 12:37	11°II24'41		min. Earth dist.	13163 Dec 03 15:52	25°II08'57	32.17395 AU
conjunction	13157 May 24 15:18	11°II56'58	3°43'31	opposition	13163 Dec 05 09:39	25°II06'21	0°06'11
minimum elong	13157 May 24 15:28	11°II56'58	3°42'35	desc. node	13164 Feb 09 14:35	23°II52'12	
max. Earth dist.	13157 May 26 00:54	11°II59'59	32.80962 AU	direct	13164 Feb 24 06:41	23°II49'02	
morning rise	13157 Jun 08 16:37	12°II29'08		evening set	13164 May 22 21:56	25°II32'21	
retrograde	13157 Sep 04 17:41	14°II18'23		conjunction	13164 Jun 07 10:00	26°II03'45	-0°10'26
min. Earth dist.	13157 Nov 21 03:45	13°II02'26	30.91018 AU	minimum elong	13164 Jun 07 10:00	26°II03'45	0°11'26
opposition	13157 Nov 22 11:51	13°II00'21	3°39'52	behind sun begin	13164 Jun 07 05:19	26°II03'22	
direct	13158 Feb 10 23:22	11°II40'57		behind sun end	13164 Jun 07 14:41	26°II04'07	
evening set	13158 May 11 18:01	13°II30'57		max. Earth dist.	13164 Jun 09 05:34	26°II07'27	34.28918 AU
conjunction	13158 May 26 23:33	14°II03'15	3°09'19	morning rise	13164 Jun 22 20:40	26°II35'02	
minimum elong	13158 May 26 23:41	14°II03'16	3°08'22	retrograde	13164 Sep 18 01:27	28°II17'01	
max. Earth dist.	13158 May 28 09:34	14°II06'17	33.00718 AU	min. Earth dist.	13164 Dec 04 20:28	27°II03'49	32.40237 AU
morning rise	13158 Jun 11 03:54	14°II35'27		opposition	13164 Dec 06 15:00	27°II01'11	-0°28'00
retrograde	13158 Sep 07 00:51	16°II23'31		direct	13165 Feb 25 15:11	25°II44'14	
min. Earth dist.	13158 Nov 23 10:37	15°II08'03	31.10896 AU	evening set	13165 May 25 01:53	27°II26'39	
opposition	13158 Nov 24 21:12	15°II05'49	3°03'28	conjunction	13165 Jun 09 13:09	27°II57'45	-0°42'23
direct	13159 Feb 13 09:46	13°II46'47		minimum elong	13165 Jun 09 13:07	27°II57'45	0°43'22
evening set	13159 May 13 23:07	15°II35'33		max. Earth dist.	13165 Jun 11 09:12	28°II01'29	34.52013 AU
conjunction	13159 May 29 07:06	16°II07'49	2°35'18	morning rise	13165 Jun 24 23:19	28°II28'46	
minimum elong	13159 May 29 07:13	16°II07'50	2°34'22		13165 Aug 25 10:48	0°☾	
max. Earth dist.	13159 May 30 19:11	16°II11'01	33.20944 AU	retrograde	13165 Sep 20 03:39	0°☾09'57	
morning rise	13159 Jun 13 13:47	16°II39'59			13165 Oct 16 06:15	30°☾II	
retrograde	13159 Sep 09 05:19	18°II26'55		min. Earth dist.	13165 Dec 06 22:27	28°II57'15	32.63592 AU
min. Earth dist.	13159 Nov 25 18:56	17°II11'47	31.31251 AU	opposition	13165 Dec 08 19:39	28°II54'27	-1°01'41
opposition	13159 Nov 27 05:59	17°II09'33	2°27'19	direct	13166 Feb 27 21:11	27°II37'54	
direct	13160 Feb 15 19:06	15°II50'53		evening set	13166 May 27 05:35	29°II19'28	
evening set	13160 May 15 04:11	17°II38'26		conjunction	13166 Jun 11 15:52	29°II50'15	-1°13'52
conjunction	13160 May 30 14:01	18°II10'37	2°01'32	minimum elong	13166 Jun 11 15:49	29°II50'15	1°14'53
minimum elong	13160 May 30 14:06	18°II10'38	2°00'33	max. Earth dist.	13166 Jun 13 14:17	29°II54'09	34.75573 AU
max. Earth dist.	13160 Jun 01 02:59	18°II13'52	33.41617 AU		13166 Jun 16 12:08	0°☾	
				morning rise	13166 Jun 27 00:53	0°☾20'57	

retrograde	13166 Sep 22 03:14	2°☾01'23		conjunction	13173 Jun 23 18:45	12°☾19'36	-4°39'01
min. Earth dist.	13166 Dec 09 02:13	0°☾49'03	32.87402 AU	minimum elong	13173 Jun 23 18:36	12°☾19'35	4°40'01
opposition	13166 Dec 10 23:46	0°☾46'16	-1°34'49	max. Earth dist.	13173 Jun 25 22:41	12°☾23'44	36.47460 AU
	13167 Jan 13 18:51	30°☿II		morning rise	13173 Jul 08 09:51	12°☾47'23	
direct	13167 Mar 02 02:25	29°II30'06		retrograde	13173 Oct 03 23:18	14°☾23'48	
	13167 Apr 16 18:01	0°☾		min. Earth dist.	13173 Dec 21 09:12	13°☾14'03	34.60515 AU
evening set	13167 May 29 09:04	1°☾10'53		opposition	13173 Dec 23 12:22	13°☾11'02	-5°09'27
				direct	13174 Mar 15 00:06	11°☾57'29	
conjunction	13167 Jun 13 17:51	1°☾41'19	-1°44'51	evening set	13174 Jun 11 04:47	13°☾33'51	
minimum elong	13167 Jun 13 17:47	1°☾41'19	1°45'52				
max. Earth dist.	13167 Jun 15 16:45	1°☾45'14	34.99534 AU	conjunction	13174 Jun 25 16:54	14°☾01'13	-5°05'58
morning rise	13167 Jun 29 01:29	2°☾11'40		minimum elong	13174 Jun 25 16:45	14°☾01'12	5°06'59
retrograde	13167 Sep 24 04:03	3°☾51'25		max. Earth dist.	13174 Jun 27 20:49	14°☾05'20	36.72420 AU
min. Earth dist.	13167 Dec 11 03:43	2°☾39'33	33.11574 AU	morning rise	13174 Jul 10 04:12	14°☾28'30	
opposition	13167 Dec 13 03:09	2°☾36'40	-2°07'21	retrograde	13174 Oct 05 19:35	16°☾04'28	
direct	13168 Mar 03 06:31	1°☾20'55		min. Earth dist.	13174 Dec 23 07:08	14°☾55'05	34.85669 AU
evening set	13168 May 30 12:32	3°☾00'57		opposition	13174 Dec 25 11:48	14°☾51'59	-5°37'30
				direct	13175 Mar 17 01:11	13°☾38'44	
conjunction	13168 Jun 14 19:21	3°☾31'01	-2°15'18	evening set	13175 Jun 13 06:33	15°☾14'36	
minimum elong	13168 Jun 14 19:16	3°☾31'01	2°16'20				
max. Earth dist.	13168 Jun 16 19:34	3°☾35'00	35.23794 AU	conjunction	13175 Jun 27 14:27	15°☾41'26	-5°32'17
morning rise	13168 Jun 30 01:08	4°☾01'00		minimum elong	13175 Jun 27 14:18	15°☾41'26	5°33'17
retrograde	13168 Sep 25 05:11	5°☾40'07		max. Earth dist.	13175 Jun 29 19:23	15°☾45'36	36.97491 AU
min. Earth dist.	13168 Dec 12 06:02	4°☾28'38	33.36044 AU	morning rise	13175 Jul 11 21:40	16°☾08'14	
opposition	13168 Dec 14 06:03	4°☾25'44	-2°39'18	retrograde	13175 Oct 07 16:38	17°☾43'46	
direct	13169 Mar 05 08:39	3°☾10'22		min. Earth dist.	13175 Dec 25 05:47	16°☾34'40	35.10983 AU
evening set	13169 Jun 01 15:45	4°☾49'43		opposition	13175 Dec 27 10:53	16°☾31'34	-6°04'51
				direct	13176 Mar 17 23:55	15°☾18'39	
conjunction	13169 Jun 16 20:23	5°☾19'23	-2°45'13	evening set	13176 Jun 14 08:04	16°☾54'02	
minimum elong	13169 Jun 16 20:17	5°☾19'23	2°46'13				
max. Earth dist.	13169 Jun 18 21:42	5°☾23'26	35.48302 AU	conjunction	13176 Jun 28 11:35	17°☾20'20	-5°57'58
morning rise	13169 Jul 01 23:49	5°☾48'58		minimum elong	13176 Jun 28 11:25	17°☾20'20	5°58'58
retrograde	13169 Sep 27 05:40	7°☾27'29		max. Earth dist.	13176 Jun 30 17:34	17°☾24'34	37.22732 AU
min. Earth dist.	13169 Dec 14 07:32	6°☾16'24	33.60722 AU	morning rise	13176 Jul 12 14:14	17°☾46'36	
opposition	13169 Dec 16 08:26	6°☾13'27	-3°10'38	retrograde	13176 Oct 08 13:38	19°☾21'45	
direct	13170 Mar 07 13:07	4°☾58'30		min. Earth dist.	13176 Dec 26 03:24	18°☾12'59	35.36464 AU
evening set	13170 Jun 03 18:47	6°☾37'12		opposition	13176 Dec 28 09:18	18°☾09'51	-6°31'30
				direct	13177 Mar 19 22:36	16°☾57'15	
conjunction	13170 Jun 18 20:38	7°☾06'26	-3°14'33	evening set	13177 Jun 16 09:27	18°☾32'13	
minimum elong	13170 Jun 18 20:31	7°☾06'26	3°15'34				
max. Earth dist.	13170 Jun 20 22:06	7°☾10'28	35.72967 AU	conjunction	13177 Jun 30 08:06	18°☾57'59	-6°23'00
morning rise	13170 Jul 03 21:38	7°☾35'36		minimum elong	13177 Jun 30 07:56	18°☾57'58	6°23'59
retrograde	13170 Sep 29 07:44	9°☾13'34		max. Earth dist.	13177 Jul 02 14:15	19°☾02'11	37.48143 AU
min. Earth dist.	13170 Dec 16 08:09	8°☾02'52	33.85560 AU	morning rise	13177 Jul 14 06:13	19°☾23'43	
opposition	13170 Dec 18 10:17	7°☾59'52	-3°41'19	retrograde	13177 Oct 10 11:33	20°☾58'32	
direct	13171 Mar 09 15:04	6°☾45'17		min. Earth dist.	13177 Dec 27 23:55	19°☾50'07	35.62135 AU
evening set	13171 Jun 05 21:37	8°☾23'23		opposition	13177 Dec 30 07:21	19°☾46'55	-6°57'27
				direct	13178 Mar 21 19:11	18°☾34'40	
conjunction	13171 Jun 20 20:39	8°☾52'11	-3°43'18	evening set	13178 Jun 18 10:19	20°☾09'14	
minimum elong	13171 Jun 20 20:32	8°☾52'10	3°44'18				
max. Earth dist.	13171 Jun 22 23:33	8°☾56'17	35.97745 AU	conjunction	13178 Jul 02 04:11	20°☾34'28	-6°47'24
morning rise	13171 Jul 05 18:33	9°☾20'54		minimum elong	13178 Jul 02 04:01	20°☾34'27	6°48'23
retrograde	13171 Oct 01 05:35	10°☾58'19		max. Earth dist.	13178 Jul 04 12:04	20°☾38'46	37.73714 AU
min. Earth dist.	13171 Dec 18 09:37	9°☾47'55	34.10480 AU	morning rise	13178 Jul 15 21:16	20°☾59'39	
opposition	13171 Dec 20 11:27	9°☾44'58	-4°11'21	retrograde	13178 Oct 12 06:05	22°☾34'09	
direct	13172 Mar 10 18:23	8°☾30'44		min. Earth dist.	13178 Dec 29 21:44	21°☾26'01	35.87932 AU
evening set	13172 Jun 07 00:24	10°☾08'14		opposition	13179 Jan 01 04:55	21°☾22'51	-7°22'42
				direct	13179 Mar 23 19:10	20°☾10'56	
conjunction	13172 Jun 21 19:59	10°☾36'34	-4°11'27	evening set	13179 Jun 20 11:15	21°☾45'09	
minimum elong	13172 Jun 21 19:51	10°☾36'34	4°12'29				
max. Earth dist.	13172 Jun 23 22:19	10°☾40'37	36.22580 AU	conjunction	13179 Jul 03 23:47	22°☾09'50	-7°11'09
morning rise	13172 Jul 06 14:46	11°☾04'50		minimum elong	13179 Jul 03 23:37	22°☾09'49	7°12'06
retrograde	13172 Oct 02 03:28	12°☾41'44		max. Earth dist.	13179 Jul 06 07:08	22°☾14'04	37.99382 AU
min. Earth dist.	13172 Dec 19 08:39	11°☾31'44	34.35465 AU	morning rise	13179 Jul 17 11:51	22°☾34'28	
opposition	13172 Dec 21 12:06	11°☾28'42	-4°40'44	retrograde	13179 Oct 14 01:04	24°☾08'40	
direct	13173 Mar 12 21:28	10°☾14'48		min. Earth dist.	13179 Dec 31 17:04	23°☾00'56	36.13804 AU
evening set	13173 Jun 09 02:41	11°☾51'44		opposition	13180 Jan 03 01:45	22°☾57'42	-7°47'15

direct	13180 Mar 24 18:05	21°☾46'07	conjunction	13186 Jul 14 06:14	2°♊48'26 -9°39'51
evening set	13180 Jun 21 11:52	23°☾20'01	minimum elong	13186 Jul 14 06:03	2°♊48'26 9°40'46
			max. Earth dist.	13186 Jul 16 14:26	2°♊52'33 39.76601 AU
conjunction	13180 Jul 04 19:05	23°☾44'08 -7°34'15	morning rise	13186 Jul 26 00:39	3°♊09'01
minimum elong	13180 Jul 04 18:54	23°☾44'07 7°35'13	retrograde	13186 Oct 24 02:16	4°♊41'52
max. Earth dist.	13180 Jul 07 03:48	23°☾48'27 38.25079 AU	min. Earth dist.	13187 Jan 11 08:23	3°♊35'58 37.91853 AU
morning rise	13180 Jul 18 01:45	24°☾08'13	opposition	13187 Jan 13 17:43	3°♊32'48 -10°20'20
retrograde	13180 Oct 14 18:46	25°☾42'10	direct	13187 Apr 05 16:12	2°♊23'20
min. Earth dist.	13181 Jan 01 14:22	24°☾34'42 36.39684 AU	evening set	13187 Jul 04 10:39	3°♊55'30
opposition	13181 Jan 03 22:32	24°☾31'30 -8°11'06			
direct	13181 Mar 26 16:17	23°☾20'16	conjunction	13187 Jul 15 22:40	4°♊15'29 -9°58'41
evening set	13181 Jun 23 12:16	24°☾53'52	minimum elong	13187 Jul 15 22:30	4°♊15'29 9°59'35
			max. Earth dist.	13187 Jul 18 07:37	4°♊19'38 40.01195 AU
conjunction	13181 Jul 06 13:51	25°☾17'24 -7°56'43	morning rise	13187 Jul 27 10:29	4°♊35'27
minimum elong	13181 Jul 06 13:40	25°☾17'24 7°57'40	retrograde	13187 Oct 25 17:09	6°♊08'11
max. Earth dist.	13181 Jul 08 22:25	25°☾21'41 38.50748 AU	min. Earth dist.	13188 Jan 13 02:38	5°♊02'28 38.16603 AU
morning rise	13181 Jul 19 14:53	25°☾40'55	opposition	13188 Jan 15 11:22	4°♊59'21 -10°39'37
retrograde	13181 Oct 16 11:49	27°☾14'39	direct	13188 Apr 06 11:10	3°♊50'09
min. Earth dist.	13182 Jan 03 09:40	26°☾07'31 36.65492 AU	evening set	13188 Jul 05 09:34	5°♊22'09
opposition	13182 Jan 05 18:45	26°☾04'18 -8°34'17			
direct	13182 Mar 28 14:02	24°☾53'24	conjunction	13188 Jul 16 14:45	5°♊41'31 -10°16'54
evening set	13182 Jun 25 12:35	26°☾26'42	minimum elong	13188 Jul 16 14:34	5°♊41'31 10°17'47
			max. Earth dist.	13188 Jul 18 23:54	5°♊45'40 40.25707 AU
conjunction	13182 Jul 08 08:17	26°☾49'40 -8°18'34	morning rise	13188 Jul 27 19:36	6°♊00'53
minimum elong	13182 Jul 08 08:06	26°☾49'39 8°19'31	retrograde	13188 Oct 26 07:56	7°♊33'32
max. Earth dist.	13182 Jul 10 16:58	26°☾53'56 38.76305 AU	min. Earth dist.	13189 Jan 13 19:15	6°♊28'04 38.41273 AU
morning rise	13182 Jul 21 03:41	27°☾12'36	opposition	13189 Jan 16 04:40	6°♊24'56 -10°58'15
retrograde	13182 Oct 18 06:57	28°☾46'09	direct	13189 Apr 08 05:44	5°♊16'00
min. Earth dist.	13183 Jan 05 05:37	27°☾39'16 36.91184 AU	evening set	13189 Jul 07 08:06	6°♊47'52
opposition	13183 Jan 07 14:35	27°☾36'04 -8°56'47			
direct	13183 Mar 30 08:52	26°☾25'29	conjunction	13189 Jul 18 06:12	7°♊06'38 -10°34'32
evening set	13183 Jun 27 12:38	27°☾58'32	minimum elong	13189 Jul 18 06:02	7°♊06'37 10°35'24
			max. Earth dist.	13189 Jul 20 15:14	7°♊10'44 40.50153 AU
conjunction	13183 Jul 10 02:29	28°☾20'55 -8°39'47	morning rise	13189 Jul 29 04:15	7°♊25'23
minimum elong	13183 Jul 10 02:19	28°☾20'54 8°40'44	retrograde	13189 Oct 28 02:06	8°♊57'58
max. Earth dist.	13183 Jul 12 11:36	28°☾25'11 39.01710 AU	min. Earth dist.	13190 Jan 15 11:39	7°♊52'46 38.65902 AU
morning rise	13183 Jul 22 15:46	28°☾43'16	opposition	13190 Jan 17 21:40	7°♊49'37 -11°16'15
	13183 Sep 14 14:20	0°♊	direct	13190 Apr 09 20:05	6°♊40'58
retrograde	13183 Oct 20 00:49	0°♊16'38	evening set	13190 Jul 09 06:28	8°♊12'43
	13183 Nov 25 09:15	30°♋☾			
min. Earth dist.	13184 Jan 07 01:28	29°☾09'59 37.16672 AU	conjunction	13190 Jul 19 21:35	8°♊30'53 -10°51'33
opposition	13184 Jan 09 10:00	29°☾06'50 -9°18'38	minimum elong	13190 Jul 19 21:25	8°♊30'52 10°52'24
direct	13184 Mar 31 04:34	27°☾56'33	max. Earth dist.	13190 Jul 22 07:41	8°♊35'02 40.74555 AU
evening set	13184 Jun 28 12:38	29°☾29'22	morning rise	13190 Jul 30 12:24	8°♊49'02
			retrograde	13190 Oct 29 17:14	10°♊21'34
conjunction	13184 Jul 10 20:07	29°☾51'09 -9°00'24	min. Earth dist.	13191 Jan 17 04:42	9°♊16'36 38.90454 AU
minimum elong	13184 Jul 10 19:56	29°☾51'08 9°01'20	opposition	13191 Jan 19 14:09	9°♊13'29 -11°33'37
max. Earth dist.	13184 Jul 13 04:15	29°☾55'18 39.26889 AU	direct	13191 Apr 11 12:42	8°♊05'07
	13184 Jul 15 19:37	0°♊	evening set	13191 Jul 11 04:45	9°♊36'48
morning rise	13184 Jul 23 03:23	0°♊12'55			
retrograde	13184 Oct 20 19:30	1°♊46'05	conjunction	13191 Jul 21 12:28	9°♊54'21 -11°07'59
min. Earth dist.	13185 Jan 07 19:39	0°♊39'44 37.41941 AU	minimum elong	13191 Jul 21 12:19	9°♊54'21 11°08'51
opposition	13185 Jan 10 04:59	0°♊36'33 -9°39'50	max. Earth dist.	13191 Jul 23 21:42	9°♊58'25 40.98870 AU
	13185 Feb 07 23:12	30°♋☾	morning rise	13191 Jul 31 20:08	10°♊11'54
direct	13185 Apr 01 23:04	29°☾26'33	retrograde	13191 Oct 31 08:25	11°♊44'24
	13185 May 23 02:31	0°♊	min. Earth dist.	13192 Jan 18 19:43	10°♊39'45 39.14901 AU
evening set	13185 Jun 30 12:14	0°♊59'08	opposition	13192 Jan 21 06:17	10°♊36'35 -11°50'22
			direct	13192 Apr 12 04:44	9°♊28'31
conjunction	13185 Jul 12 13:31	1°♊20'20 -9°20'26	evening set	13192 Jul 12 02:39	11°♊00'09
minimum elong	13185 Jul 12 13:21	1°♊20'19 9°21'21			
max. Earth dist.	13185 Jul 14 22:39	1°♊24'32 39.51846 AU	conjunction	13192 Jul 22 03:04	11°♊17'05 -11°23'51
morning rise	13185 Jul 24 14:22	1°♊41'30	minimum elong	13192 Jul 22 02:55	11°♊17'05 11°24'40
retrograde	13185 Oct 22 10:51	3°♊14'30	max. Earth dist.	13192 Jul 24 13:19	11°♊21'12 41.23046 AU
min. Earth dist.	13186 Jan 09 15:21	2°♊08'20 37.66988 AU	morning rise	13192 Aug 01 03:20	11°♊34'01
opposition	13186 Jan 11 23:40	2°♊05'13 -10°00'24	retrograde	13192 Oct 31 21:00	13°♊06'31
direct	13186 Apr 03 20:15	0°♊55'29	min. Earth dist.	13193 Jan 19 12:39	12°♊02'04 39.39186 AU
evening set	13186 Jul 02 11:35	2°♊27'51	opposition	13193 Jan 21 22:15	11°♊58'58 -12°06'30

direct	13193 Apr 13 22:56	10° $\Omega$ 51'12	conjunction	13199 Aug 01 01:31	20° $\Omega$ 35'34	-13°00'01
evening set	13193 Jul 14 00:36	12° $\Omega$ 22'47	minimum elong	13199 Aug 01 01:25	20° $\Omega$ 35'33	13°00'45
			max. Earth dist.	13199 Aug 03 09:10	20° $\Omega$ 39'21	42.84557 AU
conjunction	13193 Jul 23 17:26	12° $\Omega$ 39'06 -11°39'09	morning rise	13199 Aug 08 18:07	20° $\Omega$ 48'06	
minimum elong	13193 Jul 23 17:17	12° $\Omega$ 39'06 11°39'59	retrograde	13199 Nov 10 16:01	22° $\Omega$ 20'52	
max. Earth dist.	13193 Jul 26 03:01	12° $\Omega$ 43'10 41.47047 AU	min. Earth dist.	13200 Jan 29 21:11	21° $\Omega$ 17'41	41.00888 AU
morning rise	13193 Aug 02 10:07	12° $\Omega$ 55'25	opposition	13200 Feb 01 04:34	21° $\Omega$ 14'47	-13°44'00
retrograde	13193 Nov 02 09:32	14° $\Omega$ 27'57	direct	13200 Apr 23 09:34	20° $\Omega$ 08'38	
min. Earth dist.	13194 Jan 21 03:37	13° $\Omega$ 23'46 39.63255 AU	evening set	13200 Jul 25 05:52	21° $\Omega$ 40'11	
opposition	13194 Jan 23 13:45	13° $\Omega$ 20'39 -12°22'04				
direct	13194 Apr 15 16:12	12° $\Omega$ 13'10	conjunction	13200 Aug 01 13:45	21° $\Omega$ 52'05	-13°11'44
evening set	13194 Jul 15 22:13	13° $\Omega$ 44'43	minimum elong	13200 Aug 01 13:40	21° $\Omega$ 52'04	13°12'27
			max. Earth dist.	13200 Aug 03 21:29	21° $\Omega$ 55'52	43.06431 AU
conjunction	13194 Jul 25 07:22	14° $\Omega$ 00'25 -11°53'54	morning rise	13200 Aug 08 21:36	22° $\Omega$ 03'59	
minimum elong	13194 Jul 25 07:14	14° $\Omega$ 00'24 11°54'42	retrograde	13200 Nov 11 02:30	23° $\Omega$ 36'49	
max. Earth dist.	13194 Jul 27 16:45	14° $\Omega$ 04'26 41.70796 AU	min. Earth dist.	13201 Jan 30 10:21	22° $\Omega$ 33'49	41.22823 AU
morning rise	13194 Aug 03 16:33	14° $\Omega$ 16'07	opposition	13201 Feb 01 17:54	22° $\Omega$ 30'55	-13°55'49
	13194 Aug 31 21:20	15° $\Omega$	direct	13201 Apr 25 01:00	21° $\Omega$ 24'58	
retrograde	13194 Nov 04 00:03	15° $\Omega$ 48'41	evening set	13201 Jul 27 02:37	22° $\Omega$ 56'35	
	13195 Jan 10 15:43	15° $\Omega$				
min. Earth dist.	13195 Jan 22 19:32	14° $\Omega$ 44'42 39.87057 AU	conjunction	13201 Aug 03 01:38	23° $\Omega$ 07'49	-13°22'57
opposition	13195 Jan 25 05:03	14° $\Omega$ 41'38 -12°37'03	minimum elong	13201 Aug 03 01:33	23° $\Omega$ 07'49	13°23'39
direct	13195 Apr 17 07:37	13° $\Omega$ 34'25	max. Earth dist.	13201 Aug 05 08:39	23° $\Omega$ 11'32	43.28126 AU
	13195 Jul 14 05:12	15° $\Omega$	morning rise	13201 Aug 10 00:44	23° $\Omega$ 19'04	
evening set	13195 Jul 17 19:54	15° $\Omega$ 05'57	retrograde	13201 Nov 12 16:19	24° $\Omega$ 52'02	
			min. Earth dist.	13202 Jan 31 23:05	23° $\Omega$ 49'13	41.44611 AU
conjunction	13195 Jul 26 21:19	15° $\Omega$ 21'01 -12°08'08	opposition	13202 Feb 03 06:59	23° $\Omega$ 46'19	-14°07'05
minimum elong	13195 Jul 26 21:11	15° $\Omega$ 21'01 12°08'55	direct	13202 Apr 26 12:49	22° $\Omega$ 40'35	
max. Earth dist.	13195 Jul 29 06:51	15° $\Omega$ 25'02 41.94249 AU	evening set	13202 Jul 28 23:15	24° $\Omega$ 12'16	
morning rise	13195 Aug 04 22:33	15° $\Omega$ 36'06				
retrograde	13195 Nov 05 14:10	17° $\Omega$ 08'42	conjunction	13202 Aug 04 13:22	24° $\Omega$ 22'51	-13°33'41
min. Earth dist.	13196 Jan 24 11:05	16° $\Omega$ 04'54 40.10514 AU	minimum elong	13202 Aug 04 13:18	24° $\Omega$ 22'51	13°34'21
opposition	13196 Jan 26 19:53	16° $\Omega$ 01'53 -12°51'30	max. Earth dist.	13202 Aug 06 21:25	24° $\Omega$ 26'37	43.49674 AU
	13196 Mar 28 13:03	15° $\Omega$	morning rise	13202 Aug 11 03:26	24° $\Omega$ 33'28	
direct	13196 Apr 17 22:50	14° $\Omega$ 54'55	retrograde	13202 Nov 14 04:35	26° $\Omega$ 06'33	
	13196 May 07 23:33	15° $\Omega$	min. Earth dist.	13203 Feb 02 12:44	25° $\Omega$ 03'53	41.66221 AU
evening set	13196 Jul 18 17:30	16° $\Omega$ 26'26	opposition	13203 Feb 04 19:47	25° $\Omega$ 01'02	-14°17'51
			direct	13203 Apr 28 01:01	23° $\Omega$ 55'32	
conjunction	13196 Jul 27 10:49	16° $\Omega$ 40'53 -12°21'51	evening set	13203 Jul 30 20:00	25° $\Omega$ 27'21	
minimum elong	13196 Jul 27 10:42	16° $\Omega$ 40'53 12°22'37				
max. Earth dist.	13196 Jul 29 18:55	16° $\Omega$ 44'46 42.17347 AU	conjunction	13203 Aug 06 00:46	25° $\Omega$ 37'16	-13°43'54
morning rise	13196 Aug 05 04:12	16° $\Omega$ 55'21	minimum elong	13203 Aug 06 00:41	25° $\Omega$ 37'16	13°44'33
retrograde	13196 Nov 06 06:31	18° $\Omega$ 27'58	max. Earth dist.	13203 Aug 08 07:39	25° $\Omega$ 40'56	43.71049 AU
min. Earth dist.	13197 Jan 25 01:26	17° $\Omega$ 24'23 40.33614 AU	morning rise	13203 Aug 12 05:35	25° $\Omega$ 47'12	
opposition	13197 Jan 27 10:34	17° $\Omega$ 21'22 -13°05'24	retrograde	13203 Nov 15 17:08	27° $\Omega$ 20'28	
direct	13197 Apr 19 10:45	16° $\Omega$ 14'38	min. Earth dist.	13204 Feb 04 00:12	26° $\Omega$ 18'03	41.87643 AU
evening set	13197 Jul 20 14:43	17° $\Omega$ 46'08	opposition	13204 Feb 06 08:07	26° $\Omega$ 15'10	-14°28'06
			direct	13204 Apr 28 11:45	25° $\Omega$ 09'54	
conjunction	13197 Jul 29 00:03	17° $\Omega$ 59'58 -12°35'04	evening set	13204 Jul 31 16:41	26° $\Omega$ 41'52	
minimum elong	13197 Jul 28 23:55	17° $\Omega$ 59'57 12°35'50				
max. Earth dist.	13197 Jul 31 08:42	18° $\Omega$ 03'51 42.40079 AU	conjunction	13204 Aug 06 12:01	26° $\Omega$ 51'08	-13°53'39
morning rise	13197 Aug 06 09:18	18° $\Omega$ 13'47	minimum elong	13204 Aug 06 11:58	26° $\Omega$ 51'07	13°54'18
retrograde	13197 Nov 07 18:45	19° $\Omega$ 46'27	max. Earth dist.	13204 Aug 08 19:24	26° $\Omega$ 54'48	43.92216 AU
min. Earth dist.	13198 Jan 26 17:24	18° $\Omega$ 42'57 40.56340 AU	morning rise	13204 Aug 12 07:24	27° $\Omega$ 00'23	
opposition	13198 Jan 29 01:02	18° $\Omega$ 40'02 -13°18'48	retrograde	13204 Nov 16 02:31	28° $\Omega$ 33'51	
direct	13198 Apr 21 02:10	17° $\Omega$ 33'30	min. Earth dist.	13205 Feb 04 13:51	27° $\Omega$ 31'35	42.08839 AU
evening set	13198 Jul 22 12:02	19° $\Omega$ 05'00	opposition	13205 Feb 06 20:32	27° $\Omega$ 28'46	-14°37'51
			direct	13205 Apr 30 01:40	26° $\Omega$ 23'45	
conjunction	13198 Jul 30 12:58	19° $\Omega$ 18'12 -12°47'47	evening set	13205 Aug 02 13:29	27° $\Omega$ 55'54	
minimum elong	13198 Jul 30 12:52	19° $\Omega$ 18'11 12°48'32				
max. Earth dist.	13198 Aug 01 20:24	19° $\Omega$ 21'59 42.62468 AU	conjunction	13205 Aug 07 22:58	28° $\Omega$ 04'28	-14°02'56
morning rise	13198 Aug 07 13:54	19° $\Omega$ 31'23	minimum elong	13205 Aug 07 22:54	28° $\Omega$ 04'28	14°03'33
retrograde	13198 Nov 09 05:14	21° $\Omega$ 04'04	max. Earth dist.	13205 Aug 10 05:57	28° $\Omega$ 08'07	44.13145 AU
min. Earth dist.	13199 Jan 28 06:35	20° $\Omega$ 00'47 40.78742 AU	morning rise	13205 Aug 13 08:26	28° $\Omega$ 13'02	
opposition	13199 Jan 30 14:49	19° $\Omega$ 57'50 -13°31'40	retrograde	13205 Nov 17 11:36	29° $\Omega$ 46'45	
direct	13199 Apr 22 18:02	18° $\Omega$ 51'29	min. Earth dist.	13206 Feb 06 01:41	28° $\Omega$ 44'42	42.29749 AU
evening set	13199 Jul 24 08:58	20° $\Omega$ 23'00	opposition	13206 Feb 08 08:34	28° $\Omega$ 41'53	-14°47'08



direct	13206 May 01 15:55	27°03'06		minimum elong	13212 Aug 15 22:42	6°02'24"00	14°56'45
evening set	13206 Aug 04 10:32	29°02'09"29		morning rise	13212 Aug 17 06:19	6°02'26"02	
				max. Earth dist.	13212 Aug 18 01:54	6°02'27"17	45.48946 AU
conjunction	13206 Aug 09 09:46	29°02'17"20	-14°11'47	retrograde	13212 Nov 25 11:23	8°02'03"15	
minimum elong	13206 Aug 09 09:44	29°02'17"20	14°12'24	min. Earth dist.	13213 Feb 14 12:19	7°02'02"07	43.65032 AU
max. Earth dist.	13206 Aug 11 15:56	29°02'20"55	44.33756 AU	opposition	13213 Feb 16 14:26	6°02'59"36	-15°40'05
morning rise	13206 Aug 14 09:07	29°02'25"12		direct	13213 May 10 00:04	5°02'56"10	
	13206 Sep 06 05:35	0°02'00					
retrograde	13206 Nov 19 00:26	0°02'59"11		conjunction	13213 Aug 17 07:50	7°02'33"07	-15°02'15
	13207 Feb 05 09:00	30°02'02		minimum elong	13213 Aug 17 07:52	7°02'33"07	15°02'44
min. Earth dist.	13207 Feb 07 14:03	29°02'57"18	42.50329 AU	max. Earth dist.	13213 Aug 19 09:47	7°02'36"19	45.66917 AU
opposition	13207 Feb 09 20:18	29°02'54"32	-14°55'57	retrograde	13213 Nov 26 23:43	9°02'11"57	
direct	13207 May 03 02:54	28°02'49"59		min. Earth dist.	13214 Feb 15 22:02	8°02'10"59	43.82982 AU
	13207 Jul 22 16:05	0°02'00		opposition	13214 Feb 18 00:39	8°02'08"28	-15°45'59
evening set	13207 Aug 06 08:01	0°02'22"39		direct	13214 May 11 07:47	7°02'05"12	
conjunction	13207 Aug 10 20:34	0°02'29"45	-14°20'11	conjunction	13214 Aug 18 17:04	8°02'41"44	-15°07'52
minimum elong	13207 Aug 10 20:32	0°02'29"45	14°20'47	minimum elong	13214 Aug 18 17:05	8°02'41"44	15°08'20
max. Earth dist.	13207 Aug 13 02:53	0°02'33"19	44.54009 AU	max. Earth dist.	13214 Aug 20 19:36	8°02'44"57	45.84647 AU
morning rise	13207 Aug 15 09:09	0°02'36"53		retrograde	13214 Nov 28 08:31	10°02'20"10	
retrograde	13207 Nov 20 11:18	2°02'11"11		min. Earth dist.	13215 Feb 17 09:22	9°02'19"17	44.00681 AU
min. Earth dist.	13208 Feb 09 02:55	1°02'09"26	42.70497 AU	opposition	13215 Feb 19 10:34	9°02'16"50	-15°51'27
opposition	13208 Feb 11 07:56	1°02'06"44	-15°04'21	direct	13215 May 12 17:12	8°02'13"45	
direct	13208 May 03 15:01	0°02'02"25					
evening set	13208 Aug 07 05:55	1°02'35"22		conjunction	13215 Aug 20 02:03	9°02'49"52	-15°13'04
				minimum elong	13215 Aug 20 02:06	9°02'49"52	15°13'31
conjunction	13208 Aug 11 06:57	1°02'41"42	-14°28'12	max. Earth dist.	13215 Aug 22 03:38	9°02'53"01	46.02143 AU
minimum elong	13208 Aug 11 06:56	1°02'41"42	14°28'47	retrograde	13215 Nov 29 15:35	11°02'27"55	
max. Earth dist.	13208 Aug 13 11:30	1°02'45"08	44.73836 AU	min. Earth dist.	13216 Feb 18 18:32	10°02'27"13	44.18120 AU
morning rise	13208 Aug 15 08:04	1°02'48"03		opposition	13216 Feb 20 20:18	10°02'24"45	-15°56'31
retrograde	13208 Nov 20 23:34	3°02'22"41		direct	13216 May 13 02:55	9°02'21"51	
min. Earth dist.	13209 Feb 09 14:10	2°02'21"08	42.90226 AU				
opposition	13209 Feb 11 19:20	2°02'18"26	-15°12'19	conjunction	13216 Aug 20 10:41	10°02'57"34	-15°17'53
direct	13209 May 04 23:47	1°02'14"19		minimum elong	13216 Aug 20 10:43	10°02'57"34	15°18'20
evening set	13209 Aug 09 04:36	2°02'47"38		max. Earth dist.	13216 Aug 22 11:57	11°02'00"41	46.19359 AU
				retrograde	13216 Nov 29 23:23	12°02'35"16	
conjunction	13209 Aug 12 17:19	2°02'53"09	-14°35'48	min. Earth dist.	13217 Feb 19 05:18	11°02'34"40	44.35275 AU
minimum elong	13209 Aug 12 17:18	2°02'53"09	14°36'21	opposition	13217 Feb 21 06:03	11°02'32"15	-16°01'12
max. Earth dist.	13209 Aug 14 22:00	2°02'56"34	44.93214 AU	direct	13217 May 14 13:18	10°02'29"32	
morning rise	13209 Aug 16 06:04	2°02'58"39					
retrograde	13209 Nov 22 09:17	4°02'33"41		conjunction	13217 Aug 21 19:24	12°02'04"52	-15°22'20
min. Earth dist.	13210 Feb 11 03:07	3°02'32"12	43.09501 AU	minimum elong	13217 Aug 21 19:28	12°02'04"52	15°22'45
opposition	13210 Feb 13 06:34	3°02'29"36	-15°19'52	max. Earth dist.	13217 Aug 23 20:44	12°02'07"59	46.36283 AU
direct	13210 May 06 10:53	2°02'25"40		retrograde	13217 Dec 01 06:46	13°02'42"13	
evening set	13210 Aug 11 04:36	3°02'59"27		min. Earth dist.	13218 Feb 20 15:16	12°02'41"45	44.52089 AU
				opposition	13218 Feb 22 15:26	12°02'39"22	-16°05'29
conjunction	13210 Aug 14 03:22	4°02'04"02	-14°43'01	direct	13218 May 16 00:56	11°02'36"50	
minimum elong	13210 Aug 14 03:21	4°02'04"02	14°43'34				
max. Earth dist.	13210 Aug 16 06:55	4°02'07"22	45.12163 AU	conjunction	13218 Aug 23 03:49	13°02'11"47	-15°26'25
morning rise	13210 Aug 17 02:10	4°02'08"37		minimum elong	13218 Aug 23 03:52	13°02'11"47	15°26'49
retrograde	13210 Nov 23 16:40	5°02'44"07		max. Earth dist.	13218 Aug 25 03:30	13°02'14"47	46.52844 AU
min. Earth dist.	13211 Feb 12 13:47	4°02'42"48	43.28346 AU	retrograde	13218 Dec 02 17:57	14°02'48"48	
opposition	13211 Feb 14 17:22	4°02'40"12	-15°27'02	min. Earth dist.	13219 Feb 22 00:52	13°02'48"29	44.68520 AU
direct	13211 May 07 23:22	3°02'36"26		opposition	13219 Feb 24 00:43	13°02'46"07	-16°09'25
evening set	13211 Aug 13 06:42	5°02'10"48		direct	13219 May 17 09:11	12°02'43"46	
conjunction	13211 Aug 15 13:04	5°02'14"18	-14°49'50	conjunction	13219 Aug 24 12:17	14°02'18"21	-15°30'10
minimum elong	13211 Aug 15 13:05	5°02'14"18	14°50'20	minimum elong	13219 Aug 24 12:22	14°02'18"21	15°30'32
morning rise	13211 Aug 17 19:31	5°02'17"49		max. Earth dist.	13219 Aug 26 12:14	14°02'21"21	46.68982 AU
max. Earth dist.	13211 Aug 17 15:51	5°02'17"35	45.30708 AU	retrograde	13219 Dec 04 03:54	15°02'55"01	
retrograde	13211 Nov 25 01:38	6°02'53"59		min. Earth dist.	13220 Feb 23 11:49	14°02'54"45	44.84487 AU
min. Earth dist.	13212 Feb 14 01:19	5°02'52"44	43.46839 AU	opposition	13220 Feb 25 09:51	14°02'52"29	-16°13'00
opposition	13212 Feb 16 03:58	5°02'50"11	-15°33'46	direct	13220 May 17 17:13	13°02'50"18	
direct	13212 May 08 12:12	4°02'46"35					
evening set	13212 Aug 14 15:07	6°02'21"58		conjunction	13220 Aug 24 20:36	15°02'24"31	-15°33'35
				minimum elong	13220 Aug 24 20:40	15°02'24"32	15°33'56
conjunction	13212 Aug 15 22:42	6°02'24"00	-14°56'15	max. Earth dist.	13220 Aug 26 18:50	15°02'27"24	46.84654 AU

retrograde	13220 Dec 04 12:24	17° <u>00</u> '51		direct	13229 May 27 22:21	23° <u>09</u> '59	
min. Earth dist.	13221 Feb 23 20:39	16° <u>00</u> '43	44.99961 AU				
opposition	13221 Feb 25 18:50	15° <u>05</u> '28	-16°16'15	conjunction	13229 Sep 03 15:34	25° <u>01</u> '16	-15°50'01
direct	13221 May 19 00:33	14° <u>05</u> '25		minimum elong	13229 Sep 03 15:42	25° <u>01</u> '16	15°50'13
				max. Earth dist.	13229 Sep 05 08:52	25° <u>03</u> '46	48.07259 AU
conjunction	13221 Aug 26 04:41	16° <u>03</u> '17	-15°36'41	retrograde	13229 Dec 14 06:02	26° <u>03</u> '45	
minimum elong	13221 Aug 26 04:46	16° <u>03</u> '17	15°37'02	min. Earth dist.	13230 Mar 06 04:20	25° <u>03</u> '30	46.21230 AU
max. Earth dist.	13221 Aug 28 02:05	16° <u>03</u> '06	46.99811 AU	opposition	13230 Mar 07 19:41	25° <u>03</u> '37	-16°30'47
retrograde	13221 Dec 05 18:42	18° <u>06</u> '16		direct	13230 May 29 05:28	24° <u>03</u> '47	
min. Earth dist.	13222 Feb 25 07:27	17° <u>06</u> '10	45.14920 AU				
opposition	13222 Feb 27 03:47	17° <u>04</u> '00	-16°19'11	conjunction	13230 Sep 04 22:23	26° <u>03</u> '49	-15°50'15
direct	13222 May 20 11:09	16° <u>02</u> '06		minimum elong	13230 Sep 04 22:33	26° <u>03</u> '49	15°50'26
				max. Earth dist.	13230 Sep 06 14:05	26° <u>06</u> '12	48.19274 AU
conjunction	13222 Aug 27 12:47	17° <u>03</u> '35	-15°39'29	retrograde	13230 Dec 15 15:50	27° <u>03</u> '13	
minimum elong	13222 Aug 27 12:53	17° <u>03</u> '36	15°39'48	min. Earth dist.	13231 Mar 07 11:24	26° <u>03</u> '56	46.33046 AU
max. Earth dist.	13222 Aug 29 09:43	17° <u>03</u> '22	47.14476 AU	opposition	13231 Mar 09 02:51	26° <u>03</u> '03	-16°30'46
retrograde	13222 Dec 07 00:12	19° <u>11</u> '14		direct	13231 May 30 09:26	25° <u>03</u> '22	
min. Earth dist.	13223 Feb 26 16:29	18° <u>11</u> '13	45.29382 AU				
opposition	13223 Feb 28 12:12	18° <u>09</u> '04	-16°21'49	conjunction	13231 Sep 06 05:10	27° <u>06</u> '09	-15°50'12
direct	13223 May 21 22:35	17° <u>07</u> '17		minimum elong	13231 Sep 06 05:18	27° <u>06</u> '10	15°50'22
				max. Earth dist.	13231 Sep 07 20:17	27° <u>08</u> '30	48.30866 AU
conjunction	13223 Aug 28 20:30	18° <u>40</u> '25	-15°41'58	retrograde	13231 Dec 16 21:09	28° <u>03</u> '19	
minimum elong	13223 Aug 28 20:36	18° <u>40</u> '25	15°42'17	min. Earth dist.	13232 Mar 07 20:47	27° <u>40</u> '04	46.44415 AU
max. Earth dist.	13223 Aug 30 15:46	18° <u>43</u> '05	47.28679 AU	opposition	13232 Mar 09 10:15	27° <u>38</u> '17	-16°30'28
retrograde	13223 Dec 08 09:50	20° <u>15</u> '43		direct	13232 May 30 16:22	26° <u>37</u> '44	
min. Earth dist.	13224 Feb 28 01:21	19° <u>15</u> '47	45.43435 AU				
opposition	13224 Feb 29 20:38	19° <u>13</u> '40	-16°24'06	conjunction	13232 Sep 06 11:49	28° <u>08</u> '16	-15°49'53
direct	13224 May 22 06:31	18° <u>12</u> '00		minimum elong	13232 Sep 06 12:00	28° <u>08</u> '16	15°50'02
				max. Earth dist.	13232 Sep 08 02:18	28° <u>10</u> '35	48.41997 AU
conjunction	13224 Aug 29 04:02	19° <u>44</u> '46	-15°44'08	retrograde	13232 Dec 17 00:12	29° <u>41</u> '11	
minimum elong	13224 Aug 29 04:08	19° <u>44</u> '47	15°44'25	min. Earth dist.	13233 Mar 09 04:20	28° <u>42</u> '02	46.55279 AU
max. Earth dist.	13224 Aug 30 23:44	19° <u>47</u> '28	47.42505 AU	opposition	13233 Mar 10 17:27	28° <u>40</u> '16	-16°29'54
retrograde	13224 Dec 08 17:51	21° <u>19</u> '46		direct	13233 Jun 01 01:39	27° <u>39</u> '49	
min. Earth dist.	13225 Feb 28 10:57	20° <u>19</u> '52	45.57128 AU				
opposition	13225 Mar 02 04:57	20° <u>17</u> '49	-16°26'04	conjunction	13233 Sep 07 18:24	29° <u>10</u> '06	-15°49'18
direct	13225 May 23 15:07	19° <u>16</u> '17		minimum elong	13233 Sep 07 18:33	29° <u>10</u> '06	15°49'25
				max. Earth dist.	13233 Sep 09 06:57	29° <u>12</u> '17	48.52609 AU
conjunction	13225 Aug 30 11:26	20° <u>48</u> '43	-15°45'58	retrograde	13233 Oct 14 10:05	0° <u>42</u> '47	
minimum elong	13225 Aug 30 11:32	20° <u>48</u> '43	15°46'15		13234 Feb 23 23:34	30° <u>43</u> '39	46.65631 AU
max. Earth dist.	13225 Sep 01 05:52	20° <u>51</u> '19	47.56020 AU	min. Earth dist.	13234 Mar 10 12:30	29° <u>41</u> '56	-16°29'05
retrograde	13225 Dec 10 01:22	22° <u>23</u> '24		opposition	13234 Mar 12 00:30	28° <u>41</u> '36	
min. Earth dist.	13226 Mar 01 18:25	21° <u>23</u> '37	45.70530 AU	direct	13234 Jun 02 09:52	0° <u>43</u> '59	
opposition	13226 Mar 03 12:52	21° <u>21</u> '34	-16°27'41		13234 Aug 31 22:11		
direct	13226 May 24 20:41	20° <u>20</u> '09					
				conjunction	13234 Sep 09 00:59	0° <u>41</u> '36	-15°48'28
conjunction	13226 Aug 31 18:38	21° <u>52</u> '17	-15°47'28	minimum elong	13234 Sep 09 01:09	0° <u>41</u> '36	15°48'35
minimum elong	13226 Aug 31 18:46	21° <u>52</u> '18	15°47'43	max. Earth dist.	13234 Sep 10 13:28	0° <u>43</u> '46	48.62715 AU
max. Earth dist.	13226 Sep 02 12:56	21° <u>54</u> '52	47.69248 AU	retrograde	13234 Dec 19 13:43	1° <u>44</u> '02	
retrograde	13226 Dec 11 07:31	23° <u>26</u> '41		min. Earth dist.	13235 Mar 11 20:56	0° <u>44</u> '54	46.75471 AU
min. Earth dist.	13227 Mar 03 03:41	22° <u>26</u> '57	45.83651 AU	opposition	13235 Mar 13 07:25	0° <u>43</u> '16	-16°27'59
opposition	13227 Mar 04 20:49	22° <u>24</u> '58	-16°28'57		13235 Apr 24 10:55	30° <u>43</u> '00	
direct	13227 May 26 04:00	21° <u>23</u> '42		direct	13235 Jun 03 18:43	29° <u>43</u> '00	
					13235 Jul 13 00:55	0° <u>42</u> '47	
conjunction	13227 Sep 02 01:47	22° <u>55</u> '32	-15°48'38				
minimum elong	13227 Sep 02 01:54	22° <u>55</u> '33	15°48'52	conjunction	13235 Sep 10 07:12	1° <u>42</u> '43	-15°47'23
max. Earth dist.	13227 Sep 03 19:52	22° <u>58</u> '06	47.82212 AU	minimum elong	13235 Sep 10 07:22	1° <u>42</u> '43	15°47'27
retrograde	13227 Dec 12 12:21	24° <u>29</u> '40		max. Earth dist.	13235 Sep 11 17:58	1° <u>44</u> '47	48.72352 AU
min. Earth dist.	13228 Mar 03 11:17	23° <u>30</u> '05	45.96483 AU	retrograde	13235 Dec 20 22:00	2° <u>44</u> '54	
opposition	13228 Mar 05 04:26	23° <u>28</u> '05	-16°29'53	min. Earth dist.	13236 Mar 12 03:32	1° <u>45</u> '49	46.84879 AU
direct	13228 May 26 14:05	22° <u>26</u> '57		opposition	13236 Mar 13 14:05	1° <u>44</u> '11	-16°26'38
				direct	13236 Jun 03 23:24	0° <u>43</u> '59	
conjunction	13228 Sep 02 08:42	23° <u>58</u> '31	-15°49'29				
minimum elong	13228 Sep 02 08:50	23° <u>58</u> '31	15°49'42	conjunction	13236 Sep 10 13:22	2° <u>43</u> '27	-15°46'01
max. Earth dist.	13228 Sep 04 01:28	24° <u>01</u> '00	47.94888 AU	minimum elong	13236 Sep 10 13:32	2° <u>43</u> '27	15°46'05
retrograde	13228 Dec 12 20:57	25° <u>32</u> '24		max. Earth dist.	13236 Sep 11 23:53	2° <u>45</u> '30	48.81584 AU
min. Earth dist.	13229 Mar 04 19:28	24° <u>32</u> '55	46.09030 AU	retrograde	13236 Dec 21 04:54	3° <u>45</u> '22	
opposition	13229 Mar 06 12:08	24° <u>30</u> '58	-16°30'30				

min. Earth dist.	13237 Mar 13 11:54	2°♁46'17	46.93923 AU	conjunction	13245 Sep 19 17:09	11°♁09'18	-15°21'28
opposition	13237 Mar 14 20:50	2°♁44'43	-16°24'59	minimum elong	13245 Sep 19 17:22	11°♁09'19	15°21'23
direct	13237 Jun 05 04:07	1°♁44'36		max. Earth dist.	13245 Sep 20 20:20	11°♁10'54	49.49995 AU
				retrograde	13245 Dec 30 09:19	12°♁39'43	
conjunction	13237 Sep 11 19:23	3°♁13'48	-15°44'22	min. Earth dist.	13246 Mar 23 01:29	11°♁41'06	47.60188 AU
minimum elong	13237 Sep 11 19:34	3°♁13'49	15°44'24	opposition	13246 Mar 24 04:05	11°♁39'51	-15°57'40
max. Earth dist.	13237 Sep 13 05:31	3°♁15'50	48.90497 AU	direct	13246 Jun 14 12:43	10°♁40'36	
retrograde	13237 Dec 22 08:11	4°♁45'30					
min. Earth dist.	13238 Mar 14 18:06	3°♁46'29	47.02646 AU	conjunction	13246 Sep 20 22:46	12°♁08'13	-15°17'32
opposition	13238 Mar 16 03:16	3°♁44'54	-16°23'03	minimum elong	13246 Sep 20 22:59	12°♁08'14	15°17'25
direct	13238 Jun 06 11:15	2°♁44'51		max. Earth dist.	13246 Sep 22 01:09	12°♁09'45	49.55396 AU
				retrograde	13246 Dec 31 16:15	13°♁38'28	
conjunction	13238 Sep 13 01:17	4°♁13'50	-15°42'27	min. Earth dist.	13247 Mar 24 09:20	12°♁39'48	47.65267 AU
minimum elong	13238 Sep 13 01:28	4°♁13'51	15°42'29	opposition	13247 Mar 25 09:50	12°♁38'40	-15°53'25
max. Earth dist.	13238 Sep 14 10:05	4°♁15'46	48.99103 AU	direct	13247 Jun 15 16:13	11°♁39'28	
retrograde	13238 Dec 23 13:26	5°♁45'19					
min. Earth dist.	13239 Mar 16 01:18	4°♁46'20	47.11088 AU	conjunction	13247 Sep 22 04:15	13°♁06'55	-15°13'23
opposition	13239 Mar 17 09:34	4°♁44'48	-16°20'50	minimum elong	13247 Sep 22 04:29	13°♁06'56	15°13'16
direct	13239 Jun 07 19:08	3°♁44'50		max. Earth dist.	13247 Sep 23 05:46	13°♁08'24	49.60304 AU
				retrograde	13248 Jan 01 19:34	14°♁37'01	
conjunction	13239 Sep 14 07:14	5°♁13'36	-15°40'14	opposition	13248 Mar 25 15:29	13°♁37'15	-15°48'56
minimum elong	13239 Sep 14 07:26	5°♁13'37	15°40'15	min. Earth dist.	13248 Mar 24 15:02	13°♁38'24	47.69869 AU
max. Earth dist.	13239 Sep 15 16:33	5°♁15'34	49.07436 AU	direct	13248 Jun 15 20:45	12°♁38'06	
retrograde	13239 Dec 24 19:22	6°♁44'54					
min. Earth dist.	13240 Mar 16 08:28	5°♁45'57	47.19235 AU	conjunction	13248 Sep 22 09:23	14°♁05'24	-15°09'00
opposition	13240 Mar 17 15:54	5°♁44'28	-16°18'19	minimum elong	13248 Sep 22 09:37	14°♁05'25	15°08'50
direct	13240 Jun 08 03:24	4°♁44'36		max. Earth dist.	13248 Sep 23 09:24	14°♁06'48	49.64764 AU
				retrograde	13249 Jan 01 23:44	15°♁35'21	
conjunction	13240 Sep 14 12:49	6°♁13'09	-15°37'45	opposition	13249 Mar 26 21:12	14°♁35'37	-15°44'13
minimum elong	13240 Sep 14 13:00	6°♁13'10	15°37'45	min. Earth dist.	13249 Mar 25 22:01	14°♁36'42	47.74072 AU
max. Earth dist.	13240 Sep 15 20:39	6°♁15'02	49.15486 AU	direct	13249 Jun 17 04:20	13°♁36'31	
retrograde	13240 Dec 25 04:11	7°♁44'17					
opposition	13241 Mar 18 22:06	6°♁43'57	-16°15'31	conjunction	13249 Sep 23 14:44	15°♁03'40	-15°04'22
min. Earth dist.	13241 Mar 17 14:24	6°♁45'26	47.27091 AU	minimum elong	13249 Sep 23 14:58	15°♁03'40	15°04'13
direct	13241 Jun 09 07:15	5°♁44'11		max. Earth dist.	13249 Sep 24 15:04	15°♁05'04	49.68853 AU
				retrograde	13250 Jan 03 03:33	16°♁33'29	
conjunction	13241 Sep 15 18:33	7°♁12'34	-15°34'59	min. Earth dist.	13250 Mar 27 04:16	15°♁34'50	47.77914 AU
minimum elong	13241 Sep 15 18:46	7°♁12'35	15°34'58	opposition	13250 Mar 28 02:36	15°♁33'48	-15°39'15
max. Earth dist.	13241 Sep 17 02:13	7°♁14'25	49.23218 AU	direct	13250 Jun 18 13:18	14°♁34'44	
retrograde	13241 Dec 26 10:17	8°♁43'31					
min. Earth dist.	13242 Mar 18 22:20	7°♁44'42	47.34610 AU	conjunction	13250 Sep 24 19:52	16°♁01'44	-14°59'30
opposition	13242 Mar 20 04:12	7°♁43'18	-16°12'26	minimum elong	13250 Sep 24 20:07	16°♁01'45	14°59'18
direct	13242 Jun 10 11:51	6°♁43'39		evening set	13250 Sep 24 05:23	16°♁00'54	
				morning rise	13250 Sep 25 10:51	16°♁02'36	
conjunction	13242 Sep 17 00:19	8°♁11'52	-15°31'58	max. Earth dist.	13250 Sep 25 18:32	16°♁03'03	49.72615 AU
minimum elong	13242 Sep 17 00:30	8°♁11'53	15°31'56	retrograde	13251 Jan 04 12:09	17°♁31'26	
max. Earth dist.	13242 Sep 18 07:21	8°♁13'42	49.30605 AU	min. Earth dist.	13251 Mar 28 09:34	16°♁32'50	47.81442 AU
retrograde	13242 Dec 27 13:37	9°♁42'41		opposition	13251 Mar 29 07:59	16°♁31'47	-15°34'01
min. Earth dist.	13243 Mar 20 04:23	8°♁43'57	47.41735 AU	direct	13251 Jun 19 17:20	15°♁32'46	
opposition	13243 Mar 21 10:10	8°♁42'33	-16°09'06	evening set	13251 Sep 24 06:29	16°♁57'12	
direct	13243 Jun 11 18:07	7°♁43'02					
				conjunction	13251 Sep 26 00:55	16°♁59'39	-14°54'22
conjunction	13243 Sep 18 05:50	9°♁11'06	-15°28'42	minimum elong	13251 Sep 26 01:09	16°♁59'40	14°54'11
minimum elong	13243 Sep 18 06:03	9°♁11'07	15°28'38	morning rise	13251 Sep 27 19:52	17°♁02'08	
max. Earth dist.	13243 Sep 19 11:12	9°♁12'49	49.37560 AU	max. Earth dist.	13251 Sep 26 23:25	17°♁00'57	49.76058 AU
retrograde	13243 Dec 28 19:21	10°♁41'46		retrograde	13252 Jan 05 19:04	18°♁29'15	
min. Earth dist.	13244 Mar 20 11:48	9°♁43'05	47.48412 AU	opposition	13252 Mar 29 13:27	17°♁29'38	-15°28'32
opposition	13244 Mar 21 16:12	9°♁41'45	-16°05'31	min. Earth dist.	13252 Mar 28 16:40	17°♁30'36	47.84654 AU
direct	13244 Jun 12 00:48	8°♁42'20		direct	13252 Jun 19 21:11	16°♁30'41	
				evening set	13252 Sep 23 19:11	17°♁54'03	
conjunction	13244 Sep 18 11:36	10°♁10'15	-15°25'12				
minimum elong	13244 Sep 18 11:48	10°♁10'16	15°25'07	conjunction	13252 Sep 26 06:02	17°♁57'27	-14°49'00
max. Earth dist.	13244 Sep 19 16:49	10°♁11'58	49.44041 AU	minimum elong	13252 Sep 26 06:17	17°♁57'27	14°48'47
retrograde	13244 Dec 29 00:54	11°♁40'48		max. Earth dist.	13252 Sep 27 04:06	17°♁58'43	49.79210 AU
opposition	13245 Mar 22 22:12	10°♁40'52	-16°01'42	morning rise	13252 Sep 28 17:27	18°♁00'52	
min. Earth dist.	13245 Mar 21 19:08	10°♁42'08	47.54570 AU	retrograde	13253 Jan 05 22:16	19°♁26'55	
direct	13245 Jun 13 08:35	9°♁41'32		opposition	13253 Mar 30 18:43	18°♁27'22	-15°22'47

min. Earth dist.	13253 Mar 29 21:39	18° <u>♂</u> 28'21	47.87556 AU	morning rise	13259 Oct 09 03:32	24° <u>♂</u> 47'22	
direct	13253 Jun 21 01:06	17° <u>♂</u> 28'28		retrograde	13260 Jan 13 07:46	26° <u>♂</u> 08'53	
evening set	13253 Sep 24 10:51	18° <u>♂</u> 50'59		opposition	13260 Apr 06 07:02	25° <u>♂</u> 09'32	-14°36'19
				min. Earth dist.	13260 Apr 05 17:50	25° <u>♂</u> 10'08	47.95555 AU
conjunction	13253 Sep 27 10:58	18° <u>♂</u> 55'09	-14°43'23	direct	13260 Jun 27 15:46	24° <u>♂</u> 10'51	
minimum elong	13253 Sep 27 11:11	18° <u>♂</u> 55'09	14°43'10	evening set	13260 Sep 28 05:05	25° <u>♂</u> 29'07	
max. Earth dist.	13253 Sep 28 07:30	18° <u>♂</u> 56'20	49.82031 AU				
morning rise	13253 Sep 30 11:40	18° <u>♂</u> 59'20		conjunction	13260 Oct 03 22:14	25° <u>♂</u> 36'57	-13°58'04
retrograde	13254 Jan 07 02:02	20° <u>♂</u> 24'32		minimum elong	13260 Oct 03 22:29	25° <u>♂</u> 36'58	13°57'44
min. Earth dist.	13254 Mar 31 04:20	19° <u>♂</u> 25'57	47.90117 AU	max. Earth dist.	13260 Oct 04 11:22	25° <u>♂</u> 37'42	49.89054 AU
opposition	13254 Apr 01 00:04	19° <u>♂</u> 25'02	-15°16'48	morning rise	13260 Oct 09 16:14	25° <u>♂</u> 44'52	
direct	13254 Jun 22 06:12	18° <u>♂</u> 26'11		retrograde	13261 Jan 13 14:50	27° <u>♂</u> 05'51	
evening set	13254 Sep 25 04:28	19° <u>♂</u> 47'57		opposition	13261 Apr 07 11:59	26° <u>♂</u> 06'30	-14°28'50
				min. Earth dist.	13261 Apr 06 23:08	26° <u>♂</u> 07'06	47.94771 AU
conjunction	13254 Sep 28 16:08	19° <u>♂</u> 52'47	-14°37'33	direct	13261 Jun 28 20:13	25° <u>♂</u> 07'49	
minimum elong	13254 Sep 28 16:23	19° <u>♂</u> 52'47	14°37'18	evening set	13261 Sep 29 02:16	26° <u>♂</u> 25'36	
max. Earth dist.	13254 Sep 29 12:51	19° <u>♂</u> 53'58	49.84490 AU				
morning rise	13254 Oct 02 04:24	19° <u>♂</u> 57'38		conjunction	13261 Oct 05 03:06	26° <u>♂</u> 33'52	-13°50'46
retrograde	13255 Jan 08 05:40	21° <u>♂</u> 22'06		minimum elong	13261 Oct 05 03:21	26° <u>♂</u> 33'53	13°50'23
min. Earth dist.	13255 Apr 01 10:29	20° <u>♂</u> 23'31	47.92274 AU	max. Earth dist.	13261 Oct 05 15:56	26° <u>♂</u> 34'36	49.88184 AU
opposition	13255 Apr 02 05:12	20° <u>♂</u> 22'39	-15°10'35	morning rise	13261 Oct 11 04:47	26° <u>♂</u> 42'12	
direct	13255 Jun 23 13:50	19° <u>♂</u> 23'51		retrograde	13262 Jan 14 21:56	28° <u>♂</u> 02'43	
evening set	13255 Sep 25 23:05	20° <u>♂</u> 44'57		opposition	13262 Apr 08 17:01	27° <u>♂</u> 03'21	-14°21'07
				min. Earth dist.	13262 Apr 08 05:49	27° <u>♂</u> 03'53	47.93624 AU
conjunction	13255 Sep 29 21:09	20° <u>♂</u> 50'22	-14°31'28	direct	13262 Jun 30 00:15	26° <u>♂</u> 04'41	
minimum elong	13255 Sep 29 21:22	20° <u>♂</u> 50'22	14°31'12	evening set	13262 Sep 29 23:51	27° <u>♂</u> 22'00	
max. Earth dist.	13255 Sep 30 15:59	20° <u>♂</u> 51'27	49.86531 AU				
morning rise	13255 Oct 03 19:49	20° <u>♂</u> 55'49		conjunction	13262 Oct 06 07:59	27° <u>♂</u> 30'41	-13°43'13
retrograde	13256 Jan 09 13:00	22° <u>♂</u> 19'37		minimum elong	13262 Oct 06 08:13	27° <u>♂</u> 30'42	13°42'51
opposition	13256 Apr 02 10:26	21° <u>♂</u> 20'13	-15°04'08	max. Earth dist.	13262 Oct 06 20:17	27° <u>♂</u> 31'23	49.86990 AU
min. Earth dist.	13256 Apr 01 16:12	21° <u>♂</u> 21'04	47.93991 AU	morning rise	13262 Oct 12 16:57	27° <u>♂</u> 39'25	
direct	13256 Jun 23 18:44	20° <u>♂</u> 21'29		retrograde	13263 Jan 16 01:18	28° <u>♂</u> 59'29	
evening set	13256 Sep 25 18:27	21° <u>♂</u> 41'57		opposition	13263 Apr 09 21:44	28° <u>♂</u> 00'09	-14°13'10
				min. Earth dist.	13263 Apr 09 10:15	28° <u>♂</u> 00'41	47.92162 AU
conjunction	13256 Sep 30 02:09	21° <u>♂</u> 47'54	-14°25'11	direct	13263 Jul 01 03:37	27° <u>♂</u> 01'28	
minimum elong	13256 Sep 30 02:24	21° <u>♂</u> 47'55	14°24'55	evening set	13263 Sep 30 21:27	28° <u>♂</u> 18'22	
max. Earth dist.	13256 Sep 30 20:19	21° <u>♂</u> 48'57	49.88083 AU				
morning rise	13256 Oct 04 10:34	21° <u>♂</u> 53'54		conjunction	13263 Oct 07 12:43	28° <u>♂</u> 27'28	-13°35'27
retrograde	13257 Jan 09 20:21	23° <u>♂</u> 17'06		minimum elong	13263 Oct 07 12:59	28° <u>♂</u> 27'28	13°35'03
opposition	13257 Apr 03 15:48	22° <u>♂</u> 17'44	-14°57'29	max. Earth dist.	13263 Oct 07 23:33	28° <u>♂</u> 28'05	49.85492 AU
min. Earth dist.	13257 Apr 02 23:38	22° <u>♂</u> 18'29	47.95187 AU	morning rise	13263 Oct 14 04:59	28° <u>♂</u> 36'36	
direct	13257 Jun 24 22:43	21° <u>♂</u> 19'02		retrograde	13264 Jan 17 04:56	29° <u>♂</u> 56'14	
evening set	13257 Sep 26 14:41	22° <u>♂</u> 38'54		opposition	13264 Apr 10 02:44	28° <u>♂</u> 56'55	-14°04'57
				min. Earth dist.	13264 Apr 09 16:27	28° <u>♂</u> 57'23	47.90415 AU
conjunction	13257 Oct 01 07:22	22° <u>♂</u> 45'22	-14°18'43	direct	13264 Jul 01 08:07	27° <u>♂</u> 58'16	
minimum elong	13257 Oct 01 07:36	22° <u>♂</u> 45'23	14°18'25	evening set	13264 Sep 30 19:08	29° <u>♂</u> 14'45	
max. Earth dist.	13257 Oct 02 00:24	22° <u>♂</u> 46'21	49.89110 AU				
morning rise	13257 Oct 06 00:43	22° <u>♂</u> 51'53		conjunction	13264 Oct 07 17:29	29° <u>♂</u> 24'15	-13°27'26
retrograde	13258 Jan 11 01:10	24° <u>♂</u> 14'29		minimum elong	13264 Oct 07 17:44	29° <u>♂</u> 24'15	13°27'02
opposition	13258 Apr 04 20:48	23° <u>♂</u> 15'08	-14°50'38	max. Earth dist.	13264 Oct 08 04:46	29° <u>♂</u> 24'53	49.83713 AU
min. Earth dist.	13258 Apr 04 04:54	23° <u>♂</u> 15'52	47.95832 AU	morning rise	13264 Oct 14 16:42	29° <u>♂</u> 33'47	
direct	13258 Jun 26 01:40	22° <u>♂</u> 16'27			13264 Nov 03 12:46	0° <u>♂</u>	
evening set	13258 Sep 27 11:11	23° <u>♂</u> 35'46		retrograde	13265 Jan 17 08:04	0° <u>♂</u> 53'02	
					13265 Apr 05 16:14	30° <u>♂</u> 11'13	
conjunction	13258 Oct 02 12:24	23° <u>♂</u> 42'43	-14°12'02	opposition	13265 Apr 11 07:39	29° <u>♂</u> 53'43	-13°56'31
minimum elong	13258 Oct 02 12:39	23° <u>♂</u> 42'44	14°11'44	min. Earth dist.	13265 Apr 10 21:55	29° <u>♂</u> 54'10	47.88367 AU
max. Earth dist.	13258 Oct 03 03:26	23° <u>♂</u> 43'35	49.89580 AU	direct	13265 Jul 02 15:31	28° <u>♂</u> 55'06	
morning rise	13258 Oct 07 14:25	23° <u>♂</u> 49'43			13265 Sep 23 09:46	0° <u>♂</u>	
retrograde	13259 Jan 12 05:34	25° <u>♂</u> 11'45		evening set	13265 Oct 01 17:12	0° <u>♂</u> 11'13	
min. Earth dist.	13259 Apr 05 11:56	24° <u>♂</u> 13'04	47.95941 AU				
opposition	13259 Apr 06 01:59	24° <u>♂</u> 12'25	-14°43'35	conjunction	13265 Oct 08 22:16	0° <u>♂</u> 21'05	-13°19'12
direct	13259 Jun 27 07:21	23° <u>♂</u> 13'44		minimum elong	13265 Oct 08 22:32	0° <u>♂</u> 21'05	13°18'46
evening set	13259 Sep 28 07:58	24° <u>♂</u> 32'30		max. Earth dist.	13265 Oct 09 07:59	0° <u>♂</u> 21'38	49.81639 AU
				morning rise	13265 Oct 16 04:22	0° <u>♂</u> 31'01	
conjunction	13259 Oct 03 17:23	24° <u>♂</u> 39'55	-14°05'09	retrograde	13266 Jan 18 15:06	1° <u>♂</u> 49'53	
minimum elong	13259 Oct 03 17:38	24° <u>♂</u> 39'56	14°04'49	opposition	13266 Apr 12 12:24	0° <u>♂</u> 50'36	-13°47'50
max. Earth dist.	13259 Oct 04 08:21	24° <u>♂</u> 40'46	49.89539 AU	min. Earth dist.	13266 Apr 12 02:58	0° <u>♂</u> 51'03	47.86016 AU



























































































































	13266 Jun 06 05:07	30° $\mathbb{R}$ $\underline{\mathbb{A}}$	max. Earth dist.	13272 Oct 15 11:46	7° $\mathbb{M}$ 01'12	49.55046 AU
direct	13266 Jul 03 19:47	29° $\underline{\mathbb{A}}$ 52'01	morning rise	13272 Oct 24 11:11	7° $\mathbb{M}$ 13'30	
	13266 Jul 30 23:24	0° $\mathbb{M}$	retrograde	13273 Jan 25 06:11	8° $\mathbb{M}$ 30'01	
evening set	13266 Oct 02 15:17	1° $\mathbb{M}$ 07'46	opposition	13273 Apr 18 22:53	7° $\mathbb{M}$ 30'40	-12°41'05
			min. Earth dist.	13273 Apr 18 20:37	7° $\mathbb{M}$ 30'46	47.56926 AU
conjunction	13266 Oct 10 03:09	1° $\mathbb{M}$ 18'00 -13°10'44	direct	13273 Jul 10 02:42	6° $\mathbb{M}$ 31'58	
minimum elong	13266 Oct 10 03:23	1° $\mathbb{M}$ 18'01 13°10'17	evening set	13273 Oct 07 07:08	7° $\mathbb{M}$ 45'25	
max. Earth dist.	13266 Oct 10 12:22	1° $\mathbb{M}$ 18'32 49.79224 AU				
morning rise	13266 Oct 17 16:02	1° $\mathbb{M}$ 28'20	conjunction	13273 Oct 16 13:55	7° $\mathbb{M}$ 58'07	-12°05'43
retrograde	13267 Jan 19 22:41	2° $\mathbb{M}$ 46'51	minimum elong	13273 Oct 16 14:10	7° $\mathbb{M}$ 58'08	12°05'11
opposition	13267 Apr 13 17:21	1° $\mathbb{M}$ 47'36 -13°38'55	max. Earth dist.	13273 Oct 16 15:01	7° $\mathbb{M}$ 58'11	49.49394 AU
min. Earth dist.	13267 Apr 13 09:40	1° $\mathbb{M}$ 47'57 47.83297 AU	morning rise	13273 Oct 25 22:06	8° $\mathbb{M}$ 10'54	
direct	13267 Jul 04 23:15	0° $\mathbb{M}$ 49'02	retrograde	13274 Jan 26 10:38	9° $\mathbb{M}$ 27'06	
evening set	13267 Oct 03 13:38	2° $\mathbb{M}$ 04'26	opposition	13274 Apr 20 03:42	8° $\mathbb{M}$ 27'42	-12°30'42
			min. Earth dist.	13274 Apr 20 03:02	8° $\mathbb{M}$ 27'44	47.50978 AU
conjunction	13267 Oct 11 07:58	2° $\mathbb{M}$ 15'03 -13°02'02	direct	13274 Jul 11 06:14	7° $\mathbb{M}$ 28'58	
minimum elong	13267 Oct 11 08:13	2° $\mathbb{M}$ 15'04 13°01'35	evening set	13274 Oct 08 06:28	8° $\mathbb{M}$ 42'08	
max. Earth dist.	13267 Oct 11 16:33	2° $\mathbb{M}$ 15'33 49.76431 AU				
morning rise	13267 Oct 19 03:19	2° $\mathbb{M}$ 25'45	conjunction	13274 Oct 17 19:02	8° $\mathbb{M}$ 55'09	-11°55'35
retrograde	13268 Jan 21 04:52	3° $\mathbb{M}$ 43'55	minimum elong	13274 Oct 17 19:17	8° $\mathbb{M}$ 55'10	11°55'02
opposition	13268 Apr 13 22:13	2° $\mathbb{M}$ 44'42 -13°29'47	max. Earth dist.	13274 Oct 17 20:27	8° $\mathbb{M}$ 55'14	49.43406 AU
min. Earth dist.	13268 Apr 13 14:34	2° $\mathbb{M}$ 45'03 47.80158 AU	morning rise	13274 Oct 27 08:48	9° $\mathbb{M}$ 08'16	
direct	13268 Jul 05 00:30	1° $\mathbb{M}$ 46'09	retrograde	13275 Jan 27 12:33	10° $\mathbb{M}$ 24'11	
evening set	13268 Oct 03 12:11	3° $\mathbb{M}$ 01'13	opposition	13275 Apr 21 08:34	9° $\mathbb{M}$ 24'44	-12°20'05
			min. Earth dist.	13275 Apr 21 08:20	9° $\mathbb{M}$ 24'44	47.44700 AU
conjunction	13268 Oct 11 12:53	3° $\mathbb{M}$ 12'13 -12°53'09	direct	13275 Jul 12 13:24	8° $\mathbb{M}$ 25'56	
minimum elong	13268 Oct 11 13:07	3° $\mathbb{M}$ 12'14 12°52'40	evening set	13275 Oct 09 05:49	9° $\mathbb{M}$ 38'51	
max. Earth dist.	13268 Oct 11 19:34	3° $\mathbb{M}$ 12'36 49.73176 AU				
morning rise	13268 Oct 19 14:47	3° $\mathbb{M}$ 23'16	conjunction	13275 Oct 18 23:51	9° $\mathbb{M}$ 52'11	-11°45'14
retrograde	13269 Jan 21 10:01	4° $\mathbb{M}$ 41'07	minimum elong	13275 Oct 19 00:05	9° $\mathbb{M}$ 52'12	11°44'40
opposition	13269 Apr 15 03:12	3° $\mathbb{M}$ 41'54 -13°20'27	max. Earth dist.	13275 Oct 18 23:41	9° $\mathbb{M}$ 52'11	49.37115 AU
min. Earth dist.	13269 Apr 14 21:29	3° $\mathbb{M}$ 42'10 47.76540 AU	morning rise	13275 Oct 28 19:17	10° $\mathbb{M}$ 05'37	
direct	13269 Jul 06 04:24	2° $\mathbb{M}$ 43'21	retrograde	13276 Jan 28 18:16	11° $\mathbb{M}$ 21'16	
evening set	13269 Oct 04 10:57	3° $\mathbb{M}$ 58'06	opposition	13276 Apr 21 13:31	10° $\mathbb{M}$ 21'47	-12°09'13
			min. Earth dist.	13276 Apr 21 13:34	10° $\mathbb{M}$ 21'47	47.38136 AU
conjunction	13269 Oct 12 18:01	4° $\mathbb{M}$ 09'27 -12°44'03	direct	13276 Jul 12 18:13	9° $\mathbb{M}$ 22'57	
minimum elong	13269 Oct 12 18:17	4° $\mathbb{M}$ 09'28 12°43'35	evening set	13276 Oct 09 05:18	10° $\mathbb{M}$ 35'36	
max. Earth dist.	13269 Oct 13 00:24	4° $\mathbb{M}$ 09'49 49.69415 AU				
morning rise	13269 Oct 21 02:08	4° $\mathbb{M}$ 20'52	conjunction	13276 Oct 19 04:56	10° $\mathbb{M}$ 49'16	-11°34'40
retrograde	13270 Jan 22 11:21	5° $\mathbb{M}$ 38'22	minimum elong	13276 Oct 19 05:11	10° $\mathbb{M}$ 49'17	11°34'05
opposition	13270 Apr 16 08:10	4° $\mathbb{M}$ 39'09 -13°10'55	max. Earth dist.	13276 Oct 19 04:25	10° $\mathbb{M}$ 49'14	49.30529 AU
min. Earth dist.	13270 Apr 16 03:23	4° $\mathbb{M}$ 39'22 47.72377 AU	morning rise	13276 Oct 29 05:57	11° $\mathbb{M}$ 03'02	
direct	13270 Jul 07 13:00	3° $\mathbb{M}$ 40'35	retrograde	13277 Jan 29 01:00	12° $\mathbb{M}$ 18'27	
evening set	13270 Oct 05 09:58	4° $\mathbb{M}$ 55'00	opposition	13277 Apr 22 18:31	11° $\mathbb{M}$ 18'55	-11°58'08
			min. Earth dist.	13277 Apr 22 20:00	11° $\mathbb{M}$ 18'51	47.31274 AU
conjunction	13270 Oct 13 23:02	5° $\mathbb{M}$ 06'42 -12°34'46	direct	13277 Jul 13 23:27	10° $\mathbb{M}$ 20'04	
minimum elong	13270 Oct 13 23:16	5° $\mathbb{M}$ 06'42 12°34'16	evening set	13277 Oct 10 05:01	11° $\mathbb{M}$ 32'29	
max. Earth dist.	13270 Oct 14 03:12	5° $\mathbb{M}$ 06'56 49.65116 AU				
morning rise	13270 Oct 22 13:20	5° $\mathbb{M}$ 18'28	conjunction	13277 Oct 20 10:05	11° $\mathbb{M}$ 46'28	-11°23'51
retrograde	13271 Jan 23 17:27	6° $\mathbb{M}$ 35'38	minimum elong	13277 Oct 20 10:18	11° $\mathbb{M}$ 46'29	11°23'15
opposition	13271 Apr 17 13:00	5° $\mathbb{M}$ 36'23 -13°01'11	max. Earth dist.	13277 Oct 20 09:05	11° $\mathbb{M}$ 46'25	49.23657 AU
min. Earth dist.	13271 Apr 17 08:59	5° $\mathbb{M}$ 36'34 47.67690 AU	morning rise	13277 Oct 30 16:28	12° $\mathbb{M}$ 00'33	
direct	13271 Jul 08 18:59	4° $\mathbb{M}$ 37'47	retrograde	13278 Jan 30 07:54	13° $\mathbb{M}$ 15'44	
evening set	13271 Oct 06 08:53	5° $\mathbb{M}$ 51'52	opposition	13278 Apr 23 23:27	12° $\mathbb{M}$ 16'12	-11°46'48
			min. Earth dist.	13278 Apr 24 00:45	12° $\mathbb{M}$ 16'08	47.24101 AU
conjunction	13271 Oct 15 04:05	6° $\mathbb{M}$ 03'54 -12°25'18	direct	13278 Jul 15 01:43	11° $\mathbb{M}$ 17'19	
minimum elong	13271 Oct 15 04:19	6° $\mathbb{M}$ 03'55 12°24'47	evening set	13278 Oct 11 04:53	12° $\mathbb{M}$ 29'32	
max. Earth dist.	13271 Oct 15 07:33	6° $\mathbb{M}$ 04'06 49.60300 AU				
morning rise	13271 Oct 24 00:27	6° $\mathbb{M}$ 16'01	conjunction	13278 Oct 21 15:11	12° $\mathbb{M}$ 43'50	-11°12'49
retrograde	13272 Jan 25 01:19	7° $\mathbb{M}$ 32'51	minimum elong	13278 Oct 21 15:26	12° $\mathbb{M}$ 43'51	11°12'12
opposition	13272 Apr 17 18:02	6° $\mathbb{M}$ 33'33 -12°51'15	max. Earth dist.	13278 Oct 21 12:33	12° $\mathbb{M}$ 43'41	49.16442 AU
min. Earth dist.	13272 Apr 17 15:56	6° $\mathbb{M}$ 33'39 47.62515 AU	morning rise	13278 Nov 01 03:04	12° $\mathbb{M}$ 58'14	
direct	13272 Jul 08 23:43	5° $\mathbb{M}$ 34'55	retrograde	13279 Jan 31 14:12	14° $\mathbb{M}$ 13'13	
evening set	13272 Oct 06 07:57	6° $\mathbb{M}$ 48'41	opposition	13279 Apr 25 04:31	13° $\mathbb{M}$ 13'40	-11°35'14
			min. Earth dist.	13279 Apr 25 07:34	13° $\mathbb{M}$ 13'31	47.16575 AU
conjunction	13272 Oct 15 08:59	7° $\mathbb{M}$ 01'03 -12°15'37	direct	13279 Jul 16 04:25	12° $\mathbb{M}$ 14'46	
minimum elong	13272 Oct 15 09:13	7° $\mathbb{M}$ 01'03 12°15'04	evening set	13279 Oct 12 04:54	13° $\mathbb{M}$ 26'48	


























































































































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minimum elong	13279 Oct 22 20:47	13° <u>ℓ</u> 41'26	11°00'56	morning rise	13285 Nov 09 04:31	19° <u>ℓ</u> 47'25	
max. Earth dist.	13279 Oct 22 17:55	13° <u>ℓ</u> 41'16	49.08850 AU	retrograde	13286 Feb 07 04:01	21° <u>ℓ</u> 01'15	
morning rise	13279 Nov 02 13:34	13° <u>ℓ</u> 56'07		opposition	13286 May 01 17:31	20° <u>ℓ</u> 01'18	-10°08'22
	13279 Dec 31 07:50	15° <u>ℓ</u>		min. Earth dist.	13286 May 02 03:31	20° <u>ℓ</u> 00'50	46.50394 AU
retrograde	13280 Feb 01 17:04	15° <u>ℓ</u> 10'56		direct	13286 Jul 22 18:29	19° <u>ℓ</u> 01'57	
	13280 Mar 05 13:46	15° <u>ℓ</u>		evening set	13286 Oct 17 09:59	20° <u>ℓ</u> 12'55	
opposition	13280 Apr 25 09:39	14° <u>ℓ</u> 11'21	-11°23'27				
min. Earth dist.	13280 Apr 25 13:19	14° <u>ℓ</u> 11'11	47.08627 AU	conjunction	13286 Oct 29 11:34	20° <u>ℓ</u> 29'36	-9°37'08
direct	13280 Jul 16 11:46	13° <u>ℓ</u> 12'26		minimum elong	13286 Oct 29 11:46	20° <u>ℓ</u> 29'37	9°36'25
evening set	13280 Oct 12 05:11	14° <u>ℓ</u> 24'19		max. Earth dist.	13286 Oct 29 00:31	20° <u>ℓ</u> 28'58	48.41975 AU
				morning rise	13286 Nov 10 14:47	20° <u>ℓ</u> 46'24	
conjunction	13280 Oct 23 01:49	14° <u>ℓ</u> 39'14	-10°50'07	retrograde	13287 Feb 08 10:38	22° <u>ℓ</u> 00'06	
minimum elong	13280 Oct 23 02:04	14° <u>ℓ</u> 39'15	10°49'29	opposition	13287 May 02 22:59	21° <u>ℓ</u> 00'04	-9°55'04
max. Earth dist.	13280 Oct 22 21:13	14° <u>ℓ</u> 38'58	49.00808 AU	min. Earth dist.	13287 May 03 10:23	20° <u>ℓ</u> 59'32	46.39223 AU
morning rise	13280 Nov 03 00:05	14° <u>ℓ</u> 54'15		direct	13287 Jul 24 01:12	20° <u>ℓ</u> 00'38	
	13280 Nov 07 05:56	15° <u>ℓ</u>		evening set	13287 Oct 18 11:18	21° <u>ℓ</u> 11'29	
retrograde	13281 Feb 01 23:22	16° <u>ℓ</u> 08'53					
opposition	13281 Apr 26 14:53	15° <u>ℓ</u> 09'18	-11°11'28	conjunction	13287 Oct 30 17:20	21° <u>ℓ</u> 28'27	-9°24'13
min. Earth dist.	13281 Apr 26 19:32	15° <u>ℓ</u> 09'04	47.00200 AU	minimum elong	13287 Oct 30 17:33	21° <u>ℓ</u> 28'27	9°23'28
	13281 May 04 22:16	15° <u>ℓ</u>		max. Earth dist.	13287 Oct 30 05:53	21° <u>ℓ</u> 27'47	48.30796 AU
direct	13281 Jul 17 17:30	14° <u>ℓ</u> 10'20		morning rise	13287 Nov 12 01:00	21° <u>ℓ</u> 45'32	
	13281 Sep 26 10:35	15° <u>ℓ</u>		retrograde	13288 Feb 09 19:04	22° <u>ℓ</u> 59'06	
evening set	13281 Oct 13 05:40	15° <u>ℓ</u> 22'03		opposition	13288 May 03 04:26	21° <u>ℓ</u> 58'59	-9°41'32
				min. Earth dist.	13288 May 03 15:32	21° <u>ℓ</u> 58'28	46.27766 AU
conjunction	13281 Oct 24 07:28	15° <u>ℓ</u> 37'16	-10°38'28	direct	13288 Jul 24 03:56	20° <u>ℓ</u> 59'27	
minimum elong	13281 Oct 24 07:41	15° <u>ℓ</u> 37'17	10°37'48	evening set	13288 Oct 18 12:40	22° <u>ℓ</u> 10'12	
max. Earth dist.	13281 Oct 24 01:51	15° <u>ℓ</u> 36'57	48.92237 AU				
morning rise	13281 Nov 04 10:47	15° <u>ℓ</u> 52'36		conjunction	13288 Oct 30 23:03	22° <u>ℓ</u> 27'28	-9°11'03
retrograde	13282 Feb 03 07:31	17° <u>ℓ</u> 07'04		minimum elong	13288 Oct 30 23:15	22° <u>ℓ</u> 27'28	9°10'19
opposition	13282 Apr 27 20:08	16° <u>ℓ</u> 07'26	-10°59'16	max. Earth dist.	13288 Oct 30 10:01	22° <u>ℓ</u> 26'42	48.19325 AU
min. Earth dist.	13282 Apr 28 02:50	16° <u>ℓ</u> 07'07	46.91221 AU	morning rise	13288 Nov 12 11:18	22° <u>ℓ</u> 44'50	
direct	13282 Jul 18 22:16	15° <u>ℓ</u> 08'26		retrograde	13289 Feb 10 03:33	23° <u>ℓ</u> 58'18	
evening set	13282 Oct 14 06:24	16° <u>ℓ</u> 19'59		opposition	13289 May 04 10:08	22° <u>ℓ</u> 58'06	-9°27'45
				min. Earth dist.	13289 May 04 22:50	22° <u>ℓ</u> 57'30	46.16028 AU
conjunction	13282 Oct 25 13:07	16° <u>ℓ</u> 35'30	-10°26'37	direct	13289 Jul 25 05:34	21° <u>ℓ</u> 58'29	
minimum elong	13282 Oct 25 13:20	16° <u>ℓ</u> 35'31	10°25'57	evening set	13289 Oct 19 14:19	23° <u>ℓ</u> 09'10	
max. Earth dist.	13282 Oct 25 06:21	16° <u>ℓ</u> 35'07	48.83128 AU				
morning rise	13282 Nov 05 21:19	16° <u>ℓ</u> 51'08		conjunction	13289 Nov 01 05:09	23° <u>ℓ</u> 26'42	-8°57'40
retrograde	13283 Feb 04 14:17	18° <u>ℓ</u> 05'25		minimum elong	13289 Nov 01 05:22	23° <u>ℓ</u> 26'43	8°56'55
opposition	13283 Apr 29 01:23	17° <u>ℓ</u> 05'44	-10°46'52	max. Earth dist.	13289 Oct 31 16:21	23° <u>ℓ</u> 25'57	48.07573 AU
min. Earth dist.	13283 Apr 29 08:16	17° <u>ℓ</u> 05'25	46.81702 AU	morning rise	13289 Nov 13 21:34	23° <u>ℓ</u> 44'21	
direct	13283 Jul 20 01:11	16° <u>ℓ</u> 06'40		retrograde	13290 Feb 11 07:07	24° <u>ℓ</u> 57'44	
evening set	13283 Oct 15 07:02	17° <u>ℓ</u> 18'03		opposition	13290 May 05 15:39	23° <u>ℓ</u> 57'27	-9°13'44
				min. Earth dist.	13290 May 06 04:31	23° <u>ℓ</u> 56'50	46.03991 AU
conjunction	13283 Oct 26 18:31	17° <u>ℓ</u> 33'52	-10°14'34	direct	13290 Jul 26 12:56	22° <u>ℓ</u> 57'45	
minimum elong	13283 Oct 26 18:45	17° <u>ℓ</u> 33'53	10°13'52	evening set	13290 Oct 20 16:15	24° <u>ℓ</u> 08'23	
max. Earth dist.	13283 Oct 26 09:47	17° <u>ℓ</u> 33'22	48.73483 AU				
morning rise	13283 Nov 07 07:45	17° <u>ℓ</u> 49'48		conjunction	13290 Nov 02 11:09	24° <u>ℓ</u> 26'11	-8°44'02
retrograde	13284 Feb 05 20:01	19° <u>ℓ</u> 03'55		minimum elong	13290 Nov 02 11:21	24° <u>ℓ</u> 26'12	8°43'16
opposition	13284 Apr 29 06:51	18° <u>ℓ</u> 04'09	-10°34'15	max. Earth dist.	13290 Nov 01 20:41	24° <u>ℓ</u> 25'20	47.95520 AU
min. Earth dist.	13284 Apr 29 15:38	18° <u>ℓ</u> 03'44	46.71683 AU	morning rise	13290 Nov 15 07:57	24° <u>ℓ</u> 44'07	
direct	13284 Jul 20 05:18	17° <u>ℓ</u> 05'00		retrograde	13291 Feb 12 11:52	25° <u>ℓ</u> 57'26	
evening set	13284 Oct 15 07:51	18° <u>ℓ</u> 16'14		opposition	13291 May 06 21:26	24° <u>ℓ</u> 57'05	-8°59'28
				min. Earth dist.	13291 May 07 11:07	24° <u>ℓ</u> 56'26	45.91642 AU
conjunction	13284 Oct 27 00:15	18° <u>ℓ</u> 32'21	-10°02'18	direct	13291 Jul 27 19:48	23° <u>ℓ</u> 57'17	
minimum elong	13284 Oct 27 00:28	18° <u>ℓ</u> 32'21	10°01'37	evening set	13291 Oct 21 18:09	25° <u>ℓ</u> 07'53	
max. Earth dist.	13284 Oct 26 15:32	18° <u>ℓ</u> 31'50	48.63371 AU				
morning rise	13284 Nov 07 18:06	18° <u>ℓ</u> 48'34		conjunction	13291 Nov 03 17:17	25° <u>ℓ</u> 25'58	-8°30'12
retrograde	13285 Feb 05 22:09	20° <u>ℓ</u> 02'31		minimum elong	13291 Nov 03 17:30	25° <u>ℓ</u> 25'58	8°29'25
opposition	13285 Apr 30 12:08	19° <u>ℓ</u> 02'40	-10°21'26	max. Earth dist.	13291 Nov 03 02:19	25° <u>ℓ</u> 25'05	47.83107 AU
min. Earth dist.	13285 Apr 30 21:30	19° <u>ℓ</u> 02'14	46.61223 AU	morning rise	13291 Nov 16 18:11	25° <u>ℓ</u> 44'10	
direct	13285 Jul 21 12:53	18° <u>ℓ</u> 03'25		retrograde	13292 Feb 13 18:52	26° <u>ℓ</u> 57'28	
evening set	13285 Oct 16 08:56	19° <u>ℓ</u> 14'31		opposition	13292 May 07 03:26	25° <u>ℓ</u> 57'01	-8°44'57
				min. Earth dist.	13292 May 07 18:43	25° <u>ℓ</u> 56'17	45.78902 AU
conjunction	13285 Oct 28 05:50	19° <u>ℓ</u> 30'55	-9°49'50	direct	13292 Jul 28 02:48	24° <u>ℓ</u> 57'08	
minimum elong	13285 Oct 28 06:03	19° <u>ℓ</u> 30'56	9°49'07	evening set	13292 Oct 21 20:35	26° <u>ℓ</u> 07'42	

conjunction	13292 Nov 03 23:43	26° <del>M</del> 26'03	-8°16'07	retrograde	13299 Feb 21 00:25	4° <del>7</del> 05'06	
minimum elong	13292 Nov 03 23:54	26° <del>M</del> 26'04	8°15'20	opposition	13299 May 14 23:33	3° <del>7</del> 03'46	-6°57'02
max. Earth dist.	13292 Nov 03 07:48	26° <del>M</del> 25'07	47.70287 AU	min. Earth dist.	13299 May 15 21:53	3° <del>7</del> 02'41	44.76881 AU
morning rise	13292 Nov 17 04:37	26° <del>M</del> 44'32		direct	13299 Aug 04 16:15	2° <del>7</del> 02'54	
retrograde	13293 Feb 14 03:33	27° <del>M</del> 57'47		evening set	13299 Oct 28 19:02	3° <del>7</del> 13'31	
opposition	13293 May 08 09:18	26° <del>M</del> 57'16	-8°30'14				
min. Earth dist.	13293 May 09 00:47	26° <del>M</del> 56'31	45.65719 AU	conjunction	13299 Nov 11 23:43	3° <del>7</del> 33'42	-6°31'31
direct	13293 Jul 29 06:53	25° <del>M</del> 57'16		minimum elong	13299 Nov 11 23:52	3° <del>7</del> 33'43	6°30'40
evening set	13293 Oct 22 23:16	27° <del>M</del> 07'49		max. Earth dist.	13299 Nov 11 00:40	3° <del>7</del> 32'20	46.67667 AU
				morning rise	13299 Nov 26 06:06	3° <del>7</del> 54'01	
conjunction	13293 Nov 05 06:18	27° <del>M</del> 26'26	-8°01'50	retrograde	13300 Feb 22 06:34	5° <del>7</del> 07'16	
minimum elong	13293 Nov 05 06:29	27° <del>M</del> 26'27	8°01'03	opposition	13300 May 16 06:19	4° <del>7</del> 05'48	-6°40'39
max. Earth dist.	13293 Nov 04 12:16	27° <del>M</del> 25'23	47.56974 AU	min. Earth dist.	13300 May 17 04:27	4° <del>7</del> 04'43	44.60884 AU
morning rise	13293 Nov 18 15:17	27° <del>M</del> 45'12		direct	13300 Aug 05 23:26	3° <del>7</del> 04'47	
retrograde	13294 Feb 15 12:01	28° <del>M</del> 58'25		evening set	13300 Oct 29 23:13	4° <del>7</del> 15'30	
opposition	13294 May 09 15:33	27° <del>M</del> 57'47	-8°15'16	max. Earth dist.	13300 Nov 12 06:21	4° <del>7</del> 34'27	46.51666 AU
min. Earth dist.	13294 May 10 09:11	27° <del>M</del> 56'56	45.52027 AU				
direct	13294 Jul 30 10:50	26° <del>M</del> 57'40		conjunction	13300 Nov 13 06:58	4° <del>7</del> 35'56	-6°15'39
evening set	13294 Oct 24 02:03	28° <del>M</del> 08'11		minimum elong	13300 Nov 13 07:08	4° <del>7</del> 35'56	6°14'46
				morning rise	13300 Nov 27 16:45	4° <del>7</del> 56'30	
conjunction	13294 Nov 06 13:03	28° <del>M</del> 27'05	-7°47'21	retrograde	13301 Feb 23 13:08	6° <del>7</del> 09'49	
minimum elong	13294 Nov 06 13:14	28° <del>M</del> 27'06	7°46'31	opposition	13301 May 17 13:08	5° <del>7</del> 08'13	-6°23'59
max. Earth dist.	13294 Nov 05 18:45	28° <del>M</del> 26'00	47.43146 AU	min. Earth dist.	13301 May 18 12:08	5° <del>7</del> 07'06	44.44659 AU
morning rise	13294 Nov 20 01:41	28° <del>M</del> 46'06		direct	13301 Aug 07 06:34	4° <del>7</del> 07'04	
retrograde	13295 Feb 16 16:54	29° <del>M</del> 59'17		evening set	13301 Oct 31 03:33	5° <del>7</del> 17'53	
opposition	13295 May 10 21:44	28° <del>M</del> 58'31	-8°00'06				
min. Earth dist.	13295 May 11 15:55	28° <del>M</del> 57'39	45.37813 AU	conjunction	13301 Nov 14 14:33	5° <del>7</del> 38'35	-5°59'32
direct	13295 Jul 31 17:43	27° <del>M</del> 58'16		minimum elong	13301 Nov 14 14:42	5° <del>7</del> 38'35	5°58'39
evening set	13295 Oct 25 05:10	29° <del>M</del> 08'47		max. Earth dist.	13301 Nov 13 13:40	5° <del>7</del> 37'05	46.35419 AU
				morning rise	13301 Nov 29 03:21	5° <del>7</del> 59'24	
conjunction	13295 Nov 07 19:45	29° <del>M</del> 27'57	-7°32'38	retrograde	13302 Feb 24 19:51	7° <del>7</del> 12'50	
minimum elong	13295 Nov 07 19:55	29° <del>M</del> 27'57	7°31'49	opposition	13302 May 18 20:15	6° <del>7</del> 11'07	-6°07'05
max. Earth dist.	13295 Nov 06 23:16	29° <del>M</del> 26'44	47.28825 AU	min. Earth dist.	13302 May 19 20:16	6° <del>7</del> 09'56	44.28181 AU
morning rise	13295 Nov 21 12:18	29° <del>M</del> 47'14		direct	13302 Aug 08 15:17	5° <del>7</del> 09'50	
	13295 Nov 30 21:15	0° <del>7</del>		evening set	13302 Nov 01 08:11	6° <del>7</del> 20'47	
retrograde	13296 Feb 17 23:39	1° <del>7</del> 00'23					
	13296 May 10 17:20	30° <del>R</del> <del>M</del>		conjunction	13302 Nov 15 22:09	6° <del>7</del> 41'43	-5°43'10
opposition	13296 May 11 04:05	29° <del>M</del> 59'29	-7°44'42	minimum elong	13302 Nov 15 22:17	6° <del>7</del> 41'43	5°42'16
min. Earth dist.	13296 May 11 23:21	29° <del>M</del> 58'33	45.23144 AU	max. Earth dist.	13302 Nov 14 20:35	6° <del>7</del> 40'10	46.18925 AU
direct	13296 Aug 01 00:01	28° <del>M</del> 59'05		morning rise	13302 Nov 30 13:57	7° <del>7</del> 02'47	
	13296 Oct 18 08:06	0° <del>7</del>		retrograde	13303 Feb 26 05:51	8° <del>7</del> 16'21	
evening set	13296 Oct 25 08:14	0° <del>7</del> 09'35		opposition	13303 May 20 03:21	7° <del>7</del> 14'31	-5°49'55
max. Earth dist.	13296 Nov 07 05:33	0° <del>7</del> 27'45	47.14054 AU	min. Earth dist.	13303 May 21 03:15	7° <del>7</del> 13'20	44.11438 AU
				direct	13303 Aug 09 20:38	6° <del>7</del> 13'06	
conjunction	13296 Nov 08 02:35	0° <del>7</del> 29'00	-7°17'42	evening set	13303 Nov 02 13:13	7° <del>7</del> 24'12	
minimum elong	13296 Nov 08 02:46	0° <del>7</del> 29'01	7°16'51	max. Earth dist.	13303 Nov 16 02:56	7° <del>7</del> 43'45	46.02125 AU
morning rise	13296 Nov 21 22:44	0° <del>7</del> 48'33					
retrograde	13297 Feb 18 05:36	2° <del>7</del> 01'43		conjunction	13303 Nov 17 06:00	7° <del>7</del> 45'23	-5°26'34
opposition	13297 May 12 10:33	1° <del>7</del> 00'40	-7°29'03	minimum elong	13303 Nov 17 06:08	7° <del>7</del> 45'24	5°25'40
min. Earth dist.	13297 May 13 07:14	0° <del>7</del> 59'40	45.08051 AU	morning rise	13303 Dec 02 00:45	8° <del>7</del> 06'43	
direct	13297 Aug 02 08:08	0° <del>7</del> 00'06		retrograde	13304 Feb 27 16:37	9° <del>7</del> 20'26	
evening set	13297 Oct 26 11:43	1° <del>7</del> 10'37		opposition	13304 May 20 10:51	8° <del>7</del> 18'28	-5°32'30
max. Earth dist.	13297 Nov 08 11:48	1° <del>7</del> 29'00	46.98906 AU	min. Earth dist.	13304 May 21 12:40	8° <del>7</del> 17'12	43.94370 AU
				direct	13304 Aug 10 00:55	7° <del>7</del> 16'56	
conjunction	13297 Nov 09 09:36	1° <del>7</del> 30'18	-7°02'33	evening set	13304 Nov 02 18:29	8° <del>7</del> 28'12	
minimum elong	13297 Nov 09 09:45	1° <del>7</del> 30'18	7°01'42	max. Earth dist.	13304 Nov 16 11:04	8° <del>7</del> 47'59	45.84964 AU
morning rise	13297 Nov 23 09:16	1° <del>7</del> 50'06					
retrograde	13298 Feb 19 14:11	3° <del>7</del> 03'16		conjunction	13304 Nov 17 14:11	8° <del>7</del> 49'38	-5°09'44
opposition	13298 May 13 16:51	2° <del>7</del> 02'04	-7°13'10	minimum elong	13304 Nov 17 14:19	8° <del>7</del> 49'38	5°08'49
min. Earth dist.	13298 May 14 13:33	2° <del>7</del> 01'04	44.92615 AU	morning rise	13304 Dec 02 11:34	9° <del>7</del> 11'12	
direct	13298 Aug 03 13:11	1° <del>7</del> 01'21		retrograde	13305 Feb 28 01:45	10° <del>7</del> 25'04	
evening set	13298 Oct 27 15:24	2° <del>7</del> 11'55		opposition	13305 May 21 18:23	9° <del>7</del> 22'59	-5°14'50
				min. Earth dist.	13305 May 22 20:31	9° <del>7</del> 21'42	43.76896 AU
conjunction	13298 Nov 10 16:36	2° <del>7</del> 31'51	-6°47'09	direct	13305 Aug 11 07:22	8° <del>7</del> 21'17	
minimum elong	13298 Nov 10 16:46	2° <del>7</del> 31'51	6°46'17	evening set	13305 Nov 04 00:24	9° <del>7</del> 32'45	
max. Earth dist.	13298 Nov 09 17:13	2° <del>7</del> 30'27	46.83423 AU				
morning rise	13298 Nov 24 19:49	2° <del>7</del> 51'54		conjunction	13305 Nov 18 22:34	9° <del>7</del> 54'25	-4°52'41

minimum elong	13305 Nov 18 22:41	9°♂54'26	4°51'45	evening set	13312 Nov 11 01:31	17°♂17'18	
max. Earth dist.	13305 Nov 17 17:04	9°♂52'37	45.67360 AU	max. Earth dist.	13312 Nov 25 02:44	17°♂38'16	44.32609 AU
morning rise	13305 Dec 03 22:44	10°♂16'14					
retrograde	13306 Mar 01 11:11	11°♂30'15		conjunction	13312 Nov 26 14:40	17°♂40'31	-2°46'44
opposition	13306 May 23 02:05	10°♂28'01	-4°56'56	minimum elong	13312 Nov 26 14:44	17°♂40'32	2°45'46
min. Earth dist.	13306 May 24 05:46	10°♂26'39	43.58965 AU	morning rise	13312 Dec 12 05:33	18°♂03'52	
direct	13306 Aug 12 14:22	9°♂26'08		retrograde	13313 Mar 09 04:04	19°♂19'23	
evening set	13306 Nov 05 06:29	10°♂37'48		opposition	13313 May 30 13:42	18°♂15'42	-2°44'35
max. Earth dist.	13306 Nov 19 01:07	10°♂57'52	45.49271 AU	min. Earth dist.	13313 May 31 22:47	18°♂14'01	42.22518 AU
				direct	13313 Aug 20 01:04	17°♂12'14	
conjunction	13306 Nov 20 07:18	10°♂59'43	-4°35'23	evening set	13313 Nov 12 10:04	18°♂25'37	
minimum elong	13306 Nov 20 07:25	10°♂59'43	4°34'28	max. Earth dist.	13313 Nov 26 11:43	18°♂46'42	44.12233 AU
morning rise	13306 Dec 05 09:50	11°♂21'45					
retrograde	13307 Mar 02 17:30	12°♂35'57		conjunction	13313 Nov 28 00:45	18°♂49'02	-2°27'47
opposition	13307 May 24 10:08	11°♂33'32	-4°38'47	minimum elong	13313 Nov 28 00:49	18°♂49'02	2°26'48
min. Earth dist.	13307 May 25 15:06	11°♂32'06	43.40545 AU	morning rise	13313 Dec 13 17:08	19°♂12'36	
direct	13307 Aug 14 00:08	10°♂31'28		retrograde	13314 Mar 10 15:09	20°♂28'25	
evening set	13307 Nov 06 12:46	11°♂43'19		opposition	13314 May 31 23:04	19°♂24'32	-2°24'39
max. Earth dist.	13307 Nov 20 08:34	12°♂03'30	45.30721 AU	min. Earth dist.	13314 Jun 02 09:40	19°♂22'45	42.01988 AU
				direct	13314 Aug 21 09:06	18°♂20'51	
conjunction	13307 Nov 21 15:56	12°♂05'26	-4°17'52	evening set	13314 Nov 13 18:56	19°♂34'35	
minimum elong	13307 Nov 21 16:03	12°♂05'27	4°16'55	max. Earth dist.	13314 Nov 27 22:14	19°♂55'52	43.91655 AU
morning rise	13307 Dec 06 20:56	12°♂27'43					
retrograde	13308 Mar 03 02:16	13°♂42'06		conjunction	13314 Nov 29 11:08	19°♂58'12	-2°08'35
opposition	13308 May 24 18:16	12°♂39'29	-4°20'24	minimum elong	13314 Nov 29 11:11	19°♂58'12	2°07'36
min. Earth dist.	13308 May 25 23:37	12°♂38'01	43.21686 AU	morning rise	13314 Dec 15 04:48	20°♂21'58	
direct	13308 Aug 14 08:46	11°♂37'12		retrograde	13315 Mar 12 03:35	21°♂38'08	
evening set	13308 Nov 06 19:30	12°♂49'14		opposition	13315 Jun 02 08:40	20°♂34'03	-2°04'27
max. Earth dist.	13308 Nov 20 15:48	13°♂09'33	45.11732 AU	min. Earth dist.	13315 Jun 03 19:00	20°♂32'17	41.81243 AU
				direct	13315 Aug 22 16:44	19°♂30'09	
conjunction	13308 Nov 22 00:56	13°♂11'36	-4°00'07	evening set	13315 Nov 15 04:15	20°♂44'17	
minimum elong	13308 Nov 22 01:02	13°♂11'36	3°59'11	max. Earth dist.	13315 Nov 29 06:44	21°♂05'38	43.70829 AU
morning rise	13308 Dec 07 08:13	13°♂34'06					
retrograde	13309 Mar 04 14:19	14°♂48'40		conjunction	13315 Nov 30 21:32	21°♂08'06	-1°49'10
opposition	13309 May 26 02:34	13°♂45'51	-4°01'45	minimum elong	13315 Nov 30 21:35	21°♂08'06	1°48'10
min. Earth dist.	13309 May 27 09:52	13°♂44'16	43.02427 AU	morning rise	13315 Dec 16 16:34	21°♂32'03	
direct	13309 Aug 15 14:20	12°♂43'20		retrograde	13316 Mar 12 17:46	22°♂48'37	
evening set	13309 Nov 08 02:29	13°♂55'35		opposition	13316 Jun 02 18:39	21°♂44'20	-1°43'59
max. Earth dist.	13309 Nov 22 01:02	14°♂16'06	44.92377 AU	min. Earth dist.	13316 Jun 04 06:36	21°♂42'29	41.60232 AU
				direct	13316 Aug 22 23:37	20°♂40'13	
conjunction	13309 Nov 23 10:10	14°♂18'10	-3°42'08	evening set	13316 Nov 15 14:08	21°♂54'46	
minimum elong	13309 Nov 23 10:16	14°♂18'10	3°41'10	max. Earth dist.	13316 Nov 29 17:44	22°♂16'18	43.49687 AU
morning rise	13309 Dec 08 19:28	14°♂40'52					
retrograde	13310 Mar 06 00:17	15°♂55'38		conjunction	13316 Dec 01 08:39	22°♂18'48	-1°29'30
opposition	13310 May 27 10:59	14°♂52'36	-3°42'51	minimum elong	13316 Dec 01 08:41	22°♂18'48	1°28'30
min. Earth dist.	13310 May 28 18:09	14°♂51'03	42.82829 AU	morning rise	13316 Dec 17 04:33	22°♂42'56	
direct	13310 Aug 16 21:24	13°♂49'51		retrograde	13317 Mar 14 04:13	23°♂59'54	
evening set	13310 Nov 09 09:51	15°♂02'21		opposition	13317 Jun 04 04:46	22°♂55'25	-1°23'17
max. Earth dist.	13310 Nov 23 08:23	15°♂22'58	44.72703 AU	min. Earth dist.	13317 Jun 05 17:27	22°♂53'31	41.38873 AU
				direct	13317 Aug 24 10:23	21°♂51'05	
conjunction	13310 Nov 24 19:21	15°♂25'09	-3°23'55	evening set	13317 Nov 17 00:40	23°♂06'04	
minimum elong	13310 Nov 24 19:26	15°♂25'09	3°22'57	max. Earth dist.	13317 Dec 01 03:23	23°♂27'40	43.28172 AU
morning rise	13310 Dec 10 06:45	15°♂48'04					
retrograde	13311 Mar 07 10:45	17°♂03'03		conjunction	13317 Dec 02 19:59	23°♂30'17	-1°09'36
opposition	13311 May 28 19:41	15°♂59'48	-3°23'41	minimum elong	13317 Dec 02 20:01	23°♂30'17	1°08'36
min. Earth dist.	13311 May 30 04:10	15°♂58'10	42.62954 AU	morning rise	13317 Dec 18 16:52	23°♂54'37	
direct	13311 Aug 18 05:10	14°♂56'49		retrograde	13318 Mar 15 15:18	25°♂12'00	
evening set	13311 Nov 10 17:28	16°♂09'34		opposition	13318 Jun 05 15:15	24°♂07'18	-1°02'19
max. Earth dist.	13311 Nov 24 18:00	16°♂30'24	44.52763 AU	min. Earth dist.	13318 Jun 07 04:49	24°♂05'21	41.17120 AU
				direct	13318 Aug 25 21:13	23°♂02'43	
conjunction	13311 Nov 26 04:58	16°♂32'35	-3°05'27	evening set	13318 Nov 18 11:32	24°♂18'10	
minimum elong	13311 Nov 26 05:03	16°♂32'35	3°04'28	max. Earth dist.	13318 Dec 02 13:31	24°♂39'50	43.06220 AU
morning rise	13311 Dec 11 18:03	16°♂55'43					
retrograde	13312 Mar 07 18:03	18°♂10'57		conjunction	13318 Dec 04 07:35	24°♂42'34	-0°49'29
opposition	13312 May 29 04:37	17°♂07'29	-3°04'16	minimum elong	13318 Dec 04 07:36	24°♂42'34	0°48'28
min. Earth dist.	13312 May 30 13:40	17°♂05'48	42.42836 AU	morning rise	13318 Dec 20 05:04	25°♂07'05	
direct	13312 Aug 18 16:13	16°♂04'15		retrograde	13319 Mar 17 02:58	26°♂24'54	



opposition	13319 Jun 07 02:11	25°  19°58'	-0°41'07"	minimum elong	13324 Dec 11 11:41	2°  12°06'	1°17'00"
min. Earth dist.	13319 Jun 08 17:32	25°  17°55'	40.94936 AU	morning rise	13324 Dec 27 09:13	2°  37°31'	
direct	13319 Aug 27 07:27	24°  15°07'		retrograde	13325 Mar 24 11:26	3°  58°26'	
evening set	13319 Nov 19 22:53	25°  31°03'		opposition	13325 Jun 14 00:43	2°  51°49'	1°31'17"
max. Earth dist.	13319 Dec 04 00:59	25°  52°50'	42.83863 AU	min. Earth dist.	13325 Jun 15 19:28	2°  49°31'	39.55609 AU
				direct	13325 Sep 03 01:56	1°  45°06'	
conjunction	13319 Dec 05 19:33	25°  55°36'	-0°29'09"	evening set	13325 Nov 27 05:56	3°  04°27'	
minimum elong	13319 Dec 05 19:34	25°  55°37'	0°28'08"	max. Earth dist.	13325 Dec 11 01:17	3°  26°36'	41.43825 AU
morning rise	13319 Dec 21 17:31	26°  20°18'					
retrograde	13320 Mar 17 16:21	27°  38°34'		conjunction	13325 Dec 13 01:36	3°  29°52'	1°37'37"
opposition	13320 Jun 07 13:09	26°  33°23'	-0°19'40"	minimum elong	13325 Dec 13 01:34	3°  29°52'	1°38'38"
min. Earth dist.	13320 Jun 09 04:29	26°  31°19'	40.72366 AU	morning rise	13325 Dec 28 22:25	3°  55°24'	
direct	13320 Aug 27 16:19	25°  28°15'		retrograde	13326 Mar 26 04:03	5°  16°58'	
evening set	13320 Nov 20 10:48	26°  44°40'		opposition	13326 Jun 15 13:47	4°  10°03'	1°54'10"
max. Earth dist.	13320 Dec 04 11:03	27°  06°28'	42.61124 AU	min. Earth dist.	13326 Jun 17 09:58	4°  07°39'	39.31838 AU
				direct	13326 Sep 04 10:31	3°  03°01'	
conjunction	13320 Dec 06 07:43	27°  09°23'	-0°08'37"	evening set	13326 Nov 28 20:57	4°  23°04'	
minimum elong	13320 Dec 06 07:43	27°  09°23'	0°07'35"	max. Earth dist.	13326 Dec 12 16:05	4°  34°52'	41.19968 AU
behind sun begin	13320 Dec 06 01:51	27°  09°02'					
behind sun end	13320 Dec 06 13:35	27°  09°45'		conjunction	13326 Dec 14 15:50	4°  48°36'	1°59'29"
morning rise	13320 Dec 22 06:07	27°  34°14'		minimum elong	13326 Dec 14 15:47	4°  48°36'	2°00'31"
retrograde	13321 Mar 19 07:22	28°  53°00'		morning rise	13326 Dec 30 11:31	5°  14°14'	
asc. node	13321 May 05 20:22	28°  27°34'		retrograde	13327 Mar 27 19:26	6°  36°28'	
opposition	13321 Jun 09 00:34	27°  47°31'	0°02'02"	opposition	13327 Jun 17 03:08	5°  29°16'	2°17'17"
min. Earth dist.	13321 Jun 10 17:46	27°  45°21'	40.49453 AU	min. Earth dist.	13327 Jun 18 22:51	5°  26°54'	39.07969 AU
direct	13321 Aug 29 01:22	26°  42°05'		direct	13327 Sep 05 22:54	4°  21°56'	
evening set	13321 Nov 21 23:08	27°  59°02'		evening set	13327 Nov 30 12:55	5°  34°24'	
max. Earth dist.	13321 Dec 05 23:45	28°  20°59'	42.38060 AU	max. Earth dist.	13327 Dec 14 05:10	6°  04°59'	40.96001 AU
conjunction	13321 Dec 07 20:22	28°  23°55'	0°12'17"	conjunction	13327 Dec 16 06:29	6°  08°21'	2°21'32"
minimum elong	13321 Dec 07 20:22	28°  23°55'	0°13'17"	minimum elong	13327 Dec 16 06:25	6°  08°21'	2°22'34"
behind sun begin	13321 Dec 07 16:42	28°  23°41'		morning rise	13328 Jan 01 01:06	6°  34°05'	
behind sun end	13321 Dec 08 00:02	28°  24°08'		retrograde	13328 Mar 28 13:48	7°  57°03'	
morning rise	13321 Dec 23 18:42	28°  48°55'		opposition	13328 Jun 17 16:50	6°  49°34'	2°40'36"
	13322 Feb 22 18:30	0°  00°00'		min. Earth dist.	13328 Jun 19 13:43	6°  47°07'	38.83985 AU
retrograde	13322 Mar 20 20:40	0°  08°09'		direct	13328 Sep 06 10:49	5°  41°54'	
	13322 Apr 16 01:08	30°  00°00'		evening set	13328 Dec 01 05:29	7°  03°30'	
opposition	13322 Jun 10 12:04	29°  02°24'	0°23'59"	max. Earth dist.	13328 Dec 14 20:14	7°  25°48'	40.71858 AU
min. Earth dist.	13322 Jun 12 05:30	29°  00°13'	40.26255 AU				
direct	13322 Aug 30 13:27	27°  56°39'		conjunction	13328 Dec 16 21:47	7°  29°13'	2°43'46"
evening set	13322 Nov 23 12:03	29°  14°09'		minimum elong	13328 Dec 16 21:43	7°  29°13'	2°44'49"
max. Earth dist.	13322 Dec 07 10:56	29°  36°08'	42.14749 AU	morning rise	13329 Jan 01 14:48	7°  55°02'	
				retrograde	13329 Mar 30 05:33	9°  18°44'	
conjunction	13322 Dec 09 09:06	29°  39°11'	0°33'17"	opposition	13329 Jun 19 07:05	8°  10°58'	3°04'08"
minimum elong	13322 Dec 09 09:05	29°  39°11'	0°34'19"	min. Earth dist.	13329 Jun 21 04:53	8°  08°27'	38.59795 AU
	13322 Dec 22 12:39	0°  00°00'		direct	13329 Sep 08 02:07	7°  02°59'	
morning rise	13322 Dec 25 07:30	0°  04°20'		evening set	13329 Dec 02 22:58	8°  25°24'	
retrograde	13323 Mar 22 11:26	1°  24°06'		max. Earth dist.	13329 Dec 16 10:50	8°  47°40'	40.47487 AU
opposition	13323 Jun 11 23:58	0°  18°03'	0°46'11"				
min. Earth dist.	13323 Jun 13 18:04	0°  15°49'	40.02855 AU	conjunction	13329 Dec 18 13:30	8°  51°11'	3°06'11"
	13323 Jun 26 07:20	30°  00°00'		minimum elong	13329 Dec 18 13:25	8°  51°11'	3°07'13"
direct	13323 Sep 01 00:44	29°  11°59'		morning rise	13330 Jan 03 04:49	9°  17°04'	
	13323 Nov 04 13:38	0°  00°00'		retrograde	13330 Mar 31 22:16	10°  34°13'	
evening set	13323 Nov 25 01:17	0°  30°03'		opposition	13330 Jun 20 21:35	9°  33°29'	3°27'52"
max. Earth dist.	13323 Dec 08 23:35	0°  52°08'	41.91237 AU	min. Earth dist.	13330 Jun 22 19:43	9°  30°56'	38.35362 AU
				direct	13330 Sep 09 16:17	8°  25°09'	
conjunction	13323 Dec 10 22:11	0°  55°14'	0°54'31"	evening set	13330 Dec 04 17:08	9°  48°25'	
minimum elong	13323 Dec 10 22:09	0°  55°14'	0°55'32"	max. Earth dist.	13330 Dec 18 01:29	10°  31°03'	40.22829 AU
morning rise	13323 Dec 26 20:10	1°  20°31'					
retrograde	13324 Mar 22 22:08	2°  40°51'		conjunction	13330 Dec 20 05:43	10°  31°16'	3°28'47"
opposition	13324 Jun 12 12:19	1°  34°30'	1°08'37"	minimum elong	13330 Dec 20 05:37	10°  31°16'	3°29'48"
min. Earth dist.	13324 Jun 14 07:21	1°  32°12'	39.79285 AU	morning rise	13331 Jan 04 19:00	10°  34°12'	
direct	13324 Sep 01 14:04	0°  28°07'		retrograde	13331 Apr 02 13:33	12°  05°31'	
evening set	13324 Nov 25 15:17	1°  34°48'		opposition	13331 Jun 22 12:49	10°  35°07'	3°51'48"
max. Earth dist.	13324 Dec 09 12:56	2°  08°58'	41.67590 AU	min. Earth dist.	13331 Jun 24 12:39	10°  34°27'	38.10650 AU
				direct	13331 Sep 11 06:05	9°  48°25'	
conjunction	13324 Dec 11 11:43	2°  12°07'	1°15'58"	evening set	13331 Dec 06 11:51	11°  31°23'	

max. Earth dist.	13331 Dec 19 18:04	11°  34'45	39.97905 AU	min. Earth dist.	13338 Jul 04 14:18	21°  11'27	36.33707 AU
				direct	13338 Sep 20 19:07	20°  02'55	
conjunction	13331 Dec 21 22:20	11°  38'27	3°51'32	evening set	13338 Dec 17 22:07	21°  34'33	
minimum elong	13331 Dec 21 22:14	11°  38'26	3°52'33	max. Earth dist.	13338 Dec 30 00:20	21°  55'59	38.19877 AU
morning rise	13332 Jan 06 09:17	12°  04'25					
retrograde	13332 Apr 03 06:59	13°  30'34		conjunction	13339 Jan 01 08:23	22°  00'10	6°34'13
opposition	13332 Jun 23 04:18	12°  21'49	4°15'54	minimum elong	13339 Jan 01 08:12	22°  00'10	6°35'12
min. Earth dist.	13332 Jun 25 04:00	12°  19'09	37.85684 AU	morning rise	13339 Jan 15 18:33	22°  32'54	
direct	13332 Sep 11 20:02	11°  12'44		retrograde	13339 Apr 15 01:36	23°  35'13	
evening set	13332 Dec 07 07:35	12°  37'47		opposition	13339 Jul 04 06:01	22°  47'55	7°08'29
max. Earth dist.	13332 Dec 20 09:05	12°  59'50	39.72732 AU	min. Earth dist.	13339 Jul 06 08:33	22°  44'58	36.08497 AU
				direct	13339 Sep 22 11:37	21°  36'01	
conjunction	13332 Dec 22 15:26	13°  03'42	4°14'26	evening set	13339 Dec 19 23:44	23°  08'58	
minimum elong	13332 Dec 22 15:19	13°  03'41	4°15'28	max. Earth dist.	13339 Dec 31 19:39	23°  30'09	37.94542 AU
morning rise	13333 Jan 06 23:57	13°  29'41					
retrograde	13333 Apr 05 02:48	14°  56'43		conjunction	13340 Jan 03 05:02	23°  34'28	6°57'42
opposition	13333 Jun 24 20:11	13°  47'36	4°40'11	minimum elong	13340 Jan 03 04:52	23°  34'27	6°58'41
min. Earth dist.	13333 Jun 26 21:33	13°  44'50	37.60515 AU	morning rise	13340 Jan 17 10:29	23°  59'59	
direct	13333 Sep 13 08:32	12°  38'07		retrograde	13340 Apr 16 01:42	25°  34'39	
evening set	13333 Dec 09 03:55	14°  04'08		opposition	13340 Jul 05 01:37	24°  23'00	7°33'26
max. Earth dist.	13333 Dec 22 02:55	14°  26'10	39.47366 AU	min. Earth dist.	13340 Jul 07 05:07	24°  19'59	35.83363 AU
				direct	13340 Sep 23 03:56	23°  10'43	
conjunction	13333 Dec 24 09:08	14°  30'03	4°37'29	evening set	13340 Dec 21 02:28	24°  45'04	
minimum elong	13333 Dec 24 09:00	14°  30'03	4°38'31	max. Earth dist.	13341 Jan 01 17:30	25°  06'03	37.69231 AU
morning rise	13334 Jan 08 14:36	14°  56'02					
retrograde	13334 Apr 06 21:04	16°  24'00		conjunction	13341 Jan 04 02:42	25°  10'24	7°21'11
opposition	13334 Jun 26 12:36	15°  14'30	5°04'38	minimum elong	13341 Jan 04 02:30	25°  10'23	7°22'09
min. Earth dist.	13334 Jun 28 14:03	15°  11'42	37.35192 AU	morning rise	13341 Jan 18 02:40	25°  35'45	
direct	13334 Sep 15 01:20	14°  04'37		retrograde	13341 Apr 18 01:13	27°  31'44	
evening set	13334 Dec 11 01:00	15°  31'39		opposition	13341 Jul 06 21:44	25°  59'45	7°58'23
max. Earth dist.	13334 Dec 23 19:37	15°  53'33	39.21884 AU	min. Earth dist.	13341 Jul 09 01:39	25°  56'41	35.58235 AU
				direct	13341 Sep 25 00:50	24°  47'05	
conjunction	13334 Dec 26 02:56	15°  57'32	5°00'40	evening set	13341 Dec 23 06:26	26°  22'53	
minimum elong	13334 Dec 26 02:48	15°  57'32	5°01'41	max. Earth dist.	13342 Jan 03 14:49	26°  43'34	37.43907 AU
morning rise	13335 Jan 10 05:22	16°  23'30					
retrograde	13335 Apr 08 17:23	17°  52'26		conjunction	13342 Jan 06 00:54	26°  48'01	7°44'39
opposition	13335 Jun 28 05:27	16°  42'34	5°29'12	minimum elong	13342 Jan 06 00:42	26°  48'00	7°45'38
min. Earth dist.	13335 Jun 30 07:17	16°  39'43	37.09800 AU	morning rise	13342 Jan 19 19:16	27°  13'09	
direct	13335 Sep 16 18:05	15°  32'16		retrograde	13342 Apr 20 03:09	28°  50'32	
evening set	13335 Dec 12 22:55	17°  00'21		opposition	13342 Jul 08 18:34	27°  38'11	8°23'20
max. Earth dist.	13335 Dec 25 13:46	17°  22'10	38.96334 AU	min. Earth dist.	13342 Jul 10 22:39	27°  35'05	35.33079 AU
				direct	13342 Sep 26 21:30	26°  25'06	
conjunction	13335 Dec 27 21:31	17°  26'13	5°23'57	evening set	13342 Dec 25 11:14	28°  02'24	
minimum elong	13335 Dec 27 21:22	17°  26'12	5°24'57	max. Earth dist.	13343 Jan 05 12:46	28°  22'44	37.18506 AU
morning rise	13336 Jan 11 20:20	17°  52'08					
retrograde	13336 Apr 09 12:06	19°  22'05		conjunction	13343 Jan 07 23:43	28°  27'18	8°08'05
opposition	13336 Jun 28 22:49	18°  11'51	5°53'54	minimum elong	13343 Jan 07 23:30	28°  27'17	8°09'02
min. Earth dist.	13336 Jul 01 01:34	18°  08'56	36.84383 AU	morning rise	13343 Jan 21 11:56	28°  52'12	
direct	13336 Sep 17 11:14	17°  01'08			13343 Mar 05 06:19	0°  00'00	
evening set	13336 Dec 13 21:45	18°  30'21		retrograde	13343 Apr 22 01:54	0°  31'01	
max. Earth dist.	13336 Dec 26 08:52	18°  52'04	38.70796 AU		13343 Jun 09 18:41	30°  00'00	
				opposition	13343 Jul 10 16:14	29°  18'17	8°48'15
conjunction	13336 Dec 28 16:34	18°  56'09	5°47'19	min. Earth dist.	13343 Jul 12 21:37	29°  15'05	35.07851 AU
minimum elong	13336 Dec 28 16:25	18°  56'08	5°48'19	direct	13343 Sep 28 17:51	28°  04'47	
morning rise	13337 Jan 12 11:34	19°  22'00		evening set	13343 Dec 27 17:21	29°  43'36	
retrograde	13337 Apr 11 07:08	20°  53'02			13344 Jan 05 13:51	0°  00'00	
opposition	13337 Jun 30 16:36	19°  42'26	6°18'42	max. Earth dist.	13344 Jan 07 12:24	0°  03'38	36.93047 AU
min. Earth dist.	13337 Jul 02 18:44	19°  39'32	36.59010 AU				
direct	13337 Sep 19 04:10	18°  31'19		conjunction	13344 Jan 09 23:22	0°  08'14	8°31'28
evening set	13337 Dec 15 21:30	20°  01'43		minimum elong	13344 Jan 09 23:09	0°  08'13	8°32'25
max. Earth dist.	13337 Dec 28 03:11	20°  23'13	38.45293 AU	morning rise	13344 Jan 23 05:00	0°  32'52	
				retrograde	13344 Apr 23 01:02	2°  13'08	
conjunction	13337 Dec 30 12:07	20°  27'26	6°10'44	opposition	13344 Jul 11 14:15	1°  00'01	9°13'06
minimum elong	13337 Dec 30 11:58	20°  27'25	6°11'45	min. Earth dist.	13344 Jul 13 19:17	0°  56'48	34.82578 AU
morning rise	13338 Jan 14 02:58	20°  53'12			13344 Aug 28 19:21	30°  00'00	
retrograde	13338 Apr 13 03:40	22°  25'23		direct	13344 Sep 29 15:10	29°  46'03	
opposition	13338 Jul 02 11:03	21°  14'26	6°43'34		13344 Oct 30 22:08	0°  00'00	

evening set	13344 Dec 29 00:35	1°26'28"		opposition	13351 Jul 24 20:11	13°38'11"	12°01'46"
max. Earth dist.	13345 Jan 08 10:58	1°46'01"	36.67540 AU	min. Earth dist.	13351 Jul 27 01:19	13°34'49"	33.09141 AU
				direct	13351 Oct 12 11:34	12°20'51"	
conjunction	13345 Jan 10 23:38	1°50'47"	8°54'44"	evening set	13352 Jan 14 12:03	14°14'23"	
minimum elong	13345 Jan 10 23:25	1°50'46"	8°55'40"	max. Earth dist.	13352 Jan 22 08:12	14°30'05"	34.93159 AU
morning rise	13345 Jan 23 22:25	2°15'06"					
retrograde	13345 Apr 25 01:57	3°56'54"		conjunction	13352 Jan 24 20:42	14°35'10"	11°31'29"
opposition	13345 Jul 13 13:08	2°43'21"	9°37'51"	minimum elong	13352 Jan 24 20:27	14°35'09"	11°32'18"
min. Earth dist.	13345 Jul 15 19:34	2°40'02"	34.57295 AU	morning rise	13352 Feb 04 04:48	14°55'55"	
direct	13345 Oct 01 10:02	1°28'55"			13352 Feb 06 06:00	15°	
evening set	13345 Dec 31 08:50	3°10'58"		retrograde	13352 May 08 09:22	16°50'18"	
max. Earth dist.	13346 Jan 10 12:38	3°30'11"	36.42042 AU	opposition	13352 Jul 25 23:56	15°33'45"	12°24'28"
				min. Earth dist.	13352 Jul 28 05:53	15°30'17"	32.85577 AU
conjunction	13346 Jan 13 00:36	3°34'57"	9°17'53"		13352 Aug 17 17:09	15°R	
minimum elong	13346 Jan 13 00:23	3°34'56"	9°18'49"	direct	13352 Oct 13 11:26	14°15'58"	
morning rise	13346 Jan 25 15:47	3°58'54"			13352 Dec 07 14:29	15°	
retrograde	13346 Apr 27 03:10	5°42'17"		evening set	13353 Jan 16 05:22	16°11'43"	
opposition	13346 Jul 15 12:31	4°28'18"	10°02'29"	max. Earth dist.	13353 Jan 23 15:44	16°26'45"	34.69504 AU
min. Earth dist.	13346 Jul 17 18:26	4°24'59"	34.32057 AU				
direct	13346 Oct 03 08:07	3°13'22"		conjunction	13353 Jan 26 02:57	16°31'47"	11°52'24"
evening set	13347 Jan 02 18:21	4°57'09"		minimum elong	13353 Jan 26 02:42	16°31'45"	11°53'11"
max. Earth dist.	13347 Jan 12 12:55	5°15'48"	36.16628 AU	morning rise	13353 Feb 04 23:44	16°51'48"	
				retrograde	13353 May 10 15:44	18°48'18"	
conjunction	13347 Jan 15 02:06	5°20'42"	9°40'52"	opposition	13353 Jul 28 04:30	17°31'22"	12°46'39"
minimum elong	13347 Jan 15 01:51	5°20'41"	9°41'45"	min. Earth dist.	13353 Jul 30 09:27	17°27'57"	32.62353 AU
morning rise	13347 Jan 27 09:31	5°44'16"		direct	13353 Oct 15 15:10	16°13'10"	
retrograde	13347 Apr 29 07:35	7°29'17"		evening set	13354 Jan 19 00:06	18°11'14"	
opposition	13347 Jul 17 12:36	6°14'51"	10°26'55"	max. Earth dist.	13354 Jan 25 21:41	18°25'20"	34.46169 AU
min. Earth dist.	13347 Jul 19 19:08	6°11'29"	34.06958 AU				
direct	13347 Oct 05 06:12	4°59'26"		conjunction	13354 Jan 28 09:49	18°30'29"	12°12'47"
evening set	13348 Jan 05 04:49	6°44'59"		minimum elong	13354 Jan 28 09:34	18°30'28"	12°13'34"
max. Earth dist.	13348 Jan 14 15:46	7°03'13"	35.91361 AU	morning rise	13354 Feb 06 18:58	18°49'42"	
				retrograde	13354 May 13 00:55	20°48'25"	
conjunction	13348 Jan 17 04:23	7°08'06"	10°03'38"	opposition	13354 Jul 30 09:56	19°31'06"	13°08'17"
minimum elong	13348 Jan 17 04:08	7°08'05"	10°04'31"	min. Earth dist.	13354 Aug 01 15:20	19°27'39"	32.39444 AU
morning rise	13348 Jan 29 03:16	7°31'12"		direct	13354 Oct 17 17:29	18°12'29"	
retrograde	13348 Apr 30 11:20	9°17'57"		evening set	13355 Jan 21 20:24	20°12'57"	
opposition	13348 Jul 18 13:27	8°03'03"	10°51'07"	max. Earth dist.	13355 Jan 28 06:42	20°26'13"	34.23127 AU
min. Earth dist.	13348 Jul 20 20:02	7°59'40"	33.82041 AU				
direct	13348 Oct 06 07:22	6°47'08"		conjunction	13355 Jan 30 17:46	20°31'19"	12°32'37"
evening set	13349 Jan 06 16:50	8°34'33"		minimum elong	13355 Jan 30 17:32	20°31'17"	12°33'21"
max. Earth dist.	13349 Jan 15 18:29	8°52'12"	35.66325 AU	morning rise	13355 Feb 08 14:22	20°49'39"	
				retrograde	13355 May 15 09:16	22°50'39"	
conjunction	13349 Jan 18 07:21	8°57'10"	10°26'07"	opposition	13355 Aug 01 16:13	21°32'57"	13°29'19"
minimum elong	13349 Jan 18 07:06	8°57'09"	10°26'58"	min. Earth dist.	13355 Aug 03 21:20	21°29'29"	32.16815 AU
morning rise	13349 Jan 29 21:23	9°19'46"		direct	13355 Oct 19 22:22	20°13'53"	
retrograde	13349 May 02 16:53	11°08'17"		evening set	13356 Jan 24 18:20	22°16'49"	
opposition	13349 Jul 20 14:48	9°52'57"	11°15'02"	max. Earth dist.	13356 Jan 30 14:48	22°29'02"	34.00383 AU
min. Earth dist.	13349 Jul 22 20:48	9°49'34"	33.57401 AU				
direct	13349 Oct 08 08:08	8°36'32"		conjunction	13356 Feb 02 02:24	22°34'13"	12°51'51"
evening set	13350 Jan 09 05:54	10°25'54"		minimum elong	13356 Feb 02 02:10	22°34'12"	12°52'34"
max. Earth dist.	13350 Jan 17 22:13	10°42'58"	35.41571 AU	morning rise	13356 Feb 10 09:54	22°51'35"	
				retrograde	13356 May 16 21:10	24°54'57"	
conjunction	13350 Jan 20 11:06	10°47'59"	10°48'18"	opposition	13356 Aug 02 23:16	23°36'51"	13°49'42"
minimum elong	13350 Jan 20 10:51	10°47'57"	10°49'09"	min. Earth dist.	13356 Aug 05 04:06	23°33'23"	31.94490 AU
morning rise	13350 Jan 31 15:41	11°10'01"		direct	13356 Oct 21 04:25	22°17'20"	
retrograde	13350 May 04 20:57	13°00'23"		evening set	13357 Jan 26 17:51	24°22'50"	
opposition	13350 Jul 22 17:11	11°44'38"	11°38'36"	max. Earth dist.	13357 Feb 01 00:48	24°33'58"	33.77941 AU
min. Earth dist.	13350 Jul 24 23:37	11°41'12"	33.33083 AU				
direct	13350 Oct 10 09:13	10°27'45"		conjunction	13357 Feb 03 12:03	24°39'11"	13°10'24"
evening set	13351 Jan 11 20:16	12°19'09"		minimum elong	13357 Feb 03 11:50	24°39'09"	13°11'04"
max. Earth dist.	13351 Jan 20 03:36	12°35'37"	35.17181 AU	morning rise	13357 Feb 11 05:34	24°55'29"	
				retrograde	13357 May 19 07:59	27°01'16"	
conjunction	13351 Jan 22 15:26	12°40'36"	11°10'07"	opposition	13357 Aug 05 07:09	25°42'46"	14°09'20"
minimum elong	13351 Jan 22 15:11	12°40'35"	11°10'56"	min. Earth dist.	13357 Aug 07 12:20	25°39'16"	31.72489 AU
morning rise	13351 Feb 02 09:57	13°02'02"		direct	13357 Oct 23 12:13	24°22'48"	
retrograde	13351 May 07 03:10	14°54'21"		evening set	13358 Jan 29 19:10	26°30'57"	

max. Earth dist.	13358 Feb 03 11:38	26° $\approx$ 40'55	33.55880 AU	morning rise	13364 Feb 21 18:25	10° $\mathbb{H}$ 11'27	
				retrograde	13364 Jun 04 03:41	12° $\mathbb{H}$ 39'02	
conjunction	13358 Feb 05 22:21	26° $\approx$ 46'08	13°28'12	opposition	13364 Aug 20 12:10	11° $\mathbb{H}$ 17'53	15°59'14
minimum elong	13358 Feb 05 22:08	26° $\approx$ 46'07	13°28'52	min. Earth dist.	13364 Aug 22 10:47	11° $\mathbb{H}$ 14'40	30.33865 AU
morning rise	13358 Feb 13 00:58	27° $\approx$ 01'15		direct	13364 Nov 07 07:14	9° $\mathbb{H}$ 54'57	
retrograde	13358 May 21 20:40	29° $\approx$ 09'35		max. Earth dist.	13365 Feb 19 16:24	12° $\mathbb{H}$ 23'17	32.18026 AU
opposition	13358 Aug 07 15:46	27° $\approx$ 50'40	14°28'10				
min. Earth dist.	13358 Aug 09 19:40	27° $\approx$ 47'13	31.50893 AU	conjunction	13365 Feb 21 19:40	12° $\mathbb{H}$ 28'06	15°05'36
direct	13358 Oct 25 21:05	26° $\approx$ 30'14		minimum elong	13365 Feb 21 19:35	12° $\mathbb{H}$ 28'06	15°06'00
evening set	13359 Feb 01 21:57	28° $\approx$ 41'08		retrograde	13365 Jun 06 21:03	15° $\mathbb{H}$ 00'28	
max. Earth dist.	13359 Feb 05 22:41	28° $\approx$ 49'47	33.34247 AU	opposition	13365 Aug 23 02:10	13° $\mathbb{H}$ 39'02	16°09'57
				min. Earth dist.	13365 Aug 24 23:12	13° $\mathbb{H}$ 35'56	30.17012 AU
conjunction	13359 Feb 08 09:19	28° $\approx$ 55'02	13°45'12	direct	13365 Nov 09 20:39	12° $\mathbb{H}$ 15'47	
minimum elong	13359 Feb 08 09:07	28° $\approx$ 55'01	13°45'49	max. Earth dist.	13366 Feb 22 10:43	14° $\mathbb{H}$ 45'34	32.01397 AU
morning rise	13359 Feb 14 20:08	29° $\approx$ 08'52					
	13359 Mar 11 15:46	0° $\mathbb{H}$		conjunction	13366 Feb 24 12:07	14° $\mathbb{H}$ 50'15	15°14'41
retrograde	13359 May 24 07:38	1° $\mathbb{H}$ 19'49		minimum elong	13366 Feb 24 12:04	14° $\mathbb{H}$ 50'14	15°15'04
opposition	13359 Aug 10 01:19	0° $\mathbb{H}$ 00'30	14°46'06	retrograde	13366 Jun 09 13:31	17° $\mathbb{H}$ 23'45	
	13359 Aug 10 08:49	30° $\mathbb{R}$ $\approx$		opposition	13366 Aug 25 17:10	16° $\mathbb{H}$ 02'03	16°19'12
min. Earth dist.	13359 Aug 12 05:38	29° $\approx$ 57'00	31.29763 AU	min. Earth dist.	13366 Aug 27 13:42	15° $\mathbb{H}$ 58'58	30.00923 AU
direct	13359 Oct 28 04:29	28° $\approx$ 39'37		direct	13366 Nov 12 11:18	14° $\mathbb{H}$ 38'31	
	13360 Jan 10 09:25	0° $\mathbb{H}$		max. Earth dist.	13367 Feb 25 04:56	17° $\mathbb{H}$ 09'36	31.85557 AU
evening set	13360 Feb 05 03:06	0° $\mathbb{H}$ 53'22					
max. Earth dist.	13360 Feb 08 12:14	1° $\mathbb{H}$ 00'41	33.13135 AU	conjunction	13367 Feb 27 05:04	17° $\mathbb{H}$ 14'12	15°22'23
				minimum elong	13367 Feb 27 05:01	17° $\mathbb{H}$ 14'12	15°22'42
conjunction	13360 Feb 10 21:14	1° $\mathbb{H}$ 05'51	14°01'18	retrograde	13367 Jun 12 08:23	19° $\mathbb{H}$ 48'47	
minimum elong	13360 Feb 10 21:02	1° $\mathbb{H}$ 05'50	14°01'54	opposition	13367 Aug 28 08:45	18° $\mathbb{H}$ 26'50	16°26'57
morning rise	13360 Feb 16 14:50	1° $\mathbb{H}$ 18'16		min. Earth dist.	13367 Aug 30 03:11	18° $\mathbb{H}$ 23'53	29.85583 AU
retrograde	13360 May 25 20:47	3° $\mathbb{H}$ 31'56		direct	13367 Nov 15 03:24	17° $\mathbb{H}$ 03'00	
opposition	13360 Aug 11 11:22	2° $\mathbb{H}$ 12'14	15°03'03	max. Earth dist.	13368 Feb 27 23:57	19° $\mathbb{H}$ 35'21	31.70463 AU
min. Earth dist.	13360 Aug 13 14:04	2° $\mathbb{H}$ 08'49	31.09179 AU				
direct	13360 Oct 29 14:16	0° $\mathbb{H}$ 50'53		conjunction	13368 Feb 29 22:57	19° $\mathbb{H}$ 39'52	15°28'38
evening set	13361 Feb 07 10:25	3° $\mathbb{H}$ 07'40		minimum elong	13368 Feb 29 22:57	19° $\mathbb{H}$ 39'52	15°28'56
max. Earth dist.	13361 Feb 10 00:44	3° $\mathbb{H}$ 13'20	32.92615 AU	retrograde	13368 Jun 14 02:28	22° $\mathbb{H}$ 15'28	
				opposition	13368 Aug 30 01:07	20° $\mathbb{H}$ 53'16	16°33'07
conjunction	13361 Feb 12 09:50	3° $\mathbb{H}$ 18'33	14°16'27	min. Earth dist.	13368 Aug 31 19:24	20° $\mathbb{H}$ 50'19	29.70975 AU
minimum elong	13361 Feb 12 09:40	3° $\mathbb{H}$ 18'32	14°17'00	direct	13368 Nov 16 18:23	19° $\mathbb{H}$ 29'09	
morning rise	13361 Feb 17 08:51	3° $\mathbb{H}$ 29'23		max. Earth dist.	13369 Mar 01 20:25	22° $\mathbb{H}$ 02'44	31.56148 AU
retrograde	13361 May 28 09:50	5° $\mathbb{H}$ 45'57					
opposition	13361 Aug 13 22:26	4° $\mathbb{H}$ 25'50	15°18'56	conjunction	13369 Mar 03 17:26	22° $\mathbb{H}$ 07'06	15°33'24
min. Earth dist.	13361 Aug 16 01:04	4° $\mathbb{H}$ 22'24	30.89229 AU	minimum elong	13369 Mar 03 17:27	22° $\mathbb{H}$ 07'06	15°33'38
direct	13361 Oct 31 21:50	3° $\mathbb{H}$ 04'02		retrograde	13369 Jun 16 22:32	24° $\mathbb{H}$ 43'37	
evening set	13362 Feb 10 20:46	5° $\mathbb{H}$ 24'04		opposition	13369 Sep 01 18:04	23° $\mathbb{H}$ 21'11	16°37'40
max. Earth dist.	13362 Feb 12 16:22	5° $\mathbb{H}$ 28'04	32.72778 AU	min. Earth dist.	13369 Sep 03 10:05	23° $\mathbb{H}$ 18'23	29.57122 AU
				direct	13369 Nov 19 12:32	21° $\mathbb{H}$ 56'48	
conjunction	13362 Feb 14 23:09	5° $\mathbb{H}$ 33'06	14°30'31	max. Earth dist.	13370 Mar 04 16:06	24° $\mathbb{H}$ 31'27	31.42621 AU
minimum elong	13362 Feb 14 22:59	5° $\mathbb{H}$ 33'06	14°31'03				
morning rise	13362 Feb 19 01:07	5° $\mathbb{H}$ 42'07		conjunction	13370 Mar 06 12:17	24° $\mathbb{H}$ 35'44	15°36'37
retrograde	13362 May 30 22:02	8° $\mathbb{H}$ 01'47		minimum elong	13370 Mar 06 12:20	24° $\mathbb{H}$ 35'45	15°36'50
opposition	13362 Aug 16 10:14	6° $\mathbb{H}$ 41'18	15°33'39	retrograde	13370 Jun 19 16:53	27° $\mathbb{H}$ 13'08	
min. Earth dist.	13362 Aug 18 11:03	6° $\mathbb{H}$ 37'58	30.69983 AU	opposition	13370 Sep 04 11:45	25° $\mathbb{H}$ 50'27	16°40'32
direct	13362 Nov 03 09:27	5° $\mathbb{H}$ 19'06		min. Earth dist.	13370 Sep 06 03:17	25° $\mathbb{H}$ 47'40	29.44065 AU
evening set	13363 Feb 14 11:36	7° $\mathbb{H}$ 42'43		direct	13370 Nov 22 04:38	24° $\mathbb{H}$ 25'48	
max. Earth dist.	13363 Feb 15 06:41	7° $\mathbb{H}$ 44'29	32.53709 AU	max. Earth dist.	13371 Mar 07 14:17	27° $\mathbb{H}$ 01'36	31.29949 AU
conjunction	13363 Feb 17 13:09	7° $\mathbb{H}$ 49'32	14°43'28	conjunction	13371 Mar 09 07:49	27° $\mathbb{H}$ 05'39	15°38'14
minimum elong	13363 Feb 17 13:01	7° $\mathbb{H}$ 49'32	14°43'56	minimum elong	13371 Mar 09 07:53	27° $\mathbb{H}$ 05'40	15°38'23
morning rise	13363 Feb 20 14:26	7° $\mathbb{H}$ 56'20		retrograde	13371 Jun 22 12:00	29° $\mathbb{H}$ 43'48	
retrograde	13363 Jun 02 13:00	10° $\mathbb{H}$ 19'28		opposition	13371 Sep 07 05:43	28° $\mathbb{H}$ 20'55	16°41'39
opposition	13363 Aug 18 22:45	8° $\mathbb{H}$ 58'38	15°47'06	min. Earth dist.	13371 Sep 08 18:58	28° $\mathbb{H}$ 18'17	29.31849 AU
min. Earth dist.	13363 Aug 20 22:33	8° $\mathbb{H}$ 55'22	30.51528 AU	direct	13371 Nov 24 23:39	26° $\mathbb{H}$ 56'02	
direct	13363 Nov 05 19:35	7° $\mathbb{H}$ 36'03		max. Earth dist.	13372 Mar 09 10:53	29° $\mathbb{H}$ 32'42	31.18174 AU
evening set	13364 Feb 18 13:36	10° $\mathbb{H}$ 04'16					
max. Earth dist.	13364 Feb 18 00:03	10° $\mathbb{H}$ 03'00	32.35453 AU	conjunction	13372 Mar 11 03:40	29° $\mathbb{H}$ 36'42	15°38'11
				minimum elong	13372 Mar 11 03:48	29° $\mathbb{H}$ 36'42	15°38'19
conjunction	13364 Feb 20 04:07	10° $\mathbb{H}$ 07'52	14°55'10		13372 Mar 21 02:02	0° $\mathbb{V}$	
minimum elong	13364 Feb 20 04:00	10° $\mathbb{H}$ 07'52	14°55'38	retrograde	13372 Jun 24 08:09	2° $\mathbb{V}$ 15'31	

opposition	13372 Sep 09 00:18	0°♊52'26	16°40'57	minimum elong	13380 Apr 01 03:43	20°♊11'42	14°34'02
min. Earth dist.	13372 Sep 10 12:21	0°♊49'53	29.20544 AU	morning rise	13380 Apr 04 23:46	20°♊20'54	
	13372 Oct 12 06:12	30°♋		retrograde	13380 Jul 15 00:48	22°♊52'50	
direct	13372 Nov 26 16:38	29°♋27'19		opposition	13380 Sep 29 16:25	21°♊29'21	15°26'24
	13373 Jan 09 23:08	0°♊		min. Earth dist.	13380 Sep 30 10:25	21°♊28'05	28.68989 AU
max. Earth dist.	13373 Mar 12 10:24	2°♊05'01	31.07365 AU	direct	13380 Dec 17 12:21	20°♊03'52	
				evening set	13381 Mar 30 04:31	22°♊36'06	
conjunction	13373 Mar 13 23:57	2°♊08'43	15°36'27	max. Earth dist.	13381 Apr 03 06:17	22°♊45'51	30.61428 AU
minimum elong	13373 Mar 14 00:06	2°♊08'44	15°36'30				
retrograde	13373 Jun 27 02:25	4°♊48'08		conjunction	13381 Apr 04 00:39	22°♊47'41	14°18'24
opposition	13373 Sep 11 19:18	3°♊24'52	16°38'25	minimum elong	13381 Apr 04 01:02	22°♊47'43	14°18'06
min. Earth dist.	13373 Sep 13 05:13	3°♊22'27	29.10203 AU	morning rise	13381 Apr 08 21:21	22°♊59'20	
direct	13373 Nov 29 11:41	1°♊59'34		retrograde	13381 Jul 17 20:48	25°♊28'43	
max. Earth dist.	13374 Mar 15 08:07	4°♊38'00	30.97603 AU	opposition	13381 Oct 02 13:14	24°♊05'18	15°08'36
				min. Earth dist.	13381 Oct 03 05:55	24°♊04'07	28.67407 AU
conjunction	13374 Mar 16 20:22	4°♊41'35	15°32'58	direct	13381 Dec 20 09:43	22°♊39'52	
minimum elong	13374 Mar 16 20:34	4°♊41'36	15°32'59	evening set	13382 Apr 01 04:26	25°♊09'48	
retrograde	13374 Jun 29 22:19	7°♊21'31					
opposition	13374 Sep 14 14:39	5°♊58'06	16°33'57	conjunction	13382 Apr 06 21:54	25°♊23'30	14°00'51
min. Earth dist.	13374 Sep 15 22:21	5°♊55'51	29.00932 AU	minimum elong	13382 Apr 06 22:19	25°♊23'33	14°00'31
direct	13374 Dec 02 06:43	4°♊32'38		max. Earth dist.	13382 Apr 06 06:27	25°♊21'58	30.60620 AU
max. Earth dist.	13375 Mar 18 08:25	7°♊11'58	30.88960 AU	morning rise	13382 Apr 12 15:53	25°♊37'16	
				retrograde	13382 Jul 20 16:54	28°♊04'15	
conjunction	13375 Mar 19 17:07	7°♊15'13	15°27'41	opposition	13382 Oct 05 09:51	26°♊40'55	14°49'02
minimum elong	13375 Mar 19 17:20	7°♊15'14	15°27'39	min. Earth dist.	13382 Oct 05 23:42	26°♊39'56	28.66825 AU
retrograde	13375 Jul 02 17:09	9°♊55'34		direct	13382 Dec 23 08:34	25°♊15'34	
opposition	13375 Sep 17 10:28	8°♊32'03	16°27'33	evening set	13383 Apr 03 05:42	27°♊43'15	
min. Earth dist.	13375 Sep 18 16:18	8°♊29'55	28.92769 AU				
direct	13375 Dec 05 02:25	7°♊06'29		conjunction	13383 Apr 09 18:48	27°♊58'54	13°41'44
max. Earth dist.	13376 Mar 20 07:06	9°♊46'25	30.81497 AU	minimum elong	13383 Apr 09 19:13	27°♊58'56	13°41'21
				max. Earth dist.	13383 Apr 09 04:51	27°♊57'30	30.60831 AU
conjunction	13376 Mar 21 14:05	9°♊49'30	15°20'36	morning rise	13383 Apr 16 08:25	28°♊14'35	
minimum elong	13376 Mar 21 14:21	9°♊49'32	15°20'31		13383 Jun 05 22:04	0°♋	
retrograde	13376 Jul 04 14:17	12°♊30'12		retrograde	13383 Jul 23 13:42	0°♋39'17	
opposition	13376 Sep 19 06:21	11°♊06'38	16°19'10		13383 Sep 10 23:00	30°♋	
min. Earth dist.	13376 Sep 20 09:10	11°♊04'43	28.85774 AU	opposition	13383 Oct 08 06:25	29°♊16'01	14°27'47
direct	13376 Dec 06 22:00	9°♊41'00		min. Earth dist.	13383 Oct 08 18:28	29°♊15'10	28.67259 AU
max. Earth dist.	13377 Mar 23 07:37	12°♊21'38	30.75222 AU	direct	13383 Dec 26 05:47	27°♊50'45	
					13384 Mar 28 10:50	0°♋	
conjunction	13377 Mar 24 11:21	12°♊24'24	15°11'41	evening set	13384 Apr 04 08:18	0°♋16'14	
minimum elong	13377 Mar 24 11:37	12°♊24'26	15°11'34				
retrograde	13377 Jul 07 09:28	15°♊05'22		conjunction	13384 Apr 11 15:36	0°♋33'39	13°21'04
opposition	13377 Sep 22 02:45	13°♊41'47	16°08'51	minimum elong	13384 Apr 11 16:02	0°♋33'42	13°20'38
min. Earth dist.	13377 Sep 23 04:03	13°♊39'59	28.79933 AU	max. Earth dist.	13384 Apr 11 04:59	0°♋32'36	30.62074 AU
direct	13377 Dec 09 18:54	12°♊16'10		morning rise	13384 Apr 18 23:13	0°♋51'06	
max. Earth dist.	13378 Mar 26 06:56	14°♊57'17	30.70132 AU	retrograde	13384 Jul 25 07:43	3°♋13'34	
				opposition	13384 Oct 10 02:39	1°♋50'23	14°04'55
conjunction	13378 Mar 27 08:27	14°♊59'50	15°00'59	min. Earth dist.	13384 Oct 10 12:26	1°♋49'42	28.68702 AU
minimum elong	13378 Mar 27 08:46	14°♊59'51	15°00'49	direct	13384 Dec 28 04:24	0°♋25'14	
retrograde	13378 Jul 10 07:04	17°♊40'58		evening set	13385 Apr 06 11:30	2°♋48'32	
opposition	13378 Sep 24 23:10	16°♊17'24	15°56'35				
min. Earth dist.	13378 Sep 25 21:14	16°♊15'50	28.75222 AU	conjunction	13385 Apr 14 11:50	3°♋07'36	12°58'56
direct	13378 Dec 12 17:01	14°♊51'48		minimum elong	13385 Apr 14 12:15	3°♋07'38	12°58'28
evening set	13379 Mar 27 15:58	17°♊29'28		max. Earth dist.	13385 Apr 14 02:42	3°♋06'41	30.64367 AU
max. Earth dist.	13379 Mar 29 07:02	17°♊33'21	30.66159 AU	morning rise	13385 Apr 22 12:34	3°♋26'41	
				retrograde	13385 Jul 28 02:20	5°♋46'56	
conjunction	13379 Mar 30 05:53	17°♊35'38	14°48'30	opposition	13385 Oct 12 22:43	4°♋23'51	13°40'28
minimum elong	13379 Mar 30 06:12	17°♊35'40	14°48'18	min. Earth dist.	13385 Oct 13 05:53	4°♋23'21	28.71217 AU
morning rise	13379 Apr 01 20:24	17°♊41'53		direct	13385 Dec 31 01:27	2°♋58'48	
retrograde	13379 Jul 13 02:59	20°♊16'51		evening set	13386 Apr 08 15:06	5°♋19'58	
opposition	13379 Sep 27 19:45	18°♊53'20	15°42'25				
min. Earth dist.	13379 Sep 28 16:47	18°♊51'50	28.71590 AU	conjunction	13386 Apr 17 07:37	5°♋40'33	12°35'23
direct	13379 Dec 15 13:00	17°♊27'46		minimum elong	13386 Apr 17 08:04	5°♋40'35	12°34'52
evening set	13380 Mar 28 07:33	20°♊02'30		max. Earth dist.	13386 Apr 17 02:22	5°♋40'01	30.67754 AU
max. Earth dist.	13380 Mar 31 06:59	20°♊09'37	30.63278 AU	morning rise	13386 Apr 26 00:15	6°♋01'09	
				retrograde	13386 Jul 30 18:57	8°♋19'14	
conjunction	13380 Apr 01 03:20	20°♊11'40	14°34'17	opposition	13386 Oct 15 18:28	6°♋56'16	13°14'31

min. Earth dist.	13386 Oct 15 23:38	6°8'55"55	28.74828 AU	conjunction	13393 May 04 11:51	22°8'58"03	9°17'16
direct	13387 Jan 02 22:47	5°8'31"22		minimum elong	13393 May 04 12:14	22°8'58"05	9°16'31
evening set	13387 Apr 10 19:18	7°8'50"23		max. Earth dist.	13393 May 05 00:39	22°8'59"17	31.23457 AU
				morning rise	13393 May 16 21:12	23°8'26"27	
conjunction	13387 Apr 20 02:54	8°8'12"23	12°10'28	retrograde	13393 Aug 16 09:48	25°8'30"48	
minimum elong	13387 Apr 20 03:20	8°8'12"25	12°09'56	min. Earth dist.	13393 Nov 01 11:32	24°8'10"23	29.31930 AU
max. Earth dist.	13387 Apr 19 23:19	8°8'12"02	30.72279 AU	opposition	13393 Nov 02 00:11	24°8'09"31	9°38'21
morning rise	13387 Apr 29 10:44	8°8'34"23		direct	13394 Jan 20 16:10	22°8'46"31	
retrograde	13387 Aug 02 13:06	10°8'50"22		evening set	13394 Apr 24 07:33	24°8'51"53	
opposition	13387 Oct 18 13:37	9°8'27"32	12°47'09				
min. Earth dist.	13387 Oct 18 15:22	9°8'27"25	28.79602 AU	conjunction	13394 May 07 03:06	25°8'21"03	8°45'23
direct	13388 Jan 05 18:54	8°8'02"47		minimum elong	13394 May 07 03:29	25°8'21"06	8°44'35
evening set	13388 Apr 11 23:47	10°8'19"44		max. Earth dist.	13394 May 07 17:29	25°8'22"26	31.35475 AU
				morning rise	13394 May 19 22:10	25°8'50"11	
conjunction	13388 Apr 21 21:53	10°8'43"03	11°44'17	retrograde	13394 Aug 19 00:34	27°8'52"47	
minimum elong	13388 Apr 21 22:20	10°8'43"05	11°43'41	opposition	13394 Nov 04 16:09	26°8'31"48	9°03'50
max. Earth dist.	13388 Apr 21 22:04	10°8'43"04	30.77983 AU	min. Earth dist.	13394 Nov 04 01:32	26°8'32"47	29.44069 AU
morning rise	13388 May 01 19:53	11°8'06"22		direct	13395 Jan 23 09:14	25°8'09"08	
retrograde	13388 Aug 04 03:47	13°8'20"16		evening set	13395 Apr 26 13:22	27°8'12"43	
opposition	13388 Oct 20 08:40	11°8'57"37	12°18'25				
min. Earth dist.	13388 Oct 20 08:38	11°8'57"37	28.85558 AU	conjunction	13395 May 09 17:59	27°8'42"33	8°12'54
direct	13389 Jan 07 15:10	10°8'33"05		minimum elong	13395 May 09 18:21	27°8'42"35	8°12'06
evening set	13389 Apr 14 04:34	12°8'47"59		max. Earth dist.	13395 May 10 11:12	27°8'44"11	31.48333 AU
				morning rise	13395 May 22 21:43	28°8'12"19	
conjunction	13389 Apr 24 16:04	13°8'12"30	11°16'53		13395 Jul 24 14:04	0°8'12"19	
minimum elong	13389 Apr 24 16:30	13°8'12"33	11°16'16	retrograde	13395 Aug 21 13:27	0°8'13"11	
max. Earth dist.	13389 Apr 24 18:16	13°8'12"43	30.84889 AU		13395 Sep 19 00:55	30°8'13"11	
morning rise	13389 May 05 03:33	13°8'37"02		opposition	13395 Nov 07 07:22	28°8'52"30	8°28'45
	13389 Jun 13 23:30	15°8'37"02		min. Earth dist.	13395 Nov 06 15:08	28°8'53"36	29.57018 AU
retrograde	13389 Aug 06 20:51	15°8'48"55		direct	13396 Jan 26 04:11	27°8'30"10	
	13389 Oct 02 10:38	15°8'48"55		evening set	13396 Apr 27 19:23	29°8'32"01	
opposition	13389 Oct 23 03:06	14°8'26"30	11°48'27		13396 May 10 06:23	0°8'32"01	
min. Earth dist.	13389 Oct 22 23:22	14°8'26"46	28.92701 AU				
direct	13390 Jan 10 11:36	13°8'02"14		conjunction	13396 May 11 08:02	0°8'02"25	7°39'56
	13390 Apr 09 18:34	15°8'02"14		minimum elong	13396 May 11 08:22	0°8'02"27	7°39'05
evening set	13390 Apr 16 09:30	15°8'15"08		max. Earth dist.	13396 May 12 02:13	0°8'04"08	31.61976 AU
				morning rise	13396 May 24 20:02	0°8'32"45	
conjunction	13390 Apr 27 09:53	15°8'40"47	10°48'22	retrograde	13396 Aug 23 01:59	2°8'31"56	
minimum elong	13390 Apr 27 10:19	15°8'40"49	10°47'42	opposition	13396 Nov 08 22:03	1°8'11"33	7°53'11
max. Earth dist.	13390 Apr 27 15:28	15°8'41"19	30.92955 AU	min. Earth dist.	13396 Nov 08 03:11	1°8'12"49	29.70772 AU
morning rise	13390 May 08 10:01	16°8'06"25			13397 Jan 01 21:34	30°8'12"49	
retrograde	13390 Aug 09 11:49	18°8'16"21		direct	13397 Jan 27 20:25	29°8'49"32	
opposition	13390 Oct 25 21:07	16°8'54"11	11°17'20		13397 Feb 22 06:30	0°8'49"32	
min. Earth dist.	13390 Oct 25 15:53	16°8'54"33	29.00986 AU	evening set	13397 Apr 30 01:02	1°8'49"41	
direct	13391 Jan 13 05:32	15°8'30"12					
evening set	13391 Apr 18 14:47	17°8'41"10		conjunction	13397 May 13 21:20	2°8'20"34	7°06'32
				minimum elong	13397 May 13 21:39	2°8'20"36	7°05'41
conjunction	13391 Apr 30 03:05	18°8'07"50	10°18'52	max. Earth dist.	13397 May 14 18:37	2°8'22"34	31.76395 AU
minimum elong	13391 Apr 30 03:30	18°8'07"52	10°18'10	morning rise	13397 May 27 16:34	2°8'51"23	
max. Earth dist.	13391 Apr 30 10:56	18°8'08"35	31.02133 AU	retrograde	13397 Aug 25 11:07	4°8'48"56	
morning rise	13391 May 11 15:06	18°8'34"29		opposition	13397 Nov 11 12:08	3°8'28"51	7°17'14
retrograde	13391 Aug 12 04:05	20°8'42"30		min. Earth dist.	13397 Nov 10 16:07	3°8'30"11	29.85307 AU
opposition	13391 Oct 28 14:35	19°8'20"38	10°45'12	direct	13398 Jan 30 12:56	2°8'07"09	
min. Earth dist.	13391 Oct 28 06:05	19°8'21"13	29.10331 AU	evening set	13398 May 02 06:52	4°8'05"38	
direct	13392 Jan 16 02:13	17°8'56"57					
evening set	13392 Apr 19 20:13	20°8'06"01		conjunction	13398 May 16 09:48	4°8'36"56	6°32'48
				minimum elong	13398 May 16 10:05	4°8'36"57	6°31'55
conjunction	13392 May 01 19:44	20°8'33"37	9°48'28	max. Earth dist.	13398 May 17 08:01	4°8'39"00	31.91593 AU
minimum elong	13392 May 01 20:09	20°8'33"39	9°47'43	morning rise	13398 May 30 11:54	5°8'08"09	
max. Earth dist.	13392 May 02 06:01	20°8'34"36	31.12314 AU	retrograde	13398 Aug 27 22:17	7°8'04"07	
morning rise	13392 May 13 18:52	21°8'01"11		min. Earth dist.	13398 Nov 13 02:14	5°8'45"50	30.00655 AU
retrograde	13392 Aug 13 19:27	23°8'07"21		opposition	13398 Nov 14 01:14	5°8'44"19	6°40'59
opposition	13392 Oct 30 07:39	21°8'45"46	10°12'10	direct	13399 Feb 02 03:29	4°8'22"55	
min. Earth dist.	13392 Oct 29 21:33	21°8'46"27	29.20670 AU	evening set	13399 May 04 12:24	6°8'19"48	
direct	13393 Jan 17 20:34	20°8'22"25					
evening set	13393 Apr 22 01:53	22°8'29"37		conjunction	13399 May 18 21:36	6°8'51"26	5°58'49
				minimum elong	13399 May 18 21:51	6°8'51"27	5°57'55

max. Earth dist.	13399 May 19 22:50	6°II53'46	32.07588 AU	conjunction	13406 Jun 03 11:13	21°II43'55	1°59'51
morning rise	13399 Jun 02 05:37	7°II22'59		minimum elong	13406 Jun 03 11:17	21°II43'55	1°58'51
retrograde	13399 Aug 30 06:03	9°II17'27		max. Earth dist.	13406 Jun 05 01:56	21°II47'19	33.41492 AU
opposition	13399 Nov 16 13:54	7°II57'55	6°04'31	morning rise	13406 Jun 18 19:55	22°II16'00	
min. Earth dist.	13399 Nov 15 13:49	7°II59'31	30.16837 AU	retrograde	13406 Sep 14 09:01	24°II01'47	
direct	13400 Feb 04 16:51	6°II36'51		min. Earth dist.	13406 Nov 30 21:58	22°II47'04	31.52135 AU
evening set	13400 May 06 17:58	8°II32'11		opposition	13406 Dec 02 11:10	22°II44'42	1°49'42
				direct	13407 Feb 21 03:58	21°II26'22	
conjunction	13400 May 21 08:28	9°II04'05	5°24'39	evening set	13407 May 21 06:03	23°II12'47	
minimum elong	13400 May 21 08:42	9°II04'06	5°23'43				
max. Earth dist.	13400 May 22 11:16	9°II06'32	32.24420 AU	conjunction	13407 Jun 05 17:21	23°II44'50	1°26'23
morning rise	13400 Jun 04 21:54	9°II35'53		minimum elong	13407 Jun 05 17:24	23°II44'51	1°25'23
retrograde	13400 Sep 01 14:40	11°II28'54		max. Earth dist.	13407 Jun 07 08:12	23°II48'13	33.63010 AU
min. Earth dist.	13400 Nov 17 22:28	10°II11'29	30.33882 AU	morning rise	13407 Jun 21 03:28	24°II16'48	
opposition	13400 Nov 19 01:45	10°II09'41	5°27'54	retrograde	13407 Sep 16 14:12	26°II01'34	
direct	13401 Feb 07 07:31	8°II48'57		min. Earth dist.	13407 Dec 03 02:59	24°II47'20	31.73791 AU
evening set	13401 May 08 23:24	10°II42'50		opposition	13407 Dec 04 18:27	24°II44'51	1°14'15
				direct	13408 Feb 23 12:56	23°II26'53	
conjunction	13401 May 23 18:42	11°II14'55	4°50'22	evening set	13408 May 22 10:46	25°II12'15	
minimum elong	13401 May 23 18:54	11°II14'56	4°49'26				
max. Earth dist.	13401 May 25 00:06	11°II17'36	32.42098 AU	conjunction	13408 Jun 06 22:51	25°II44'08	0°53'15
morning rise	13401 Jun 07 12:50	11°II46'54		minimum elong	13408 Jun 06 22:53	25°II44'08	0°52'13
retrograde	13401 Sep 03 23:01	13°II38'34		max. Earth dist.	13408 Jun 08 15:42	25°II47'40	33.84898 AU
min. Earth dist.	13401 Nov 20 08:10	12°II21'33	30.51806 AU	morning rise	13408 Jun 22 09:36	26°II15'55	
opposition	13401 Nov 21 13:04	12°II19'40	4°51'13	retrograde	13408 Sep 17 16:44	27°II59'44	
direct	13402 Feb 09 18:27	10°II59'19		min. Earth dist.	13408 Dec 04 09:32	26°II45'50	31.95825 AU
evening set	13402 May 11 04:35	12°II51'47		opposition	13408 Dec 06 01:16	26°II43'21	0°39'11
				direct	13409 Feb 24 20:24	25°II25'46	
conjunction	13402 May 26 04:06	13°II24'01	4°16'03	evening set	13409 May 24 15:21	27°II10'07	
minimum elong	13402 May 26 04:17	13°II24'01	4°15'05				
max. Earth dist.	13402 May 27 11:36	13°II26'51	32.60621 AU	conjunction	13409 Jun 09 03:42	27°II41'46	0°20'29
morning rise	13402 Jun 10 02:20	13°II56'08		minimum elong	13409 Jun 09 03:43	27°II41'47	0°19'28
retrograde	13402 Sep 06 06:54	15°II46'30		max. Earth dist.	13409 Jun 10 21:07	27°II45'20	34.07138 AU
opposition	13402 Nov 23 23:34	14°II27'57	4°14'34	morning rise	13409 Jun 24 14:45	28°II13'20	
min. Earth dist.	13402 Nov 22 16:15	14°II29'59	30.70540 AU	retrograde	13409 Sep 19 19:45	29°II56'14	
direct	13403 Feb 12 07:29	13°II07'59		min. Earth dist.	13409 Dec 06 13:35	28°II42'47	32.18203 AU
evening set	13403 May 13 09:55	14°II59'08		opposition	13409 Dec 08 07:13	28°II40'11	0°04'34
				desc. node	13410 Jan 26 04:23	27°II37'30	
conjunction	13403 May 28 12:52	15°II31'26	3°41'46	direct	13410 Feb 27 04:26	27°II22'58	
minimum elong	13403 May 28 13:01	15°II31'26	3°40'49	evening set	13410 May 26 19:38	29°II06'21	
max. Earth dist.	13403 May 29 21:52	15°II34'23	32.79895 AU				
morning rise	13403 Jun 12 14:41	16°II03'37		conjunction	13410 Jun 11 07:46	29°II37'45	-0°11'56
retrograde	13403 Sep 08 15:47	17°II52'45		minimum elong	13410 Jun 11 07:45	29°II37'45	0°12'58
min. Earth dist.	13403 Nov 25 00:11	16°II36'43	30.90031 AU	behind sun begin	13410 Jun 11 03:48	29°II37'26	
opposition	13403 Nov 26 09:21	16°II34'34	3°38'01	behind sun end	13410 Jun 11 11:42	29°II38'04	
direct	13404 Feb 14 18:44	15°II15'01		max. Earth dist.	13410 Jun 13 02:27	29°II41'23	34.29692 AU
evening set	13404 May 14 15:04	17°II04'54			13410 Jun 22 06:11	0°00	
				morning rise	13410 Jun 26 18:42	0°0009'04	
conjunction	13404 May 29 21:04	17°II37'13	3°07'36	retrograde	13410 Sep 21 23:31	1°0051'06	
minimum elong	13404 May 29 21:12	17°II37'13	3°06'37	min. Earth dist.	13410 Dec 08 18:06	0°0037'59	32.40935 AU
max. Earth dist.	13404 May 31 08:34	17°II40'22	32.99862 AU	opposition	13410 Dec 10 12:37	0°0035'21	-0°29'34
morning rise	13404 Jun 14 01:39	18°II09'25			13411 Jan 04 05:13	30°R11	
retrograde	13404 Sep 09 22:37	19°II57'22		direct	13411 Mar 01 09:24	29°II18'28	
min. Earth dist.	13404 Nov 26 08:12	18°II41'46	31.10175 AU		13411 Apr 24 08:22	0°00	
opposition	13404 Nov 27 18:39	18°II39'34	3°01'39	evening set	13411 May 28 23:41	1°0000'57	
direct	13405 Feb 16 07:35	17°II20'25					
evening set	13405 May 16 20:08	19°II09'06		conjunction	13411 Jun 13 11:14	1°0032'03	-0°43'49
				minimum elong	13411 Jun 13 11:13	1°0032'03	0°44'51
conjunction	13405 Jun 01 04:19	19°II41'22	2°33'37	max. Earth dist.	13411 Jun 15 07:22	1°0035'47	34.52592 AU
minimum elong	13405 Jun 01 04:25	19°II41'23	2°32'38	morning rise	13411 Jun 28 21:25	2°0003'04	
max. Earth dist.	13405 Jun 02 16:34	19°II44'34	33.20417 AU	retrograde	13411 Sep 24 00:51	3°0044'17	
morning rise	13405 Jun 16 11:24	20°II13'32		min. Earth dist.	13411 Dec 10 21:36	2°0031'32	32.64029 AU
retrograde	13405 Sep 12 05:27	22°II00'23		opposition	13411 Dec 12 17:12	2°0028'51	-1°03'11
min. Earth dist.	13405 Nov 28 14:26	20°II45'17	31.30908 AU	direct	13412 Mar 02 16:29	1°0012'19	
opposition	13405 Nov 30 03:16	20°II42'57	2°25'32	evening set	13412 May 30 03:37	2°0053'56	
direct	13406 Feb 18 17:10	19°II24'12					
evening set	13406 May 19 01:04	21°II11'44		conjunction	13412 Jun 14 13:53	3°0024'43	-1°15'16

minimum elong	13412 Jun 14 13:51	3°☾24'43	1°16'18	evening set	13419 Jun 13 00:23	15°☾25'58	
max. Earth dist.	13412 Jun 16 10:38	3°☾28'28	34.75860 AU				
morning rise	13412 Jun 29 23:09	3°☾55'25		conjunction	13419 Jun 27 16:21	15°☾53'49	-4°39'58
retrograde	13412 Sep 25 03:59	5°☾35'51		minimum elong	13419 Jun 27 16:13	15°☾53'48	4°40'59
min. Earth dist.	13412 Dec 11 23:45	4°☾23'32	32.87553 AU	max. Earth dist.	13419 Jun 29 20:03	15°☾57'56	36.48252 AU
opposition	13412 Dec 13 21:20	4°☾20'45	-1°36'16	morning rise	13419 Jul 12 07:35	16°☾21'36	
direct	13413 Mar 04 21:50	3°☾04'34		retrograde	13419 Oct 08 00:22	17°☾58'03	
evening set	13413 Jun 01 07:01	4°☾45'22		min. Earth dist.	13419 Dec 25 05:02	16°☾48'28	34.61467 AU
				opposition	13419 Dec 27 09:28	16°☾45'23	-5°10'25
conjunction	13413 Jun 16 15:57	5°☾15'49	-1°46'12	direct	13420 Mar 17 17:02	15°☾31'53	
minimum elong	13413 Jun 16 15:53	5°☾15'48	1°47'13	evening set	13420 Jun 14 02:35	17°☾08'21	
max. Earth dist.	13413 Jun 18 15:05	5°☾19'44	34.99549 AU				
morning rise	13413 Jul 01 23:33	5°☾46'09		conjunction	13420 Jun 28 14:47	17°☾35'43	-5°06'50
retrograde	13413 Sep 27 04:12	7°☾25'53		minimum elong	13420 Jun 28 14:38	17°☾35'42	5°07'52
min. Earth dist.	13413 Dec 14 02:40	6°☾13'56	33.11501 AU	max. Earth dist.	13420 Jun 30 19:47	17°☾39'54	36.73493 AU
opposition	13413 Dec 16 00:50	6°☾11'07	-2°08'45	morning rise	13420 Jul 13 01:58	18°☾03'00	
direct	13414 Mar 07 04:45	4°☾55'19		retrograde	13420 Oct 08 21:29	19°☾39'01	
evening set	13414 Jun 03 10:28	6°☾35'22		min. Earth dist.	13420 Dec 26 05:16	18°☾29'41	34.86839 AU
				opposition	13420 Dec 28 09:15	18°☾26'39	-5°38'22
conjunction	13414 Jun 18 17:21	7°☾05'26	-2°16'36	direct	13421 Mar 19 18:32	17°☾13'30	
minimum elong	13414 Jun 18 17:16	7°☾05'26	2°17'39	evening set	13421 Jun 16 04:35	18°☾49'28	
max. Earth dist.	13414 Jun 20 16:42	7°☾09'21	35.23648 AU				
morning rise	13414 Jul 03 23:14	7°☾35'25		conjunction	13421 Jun 30 12:27	19°☾16'18	-5°33'05
retrograde	13414 Sep 29 05:22	9°☾14'29		minimum elong	13421 Jun 30 12:17	19°☾16'17	5°34'05
min. Earth dist.	13414 Dec 16 02:57	8°☾03'00	33.35862 AU	max. Earth dist.	13421 Jul 02 16:46	19°☾20'25	36.98700 AU
opposition	13414 Dec 18 03:26	8°☾00'04	-2°40'39	morning rise	13421 Jul 14 19:38	19°☾43'05	
direct	13415 Mar 09 08:40	6°☾44'39		retrograde	13421 Oct 10 18:09	21°☾18'40	
evening set	13415 Jun 05 13:38	8°☾24'01		min. Earth dist.	13421 Dec 28 02:54	20°☾09'42	35.12177 AU
				opposition	13421 Dec 30 08:21	20°☾06'36	-6°05'39
conjunction	13415 Jun 20 18:20	8°☾53'41	-2°46'27	direct	13422 Mar 21 19:39	18°☾53'45	
minimum elong	13415 Jun 20 18:14	8°☾53'40	2°47'29	evening set	13422 Jun 18 06:19	20°☾29'14	
max. Earth dist.	13415 Jun 22 19:46	8°☾57'44	35.48113 AU				
morning rise	13415 Jul 05 21:52	9°☾23'16		conjunction	13422 Jul 02 09:49	20°☾55'33	-5°58'43
retrograde	13415 Oct 01 02:37	11°☾01'44		minimum elong	13422 Jul 02 09:39	20°☾55'32	5°59'43
min. Earth dist.	13415 Dec 18 05:11	9°☾50'36	33.60576 AU	max. Earth dist.	13422 Jul 04 15:24	20°☾59'44	37.23852 AU
opposition	13415 Dec 20 05:48	9°☾47'40	-3°11'55	morning rise	13422 Jul 16 12:31	21°☾21'49	
direct	13416 Mar 10 12:37	8°☾32'40		retrograde	13422 Oct 12 12:16	22°☾57'00	
evening set	13416 Jun 06 16:32	10°☾11'22		min. Earth dist.	13422 Dec 30 02:05	21°☾48'15	35.37474 AU
				opposition	13423 Jan 01 06:53	21°☾45'11	-6°32'15
conjunction	13416 Jun 21 18:32	10°☾40'36	-3°15'44	direct	13423 Mar 23 21:16	20°☾32'38	
minimum elong	13416 Jun 21 18:26	10°☾40'36	3°16'46	evening set	13423 Jun 20 07:50	22°☾07'40	
max. Earth dist.	13416 Jun 23 20:18	10°☾44'40	35.72886 AU				
morning rise	13416 Jul 06 19:29	11°☾09'46		conjunction	13423 Jul 04 06:35	22°☾33'26	-6°23'43
retrograde	13416 Oct 02 01:18	12°☾47'41		minimum elong	13423 Jul 04 06:25	22°☾33'26	6°24'42
min. Earth dist.	13416 Dec 19 05:05	11°☾37'00	33.85565 AU	max. Earth dist.	13423 Jul 06 11:53	22°☾37'35	37.48978 AU
opposition	13416 Dec 21 07:28	11°☾33'59	-3°42'32	morning rise	13423 Jul 18 04:36	22°☾59'09	
direct	13417 Mar 12 15:11	10°☾19'22		retrograde	13423 Oct 14 06:49	24°☾33'58	
evening set	13417 Jun 08 19:21	11°☾57'27		min. Earth dist.	13423 Dec 31 22:56	23°☾25'31	35.62761 AU
				opposition	13424 Jan 03 04:54	23°☾22'24	-6°58'11
conjunction	13417 Jun 23 18:18	12°☾26'16	-3°44'25	direct	13424 Mar 24 21:26	22°☾10'09	
minimum elong	13417 Jun 23 18:11	12°☾26'15	3°45'26	evening set	13424 Jun 21 08:55	23°☾44'44	
max. Earth dist.	13417 Jun 25 21:17	12°☾30'23	35.97879 AU				
morning rise	13417 Jul 08 16:21	12°☾54'59		conjunction	13424 Jul 05 02:38	24°☾09'57	-6°48'05
retrograde	13417 Oct 04 00:56	14°☾32'23		minimum elong	13424 Jul 05 02:27	24°☾09'57	6°49'05
min. Earth dist.	13417 Dec 21 05:52	13°☾22'04	34.10771 AU	max. Earth dist.	13424 Jul 07 08:42	24°☾14'07	37.74108 AU
opposition	13417 Dec 23 08:42	13°☾19'02	-4°12'30	morning rise	13424 Jul 18 19:48	24°☾35'08	
direct	13418 Mar 14 14:48	12°☾04'49		retrograde	13424 Oct 15 02:24	26°☾09'36	
evening set	13418 Jun 10 21:51	13°☾42'20		min. Earth dist.	13425 Jan 01 20:14	25°☾01'25	35.88111 AU
				opposition	13425 Jan 04 02:35	24°☾58'18	-7°23'25
conjunction	13418 Jun 25 17:38	14°☾10'40	-4°12'30	direct	13425 Mar 26 18:55	23°☾46'19	
minimum elong	13418 Jun 25 17:30	14°☾10'39	4°13'32	evening set	13425 Jun 23 09:46	25°☾20'31	
max. Earth dist.	13418 Jun 27 21:30	14°☾14'50	36.23035 AU				
morning rise	13418 Jul 10 12:19	14°☾38'56		conjunction	13425 Jul 06 22:23	25°☾45'11	-7°11'49
retrograde	13418 Oct 05 23:32	16°☾15'51		minimum elong	13425 Jul 06 22:13	25°☾45'10	7°12'48
min. Earth dist.	13418 Dec 23 05:55	15°☾05'53	34.36087 AU	max. Earth dist.	13425 Jul 09 05:31	25°☾49'24	37.99322 AU
opposition	13418 Dec 25 09:20	15°☾02'51	-4°41'47	morning rise	13425 Jul 20 10:16	26°☾09'48	
direct	13419 Mar 16 17:29	13°☾49'00		retrograde	13425 Oct 16 21:22	27°☾43'57	



min. Earth dist.	13426 Jan 03 16:42	26° $\overline{53}$ 6'03	36.13546 AU	direct	13432 Apr 06 17:09	4° $\overline{29}$ 9'15	
opposition	13426 Jan 05 23:34	26° $\overline{53}$ 2'55	-7°47'57	evening set	13432 Jul 05 09:27	6° $\overline{21}$ 0'42	
direct	13426 Mar 28 16:46	25° $\overline{58}$ 21'15					
evening set	13426 Jun 25 10:27	26° $\overline{55}$ 5'06		conjunction	13432 Jul 17 04:12	6° $\overline{22}$ 2'18	-9°40'08
				minimum elong	13432 Jul 17 04:02	6° $\overline{22}$ 2'17	9°41'01
conjunction	13426 Jul 08 17:31	27° $\overline{59}$ 19'11	-7°34'54	max. Earth dist.	13432 Jul 19 13:39	6° $\overline{26}$ 3'0	39.76517 AU
minimum elong	13426 Jul 08 17:20	27° $\overline{59}$ 19'10	7°35'53	morning rise	13432 Jul 28 22:30	6° $\overline{42}$ 5'2	
max. Earth dist.	13426 Jul 11 00:29	27° $\overline{52}$ 3'22	38.24627 AU	retrograde	13432 Oct 27 01:40	8° $\overline{15}$ 4'8	
morning rise	13426 Jul 22 00:12	27° $\overline{54}$ 3'14		min. Earth dist.	13433 Jan 14 06:07	7° $\overline{09}$ 5'5	37.91884 AU
retrograde	13426 Oct 18 18:17	29° $\overline{51}$ 7'08		opposition	13433 Jan 16 14:50	7° $\overline{06}$ 4'8	-10°20'34
min. Earth dist.	13427 Jan 05 11:53	28° $\overline{50}$ 9'34	36.39089 AU	direct	13433 Apr 08 10:59	5° $\overline{57}$ 2'3	
opposition	13427 Jan 07 20:07	28° $\overline{50}$ 6'22	-8°11'47	evening set	13433 Jul 07 08:46	7° $\overline{29}$ 4'0	
direct	13427 Mar 30 12:02	26° $\overline{55}$ 5'01					
evening set	13427 Jun 27 10:44	28° $\overline{52}$ 8'34		conjunction	13433 Jul 18 20:42	7° $\overline{49}$ 4'0	-9°58'52
				minimum elong	13433 Jul 18 20:32	7° $\overline{49}$ 3'9	9°59'46
conjunction	13427 Jul 10 12:21	28° $\overline{52}$ 5'05	-7°57'21	max. Earth dist.	13433 Jul 21 05:01	7° $\overline{53}$ 4'6	40.01308 AU
minimum elong	13427 Jul 10 12:10	28° $\overline{52}$ 5'04	7°58'18	morning rise	13433 Jul 30 08:30	8° $\overline{09}$ 3'9	
max. Earth dist.	13427 Jul 12 20:51	28° $\overline{56}$ 2'1	38.50020 AU	retrograde	13433 Oct 28 19:48	9° $\overline{42}$ 2'8	
morning rise	13427 Jul 23 13:18	29° $\overline{51}$ 5'34		min. Earth dist.	13434 Jan 15 23:02	8° $\overline{36}$ 5'2	38.16751 AU
	13427 Aug 19 11:26	0° $\overline{0}$		opposition	13434 Jan 18 08:29	8° $\overline{33}$ 4'3	-10°39'47
retrograde	13427 Oct 20 11:28	0° $\overline{49}$ 1'4		direct	13434 Apr 10 03:22	7° $\overline{24}$ 3'5	
	13427 Dec 24 18:32	30° $\overline{58}$		evening set	13434 Jul 09 07:41	8° $\overline{56}$ 4'3	
min. Earth dist.	13428 Jan 07 08:30	29° $\overline{54}$ 1'55	36.64695 AU				
opposition	13428 Jan 09 16:17	29° $\overline{53}$ 8'46	-8°34'56	conjunction	13434 Jul 20 12:57	9° $\overline{16}$ 0'7	-10°17'03
direct	13428 Mar 31 09:49	28° $\overline{52}$ 7'44		minimum elong	13434 Jul 20 12:46	9° $\overline{16}$ 0'6	10°17'54
	13428 Jun 27 21:10	0° $\overline{0}$		max. Earth dist.	13434 Jul 22 22:00	9° $\overline{20}$ 1'4	40.25839 AU
evening set	13428 Jun 28 10:59	0° $\overline{01}$ 0'1		morning rise	13434 Jul 31 17:54	9° $\overline{35}$ 2'9	
				retrograde	13434 Oct 30 09:14	11° $\overline{08}$ 1'2	
conjunction	13428 Jul 11 06:38	0° $\overline{23}$ 5'8	-8°19'09	min. Earth dist.	13435 Jan 17 17:41	10° $\overline{02}$ 4'6	38.41350 AU
minimum elong	13428 Jul 11 06:27	0° $\overline{23}$ 5'7	8°20'06	opposition	13435 Jan 20 01:55	9° $\overline{59}$ 4'2	-10°58'22
max. Earth dist.	13428 Jul 13 14:36	0° $\overline{28}$ 0'9	38.75462 AU	direct	13435 Apr 11 23:42	8° $\overline{50}$ 4'9	
morning rise	13428 Jul 24 01:55	0° $\overline{46}$ 5'2		evening set	13435 Jul 11 06:27	10° $\overline{22}$ 4'8	
retrograde	13428 Oct 21 04:43	2° $\overline{02}$ 0'20					
min. Earth dist.	13429 Jan 08 02:38	1° $\overline{13}$ 2'3	36.90332 AU	conjunction	13435 Jul 22 04:38	10° $\overline{41}$ 3'5	-10°34'38
opposition	13429 Jan 10 11:57	1° $\overline{10}$ 1'0	-8°57'23	minimum elong	13435 Jul 22 04:28	10° $\overline{41}$ 3'4	10°35'30
	13429 Mar 27 01:17	30° $\overline{58}$		max. Earth dist.	13435 Jul 24 12:47	10° $\overline{45}$ 3'7	40.50125 AU
direct	13429 Apr 02 07:17	29° $\overline{59}$ 2'8		morning rise	13435 Aug 02 02:36	11° $\overline{00}$ 2'0	
	13429 Apr 08 12:22	0° $\overline{0}$		retrograde	13435 Oct 31 22:19	12° $\overline{32}$ 5'7	
evening set	13429 Jun 30 10:45	1° $\overline{32}$ 3'1		min. Earth dist.	13436 Jan 19 09:44	11° $\overline{27}$ 4'7	38.65722 AU
				opposition	13436 Jan 21 18:47	11° $\overline{24}$ 4'0	-11°16'21
conjunction	13429 Jul 13 00:30	1° $\overline{54}$ 5'3	-8°40'19	direct	13436 Apr 12 19:29	10° $\overline{16}$ 0'2	
minimum elong	13429 Jul 13 00:20	1° $\overline{54}$ 5'2	8°41'15	evening set	13436 Jul 12 04:51	11° $\overline{47}$ 5'3	
max. Earth dist.	13429 Jul 15 09:43	1° $\overline{59}$ 0'9	39.00893 AU				
morning rise	13429 Jul 25 13:51	2° $\overline{17}$ 1'3		conjunction	13436 Jul 22 19:55	12° $\overline{06}$ 0'3	-10°51'39
retrograde	13429 Oct 22 21:11	3° $\overline{50}$ 3'0		minimum elong	13436 Jul 22 19:46	12° $\overline{06}$ 0'2	10°52'29
min. Earth dist.	13430 Jan 09 22:34	2° $\overline{43}$ 5'0	37.15936 AU	max. Earth dist.	13436 Jul 25 04:33	12° $\overline{10}$ 0'6	40.74212 AU
opposition	13430 Jan 12 07:20	2° $\overline{40}$ 3'9	-9°19'10	morning rise	13436 Aug 02 10:54	12° $\overline{24}$ 1'1	
direct	13430 Apr 04 03:58	1° $\overline{30}$ 1'8		retrograde	13436 Nov 01 12:37	13° $\overline{56}$ 4'4	
evening set	13430 Jul 02 10:34	3° $\overline{03}$ 0'7		min. Earth dist.	13437 Jan 20 02:46	12° $\overline{51}$ 4'4	38.89947 AU
				opposition	13437 Jan 22 11:28	12° $\overline{48}$ 3'9	-11°33'43
conjunction	13430 Jul 14 18:09	3° $\overline{24}$ 5'4	-9°00'52	direct	13437 Apr 14 13:14	11° $\overline{40}$ 1'6	
minimum elong	13430 Jul 14 17:58	3° $\overline{24}$ 5'3	9°01'47	evening set	13437 Jul 14 02:58	13° $\overline{11}$ 5'9	
max. Earth dist.	13430 Jul 17 03:08	3° $\overline{29}$ 0'7	39.26260 AU				
morning rise	13430 Jul 27 01:16	3° $\overline{46}$ 3'9		conjunction	13437 Jul 24 10:50	13° $\overline{29}$ 3'1	-11°08'05
retrograde	13430 Oct 24 13:30	5° $\overline{19}$ 4'8		minimum elong	13437 Jul 24 10:41	13° $\overline{29}$ 3'1	11°08'55
min. Earth dist.	13431 Jan 11 16:42	4° $\overline{13}$ 2'6	37.41429 AU	max. Earth dist.	13437 Jul 26 19:55	13° $\overline{33}$ 3'5	40.98186 AU
opposition	13431 Jan 14 02:00	4° $\overline{10}$ 1'5	-9°40'17	morning rise	13437 Aug 03 18:26	13° $\overline{47}$ 0'4	
direct	13431 Apr 06 00:00	3° $\overline{00}$ 1'3			13437 Sep 24 18:07	15° $\overline{0}$	
evening set	13431 Jul 04 10:11	4° $\overline{32}$ 5'1		retrograde	13437 Nov 03 02:12	15° $\overline{19}$ 3'3	
					13437 Dec 13 16:33	15° $\overline{58}$	
conjunction	13431 Jul 16 11:20	4° $\overline{54}$ 0'2	-9°20'48	min. Earth dist.	13438 Jan 21 18:39	14° $\overline{14}$ 4'6	39.14058 AU
minimum elong	13431 Jul 16 11:10	4° $\overline{54}$ 0'1	9°21'43	opposition	13438 Jan 24 03:35	14° $\overline{11}$ 4'2	-11°50'29
max. Earth dist.	13431 Jul 18 20:08	4° $\overline{58}$ 1'3	39.51480 AU	direct	13438 Apr 16 06:53	13° $\overline{03}$ 3'3	
morning rise	13431 Jul 28 12:17	5° $\overline{15}$ 1'2		evening set	13438 Jul 16 01:01	14° $\overline{35}$ 1'0	
retrograde	13431 Oct 26 08:10	6° $\overline{48}$ 1'4					
min. Earth dist.	13432 Jan 13 11:19	5° $\overline{42}$ 0'8	37.66771 AU	conjunction	13438 Jul 26 01:22	14° $\overline{52}$ 0'5	-11°23'57
opposition	13432 Jan 15 20:36	5° $\overline{38}$ 5'8	-10°00'44	minimum elong	13438 Jul 26 01:13	14° $\overline{52}$ 0'5	11°24'45

max. Earth dist.	13438 Jul 28 09:51	14° $\Omega$ 56'05	41.22064 AU	opposition	13445 Feb 02 11:44	23° $\Omega$ 31'04	-13°31'14
	13438 Jul 30 17:13	15° $\Omega$		direct	13445 Apr 25 16:10	22° $\Omega$ 24'45	
morning rise	13438 Aug 05 01:43	15° $\Omega$ 09'01		evening set	13445 Jul 27 06:30	23° $\Omega$ 56'18	
retrograde	13438 Nov 04 19:15	16° $\Omega$ 41'28					
min. Earth dist.	13439 Jan 23 09:40	15° $\Omega$ 36'56	39.38098 AU	conjunction	13445 Aug 03 23:20	24° $\Omega$ 08'52	-12°59'33
opposition	13439 Jan 25 19:17	15° $\Omega$ 33'50	-12°06'37	minimum elong	13445 Aug 03 23:13	24° $\Omega$ 08'52	13°00'15
	13439 Feb 22 04:52	15° $\mathbb{R}\Omega$		max. Earth dist.	13445 Aug 06 06:44	24° $\Omega$ 12'39	42.84936 AU
direct	13439 Apr 17 20:18	14° $\Omega$ 25'57		morning rise	13445 Aug 11 16:14	24° $\Omega$ 21'27	
	13439 Jun 09 11:20	15° $\Omega$		retrograde	13445 Nov 13 16:52	25° $\Omega$ 54'13	
evening set	13439 Jul 17 22:46	15° $\Omega$ 57'29		min. Earth dist.	13446 Feb 01 17:06	24° $\Omega$ 51'10	41.01370 AU
				opposition	13446 Feb 04 01:26	24° $\Omega$ 48'13	-13°43'28
conjunction	13439 Jul 27 15:44	16° $\Omega$ 13'48	-11°39'14	direct	13446 Apr 27 03:50	23° $\Omega$ 42'08	
minimum elong	13439 Jul 27 15:35	16° $\Omega$ 13'48	11°40'02	evening set	13446 Jul 29 03:28	25° $\Omega$ 13'45	
max. Earth dist.	13439 Jul 30 01:25	16° $\Omega$ 17'52	41.45874 AU				
morning rise	13439 Aug 06 08:28	16° $\Omega$ 30'07		conjunction	13446 Aug 05 11:51	25° $\Omega$ 25'41	-13°11'12
retrograde	13439 Nov 06 10:09	18° $\Omega$ 02'33		minimum elong	13446 Aug 05 11:47	25° $\Omega$ 25'41	13°11'52
min. Earth dist.	13440 Jan 25 01:56	16° $\Omega$ 58'12	39.62045 AU	max. Earth dist.	13446 Aug 07 19:35	25° $\Omega$ 29'27	43.06983 AU
opposition	13440 Jan 27 10:51	16° $\Omega$ 55'09	-12°22'09	morning rise	13446 Aug 12 20:15	25° $\Omega$ 37'37	
direct	13440 Apr 18 11:20	15° $\Omega$ 47'32		retrograde	13446 Nov 15 04:40	27° $\Omega$ 10'29	
evening set	13440 Jul 18 20:21	17° $\Omega$ 19'02		min. Earth dist.	13447 Feb 03 08:12	26° $\Omega$ 07'32	41.23380 AU
				opposition	13447 Feb 05 14:51	26° $\Omega$ 04'41	-13°55'13
conjunction	13440 Jul 28 05:30	17° $\Omega$ 34'44	-11°53'57	direct	13447 Apr 28 17:39	24° $\Omega$ 58'49	
minimum elong	13440 Jul 28 05:23	17° $\Omega$ 34'43	11°54'43	evening set	13447 Jul 31 00:28	26° $\Omega$ 30'29	
max. Earth dist.	13440 Jul 30 14:24	17° $\Omega$ 38'42	41.69588 AU				
morning rise	13440 Aug 06 14:39	17° $\Omega$ 50'25		conjunction	13447 Aug 07 00:02	26° $\Omega$ 41'46	-13°22'23
retrograde	13440 Nov 07 00:00	19° $\Omega$ 22'52		minimum elong	13447 Aug 06 23:57	26° $\Omega$ 41'46	13°23'02
min. Earth dist.	13441 Jan 25 15:52	18° $\Omega$ 18'49	39.85879 AU	max. Earth dist.	13447 Aug 09 06:40	26° $\Omega$ 45'27	43.28649 AU
opposition	13441 Jan 28 02:00	18° $\Omega$ 15'43	-12°37'05	morning rise	13447 Aug 13 23:35	26° $\Omega$ 53'03	
direct	13441 Apr 20 02:11	17° $\Omega$ 08'22		retrograde	13447 Nov 16 14:01	28° $\Omega$ 26'02	
evening set	13441 Jul 20 17:43	18° $\Omega$ 39'50		min. Earth dist.	13448 Feb 04 20:51	27° $\Omega$ 23'16	41.45017 AU
				opposition	13448 Feb 07 03:58	27° $\Omega$ 20'25	-14°06'28
conjunction	13441 Jul 29 19:12	18° $\Omega$ 54'55	-12°08'07	direct	13448 Apr 29 09:15	26° $\Omega$ 14'45	
minimum elong	13441 Jul 29 19:04	18° $\Omega$ 54'54	12°08'53	evening set	13448 Jul 31 21:04	27° $\Omega$ 46'29	
max. Earth dist.	13441 Aug 01 04:51	18° $\Omega$ 58'55	41.93159 AU				
morning rise	13441 Aug 07 20:38	19° $\Omega$ 09'59		conjunction	13448 Aug 07 11:41	27° $\Omega$ 57'07	-13°33'05
retrograde	13441 Nov 08 11:26	20° $\Omega$ 42'28		minimum elong	13448 Aug 07 11:37	27° $\Omega$ 57'07	13°33'44
min. Earth dist.	13442 Jan 27 07:44	19° $\Omega$ 38'35	40.09549 AU	max. Earth dist.	13448 Aug 09 18:04	28° $\Omega$ 00'46	43.49965 AU
opposition	13442 Jan 29 16:49	19° $\Omega$ 35'33	-12°51'26	morning rise	13448 Aug 14 02:23	28° $\Omega$ 07'45	
direct	13442 Apr 21 19:20	18° $\Omega$ 28'28		retrograde	13448 Nov 17 01:11	29° $\Omega$ 40'52	
evening set	13442 Jul 22 15:08	19° $\Omega$ 59'57		min. Earth dist.	13449 Feb 05 10:34	28° $\Omega$ 38'14	41.66354 AU
				opposition	13449 Feb 07 16:55	28° $\Omega$ 35'25	-14°17'14
conjunction	13442 Jul 31 08:39	20° $\Omega$ 14'24	-12°21'44	direct	13449 Apr 30 23:36	27° $\Omega$ 29'57	
minimum elong	13442 Jul 31 08:33	20° $\Omega$ 14'24	12°22'29	evening set	13449 Aug 02 17:51	29° $\Omega$ 01'48	
max. Earth dist.	13442 Aug 02 17:51	20° $\Omega$ 18'22	42.16548 AU				
morning rise	13442 Aug 09 02:05	20° $\Omega$ 28'51		conjunction	13449 Aug 08 23:17	29° $\Omega$ 11'46	-13°43'19
retrograde	13442 Nov 09 22:49	22° $\Omega$ 01'23		minimum elong	13449 Aug 08 23:13	29° $\Omega$ 11'45	13°43'56
min. Earth dist.	13443 Jan 28 22:00	20° $\Omega$ 57'45	40.32984 AU	max. Earth dist.	13449 Aug 11 05:57	29° $\Omega$ 15'25	43.71021 AU
opposition	13443 Jan 31 07:19	20° $\Omega$ 54'43	-13°05'14	morning rise	13449 Aug 15 04:42	29° $\Omega$ 21'44	
direct	13443 Apr 23 12:00	19° $\Omega$ 47'54			13449 Sep 09 06:30	0° $\mathbb{N}$	
evening set	13443 Jul 24 12:15	21° $\Omega$ 19'23		retrograde	13449 Nov 18 12:16	0° $\mathbb{N}$ 54'59	
					13450 Jan 31 21:09	30° $\mathbb{R}\Omega$	
conjunction	13443 Aug 01 21:41	21° $\Omega$ 33'13	-12°34'50	min. Earth dist.	13450 Feb 06 23:22	29° $\Omega$ 52'30	41.87434 AU
minimum elong	13443 Aug 01 21:34	21° $\Omega$ 33'12	12°35'35	opposition	13450 Feb 09 05:19	29° $\Omega$ 49'43	-14°27'30
max. Earth dist.	13443 Aug 04 06:21	21° $\Omega$ 37'07	42.39668 AU	direct	13450 May 02 13:09	28° $\Omega$ 44'28	
morning rise	13443 Aug 10 07:12	21° $\Omega$ 47'03			13450 Jul 25 03:16	0° $\mathbb{N}$	
retrograde	13443 Nov 11 13:07	23° $\Omega$ 19'39		evening set	13450 Aug 04 14:37	0° $\mathbb{N}$ 16'27	
min. Earth dist.	13444 Jan 30 12:39	22° $\Omega$ 16'13	40.56142 AU				
opposition	13444 Feb 01 21:41	22° $\Omega$ 13'13	-13°18'29	conjunction	13450 Aug 10 10:30	0° $\mathbb{N}$ 25'44	-13°53'05
direct	13444 Apr 24 01:42	21° $\Omega$ 06'40		minimum elong	13450 Aug 10 10:27	0° $\mathbb{N}$ 25'44	13°53'42
evening set	13444 Jul 25 09:26	22° $\Omega$ 38'11		max. Earth dist.	13450 Aug 12 16:07	0° $\mathbb{N}$ 29'18	43.91851 AU
				morning rise	13450 Aug 16 06:30	0° $\mathbb{N}$ 35'02	
conjunction	13444 Aug 02 10:43	22° $\Omega$ 51'22	-12°47'27	retrograde	13450 Nov 20 01:39	2° $\mathbb{N}$ 08'29	
minimum elong	13444 Aug 02 10:38	22° $\Omega$ 51'22	12°48'09	min. Earth dist.	13451 Feb 08 11:07	1° $\mathbb{N}$ 06'12	42.08312 AU
max. Earth dist.	13444 Aug 04 19:47	22° $\Omega$ 55'17	42.62486 AU	opposition	13451 Feb 10 17:36	1° $\mathbb{N}$ 03'24	-14°37'16
morning rise	13444 Aug 10 11:56	23° $\Omega$ 04'35			13451 Apr 22 07:42	30° $\mathbb{R}\Omega$	
retrograde	13444 Nov 12 02:11	24° $\Omega$ 37'16		direct	13451 May 03 23:31	29° $\Omega$ 58'22	
min. Earth dist.	13445 Jan 31 03:43	23° $\Omega$ 34'00	40.78949 AU		13451 May 15 14:01	0° $\mathbb{N}$	

evening set	13451 Aug 06 11:17	1° $\mathring{M}$ 30'31		min. Earth dist.	13458 Feb 16 21:57	9° $\mathring{M}$ 27'37	43.46776 AU
				opposition	13458 Feb 19 01:03	9° $\mathring{M}$ 25'04	-15°32'45
conjunction	13451 Aug 11 21:29	1° $\mathring{M}$ 39'07	-14°02'23	direct	13458 May 12 06:09	8° $\mathring{M}$ 21'31	
minimum elong	13451 Aug 11 21:26	1° $\mathring{M}$ 39'07	14°02'58	evening set	13458 Aug 18 08:49	9° $\mathring{M}$ 56'41	
max. Earth dist.	13451 Aug 14 04:01	1° $\mathring{M}$ 42'43	44.12483 AU				
morning rise	13451 Aug 17 07:43	1° $\mathring{M}$ 47'44		conjunction	13458 Aug 19 21:04	9° $\mathring{M}$ 59'01	-14°55'15
retrograde	13451 Nov 21 12:36	3° $\mathring{M}$ 21'23		minimum elong	13458 Aug 19 21:04	9° $\mathring{M}$ 59'01	14°55'43
min. Earth dist.	13452 Feb 10 00:17	2° $\mathring{M}$ 19'15	42.28980 AU	morning rise	13458 Aug 21 09:22	10° $\mathring{M}$ 01'21	
opposition	13452 Feb 12 05:44	2° $\mathring{M}$ 16'31	-14°46'33	max. Earth dist.	13458 Aug 21 23:29	10° $\mathring{M}$ 02'15	45.48900 AU
direct	13452 May 04 10:53	1° $\mathring{M}$ 11'42		retrograde	13458 Nov 29 11:29	11° $\mathring{M}$ 38'18	
evening set	13452 Aug 07 08:18	2° $\mathring{M}$ 44'03		min. Earth dist.	13459 Feb 18 10:20	10° $\mathring{M}$ 37'12	43.64929 AU
				opposition	13459 Feb 20 11:41	10° $\mathring{M}$ 34'44	-15°39'02
conjunction	13452 Aug 12 08:15	2° $\mathring{M}$ 51'57	-14°11'13	direct	13459 May 13 17:39	9° $\mathring{M}$ 31'21	
minimum elong	13452 Aug 12 08:13	2° $\mathring{M}$ 51'57	14°11'47				
max. Earth dist.	13452 Aug 14 13:45	2° $\mathring{M}$ 55'29	44.32919 AU	conjunction	13459 Aug 21 06:31	11° $\mathring{M}$ 08'24	-15°01'15
morning rise	13452 Aug 17 08:17	2° $\mathring{M}$ 59'51		minimum elong	13459 Aug 21 06:34	11° $\mathring{M}$ 08'24	15°01'41
retrograde	13452 Nov 21 22:57	4° $\mathring{M}$ 33'46		max. Earth dist.	13459 Aug 23 08:10	11° $\mathring{M}$ 11'34	45.66726 AU
min. Earth dist.	13453 Feb 10 11:16	3° $\mathring{M}$ 31'52	42.49431 AU	retrograde	13459 Nov 30 17:53	12° $\mathring{M}$ 47'15	
opposition	13453 Feb 12 17:26	3° $\mathring{M}$ 29'06	-14°55'21	min. Earth dist.	13460 Feb 19 20:49	11° $\mathring{M}$ 46'15	43.82618 AU
direct	13453 May 05 21:48	2° $\mathring{M}$ 24'30		opposition	13460 Feb 21 21:57	11° $\mathring{M}$ 43'48	-15°44'56
evening set	13453 Aug 09 05:19	3° $\mathring{M}$ 57'07		direct	13460 May 14 06:22	10° $\mathring{M}$ 40'33	
conjunction	13453 Aug 13 18:45	4° $\mathring{M}$ 04'18	-14°19'35	conjunction	13460 Aug 21 15:41	12° $\mathring{M}$ 17'08	-15°06'53
minimum elong	13453 Aug 13 18:43	4° $\mathring{M}$ 04'18	14°20'08	minimum elong	13460 Aug 21 15:43	12° $\mathring{M}$ 17'08	15°07'18
max. Earth dist.	13453 Aug 16 00:20	4° $\mathring{M}$ 07'49	44.53117 AU	max. Earth dist.	13460 Aug 23 16:09	12° $\mathring{M}$ 20'13	45.84123 AU
morning rise	13453 Aug 18 08:16	4° $\mathring{M}$ 11'28		retrograde	13460 Dec 01 03:36	13° $\mathring{M}$ 55'34	
retrograde	13453 Nov 23 08:24	5° $\mathring{M}$ 45'41		min. Earth dist.	13461 Feb 20 07:27	12° $\mathring{M}$ 54'40	43.99933 AU
min. Earth dist.	13454 Feb 11 24:00	4° $\mathring{M}$ 43'55	42.69628 AU	opposition	13461 Feb 22 08:00	12° $\mathring{M}$ 52'14	-15°50'27
opposition	13454 Feb 14 05:04	4° $\mathring{M}$ 41'13	-15°03'42	direct	13461 May 15 17:08	11° $\mathring{M}$ 49'08	
direct	13454 May 07 10:35	3° $\mathring{M}$ 36'51					
evening set	13454 Aug 11 03:01	5° $\mathring{M}$ 09'45		conjunction	13461 Aug 23 00:44	13° $\mathring{M}$ 25'15	-15°12'08
				minimum elong	13461 Aug 23 00:47	13° $\mathring{M}$ 25'15	15°12'32
conjunction	13454 Aug 15 05:11	5° $\mathring{M}$ 16'10	-14°27'32	max. Earth dist.	13461 Aug 25 01:45	13° $\mathring{M}$ 28'22	46.01180 AU
minimum elong	13454 Aug 15 05:10	5° $\mathring{M}$ 16'10	14°28'04	retrograde	13461 Dec 02 12:44	15° $\mathring{M}$ 03'17	
max. Earth dist.	13454 Aug 17 10:40	5° $\mathring{M}$ 19'40	44.73044 AU	min. Earth dist.	13462 Feb 21 18:14	14° $\mathring{M}$ 02'26	44.16917 AU
morning rise	13454 Aug 19 07:24	5° $\mathring{M}$ 22'36		opposition	13462 Feb 23 17:47	14° $\mathring{M}$ 00'04	-15°55'35
retrograde	13454 Nov 24 16:48	6° $\mathring{M}$ 57'08		direct	13462 May 17 04:09	12° $\mathring{M}$ 57'06	
min. Earth dist.	13455 Feb 13 11:27	5° $\mathring{M}$ 55'33	42.89505 AU				
opposition	13455 Feb 15 16:15	5° $\mathring{M}$ 52'52	-15°11'35	conjunction	13462 Aug 24 09:27	14° $\mathring{M}$ 32'47	-15°17'00
direct	13455 May 09 00:44	4° $\mathring{M}$ 48'44		minimum elong	13462 Aug 24 09:30	14° $\mathring{M}$ 32'47	15°17'22
evening set	13455 Aug 13 01:15	6° $\mathring{M}$ 22'00		max. Earth dist.	13462 Aug 26 09:00	14° $\mathring{M}$ 35'48	46.17947 AU
				retrograde	13462 Dec 03 23:37	16° $\mathring{M}$ 10'25	
conjunction	13455 Aug 16 15:20	6° $\mathring{M}$ 27'36	-14°35'03	min. Earth dist.	13463 Feb 23 03:06	15° $\mathring{M}$ 09'43	44.33634 AU
minimum elong	13455 Aug 16 15:19	6° $\mathring{M}$ 27'36	14°35'33	opposition	13463 Feb 25 03:14	15° $\mathring{M}$ 07'20	-16°00'18
max. Earth dist.	13455 Aug 18 19:28	6° $\mathring{M}$ 31'00	44.92634 AU	direct	13463 May 18 11:07	14° $\mathring{M}$ 04'31	
morning rise	13455 Aug 20 05:30	6° $\mathring{M}$ 33'12					
retrograde	13455 Nov 26 05:58	8° $\mathring{M}$ 08'09		conjunction	13463 Aug 25 18:04	15° $\mathring{M}$ 39'48	-15°21'29
min. Earth dist.	13456 Feb 14 22:54	7° $\mathring{M}$ 06'44	43.09035 AU	minimum elong	13463 Aug 25 18:08	15° $\mathring{M}$ 39'49	15°21'51
opposition	13456 Feb 17 03:28	7° $\mathring{M}$ 04'05	-15°19'03	max. Earth dist.	13463 Aug 27 18:01	15° $\mathring{M}$ 42'49	46.34461 AU
direct	13456 May 09 10:27	6° $\mathring{M}$ 00'10		retrograde	13463 Dec 05 07:50	17° $\mathring{M}$ 17'04	
evening set	13456 Aug 14 00:41	7° $\mathring{M}$ 33'52		min. Earth dist.	13464 Feb 24 13:58	16° $\mathring{M}$ 16'26	44.50105 AU
				opposition	13464 Feb 26 12:45	16° $\mathring{M}$ 14'07	-16°04'37
conjunction	13456 Aug 17 01:22	7° $\mathring{M}$ 38'34	-14°42'10	direct	13464 May 18 19:59	15° $\mathring{M}$ 11'28	
minimum elong	13456 Aug 17 01:22	7° $\mathring{M}$ 38'34	14°42'40				
max. Earth dist.	13456 Aug 19 05:54	7° $\mathring{M}$ 41'58	45.11844 AU	conjunction	13464 Aug 26 02:26	16° $\mathring{M}$ 46'22	-15°25'35
morning rise	13456 Aug 20 02:05	7° $\mathring{M}$ 43'17		minimum elong	13464 Aug 26 02:29	16° $\mathring{M}$ 46'22	15°25'55
retrograde	13456 Nov 26 17:15	9° $\mathring{M}$ 18'43		max. Earth dist.	13464 Aug 28 01:57	16° $\mathring{M}$ 49'21	46.50747 AU
min. Earth dist.	13457 Feb 15 11:35	8° $\mathring{M}$ 17'23	43.28138 AU	retrograde	13464 Dec 05 13:23	18° $\mathring{M}$ 23'16	
opposition	13457 Feb 17 14:30	8° $\mathring{M}$ 14'50	-15°26'06	min. Earth dist.	13465 Feb 24 22:42	17° $\mathring{M}$ 22'49	44.66318 AU
direct	13457 May 10 21:10	7° $\mathring{M}$ 11'06		opposition	13465 Feb 26 21:54	17° $\mathring{M}$ 20'29	-16°08'34
evening set	13457 Aug 16 02:18	8° $\mathring{M}$ 45'23		direct	13465 May 20 07:06	16° $\mathring{M}$ 18'00	
conjunction	13457 Aug 18 11:17	8° $\mathring{M}$ 49'03	-14°48'54	conjunction	13465 Aug 27 10:39	17° $\mathring{M}$ 52'32	-15°29'19
minimum elong	13457 Aug 18 11:18	8° $\mathring{M}$ 49'03	14°49'22	minimum elong	13465 Aug 27 10:44	17° $\mathring{M}$ 52'33	15°29'39
morning rise	13457 Aug 20 20:22	8° $\mathring{M}$ 52'44		max. Earth dist.	13465 Aug 29 09:17	17° $\mathring{M}$ 55'27	46.66762 AU
max. Earth dist.	13457 Aug 20 14:05	8° $\mathring{M}$ 52'20	45.30614 AU	retrograde	13465 Dec 06 22:01	19° $\mathring{M}$ 29'07	
retrograde	13457 Nov 28 03:26	10° $\mathring{M}$ 28'46		min. Earth dist.	13466 Feb 26 08:26	18° $\mathring{M}$ 28'46	44.82259 AU

opposition	13466 Feb 28 06:51	18° $\mathring{\text{N}}$ 26'29	-16°12'07	conjunction	13474 Sep 06 07:18	27° $\mathring{\text{N}}$ 33'41	-15°48'13
direct	13466 May 21 16:54	17° $\mathring{\text{N}}$ 24'11		minimum elong	13474 Sep 06 07:27	27° $\mathring{\text{N}}$ 33'41	15°48'23
				max. Earth dist.	13474 Sep 07 23:38	27° $\mathring{\text{N}}$ 36'08	47.93238 AU
conjunction	13466 Aug 28 18:53	18° $\mathring{\text{N}}$ 58'23	-15°32'42	retrograde	13474 Dec 16 20:33	29° $\mathring{\text{N}}$ 07'33	
minimum elong	13466 Aug 28 18:58	18° $\mathring{\text{N}}$ 58'23	15°32'59	min. Earth dist.	13475 Mar 08 17:17	28° $\mathring{\text{N}}$ 08'01	46.07214 AU
max. Earth dist.	13466 Aug 30 17:52	19° $\mathring{\text{N}}$ 01'18	46.82492 AU	opposition	13475 Mar 10 09:13	28° $\mathring{\text{N}}$ 06'06	-16°29'12
retrograde	13466 Dec 08 06:27	20° $\mathring{\text{N}}$ 34'39		direct	13475 May 31 17:17	27° $\mathring{\text{N}}$ 05'04	
min. Earth dist.	13467 Feb 27 18:18	19° $\mathring{\text{N}}$ 34'25	44.97871 AU				
opposition	13467 Mar 01 15:45	19° $\mathring{\text{N}}$ 32'11	-16°15'18	conjunction	13475 Sep 07 13:59	28° $\mathring{\text{N}}$ 36'22	-15°48'47
direct	13467 May 23 02:49	18° $\mathring{\text{N}}$ 30'04		minimum elong	13475 Sep 07 14:07	28° $\mathring{\text{N}}$ 36'22	15°48'55
				max. Earth dist.	13475 Sep 09 05:35	28° $\mathring{\text{N}}$ 38'46	48.05345 AU
conjunction	13467 Aug 30 02:43	20° $\mathring{\text{N}}$ 03'55	-15°35'43		13475 Nov 17 20:21	0° $\mathring{\text{A}}$	
minimum elong	13467 Aug 30 02:48	20° $\mathring{\text{N}}$ 03'56	15°36'01	retrograde	13475 Dec 18 01:30	0° $\mathring{\text{A}}$ 09'58	
max. Earth dist.	13467 Sep 01 00:10	20° $\mathring{\text{N}}$ 06'45	46.97880 AU		13476 Jan 17 19:21	30° $\mathring{\text{R}}$ $\mathring{\text{N}}$	
retrograde	13467 Dec 09 17:01	21° $\mathring{\text{N}}$ 39'54		min. Earth dist.	13476 Mar 09 01:54	29° $\mathring{\text{N}}$ 10'28	46.19206 AU
min. Earth dist.	13468 Feb 29 02:57	20° $\mathring{\text{N}}$ 39'50	45.13123 AU	opposition	13476 Mar 10 16:49	29° $\mathring{\text{N}}$ 08'36	-16°29'30
opposition	13468 Mar 02 00:31	20° $\mathring{\text{N}}$ 37'37	-16°18'09	direct	13476 Jun 01 01:37	28° $\mathring{\text{N}}$ 07'42	
direct	13468 May 23 09:05	19° $\mathring{\text{N}}$ 35'40					
				conjunction	13476 Sep 07 20:50	29° $\mathring{\text{N}}$ 38'43	-15°49'01
conjunction	13468 Aug 30 10:41	21° $\mathring{\text{N}}$ 09'12	-15°38'25	minimum elong	13476 Sep 07 21:00	29° $\mathring{\text{N}}$ 38'44	15°49'08
minimum elong	13468 Aug 30 10:47	21° $\mathring{\text{N}}$ 09'13	15°38'41	max. Earth dist.	13476 Sep 09 12:46	29° $\mathring{\text{N}}$ 41'08	48.17196 AU
max. Earth dist.	13468 Sep 01 08:10	21° $\mathring{\text{N}}$ 12'01	47.12872 AU		13476 Sep 22 16:19	0° $\mathring{\text{A}}$	
retrograde	13468 Dec 10 01:12	22° $\mathring{\text{N}}$ 44'53		retrograde	13476 Dec 18 06:34	1° $\mathring{\text{A}}$ 12'03	
min. Earth dist.	13469 Mar 01 13:26	21° $\mathring{\text{N}}$ 44'53	45.27945 AU	min. Earth dist.	13477 Mar 10 09:39	0° $\mathring{\text{A}}$ 12'39	46.30912 AU
opposition	13469 Mar 03 09:09	21° $\mathring{\text{N}}$ 42'45	-16°20'39	opposition	13477 Mar 12 00:04	0° $\mathring{\text{A}}$ 10'48	-16°29'29
direct	13469 May 24 16:16	20° $\mathring{\text{N}}$ 40'59			13477 Mar 21 10:32	30° $\mathring{\text{R}}$ $\mathring{\text{N}}$	
				direct	13477 Jun 02 11:34	29° $\mathring{\text{N}}$ 10'01	
conjunction	13469 Aug 31 18:32	22° $\mathring{\text{N}}$ 14'13	-15°40'48		13477 Aug 10 21:21	0° $\mathring{\text{A}}$	
minimum elong	13469 Aug 31 18:38	22° $\mathring{\text{N}}$ 14'13	15°41'03	conjunction	13477 Sep 09 03:24	0° $\mathring{\text{A}}$ 40'46	-15°48'56
max. Earth dist.	13469 Sep 02 14:44	22° $\mathring{\text{N}}$ 16'56	47.27422 AU	minimum elong	13477 Sep 09 03:33	0° $\mathring{\text{A}}$ 40'46	15°49'02
retrograde	13469 Dec 11 07:00	23° $\mathring{\text{N}}$ 49'35		max. Earth dist.	13477 Sep 10 17:47	0° $\mathring{\text{A}}$ 43'04	48.28763 AU
min. Earth dist.	13470 Mar 02 21:57	22° $\mathring{\text{N}}$ 49'43	45.42281 AU	retrograde	13477 Dec 19 15:24	2° $\mathring{\text{A}}$ 13'52	
opposition	13470 Mar 04 17:32	22° $\mathring{\text{N}}$ 47'36	-16°22'51	min. Earth dist.	13478 Mar 11 16:52	1° $\mathring{\text{A}}$ 14'34	46.42329 AU
direct	13470 May 26 00:21	21° $\mathring{\text{N}}$ 45'59		opposition	13478 Mar 13 07:15	1° $\mathring{\text{A}}$ 12'44	-16°29'09
				direct	13478 Jun 03 18:09	0° $\mathring{\text{A}}$ 12'05	
conjunction	13470 Sep 02 02:11	23° $\mathring{\text{N}}$ 18'54	-15°42'53				
minimum elong	13470 Sep 02 02:18	23° $\mathring{\text{N}}$ 18'55	15°43'06	conjunction	13478 Sep 10 09:56	1° $\mathring{\text{A}}$ 42'33	-15°48'34
max. Earth dist.	13470 Sep 03 21:03	23° $\mathring{\text{N}}$ 21'32	47.41463 AU	minimum elong	13478 Sep 10 10:06	1° $\mathring{\text{A}}$ 42'34	15°48'39
retrograde	13470 Dec 12 14:18	24° $\mathring{\text{N}}$ 53'59		max. Earth dist.	13478 Sep 12 00:38	1° $\mathring{\text{A}}$ 44'53	48.40014 AU
min. Earth dist.	13471 Mar 04 07:44	23° $\mathring{\text{N}}$ 54'10	45.56114 AU	retrograde	13478 Dec 20 23:39	3° $\mathring{\text{A}}$ 15'25	
opposition	13471 Mar 06 01:52	23° $\mathring{\text{N}}$ 52'07	-16°24'45	min. Earth dist.	13479 Mar 13 01:35	2° $\mathring{\text{A}}$ 16'10	46.53400 AU
direct	13471 May 27 10:20	22° $\mathring{\text{N}}$ 50'39		opposition	13479 Mar 14 14:22	2° $\mathring{\text{A}}$ 14'25	-16°28'30
				direct	13479 Jun 05 00:21	1° $\mathring{\text{A}}$ 13'54	
conjunction	13471 Sep 03 09:49	24° $\mathring{\text{N}}$ 23'13	-15°44'40				
minimum elong	13471 Sep 03 09:56	24° $\mathring{\text{N}}$ 23'14	15°44'53	conjunction	13479 Sep 11 16:26	2° $\mathring{\text{A}}$ 44'08	-15°47'54
max. Earth dist.	13471 Sep 05 04:35	24° $\mathring{\text{N}}$ 25'51	47.55020 AU	minimum elong	13479 Sep 11 16:36	2° $\mathring{\text{A}}$ 44'08	15°47'57
retrograde	13471 Dec 13 20:43	25° $\mathring{\text{N}}$ 58'00		max. Earth dist.	13479 Sep 13 05:54	2° $\mathring{\text{A}}$ 46'22	48.50922 AU
min. Earth dist.	13472 Mar 04 16:50	24° $\mathring{\text{N}}$ 58'15	45.69457 AU	retrograde	13479 Dec 22 07:01	4° $\mathring{\text{A}}$ 16'45	
opposition	13472 Mar 06 10:02	24° $\mathring{\text{N}}$ 56'15	-16°26'20	min. Earth dist.	13480 Mar 13 08:23	3° $\mathring{\text{A}}$ 17'38	46.64093 AU
direct	13472 May 27 21:32	23° $\mathring{\text{N}}$ 54'54		opposition	13480 Mar 14 21:20	3° $\mathring{\text{A}}$ 15'52	-16°27'34
				direct	13480 Jun 05 04:31	2° $\mathring{\text{A}}$ 15'29	
conjunction	13472 Sep 03 17:00	25° $\mathring{\text{N}}$ 27'08	-15°46'10				
minimum elong	13472 Sep 03 17:09	25° $\mathring{\text{N}}$ 27'08	15°46'21	conjunction	13480 Sep 11 22:46	3° $\mathring{\text{A}}$ 45'29	-15°46'57
max. Earth dist.	13472 Sep 05 09:58	25° $\mathring{\text{N}}$ 29'38	47.68124 AU	minimum elong	13480 Sep 11 22:56	3° $\mathring{\text{A}}$ 45'30	15°47'00
retrograde	13472 Dec 14 07:19	27° $\mathring{\text{N}}$ 01'36		max. Earth dist.	13480 Sep 13 11:16	3° $\mathring{\text{A}}$ 47'40	48.61407 AU
min. Earth dist.	13473 Mar 06 00:52	26° $\mathring{\text{N}}$ 01'56	45.82385 AU	retrograde	13480 Dec 22 13:00	5° $\mathring{\text{A}}$ 17'54	
opposition	13473 Mar 07 17:58	25° $\mathring{\text{N}}$ 59'57	-16°27'37	min. Earth dist.	13481 Mar 14 17:14	4° $\mathring{\text{A}}$ 18'48	46.74340 AU
direct	13473 May 29 03:34	24° $\mathring{\text{N}}$ 58'42		opposition	13481 Mar 16 04:21	4° $\mathring{\text{A}}$ 17'08	-16°26'21
				direct	13481 Jun 06 11:23	3° $\mathring{\text{A}}$ 16'52	
conjunction	13473 Sep 05 00:15	26° $\mathring{\text{N}}$ 30'37	-15°47'21				
minimum elong	13473 Sep 05 00:22	26° $\mathring{\text{N}}$ 30'37	15°47'31	conjunction	13481 Sep 13 05:19	4° $\mathring{\text{A}}$ 46'38	-15°45'45
max. Earth dist.	13473 Sep 06 17:26	26° $\mathring{\text{N}}$ 33'07	47.80838 AU	minimum elong	13481 Sep 13 05:30	4° $\mathring{\text{A}}$ 46'39	15°45'46
retrograde	13473 Dec 15 16:00	28° $\mathring{\text{N}}$ 04'47		max. Earth dist.	13481 Sep 14 17:26	4° $\mathring{\text{A}}$ 48'48	48.71423 AU
min. Earth dist.	13474 Mar 07 10:15	27° $\mathring{\text{N}}$ 05'07	45.94952 AU	retrograde	13481 Dec 23 16:35	6° $\mathring{\text{A}}$ 18'51	
opposition	13474 Mar 09 01:40	27° $\mathring{\text{N}}$ 03'13	-16°28'34	min. Earth dist.	13482 Mar 16 00:44	5° $\mathring{\text{A}}$ 19'48	46.84067 AU
direct	13474 May 30 10:17	26° $\mathring{\text{N}}$ 02'05		opposition	13482 Mar 17 11:02	5° $\mathring{\text{A}}$ 18'11	-16°24'54

direct	13482 Jun 07 21:15	4° <u>♁</u> 18'01		minimum elong	13490 Sep 22 10:16	13° <u>♁</u> 45'27	15°23'28
				max. Earth dist.	13490 Sep 23 14:16	13° <u>♁</u> 47'06	49.41435 AU
conjunction	13482 Sep 14 11:38	5° <u>♁</u> 47'34 -15°44'18		retrograde	13491 Jan 02 01:53	15° <u>♁</u> 15'58	
minimum elong	13482 Sep 14 11:49	5° <u>♁</u> 47'34 15°44'19		opposition	13491 Mar 26 19:35	14° <u>♁</u> 16'00	-16°00'03
max. Earth dist.	13482 Sep 15 21:30	5° <u>♁</u> 49'35 48.80907 AU		min. Earth dist.	13491 Mar 25 16:43	14° <u>♁</u> 17'15	47.51966 AU
retrograde	13482 Dec 25 00:50	7° <u>♁</u> 19'33		direct	13491 Jun 17 00:47	13° <u>♁</u> 16'37	
min. Earth dist.	13483 Mar 17 08:18	6° <u>♁</u> 20'34 46.93261 AU					
opposition	13483 Mar 18 17:50	6° <u>♁</u> 18'58 -16°23'11		conjunction	13491 Sep 23 15:30	14° <u>♁</u> 44'25	-15°19'50
direct	13483 Jun 09 04:00	5° <u>♁</u> 18'54		minimum elong	13491 Sep 23 15:43	14° <u>♁</u> 44'26	15°19'42
				max. Earth dist.	13491 Sep 24 19:40	14° <u>♁</u> 46'04	49.47484 AU
conjunction	13483 Sep 15 17:50	6° <u>♁</u> 48'13 -15°42'37		retrograde	13492 Jan 03 03:56	16° <u>♁</u> 14'49	
minimum elong	13483 Sep 15 18:01	6° <u>♁</u> 48'13 15°42'36		min. Earth dist.	13492 Mar 25 22:54	15° <u>♁</u> 16'11	47.57745 AU
max. Earth dist.	13483 Sep 17 03:35	6° <u>♁</u> 50'13 48.89854 AU		opposition	13492 Mar 27 01:26	15° <u>♁</u> 14'56	-15°55'58
retrograde	13483 Dec 26 08:42	8° <u>♁</u> 19'59		direct	13492 Jun 17 09:43	14° <u>♁</u> 15'39	
min. Earth dist.	13484 Mar 17 16:56	7° <u>♁</u> 20'59 47.01919 AU					
opposition	13484 Mar 19 00:35	7° <u>♁</u> 19'29 -16°21'14		conjunction	13492 Sep 23 20:55	15° <u>♁</u> 43'19	-15°15'50
direct	13484 Jun 09 10:48	6° <u>♁</u> 19'30		minimum elong	13492 Sep 23 21:08	15° <u>♁</u> 43'19	15°15'39
				max. Earth dist.	13492 Sep 24 23:07	15° <u>♁</u> 44'50	49.53116 AU
conjunction	13484 Sep 15 23:56	7° <u>♁</u> 48'34 -15°40'41		retrograde	13493 Jan 03 10:11	17° <u>♁</u> 13'36	
minimum elong	13484 Sep 16 00:06	7° <u>♁</u> 48'34 15°40'40		min. Earth dist.	13493 Mar 27 05:33	16° <u>♁</u> 14'59	47.63090 AU
max. Earth dist.	13484 Sep 17 08:15	7° <u>♁</u> 50'28 48.98310 AU		opposition	13493 Mar 28 07:07	16° <u>♁</u> 13'47	-15°51'38
retrograde	13484 Dec 26 14:17	9° <u>♁</u> 20'07		direct	13493 Jun 18 16:43	15° <u>♁</u> 14'35	
min. Earth dist.	13485 Mar 18 23:12	8° <u>♁</u> 21'10 47.10112 AU					
opposition	13485 Mar 20 06:55	8° <u>♁</u> 19'40 -16°19'01		conjunction	13493 Sep 25 02:29	16° <u>♁</u> 42'07	-15°11'36
direct	13485 Jun 10 15:21	7° <u>♁</u> 19'45		minimum elong	13493 Sep 25 02:43	16° <u>♁</u> 42'07	15°11'25
				max. Earth dist.	13493 Sep 26 04:32	16° <u>♁</u> 43'38	49.58271 AU
conjunction	13485 Sep 17 05:51	8° <u>♁</u> 48'36 -15°38'31		retrograde	13494 Jan 04 17:48	18° <u>♁</u> 12'17	
minimum elong	13485 Sep 17 06:03	8° <u>♁</u> 48'37 15°38'27		opposition	13494 Mar 29 12:53	17° <u>♁</u> 12'32	-15°47'04
max. Earth dist.	13485 Sep 18 13:11	8° <u>♁</u> 50'27 49.06320 AU		min. Earth dist.	13494 Mar 28 13:12	17° <u>♁</u> 13'39	47.67916 AU
retrograde	13485 Dec 27 18:50	10° <u>♁</u> 19'57		direct	13494 Jun 19 23:21	16° <u>♁</u> 13'24	
min. Earth dist.	13486 Mar 20 07:12	9° <u>♁</u> 20'59 47.17900 AU					
opposition	13486 Mar 21 13:21	9° <u>♁</u> 19'34 -16°16'33		conjunction	13494 Sep 26 07:53	17° <u>♁</u> 40'47	-15°07'10
direct	13486 Jun 11 21:45	8° <u>♁</u> 19'44		minimum elong	13494 Sep 26 08:07	17° <u>♁</u> 40'48	15°06'56
				max. Earth dist.	13494 Sep 27 08:11	17° <u>♁</u> 42'12	49.62904 AU
conjunction	13486 Sep 18 11:41	9° <u>♁</u> 48'22 -15°36'04		retrograde	13495 Jan 06 00:44	19° <u>♁</u> 10'48	
minimum elong	13486 Sep 18 11:52	9° <u>♁</u> 48'22 15°35'59		opposition	13495 Mar 30 18:30	18° <u>♁</u> 11'07	-15°42'18
max. Earth dist.	13486 Sep 19 19:03	9° <u>♁</u> 50'13 49.13967 AU		min. Earth dist.	13495 Mar 29 18:54	18° <u>♁</u> 12'13	47.72200 AU
retrograde	13486 Dec 28 21:57	11° <u>♁</u> 19'31		direct	13495 Jun 21 02:48	17° <u>♁</u> 12'02	
opposition	13487 Mar 22 19:31	10° <u>♁</u> 19'12 -16°13'48					
min. Earth dist.	13487 Mar 21 13:40	10° <u>♁</u> 20'36 47.25331 AU		conjunction	13495 Sep 27 13:15	18° <u>♁</u> 39'16	-15°02'30
direct	13487 Jun 13 06:32	9° <u>♁</u> 19'26		minimum elong	13495 Sep 27 13:28	18° <u>♁</u> 39'17	15°02'17
				max. Earth dist.	13495 Sep 28 12:11	18° <u>♁</u> 40'36	49.66989 AU
conjunction	13487 Sep 19 17:19	10° <u>♁</u> 47'53 -15°33'21		retrograde	13496 Jan 07 05:44	20° <u>♁</u> 09'08	
minimum elong	13487 Sep 19 17:32	10° <u>♁</u> 47'53 15°33'16		min. Earth dist.	13496 Mar 30 02:37	19° <u>♁</u> 10'29	47.75957 AU
max. Earth dist.	13487 Sep 20 23:10	10° <u>♁</u> 49'38 49.21288 AU		opposition	13496 Mar 31 00:10	19° <u>♁</u> 09'29	-15°37'19
retrograde	13487 Dec 30 05:15	12° <u>♁</u> 18'52		direct	13496 Jun 21 06:54	18° <u>♁</u> 10'26	
min. Earth dist.	13488 Mar 21 20:09	11° <u>♁</u> 20'01 47.32465 AU		evening set	13496 Sep 26 14:11	19° <u>♁</u> 35'52	
opposition	13488 Mar 23 01:42	11° <u>♁</u> 18'37 -16°10'46					
direct	13488 Jun 13 12:35	10° <u>♁</u> 18'57		conjunction	13496 Sep 27 18:34	19° <u>♁</u> 37'30	-14°57'38
				minimum elong	13496 Sep 27 18:48	19° <u>♁</u> 37'31	14°57'23
conjunction	13488 Sep 19 22:58	11° <u>♁</u> 47'12 -15°30'22		morning rise	13496 Sep 28 23:27	19° <u>♁</u> 39'11	
minimum elong	13488 Sep 19 23:10	11° <u>♁</u> 47'13 15°30'15		max. Earth dist.	13496 Sep 28 17:13	19° <u>♁</u> 38'49	49.70580 AU
max. Earth dist.	13488 Sep 21 05:06	11° <u>♁</u> 48'58 49.28312 AU		retrograde	13497 Jan 07 07:17	21° <u>♁</u> 07'13	
retrograde	13488 Dec 30 12:40	13° <u>♁</u> 18'02		min. Earth dist.	13497 Mar 31 08:30	20° <u>♁</u> 08'34	47.79227 AU
min. Earth dist.	13489 Mar 23 03:33	12° <u>♁</u> 19'12 47.39285 AU		opposition	13497 Apr 01 05:37	20° <u>♁</u> 07'34	-15°32'06
opposition	13489 Mar 24 07:48	12° <u>♁</u> 17'52 -16°07'28		direct	13497 Jun 22 13:44	19° <u>♁</u> 08'32	
direct	13489 Jun 14 18:48	11° <u>♁</u> 18'18		evening set	13497 Sep 26 22:49	20° <u>♁</u> 32'38	
conjunction	13489 Sep 21 04:34	12° <u>♁</u> 46'23 -15°27'07		conjunction	13497 Sep 28 23:41	20° <u>♁</u> 35'28	-14°52'33
minimum elong	13489 Sep 21 04:48	12° <u>♁</u> 46'24 15°27'00		minimum elong	13497 Sep 28 23:54	20° <u>♁</u> 35'29	14°52'17
max. Earth dist.	13489 Sep 22 09:32	12° <u>♁</u> 48'04 49.35039 AU		max. Earth dist.	13497 Sep 29 20:26	20° <u>♁</u> 36'40	49.73719 AU
retrograde	13489 Dec 31 20:13	14° <u>♁</u> 17'03		morning rise	13497 Oct 01 01:03	20° <u>♁</u> 38'19	
min. Earth dist.	13490 Mar 24 09:04	13° <u>♁</u> 18'19 47.45794 AU		retrograde	13498 Jan 08 12:29	22° <u>♁</u> 05'03	
opposition	13490 Mar 25 13:34	13° <u>♁</u> 16'59 -16°03'54		opposition	13498 Apr 02 10:54	21° <u>♁</u> 05'25	-15°26'40
direct	13490 Jun 15 20:58	12° <u>♁</u> 17'30		min. Earth dist.	13498 Apr 01 14:38	21° <u>♁</u> 06'21	47.82097 AU
				direct	13498 Jun 23 19:53	20° <u>♁</u> 06'23	
conjunction	13490 Sep 22 10:04	13° <u>♁</u> 45'27 -15°23'36		evening set	13498 Sep 27 13:19	21° <u>♁</u> 29'30	

conjunction	13498 Sep 30 04:51	21° <u>♁</u> 33'10	-14°47'13	direct	13505 Jul 01 06:40	26° <u>♁</u> 47'48	
minimum elong	13498 Sep 30 05:06	21° <u>♁</u> 33'11	14°46'56	evening set	13505 Oct 02 03:45	28° <u>♁</u> 06'32	
max. Earth dist.	13498 Oct 01 01:48	21° <u>♁</u> 34'23	49.76483 AU				
morning rise	13498 Oct 02 20:58	21° <u>♁</u> 36'52		conjunction	13505 Oct 07 15:24	28° <u>♁</u> 14'04	-14°03'11
retrograde	13499 Jan 09 17:43	23° <u>♁</u> 02'38		minimum elong	13505 Oct 07 15:39	28° <u>♁</u> 14'05	14°02'47
opposition	13499 Apr 03 16:18	22° <u>♁</u> 03'01	-15°20'58	max. Earth dist.	13505 Oct 08 06:22	28° <u>♁</u> 14'56	49.87016 AU
min. Earth dist.	13499 Apr 02 21:13	22° <u>♁</u> 03'54	47.84610 AU	morning rise	13505 Oct 13 03:52	28° <u>♁</u> 21'39	
direct	13499 Jun 25 03:34	21° <u>♁</u> 04'01		retrograde	13506 Jan 17 09:34	29° <u>♁</u> 43'06	
evening set	13499 Sep 28 05:54	22° <u>♁</u> 26'18		opposition	13506 Apr 11 04:17	28° <u>♁</u> 43'48	-14°34'15
				min. Earth dist.	13506 Apr 10 14:50	28° <u>♁</u> 44'25	47.93212 AU
conjunction	13499 Oct 01 09:44	22° <u>♁</u> 30'40	-14°41'39	direct	13506 Jul 02 09:46	27° <u>♁</u> 45'10	
minimum elong	13499 Oct 01 09:58	22° <u>♁</u> 30'40	14°41'21	evening set	13506 Oct 03 01:07	29° <u>♁</u> 03'24	
max. Earth dist.	13499 Oct 02 05:34	22° <u>♁</u> 31'48	49.78936 AU				
morning rise	13499 Oct 04 14:08	22° <u>♁</u> 35'04		conjunction	13506 Oct 08 20:33	29° <u>♁</u> 11'24	-13°56'01
retrograde	13500 Jan 11 00:52	24° <u>♁</u> 00'00		minimum elong	13506 Oct 08 20:47	29° <u>♁</u> 11'25	13°55'37
opposition	13500 Apr 04 21:32	23° <u>♁</u> 00'25	-15°15'02	max. Earth dist.	13506 Oct 09 11:01	29° <u>♁</u> 12'14	49.86900 AU
min. Earth dist.	13500 Apr 04 02:08	23° <u>♁</u> 01'19	47.86825 AU	morning rise	13506 Oct 14 16:42	29° <u>♁</u> 19'25	
direct	13500 Jun 26 06:40	22° <u>♁</u> 01'27			13506 Nov 15 04:32	0° <u>♁</u>	
evening set	13500 Sep 28 23:56	23° <u>♁</u> 23'00		retrograde	13507 Jan 18 11:34	0° <u>♁</u> 40'23	
					13507 Mar 26 02:55	30° <u>♁</u>	
conjunction	13500 Oct 02 14:44	23° <u>♁</u> 27'59	-14°35'50	opposition	13507 Apr 12 09:23	29° <u>♁</u> 41'07	-14°26'41
minimum elong	13500 Oct 02 14:59	23° <u>♁</u> 28'00	14°35'32	min. Earth dist.	13507 Apr 11 20:26	29° <u>♁</u> 41'43	47.92711 AU
max. Earth dist.	13500 Oct 03 09:53	23° <u>♁</u> 29'05	49.81086 AU	direct	13507 Jul 03 15:25	28° <u>♁</u> 42'30	
morning rise	13500 Oct 06 06:10	23° <u>♁</u> 33'01		evening set	13507 Oct 03 22:32	0° <u>♁</u> 00'18	
retrograde	13501 Jan 12 07:02	24° <u>♁</u> 57'14			13507 Oct 03 17:17	0° <u>♁</u>	
min. Earth dist.	13501 Apr 05 08:56	23° <u>♁</u> 58'30	47.88750 AU				
opposition	13501 Apr 06 02:43	23° <u>♁</u> 57'40	-15°08'50	conjunction	13507 Oct 10 01:23	0° <u>♁</u> 08'43	-13°48'39
direct	13501 Jun 27 09:12	22° <u>♁</u> 58'45		minimum elong	13507 Oct 10 01:38	0° <u>♁</u> 08'44	13°48'13
evening set	13501 Sep 29 18:54	24° <u>♁</u> 19'38		max. Earth dist.	13507 Oct 10 13:37	0° <u>♁</u> 09'25	49.86242 AU
				morning rise	13507 Oct 16 05:09	0° <u>♁</u> 17'10	
conjunction	13501 Oct 03 19:46	24° <u>♁</u> 25'13	-14°29'46	retrograde	13508 Jan 19 16:38	1° <u>♁</u> 37'40	
minimum elong	13501 Oct 03 20:00	24° <u>♁</u> 25'13	14°29'26	opposition	13508 Apr 12 14:31	0° <u>♁</u> 38'25	-14°18'55
max. Earth dist.	13501 Oct 04 14:53	24° <u>♁</u> 26'19	49.82962 AU	min. Earth dist.	13508 Apr 12 02:49	0° <u>♁</u> 38'57	47.91684 AU
morning rise	13501 Oct 07 21:13	24° <u>♁</u> 30'49			13508 May 20 04:18	30° <u>♁</u>	
retrograde	13502 Jan 13 09:14	25° <u>♁</u> 54'23		direct	13508 Jul 03 21:09	29° <u>♁</u> 39'48	
opposition	13502 Apr 07 07:49	24° <u>♁</u> 54'52	-15°02'23		13508 Aug 16 15:40	0° <u>♁</u>	
min. Earth dist.	13502 Apr 06 13:57	24° <u>♁</u> 55'41	47.90374 AU	evening set	13508 Oct 03 20:15	0° <u>♁</u> 57'09	
direct	13502 Jun 28 15:55	23° <u>♁</u> 55'59					
evening set	13502 Sep 30 14:19	25° <u>♁</u> 16'16		conjunction	13508 Oct 10 06:28	1° <u>♁</u> 05'57	-13°41'04
				minimum elong	13508 Oct 10 06:42	1° <u>♁</u> 05'58	13°40'38
conjunction	13502 Oct 05 00:30	25° <u>♁</u> 22'23	-14°23'28	max. Earth dist.	13508 Oct 10 18:27	1° <u>♁</u> 06'39	49.85067 AU
minimum elong	13502 Oct 05 00:45	25° <u>♁</u> 22'23	14°23'08	morning rise	13508 Oct 16 17:30	1° <u>♁</u> 14'50	
max. Earth dist.	13502 Oct 05 17:59	25° <u>♁</u> 23'23	49.84531 AU	retrograde	13509 Jan 19 21:29	2° <u>♁</u> 34'53	
morning rise	13502 Oct 09 11:25	25° <u>♁</u> 28'31		opposition	13509 Apr 13 19:26	1° <u>♁</u> 35'37	-14°10'56
retrograde	13503 Jan 14 14:06	26° <u>♁</u> 51'30		min. Earth dist.	13509 Apr 13 09:15	1° <u>♁</u> 36'06	47.90157 AU
opposition	13503 Apr 08 13:00	25° <u>♁</u> 52'02	-14°55'42	direct	13509 Jul 05 04:41	0° <u>♁</u> 37'01	
min. Earth dist.	13503 Apr 07 19:56	25° <u>♁</u> 52'49	47.91690 AU	evening set	13509 Oct 04 18:13	1° <u>♁</u> 53'55	
direct	13503 Jun 29 21:51	24° <u>♁</u> 53'13					
evening set	13503 Oct 01 10:21	26° <u>♁</u> 12'57		conjunction	13509 Oct 11 11:22	2° <u>♁</u> 03'07	-13°33'18
				minimum elong	13509 Oct 11 11:38	2° <u>♁</u> 03'08	13°32'50
conjunction	13503 Oct 06 05:29	26° <u>♁</u> 19'33	-14°16'56	max. Earth dist.	13509 Oct 11 21:56	2° <u>♁</u> 03'43	49.83440 AU
minimum elong	13503 Oct 06 05:44	26° <u>♁</u> 19'34	14°16'34	morning rise	13509 Oct 18 05:27	2° <u>♁</u> 12'24	
max. Earth dist.	13503 Oct 06 23:13	26° <u>♁</u> 20'34	49.85769 AU	retrograde	13510 Jan 21 05:02	3° <u>♁</u> 32'00	
morning rise	13503 Oct 11 01:18	26° <u>♁</u> 26'13		opposition	13510 Apr 15 00:18	2° <u>♁</u> 32'44	-14°02'45
retrograde	13504 Jan 15 20:33	27° <u>♁</u> 48'39		min. Earth dist.	13510 Apr 14 14:10	2° <u>♁</u> 33'12	47.88209 AU
opposition	13504 Apr 08 18:09	26° <u>♁</u> 49'14	-14°48'46	direct	13510 Jul 06 07:48	1° <u>♁</u> 34'07	
min. Earth dist.	13504 Apr 08 02:27	26° <u>♁</u> 49'58	47.92640 AU	evening set	13510 Oct 05 15:58	2° <u>♁</u> 50'35	
direct	13504 Jun 30 03:59	25° <u>♁</u> 50'29					
evening set	13504 Oct 01 06:53	27° <u>♁</u> 09'42		conjunction	13510 Oct 12 16:04	3° <u>♁</u> 00'11	-13°25'18
				minimum elong	13510 Oct 12 16:18	3° <u>♁</u> 00'12	13°24'50
conjunction	13504 Oct 06 10:23	27° <u>♁</u> 16'47	-14°10'10	max. Earth dist.	13510 Oct 13 01:42	3° <u>♁</u> 00'44	49.81406 AU
minimum elong	13504 Oct 06 10:38	27° <u>♁</u> 16'48	14°09'47	morning rise	13510 Oct 19 17:09	3° <u>♁</u> 09'51	
max. Earth dist.	13504 Oct 07 02:39	27° <u>♁</u> 17'43	49.86628 AU	retrograde	13511 Jan 22 12:23	4° <u>♁</u> 29'02	
morning rise	13504 Oct 11 14:39	27° <u>♁</u> 23'55		opposition	13511 Apr 16 05:18	3° <u>♁</u> 29'45	-13°54'19
retrograde	13505 Jan 16 04:12	28° <u>♁</u> 45'50		min. Earth dist.	13511 Apr 15 20:54	3° <u>♁</u> 30'09	47.85891 AU
opposition	13505 Apr 09 23:11	27° <u>♁</u> 46'30	-14°41'37	direct	13511 Jul 07 09:06	2° <u>♁</u> 31'08	
min. Earth dist.	13505 Apr 09 07:36	27° <u>♁</u> 47'13	47.93173 AU	evening set	13511 Oct 06 14:11	3° <u>♁</u> 47'11	

conjunction	13511 Oct 13 21:00	3°M.57'10	-13°17'05	direct	13518 Jul 13 19:16	9°M.10'14	
minimum elong	13511 Oct 13 21:15	3°M.57'11	13°16'36	evening set	13518 Oct 11 05:02	10°M.23'59	
max. Earth dist.	13511 Oct 14 06:36	3°M.57'43	49.79042 AU				
morning rise	13511 Oct 21 04:44	4°M.07'12		conjunction	13518 Oct 20 07:28	10°M.36'26	-12°13'16
retrograde	13512 Jan 23 14:39	5°M.26'00		minimum elong	13518 Oct 20 07:43	10°M.36'27	12°12'40
opposition	13512 Apr 16 10:07	4°M.26'42	-13°45'40	max. Earth dist.	13518 Oct 20 10:34	10°M.36'37	49.52981 AU
min. Earth dist.	13512 Apr 16 01:34	4°M.27'06	47.83247 AU	morning rise	13518 Oct 29 11:03	10°M.48'58	
direct	13512 Jul 07 14:34	3°M.28'04		retrograde	13519 Jan 30 00:58	12°M.05'28	
evening set	13512 Oct 06 12:22	4°M.43'45		opposition	13519 Apr 23 20:43	11°M.06'09	-12°38'38
				min. Earth dist.	13519 Apr 23 19:10	11°M.06'13	47.54908 AU
conjunction	13512 Oct 14 01:43	4°M.54'06	-13°08'38	direct	13519 Jul 15 02:35	10°M.07'29	
minimum elong	13512 Oct 14 01:58	4°M.54'07	13°08'07	evening set	13519 Oct 12 04:33	11°M.20'57	
max. Earth dist.	13512 Oct 14 09:37	4°M.54'33	49.76366 AU				
morning rise	13512 Oct 21 16:11	5°M.04'30		conjunction	13519 Oct 21 12:37	11°M.33'44	-12°03'19
retrograde	13513 Jan 23 17:41	6°M.22'55		minimum elong	13519 Oct 21 12:51	11°M.33'45	12°02'44
opposition	13513 Apr 17 15:01	5°M.23'37	-13°36'46	max. Earth dist.	13519 Oct 21 13:58	11°M.33'48	49.47433 AU
min. Earth dist.	13513 Apr 17 07:25	5°M.23'58	47.80306 AU	morning rise	13519 Oct 30 21:58	11°M.46'36	
direct	13513 Jul 08 20:46	4°M.24'59		retrograde	13520 Jan 31 07:58	13°M.02'48	
evening set	13513 Oct 07 10:44	5°M.40'18		opposition	13520 Apr 24 01:40	12°M.03'27	-12°28'13
				min. Earth dist.	13520 Apr 24 00:37	12°M.03'30	47.48956 AU
conjunction	13513 Oct 15 06:39	5°M.51'01	-12°59'57	direct	13520 Jul 15 06:59	11°M.04'45	
minimum elong	13513 Oct 15 06:54	5°M.51'02	12°59'26	evening set	13520 Oct 12 03:59	12°M.17'55	
max. Earth dist.	13513 Oct 15 14:47	5°M.51'29	49.73383 AU				
morning rise	13513 Oct 23 03:34	6°M.01'48		conjunction	13520 Oct 21 17:46	12°M.31'02	-11°53'12
retrograde	13514 Jan 24 22:11	7°M.19'51		minimum elong	13520 Oct 21 18:01	12°M.31'03	11°52'34
opposition	13514 Apr 18 19:51	6°M.20'32	-13°27'38	max. Earth dist.	13520 Oct 21 17:40	12°M.31'02	49.41342 AU
min. Earth dist.	13514 Apr 18 13:20	6°M.20'51	47.77047 AU	morning rise	13520 Oct 31 08:54	12°M.44'14	
direct	13514 Jul 10 04:22	5°M.21'54		retrograde	13521 Jan 31 15:37	14°M.00'09	
evening set	13514 Oct 08 09:20	6°M.36'53		opposition	13521 Apr 25 06:47	13°M.00'45	-12°17'36
				min. Earth dist.	13521 Apr 25 07:47	13°M.00'42	47.42489 AU
conjunction	13514 Oct 16 11:29	6°M.47'57	-12°51'03	direct	13521 Jul 16 09:40	12°M.01'59	
minimum elong	13514 Oct 16 11:43	6°M.47'58	12°50'30	evening set	13521 Oct 13 03:36	13°M.14'54	
max. Earth dist.	13514 Oct 16 18:20	6°M.48'20	49.70103 AU				
morning rise	13514 Oct 24 14:44	6°M.59'06		conjunction	13521 Oct 22 22:57	13°M.28'20	-11°42'52
retrograde	13515 Jan 26 06:04	8°M.16'48		minimum elong	13521 Oct 22 23:10	13°M.28'20	11°42'13
opposition	13515 Apr 20 00:45	7°M.17'30	-13°18'16	max. Earth dist.	13521 Oct 22 22:31	13°M.28'18	49.34777 AU
min. Earth dist.	13515 Apr 19 18:02	7°M.17'49	47.73477 AU	morning rise	13521 Nov 01 19:30	13°M.41'50	
direct	13515 Jul 11 07:49	6°M.18'52		retrograde	13522 Feb 01 19:11	14°M.57'29	
evening set	13515 Oct 09 07:49	7°M.33'31		opposition	13522 Apr 26 11:39	13°M.58'02	-12°06'46
				min. Earth dist.	13522 Apr 26 12:45	13°M.57'59	47.35571 AU
conjunction	13515 Oct 17 16:15	7°M.44'56	-12°41'55	direct	13522 Jul 17 14:13	12°M.59'13	
minimum elong	13515 Oct 17 16:30	7°M.44'57	12°41'22	evening set	13522 Oct 14 03:19	14°M.11'53	
max. Earth dist.	13515 Oct 17 22:12	7°M.45'17	49.66475 AU				
morning rise	13515 Oct 26 01:52	7°M.56'26		conjunction	13522 Oct 24 03:59	14°M.25'37	-11°32'19
retrograde	13516 Jan 27 12:35	9°M.13'50		minimum elong	13522 Oct 24 04:13	14°M.25'38	11°31'40
opposition	13516 Apr 20 05:48	8°M.14'32	-13°08'40	max. Earth dist.	13522 Oct 24 01:43	14°M.25'30	49.27796 AU
min. Earth dist.	13516 Apr 20 01:00	8°M.14'46	47.69540 AU	morning rise	13522 Nov 03 06:09	14°M.39'27	
direct	13516 Jul 11 10:31	7°M.15'55			13522 Nov 18 18:58	15°M.	
evening set	13516 Oct 09 06:47	8°M.30'14		retrograde	13523 Feb 02 23:18	15°M.54'51	
					13523 Apr 23 12:45	15°R.M.	
conjunction	13516 Oct 17 21:20	8°M.42'01	-12°32'34	opposition	13523 Apr 27 16:44	14°M.55'20	-11°55'43
minimum elong	13516 Oct 17 21:35	8°M.42'02	12°32'00	min. Earth dist.	13523 Apr 27 19:02	14°M.55'14	47.28284 AU
max. Earth dist.	13516 Oct 18 03:05	8°M.42'21	49.62464 AU	direct	13523 Jul 18 19:55	13°M.56'28	
morning rise	13516 Oct 26 12:58	8°M.53'52			13523 Oct 08 12:15	15°M.	
retrograde	13517 Jan 27 16:06	10°M.10'56		evening set	13523 Oct 15 02:55	15°M.08'54	
opposition	13517 Apr 21 10:34	9°M.11'39	-12°58'52				
min. Earth dist.	13517 Apr 21 06:06	9°M.11'52	47.65175 AU	conjunction	13523 Oct 25 09:05	15°M.22'57	-11°21'33
direct	13517 Jul 12 14:27	8°M.13'02		minimum elong	13523 Oct 25 09:19	15°M.22'58	11°20'53
evening set	13517 Oct 10 05:55	9°M.27'04		max. Earth dist.	13523 Oct 25 06:58	15°M.22'50	49.20462 AU
				morning rise	13523 Nov 04 16:34	15°M.37'06	
conjunction	13517 Oct 19 02:21	9°M.39'11	-12°23'01	retrograde	13524 Feb 04 03:12	16°M.52'16	
minimum elong	13517 Oct 19 02:36	9°M.39'12	12°22'27	opposition	13524 Apr 27 21:49	15°M.52'42	-11°44'26
max. Earth dist.	13517 Oct 19 05:49	9°M.39'23	49.57986 AU	min. Earth dist.	13524 Apr 28 01:02	15°M.52'33	47.20654 AU
morning rise	13517 Oct 28 00:06	9°M.51'23			13524 Jun 24 21:45	15°R.M.	
retrograde	13518 Jan 28 20:56	11°M.08'09		direct	13524 Jul 19 03:52	14°M.53'47	
opposition	13518 Apr 22 15:35	10°M.08'52	-12°48'50		13524 Aug 11 23:26	15°M.	
min. Earth dist.	13518 Apr 22 12:37	10°M.09'00	47.60321 AU	evening set	13524 Oct 15 02:57	16°M.05'59	

conjunction	13524 Oct 25 14:16	16° <u>ℓ</u> 20'21	-11°10'34	direct	13531 Jul 26 10:21	21° <u>ℓ</u> 39'53	
minimum elong	13524 Oct 25 14:30	16° <u>ℓ</u> 20'22	11°09'53	evening set	13531 Oct 21 06:43	22° <u>ℓ</u> 51'01	
max. Earth dist.	13524 Oct 25 10:55	16° <u>ℓ</u> 20'10	49.12819 AU				
morning rise	13524 Nov 05 03:02	16° <u>ℓ</u> 34'49		conjunction	13531 Nov 02 04:32	23° <u>ℓ</u> 07'29	-9°47'23
retrograde	13525 Feb 04 11:10	17° <u>ℓ</u> 49'46		minimum elong	13531 Nov 02 04:45	23° <u>ℓ</u> 07'30	9°46'36
opposition	13525 Apr 29 02:40	16° <u>ℓ</u> 50'10	-11°32'55	max. Earth dist.	13531 Nov 01 18:53	23° <u>ℓ</u> 06'56	48.49717 AU
min. Earth dist.	13525 Apr 29 05:48	16° <u>ℓ</u> 50'01	47.12731 AU	morning rise	13531 Nov 14 03:51	23° <u>ℓ</u> 24'04	
direct	13525 Jul 20 07:31	15° <u>ℓ</u> 51'12		retrograde	13532 Feb 12 06:54	24° <u>ℓ</u> 37'54	
evening set	13525 Oct 16 02:56	17° <u>ℓ</u> 03'13		opposition	13532 May 05 15:43	23° <u>ℓ</u> 37'59	-10°05'49
				min. Earth dist.	13532 May 06 01:34	23° <u>ℓ</u> 37'31	46.47257 AU
conjunction	13525 Oct 26 19:28	17° <u>ℓ</u> 17'53	-10°59'21	direct	13532 Jul 26 13:28	22° <u>ℓ</u> 38'39	
minimum elong	13525 Oct 26 19:41	17° <u>ℓ</u> 17'54	10°58'39	evening set	13532 Oct 21 08:07	23° <u>ℓ</u> 49'39	
max. Earth dist.	13525 Oct 26 15:12	17° <u>ℓ</u> 17'39	49.04873 AU				
morning rise	13525 Nov 06 13:31	17° <u>ℓ</u> 32'40		conjunction	13532 Nov 02 10:21	24° <u>ℓ</u> 06'24	-9°34'40
retrograde	13526 Feb 05 18:24	18° <u>ℓ</u> 47'25		minimum elong	13532 Nov 02 10:33	24° <u>ℓ</u> 06'25	9°33'53
opposition	13526 Apr 30 07:50	17° <u>ℓ</u> 47'47	-11°21'09	max. Earth dist.	13532 Nov 01 22:27	24° <u>ℓ</u> 05'43	48.38864 AU
min. Earth dist.	13526 Apr 30 12:39	17° <u>ℓ</u> 47'33	47.04511 AU	morning rise	13532 Nov 14 14:25	24° <u>ℓ</u> 23'16	
direct	13526 Jul 21 10:14	16° <u>ℓ</u> 48'47		retrograde	13533 Feb 12 12:06	25° <u>ℓ</u> 36'57	
evening set	13526 Oct 17 03:00	18° <u>ℓ</u> 00'36		opposition	13533 May 06 21:10	24° <u>ℓ</u> 36'56	-9°52'30
				min. Earth dist.	13533 May 07 08:45	24° <u>ℓ</u> 36'23	46.36036 AU
conjunction	13526 Oct 28 00:40	18° <u>ℓ</u> 15'36	-10°47'54	direct	13533 Jul 27 19:05	23° <u>ℓ</u> 37'29	
minimum elong	13526 Oct 28 00:54	18° <u>ℓ</u> 15'36	10°47'12	evening set	13533 Oct 22 09:28	24° <u>ℓ</u> 48'22	
max. Earth dist.	13526 Oct 27 20:30	18° <u>ℓ</u> 15'21	48.96645 AU				
morning rise	13526 Nov 07 23:42	18° <u>ℓ</u> 30'41		conjunction	13533 Nov 03 16:19	25° <u>ℓ</u> 05'24	-9°21'44
retrograde	13527 Feb 06 22:44	19° <u>ℓ</u> 45'15		minimum elong	13533 Nov 03 16:32	25° <u>ℓ</u> 05'24	9°20'57
opposition	13527 May 01 12:57	18° <u>ℓ</u> 45'35	-11°09'10	max. Earth dist.	13533 Nov 03 04:14	25° <u>ℓ</u> 04'42	48.27547 AU
min. Earth dist.	13527 May 01 17:35	18° <u>ℓ</u> 45'22	46.95991 AU	morning rise	13533 Nov 16 00:43	25° <u>ℓ</u> 22'32	
direct	13527 Jul 22 14:04	17° <u>ℓ</u> 46'32		retrograde	13534 Feb 13 14:15	26° <u>ℓ</u> 36'06	
evening set	13527 Oct 18 03:23	18° <u>ℓ</u> 58'13		opposition	13534 May 08 02:46	25° <u>ℓ</u> 35'58	-9°38'58
				min. Earth dist.	13534 May 08 15:16	25° <u>ℓ</u> 35'22	46.24379 AU
conjunction	13527 Oct 29 05:56	19° <u>ℓ</u> 13'31	-10°36'13	direct	13534 Jul 29 04:05	24° <u>ℓ</u> 36'24	
minimum elong	13527 Oct 29 06:09	19° <u>ℓ</u> 13'31	10°35'30	evening set	13534 Oct 23 10:57	25° <u>ℓ</u> 47'10	
max. Earth dist.	13527 Oct 28 23:53	19° <u>ℓ</u> 13'10	48.88103 AU				
morning rise	13527 Nov 09 10:09	19° <u>ℓ</u> 28'53		conjunction	13534 Nov 04 22:02	26° <u>ℓ</u> 04'28	-9°08'35
retrograde	13528 Feb 08 03:28	20° <u>ℓ</u> 43'18		minimum elong	13534 Nov 04 22:13	26° <u>ℓ</u> 04'28	9°07'47
opposition	13528 May 01 18:07	19° <u>ℓ</u> 43'36	-10°56'56	max. Earth dist.	13534 Nov 04 08:38	26° <u>ℓ</u> 03'41	48.15843 AU
min. Earth dist.	13528 May 01 24:00	19° <u>ℓ</u> 43'20	46.87151 AU	morning rise	13534 Nov 17 10:53	26° <u>ℓ</u> 21'53	
direct	13528 Jul 22 18:39	18° <u>ℓ</u> 44'32		retrograde	13535 Feb 14 20:59	27° <u>ℓ</u> 35'20	
evening set	13528 Oct 18 03:50	19° <u>ℓ</u> 56'05		opposition	13535 May 09 08:22	26° <u>ℓ</u> 35'05	-9°25'12
				min. Earth dist.	13535 May 09 21:01	26° <u>ℓ</u> 34'29	46.12370 AU
conjunction	13528 Oct 29 11:29	20° <u>ℓ</u> 11'40	-10°24'19	direct	13535 Jul 30 09:58	25° <u>ℓ</u> 35'23	
minimum elong	13528 Oct 29 11:42	20° <u>ℓ</u> 11'40	10°23'36	evening set	13535 Oct 24 12:37	26° <u>ℓ</u> 46'03	
max. Earth dist.	13528 Oct 29 05:25	20° <u>ℓ</u> 11'19	48.79203 AU				
morning rise	13528 Nov 09 20:34	20° <u>ℓ</u> 27'21		conjunction	13535 Nov 06 04:01	27° <u>ℓ</u> 03'38	-8°55'12
retrograde	13529 Feb 08 07:37	21° <u>ℓ</u> 41'37		minimum elong	13535 Nov 06 04:13	27° <u>ℓ</u> 03'39	8°54'24
opposition	13529 May 02 23:24	20° <u>ℓ</u> 41'53	-10°44'28	max. Earth dist.	13535 Nov 05 13:43	27° <u>ℓ</u> 02'48	48.03791 AU
min. Earth dist.	13529 May 03 06:28	20° <u>ℓ</u> 41'33	46.77906 AU	morning rise	13535 Nov 18 21:13	27° <u>ℓ</u> 21'20	
direct	13529 Jul 24 01:50	19° <u>ℓ</u> 42'46		retrograde	13536 Feb 16 05:05	28° <u>ℓ</u> 34'41	
evening set	13529 Oct 19 04:42	20° <u>ℓ</u> 54'11		opposition	13536 May 09 14:05	27° <u>ℓ</u> 34'19	-9°11'11
				min. Earth dist.	13536 May 10 04:25	27° <u>ℓ</u> 33'38	46.00044 AU
conjunction	13529 Oct 30 17:01	21° <u>ℓ</u> 10'03	-10°12'13	direct	13536 Jul 30 14:37	26° <u>ℓ</u> 34'31	
minimum elong	13529 Oct 30 17:14	21° <u>ℓ</u> 10'04	10°11'27	evening set	13536 Oct 24 14:28	27° <u>ℓ</u> 45'05	
max. Earth dist.	13529 Oct 30 09:24	21° <u>ℓ</u> 09'37	48.69878 AU				
morning rise	13529 Nov 11 06:57	21° <u>ℓ</u> 26'03		conjunction	13536 Nov 06 10:09	28° <u>ℓ</u> 02'57	-8°41'36
retrograde	13530 Feb 09 14:59	22° <u>ℓ</u> 40'11		minimum elong	13536 Nov 06 10:20	28° <u>ℓ</u> 02'57	8°40'46
opposition	13530 May 04 04:39	21° <u>ℓ</u> 40'24	-10°31'48	max. Earth dist.	13536 Nov 05 19:48	28° <u>ℓ</u> 02'06	47.91455 AU
min. Earth dist.	13530 May 04 12:12	21° <u>ℓ</u> 40'03	46.68209 AU	morning rise	13536 Nov 19 07:26	28° <u>ℓ</u> 20'55	
direct	13530 Jul 25 07:19	20° <u>ℓ</u> 41'14		retrograde	13537 Feb 16 11:30	29° <u>ℓ</u> 34'11	
evening set	13530 Oct 20 05:39	21° <u>ℓ</u> 52'30		opposition	13537 May 10 19:47	28° <u>ℓ</u> 33'43	-8°56'56
				min. Earth dist.	13537 May 11 09:49	28° <u>ℓ</u> 33'03	45.87436 AU
conjunction	13530 Oct 31 22:44	22° <u>ℓ</u> 08'41	-9°59'54	direct	13537 Jul 31 18:57	27° <u>ℓ</u> 33'48	
minimum elong	13530 Oct 31 22:57	22° <u>ℓ</u> 08'42	9°59'09	evening set	13537 Oct 25 16:33	28° <u>ℓ</u> 44'20	
max. Earth dist.	13530 Oct 31 13:35	22° <u>ℓ</u> 08'09	48.60053 AU				
morning rise	13530 Nov 12 17:31	22° <u>ℓ</u> 24'58		conjunction	13537 Nov 07 16:10	29° <u>ℓ</u> 02'27	-8°27'45
retrograde	13531 Feb 11 00:25	23° <u>ℓ</u> 38'58		minimum elong	13537 Nov 07 16:22	29° <u>ℓ</u> 02'28	8°26'55
opposition	13531 May 05 10:14	22° <u>ℓ</u> 39'08	-10°18'55	max. Earth dist.	13537 Nov 07 00:03	29° <u>ℓ</u> 01'31	47.78840 AU
min. Earth dist.	13531 May 05 19:52	22° <u>ℓ</u> 38'40	46.57996 AU	morning rise	13537 Nov 20 17:43	29° <u>ℓ</u> 20'42	



	13537 Dec 21 21:39	0°♏	min. Earth dist.	13544 May 18 12:28	5°♏37'46	44.90019 AU
retrograde	13538 Feb 17 18:09	0°♏33'54	direct	13544 Aug 07 10:49	4°♏38'09	
	13538 Apr 17 22:51	30°♏	evening set	13544 Oct 31 13:48	5°♏48'51	
opposition	13538 May 12 01:40	29°♏33'20 -8°42'25				
min. Earth dist.	13538 May 12 16:53	29°♏32'37 45.74569 AU	conjunction	13544 Nov 14 15:29	6°♏08'50 -6°44'24	
direct	13538 Aug 01 23:05	28°♏33'19	minimum elong	13544 Nov 14 15:39	6°♏08'51 6°43'29	
evening set	13538 Oct 26 18:44	29°♏43'49	max. Earth dist.	13544 Nov 13 16:24	6°♏07'27 46.80886 AU	
	13538 Nov 07 08:45	0°♏	morning rise	13544 Nov 28 19:06	6°♏28'57	
			retrograde	13545 Feb 24 19:52	7°♏42'16	
conjunction	13538 Nov 08 22:31	0°♏02'13 -8°13'40	opposition	13545 May 18 22:10	6°♏41'01 -6°54'10	
minimum elong	13538 Nov 08 22:42	0°♏02'14 8°12'49	min. Earth dist.	13545 May 19 19:52	6°♏39'58 44.74304 AU	
max. Earth dist.	13538 Nov 08 06:41	0°♏01'17 47.65964 AU	direct	13545 Aug 08 18:13	5°♏40'14	
morning rise	13538 Nov 22 03:56	0°♏20'44	evening set	13545 Nov 01 17:47	6°♏50'59	
retrograde	13539 Feb 18 22:51	1°♏33'55				
opposition	13539 May 13 07:42	0°♏33'15 -8°27'40	conjunction	13545 Nov 15 22:48	7°♏11'13 -6°28'46	
min. Earth dist.	13539 May 13 23:29	0°♏32'30 45.61429 AU	minimum elong	13545 Nov 15 22:57	7°♏11'14 6°27'50	
	13539 Jun 12 23:25	30°♏	max. Earth dist.	13545 Nov 14 22:33	7°♏09'46 46.65049 AU	
direct	13539 Aug 03 06:31	29°♏33'09	morning rise	13545 Nov 30 05:41	7°♏31'36	
	13539 Sep 22 09:18	0°♏	retrograde	13546 Feb 26 04:51	8°♏44'58	
evening set	13539 Oct 27 21:11	0°♏43'38	opposition	13546 May 20 05:05	7°♏43'34 -6°37'46	
max. Earth dist.	13539 Nov 09 11:43	1°♏01'18 47.52819 AU	min. Earth dist.	13546 May 21 04:39	7°♏42'25 44.58148 AU	
			direct	13546 Aug 10 00:38	6°♏42'37	
conjunction	13539 Nov 10 04:47	1°♏02'18 -7°59'21	evening set	13546 Nov 02 22:01	7°♏53'26	
minimum elong	13539 Nov 10 04:58	1°♏02'19 7°58'30	max. Earth dist.	13546 Nov 16 05:43	8°♏12'26 46.48821 AU	
morning rise	13539 Nov 23 14:16	1°♏21'06				
retrograde	13540 Feb 20 06:08	2°♏34'16	conjunction	13546 Nov 17 06:17	8°♏13'55 -6°12'53	
opposition	13540 May 13 13:46	1°♏33'32 -8°12'40	minimum elong	13546 Nov 17 06:26	8°♏13'55 6°11'57	
min. Earth dist.	13540 May 14 05:53	1°♏32'46 45.47999 AU	morning rise	13546 Dec 01 16:18	8°♏34'32	
direct	13540 Aug 03 12:25	0°♏33'20	retrograde	13547 Feb 27 13:39	9°♏47'58	
evening set	13540 Oct 27 23:58	1°♏43'51	opposition	13547 May 21 12:00	8°♏46'25 -6°21'07	
			min. Earth dist.	13547 May 22 11:23	8°♏45'16 44.41631 AU	
conjunction	13540 Nov 10 11:25	2°♏02'47 -7°44'48	direct	13547 Aug 11 05:41	7°♏45'17	
minimum elong	13540 Nov 10 11:35	2°♏02'48 7°43'56	evening set	13547 Nov 04 02:30	8°♏56'11	
max. Earth dist.	13540 Nov 09 17:12	2°♏01'42 47.39331 AU	max. Earth dist.	13547 Nov 17 11:18	9°♏15'20 46.32245 AU	
morning rise	13540 Nov 24 00:43	2°♏21'51				
retrograde	13541 Feb 20 15:23	3°♏35'02	conjunction	13547 Nov 18 13:45	9°♏16'55 -5°56'47	
opposition	13541 May 14 19:57	2°♏34'14 -7°57'26	minimum elong	13547 Nov 18 13:53	9°♏16'56 5°55'50	
min. Earth dist.	13541 May 15 13:56	2°♏33'22 45.34202 AU	morning rise	13547 Dec 03 03:01	9°♏37'48	
direct	13541 Aug 04 17:04	1°♏33'57	retrograde	13548 Feb 28 23:40	10°♏51'17	
evening set	13541 Oct 29 03:02	2°♏44'29	opposition	13548 May 21 19:11	9°♏49'35 -6°04'13	
			min. Earth dist.	13548 May 22 20:06	9°♏48'22 44.24800 AU	
conjunction	13541 Nov 11 18:15	3°♏03'42 -7°30'02	direct	13548 Aug 11 09:52	8°♏48'17	
minimum elong	13541 Nov 11 18:25	3°♏03'42 7°29'10	evening set	13548 Nov 04 07:14	9°♏59'17	
max. Earth dist.	13541 Nov 10 23:41	3°♏02'36 47.25455 AU				
morning rise	13541 Nov 25 11:10	3°♏23'02	conjunction	13548 Nov 18 21:37	10°♏20'16 -5°40'26	
retrograde	13542 Feb 22 00:26	4°♏36'14	minimum elong	13548 Nov 18 21:45	10°♏20'17 5°39'29	
opposition	13542 May 16 02:15	3°♏35'21 -7°41'57	max. Earth dist.	13548 Nov 17 19:24	10°♏18'41 46.15367 AU	
min. Earth dist.	13542 May 16 20:22	3°♏34'29 45.19974 AU	morning rise	13548 Dec 03 13:40	10°♏41'23	
direct	13542 Aug 05 20:19	2°♏34'58	retrograde	13549 Mar 01 05:53	11°♏54'58	
evening set	13542 Oct 30 06:19	3°♏45'34	opposition	13549 May 23 02:18	10°♏53'05 -5°47'04	
max. Earth dist.	13542 Nov 12 04:12	4°♏03'48 47.11105 AU	min. Earth dist.	13549 May 24 03:35	10°♏51'51 44.07681 AU	
			direct	13549 Aug 12 18:15	9°♏51'37	
conjunction	13542 Nov 13 01:00	4°♏05'02 -7°15'02	evening set	13549 Nov 05 12:21	11°♏02'45	
minimum elong	13542 Nov 13 01:10	4°♏05'02 7°14'08	max. Earth dist.	13549 Nov 19 01:50	11°♏22'18 45.98230 AU	
morning rise	13542 Nov 26 21:42	4°♏24'38				
retrograde	13543 Feb 23 08:37	5°♏37'52	conjunction	13549 Nov 20 05:27	11°♏23'58 -5°23'50	
opposition	13543 May 17 08:53	4°♏36'53 -7°26'15	minimum elong	13549 Nov 20 05:34	11°♏23'59 5°22'53	
min. Earth dist.	13543 May 18 04:54	4°♏35'55 45.05257 AU	morning rise	13549 Dec 05 00:29	11°♏45'20	
direct	13543 Aug 07 01:29	3°♏36'23	retrograde	13550 Mar 02 12:57	12°♏59'02	
evening set	13543 Oct 31 09:53	4°♏47'02	opposition	13550 May 24 09:43	11°♏57'00 -5°29'40	
max. Earth dist.	13543 Nov 13 11:01	5°♏05'30 46.96244 AU	min. Earth dist.	13550 May 25 11:24	11°♏55'44 43.90324 AU	
			direct	13550 Aug 14 01:53	10°♏55'21	
conjunction	13543 Nov 14 08:16	5°♏06'45 -6°59'50	evening set	13550 Nov 06 17:30	12°♏06'38	
minimum elong	13543 Nov 14 08:25	5°♏06'46 6°58'57	max. Earth dist.	13550 Nov 20 09:06	12°♏26'22 45.80837 AU	
morning rise	13543 Nov 28 08:20	5°♏26'37				
retrograde	13544 Feb 24 12:31	6°♏39'53	conjunction	13550 Nov 21 13:24	12°♏28'05 -5°07'00	
opposition	13544 May 17 15:28	5°♏38'47 -7°10'19	minimum elong	13550 Nov 21 13:32	12°♏28'06 5°06'04	

morning rise	13550 Dec 06 11:08	12° $\nearrow$ 49'42	conjunction	13557 Nov 29 04:34	20° $\nearrow$ 11'19	-3°02'34
retrograde	13551 Mar 03 20:57	14° $\nearrow$ 03'32	minimum elong	13557 Nov 29 04:39	20° $\nearrow$ 11'20	3°01'33
opposition	13551 May 25 17:27	13° $\nearrow$ 01'21	morning rise	13557 Dec 14 17:53	20° $\nearrow$ 34'30	
min. Earth dist.	13551 May 26 20:25	13° $\nearrow$ 00'01	retrograde	13558 Mar 11 20:06	21° $\nearrow$ 49'50	
direct	13551 Aug 15 10:33	11° $\nearrow$ 59'32	opposition	13558 Jun 02 04:12	20° $\nearrow$ 46'22	-3°01'16
evening set	13551 Nov 07 23:09	13° $\nearrow$ 10'59	min. Earth dist.	13558 Jun 03 14:13	20° $\nearrow$ 44'39	42.39208 AU
			direct	13558 Aug 22 13:37	19° $\nearrow$ 43'08	
conjunction	13551 Nov 22 21:44	13° $\nearrow$ 32'41	evening set	13558 Nov 15 01:05	20° $\nearrow$ 56'17	
minimum elong	13551 Nov 22 21:51	13° $\nearrow$ 32'41	max. Earth dist.	13558 Nov 29 02:11	21° $\nearrow$ 17'15	44.28823 AU
max. Earth dist.	13551 Nov 21 17:17	13° $\nearrow$ 30'56				
morning rise	13551 Dec 07 22:03	13° $\nearrow$ 54'31	conjunction	13558 Nov 30 14:25	21° $\nearrow$ 19'32	-2°43'51
retrograde	13552 Mar 04 08:04	15° $\nearrow$ 08'32	minimum elong	13558 Nov 30 14:29	21° $\nearrow$ 19'32	2°42'51
opposition	13552 May 26 01:05	14° $\nearrow$ 06'11	morning rise	13558 Dec 16 05:14	21° $\nearrow$ 42'55	
min. Earth dist.	13552 May 27 03:51	14° $\nearrow$ 04'52	retrograde	13559 Mar 13 06:28	22° $\nearrow$ 58'31	
direct	13552 Aug 15 15:45	13° $\nearrow$ 04'12	opposition	13559 Jun 03 13:24	21° $\nearrow$ 54'49	-2°41'35
evening set	13552 Nov 08 05:15	14° $\nearrow$ 15'51	min. Earth dist.	13559 Jun 04 23:30	21° $\nearrow$ 53'05	42.18526 AU
max. Earth dist.	13552 Nov 21 23:53	14° $\nearrow$ 35'56	direct	13559 Aug 23 22:30	20° $\nearrow$ 51'20	
			evening set	13559 Nov 16 09:46	22° $\nearrow$ 04'48	
conjunction	13552 Nov 23 06:13	14° $\nearrow$ 37'47	max. Earth dist.	13559 Nov 30 10:31	22° $\nearrow$ 25'51	44.08061 AU
minimum elong	13552 Nov 23 06:20	14° $\nearrow$ 37'47				
morning rise	13552 Dec 08 09:10	14° $\nearrow$ 59'51	conjunction	13559 Dec 02 00:28	22° $\nearrow$ 28'15	-2°24'55
retrograde	13553 Mar 05 19:23	16° $\nearrow$ 14'03	minimum elong	13559 Dec 02 00:31	22° $\nearrow$ 28'15	2°23'54
opposition	13553 May 27 09:07	15° $\nearrow$ 11'34	morning rise	13559 Dec 17 16:58	22° $\nearrow$ 51'50	
min. Earth dist.	13553 May 28 13:47	15° $\nearrow$ 10'08	retrograde	13560 Mar 13 17:22	24° $\nearrow$ 07'44	
direct	13553 Aug 16 20:27	14° $\nearrow$ 09'25	opposition	13560 Jun 03 22:41	23° $\nearrow$ 03'48	-2°21'39
evening set	13553 Nov 09 11:33	15° $\nearrow$ 21'17	min. Earth dist.	13560 Jun 05 09:48	23° $\nearrow$ 02'01	41.97587 AU
max. Earth dist.	13553 Nov 23 08:37	15° $\nearrow$ 41'34	direct	13560 Aug 24 06:59	22° $\nearrow$ 00'04	
			evening set	13560 Nov 16 18:43	23° $\nearrow$ 13'53	
conjunction	13553 Nov 24 15:01	15° $\nearrow$ 43'26	max. Earth dist.	13560 Nov 30 20:31	23° $\nearrow$ 35'06	43.87041 AU
minimum elong	13553 Nov 24 15:08	15° $\nearrow$ 43'27				
morning rise	13553 Dec 09 20:07	16° $\nearrow$ 05'44	conjunction	13560 Dec 02 10:54	23° $\nearrow$ 37'32	-2°05'43
retrograde	13554 Mar 07 03:28	17° $\nearrow$ 20'08	minimum elong	13560 Dec 02 10:58	23° $\nearrow$ 37'33	2°04'42
opposition	13554 May 28 17:19	16° $\nearrow$ 17'29	morning rise	13560 Dec 18 04:37	24° $\nearrow$ 01'20	
min. Earth dist.	13554 May 29 22:28	16° $\nearrow$ 16'02	retrograde	13561 Mar 15 01:23	25° $\nearrow$ 17'33	
direct	13554 Aug 18 05:30	15° $\nearrow$ 15'09	opposition	13561 Jun 05 08:23	24° $\nearrow$ 13'24	-2°01'27
evening set	13554 Nov 10 18:28	16° $\nearrow$ 27'16	min. Earth dist.	13561 Jun 06 20:24	24° $\nearrow$ 11'33	41.76416 AU
max. Earth dist.	13554 Nov 24 15:38	16° $\nearrow$ 47'39	direct	13561 Aug 25 18:43	23° $\nearrow$ 09'25	
			evening set	13561 Nov 18 04:02	24° $\nearrow$ 23'36	
conjunction	13554 Nov 26 00:01	16° $\nearrow$ 49'39	max. Earth dist.	13561 Dec 02 06:38	24° $\nearrow$ 44'58	43.65825 AU
minimum elong	13554 Nov 26 00:07	16° $\nearrow$ 49'39				
morning rise	13554 Dec 11 07:29	17° $\nearrow$ 12'11	conjunction	13561 Dec 03 21:23	24° $\nearrow$ 47'27	-1°46'18
retrograde	13555 Mar 08 12:30	18° $\nearrow$ 26'47	minimum elong	13561 Dec 03 21:26	24° $\nearrow$ 47'27	1°45'16
opposition	13555 May 30 01:44	17° $\nearrow$ 23'57	morning rise	13561 Dec 19 16:18	25° $\nearrow$ 11'26	
min. Earth dist.	13555 May 31 07:57	17° $\nearrow$ 22'27	retrograde	13562 Mar 16 12:49	26° $\nearrow$ 28'02	
direct	13555 Aug 19 14:06	16° $\nearrow$ 21'25	opposition	13562 Jun 06 18:13	25° $\nearrow$ 23'39	-1°40'59
evening set	13555 Nov 12 01:36	17° $\nearrow$ 33'46	min. Earth dist.	13562 Jun 08 05:55	25° $\nearrow$ 21'48	41.55071 AU
max. Earth dist.	13555 Nov 25 23:53	17° $\nearrow$ 54'18	direct	13562 Aug 27 03:31	24° $\nearrow$ 19'25	
			evening set	13562 Nov 19 13:54	25° $\nearrow$ 34'00	
conjunction	13555 Nov 27 09:22	17° $\nearrow$ 56'23	max. Earth dist.	13562 Dec 03 16:06	25° $\nearrow$ 55'29	43.44429 AU
minimum elong	13555 Nov 27 09:27	17° $\nearrow$ 56'23				
morning rise	13555 Dec 12 18:51	18° $\nearrow$ 19'08	conjunction	13562 Dec 05 08:14	25° $\nearrow$ 58'03	-1°26'38
retrograde	13556 Mar 08 21:06	19° $\nearrow$ 33'58	minimum elong	13562 Dec 05 08:16	25° $\nearrow$ 58'03	1°25'36
opposition	13556 May 30 10:29	18° $\nearrow$ 30'57	morning rise	13562 Dec 21 04:12	26° $\nearrow$ 22'13	
min. Earth dist.	13556 May 31 18:27	18° $\nearrow$ 29'20	retrograde	13563 Mar 18 02:23	27° $\nearrow$ 39'13	
direct	13556 Aug 19 23:35	17° $\nearrow$ 28'12	opposition	13563 Jun 08 04:28	26° $\nearrow$ 34'37	-1°20'16
evening set	13556 Nov 12 09:10	18° $\nearrow$ 40'47	min. Earth dist.	13563 Jun 09 17:43	26° $\nearrow$ 32'41	41.33566 AU
max. Earth dist.	13556 Nov 26 08:32	19° $\nearrow$ 01'28	direct	13563 Aug 28 10:02	25° $\nearrow$ 30'09	
			evening set	13563 Nov 21 00:05	26° $\nearrow$ 45'11	
conjunction	13556 Nov 27 18:56	19° $\nearrow$ 03'37	max. Earth dist.	13563 Dec 05 03:41	27° $\nearrow$ 06'51	43.22873 AU
minimum elong	13556 Nov 27 19:01	19° $\nearrow$ 03'37				
morning rise	13556 Dec 13 06:21	19° $\nearrow$ 26'35	conjunction	13563 Dec 06 19:28	27° $\nearrow$ 09'25	-1°06'44
retrograde	13557 Mar 10 07:23	20° $\nearrow$ 41'39	minimum elong	13563 Dec 06 19:30	27° $\nearrow$ 09'25	1°05'42
opposition	13557 May 31 19:06	19° $\nearrow$ 38'25	morning rise	13563 Dec 22 16:11	27° $\nearrow$ 33'46	
min. Earth dist.	13557 Jun 02 03:17	19° $\nearrow$ 36'47	retrograde	13564 Mar 18 15:15	28° $\nearrow$ 51'12	
direct	13557 Aug 21 07:30	18° $\nearrow$ 35'25	opposition	13564 Jun 08 14:54	27° $\nearrow$ 46'23	-0°59'18
evening set	13557 Nov 13 17:05	19° $\nearrow$ 48'17	min. Earth dist.	13564 Jun 10 03:52	27° $\nearrow$ 44'28	41.11883 AU
max. Earth dist.	13557 Nov 27 16:08	20° $\nearrow$ 09'03	direct	13564 Aug 28 19:38	26° $\nearrow$ 41'41	

evening set	13564 Nov 21 11:01	27° $\nearrow$ 57'12		direct	13570 Sep 05 09:49	4° $\searrow$ 08'35	
max. Earth dist.	13564 Dec 05 13:22	28° $\nearrow$ 18'55	43.01116 AU	evening set	13570 Nov 29 15:29	5° $\searrow$ 27'25	
				max. Earth dist.	13570 Dec 13 12:38	5° $\searrow$ 49'35	41.63820 AU
conjunction	13564 Dec 07 06:56	28° $\nearrow$ 21'37	-0°46'36				
minimum elong	13564 Dec 07 06:57	28° $\nearrow$ 21'37	0°45'33	conjunction	13570 Dec 15 11:42	5° $\searrow$ 52'44	1°18'55
morning rise	13564 Dec 23 04:28	28° $\nearrow$ 46'09		minimum elong	13570 Dec 15 11:40	5° $\searrow$ 52'44	1°19'59
	13565 Mar 01 18:03	0° $\searrow$		morning rise	13570 Dec 31 08:53	6° $\searrow$ 18'10	
retrograde	13565 Mar 20 05:42	0° $\searrow$ 04'01		retrograde	13571 Mar 28 14:42	7° $\searrow$ 39'14	
	13565 Apr 07 15:23	30° $\nearrow$		opposition	13571 Jun 18 01:05	6° $\searrow$ 32'34	1°34'24
opposition	13565 Jun 10 01:34	28° $\nearrow$ 59'00	-0°38'04	min. Earth dist.	13571 Jun 19 20:38	6° $\searrow$ 30'14	39.51760 AU
min. Earth dist.	13565 Jun 11 15:47	28° $\nearrow$ 57'01	40.89991 AU	direct	13571 Sep 06 23:41	5° $\searrow$ 25'50	
direct	13565 Aug 30 04:33	27° $\nearrow$ 54'04		evening set	13571 Dec 01 06:13	6° $\searrow$ 45'18	
evening set	13565 Nov 22 22:21	29° $\nearrow$ 10'05		max. Earth dist.	13571 Dec 15 01:22	7° $\searrow$ 07'28	41.39879 AU
max. Earth dist.	13565 Dec 07 01:07	29° $\nearrow$ 31'58	42.79099 AU				
				conjunction	13571 Dec 17 01:38	7° $\searrow$ 10'45	1°40'35
conjunction	13565 Dec 08 18:54	29° $\nearrow$ 34'41	-0°26'14	minimum elong	13571 Dec 17 01:35	7° $\searrow$ 10'44	1°41'38
minimum elong	13565 Dec 08 18:55	29° $\nearrow$ 34'41	0°25'12	morning rise	13572 Jan 01 22:11	7° $\searrow$ 36'17	
morning rise	13565 Dec 24 16:44	29° $\nearrow$ 59'24		retrograde	13572 Mar 29 05:58	8° $\searrow$ 57'57	
	13565 Dec 25 02:15	0° $\searrow$		opposition	13572 Jun 18 14:04	7° $\searrow$ 50'58	1°57'18
retrograde	13566 Mar 21 17:32	1° $\searrow$ 17'45		min. Earth dist.	13572 Jun 20 10:00	7° $\searrow$ 48'36	39.27764 AU
opposition	13566 Jun 11 12:44	0° $\searrow$ 12'31	-0°16'36	direct	13572 Sep 07 12:58	6° $\searrow$ 43'52	
min. Earth dist.	13566 Jun 13 03:54	0° $\searrow$ 10'28	40.67810 AU	evening set	13572 Dec 01 21:33	8° $\searrow$ 04'01	
	13566 Jun 21 12:48	30° $\nearrow$		max. Earth dist.	13572 Dec 15 14:58	8° $\searrow$ 26'14	41.15751 AU
direct	13566 Aug 31 16:18	29° $\nearrow$ 07'20					
	13566 Nov 08 02:52	0° $\searrow$		conjunction	13572 Dec 17 16:02	8° $\searrow$ 29'34	2°02'27
evening set	13566 Nov 24 10:13	0° $\searrow$ 23'53		minimum elong	13572 Dec 17 15:58	8° $\searrow$ 29'34	2°03'31
max. Earth dist.	13566 Dec 08 12:05	0° $\searrow$ 45'49	42.56771 AU	morning rise	13573 Jan 02 11:28	8° $\searrow$ 55'13	
				retrograde	13573 Mar 30 19:14	10° $\searrow$ 17'32	
conjunction	13566 Dec 10 07:02	0° $\searrow$ 48'39	-0°05'42	opposition	13573 Jun 20 03:29	9° $\searrow$ 10'14	2°20'25
minimum elong	13566 Dec 10 07:02	0° $\searrow$ 48'39	0°04'39	min. Earth dist.	13573 Jun 22 00:39	9° $\searrow$ 07'47	39.03621 AU
behind sun begin	13566 Dec 10 00:42	0° $\searrow$ 48'15		direct	13573 Sep 09 02:18	8° $\searrow$ 02'47	
behind sun end	13566 Dec 10 13:22	0° $\searrow$ 49'02		evening set	13573 Dec 03 13:27	9° $\searrow$ 23'39	
morning rise	13566 Dec 26 05:14	1° $\searrow$ 13'31		max. Earth dist.	13573 Dec 17 05:50	9° $\searrow$ 45'56	40.91517 AU
asc. node	13567 Mar 19 10:35	2° $\searrow$ 32'13					
retrograde	13567 Mar 23 05:00	2° $\searrow$ 32'23		conjunction	13573 Dec 19 06:47	9° $\searrow$ 49'17	2°24'31
opposition	13567 Jun 13 00:08	1° $\searrow$ 26'54	0°05'07	minimum elong	13573 Dec 19 06:43	9° $\searrow$ 49'17	2°25'33
min. Earth dist.	13567 Jun 14 15:46	1° $\searrow$ 24'49	40.45295 AU	morning rise	13574 Jan 04 00:56	10° $\searrow$ 15'01	
direct	13567 Sep 02 03:55	0° $\searrow$ 21'27		retrograde	13574 Apr 01 09:55	11° $\searrow$ 38'02	
evening set	13567 Nov 25 22:49	1° $\searrow$ 38'33		opposition	13574 Jun 21 17:14	10° $\searrow$ 30'26	2°43'45
max. Earth dist.	13567 Dec 09 23:01	2° $\searrow$ 00'30	42.34059 AU	min. Earth dist.	13574 Jun 23 13:50	10° $\searrow$ 27'59	38.79402 AU
				direct	13574 Sep 10 15:07	9° $\searrow$ 22'38	
conjunction	13567 Dec 11 19:45	2° $\searrow$ 03'28	0°15'12	evening set	13574 Dec 05 05:59	10° $\searrow$ 44'16	
minimum elong	13567 Dec 11 19:44	2° $\searrow$ 03'28	0°16'14	max. Earth dist.	13574 Dec 18 19:17	11° $\searrow$ 06'30	40.67201 AU
morning rise	13567 Dec 27 18:02	2° $\searrow$ 28'30					
retrograde	13568 Mar 23 18:05	3° $\searrow$ 47'53		conjunction	13574 Dec 20 21:46	11° $\searrow$ 09'59	2°46'45
opposition	13568 Jun 13 11:54	2° $\searrow$ 42'09	0°27'05	minimum elong	13574 Dec 20 21:41	11° $\searrow$ 09'59	2°47'48
min. Earth dist.	13568 Jun 15 05:27	2° $\searrow$ 39'56	40.22396 AU	morning rise	13575 Jan 05 14:32	11° $\searrow$ 35'48	
direct	13568 Sep 02 14:18	1° $\searrow$ 36'24		retrograde	13575 Apr 03 04:02	12° $\searrow$ 59'34	
evening set	13568 Nov 26 11:51	2° $\searrow$ 54'02		opposition	13575 Jun 23 07:32	11° $\searrow$ 51'38	3°07'17
max. Earth dist.	13568 Dec 10 11:54	3° $\searrow$ 16'07	42.10976 AU	min. Earth dist.	13575 Jun 25 05:27	11° $\searrow$ 49'07	38.55124 AU
				direct	13575 Sep 12 01:31	10° $\searrow$ 43'30	
conjunction	13568 Dec 12 08:51	3° $\searrow$ 19'06	0°36'13	evening set	13575 Dec 06 23:17	12° $\searrow$ 05'57	
minimum elong	13568 Dec 12 08:50	3° $\searrow$ 19'06	0°37'16	max. Earth dist.	13575 Dec 20 11:38	12° $\searrow$ 28'17	40.42823 AU
morning rise	13568 Dec 28 06:55	3° $\searrow$ 44'17					
retrograde	13569 Mar 25 08:58	5° $\searrow$ 04'12		conjunction	13575 Dec 22 13:33	12° $\searrow$ 31'45	3°09'10
opposition	13569 Jun 14 23:56	3° $\searrow$ 58'11	0°49'17	minimum elong	13575 Dec 22 13:28	12° $\searrow$ 31'44	3°10'12
min. Earth dist.	13569 Jun 16 17:27	3° $\searrow$ 55'58	39.99139 AU	morning rise	13576 Jan 07 04:23	12° $\searrow$ 57'37	
direct	13569 Sep 03 23:47	2° $\searrow$ 52'07		retrograde	13576 Apr 03 20:54	14° $\searrow$ 22'11	
evening set	13569 Nov 28 01:26	4° $\searrow$ 10'20		opposition	13576 Jun 23 22:04	13° $\searrow$ 13'58	3°31'01
max. Earth dist.	13569 Dec 11 22:57	4° $\searrow$ 32'23	41.87543 AU	min. Earth dist.	13576 Jun 25 19:44	13° $\searrow$ 11'26	38.30783 AU
				direct	13576 Sep 12 14:55	12° $\searrow$ 05'30	
conjunction	13569 Dec 13 21:58	4° $\searrow$ 35'32	0°57'28	evening set	13576 Dec 07 17:29	13° $\searrow$ 28'50	
minimum elong	13569 Dec 13 21:57	4° $\searrow$ 35'32	0°58'30	max. Earth dist.	13576 Dec 21 02:17	13° $\searrow$ 51'05	40.18373 AU
morning rise	13569 Dec 29 19:51	5° $\searrow$ 00'50					
retrograde	13570 Mar 27 00:42	6° $\searrow$ 21'19		conjunction	13576 Dec 23 05:37	13° $\searrow$ 54'41	3°31'45
opposition	13570 Jun 16 12:24	5° $\searrow$ 14'59	1°11'43	minimum elong	13576 Dec 23 05:31	13° $\searrow$ 54'40	3°32'47
min. Earth dist.	13570 Jun 18 07:33	5° $\searrow$ 12'41	39.75576 AU	morning rise	13577 Jan 07 18:35	14° $\searrow$ 20'36	

retrograde	13577 Apr 05 16:03	15°346'01		conjunction	13584 Jan 03 13:22	24°311'21	6°13'33
opposition	13577 Jun 25 13:10	14°337'30	3°54'56	minimum elong	13584 Jan 03 13:13	24°311'20	6°14'33
min. Earth dist.	13577 Jun 27 11:42	14°334'55	38.06364 AU	morning rise	13584 Jan 18 03:36	24°337'07	
direct	13577 Sep 14 04:18	13°328'43		retrograde	13584 Apr 16 09:11	26°309'33	
evening set	13577 Dec 09 12:13	14°352'59		opposition	13584 Jul 05 12:38	24°358'37	6°46'33
max. Earth dist.	13577 Dec 22 18:31	15°315'13	39.93787 AU	min. Earth dist.	13584 Jul 07 15:59	24°355'38	36.30134 AU
				direct	13584 Sep 23 20:28	23°347'07	
conjunction	13577 Dec 24 22:12	15°318'52	3°54'29	evening set	13584 Dec 21 00:15	25°319'00	
minimum elong	13577 Dec 24 22:06	15°318'52	3°55'31	max. Earth dist.	13585 Jan 02 00:06	25°340'18	38.16092 AU
morning rise	13578 Jan 09 08:42	15°344'50					
retrograde	13578 Apr 07 08:40	17°311'08		conjunction	13585 Jan 04 09:47	25°344'37	6°37'01
opposition	13578 Jun 27 04:51	16°302'20	4°19'01	minimum elong	13585 Jan 04 09:37	25°344'36	6°38'00
min. Earth dist.	13578 Jun 29 04:22	15°359'40	37.81788 AU	morning rise	13585 Jan 18 19:21	26°310'16	
direct	13578 Sep 15 20:45	14°353'14		retrograde	13585 Apr 18 05:58	27°343'53	
evening set	13578 Dec 11 08:01	16°318'27		opposition	13585 Jul 07 07:51	26°332'32	7°11'29
max. Earth dist.	13578 Dec 24 11:02	16°340'38	39.69025 AU	min. Earth dist.	13585 Jul 09 12:10	26°329'29	36.04519 AU
				direct	13585 Sep 25 15:39	25°320'37	
conjunction	13578 Dec 26 15:24	16°344'22	4°17'22	evening set	13585 Dec 23 01:55	26°353'46	
minimum elong	13578 Dec 26 15:17	16°344'22	4°18'23	max. Earth dist.	13586 Jan 03 21:12	27°314'54	37.90339 AU
morning rise	13579 Jan 10 23:21	17°310'22					
retrograde	13579 Apr 09 03:13	18°337'35		conjunction	13586 Jan 06 06:33	27°319'14	7°00'31
opposition	13579 Jun 28 20:49	17°328'29	4°43'15	minimum elong	13586 Jan 06 06:23	27°319'13	7°01'30
min. Earth dist.	13579 Jun 30 20:26	17°325'48	37.57018 AU	morning rise	13586 Jan 20 11:09	27°344'44	
direct	13579 Sep 17 11:59	16°319'02		retrograde	13586 Apr 20 02:52	29°319'35	
evening set	13579 Dec 13 04:40	17°345'16		opposition	13586 Jul 09 03:30	28°307'51	7°36'26
max. Earth dist.	13579 Dec 26 03:05	18°307'18	39.44015 AU	min. Earth dist.	13586 Jul 11 07:00	28°304'49	35.78982 AU
				direct	13586 Sep 27 10:37	26°355'29	
conjunction	13579 Dec 28 09:13	18°311'11	4°40'22	evening set	13586 Dec 25 04:43	28°329'58	
minimum elong	13579 Dec 28 09:05	18°311'11	4°41'24	max. Earth dist.	13587 Jan 05 17:32	28°350'49	37.64667 AU
morning rise	13580 Jan 12 14:17	18°337'11					
retrograde	13580 Apr 09 21:18	20°305'23		conjunction	13587 Jan 08 04:02	28°355'16	7°24'01
opposition	13580 Jun 29 13:32	18°355'57	5°07'40	minimum elong	13587 Jan 08 03:50	28°355'15	7°24'58
min. Earth dist.	13580 Jul 01 15:00	18°353'09	37.31996 AU	morning rise	13587 Jan 22 03:22	29°320'36	
direct	13580 Sep 18 02:02	17°346'08			13587 Feb 14 12:08	0°≈	
evening set	13580 Dec 14 02:05	19°313'24		retrograde	13587 Apr 22 00:30	0°≈56'45	
max. Earth dist.	13580 Dec 26 21:26	19°335'23	39.18756 AU		13587 Jun 30 02:18	30°R3	
				opposition	13587 Jul 10 23:47	29°344'37	8°01'24
conjunction	13580 Dec 29 03:34	19°339'18	5°03'31	min. Earth dist.	13587 Jul 13 04:21	29°341'30	35.53568 AU
minimum elong	13580 Dec 29 03:26	19°339'18	5°04'32	direct	13587 Sep 29 03:39	28°331'49	
morning rise	13581 Jan 13 05:17	20°305'17			13587 Dec 23 00:53	0°≈	
retrograde	13581 Apr 11 16:45	21°334'29		evening set	13587 Dec 27 08:30	0°≈07'43	
opposition	13581 Jul 01 06:31	20°324'42	5°32'13	max. Earth dist.	13588 Jan 07 16:42	0°≈28'24	37.39130 AU
min. Earth dist.	13581 Jul 03 07:52	20°321'53	37.06741 AU				
direct	13581 Sep 19 17:30	19°314'29		conjunction	13588 Jan 10 02:18	0°≈32'49	7°47'28
evening set	13581 Dec 16 00:25	20°342'50		minimum elong	13588 Jan 10 02:06	0°≈32'48	7°48'26
max. Earth dist.	13581 Dec 28 14:07	21°304'37	38.93278 AU	morning rise	13588 Jan 23 19:47	0°≈57'55	
				retrograde	13588 Apr 22 23:43	2°≈35'27	
conjunction	13581 Dec 30 22:17	21°308'42	5°26'46	opposition	13588 Jul 11 20:41	1°≈22'56	8°26'19
minimum elong	13581 Dec 30 22:08	21°308'42	5°27'47	min. Earth dist.	13588 Jul 14 00:33	1°≈19'50	35.28295 AU
morning rise	13582 Jan 14 20:37	21°334'38		direct	13588 Sep 29 22:19	0°≈09'42	
retrograde	13582 Apr 13 15:15	23°304'53		evening set	13588 Dec 28 13:28	1°≈47'05	
opposition	13582 Jul 03 00:08	21°354'44	5°56'53	max. Earth dist.	13589 Jan 08 14:11	2°≈07'24	37.13731 AU
min. Earth dist.	13582 Jul 05 02:53	21°351'49	36.81312 AU				
direct	13582 Sep 21 07:33	20°344'06		conjunction	13589 Jan 11 01:00	2°≈11'57	8°10'52
evening set	13582 Dec 17 23:18	22°313'34		minimum elong	13589 Jan 11 00:47	2°≈11'56	8°11'48
max. Earth dist.	13582 Dec 30 09:33	22°335'16	38.67631 AU	morning rise	13589 Jan 24 12:28	2°≈36'49	
				retrograde	13589 Apr 25 01:29	4°≈15'47	
conjunction	13583 Jan 01 17:34	22°339'23	5°50'07	opposition	13589 Jul 13 18:09	3°≈02'53	8°51'11
minimum elong	13583 Jan 01 17:25	22°339'22	5°51'07	min. Earth dist.	13589 Jul 15 22:43	2°≈59'43	35.03169 AU
morning rise	13583 Jan 16 11:53	23°305'14		direct	13589 Oct 01 16:16	1°≈49'13	
retrograde	13583 Apr 15 11:01	24°336'34		evening set	13589 Dec 30 19:23	3°≈28'10	
opposition	13583 Jul 04 18:14	23°326'02	6°21'41	max. Earth dist.	13590 Jan 10 14:11	3°≈48'13	36.88443 AU
min. Earth dist.	13583 Jul 06 21:14	23°323'05	36.55747 AU				
direct	13583 Sep 23 01:18	22°314'58		conjunction	13590 Jan 13 00:35	3°≈52'46	8°34'10
evening set	13583 Dec 19 23:23	23°345'37		minimum elong	13590 Jan 13 00:22	3°≈52'45	8°35'06
max. Earth dist.	13584 Jan 01 04:19	24°307'07	38.41886 AU	morning rise	13590 Jan 26 05:20	4°≈17'22	
				retrograde	13590 Apr 27 02:49	5°≈57'49	

opposition	13590 Jul 15 16:22	4°44'33"	9°15'57"	max. Earth dist.	13597 Jan 23 05:29	16°22'16"	35.13179 AU
min. Earth dist.	13590 Jul 17 21:10	4°41'21"	34.78138 AU				
direct	13590 Oct 03 14:21	3°30'28"		conjunction	13597 Jan 25 17:57	16°27'18"	11°12'17"
evening set	13591 Jan 02 02:39	5°11'03"		minimum elong	13597 Jan 25 17:42	16°27'16"	11°13'05"
max. Earth dist.	13591 Jan 12 13:46	5°30'41"	36.63234 AU	morning rise	13597 Feb 05 11:22	16°48'40"	
				retrograde	13597 May 10 05:02	18°41'18"	
conjunction	13591 Jan 15 00:46	5°35'20"	8°57'21"	opposition	13597 Jul 27 23:18	17°25'03"	12°04'06"
minimum elong	13591 Jan 15 00:32	5°35'18"	8°58'16"	min. Earth dist.	13597 Jul 30 05:37	17°21'36"	33.05018 AU
morning rise	13591 Jan 27 22:37	5°59'36"		direct	13597 Oct 15 12:29	16°07'39"	
retrograde	13591 Apr 29 06:50	7°41'37"		evening set	13598 Jan 17 15:49	18°01'26"	
opposition	13591 Jul 17 15:13	6°27'57"	9°40'37"	max. Earth dist.	13598 Jan 25 10:39	18°17'04"	34.88872 AU
min. Earth dist.	13591 Jul 19 20:01	6°24'45"	34.53169 AU				
direct	13591 Oct 05 13:12	5°13'26"		conjunction	13598 Jan 27 23:14	18°22'10"	11°33'39"
evening set	13592 Jan 04 11:07	6°55'43"		minimum elong	13598 Jan 27 22:59	18°22'08"	11°34'26"
max. Earth dist.	13592 Jan 14 14:05	7°14'53"	36.38033 AU	morning rise	13598 Feb 07 06:07	18°42'51"	
				retrograde	13598 May 12 13:21	20°37'31"	
conjunction	13592 Jan 17 01:55	7°19'38"	9°20'25"	opposition	13598 Jul 30 03:05	19°20'49"	12°26'47"
minimum elong	13592 Jan 17 01:41	7°19'37"	9°21'19"	min. Earth dist.	13598 Aug 01 08:40	19°17'24"	32.81173 AU
morning rise	13592 Jan 29 16:17	7°43'34"		direct	13598 Oct 17 15:35	18°02'56"	
retrograde	13592 Apr 30 08:42	9°27'11"		evening set	13599 Jan 20 09:01	19°58'55"	
opposition	13592 Jul 18 14:49	8°13'07"	10°05'08"	max. Earth dist.	13599 Jan 27 17:13	20°13'48"	34.64952 AU
min. Earth dist.	13592 Jul 20 20:55	8°09'48"	34.28211 AU				
direct	13592 Oct 06 11:36	6°58'09"		conjunction	13599 Jan 30 05:23	20°18'55"	11°54'31"
evening set	13593 Jan 05 20:54	8°42'10"		minimum elong	13599 Jan 30 05:08	20°18'53"	11°55'15"
max. Earth dist.	13593 Jan 15 16:04	9°00'54"	36.12859 AU	morning rise	13599 Feb 09 01:04	20°38'51"	
				retrograde	13599 May 14 20:10	22°35'37"	
conjunction	13593 Jan 18 03:45	9°05'42"	9°43'18"	opposition	13599 Aug 01 07:49	21°18'31"	12°48'56"
minimum elong	13593 Jan 18 03:31	9°05'40"	9°44'10"	min. Earth dist.	13599 Aug 03 13:35	21°15'03"	32.57748 AU
morning rise	13593 Jan 30 10:06	9°29'12"		direct	13599 Oct 19 18:59	20°00'10"	
retrograde	13593 May 02 10:40	11°14'30"		evening set	13600 Jan 23 03:54	21°58'27"	
opposition	13593 Jul 20 15:05	10°00'01"	10°29'29"	max. Earth dist.	13600 Jan 30 01:13	22°12'33"	34.41498 AU
min. Earth dist.	13593 Jul 22 20:33	9°56'43"	34.03291 AU				
direct	13593 Oct 08 11:21	8°44'35"		conjunction	13600 Feb 01 12:21	22°17'37"	12°14'51"
evening set	13594 Jan 08 07:38	10°30'24"		minimum elong	13600 Feb 01 12:07	22°17'36"	12°15'34"
max. Earth dist.	13594 Jan 17 16:59	10°48'31"	35.87722 AU	morning rise	13600 Feb 10 20:10	22°36'45"	
				retrograde	13600 May 16 05:25	24°35'42"	
conjunction	13594 Jan 20 06:04	10°53'28"	10°05'58"	opposition	13600 Aug 02 13:06	23°18'13"	13°10'29"
minimum elong	13594 Jan 20 05:50	10°53'27"	10°06'50"	min. Earth dist.	13600 Aug 04 17:28	23°14'49"	32.34809 AU
morning rise	13594 Feb 01 04:06	11°16'32"		direct	13600 Oct 21 00:01	21°59'25"	
retrograde	13594 May 04 13:37	13°03'34"		evening set	13601 Jan 25 00:05	24°00'06"	
opposition	13594 Jul 22 16:12	11°48'39"	10°53'36"	max. Earth dist.	13601 Jan 31 08:46	24°13'15"	34.18535 AU
min. Earth dist.	13594 Jul 24 22:52	11°45'15"	33.78448 AU				
direct	13594 Oct 10 09:07	10°32'44"		conjunction	13601 Feb 02 20:07	24°18'23"	12°34'34"
evening set	13595 Jan 10 19:45	12°20'25"		minimum elong	13601 Feb 02 19:53	24°18'22"	12°35'15"
max. Earth dist.	13595 Jan 19 21:12	12°38'04"	35.62687 AU	morning rise	13601 Feb 11 15:33	24°36'37"	
				retrograde	13601 May 18 14:38	26°37'52"	
conjunction	13595 Jan 22 09:23	12°42'59"	10°28'24"	opposition	13601 Aug 04 19:28	25°20'00"	13°31'22"
minimum elong	13595 Jan 22 09:08	12°42'58"	10°29'14"	min. Earth dist.	13601 Aug 07 00:15	25°16'33"	32.12371 AU
morning rise	13595 Feb 02 22:19	13°05'32"		direct	13601 Oct 23 02:37	24°00'48"	
retrograde	13595 May 06 17:00	14°54'22"					
opposition	13595 Jul 24 17:46	13°39'01"	11°17'27"				
min. Earth dist.	13595 Jul 26 23:47	13°35'38"	33.53737 AU				
direct	13595 Oct 12 09:18	12°22'36"					
evening set	13596 Jan 13 09:14	14°12'14"					
max. Earth dist.	13596 Jan 21 23:57	14°29'11"	35.37819 AU				
conjunction	13596 Jan 24 13:17	14°34'15"	10°50'31"				
minimum elong	13596 Jan 24 13:02	14°34'14"	10°51'21"				
morning rise	13596 Feb 04 16:54	14°56'15"					
	13596 Feb 06 15:07	15°					
retrograde	13596 May 07 23:11	16°46'56"					
opposition	13596 Jul 25 20:10	15°31'08"	11°40'58"				
min. Earth dist.	13596 Jul 28 02:45	15°27'42"	33.29242 AU				
	13596 Aug 15 23:15	15°					
direct	13596 Oct 13 09:11	14°14'13"					
	13596 Dec 09 03:26	15°					
evening set	13597 Jan 14 23:46	16°05'53"					