

opposition	2100 Mar 06 11:44	15° $\mathring{M}$ 57'59	0°59'37	evening set	2106 Sep 07 14:36	29° $\mathring{M}$ 36'37	
min. Earth dist.	2100 Mar 07 05:55	15° $\mathring{M}$ 56'43	29.21725 AU		2106 Sep 18 06:01	0° $\underline{A}$	
direct	2100 May 25 15:41	14° $\mathring{M}$ 32'57					
evening set	2100 Aug 24 13:31	16° $\mathring{M}$ 29'00		conjunction	2106 Sep 23 13:39	0° $\underline{A}$ 11'51	1°15'04
				minimum elong	2106 Sep 23 13:39	0° $\underline{A}$ 11'51	1°15'04
conjunction	2100 Sep 09 15:34	17° $\mathring{M}$ 04'28	0°57'27	max. Earth dist.	2106 Sep 22 16:23	0° $\underline{A}$ 09'52	31.25370 AU
minimum elong	2100 Sep 09 15:34	17° $\mathring{M}$ 04'28	0°57'28	morning rise	2106 Oct 09 09:07	0° $\underline{A}$ 46'47	
max. Earth dist.	2100 Sep 08 18:42	17° $\mathring{M}$ 02'32	31.21997 AU	retrograde	2107 Jan 04 03:01	2° $\underline{A}$ 38'42	
morning rise	2100 Sep 25 14:35	17° $\mathring{M}$ 39'41		opposition	2107 Mar 22 12:40	1° $\underline{A}$ 16'34	1°21'33
retrograde	2100 Dec 21 16:33	19° $\mathring{M}$ 32'00		min. Earth dist.	2107 Mar 23 08:35	1° $\underline{A}$ 15'11	29.25829 AU
opposition	2101 Mar 08 22:06	18° $\mathring{M}$ 09'47	1°03'03		2107 May 18 21:56	30° $\mathring{R}$ $\mathring{M}$	
min. Earth dist.	2101 Mar 09 16:06	18° $\mathring{M}$ 08'32	29.22339 AU	direct	2107 Jun 11 05:49	29° $\mathring{M}$ 51'26	
direct	2101 May 28 04:58	16° $\mathring{M}$ 44'43			2107 Jul 04 06:32	0° $\underline{A}$	
evening set	2101 Aug 27 02:00	18° $\mathring{M}$ 40'47		evening set	2107 Sep 10 02:38	1° $\underline{A}$ 47'29	
max. Earth dist.	2101 Sep 11 07:05	19° $\mathring{M}$ 14'18	31.22554 AU	max. Earth dist.	2107 Sep 25 02:33	2° $\underline{A}$ 20'35	31.26160 AU
conjunction	2101 Sep 12 03:41	19° $\mathring{M}$ 16'13	1°00'38	conjunction	2107 Sep 26 00:59	2° $\underline{A}$ 22'40	1°17'38
minimum elong	2101 Sep 12 03:41	19° $\mathring{M}$ 16'13	1°00'37	minimum elong	2107 Sep 26 00:59	2° $\underline{A}$ 22'40	1°17'38
morning rise	2101 Sep 28 01:59	19° $\mathring{M}$ 51'23		morning rise	2107 Oct 11 20:00	2° $\underline{A}$ 57'34	
retrograde	2101 Dec 24 01:54	21° $\mathring{M}$ 43'37		retrograde	2108 Jan 06 14:04	4° $\underline{A}$ 49'29	
opposition	2102 Mar 11 08:34	20° $\mathring{M}$ 21'24	1°06'24	opposition	2108 Mar 23 23:12	3° $\underline{A}$ 27'24	1°24'14
min. Earth dist.	2102 Mar 12 04:06	20° $\mathring{M}$ 20'03	29.22866 AU	min. Earth dist.	2108 Mar 24 18:54	3° $\underline{A}$ 26'02	29.26648 AU
direct	2102 May 30 16:57	18° $\mathring{M}$ 56'18		direct	2108 Jun 12 15:30	2° $\underline{A}$ 02'18	
evening set	2102 Aug 29 14:21	20° $\mathring{M}$ 52'21		evening set	2108 Sep 11 14:22	3° $\underline{A}$ 58'23	
conjunction	2102 Sep 14 15:28	21° $\mathring{M}$ 27'44	1°03'43	conjunction	2108 Sep 27 12:17	4° $\underline{A}$ 33'32	1°20'06
minimum elong	2102 Sep 14 15:28	21° $\mathring{M}$ 27'44	1°03'44	minimum elong	2108 Sep 27 12:17	4° $\underline{A}$ 33'32	1°20'07
max. Earth dist.	2102 Sep 13 17:57	21° $\mathring{M}$ 25'45	31.23057 AU	max. Earth dist.	2108 Sep 26 14:48	4° $\underline{A}$ 31'32	31.26972 AU
morning rise	2102 Sep 30 13:22	22° $\mathring{M}$ 02'52		morning rise	2108 Oct 13 06:33	5° $\underline{A}$ 08'24	
retrograde	2102 Dec 26 13:07	23° $\mathring{M}$ 55'00		retrograde	2109 Jan 07 22:45	7° $\underline{A}$ 00'19	
opposition	2103 Mar 13 18:53	22° $\mathring{M}$ 32'48	1°09'39	opposition	2109 Mar 26 09:56	5° $\underline{A}$ 38'19	1°26'49
min. Earth dist.	2103 Mar 14 13:49	22° $\mathring{M}$ 31'29	29.23349 AU	min. Earth dist.	2109 Mar 27 06:33	5° $\underline{A}$ 36'53	29.27449 AU
direct	2103 Jun 02 06:18	21° $\mathring{M}$ 07'39		direct	2109 Jun 15 03:06	4° $\underline{A}$ 13'16	
evening set	2103 Sep 01 02:39	23° $\mathring{M}$ 03'42		evening set	2109 Sep 14 02:16	6° $\underline{A}$ 09'23	
max. Earth dist.	2103 Sep 16 05:31	23° $\mathring{M}$ 37'02	31.23527 AU				
				conjunction	2109 Sep 29 23:28	6° $\underline{A}$ 44'29	1°22'27
conjunction	2103 Sep 17 03:16	23° $\mathring{M}$ 39'02	1°06'42	minimum elong	2109 Sep 29 23:27	6° $\underline{A}$ 44'29	1°22'27
minimum elong	2103 Sep 17 03:15	23° $\mathring{M}$ 39'02	1°06'42	max. Earth dist.	2109 Sep 29 00:42	6° $\underline{A}$ 42'22	31.27751 AU
morning rise	2103 Oct 03 00:30	24° $\mathring{M}$ 14'06		morning rise	2109 Oct 15 17:19	7° $\underline{A}$ 19'18	
retrograde	2103 Dec 28 23:31	26° $\mathring{M}$ 06'11		retrograde	2110 Jan 10 10:22	9° $\underline{A}$ 11'14	
opposition	2104 Mar 15 05:19	24° $\mathring{M}$ 43'58	1°12'47	opposition	2110 Mar 28 20:31	7° $\underline{A}$ 49'17	1°29'15
min. Earth dist.	2104 Mar 16 01:22	24° $\mathring{M}$ 42'34	29.23846 AU	min. Earth dist.	2110 Mar 29 16:39	7° $\underline{A}$ 47'53	29.28197 AU
direct	2104 Jun 03 18:19	23° $\mathring{M}$ 18'48		direct	2110 Jun 17 14:51	6° $\underline{A}$ 24'17	
evening set	2104 Sep 02 14:47	25° $\mathring{M}$ 14'49		evening set	2110 Sep 16 13:59	8° $\underline{A}$ 20'25	
conjunction	2104 Sep 18 14:52	25° $\mathring{M}$ 50'07	1°09'36	conjunction	2110 Oct 02 10:46	8° $\underline{A}$ 55'29	1°24'40
minimum elong	2104 Sep 18 14:52	25° $\mathring{M}$ 50'07	1°09'36	minimum elong	2110 Oct 02 10:45	8° $\underline{A}$ 55'29	1°24'41
max. Earth dist.	2104 Sep 17 17:16	25° $\mathring{M}$ 48'07	31.24051 AU	max. Earth dist.	2110 Oct 01 12:26	8° $\underline{A}$ 53'25	31.28436 AU
morning rise	2104 Oct 04 11:32	26° $\mathring{M}$ 25'08		morning rise	2110 Oct 18 03:55	9° $\underline{A}$ 30'17	
retrograde	2104 Dec 30 09:27	28° $\mathring{M}$ 17'08		retrograde	2111 Jan 12 20:03	11° $\underline{A}$ 22'13	
opposition	2105 Mar 17 15:47	26° $\mathring{M}$ 54'56	1°15'49	opposition	2111 Mar 31 07:25	10° $\underline{A}$ 00'18	1°31'34
min. Earth dist.	2105 Mar 18 11:13	26° $\mathring{M}$ 53'35	29.24406 AU	min. Earth dist.	2111 Apr 01 04:57	9° $\underline{A}$ 58'49	29.28829 AU
direct	2105 Jun 06 07:34	25° $\mathring{M}$ 29'45		direct	2111 Jun 20 02:01	8° $\underline{A}$ 35'20	
evening set	2105 Sep 05 02:43	27° $\mathring{M}$ 25'46		evening set	2111 Sep 19 01:47	10° $\underline{A}$ 31'30	
max. Earth dist.	2105 Sep 20 03:59	27° $\mathring{M}$ 58'58	31.24654 AU				
				conjunction	2111 Oct 04 21:54	11° $\underline{A}$ 06'32	1°26'47
conjunction	2105 Sep 21 02:10	28° $\mathring{M}$ 01'01	1°12'23	minimum elong	2111 Oct 04 21:53	11° $\underline{A}$ 06'31	1°26'46
minimum elong	2105 Sep 21 02:10	28° $\mathring{M}$ 01'01	1°12'22	max. Earth dist.	2111 Oct 03 22:45	11° $\underline{A}$ 04'23	31.29002 AU
morning rise	2105 Oct 06 22:18	28° $\mathring{M}$ 36'00		morning rise	2111 Oct 20 14:34	11° $\underline{A}$ 41'16	
	2105 Nov 21 23:06	0° $\underline{A}$		retrograde	2112 Jan 15 07:22	13° $\underline{A}$ 33'13	
retrograde	2106 Jan 01 18:39	0° $\underline{A}$ 27'58		opposition	2112 Apr 01 18:11	12° $\underline{A}$ 11'20	1°33'45
	2106 Feb 12 12:23	30° $\mathring{R}$ $\mathring{M}$		min. Earth dist.	2112 Apr 02 15:04	12° $\underline{A}$ 09'53	29.29326 AU
opposition	2106 Mar 20 02:17	29° $\mathring{M}$ 05'47	1°18'44	direct	2112 Jun 21 15:11	10° $\underline{A}$ 46'23	
min. Earth dist.	2106 Mar 20 22:07	29° $\mathring{M}$ 04'24	29.25076 AU	evening set	2112 Sep 20 13:28	12° $\underline{A}$ 42'33	
direct	2106 Jun 08 17:57	27° $\mathring{M}$ 40'36		max. Earth dist.	2112 Oct 05 09:36	13° $\underline{A}$ 15'22	31.29426 AU

conjunction	2112 Oct 06 09:02	13° <u>♁</u> 17'33	1°28'45	evening set	2119 Oct 06 19:16	27° <u>♁</u> 57'04	
minimum elong	2112 Oct 06 09:02	13° <u>♁</u> 17'33	1°28'46				
morning rise	2112 Oct 22 01:04	13° <u>♁</u> 52'15		conjunction	2119 Oct 22 11:05	28° <u>♁</u> 31'49	1°38'54
retrograde	2113 Jan 16 18:23	15° <u>♁</u> 44'12		minimum elong	2119 Oct 22 11:05	28° <u>♁</u> 31'49	1°38'54
opposition	2113 Apr 04 05:12	14° <u>♁</u> 22'19	1°35'47	max. Earth dist.	2119 Oct 21 13:05	28° <u>♁</u> 29'46	31.31231 AU
min. Earth dist.	2113 Apr 05 03:11	14° <u>♁</u> 20'48	29.29700 AU	morning rise	2119 Nov 06 23:25	29° <u>♁</u> 06'17	
direct	2113 Jun 24 03:12	12° <u>♁</u> 57'24			2119 Dec 03 13:45	0° <u>♁</u>	
evening set	2113 Sep 23 00:49	14° <u>♁</u> 53'33		retrograde	2120 Feb 01 12:24	0° <u>♁</u> 58'16	
					2120 Apr 04 19:54	30° <u>♁</u>	
conjunction	2113 Oct 08 19:53	15° <u>♁</u> 28'30	1°30'36	opposition	2120 Apr 19 10:05	29° <u>♁</u> 36'22	1°46'08
minimum elong	2113 Oct 08 19:53	15° <u>♁</u> 28'30	1°30'36	min. Earth dist.	2120 Apr 20 07:20	29° <u>♁</u> 34'55	29.31581 AU
max. Earth dist.	2113 Oct 07 20:32	15° <u>♁</u> 26'20	31.29740 AU	direct	2120 Jul 09 10:52	28° <u>♁</u> 11'34	
morning rise	2113 Oct 24 11:24	16° <u>♁</u> 03'10			2120 Oct 04 18:00	0° <u>♁</u>	
retrograde	2114 Jan 19 04:18	17° <u>♁</u> 55'06		evening set	2120 Oct 08 06:06	0° <u>♁</u> 07'34	
opposition	2114 Apr 06 16:03	16° <u>♁</u> 33'13	1°37'42				
min. Earth dist.	2114 Apr 07 13:41	16° <u>♁</u> 31'44	29.29951 AU	conjunction	2120 Oct 23 21:19	0° <u>♁</u> 42'17	1°39'48
direct	2114 Jun 26 16:54	15° <u>♁</u> 08'18		minimum elong	2120 Oct 23 21:19	0° <u>♁</u> 42'16	1°39'49
evening set	2114 Sep 25 12:16	17° <u>♁</u> 04'26		max. Earth dist.	2120 Oct 22 23:21	0° <u>♁</u> 40'13	31.31716 AU
max. Earth dist.	2114 Oct 10 06:32	17° <u>♁</u> 37'06	31.29944 AU	morning rise	2120 Nov 08 09:17	1° <u>♁</u> 16'43	
				retrograde	2121 Feb 02 23:48	3° <u>♁</u> 08'45	
conjunction	2114 Oct 11 06:42	17° <u>♁</u> 39'21	1°32'19	opposition	2121 Apr 21 21:15	1° <u>♁</u> 46'54	1°47'01
minimum elong	2114 Oct 11 06:42	17° <u>♁</u> 39'21	1°32'20	min. Earth dist.	2121 Apr 22 17:15	1° <u>♁</u> 45'32	29.32069 AU
morning rise	2114 Oct 26 21:44	18° <u>♁</u> 13'59		direct	2121 Jul 11 23:45	0° <u>♁</u> 22'10	
retrograde	2115 Jan 21 13:38	20° <u>♁</u> 05'54		evening set	2121 Oct 10 16:44	2° <u>♁</u> 18'10	
opposition	2115 Apr 09 02:52	18° <u>♁</u> 44'01	1°39'28	max. Earth dist.	2121 Oct 25 09:43	2° <u>♁</u> 50'48	31.32190 AU
min. Earth dist.	2115 Apr 10 01:01	18° <u>♁</u> 42'29	29.30132 AU				
direct	2115 Jun 29 03:43	17° <u>♁</u> 19'05		conjunction	2121 Oct 26 07:29	2° <u>♁</u> 52'50	1°40'34
evening set	2115 Sep 27 23:29	19° <u>♁</u> 15'11		minimum elong	2121 Oct 26 07:29	2° <u>♁</u> 52'50	1°40'33
				morning rise	2121 Nov 10 18:58	3° <u>♁</u> 27'15	
conjunction	2115 Oct 13 17:30	19° <u>♁</u> 50'04	1°33'55	retrograde	2122 Feb 05 11:26	5° <u>♁</u> 19'21	
minimum elong	2115 Oct 13 17:30	19° <u>♁</u> 50'04	1°33'54	opposition	2122 Apr 24 08:37	3° <u>♁</u> 57'31	1°47'45
max. Earth dist.	2115 Oct 12 18:21	19° <u>♁</u> 47'54	31.30101 AU	min. Earth dist.	2122 Apr 25 05:21	3° <u>♁</u> 56'06	29.32528 AU
morning rise	2115 Oct 29 07:53	20° <u>♁</u> 24'39		direct	2122 Jul 14 11:20	2° <u>♁</u> 32'51	
retrograde	2116 Jan 23 21:38	22° <u>♁</u> 16'33		evening set	2122 Oct 13 03:29	4° <u>♁</u> 28'51	
opposition	2116 Apr 10 13:53	20° <u>♁</u> 54'39	1°41'06				
min. Earth dist.	2116 Apr 11 12:01	20° <u>♁</u> 53'08	29.30278 AU	conjunction	2122 Oct 28 17:46	5° <u>♁</u> 03'29	1°41'10
direct	2116 Jun 30 16:21	19° <u>♁</u> 29'43		minimum elong	2122 Oct 28 17:46	5° <u>♁</u> 03'29	1°41'10
evening set	2116 Sep 29 10:35	21° <u>♁</u> 25'46		max. Earth dist.	2122 Oct 27 20:28	5° <u>♁</u> 01'30	31.32610 AU
max. Earth dist.	2116 Oct 14 03:55	21° <u>♁</u> 58'23	31.30257 AU	morning rise	2122 Nov 13 04:46	5° <u>♁</u> 37'53	
				retrograde	2123 Feb 07 21:34	7° <u>♁</u> 30'01	
conjunction	2116 Oct 15 03:52	22° <u>♁</u> 00'37	1°35'22	opposition	2123 Apr 26 19:54	6° <u>♁</u> 08'13	1°48'19
minimum elong	2116 Oct 15 03:51	22° <u>♁</u> 00'37	1°35'23	min. Earth dist.	2123 Apr 27 16:06	6° <u>♁</u> 06'50	29.32890 AU
morning rise	2116 Oct 30 17:52	22° <u>♁</u> 35'11		direct	2123 Jul 17 00:44	4° <u>♁</u> 43'36	
retrograde	2117 Jan 25 08:19	24° <u>♁</u> 27'05		evening set	2123 Oct 15 14:20	6° <u>♁</u> 39'35	
opposition	2117 Apr 13 00:52	23° <u>♁</u> 05'09	1°42'35	max. Earth dist.	2123 Oct 30 06:01	7° <u>♁</u> 12'09	31.32914 AU
min. Earth dist.	2117 Apr 13 22:16	23° <u>♁</u> 03'41	29.30472 AU				
direct	2117 Jul 03 02:31	21° <u>♁</u> 40'13		conjunction	2123 Oct 31 04:00	7° <u>♁</u> 14'12	1°41'38
evening set	2117 Oct 01 21:29	23° <u>♁</u> 36'15		minimum elong	2123 Oct 31 04:00	7° <u>♁</u> 14'12	1°41'37
				morning rise	2123 Nov 15 14:37	7° <u>♁</u> 48'34	
conjunction	2117 Oct 17 14:24	24° <u>♁</u> 11'03	1°36'41	retrograde	2124 Feb 10 08:10	9° <u>♁</u> 40'45	
minimum elong	2117 Oct 17 14:24	24° <u>♁</u> 11'03	1°36'41	opposition	2124 Apr 28 07:30	8° <u>♁</u> 18'57	1°48'44
max. Earth dist.	2117 Oct 16 15:52	24° <u>♁</u> 08'57	31.30481 AU	min. Earth dist.	2124 Apr 29 03:56	8° <u>♁</u> 17'34	29.33140 AU
morning rise	2117 Nov 02 03:43	24° <u>♁</u> 45'35		direct	2124 Jul 18 11:39	6° <u>♁</u> 54'23	
retrograde	2118 Jan 27 16:03	26° <u>♁</u> 37'29		evening set	2124 Oct 17 00:51	8° <u>♁</u> 50'20	
opposition	2118 Apr 15 11:52	25° <u>♁</u> 15'33	1°43'55				
min. Earth dist.	2118 Apr 16 09:39	25° <u>♁</u> 14'04	29.30746 AU	conjunction	2124 Nov 01 14:10	9° <u>♁</u> 24'55	1°41'57
direct	2118 Jul 05 14:11	23° <u>♁</u> 50'39		minimum elong	2124 Nov 01 14:10	9° <u>♁</u> 24'55	1°41'57
evening set	2118 Oct 04 08:28	25° <u>♁</u> 46'39		max. Earth dist.	2124 Oct 31 17:17	9° <u>♁</u> 22'58	31.33089 AU
max. Earth dist.	2118 Oct 19 01:35	26° <u>♁</u> 19'16	31.30813 AU	morning rise	2124 Nov 17 00:14	9° <u>♁</u> 59'16	
				retrograde	2125 Feb 11 17:06	11° <u>♁</u> 51'29	
conjunction	2118 Oct 20 00:43	26° <u>♁</u> 21'25	1°37'52	opposition	2125 Apr 30 19:10	10° <u>♁</u> 29'42	1°49'00
minimum elong	2118 Oct 20 00:42	26° <u>♁</u> 21'25	1°37'53	min. Earth dist.	2125 May 01 15:41	10° <u>♁</u> 28'18	29.33236 AU
morning rise	2118 Nov 04 13:42	26° <u>♁</u> 55'55		direct	2125 Jul 21 01:10	9° <u>♁</u> 05'09	
retrograde	2119 Jan 30 02:55	28° <u>♁</u> 47'51		evening set	2125 Oct 19 11:34	11° <u>♁</u> 01'03	
opposition	2119 Apr 17 22:51	27° <u>♁</u> 25'56	1°45'06	max. Earth dist.	2125 Nov 03 02:21	11° <u>♁</u> 33'34	31.33116 AU
min. Earth dist.	2119 Apr 18 19:22	27° <u>♁</u> 24'32	29.31126 AU				
direct	2119 Jul 08 01:03	26° <u>♁</u> 01'04		conjunction	2125 Nov 04 00:16	11° <u>♁</u> 35'37	1°42'07

minimum elong	2125 Nov 04 00:16	11° <del>ℳ</del> 35'37	1°42'07	min. Earth dist.	2132 May 16 22:10	25° <del>ℳ</del> 41'23	29.32029 AU
morning rise	2125 Nov 19 10:06	12° <del>ℳ</del> 09'56		direct	2132 Aug 05 10:13	24° <del>ℳ</del> 18'09	
retrograde	2126 Feb 14 04:13	14° <del>ℳ</del> 02'11		evening set	2132 Nov 03 10:33	26° <del>ℳ</del> 13'42	
opposition	2126 May 03 06:36	12° <del>ℳ</del> 40'22	1°49'07				
min. Earth dist.	2126 May 04 02:35	12° <del>ℳ</del> 39'00	29.33197 AU	conjunction	2132 Nov 18 20:29	26° <del>ℳ</del> 48'07	1°39'18
direct	2126 Jul 23 12:07	11° <del>ℳ</del> 15'50		minimum elong	2132 Nov 18 20:29	26° <del>ℳ</del> 48'07	1°39'19
evening set	2126 Oct 21 22:01	13° <del>ℳ</del> 11'41		max. Earth dist.	2132 Nov 18 02:18	26° <del>ℳ</del> 46'24	31.31910 AU
				morning rise	2132 Dec 04 04:02	27° <del>ℳ</del> 22'20	
conjunction	2126 Nov 06 10:28	13° <del>ℳ</del> 46'13	1°42'09	retrograde	2133 Mar 01 04:03	29° <del>ℳ</del> 15'00	
minimum elong	2126 Nov 06 10:28	13° <del>ℳ</del> 46'13	1°42'10	opposition	2133 May 18 17:01	27° <del>ℳ</del> 53'00	1°45'34
max. Earth dist.	2126 Nov 05 13:38	13° <del>ℳ</del> 44'16	31.33004 AU	min. Earth dist.	2133 May 19 09:45	27° <del>ℳ</del> 51'52	29.32007 AU
morning rise	2126 Nov 21 19:46	14° <del>ℳ</del> 20'31		direct	2133 Aug 07 20:54	26° <del>ℳ</del> 28'41	
	2126 Dec 10 18:19	15° <del>ℳ</del>		evening set	2133 Nov 05 20:23	28° <del>ℳ</del> 24'13	
retrograde	2127 Feb 16 12:07	16° <del>ℳ</del> 12'49					
	2127 Apr 30 05:07	15° <del>ℳ</del>		conjunction	2133 Nov 21 06:08	28° <del>ℳ</del> 58'37	1°38'19
opposition	2127 May 05 18:21	14° <del>ℳ</del> 50'57	1°49'04	minimum elong	2133 Nov 21 06:09	28° <del>ℳ</del> 58'37	1°38'19
min. Earth dist.	2127 May 06 14:58	14° <del>ℳ</del> 49'33	29.33020 AU	max. Earth dist.	2133 Nov 20 13:38	28° <del>ℳ</del> 57'04	31.31890 AU
direct	2127 Jul 26 00:17	13° <del>ℳ</del> 26'26		morning rise	2133 Dec 06 13:19	29° <del>ℳ</del> 32'50	
	2127 Oct 13 22:47	15° <del>ℳ</del>			2133 Dec 19 07:01	0° <del>ℳ</del>	
evening set	2127 Oct 24 08:27	15° <del>ℳ</del> 22'12		retrograde	2134 Mar 03 13:40	1° <del>ℳ</del> 25'36	
				opposition	2134 May 21 04:54	0° <del>ℳ</del> 03'37	1°44'27
conjunction	2127 Nov 08 20:19	15° <del>ℳ</del> 56'43	1°42'02	min. Earth dist.	2134 May 21 21:22	0° <del>ℳ</del> 02'30	29.31966 AU
minimum elong	2127 Nov 08 20:19	15° <del>ℳ</del> 56'43	1°42'02		2134 May 23 10:21	30° <del>ℳ</del>	
max. Earth dist.	2127 Nov 07 22:53	15° <del>ℳ</del> 54'42	31.32787 AU	direct	2134 Aug 10 10:18	28° <del>ℳ</del> 39'24	
morning rise	2127 Nov 24 05:24	16° <del>ℳ</del> 31'00			2134 Oct 22 16:22	0° <del>ℳ</del>	
retrograde	2128 Feb 18 22:38	18° <del>ℳ</del> 23'19		evening set	2134 Nov 08 06:25	0° <del>ℳ</del> 34'54	
opposition	2128 May 07 05:58	17° <del>ℳ</del> 01'25	1°48'52				
min. Earth dist.	2128 May 08 01:22	17° <del>ℳ</del> 00'05	29.32766 AU	conjunction	2134 Nov 23 15:41	1° <del>ℳ</del> 09'18	1°37'12
direct	2128 Jul 27 11:24	15° <del>ℳ</del> 36'53		minimum elong	2134 Nov 23 15:41	1° <del>ℳ</del> 09'18	1°37'12
evening set	2128 Oct 25 18:38	17° <del>ℳ</del> 32'35		max. Earth dist.	2134 Nov 22 22:35	1° <del>ℳ</del> 07'42	31.31834 AU
max. Earth dist.	2128 Nov 09 09:53	18° <del>ℳ</del> 05'10	31.32511 AU	morning rise	2134 Dec 08 22:47	1° <del>ℳ</del> 43'31	
				retrograde	2135 Mar 06 01:43	3° <del>ℳ</del> 36'23	
conjunction	2128 Nov 10 06:11	18° <del>ℳ</del> 07'05	1°41'47	opposition	2135 May 23 16:59	2° <del>ℳ</del> 14'25	1°43'10
minimum elong	2128 Nov 10 06:11	18° <del>ℳ</del> 07'05	1°41'48	min. Earth dist.	2135 May 24 08:29	2° <del>ℳ</del> 13'22	29.31876 AU
morning rise	2128 Nov 25 14:48	18° <del>ℳ</del> 41'20		direct	2135 Aug 12 21:17	0° <del>ℳ</del> 50'15	
retrograde	2129 Feb 20 08:02	20° <del>ℳ</del> 33'42		evening set	2135 Nov 10 16:12	2° <del>ℳ</del> 45'44	
opposition	2129 May 09 17:45	19° <del>ℳ</del> 11'45	1°48'31	max. Earth dist.	2135 Nov 25 09:36	3° <del>ℳ</del> 18'39	31.31692 AU
min. Earth dist.	2129 May 10 13:43	19° <del>ℳ</del> 10'23	29.32495 AU				
direct	2129 Jul 29 21:29	17° <del>ℳ</del> 47'13		conjunction	2135 Nov 26 01:17	3° <del>ℳ</del> 20'07	1°35'56
evening set	2129 Oct 28 04:40	19° <del>ℳ</del> 42'51		minimum elong	2135 Nov 26 01:18	3° <del>ℳ</del> 20'07	1°35'55
				morning rise	2135 Dec 11 07:59	3° <del>ℳ</del> 54'20	
conjunction	2129 Nov 12 15:47	20° <del>ℳ</del> 17'19	1°41'23	retrograde	2136 Mar 07 09:57	5° <del>ℳ</del> 47'19	
minimum elong	2129 Nov 12 15:47	20° <del>ℳ</del> 17'19	1°41'22	opposition	2136 May 25 05:20	4° <del>ℳ</del> 25'21	1°41'45
max. Earth dist.	2129 Nov 11 19:56	20° <del>ℳ</del> 15'28	31.32260 AU	min. Earth dist.	2136 May 25 21:12	4° <del>ℳ</del> 24'16	29.31676 AU
morning rise	2129 Nov 28 00:11	20° <del>ℳ</del> 51'34		direct	2136 Aug 14 09:18	3° <del>ℳ</del> 01'15	
retrograde	2130 Feb 22 18:56	22° <del>ℳ</del> 43'59		evening set	2136 Nov 12 02:12	4° <del>ℳ</del> 56'40	
opposition	2130 May 12 05:25	21° <del>ℳ</del> 21'59	1°48'01				
min. Earth dist.	2130 May 12 23:43	21° <del>ℳ</del> 20'45	29.32262 AU	conjunction	2136 Nov 27 10:51	5° <del>ℳ</del> 31'03	1°34'32
direct	2130 Aug 01 10:23	19° <del>ℳ</del> 57'29		minimum elong	2136 Nov 27 10:51	5° <del>ℳ</del> 31'03	1°34'32
evening set	2130 Oct 30 14:44	21° <del>ℳ</del> 53'05		max. Earth dist.	2136 Nov 26 18:45	5° <del>ℳ</del> 29'33	31.31440 AU
max. Earth dist.	2130 Nov 14 06:03	22° <del>ℳ</del> 25'43	31.32058 AU	morning rise	2136 Dec 12 17:29	6° <del>ℳ</del> 05'16	
				retrograde	2137 Mar 09 20:52	7° <del>ℳ</del> 58'21	
conjunction	2130 Nov 15 01:26	22° <del>ℳ</del> 27'31	1°40'50	opposition	2137 May 27 17:30	6° <del>ℳ</del> 36'21	1°40'11
minimum elong	2130 Nov 15 01:26	22° <del>ℳ</del> 27'31	1°40'50	min. Earth dist.	2137 May 28 08:05	6° <del>ℳ</del> 35'22	29.31353 AU
morning rise	2130 Nov 30 09:29	23° <del>ℳ</del> 01'46		direct	2137 Aug 16 20:07	5° <del>ℳ</del> 12'18	
retrograde	2131 Feb 25 06:31	24° <del>ℳ</del> 54'15		evening set	2137 Nov 14 11:59	7° <del>ℳ</del> 07'40	
opposition	2131 May 14 17:10	23° <del>ℳ</del> 32'13	1°47'21				
min. Earth dist.	2131 May 15 11:34	23° <del>ℳ</del> 30'59	29.32109 AU	conjunction	2137 Nov 29 20:29	7° <del>ℳ</del> 42'03	1°32'59
direct	2131 Aug 03 21:23	22° <del>ℳ</del> 07'46		minimum elong	2137 Nov 29 20:29	7° <del>ℳ</del> 42'03	1°32'59
evening set	2131 Nov 02 00:41	24° <del>ℳ</del> 03'20		max. Earth dist.	2137 Nov 29 05:12	7° <del>ℳ</del> 40'36	31.31037 AU
				morning rise	2137 Dec 15 02:52	8° <del>ℳ</del> 16'16	
conjunction	2131 Nov 17 11:05	24° <del>ℳ</del> 37'46	1°40'08	retrograde	2138 Mar 12 06:50	10° <del>ℳ</del> 09'26	
minimum elong	2131 Nov 17 11:05	24° <del>ℳ</del> 37'46	1°40'08	opposition	2138 May 30 05:54	8° <del>ℳ</del> 47'23	1°38'28
max. Earth dist.	2131 Nov 16 16:57	24° <del>ℳ</del> 36'04	31.31955 AU	min. Earth dist.	2138 May 30 21:14	8° <del>ℳ</del> 46'21	29.30873 AU
morning rise	2131 Dec 02 18:47	25° <del>ℳ</del> 11'59		direct	2138 Aug 19 06:11	7° <del>ℳ</del> 23'22	
retrograde	2132 Feb 27 16:48	27° <del>ℳ</del> 04'33		evening set	2138 Nov 16 21:50	9° <del>ℳ</del> 18'40	
opposition	2132 May 16 05:04	25° <del>ℳ</del> 42'33	1°46'33				

conjunction	2138 Dec 02 06:02	9° $\mathring{A}$ 53'01	1°31'19	direct	2145 Sep 03 18:33	22° $\mathring{A}$ 38'13	
minimum elong	2138 Dec 02 06:02	9° $\mathring{A}$ 53'01	1°31'20	evening set	2145 Dec 01 16:10	24° $\mathring{A}$ 32'58	
max. Earth dist.	2138 Dec 01 15:03	9° $\mathring{A}$ 51'37	31.30490 AU				
morning rise	2138 Dec 17 12:18	10° $\mathring{A}$ 27'15		conjunction	2145 Dec 16 23:04	25° $\mathring{A}$ 07'18	1°16'11
retrograde	2139 Mar 14 17:44	12° $\mathring{A}$ 20'29		minimum elong	2145 Dec 16 23:04	25° $\mathring{A}$ 07'18	1°16'11
opposition	2139 Jun 01 18:09	10° $\mathring{A}$ 58'23	1°36'37	max. Earth dist.	2145 Dec 16 13:36	25° $\mathring{A}$ 06'25	31.25827 AU
min. Earth dist.	2139 Jun 02 08:04	10° $\mathring{A}$ 57'26	29.30242 AU	morning rise	2146 Jan 01 04:54	25° $\mathring{A}$ 41'34	
direct	2139 Aug 21 19:09	9° $\mathring{A}$ 34'21		retrograde	2146 Mar 29 21:47	27° $\mathring{A}$ 35'24	
evening set	2139 Nov 19 07:37	11° $\mathring{A}$ 29'34		opposition	2146 Jun 17 09:07	26° $\mathring{A}$ 12'52	1°20'01
				min. Earth dist.	2146 Jun 17 17:02	26° $\mathring{A}$ 12'20	29.25648 AU
conjunction	2139 Dec 04 15:33	12° $\mathring{A}$ 03'55	1°29'32	direct	2146 Sep 06 05:41	24° $\mathring{A}$ 48'58	
minimum elong	2139 Dec 04 15:33	12° $\mathring{A}$ 03'56	1°29'31	evening set	2146 Dec 04 01:30	26° $\mathring{A}$ 43'42	
max. Earth dist.	2139 Dec 04 00:42	12° $\mathring{A}$ 02'32	31.29801 AU				
morning rise	2139 Dec 19 21:42	12° $\mathring{A}$ 38'09		conjunction	2146 Dec 19 08:18	27° $\mathring{A}$ 18'02	1°13'33
retrograde	2140 Mar 16 05:34	14° $\mathring{A}$ 31'27		minimum elong	2146 Dec 19 08:18	27° $\mathring{A}$ 18'02	1°13'34
opposition	2140 Jun 03 06:39	13° $\mathring{A}$ 09'16	1°34'38	max. Earth dist.	2146 Dec 19 00:03	27° $\mathring{A}$ 17'16	31.25358 AU
min. Earth dist.	2140 Jun 03 20:48	13° $\mathring{A}$ 08'19	29.29509 AU	morning rise	2147 Jan 03 14:03	27° $\mathring{A}$ 52'19	
direct	2140 Aug 23 05:35	11° $\mathring{A}$ 45'14		retrograde	2147 Apr 01 08:13	29° $\mathring{A}$ 46'17	
evening set	2140 Nov 20 17:04	13° $\mathring{A}$ 40'21		opposition	2147 Jun 19 21:51	28° $\mathring{A}$ 23'44	1°17'08
max. Earth dist.	2140 Dec 05 11:23	14° $\mathring{A}$ 13'25	31.29039 AU	min. Earth dist.	2147 Jun 20 06:04	28° $\mathring{A}$ 23'11	29.25175 AU
				direct	2147 Sep 08 15:50	26° $\mathring{A}$ 59'56	
conjunction	2140 Dec 06 00:53	14° $\mathring{A}$ 14'42	1°27'36	evening set	2147 Dec 06 10:55	28° $\mathring{A}$ 54'36	
minimum elong	2140 Dec 06 00:54	14° $\mathring{A}$ 14'42	1°27'37				
morning rise	2140 Dec 21 06:53	14° $\mathring{A}$ 48'54		conjunction	2147 Dec 21 17:37	29° $\mathring{A}$ 28'57	1°10'49
retrograde	2141 Mar 18 15:40	16° $\mathring{A}$ 42'17		minimum elong	2147 Dec 21 17:37	29° $\mathring{A}$ 28'57	1°10'48
opposition	2141 Jun 05 19:01	15° $\mathring{A}$ 20'00	1°32'31	max. Earth dist.	2147 Dec 21 10:14	29° $\mathring{A}$ 28'15	31.24882 AU
min. Earth dist.	2141 Jun 06 07:57	15° $\mathring{A}$ 19'08	29.28713 AU		2148 Jan 04 12:17	0° $\mathring{A}$	
direct	2141 Aug 25 18:22	13° $\mathring{A}$ 55'57		morning rise	2148 Jan 05 23:23	0° $\mathring{A}$ 03'14	
evening set	2141 Nov 23 02:40	15° $\mathring{A}$ 50'58		retrograde	2148 Apr 02 19:37	1° $\mathring{A}$ 57'21	
				opposition	2148 Jun 21 10:33	0° $\mathring{A}$ 34'47	1°14'09
conjunction	2141 Dec 08 10:09	16° $\mathring{A}$ 25'18	1°25'34	min. Earth dist.	2148 Jun 21 17:01	0° $\mathring{A}$ 34'21	29.24662 AU
minimum elong	2141 Dec 08 10:10	16° $\mathring{A}$ 25'18	1°25'33		2148 Jul 13 13:35	30° $\mathring{A}$	
max. Earth dist.	2141 Dec 07 20:34	16° $\mathring{A}$ 24'02	31.28248 AU	direct	2148 Sep 10 03:43	29° $\mathring{A}$ 11'03	
morning rise	2141 Dec 23 16:11	16° $\mathring{A}$ 59'32			2148 Nov 04 16:57	0° $\mathring{A}$	
retrograde	2142 Mar 21 03:24	18° $\mathring{A}$ 52'58		evening set	2148 Dec 07 20:19	1° $\mathring{A}$ 05'41	
opposition	2142 Jun 08 07:16	17° $\mathring{A}$ 30'36	1°30'16				
min. Earth dist.	2142 Jun 08 19:38	17° $\mathring{A}$ 29'45	29.27945 AU	conjunction	2148 Dec 23 02:52	1° $\mathring{A}$ 40'02	1°07'58
direct	2142 Aug 28 05:42	16° $\mathring{A}$ 06'32		minimum elong	2148 Dec 23 02:52	1° $\mathring{A}$ 40'02	1°07'58
evening set	2142 Nov 25 12:06	18° $\mathring{A}$ 01'29		max. Earth dist.	2148 Dec 22 19:42	1° $\mathring{A}$ 39'22	31.24330 AU
				morning rise	2149 Jan 07 08:44	2° $\mathring{A}$ 14'21	
conjunction	2142 Dec 10 19:33	18° $\mathring{A}$ 35'48	1°23'24	retrograde	2149 Apr 05 08:06	4° $\mathring{A}$ 08'37	
minimum elong	2142 Dec 10 19:33	18° $\mathring{A}$ 35'48	1°23'24	opposition	2149 Jun 23 23:26	2° $\mathring{A}$ 46'01	1°11'03
max. Earth dist.	2142 Dec 10 07:58	18° $\mathring{A}$ 34'43	31.27508 AU	min. Earth dist.	2149 Jun 24 06:05	2° $\mathring{A}$ 45'34	29.24068 AU
morning rise	2142 Dec 26 01:19	19° $\mathring{A}$ 10'01		direct	2149 Sep 12 13:12	1° $\mathring{A}$ 22'20	
retrograde	2143 Mar 23 13:35	21° $\mathring{A}$ 03'32		evening set	2149 Dec 10 05:48	3° $\mathring{A}$ 16'56	
opposition	2143 Jun 10 19:45	19° $\mathring{A}$ 41'06	1°27'54				
min. Earth dist.	2143 Jun 11 07:16	19° $\mathring{A}$ 40'19	29.27237 AU	conjunction	2149 Dec 25 12:24	3° $\mathring{A}$ 51'17	1°05'02
direct	2143 Aug 30 19:28	18° $\mathring{A}$ 17'03		minimum elong	2149 Dec 25 12:24	3° $\mathring{A}$ 51'17	1°05'01
evening set	2143 Nov 27 21:30	20° $\mathring{A}$ 11'55		max. Earth dist.	2149 Dec 25 06:29	3° $\mathring{A}$ 50'44	31.23682 AU
				morning rise	2150 Jan 09 18:11	4° $\mathring{A}$ 25'37	
conjunction	2143 Dec 13 04:36	20° $\mathring{A}$ 46'15	1°21'07	retrograde	2150 Apr 07 19:03	6° $\mathring{A}$ 20'01	
minimum elong	2143 Dec 13 04:36	20° $\mathring{A}$ 46'15	1°21'06	opposition	2150 Jun 26 12:08	4° $\mathring{A}$ 57'23	1°07'52
max. Earth dist.	2143 Dec 12 17:01	20° $\mathring{A}$ 45'09	31.26859 AU	min. Earth dist.	2150 Jun 26 17:41	4° $\mathring{A}$ 57'00	29.23344 AU
morning rise	2143 Dec 28 10:29	21° $\mathring{A}$ 20'29		direct	2150 Sep 15 01:14	3° $\mathring{A}$ 33'44	
retrograde	2144 Mar 25 01:32	23° $\mathring{A}$ 14'05		evening set	2150 Dec 12 15:28	5° $\mathring{A}$ 28'17	
opposition	2144 Jun 12 08:13	21° $\mathring{A}$ 51'35	1°25'24				
min. Earth dist.	2144 Jun 12 18:05	21° $\mathring{A}$ 50'55	29.26638 AU	conjunction	2150 Dec 27 21:50	6° $\mathring{A}$ 02'39	1°01'59
direct	2144 Sep 01 06:29	20° $\mathring{A}$ 27'35		minimum elong	2150 Dec 27 21:50	6° $\mathring{A}$ 02'39	1°02'00
evening set	2144 Nov 29 06:49	22° $\mathring{A}$ 22'24		max. Earth dist.	2150 Dec 27 15:31	6° $\mathring{A}$ 02'04	31.22900 AU
				morning rise	2151 Jan 12 03:49	6° $\mathring{A}$ 33'00	
conjunction	2144 Dec 14 13:56	22° $\mathring{A}$ 56'44	1°18'43	retrograde	2151 Apr 10 08:13	8° $\mathring{A}$ 31'31	
minimum elong	2144 Dec 14 13:56	22° $\mathring{A}$ 56'44	1°18'44	opposition	2151 Jun 29 01:07	7° $\mathring{A}$ 08'50	1°04'34
max. Earth dist.	2144 Dec 14 04:13	22° $\mathring{A}$ 55'49	31.26304 AU	min. Earth dist.	2151 Jun 29 06:19	7° $\mathring{A}$ 08'29	29.22500 AU
morning rise	2144 Dec 29 19:38	23° $\mathring{A}$ 30'58		direct	2151 Sep 17 12:20	5° $\mathring{A}$ 45'13	
retrograde	2145 Mar 27 10:25	25° $\mathring{A}$ 24'41		evening set	2151 Dec 15 00:47	7° $\mathring{A}$ 39'42	
opposition	2145 Jun 14 20:41	24° $\mathring{A}$ 02'10	1°22'46				
min. Earth dist.	2145 Jun 15 06:25	24° $\mathring{A}$ 01'30	29.26118 AU	conjunction	2151 Dec 30 07:17	8° $\mathring{A}$ 14'05	0°58'52

minimum elong	2151 Dec 30 07:18	8° $\overline{3}$ 14'05	0°58'52	evening set	2158 Dec 29 18:15	22° $\overline{3}$ 59'19	
max. Earth dist.	2151 Dec 30 02:42	8° $\overline{3}$ 13'39	31.21994 AU				
morning rise	2152 Jan 14 13:12	8° $\overline{3}$ 48'26		conjunction	2159 Jan 14 00:51	23° $\overline{3}$ 33'47	0°34'52
retrograde	2152 Apr 11 19:38	10° $\overline{3}$ 43'04		minimum elong	2159 Jan 14 00:52	23° $\overline{3}$ 33'47	0°34'53
opposition	2152 Jun 30 14:08	9° $\overline{3}$ 20'18	1°01'11	max. Earth dist.	2159 Jan 14 03:03	23° $\overline{3}$ 33'59	31.15776 AU
min. Earth dist.	2152 Jun 30 18:49	9° $\overline{3}$ 19'59	29.21528 AU	morning rise	2159 Jan 29 07:47	24° $\overline{3}$ 08'18	
direct	2152 Sep 19 02:02	7° $\overline{3}$ 56'42		retrograde	2159 Apr 28 02:05	26° $\overline{3}$ 03'46	
evening set	2152 Dec 16 10:19	9° $\overline{3}$ 51'06		opposition	2159 Jul 17 08:30	24° $\overline{3}$ 40'32	0°35'17
				min. Earth dist.	2159 Jul 17 05:44	24° $\overline{3}$ 40'43	29.15460 AU
conjunction	2152 Dec 31 16:39	10° $\overline{3}$ 25'29	0°55'39	direct	2159 Oct 05 09:16	23° $\overline{3}$ 17'07	
minimum elong	2152 Dec 31 16:39	10° $\overline{3}$ 25'29	0°55'40	evening set	2160 Jan 01 03:43	25° $\overline{3}$ 11'04	
max. Earth dist.	2152 Dec 31 11:47	10° $\overline{3}$ 25'02	31.20992 AU				
morning rise	2153 Jan 15 22:51	10° $\overline{3}$ 59'52		conjunction	2160 Jan 16 10:14	25° $\overline{3}$ 45'32	0°31'11
retrograde	2153 Apr 14 08:12	12° $\overline{3}$ 54'36		minimum elong	2160 Jan 16 10:14	25° $\overline{3}$ 45'32	0°31'11
opposition	2153 Jul 03 02:52	11° $\overline{3}$ 31'44	0°57'43	max. Earth dist.	2160 Jan 16 12:23	25° $\overline{3}$ 45'44	31.15134 AU
min. Earth dist.	2153 Jul 03 06:18	11° $\overline{3}$ 31'30	29.20497 AU	morning rise	2160 Jan 31 17:31	26° $\overline{3}$ 20'05	
direct	2153 Sep 21 13:01	10° $\overline{3}$ 08'07		retrograde	2160 Apr 29 15:53	28° $\overline{3}$ 15'43	
evening set	2153 Dec 18 19:35	12° $\overline{3}$ 02'27		opposition	2160 Jul 18 21:39	26° $\overline{3}$ 52'26	0°31'19
				min. Earth dist.	2160 Jul 18 18:20	26° $\overline{3}$ 52'40	29.14817 AU
conjunction	2154 Jan 03 02:04	12° $\overline{3}$ 36'50	0°52'22	direct	2160 Oct 06 19:32	25° $\overline{3}$ 29'05	
minimum elong	2154 Jan 03 02:04	12° $\overline{3}$ 36'50	0°52'22	evening set	2161 Jan 02 13:14	27° $\overline{3}$ 23'00	
max. Earth dist.	2154 Jan 02 22:50	12° $\overline{3}$ 36'32	31.19943 AU				
morning rise	2154 Jan 18 08:16	13° $\overline{3}$ 11'14		conjunction	2161 Jan 17 19:59	27° $\overline{3}$ 57'29	0°27'27
retrograde	2154 Apr 16 17:35	15° $\overline{3}$ 06'04		minimum elong	2161 Jan 17 19:59	27° $\overline{3}$ 57'29	0°27'28
opposition	2154 Jul 05 15:49	13° $\overline{3}$ 43'07	0°54'10	max. Earth dist.	2161 Jan 17 24:00	27° $\overline{3}$ 57'52	31.14467 AU
min. Earth dist.	2154 Jul 05 19:05	13° $\overline{3}$ 42'53	29.19449 AU	morning rise	2161 Feb 02 03:19	28° $\overline{3}$ 32'03	
direct	2154 Sep 24 02:03	12° $\overline{3}$ 19'30			2161 Mar 21 19:05	0° $\approx$	
evening set	2154 Dec 21 04:55	14° $\overline{3}$ 13'44		retrograde	2161 May 02 04:03	0° $\approx$ 27'50	
					2161 Jun 14 01:22	30° $\overline{R}$ $\overline{3}$	
conjunction	2155 Jan 05 11:16	14° $\overline{3}$ 48'08	0°49'00	opposition	2161 Jul 21 10:40	29° $\overline{3}$ 04'31	0°27'18
minimum elong	2155 Jan 05 11:16	14° $\overline{3}$ 48'08	0°49'00	min. Earth dist.	2161 Jul 21 06:53	29° $\overline{3}$ 04'46	29.14115 AU
max. Earth dist.	2155 Jan 05 08:34	14° $\overline{3}$ 47'53	31.18927 AU	direct	2161 Oct 09 07:45	27° $\overline{3}$ 41'12	
morning rise	2155 Jan 20 17:40	15° $\overline{3}$ 22'33		evening set	2162 Jan 04 23:00	29° $\overline{3}$ 35'06	
retrograde	2155 Apr 19 05:25	17° $\overline{3}$ 17'29			2162 Jan 16 00:34	0° $\approx$	
opposition	2155 Jul 08 04:40	15° $\overline{3}$ 54'27	0°50'32				
min. Earth dist.	2155 Jul 08 05:50	15° $\overline{3}$ 54'22	29.18466 AU	conjunction	2162 Jan 20 05:43	0° $\approx$ 09'36	0°23'40
direct	2155 Sep 26 14:13	14° $\overline{3}$ 30'51		minimum elong	2162 Jan 20 05:42	0° $\approx$ 09'36	0°23'40
evening set	2155 Dec 23 14:15	16° $\overline{3}$ 25'00		max. Earth dist.	2162 Jan 20 09:21	0° $\approx$ 09'56	31.13731 AU
				morning rise	2162 Feb 04 13:24	0° $\approx$ 44'11	
conjunction	2156 Jan 07 20:38	16° $\overline{3}$ 59'25	0°45'34	retrograde	2162 May 04 17:39	2° $\approx$ 40'06	
minimum elong	2156 Jan 07 20:38	16° $\overline{3}$ 59'25	0°45'34	opposition	2162 Jul 23 23:51	1° $\approx$ 16'45	0°23'14
max. Earth dist.	2156 Jan 07 19:15	16° $\overline{3}$ 59'17	31.17988 AU	min. Earth dist.	2162 Jul 23 18:57	1° $\approx$ 17'04	29.13327 AU
morning rise	2156 Jan 23 03:07	17° $\overline{3}$ 33'52			2162 Sep 21 18:46	30° $\overline{R}$ $\overline{3}$	
retrograde	2156 Apr 20 15:56	19° $\overline{3}$ 28'55		direct	2162 Oct 11 18:17	29° $\overline{3}$ 53'28	
opposition	2156 Jul 09 17:41	18° $\overline{3}$ 05'48	0°46'49		2162 Oct 31 12:50	0° $\approx$	
min. Earth dist.	2156 Jul 09 18:46	18° $\overline{3}$ 05'44	29.17587 AU	evening set	2163 Jan 07 08:39	1° $\approx$ 47'19	
direct	2156 Sep 28 01:00	16° $\overline{3}$ 42'14					
evening set	2156 Dec 24 23:28	18° $\overline{3}$ 36'19		conjunction	2163 Jan 22 15:32	2° $\approx$ 21'50	0°19'52
				minimum elong	2163 Jan 22 15:32	2° $\approx$ 21'50	0°19'52
conjunction	2157 Jan 09 05:57	19° $\overline{3}$ 10'45	0°42'04	max. Earth dist.	2163 Jan 22 20:27	2° $\approx$ 22'17	31.12871 AU
minimum elong	2157 Jan 09 05:57	19° $\overline{3}$ 10'45	0°42'05	morning rise	2163 Feb 06 23:18	2° $\approx$ 56'27	
max. Earth dist.	2157 Jan 09 05:54	19° $\overline{3}$ 10'45	31.17172 AU	retrograde	2163 May 07 05:06	4° $\approx$ 52'30	
morning rise	2157 Jan 24 12:36	19° $\overline{3}$ 45'13		opposition	2163 Jul 26 13:13	3° $\approx$ 29'05	0°19'08
retrograde	2157 Apr 23 02:39	21° $\overline{3}$ 40'24		min. Earth dist.	2163 Jul 26 08:27	3° $\approx$ 29'24	29.12402 AU
opposition	2157 Jul 12 06:32	20° $\overline{3}$ 17'14	0°43'02	direct	2163 Oct 14 07:24	2° $\approx$ 05'50	
min. Earth dist.	2157 Jul 12 05:30	20° $\overline{3}$ 17'18	29.16809 AU	evening set	2164 Jan 09 18:30	3° $\approx$ 59'37	
direct	2157 Sep 30 12:41	18° $\overline{3}$ 53'42					
evening set	2157 Dec 27 08:54	20° $\overline{3}$ 47'45		conjunction	2164 Jan 25 01:28	4° $\approx$ 34'09	0°16'01
				minimum elong	2164 Jan 25 01:28	4° $\approx$ 34'09	0°16'01
conjunction	2158 Jan 11 15:19	21° $\overline{3}$ 22'11	0°38'30	behind sun begin	2164 Jan 25 00:20	4° $\approx$ 34'03	
minimum elong	2158 Jan 11 15:19	21° $\overline{3}$ 22'11	0°38'30	behind sun end	2164 Jan 25 02:35	4° $\approx$ 34'15	
max. Earth dist.	2158 Jan 11 15:42	21° $\overline{3}$ 22'13	31.16437 AU	max. Earth dist.	2164 Jan 25 06:28	4° $\approx$ 34'37	31.11892 AU
morning rise	2158 Jan 26 22:12	21° $\overline{3}$ 56'41		morning rise	2164 Feb 09 09:33	5° $\approx$ 08'48	
retrograde	2158 Apr 25 14:36	23° $\overline{3}$ 52'00		retrograde	2164 May 08 18:38	7° $\approx$ 04'58	
opposition	2158 Jul 14 19:27	22° $\overline{3}$ 28'48	0°39'12	opposition	2164 Jul 28 02:25	5° $\approx$ 41'27	0°15'01
min. Earth dist.	2158 Jul 14 18:13	22° $\overline{3}$ 28'53	29.16115 AU	min. Earth dist.	2164 Jul 27 20:08	5° $\approx$ 41'53	29.11353 AU
direct	2158 Oct 02 21:35	21° $\overline{3}$ 05'19		direct	2164 Oct 15 19:55	4° $\approx$ 18'13	

evening set	2165 Jan 11 04:16	6° $\approx$ 11'56		minimum elong	2170 Feb 06 13:13	17° $\approx$ 48'01	0°07'26
				behind sun begin	2170 Feb 06 07:21	17° $\approx$ 47'29	
conjunction	2165 Jan 26 11:24	6° $\approx$ 46'29	0°12'10	behind sun end	2170 Feb 06 19:05	17° $\approx$ 48'33	
minimum elong	2165 Jan 26 11:24	6° $\approx$ 46'29	0°12'10	max. Earth dist.	2170 Feb 07 00:06	17° $\approx$ 49'02	31.05205 AU
behind sun begin	2165 Jan 26 07:00	6° $\approx$ 46'05		morning rise	2170 Feb 21 22:52	18° $\approx$ 22'50	
behind sun end	2165 Jan 26 15:47	6° $\approx$ 46'53		retrograde	2170 May 22 18:02	20° $\approx$ 19'44	
max. Earth dist.	2165 Jan 26 17:04	6° $\approx$ 47'01	31.10777 AU	opposition	2170 Aug 11 09:24	18° $\approx$ 55'44	-0°10'00
morning rise	2165 Feb 10 19:46	7° $\approx$ 21'10		min. Earth dist.	2170 Aug 10 22:32	18° $\approx$ 56'28	29.04768 AU
retrograde	2165 May 11 05:41	9° $\approx$ 17'26		direct	2170 Oct 29 14:50	17° $\approx$ 32'31	
opposition	2165 Jul 30 15:44	7° $\approx$ 53'50	0°10'52	evening set	2171 Jan 24 15:06	19° $\approx$ 25'57	
min. Earth dist.	2165 Jul 30 09:56	7° $\approx$ 54'14	29.10190 AU				
direct	2165 Oct 18 07:25	6° $\approx$ 30'35		conjunction	2171 Feb 08 23:09	20° $\approx$ 00'37	-0°11'19
evening set	2166 Jan 13 14:01	8° $\approx$ 24'13		minimum elong	2171 Feb 08 23:09	20° $\approx$ 00'37	0°11'18
				behind sun begin	2171 Feb 08 18:24	20° $\approx$ 00'11	
conjunction	2166 Jan 28 21:20	8° $\approx$ 58'47	0°08'17	behind sun end	2171 Feb 09 03:54	20° $\approx$ 01'03	
minimum elong	2166 Jan 28 21:20	8° $\approx$ 58'47	0°08'17	max. Earth dist.	2171 Feb 09 10:05	20° $\approx$ 01'38	31.04344 AU
behind sun begin	2166 Jan 28 15:40	8° $\approx$ 58'16		morning rise	2171 Feb 24 09:14	20° $\approx$ 35'28	
behind sun end	2166 Jan 29 03:01	8° $\approx$ 59'18		retrograde	2171 May 25 08:07	22° $\approx$ 32'31	
max. Earth dist.	2166 Jan 29 04:04	8° $\approx$ 59'24	31.09586 AU	opposition	2171 Aug 13 22:36	21° $\approx$ 08'28	-0°14'09
morning rise	2166 Feb 13 05:54	9° $\approx$ 33'30		min. Earth dist.	2171 Aug 13 10:21	21° $\approx$ 09'18	29.03948 AU
retrograde	2166 May 13 16:42	11° $\approx$ 29'52		direct	2171 Nov 01 00:43	19° $\approx$ 45'18	
opposition	2166 Aug 02 04:47	10° $\approx$ 06'10	0°06'42	evening set	2172 Jan 27 01:06	21° $\approx$ 38'44	
min. Earth dist.	2166 Aug 01 21:13	10° $\approx$ 06'40	29.08975 AU				
direct	2166 Oct 20 19:49	8° $\approx$ 42'53		conjunction	2172 Feb 11 09:26	22° $\approx$ 13'25	-0°15'11
evening set	2167 Jan 15 23:52	10° $\approx$ 36'28		minimum elong	2172 Feb 11 09:26	22° $\approx$ 13'25	0°15'12
				behind sun begin	2172 Feb 11 07:07	22° $\approx$ 13'13	
conjunction	2167 Jan 31 07:12	11° $\approx$ 11'03	0°04'25	behind sun end	2172 Feb 11 11:45	22° $\approx$ 13'38	
minimum elong	2167 Jan 31 07:12	11° $\approx$ 11'03	0°04'25	max. Earth dist.	2172 Feb 11 21:53	22° $\approx$ 14'36	31.03542 AU
behind sun begin	2167 Jan 31 00:55	11° $\approx$ 10'29		morning rise	2172 Feb 26 19:44	22° $\approx$ 48'18	
behind sun end	2167 Jan 31 13:29	11° $\approx$ 11'37		retrograde	2172 May 26 20:54	24° $\approx$ 45'31	
max. Earth dist.	2167 Jan 31 14:09	11° $\approx$ 11'41	31.08373 AU	opposition	2172 Aug 15 11:48	23° $\approx$ 21'26	-0°18'18
morning rise	2167 Feb 15 16:08	11° $\approx$ 45'47		min. Earth dist.	2172 Aug 14 23:31	23° $\approx$ 22'16	29.03167 AU
retrograde	2167 May 16 04:41	13° $\approx$ 42'16		direct	2172 Nov 02 13:28	21° $\approx$ 58'19	
opposition	2167 Aug 04 18:06	12° $\approx$ 18'28	0°02'32	evening set	2173 Jan 28 11:14	23° $\approx$ 51'45	
min. Earth dist.	2167 Aug 04 10:24	12° $\approx$ 18'59	29.07793 AU				
direct	2167 Oct 23 05:29	10° $\approx$ 55'11		conjunction	2173 Feb 12 19:45	24° $\approx$ 26'27	-0°19'03
evening set	2168 Jan 18 09:29	12° $\approx$ 48'42		minimum elong	2173 Feb 12 19:46	24° $\approx$ 26'27	0°19'03
				max. Earth dist.	2173 Feb 13 08:35	24° $\approx$ 27'40	31.02776 AU
conjunction	2168 Feb 02 17:07	13° $\approx$ 23'18	0°00'27	morning rise	2173 Feb 28 06:26	25° $\approx$ 01'22	
minimum elong	2168 Feb 02 17:08	13° $\approx$ 23'18	0°00'27	retrograde	2173 May 29 11:59	26° $\approx$ 58'44	
behind sun begin	2168 Feb 02 10:45	13° $\approx$ 22'43		min. Earth dist.	2173 Aug 17 11:06	25° $\approx$ 35'33	29.02391 AU
behind sun end	2168 Feb 02 23:30	13° $\approx$ 23'52		opposition	2173 Aug 18 00:56	25° $\approx$ 34'37	-0°22'26
max. Earth dist.	2168 Feb 03 02:00	13° $\approx$ 24'07	31.07223 AU	direct	2173 Nov 05 01:45	24° $\approx$ 11'33	
morning rise	2168 Feb 18 02:12	13° $\approx$ 58'03		evening set	2174 Jan 30 21:32	26° $\approx$ 04'58	
desc. node	2168 Mar 14 17:03	14° $\approx$ 50'53					
	2168 Mar 19 18:24	15° $\approx$		conjunction	2174 Feb 15 06:13	26° $\approx$ 39'43	-0°22'54
retrograde	2168 May 17 16:09	15° $\approx$ 54'40		minimum elong	2174 Feb 15 06:12	26° $\approx$ 39'43	0°22'54
	2168 Jul 19 00:13	15° $\approx$		max. Earth dist.	2174 Feb 15 19:38	26° $\approx$ 40'59	31.01967 AU
opposition	2168 Aug 06 07:14	14° $\approx$ 30'47	-0°01'39	morning rise	2174 Mar 02 17:11	27° $\approx$ 14'40	
min. Earth dist.	2168 Aug 05 21:53	14° $\approx$ 31'25	29.06680 AU	retrograde	2174 May 31 23:48	29° $\approx$ 12'10	
direct	2168 Oct 24 17:32	13° $\approx$ 07'30		opposition	2174 Aug 20 14:14	27° $\approx$ 48'01	-0°26'31
evening set	2169 Jan 19 19:25	15° $\approx$ 00'59		min. Earth dist.	2174 Aug 20 00:59	27° $\approx$ 48'55	29.01562 AU
	2169 Jan 19 08:45	15° $\approx$		direct	2174 Nov 07 12:59	26° $\approx$ 24'59	
				evening set	2175 Feb 02 07:56	28° $\approx$ 18'24	
conjunction	2169 Feb 04 03:06	15° $\approx$ 35'36	-0°03'33				
minimum elong	2169 Feb 04 03:05	15° $\approx$ 35'36	0°03'32	conjunction	2175 Feb 17 16:55	28° $\approx$ 53'09	-0°26'42
behind sun begin	2169 Feb 03 20:43	15° $\approx$ 35'01		minimum elong	2175 Feb 17 16:55	28° $\approx$ 53'09	0°26'42
behind sun end	2169 Feb 04 09:26	15° $\approx$ 36'10		max. Earth dist.	2175 Feb 18 07:13	28° $\approx$ 54'30	31.01102 AU
max. Earth dist.	2169 Feb 04 11:55	15° $\approx$ 36'25	31.06161 AU	morning rise	2175 Mar 05 04:07	29° $\approx$ 28'08	
morning rise	2169 Feb 19 12:36	16° $\approx$ 10'23			2175 Mar 20 00:56	0° $\approx$	
retrograde	2169 May 20 05:45	18° $\approx$ 07'08		retrograde	2175 Jun 03 12:12	1° $\approx$ 25'46	
opposition	2169 Aug 08 20:15	16° $\approx$ 43'11	-0°05'49	opposition	2175 Aug 23 03:28	0° $\approx$ 01'34	-0°30'34
min. Earth dist.	2169 Aug 08 10:15	16° $\approx$ 43'52	29.05680 AU	min. Earth dist.	2175 Aug 22 12:47	0° $\approx$ 02'34	29.00645 AU
direct	2169 Oct 27 03:18	15° $\approx$ 19'56			2175 Aug 24 02:27	30° $\approx$	
evening set	2170 Jan 22 05:13	17° $\approx$ 13'23		direct	2175 Nov 10 01:43	28° $\approx$ 38'33	
					2176 Jan 20 19:57	0° $\approx$	
conjunction	2170 Feb 06 13:13	17° $\approx$ 48'01	-0°07'26	evening set	2176 Feb 04 18:27	0° $\approx$ 31'56	

conjunction	2176 Feb 20 03:33	1° <del>✕</del> 06'43	-0°30'28	direct	2182 Nov 25 09:12	14° <del>✕</del> 12'48	
minimum elong	2176 Feb 20 03:33	1° <del>✕</del> 06'43	0°30'28	evening set	2183 Feb 19 20:49	16° <del>✕</del> 05'56	
max. Earth dist.	2176 Feb 20 17:30	1° <del>✕</del> 08'03	31.00122 AU				
morning rise	2176 Mar 06 15:14	1° <del>✕</del> 41'44		conjunction	2183 Mar 07 07:53	16° <del>✕</del> 40'51	-0°55'18
retrograde	2176 Jun 05 01:13	3° <del>✕</del> 39'29		minimum elong	2183 Mar 07 07:53	16° <del>✕</del> 40'51	0°55'17
opposition	2176 Aug 24 16:51	2° <del>✕</del> 15'13	-0°34'35	max. Earth dist.	2183 Mar 08 02:44	16° <del>✕</del> 42'38	30.92589 AU
min. Earth dist.	2176 Aug 24 02:41	2° <del>✕</del> 16'11	28.99614 AU	morning rise	2183 Mar 22 22:02	17° <del>✕</del> 16'03	
direct	2176 Nov 11 12:17	0° <del>✕</del> 52'12		retrograde	2183 Jun 21 18:35	19° <del>✕</del> 14'25	
evening set	2177 Feb 06 05:01	2° <del>✕</del> 45'32		opposition	2183 Sep 10 12:05	17° <del>✕</del> 49'30	-1°00'54
				min. Earth dist.	2183 Sep 09 17:37	17° <del>✕</del> 50'47	28.92281 AU
conjunction	2177 Feb 21 14:33	3° <del>✕</del> 20'20	-0°34'12	direct	2183 Nov 27 20:13	16° <del>✕</del> 26'19	
minimum elong	2177 Feb 21 14:33	3° <del>✕</del> 20'20	0°34'11	evening set	2184 Feb 22 07:34	18° <del>✕</del> 19'27	
max. Earth dist.	2177 Feb 22 05:43	3° <del>✕</del> 21'46	30.99029 AU				
morning rise	2177 Mar 09 02:25	3° <del>✕</del> 55'23		conjunction	2184 Mar 08 19:05	18° <del>✕</del> 54'23	-0°58'33
retrograde	2177 Jun 07 12:37	5° <del>✕</del> 53'13		minimum elong	2184 Mar 08 19:05	18° <del>✕</del> 54'23	0°58'34
opposition	2177 Aug 27 05:52	4° <del>✕</del> 28'51	-0°38'33	max. Earth dist.	2184 Mar 09 15:06	18° <del>✕</del> 56'17	30.91904 AU
min. Earth dist.	2177 Aug 26 14:41	4° <del>✕</del> 29'54	28.98461 AU	morning rise	2184 Mar 24 09:33	19° <del>✕</del> 29'38	
direct	2177 Nov 14 00:59	3° <del>✕</del> 05'48		retrograde	2184 Jun 23 08:22	21° <del>✕</del> 28'05	
evening set	2178 Feb 08 15:40	4° <del>✕</del> 59'06		min. Earth dist.	2184 Sep 11 04:54	20° <del>✕</del> 04'33	28.91642 AU
				opposition	2184 Sep 12 00:57	20° <del>✕</del> 03'10	-1°04'20
conjunction	2178 Feb 24 01:18	5° <del>✕</del> 33'54	-0°37'52	direct	2184 Nov 29 08:59	18° <del>✕</del> 40'01	
minimum elong	2178 Feb 24 01:18	5° <del>✕</del> 33'54	0°37'52	evening set	2185 Feb 23 18:41	20° <del>✕</del> 33'09	
max. Earth dist.	2178 Feb 24 15:54	5° <del>✕</del> 35'17	30.97840 AU				
morning rise	2178 Mar 11 13:41	6° <del>✕</del> 08'59		conjunction	2185 Mar 11 06:22	21° <del>✕</del> 08'08	-1°01'44
retrograde	2178 Jun 10 01:19	8° <del>✕</del> 06'54		minimum elong	2185 Mar 11 06:21	21° <del>✕</del> 08'08	1°01'44
opposition	2178 Aug 29 19:05	6° <del>✕</del> 42'25	-0°42'27	max. Earth dist.	2185 Mar 12 02:11	21° <del>✕</del> 10'00	30.91297 AU
min. Earth dist.	2178 Aug 29 03:47	6° <del>✕</del> 43'28	28.97256 AU	morning rise	2185 Mar 26 21:20	21° <del>✕</del> 43'24	
direct	2178 Nov 16 11:05	5° <del>✕</del> 19'19		retrograde	2185 Jun 25 22:11	23° <del>✕</del> 41'59	
evening set	2179 Feb 11 02:03	7° <del>✕</del> 12'33		opposition	2185 Sep 14 13:49	22° <del>✕</del> 17'02	-1°07'42
				min. Earth dist.	2185 Sep 13 18:16	22° <del>✕</del> 18'23	28.91077 AU
conjunction	2179 Feb 26 12:06	7° <del>✕</del> 47'23	-0°41'29	direct	2185 Dec 01 19:25	20° <del>✕</del> 53'56	
minimum elong	2179 Feb 26 12:06	7° <del>✕</del> 47'23	0°41'29	evening set	2186 Feb 26 05:45	22° <del>✕</del> 47'06	
max. Earth dist.	2179 Feb 27 04:28	7° <del>✕</del> 48'56	30.96621 AU				
morning rise	2179 Mar 14 00:41	8° <del>✕</del> 22'29		conjunction	2186 Mar 13 17:54	23° <del>✕</del> 22'06	-1°04'49
retrograde	2179 Jun 12 12:45	10° <del>✕</del> 20'29		minimum elong	2186 Mar 13 17:54	23° <del>✕</del> 22'06	1°04'50
opposition	2179 Sep 01 08:14	8° <del>✕</del> 55'53	-0°46'17	max. Earth dist.	2186 Mar 14 15:08	23° <del>✕</del> 24'07	30.90748 AU
min. Earth dist.	2179 Aug 31 16:19	8° <del>✕</del> 56'59	28.96049 AU	morning rise	2186 Mar 29 09:05	23° <del>✕</del> 57'25	
direct	2179 Nov 18 22:41	7° <del>✕</del> 32'44		retrograde	2186 Jun 28 10:19	25° <del>✕</del> 56'05	
evening set	2180 Feb 13 12:44	9° <del>✕</del> 25'55		min. Earth dist.	2186 Sep 16 06:07	24° <del>✕</del> 32'35	28.90530 AU
				opposition	2186 Sep 17 02:43	24° <del>✕</del> 31'09	-1°10'57
conjunction	2180 Feb 28 22:56	10° <del>✕</del> 00'46	-0°45'02	direct	2186 Dec 04 07:47	23° <del>✕</del> 08'05	
minimum elong	2180 Feb 28 22:55	10° <del>✕</del> 00'46	0°45'03	evening set	2187 Feb 28 17:02	25° <del>✕</del> 01'17	
max. Earth dist.	2180 Feb 29 15:09	10° <del>✕</del> 02'18	30.95447 AU				
morning rise	2180 Mar 15 12:01	10° <del>✕</del> 35'54		conjunction	2187 Mar 16 05:20	25° <del>✕</del> 36'18	-1°07'49
retrograde	2180 Jun 14 02:49	12° <del>✕</del> 33'58		minimum elong	2187 Mar 16 05:20	25° <del>✕</del> 36'18	1°07'48
opposition	2180 Sep 02 21:09	11° <del>✕</del> 09'16	-0°50'03	max. Earth dist.	2187 Mar 17 01:52	25° <del>✕</del> 38'15	30.90192 AU
min. Earth dist.	2180 Sep 02 04:11	11° <del>✕</del> 10'26	28.94928 AU	morning rise	2187 Mar 31 21:05	26° <del>✕</del> 11'39	
direct	2180 Nov 20 09:01	9° <del>✕</del> 46'05		retrograde	2187 Jun 30 23:42	28° <del>✕</del> 10'27	
evening set	2181 Feb 14 23:21	11° <del>✕</del> 39'14		opposition	2187 Sep 19 15:46	26° <del>✕</del> 45'30	-1°14'05
				min. Earth dist.	2187 Sep 18 19:23	26° <del>✕</del> 46'54	28.89964 AU
conjunction	2181 Mar 02 09:55	12° <del>✕</del> 14'06	-0°48'32	direct	2187 Dec 06 17:36	25° <del>✕</del> 22'27	
minimum elong	2181 Mar 02 09:54	12° <del>✕</del> 14'06	0°48'32	evening set	2188 Mar 02 04:27	27° <del>✕</del> 15'40	
max. Earth dist.	2181 Mar 03 03:30	12° <del>✕</del> 15'46	30.94362 AU				
morning rise	2181 Mar 17 23:17	12° <del>✕</del> 49'15		conjunction	2188 Mar 17 17:16	27° <del>✕</del> 50'43	-1°10'42
retrograde	2181 Jun 16 15:23	14° <del>✕</del> 47'25		minimum elong	2188 Mar 17 17:16	27° <del>✕</del> 50'43	1°10'42
opposition	2181 Sep 05 10:10	13° <del>✕</del> 22'37	-0°53'45	max. Earth dist.	2188 Mar 18 15:00	27° <del>✕</del> 52'47	30.89578 AU
min. Earth dist.	2181 Sep 04 17:05	13° <del>✕</del> 23'48	28.93909 AU	morning rise	2188 Apr 02 09:14	28° <del>✕</del> 26'06	
direct	2181 Nov 22 21:22	11° <del>✕</del> 59'25			2188 May 24 02:49	0° <del>∇</del>	
evening set	2182 Feb 17 10:00	13° <del>✕</del> 52'33		retrograde	2188 Jul 02 11:49	0° <del>∇</del> 25'00	
					2188 Aug 11 23:36	30° <del>✕</del>	
conjunction	2182 Mar 04 20:49	14° <del>✕</del> 27'26	-0°51'57	min. Earth dist.	2188 Sep 20 08:12	29° <del>✕</del> 01'26	28.89308 AU
minimum elong	2182 Mar 04 20:49	14° <del>✕</del> 27'26	0°51'57	opposition	2188 Sep 21 04:36	29° <del>✕</del> 00'01	-1°17'08
max. Earth dist.	2182 Mar 05 14:54	14° <del>✕</del> 29'09	30.93412 AU	direct	2188 Dec 08 04:44	27° <del>✕</del> 36'58	
morning rise	2182 Mar 20 10:34	15° <del>✕</del> 02'37		evening set	2189 Mar 04 16:06	29° <del>✕</del> 30'12	
retrograde	2182 Jun 19 06:02	17° <del>✕</del> 00'52			2189 Mar 17 21:26	0° <del>∇</del>	
opposition	2182 Sep 07 23:03	15° <del>✕</del> 36'00	-0°57'22				
min. Earth dist.	2182 Sep 07 04:14	15° <del>✕</del> 37'18	28.93029 AU	conjunction	2189 Mar 20 05:11	0° <del>∇</del> 05'17	-1°13'30




























































































































minimum elong	2189 Mar 20 05:11	0°♈05'17	1°13'29	min. Earth dist.	2195 Oct 06 22:49	14°♈43'26	28.84434 AU
max. Earth dist.	2189 Mar 21 01:59	0°♈07'15	30.88877 AU	direct	2195 Dec 24 16:13	13°♈18'37	
morning rise	2189 Apr 04 21:41	0°♈40'42		evening set	2196 Mar 20 02:01	15°♈11'50	
retrograde	2189 Jul 05 02:15	2°♈39'40					
opposition	2189 Sep 23 17:32	1°♈14'38	-1°20'03	conjunction	2196 Apr 04 17:47	15°♈47'05	-1°29'41
min. Earth dist.	2189 Sep 22 20:47	1°♈16'04	28.88563 AU	minimum elong	2196 Apr 04 17:47	15°♈47'05	1°29'41
	2189 Nov 18 07:48	30°♈		max. Earth dist.	2196 Apr 05 16:38	15°♈49'14	30.84179 AU
direct	2189 Dec 10 15:11	29°♈51'34		morning rise	2196 Apr 20 13:13	16°♈22'41	
	2190 Jan 01 17:50	0°♈		retrograde	2196 Jul 21 00:27	18°♈21'51	
evening set	2190 Mar 07 03:36	1°♈44'48		min. Earth dist.	2196 Oct 08 11:25	16°♈58'01	28.84155 AU
				opposition	2196 Oct 09 09:38	16°♈56'28	-1°36'54
conjunction	2190 Mar 22 17:05	2°♈19'54	-1°16'10	direct	2196 Dec 26 02:38	15°♈33'13	
minimum elong	2190 Mar 22 17:05	2°♈19'54	1°16'11	evening set	2197 Mar 22 14:00	17°♈26'27	
max. Earth dist.	2190 Mar 23 14:38	2°♈21'57	30.88076 AU				
morning rise	2190 Apr 07 09:53	2°♈55'20		conjunction	2197 Apr 07 06:19	18°♈01'44	-1°31'29
retrograde	2190 Jul 07 14:39	4°♈54'22		minimum elong	2197 Apr 07 06:19	18°♈01'44	1°31'29
min. Earth dist.	2190 Sep 25 10:10	3°♈30'41	28.87733 AU	max. Earth dist.	2197 Apr 08 06:33	18°♈04'01	30.83949 AU
opposition	2190 Sep 26 06:26	3°♈29'16	-1°22'51	morning rise	2197 Apr 23 02:01	18°♈37'21	
direct	2190 Dec 13 03:32	2°♈06'10		retrograde	2197 Jul 23 12:48	20°♈36'33	
evening set	2191 Mar 09 15:13	3°♈59'23		opposition	2197 Oct 11 22:03	19°♈11'11	-1°38'45
				min. Earth dist.	2197 Oct 10 23:38	19°♈12'45	28.83970 AU
conjunction	2191 Mar 25 05:04	4°♈34'31	-1°18'44	direct	2197 Dec 28 14:13	17°♈47'57	
minimum elong	2191 Mar 25 05:04	4°♈34'31	1°18'44	evening set	2198 Mar 25 02:05	19°♈41'12	
max. Earth dist.	2191 Mar 26 02:30	4°♈36'33	30.87242 AU				
morning rise	2191 Apr 09 22:20	5°♈09'58		conjunction	2198 Apr 09 18:42	20°♈16'31	-1°33'09
retrograde	2191 Jul 10 05:11	7°♈09'01		minimum elong	2198 Apr 09 18:42	20°♈16'31	1°33'09
opposition	2191 Sep 28 19:07	5°♈43'52	-1°25'32	max. Earth dist.	2198 Apr 10 18:12	20°♈18'44	30.83810 AU
min. Earth dist.	2191 Sep 27 21:48	5°♈45'20	28.86902 AU	morning rise	2198 Apr 25 14:57	20°♈52'10	
direct	2191 Dec 15 15:12	4°♈20'42		retrograde	2198 Jul 26 02:32	22°♈51'25	
evening set	2192 Mar 11 02:53	6°♈13'55		min. Earth dist.	2198 Oct 13 11:49	21°♈27'39	28.83863 AU
				opposition	2198 Oct 14 10:31	21°♈26'04	-1°40'26
conjunction	2192 Mar 26 17:05	6°♈49'04	-1°21'10	direct	2198 Dec 31 00:43	20°♈02'50	
minimum elong	2192 Mar 26 17:05	6°♈49'04	1°21'11	evening set	2199 Mar 27 14:24	21°♈56'08	
max. Earth dist.	2192 Mar 27 14:49	6°♈51'07	30.86412 AU				
morning rise	2192 Apr 11 10:48	7°♈24'33		conjunction	2199 Apr 12 07:30	22°♈31'28	-1°34'39
retrograde	2192 Jul 11 17:59	9°♈23'38		minimum elong	2199 Apr 12 07:30	22°♈31'28	1°34'40
min. Earth dist.	2192 Sep 29 11:17	7°♈59'49	28.86111 AU	max. Earth dist.	2199 Apr 13 07:42	22°♈33'45	30.83703 AU
opposition	2192 Sep 30 07:50	7°♈58'24	-1°28'04	morning rise	2199 Apr 28 04:05	23°♈07'09	
direct	2192 Dec 17 02:32	6°♈35'12		retrograde	2199 Jul 28 14:21	25°♈06'25	
evening set	2193 Mar 13 14:32	8°♈28'24		opposition	2199 Oct 16 22:55	23°♈41'05	-1°41'59
				min. Earth dist.	2199 Oct 16 01:01	23°♈42'37	28.83757 AU
conjunction	2193 Mar 29 05:13	9°♈03'34	-1°23'30	direct	2200 Jan 02 11:53	22°♈17'52	
minimum elong	2193 Mar 29 05:13	9°♈03'34	1°23'29	evening set	2200 Mar 30 02:54	24°♈11'13	
max. Earth dist.	2193 Mar 30 03:45	9°♈05'42	30.85664 AU				
morning rise	2193 Apr 13 23:14	9°♈39'05		conjunction	2200 Apr 14 20:27	24°♈46'35	-1°36'02
retrograde	2193 Jul 14 08:33	11°♈38'10		minimum elong	2200 Apr 14 20:27	24°♈46'35	1°36'02
opposition	2193 Oct 02 20:11	10°♈12'53	-1°30'29	max. Earth dist.	2200 Apr 15 19:57	24°♈48'48	30.83582 AU
min. Earth dist.	2193 Oct 01 22:21	10°♈14'24	28.85416 AU	morning rise	2200 Apr 30 17:30	25°♈22'17	
direct	2193 Dec 19 16:11	8°♈49'39		retrograde	2200 Jul 31 05:10	27°♈21'34	
evening set	2194 Mar 16 02:23	10°♈42'51		opposition	2200 Oct 19 11:17	25°♈56'15	-1°43'22
				min. Earth dist.	2200 Oct 18 12:51	25°♈57'49	28.83602 AU
conjunction	2194 Mar 31 17:18	11°♈18'03	-1°25'41	direct	2201 Jan 04 22:57	24°♈33'00	
minimum elong	2194 Mar 31 17:18	11°♈18'03	1°25'41	evening set	2201 Apr 01 15:35	26°♈26'24	
max. Earth dist.	2194 Apr 01 15:31	11°♈20'09	30.85024 AU				
morning rise	2194 Apr 16 11:51	11°♈53'35		conjunction	2201 Apr 17 09:31	27°♈01'47	-1°37'15
retrograde	2194 Jul 16 22:35	13°♈52'42		minimum elong	2201 Apr 17 09:31	27°♈01'47	1°37'15
min. Earth dist.	2194 Oct 04 11:29	12°♈28'51	28.84857 AU	max. Earth dist.	2201 Apr 18 08:39	27°♈03'58	30.83367 AU
opposition	2194 Oct 05 08:49	12°♈27'22	-1°32'46	morning rise	2201 May 03 06:59	27°♈37'31	
direct	2194 Dec 22 03:33	11°♈04'06		retrograde	2201 Aug 02 17:56	29°♈36'49	
evening set	2195 Mar 18 13:59	12°♈57'18		opposition	2201 Oct 21 23:41	28°♈11'29	-1°44'36
				min. Earth dist.	2201 Oct 21 02:39	28°♈12'57	28.83342 AU
conjunction	2195 Apr 03 05:29	13°♈32'32	-1°27'45	direct	2202 Jan 07 10:16	26°♈48'13	
minimum elong	2195 Apr 03 05:29	13°♈32'32	1°27'45	evening set	2202 Apr 04 04:12	28°♈41'37	
max. Earth dist.	2195 Apr 04 05:05	13°♈34'46	30.84533 AU				
morning rise	2195 Apr 19 00:19	14°♈08'06		conjunction	2202 Apr 19 22:41	29°♈17'02	-1°38'20
retrograde	2195 Jul 19 10:42	16°♈07'15		minimum elong	2202 Apr 19 22:41	29°♈17'02	1°38'20
opposition	2195 Oct 07 21:15	14°♈41'53	-1°34'54	max. Earth dist.	2202 Apr 20 21:49	29°♈19'13	30.83068 AU



morning rise	2202 May 05 20:31	29° $\Upsilon$ 52'48	opposition	2208 Nov 06 11:47	13° $\mathcal{B}$ 56'47	-1°48'40	
	2202 May 09 03:23	0° $\mathcal{B}$	min. Earth dist.	2208 Nov 05 15:58	13° $\mathcal{B}$ 58'10	28.81465 AU	
retrograde	2202 Aug 05 08:42	1° $\mathcal{B}$ 52'03	direct	2209 Jan 22 22:20	12° $\mathcal{B}$ 33'12		
opposition	2202 Oct 24 11:57	0° $\mathcal{B}$ 26'42	-1°45'40	evening set	2209 Apr 19 21:32	14° $\mathcal{B}$ 26'45	
min. Earth dist.	2202 Oct 23 14:17	0° $\mathcal{B}$ 28'13	28.82995 AU		2209 May 04 18:09	15° $\mathcal{B}$	
	2202 Nov 09 16:04	30° $\mathcal{R}\Upsilon$					
direct	2203 Jan 09 23:54	29° $\Upsilon$ 03'23	conjunction	2209 May 05 19:15	15° $\mathcal{B}$ 02'22	-1°41'37	
	2203 Mar 09 16:40	0° $\mathcal{B}$	minimum elong	2209 May 05 19:15	15° $\mathcal{B}$ 02'22	1°41'37	
evening set	2203 Apr 06 16:52	0° $\mathcal{B}$ 56'48	max. Earth dist.	2209 May 06 16:55	15° $\mathcal{B}$ 04'24	30.81407 AU	
			morning rise	2209 May 21 20:08	15° $\mathcal{B}$ 38'17		
conjunction	2203 Apr 22 11:42	1° $\mathcal{B}$ 32'15	-1°39'15	retrograde	2209 Aug 21 04:28	17° $\mathcal{B}$ 37'13	
minimum elong	2203 Apr 22 11:42	1° $\mathcal{B}$ 32'15	1°39'15	opposition	2209 Nov 08 23:26	16° $\mathcal{B}$ 11'49	-1°48'36
max. Earth dist.	2203 Apr 23 09:50	1° $\mathcal{B}$ 34'20	30.82683 AU	min. Earth dist.	2209 Nov 08 02:56	16° $\mathcal{B}$ 13'16	28.81608 AU
morning rise	2203 May 08 10:07	2° $\mathcal{B}$ 08'02			2209 Dec 30 00:36	15° $\mathcal{R}\mathcal{B}$	
retrograde	2203 Aug 07 22:21	4° $\mathcal{B}$ 07'16		direct	2210 Jan 25 08:36	14° $\mathcal{B}$ 48'14	
min. Earth dist.	2203 Oct 26 03:54	2° $\mathcal{B}$ 43'17	28.82592 AU		2210 Feb 20 11:27	15° $\mathcal{B}$	
opposition	2203 Oct 27 00:16	2° $\mathcal{B}$ 41'52	-1°46'35	evening set	2210 Apr 22 10:32	16° $\mathcal{B}$ 41'51	
direct	2204 Jan 12 11:37	1° $\mathcal{B}$ 18'30					
evening set	2204 Apr 08 05:33	3° $\mathcal{B}$ 11'55	conjunction	2210 May 08 08:42	17° $\mathcal{B}$ 17'29	-1°41'27	
			minimum elong	2210 May 08 08:42	17° $\mathcal{B}$ 17'29	1°41'28	
conjunction	2204 Apr 24 01:02	3° $\mathcal{B}$ 47'23	-1°40'02	max. Earth dist.	2210 May 09 06:21	17° $\mathcal{B}$ 19'31	30.81602 AU
minimum elong	2204 Apr 24 01:02	3° $\mathcal{B}$ 47'23	1°40'02	morning rise	2210 May 24 10:00	17° $\mathcal{B}$ 53'26	
max. Earth dist.	2204 Apr 24 23:47	3° $\mathcal{B}$ 49'32	30.82273 AU	retrograde	2210 Aug 23 16:07	19° $\mathcal{B}$ 52'20	
morning rise	2204 May 09 23:44	4° $\mathcal{B}$ 23'12		opposition	2210 Nov 11 11:12	18° $\mathcal{B}$ 26'59	-1°48'21
retrograde	2204 Aug 09 11:21	6° $\mathcal{B}$ 22'21		min. Earth dist.	2210 Nov 10 15:57	18° $\mathcal{B}$ 28'21	28.81853 AU
opposition	2204 Oct 28 12:10	4° $\mathcal{B}$ 56'56	-1°47'20	direct	2211 Jan 27 19:26	17° $\mathcal{B}$ 03'24	
min. Earth dist.	2204 Oct 27 15:18	4° $\mathcal{B}$ 58'24	28.82182 AU	evening set	2211 Apr 24 23:34	18° $\mathcal{B}$ 57'04	
direct	2205 Jan 14 00:48	3° $\mathcal{B}$ 33'30					
evening set	2205 Apr 10 18:23	5° $\mathcal{B}$ 26'56	conjunction	2211 May 10 22:18	19° $\mathcal{B}$ 32'44	-1°41'09	
			minimum elong	2211 May 10 22:18	19° $\mathcal{B}$ 32'44	1°41'09	
conjunction	2205 Apr 26 14:09	6° $\mathcal{B}$ 02'26	-1°40'39	max. Earth dist.	2211 May 11 19:54	19° $\mathcal{B}$ 34'46	30.81892 AU
minimum elong	2205 Apr 26 14:09	6° $\mathcal{B}$ 02'26	1°40'39	morning rise	2211 May 26 24:00	20° $\mathcal{B}$ 08'43	
max. Earth dist.	2205 Apr 27 11:40	6° $\mathcal{B}$ 04'28	30.81885 AU	retrograde	2211 Aug 26 06:19	22° $\mathcal{B}$ 07'34	
morning rise	2205 May 12 13:26	6° $\mathcal{B}$ 38'16		opposition	2211 Nov 13 22:48	20° $\mathcal{B}$ 42'16	-1°47'56
retrograde	2205 Aug 12 01:40	8° $\mathcal{B}$ 37'23		min. Earth dist.	2211 Nov 13 03:05	20° $\mathcal{B}$ 43'40	28.82150 AU
min. Earth dist.	2205 Oct 30 03:57	7° $\mathcal{B}$ 13'21	28.81836 AU	direct	2212 Jan 30 08:25	19° $\mathcal{B}$ 18'41	
opposition	2205 Oct 31 00:13	7° $\mathcal{B}$ 11'56	-1°47'55	evening set	2212 Apr 26 12:59	21° $\mathcal{B}$ 12'25	
direct	2206 Jan 16 12:07	5° $\mathcal{B}$ 48'27					
evening set	2206 Apr 13 06:56	7° $\mathcal{B}$ 41'53	conjunction	2212 May 12 12:04	21° $\mathcal{B}$ 48'07	-1°40'41	
			minimum elong	2212 May 12 12:04	21° $\mathcal{B}$ 48'07	1°40'40	
conjunction	2206 Apr 29 03:18	8° $\mathcal{B}$ 17'25	-1°41'08	max. Earth dist.	2212 May 13 08:30	21° $\mathcal{B}$ 50'03	30.82184 AU
minimum elong	2206 Apr 29 03:18	8° $\mathcal{B}$ 17'25	1°41'07	morning rise	2212 May 28 14:14	22° $\mathcal{B}$ 24'07	
max. Earth dist.	2206 Apr 30 01:58	8° $\mathcal{B}$ 19'34	30.81575 AU	retrograde	2212 Aug 27 19:32	24° $\mathcal{B}$ 22'55	
morning rise	2206 May 15 02:51	8° $\mathcal{B}$ 53'17		opposition	2212 Nov 15 10:26	22° $\mathcal{B}$ 57'41	-1°47'21
retrograde	2206 Aug 14 13:50	10° $\mathcal{B}$ 52'20		min. Earth dist.	2212 Nov 14 16:20	22° $\mathcal{B}$ 58'57	28.82435 AU
opposition	2206 Nov 02 12:11	9° $\mathcal{B}$ 26'53	-1°48'20	direct	2213 Jan 31 19:18	21° $\mathcal{B}$ 34'04	
min. Earth dist.	2206 Nov 01 15:50	9° $\mathcal{B}$ 28'18	28.81577 AU	evening set	2213 Apr 29 02:21	23° $\mathcal{B}$ 27'52	
direct	2207 Jan 19 00:31	8° $\mathcal{B}$ 03'21					
evening set	2207 Apr 15 19:47	9° $\mathcal{B}$ 56'49	conjunction	2213 May 15 02:03	24° $\mathcal{B}$ 03'36	-1°40'04	
			minimum elong	2213 May 15 02:03	24° $\mathcal{B}$ 03'36	1°40'03	
conjunction	2207 May 01 16:31	10° $\mathcal{B}$ 32'22	-1°41'27	max. Earth dist.	2213 May 15 22:33	24° $\mathcal{B}$ 05'31	30.82443 AU
minimum elong	2207 May 01 16:31	10° $\mathcal{B}$ 32'22	1°41'27	morning rise	2213 May 31 04:28	24° $\mathcal{B}$ 39'37	
max. Earth dist.	2207 May 02 14:09	10° $\mathcal{B}$ 34'25	30.81386 AU	retrograde	2213 Aug 30 09:27	26° $\mathcal{B}$ 38'20	
morning rise	2207 May 17 16:38	11° $\mathcal{B}$ 08'16		opposition	2213 Nov 17 22:02	25° $\mathcal{B}$ 13'08	-1°46'36
retrograde	2207 Aug 17 03:00	13° $\mathcal{B}$ 07'16		min. Earth dist.	2213 Nov 17 03:51	25° $\mathcal{B}$ 14'25	28.82647 AU
opposition	2207 Nov 04 23:57	11° $\mathcal{B}$ 41'49	-1°48'35	direct	2214 Feb 03 08:33	23° $\mathcal{B}$ 49'29	
min. Earth dist.	2207 Nov 04 03:31	11° $\mathcal{B}$ 43'15	28.81459 AU	evening set	2214 May 01 15:46	25° $\mathcal{B}$ 43'19	
direct	2208 Jan 21 11:20	10° $\mathcal{B}$ 18'15					
evening set	2208 Apr 17 08:37	12° $\mathcal{B}$ 11'45	conjunction	2214 May 17 15:46	26° $\mathcal{B}$ 19'05	-1°39'17	
			minimum elong	2214 May 17 15:46	26° $\mathcal{B}$ 19'05	1°39'17	
conjunction	2208 May 03 05:55	12° $\mathcal{B}$ 47'20	-1°41'36	max. Earth dist.	2214 May 18 10:26	26° $\mathcal{B}$ 20'50	30.82615 AU
minimum elong	2208 May 03 05:55	12° $\mathcal{B}$ 47'20	1°41'36	morning rise	2214 Jun 02 18:45	26° $\mathcal{B}$ 55'07	
max. Earth dist.	2208 May 04 04:14	12° $\mathcal{B}$ 49'27	30.81325 AU	retrograde	2214 Sep 02 00:24	28° $\mathcal{B}$ 53'44	
morning rise	2208 May 19 06:22	13° $\mathcal{B}$ 23'15		opposition	2214 Nov 20 09:45	27° $\mathcal{B}$ 28'32	-1°45'41
	2208 Jul 12 14:23	15° $\mathcal{B}$		min. Earth dist.	2214 Nov 19 16:43	27° $\mathcal{B}$ 29'44	28.82779 AU
retrograde	2208 Aug 18 14:08	15° $\mathcal{B}$ 22'13		direct	2215 Feb 05 20:52	26° $\mathcal{B}$ 04'51	
	2208 Sep 25 05:52	15° $\mathcal{R}\mathcal{B}$		evening set	2215 May 04 05:12	27° $\mathcal{B}$ 58'41	

conjunction	2215 May 20 05:52	28° <b>8</b> 34'29 -1°38'22	retrograde	2221 Sep 17 13:47	14° <b>II</b> 37'13
minimum elong	2215 May 20 05:52	28° <b>8</b> 34'29 1°38'22	opposition	2221 Dec 05 16:06	13° <b>II</b> 12'07 -1°35'00
max. Earth dist.	2215 May 21 00:53	28° <b>8</b> 36'16 30.82708 AU	min. Earth dist.	2221 Dec 05 02:49	13° <b>II</b> 13'04 28.84252 AU
morning rise	2215 Jun 05 09:05	29° <b>8</b> 10'32	direct	2222 Feb 21 06:26	11° <b>II</b> 47'59
	2215 Jun 29 09:41	0° <b>II</b>	evening set	2222 May 20 03:17	13° <b>II</b> 42'00
retrograde	2215 Sep 04 12:22	1° <b>II</b> 09'01			
	2215 Nov 13 06:44	30° <b>8</b>	conjunction	2222 Jun 05 07:05	14° <b>II</b> 17'56 -1°27'53
opposition	2215 Nov 22 21:09	29° <b>8</b> 43'49 -1°44'37	minimum elong	2222 Jun 05 07:05	14° <b>II</b> 17'56 1°27'53
min. Earth dist.	2215 Nov 22 04:44	29° <b>8</b> 44'59 28.82830 AU	max. Earth dist.	2222 Jun 05 22:32	14° <b>II</b> 19'22 30.84502 AU
direct	2216 Feb 08 10:14	28° <b>8</b> 20'04	morning rise	2222 Jun 21 12:43	14° <b>II</b> 54'04
	2216 Apr 29 08:16	0° <b>II</b>	retrograde	2222 Sep 20 02:53	16° <b>II</b> 51'39
evening set	2216 May 05 18:47	0° <b>II</b> 13'55	opposition	2222 Dec 08 03:02	15° <b>II</b> 26'38 -1°32'53
			min. Earth dist.	2222 Dec 07 13:25	15° <b>II</b> 27'36 28.84937 AU
conjunction	2216 May 21 19:48	0° <b>II</b> 49'43 -1°37'18	direct	2223 Feb 23 19:24	14° <b>II</b> 02'29
minimum elong	2216 May 21 19:48	0° <b>II</b> 49'43 1°37'18	evening set	2223 May 22 17:01	15° <b>II</b> 56'35
max. Earth dist.	2216 May 22 13:03	0° <b>II</b> 51'20 30.82750 AU			
morning rise	2216 Jun 06 23:34	1° <b>II</b> 25'47	conjunction	2223 Jun 07 21:03	16° <b>II</b> 32'32 -1°25'50
retrograde	2216 Sep 06 01:56	3° <b>II</b> 24'08	minimum elong	2223 Jun 07 21:04	16° <b>II</b> 32'32 1°25'50
opposition	2216 Nov 24 08:33	1° <b>II</b> 58'56 -1°43'24	max. Earth dist.	2223 Jun 08 10:53	16° <b>II</b> 33'49 30.85250 AU
min. Earth dist.	2216 Nov 23 16:36	2° <b>II</b> 00'04 28.82864 AU	morning rise	2223 Jun 24 03:09	17° <b>II</b> 08'41
direct	2217 Feb 09 21:50	0° <b>II</b> 35'05	retrograde	2223 Sep 22 17:08	19° <b>II</b> 06'10
evening set	2217 May 08 08:09	2° <b>II</b> 28'57	opposition	2223 Dec 10 13:55	17° <b>II</b> 41'14 -1°30'36
			min. Earth dist.	2223 Dec 10 01:25	17° <b>II</b> 42'07 28.85729 AU
conjunction	2217 May 24 09:42	3° <b>II</b> 04'46 -1°36'05	direct	2224 Feb 26 06:57	16° <b>II</b> 17'06
minimum elong	2217 May 24 09:42	3° <b>II</b> 04'46 1°36'05	evening set	2224 May 24 06:42	18° <b>II</b> 11'17
max. Earth dist.	2217 May 25 03:16	3° <b>II</b> 06'25 30.82782 AU			
morning rise	2217 Jun 09 13:40	3° <b>II</b> 40'51	conjunction	2224 Jun 09 11:18	18° <b>II</b> 47'16 -1°23'38
retrograde	2217 Sep 08 13:13	5° <b>II</b> 39'03	minimum elong	2224 Jun 09 11:18	18° <b>II</b> 47'16 1°23'38
opposition	2217 Nov 26 19:50	4° <b>II</b> 13'51 -1°42'01	max. Earth dist.	2224 Jun 10 01:29	18° <b>II</b> 48'35 30.86066 AU
min. Earth dist.	2217 Nov 26 04:55	4° <b>II</b> 14'54 28.82914 AU	morning rise	2224 Jun 25 17:28	19° <b>II</b> 23'25
direct	2218 Feb 12 09:47	2° <b>II</b> 49'56	retrograde	2224 Sep 24 05:20	21° <b>II</b> 20'48
evening set	2218 May 10 21:35	4° <b>II</b> 43'47	opposition	2224 Dec 12 00:49	19° <b>II</b> 55'59 -1°28'12
			min. Earth dist.	2224 Dec 11 12:59	19° <b>II</b> 56'49 28.86542 AU
conjunction	2218 May 26 23:32	5° <b>II</b> 19'38 -1°34'43	direct	2225 Feb 27 19:48	18° <b>II</b> 31'51
minimum elong	2218 May 26 23:32	5° <b>II</b> 19'38 1°34'43	evening set	2225 May 26 20:29	20° <b>II</b> 26'07
max. Earth dist.	2218 May 27 15:58	5° <b>II</b> 21'10 30.82881 AU			
morning rise	2218 Jun 12 03:57	5° <b>II</b> 55'44	conjunction	2225 Jun 12 01:17	21° <b>II</b> 02'07 -1°21'19
retrograde	2218 Sep 11 02:41	7° <b>II</b> 53'47	minimum elong	2225 Jun 12 01:17	21° <b>II</b> 02'07 1°21'20
opposition	2218 Nov 29 06:56	6° <b>II</b> 28'35 -1°40'30	max. Earth dist.	2225 Jun 12 13:30	21° <b>II</b> 03'15 30.86877 AU
min. Earth dist.	2218 Nov 28 15:38	6° <b>II</b> 29'40 28.83055 AU	morning rise	2225 Jun 28 07:51	21° <b>II</b> 38'17
direct	2219 Feb 14 20:59	5° <b>II</b> 04'34	retrograde	2225 Sep 26 19:35	23° <b>II</b> 35'34
evening set	2219 May 13 11:00	6° <b>II</b> 58'27	opposition	2225 Dec 14 11:44	22° <b>II</b> 10'50 -1°25'39
			min. Earth dist.	2225 Dec 14 00:37	22° <b>II</b> 11'37 28.87331 AU
conjunction	2219 May 29 13:25	7° <b>II</b> 34'19 -1°33'13	direct	2226 Mar 02 07:15	20° <b>II</b> 46'42
minimum elong	2219 May 29 13:25	7° <b>II</b> 34'19 1°33'14	evening set	2226 May 29 10:20	22° <b>II</b> 41'01
max. Earth dist.	2219 May 30 05:40	7° <b>II</b> 35'51 30.83069 AU			
morning rise	2219 Jun 14 18:10	8° <b>II</b> 10'26	conjunction	2226 Jun 14 15:37	23° <b>II</b> 17'03 -1°18'53
retrograde	2219 Sep 13 12:57	10° <b>II</b> 08'22	minimum elong	2226 Jun 14 15:37	23° <b>II</b> 17'03 1°18'53
opposition	2219 Dec 01 18:07	8° <b>II</b> 43'10 -1°38'49	max. Earth dist.	2226 Jun 15 03:45	23° <b>II</b> 18'11 30.87626 AU
min. Earth dist.	2219 Dec 01 04:09	8° <b>II</b> 44'09 28.83306 AU	morning rise	2226 Jun 30 22:16	23° <b>II</b> 53'14
direct	2220 Feb 17 08:02	7° <b>II</b> 19'06	retrograde	2226 Sep 29 07:50	25° <b>II</b> 50'22
evening set	2220 May 15 00:28	9° <b>II</b> 13'01	opposition	2226 Dec 16 22:38	24° <b>II</b> 25'43 -1°22'59
			min. Earth dist.	2226 Dec 16 13:00	24° <b>II</b> 26'24 28.88033 AU
conjunction	2220 May 31 03:22	9° <b>II</b> 48'54 -1°31'35	direct	2227 Mar 04 19:22	23° <b>II</b> 01'34
minimum elong	2220 May 31 03:22	9° <b>II</b> 48'54 1°31'34	evening set	2227 Jun 01 00:17	24° <b>II</b> 55'56
max. Earth dist.	2220 May 31 19:18	9° <b>II</b> 50'23 30.83398 AU			
morning rise	2220 Jun 16 08:24	10° <b>II</b> 25'01	conjunction	2227 Jun 17 05:52	25° <b>II</b> 31'59 -1°16'20
retrograde	2220 Sep 15 01:42	12° <b>II</b> 22'48	minimum elong	2227 Jun 17 05:52	25° <b>II</b> 31'59 1°16'20
opposition	2220 Dec 03 04:59	10° <b>II</b> 57'39 -1°36'59	max. Earth dist.	2227 Jun 17 16:04	25° <b>II</b> 32'56 30.88297 AU
min. Earth dist.	2220 Dec 02 14:26	10° <b>II</b> 58'41 28.83699 AU	morning rise	2227 Jul 03 12:53	26° <b>II</b> 08'10
direct	2221 Feb 18 20:17	9° <b>II</b> 33'32	retrograde	2227 Oct 01 21:15	28° <b>II</b> 05'09
evening set	2221 May 17 14:01	11° <b>II</b> 27'30	opposition	2227 Dec 19 09:26	26° <b>II</b> 40'34 -1°20'11
			min. Earth dist.	2227 Dec 18 23:57	26° <b>II</b> 41'14 28.88652 AU
conjunction	2221 Jun 02 17:13	12° <b>II</b> 03'24 -1°29'48	direct	2228 Mar 06 07:04	25° <b>II</b> 16'21
minimum elong	2221 Jun 02 17:14	12° <b>II</b> 03'24 1°29'49	evening set	2228 Jun 02 14:14	27° <b>II</b> 10'46
max. Earth dist.	2221 Jun 03 08:19	12° <b>II</b> 04'49 30.83868 AU			
morning rise	2221 Jun 18 22:39	12° <b>II</b> 39'32	conjunction	2228 Jun 18 20:09	27° <b>II</b> 46'49 -1°13'40

minimum elong	2228 Jun 18 20:10	27° $\Pi$ 46'49	1°13'39	morning rise	2234 Jul 19 16:17	11° $\mathfrak{C}$ 48'35
max. Earth dist.	2228 Jun 19 05:39	27° $\Pi$ 47'42	30.88874 AU	retrograde	2234 Oct 17 07:01	13° $\mathfrak{C}$ 44'26
morning rise	2228 Jul 05 03:17	28° $\Pi$ 23'01		opposition	2235 Jan 03 11:10	12° $\mathfrak{C}$ 20'10 -0°57'36
	2228 Aug 29 14:38	0° $\mathfrak{C}$		min. Earth dist.	2235 Jan 03 06:41	12° $\mathfrak{C}$ 20'29 28.93532 AU
retrograde	2228 Oct 03 07:07	0° $\mathfrak{C}$ 19'50		direct	2235 Mar 22 17:28	10° $\mathfrak{C}$ 55'33
	2228 Nov 07 09:03	30° $\mathfrak{K}$ $\Pi$		evening set	2235 Jun 19 14:30	12° $\mathfrak{C}$ 50'13
opposition	2228 Dec 20 20:12	28° $\Pi$ 55'18	-1°17'16			
min. Earth dist.	2228 Dec 20 12:34	28° $\Pi$ 55'50	28.89200 AU	conjunction	2235 Jul 05 22:20	13° $\mathfrak{C}$ 26'19 -0°52'12
direct	2229 Mar 08 18:18	27° $\Pi$ 31'01		minimum elong	2235 Jul 05 22:20	13° $\mathfrak{C}$ 26'19 0°52'13
evening set	2229 Jun 05 04:03	29° $\Pi$ 25'27		max. Earth dist.	2235 Jul 06 03:03	13° $\mathfrak{C}$ 26'45 30.94049 AU
	2229 Jun 20 18:01	0° $\mathfrak{C}$		morning rise	2235 Jul 22 06:16	14° $\mathfrak{C}$ 02'27
				retrograde	2235 Oct 19 18:52	15° $\mathfrak{C}$ 58'09
conjunction	2229 Jun 21 10:20	0° $\mathfrak{C}$ 01'31	-1°10'53	opposition	2236 Jan 05 21:37	14° $\mathfrak{C}$ 33'59 -0°53'59
minimum elong	2229 Jun 21 10:20	0° $\mathfrak{C}$ 01'31	1°10'54	min. Earth dist.	2236 Jan 05 18:23	14° $\mathfrak{C}$ 34'12 28.94637 AU
max. Earth dist.	2229 Jun 21 18:51	0° $\mathfrak{C}$ 02'19	30.89421 AU	direct	2236 Mar 24 06:12	13° $\mathfrak{C}$ 09'23
morning rise	2229 Jul 07 17:40	0° $\mathfrak{C}$ 37'42		evening set	2236 Jun 21 04:21	15° $\mathfrak{C}$ 04'06
retrograde	2229 Oct 05 19:37	2° $\mathfrak{C}$ 34'22				
opposition	2229 Dec 23 06:48	1° $\mathfrak{C}$ 09'52	-1°14'15	conjunction	2236 Jul 07 12:14	15° $\mathfrak{C}$ 40'12 -0°48'47
min. Earth dist.	2229 Dec 22 23:00	1° $\mathfrak{C}$ 10'25	28.89733 AU	minimum elong	2236 Jul 07 12:14	15° $\mathfrak{C}$ 40'12 0°48'46
	2230 Feb 09 16:59	30° $\mathfrak{K}$ $\Pi$		max. Earth dist.	2236 Jul 07 15:16	15° $\mathfrak{C}$ 40'29 30.95199 AU
direct	2230 Mar 11 06:15	29° $\Pi$ 45'31		morning rise	2236 Jul 23 20:18	16° $\mathfrak{C}$ 16'20
	2230 Apr 09 13:04	0° $\mathfrak{C}$		retrograde	2236 Oct 21 07:52	18° $\mathfrak{C}$ 11'54
evening set	2230 Jun 07 17:48	1° $\mathfrak{C}$ 39'58		opposition	2237 Jan 07 07:54	16° $\mathfrak{C}$ 47'50 -0°50'17
				min. Earth dist.	2237 Jan 07 04:39	16° $\mathfrak{C}$ 48'04 28.95800 AU
conjunction	2230 Jun 24 00:19	2° $\mathfrak{C}$ 16'03	-1°08'00	direct	2237 Mar 26 18:12	15° $\mathfrak{C}$ 23'14
minimum elong	2230 Jun 24 00:20	2° $\mathfrak{C}$ 16'03	1°08'00	evening set	2237 Jun 23 18:13	17° $\mathfrak{C}$ 18'02
max. Earth dist.	2230 Jun 24 07:43	2° $\mathfrak{C}$ 16'44	30.89962 AU			
morning rise	2230 Jul 10 07:53	2° $\mathfrak{C}$ 52'14		conjunction	2237 Jul 10 02:16	17° $\mathfrak{C}$ 54'09 -0°45'17
retrograde	2230 Oct 08 06:23	4° $\mathfrak{C}$ 48'43		minimum elong	2237 Jul 10 02:17	17° $\mathfrak{C}$ 54'09 0°45'18
opposition	2230 Dec 25 17:29	3° $\mathfrak{C}$ 24'15	-1°11'07	max. Earth dist.	2237 Jul 10 04:50	17° $\mathfrak{C}$ 54'23 30.96356 AU
min. Earth dist.	2230 Dec 25 11:22	3° $\mathfrak{C}$ 24'41	28.90295 AU	morning rise	2237 Jul 26 10:15	18° $\mathfrak{C}$ 30'16
direct	2231 Mar 13 16:05	1° $\mathfrak{C}$ 59'49		retrograde	2237 Oct 23 18:42	20° $\mathfrak{C}$ 25'42
evening set	2231 Jun 10 07:34	3° $\mathfrak{C}$ 54'18		opposition	2238 Jan 09 18:23	19° $\mathfrak{C}$ 01'45 -0°46'31
				min. Earth dist.	2238 Jan 09 17:02	19° $\mathfrak{C}$ 01'50 28.96943 AU
conjunction	2231 Jun 26 14:30	4° $\mathfrak{C}$ 30'23	-1°05'02	direct	2238 Mar 29 05:03	17° $\mathfrak{C}$ 37'09
minimum elong	2231 Jun 26 14:31	4° $\mathfrak{C}$ 30'23	1°05'02	evening set	2238 Jun 26 08:04	19° $\mathfrak{C}$ 32'00
max. Earth dist.	2231 Jun 26 21:47	4° $\mathfrak{C}$ 31'03	30.90559 AU			
morning rise	2231 Jul 12 22:07	5° $\mathfrak{C}$ 06'33		conjunction	2238 Jul 12 16:16	20° $\mathfrak{C}$ 08'07 -0°41'44
retrograde	2231 Oct 10 17:41	7° $\mathfrak{C}$ 02'52		minimum elong	2238 Jul 12 16:16	20° $\mathfrak{C}$ 08'07 0°41'43
opposition	2231 Dec 28 03:50	5° $\mathfrak{C}$ 38'26	-1°07'53	max. Earth dist.	2238 Jul 12 17:30	20° $\mathfrak{C}$ 08'14 30.97472 AU
min. Earth dist.	2231 Dec 27 21:39	5° $\mathfrak{C}$ 38'52	28.90919 AU	morning rise	2238 Jul 29 00:17	20° $\mathfrak{C}$ 44'13
direct	2232 Mar 15 05:38	4° $\mathfrak{C}$ 13'56		retrograde	2238 Oct 26 07:38	22° $\mathfrak{C}$ 39'31
evening set	2232 Jun 11 21:28	6° $\mathfrak{C}$ 08'27		opposition	2239 Jan 12 04:46	21° $\mathfrak{C}$ 15'40 -0°42'40
				min. Earth dist.	2239 Jan 12 03:32	21° $\mathfrak{C}$ 15'45 28.98001 AU
conjunction	2232 Jun 28 04:29	6° $\mathfrak{C}$ 44'32	-1°01'57	direct	2239 Mar 31 17:03	19° $\mathfrak{C}$ 51'02
minimum elong	2232 Jun 28 04:29	6° $\mathfrak{C}$ 44'32	1°01'57	evening set	2239 Jun 28 22:08	21° $\mathfrak{C}$ 45'57
max. Earth dist.	2232 Jun 28 10:05	6° $\mathfrak{C}$ 45'03	30.91236 AU			
morning rise	2232 Jul 14 12:20	7° $\mathfrak{C}$ 20'42		conjunction	2239 Jul 15 06:22	22° $\mathfrak{C}$ 22'04 -0°38'06
retrograde	2232 Oct 12 06:03	9° $\mathfrak{C}$ 16'51		minimum elong	2239 Jul 15 06:22	22° $\mathfrak{C}$ 22'04 0°38'07
opposition	2232 Dec 29 14:23	7° $\mathfrak{C}$ 52'27	-1°04'33	max. Earth dist.	2239 Jul 15 06:07	22° $\mathfrak{C}$ 22'03 30.98470 AU
min. Earth dist.	2232 Dec 29 09:10	7° $\mathfrak{C}$ 52'49	28.91660 AU	morning rise	2239 Jul 31 14:20	22° $\mathfrak{C}$ 58'10
direct	2233 Mar 17 17:07	6° $\mathfrak{C}$ 27'54		retrograde	2239 Oct 28 17:59	24° $\mathfrak{C}$ 53'18
evening set	2233 Jun 14 10:58	8° $\mathfrak{C}$ 22'27		opposition	2240 Jan 14 15:11	23° $\mathfrak{C}$ 29'32 -0°38'46
				min. Earth dist.	2240 Jan 14 15:58	23° $\mathfrak{C}$ 29'28 28.98946 AU
conjunction	2233 Jun 30 18:23	8° $\mathfrak{C}$ 58'32	-0°58'48	direct	2240 Apr 02 02:55	22° $\mathfrak{C}$ 04'52
minimum elong	2233 Jun 30 18:23	8° $\mathfrak{C}$ 58'32	0°58'48	evening set	2240 Jun 30 12:03	23° $\mathfrak{C}$ 59'50
max. Earth dist.	2233 Jul 01 00:29	8° $\mathfrak{C}$ 59'06	30.92039 AU			
morning rise	2233 Jul 17 02:09	9° $\mathfrak{C}$ 34'41		conjunction	2240 Jul 16 20:27	24° $\mathfrak{C}$ 35'56 -0°34'26
retrograde	2233 Oct 14 17:19	11° $\mathfrak{C}$ 30'41		minimum elong	2240 Jul 16 20:28	24° $\mathfrak{C}$ 35'56 0°34'26
opposition	2234 Jan 01 00:51	10° $\mathfrak{C}$ 06'21	-1°01'07	max. Earth dist.	2240 Jul 16 19:32	24° $\mathfrak{C}$ 35'51 30.99363 AU
min. Earth dist.	2233 Dec 31 20:00	10° $\mathfrak{C}$ 06'41	28.92521 AU	morning rise	2240 Aug 02 04:16	25° $\mathfrak{C}$ 12'01
direct	2234 Mar 20 05:46	8° $\mathfrak{C}$ 41'45		retrograde	2240 Oct 30 04:45	27° $\mathfrak{C}$ 07'00
evening set	2234 Jun 17 00:46	10° $\mathfrak{C}$ 36'21		opposition	2241 Jan 16 01:34	25° $\mathfrak{C}$ 43'17 -0°34'49
				min. Earth dist.	2241 Jan 16 02:38	25° $\mathfrak{C}$ 43'13 28.99775 AU
conjunction	2234 Jul 03 08:15	11° $\mathfrak{C}$ 12'26	-0°55'32	direct	2241 Apr 04 16:16	24° $\mathfrak{C}$ 18'35
minimum elong	2234 Jul 03 08:15	11° $\mathfrak{C}$ 12'27	0°55'32	evening set	2241 Jul 03 01:51	26° $\mathfrak{C}$ 13'35
max. Earth dist.	2234 Jul 03 12:38	11° $\mathfrak{C}$ 12'51	30.92981 AU			

conjunction	2241 Jul 19 10:10	26°  49'40 -0°30'43	conjunction	2247 Aug 02 19:38	10°  08'39 -0°07'47
minimum elong	2241 Jul 19 10:10	26°  49'40 0°30'44	minimum elong	2247 Aug 02 19:38	10°  08'39 0°07'47
max. Earth dist.	2241 Jul 19 07:15	26°  49'24 31.00152 AU	behind sun begin	2247 Aug 02 13:43	10°  08'08
morning rise	2241 Aug 04 18:00	27°  25'44	behind sun end	2247 Aug 03 01:34	10°  09'11
retrograde	2241 Nov 01 16:11	29°  20'34	max. Earth dist.	2247 Aug 02 12:29	10°  08'01 31.05132 AU
opposition	2242 Jan 18 11:55	27°  25'54 -0°30'49	morning rise	2247 Aug 19 02:21	10°  04'33
min. Earth dist.	2242 Jan 18 14:18	27°  25'43 29.00534 AU	retrograde	2247 Nov 15 13:43	12°  03'30
direct	2242 Apr 07 03:17	26°  23'08	opposition	2248 Feb 01 00:33	11°  01'10 -0°06'12
evening set	2242 Jul 05 15:34	28°  27'10	min. Earth dist.	2248 Feb 01 06:18	11°  01'46 29.05696 AU
			direct	2248 Apr 20 04:56	9°  05'12
conjunction	2242 Jul 22 00:04	29°  20'15 -0°26'58	evening set	2248 Jul 19 01:03	11°  04'53
minimum elong	2242 Jul 22 00:04	29°  20'15 0°26'57			
max. Earth dist.	2242 Jul 21 21:09	29°  20'59 31.00885 AU	conjunction	2248 Aug 04 09:00	12°  02'30 -0°03'54
morning rise	2242 Aug 07 07:39	29°  23'17	minimum elong	2248 Aug 04 09:00	12°  02'30 0°03'54
	2242 Aug 17 02:03	0°  00	behind sun begin	2248 Aug 04 02:29	12°  02'56
retrograde	2242 Nov 04 02:44	1°  03'57	behind sun end	2248 Aug 04 15:31	12°  02'05
opposition	2243 Jan 20 22:02	0°  01'19 -0°26'47	max. Earth dist.	2248 Aug 04 01:07	12°  02'48 31.06280 AU
min. Earth dist.	2243 Jan 21 01:17	0°  01'06 29.01242 AU	morning rise	2248 Aug 20 15:25	12°  05'23
	2243 Jan 27 00:19	30°  00	retrograde	2248 Nov 16 23:22	14°  01'13
direct	2243 Apr 09 15:48	28°  24'53	opposition	2249 Feb 02 10:46	13°  02'00 -0°02'02
	2243 Jun 18 12:28	0°  00	min. Earth dist.	2249 Feb 02 18:02	13°  02'29 29.06885 AU
evening set	2243 Jul 08 05:26	0°  04'35	direct	2249 Apr 22 14:28	12°  03'03
			evening set	2249 Jul 21 14:20	13°  05'25
conjunction	2243 Jul 24 13:46	1°  01'38 -0°23'10	asc. node	2249 Jul 31 11:46	14°  02'06
minimum elong	2243 Jul 24 13:46	1°  01'38 0°23'11			
max. Earth dist.	2243 Jul 24 08:48	1°  01'11 31.01597 AU	conjunction	2249 Aug 06 22:11	14°  03'24 0°00'04
morning rise	2243 Aug 09 21:23	1°  05'29	minimum elong	2249 Aug 06 22:12	14°  03'24 0°00'04
retrograde	2243 Nov 06 15:33	3°  04'09	behind sun begin	2249 Aug 06 16:07	14°  03'52
opposition	2244 Jan 23 08:12	2°  03'34 -0°22'43	behind sun end	2249 Aug 07 04:17	14°  03'56
min. Earth dist.	2244 Jan 23 11:59	2°  03'18 29.01966 AU	max. Earth dist.	2249 Aug 06 14:06	14°  03'40 31.07487 AU
direct	2244 Apr 11 04:00	0°  05'41		2249 Aug 18 11:34	15°  00
evening set	2244 Jul 09 18:58	2°  05'47	morning rise	2249 Aug 23 04:18	15°  01'14
			retrograde	2249 Nov 19 09:21	17°  03'59
conjunction	2244 Jul 26 03:24	3°  02'51 -0°19'21	opposition	2250 Feb 04 20:51	15°  04'52 0°02'08
minimum elong	2244 Jul 26 03:24	3°  02'51 0°19'20	min. Earth dist.	2250 Feb 05 04:16	15°  04'21 29.08080 AU
max. Earth dist.	2244 Jul 25 22:46	3°  02'25 31.02332 AU		2250 Mar 02 02:36	15°  00
morning rise	2244 Aug 11 10:38	4°  05'49	direct	2250 Apr 25 03:09	14°  01'56
retrograde	2244 Nov 08 02:21	6°  00'11		2250 Jun 16 22:20	15°  00
opposition	2245 Jan 24 18:23	4°  03'37 -0°18'37	evening set	2250 Jul 24 03:57	16°  01'22
min. Earth dist.	2245 Jan 24 23:23	4°  03'16 29.02732 AU			
direct	2245 Apr 13 17:16	3°  01'14	conjunction	2250 Aug 09 11:30	16°  04'20 0°04'02
evening set	2245 Jul 12 08:33	5°  06'51	minimum elong	2250 Aug 09 11:30	16°  04'20 0°04'03
			behind sun begin	2250 Aug 09 05:00	16°  04'45
conjunction	2245 Jul 28 16:48	5°  04'23 -0°15'31	behind sun end	2250 Aug 09 18:00	16°  04'54
minimum elong	2245 Jul 28 16:48	5°  04'23 0°15'31	max. Earth dist.	2250 Aug 09 01:35	16°  04'26 31.08660 AU
behind sun begin	2245 Jul 28 15:38	5°  04'27	morning rise	2250 Aug 25 17:22	17°  02'30'08
behind sun end	2245 Jul 28 17:58	5°  04'25'59	retrograde	2250 Nov 21 20:20	19°  01'6'47
max. Earth dist.	2245 Jul 28 10:37	5°  04'21'19 31.03151 AU	opposition	2251 Feb 07 06:57	17°  05'34'45 0°06'18
morning rise	2245 Aug 14 00:00	6°  01'8'50	min. Earth dist.	2251 Feb 07 15:38	17°  05'30'08 29.09230 AU
retrograde	2245 Nov 10 14:34	8°  01'3'03	direct	2251 Apr 27 12:48	16°  02'8'48
opposition	2246 Jan 27 04:24	6°  04'33 -0°14'30	evening set	2251 Jul 26 17:28	18°  02'4'18
min. Earth dist.	2246 Jan 27 09:03	6°  04'13 29.03606 AU			
direct	2246 Apr 16 05:39	5°  02'4'35	conjunction	2251 Aug 12 00:57	19°  00'15 0°07'55
evening set	2246 Jul 14 21:58	7°  01'9'47	minimum elong	2251 Aug 12 00:57	19°  00'15 0°07'54
			behind sun begin	2251 Aug 11 19:04	18°  05'9'43
conjunction	2246 Jul 31 06:15	7°  05'54'48 -0°11'39	behind sun end	2251 Aug 12 06:50	19°  00'46
minimum elong	2246 Jul 31 06:14	7°  05'54'48 0°11'38	max. Earth dist.	2251 Aug 11 14:54	18°  05'20 31.09758 AU
behind sun begin	2246 Jul 31 01:38	7°  05'52'23	morning rise	2251 Aug 28 06:20	19°  03'6'01
behind sun end	2246 Jul 31 10:51	7°  05'56'12	retrograde	2251 Nov 24 06:22	21°  02'9'33
max. Earth dist.	2246 Jul 31 00:01	7°  05'55'14 31.04076 AU	opposition	2252 Feb 09 17:12	20°  06'36 0°10'27
morning rise	2246 Aug 16 13:07	8°  03'1'43	min. Earth dist.	2252 Feb 10 02:51	20°  05'55 29.10268 AU
retrograde	2246 Nov 13 01:03	10°  02'5'48	direct	2252 Apr 29 00:46	18°  04'1'38
opposition	2247 Jan 29 14:36	9°  02'2'22 -0°10'21	evening set	2252 Jul 28 06:58	20°  03'7'10
min. Earth dist.	2247 Jan 29 20:43	9°  01'5'56 29.04593 AU			
direct	2247 Apr 18 16:55	7°  03'7'24	conjunction	2252 Aug 13 14:01	21°  03'1'04 0°11'46
evening set	2247 Jul 17 11:31	9°  03'2'39	minimum elong	2252 Aug 13 14:01	21°  03'1'04 0°11'47
			behind sun begin	2252 Aug 13 09:28	21°  02'12'40

behind sun end	2252 Aug 13 18:33	21°Ω13'29		minimum elong	2258 Aug 27 18:52	4°♊25'58	0°34'21
max. Earth dist.	2252 Aug 13 01:49	21°Ω11'57	31.10740 AU	max. Earth dist.	2258 Aug 27 03:19	4°♊24'32	31.15415 AU
morning rise	2252 Aug 29 19:11	21°Ω48'49		morning rise	2258 Sep 12 21:25	5°♊01'27	
retrograde	2252 Nov 25 18:07	23°Ω42'13		retrograde	2258 Dec 09 08:26	6°♊54'06	
opposition	2253 Feb 11 03:23	22°Ω19'19	0°14'35	opposition	2259 Feb 24 15:55	5°♊31'22	0°38'35
min. Earth dist.	2253 Feb 11 13:36	22°Ω18'36	29.11202 AU	min. Earth dist.	2259 Feb 25 05:50	5°♊30'24	29.15894 AU
direct	2253 May 01 12:56	20°Ω54'19		direct	2259 May 15 14:58	4°♊06'08	
evening set	2253 Jul 30 20:17	22°Ω49'54		evening set	2259 Aug 14 02:30	6°♊01'49	
conjunction	2253 Aug 16 03:14	23°Ω25'46	0°15'37	conjunction	2259 Aug 30 07:16	6°♊37'29	0°37'57
minimum elong	2253 Aug 16 03:14	23°Ω25'46	0°15'36	minimum elong	2259 Aug 30 07:16	6°♊37'29	0°37'56
behind sun begin	2253 Aug 16 02:13	23°Ω25'41		max. Earth dist.	2259 Aug 29 14:33	6°♊35'57	31.16360 AU
behind sun end	2253 Aug 16 04:16	23°Ω25'52		morning rise	2259 Sep 15 09:25	7°♊12'56	
max. Earth dist.	2253 Aug 15 15:09	23°Ω24'40	31.11612 AU	retrograde	2259 Dec 11 18:51	9°♊05'30	
morning rise	2253 Sep 01 07:52	24°Ω01'28		opposition	2260 Feb 27 02:05	7°♊42'50	0°42'25
retrograde	2253 Nov 28 04:04	25°Ω54'45		min. Earth dist.	2260 Feb 27 16:30	7°♊41'50	29.16913 AU
opposition	2254 Feb 13 13:33	24°Ω31'52	0°18'41	direct	2260 May 17 00:19	6°♊17'37	
min. Earth dist.	2254 Feb 14 01:20	24°Ω31'03	29.12026 AU	evening set	2260 Aug 15 15:04	8°♊13'21	
direct	2254 May 04 01:56	23°Ω06'50		conjunction	2260 Aug 31 19:34	8°♊48'59	0°41'30
evening set	2254 Aug 02 09:37	25°Ω02'25		minimum elong	2260 Aug 31 19:34	8°♊48'59	0°41'31
conjunction	2254 Aug 18 16:11	25°Ω38'16	0°19'26	max. Earth dist.	2260 Aug 31 03:32	8°♊47'30	31.17430 AU
minimum elong	2254 Aug 18 16:11	25°Ω38'16	0°19'27	morning rise	2260 Sep 16 21:05	9°♊24'24	
max. Earth dist.	2254 Aug 18 02:13	25°Ω36'59	31.12401 AU	retrograde	2260 Dec 13 04:04	11°♊16'55	
morning rise	2254 Sep 03 20:37	26°Ω13'55		opposition	2261 Feb 28 12:15	9°♊54'21	0°46'11
retrograde	2254 Nov 30 15:59	28°Ω07'04		min. Earth dist.	2261 Mar 01 03:07	9°♊53'18	29.18020 AU
opposition	2255 Feb 15 23:37	26°Ω44'13	0°22'45	direct	2261 May 19 11:43	8°♊29'10	
min. Earth dist.	2255 Feb 16 11:18	26°Ω43'23	29.12777 AU	evening set	2261 Aug 18 03:52	10°♊24'57	
direct	2255 May 06 14:34	25°Ω19'07		conjunction	2261 Sep 03 07:46	11°♊00'33	0°45'00
evening set	2255 Aug 04 22:49	27°Ω14'43		minimum elong	2261 Sep 03 07:46	11°♊00'33	0°45'00
conjunction	2255 Aug 21 05:10	27°Ω50'32	0°23'13	max. Earth dist.	2261 Sep 02 14:13	10°♊58'56	31.18574 AU
minimum elong	2255 Aug 21 05:10	27°Ω50'32	0°23'13	morning rise	2261 Sep 19 08:57	11°♊35'56	
max. Earth dist.	2255 Aug 20 14:59	27°Ω49'14	31.13117 AU	retrograde	2261 Dec 15 15:30	13°♊28'24	
morning rise	2255 Sep 06 09:01	28°Ω26'08		opposition	2262 Mar 02 22:16	12°♊05'56	0°49'53
	2255 Oct 30 09:37	0°♊		min. Earth dist.	2262 Mar 03 13:16	12°♊04'53	29.19189 AU
retrograde	2255 Dec 03 02:12	0°♊19'09		direct	2262 May 21 22:44	10°♊40'48	
	2256 Jan 06 05:15	30°♋Ω		evening set	2262 Aug 20 16:32	12°♊36'40	
opposition	2256 Feb 18 09:47	28°Ω56'19	0°26'47	conjunction	2262 Sep 05 20:10	13°♊12'14	0°48'26
min. Earth dist.	2256 Feb 18 23:08	28°Ω55'23	29.13487 AU	minimum elong	2262 Sep 05 20:10	13°♊12'14	0°48'26
direct	2256 May 08 02:47	27°Ω31'10		max. Earth dist.	2262 Sep 05 03:08	13°♊10'40	31.19727 AU
evening set	2256 Aug 06 11:54	29°Ω26'47		morning rise	2262 Sep 21 20:40	13°♊47'34	
	2256 Aug 21 14:13	0°♊		retrograde	2262 Dec 18 01:20	15°♊40'01	
conjunction	2256 Aug 22 17:52	0°♊02'33	0°26'58	opposition	2263 Mar 05 08:36	14°♊17'37	0°53'30
minimum elong	2256 Aug 22 17:52	0°♊02'33	0°26'59	min. Earth dist.	2263 Mar 06 00:59	14°♊16'29	29.20320 AU
max. Earth dist.	2256 Aug 22 02:44	0°♊01'10	31.13832 AU	direct	2263 May 24 10:45	12°♊52'33	
morning rise	2256 Sep 07 21:23	0°♊38'07		evening set	2263 Aug 23 05:21	14°♊48'28	
retrograde	2256 Dec 04 13:58	2°♊30'59		conjunction	2263 Sep 08 08:21	15°♊24'00	0°51'47
opposition	2257 Feb 19 19:49	1°♊08'11	0°30'46	minimum elong	2263 Sep 08 08:21	15°♊24'00	0°51'47
min. Earth dist.	2257 Feb 20 08:44	1°♊07'16	29.14213 AU	max. Earth dist.	2263 Sep 07 13:42	15°♊22'17	31.20822 AU
	2257 Apr 07 20:41	30°♋Ω		morning rise	2263 Sep 24 08:26	15°♊59'18	
direct	2257 May 10 15:55	29°Ω42'59		retrograde	2263 Dec 20 13:18	17°♊51'42	
	2257 Jun 12 00:14	0°♊		opposition	2264 Mar 06 18:51	16°♊29'23	0°57'03
evening set	2257 Aug 09 00:43	1°♊38'37		min. Earth dist.	2264 Mar 07 10:57	16°♊28'16	29.21374 AU
conjunction	2257 Aug 25 06:19	2°♊14'21	0°30'41	direct	2264 May 25 22:39	15°♊04'20	
minimum elong	2257 Aug 25 06:19	2°♊14'21	0°30'41	evening set	2264 Aug 24 18:01	17°♊00'19	
max. Earth dist.	2257 Aug 24 14:41	2°♊12'55	31.14576 AU	conjunction	2264 Sep 09 20:38	17°♊35'49	0°55'04
morning rise	2257 Sep 10 09:22	2°♊49'53		minimum elong	2264 Sep 09 20:38	17°♊35'49	0°55'04
retrograde	2257 Dec 06 23:05	4°♊42'38		max. Earth dist.	2264 Sep 09 01:52	17°♊34'05	31.21810 AU
opposition	2258 Feb 22 05:58	3°♊19'51	0°34'42	morning rise	2264 Sep 25 20:01	18°♊11'04	
min. Earth dist.	2258 Feb 22 20:09	3°♊18'51	29.15006 AU	retrograde	2264 Dec 22 00:02	20°♊03'25	
direct	2258 May 13 02:26	1°♊54'38		opposition	2265 Mar 09 05:20	18°♊41'11	1°00'31
evening set	2258 Aug 11 13:34	3°♊50'16		min. Earth dist.	2265 Mar 09 23:05	18°♊39'57	29.22314 AU
conjunction	2258 Aug 27 18:52	4°♊25'58	0°34'21	direct	2265 May 28 10:57	17°♊16'09	

evening set	2265 Aug 27 06:32	19° $\mathring{M}$ 12'09		minimum elong	2271 Sep 26 06:49	2° $\mathring{A}$ 55'25	1°15'29
				morning rise	2271 Oct 12 02:15	3° $\mathring{A}$ 30'21	
conjunction	2265 Sep 12 08:37	19° $\mathring{M}$ 47'37	0°58'16	retrograde	2272 Jan 06 19:24	5° $\mathring{A}$ 22'16	
minimum elong	2265 Sep 12 08:37	19° $\mathring{M}$ 47'37	0°58'16	opposition	2272 Mar 24 06:14	4° $\mathring{A}$ 00'09	1°21'58
max. Earth dist.	2265 Sep 11 12:49	19° $\mathring{M}$ 45'47	31.22688 AU	min. Earth dist.	2272 Mar 25 02:32	3° $\mathring{A}$ 58'44	29.26847 AU
morning rise	2265 Sep 28 07:35	20° $\mathring{M}$ 22'49		direct	2272 Jun 12 21:02	2° $\mathring{A}$ 35'02	
retrograde	2265 Dec 24 12:05	22° $\mathring{M}$ 15'07		evening set	2272 Sep 11 19:42	4° $\mathring{A}$ 31'01	
opposition	2266 Mar 11 15:40	20° $\mathring{M}$ 52'55	1°03'53				
min. Earth dist.	2266 Mar 12 09:10	20° $\mathring{M}$ 51'42	29.23124 AU	conjunction	2272 Sep 27 18:02	5° $\mathring{A}$ 06'11	1°18'00
direct	2266 May 31 00:42	19° $\mathring{M}$ 27'53		minimum elong	2272 Sep 27 18:02	5° $\mathring{A}$ 06'11	1°18'00
evening set	2266 Aug 29 19:08	21° $\mathring{M}$ 23'55		max. Earth dist.	2272 Sep 26 19:52	5° $\mathring{A}$ 04'08	31.27159 AU
				morning rise	2272 Oct 13 13:03	5° $\mathring{A}$ 41'04	
conjunction	2266 Sep 14 20:44	21° $\mathring{M}$ 59'21	1°01'23	retrograde	2273 Jan 08 06:45	7° $\mathring{A}$ 32'58	
minimum elong	2266 Sep 14 20:43	21° $\mathring{M}$ 59'21	1°01'23	opposition	2273 Mar 26 16:41	6° $\mathring{A}$ 10'53	1°24'35
max. Earth dist.	2266 Sep 14 00:07	21° $\mathring{M}$ 57'26	31.23428 AU	min. Earth dist.	2273 Mar 27 11:59	6° $\mathring{A}$ 09'33	29.27643 AU
morning rise	2266 Sep 30 19:05	22° $\mathring{M}$ 34'30		direct	2273 Jun 15 08:22	4° $\mathring{A}$ 45'49	
retrograde	2266 Dec 26 21:15	24° $\mathring{M}$ 26'44		evening set	2273 Sep 14 07:20	6° $\mathring{A}$ 41'49	
opposition	2267 Mar 14 02:02	23° $\mathring{M}$ 04'34	1°07'10	max. Earth dist.	2273 Sep 29 07:39	7° $\mathring{A}$ 14'57	31.27979 AU
min. Earth dist.	2267 Mar 14 21:02	23° $\mathring{M}$ 03'15	29.23819 AU				
direct	2267 Jun 02 11:42	21° $\mathring{M}$ 39'31		conjunction	2273 Sep 30 05:15	7° $\mathring{A}$ 16'57	1°20'23
evening set	2267 Sep 01 07:34	23° $\mathring{M}$ 35'33		minimum elong	2273 Sep 30 05:15	7° $\mathring{A}$ 16'57	1°20'23
				morning rise	2273 Oct 15 23:36	7° $\mathring{A}$ 51'48	
conjunction	2267 Sep 17 08:43	24° $\mathring{M}$ 10'56	1°04'24	retrograde	2274 Jan 10 17:05	9° $\mathring{A}$ 43'41	
minimum elong	2267 Sep 17 08:42	24° $\mathring{M}$ 10'56	1°04'24	opposition	2274 Mar 29 03:21	8° $\mathring{A}$ 21'40	1°27'05
max. Earth dist.	2267 Sep 16 12:01	24° $\mathring{M}$ 09'01	31.24073 AU	min. Earth dist.	2274 Mar 29 23:48	8° $\mathring{A}$ 20'15	29.28486 AU
morning rise	2267 Oct 03 06:29	24° $\mathring{M}$ 46'03		direct	2274 Jun 17 20:26	6° $\mathring{A}$ 56'39	
retrograde	2267 Dec 29 06:35	26° $\mathring{M}$ 38'11		evening set	2274 Sep 16 19:08	8° $\mathring{A}$ 52'41	
opposition	2268 Mar 15 12:28	25° $\mathring{M}$ 16'03	1°10'20				
min. Earth dist.	2268 Mar 16 07:24	25° $\mathring{M}$ 14'44	29.24417 AU	conjunction	2274 Oct 02 16:26	9° $\mathring{A}$ 27'46	1°22'40
direct	2268 Jun 04 00:50	23° $\mathring{M}$ 50'59		minimum elong	2274 Oct 02 16:25	9° $\mathring{A}$ 27'46	1°22'40
evening set	2268 Sep 02 19:48	25° $\mathring{M}$ 47'00		max. Earth dist.	2274 Oct 01 18:23	9° $\mathring{A}$ 25'43	31.28825 AU
				morning rise	2274 Oct 18 10:16	10° $\mathring{A}$ 02'34	
conjunction	2268 Sep 18 20:18	26° $\mathring{M}$ 22'21	1°07'19	retrograde	2275 Jan 13 04:38	11° $\mathring{A}$ 54'28	
minimum elong	2268 Sep 18 20:18	26° $\mathring{M}$ 22'21	1°07'20	opposition	2275 Mar 31 13:53	10° $\mathring{A}$ 32'30	1°29'27
max. Earth dist.	2268 Sep 17 22:26	26° $\mathring{M}$ 20'19	31.24638 AU	min. Earth dist.	2275 Apr 01 09:43	10° $\mathring{A}$ 31'08	29.29311 AU
morning rise	2268 Oct 04 17:35	26° $\mathring{M}$ 57'25		direct	2275 Jun 20 09:43	9° $\mathring{A}$ 07'32	
retrograde	2268 Dec 30 16:44	28° $\mathring{M}$ 49'30		evening set	2275 Sep 19 06:56	11° $\mathring{A}$ 03'37	
opposition	2269 Mar 17 22:53	27° $\mathring{M}$ 27'21	1°13'25	max. Earth dist.	2275 Oct 04 05:14	11° $\mathring{A}$ 36'35	31.29614 AU
min. Earth dist.	2269 Mar 18 18:22	27° $\mathring{M}$ 26'00	29.24979 AU				
direct	2269 Jun 06 10:50	26° $\mathring{M}$ 02'15		conjunction	2275 Oct 05 03:38	11° $\mathring{A}$ 38'40	1°24'50
evening set	2269 Sep 05 07:51	27° $\mathring{M}$ 58'16		minimum elong	2275 Oct 05 03:38	11° $\mathring{A}$ 38'40	1°24'49
max. Earth dist.	2269 Sep 20 10:49	28° $\mathring{M}$ 31'36	31.25187 AU	morning rise	2275 Oct 20 20:52	12° $\mathring{A}$ 13'26	
				retrograde	2276 Jan 15 14:39	14° $\mathring{A}$ 05'20	
conjunction	2269 Sep 21 07:59	28° $\mathring{M}$ 33'33	1°10'09	opposition	2276 Apr 02 00:46	12° $\mathring{A}$ 43'25	1°31'41
minimum elong	2269 Sep 21 07:58	28° $\mathring{M}$ 33'33	1°10'09	min. Earth dist.	2276 Apr 02 21:41	12° $\mathring{A}$ 41'59	29.30074 AU
morning rise	2269 Oct 07 04:35	29° $\mathring{M}$ 08'35		direct	2276 Jun 21 20:29	11° $\mathring{A}$ 18'30	
	2269 Nov 01 16:11	0° $\mathring{A}$		evening set	2276 Sep 20 18:28	13° $\mathring{A}$ 14'36	
retrograde	2270 Jan 02 00:43	1° $\mathring{A}$ 00'35					
	2270 Mar 07 06:35	30° $\mathring{R}$ $\mathring{M}$		conjunction	2276 Oct 06 14:40	13° $\mathring{A}$ 49'36	1°26'52
opposition	2270 Mar 20 09:13	29° $\mathring{M}$ 38'27	1°16'22	minimum elong	2276 Oct 06 14:40	13° $\mathring{A}$ 49'36	1°26'51
min. Earth dist.	2270 Mar 21 05:08	29° $\mathring{M}$ 37'04	29.25532 AU	max. Earth dist.	2276 Oct 05 16:32	13° $\mathring{A}$ 47'33	31.30318 AU
direct	2270 Jun 08 23:07	28° $\mathring{M}$ 13'20		morning rise	2276 Oct 22 07:18	14° $\mathring{A}$ 24'20	
	2270 Sep 03 11:47	0° $\mathring{A}$		retrograde	2277 Jan 17 00:27	16° $\mathring{A}$ 16'14	
evening set	2270 Sep 07 19:59	0° $\mathring{A}$ 09'19		opposition	2277 Apr 04 11:37	14° $\mathring{A}$ 54'23	1°33'48
				min. Earth dist.	2277 Apr 05 08:24	14° $\mathring{A}$ 52'57	29.30709 AU
conjunction	2270 Sep 23 19:25	0° $\mathring{A}$ 44'34	1°12'52	direct	2277 Jun 24 09:47	13° $\mathring{A}$ 29'30	
minimum elong	2270 Sep 23 19:25	0° $\mathring{A}$ 44'34	1°12'52	evening set	2277 Sep 23 06:12	15° $\mathring{A}$ 25'36	
max. Earth dist.	2270 Sep 22 21:00	0° $\mathring{A}$ 42'29	31.25762 AU	max. Earth dist.	2277 Oct 08 02:23	15° $\mathring{A}$ 58'25	31.30880 AU
morning rise	2270 Oct 09 15:37	1° $\mathring{A}$ 19'32					
retrograde	2271 Jan 04 10:44	3° $\mathring{A}$ 11'29		conjunction	2277 Oct 09 01:44	16° $\mathring{A}$ 00'35	1°28'46
opposition	2271 Mar 22 19:39	1° $\mathring{A}$ 49'21	1°19'14	minimum elong	2277 Oct 09 01:43	16° $\mathring{A}$ 00'35	1°28'46
min. Earth dist.	2271 Mar 23 15:11	1° $\mathring{A}$ 48'00	29.26150 AU	morning rise	2277 Oct 24 17:53	16° $\mathring{A}$ 35'16	
direct	2271 Jun 11 09:54	0° $\mathring{A}$ 24'13		retrograde	2278 Jan 19 11:10	18° $\mathring{A}$ 27'11	
evening set	2271 Sep 10 07:48	2° $\mathring{A}$ 20'12		opposition	2278 Apr 06 22:24	17° $\mathring{A}$ 05'21	1°35'46
max. Earth dist.	2271 Sep 25 09:30	2° $\mathring{A}$ 53'27	31.26408 AU	min. Earth dist.	2278 Apr 07 19:41	17° $\mathring{A}$ 03'53	29.31212 AU
				direct	2278 Jun 26 20:12	15° $\mathring{A}$ 40'30	
conjunction	2271 Sep 26 06:50	2° $\mathring{A}$ 55'25	1°15'29	evening set	2278 Sep 25 17:46	17° $\mathring{A}$ 36'36	

conjunction	2278 Oct 11 12:53	18° <u>♄</u> 11'32	1°30'33	retrograde	2285 Feb 03 08:05	3° <u>♋</u> 41'33	
minimum elong	2278 Oct 11 12:53	18° <u>♄</u> 11'32	1°30'33	opposition	2285 Apr 22 03:36	2° <u>♋</u> 19'39	1°45'36
max. Earth dist.	2278 Oct 10 14:08	18° <u>♄</u> 09'25	31.31299 AU	min. Earth dist.	2285 Apr 23 00:57	2° <u>♋</u> 18'11	29.32405 AU
morning rise	2278 Oct 27 04:22	18° <u>♄</u> 46'12		direct	2285 Jul 12 06:01	0° <u>♋</u> 54'51	
retrograde	2279 Jan 21 19:29	20° <u>♄</u> 38'06		evening set	2285 Oct 10 23:07	2° <u>♋</u> 50'47	
opposition	2279 Apr 09 09:25	19° <u>♄</u> 16'17	1°37'36				
min. Earth dist.	2279 Apr 10 07:18	19° <u>♄</u> 14'47	29.31551 AU	conjunction	2285 Oct 26 14:29	3° <u>♋</u> 25'29	1°39'16
direct	2279 Jun 29 08:51	17° <u>♄</u> 51'27		minimum elong	2285 Oct 26 14:29	3° <u>♋</u> 25'29	1°39'16
evening set	2279 Sep 28 05:18	19° <u>♄</u> 47'32		max. Earth dist.	2285 Oct 25 16:39	3° <u>♋</u> 23'27	31.32442 AU
				morning rise	2285 Nov 11 02:27	3° <u>♋</u> 59'55	
conjunction	2279 Oct 13 23:41	20° <u>♄</u> 22'26	1°32'12	retrograde	2286 Feb 05 18:02	5° <u>♋</u> 51'53	
minimum elong	2279 Oct 13 23:40	20° <u>♄</u> 22'26	1°32'12	opposition	2286 Apr 24 14:35	4° <u>♋</u> 30'02	1°46'24
max. Earth dist.	2279 Oct 12 23:34	20° <u>♄</u> 20'12	31.31570 AU	min. Earth dist.	2286 Apr 25 11:14	4° <u>♋</u> 28'37	29.32714 AU
morning rise	2279 Oct 29 14:45	20° <u>♄</u> 57'04		direct	2286 Jul 14 19:38	3° <u>♋</u> 05'17	
retrograde	2280 Jan 24 05:35	22° <u>♄</u> 48'58		evening set	2286 Oct 13 09:55	5° <u>♋</u> 01'13	
opposition	2280 Apr 10 20:23	21° <u>♄</u> 27'09	1°39'18	max. Earth dist.	2286 Oct 28 02:16	5° <u>♋</u> 33'48	31.32775 AU
min. Earth dist.	2280 Apr 11 17:56	21° <u>♄</u> 25'40	29.31766 AU				
direct	2280 Jun 30 19:34	20° <u>♄</u> 02'18		conjunction	2286 Oct 29 00:39	5° <u>♋</u> 35'54	1°39'57
evening set	2280 Sep 29 16:33	21° <u>♄</u> 58'22		minimum elong	2286 Oct 29 00:39	5° <u>♋</u> 35'54	1°39'57
max. Earth dist.	2280 Oct 14 11:23	22° <u>♄</u> 31'05	31.31724 AU	morning rise	2286 Nov 13 12:16	6° <u>♋</u> 10'18	
				retrograde	2287 Feb 08 05:22	8° <u>♋</u> 02'20	
conjunction	2280 Oct 15 10:34	22° <u>♄</u> 33'14	1°33'43	opposition	2287 Apr 27 01:50	6° <u>♋</u> 40'30	1°47'04
minimum elong	2280 Oct 15 10:34	22° <u>♄</u> 33'14	1°33'43	min. Earth dist.	2287 Apr 27 22:17	6° <u>♋</u> 39'06	29.33063 AU
morning rise	2280 Oct 31 00:57	23° <u>♄</u> 07'49		direct	2287 Jul 17 06:35	5° <u>♋</u> 15'49	
retrograde	2281 Jan 25 14:09	24° <u>♄</u> 59'44		evening set	2287 Oct 15 20:25	7° <u>♋</u> 11'45	
opposition	2281 Apr 13 07:24	23° <u>♄</u> 37'53	1°40'51				
min. Earth dist.	2281 Apr 14 05:57	23° <u>♄</u> 36'20	29.31878 AU	conjunction	2287 Oct 31 10:48	7° <u>♋</u> 46'23	1°40'30
direct	2281 Jul 03 06:26	22° <u>♄</u> 13'03		minimum elong	2287 Oct 31 10:47	7° <u>♋</u> 46'23	1°40'30
evening set	2281 Oct 02 03:44	24° <u>♄</u> 09'04		max. Earth dist.	2287 Oct 30 13:44	7° <u>♋</u> 44'25	31.33112 AU
				morning rise	2287 Nov 15 21:48	8° <u>♋</u> 20'47	
conjunction	2281 Oct 17 21:06	24° <u>♄</u> 43'54	1°35'06	retrograde	2288 Feb 10 13:34	10° <u>♋</u> 12'52	
minimum elong	2281 Oct 17 21:06	24° <u>♄</u> 43'54	1°35'06	opposition	2288 Apr 28 13:17	8° <u>♋</u> 51'04	1°47'34
max. Earth dist.	2281 Oct 16 21:07	24° <u>♄</u> 41'40	31.31809 AU	min. Earth dist.	2288 Apr 29 09:52	8° <u>♋</u> 49'39	29.33374 AU
morning rise	2281 Nov 02 11:10	25° <u>♄</u> 18'27		direct	2288 Jul 18 19:04	7° <u>♋</u> 26'27	
retrograde	2282 Jan 28 01:01	27° <u>♄</u> 10'21		evening set	2288 Oct 17 07:07	9° <u>♋</u> 22'21	
opposition	2282 Apr 15 18:18	25° <u>♄</u> 48'29	1°42'15				
min. Earth dist.	2282 Apr 16 15:49	25° <u>♄</u> 47'01	29.31943 AU	conjunction	2288 Nov 01 20:51	9° <u>♋</u> 56'59	1°40'54
direct	2282 Jul 05 18:01	24° <u>♄</u> 23'37		minimum elong	2288 Nov 01 20:51	9° <u>♋</u> 56'59	1°40'54
evening set	2282 Oct 04 14:45	26° <u>♄</u> 19'37		max. Earth dist.	2288 Oct 31 22:53	9° <u>♋</u> 54'55	31.33396 AU
max. Earth dist.	2282 Oct 19 08:22	26° <u>♄</u> 52'15	31.31861 AU	morning rise	2288 Nov 17 07:36	10° <u>♋</u> 31'20	
				retrograde	2289 Feb 11 23:39	12° <u>♋</u> 23'29	
conjunction	2282 Oct 20 07:39	26° <u>♄</u> 54'25	1°36'21	opposition	2289 May 01 00:33	11° <u>♋</u> 01'42	1°47'55
minimum elong	2282 Oct 20 07:39	26° <u>♄</u> 54'25	1°36'21	min. Earth dist.	2289 May 01 20:30	11° <u>♋</u> 00'20	29.33622 AU
morning rise	2282 Nov 04 21:04	27° <u>♄</u> 28'56		direct	2289 Jul 21 05:28	9° <u>♋</u> 37'07	
retrograde	2283 Jan 30 11:02	29° <u>♄</u> 20'50		evening set	2289 Oct 19 17:36	11° <u>♋</u> 33'01	
opposition	2283 Apr 18 05:22	27° <u>♄</u> 58'57	1°43'31	max. Earth dist.	2289 Nov 03 10:10	12° <u>♋</u> 05'40	31.33580 AU
min. Earth dist.	2283 Apr 19 03:42	27° <u>♄</u> 57'25	29.32019 AU				
direct	2283 Jul 08 06:19	26° <u>♄</u> 34'05		conjunction	2289 Nov 04 07:03	12° <u>♋</u> 07'37	1°41'09
evening set	2283 Oct 07 01:42	28° <u>♄</u> 30'03		minimum elong	2289 Nov 04 07:02	12° <u>♋</u> 07'37	1°41'09
				morning rise	2289 Nov 19 17:13	12° <u>♋</u> 41'57	
conjunction	2283 Oct 22 18:01	29° <u>♄</u> 04'49	1°37'28	retrograde	2290 Feb 14 08:38	14° <u>♋</u> 34'09	
minimum elong	2283 Oct 22 18:01	29° <u>♄</u> 04'49	1°37'28	opposition	2290 May 03 12:11	13° <u>♋</u> 12'22	1°48'07
max. Earth dist.	2283 Oct 21 18:54	29° <u>♄</u> 02'39	31.31969 AU	min. Earth dist.	2290 May 04 08:58	13° <u>♋</u> 10'57	29.33741 AU
morning rise	2283 Nov 07 06:59	29° <u>♄</u> 39'18		direct	2290 Jul 23 16:14	11° <u>♋</u> 47'50	
	2283 Nov 16 23:45	0° <u>♋</u>		evening set	2290 Oct 22 04:14	13° <u>♋</u> 43'41	
retrograde	2284 Feb 01 22:14	1° <u>♋</u> 31'13					
opposition	2284 Apr 19 16:26	0° <u>♋</u> 09'18	1°44'38	conjunction	2290 Nov 06 17:04	14° <u>♋</u> 18'15	1°41'16
min. Earth dist.	2284 Apr 20 13:27	0° <u>♋</u> 07'52	29.32162 AU	minimum elong	2290 Nov 06 17:04	14° <u>♋</u> 18'15	1°41'15
	2284 Apr 25 08:38	30° <u>♋</u> <u>♄</u>		max. Earth dist.	2290 Nov 05 19:32	14° <u>♋</u> 16'14	31.33636 AU
direct	2284 Jul 09 19:24	28° <u>♄</u> 44'28		morning rise	2290 Nov 22 02:58	14° <u>♋</u> 52'35	
	2284 Sep 18 23:34	0° <u>♋</u>			2290 Nov 25 12:55	15° <u>♋</u>	
evening set	2284 Oct 08 12:24	0° <u>♋</u> 40'25		retrograde	2291 Feb 16 19:22	16° <u>♋</u> 44'49	
max. Earth dist.	2284 Oct 23 05:20	1° <u>♋</u> 13'01	31.32155 AU	opposition	2291 May 05 23:41	15° <u>♋</u> 23'01	1°48'10
				min. Earth dist.	2291 May 06 19:22	15° <u>♋</u> 21'41	29.33725 AU
conjunction	2284 Oct 24 04:11	1° <u>♋</u> 15'08	1°38'26		2291 May 20 06:06	15° <u>♋</u>	
minimum elong	2284 Oct 24 04:11	1° <u>♋</u> 15'08	1°38'26	direct	2291 Jul 26 03:51	13° <u>♋</u> 58'30	
morning rise	2284 Nov 08 16:40	1° <u>♋</u> 49'36			2291 Sep 27 17:34	15° <u>♋</u>	

evening set	2291 Oct 24 14:43	15° <del>ℳ</del> 54'19		retrograde	2298 Mar 03 18:43	1° <del>♂</del> 56'55	
max. Earth dist.	2291 Nov 08 06:08	16° <del>ℳ</del> 26'53	31.33545 AU	opposition	2298 May 21 09:38	0° <del>♂</del> 34'51	1°44'14
				min. Earth dist.	2298 May 22 02:06	0° <del>♂</del> 33'44	29.31916 AU
conjunction	2291 Nov 09 03:10	16° <del>ℳ</del> 28'51	1°41'14		2298 Jun 12 10:54	30° <del>ℳ</del>	
minimum elong	2291 Nov 09 03:10	16° <del>ℳ</del> 28'51	1°41'14	direct	2298 Aug 10 15:31	29° <del>ℳ</del> 10'27	
morning rise	2291 Nov 24 12:35	17° <del>ℳ</del> 03'10			2298 Oct 06 01:47	0° <del>♂</del>	
retrograde	2292 Feb 19 05:27	18° <del>ℳ</del> 55'27		evening set	2298 Nov 08 12:56	1° <del>♂</del> 05'53	
opposition	2292 May 07 11:27	17° <del>ℳ</del> 33'36	1°48'03				
min. Earth dist.	2292 May 08 08:00	17° <del>ℳ</del> 32'12	29.33574 AU	conjunction	2298 Nov 23 22:46	1° <del>♂</del> 40'17	1°37'03
direct	2292 Jul 27 15:13	16° <del>ℳ</del> 09'06		minimum elong	2298 Nov 23 22:46	1° <del>♂</del> 40'17	1°37'02
evening set	2292 Oct 26 00:59	18° <del>ℳ</del> 04'51		max. Earth dist.	2298 Nov 23 06:01	1° <del>♂</del> 38'43	31.31774 AU
				morning rise	2298 Dec 09 06:01	2° <del>♂</del> 14'30	
conjunction	2292 Nov 10 13:01	18° <del>ℳ</del> 39'22	1°41'03	retrograde	2299 Mar 06 04:01	4° <del>♂</del> 07'11	
minimum elong	2292 Nov 10 13:01	18° <del>ℳ</del> 39'22	1°41'03	opposition	2299 May 23 21:38	2° <del>♂</del> 45'07	1°43'04
max. Earth dist.	2292 Nov 09 16:07	18° <del>ℳ</del> 37'24	31.33338 AU	min. Earth dist.	2299 May 24 14:21	2° <del>♂</del> 43'59	29.31850 AU
morning rise	2292 Nov 25 22:09	19° <del>ℳ</del> 13'39		direct	2299 Aug 13 02:07	1° <del>♂</del> 20'49	
retrograde	2293 Feb 20 16:15	21° <del>ℳ</del> 05'58		evening set	2299 Nov 10 22:47	3° <del>♂</del> 16'13	
opposition	2293 May 09 23:03	19° <del>ℳ</del> 44'05	1°47'47				
min. Earth dist.	2293 May 10 18:31	19° <del>ℳ</del> 42'45	29.33297 AU	conjunction	2299 Nov 26 08:11	3° <del>♂</del> 50'36	1°35'53
direct	2293 Jul 30 03:48	18° <del>ℳ</del> 19'34		minimum elong	2299 Nov 26 08:11	3° <del>♂</del> 50'36	1°35'53
evening set	2293 Oct 28 11:18	20° <del>ℳ</del> 15'15		max. Earth dist.	2299 Nov 25 15:31	3° <del>♂</del> 49'02	31.31738 AU
				morning rise	2299 Dec 11 15:21	4° <del>♂</del> 24'49	
conjunction	2293 Nov 12 22:53	20° <del>ℳ</del> 49'44	1°40'44	retrograde	2300 Mar 08 15:07	6° <del>♂</del> 17'37	
minimum elong	2293 Nov 12 22:53	20° <del>ℳ</del> 49'44	1°40'44	opposition	2300 May 26 09:33	4° <del>♂</del> 55'34	1°41'45
max. Earth dist.	2293 Nov 12 01:56	20° <del>ℳ</del> 47'47	31.33014 AU	min. Earth dist.	2300 May 27 00:36	4° <del>♂</del> 54'33	29.31810 AU
morning rise	2293 Nov 28 07:41	21° <del>ℳ</del> 24'01		direct	2300 Aug 15 13:05	3° <del>♂</del> 31'20	
retrograde	2294 Feb 23 02:35	23° <del>ℳ</del> 16'22		evening set	2300 Nov 13 08:27	5° <del>♂</del> 26'43	
opposition	2294 May 12 10:38	21° <del>ℳ</del> 54'24	1°47'23				
min. Earth dist.	2294 May 13 06:34	21° <del>ℳ</del> 53'03	29.32948 AU	conjunction	2300 Nov 28 17:37	6° <del>♂</del> 01'07	1°34'35
direct	2294 Aug 01 14:50	20° <del>ℳ</del> 29'53		minimum elong	2300 Nov 28 17:38	6° <del>♂</del> 01'07	1°34'34
evening set	2294 Oct 30 21:25	22° <del>ℳ</del> 25'30		max. Earth dist.	2300 Nov 28 01:50	5° <del>♂</del> 59'38	31.31682 AU
				morning rise	2300 Dec 14 00:31	6° <del>♂</del> 35'20	
conjunction	2294 Nov 15 08:41	22° <del>ℳ</del> 59'58	1°40'17	retrograde	2301 Mar 11 01:49	8° <del>♂</del> 28'15	
minimum elong	2294 Nov 15 08:42	22° <del>ℳ</del> 59'58	1°40'17	opposition	2301 May 28 21:43	7° <del>♂</del> 06'13	1°40'17
max. Earth dist.	2294 Nov 14 12:58	22° <del>ℳ</del> 58'07	31.32652 AU	min. Earth dist.	2301 May 29 13:18	7° <del>♂</del> 05'09	29.31730 AU
morning rise	2294 Nov 30 17:06	23° <del>ℳ</del> 34'13		direct	2301 Aug 17 23:21	5° <del>♂</del> 42'04	
retrograde	2295 Feb 25 12:37	25° <del>ℳ</del> 26'36		evening set	2301 Nov 15 18:16	7° <del>♂</del> 37'25	
opposition	2295 May 14 22:23	24° <del>ℳ</del> 04'35	1°46'49	max. Earth dist.	2301 Nov 30 11:52	8° <del>♂</del> 10'22	31.31570 AU
min. Earth dist.	2295 May 15 17:24	24° <del>ℳ</del> 03'18	29.32575 AU				
direct	2295 Aug 04 04:56	22° <del>ℳ</del> 40'04		conjunction	2301 Dec 01 03:08	8° <del>♂</del> 11'48	1°33'08
evening set	2295 Nov 02 07:24	24° <del>ℳ</del> 35'37		minimum elong	2301 Dec 01 03:08	8° <del>♂</del> 11'48	1°33'08
				morning rise	2301 Dec 16 09:51	8° <del>♂</del> 46'01	
conjunction	2295 Nov 17 18:08	25° <del>ℳ</del> 10'04	1°39'41	retrograde	2302 Mar 13 13:09	10° <del>♂</del> 39'03	
minimum elong	2295 Nov 17 18:08	25° <del>ℳ</del> 10'04	1°39'41	opposition	2302 May 31 09:45	9° <del>♂</del> 17'01	1°38'40
max. Earth dist.	2295 Nov 16 22:12	25° <del>ℳ</del> 08'12	31.32299 AU	min. Earth dist.	2302 Jun 01 00:04	9° <del>♂</del> 16'03	29.31557 AU
morning rise	2295 Dec 03 02:21	25° <del>ℳ</del> 44'18		direct	2302 Aug 20 10:38	7° <del>♂</del> 52'56	
retrograde	2296 Feb 27 23:56	27° <del>ℳ</del> 36'44		evening set	2302 Nov 18 04:11	9° <del>♂</del> 48'16	
opposition	2296 May 16 10:10	26° <del>ℳ</del> 14'40	1°46'07				
min. Earth dist.	2296 May 17 04:26	26° <del>ℳ</del> 13'26	29.32265 AU	conjunction	2302 Dec 03 12:42	10° <del>♂</del> 22'39	1°31'34
direct	2296 Aug 05 16:19	24° <del>ℳ</del> 50'10		minimum elong	2302 Dec 03 12:42	10° <del>♂</del> 22'39	1°31'33
evening set	2296 Nov 03 17:15	26° <del>ℳ</del> 45'40		max. Earth dist.	2302 Dec 02 21:24	10° <del>♂</del> 21'12	31.31341 AU
max. Earth dist.	2296 Nov 18 09:38	27° <del>ℳ</del> 18'23	31.32030 AU	morning rise	2302 Dec 18 19:16	10° <del>♂</del> 56'52	
				retrograde	2303 Mar 16 00:44	12° <del>♂</del> 50'00	
conjunction	2296 Nov 19 03:47	27° <del>ℳ</del> 20'05	1°38'57	opposition	2303 Jun 02 22:09	11° <del>♂</del> 27'57	1°36'55
minimum elong	2296 Nov 19 03:47	27° <del>ℳ</del> 20'05	1°38'57	min. Earth dist.	2303 Jun 03 12:46	11° <del>♂</del> 26'58	29.31272 AU
morning rise	2296 Dec 04 11:33	27° <del>ℳ</del> 54'19		direct	2303 Aug 22 21:16	10° <del>♂</del> 03'56	
retrograde	2297 Mar 01 08:16	29° <del>ℳ</del> 46'48		evening set	2303 Nov 20 13:50	11° <del>♂</del> 59'13	
opposition	2297 May 18 21:52	28° <del>ℳ</del> 24'44	1°45'15				
min. Earth dist.	2297 May 19 15:44	28° <del>ℳ</del> 23'31	29.32038 AU	conjunction	2303 Dec 05 22:12	12° <del>♂</del> 33'35	1°29'51
direct	2297 Aug 08 04:48	27° <del>ℳ</del> 00'16		minimum elong	2303 Dec 05 22:12	12° <del>♂</del> 33'35	1°29'51
evening set	2297 Nov 06 03:12	28° <del>ℳ</del> 55'43		max. Earth dist.	2303 Dec 05 08:08	12° <del>♂</del> 32'16	31.30988 AU
				morning rise	2303 Dec 21 04:31	13° <del>♂</del> 07'48	
conjunction	2297 Nov 21 13:14	29° <del>ℳ</del> 30'08	1°38'04	retrograde	2304 Mar 17 12:06	15° <del>♂</del> 01'02	
minimum elong	2297 Nov 21 13:14	29° <del>ℳ</del> 30'08	1°38'04	opposition	2304 Jun 04 10:31	13° <del>♂</del> 38'58	1°35'02
max. Earth dist.	2297 Nov 20 18:47	29° <del>ℳ</del> 28'24	31.31863 AU	min. Earth dist.	2304 Jun 05 00:23	13° <del>♂</del> 38'02	29.30833 AU
	2297 Dec 04 21:27	0° <del>♂</del>		direct	2304 Aug 24 11:13	12° <del>♂</del> 14'58	
morning rise	2297 Dec 06 20:55	0° <del>♂</del> 04'21		evening set	2304 Nov 21 23:42	14° <del>♂</del> 10'12	



conjunction	2304 Dec 07 07:42	14° $\mathring{A}$ 44'34	1°28'01	opposition	2311 Jun 21 01:37	28° $\mathring{A}$ 54'23	1°18'12
minimum elong	2304 Dec 07 07:42	14° $\mathring{A}$ 44'34	1°28'01	min. Earth dist.	2311 Jun 21 09:42	28° $\mathring{A}$ 53'50	29.26169 AU
max. Earth dist.	2304 Dec 06 17:00	14° $\mathring{A}$ 43'11	31.30482 AU	direct	2311 Sep 09 20:45	27° $\mathring{A}$ 30'30	
morning rise	2304 Dec 22 14:02	15° $\mathring{A}$ 18'47		evening set	2311 Dec 07 17:52	29° $\mathring{A}$ 25'11	
retrograde	2305 Mar 20 00:27	17° $\mathring{A}$ 12'06					
opposition	2305 Jun 06 22:46	15° $\mathring{A}$ 49'58	1°33'00	conjunction	2311 Dec 23 00:43	29° $\mathring{A}$ 59'32	1°11'52
min. Earth dist.	2305 Jun 07 12:13	15° $\mathring{A}$ 49'04	29.30260 AU	minimum elong	2311 Dec 23 00:43	29° $\mathring{A}$ 59'32	1°11'52
direct	2305 Aug 26 22:40	14° $\mathring{A}$ 25'59		max. Earth dist.	2311 Dec 22 15:57	29° $\mathring{A}$ 58'42	31.25870 AU
evening set	2305 Nov 24 09:20	16° $\mathring{A}$ 21'09			2311 Dec 23 05:44	0° $\mathring{B}$	
				morning rise	2312 Jan 07 06:39	0° $\mathring{B}$ 33'48	
conjunction	2305 Dec 09 17:18	16° $\mathring{A}$ 55'31	1°26'04	retrograde	2312 Apr 04 01:22	2° $\mathring{B}$ 27'45	
minimum elong	2305 Dec 09 17:19	16° $\mathring{A}$ 55'31	1°26'04	opposition	2312 Jun 22 14:19	1° $\mathring{B}$ 05'12	1°15'19
max. Earth dist.	2305 Dec 09 04:02	16° $\mathring{A}$ 54'16	31.29843 AU	min. Earth dist.	2312 Jun 22 22:14	1° $\mathring{B}$ 04'40	29.25680 AU
morning rise	2305 Dec 24 23:23	17° $\mathring{A}$ 29'44			2312 Aug 07 14:16	30° $\mathring{R}$ $\mathring{A}$	
retrograde	2306 Mar 22 09:22	19° $\mathring{A}$ 23'07		direct	2312 Sep 11 07:00	29° $\mathring{A}$ 41'23	
opposition	2306 Jun 09 11:14	18° $\mathring{A}$ 00'55	1°30'51		2312 Oct 15 03:44	0° $\mathring{B}$	
min. Earth dist.	2306 Jun 10 00:33	18° $\mathring{A}$ 00'01	29.29553 AU	evening set	2312 Dec 09 03:13	1° $\mathring{B}$ 36'01	
direct	2306 Aug 29 11:39	16° $\mathring{A}$ 36'57					
evening set	2306 Nov 26 18:57	18° $\mathring{A}$ 32'01		conjunction	2312 Dec 24 10:06	2° $\mathring{B}$ 10'22	1°09'06
				minimum elong	2312 Dec 24 10:06	2° $\mathring{B}$ 10'22	1°09'06
conjunction	2306 Dec 12 02:32	19° $\mathring{A}$ 06'21	1°23'59	max. Earth dist.	2312 Dec 24 03:05	2° $\mathring{B}$ 09'42	31.25388 AU
minimum elong	2306 Dec 12 02:33	19° $\mathring{A}$ 06'21	1°23'59	morning rise	2313 Jan 08 15:56	2° $\mathring{B}$ 44'39	
max. Earth dist.	2306 Dec 11 12:57	19° $\mathring{A}$ 05'05	31.29106 AU	retrograde	2313 Apr 06 12:59	4° $\mathring{B}$ 38'44	
morning rise	2306 Dec 27 08:41	19° $\mathring{A}$ 40'35		opposition	2313 Jun 25 02:50	3° $\mathring{B}$ 16'10	1°12'19
retrograde	2307 Mar 24 20:14	21° $\mathring{A}$ 34'01		min. Earth dist.	2313 Jun 25 09:42	3° $\mathring{B}$ 15'42	29.25176 AU
opposition	2307 Jun 11 23:39	20° $\mathring{A}$ 11'45	1°28'34	direct	2313 Sep 13 19:33	1° $\mathring{B}$ 52'25	
min. Earth dist.	2307 Jun 12 11:37	20° $\mathring{A}$ 10'56	29.28789 AU	evening set	2313 Dec 11 12:46	3° $\mathring{B}$ 47'02	
direct	2307 Sep 01 00:01	18° $\mathring{A}$ 47'46					
evening set	2307 Nov 29 04:22	20° $\mathring{A}$ 42'44		conjunction	2313 Dec 26 19:24	4° $\mathring{B}$ 21'23	1°06'14
				minimum elong	2313 Dec 26 19:24	4° $\mathring{B}$ 21'23	1°06'15
conjunction	2307 Dec 14 11:55	21° $\mathring{A}$ 17'05	1°21'47	max. Earth dist.	2313 Dec 26 12:03	4° $\mathring{B}$ 20'41	31.24873 AU
minimum elong	2307 Dec 14 11:55	21° $\mathring{A}$ 17'05	1°21'48	morning rise	2314 Jan 11 01:24	4° $\mathring{B}$ 55'41	
max. Earth dist.	2307 Dec 14 00:01	21° $\mathring{A}$ 15'57	31.28332 AU	retrograde	2314 Apr 09 02:09	6° $\mathring{B}$ 49'54	
morning rise	2307 Dec 29 17:51	21° $\mathring{A}$ 51'18		opposition	2314 Jun 27 15:38	5° $\mathring{B}$ 27'19	1°09'12
retrograde	2308 Mar 26 05:55	23° $\mathring{A}$ 44'49		min. Earth dist.	2314 Jun 27 21:46	5° $\mathring{B}$ 26'54	29.24633 AU
opposition	2308 Jun 13 12:10	22° $\mathring{A}$ 22'27	1°26'10	direct	2314 Sep 16 06:05	4° $\mathring{B}$ 03'38	
min. Earth dist.	2308 Jun 14 00:13	22° $\mathring{A}$ 21'38	29.28027 AU	evening set	2314 Dec 13 22:07	5° $\mathring{B}$ 58'13	
direct	2308 Sep 02 11:58	20° $\mathring{A}$ 58'28					
evening set	2308 Nov 30 13:47	22° $\mathring{A}$ 53'21		conjunction	2314 Dec 29 04:48	6° $\mathring{B}$ 32'34	1°03'17
				minimum elong	2314 Dec 29 04:48	6° $\mathring{B}$ 32'34	1°03'17
conjunction	2308 Dec 15 21:05	23° $\mathring{A}$ 27'41	1°19'29	max. Earth dist.	2314 Dec 28 23:09	6° $\mathring{B}$ 32'02	31.24283 AU
minimum elong	2308 Dec 15 21:05	23° $\mathring{A}$ 27'41	1°19'28	morning rise	2315 Jan 13 10:40	7° $\mathring{B}$ 06'54	
max. Earth dist.	2308 Dec 15 09:38	23° $\mathring{A}$ 26'36	31.27605 AU	retrograde	2315 Apr 11 12:34	9° $\mathring{B}$ 01'15	
morning rise	2308 Dec 31 03:04	24° $\mathring{A}$ 01'55		opposition	2315 Jun 30 04:37	7° $\mathring{B}$ 38'38	1°05'59
retrograde	2309 Mar 28 16:08	25° $\mathring{A}$ 55'31		min. Earth dist.	2315 Jun 30 10:28	7° $\mathring{B}$ 38'15	29.23985 AU
opposition	2309 Jun 16 00:32	24° $\mathring{A}$ 33'05	1°23'38	direct	2315 Sep 18 18:44	6° $\mathring{B}$ 15'01	
min. Earth dist.	2309 Jun 16 10:32	24° $\mathring{A}$ 32'24	29.27327 AU	evening set	2315 Dec 16 07:45	8° $\mathring{B}$ 09'33	
direct	2309 Sep 04 23:35	23° $\mathring{A}$ 09'06					
evening set	2309 Dec 02 23:10	25° $\mathring{A}$ 03'54		conjunction	2315 Dec 31 14:14	8° $\mathring{B}$ 43'55	1°00'14
				minimum elong	2315 Dec 31 14:14	8° $\mathring{B}$ 43'55	1°00'14
conjunction	2309 Dec 18 06:20	25° $\mathring{A}$ 38'15	1°17'03	max. Earth dist.	2315 Dec 31 08:13	8° $\mathring{B}$ 43'21	31.23587 AU
minimum elong	2309 Dec 18 06:20	25° $\mathring{A}$ 38'15	1°17'03	morning rise	2316 Jan 15 20:19	9° $\mathring{B}$ 18'16	
max. Earth dist.	2309 Dec 17 19:56	25° $\mathring{A}$ 37'16	31.26941 AU	retrograde	2316 Apr 13 01:06	11° $\mathring{B}$ 12'45	
morning rise	2310 Jan 02 12:13	26° $\mathring{A}$ 12'29		opposition	2316 Jul 01 17:25	9° $\mathring{B}$ 50'06	1°02'41
retrograde	2310 Mar 31 02:10	28° $\mathring{A}$ 06'11		min. Earth dist.	2316 Jul 01 22:03	9° $\mathring{B}$ 49'47	29.23224 AU
opposition	2310 Jun 18 13:04	26° $\mathring{A}$ 43'42	1°20'59	direct	2316 Sep 20 06:48	8° $\mathring{B}$ 26'31	
min. Earth dist.	2310 Jun 18 23:03	26° $\mathring{A}$ 43'01	29.26709 AU	evening set	2316 Dec 17 17:14	10° $\mathring{B}$ 21'00	
direct	2310 Sep 07 09:44	25° $\mathring{A}$ 19'46					
evening set	2310 Dec 05 08:33	27° $\mathring{A}$ 14'30		conjunction	2317 Jan 01 23:48	10° $\mathring{B}$ 55'23	0°57'05
				minimum elong	2317 Jan 01 23:48	10° $\mathring{B}$ 55'23	0°57'05
conjunction	2310 Dec 20 15:36	27° $\mathring{A}$ 48'50	1°14'31	max. Earth dist.	2317 Jan 01 19:01	10° $\mathring{B}$ 54'56	31.22748 AU
minimum elong	2310 Dec 20 15:36	27° $\mathring{A}$ 48'50	1°14'30	morning rise	2317 Jan 17 05:51	11° $\mathring{B}$ 29'45	
max. Earth dist.	2310 Dec 20 06:26	27° $\mathring{A}$ 47'58	31.26379 AU	retrograde	2317 Apr 15 11:58	13° $\mathring{B}$ 24'22	
morning rise	2311 Jan 04 21:26	28° $\mathring{A}$ 23'06		opposition	2317 Jul 04 06:27	12° $\mathring{B}$ 01'39	0°59'17
	2311 Mar 01 17:44	0° $\mathring{B}$		min. Earth dist.	2317 Jul 04 11:30	12° $\mathring{B}$ 01'19	29.22306 AU
retrograde	2311 Apr 02 13:14	0° $\mathring{B}$ 16'54		direct	2317 Sep 22 18:58	10° $\mathring{B}$ 38'06	
	2311 May 05 08:18	30° $\mathring{R}$ $\mathring{A}$		evening set	2317 Dec 20 02:49	12° $\mathring{B}$ 32'31	

conjunction	2318 Jan 04 09:17	13°30'55" 0°53'52"	direct	2324 Oct 08 01:26	25°35'56"	
minimum elong	2318 Jan 04 09:17	13°30'55" 0°53'52"	evening set	2325 Jan 03 20:30	27°35'25"	
max. Earth dist.	2318 Jan 04 04:40	13°30'56" 31.21769 AU				
morning rise	2318 Jan 19 15:29	13°34'18"	conjunction	2325 Jan 19 03:09	28°32'22"	0°29'27"
retrograde	2318 Apr 17 22:47	15°33'02"	minimum elong	2325 Jan 19 03:09	28°32'22"	0°29'26"
opposition	2318 Jul 06 19:18	14°31'15" 0°55'48"	max. Earth dist.	2325 Jan 19 05:01	28°32'32"	31.14634 AU
min. Earth dist.	2318 Jul 06 22:41	14°31'01" 29.21252 AU	morning rise	2325 Feb 03 10:30	29°30'15"	
direct	2318 Sep 25 07:01	12°34'42"		2325 Mar 03 23:49	0°00'00"	
evening set	2318 Dec 22 12:18	14°34'40"	retrograde	2325 May 03 10:21	0°00'57"30	
				2325 Jul 06 10:23	30°00'00"	
conjunction	2319 Jan 06 18:46	15°31'26" 0°50'34"	opposition	2325 Jul 22 13:59	29°33'41"	0°29'28"
minimum elong	2319 Jan 06 18:46	15°31'26" 0°50'34"	min. Earth dist.	2325 Jul 22 10:33	29°33'42"	29.14257 AU
max. Earth dist.	2319 Jan 06 14:46	15°31'04" 31.20662 AU	direct	2325 Oct 10 13:32	28°31'04"	
morning rise	2319 Jan 22 01:05	15°35'25"		2326 Jan 04 02:43	0°00'00"	
retrograde	2319 Apr 20 09:12	17°34'41"	evening set	2326 Jan 06 05:55	0°00'04"43	
opposition	2319 Jul 09 08:23	16°32'48" 0°52'14"				
min. Earth dist.	2319 Jul 09 12:01	16°32'33" 29.20110 AU	conjunction	2326 Jan 21 12:42	0°00'39"12	0°25'44"
direct	2319 Sep 27 17:36	15°30'15"	minimum elong	2326 Jan 21 12:42	0°00'39"12	0°25'44"
evening set	2319 Dec 24 21:35	16°35'53"	max. Earth dist.	2326 Jan 21 16:08	0°00'39"32	31.13864 AU
			morning rise	2326 Feb 05 20:07	1°00'13"47	
conjunction	2320 Jan 09 04:08	17°32'55" 0°47'12"	retrograde	2326 May 05 22:03	3°00'09"31	
minimum elong	2320 Jan 09 04:08	17°32'55" 0°47'12"	opposition	2326 Jul 25 03:10	1°00'46"10	0°25'28"
max. Earth dist.	2320 Jan 09 01:24	17°32'39" 31.19509 AU	min. Earth dist.	2326 Jul 24 23:49	1°00'46"24	29.13489 AU
morning rise	2320 Jan 24 10:33	18°30'42"	direct	2326 Oct 13 01:20	0°00'22"49	
retrograde	2320 Apr 21 20:11	19°35'17"	evening set	2327 Jan 08 15:31	2°00'16"42	
opposition	2320 Jul 10 21:17	18°33'18" 0°48'36"				
min. Earth dist.	2320 Jul 10 23:06	18°33'11" 29.18940 AU	conjunction	2327 Jan 23 22:21	2°00'51"13	0°21'59"
direct	2320 Sep 29 04:54	17°31'24"	minimum elong	2327 Jan 23 22:21	2°00'51"13	0°21'58"
evening set	2320 Dec 26 07:03	19°30'54"	max. Earth dist.	2327 Jan 24 02:22	2°00'51"35	31.13101 AU
			morning rise	2327 Feb 08 06:02	3°00'25"49	
conjunction	2321 Jan 10 13:29	19°34'19" 0°43'47"	retrograde	2327 May 08 09:47	5°00'21"42	
minimum elong	2321 Jan 10 13:29	19°34'20" 0°43'46"	opposition	2327 Jul 27 16:17	3°00'58"19	0°21'26"
max. Earth dist.	2321 Jan 10 11:03	19°34'06" 31.18353 AU	min. Earth dist.	2327 Jul 27 11:07	3°00'58"40	29.12703 AU
morning rise	2321 Jan 25 20:09	20°31'54"	direct	2327 Oct 15 13:20	2°00'35"00	
retrograde	2321 Apr 24 08:13	22°31'05"	evening set	2328 Jan 11 01:10	4°00'28"51	
opposition	2321 Jul 13 10:07	20°34'45" 0°44'54"				
min. Earth dist.	2321 Jul 13 11:40	20°34'39" 29.17822 AU	conjunction	2328 Jan 26 08:05	5°00'03"23	0°18'11"
direct	2321 Oct 01 15:20	19°32'41"	minimum elong	2328 Jan 26 08:05	5°00'03"23	0°18'11"
evening set	2321 Dec 28 16:22	21°31'18"	max. Earth dist.	2328 Jan 26 12:38	5°00'03"48	31.12276 AU
			morning rise	2328 Feb 10 16:01	5°00'38"01	
conjunction	2322 Jan 12 22:58	21°35'24" 0°40'17"	retrograde	2328 May 09 21:12	7°00'34"03	
minimum elong	2322 Jan 12 22:58	21°35'24" 0°40'17"	opposition	2328 Jul 29 05:35	6°00'10"36	0°17'22"
max. Earth dist.	2322 Jan 12 22:34	21°35'24" 31.17276 AU	min. Earth dist.	2328 Jul 29 00:49	6°00'10"55	29.11841 AU
morning rise	2322 Jan 28 05:37	22°32'11"	direct	2328 Oct 17 00:24	4°00'47"19	
retrograde	2322 Apr 26 20:02	24°32'22"	evening set	2329 Jan 12 10:58	6°00'41"07	
opposition	2322 Jul 15 23:05	22°35'13" 0°41'08"				
min. Earth dist.	2322 Jul 15 23:07	22°35'13" 29.16786 AU	conjunction	2329 Jan 27 18:03	7°00'15"40	0°14'23"
direct	2322 Oct 04 03:22	21°33'54"	minimum elong	2329 Jan 27 18:03	7°00'15"40	0°14'22"
evening set	2322 Dec 31 01:43	23°32'43"	behind sun begin	2329 Jan 27 14:58	7°00'15"23	
			behind sun end	2329 Jan 27 21:09	7°00'15"57	
conjunction	2323 Jan 15 08:11	24°30'49" 0°36'43"	max. Earth dist.	2329 Jan 27 23:37	7°00'16"11	31.11365 AU
minimum elong	2323 Jan 15 08:11	24°30'49" 0°36'43"	morning rise	2329 Feb 12 02:07	7°00'50"20	
max. Earth dist.	2323 Jan 15 07:52	24°30'48" 31.16301 AU	retrograde	2329 May 12 08:53	9°00'46"30	
morning rise	2323 Jan 30 15:10	24°33'39"	opposition	2329 Jul 31 18:37	8°00'22"59	0°13'16"
retrograde	2323 Apr 29 09:15	26°33'58"	min. Earth dist.	2329 Jul 31 12:22	8°00'23"24	29.10864 AU
opposition	2323 Jul 18 12:06	25°31'04" 0°37'18"	direct	2329 Oct 19 12:25	6°00'59"43	
min. Earth dist.	2323 Jul 18 10:56	25°31'04" 29.15867 AU	evening set	2330 Jan 14 20:55	8°00'53"29	
direct	2323 Oct 06 13:05	23°34'14"				
evening set	2324 Jan 02 11:02	25°34'14"	conjunction	2330 Jan 30 04:00	9°00'28"02	0°10'33"
			minimum elong	2330 Jan 30 03:59	9°00'28"02	0°10'33"
conjunction	2324 Jan 17 17:43	26°31'54" 0°33'07"	behind sun begin	2330 Jan 29 22:58	9°00'27"34	
minimum elong	2324 Jan 17 17:43	26°31'54" 0°33'07"	behind sun end	2330 Jan 30 09:01	9°00'28"29	
max. Earth dist.	2324 Jan 17 19:28	26°31'55" 31.15427 AU	max. Earth dist.	2330 Jan 30 09:19	9°00'28"31	31.10328 AU
morning rise	2324 Feb 02 00:44	26°35'01"30	morning rise	2330 Feb 14 12:25	10°00'02"43	
retrograde	2324 Apr 30 20:27	28°34'54"	retrograde	2330 May 14 21:09	11°00'59"01	
opposition	2324 Jul 20 01:01	27°32'24" 0°33'24"	opposition	2330 Aug 03 08:00	10°00'35"25	0°09'09"
min. Earth dist.	2324 Jul 19 23:11	27°32'23" 29.15030 AU	min. Earth dist.	2330 Aug 03 01:53	10°00'35"50	29.09774 AU

direct	2330 Oct 21 22:47	9° $\approx$ 12'09		conjunction	2336 Feb 12 15:54	22° $\approx$ 41'58	-0°12'43
evening set	2331 Jan 17 06:35	11° $\approx$ 05'50		minimum elong	2336 Feb 12 15:54	22° $\approx$ 41'58	0°12'42
				behind sun begin	2336 Feb 12 11:47	22° $\approx$ 41'35	
conjunction	2331 Feb 01 13:58	11° $\approx$ 40'24	0°06'42	behind sun end	2336 Feb 12 20:01	22° $\approx$ 42'20	
minimum elong	2331 Feb 01 13:58	11° $\approx$ 40'24	0°06'43	max. Earth dist.	2336 Feb 13 03:01	22° $\approx$ 43'00	31.03591 AU
behind sun begin	2331 Feb 01 07:58	11° $\approx$ 39'52		morning rise	2336 Feb 28 01:56	23° $\approx$ 16'49	
behind sun end	2331 Feb 01 19:58	11° $\approx$ 40'57		retrograde	2336 May 28 00:41	25° $\approx$ 13'49	
max. Earth dist.	2331 Feb 01 20:57	11° $\approx$ 41'03	31.09186 AU	opposition	2336 Aug 16 14:43	23° $\approx$ 49'41	-0°15'38
morning rise	2331 Feb 16 22:30	12° $\approx$ 15'07		min. Earth dist.	2336 Aug 16 02:28	23° $\approx$ 50'32	29.03172 AU
retrograde	2331 May 17 08:35	14° $\approx$ 11'31		direct	2336 Nov 03 20:26	22° $\approx$ 26'26	
opposition	2331 Aug 05 21:15	12° $\approx$ 47'49	0°05'01	evening set	2337 Jan 29 17:46	24° $\approx$ 19'52	
min. Earth dist.	2331 Aug 05 14:05	12° $\approx$ 48'18	29.08579 AU				
direct	2331 Oct 24 10:47	11° $\approx$ 24'32		conjunction	2337 Feb 14 02:04	24° $\approx$ 54'33	-0°16'33
evening set	2332 Jan 19 16:30	13° $\approx$ 18'09		minimum elong	2337 Feb 14 02:03	24° $\approx$ 54'33	0°16'33
				max. Earth dist.	2337 Feb 14 13:50	24° $\approx$ 55'39	31.02755 AU
conjunction	2332 Feb 03 23:53	13° $\approx$ 52'44	0°02'51	morning rise	2337 Mar 01 12:26	25° $\approx$ 29'26	
minimum elong	2332 Feb 03 23:53	13° $\approx$ 52'44	0°02'52	retrograde	2337 May 30 12:59	27° $\approx$ 26'35	
behind sun begin	2332 Feb 03 17:30	13° $\approx$ 52'10		opposition	2337 Aug 19 03:51	26° $\approx$ 02'25	-0°19'43
behind sun end	2332 Feb 04 06:16	13° $\approx$ 53'19		min. Earth dist.	2337 Aug 18 15:43	26° $\approx$ 03'15	29.02388 AU
max. Earth dist.	2332 Feb 04 06:32	13° $\approx$ 53'20	31.07970 AU	direct	2337 Nov 06 07:28	24° $\approx$ 39'14	
morning rise	2332 Feb 19 08:53	14° $\approx$ 27'28		evening set	2338 Feb 01 03:48	26° $\approx$ 32'38	
	2332 Mar 05 13:50	15° $\approx$					
retrograde	2332 May 18 21:58	16° $\approx$ 23'59		conjunction	2338 Feb 16 12:24	27° $\approx$ 07'21	-0°20'22
opposition	2332 Aug 07 10:19	15° $\approx$ 00'10	0°00'53	minimum elong	2338 Feb 16 12:23	27° $\approx$ 07'21	0°20'21
min. Earth dist.	2332 Aug 07 02:29	15° $\approx$ 00'42	29.07358 AU	max. Earth dist.	2338 Feb 17 01:37	27° $\approx$ 08'36	31.02013 AU
	2332 Aug 07 12:48	15° $\approx$		morning rise	2338 Mar 03 22:58	27° $\approx$ 42'16	
direct	2332 Oct 25 20:35	13° $\approx$ 36'51		retrograde	2338 Jun 02 01:33	29° $\approx$ 39'34	
desc. node	2332 Oct 25 05:17	13° $\approx$ 36'52		opposition	2338 Aug 21 16:59	28° $\approx$ 15'24	-0°23'48
	2333 Jan 06 21:27	15° $\approx$		min. Earth dist.	2338 Aug 21 03:05	28° $\approx$ 16'21	29.01666 AU
evening set	2333 Jan 21 02:14	15° $\approx$ 30'25		direct	2338 Nov 08 19:25	26° $\approx$ 52'16	
				evening set	2339 Feb 03 13:58	28° $\approx$ 45'40	
conjunction	2333 Feb 05 09:56	16° $\approx$ 05'01	-0°01'08				
minimum elong	2333 Feb 05 09:56	16° $\approx$ 05'01	0°01'08	conjunction	2339 Feb 18 22:38	29° $\approx$ 20'24	-0°24'09
behind sun begin	2333 Feb 05 03:32	16° $\approx$ 04'26		minimum elong	2339 Feb 18 22:38	29° $\approx$ 20'24	0°24'09
behind sun end	2333 Feb 05 16:20	16° $\approx$ 05'35		max. Earth dist.	2339 Feb 19 11:52	29° $\approx$ 21'39	31.01305 AU
max. Earth dist.	2333 Feb 05 18:23	16° $\approx$ 05'48	31.06744 AU	morning rise	2339 Mar 06 09:41	29° $\approx$ 55'22	
morning rise	2333 Feb 20 19:03	16° $\approx$ 39'46			2339 Mar 08 12:01	0° $\approx$	
retrograde	2333 May 21 09:35	18° $\approx$ 36'23		retrograde	2339 Jun 04 13:58	1° $\approx$ 52'50	
opposition	2333 Aug 09 23:27	17° $\approx$ 12'28	-0°03'15	opposition	2339 Aug 24 06:18	0° $\approx$ 28'38	-0°27'50
min. Earth dist.	2333 Aug 09 14:59	17° $\approx$ 13'03	29.06153 AU	min. Earth dist.	2339 Aug 23 16:32	0° $\approx$ 29'34	29.00971 AU
direct	2333 Oct 28 09:07	15° $\approx$ 49'09			2339 Sep 11 01:52	30° $\approx$	
evening set	2334 Jan 23 12:02	17° $\approx$ 42'39		direct	2339 Nov 11 05:20	29° $\approx$ 05'33	
					2340 Jan 07 22:47	0° $\approx$	
conjunction	2334 Feb 07 19:44	18° $\approx$ 17'16	-0°05'02	evening set	2340 Feb 06 00:16	0° $\approx$ 58'57	
minimum elong	2334 Feb 07 19:45	18° $\approx$ 17'16	0°05'02				
behind sun begin	2334 Feb 07 13:31	18° $\approx$ 16'42		conjunction	2340 Feb 21 09:20	1° $\approx$ 33'42	-0°27'55
behind sun end	2334 Feb 08 01:59	18° $\approx$ 17'50		minimum elong	2340 Feb 21 09:20	1° $\approx$ 33'42	0°27'54
max. Earth dist.	2334 Feb 08 04:26	18° $\approx$ 18'04	31.05582 AU	max. Earth dist.	2340 Feb 22 00:13	1° $\approx$ 35'07	31.00594 AU
morning rise	2334 Feb 23 05:14	18° $\approx$ 52'03		morning rise	2340 Mar 07 20:32	2° $\approx$ 08'42	
retrograde	2334 May 23 23:56	20° $\approx$ 48'47		retrograde	2340 Jun 06 01:39	4° $\approx$ 06'19	
opposition	2334 Aug 12 12:33	19° $\approx$ 24'46	-0°07'23	opposition	2340 Aug 25 19:21	2° $\approx$ 42'06	-0°31'51
min. Earth dist.	2334 Aug 12 02:25	19° $\approx$ 25'28	29.05044 AU	min. Earth dist.	2340 Aug 25 04:44	2° $\approx$ 43'06	29.00234 AU
direct	2334 Oct 30 20:54	18° $\approx$ 01'27		direct	2340 Nov 12 16:29	1° $\approx$ 19'03	
evening set	2335 Jan 25 21:54	19° $\approx$ 54'55		evening set	2341 Feb 07 10:52	3° $\approx$ 12'28	
conjunction	2335 Feb 10 05:51	20° $\approx$ 29'34	-0°08'52	conjunction	2341 Feb 22 19:59	3° $\approx$ 47'14	-0°31'38
minimum elong	2335 Feb 10 05:51	20° $\approx$ 29'33	0°08'52	minimum elong	2341 Feb 22 19:59	3° $\approx$ 47'14	0°31'38
behind sun begin	2335 Feb 10 00:19	20° $\approx$ 29'03		max. Earth dist.	2341 Feb 23 10:13	3° $\approx$ 48'35	30.99822 AU
behind sun end	2335 Feb 10 11:23	20° $\approx$ 30'04		morning rise	2341 Mar 10 07:41	4° $\approx$ 22'16	
max. Earth dist.	2335 Feb 10 16:07	20° $\approx$ 30'31	31.04519 AU	retrograde	2341 Jun 08 15:56	6° $\approx$ 20'02	
morning rise	2335 Feb 25 15:33	21° $\approx$ 04'22		opposition	2341 Aug 28 08:39	4° $\approx$ 55'46	-0°35'48
retrograde	2335 May 26 11:56	23° $\approx$ 01'15		min. Earth dist.	2341 Aug 27 17:44	4° $\approx$ 56'47	28.99425 AU
opposition	2335 Aug 15 01:43	21° $\approx$ 37'10	-0°11'31	direct	2341 Nov 15 01:51	3° $\approx$ 32'45	
min. Earth dist.	2335 Aug 14 15:27	21° $\approx$ 37'52	29.04048 AU	evening set	2342 Feb 09 21:20	5° $\approx$ 26'09	
direct	2335 Nov 02 08:20	20° $\approx$ 13'52					
evening set	2336 Jan 28 07:44	22° $\approx$ 07'18		conjunction	2342 Feb 25 06:49	6° $\approx$ 00'57	-0°35'19
				minimum elong	2342 Feb 25 06:49	6° $\approx$ 00'57	0°35'18

max. Earth dist.	2342 Feb 25 22:22	6° $\mathbf{\text{H}}$ 02'25	30.98945 AU	conjunction	2349 Mar 12 12:07	21° $\mathbf{\text{H}}$ 36'42	-0°59'18
morning rise	2342 Mar 12 18:40	6° $\mathbf{\text{H}}$ 36'00		minimum elong	2349 Mar 12 12:07	21° $\mathbf{\text{H}}$ 36'42	0°59'18
retrograde	2342 Jun 11 04:13	8° $\mathbf{\text{H}}$ 33'53		max. Earth dist.	2349 Mar 13 07:59	21° $\mathbf{\text{H}}$ 38'35	30.91871 AU
opposition	2342 Aug 30 22:00	7° $\mathbf{\text{H}}$ 09'33	-0°39'43	morning rise	2349 Mar 28 02:30	22° $\mathbf{\text{H}}$ 11'57	
min. Earth dist.	2342 Aug 30 06:55	7° $\mathbf{\text{H}}$ 10'35	28.98488 AU	retrograde	2349 Jun 26 23:20	24° $\mathbf{\text{H}}$ 10'24	
direct	2342 Nov 17 14:22	5° $\mathbf{\text{H}}$ 46'33		opposition	2349 Sep 15 17:22	22° $\mathbf{\text{H}}$ 45'30	-1°05'06
evening set	2343 Feb 12 08:05	7° $\mathbf{\text{H}}$ 39'55		min. Earth dist.	2349 Sep 14 21:58	22° $\mathbf{\text{H}}$ 46'50	28.91565 AU
				direct	2349 Dec 03 01:29	21° $\mathbf{\text{H}}$ 22'21	
conjunction	2343 Feb 27 17:44	8° $\mathbf{\text{H}}$ 14'44	-0°38'56	evening set	2350 Feb 27 11:35	23° $\mathbf{\text{H}}$ 15'30	
minimum elong	2343 Feb 27 17:44	8° $\mathbf{\text{H}}$ 14'44	0°38'57				
max. Earth dist.	2343 Feb 28 08:51	8° $\mathbf{\text{H}}$ 16'10	30.97958 AU	conjunction	2350 Mar 14 23:14	23° $\mathbf{\text{H}}$ 50'28	-1°02'25
morning rise	2343 Mar 15 06:03	8° $\mathbf{\text{H}}$ 49'49		minimum elong	2350 Mar 14 23:14	23° $\mathbf{\text{H}}$ 50'28	1°02'25
retrograde	2343 Jun 13 19:17	10° $\mathbf{\text{H}}$ 47'48		max. Earth dist.	2350 Mar 15 18:44	23° $\mathbf{\text{H}}$ 52'19	30.91185 AU
opposition	2343 Sep 02 11:12	9° $\mathbf{\text{H}}$ 23'23	-0°43'34	morning rise	2350 Mar 30 14:10	24° $\mathbf{\text{H}}$ 25'45	
min. Earth dist.	2343 Sep 01 19:13	9° $\mathbf{\text{H}}$ 24'29	28.97451 AU	retrograde	2350 Jun 29 13:26	26° $\mathbf{\text{H}}$ 24'19	
direct	2343 Nov 20 01:49	8° $\mathbf{\text{H}}$ 00'21		min. Earth dist.	2350 Sep 17 10:34	25° $\mathbf{\text{H}}$ 00'44	28.90934 AU
evening set	2344 Feb 14 18:44	9° $\mathbf{\text{H}}$ 53'41		opposition	2350 Sep 18 06:24	24° $\mathbf{\text{H}}$ 59'22	-1°08'23
				direct	2350 Dec 05 11:10	23° $\mathbf{\text{H}}$ 36'14	
conjunction	2344 Mar 01 04:44	10° $\mathbf{\text{H}}$ 28'31	-0°42'30	evening set	2351 Mar 01 22:39	25° $\mathbf{\text{H}}$ 29'25	
minimum elong	2344 Mar 01 04:43	10° $\mathbf{\text{H}}$ 28'31	0°42'30				
max. Earth dist.	2344 Mar 01 20:45	10° $\mathbf{\text{H}}$ 30'02	30.96866 AU	conjunction	2351 Mar 17 10:46	26° $\mathbf{\text{H}}$ 04'24	-1°05'27
morning rise	2344 Mar 16 17:23	11° $\mathbf{\text{H}}$ 03'38		minimum elong	2351 Mar 17 10:45	26° $\mathbf{\text{H}}$ 04'24	1°05'27
retrograde	2344 Jun 15 07:21	13° $\mathbf{\text{H}}$ 01'42		max. Earth dist.	2351 Mar 18 07:46	26° $\mathbf{\text{H}}$ 06'24	30.90581 AU
min. Earth dist.	2344 Sep 03 08:56	11° $\mathbf{\text{H}}$ 38'15	28.96329 AU	morning rise	2351 Apr 02 01:56	26° $\mathbf{\text{H}}$ 39'43	
opposition	2344 Sep 04 00:27	11° $\mathbf{\text{H}}$ 37'11	-0°47'21	retrograde	2351 Jul 02 01:17	28° $\mathbf{\text{H}}$ 38'23	
direct	2344 Nov 21 13:12	10° $\mathbf{\text{H}}$ 14'06		opposition	2351 Sep 20 19:15	27° $\mathbf{\text{H}}$ 13'26	-1°11'35
evening set	2345 Feb 16 05:25	12° $\mathbf{\text{H}}$ 07'23		min. Earth dist.	2351 Sep 19 23:13	27° $\mathbf{\text{H}}$ 14'49	28.90360 AU
				direct	2351 Dec 07 22:48	25° $\mathbf{\text{H}}$ 50'20	
conjunction	2345 Mar 03 15:41	12° $\mathbf{\text{H}}$ 42'15	-0°46'01	evening set	2352 Mar 03 09:59	27° $\mathbf{\text{H}}$ 43'32	
minimum elong	2345 Mar 03 15:41	12° $\mathbf{\text{H}}$ 42'15	0°46'01				
max. Earth dist.	2345 Mar 04 08:10	12° $\mathbf{\text{H}}$ 43'48	30.95734 AU	conjunction	2352 Mar 18 22:22	28° $\mathbf{\text{H}}$ 18'33	-1°08'22
morning rise	2345 Mar 19 04:40	13° $\mathbf{\text{H}}$ 17'22		minimum elong	2352 Mar 18 22:22	28° $\mathbf{\text{H}}$ 18'33	1°08'22
retrograde	2345 Jun 17 21:20	15° $\mathbf{\text{H}}$ 15'30		max. Earth dist.	2352 Mar 19 18:58	28° $\mathbf{\text{H}}$ 20'30	30.90027 AU
opposition	2345 Sep 06 13:25	13° $\mathbf{\text{H}}$ 50'53	-0°51'04	morning rise	2352 Apr 03 14:03	28° $\mathbf{\text{H}}$ 53'54	
min. Earth dist.	2345 Sep 05 20:23	13° $\mathbf{\text{H}}$ 52'03	28.95200 AU		2352 May 06 13:57	0° $\mathbf{\text{Y}}$	
direct	2345 Nov 24 02:24	12° $\mathbf{\text{H}}$ 27'46		retrograde	2352 Jul 03 16:16	0° $\mathbf{\text{Y}}$ 52'41	
evening set	2346 Feb 18 16:11	14° $\mathbf{\text{H}}$ 21'00			2352 Sep 02 08:26	30° $\mathbf{\text{R}}$ $\mathbf{\text{H}}$	
				min. Earth dist.	2352 Sep 21 11:21	29° $\mathbf{\text{H}}$ 29'09	28.89810 AU
conjunction	2346 Mar 06 02:39	14° $\mathbf{\text{H}}$ 55'53	-0°49'27	opposition	2352 Sep 22 08:09	29° $\mathbf{\text{H}}$ 27'43	-1°14'39
minimum elong	2346 Mar 06 02:39	14° $\mathbf{\text{H}}$ 55'53	0°49'27	direct	2352 Dec 09 09:17	28° $\mathbf{\text{H}}$ 04'38	
max. Earth dist.	2346 Mar 06 19:31	14° $\mathbf{\text{H}}$ 57'29	30.94615 AU	evening set	2353 Mar 05 21:24	29° $\mathbf{\text{H}}$ 57'52	
morning rise	2346 Mar 21 16:03	15° $\mathbf{\text{H}}$ 31'03			2353 Mar 06 20:26	0° $\mathbf{\text{Y}}$	
retrograde	2346 Jun 20 10:46	17° $\mathbf{\text{H}}$ 29'15					
min. Earth dist.	2346 Sep 08 09:53	16° $\mathbf{\text{H}}$ 05'40	28.94130 AU	conjunction	2353 Mar 21 10:06	0° $\mathbf{\text{Y}}$ 32'55	-1°11'12
opposition	2346 Sep 09 02:37	16° $\mathbf{\text{H}}$ 04'32	-0°54'42	minimum elong	2353 Mar 21 10:06	0° $\mathbf{\text{Y}}$ 32'55	1°11'13
direct	2346 Nov 26 14:25	14° $\mathbf{\text{H}}$ 41'23		max. Earth dist.	2353 Mar 22 07:29	0° $\mathbf{\text{Y}}$ 34'57	30.89447 AU
evening set	2347 Feb 21 02:49	16° $\mathbf{\text{H}}$ 34'34		morning rise	2353 Apr 06 02:05	1° $\mathbf{\text{Y}}$ 08'18	
				retrograde	2353 Jul 06 04:53	3° $\mathbf{\text{Y}}$ 07'11	
conjunction	2347 Mar 08 13:42	17° $\mathbf{\text{H}}$ 09'29	-0°52'49	opposition	2353 Sep 24 21:08	1° $\mathbf{\text{Y}}$ 42'12	-1°17'37
minimum elong	2347 Mar 08 13:42	17° $\mathbf{\text{H}}$ 09'29	0°52'49	min. Earth dist.	2353 Sep 24 01:03	1° $\mathbf{\text{Y}}$ 43'36	28.89212 AU
max. Earth dist.	2347 Mar 09 07:57	17° $\mathbf{\text{H}}$ 11'12	30.93590 AU	direct	2353 Dec 11 20:00	0° $\mathbf{\text{Y}}$ 19'09	
morning rise	2347 Mar 24 03:22	17° $\mathbf{\text{H}}$ 44'40		evening set	2354 Mar 08 08:59	2° $\mathbf{\text{Y}}$ 12'25	
retrograde	2347 Jun 22 23:20	19° $\mathbf{\text{H}}$ 42'57					
opposition	2347 Sep 11 15:34	18° $\mathbf{\text{H}}$ 18'08	-0°58'15	conjunction	2354 Mar 23 22:05	2° $\mathbf{\text{Y}}$ 47'30	-1°13'55
min. Earth dist.	2347 Sep 10 21:08	18° $\mathbf{\text{H}}$ 19'24	28.93157 AU	minimum elong	2354 Mar 23 22:05	2° $\mathbf{\text{Y}}$ 47'30	1°13'55
direct	2347 Nov 29 03:19	16° $\mathbf{\text{H}}$ 54'58		max. Earth dist.	2354 Mar 24 19:27	2° $\mathbf{\text{Y}}$ 49'31	30.88819 AU
evening set	2348 Feb 23 13:47	18° $\mathbf{\text{H}}$ 48'08		morning rise	2354 Apr 08 14:27	3° $\mathbf{\text{Y}}$ 22'54	
				retrograde	2354 Jul 08 20:15	5° $\mathbf{\text{Y}}$ 21'52	
conjunction	2348 Mar 10 00:49	19° $\mathbf{\text{H}}$ 23'03	-0°56'06	opposition	2354 Sep 27 10:04	3° $\mathbf{\text{Y}}$ 56'52	-1°20'28
minimum elong	2348 Mar 10 00:49	19° $\mathbf{\text{H}}$ 23'03	0°56'05	min. Earth dist.	2354 Sep 26 13:00	3° $\mathbf{\text{Y}}$ 58'20	28.88541 AU
max. Earth dist.	2348 Mar 10 18:55	19° $\mathbf{\text{H}}$ 24'46	30.92668 AU	direct	2354 Dec 14 08:56	2° $\mathbf{\text{Y}}$ 33'49	
morning rise	2348 Mar 25 14:59	19° $\mathbf{\text{H}}$ 58'17		evening set	2355 Mar 10 20:41	4° $\mathbf{\text{Y}}$ 27'06	
retrograde	2348 Jun 24 11:36	21° $\mathbf{\text{H}}$ 56'39					
min. Earth dist.	2348 Sep 12 10:11	20° $\mathbf{\text{H}}$ 33'02	28.92307 AU	conjunction	2355 Mar 26 10:05	5° $\mathbf{\text{Y}}$ 02'12	-1°16'32
opposition	2348 Sep 13 04:28	20° $\mathbf{\text{H}}$ 31'46	-1°01'43	minimum elong	2355 Mar 26 10:05	5° $\mathbf{\text{Y}}$ 02'12	1°16'32
direct	2348 Nov 30 13:35	19° $\mathbf{\text{H}}$ 08'36		max. Earth dist.	2355 Mar 27 07:09	5° $\mathbf{\text{Y}}$ 04'12	30.88084 AU
evening set	2349 Feb 25 00:37	21° $\mathbf{\text{H}}$ 01'46		morning rise	2355 Apr 11 02:56	5° $\mathbf{\text{Y}}$ 37'38	

retrograde	2355 Jul 11 10:32	7°♊36'41		minimum elong	2362 Apr 10 23:36	20°♊44'50	1°31'20
opposition	2355 Sep 29 23:06	6°♊11'38	-1°23'12	max. Earth dist.	2362 Apr 11 23:02	20°♊47'03	30.82952 AU
min. Earth dist.	2355 Sep 29 03:05	6°♊13'01	28.87760 AU	morning rise	2362 Apr 26 19:19	21°♊20'28	
direct	2355 Dec 16 21:00	4°♊48'33		retrograde	2362 Jul 27 03:39	23°♊19'41	
evening set	2356 Mar 12 08:24	6°♊41'50		opposition	2362 Oct 15 15:06	21°♊54'16	-1°38'34
				min. Earth dist.	2362 Oct 14 17:24	21°♊55'47	28.82903 AU
conjunction	2356 Mar 27 22:19	7°♊16'58	-1°19'01	direct	2363 Jan 01 04:45	20°♊30'58	
minimum elong	2356 Mar 27 22:19	7°♊16'58	1°19'00	evening set	2363 Mar 28 19:24	22°♊24'14	
max. Earth dist.	2356 Mar 28 19:57	7°♊19'01	30.87257 AU				
morning rise	2356 Apr 12 15:29	7°♊52'26		conjunction	2363 Apr 13 12:06	22°♊59'33	-1°32'56
retrograde	2356 Jul 12 23:51	9°♊51'31		minimum elong	2363 Apr 13 12:06	22°♊59'33	1°32'57
opposition	2356 Oct 01 11:44	8°♊26'24	-1°25'48	max. Earth dist.	2363 Apr 14 11:40	23°♊01'47	30.82682 AU
min. Earth dist.	2356 Sep 30 14:44	8°♊27'51	28.86889 AU	morning rise	2363 Apr 29 08:17	23°♊35'13	
direct	2356 Dec 18 10:15	7°♊03'17		retrograde	2363 Jul 29 18:20	25°♊34'27	
evening set	2357 Mar 14 20:15	8°♊56'33		min. Earth dist.	2363 Oct 17 04:40	24°♊10'38	28.82688 AU
				opposition	2363 Oct 18 03:25	24°♊09'03	-1°40'11
conjunction	2357 Mar 30 10:23	9°♊31'43	-1°21'24	direct	2364 Jan 03 17:23	22°♊45'44	
minimum elong	2357 Mar 30 10:23	9°♊31'43	1°21'24	evening set	2364 Mar 30 07:42	24°♊39'03	
max. Earth dist.	2357 Mar 31 07:17	9°♊33'42	30.86360 AU				
morning rise	2357 Apr 15 04:06	10°♊07'13		conjunction	2364 Apr 15 00:45	25°♊14'24	-1°34'23
retrograde	2357 Jul 15 12:57	12°♊06'19		minimum elong	2364 Apr 15 00:45	25°♊14'24	1°34'22
min. Earth dist.	2357 Oct 03 04:17	10°♊42'32	28.85996 AU	max. Earth dist.	2364 Apr 16 00:13	25°♊16'37	30.82502 AU
opposition	2357 Oct 04 00:35	10°♊41'08	-1°28'16	morning rise	2364 Apr 30 21:23	25°♊50'05	
direct	2357 Dec 20 21:20	9°♊17'58		retrograde	2364 Jul 31 07:45	27°♊49'22	
evening set	2358 Mar 17 07:48	11°♊11'13		opposition	2364 Oct 19 15:45	26°♊23'57	-1°41'39
				min. Earth dist.	2364 Oct 18 18:02	26°♊25'28	28.82551 AU
conjunction	2358 Apr 01 22:29	11°♊46'24	-1°23'39	direct	2365 Jan 05 04:25	25°♊00'39	
minimum elong	2358 Apr 01 22:29	11°♊46'24	1°23'38	evening set	2365 Apr 01 20:00	26°♊54'01	
max. Earth dist.	2358 Apr 02 20:49	11°♊48'31	30.85473 AU				
morning rise	2358 Apr 17 16:28	12°♊21'55		conjunction	2365 Apr 17 13:35	27°♊29'24	-1°35'41
retrograde	2358 Jul 18 01:32	14°♊21'03		minimum elong	2365 Apr 17 13:35	27°♊29'24	1°35'41
opposition	2358 Oct 06 13:14	12°♊55'47	-1°30'37	max. Earth dist.	2365 Apr 18 13:35	27°♊31'40	30.82393 AU
min. Earth dist.	2358 Oct 05 16:09	12°♊57'15	28.85134 AU	morning rise	2365 May 03 10:32	28°♊05'07	
direct	2358 Dec 23 10:14	11°♊32'35			2365 Jul 17 13:14	0°♊	
evening set	2359 Mar 19 19:42	13°♊25'49		retrograde	2365 Aug 02 22:02	0°♊04'24	
					2365 Aug 19 09:47	30°♊	
conjunction	2359 Apr 04 10:38	14°♊01'01	-1°25'46	min. Earth dist.	2365 Oct 21 05:26	28°♊40'36	28.82445 AU
minimum elong	2359 Apr 04 10:38	14°♊01'01	1°25'46	opposition	2365 Oct 22 04:00	28°♊39'01	-1°42'58
max. Earth dist.	2359 Apr 05 08:13	14°♊03'04	30.84651 AU	direct	2366 Jan 07 17:09	27°♊15'43	
morning rise	2359 Apr 20 05:13	14°♊36'35		evening set	2366 Apr 04 08:29	29°♊09'07	
retrograde	2359 Jul 20 14:51	16°♊35'43					
min. Earth dist.	2359 Oct 08 04:38	15°♊11'52	28.84376 AU	conjunction	2366 Apr 20 02:22	29°♊44'31	-1°36'50
opposition	2359 Oct 09 01:44	15°♊10'24	-1°32'49	minimum elong	2366 Apr 20 02:22	29°♊44'31	1°36'49
direct	2359 Dec 25 20:38	13°♊47'08		max. Earth dist.	2366 Apr 21 01:22	29°♊46'42	30.82274 AU
evening set	2360 Mar 21 07:32	15°♊40'22			2366 Apr 26 22:24	0°♊	
				morning rise	2366 May 05 23:53	0°♊20'16	
conjunction	2360 Apr 05 23:00	16°♊15'36	-1°27'46	retrograde	2366 Aug 05 12:34	2°♊19'34	
minimum elong	2360 Apr 05 23:00	16°♊15'36	1°27'45	opposition	2366 Oct 24 16:27	0°♊54'12	-1°44'07
max. Earth dist.	2360 Apr 06 21:55	16°♊17'47	30.83941 AU	min. Earth dist.	2366 Oct 23 19:02	0°♊55'41	28.82313 AU
morning rise	2360 Apr 21 17:50	16°♊51'12			2366 Nov 28 18:19	30°♊	
retrograde	2360 Jul 22 01:36	18°♊50'21		direct	2367 Jan 10 04:33	29°♊30'53	
opposition	2360 Oct 10 14:13	17°♊24'59	-1°34'52		2367 Feb 20 13:09	0°♊	
min. Earth dist.	2360 Oct 09 16:52	17°♊26'28	28.83734 AU	evening set	2367 Apr 06 21:08	1°♊24'19	
direct	2360 Dec 27 08:30	16°♊01'42					
evening set	2361 Mar 23 19:24	17°♊54'56		conjunction	2367 Apr 22 15:39	1°♊59'46	-1°37'51
				minimum elong	2367 Apr 22 15:39	1°♊59'46	1°37'51
conjunction	2361 Apr 08 11:11	18°♊30'12	-1°29'37	max. Earth dist.	2367 Apr 23 15:19	2°♊02'00	30.82102 AU
minimum elong	2361 Apr 08 11:10	18°♊30'12	1°29'38	morning rise	2367 May 08 13:26	2°♊35'32	
max. Earth dist.	2361 Apr 09 09:39	18°♊32'19	30.83374 AU	retrograde	2367 Aug 08 02:24	4°♊34'48	
morning rise	2361 Apr 24 06:31	19°♊05'48		min. Earth dist.	2367 Oct 26 07:04	3°♊10'56	28.82094 AU
retrograde	2361 Jul 24 15:35	21°♊05'00		opposition	2367 Oct 27 04:36	3°♊09'26	-1°45'07
min. Earth dist.	2361 Oct 12 04:27	19°♊41'08	28.83248 AU	direct	2368 Jan 12 18:04	1°♊46'06	
opposition	2361 Oct 13 02:38	19°♊39'35	-1°36'47	evening set	2368 Apr 08 09:59	3°♊39'33	
direct	2361 Dec 29 18:32	18°♊16'17					
evening set	2362 Mar 26 07:23	20°♊09'33		conjunction	2368 Apr 24 04:48	4°♊15'01	-1°38'42
				minimum elong	2368 Apr 24 04:48	4°♊15'01	1°38'41
conjunction	2362 Apr 10 23:36	20°♊44'50	-1°31'21	max. Earth dist.	2368 Apr 25 02:55	4°♊17'06	30.81844 AU

morning rise	2368 May 10 03:12	4°850'49	direct	2375 Jan 28 02:44	17°830'51	
retrograde	2368 Aug 09 15:50	6°850'03	evening set	2375 Apr 25 03:41	19°824'27	
opposition	2368 Oct 28 16:54	5°824'39 -1°45'57				
min. Earth dist.	2368 Oct 27 20:03	5°826'07 28.81801 AU	conjunction	2375 May 11 01:50	20°800'06 -1°40'28	
direct	2369 Jan 14 05:07	4°801'16	minimum elong	2375 May 11 01:50	20°800'06 1°40'29	
evening set	2369 Apr 10 22:35	5°854'44	max. Earth dist.	2375 May 11 22:57	20°802'05 30.80749 AU	
			morning rise	2375 May 27 03:14	20°836'03	
conjunction	2369 Apr 26 18:00	6°830'13 -1°39'25	retrograde	2375 Aug 26 10:40	22°834'55	
minimum elong	2369 Apr 26 17:59	6°830'13 1°39'25	min. Earth dist.	2375 Nov 13 08:35	21°810'52 28.81012 AU	
max. Earth dist.	2369 Apr 27 16:48	6°832'22 30.81512 AU	opposition	2375 Nov 14 03:58	21°809'30 -1°47'16	
morning rise	2369 May 12 16:39	7°806'02	direct	2376 Jan 30 14:04	19°845'51	
retrograde	2369 Aug 12 03:19	9°805'14	evening set	2376 Apr 26 16:42	21°839'31	
min. Earth dist.	2369 Oct 30 08:34	7°841'14 28.81447 AU				
opposition	2369 Oct 31 05:04	7°839'48 -1°46'38	conjunction	2376 May 12 15:30	22°815'12 -1°40'07	
direct	2370 Jan 16 17:38	6°816'22	minimum elong	2376 May 12 15:30	22°815'12 1°40'06	
evening set	2370 Apr 13 11:24	8°809'49	max. Earth dist.	2376 May 13 13:26	22°817'16 30.81076 AU	
			morning rise	2376 May 28 17:08	22°851'10	
conjunction	2370 Apr 29 07:11	8°845'20 -1°39'58	retrograde	2376 Aug 28 00:42	24°849'59	
minimum elong	2370 Apr 29 07:11	8°845'20 1°39'58	opposition	2376 Nov 15 15:35	23°824'38 -1°46'47	
max. Earth dist.	2370 Apr 30 04:51	8°847'23 30.81167 AU	min. Earth dist.	2376 Nov 14 19:55	23°826'01 28.81381 AU	
morning rise	2370 May 15 06:25	9°821'10	direct	2377 Feb 01 03:36	22°801'00	
retrograde	2370 Aug 14 17:23	11°820'18	evening set	2377 Apr 29 05:50	23°854'43	
opposition	2370 Nov 02 17:02	9°854'51 -1°47'09				
min. Earth dist.	2370 Nov 01 20:22	9°856'18 28.81116 AU	conjunction	2377 May 15 04:55	24°830'26 -1°39'35	
direct	2371 Jan 19 04:19	8°831'21	minimum elong	2377 May 15 04:55	24°830'26 1°39'36	
evening set	2371 Apr 16 00:10	10°824'49	max. Earth dist.	2377 May 16 01:30	24°832'22 30.81490 AU	
			morning rise	2377 May 31 07:07	25°806'27	
conjunction	2371 May 01 20:30	11°800'21 -1°40'23	retrograde	2377 Aug 30 14:25	27°805'13	
minimum elong	2371 May 01 20:30	11°800'21 1°40'23	min. Earth dist.	2377 Nov 17 08:23	25°841'16 28.81825 AU	
max. Earth dist.	2371 May 02 18:39	11°802'26 30.80849 AU	opposition	2377 Nov 18 03:19	25°839'56 -1°46'09	
morning rise	2371 May 17 20:06	11°836'13	direct	2378 Feb 03 14:20	24°816'18	
retrograde	2371 Aug 17 04:36	13°835'17	evening set	2378 May 01 19:07	26°810'06	
min. Earth dist.	2371 Nov 04 09:15	12°811'12 28.80835 AU				
opposition	2371 Nov 05 05:01	12°809'48 -1°47'30	conjunction	2378 May 17 18:49	26°845'51 -1°38'55	
direct	2372 Jan 21 15:14	10°846'15	minimum elong	2378 May 17 18:49	26°845'51 1°38'55	
evening set	2372 Apr 17 13:00	12°839'44	max. Earth dist.	2378 May 18 15:57	26°847'50 30.81938 AU	
			morning rise	2378 Jun 02 21:15	27°821'52	
conjunction	2372 May 03 09:48	13°815'17 -1°40'38	retrograde	2378 Sep 02 03:25	29°820'35	
minimum elong	2372 May 03 09:48	13°815'17 1°40'37	opposition	2378 Nov 20 14:52	27°855'22 -1°45'21	
max. Earth dist.	2372 May 04 07:36	13°817'21 30.80623 AU	min. Earth dist.	2378 Nov 19 20:39	27°856'40 28.82259 AU	
morning rise	2372 May 19 09:49	13°851'11	direct	2379 Feb 06 02:58	26°831'45	
	2372 Jun 23 04:31	15°8	evening set	2379 May 04 08:41	28°825'36	
retrograde	2372 Aug 18 18:03	15°850'11				
	2372 Oct 16 03:02	15°88	conjunction	2379 May 20 08:45	29°801'22 -1°38'05	
opposition	2372 Nov 06 16:43	14°824'42 -1°47'41	minimum elong	2379 May 20 08:45	29°801'22 1°38'06	
min. Earth dist.	2372 Nov 05 20:12	14°826'09 28.80666 AU	max. Earth dist.	2379 May 21 04:06	29°803'12 30.82355 AU	
direct	2373 Jan 23 03:34	13°801'05	morning rise	2379 Jun 05 11:44	29°837'26	
evening set	2373 Apr 20 01:53	14°854'37		2379 Jun 16 00:01	0°II	
	2373 Apr 22 12:31	15°8	retrograde	2379 Sep 04 18:16	1°II36'04	
conjunction	2373 May 05 23:04	15°830'12 -1°40'44	min. Earth dist.	2379 Nov 22 08:36	0°II12'10 28.82637 AU	
minimum elong	2373 May 05 23:04	15°830'12 1°40'44	opposition	2379 Nov 23 02:30	0°II10'54 -1°44'23	
max. Earth dist.	2373 May 06 20:43	15°832'14 30.80511 AU		2379 Nov 29 13:41	30°88	
morning rise	2373 May 21 23:33	16°806'06	direct	2380 Feb 08 14:04	28°847'15	
retrograde	2373 Aug 21 06:23	18°805'04		2380 Apr 16 04:06	0°II	
min. Earth dist.	2373 Nov 08 09:07	16°840'57 28.80633 AU	evening set	2380 May 05 22:13	0°II41'09	
opposition	2373 Nov 09 04:36	16°839'35 -1°47'43				
direct	2374 Jan 25 14:11	15°815'57	conjunction	2380 May 21 22:48	1°II16'57 -1°37'07	
evening set	2374 Apr 22 14:36	17°809'30	minimum elong	2380 May 21 22:48	1°II16'57 1°37'06	
			max. Earth dist.	2380 May 22 18:00	1°II18'45 30.82675 AU	
conjunction	2374 May 08 12:24	17°845'07 -1°40'41	morning rise	2380 Jun 07 02:01	1°II53'01	
minimum elong	2374 May 08 12:24	17°845'07 1°40'40	retrograde	2380 Sep 06 05:01	3°II51'33	
max. Earth dist.	2374 May 09 10:27	17°847'11 30.80561 AU	opposition	2380 Nov 24 14:05	2°II26'26 -1°43'15	
morning rise	2374 May 24 13:14	18°821'03	min. Earth dist.	2380 Nov 23 21:38	2°II27'36 28.82905 AU	
retrograde	2374 Aug 23 20:24	20°819'57	direct	2381 Feb 10 01:30	1°II02'44	
opposition	2374 Nov 11 16:18	18°854'30 -1°47'34	evening set	2381 May 08 11:45	2°II56'39	
min. Earth dist.	2374 Nov 10 19:53	18°855'56 28.80750 AU	conjunction	2381 May 24 12:48	3°II32'28 -1°35'59	

minimum elong	2381 May 24 12:48	3° $\Pi$ 32'28	1°36'00	evening set	2388 May 24 10:34	18° $\Pi$ 40'55	
max. Earth dist.	2381 May 25 06:48	3° $\Pi$ 34'10	30.82915 AU				
morning rise	2381 Jun 09 16:28	4° $\Pi$ 08'34		conjunction	2388 Jun 09 14:37	19° $\Pi$ 16'53	-1°24'13
retrograde	2381 Sep 08 17:54	6° $\Pi$ 06'58		minimum elong	2388 Jun 09 14:38	19° $\Pi$ 16'53	1°24'12
min. Earth dist.	2381 Nov 26 08:57	4° $\Pi$ 43'02	28.83102 AU	max. Earth dist.	2388 Jun 10 04:14	19° $\Pi$ 18'09	30.85158 AU
opposition	2381 Nov 27 01:32	4° $\Pi$ 41'52	-1°41'58	morning rise	2388 Jun 25 20:40	19° $\Pi$ 53'01	
direct	2382 Feb 12 13:37	3° $\Pi$ 18'06		retrograde	2388 Sep 24 11:29	21° $\Pi$ 50'28	
evening set	2382 May 11 01:16	5° $\Pi$ 12'02		opposition	2388 Dec 12 07:22	20° $\Pi$ 25'32	-1°28'51
				min. Earth dist.	2388 Dec 11 18:32	20° $\Pi$ 26'26	28.85594 AU
conjunction	2382 May 27 02:45	5° $\Pi$ 47'52	-1°34'43	direct	2389 Feb 28 01:50	19° $\Pi$ 01'22	
minimum elong	2382 May 27 02:45	5° $\Pi$ 47'52	1°34'43	evening set	2389 May 27 00:11	20° $\Pi$ 55'31	
max. Earth dist.	2382 May 27 20:02	5° $\Pi$ 49'29	30.83080 AU				
morning rise	2382 Jun 12 06:49	6° $\Pi$ 23'58		conjunction	2389 Jun 12 04:43	21° $\Pi$ 31'30	-1°21'59
retrograde	2382 Sep 11 05:34	8° $\Pi$ 22'15		minimum elong	2389 Jun 12 04:43	21° $\Pi$ 31'30	1°22'00
opposition	2382 Nov 29 13:00	6° $\Pi$ 57'08	-1°40'33	max. Earth dist.	2389 Jun 12 18:35	21° $\Pi$ 32'48	30.85907 AU
min. Earth dist.	2382 Nov 28 22:07	6° $\Pi$ 58'12	28.83249 AU	morning rise	2389 Jun 28 10:55	22° $\Pi$ 07'40	
direct	2383 Feb 14 23:53	5° $\Pi$ 33'18		retrograde	2389 Sep 26 22:39	24° $\Pi$ 05'00	
evening set	2383 May 13 14:48	7° $\Pi$ 27'14		opposition	2389 Dec 14 18:19	22° $\Pi$ 40'09	-1°26'25
				min. Earth dist.	2389 Dec 14 06:47	22° $\Pi$ 40'58	28.86378 AU
conjunction	2383 May 29 16:51	8° $\Pi$ 03'06	-1°33'19	direct	2390 Mar 02 13:07	21° $\Pi$ 16'00	
minimum elong	2383 May 29 16:52	8° $\Pi$ 03'06	1°33'19	evening set	2390 May 29 13:54	23° $\Pi$ 10'13	
max. Earth dist.	2383 May 30 09:44	8° $\Pi$ 04'41	30.83233 AU				
morning rise	2383 Jun 14 21:13	8° $\Pi$ 39'12		conjunction	2390 Jun 14 18:48	23° $\Pi$ 46'13	-1°19'38
retrograde	2383 Sep 13 18:09	10° $\Pi$ 37'20		minimum elong	2390 Jun 14 18:48	23° $\Pi$ 46'13	1°19'38
min. Earth dist.	2383 Dec 01 08:50	9° $\Pi$ 13'18	28.83399 AU	max. Earth dist.	2390 Jun 15 07:25	23° $\Pi$ 47'24	30.86732 AU
opposition	2383 Dec 02 00:04	9° $\Pi$ 12'14	-1°38'58	morning rise	2390 Jul 01 01:22	24° $\Pi$ 22'24	
direct	2384 Feb 17 12:52	7° $\Pi$ 48'18		retrograde	2390 Sep 29 12:04	26° $\Pi$ 19'37	
evening set	2384 May 15 04:28	9° $\Pi$ 42'15		opposition	2390 Dec 17 05:09	24° $\Pi$ 54'53	-1°23'50
				min. Earth dist.	2390 Dec 16 17:36	24° $\Pi$ 55'42	28.87201 AU
conjunction	2384 May 31 06:49	10° $\Pi$ 18'08	-1°31'46	direct	2391 Mar 05 00:41	23° $\Pi$ 30'43	
minimum elong	2384 May 31 06:49	10° $\Pi$ 18'08	1°31'45	evening set	2391 Jun 01 03:52	25° $\Pi$ 25'01	
max. Earth dist.	2384 May 31 22:23	10° $\Pi$ 19'35	30.83404 AU				
morning rise	2384 Jun 16 11:37	10° $\Pi$ 54'15		conjunction	2391 Jun 17 09:06	26° $\Pi$ 01'03	-1°17'10
retrograde	2384 Sep 15 06:40	12° $\Pi$ 52'14		minimum elong	2391 Jun 17 09:06	26° $\Pi$ 01'03	1°17'10
opposition	2384 Dec 03 11:21	11° $\Pi$ 27'07	-1°37'14	max. Earth dist.	2391 Jun 17 20:55	26° $\Pi$ 02'09	30.87536 AU
min. Earth dist.	2384 Dec 02 21:26	11° $\Pi$ 28'06	28.83609 AU	morning rise	2391 Jul 03 15:50	26° $\Pi$ 37'14	
direct	2385 Feb 19 00:30	10° $\Pi$ 03'07		retrograde	2391 Oct 01 23:47	28° $\Pi$ 34'20	
evening set	2385 May 17 17:46	11° $\Pi$ 57'05		opposition	2391 Dec 19 16:03	27° $\Pi$ 09'42	-1°21'08
				min. Earth dist.	2391 Dec 19 06:28	27° $\Pi$ 10'22	28.87982 AU
conjunction	2385 Jun 02 20:42	12° $\Pi$ 32'59	-1°30'05	direct	2392 Mar 06 10:18	25° $\Pi$ 45'31	
minimum elong	2385 Jun 02 20:42	12° $\Pi$ 32'59	1°30'05	evening set	2392 Jun 02 17:47	27° $\Pi$ 39'53	
max. Earth dist.	2385 Jun 03 12:48	12° $\Pi$ 34'29	30.83660 AU				
morning rise	2385 Jun 19 01:41	13° $\Pi$ 09'06		conjunction	2392 Jun 18 23:26	28° $\Pi$ 15'56	-1°14'35
retrograde	2385 Sep 17 19:16	15° $\Pi$ 06'56		minimum elong	2392 Jun 18 23:26	28° $\Pi$ 15'56	1°14'35
opposition	2385 Dec 05 22:26	13° $\Pi$ 41'51	-1°35'21	max. Earth dist.	2392 Jun 19 10:19	28° $\Pi$ 16'57	30.88289 AU
min. Earth dist.	2385 Dec 05 08:21	13° $\Pi$ 42'50	28.83907 AU	morning rise	2392 Jul 05 06:21	28° $\Pi$ 52'07	
direct	2386 Feb 21 14:10	12° $\Pi$ 17'46			2392 Aug 08 21:13	0° $\mathfrak{G}$	
evening set	2386 May 20 07:25	14° $\Pi$ 11'46		retrograde	2392 Oct 03 12:00	0° $\mathfrak{G}$ 49'06	
					2392 Nov 29 13:32	30° $\mathfrak{R}$ $\Pi$	
conjunction	2386 Jun 05 10:37	14° $\Pi$ 47'41	-1°28'15	opposition	2392 Dec 21 02:54	29° $\Pi$ 24'32	-1°18'18
minimum elong	2386 Jun 05 10:38	14° $\Pi$ 47'41	1°28'15	min. Earth dist.	2392 Dec 20 17:15	29° $\Pi$ 25'14	28.88682 AU
max. Earth dist.	2386 Jun 06 01:12	14° $\Pi$ 49'03	30.84024 AU	direct	2393 Mar 08 22:59	28° $\Pi$ 00'20	
morning rise	2386 Jun 21 16:06	15° $\Pi$ 23'49		evening set	2393 Jun 05 07:39	29° $\Pi$ 54'45	
retrograde	2386 Sep 20 08:43	17° $\Pi$ 21'31			2393 Jun 07 17:16	0° $\mathfrak{G}$	
opposition	2386 Dec 08 09:27	15° $\Pi$ 56'27	-1°33'20				
min. Earth dist.	2386 Dec 07 20:08	15° $\Pi$ 57'23	28.84340 AU	conjunction	2393 Jun 21 13:31	0° $\mathfrak{G}$ 30'48	-1°11'53
direct	2387 Feb 24 01:06	14° $\Pi$ 32'19		minimum elong	2393 Jun 21 13:31	0° $\mathfrak{G}$ 30'48	1°11'54
evening set	2387 May 22 20:57	16° $\Pi$ 26'21		max. Earth dist.	2393 Jun 21 22:42	0° $\mathfrak{G}$ 31'40	30.88943 AU
				morning rise	2393 Jul 07 20:44	1° $\mathfrak{G}$ 07'00	
conjunction	2387 Jun 08 00:45	17° $\Pi$ 02'18	-1°26'18	retrograde	2393 Oct 05 23:45	3° $\mathfrak{G}$ 03'51	
minimum elong	2387 Jun 08 00:46	17° $\Pi$ 02'18	1°26'19	opposition	2393 Dec 23 13:51	1° $\mathfrak{G}$ 39'20	-1°15'22
max. Earth dist.	2387 Jun 08 15:56	17° $\Pi$ 03'43	30.84523 AU	min. Earth dist.	2393 Dec 23 05:58	1° $\mathfrak{G}$ 39'54	28.89292 AU
morning rise	2387 Jun 24 06:22	17° $\Pi$ 38'26		direct	2394 Mar 11 10:13	0° $\mathfrak{G}$ 15'05	
retrograde	2387 Sep 22 21:30	19° $\Pi$ 36'00		evening set	2394 Jun 07 21:32	2° $\mathfrak{G}$ 09'32	
opposition	2387 Dec 10 20:27	18° $\Pi$ 10'59	-1°31'10				
min. Earth dist.	2387 Dec 10 07:35	18° $\Pi$ 11'54	28.84898 AU	conjunction	2394 Jun 24 03:53	2° $\mathfrak{G}$ 45'37	-1°09'06
direct	2388 Feb 26 14:22	16° $\Pi$ 46'50		minimum elong	2394 Jun 24 03:53	2° $\mathfrak{G}$ 45'37	1°09'06

max. Earth dist.	2394 Jun 24 12:50	2° $\overline{04}$ 46'27	30.89520 AU	conjunction	2401 Jul 10 05:37	18° $\overline{02}$ 24'32	-0°46'57
morning rise	2394 Jul 10 11:11	3° $\overline{02}$ 21'48		minimum elong	2401 Jul 10 05:38	18° $\overline{02}$ 24'32	0°46'57
retrograde	2394 Oct 08 11:47	5° $\overline{08}$ 18'29		max. Earth dist.	2401 Jul 10 09:04	18° $\overline{02}$ 24'51	30.94476 AU
opposition	2394 Dec 26 00:28	3° $\overline{05}$ 54'01	-1°12'19	morning rise	2401 Jul 26 13:38	19° $\overline{05}$ 00'40	
min. Earth dist.	2394 Dec 25 16:57	3° $\overline{05}$ 54'33	28.89824 AU	retrograde	2401 Oct 23 23:51	20° $\overline{05}$ 56'12	
direct	2395 Mar 13 23:32	2° $\overline{02}$ 29'41		opposition	2402 Jan 10 01:33	19° $\overline{05}$ 32'05	-0°48'20
evening set	2395 Jun 10 11:33	4° $\overline{02}$ 24'11		min. Earth dist.	2402 Jan 09 22:14	19° $\overline{05}$ 32'19	28.95055 AU
				direct	2402 Mar 29 11:27	18° $\overline{05}$ 07'25	
conjunction	2395 Jun 26 18:03	5° $\overline{05}$ 00'16	-1°06'12	evening set	2402 Jun 26 11:32	20° $\overline{05}$ 02'11	
minimum elong	2395 Jun 26 18:03	5° $\overline{05}$ 00'16	1°06'12				
max. Earth dist.	2395 Jun 27 00:58	5° $\overline{05}$ 00'54	30.90039 AU	conjunction	2402 Jul 12 19:32	20° $\overline{05}$ 38'17	-0°43'28
morning rise	2395 Jul 13 01:39	5° $\overline{05}$ 36'27		minimum elong	2402 Jul 12 19:33	20° $\overline{05}$ 38'17	0°43'28
retrograde	2395 Oct 11 00:40	7° $\overline{05}$ 32'58		max. Earth dist.	2402 Jul 12 21:42	20° $\overline{05}$ 38'29	30.95622 AU
opposition	2395 Dec 28 11:09	6° $\overline{05}$ 08'32	-1°09'10	morning rise	2402 Jul 29 03:36	21° $\overline{05}$ 14'24	
min. Earth dist.	2395 Dec 28 04:50	6° $\overline{05}$ 08'58	28.90335 AU	retrograde	2402 Oct 26 10:48	23° $\overline{05}$ 09'48	
direct	2396 Mar 15 10:34	4° $\overline{05}$ 44'07		opposition	2403 Jan 12 11:50	21° $\overline{05}$ 45'48	-0°44'34
evening set	2396 Jun 12 01:13	6° $\overline{05}$ 38'39		min. Earth dist.	2403 Jan 12 10:08	21° $\overline{05}$ 45'55	28.96233 AU
				direct	2403 Mar 31 21:20	20° $\overline{05}$ 21'07	
conjunction	2396 Jun 28 08:08	7° $\overline{05}$ 14'44	-1°03'12	evening set	2403 Jun 29 01:22	22° $\overline{05}$ 15'57	
minimum elong	2396 Jun 28 08:08	7° $\overline{05}$ 14'44	1°03'12				
max. Earth dist.	2396 Jun 28 15:21	7° $\overline{05}$ 15'24	30.90549 AU	conjunction	2403 Jul 15 09:36	22° $\overline{05}$ 52'04	-0°39'55
morning rise	2396 Jul 14 15:41	7° $\overline{05}$ 50'54		minimum elong	2403 Jul 15 09:36	22° $\overline{05}$ 52'04	0°39'55
retrograde	2396 Oct 12 12:59	9° $\overline{05}$ 47'16		max. Earth dist.	2403 Jul 15 11:34	22° $\overline{05}$ 52'15	30.96812 AU
opposition	2396 Dec 29 21:43	8° $\overline{05}$ 22'50	-1°05'55	morning rise	2403 Jul 31 17:32	23° $\overline{05}$ 28'10	
min. Earth dist.	2396 Dec 29 16:09	8° $\overline{05}$ 23'14	28.90852 AU	retrograde	2403 Oct 28 22:17	25° $\overline{05}$ 23'26	
direct	2397 Mar 18 00:46	6° $\overline{05}$ 58'22		opposition	2404 Jan 14 22:10	23° $\overline{05}$ 59'32	-0°40'45
evening set	2397 Jun 14 15:01	8° $\overline{05}$ 52'55		min. Earth dist.	2404 Jan 14 20:51	23° $\overline{05}$ 59'38	28.97402 AU
				direct	2404 Apr 02 09:27	22° $\overline{05}$ 34'52	
conjunction	2397 Jun 30 22:03	9° $\overline{05}$ 29'00	-1°00'07	evening set	2404 Jun 30 15:14	24° $\overline{05}$ 29'45	
minimum elong	2397 Jun 30 22:03	9° $\overline{05}$ 29'00	1°00'07				
max. Earth dist.	2397 Jul 01 03:24	9° $\overline{05}$ 29'30	30.91107 AU	conjunction	2404 Jul 16 23:22	25° $\overline{05}$ 05'51	-0°36'19
morning rise	2397 Jul 17 05:54	10° $\overline{05}$ 05'10		minimum elong	2404 Jul 16 23:22	25° $\overline{05}$ 05'51	0°36'19
retrograde	2397 Oct 15 01:54	12° $\overline{05}$ 01'21		max. Earth dist.	2404 Jul 16 23:18	25° $\overline{05}$ 05'51	30.97958 AU
opposition	2398 Jan 01 08:05	10° $\overline{05}$ 36'57	-1°02'35	morning rise	2404 Aug 02 07:21	25° $\overline{05}$ 41'57	
min. Earth dist.	2398 Jan 01 02:43	10° $\overline{05}$ 37'20	28.91452 AU	retrograde	2404 Oct 30 10:21	27° $\overline{05}$ 37'05	
direct	2398 Mar 20 13:01	9° $\overline{05}$ 12'25		opposition	2405 Jan 16 08:35	26° $\overline{05}$ 13'16	-0°36'51
evening set	2398 Jun 17 04:40	11° $\overline{05}$ 06'59		min. Earth dist.	2405 Jan 16 08:30	26° $\overline{05}$ 13'16	28.98521 AU
				direct	2405 Apr 04 20:16	24° $\overline{05}$ 48'34	
conjunction	2398 Jul 03 12:04	11° $\overline{05}$ 43'05	-0°56'57	evening set	2405 Jul 03 05:02	26° $\overline{05}$ 43'32	
minimum elong	2398 Jul 03 12:04	11° $\overline{05}$ 43'05	0°56'56				
max. Earth dist.	2398 Jul 03 17:36	11° $\overline{05}$ 43'36	30.91749 AU	conjunction	2405 Jul 19 13:25	27° $\overline{05}$ 19'37	-0°32'39
morning rise	2398 Jul 19 19:53	12° $\overline{05}$ 19'15		minimum elong	2405 Jul 19 13:25	27° $\overline{05}$ 19'37	0°32'39
retrograde	2398 Oct 17 12:46	14° $\overline{05}$ 15'15		max. Earth dist.	2405 Jul 19 13:18	27° $\overline{05}$ 19'36	30.99028 AU
opposition	2399 Jan 03 18:34	12° $\overline{05}$ 50'54	-0°59'09	morning rise	2405 Aug 04 21:10	27° $\overline{05}$ 55'41	
min. Earth dist.	2399 Jan 03 14:29	12° $\overline{05}$ 51'11	28.92144 AU	retrograde	2405 Nov 01 21:42	29° $\overline{05}$ 50'41	
direct	2399 Mar 23 01:04	11° $\overline{05}$ 26'18		opposition	2406 Jan 18 18:52	28° $\overline{05}$ 26'56	-0°32'55
evening set	2399 Jun 19 18:27	13° $\overline{05}$ 20'54		min. Earth dist.	2406 Jan 18 19:57	28° $\overline{05}$ 26'52	28.99535 AU
				direct	2406 Apr 07 09:52	27° $\overline{05}$ 02'13	
conjunction	2399 Jul 06 01:58	13° $\overline{05}$ 57'00	-0°53'42	evening set	2406 Jul 05 19:00	28° $\overline{05}$ 57'13	
minimum elong	2399 Jul 06 01:58	13° $\overline{05}$ 57'00	0°53'41				
max. Earth dist.	2399 Jul 06 06:13	13° $\overline{05}$ 57'24	30.92516 AU	conjunction	2406 Jul 22 03:18	29° $\overline{05}$ 33'18	-0°28'57
morning rise	2399 Jul 22 09:56	14° $\overline{05}$ 33'09		minimum elong	2406 Jul 22 03:18	29° $\overline{05}$ 33'18	0°28'57
retrograde	2399 Oct 20 01:54	16° $\overline{05}$ 28'59		max. Earth dist.	2406 Jul 22 00:47	29° $\overline{05}$ 33'04	31.00002 AU
opposition	2400 Jan 06 04:48	15° $\overline{05}$ 04'41	-0°55'37		2406 Aug 03 04:18	0° $\overline{00}$	
min. Earth dist.	2400 Jan 06 00:23	15° $\overline{05}$ 05'00	28.92976 AU	morning rise	2406 Aug 07 11:08	0° $\overline{00}$ 09'21	
direct	2400 Mar 24 13:07	13° $\overline{05}$ 40'03		retrograde	2406 Nov 04 10:26	2° $\overline{00}$ 04'11	
evening set	2400 Jun 21 08:09	15° $\overline{05}$ 34'42		opposition	2407 Jan 21 05:10	0° $\overline{00}$ 40'30	-0°28'56
				min. Earth dist.	2407 Jan 21 06:46	0° $\overline{00}$ 40'23	29.00461 AU
conjunction	2400 Jul 07 15:51	16° $\overline{05}$ 10'48	-0°50'22		2407 Feb 15 02:22	30° $\overline{00}$ $\overline{R}$ $\overline{05}$	
minimum elong	2400 Jul 07 15:52	16° $\overline{05}$ 10'48	0°50'22	direct	2407 Apr 09 22:09	29° $\overline{05}$ 15'43	
max. Earth dist.	2400 Jul 07 19:50	16° $\overline{05}$ 11'10	30.93418 AU		2407 Jun 01 13:49	0° $\overline{00}$	
morning rise	2400 Jul 23 23:48	16° $\overline{05}$ 46'57		evening set	2407 Jul 08 08:47	1° $\overline{00}$ 10'46	
retrograde	2400 Oct 21 12:49	18° $\overline{05}$ 42'37					
opposition	2401 Jan 07 15:16	17° $\overline{05}$ 18'24	-0°52'01	conjunction	2407 Jul 24 17:13	1° $\overline{00}$ 46'50	-0°25'12
min. Earth dist.	2401 Jan 07 12:19	17° $\overline{05}$ 18'37	28.93954 AU	minimum elong	2407 Jul 24 17:13	1° $\overline{00}$ 46'50	0°25'12
direct	2401 Mar 26 22:58	15° $\overline{05}$ 53'45		max. Earth dist.	2407 Jul 24 14:30	1° $\overline{00}$ 46'35	31.00879 AU
evening set	2401 Jun 23 21:40	17° $\overline{05}$ 48'26		morning rise	2407 Aug 10 00:45	2° $\overline{00}$ 22'52	



retrograde	2407 Nov 06 21:14	4°♏17'32		behind sun begin	2413 Aug 06 19:15	15°♏04'06	
opposition	2408 Jan 23 15:27	2°♏53'54 -0°24'55		behind sun end	2413 Aug 07 08:26	15°♏05'16	
min. Earth dist.	2408 Jan 23 18:44	2°♏53'40 29.01303 AU		max. Earth dist.	2413 Aug 06 17:46	15°♏03'57	31.06480 AU
direct	2408 Apr 11 10:32	1°♏29'05		morning rise	2413 Aug 23 08:18	15°♏40'33	
evening set	2408 Jul 09 22:34	3°♏24'09		retrograde	2413 Nov 19 14:33	17°♏34'22	
				opposition	2414 Feb 05 04:01	16°♏11'06 -0°00'21	
conjunction	2408 Jul 26 06:53	4°♏00'12 -0°21'26		min. Earth dist.	2414 Feb 05 10:39	16°♏10'38 29.07108 AU	
minimum elong	2408 Jul 26 06:53	4°♏00'12 0°21'26		asc. node	2414 Mar 07 16:56	15°♏22'35	
max. Earth dist.	2408 Jul 26 02:27	3°♏59'48 31.01712 AU			2414 Mar 27 00:53	15°♏♏	
morning rise	2408 Aug 11 14:25	4°♏36'12		direct	2414 Apr 25 06:20	14°♏46'07	
retrograde	2408 Nov 08 10:15	6°♏30'43			2414 May 24 09:50	15°♏	
opposition	2409 Jan 25 01:34	5°♏07'07 -0°20'52		evening set	2414 Jul 24 07:20	16°♏41'26	
min. Earth dist.	2409 Jan 25 04:47	5°♏06'53 29.02122 AU					
direct	2409 Apr 13 23:15	3°♏42'15		conjunction	2414 Aug 09 15:13	17°♏17'24 0°01'41	
evening set	2409 Jul 12 12:06	5°♏37'20		minimum elong	2414 Aug 09 15:13	17°♏17'24 0°01'41	
				behind sun begin	2414 Aug 09 08:37	17°♏16'49	
conjunction	2409 Jul 28 20:27	6°♏13'24 -0°17'38		behind sun end	2414 Aug 09 21:49	17°♏17'59	
minimum elong	2409 Jul 28 20:27	6°♏13'24 0°17'38		max. Earth dist.	2414 Aug 09 07:36	17°♏16'43 31.07744 AU	
max. Earth dist.	2409 Jul 28 15:36	6°♏12'57 31.02525 AU		morning rise	2414 Aug 25 21:15	17°♏53'14	
morning rise	2409 Aug 14 03:45	6°♏49'22		retrograde	2414 Nov 22 01:04	19°♏46'57	
retrograde	2409 Nov 10 20:33	8°♏43'43		opposition	2415 Feb 07 14:08	18°♏23'48 0°03'47	
opposition	2410 Jan 27 11:48	7°♏20'10 -0°16'48		min. Earth dist.	2415 Feb 07 21:37	18°♏23'16 29.08395 AU	
min. Earth dist.	2410 Jan 27 16:47	7°♏19'49 29.02947 AU		direct	2415 Apr 27 19:13	16°♏58'51	
direct	2410 Apr 16 10:01	5°♏55'15		evening set	2415 Jul 26 20:50	18°♏54'15	
evening set	2410 Jul 15 01:42	7°♏50'22					
				conjunction	2415 Aug 12 04:19	19°♏30'11 0°05'34	
conjunction	2410 Jul 31 10:01	8°♏26'24 -0°13'49		minimum elong	2415 Aug 12 04:19	19°♏30'11 0°05'34	
minimum elong	2410 Jul 31 10:01	8°♏26'24 0°13'49		behind sun begin	2415 Aug 11 21:59	19°♏29'38	
behind sun begin	2410 Jul 31 06:44	8°♏26'06		behind sun end	2415 Aug 12 10:39	19°♏30'45	
behind sun end	2410 Jul 31 13:18	8°♏26'41		max. Earth dist.	2415 Aug 11 18:48	19°♏29'20 31.09051 AU	
max. Earth dist.	2410 Jul 31 04:21	8°♏25'53 31.03376 AU		morning rise	2415 Aug 28 10:10	20°♏05'59	
morning rise	2410 Aug 16 17:09	9°♏02'21		retrograde	2415 Nov 24 13:19	21°♏59'37	
retrograde	2410 Nov 13 07:03	10°♏56'31		opposition	2416 Feb 10 00:11	20°♏36'35 0°07'55	
opposition	2411 Jan 29 21:44	9°♏33'02 -0°12'42		min. Earth dist.	2416 Feb 10 07:54	20°♏36'02 29.09705 AU	
min. Earth dist.	2411 Jan 30 02:26	9°♏32'42 29.03822 AU		direct	2416 Apr 29 06:30	19°♏11'38	
direct	2411 Apr 18 22:49	8°♏08'04		evening set	2416 Jul 28 10:14	21°♏07'08	
evening set	2411 Jul 17 15:18	10°♏03'14					
				conjunction	2416 Aug 13 17:37	21°♏43'02 0°09'24	
conjunction	2411 Aug 02 23:26	10°♏39'15 -0°10'00		minimum elong	2416 Aug 13 17:38	21°♏43'03 0°09'24	
minimum elong	2411 Aug 02 23:26	10°♏39'15 0°10'00		behind sun begin	2416 Aug 13 12:09	21°♏42'33	
behind sun begin	2411 Aug 02 18:10	10°♏38'47		behind sun end	2416 Aug 13 23:06	21°♏43'32	
behind sun end	2411 Aug 03 04:43	10°♏39'43		max. Earth dist.	2416 Aug 13 08:10	21°♏42'11 31.10334 AU	
max. Earth dist.	2411 Aug 02 16:43	10°♏38'39 31.04290 AU		morning rise	2416 Aug 29 22:58	22°♏18'49	
morning rise	2411 Aug 19 06:22	11°♏15'10		retrograde	2416 Nov 26 00:18	24°♏12'21	
retrograde	2411 Nov 15 17:18	13°♏09'13		opposition	2417 Feb 11 10:25	22°♏49'24 0°12'01	
opposition	2412 Feb 01 07:56	11°♏45'47 -0°08'36		min. Earth dist.	2417 Feb 11 19:49	22°♏48'44 29.10956 AU	
min. Earth dist.	2412 Feb 01 13:53	11°♏45'22 29.04799 AU		direct	2417 May 01 18:38	21°♏24'29	
direct	2412 Apr 20 08:31	10°♏20'48		evening set	2417 Jul 30 23:40	23°♏20'02	
evening set	2412 Jul 19 04:31	12°♏15'59					
				conjunction	2417 Aug 16 06:44	23°♏55'55 0°13'13	
conjunction	2412 Aug 04 12:39	12°♏51'59 -0°06'10		minimum elong	2417 Aug 16 06:44	23°♏55'55 0°13'14	
minimum elong	2412 Aug 04 12:39	12°♏51'59 0°06'10		behind sun begin	2417 Aug 16 03:01	23°♏55'35	
behind sun begin	2412 Aug 04 06:24	12°♏51'26		behind sun end	2417 Aug 16 10:27	23°♏56'15	
behind sun end	2412 Aug 04 18:53	12°♏52'32		max. Earth dist.	2417 Aug 15 19:25	23°♏54'53 31.11541 AU	
max. Earth dist.	2412 Aug 04 06:05	12°♏51'24 31.05325 AU		morning rise	2417 Sep 01 11:53	24°♏31'39	
morning rise	2412 Aug 20 19:15	13°♏27'53		retrograde	2417 Nov 28 13:30	26°♏25'04	
	2412 Oct 12 01:36	15°♏		opposition	2418 Feb 13 20:34	25°♏02'12 0°16'07	
retrograde	2412 Nov 17 03:35	15°♏21'48		min. Earth dist.	2418 Feb 14 06:01	25°♏01'33 29.12103 AU	
	2412 Dec 23 18:39	15°♏♏		direct	2418 May 04 08:07	23°♏37'17	
opposition	2413 Feb 02 18:01	13°♏58'27 -0°04'28		evening set	2418 Aug 02 13:10	25°♏32'53	
min. Earth dist.	2413 Feb 02 23:54	13°♏58'02 29.05888 AU					
direct	2413 Apr 22 20:01	12°♏33'27		conjunction	2418 Aug 18 20:02	26°♏08'45 0°17'02	
evening set	2413 Jul 21 17:59	14°♏28'42		minimum elong	2418 Aug 18 20:02	26°♏08'45 0°17'01	
	2413 Aug 04 23:19	15°♏		max. Earth dist.	2418 Aug 18 08:04	26°♏07'39 31.12611 AU	
				morning rise	2418 Sep 04 00:40	26°♏44'26	
conjunction	2413 Aug 07 01:52	15°♏04'41 -0°02'18		retrograde	2418 Nov 30 23:39	28°♏37'45	
minimum elong	2413 Aug 07 01:50	15°♏04'41 0°02'18		opposition	2419 Feb 16 06:50	27°♏14'56 0°20'10	

min. Earth dist.	2419 Feb 16 18:16	27°014'08	29.13116 AU	conjunction	2425 Sep 03 12:50	11°033'10	0°42'35
direct	2419 May 06 19:46	25°050'00		minimum elong	2425 Sep 03 12:50	11°033'10	0°42'36
evening set	2419 Aug 05 02:35	27°045'37		max. Earth dist.	2425 Sep 02 20:25	11°031'39	31.18297 AU
				morning rise	2425 Sep 19 14:19	12°008'33	
conjunction	2419 Aug 21 09:09	28°021'27	0°20'49	retrograde	2425 Dec 15 21:49	14°001'03	
minimum elong	2419 Aug 21 09:08	28°021'27	0°20'49	opposition	2426 Mar 03 05:48	12°038'27	0°47'19
max. Earth dist.	2419 Aug 20 20:04	28°020'15	31.13565 AU	min. Earth dist.	2426 Mar 03 21:13	12°037'23	29.18819 AU
morning rise	2419 Sep 06 13:26	28°057'06		direct	2426 May 22 05:37	11°013'16	
	2419 Oct 08 14:57	0°00		evening set	2426 Aug 20 21:09	13°009'00	
retrograde	2419 Dec 03 10:27	0°050'16		max. Earth dist.	2426 Sep 05 07:29	13°042'57	31.19303 AU
	2420 Jan 29 20:53	30°00					
opposition	2420 Feb 18 17:01	29°027'31	0°24'12	conjunction	2426 Sep 06 01:04	13°044'35	0°46'01
min. Earth dist.	2420 Feb 19 04:23	29°026'43	29.14005 AU	minimum elong	2426 Sep 06 01:04	13°044'35	0°46'01
direct	2420 May 08 08:50	28°002'33		morning rise	2426 Sep 22 02:11	14°019'55	
evening set	2420 Aug 06 15:46	29°058'10		retrograde	2426 Dec 18 10:07	16°012'21	
	2420 Aug 07 12:07	0°00		opposition	2427 Mar 05 15:50	14°049'50	0°50'57
				min. Earth dist.	2427 Mar 06 06:41	14°048'48	29.19865 AU
conjunction	2420 Aug 22 21:58	0°033'58	0°24'33	direct	2427 May 24 18:35	13°024'41	
minimum elong	2420 Aug 22 21:58	0°033'58	0°24'33	evening set	2427 Aug 23 09:48	15°020'28	
max. Earth dist.	2420 Aug 22 07:38	0°032'39	31.14397 AU				
morning rise	2420 Sep 08 01:51	1°009'35		conjunction	2427 Sep 08 13:20	15°056'02	0°49'23
retrograde	2420 Dec 04 20:53	3°002'38		minimum elong	2427 Sep 08 13:20	15°056'02	0°49'24
opposition	2421 Feb 20 03:16	1°039'54	0°28'11	max. Earth dist.	2427 Sep 07 19:52	15°054'25	31.20372 AU
min. Earth dist.	2421 Feb 20 16:09	1°038'59	29.14803 AU	morning rise	2427 Sep 24 13:49	16°031'20	
direct	2421 May 10 19:18	0°014'52		retrograde	2427 Dec 20 20:16	18°023'43	
evening set	2421 Aug 09 04:53	2°010'29		opposition	2428 Mar 07 02:08	17°001'18	0°54'30
				min. Earth dist.	2428 Mar 07 18:27	17°000'09	29.20958 AU
conjunction	2421 Aug 25 10:52	2°046'16	0°28'16	direct	2428 May 26 05:45	15°036'12	
minimum elong	2421 Aug 25 10:52	2°046'16	0°28'16	evening set	2428 Aug 24 22:16	17°032'02	
max. Earth dist.	2421 Aug 24 20:20	2°044'56	31.15159 AU	max. Earth dist.	2428 Sep 09 07:20	18°005'53	31.21463 AU
morning rise	2421 Sep 10 14:17	3°021'50					
retrograde	2421 Dec 07 06:10	5°014'44		conjunction	2428 Sep 10 01:20	18°007'33	0°52'41
opposition	2422 Feb 22 13:16	3°052'02	0°32'07	minimum elong	2428 Sep 10 01:20	18°007'33	0°52'41
min. Earth dist.	2422 Feb 23 02:29	3°051'06	29.15532 AU	morning rise	2428 Sep 26 01:22	18°042'49	
direct	2422 May 13 07:33	2°026'57		retrograde	2428 Dec 22 07:09	20°035'10	
evening set	2422 Aug 11 18:04	4°022'35		opposition	2429 Mar 09 12:21	19°012'50	0°57'59
				min. Earth dist.	2429 Mar 10 04:21	19°011'43	29.22023 AU
conjunction	2422 Aug 27 23:34	4°058'19	0°31'56	direct	2429 May 28 18:28	17°047'47	
minimum elong	2422 Aug 27 23:33	4°058'19	0°31'55	evening set	2429 Aug 27 10:56	19°043'41	
max. Earth dist.	2422 Aug 27 07:24	4°056'49	31.15874 AU				
morning rise	2422 Sep 13 02:38	5°033'50		conjunction	2429 Sep 12 13:28	20°019'10	0°55'54
retrograde	2422 Dec 09 15:55	7°026'37		minimum elong	2429 Sep 12 13:28	20°019'10	0°55'54
opposition	2423 Feb 24 23:24	6°003'55	0°36'00	max. Earth dist.	2429 Sep 11 18:28	20°017'25	31.22483 AU
min. Earth dist.	2423 Feb 25 13:20	6°002'57	29.16259 AU	morning rise	2429 Sep 28 12:58	20°054'24	
direct	2423 May 15 18:22	4°038'47		retrograde	2429 Dec 24 17:57	22°046'42	
evening set	2423 Aug 14 06:51	6°034'25		opposition	2430 Mar 11 22:36	21°024'27	1°01'22
				min. Earth dist.	2430 Mar 12 15:57	21°023'14	29.23011 AU
conjunction	2423 Aug 30 12:07	7°010'07	0°35'32	direct	2430 May 31 04:47	19°059'25	
minimum elong	2423 Aug 30 12:07	7°010'07	0°35'33	evening set	2430 Aug 29 23:30	21°055'22	
max. Earth dist.	2423 Aug 29 20:35	7°008'41	31.16604 AU	max. Earth dist.	2430 Sep 14 06:30	22°029'03	31.23409 AU
morning rise	2423 Sep 15 14:33	7°045'35					
retrograde	2423 Dec 12 00:41	9°038'15		conjunction	2430 Sep 15 01:38	22°030'49	0°59'02
opposition	2424 Feb 27 09:34	8°015'35	0°39'50	minimum elong	2430 Sep 15 01:38	22°030'49	0°59'01
min. Earth dist.	2424 Feb 28 00:10	8°014'33	29.17013 AU	morning rise	2430 Oct 01 00:30	23°006'00	
direct	2424 May 17 06:40	6°050'25		retrograde	2430 Dec 27 03:19	24°058'16	
evening set	2424 Aug 15 19:44	8°046'03		opposition	2431 Mar 14 09:02	23°036'05	1°04'40
max. Earth dist.	2424 Aug 31 07:24	9°020'08	31.17399 AU	min. Earth dist.	2431 Mar 15 02:41	23°034'51	29.23869 AU
				direct	2431 Jun 02 17:02	22°011'04	
conjunction	2424 Sep 01 00:26	9°021'42	0°39'06	evening set	2431 Sep 01 12:01	24°007'02	
minimum elong	2424 Sep 01 00:26	9°021'42	0°39'05				
morning rise	2424 Sep 17 02:34	9°057'09		conjunction	2431 Sep 17 13:30	24°042'27	1°02'05
retrograde	2424 Dec 13 12:00	11°049'43		minimum elong	2431 Sep 17 13:29	24°042'27	1°02'05
opposition	2425 Feb 28 19:34	10°027'04	0°43'36	max. Earth dist.	2431 Sep 16 16:46	24°040'32	31.24198 AU
min. Earth dist.	2425 Mar 01 09:52	10°026'04	29.17868 AU	morning rise	2431 Oct 03 11:53	25°017'36	
direct	2425 May 19 17:28	9°001'52		retrograde	2431 Dec 29 13:00	27°009'49	
evening set	2425 Aug 18 08:22	10°057'33		opposition	2432 Mar 15 19:28	25°047'40	1°07'53
				min. Earth dist.	2432 Mar 16 13:46	25°046'24	29.24608 AU

direct	2432 Jun 04 03:38	24° <u>7</u> 22'40		minimum elong	2438 Oct 02 22:04	9° <u>5</u> 59'54	1°20'35
evening set	2432 Sep 03 00:21	26° <u>7</u> 18'38		max. Earth dist.	2438 Oct 01 23:46	9° <u>5</u> 57'50	31.28090 AU
max. Earth dist.	2432 Sep 18 05:13	26° <u>7</u> 52'08	31.24867 AU	morning rise	2438 Oct 18 16:28	10° <u>5</u> 34'44	
				retrograde	2439 Jan 13 11:50	12° <u>5</u> 26'35	
conjunction	2432 Sep 19 01:29	26° <u>7</u> 54'01	1°05'02	opposition	2439 Mar 31 20:25	11° <u>5</u> 04'30	1°27'16
minimum elong	2432 Sep 19 01:29	26° <u>7</u> 54'01	1°05'01	min. Earth dist.	2439 Apr 01 16:39	11° <u>5</u> 03'06	29.28555 AU
morning rise	2432 Oct 04 23:11	27° <u>7</u> 29'07		direct	2439 Jun 20 15:21	9° <u>5</u> 39'26	
retrograde	2432 Dec 30 21:22	29° <u>7</u> 21'16		evening set	2439 Sep 19 11:43	11° <u>5</u> 35'24	
opposition	2433 Mar 18 05:50	27° <u>7</u> 59'09	1°10'59	max. Earth dist.	2439 Oct 04 11:31	12° <u>5</u> 08'29	31.28865 AU
min. Earth dist.	2433 Mar 19 01:06	27° <u>7</u> 57'49	29.25219 AU				
direct	2433 Jun 06 15:16	26° <u>7</u> 34'08		conjunction	2439 Oct 05 09:04	12° <u>5</u> 10'29	1°22'49
evening set	2433 Sep 05 12:44	28° <u>7</u> 30'07		minimum elong	2439 Oct 05 09:03	12° <u>5</u> 10'29	1°22'49
				morning rise	2439 Oct 21 02:50	12° <u>5</u> 45'16	
conjunction	2433 Sep 21 13:13	29° <u>7</u> 05'27	1°07'53	retrograde	2440 Jan 15 20:38	14° <u>5</u> 37'07	
minimum elong	2433 Sep 21 13:13	29° <u>7</u> 05'27	1°07'54	opposition	2440 Apr 02 07:00	13° <u>5</u> 15'05	1°29'34
max. Earth dist.	2433 Sep 20 15:16	29° <u>7</u> 03'25	31.25429 AU	min. Earth dist.	2440 Apr 03 02:59	13° <u>5</u> 13'42	29.29351 AU
morning rise	2433 Oct 07 10:33	29° <u>7</u> 40'31		direct	2440 Jun 22 03:58	11° <u>5</u> 50'04	
	2433 Oct 16 14:36	0° <u>5</u>		evening set	2440 Sep 20 23:22	13° <u>5</u> 46'03	
retrograde	2434 Jan 02 08:24	1° <u>5</u> 32'36					
opposition	2434 Mar 20 16:11	0° <u>5</u> 10'29	1°13'59	conjunction	2440 Oct 06 20:02	14° <u>5</u> 21'06	1°24'54
min. Earth dist.	2434 Mar 21 11:17	0° <u>5</u> 09'10	29.25741 AU	minimum elong	2440 Oct 06 20:02	14° <u>5</u> 21'06	1°24'54
	2434 Mar 26 23:40	30° <u>8</u>		max. Earth dist.	2440 Oct 05 21:31	14° <u>5</u> 19'00	31.29678 AU
direct	2434 Jun 09 01:42	28° <u>8</u> 45'26		morning rise	2440 Oct 22 13:22	14° <u>5</u> 55'51	
	2434 Aug 18 20:56	0° <u>5</u>		retrograde	2441 Jan 17 06:31	16° <u>5</u> 47'41	
evening set	2434 Sep 08 00:52	0° <u>5</u> 41'25		opposition	2441 Apr 04 17:29	15° <u>5</u> 25'44	1°31'44
max. Earth dist.	2434 Sep 23 03:32	1° <u>5</u> 14'43	31.25906 AU	min. Earth dist.	2441 Apr 05 13:39	15° <u>5</u> 24'20	29.30175 AU
				direct	2441 Jun 24 14:03	14° <u>5</u> 00'46	
conjunction	2434 Sep 24 00:57	1° <u>5</u> 16'43	1°10'39	evening set	2441 Sep 23 10:53	15° <u>5</u> 56'46	
minimum elong	2434 Sep 24 00:57	1° <u>5</u> 16'42	1°10'39	max. Earth dist.	2441 Oct 08 09:34	16° <u>5</u> 29'46	31.30475 AU
morning rise	2434 Oct 09 21:32	1° <u>5</u> 51'44					
retrograde	2435 Jan 04 17:25	3° <u>5</u> 43'45		conjunction	2441 Oct 09 07:10	16° <u>5</u> 31'46	1°26'52
opposition	2435 Mar 23 02:39	2° <u>5</u> 21'38	1°16'52	minimum elong	2441 Oct 09 07:10	16° <u>5</u> 31'46	1°26'53
min. Earth dist.	2435 Mar 23 23:00	2° <u>5</u> 20'13	29.26202 AU	morning rise	2441 Oct 24 23:48	17° <u>5</u> 06'30	
direct	2435 Jun 11 14:18	0° <u>5</u> 56'34		retrograde	2442 Jan 19 14:58	18° <u>5</u> 58'20	
evening set	2435 Sep 10 12:57	2° <u>5</u> 52'32		opposition	2442 Apr 07 04:17	17° <u>5</u> 36'26	1°33'46
				min. Earth dist.	2442 Apr 08 01:10	17° <u>5</u> 35'00	29.30936 AU
conjunction	2435 Sep 26 12:23	3° <u>5</u> 27'46	1°13'18	direct	2442 Jun 27 01:24	16° <u>5</u> 11'31	
minimum elong	2435 Sep 26 12:22	3° <u>5</u> 27'46	1°13'19	evening set	2442 Sep 25 22:31	18° <u>5</u> 07'32	
max. Earth dist.	2435 Sep 25 13:58	3° <u>5</u> 25'41	31.26365 AU				
morning rise	2435 Oct 12 08:32	4° <u>5</u> 02'44		conjunction	2442 Oct 11 18:03	18° <u>5</u> 42'30	1°28'42
retrograde	2436 Jan 07 04:54	5° <u>5</u> 54'42		minimum elong	2442 Oct 11 18:02	18° <u>5</u> 42'30	1°28'42
opposition	2436 Mar 24 13:01	4° <u>5</u> 32'34	1°19'39	max. Earth dist.	2442 Oct 10 19:08	18° <u>5</u> 40'22	31.31190 AU
min. Earth dist.	2436 Mar 25 08:34	4° <u>5</u> 31'13	29.26673 AU	morning rise	2442 Oct 27 10:16	19° <u>5</u> 17'12	
direct	2436 Jun 13 03:29	3° <u>5</u> 07'28		retrograde	2443 Jan 22 02:05	21° <u>5</u> 09'03	
evening set	2436 Sep 12 00:40	5° <u>5</u> 03'25		opposition	2443 Apr 09 15:04	19° <u>5</u> 47'11	1°35'40
				min. Earth dist.	2443 Apr 10 11:28	19° <u>5</u> 45'47	29.31605 AU
conjunction	2436 Sep 27 23:38	5° <u>5</u> 38'37	1°15'51	direct	2443 Jun 29 11:42	18° <u>5</u> 22'18	
minimum elong	2436 Sep 27 23:38	5° <u>5</u> 38'37	1°15'50	evening set	2443 Sep 28 09:58	20° <u>5</u> 18'20	
max. Earth dist.	2436 Sep 27 01:40	5° <u>5</u> 36'35	31.26847 AU	max. Earth dist.	2443 Oct 13 06:48	20° <u>5</u> 51'11	31.31789 AU
morning rise	2436 Oct 13 19:08	6° <u>5</u> 13'33					
retrograde	2437 Jan 08 14:21	8° <u>5</u> 05'28		conjunction	2443 Oct 14 05:05	20° <u>5</u> 53'16	1°30'25
opposition	2437 Mar 26 23:31	6° <u>5</u> 43'19	1°22'19	minimum elong	2443 Oct 14 05:05	20° <u>5</u> 53'16	1°30'26
min. Earth dist.	2437 Mar 27 20:09	6° <u>5</u> 41'54	29.27201 AU	morning rise	2443 Oct 29 20:35	21° <u>5</u> 27'55	
direct	2437 Jun 15 14:49	5° <u>5</u> 18'13		retrograde	2444 Jan 24 11:05	23° <u>5</u> 19'47	
evening set	2437 Sep 14 12:28	7° <u>5</u> 14'09		opposition	2444 Apr 11 02:04	21° <u>5</u> 57'57	1°37'26
				min. Earth dist.	2444 Apr 11 23:40	21° <u>5</u> 56'28	29.32146 AU
conjunction	2437 Sep 30 10:53	7° <u>5</u> 49'19	1°18'17	direct	2444 Jun 30 23:25	20° <u>5</u> 33'06	
minimum elong	2437 Sep 30 10:52	7° <u>5</u> 49'19	1°18'17	evening set	2444 Sep 29 21:19	22° <u>5</u> 29'07	
max. Earth dist.	2437 Sep 29 12:52	7° <u>5</u> 47'16	31.27420 AU				
morning rise	2437 Oct 16 05:51	8° <u>5</u> 24'11		conjunction	2444 Oct 15 15:48	23° <u>5</u> 04'01	1°32'00
retrograde	2438 Jan 11 00:47	10° <u>5</u> 16'03		minimum elong	2444 Oct 15 15:48	23° <u>5</u> 04'01	1°32'00
opposition	2438 Mar 29 09:50	8° <u>5</u> 53'56	1°24'51	max. Earth dist.	2444 Oct 14 16:31	23° <u>5</u> 01'51	31.32264 AU
min. Earth dist.	2438 Mar 30 05:33	8° <u>5</u> 52'34	29.27821 AU	morning rise	2444 Oct 31 06:56	23° <u>5</u> 38'38	
direct	2438 Jun 18 04:07	7° <u>5</u> 28'50		retrograde	2445 Jan 25 22:24	25° <u>5</u> 30'30	
evening set	2438 Sep 17 00:15	9° <u>5</u> 24'47		opposition	2445 Apr 13 12:54	24° <u>5</u> 08'40	1°39'03
				min. Earth dist.	2445 Apr 14 09:48	24° <u>5</u> 07'14	29.32547 AU
conjunction	2438 Oct 02 22:04	9° <u>5</u> 59'54	1°20'36	direct	2445 Jul 03 11:48	22° <u>5</u> 43'51	

evening set	2445 Oct 02 08:39	24° <u>♂</u> 39'51		max. Earth dist.	2451 Oct 30 18:29	8° <u>♂</u> 14'54	31.33704 AU
max. Earth dist.	2445 Oct 17 03:29	25° <u>♂</u> 12'33	31.32588 AU	morning rise	2451 Nov 16 04:28	8° <u>♂</u> 51'23	
				retrograde	2452 Feb 10 19:16	10° <u>♂</u> 43'21	
conjunction	2445 Oct 18 02:40	25° <u>♂</u> 14'43	1°33'27	opposition	2452 Apr 28 18:19	9° <u>♂</u> 21'31	1°46'21
minimum elong	2445 Oct 18 02:40	25° <u>♂</u> 14'43	1°33'28	min. Earth dist.	2452 Apr 29 14:12	9° <u>♂</u> 20'09	29.33994 AU
morning rise	2445 Nov 02 17:09	25° <u>♂</u> 49'18		direct	2452 Jul 18 21:48	7° <u>♂</u> 56'50	
retrograde	2446 Jan 28 08:13	27° <u>♂</u> 41'10		evening set	2452 Oct 17 12:26	9° <u>♂</u> 52'41	
opposition	2446 Apr 15 23:53	26° <u>♂</u> 19'21	1°40'32	max. Earth dist.	2452 Nov 01 05:50	10° <u>♂</u> 25'21	31.34061 AU
min. Earth dist.	2446 Apr 16 22:04	26° <u>♂</u> 17'49	29.32817 AU				
direct	2446 Jul 05 22:52	24° <u>♂</u> 54'32		conjunction	2452 Nov 02 02:54	10° <u>♂</u> 27'19	1°39'48
evening set	2446 Oct 04 19:54	26° <u>♂</u> 50'31		minimum elong	2452 Nov 02 02:54	10° <u>♂</u> 27'19	1°39'47
				morning rise	2452 Nov 17 14:01	11° <u>♂</u> 01'42	
conjunction	2446 Oct 20 13:21	27° <u>♂</u> 25'20	1°34'47	retrograde	2453 Feb 12 04:00	12° <u>♂</u> 53'45	
minimum elong	2446 Oct 20 13:21	27° <u>♂</u> 25'20	1°34'46	opposition	2453 May 01 05:40	11° <u>♂</u> 31'57	1°46'47
max. Earth dist.	2446 Oct 19 14:08	27° <u>♂</u> 23'10	31.32806 AU	min. Earth dist.	2453 May 02 02:16	11° <u>♂</u> 30'32	29.34354 AU
morning rise	2446 Nov 05 03:23	27° <u>♂</u> 59'53		direct	2453 Jul 21 08:53	10° <u>♂</u> 07'21	
retrograde	2447 Jan 30 18:44	29° <u>♂</u> 51'45		evening set	2453 Oct 19 23:04	12° <u>♂</u> 03'11	
opposition	2447 Apr 18 10:52	28° <u>♂</u> 29'55	1°41'52				
min. Earth dist.	2447 Apr 19 08:17	28° <u>♂</u> 28'27	29.32981 AU	conjunction	2453 Nov 04 12:56	12° <u>♂</u> 37'48	1°40'08
direct	2447 Jul 08 12:36	27° <u>♂</u> 05'06		minimum elong	2453 Nov 04 12:56	12° <u>♂</u> 37'48	1°40'09
evening set	2447 Oct 07 06:51	29° <u>♂</u> 01'03		max. Earth dist.	2453 Nov 03 15:30	12° <u>♂</u> 35'47	31.34417 AU
				morning rise	2453 Nov 19 23:45	13° <u>♂</u> 12'09	
conjunction	2447 Oct 22 23:44	29° <u>♂</u> 35'50	1°35'58		2454 Jan 29 21:13	15° <u>♂</u>	
minimum elong	2447 Oct 22 23:44	29° <u>♂</u> 35'50	1°35'58	retrograde	2454 Feb 14 15:10	15° <u>♂</u> 04'15	
max. Earth dist.	2447 Oct 22 00:10	29° <u>♂</u> 33'38	31.32933 AU		2454 Mar 02 14:40	15° <u>♀</u> <u>♂</u>	
	2447 Nov 02 20:06	0° <u>♂</u>		opposition	2454 May 03 16:54	13° <u>♂</u> 42'29	1°47'05
morning rise	2447 Nov 07 13:17	0° <u>♂</u> 10'21		min. Earth dist.	2454 May 04 12:23	13° <u>♂</u> 41'09	29.34682 AU
retrograde	2448 Feb 02 05:50	2° <u>♂</u> 02'13		direct	2454 Jul 23 19:57	12° <u>♂</u> 17'57	
opposition	2448 Apr 19 21:57	0° <u>♂</u> 40'22	1°43'04	evening set	2454 Oct 22 09:38	14° <u>♂</u> 13'47	
min. Earth dist.	2448 Apr 20 19:50	0° <u>♂</u> 38'51	29.33100 AU				
	2448 May 15 11:45	30° <u>♀</u> <u>♂</u>		conjunction	2454 Nov 06 23:04	14° <u>♂</u> 48'23	1°40'20
direct	2448 Jul 10 00:25	29° <u>♂</u> 15'33		minimum elong	2454 Nov 06 23:04	14° <u>♂</u> 48'22	1°40'19
	2448 Sep 01 14:30	0° <u>♂</u>		max. Earth dist.	2454 Nov 06 02:07	14° <u>♂</u> 46'25	31.34704 AU
evening set	2448 Oct 08 17:42	1° <u>♂</u> 11'28			2454 Nov 12 03:27	15° <u>♂</u>	
max. Earth dist.	2448 Oct 23 11:33	1° <u>♂</u> 44'06	31.33045 AU	morning rise	2454 Nov 22 09:22	15° <u>♂</u> 22'43	
				retrograde	2455 Feb 17 01:35	17° <u>♂</u> 14'54	
conjunction	2448 Oct 24 10:11	1° <u>♂</u> 46'13	1°37'00	opposition	2455 May 06 04:31	15° <u>♂</u> 53'08	1°47'13
minimum elong	2448 Oct 24 10:10	1° <u>♂</u> 46'13	1°37'00	min. Earth dist.	2455 May 07 00:53	15° <u>♂</u> 51'45	29.34932 AU
morning rise	2448 Nov 08 23:10	2° <u>♂</u> 20'41			2455 Jun 10 08:38	15° <u>♀</u> <u>♂</u>	
retrograde	2449 Feb 03 14:21	4° <u>♂</u> 12'34		direct	2455 Jul 26 05:56	14° <u>♂</u> 28'40	
opposition	2449 Apr 22 08:52	2° <u>♂</u> 50'41	1°44'06		2455 Sep 08 23:37	15° <u>♂</u>	
min. Earth dist.	2449 Apr 23 06:22	2° <u>♂</u> 49'13	29.33214 AU	evening set	2455 Oct 24 20:02	16° <u>♂</u> 24'29	
direct	2449 Jul 12 13:34	1° <u>♂</u> 25'53					
evening set	2449 Oct 11 04:38	3° <u>♂</u> 21'46		conjunction	2455 Nov 09 09:01	16° <u>♂</u> 59'02	1°40'23
				minimum elong	2455 Nov 09 09:01	16° <u>♂</u> 59'02	1°40'23
conjunction	2449 Oct 26 20:26	3° <u>♂</u> 56'29	1°37'55	max. Earth dist.	2455 Nov 08 12:24	16° <u>♂</u> 57'06	31.34899 AU
minimum elong	2449 Oct 26 20:26	3° <u>♂</u> 56'29	1°37'56	morning rise	2455 Nov 24 18:58	17° <u>♂</u> 33'22	
max. Earth dist.	2449 Oct 25 21:09	3° <u>♂</u> 54'19	31.33182 AU	retrograde	2456 Feb 19 12:41	19° <u>♂</u> 25'36	
morning rise	2449 Nov 11 09:04	4° <u>♂</u> 30'56		opposition	2456 May 07 16:04	18° <u>♂</u> 03'51	1°47'12
retrograde	2450 Feb 06 00:06	6° <u>♂</u> 22'50		min. Earth dist.	2456 May 08 11:33	18° <u>♂</u> 02'31	29.35051 AU
opposition	2450 Apr 24 19:58	5° <u>♂</u> 00'57	1°45'00	direct	2456 Jul 27 19:47	16° <u>♂</u> 39'25	
min. Earth dist.	2450 Apr 25 17:00	4° <u>♂</u> 59'30	29.33396 AU	evening set	2456 Oct 26 06:36	18° <u>♂</u> 35'12	
direct	2450 Jul 15 00:15	3° <u>♂</u> 36'10					
evening set	2450 Oct 13 15:15	5° <u>♂</u> 32'02		conjunction	2456 Nov 10 19:05	19° <u>♂</u> 09'44	1°40'18
max. Earth dist.	2450 Oct 28 08:59	6° <u>♂</u> 04'42	31.33398 AU	minimum elong	2456 Nov 10 19:05	19° <u>♂</u> 09'44	1°40'17
				max. Earth dist.	2456 Nov 09 21:57	19° <u>♂</u> 07'46	31.34943 AU
conjunction	2450 Oct 29 06:41	6° <u>♂</u> 06'43	1°38'41	morning rise	2456 Nov 26 04:41	19° <u>♂</u> 44'02	
minimum elong	2450 Oct 29 06:41	6° <u>♂</u> 06'43	1°38'41	retrograde	2457 Feb 21 00:44	21° <u>♂</u> 36'19	
morning rise	2450 Nov 13 18:39	6° <u>♂</u> 41'08		opposition	2457 May 10 03:35	20° <u>♂</u> 14'33	1°47'01
retrograde	2451 Feb 08 08:14	8° <u>♂</u> 33'04		min. Earth dist.	2457 May 10 23:34	20° <u>♂</u> 13'12	29.35029 AU
opposition	2451 Apr 27 07:14	7° <u>♂</u> 11'12	1°45'45	direct	2457 Jul 30 07:29	18° <u>♂</u> 50'09	
min. Earth dist.	2451 Apr 28 04:18	7° <u>♂</u> 09'45	29.33652 AU	evening set	2457 Oct 28 17:02	20° <u>♂</u> 45'54	
direct	2451 Jul 17 11:47	5° <u>♂</u> 46'28		max. Earth dist.	2457 Nov 12 08:55	21° <u>♂</u> 18'31	31.34841 AU
evening set	2451 Oct 16 01:59	7° <u>♂</u> 42'19					
				conjunction	2457 Nov 13 05:13	21° <u>♂</u> 20'25	1°40'04
conjunction	2451 Oct 31 16:46	8° <u>♂</u> 16'58	1°39'19	minimum elong	2457 Nov 13 05:13	21° <u>♂</u> 20'25	1°40'04
minimum elong	2451 Oct 31 16:46	8° <u>♂</u> 16'58	1°39'20	morning rise	2457 Nov 28 14:21	21° <u>♂</u> 54'42	

retrograde	2458 Feb 23 09:42	23° <del>M</del> 47'01		min. Earth dist.	2464 May 26 07:06	5° <del>∟</del> 25'35	29.32566 AU
opposition	2458 May 12 15:20	22° <del>M</del> 25'14	1°46'42	direct	2464 Aug 14 16:31	4° <del>∟</del> 02'24	
min. Earth dist.	2458 May 13 11:04	22° <del>M</del> 23'53	29.34837 AU	evening set	2464 Nov 12 14:52	5° <del>∟</del> 57'43	
direct	2458 Aug 01 20:49	21° <del>M</del> 00'50		max. Earth dist.	2464 Nov 27 07:54	6° <del>∟</del> 30'33	31.32362 AU
evening set	2458 Oct 31 03:25	22° <del>M</del> 56'31					
conjunction	2458 Nov 15 15:01	23° <del>M</del> 31'01	1°39'41	conjunction	2464 Nov 28 00:28	6° <del>∟</del> 32'06	1°34'32
minimum elong	2458 Nov 15 15:01	23° <del>M</del> 31'01	1°39'41	minimum elong	2464 Nov 28 00:28	6° <del>∟</del> 32'06	1°34'31
max. Earth dist.	2458 Nov 14 17:54	23° <del>M</del> 29'02	31.34582 AU	morning rise	2464 Dec 13 07:42	7° <del>∟</del> 06'19	
morning rise	2458 Nov 30 23:57	24° <del>M</del> 05'17		retrograde	2465 Mar 10 07:47	8° <del>∟</del> 59'01	
retrograde	2459 Feb 25 20:20	25° <del>M</del> 57'38		opposition	2465 May 28 01:49	7° <del>∟</del> 36'57	1°40'17
opposition	2459 May 15 03:04	24° <del>M</del> 35'48	1°46'14	min. Earth dist.	2465 May 28 17:24	7° <del>∟</del> 35'53	29.32352 AU
min. Earth dist.	2459 May 15 22:27	24° <del>M</del> 34'29	29.34518 AU	direct	2465 Aug 17 05:26	6° <del>∟</del> 12'40	
direct	2459 Aug 04 08:29	23° <del>M</del> 11'23		evening set	2465 Nov 15 00:41	8° <del>∟</del> 07'58	
evening set	2459 Nov 02 13:33	25° <del>M</del> 07'01		conjunction	2465 Nov 30 09:54	8° <del>∟</del> 42'21	1°33'11
max. Earth dist.	2459 Nov 17 05:13	25° <del>M</del> 39'38	31.34204 AU	minimum elong	2465 Nov 30 09:54	8° <del>∟</del> 42'21	1°33'12
				max. Earth dist.	2465 Nov 29 17:22	8° <del>∟</del> 40'48	31.32167 AU
conjunction	2459 Nov 18 00:56	25° <del>M</del> 41'29	1°39'10	morning rise	2465 Dec 15 16:59	9° <del>∟</del> 16'34	
minimum elong	2459 Nov 18 00:56	25° <del>M</del> 41'29	1°39'12	retrograde	2466 Mar 12 20:28	11° <del>∟</del> 09'23	
morning rise	2459 Dec 03 09:24	26° <del>M</del> 15'44		opposition	2466 May 30 13:55	9° <del>∟</del> 47'18	1°38'46
retrograde	2460 Feb 28 04:51	28° <del>M</del> 08'07		min. Earth dist.	2466 May 31 05:21	9° <del>∟</del> 46'16	29.32165 AU
opposition	2460 May 16 14:48	26° <del>M</del> 46'13	1°45'36	direct	2466 Aug 19 16:09	8° <del>∟</del> 23'07	
min. Earth dist.	2460 May 17 10:27	26° <del>M</del> 44'52	29.34092 AU	evening set	2466 Nov 17 10:16	10° <del>∟</del> 18'24	
direct	2460 Aug 05 21:19	25° <del>M</del> 21'48					
evening set	2460 Nov 03 23:39	27° <del>M</del> 17'20		conjunction	2466 Dec 02 19:18	10° <del>∟</del> 52'46	1°31'42
				minimum elong	2466 Dec 02 19:19	10° <del>∟</del> 52'46	1°31'42
conjunction	2460 Nov 19 10:32	27° <del>M</del> 51'47	1°38'31	max. Earth dist.	2466 Dec 02 04:19	10° <del>∟</del> 51'22	31.31972 AU
minimum elong	2460 Nov 19 10:32	27° <del>M</del> 51'47	1°38'31	morning rise	2466 Dec 18 02:04	11° <del>∟</del> 26'59	
max. Earth dist.	2460 Nov 18 14:17	27° <del>M</del> 49'53	31.33759 AU	retrograde	2467 Mar 15 06:10	13° <del>∟</del> 19'56	
morning rise	2460 Dec 04 18:54	28° <del>M</del> 26'01		opposition	2467 Jun 02 02:06	11° <del>∟</del> 57'51	1°37'07
	2461 Jan 27 13:29	0° <del>∟</del>		min. Earth dist.	2467 Jun 02 16:51	11° <del>∟</del> 56'52	29.31935 AU
retrograde	2461 Mar 01 15:29	0° <del>∟</del> 18'26		direct	2467 Aug 22 04:41	10° <del>∟</del> 33'44	
	2461 Apr 04 13:58	30° <del>R</del> <del>M</del>		evening set	2467 Nov 19 20:06	12° <del>∟</del> 29'00	
opposition	2461 May 19 02:27	28° <del>M</del> 56'28	1°44'50				
min. Earth dist.	2461 May 19 20:48	28° <del>M</del> 55'13	29.33633 AU	conjunction	2467 Dec 05 04:42	13° <del>∟</del> 03'22	1°30'06
direct	2461 Aug 08 08:38	27° <del>M</del> 32'02		minimum elong	2467 Dec 05 04:42	13° <del>∟</del> 03'22	1°30'07
evening set	2461 Nov 06 09:31	29° <del>M</del> 27'30		max. Earth dist.	2467 Dec 04 13:13	13° <del>∟</del> 01'55	31.31716 AU
	2461 Nov 20 23:36	0° <del>∟</del>		morning rise	2467 Dec 20 11:28	13° <del>∟</del> 37'35	
				retrograde	2468 Mar 16 17:56	15° <del>∟</del> 30'38	
conjunction	2461 Nov 21 20:09	0° <del>∟</del> 01'56	1°37'44	opposition	2468 Jun 03 14:12	14° <del>∟</del> 08'34	1°35'20
minimum elong	2461 Nov 21 20:09	0° <del>∟</del> 01'56	1°37'44	min. Earth dist.	2468 Jun 04 04:20	14° <del>∟</del> 07'37	29.31642 AU
max. Earth dist.	2461 Nov 21 01:17	0° <del>∟</del> 00'09	31.33296 AU	direct	2468 Aug 23 16:02	12° <del>∟</del> 44'31	
morning rise	2461 Dec 07 04:03	0° <del>∟</del> 36'09		evening set	2468 Nov 21 05:45	14° <del>∟</del> 39'45	
retrograde	2462 Mar 03 23:40	2° <del>∟</del> 28'37					
opposition	2462 May 21 14:18	1° <del>∟</del> 06'35	1°43'55	conjunction	2468 Dec 06 14:17	15° <del>∟</del> 14'07	1°28'21
min. Earth dist.	2462 May 22 08:57	1° <del>∟</del> 05'19	29.33192 AU	minimum elong	2468 Dec 06 14:17	15° <del>∟</del> 14'07	1°28'21
	2462 Jul 07 15:53	30° <del>R</del> <del>M</del>		max. Earth dist.	2468 Dec 06 00:18	15° <del>∟</del> 12'48	31.31364 AU
direct	2462 Aug 10 19:54	29° <del>M</del> 42'10		morning rise	2468 Dec 21 20:43	15° <del>∟</del> 48'20	
	2462 Sep 13 04:46	0° <del>∟</del>		retrograde	2469 Mar 19 03:43	17° <del>∟</del> 41'30	
evening set	2462 Nov 08 19:26	1° <del>∟</del> 37'33		opposition	2469 Jun 06 02:33	16° <del>∟</del> 19'25	1°33'25
max. Earth dist.	2462 Nov 23 11:02	2° <del>∟</del> 10'14	31.32901 AU	min. Earth dist.	2469 Jun 06 16:52	16° <del>∟</del> 18'27	29.31220 AU
				direct	2469 Aug 26 04:59	14° <del>∟</del> 55'25	
conjunction	2462 Nov 24 05:37	2° <del>∟</del> 11'58	1°36'48	evening set	2469 Nov 23 15:33	16° <del>∟</del> 50'36	
minimum elong	2462 Nov 24 05:37	2° <del>∟</del> 11'58	1°36'48				
morning rise	2462 Dec 09 13:21	2° <del>∟</del> 46'11		conjunction	2469 Dec 08 23:40	17° <del>∟</del> 24'58	1°26'29
retrograde	2463 Mar 06 10:20	4° <del>∟</del> 38'42		minimum elong	2469 Dec 08 23:40	17° <del>∟</del> 24'58	1°26'30
opposition	2463 May 24 02:07	3° <del>∟</del> 16'39	1°42'51	max. Earth dist.	2469 Dec 08 09:10	17° <del>∟</del> 23'36	31.30883 AU
min. Earth dist.	2463 May 24 18:55	3° <del>∟</del> 15'30	29.32834 AU	morning rise	2469 Dec 24 06:06	17° <del>∟</del> 59'11	
direct	2463 Aug 13 06:49	1° <del>∟</del> 52'15		retrograde	2470 Mar 21 15:06	19° <del>∟</del> 52'27	
evening set	2463 Nov 11 05:07	3° <del>∟</del> 47'36		opposition	2470 Jun 08 14:51	18° <del>∟</del> 30'20	1°31'21
				min. Earth dist.	2470 Jun 09 03:52	18° <del>∟</del> 29'27	29.30667 AU
conjunction	2463 Nov 26 15:00	4° <del>∟</del> 22'00	1°35'44	direct	2470 Aug 28 16:29	17° <del>∟</del> 06'22	
minimum elong	2463 Nov 26 15:00	4° <del>∟</del> 22'00	1°35'45	evening set	2470 Nov 26 01:13	19° <del>∟</del> 01'30	
max. Earth dist.	2463 Nov 25 21:23	4° <del>∟</del> 20'21	31.32587 AU				
morning rise	2463 Dec 11 22:27	4° <del>∟</del> 56'13		conjunction	2470 Dec 11 09:14	19° <del>∟</del> 35'52	1°24'30
retrograde	2464 Mar 07 20:46	6° <del>∟</del> 48'50		minimum elong	2470 Dec 11 09:15	19° <del>∟</del> 35'52	1°24'30
opposition	2464 May 25 14:04	5° <del>∟</del> 26'44	1°41'39	max. Earth dist.	2470 Dec 10 19:47	19° <del>∟</del> 34'36	31.30258 AU

morning rise	2470 Dec 26 15:26	20° <del>2</del> 10'05	direct	2477 Sep 12 23:43	2° <del>3</del> 21'31	
retrograde	2471 Mar 23 23:41	22° <del>2</del> 03'27	evening set	2477 Dec 10 18:57	4° <del>3</del> 16'08	
opposition	2471 Jun 11 03:22	20° <del>2</del> 41'17 1°29'10				
min. Earth dist.	2471 Jun 11 16:53	20° <del>2</del> 40'22 29.29975 AU	conjunction	2477 Dec 26 01:57	4° <del>3</del> 50'29 1°07'25	
direct	2471 Aug 31 03:54	19° <del>2</del> 17'20	minimum elong	2477 Dec 26 01:57	4° <del>3</del> 50'29 1°07'26	
evening set	2471 Nov 28 10:47	21° <del>2</del> 12'22	max. Earth dist.	2477 Dec 25 18:46	4° <del>3</del> 49'49 31.25086 AU	
			morning rise	2478 Jan 10 07:51	5° <del>3</del> 24'46	
conjunction	2471 Dec 13 18:34	21° <del>2</del> 46'44 1°22'24	retrograde	2478 Apr 08 05:19	7° <del>3</del> 18'47	
minimum elong	2471 Dec 13 18:34	21° <del>2</del> 46'44 1°22'24	opposition	2478 Jun 26 18:31	5° <del>3</del> 56'10 1°10'31	
max. Earth dist.	2471 Dec 13 05:17	21° <del>2</del> 45'29 31.29518 AU	min. Earth dist.	2478 Jun 27 01:49	5° <del>3</del> 55'40 29.24874 AU	
morning rise	2471 Dec 29 00:47	22° <del>2</del> 20'58	direct	2478 Sep 15 12:30	4° <del>3</del> 32'21	
retrograde	2472 Mar 25 10:20	24° <del>2</del> 14'24	evening set	2478 Dec 13 04:21	6° <del>3</del> 26'55	
opposition	2472 Jun 12 15:40	22° <del>2</del> 52'10 1°26'51				
min. Earth dist.	2472 Jun 13 03:39	22° <del>2</del> 51'21 29.29169 AU	conjunction	2478 Dec 28 11:07	7° <del>3</del> 01'16 1°04'33	
direct	2472 Sep 01 15:01	21° <del>2</del> 28'12	minimum elong	2478 Dec 28 11:07	7° <del>3</del> 01'17 1°04'33	
evening set	2472 Nov 29 20:20	23° <del>2</del> 23'10	max. Earth dist.	2478 Dec 28 04:02	7° <del>3</del> 00'36 31.24590 AU	
			morning rise	2479 Jan 12 17:12	7° <del>3</del> 35'35	
conjunction	2472 Dec 15 03:57	23° <del>2</del> 57'31 1°20'10	retrograde	2479 Apr 10 17:19	9° <del>3</del> 29'44	
minimum elong	2472 Dec 15 03:57	23° <del>2</del> 57'31 1°20'10	opposition	2479 Jun 29 07:07	8° <del>3</del> 07'05 1°07'24	
max. Earth dist.	2472 Dec 14 15:14	23° <del>2</del> 56'19 31.28672 AU	min. Earth dist.	2479 Jun 29 12:42	8° <del>3</del> 06'43 29.24379 AU	
morning rise	2472 Dec 30 10:04	24° <del>2</del> 31'46	direct	2479 Sep 17 23:35	6° <del>3</del> 43'20	
retrograde	2473 Mar 27 20:45	26° <del>2</del> 25'16	evening set	2479 Dec 15 13:36	8° <del>3</del> 37'52	
opposition	2473 Jun 15 04:02	25° <del>2</del> 02'57 1°24'25				
min. Earth dist.	2473 Jun 15 16:24	25° <del>2</del> 02'06 29.28303 AU	conjunction	2479 Dec 30 20:24	9° <del>3</del> 12'14 1°01'35	
direct	2473 Sep 04 01:09	23° <del>2</del> 38'58	minimum elong	2479 Dec 30 20:24	9° <del>3</del> 12'14 1°01'36	
evening set	2473 Dec 02 05:47	25° <del>2</del> 33'51	max. Earth dist.	2479 Dec 30 14:38	9° <del>3</del> 11'42 31.24080 AU	
			morning rise	2480 Jan 15 02:27	9° <del>3</del> 46'34	
conjunction	2473 Dec 17 13:16	26° <del>2</del> 08'11 1°17'50	retrograde	2480 Apr 12 03:00	11° <del>3</del> 40'51	
minimum elong	2473 Dec 17 13:16	26° <del>2</del> 08'11 1°17'51	opposition	2480 Jun 30 19:58	10° <del>3</del> 18'11 1°04'11	
max. Earth dist.	2473 Dec 17 01:52	26° <del>2</del> 07'07 31.27810 AU	min. Earth dist.	2480 Jul 01 01:50	10° <del>3</del> 17'48 29.23845 AU	
morning rise	2474 Jan 01 19:16	26° <del>2</del> 42'26	direct	2480 Sep 19 11:07	8° <del>3</del> 54'31	
retrograde	2474 Mar 30 07:36	28° <del>2</del> 36'01	evening set	2480 Dec 16 23:05	10° <del>3</del> 49'00	
opposition	2474 Jun 17 16:28	27° <del>2</del> 13'36 1°21'52				
min. Earth dist.	2474 Jun 18 03:08	27° <del>2</del> 12'53 29.27443 AU	conjunction	2481 Jan 01 05:46	11° <del>3</del> 23'22 0°58'32	
direct	2474 Sep 06 14:05	25° <del>2</del> 49'38	minimum elong	2481 Jan 01 05:46	11° <del>3</del> 23'22 0°58'31	
evening set	2474 Dec 04 15:07	27° <del>2</del> 44'25	max. Earth dist.	2481 Jan 01 00:28	11° <del>3</del> 22'52 31.23521 AU	
			morning rise	2481 Jan 16 11:54	11° <del>3</del> 57'43	
conjunction	2474 Dec 19 22:19	28° <del>2</del> 18'46 1°15'24	retrograde	2481 Apr 14 14:30	13° <del>3</del> 52'08	
minimum elong	2474 Dec 19 22:19	28° <del>2</del> 18'46 1°15'23	opposition	2481 Jul 03 08:39	12° <del>3</del> 29'28 1°00'52	
max. Earth dist.	2474 Dec 19 11:10	28° <del>2</del> 17'43 31.26982 AU	min. Earth dist.	2481 Jul 03 12:52	12° <del>3</del> 29'11 29.23232 AU	
morning rise	2475 Jan 04 04:23	28° <del>2</del> 53'01	direct	2481 Sep 21 22:31	11° <del>3</del> 05'51	
	2475 Feb 07 02:30	0° <del>3</del>	evening set	2481 Dec 19 08:40	13° <del>3</del> 00'17	
retrograde	2475 Apr 01 20:09	0° <del>3</del> 46'42				
	2475 May 28 09:05	30° <del>3</del> 47'	conjunction	2482 Jan 03 15:14	13° <del>3</del> 34'40 0°55'24	
opposition	2475 Jun 20 05:01	29° <del>2</del> 24'11 1°19'12	minimum elong	2482 Jan 03 15:15	13° <del>3</del> 34'40 0°55'24	
min. Earth dist.	2475 Jun 20 15:03	29° <del>2</del> 23'31 29.26666 AU	max. Earth dist.	2482 Jan 03 10:22	13° <del>3</del> 34'13 31.22854 AU	
direct	2475 Sep 09 00:03	28° <del>2</del> 00'13	morning rise	2482 Jan 18 21:27	14° <del>3</del> 09'03	
evening set	2475 Dec 07 00:24	29° <del>2</del> 54'57	retrograde	2482 Apr 17 01:54	16° <del>3</del> 03'37	
	2475 Dec 09 07:18	0° <del>3</del>	opposition	2482 Jul 05 21:45	14° <del>3</del> 40'54 0°57'28	
conjunction	2475 Dec 22 07:37	0° <del>3</del> 29'17 1°12'51	min. Earth dist.	2482 Jul 06 02:21	14° <del>3</del> 40'35 29.22510 AU	
minimum elong	2475 Dec 22 07:37	0° <del>3</del> 29'17 1°12'52	direct	2482 Sep 24 08:37	13° <del>3</del> 17'19	
max. Earth dist.	2475 Dec 21 22:26	0° <del>3</del> 28'25 31.26256 AU	evening set	2482 Dec 21 18:05	15° <del>3</del> 11'43	
morning rise	2476 Jan 06 13:31	1° <del>3</del> 03'33				
retrograde	2476 Apr 03 05:57	2° <del>3</del> 57'19	conjunction	2483 Jan 06 00:44	15° <del>3</del> 46'06 0°52'10	
opposition	2476 Jun 21 17:20	1° <del>3</del> 34'46 1°16'25	minimum elong	2483 Jan 06 00:44	15° <del>3</del> 46'06 0°52'10	
min. Earth dist.	2476 Jun 22 02:14	1° <del>3</del> 34'10 29.25981 AU	max. Earth dist.	2483 Jan 05 21:02	15° <del>3</del> 45'45 31.22072 AU	
direct	2476 Sep 10 12:18	0° <del>3</del> 10'50	morning rise	2483 Jan 21 06:57	16° <del>3</del> 20'30	
evening set	2476 Dec 08 09:47	2° <del>3</del> 05'30	retrograde	2483 Apr 19 13:18	18° <del>3</del> 15'12	
			opposition	2483 Jul 08 10:43	16° <del>3</del> 52'26 0°53'59	
conjunction	2476 Dec 23 16:44	2° <del>3</del> 39'50 1°10'11	min. Earth dist.	2483 Jul 08 13:57	16° <del>3</del> 52'13 29.21646 AU	
minimum elong	2476 Dec 23 16:44	2° <del>3</del> 39'50 1°10'11	direct	2483 Sep 26 20:58	15° <del>3</del> 28'53	
max. Earth dist.	2476 Dec 23 07:30	2° <del>3</del> 38'58 31.25632 AU	evening set	2483 Dec 24 03:45	17° <del>3</del> 23'13	
morning rise	2477 Jan 07 22:48	3° <del>3</del> 14'07				
retrograde	2477 Apr 05 18:41	5° <del>3</del> 08'00	conjunction	2484 Jan 08 10:15	17° <del>3</del> 57'37 0°48'52	
opposition	2477 Jun 24 05:49	3° <del>3</del> 45'24 1°13'31	minimum elong	2484 Jan 08 10:15	17° <del>3</del> 57'37 0°48'53	
min. Earth dist.	2477 Jun 24 13:29	3° <del>3</del> 44'53 29.25401 AU	max. Earth dist.	2484 Jan 08 06:12	17° <del>3</del> 57'15 31.21141 AU	
			morning rise	2484 Jan 23 16:44	18° <del>3</del> 32'02	

retrograde	2484 Apr 21 02:20	20° $\overline{3}$ 26'52		evening set	2491 Jan 07 21:42	2° $\approx$ 44'10	
opposition	2484 Jul 09 23:36	19° $\overline{3}$ 04'01	0°50'25				
min. Earth dist.	2484 Jul 10 02:45	19° $\overline{3}$ 03'48	29.20654 AU	conjunction	2491 Jan 23 04:29	3° $\approx$ 18'40	0°24'06
direct	2484 Sep 28 06:34	17° $\overline{3}$ 40'29		minimum elong	2491 Jan 23 04:29	3° $\approx$ 18'40	0°24'05
evening set	2484 Dec 25 13:12	19° $\overline{3}$ 34'45		max. Earth dist.	2491 Jan 23 07:20	3° $\approx$ 18'56	31.14183 AU
				morning rise	2491 Feb 07 12:03	3° $\approx$ 53'15	
conjunction	2485 Jan 09 19:53	20° $\overline{3}$ 09'10	0°45'30	retrograde	2491 May 07 11:53	5° $\approx$ 48'58	
minimum elong	2485 Jan 09 19:53	20° $\overline{3}$ 09'10	0°45'30	opposition	2491 Jul 26 18:42	4° $\approx$ 25'38	0°23'43
max. Earth dist.	2485 Jan 09 17:25	20° $\overline{3}$ 08'56	31.20095 AU	min. Earth dist.	2491 Jul 26 15:20	4° $\approx$ 25'52	29.13809 AU
morning rise	2485 Jan 25 02:20	20° $\overline{3}$ 43'35		direct	2491 Oct 14 17:00	3° $\approx$ 02'17	
retrograde	2485 Apr 23 12:58	22° $\overline{3}$ 38'32		evening set	2492 Jan 10 07:14	4° $\approx$ 56'10	
opposition	2485 Jul 12 12:36	21° $\overline{3}$ 15'36	0°46'47				
min. Earth dist.	2485 Jul 12 14:53	21° $\overline{3}$ 15'26	29.19551 AU	conjunction	2492 Jan 25 14:13	5° $\approx$ 30'41	0°20'22
direct	2485 Sep 30 19:05	19° $\overline{3}$ 52'04		minimum elong	2492 Jan 25 14:13	5° $\approx$ 30'41	0°20'22
evening set	2485 Dec 27 22:39	21° $\overline{3}$ 46'16		max. Earth dist.	2492 Jan 25 18:37	5° $\approx$ 31'05	31.13426 AU
				morning rise	2492 Feb 09 21:54	6° $\approx$ 05'17	
conjunction	2486 Jan 12 05:09	22° $\overline{3}$ 20'41	0°42'05	retrograde	2492 May 08 22:57	8° $\approx$ 01'09	
minimum elong	2486 Jan 12 05:10	22° $\overline{3}$ 20'41	0°42'05	opposition	2492 Jul 28 07:35	6° $\approx$ 37'48	0°19'43
max. Earth dist.	2486 Jan 12 02:32	22° $\overline{3}$ 20'26	31.18975 AU	min. Earth dist.	2492 Jul 28 02:41	6° $\approx$ 38'08	29.13041 AU
morning rise	2486 Jan 27 11:54	22° $\overline{3}$ 55'07		direct	2492 Oct 16 04:37	5° $\approx$ 14'30	
retrograde	2486 Apr 26 02:31	24° $\overline{3}$ 50'10		evening set	2493 Jan 11 17:02	7° $\approx$ 08'22	
opposition	2486 Jul 15 01:37	23° $\overline{3}$ 27'08	0°43'05				
min. Earth dist.	2486 Jul 15 02:49	23° $\overline{3}$ 27'03	29.18426 AU	conjunction	2493 Jan 26 23:56	7° $\approx$ 42'54	0°16'36
direct	2486 Oct 03 06:46	22° $\overline{3}$ 03'36		minimum elong	2493 Jan 26 23:56	7° $\approx$ 42'54	0°16'35
evening set	2486 Dec 30 08:00	23° $\overline{3}$ 57'44		max. Earth dist.	2493 Jan 27 04:09	7° $\approx$ 43'17	31.12646 AU
				morning rise	2493 Feb 11 07:58	8° $\approx$ 17'31	
conjunction	2487 Jan 14 14:40	24° $\overline{3}$ 32'10	0°38'35	retrograde	2493 May 11 12:10	10° $\approx$ 13'34	
minimum elong	2487 Jan 14 14:40	24° $\overline{3}$ 32'10	0°38'35	opposition	2493 Jul 30 20:50	8° $\approx$ 50'09	0°15'40
max. Earth dist.	2487 Jan 14 14:02	24° $\overline{3}$ 32'06	31.17855 AU	min. Earth dist.	2493 Jul 30 15:43	8° $\approx$ 50'30	29.12245 AU
morning rise	2487 Jan 29 21:24	25° $\overline{3}$ 06'37		direct	2493 Oct 18 13:24	7° $\approx$ 26'54	
retrograde	2487 Apr 28 13:52	27° $\overline{3}$ 01'47		evening set	2494 Jan 14 02:37	9° $\approx$ 20'44	
opposition	2487 Jul 17 14:36	25° $\overline{3}$ 38'40	0°39'20				
min. Earth dist.	2487 Jul 17 15:22	25° $\overline{3}$ 38'37	29.17331 AU	conjunction	2494 Jan 29 09:47	9° $\approx$ 55'17	0°12'48
direct	2487 Oct 05 19:34	24° $\overline{3}$ 15'08		minimum elong	2494 Jan 29 09:47	9° $\approx$ 55'17	0°12'49
evening set	2488 Jan 01 17:25	26° $\overline{3}$ 09'12		behind sun begin	2494 Jan 29 05:42	9° $\approx$ 54'54	
				behind sun end	2494 Jan 29 13:51	9° $\approx$ 55'39	
conjunction	2488 Jan 17 00:01	26° $\overline{3}$ 43'38	0°35'02	max. Earth dist.	2494 Jan 29 15:43	9° $\approx$ 55'49	31.11811 AU
minimum elong	2488 Jan 17 00:02	26° $\overline{3}$ 43'38	0°35'03	morning rise	2494 Feb 13 17:51	10° $\approx$ 29'56	
max. Earth dist.	2488 Jan 16 23:42	26° $\overline{3}$ 43'37	31.16807 AU	retrograde	2494 May 13 23:47	12° $\approx$ 26'08	
morning rise	2488 Feb 01 07:04	27° $\overline{3}$ 18'08		opposition	2494 Aug 02 10:07	11° $\approx$ 02'40	0°11'35
retrograde	2488 Apr 30 02:12	29° $\overline{3}$ 13'25		min. Earth dist.	2494 Aug 02 04:10	11° $\approx$ 03'04	29.11358 AU
opposition	2488 Jul 19 03:30	27° $\overline{3}$ 50'13	0°35'30	direct	2494 Oct 21 01:50	9° $\approx$ 39'27	
min. Earth dist.	2488 Jul 19 02:18	27° $\overline{3}$ 50'18	29.16325 AU	evening set	2495 Jan 16 12:35	11° $\approx$ 33'15	
direct	2488 Oct 07 06:52	26° $\overline{3}$ 26'43					
evening set	2489 Jan 03 02:48	28° $\overline{3}$ 20'43		conjunction	2495 Jan 31 19:42	12° $\approx$ 07'48	0°09'00
				minimum elong	2495 Jan 31 19:43	12° $\approx$ 07'48	0°09'00
conjunction	2489 Jan 18 09:30	28° $\overline{3}$ 55'11	0°31'26	behind sun begin	2495 Jan 31 14:13	12° $\approx$ 07'18	
minimum elong	2489 Jan 18 09:30	28° $\overline{3}$ 55'11	0°31'25	behind sun end	2495 Feb 01 01:13	12° $\approx$ 08'18	
max. Earth dist.	2489 Jan 18 10:37	28° $\overline{3}$ 55'17	31.15839 AU	max. Earth dist.	2495 Feb 01 01:11	12° $\approx$ 08'18	31.10876 AU
morning rise	2489 Feb 02 16:36	29° $\overline{3}$ 29'42		morning rise	2495 Feb 16 04:11	12° $\approx$ 42'30	
	2489 Feb 16 20:10	0° $\approx$		retrograde	2495 May 16 14:20	14° $\approx$ 38'49	
retrograde	2489 May 02 12:17	1° $\approx$ 25'07		opposition	2495 Aug 04 23:20	13° $\approx$ 15'18	0°07'30
opposition	2489 Jul 21 16:31	0° $\approx$ 01'52	0°31'38	min. Earth dist.	2495 Aug 04 16:43	13° $\approx$ 15'45	29.10368 AU
min. Earth dist.	2489 Jul 21 15:11	0° $\approx$ 01'57	29.15407 AU	direct	2495 Oct 23 12:34	11° $\approx$ 52'05	
	2489 Jul 22 20:02	30° $\overline{R}$ $\overline{3}$		evening set	2496 Jan 18 22:28	13° $\approx$ 45'50	
direct	2489 Oct 09 19:01	28° $\overline{3}$ 38'24					
	2489 Dec 21 07:59	0° $\approx$		conjunction	2496 Feb 03 05:53	14° $\approx$ 20'25	0°05'11
evening set	2490 Jan 05 12:16	0° $\approx$ 32'22		minimum elong	2496 Feb 03 05:52	14° $\approx$ 20'25	0°05'12
				behind sun begin	2496 Feb 02 23:40	14° $\approx$ 19'52	
conjunction	2490 Jan 20 19:01	1° $\approx$ 06'51	0°27'47	behind sun end	2496 Feb 03 12:05	14° $\approx$ 20'59	
minimum elong	2490 Jan 20 19:01	1° $\approx$ 06'51	0°27'48	max. Earth dist.	2496 Feb 03 12:44	14° $\approx$ 21'03	31.09808 AU
max. Earth dist.	2490 Jan 20 21:08	1° $\approx$ 07'03	31.14981 AU	morning rise	2496 Feb 18 14:28	14° $\approx$ 55'08	
morning rise	2490 Feb 05 02:19	1° $\approx$ 41'23			2496 Feb 20 19:20	15° $\approx$	
retrograde	2490 May 05 00:39	3° $\approx$ 36'57		retrograde	2496 May 18 02:16	16° $\approx$ 51'35	
opposition	2490 Jul 24 05:31	2° $\approx$ 13'39	0°27'42	opposition	2496 Aug 06 12:40	15° $\approx$ 27'58	0°03'24
min. Earth dist.	2490 Jul 24 02:04	2° $\approx$ 13'53	29.14581 AU	min. Earth dist.	2496 Aug 06 06:05	15° $\approx$ 28'25	29.09227 AU
direct	2490 Oct 12 06:52	0° $\approx$ 50'15			2496 Aug 24 00:29	15° $\overline{R}$ $\approx$	

direct	2496 Oct 25 00:52	14° $\approx$ 04'45		max. Earth dist.	2502 Feb 17 05:15	27° $\approx$ 36'26	31.02505 AU
	2496 Dec 22 13:07	15° $\approx$		morning rise	2502 Mar 04 04:43	28° $\approx$ 10'17	
evening set	2497 Jan 20 08:25	15° $\approx$ 58'27			2502 May 11 21:29	0° $\approx$	
				retrograde	2502 Jun 02 03:33	0° $\approx$ 07'25	
conjunction	2497 Feb 04 15:52	16° $\approx$ 33'02	0°01'19		2502 Jun 23 18:28	30° $\approx$	
minimum elong	2497 Feb 04 15:52	16° $\approx$ 33'02	0°01'18	opposition	2502 Aug 21 19:47	28° $\approx$ 43'13	-0°21'07
behind sun begin	2497 Feb 04 09:29	16° $\approx$ 32'28		min. Earth dist.	2502 Aug 21 07:53	28° $\approx$ 44'01	29.02036 AU
behind sun end	2497 Feb 04 22:16	16° $\approx$ 33'37		direct	2502 Nov 08 22:02	27° $\approx$ 19'57	
max. Earth dist.	2497 Feb 04 22:36	16° $\approx$ 33'39	31.08614 AU	evening set	2503 Feb 03 20:02	29° $\approx$ 13'20	
morning rise	2497 Feb 20 00:49	17° $\approx$ 07'47					
retrograde	2497 May 20 15:39	19° $\approx$ 04'20		conjunction	2503 Feb 19 04:41	29° $\approx$ 48'02	-0°21'38
desc. node	2497 Jun 06 09:43	18° $\approx$ 59'48		minimum elong	2503 Feb 19 04:40	29° $\approx$ 48'02	0°21'38
opposition	2497 Aug 09 01:53	17° $\approx$ 40'36	-0°00'43	max. Earth dist.	2503 Feb 19 17:36	29° $\approx$ 49'15	31.01564 AU
min. Earth dist.	2497 Aug 08 17:53	17° $\approx$ 41'09	29.07976 AU		2503 Feb 24 10:36	0° $\approx$	
direct	2497 Oct 27 12:38	16° $\approx$ 17'22		morning rise	2503 Mar 06 15:15	0° $\approx$ 22'57	
evening set	2498 Jan 22 18:20	18° $\approx$ 11'00		retrograde	2503 Jun 04 15:15	2° $\approx$ 20'13	
				opposition	2503 Aug 24 08:46	0° $\approx$ 55'59	-0°25'08
conjunction	2498 Feb 07 02:01	18° $\approx$ 45'36	-0°02'38	min. Earth dist.	2503 Aug 23 19:46	0° $\approx$ 56'52	29.01140 AU
minimum elong	2498 Feb 07 01:59	18° $\approx$ 45'36	0°02'38		2503 Sep 30 17:34	30° $\approx$	
behind sun begin	2498 Feb 06 19:36	18° $\approx$ 45'01		direct	2503 Nov 11 10:00	29° $\approx$ 32'46	
behind sun end	2498 Feb 07 08:23	18° $\approx$ 46'11			2503 Dec 21 16:05	0° $\approx$	
max. Earth dist.	2498 Feb 07 09:42	18° $\approx$ 46'19	31.07319 AU	evening set	2504 Feb 06 06:15	1° $\approx$ 26'09	
morning rise	2498 Feb 22 11:10	19° $\approx$ 20'22					
retrograde	2498 May 23 03:18	21° $\approx$ 17'01		conjunction	2504 Feb 21 14:58	2° $\approx$ 00'52	-0°25'22
opposition	2498 Aug 11 15:15	19° $\approx$ 53'10	-0°04'49	minimum elong	2504 Feb 21 14:57	2° $\approx$ 00'52	0°25'22
min. Earth dist.	2498 Aug 11 07:28	19° $\approx$ 53'42	29.06665 AU	max. Earth dist.	2504 Feb 22 03:44	2° $\approx$ 02'05	31.00715 AU
direct	2498 Oct 30 01:29	18° $\approx$ 29'55		morning rise	2504 Mar 08 02:01	2° $\approx$ 35'49	
evening set	2499 Jan 25 04:09	20° $\approx$ 23'27		retrograde	2504 Jun 06 05:55	4° $\approx$ 33'15	
				opposition	2504 Aug 25 21:54	3° $\approx$ 08'59	-0°29'07
conjunction	2499 Feb 09 12:00	20° $\approx$ 58'05	-0°06'28	min. Earth dist.	2504 Aug 25 08:01	3° $\approx$ 09'55	29.00327 AU
minimum elong	2499 Feb 09 12:00	20° $\approx$ 58'05	0°06'29	direct	2504 Nov 12 19:50	1° $\approx$ 45'48	
behind sun begin	2499 Feb 09 05:58	20° $\approx$ 57'32		evening set	2505 Feb 07 16:23	3° $\approx$ 39'12	
behind sun end	2499 Feb 09 18:02	20° $\approx$ 58'38					
max. Earth dist.	2499 Feb 09 20:38	20° $\approx$ 58'53	31.06012 AU	conjunction	2505 Feb 23 01:24	4° $\approx$ 13'57	-0°29'05
morning rise	2499 Feb 24 21:28	21° $\approx$ 32'52		minimum elong	2505 Feb 23 01:24	4° $\approx$ 13'57	0°29'05
retrograde	2499 May 25 16:20	23° $\approx$ 29'37		max. Earth dist.	2505 Feb 23 15:54	4° $\approx$ 15'19	30.99910 AU
opposition	2499 Aug 14 04:22	22° $\approx$ 05'39	-0°08'55	morning rise	2505 Mar 10 12:38	4° $\approx$ 48'55	
min. Earth dist.	2499 Aug 13 18:40	22° $\approx$ 06'19	29.05368 AU	retrograde	2505 Jun 08 18:12	6° $\approx$ 46'31	
direct	2499 Nov 01 14:17	20° $\approx$ 42'22		opposition	2505 Aug 28 11:08	5° $\approx$ 22'13	-0°33'04
evening set	2500 Jan 27 14:10	22° $\approx$ 35'51		min. Earth dist.	2505 Aug 27 21:05	5° $\approx$ 23'10	28.99535 AU
				direct	2505 Nov 15 07:01	3° $\approx$ 59'06	
conjunction	2500 Feb 11 22:06	23° $\approx$ 10'30	-0°10'16	evening set	2506 Feb 10 02:49	5° $\approx$ 52'29	
minimum elong	2500 Feb 11 22:06	23° $\approx$ 10'30	0°10'16				
behind sun begin	2500 Feb 11 16:58	23° $\approx$ 10'02		conjunction	2506 Feb 25 12:00	6° $\approx$ 27'16	-0°32'45
behind sun end	2500 Feb 12 03:14	23° $\approx$ 10'58		minimum elong	2506 Feb 25 12:00	6° $\approx$ 27'16	0°32'44
max. Earth dist.	2500 Feb 12 07:15	23° $\approx$ 11'21	31.04735 AU	max. Earth dist.	2506 Feb 26 02:32	6° $\approx$ 28'38	30.99127 AU
morning rise	2500 Feb 27 07:54	23° $\approx$ 45'19		morning rise	2506 Mar 12 23:37	7° $\approx$ 02'16	
retrograde	2500 May 28 03:19	25° $\approx$ 42'10		retrograde	2506 Jun 11 08:58	9° $\approx$ 00'01	
opposition	2500 Aug 16 17:27	24° $\approx$ 18'07	-0°13'00	min. Earth dist.	2506 Aug 30 08:57	7° $\approx$ 36'44	28.98743 AU
min. Earth dist.	2500 Aug 16 07:53	24° $\approx$ 18'46	29.04144 AU	opposition	2506 Aug 31 00:18	7° $\approx$ 35'41	-0°36'58
direct	2500 Nov 04 00:56	22° $\approx$ 54'49		direct	2506 Nov 17 18:05	6° $\approx$ 12'36	
evening set	2501 Jan 30 00:05	24° $\approx$ 48'15		evening set	2507 Feb 12 13:20	8° $\approx$ 06'00	
conjunction	2501 Feb 14 08:19	25° $\approx$ 22'55	-0°14'04	conjunction	2507 Feb 27 22:46	8° $\approx$ 40'48	-0°36'22
minimum elong	2501 Feb 14 08:18	25° $\approx$ 22'55	0°14'05	minimum elong	2507 Feb 27 22:45	8° $\approx$ 40'48	0°36'23
behind sun begin	2501 Feb 14 05:01	25° $\approx$ 22'37		max. Earth dist.	2507 Feb 28 14:01	8° $\approx$ 42'15	30.98295 AU
behind sun end	2501 Feb 14 11:36	25° $\approx$ 23'13		morning rise	2507 Mar 15 10:42	9° $\approx$ 15'51	
max. Earth dist.	2501 Feb 14 19:12	25° $\approx$ 23'56	31.03564 AU	retrograde	2507 Jun 13 22:23	11° $\approx$ 13'44	
morning rise	2501 Mar 01 18:16	25° $\approx$ 57'46		opposition	2507 Sep 02 13:36	9° $\approx$ 49'21	-0°40'49
retrograde	2501 May 30 14:29	27° $\approx$ 54'44		min. Earth dist.	2507 Sep 01 22:48	9° $\approx$ 50'22	28.97880 AU
opposition	2501 Aug 19 06:33	26° $\approx$ 30'36	-0°17'04	direct	2507 Nov 20 06:48	8° $\approx$ 26'19	
min. Earth dist.	2501 Aug 18 19:07	26° $\approx$ 31'23	29.03026 AU	evening set	2508 Feb 15 00:02	10° $\approx$ 19'42	
direct	2501 Nov 06 13:01	25° $\approx$ 07'19					
evening set	2502 Feb 01 10:02	27° $\approx$ 00'43		conjunction	2508 Mar 01 09:45	10° $\approx$ 54'32	-0°39'56
				minimum elong	2508 Mar 01 09:45	10° $\approx$ 54'32	0°39'56
conjunction	2502 Feb 16 18:18	27° $\approx$ 35'24	-0°17'52	max. Earth dist.	2508 Mar 02 01:24	10° $\approx$ 56'01	30.97386 AU
minimum elong	2502 Feb 16 18:18	27° $\approx$ 35'24	0°17'51	morning rise	2508 Mar 16 21:58	11° $\approx$ 29'37	



retrograde	2508 Jun 15 12:55	13° <del>✕</del> 27'36		minimum elong	2515 Mar 17 15:24	26° <del>✕</del> 30'46	1°03'00
min. Earth dist.	2508 Sep 03 10:28	12° <del>✕</del> 04'17	28.96917 AU	max. Earth dist.	2515 Mar 18 10:56	26° <del>✕</del> 32'37	30.90318 AU
opposition	2508 Sep 04 02:38	12° <del>✕</del> 03'11	-0°44'36	morning rise	2515 Apr 02 06:16	27° <del>✕</del> 06'02	
direct	2508 Nov 21 19:40	10° <del>✕</del> 40'08		retrograde	2515 Jul 02 04:32	29° <del>✕</del> 04'36	
evening set	2509 Feb 16 10:50	12° <del>✕</del> 33'30		opposition	2515 Sep 20 21:51	27° <del>✕</del> 39'36	-1°08'59
				min. Earth dist.	2515 Sep 20 01:52	27° <del>✕</del> 40'59	28.90041 AU
conjunction	2509 Mar 03 20:43	13° <del>✕</del> 08'21	-0°43'27	direct	2515 Dec 08 02:23	26° <del>✕</del> 16'24	
minimum elong	2509 Mar 03 20:43	13° <del>✕</del> 08'21	0°43'27	evening set	2516 Mar 03 14:45	28° <del>✕</del> 09'35	
max. Earth dist.	2509 Mar 04 12:15	13° <del>✕</del> 09'50	30.96363 AU				
morning rise	2509 Mar 19 09:22	13° <del>✕</del> 43'28		conjunction	2516 Mar 19 02:47	28° <del>✕</del> 44'35	-1°05'58
retrograde	2509 Jun 18 00:36	15° <del>✕</del> 41'34		minimum elong	2516 Mar 19 02:47	28° <del>✕</del> 44'35	1°05'57
opposition	2509 Sep 06 15:57	14° <del>✕</del> 17'03	-0°48'19	max. Earth dist.	2516 Mar 19 23:10	28° <del>✕</del> 46'31	30.89671 AU
min. Earth dist.	2509 Sep 06 00:28	14° <del>✕</del> 18'07	28.95853 AU	morning rise	2516 Apr 03 17:59	29° <del>✕</del> 19'54	
direct	2509 Nov 24 06:45	12° <del>✕</del> 54'00			2516 Apr 22 17:13	0° <del>∇</del>	
evening set	2510 Feb 18 21:25	14° <del>✕</del> 47'20		retrograde	2516 Jul 03 17:49	1° <del>∇</del> 18'33	
					2516 Sep 18 12:54	30° <del>✕</del>	
conjunction	2510 Mar 06 07:44	15° <del>✕</del> 22'12	-0°46'54	opposition	2516 Sep 22 10:44	29° <del>✕</del> 53'32	-1°12'06
minimum elong	2510 Mar 06 07:44	15° <del>✕</del> 22'12	0°46'53	min. Earth dist.	2516 Sep 21 15:06	29° <del>✕</del> 54'53	28.89456 AU
max. Earth dist.	2510 Mar 07 00:31	15° <del>✕</del> 23'47	30.95263 AU	direct	2516 Dec 09 14:11	28° <del>✕</del> 30'21	
morning rise	2510 Mar 21 20:38	15° <del>✕</del> 57'20			2517 Feb 23 04:26	0° <del>∇</del>	
retrograde	2510 Jun 20 12:41	17° <del>✕</del> 55'30		evening set	2517 Mar 06 01:54	0° <del>∇</del> 23'33	
opposition	2510 Sep 09 05:04	16° <del>✕</del> 30'54	-0°51'58				
min. Earth dist.	2510 Sep 08 12:20	16° <del>✕</del> 32'03	28.94721 AU	conjunction	2517 Mar 21 14:19	0° <del>∇</del> 58'34	-1°08'49
direct	2510 Nov 26 19:55	15° <del>✕</del> 07'49		minimum elong	2517 Mar 21 14:19	0° <del>∇</del> 58'34	1°08'50
evening set	2511 Feb 21 08:17	17° <del>✕</del> 01'06		max. Earth dist.	2517 Mar 22 11:24	1° <del>∇</del> 00'34	30.89141 AU
				morning rise	2517 Apr 06 05:53	1° <del>∇</del> 33'55	
conjunction	2511 Mar 08 18:44	17° <del>✕</del> 35'59	-0°50'16	retrograde	2517 Jul 06 08:33	3° <del>∇</del> 32'40	
minimum elong	2511 Mar 08 18:44	17° <del>✕</del> 35'59	0°50'17	opposition	2517 Sep 24 23:36	2° <del>∇</del> 07'38	-1°15'06
max. Earth dist.	2511 Mar 09 11:03	17° <del>✕</del> 37'32	30.94118 AU	min. Earth dist.	2517 Sep 24 02:27	2° <del>∇</del> 09'05	28.88961 AU
morning rise	2511 Mar 24 08:10	18° <del>✕</del> 11'09		direct	2517 Dec 12 02:24	0° <del>∇</del> 44'29	
retrograde	2511 Jun 23 01:49	20° <del>✕</del> 09'24		evening set	2518 Mar 08 13:12	2° <del>∇</del> 37'42	
opposition	2511 Sep 11 18:04	18° <del>✕</del> 44'42	-0°55'33				
min. Earth dist.	2511 Sep 11 01:28	18° <del>✕</del> 45'50	28.93594 AU	conjunction	2518 Mar 24 01:52	3° <del>∇</del> 12'45	-1°11'35
direct	2511 Nov 29 06:01	17° <del>✕</del> 21'33		minimum elong	2518 Mar 24 01:52	3° <del>∇</del> 12'45	1°11'35
evening set	2512 Feb 23 19:01	19° <del>✕</del> 14'48		max. Earth dist.	2518 Mar 24 22:59	3° <del>∇</del> 14'45	30.88662 AU
				morning rise	2518 Apr 08 17:55	3° <del>∇</del> 48'08	
conjunction	2512 Mar 10 05:55	19° <del>✕</del> 49'43	-0°53'35	retrograde	2518 Jul 08 21:53	5° <del>∇</del> 46'59	
minimum elong	2512 Mar 10 05:55	19° <del>✕</del> 49'43	0°53'34	opposition	2518 Sep 27 12:38	4° <del>∇</del> 21'57	-1°18'00
max. Earth dist.	2512 Mar 10 23:54	19° <del>✕</del> 51'25	30.93005 AU	min. Earth dist.	2518 Sep 26 16:16	4° <del>∇</del> 23'21	28.88503 AU
morning rise	2512 Mar 25 19:33	20° <del>✕</del> 24'54		direct	2518 Dec 14 13:19	2° <del>∇</del> 58'50	
retrograde	2512 Jun 24 12:42	22° <del>✕</del> 23'13		evening set	2519 Mar 11 00:41	4° <del>∇</del> 52'05	
opposition	2512 Sep 13 07:02	20° <del>✕</del> 58'25	-0°59'02				
min. Earth dist.	2512 Sep 12 13:27	20° <del>✕</del> 59'38	28.92518 AU	conjunction	2519 Mar 26 13:51	5° <del>∇</del> 27'10	-1°14'15
direct	2512 Nov 30 18:40	19° <del>✕</del> 35'15		minimum elong	2519 Mar 26 13:51	5° <del>∇</del> 27'10	1°14'15
evening set	2513 Feb 25 05:50	21° <del>✕</del> 28'27		max. Earth dist.	2519 Mar 27 12:01	5° <del>∇</del> 29'16	30.88197 AU
				morning rise	2519 Apr 11 06:09	6° <del>∇</del> 02'34	
conjunction	2513 Mar 12 16:51	22° <del>✕</del> 03'22	-0°56'48	retrograde	2519 Jul 11 11:51	8° <del>∇</del> 01'31	
minimum elong	2513 Mar 12 16:51	22° <del>✕</del> 03'22	0°56'49	min. Earth dist.	2519 Sep 29 04:05	6° <del>∇</del> 37'56	28.88019 AU
max. Earth dist.	2513 Mar 13 10:36	22° <del>✕</del> 05'03	30.91979 AU	opposition	2519 Sep 30 01:20	6° <del>∇</del> 36'28	-1°20'47
morning rise	2513 Mar 28 06:59	22° <del>✕</del> 38'36		direct	2519 Dec 17 02:25	5° <del>∇</del> 13'23	
retrograde	2513 Jun 27 02:01	24° <del>✕</del> 37'00		evening set	2520 Mar 12 12:30	7° <del>∇</del> 06'39	
opposition	2513 Sep 15 20:03	23° <del>✕</del> 12'06	-1°02'27				
min. Earth dist.	2513 Sep 15 01:39	23° <del>✕</del> 13'22	28.91562 AU	conjunction	2520 Mar 28 01:50	7° <del>∇</del> 41'46	-1°16'47
direct	2513 Dec 03 04:27	21° <del>✕</del> 48'54		minimum elong	2520 Mar 28 01:50	7° <del>∇</del> 41'46	1°16'47
evening set	2514 Feb 27 16:42	23° <del>✕</del> 42'06		max. Earth dist.	2520 Mar 28 23:02	7° <del>∇</del> 43'47	30.87676 AU
				morning rise	2520 Apr 12 18:41	8° <del>∇</del> 17'13	
conjunction	2514 Mar 15 04:08	24° <del>✕</del> 17'03	-0°59'57	retrograde	2520 Jul 13 01:57	10° <del>∇</del> 16'15	
minimum elong	2514 Mar 15 04:08	24° <del>✕</del> 17'03	0°59'56	opposition	2520 Oct 01 14:20	8° <del>∇</del> 51'11	-1°23'26
max. Earth dist.	2514 Mar 15 23:33	24° <del>✕</del> 18'53	30.91075 AU	min. Earth dist.	2520 Sep 30 17:45	8° <del>∇</del> 52'36	28.87467 AU
morning rise	2514 Mar 30 18:31	24° <del>✕</del> 52'17		direct	2520 Dec 18 12:54	7° <del>∇</del> 28'06	
retrograde	2514 Jun 29 13:50	26° <del>✕</del> 50'46		evening set	2521 Mar 15 00:06	9° <del>∇</del> 21'24	
opposition	2514 Sep 18 08:59	25° <del>✕</del> 25'49	-1°05'46				
min. Earth dist.	2514 Sep 17 14:20	25° <del>✕</del> 27'06	28.90731 AU	conjunction	2521 Mar 30 13:58	9° <del>∇</del> 56'32	-1°19'13
direct	2514 Dec 05 15:16	24° <del>✕</del> 02'37		minimum elong	2521 Mar 30 13:57	9° <del>∇</del> 56'32	1°19'13
evening set	2515 Mar 02 03:40	25° <del>✕</del> 55'47		max. Earth dist.	2521 Mar 31 12:13	9° <del>∇</del> 58'39	30.87065 AU
				morning rise	2521 Apr 15 07:02	10° <del>∇</del> 32'00	
conjunction	2515 Mar 17 15:24	26° <del>✕</del> 30'46	-1°03'00	retrograde	2521 Jul 15 13:39	12° <del>∇</del> 31'06	

min. Earth dist.	2521 Oct 03 06:18	11°♈07'28	28.86802 AU	max. Earth dist.	2528 Apr 16 04:08	25°♈42'27	30.82536 AU
opposition	2521 Oct 04 03:16	11°♈06'00	-1°25'58	morning rise	2528 May 01 00:34	26°♈15'53	
direct	2521 Dec 21 01:44	9°♈42'56		retrograde	2528 Jul 31 12:31	28°♈15'08	
evening set	2522 Mar 17 12:02	11°♈36'13		opposition	2528 Oct 19 19:11	26°♈49'44	-1°39'52
				min. Earth dist.	2528 Oct 18 20:49	26°♈51'18	28.82498 AU
conjunction	2522 Apr 02 02:09	12°♈11'23	-1°21'32	direct	2529 Jan 05 11:13	25°♈26'26	
minimum elong	2522 Apr 02 02:09	12°♈11'23	1°21'31	evening set	2529 Apr 01 23:57	27°♈19'48	
max. Earth dist.	2522 Apr 02 23:20	12°♈13'23	30.86360 AU				
morning rise	2522 Apr 17 19:49	12°♈46'53		conjunction	2529 Apr 17 16:56	27°♈55'09	-1°34'03
retrograde	2522 Jul 18 03:15	14°♈46'01		minimum elong	2529 Apr 17 16:56	27°♈55'09	1°34'04
opposition	2522 Oct 06 16:06	13°♈20'52	-1°28'23	max. Earth dist.	2529 Apr 18 15:52	27°♈57'19	30.82284 AU
min. Earth dist.	2522 Oct 05 19:10	13°♈22'20	28.86063 AU	morning rise	2529 May 03 13:35	28°♈30'51	
direct	2522 Dec 23 11:53	11°♈57'45			2529 Jun 20 15:27	0°♈	
evening set	2523 Mar 19 23:52	13°♈51'02		retrograde	2529 Aug 03 02:18	0°♈30'08	
					2529 Sep 16 09:49	30°♈	
conjunction	2523 Apr 04 14:30	14°♈26'14	-1°23'43	min. Earth dist.	2529 Oct 21 09:54	29°♈06'15	28.82309 AU
minimum elong	2523 Apr 04 14:30	14°♈26'14	1°23'43	opposition	2529 Oct 22 07:42	29°♈04'44	-1°41'16
max. Earth dist.	2523 Apr 05 12:41	14°♈28'20	30.85581 AU	direct	2530 Jan 07 22:12	27°♈41'26	
morning rise	2523 Apr 20 08:29	15°♈01'46		evening set	2530 Apr 04 12:14	29°♈34'50	
retrograde	2523 Jul 20 15:10	17°♈00'56			2530 Apr 15 17:50	0°♈	
min. Earth dist.	2523 Oct 08 08:15	15°♈37'09	28.85270 AU				
opposition	2523 Oct 09 04:50	15°♈35'43	-1°30'39	conjunction	2530 Apr 20 05:51	0°♈10'13	-1°35'18
direct	2523 Dec 25 23:02	14°♈12'34		minimum elong	2530 Apr 20 05:51	0°♈10'13	1°35'17
evening set	2524 Mar 21 11:45	16°♈05'50		max. Earth dist.	2530 Apr 21 05:56	0°♈12'29	30.82135 AU
				morning rise	2530 May 06 02:46	0°♈45'56	
conjunction	2524 Apr 06 02:43	16°♈41'03	-1°25'46	retrograde	2530 Aug 05 14:49	2°♈45'14	
minimum elong	2524 Apr 06 02:43	16°♈41'03	1°25'46	opposition	2530 Oct 24 19:57	1°♈19'52	-1°42'31
max. Earth dist.	2524 Apr 07 00:27	16°♈43'07	30.84796 AU	min. Earth dist.	2530 Oct 23 21:48	1°♈21'24	28.82188 AU
morning rise	2524 Apr 21 21:10	17°♈16'36			2530 Dec 27 06:27	30°♈	
retrograde	2524 Jul 22 05:06	19°♈15'48		direct	2531 Jan 10 10:47	29°♈56'35	
opposition	2524 Oct 10 17:22	17°♈50'31	-1°32'47		2531 Jan 24 09:08	0°♈	
min. Earth dist.	2524 Oct 09 20:00	17°♈52'01	28.84507 AU	evening set	2531 Apr 07 00:50	1°♈50'01	
direct	2524 Dec 27 10:31	16°♈27'19					
evening set	2525 Mar 23 23:43	18°♈20'36		conjunction	2531 Apr 22 18:45	2°♈25'25	-1°36'23
				minimum elong	2531 Apr 22 18:45	2°♈25'25	1°36'23
conjunction	2525 Apr 08 15:03	18°♈55'50	-1°27'42	max. Earth dist.	2531 Apr 23 17:40	2°♈27'35	30.82037 AU
minimum elong	2525 Apr 08 15:03	18°♈55'50	1°27'42	morning rise	2531 May 08 16:16	3°♈01'11	
max. Earth dist.	2525 Apr 09 13:22	18°♈57'57	30.84053 AU	retrograde	2531 Aug 08 05:22	5°♈00'29	
morning rise	2525 Apr 24 09:54	19°♈31'25		min. Earth dist.	2531 Oct 26 10:27	3°♈36'40	28.82098 AU
retrograde	2525 Jul 24 17:46	21°♈30'38		opposition	2531 Oct 27 08:19	3°♈35'08	-1°43'36
min. Earth dist.	2525 Oct 12 09:14	20°♈06'45	28.83820 AU	direct	2532 Jan 12 21:25	2°♈11'51	
opposition	2525 Oct 13 06:01	20°♈05'18	-1°34'46	evening set	2532 Apr 08 13:25	4°♈05'19	
direct	2525 Dec 29 22:15	18°♈42'03					
evening set	2526 Mar 26 11:34	20°♈35'20		conjunction	2532 Apr 24 07:51	4°♈40'46	-1°37'19
				minimum elong	2532 Apr 24 07:51	4°♈40'46	1°37'19
conjunction	2526 Apr 11 03:24	21°♈10'36	-1°29'30	max. Earth dist.	2532 Apr 25 07:31	4°♈43'00	30.81920 AU
minimum elong	2526 Apr 11 03:24	21°♈10'36	1°29'29	morning rise	2532 May 10 05:38	5°♈16'33	
max. Earth dist.	2526 Apr 12 02:07	21°♈12'45	30.83425 AU	retrograde	2532 Aug 09 17:28	7°♈15'52	
morning rise	2526 Apr 26 22:39	21°♈46'12		opposition	2532 Oct 28 20:39	5°♈50'32	-1°44'31
retrograde	2526 Jul 27 08:03	23°♈45'26		min. Earth dist.	2532 Oct 27 23:27	5°♈52'01	28.81955 AU
opposition	2526 Oct 15 18:26	22°♈20'04	-1°36'37	direct	2533 Jan 14 09:00	4°♈27'14	
min. Earth dist.	2526 Oct 14 20:21	22°♈21'36	28.83250 AU	evening set	2533 Apr 11 02:14	6°♈20'44	
direct	2527 Jan 01 10:16	20°♈56'46					
evening set	2527 Mar 28 23:44	22°♈50'05		conjunction	2533 Apr 26 21:04	6°♈56'12	-1°38'07
				minimum elong	2533 Apr 26 21:04	6°♈56'12	1°38'07
conjunction	2527 Apr 13 15:53	23°♈25'23	-1°31'09	max. Earth dist.	2533 Apr 27 19:38	6°♈58'20	30.81749 AU
minimum elong	2527 Apr 13 15:53	23°♈25'23	1°31'09	morning rise	2533 May 12 19:22	7°♈32'01	
max. Earth dist.	2527 Apr 14 14:26	23°♈27'31	30.82908 AU	retrograde	2533 Aug 12 06:57	9°♈31'19	
morning rise	2527 Apr 29 11:38	24°♈01'01		min. Earth dist.	2533 Oct 30 11:35	8°♈07'28	28.81743 AU
retrograde	2527 Jul 29 21:35	26°♈00'15		opposition	2533 Oct 31 08:57	8°♈05'58	-1°45'17
min. Earth dist.	2527 Oct 17 09:34	24°♈36'21	28.82810 AU	direct	2534 Jan 16 20:23	6°♈42'38	
opposition	2527 Oct 18 06:50	24°♈34'52	-1°38'19	evening set	2534 Apr 13 15:03	8°♈36'10	
direct	2528 Jan 03 21:32	23°♈11'34					
evening set	2528 Mar 30 11:47	25°♈04'54		conjunction	2534 Apr 29 10:23	9°♈11'40	-1°38'45
				minimum elong	2534 Apr 29 10:23	9°♈11'39	1°38'45
conjunction	2528 Apr 15 04:31	25°♈40'13	-1°32'41	max. Earth dist.	2534 Apr 30 08:50	9°♈13'47	30.81479 AU
minimum elong	2528 Apr 15 04:31	25°♈40'13	1°32'40	morning rise	2534 May 15 09:07	9°♈47'30	

retrograde	2534 Aug 14 18:50	11°846'45		evening set	2541 Apr 29 09:21	24°821'31	
opposition	2534 Nov 02 21:17	10°821'23	-1°45'53				
min. Earth dist.	2534 Nov 02 01:13	10°822'47	28.81426 AU	conjunction	2541 May 15 08:05	24°857'12	-1°39'01
direct	2535 Jan 19 07:40	8°858'00		minimum elong	2541 May 15 08:05	24°857'12	1°39'02
evening set	2535 Apr 16 03:57	10°851'31		max. Earth dist.	2541 May 16 05:33	24°859'13	30.80049 AU
				morning rise	2541 May 31 09:42	25°833'11	
conjunction	2535 May 01 23:49	11°827'03	-1°39'15	retrograde	2541 Aug 30 16:12	27°831'58	
minimum elong	2535 May 01 23:49	11°827'03	1°39'15	opposition	2541 Nov 18 08:05	26°806'32	-1°45'36
max. Earth dist.	2535 May 02 21:44	11°829'07	30.81133 AU	min. Earth dist.	2541 Nov 17 13:10	26°807'53	28.80284 AU
morning rise	2535 May 17 22:57	12°802'54		direct	2542 Feb 03 20:21	24°842'49	
retrograde	2535 Aug 17 08:48	14°802'05		evening set	2542 May 01 22:29	26°836'31	
opposition	2535 Nov 05 09:15	12°836'41	-1°46'20				
min. Earth dist.	2535 Nov 04 12:36	12°838'08	28.81048 AU	conjunction	2542 May 17 21:38	27°812'14	-1°38'27
direct	2536 Jan 21 19:40	11°813'13		minimum elong	2542 May 17 21:38	27°812'14	1°38'27
evening set	2536 Apr 17 16:53	13°806'46		max. Earth dist.	2542 May 18 18:07	27°814'09	30.80340 AU
				morning rise	2542 Jun 02 23:49	27°848'15	
conjunction	2536 May 03 13:07	13°842'18	-1°39'35	retrograde	2542 Sep 02 05:35	29°846'58	
minimum elong	2536 May 03 13:07	13°842'18	1°39'35	opposition	2542 Nov 20 19:40	28°821'36	-1°44'55
max. Earth dist.	2536 May 04 10:23	13°844'18	30.80741 AU	min. Earth dist.	2542 Nov 20 00:29	28°822'58	28.80630 AU
morning rise	2536 May 19 12:45	14°818'11		direct	2543 Feb 06 07:21	26°857'53	
	2536 Jun 08 11:18	15°8		evening set	2543 May 04 11:44	28°851'39	
retrograde	2536 Aug 18 21:35	16°817'18					
	2536 Nov 02 01:15	15°8		conjunction	2543 May 20 11:22	29°827'24	-1°37'44
opposition	2536 Nov 06 21:23	14°851'51	-1°46'37	minimum elong	2543 May 20 11:23	29°827'24	1°37'44
min. Earth dist.	2536 Nov 06 02:01	14°853'13	28.80666 AU	max. Earth dist.	2543 May 21 08:01	29°829'20	30.80724 AU
direct	2537 Jan 23 07:24	13°828'19			2543 Jun 04 00:29	0°II	
	2537 Apr 10 01:52	15°8		morning rise	2543 Jun 05 13:52	0°II03'26	
evening set	2537 Apr 20 05:33	15°821'51		retrograde	2543 Sep 04 17:21	2°II02'06	
				opposition	2543 Nov 23 07:12	0°II36'49	-1°44'03
conjunction	2537 May 06 02:24	15°857'26	-1°39'47	min. Earth dist.	2543 Nov 22 13:18	0°II38'05	28.81047 AU
minimum elong	2537 May 06 02:25	15°857'26	1°39'47		2543 Dec 15 19:16	30°8	
max. Earth dist.	2537 May 07 00:16	15°859'29	30.80384 AU	direct	2544 Feb 08 17:35	29°813'07	
morning rise	2537 May 22 02:22	16°833'19			2544 Apr 02 00:52	0°II	
retrograde	2537 Aug 21 11:38	18°832'22		evening set	2544 May 06 01:04	1°II06'56	
opposition	2537 Nov 09 09:16	17°806'53	-1°46'44				
min. Earth dist.	2537 Nov 08 13:13	17°808'18	28.80335 AU	conjunction	2544 May 22 01:12	1°II42'43	-1°36'51
direct	2538 Jan 25 21:15	15°843'17		minimum elong	2544 May 22 01:12	1°II42'43	1°36'51
evening set	2538 Apr 22 18:34	17°836'50		max. Earth dist.	2544 May 22 21:08	1°II44'36	30.81172 AU
				morning rise	2544 Jun 07 04:05	2°II18'47	
conjunction	2538 May 08 15:44	18°812'26	-1°39'49	retrograde	2544 Sep 06 07:20	4°II17'24	
minimum elong	2538 May 08 15:44	18°812'26	1°39'49	opposition	2544 Nov 24 18:42	2°II52'11	-1°43'02
max. Earth dist.	2538 May 09 12:33	18°814'24	30.80096 AU	min. Earth dist.	2544 Nov 24 00:23	2°II53'29	28.81491 AU
morning rise	2538 May 24 16:18	18°848'21		direct	2545 Feb 10 04:32	1°II28'28	
retrograde	2538 Aug 24 00:58	20°847'19		evening set	2545 May 08 14:30	3°II22'22	
opposition	2538 Nov 11 21:03	19°821'50	-1°46'42				
min. Earth dist.	2538 Nov 11 01:56	19°823'10	28.80112 AU	conjunction	2545 May 24 15:01	3°II58'10	-1°35'50
direct	2539 Jan 28 08:26	17°858'10		minimum elong	2545 May 24 15:01	3°II58'10	1°35'49
evening set	2539 Apr 25 07:27	19°851'44		max. Earth dist.	2545 May 25 10:02	3°II59'57	30.81594 AU
				morning rise	2545 Jun 09 18:20	4°II34'15	
conjunction	2539 May 11 05:17	20°827'22	-1°39'42	retrograde	2545 Sep 08 19:26	6°II32'48	
minimum elong	2539 May 11 05:17	20°827'22	1°39'42	opposition	2545 Nov 27 06:23	5°II07'39	-1°41'52
max. Earth dist.	2539 May 12 03:00	20°829'24	30.79933 AU	min. Earth dist.	2545 Nov 26 13:47	5°II08'49	28.81887 AU
morning rise	2539 May 27 06:05	21°803'18		direct	2546 Feb 12 16:06	3°II43'54	
retrograde	2539 Aug 26 13:56	23°802'12		evening set	2546 May 11 04:04	5°II37'52	
opposition	2539 Nov 14 08:46	21°836'42	-1°46'30				
min. Earth dist.	2539 Nov 13 13:17	21°838'05	28.80012 AU	conjunction	2546 May 27 05:12	6°II13'41	-1°34'40
direct	2540 Jan 30 21:31	20°813'01		minimum elong	2546 May 27 05:12	6°II13'41	1°34'40
evening set	2540 Apr 26 20:25	22°806'37		max. Earth dist.	2546 May 27 23:57	6°II15'27	30.81959 AU
				morning rise	2546 Jun 12 08:48	6°II49'47	
conjunction	2540 May 12 18:31	22°842'16	-1°39'26	retrograde	2546 Sep 11 08:59	8°II48'14	
minimum elong	2540 May 12 18:31	22°842'16	1°39'26	opposition	2546 Nov 29 17:43	7°II23'07	-1°40'32
max. Earth dist.	2540 May 13 15:03	22°844'12	30.79912 AU	min. Earth dist.	2546 Nov 29 01:04	7°II24'18	28.82199 AU
morning rise	2540 May 28 19:53	23°818'14		direct	2547 Feb 15 05:28	5°II59'20	
retrograde	2540 Aug 28 04:30	25°817'04		evening set	2547 May 13 17:49	7°II53'19	
opposition	2540 Nov 15 20:29	23°851'35	-1°46'08				
min. Earth dist.	2540 Nov 15 01:06	23°852'57	28.80076 AU	conjunction	2547 May 29 19:15	8°II29'11	-1°33'21
direct	2541 Feb 01 08:39	22°827'52		minimum elong	2547 May 29 19:15	8°II29'11	1°33'21

max. Earth dist.	2547 May 30 12:16	8° $\Pi$ 30'46	30.82232 AU	conjunction	2554 Jun 14 21:06	24° $\Pi$ 13'22	-1°20'23
morning rise	2547 Jun 14 23:21	9° $\Pi$ 05'17		minimum elong	2554 Jun 14 21:07	24° $\Pi$ 13'22	1°20'23
retrograde	2547 Sep 13 22:11	11° $\Pi$ 03'37		max. Earth dist.	2554 Jun 15 10:30	24° $\Pi$ 14'37	30.85032 AU
opposition	2547 Dec 02 05:15	9° $\Pi$ 38'31	-1°39'03	morning rise	2554 Jul 01 03:24	24° $\Pi$ 49'33	
min. Earth dist.	2547 Dec 01 14:05	9° $\Pi$ 39'35	28.82441 AU	retrograde	2554 Sep 29 13:32	26° $\Pi$ 46'52	
direct	2548 Feb 17 16:33	8° $\Pi$ 14'40		opposition	2554 Dec 17 10:42	25° $\Pi$ 21'57	-1°24'41
evening set	2548 May 15 07:11	10° $\Pi$ 08'40		min. Earth dist.	2554 Dec 16 23:09	25° $\Pi$ 22'47	28.85522 AU
				direct	2555 Mar 05 04:24	23° $\Pi$ 57'44	
conjunction	2548 May 31 09:15	10° $\Pi$ 44'33	-1°31'54	evening set	2555 Jun 01 06:15	25° $\Pi$ 51'55	
minimum elong	2548 May 31 09:15	10° $\Pi$ 44'33	1°31'54				
max. Earth dist.	2548 Jun 01 02:33	10° $\Pi$ 46'10	30.82453 AU	conjunction	2555 Jun 17 11:14	26° $\Pi$ 27'56	-1°18'01
morning rise	2548 Jun 16 13:32	11° $\Pi$ 20'40		minimum elong	2555 Jun 17 11:14	26° $\Pi$ 27'56	1°18'01
retrograde	2548 Sep 15 11:25	13° $\Pi$ 18'51		max. Earth dist.	2555 Jun 18 00:31	26° $\Pi$ 29'10	30.85911 AU
opposition	2548 Dec 03 16:34	11° $\Pi$ 53'45	-1°37'25	morning rise	2555 Jul 03 17:42	27° $\Pi$ 04'06	
min. Earth dist.	2548 Dec 03 01:34	11° $\Pi$ 54'49	28.82638 AU	retrograde	2555 Oct 02 02:19	29° $\Pi$ 01'18	
direct	2549 Feb 19 06:26	10° $\Pi$ 29'50		opposition	2555 Dec 19 21:31	27° $\Pi$ 36'30	-1°22'05
evening set	2549 May 17 20:50	12° $\Pi$ 23'51		min. Earth dist.	2555 Dec 19 09:41	27° $\Pi$ 37'21	28.86435 AU
				direct	2556 Mar 06 16:33	26° $\Pi$ 12'17	
conjunction	2549 Jun 02 23:11	12° $\Pi$ 59'45	-1°30'19	evening set	2556 Jun 02 19:57	28° $\Pi$ 06'33	
minimum elong	2549 Jun 02 23:12	12° $\Pi$ 59'45	1°30'19				
max. Earth dist.	2549 Jun 03 14:41	13° $\Pi$ 01'12	30.82662 AU	conjunction	2556 Jun 19 01:07	28° $\Pi$ 42'34	-1°15'31
morning rise	2549 Jun 19 04:01	13° $\Pi$ 35'53		minimum elong	2556 Jun 19 01:07	28° $\Pi$ 42'34	1°15'32
retrograde	2549 Sep 18 01:52	15° $\Pi$ 33'55		max. Earth dist.	2556 Jun 19 13:01	28° $\Pi$ 43'41	30.86858 AU
opposition	2549 Dec 06 03:44	14° $\Pi$ 08'49	-1°35'39	morning rise	2556 Jul 05 07:56	29° $\Pi$ 18'45	
min. Earth dist.	2549 Dec 05 13:27	14° $\Pi$ 09'50	28.82864 AU		2556 Jul 25 04:33	0° $\Theta$	
direct	2550 Feb 21 18:50	12° $\Pi$ 44'49		retrograde	2556 Oct 03 14:57	1° $\Theta$ 15'52	
evening set	2550 May 20 10:21	14° $\Pi$ 38'51			2556 Dec 16 03:15	30° $\kappa$ $\Pi$	
				opposition	2556 Dec 21 08:28	29° $\Pi$ 51'10	-1°19'21
conjunction	2550 Jun 05 13:18	15° $\Pi$ 14'46	-1°28'35	min. Earth dist.	2556 Dec 20 22:08	29° $\Pi$ 51'53	28.87400 AU
minimum elong	2550 Jun 05 13:18	15° $\Pi$ 14'46	1°28'36	direct	2557 Mar 09 02:48	28° $\Pi$ 26'56	
max. Earth dist.	2550 Jun 06 05:16	15° $\Pi$ 16'16	30.82909 AU		2557 May 26 10:18	0° $\Theta$	
morning rise	2550 Jun 21 18:19	15° $\Pi$ 50'54		evening set	2557 Jun 05 09:47	0° $\Theta$ 21'17	
retrograde	2550 Sep 20 12:59	17° $\Pi$ 48'47					
opposition	2550 Dec 08 14:52	16° $\Pi$ 23'42	-1°33'44	conjunction	2557 Jun 21 15:27	0° $\Theta$ 57'20	-1°12'55
min. Earth dist.	2550 Dec 08 01:22	16° $\Pi$ 24'39	28.83139 AU	minimum elong	2557 Jun 21 15:28	0° $\Theta$ 57'20	1°12'55
direct	2551 Feb 24 07:34	14° $\Pi$ 59'37		max. Earth dist.	2557 Jun 22 03:25	0° $\Theta$ 58'27	30.87821 AU
evening set	2551 May 22 23:57	16° $\Pi$ 53'40		morning rise	2557 Jul 07 22:21	1° $\Theta$ 33'31	
				retrograde	2557 Oct 06 03:52	3° $\Theta$ 30'30	
conjunction	2551 Jun 08 03:13	17° $\Pi$ 29'36	-1°26'44	opposition	2557 Dec 23 19:13	2° $\Theta$ 05'54	-1°16'30
minimum elong	2551 Jun 08 03:13	17° $\Pi$ 29'36	1°26'43	min. Earth dist.	2557 Dec 23 09:24	2° $\Theta$ 06'36	28.88332 AU
max. Earth dist.	2551 Jun 08 17:48	17° $\Pi$ 30'58	30.83240 AU	direct	2558 Mar 11 16:11	0° $\Theta$ 41'40	
morning rise	2551 Jun 24 08:39	18° $\Pi$ 05'45		evening set	2558 Jun 07 23:53	2° $\Theta$ 36'06	
retrograde	2551 Sep 23 02:28	20° $\Pi$ 03'28					
opposition	2551 Dec 11 01:49	18° $\Pi$ 38'24	-1°31'41	conjunction	2558 Jun 24 05:44	3° $\Theta$ 12'10	-1°10'12
min. Earth dist.	2551 Dec 10 12:14	18° $\Pi$ 39'22	28.83526 AU	minimum elong	2558 Jun 24 05:44	3° $\Theta$ 12'10	1°10'12
direct	2552 Feb 26 19:18	17° $\Pi$ 14'15		max. Earth dist.	2558 Jun 24 15:21	3° $\Theta$ 13'03	30.88723 AU
evening set	2552 May 24 13:29	19° $\Pi$ 08'19		morning rise	2558 Jul 10 12:59	3° $\Theta$ 48'21	
				retrograde	2558 Oct 08 18:02	5° $\Theta$ 45'13	
conjunction	2552 Jun 09 17:11	19° $\Pi$ 44'17	-1°24'44	opposition	2558 Dec 26 06:07	4° $\Theta$ 20'42	-1°13'33
minimum elong	2552 Jun 09 17:11	19° $\Pi$ 44'17	1°24'45	min. Earth dist.	2558 Dec 25 21:21	4° $\Theta$ 21'19	28.89190 AU
max. Earth dist.	2552 Jun 10 07:59	19° $\Pi$ 45'40	30.83686 AU	direct	2559 Mar 14 04:22	2° $\Theta$ 56'26	
morning rise	2552 Jun 25 22:50	20° $\Pi$ 20'26		evening set	2559 Jun 10 13:48	4° $\Theta$ 50'56	
retrograde	2552 Sep 24 13:58	22° $\Pi$ 18'01					
opposition	2552 Dec 12 12:53	20° $\Pi$ 52'58	-1°29'29	conjunction	2559 Jun 26 20:06	5° $\Theta$ 27'00	-1°07'23
min. Earth dist.	2552 Dec 12 00:28	20° $\Pi$ 53'51	28.84043 AU	minimum elong	2559 Jun 26 20:06	5° $\Theta$ 27'00	1°07'22
direct	2553 Feb 28 06:12	19° $\Pi$ 28'47		max. Earth dist.	2559 Jun 27 05:39	5° $\Theta$ 27'54	30.89524 AU
evening set	2553 May 27 02:54	21° $\Pi$ 22'52		morning rise	2559 Jul 13 03:19	6° $\Theta$ 03'12	
				retrograde	2559 Oct 11 05:30	7° $\Theta$ 59'55	
conjunction	2553 Jun 12 07:04	21° $\Pi$ 58'50	-1°22'38	opposition	2559 Dec 28 16:56	6° $\Theta$ 35'28	-1°10'29
minimum elong	2553 Jun 12 07:04	21° $\Pi$ 58'51	1°22'37	min. Earth dist.	2559 Dec 28 09:26	6° $\Theta$ 36'00	28.89932 AU
max. Earth dist.	2553 Jun 12 21:06	22° $\Pi$ 00'09	30.84291 AU	direct	2560 Mar 15 17:08	5° $\Theta$ 11'11	
morning rise	2553 Jun 28 13:04	22° $\Pi$ 35'00		evening set	2560 Jun 12 03:49	7° $\Theta$ 05'42	
retrograde	2553 Sep 27 02:43	24° $\Pi$ 32'27					
opposition	2553 Dec 14 23:47	23° $\Pi$ 07'28	-1°27'09	conjunction	2560 Jun 28 10:17	7° $\Theta$ 41'47	-1°04'27
min. Earth dist.	2553 Dec 14 10:45	23° $\Pi$ 08'23	28.84714 AU	minimum elong	2560 Jun 28 10:17	7° $\Theta$ 41'47	1°04'28
direct	2554 Mar 02 17:43	21° $\Pi$ 43'15		max. Earth dist.	2560 Jun 28 17:45	7° $\Theta$ 42'29	30.90238 AU
evening set	2554 May 29 16:37	23° $\Pi$ 37'23		morning rise	2560 Jul 14 17:50	8° $\Theta$ 17'59	

retrograde	2560 Oct 12 19:34	10°☾14'32	minimum elong	2567 Jul 15 12:20	23°☾21'04 0°41'40
opposition	2560 Dec 30 03:37	8°☾50'08 -1°07'18	max. Earth dist.	2567 Jul 15 14:06	23°☾21'14 30.95601 AU
min. Earth dist.	2560 Dec 29 20:31	8°☾50'38 28.90606 AU	morning rise	2567 Jul 31 20:24	23°☾57'11
direct	2561 Mar 18 05:23	7°☾25'48	retrograde	2567 Oct 29 03:41	25°☾52'37
evening set	2561 Jun 14 17:40	9°☾20'21	opposition	2568 Jan 15 04:52	24°☾28'36 -0°42'39
			min. Earth dist.	2568 Jan 15 02:43	24°☾28'45 28.96183 AU
conjunction	2561 Jul 01 00:31	9°☾56'27 -1°01'27	direct	2568 Apr 02 14:34	23°☾03'56
minimum elong	2561 Jul 01 00:32	9°☾56'27 1°01'26	evening set	2568 Jun 30 18:04	24°☾58'46
max. Earth dist.	2561 Jul 01 07:44	9°☾57'07 30.90879 AU			
morning rise	2561 Jul 17 08:08	10°☾32'38	conjunction	2568 Jul 17 02:16	25°☾34'52 -0°38'08
retrograde	2561 Oct 15 07:08	12°☾29'01	minimum elong	2568 Jul 17 02:16	25°☾34'52 0°38'09
opposition	2562 Jan 01 14:21	11°☾04'40 -1°04'02	max. Earth dist.	2568 Jul 17 04:25	25°☾35'04 30.96749 AU
min. Earth dist.	2562 Jan 01 08:59	11°☾05'03 28.91222 AU	morning rise	2568 Aug 02 10:09	26°☾10'58
direct	2562 Mar 20 17:02	9°☾40'16	retrograde	2568 Oct 30 14:54	28°☾06'16
evening set	2562 Jun 17 07:37	11°☾34'51	opposition	2569 Jan 16 15:10	26°☾42'21 -0°38'50
			min. Earth dist.	2569 Jan 16 14:07	26°☾42'26 28.97349 AU
conjunction	2562 Jul 03 14:42	12°☾10'57 -0°58'21	direct	2569 Apr 05 02:30	25°☾17'41
minimum elong	2562 Jul 03 14:43	12°☾10'57 0°58'21	evening set	2569 Jul 03 07:56	27°☾12'36
max. Earth dist.	2562 Jul 03 20:29	12°☾11'29 30.91499 AU			
morning rise	2562 Jul 19 22:30	12°☾47'08	conjunction	2569 Jul 19 16:06	27°☾48'41 -0°34'32
retrograde	2562 Oct 17 19:13	14°☾43'20	minimum elong	2569 Jul 19 16:07	27°☾48'41 0°34'31
opposition	2563 Jan 04 00:45	13°☾19'02 -1°00'41	max. Earth dist.	2569 Jul 19 16:17	27°☾48'42 30.97935 AU
min. Earth dist.	2563 Jan 03 19:14	13°☾19'25 28.91837 AU	morning rise	2569 Aug 05 00:08	28°☾24'47
direct	2563 Mar 23 05:11	11°☾54'33		2569 Sep 28 13:24	0°♂
evening set	2563 Jun 19 21:31	13°☾49'10	retrograde	2569 Nov 02 05:00	0°♂19'56
				2569 Dec 07 04:00	30°♂☾
conjunction	2563 Jul 06 04:48	14°☾25'16 -0°55'10	opposition	2570 Jan 19 01:28	28°☾56'07 -0°34'58
minimum elong	2563 Jul 06 04:48	14°☾25'16 0°55'09	min. Earth dist.	2570 Jan 19 00:48	28°☾56'10 28.98523 AU
max. Earth dist.	2563 Jul 06 09:45	14°☾25'44 30.92126 AU	direct	2570 Apr 07 15:14	27°☾31'27
morning rise	2563 Jul 22 12:39	15°☾01'27	evening set	2570 Jul 05 21:50	29°☾26'25
retrograde	2563 Oct 20 05:10	16°☾57'29		2570 Jul 21 02:55	0°♂
opposition	2564 Jan 06 11:22	15°☾33'12 -0°57'14			
min. Earth dist.	2564 Jan 06 07:28	15°☾33'29 28.92495 AU	conjunction	2570 Jul 22 06:09	0°♂02'31 -0°30'53
direct	2564 Mar 24 15:59	14°☾08'41	minimum elong	2570 Jul 22 06:09	0°♂02'31 0°30'53
evening set	2564 Jun 21 11:05	16°☾03'18	max. Earth dist.	2570 Jul 22 06:03	0°♂02'31 30.99070 AU
			morning rise	2570 Aug 07 13:55	0°♂38'35
conjunction	2564 Jul 07 18:39	16°☾39'25 -0°51'54	retrograde	2570 Nov 04 16:06	2°♂33'37
minimum elong	2564 Jul 07 18:39	16°☾39'25 0°51'55	opposition	2571 Jan 21 11:51	1°♂09'53 -0°31'02
max. Earth dist.	2564 Jul 07 23:17	16°☾39'51 30.92830 AU	min. Earth dist.	2571 Jan 21 13:04	1°♂09'48 28.99620 AU
morning rise	2564 Jul 24 02:33	17°☾15'34		2571 Mar 11 00:01	30°♂☾
retrograde	2564 Oct 21 17:02	19°☾11'27	direct	2571 Apr 10 03:24	29°☾45'12
opposition	2565 Jan 07 21:46	17°☾47'13 -0°53'42		2571 May 09 23:04	0°♂
min. Earth dist.	2565 Jan 07 17:36	17°☾47'31 28.93235 AU	evening set	2571 Jul 08 11:45	1°♂40'13
direct	2565 Mar 27 03:43	16°☾22'37			
evening set	2565 Jun 24 00:56	18°☾17'17	conjunction	2571 Jul 24 20:03	2°♂16'18 -0°27'12
			minimum elong	2571 Jul 24 20:03	2°♂16'18 0°27'11
conjunction	2565 Jul 10 08:34	18°☾53'24 -0°48'34	max. Earth dist.	2571 Jul 24 18:12	2°♂16'08 31.00129 AU
minimum elong	2565 Jul 10 08:34	18°☾53'24 0°48'34	morning rise	2571 Aug 10 03:48	2°♂52'21
max. Earth dist.	2565 Jul 10 11:53	18°☾53'42 30.93625 AU	retrograde	2571 Nov 07 04:35	4°♂47'13
morning rise	2565 Jul 26 16:37	19°☾29'33	opposition	2572 Jan 23 22:12	3°♂23'34 -0°27'04
retrograde	2565 Oct 24 03:50	21°☾25'16	min. Earth dist.	2572 Jan 23 23:23	3°♂23'29 29.00623 AU
opposition	2566 Jan 10 08:09	20°☾01'05 -0°50'06	direct	2572 Apr 11 16:02	1°♂58'50
min. Earth dist.	2566 Jan 10 05:16	20°☾01'17 28.94098 AU	evening set	2572 Jul 10 01:28	3°♂53'53
direct	2566 Mar 29 13:42	18°☾36'27			
evening set	2566 Jun 26 14:38	20°☾31'10	conjunction	2572 Jul 26 09:47	4°♂29'58 -0°23'28
			minimum elong	2572 Jul 26 09:47	4°♂29'58 0°23'29
conjunction	2566 Jul 12 22:37	21°☾07'16 -0°45'09	max. Earth dist.	2572 Jul 26 06:54	4°♂29'42 31.01074 AU
minimum elong	2566 Jul 12 22:37	21°☾07'16 0°45'10	morning rise	2572 Aug 11 17:23	5°♂06'00
max. Earth dist.	2566 Jul 13 02:10	21°☾07'36 30.94553 AU	retrograde	2572 Nov 08 15:02	7°♂00'42
morning rise	2566 Jul 29 06:32	21°☾43'24	opposition	2573 Jan 25 08:37	5°♂37'06 -0°23'04
retrograde	2566 Oct 26 14:58	23°☾38'57	min. Earth dist.	2573 Jan 25 11:46	5°♂36'53 29.01521 AU
opposition	2567 Jan 12 18:31	22°☾14'52 -0°46'25	direct	2573 Apr 14 02:56	4°♂12'20
min. Earth dist.	2567 Jan 12 15:46	22°☾15'03 28.95078 AU	evening set	2573 Jul 12 15:15	6°♂07'24
direct	2567 Apr 01 03:03	20°☾50'12			
evening set	2567 Jun 29 04:24	22°☾44'58	conjunction	2573 Jul 28 23:38	6°♂43'28 -0°19'43
			minimum elong	2573 Jul 28 23:38	6°♂43'28 0°19'43
conjunction	2567 Jul 15 12:19	23°☾21'04 -0°41'41	max. Earth dist.	2573 Jul 28 19:49	6°♂43'08 31.01934 AU

morning rise	2573 Aug 14 07:05	7° $\Omega$ 19'29	evening set	2579 Jul 27 00:20	19° $\Omega$ 24'31	
retrograde	2573 Nov 11 02:35	9° $\Omega$ 14'00				
opposition	2574 Jan 27 18:42	7° $\Omega$ 50'27 -0°19'03	conjunction	2579 Aug 12 08:06	20° $\Omega$ 00'28 0°03'14	
min. Earth dist.	2574 Jan 27 22:01	7° $\Omega$ 50'13 29.02331 AU	minimum elong	2579 Aug 12 08:05	20° $\Omega$ 00'28 0°03'14	
direct	2574 Apr 16 15:04	6° $\Omega$ 25'37	behind sun begin	2579 Aug 12 01:32	19° $\Omega$ 59'53	
evening set	2574 Jul 15 05:07	8° $\Omega$ 20'43	behind sun end	2579 Aug 12 14:39	20° $\Omega$ 01'02	
			max. Earth dist.	2579 Aug 12 00:02	19° $\Omega$ 59'44 31.07198 AU	
conjunction	2574 Jul 31 13:21	8° $\Omega$ 56'46 -0°15'56	morning rise	2579 Aug 28 14:03	20° $\Omega$ 36'17	
minimum elong	2574 Jul 31 13:21	8° $\Omega$ 56'46 0°15'57	retrograde	2579 Nov 24 19:22	22° $\Omega$ 29'58	
max. Earth dist.	2574 Jul 31 07:55	8° $\Omega$ 56'17 31.02716 AU	opposition	2580 Feb 10 07:19	21° $\Omega$ 06'43 0°05'24	
morning rise	2574 Aug 16 20:41	9° $\Omega$ 32'45	min. Earth dist.	2580 Feb 10 15:10	21° $\Omega$ 06'10 29.07802 AU	
retrograde	2574 Nov 13 12:29	11° $\Omega$ 27'07	direct	2580 Apr 29 14:14	19° $\Omega$ 41'41	
opposition	2575 Jan 30 04:58	10° $\Omega$ 03'36 -0°15'00	evening set	2580 Jul 28 13:32	21° $\Omega$ 37'01	
min. Earth dist.	2575 Jan 30 09:50	10° $\Omega$ 03'16 29.03104 AU				
direct	2575 Apr 19 01:27	8° $\Omega$ 38'42	conjunction	2580 Aug 13 21:02	22° $\Omega$ 12'57 0°07'02	
evening set	2575 Jul 17 18:34	10° $\Omega$ 33'50	minimum elong	2580 Aug 13 21:03	22° $\Omega$ 12'57 0°07'02	
			behind sun begin	2580 Aug 13 14:58	22° $\Omega$ 12'25	
conjunction	2575 Aug 03 02:53	11° $\Omega$ 09'51 -0°12'09	behind sun end	2580 Aug 14 03:08	22° $\Omega$ 13'29	
minimum elong	2575 Aug 03 02:52	11° $\Omega$ 09'51 0°12'09	max. Earth dist.	2580 Aug 13 11:52	22° $\Omega$ 12'07 31.08426 AU	
behind sun begin	2575 Aug 02 22:31	11° $\Omega$ 09'28	morning rise	2580 Aug 30 02:52	22° $\Omega$ 48'44	
behind sun end	2575 Aug 03 07:14	11° $\Omega$ 10'15	retrograde	2580 Nov 26 07:33	24° $\Omega$ 42'19	
max. Earth dist.	2575 Aug 02 21:30	11° $\Omega$ 09'23 31.03482 AU	opposition	2581 Feb 11 17:17	23° $\Omega$ 19'11 0°09'28	
morning rise	2575 Aug 19 09:53	11° $\Omega$ 45'48	min. Earth dist.	2581 Feb 12 00:44	23° $\Omega$ 18'40 29.09065 AU	
retrograde	2575 Nov 15 22:17	13° $\Omega$ 40'01	direct	2581 May 02 02:36	21° $\Omega$ 54'11	
opposition	2576 Feb 01 15:05	12° $\Omega$ 16'32 -0°10'56	evening set	2581 Jul 31 02:55	23° $\Omega$ 49'36	
min. Earth dist.	2576 Feb 01 20:18	12° $\Omega$ 16'10 29.03868 AU				
direct	2576 Apr 20 14:28	10° $\Omega$ 51'35	conjunction	2581 Aug 16 10:15	24° $\Omega$ 25'31 0°10'50	
evening set	2576 Jul 19 08:10	12° $\Omega$ 46'43	minimum elong	2581 Aug 16 10:14	24° $\Omega$ 25'31 0°10'50	
			behind sun begin	2581 Aug 16 05:17	24° $\Omega$ 25'04	
conjunction	2576 Aug 04 16:13	13° $\Omega$ 22'44 -0°08'21	behind sun end	2581 Aug 16 15:12	24° $\Omega$ 25'57	
minimum elong	2576 Aug 04 16:13	13° $\Omega$ 22'44 0°08'22	max. Earth dist.	2581 Aug 16 00:31	24° $\Omega$ 24'37 31.09708 AU	
behind sun begin	2576 Aug 04 10:27	13° $\Omega$ 22'13	morning rise	2581 Sep 01 15:38	25° $\Omega$ 01'16	
behind sun end	2576 Aug 04 22:00	13° $\Omega$ 23'15	retrograde	2581 Nov 28 18:19	26° $\Omega$ 54'45	
max. Earth dist.	2576 Aug 04 09:00	13° $\Omega$ 22'05 31.04270 AU	opposition	2582 Feb 14 03:21	25° $\Omega$ 31'44 0°13'32	
morning rise	2576 Aug 20 23:10	13° $\Omega$ 58'39	min. Earth dist.	2582 Feb 14 12:31	25° $\Omega$ 31'05 29.10362 AU	
	2576 Sep 21 01:30	15° $\Omega$	direct	2582 May 04 13:12	24° $\Omega$ 06'45	
retrograde	2576 Nov 17 09:49	15° $\Omega$ 52'43	evening set	2582 Aug 02 16:18	26° $\Omega$ 02'15	
	2577 Jan 15 10:45	15° $\Omega$				
opposition	2577 Feb 03 01:04	14° $\Omega$ 29'16 -0°06'51	conjunction	2582 Aug 18 23:24	26° $\Omega$ 38'08 0°14'36	
min. Earth dist.	2577 Feb 03 06:54	14° $\Omega$ 28'51 29.04696 AU	minimum elong	2582 Aug 18 23:24	26° $\Omega$ 38'08 0°14'36	
direct	2577 Apr 23 01:28	13° $\Omega$ 04'15	behind sun begin	2582 Aug 18 20:48	26° $\Omega$ 37'54	
evening set	2577 Jul 21 21:32	14° $\Omega$ 59'26	behind sun end	2582 Aug 19 01:59	26° $\Omega$ 38'22	
	2577 Jul 22 03:51	15° $\Omega$	max. Earth dist.	2582 Aug 18 12:57	26° $\Omega$ 37'11 31.10997 AU	
conjunction	2577 Aug 07 05:41	15° $\Omega$ 35'25 -0°04'33	morning rise	2582 Sep 04 04:27	27° $\Omega$ 13'52	
minimum elong	2577 Aug 07 05:40	15° $\Omega$ 35'25 0°04'33	retrograde	2582 Dec 01 06:07	29° $\Omega$ 07'15	
behind sun begin	2577 Aug 06 23:12	15° $\Omega$ 34'51	opposition	2583 Feb 16 13:27	27° $\Omega$ 44'20 0°17'34	
behind sun end	2577 Aug 07 12:08	15° $\Omega$ 36'00	min. Earth dist.	2583 Feb 16 22:40	27° $\Omega$ 43'41 29.11619 AU	
max. Earth dist.	2577 Aug 06 22:52	15° $\Omega$ 34'49 31.05131 AU	direct	2583 May 07 01:01	26° $\Omega$ 19'23	
morning rise	2577 Aug 23 12:13	16° $\Omega$ 11'18	evening set	2583 Aug 05 05:36	28° $\Omega$ 14'55	
retrograde	2577 Nov 19 19:56	18° $\Omega$ 05'13				
opposition	2578 Feb 05 11:11	16° $\Omega$ 41'50 -0°02'46	conjunction	2583 Aug 21 12:19	28° $\Omega$ 50'47 0°18'22	
min. Earth dist.	2578 Feb 05 17:55	16° $\Omega$ 41'21 29.05602 AU	minimum elong	2583 Aug 21 12:19	28° $\Omega$ 50'47 0°18'23	
direct	2578 Apr 25 13:27	15° $\Omega$ 16'47	max. Earth dist.	2583 Aug 21 00:26	28° $\Omega$ 49'42 31.12209 AU	
evening set	2578 Jul 24 11:02	17° $\Omega$ 12'01	morning rise	2583 Sep 06 17:00	29° $\Omega$ 26'29	
				2583 Sep 22 19:27	0° $\Omega$	
conjunction	2578 Aug 09 18:50	17° $\Omega$ 47'58 -0°00'41	retrograde	2583 Dec 03 15:31	1° $\Omega$ 19'47	
minimum elong	2578 Aug 09 18:50	17° $\Omega$ 47'58 0°00'42		2584 Feb 17 04:18	30° $\Omega$	
behind sun begin	2578 Aug 09 12:16	17° $\Omega$ 47'24	opposition	2584 Feb 18 23:42	29° $\Omega$ 56'57 0°21'35	
behind sun end	2578 Aug 10 01:25	17° $\Omega$ 48'33	min. Earth dist.	2584 Feb 19 10:23	29° $\Omega$ 56'12 29.12799 AU	
max. Earth dist.	2578 Aug 09 10:24	17° $\Omega$ 47'13 31.06100 AU	direct	2584 May 08 11:17	28° $\Omega$ 32'00	
morning rise	2578 Aug 26 01:15	18° $\Omega$ 23'49		2584 Jul 24 15:14	0° $\Omega$	
asc. node	2578 Oct 12 12:39	19° $\Omega$ 49'58	evening set	2584 Aug 06 18:51	0° $\Omega$ 27'35	
retrograde	2578 Nov 22 08:55	20° $\Omega$ 17'37				
opposition	2579 Feb 07 21:09	18° $\Omega$ 54'17 0°01'19	conjunction	2584 Aug 23 01:25	1° $\Omega$ 03'25 0°22'06	
min. Earth dist.	2579 Feb 08 03:42	18° $\Omega$ 53'49 29.06639 AU	minimum elong	2584 Aug 23 01:25	1° $\Omega$ 03'25 0°22'05	
direct	2579 Apr 28 02:13	17° $\Omega$ 29'14	max. Earth dist.	2584 Aug 22 13:23	1° $\Omega$ 02'19 31.13331 AU	
			morning rise	2584 Sep 08 05:37	1° $\Omega$ 39'05	

retrograde	2584 Dec 05 00:43	3° $\mathring{M}$ 32'16		minimum elong	2591 Sep 08 17:16	16° $\mathring{M}$ 26'56	0°46'57
opposition	2585 Feb 20 09:47	2° $\mathring{M}$ 09'30	0°25'33	max. Earth dist.	2591 Sep 08 00:22	16° $\mathring{M}$ 25'22	31.19528 AU
min. Earth dist.	2585 Feb 20 21:07	2° $\mathring{M}$ 08'42	29.13857 AU	morning rise	2591 Sep 24 18:18	17° $\mathring{M}$ 02'16	
direct	2585 May 10 23:36	0° $\mathring{M}$ 44'32		retrograde	2591 Dec 21 02:53	18° $\mathring{M}$ 54'40	
evening set	2585 Aug 09 08:14	2° $\mathring{M}$ 40'09		opposition	2592 Mar 07 08:41	17° $\mathring{M}$ 32'08	0°51'54
				min. Earth dist.	2592 Mar 07 23:30	17° $\mathring{M}$ 31'05	29.20089 AU
conjunction	2585 Aug 25 14:21	3° $\mathring{M}$ 15'57	0°25'48	direct	2592 May 26 12:17	16° $\mathring{M}$ 06'58	
minimum elong	2585 Aug 25 14:21	3° $\mathring{M}$ 15'57	0°25'48	evening set	2592 Aug 25 01:58	18° $\mathring{M}$ 02'40	
max. Earth dist.	2585 Aug 25 00:12	3° $\mathring{M}$ 14'39	31.14333 AU	max. Earth dist.	2592 Sep 09 11:42	18° $\mathring{M}$ 36'35	31.20610 AU
morning rise	2585 Sep 10 18:17	3° $\mathring{M}$ 51'34					
retrograde	2585 Dec 07 11:53	5° $\mathring{M}$ 44'39		conjunction	2592 Sep 10 05:24	18° $\mathring{M}$ 38'13	0°50'16
opposition	2586 Feb 22 19:57	4° $\mathring{M}$ 21'55	0°29'29	minimum elong	2592 Sep 10 05:24	18° $\mathring{M}$ 38'13	0°50'15
min. Earth dist.	2586 Feb 23 08:01	4° $\mathring{M}$ 21'05	29.14814 AU	morning rise	2592 Sep 26 05:57	19° $\mathring{M}$ 13'30	
direct	2586 May 13 09:52	2° $\mathring{M}$ 56'55		retrograde	2592 Dec 22 12:19	21° $\mathring{M}$ 05'51	
evening set	2586 Aug 11 21:19	4° $\mathring{M}$ 52'33		opposition	2593 Mar 09 18:45	19° $\mathring{M}$ 43'23	0°55'24
				min. Earth dist.	2593 Mar 10 10:29	19° $\mathring{M}$ 42'17	29.21227 AU
conjunction	2586 Aug 28 03:16	5° $\mathring{M}$ 28'19	0°29'28	direct	2593 May 28 22:19	18° $\mathring{M}$ 18'15	
minimum elong	2586 Aug 28 03:16	5° $\mathring{M}$ 28'19	0°29'27	evening set	2593 Aug 27 14:31	20° $\mathring{M}$ 14'01	
max. Earth dist.	2586 Aug 27 13:17	5° $\mathring{M}$ 27'02	31.15232 AU				
morning rise	2586 Sep 13 06:35	6° $\mathring{M}$ 03'54		conjunction	2593 Sep 12 17:37	20° $\mathring{M}$ 49'31	0°53'30
retrograde	2586 Dec 09 21:00	7° $\mathring{M}$ 56'51		minimum elong	2593 Sep 12 17:37	20° $\mathring{M}$ 49'31	0°53'30
opposition	2587 Feb 25 06:09	6° $\mathring{M}$ 34'09	0°33'22	max. Earth dist.	2593 Sep 12 00:22	20° $\mathring{M}$ 47'56	31.21776 AU
min. Earth dist.	2587 Feb 25 19:26	6° $\mathring{M}$ 33'14	29.15669 AU	morning rise	2593 Sep 28 17:34	21° $\mathring{M}$ 24'47	
direct	2587 May 15 21:55	5° $\mathring{M}$ 09'07		retrograde	2593 Dec 24 21:25	23° $\mathring{M}$ 17'04	
evening set	2587 Aug 14 10:26	7° $\mathring{M}$ 04'46		opposition	2594 Mar 12 04:59	21° $\mathring{M}$ 54'42	0°58'49
				min. Earth dist.	2594 Mar 12 20:59	21° $\mathring{M}$ 53'35	29.22398 AU
conjunction	2587 Aug 30 15:52	7° $\mathring{M}$ 40'29	0°33'04	direct	2594 May 31 10:09	20° $\mathring{M}$ 29'38	
minimum elong	2587 Aug 30 15:52	7° $\mathring{M}$ 40'29	0°33'05	evening set	2594 Aug 30 03:08	22° $\mathring{M}$ 25'26	
max. Earth dist.	2587 Aug 30 00:03	7° $\mathring{M}$ 39'02	31.16063 AU	max. Earth dist.	2594 Sep 14 10:49	22° $\mathring{M}$ 59'11	31.22941 AU
morning rise	2587 Sep 15 18:55	8° $\mathring{M}$ 16'01					
retrograde	2587 Dec 12 08:49	10° $\mathring{M}$ 08'51		conjunction	2594 Sep 15 05:34	23° $\mathring{M}$ 00'55	0°56'39
opposition	2588 Feb 27 16:11	8° $\mathring{M}$ 46'10	0°37'12	minimum elong	2594 Sep 15 05:34	23° $\mathring{M}$ 00'55	0°56'39
min. Earth dist.	2588 Feb 28 05:26	8° $\mathring{M}$ 45'14	29.16487 AU	morning rise	2594 Oct 01 05:05	23° $\mathring{M}$ 36'08	
direct	2588 May 17 10:51	7° $\mathring{M}$ 21'04		retrograde	2594 Dec 27 08:32	25° $\mathring{M}$ 28'24	
evening set	2588 Aug 15 23:12	9° $\mathring{M}$ 16'43		opposition	2595 Mar 14 15:14	24° $\mathring{M}$ 06'07	1°02'08
				min. Earth dist.	2595 Mar 15 07:34	24° $\mathring{M}$ 04'59	29.23558 AU
conjunction	2588 Sep 01 04:25	9° $\mathring{M}$ 52'25	0°36'38	direct	2595 Jun 02 19:41	22° $\mathring{M}$ 41'05	
minimum elong	2588 Sep 01 04:25	9° $\mathring{M}$ 52'25	0°36'38	evening set	2595 Sep 01 15:35	24° $\mathring{M}$ 36'57	
max. Earth dist.	2588 Aug 31 12:55	9° $\mathring{M}$ 50'59	31.16860 AU				
morning rise	2588 Sep 17 06:53	10° $\mathring{M}$ 27'54		conjunction	2595 Sep 17 17:42	25° $\mathring{M}$ 12'23	0°59'43
retrograde	2588 Dec 13 18:12	12° $\mathring{M}$ 20'36		minimum elong	2595 Sep 17 17:42	25° $\mathring{M}$ 12'23	0°59'44
opposition	2589 Mar 01 02:22	10° $\mathring{M}$ 57'56	0°40'59	max. Earth dist.	2595 Sep 16 23:24	25° $\mathring{M}$ 10'42	31.24056 AU
min. Earth dist.	2589 Mar 01 17:08	10° $\mathring{M}$ 56'54	29.17287 AU	morning rise	2595 Oct 03 16:30	25° $\mathring{M}$ 47'34	
direct	2589 May 19 23:06	9° $\mathring{M}$ 32'49		retrograde	2595 Dec 29 17:33	27° $\mathring{M}$ 39'48	
evening set	2589 Aug 18 12:06	11° $\mathring{M}$ 28'28		opposition	2596 Mar 16 01:37	26° $\mathring{M}$ 17'36	1°05'23
				min. Earth dist.	2596 Mar 16 19:08	26° $\mathring{M}$ 16'23	29.24627 AU
conjunction	2589 Sep 03 16:50	12° $\mathring{M}$ 04'06	0°40'08	direct	2596 Jun 04 07:08	24° $\mathring{M}$ 52'37	
minimum elong	2589 Sep 03 16:50	12° $\mathring{M}$ 04'06	0°40'08	evening set	2596 Sep 03 04:07	26° $\mathring{M}$ 48'32	
max. Earth dist.	2589 Sep 03 00:13	12° $\mathring{M}$ 02'34	31.17676 AU	max. Earth dist.	2596 Sep 18 09:30	27° $\mathring{M}$ 22'04	31.25065 AU
morning rise	2589 Sep 19 18:57	12° $\mathring{M}$ 39'32					
retrograde	2589 Dec 16 05:43	14° $\mathring{M}$ 32'08		conjunction	2596 Sep 19 05:35	27° $\mathring{M}$ 23'55	1°02'43
opposition	2590 Mar 03 12:19	13° $\mathring{M}$ 09'29	0°44'41	minimum elong	2596 Sep 19 05:35	27° $\mathring{M}$ 23'55	1°02'42
min. Earth dist.	2590 Mar 04 02:30	13° $\mathring{M}$ 08'30	29.18127 AU	morning rise	2596 Oct 05 04:02	27° $\mathring{M}$ 59'04	
direct	2590 May 22 12:02	11° $\mathring{M}$ 44'19		retrograde	2596 Dec 31 05:21	29° $\mathring{M}$ 51'16	
evening set	2590 Aug 21 00:51	13° $\mathring{M}$ 39'59		opposition	2597 Mar 18 11:59	28° $\mathring{M}$ 29'08	1°08'31
				min. Earth dist.	2597 Mar 19 05:25	28° $\mathring{M}$ 27'55	29.25574 AU
conjunction	2590 Sep 06 05:12	14° $\mathring{M}$ 15'36	0°43'34	direct	2597 Jun 06 19:22	27° $\mathring{M}$ 04'10	
minimum elong	2590 Sep 06 05:12	14° $\mathring{M}$ 15'36	0°43'34	evening set	2597 Sep 05 16:34	29° $\mathring{M}$ 00'07	
max. Earth dist.	2590 Sep 05 12:26	14° $\mathring{M}$ 14'03	31.18544 AU				
morning rise	2590 Sep 22 06:43	14° $\mathring{M}$ 50'58		conjunction	2597 Sep 21 17:39	29° $\mathring{M}$ 35'28	1°05'36
retrograde	2590 Dec 18 16:07	16° $\mathring{M}$ 43'28		minimum elong	2597 Sep 21 17:39	29° $\mathring{M}$ 35'28	1°05'36
opposition	2591 Mar 05 22:34	15° $\mathring{M}$ 20'51	0°48'20	max. Earth dist.	2597 Sep 20 21:43	29° $\mathring{M}$ 33'38	31.25926 AU
min. Earth dist.	2591 Mar 06 13:56	15° $\mathring{M}$ 19'47	29.19056 AU		2597 Oct 02 19:13	0° $\mathring{A}$	
direct	2591 May 24 23:33	13° $\mathring{M}$ 55'41		morning rise	2597 Oct 07 15:21	0° $\mathring{A}$ 10'34	
evening set	2591 Aug 23 13:20	15° $\mathring{M}$ 51'21		retrograde	2598 Jan 02 14:48	2° $\mathring{A}$ 02'44	
				opposition	2598 Mar 20 22:28	0° $\mathring{A}$ 40'38	1°11'33
conjunction	2591 Sep 08 17:16	16° $\mathring{M}$ 26'56	0°46'57	min. Earth dist.	2598 Mar 21 17:34	0° $\mathring{A}$ 39'19	29.26368 AU

	2598 Apr 15 09:18	30° <u>8</u> ′ <u>19</u> ″	
direct	2598 Jun 09 07:01	29° <u>19</u> ′15″41	
	2598 Aug 01 19:13	0° <u>0</u> ′	
evening set	2598 Sep 08 05:00	1° <u>0</u> ′11″39	
max. Earth dist.	2598 Sep 23 08:19	1° <u>0</u> ′45″01	31.26654 AU
conjunction	2598 Sep 24 05:29	1° <u>0</u> ′46″58	1°08′24
minimum elong	2598 Sep 24 05:28	1° <u>0</u> ′46″58	1°08′23
morning rise	2598 Oct 10 02:44	2° <u>0</u> ′22″01	
retrograde	2599 Jan 05 02:24	4° <u>0</u> ′14″08	
opposition	2599 Mar 23 08:55	2° <u>0</u> ′52″04	1°14′29
min. Earth dist.	2599 Mar 24 03:32	2° <u>0</u> ′50″47	29.27029 AU
direct	2599 Jun 11 19:59	1° <u>0</u> ′27″07	
evening set	2599 Sep 10 17:06	3° <u>0</u> ′23″05	
conjunction	2599 Sep 26 17:06	3° <u>0</u> ′58″22	1°11′05
minimum elong	2599 Sep 26 17:06	3° <u>0</u> ′58″22	1°11′05
max. Earth dist.	2599 Sep 25 19:36	3° <u>0</u> ′56″23	31.27244 AU
morning rise	2599 Oct 12 13:44	4° <u>0</u> ′33″22	
retrograde	2600 Jan 07 13:06	6° <u>0</u> ′25″26	
opposition	2600 Mar 25 19:27	5° <u>0</u> ′03″22	1°17′19
min. Earth dist.	2600 Mar 26 15:30	5° <u>0</u> ′01″59	29.27577 AU
direct	2600 Jun 14 08:13	3° <u>0</u> ′38″25	
evening set	2600 Sep 13 05:11	5° <u>0</u> ′34″23	
max. Earth dist.	2600 Sep 28 06:53	6° <u>0</u> ′07″36	31.27749 AU
conjunction	2600 Sep 29 04:42	6° <u>0</u> ′09″37	1°13′41
minimum elong	2600 Sep 29 04:41	6° <u>0</u> ′09″37	1°13′40
morning rise	2600 Oct 15 00:49	6° <u>0</u> ′44″34	
retrograde	2601 Jan 09 23:31	8° <u>0</u> ′36″34	
opposition	2601 Mar 28 05:44	7° <u>0</u> ′14″31	1°20′01
min. Earth dist.	2601 Mar 29 01:30	7° <u>0</u> ′13″09	29.28042 AU
direct	2601 Jun 16 21:56	5° <u>0</u> ′49″31	
evening set	2601 Sep 15 17:15	7° <u>0</u> ′45″29	
conjunction	2601 Oct 01 16:09	8° <u>0</u> ′20″41	1°16′10
minimum elong	2601 Oct 01 16:09	8° <u>0</u> ′20″41	1°16′10
max. Earth dist.	2601 Sep 30 17:31	8° <u>0</u> ′18″35	31.28190 AU
morning rise	2601 Oct 17 11:44	8° <u>0</u> ′55″36	
retrograde	2602 Jan 12 08:33	10° <u>0</u> ′47″31	