

opposition	2100 Mar 06 11:42	15° \mathring{M} 57'59	0°59'37	conjunction	2107 Sep 26 00:57	2° \mathring{U} 22'40	1°17'38
min. Earth dist.	2100 Mar 07 05:53	15° \mathring{M} 56'43	29.21725 AU	minimum elong	2107 Sep 26 00:56	2° \mathring{U} 22'40	1°17'38
direct	2100 May 25 15:39	14° \mathring{M} 32'57		retrograde	2108 Jan 06 14:02	4° \mathring{U} 49'29	
conjunction	2100 Sep 09 15:32	17° \mathring{M} 04'28	0°57'27	opposition	2108 Mar 23 23:10	3° \mathring{U} 27'24	1°24'14
minimum elong	2100 Sep 09 15:32	17° \mathring{M} 04'28	0°57'28	min. Earth dist.	2108 Mar 24 18:51	3° \mathring{U} 26'02	29.26648 AU
max. Earth dist.	2100 Sep 08 18:40	17° \mathring{M} 02'32	31.21997 AU	direct	2108 Jun 12 15:28	2° \mathring{U} 02'18	
retrograde	2100 Dec 21 16:30	19° \mathring{M} 32'00		conjunction	2108 Sep 27 12:15	4° \mathring{U} 33'32	1°20'06
opposition	2101 Mar 08 22:04	18° \mathring{M} 09'47	1°03'03	minimum elong	2108 Sep 27 12:15	4° \mathring{U} 33'32	1°20'07
min. Earth dist.	2101 Mar 09 16:04	18° \mathring{M} 08'32	29.22339 AU	max. Earth dist.	2108 Sep 26 14:45	4° \mathring{U} 31'32	31.26972 AU
direct	2101 May 28 04:55	16° \mathring{M} 44'43		retrograde	2109 Jan 07 22:43	7° \mathring{U} 00'19	
max. Earth dist.	2101 Sep 11 07:03	19° \mathring{M} 14'18	31.22554 AU	opposition	2109 Mar 26 09:54	5° \mathring{U} 38'19	1°26'49
conjunction	2101 Sep 12 03:39	19° \mathring{M} 16'13	1°00'38	min. Earth dist.	2109 Mar 27 06:31	5° \mathring{U} 36'53	29.27449 AU
minimum elong	2101 Sep 12 03:39	19° \mathring{M} 16'13	1°00'37	direct	2109 Jun 15 03:05	4° \mathring{U} 13'16	
retrograde	2101 Dec 24 01:51	21° \mathring{M} 43'37		conjunction	2109 Sep 29 23:25	6° \mathring{U} 44'29	1°22'27
opposition	2102 Mar 11 08:32	20° \mathring{M} 21'24	1°06'24	minimum elong	2109 Sep 29 23:25	6° \mathring{U} 44'29	1°22'27
min. Earth dist.	2102 Mar 12 04:04	20° \mathring{M} 20'03	29.22866 AU	max. Earth dist.	2109 Sep 29 00:40	6° \mathring{U} 42'22	31.27751 AU
direct	2102 May 30 16:54	18° \mathring{M} 56'18		retrograde	2110 Jan 10 10:19	9° \mathring{U} 11'14	
conjunction	2102 Sep 14 15:26	21° \mathring{M} 27'44	1°03'43	opposition	2110 Mar 28 20:29	7° \mathring{U} 49'17	1°29'15
minimum elong	2102 Sep 14 15:26	21° \mathring{M} 27'44	1°03'44	min. Earth dist.	2110 Mar 29 16:36	7° \mathring{U} 47'53	29.28197 AU
max. Earth dist.	2102 Sep 13 17:54	21° \mathring{M} 25'45	31.23057 AU	direct	2110 Jun 17 14:48	6° \mathring{U} 24'17	
retrograde	2102 Dec 26 13:04	23° \mathring{M} 55'00		conjunction	2110 Oct 02 10:43	8° \mathring{U} 55'29	1°24'40
opposition	2103 Mar 13 18:51	22° \mathring{M} 32'48	1°09'39	minimum elong	2110 Oct 02 10:43	8° \mathring{U} 55'29	1°24'41
min. Earth dist.	2103 Mar 14 13:47	22° \mathring{M} 31'29	29.23349 AU	max. Earth dist.	2110 Oct 01 12:24	8° \mathring{U} 53'25	31.28436 AU
direct	2103 Jun 02 06:15	21° \mathring{M} 07'39		retrograde	2111 Jan 12 20:00	11° \mathring{U} 22'13	
max. Earth dist.	2103 Sep 16 05:29	23° \mathring{M} 37'02	31.23527 AU	opposition	2111 Mar 31 07:23	11° \mathring{U} 00'18	1°31'34
conjunction	2103 Sep 17 03:13	23° \mathring{M} 39'02	1°06'42	min. Earth dist.	2111 Apr 01 04:55	9° \mathring{U} 58'49	29.28829 AU
minimum elong	2103 Sep 17 03:13	23° \mathring{M} 39'02	1°06'42	direct	2111 Jun 20 01:58	8° \mathring{U} 35'20	
retrograde	2103 Dec 28 23:29	26° \mathring{M} 06'11		conjunction	2111 Oct 04 21:51	11° \mathring{U} 06'32	1°26'47
opposition	2104 Mar 15 05:17	24° \mathring{M} 43'58	1°12'47	minimum elong	2111 Oct 04 21:51	11° \mathring{U} 06'31	1°26'46
min. Earth dist.	2104 Mar 16 01:20	24° \mathring{M} 42'34	29.23846 AU	max. Earth dist.	2111 Oct 03 22:43	11° \mathring{U} 04'23	31.29002 AU
direct	2104 Jun 03 18:16	23° \mathring{M} 18'48		retrograde	2112 Jan 15 07:18	13° \mathring{U} 33'13	
conjunction	2104 Sep 18 14:50	25° \mathring{M} 50'07	1°09'36	opposition	2112 Apr 01 18:09	12° \mathring{U} 11'20	1°33'45
minimum elong	2104 Sep 18 14:50	25° \mathring{M} 50'07	1°09'36	min. Earth dist.	2112 Apr 02 15:01	12° \mathring{U} 09'53	29.29326 AU
max. Earth dist.	2104 Sep 17 17:14	25° \mathring{M} 48'07	31.24051 AU	direct	2112 Jun 21 15:08	10° \mathring{U} 46'23	
retrograde	2104 Dec 30 09:25	28° \mathring{M} 17'08		max. Earth dist.	2112 Oct 05 09:34	13° \mathring{U} 15'22	31.29426 AU
opposition	2105 Mar 17 15:45	26° \mathring{M} 54'56	1°15'49	conjunction	2112 Oct 06 09:00	13° \mathring{U} 17'33	1°28'45
min. Earth dist.	2105 Mar 18 11:11	26° \mathring{M} 53'35	29.24406 AU	minimum elong	2112 Oct 06 09:00	13° \mathring{U} 17'33	1°28'46
direct	2105 Jun 06 07:32	25° \mathring{M} 29'45		retrograde	2113 Jan 16 18:19	15° \mathring{U} 44'12	
max. Earth dist.	2105 Sep 20 03:57	27° \mathring{M} 58'58	31.24654 AU	opposition	2113 Apr 04 05:09	14° \mathring{U} 22'19	1°35'47
conjunction	2105 Sep 21 02:08	28° \mathring{M} 01'01	1°12'23	min. Earth dist.	2113 Apr 05 03:09	14° \mathring{U} 20'48	29.29700 AU
minimum elong	2105 Sep 21 02:08	28° \mathring{M} 01'01	1°12'22	direct	2113 Jun 24 03:09	12° \mathring{U} 57'24	
retrograde	2105 Nov 21 23:04	0° \mathring{U}		conjunction	2113 Oct 08 19:50	15° \mathring{U} 28'30	1°30'36
opposition	2106 Jan 01 18:37	0° \mathring{U} 27'58		minimum elong	2113 Oct 08 19:50	15° \mathring{U} 28'30	1°30'36
min. Earth dist.	2106 Feb 12 12:21	30° \mathring{R} \mathring{M}		max. Earth dist.	2113 Oct 07 20:29	15° \mathring{U} 26'20	31.29740 AU
direct	2106 Mar 20 02:15	29° \mathring{M} 05'47	1°18'44	retrograde	2114 Jan 19 04:15	17° \mathring{U} 55'06	
conjunction	2106 Mar 20 22:04	29° \mathring{M} 04'24	29.25076 AU	opposition	2114 Apr 06 16:01	16° \mathring{U} 33'13	1°37'42
retrograde	2106 Jun 08 17:54	27° \mathring{M} 40'36		min. Earth dist.	2114 Apr 07 13:38	16° \mathring{U} 31'44	29.29951 AU
opposition	2106 Sep 18 05:59	0° \mathring{U}		direct	2114 Jun 26 16:52	15° \mathring{U} 08'18	
min. Earth dist.	2106 Sep 23 13:37	0° \mathring{U} 11'51	1°15'04	max. Earth dist.	2114 Oct 10 06:29	17° \mathring{U} 37'06	31.29944 AU
maximum elongation	2106 Sep 23 13:37	0° \mathring{U} 11'51	1°15'04	conjunction	2114 Oct 11 06:40	17° \mathring{U} 39'21	1°32'19
retrograde	2107 Jan 04 02:59	2° \mathring{U} 38'42		minimum elong	2114 Oct 11 06:40	17° \mathring{U} 39'21	1°32'20
opposition	2107 Mar 22 12:38	1° \mathring{U} 16'34	1°21'33	retrograde	2115 Jan 21 13:35	20° \mathring{U} 05'54	
min. Earth dist.	2107 Mar 23 08:33	1° \mathring{U} 15'11	29.25829 AU	opposition	2115 Apr 09 02:50	18° \mathring{U} 44'01	1°39'28
direct	2107 May 18 21:54	30° \mathring{R} \mathring{M}		min. Earth dist.	2115 Apr 10 00:58	18° \mathring{U} 42'29	29.30132 AU
retrograde	2107 Jun 11 05:47	29° \mathring{M} 51'26		direct	2115 Jun 29 03:40	17° \mathring{U} 19'05	
opposition	2107 Jul 04 06:30	0° \mathring{U}		conjunction	2115 Oct 13 17:28	19° \mathring{U} 50'04	1°33'55
min. Earth dist.	2107 Sep 25 02:31	2° \mathring{U} 20'35	31.26160 AU	minimum elong	2115 Oct 13 17:27	19° \mathring{U} 50'04	1°33'54

max. Earth dist.	2115 Oct 12 18:18	19°♁47'54	31.30101 AU	minimum elong	2123 Oct 31 03:57	7°♃14'12	1°41'37
retrograde	2116 Jan 23 21:36	22°♁16'33		retrograde	2124 Feb 10 08:07	9°♃40'45	
opposition	2116 Apr 10 13:50	20°♁54'39	1°41'06	opposition	2124 Apr 28 07:27	8°♃18'57	1°48'44
min. Earth dist.	2116 Apr 11 11:58	20°♁53'08	29.30278 AU	min. Earth dist.	2124 Apr 29 03:53	8°♃17'34	29.33140 AU
direct	2116 Jun 30 16:20	19°♁29'43		direct	2124 Jul 18 11:35	6°♃54'23	
max. Earth dist.	2116 Oct 14 03:53	21°♁58'23	31.30257 AU				
				conjunction	2124 Nov 01 14:08	9°♃24'55	1°41'57
conjunction	2116 Oct 15 03:49	22°♁00'37	1°35'22	minimum elong	2124 Nov 01 14:08	9°♃24'55	1°41'57
minimum elong	2116 Oct 15 03:49	22°♁00'37	1°35'23	max. Earth dist.	2124 Oct 31 17:15	9°♃22'58	31.33089 AU
retrograde	2117 Jan 25 08:17	24°♁27'05		retrograde	2125 Feb 11 17:04	11°♃51'29	
opposition	2117 Apr 13 00:49	23°♁05'09	1°42'35	opposition	2125 Apr 30 19:07	10°♃29'42	1°49'00
min. Earth dist.	2117 Apr 13 22:13	23°♁03'41	29.30472 AU	min. Earth dist.	2125 May 01 15:38	10°♃28'18	29.33236 AU
direct	2117 Jul 03 02:30	21°♁40'13		direct	2125 Jul 21 01:07	9°♃05'09	
				max. Earth dist.	2125 Nov 03 02:19	11°♃33'34	31.33116 AU
conjunction	2117 Oct 17 14:21	24°♁11'03	1°36'41				
minimum elong	2117 Oct 17 14:21	24°♁11'03	1°36'41	conjunction	2125 Nov 04 00:14	11°♃35'37	1°42'07
max. Earth dist.	2117 Oct 16 15:49	24°♁08'57	31.30481 AU	minimum elong	2125 Nov 04 00:14	11°♃35'37	1°42'07
retrograde	2118 Jan 27 16:01	26°♁37'29		retrograde	2126 Feb 14 04:10	14°♃02'11	
opposition	2118 Apr 15 11:49	25°♁15'33	1°43'55	opposition	2126 May 03 06:33	12°♃40'22	1°49'07
min. Earth dist.	2118 Apr 16 09:36	25°♁14'04	29.30746 AU	min. Earth dist.	2126 May 04 02:33	12°♃39'00	29.33197 AU
direct	2118 Jul 05 14:10	23°♁50'39		direct	2126 Jul 23 12:04	11°♃15'50	
max. Earth dist.	2118 Oct 19 01:32	26°♁19'16	31.30813 AU				
				conjunction	2126 Nov 06 10:26	13°♃46'13	1°42'09
conjunction	2118 Oct 20 00:40	26°♁21'25	1°37'52	minimum elong	2126 Nov 06 10:26	13°♃46'13	1°42'10
minimum elong	2118 Oct 20 00:40	26°♁21'25	1°37'53	max. Earth dist.	2126 Nov 05 13:35	13°♃44'16	31.33004 AU
retrograde	2119 Jan 30 02:52	28°♁47'51			2126 Dec 10 18:17	15°♃	
opposition	2119 Apr 17 22:49	27°♁25'56	1°45'06	retrograde	2127 Feb 16 12:05	16°♃12'49	
min. Earth dist.	2119 Apr 18 19:20	27°♁24'32	29.31126 AU		2127 Apr 30 05:04	15°♃	
direct	2119 Jul 08 01:01	26°♁01'04		opposition	2127 May 05 18:18	14°♃50'57	1°49'04
				min. Earth dist.	2127 May 06 14:56	14°♃49'33	29.33020 AU
conjunction	2119 Oct 22 11:03	28°♁31'49	1°38'54	direct	2127 Jul 26 00:15	13°♃26'26	
minimum elong	2119 Oct 22 11:02	28°♁31'49	1°38'54		2127 Oct 13 22:44	15°♃	
max. Earth dist.	2119 Oct 21 13:03	28°♁29'46	31.31231 AU				
	2119 Dec 03 13:43	0°♃		conjunction	2127 Nov 08 20:16	15°♃56'43	1°42'02
retrograde	2120 Feb 01 12:20	0°♃58'16		minimum elong	2127 Nov 08 20:16	15°♃56'43	1°42'02
	2120 Apr 04 19:52	30°♃♁		max. Earth dist.	2127 Nov 07 22:51	15°♃54'42	31.32787 AU
opposition	2120 Apr 19 10:02	29°♁36'22	1°46'08	retrograde	2128 Feb 18 22:35	18°♃23'19	
min. Earth dist.	2120 Apr 20 07:17	29°♁34'55	29.31581 AU	opposition	2128 May 07 05:55	17°♃01'25	1°48'52
direct	2120 Jul 09 10:49	28°♁11'34		min. Earth dist.	2128 May 08 01:19	17°♃00'05	29.32766 AU
	2120 Oct 04 17:58	0°♃		direct	2128 Jul 27 11:22	15°♃36'53	
				max. Earth dist.	2128 Nov 09 09:50	18°♃05'10	31.32511 AU
conjunction	2120 Oct 23 21:17	0°♃42'17	1°39'48				
minimum elong	2120 Oct 23 21:17	0°♃42'16	1°39'49	conjunction	2128 Nov 10 06:08	18°♃07'05	1°41'47
max. Earth dist.	2120 Oct 22 23:19	0°♃40'13	31.31716 AU	minimum elong	2128 Nov 10 06:08	18°♃07'05	1°41'48
retrograde	2121 Feb 02 23:44	3°♃08'45		retrograde	2129 Feb 20 07:58	20°♃33'42	
opposition	2121 Apr 21 21:12	1°♃46'54	1°47'01	opposition	2129 May 09 17:42	19°♃11'45	1°48'31
min. Earth dist.	2121 Apr 22 17:13	1°♃45'32	29.32069 AU	min. Earth dist.	2129 May 10 13:41	19°♃10'23	29.32495 AU
direct	2121 Jul 11 23:42	0°♃22'10		direct	2129 Jul 29 21:27	17°♃47'13	
max. Earth dist.	2121 Oct 25 09:40	2°♃50'48	31.32190 AU				
				conjunction	2129 Nov 12 15:44	20°♃17'19	1°41'23
conjunction	2121 Oct 26 07:26	2°♃52'50	1°40'34	minimum elong	2129 Nov 12 15:44	20°♃17'19	1°41'22
minimum elong	2121 Oct 26 07:26	2°♃52'50	1°40'33	max. Earth dist.	2129 Nov 11 19:53	20°♃15'28	31.32260 AU
retrograde	2122 Feb 05 11:23	5°♃19'21		retrograde	2130 Feb 22 18:52	22°♃43'59	
opposition	2122 Apr 24 08:34	3°♃57'31	1°47'45	opposition	2130 May 12 05:22	21°♃21'59	1°48'01
min. Earth dist.	2122 Apr 25 05:18	3°♃56'06	29.32528 AU	min. Earth dist.	2130 May 12 23:40	21°♃20'45	29.32262 AU
direct	2122 Jul 14 11:16	2°♃32'51		direct	2130 Aug 01 10:21	19°♃57'29	
				max. Earth dist.	2130 Nov 14 06:01	22°♃25'43	31.32058 AU
conjunction	2122 Oct 28 17:43	5°♃03'29	1°41'10				
minimum elong	2122 Oct 28 17:43	5°♃03'29	1°41'10	conjunction	2130 Nov 15 01:23	22°♃27'31	1°40'50
max. Earth dist.	2122 Oct 27 20:25	5°♃01'30	31.32610 AU	minimum elong	2130 Nov 15 01:23	22°♃27'31	1°40'50
retrograde	2123 Feb 07 21:31	7°♃30'01		retrograde	2131 Feb 25 06:27	24°♃54'15	
opposition	2123 Apr 26 19:52	6°♃08'13	1°48'19	opposition	2131 May 14 17:07	23°♃32'13	1°47'21
min. Earth dist.	2123 Apr 27 16:03	6°♃06'50	29.32890 AU	min. Earth dist.	2131 May 15 11:31	23°♃30'59	29.32109 AU
direct	2123 Jul 17 00:41	4°♃43'36		direct	2131 Aug 03 21:20	22°♃07'46	
max. Earth dist.	2123 Oct 30 05:58	7°♃12'09	31.32914 AU				
				conjunction	2131 Nov 17 11:02	24°♃37'46	1°40'08
conjunction	2123 Oct 31 03:57	7°♃14'12	1°41'38	minimum elong	2131 Nov 17 11:02	24°♃37'46	1°40'08

max. Earth dist.	2131 Nov 16 16:54	24° \mathbb{M} 36'04	31.31955 AU	max. Earth dist.	2139 Dec 04 00:39	12° \mathbb{Z} 02'32	31.29801 AU
retrograde	2132 Feb 27 16:44	27° \mathbb{M} 04'33		retrograde	2140 Mar 16 05:31	14° \mathbb{Z} 31'27	
opposition	2132 May 16 05:01	25° \mathbb{M} 42'33	1°46'33	opposition	2140 Jun 03 06:36	13° \mathbb{Z} 09'16	1°34'38
min. Earth dist.	2132 May 16 22:08	25° \mathbb{M} 41'23	29.32029 AU	min. Earth dist.	2140 Jun 03 20:45	13° \mathbb{Z} 08'19	29.29509 AU
direct	2132 Aug 05 10:10	24° \mathbb{M} 18'09		direct	2140 Aug 23 05:32	11° \mathbb{Z} 45'14	
				max. Earth dist.	2140 Dec 05 11:20	14° \mathbb{Z} 13'25	31.29039 AU
conjunction	2132 Nov 18 20:26	26° \mathbb{M} 48'07	1°39'18				
minimum elong	2132 Nov 18 20:26	26° \mathbb{M} 48'07	1°39'19	conjunction	2140 Dec 06 00:50	14° \mathbb{Z} 14'42	1°27'36
max. Earth dist.	2132 Nov 18 02:16	26° \mathbb{M} 46'24	31.31910 AU	minimum elong	2140 Dec 06 00:51	14° \mathbb{Z} 14'42	1°27'37
retrograde	2133 Mar 01 04:00	29° \mathbb{M} 15'00		retrograde	2141 Mar 18 15:36	16° \mathbb{Z} 42'17	
opposition	2133 May 18 16:58	27° \mathbb{M} 53'00	1°45'34	opposition	2141 Jun 05 18:58	15° \mathbb{Z} 20'00	1°32'31
min. Earth dist.	2133 May 19 09:43	27° \mathbb{M} 51'52	29.32007 AU	min. Earth dist.	2141 Jun 06 07:54	15° \mathbb{Z} 19'08	29.28713 AU
direct	2133 Aug 07 20:50	26° \mathbb{M} 28'41		direct	2141 Aug 25 18:19	13° \mathbb{Z} 55'57	
conjunction	2133 Nov 21 06:06	28° \mathbb{M} 58'37	1°38'19	conjunction	2141 Dec 08 10:06	16° \mathbb{Z} 25'18	1°25'34
minimum elong	2133 Nov 21 06:06	28° \mathbb{M} 58'37	1°38'19	minimum elong	2141 Dec 08 10:06	16° \mathbb{Z} 25'18	1°25'33
max. Earth dist.	2133 Nov 20 13:35	28° \mathbb{M} 57'04	31.31890 AU	max. Earth dist.	2141 Dec 07 20:31	16° \mathbb{Z} 24'02	31.28248 AU
	2133 Dec 19 06:58	0° \mathbb{Z}		retrograde	2142 Mar 21 03:21	18° \mathbb{Z} 52'58	
retrograde	2134 Mar 03 13:37	1° \mathbb{Z} 25'36		opposition	2142 Jun 08 07:13	17° \mathbb{Z} 30'36	1°30'16
opposition	2134 May 21 04:51	0° \mathbb{Z} 03'37	1°44'27	min. Earth dist.	2142 Jun 08 19:35	17° \mathbb{Z} 29'45	29.27945 AU
min. Earth dist.	2134 May 21 21:19	0° \mathbb{Z} 02'30	29.31966 AU	direct	2142 Aug 28 05:39	16° \mathbb{Z} 06'32	
	2134 May 23 10:18	30° \mathbb{R} \mathbb{M}					
direct	2134 Aug 10 10:16	28° \mathbb{M} 39'24		conjunction	2142 Dec 10 19:29	18° \mathbb{Z} 35'48	1°23'24
	2134 Oct 22 16:19	0° \mathbb{Z}		minimum elong	2142 Dec 10 19:30	18° \mathbb{Z} 35'48	1°23'24
				max. Earth dist.	2142 Dec 10 07:55	18° \mathbb{Z} 34'43	31.27508 AU
conjunction	2134 Nov 23 15:38	1° \mathbb{Z} 09'18	1°37'12	retrograde	2143 Mar 23 13:32	21° \mathbb{Z} 03'32	
minimum elong	2134 Nov 23 15:38	1° \mathbb{Z} 09'18	1°37'12	opposition	2143 Jun 10 19:42	19° \mathbb{Z} 41'06	1°27'54
max. Earth dist.	2134 Nov 22 22:32	1° \mathbb{Z} 07'42	31.31834 AU	min. Earth dist.	2143 Jun 11 07:13	19° \mathbb{Z} 40'19	29.27237 AU
retrograde	2135 Mar 06 01:41	3° \mathbb{Z} 36'23		direct	2143 Aug 30 19:24	18° \mathbb{Z} 17'03	
opposition	2135 May 23 16:56	2° \mathbb{Z} 14'25	1°43'10				
min. Earth dist.	2135 May 24 08:26	2° \mathbb{Z} 13'22	29.31876 AU	conjunction	2143 Dec 13 04:33	20° \mathbb{Z} 46'15	1°21'07
direct	2135 Aug 12 21:14	0° \mathbb{Z} 50'15		minimum elong	2143 Dec 13 04:33	20° \mathbb{Z} 46'15	1°21'06
max. Earth dist.	2135 Nov 25 09:33	3° \mathbb{Z} 18'39	31.31692 AU	max. Earth dist.	2143 Dec 12 16:58	20° \mathbb{Z} 45'09	31.26859 AU
				retrograde	2144 Mar 25 01:28	23° \mathbb{Z} 14'05	
conjunction	2135 Nov 26 01:14	3° \mathbb{Z} 20'07	1°35'56	opposition	2144 Jun 12 08:09	21° \mathbb{Z} 51'35	1°25'24
minimum elong	2135 Nov 26 01:15	3° \mathbb{Z} 20'07	1°35'55	min. Earth dist.	2144 Jun 12 18:02	21° \mathbb{Z} 50'55	29.26638 AU
retrograde	2136 Mar 07 09:54	5° \mathbb{Z} 47'19		direct	2144 Sep 01 06:26	20° \mathbb{Z} 27'35	
opposition	2136 May 25 05:17	4° \mathbb{Z} 25'21	1°41'45				
min. Earth dist.	2136 May 25 21:09	4° \mathbb{Z} 24'16	29.31676 AU	conjunction	2144 Dec 14 13:53	22° \mathbb{Z} 56'44	1°18'43
direct	2136 Aug 14 09:16	3° \mathbb{Z} 01'15		minimum elong	2144 Dec 14 13:53	22° \mathbb{Z} 56'44	1°18'44
				max. Earth dist.	2144 Dec 14 04:10	22° \mathbb{Z} 55'49	31.26304 AU
conjunction	2136 Nov 27 10:48	5° \mathbb{Z} 31'03	1°34'32	retrograde	2145 Mar 27 10:22	25° \mathbb{Z} 24'41	
minimum elong	2136 Nov 27 10:48	5° \mathbb{Z} 31'03	1°34'32	opposition	2145 Jun 14 20:38	24° \mathbb{Z} 02'10	1°22'46
max. Earth dist.	2136 Nov 26 18:42	5° \mathbb{Z} 29'33	31.31440 AU	min. Earth dist.	2145 Jun 15 06:21	24° \mathbb{Z} 01'30	29.26118 AU
retrograde	2137 Mar 09 20:49	7° \mathbb{Z} 58'21		direct	2145 Sep 03 18:30	22° \mathbb{Z} 38'13	
opposition	2137 May 27 17:27	6° \mathbb{Z} 36'21	1°40'11				
min. Earth dist.	2137 May 28 08:02	6° \mathbb{Z} 35'22	29.31353 AU	conjunction	2145 Dec 16 23:01	25° \mathbb{Z} 07'18	1°16'11
direct	2137 Aug 16 20:05	5° \mathbb{Z} 12'18		minimum elong	2145 Dec 16 23:01	25° \mathbb{Z} 07'18	1°16'11
				max. Earth dist.	2145 Dec 16 13:32	25° \mathbb{Z} 06'25	31.25827 AU
conjunction	2137 Nov 29 20:26	7° \mathbb{Z} 42'03	1°32'59	retrograde	2146 Mar 29 21:43	27° \mathbb{Z} 35'24	
minimum elong	2137 Nov 29 20:26	7° \mathbb{Z} 42'03	1°32'59	opposition	2146 Jun 17 09:04	26° \mathbb{Z} 12'52	1°20'01
max. Earth dist.	2137 Nov 29 05:09	7° \mathbb{Z} 40'36	31.31037 AU	min. Earth dist.	2146 Jun 17 16:59	26° \mathbb{Z} 12'20	29.25648 AU
retrograde	2138 Mar 12 06:47	10° \mathbb{Z} 09'26		direct	2146 Sep 06 05:37	24° \mathbb{Z} 48'58	
opposition	2138 May 30 05:51	8° \mathbb{Z} 47'23	1°38'28				
min. Earth dist.	2138 May 30 21:11	8° \mathbb{Z} 46'21	29.30873 AU	conjunction	2146 Dec 19 08:15	27° \mathbb{Z} 18'02	1°13'33
direct	2138 Aug 19 06:09	7° \mathbb{Z} 23'22		minimum elong	2146 Dec 19 08:15	27° \mathbb{Z} 18'02	1°13'34
				max. Earth dist.	2146 Dec 19 00:00	27° \mathbb{Z} 17'16	31.25358 AU
conjunction	2138 Dec 02 05:59	9° \mathbb{Z} 53'01	1°31'19	retrograde	2147 Apr 01 08:10	29° \mathbb{Z} 46'17	
minimum elong	2138 Dec 02 05:59	9° \mathbb{Z} 53'01	1°31'20	opposition	2147 Jun 19 21:48	28° \mathbb{Z} 23'44	1°17'08
max. Earth dist.	2138 Dec 01 15:00	9° \mathbb{Z} 51'37	31.30490 AU	min. Earth dist.	2147 Jun 20 06:01	28° \mathbb{Z} 23'11	29.25175 AU
retrograde	2139 Mar 14 17:41	12° \mathbb{Z} 20'29		direct	2147 Sep 08 15:47	26° \mathbb{Z} 59'56	
opposition	2139 Jun 01 18:06	10° \mathbb{Z} 58'23	1°36'37				
min. Earth dist.	2139 Jun 02 08:01	10° \mathbb{Z} 57'26	29.30242 AU	conjunction	2147 Dec 21 17:34	29° \mathbb{Z} 28'57	1°10'49
direct	2139 Aug 21 19:06	9° \mathbb{Z} 34'21		minimum elong	2147 Dec 21 17:34	29° \mathbb{Z} 28'57	1°10'48
				max. Earth dist.	2147 Dec 21 10:10	29° \mathbb{Z} 28'15	31.24882 AU
conjunction	2139 Dec 04 15:30	12° \mathbb{Z} 03'55	1°29'32				
minimum elong	2139 Dec 04 15:30	12° \mathbb{Z} 03'56	1°29'31	retrograde	2148 Jan 04 12:14	0° \mathbb{Z}	
					2148 Apr 02 19:34	1° \mathbb{Z} 57'21	

opposition	2148 Jun 21 10:29	0°☾34'47	1°14'09	min. Earth dist.	2156 Jul 09 18:43	18°☾05'44	29.17587 AU
min. Earth dist.	2148 Jun 21 16:58	0°☾34'21	29.24662 AU	direct	2156 Sep 28 00:56	16°☾42'14	
	2148 Jul 13 13:32	30°☾					
direct	2148 Sep 10 03:40	29°☾11'03		conjunction	2157 Jan 09 05:54	19°☾10'45	0°42'04
	2148 Nov 04 16:54	0°☾		minimum elong	2157 Jan 09 05:54	19°☾10'45	0°42'05
				max. Earth dist.	2157 Jan 09 05:51	19°☾10'45	31.17172 AU
conjunction	2148 Dec 23 02:49	1°☾40'02	1°07'58	retrograde	2157 Apr 23 02:35	21°☾40'24	
minimum elong	2148 Dec 23 02:49	1°☾40'02	1°07'58	opposition	2157 Jul 12 06:28	20°☾17'14	0°43'02
max. Earth dist.	2148 Dec 22 19:39	1°☾39'22	31.24330 AU	min. Earth dist.	2157 Jul 12 05:26	20°☾17'18	29.16809 AU
retrograde	2149 Apr 05 08:03	4°☾08'37		direct	2157 Sep 30 12:38	18°☾53'42	
opposition	2149 Jun 23 23:23	2°☾46'01	1°11'03				
min. Earth dist.	2149 Jun 24 06:02	2°☾45'34	29.24068 AU	conjunction	2158 Jan 11 15:16	21°☾22'11	0°38'30
direct	2149 Sep 12 13:09	1°☾22'20		minimum elong	2158 Jan 11 15:16	21°☾22'11	0°38'30
				max. Earth dist.	2158 Jan 11 15:38	21°☾22'13	31.16437 AU
conjunction	2149 Dec 25 12:20	3°☾51'17	1°05'02	retrograde	2158 Apr 25 14:33	23°☾52'00	
minimum elong	2149 Dec 25 12:21	3°☾51'17	1°05'01	opposition	2158 Jul 14 19:23	22°☾28'48	0°39'12
max. Earth dist.	2149 Dec 25 06:26	3°☾50'44	31.23682 AU	min. Earth dist.	2158 Jul 14 18:10	22°☾28'53	29.16115 AU
retrograde	2150 Apr 07 19:00	6°☾20'01		direct	2158 Oct 02 21:31	21°☾05'19	
opposition	2150 Jun 26 12:04	4°☾57'23	1°07'52				
min. Earth dist.	2150 Jun 26 17:38	4°☾57'00	29.23344 AU	conjunction	2159 Jan 14 00:48	23°☾33'47	0°34'52
direct	2150 Sep 15 01:11	3°☾33'44		minimum elong	2159 Jan 14 00:48	23°☾33'47	0°34'53
				max. Earth dist.	2159 Jan 14 03:00	23°☾33'59	31.15776 AU
conjunction	2150 Dec 27 21:46	6°☾02'39	1°01'59	retrograde	2159 Apr 28 02:01	26°☾03'46	
minimum elong	2150 Dec 27 21:47	6°☾02'39	1°02'00	opposition	2159 Jul 17 08:26	24°☾40'32	0°35'17
max. Earth dist.	2150 Dec 27 15:28	6°☾02'04	31.22900 AU	min. Earth dist.	2159 Jul 17 05:40	24°☾40'43	29.15460 AU
retrograde	2151 Apr 10 08:09	8°☾31'31		direct	2159 Oct 05 09:13	23°☾17'07	
opposition	2151 Jun 29 01:04	7°☾08'50	1°04'34				
min. Earth dist.	2151 Jun 29 06:15	7°☾08'29	29.22500 AU	conjunction	2160 Jan 16 10:10	25°☾45'32	0°31'11
direct	2151 Sep 17 12:17	5°☾45'13		minimum elong	2160 Jan 16 10:10	25°☾45'32	0°31'11
				max. Earth dist.	2160 Jan 16 12:20	25°☾45'44	31.15134 AU
conjunction	2151 Dec 30 07:14	8°☾14'05	0°58'52	retrograde	2160 Apr 29 15:50	28°☾15'43	
minimum elong	2151 Dec 30 07:14	8°☾14'05	0°58'52	opposition	2160 Jul 18 21:36	26°☾52'26	0°31'19
max. Earth dist.	2151 Dec 30 02:39	8°☾13'39	31.21994 AU	min. Earth dist.	2160 Jul 18 18:17	26°☾52'40	29.14817 AU
retrograde	2152 Apr 11 19:35	10°☾43'04		direct	2160 Oct 06 19:28	25°☾29'05	
opposition	2152 Jun 30 14:04	9°☾20'18	1°01'11				
min. Earth dist.	2152 Jun 30 18:45	9°☾19'59	29.21528 AU	conjunction	2161 Jan 17 19:55	27°☾57'29	0°27'27
direct	2152 Sep 19 01:58	7°☾56'42		minimum elong	2161 Jan 17 19:56	27°☾57'29	0°27'28
				max. Earth dist.	2161 Jan 17 23:56	27°☾57'52	31.14467 AU
conjunction	2152 Dec 31 16:35	10°☾25'29	0°55'39		2161 Mar 21 19:02	0°☾	
minimum elong	2152 Dec 31 16:36	10°☾25'29	0°55'40	retrograde	2161 May 02 04:00	0°☾27'50	
max. Earth dist.	2152 Dec 31 11:43	10°☾25'02	31.20992 AU		2161 Jun 14 01:19	30°☾	
retrograde	2153 Apr 14 08:09	12°☾54'36		opposition	2161 Jul 21 10:37	29°☾04'31	0°27'18
opposition	2153 Jul 03 02:49	11°☾31'44	0°57'43	min. Earth dist.	2161 Jul 21 06:49	29°☾04'46	29.14115 AU
min. Earth dist.	2153 Jul 03 06:14	11°☾31'30	29.20497 AU	direct	2161 Oct 09 07:41	27°☾41'12	
direct	2153 Sep 21 12:58	10°☾08'07			2162 Jan 16 00:30	0°☾	
conjunction	2154 Jan 03 02:00	12°☾36'50	0°52'22	conjunction	2162 Jan 20 05:39	0°☾09'36	0°23'40
minimum elong	2154 Jan 03 02:01	12°☾36'50	0°52'22	minimum elong	2162 Jan 20 05:39	0°☾09'36	0°23'40
max. Earth dist.	2154 Jan 02 22:47	12°☾36'32	31.19943 AU	max. Earth dist.	2162 Jan 20 09:17	0°☾09'56	31.13731 AU
retrograde	2154 Apr 16 17:31	15°☾06'04		retrograde	2162 May 04 17:35	2°☾40'06	
opposition	2154 Jul 05 15:46	13°☾43'07	0°54'10	opposition	2162 Jul 23 23:47	1°☾16'45	0°23'14
min. Earth dist.	2154 Jul 05 19:01	13°☾42'53	29.19449 AU	min. Earth dist.	2162 Jul 23 18:53	1°☾17'04	29.13327 AU
direct	2154 Sep 24 01:59	12°☾19'30			2162 Sep 21 18:43	30°☾	
				direct	2162 Oct 11 18:14	29°☾53'28	
conjunction	2155 Jan 05 11:13	14°☾48'08	0°49'00		2162 Oct 31 12:46	0°☾	
minimum elong	2155 Jan 05 11:13	14°☾48'08	0°49'00				
max. Earth dist.	2155 Jan 05 08:30	14°☾47'53	31.18927 AU	conjunction	2163 Jan 22 15:29	2°☾21'50	0°19'52
retrograde	2155 Apr 19 05:21	17°☾17'29		minimum elong	2163 Jan 22 15:29	2°☾21'50	0°19'52
opposition	2155 Jul 08 04:36	15°☾54'27	0°50'32	max. Earth dist.	2163 Jan 22 20:24	2°☾22'17	31.12871 AU
min. Earth dist.	2155 Jul 08 05:47	15°☾54'22	29.18466 AU	retrograde	2163 May 07 05:02	4°☾52'30	
direct	2155 Sep 26 14:09	14°☾30'51		opposition	2163 Jul 26 13:09	3°☾29'05	0°19'08
				min. Earth dist.	2163 Jul 26 08:24	3°☾29'24	29.12402 AU
conjunction	2156 Jan 07 20:34	16°☾59'25	0°45'34	direct	2163 Oct 14 07:20	2°☾05'50	
minimum elong	2156 Jan 07 20:34	16°☾59'25	0°45'34				
max. Earth dist.	2156 Jan 07 19:11	16°☾59'17	31.17988 AU	conjunction	2164 Jan 25 01:24	4°☾34'09	0°16'01
retrograde	2156 Apr 20 15:52	19°☾28'55		minimum elong	2164 Jan 25 01:24	4°☾34'09	0°16'01
opposition	2156 Jul 09 17:38	18°☾05'48	0°46'49	behind sun begin	2164 Jan 25 00:17	4°☾34'03	

behind sun end	2164 Jan 25 02:32	4°34'15		opposition	2170 Aug 11 09:20	18°55'44	0°-9'-59
max. Earth dist.	2164 Jan 25 06:25	4°34'37	31.11892 AU	min. Earth dist.	2170 Aug 10 22:28	18°56'28	29.04768 AU
retrograde	2164 May 08 18:34	7°04'58		direct	2170 Oct 29 14:46	17°32'31	
opposition	2164 Jul 28 02:21	5°41'27	0°15'01				
min. Earth dist.	2164 Jul 27 20:04	5°41'53	29.11353 AU	conjunction	2171 Feb 08 23:05	20°00'37	0°-11'-18
direct	2164 Oct 15 19:51	4°18'13		minimum elong	2171 Feb 08 23:05	20°00'37	0°11'18
				behind sun begin	2171 Feb 08 18:20	20°00'11	
conjunction	2165 Jan 26 11:20	6°46'29	0°12'10	behind sun end	2171 Feb 09 03:50	20°01'03	
minimum elong	2165 Jan 26 11:20	6°46'29	0°12'10	max. Earth dist.	2171 Feb 09 10:02	20°01'38	31.04344 AU
behind sun begin	2165 Jan 26 06:57	6°46'05		retrograde	2171 May 25 08:03	22°32'31	
behind sun end	2165 Jan 26 15:43	6°46'53		opposition	2171 Aug 13 22:32	21°08'28	0°-14'-8
max. Earth dist.	2165 Jan 26 17:01	6°47'01	31.10777 AU	min. Earth dist.	2171 Aug 13 10:17	21°09'18	29.03948 AU
retrograde	2165 May 11 05:37	9°17'26		direct	2171 Nov 01 00:40	19°45'18	
opposition	2165 Jul 30 15:41	7°53'50	0°10'52				
min. Earth dist.	2165 Jul 30 09:53	7°54'14	29.10190 AU	conjunction	2172 Feb 11 09:22	22°13'25	0°-15'-10
direct	2165 Oct 18 07:21	6°30'35		minimum elong	2172 Feb 11 09:22	22°13'25	0°15'12
				behind sun begin	2172 Feb 11 07:03	22°13'13	
conjunction	2166 Jan 28 21:16	8°58'47	0°08'17	behind sun end	2172 Feb 11 11:41	22°13'38	
minimum elong	2166 Jan 28 21:17	8°58'47	0°08'17	max. Earth dist.	2172 Feb 11 21:50	22°14'36	31.03542 AU
behind sun begin	2166 Jan 28 15:36	8°58'16		retrograde	2172 May 26 20:50	24°45'31	
behind sun end	2166 Jan 29 02:57	8°59'18		opposition	2172 Aug 15 11:44	23°21'26	0°-18'-17
max. Earth dist.	2166 Jan 29 04:00	8°59'24	31.09586 AU	min. Earth dist.	2172 Aug 14 23:27	23°22'16	29.03167 AU
retrograde	2166 May 13 16:38	11°29'52		direct	2172 Nov 02 13:24	21°58'19	
opposition	2166 Aug 02 04:43	10°06'10	0°06'42				
min. Earth dist.	2166 Aug 01 21:10	10°06'40	29.08975 AU	conjunction	2173 Feb 12 19:42	24°26'27	0°-19'-2
direct	2166 Oct 20 19:46	8°42'53		minimum elong	2173 Feb 12 19:42	24°26'27	0°19'03
				max. Earth dist.	2173 Feb 13 08:31	24°27'40	31.02776 AU
conjunction	2167 Jan 31 07:09	11°11'03	0°04'25	retrograde	2173 May 29 11:55	26°58'44	
minimum elong	2167 Jan 31 07:08	11°11'03	0°04'25	min. Earth dist.	2173 Aug 17 11:02	25°35'33	29.02391 AU
behind sun begin	2167 Jan 31 00:51	11°10'29		opposition	2173 Aug 18 00:52	25°34'37	0°-22'-25
behind sun end	2167 Jan 31 13:26	11°11'37		direct	2173 Nov 05 01:41	24°11'33	
max. Earth dist.	2167 Jan 31 14:05	11°11'41	31.08373 AU				
retrograde	2167 May 16 04:37	13°42'16		conjunction	2174 Feb 15 06:09	26°39'43	0°-22'-53
opposition	2167 Aug 04 18:02	12°18'28	0°02'32	minimum elong	2174 Feb 15 06:09	26°39'43	0°22'54
min. Earth dist.	2167 Aug 04 10:21	12°18'59	29.07793 AU	max. Earth dist.	2174 Feb 15 19:34	26°40'59	31.01967 AU
direct	2167 Oct 23 05:26	10°55'11		retrograde	2174 May 31 23:44	29°12'10	
				opposition	2174 Aug 20 14:10	27°48'01	0°-26'-30
conjunction	2168 Feb 02 17:04	13°23'18	0°00'27	min. Earth dist.	2174 Aug 20 00:56	27°48'55	29.01562 AU
minimum elong	2168 Feb 02 17:04	13°23'18	0°00'27	direct	2174 Nov 07 12:55	26°24'59	
behind sun begin	2168 Feb 02 10:42	13°22'43					
behind sun end	2168 Feb 02 23:26	13°23'52		conjunction	2175 Feb 17 16:51	28°53'09	0°-26'-41
max. Earth dist.	2168 Feb 03 01:56	13°24'07	31.07223 AU	minimum elong	2175 Feb 17 16:51	28°53'09	0°26'42
desc. node	2168 Mar 14 16:59	14°50'53		max. Earth dist.	2175 Feb 18 07:09	28°54'30	31.01102 AU
	2168 Mar 19 18:20	15°			2175 Mar 20 00:52	0°	
retrograde	2168 May 17 16:05	15°54'40		retrograde	2175 Jun 03 12:09	1°25'46	
	2168 Jul 19 00:10	15°		opposition	2175 Aug 23 03:24	0°01'34	0°-30'-33
opposition	2168 Aug 06 07:10	14°30'47	0°-1'-38	min. Earth dist.	2175 Aug 22 12:43	0°02'34	29.00645 AU
min. Earth dist.	2168 Aug 05 21:49	14°31'25	29.06680 AU		2175 Aug 24 02:23	30°	
direct	2168 Oct 24 17:28	13°07'30		direct	2175 Nov 10 01:39	28°38'33	
	2169 Jan 19 08:41	15°			2176 Jan 20 19:53	0°	
conjunction	2169 Feb 04 03:02	15°35'36	0°-3'-32	conjunction	2176 Feb 20 03:30	1°06'43	0°-30'-27
minimum elong	2169 Feb 04 03:01	15°35'36	0°03'32	minimum elong	2176 Feb 20 03:29	1°06'43	0°30'28
behind sun begin	2169 Feb 03 20:40	15°35'01		max. Earth dist.	2176 Feb 20 17:26	1°08'03	31.00122 AU
behind sun end	2169 Feb 04 09:22	15°36'10		retrograde	2176 Jun 05 01:09	3°39'29	
max. Earth dist.	2169 Feb 04 11:51	15°36'25	31.06161 AU	opposition	2176 Aug 24 16:48	2°15'13	0°-34'-34
retrograde	2169 May 20 05:41	18°07'08		min. Earth dist.	2176 Aug 24 02:37	2°16'11	28.99614 AU
opposition	2169 Aug 08 20:11	16°43'11	0°-5'-48	direct	2176 Nov 11 12:13	0°52'12	
min. Earth dist.	2169 Aug 08 10:11	16°43'52	29.05680 AU				
direct	2169 Oct 27 03:15	15°19'56		conjunction	2177 Feb 21 14:29	3°20'20	0°-34'-11
				minimum elong	2177 Feb 21 14:29	3°20'20	0°34'11
conjunction	2170 Feb 06 13:10	17°48'01	0°-7'-25	max. Earth dist.	2177 Feb 22 05:39	3°21'46	30.99029 AU
minimum elong	2170 Feb 06 13:10	17°48'01	0°07'26	retrograde	2177 Jun 07 12:33	5°53'13	
behind sun begin	2170 Feb 06 07:18	17°47'29		opposition	2177 Aug 27 05:48	4°28'51	0°-38'-32
behind sun end	2170 Feb 06 19:02	17°48'33		min. Earth dist.	2177 Aug 26 14:37	4°29'54	28.98461 AU
max. Earth dist.	2170 Feb 07 00:02	17°49'02	31.05205 AU	direct	2177 Nov 14 00:55	3°05'48	
retrograde	2170 May 22 17:58	20°19'44					

conjunction	2178 Feb 24 01:14	5° ✕ 33'54	0°-37'-51	retrograde	2186 Jun 28 10:15	25° ✕ 56'05	
minimum elong	2178 Feb 24 01:14	5° ✕ 33'54	0°37'52	min. Earth dist.	2186 Sep 16 06:02	24° ✕ 32'35	28.90530 AU
max. Earth dist.	2178 Feb 24 15:50	5° ✕ 35'17	30.97840 AU	opposition	2186 Sep 17 02:39	24° ✕ 31'09	-1°-10'-56
retrograde	2178 Jun 10 01:15	8° ✕ 06'54		direct	2186 Dec 04 07:44	23° ✕ 08'05	
opposition	2178 Aug 29 19:01	6° ✕ 42'25	0°-42'-26				
min. Earth dist.	2178 Aug 29 03:43	6° ✕ 43'28	28.97256 AU	conjunction	2187 Mar 16 05:16	25° ✕ 36'18	-1°-7'-48
direct	2178 Nov 16 11:01	5° ✕ 19'19		minimum elong	2187 Mar 16 05:16	25° ✕ 36'18	1°07'48
				max. Earth dist.	2187 Mar 17 01:48	25° ✕ 38'15	30.90192 AU
conjunction	2179 Feb 26 12:02	7° ✕ 47'23	0°-41'-28	retrograde	2187 Jun 30 23:38	28° ✕ 10'27	
minimum elong	2179 Feb 26 12:02	7° ✕ 47'23	0°41'29	opposition	2187 Sep 19 15:42	26° ✕ 45'30	-1°-14'-4
max. Earth dist.	2179 Feb 27 04:24	7° ✕ 48'56	30.96621 AU	min. Earth dist.	2187 Sep 18 19:19	26° ✕ 46'54	28.89964 AU
retrograde	2179 Jun 12 12:41	10° ✕ 20'29		direct	2187 Dec 06 17:32	25° ✕ 22'27	
opposition	2179 Sep 01 08:10	8° ✕ 55'53	0°-46'-16				
min. Earth dist.	2179 Aug 31 16:15	8° ✕ 56'59	28.96049 AU	conjunction	2188 Mar 17 17:12	27° ✕ 50'43	-1°-10'-41
direct	2179 Nov 18 22:37	7° ✕ 32'44		minimum elong	2188 Mar 17 17:12	27° ✕ 50'43	1°10'42
				max. Earth dist.	2188 Mar 18 14:56	27° ✕ 52'47	30.89578 AU
conjunction	2180 Feb 28 22:52	10° ✕ 00'46	0°-45'-1		2188 May 24 02:45	0° ∇	
minimum elong	2180 Feb 28 22:51	10° ✕ 00'46	0°45'03	retrograde	2188 Jul 02 11:45	0° ∇ 25'00	
max. Earth dist.	2180 Feb 29 15:05	10° ✕ 02'18	30.95447 AU		2188 Aug 11 23:32	30° R ✕	
retrograde	2180 Jun 14 02:45	12° ✕ 33'58		min. Earth dist.	2188 Sep 20 08:08	29° ✕ 01'26	28.89308 AU
opposition	2180 Sep 02 21:05	11° ✕ 09'16	0°-50'-2	opposition	2188 Sep 21 04:32	29° ✕ 00'01	-1°-17'-7
min. Earth dist.	2180 Sep 02 04:07	11° ✕ 10'26	28.94928 AU	direct	2188 Dec 08 04:41	27° ✕ 36'58	
direct	2180 Nov 20 08:57	9° ✕ 46'05			2189 Mar 17 21:22	0° ∇	
conjunction	2181 Mar 02 09:51	12° ✕ 14'06	0°-48'-31	conjunction	2189 Mar 20 05:07	0° ∇ 05'17	-1°-13'-29
minimum elong	2181 Mar 02 09:50	12° ✕ 14'06	0°48'32	minimum elong	2189 Mar 20 05:06	0° ∇ 05'17	1°13'29
max. Earth dist.	2181 Mar 03 03:26	12° ✕ 15'46	30.94362 AU	max. Earth dist.	2189 Mar 21 01:55	0° ∇ 07'15	30.88877 AU
retrograde	2181 Jun 15 15:19	14° ✕ 47'25		retrograde	2189 Jul 05 02:11	2° ∇ 39'40	
opposition	2181 Sep 05 10:06	13° ✕ 22'37	0°-53'-44	opposition	2189 Sep 23 17:28	1° ∇ 14'38	-1°-20'-2
min. Earth dist.	2181 Sep 04 17:01	13° ✕ 23'48	28.93909 AU	min. Earth dist.	2189 Sep 22 20:43	1° ∇ 16'04	28.88563 AU
direct	2181 Nov 22 21:18	11° ✕ 59'25			2189 Nov 18 07:44	30° R ✕	
				direct	2189 Dec 10 15:08	29° ✕ 51'34	
conjunction	2182 Mar 04 20:45	14° ✕ 27'26	0°-51'-56		2190 Jan 01 17:46	0° ∇	
minimum elong	2182 Mar 04 20:45	14° ✕ 27'26	0°51'57	conjunction	2190 Mar 22 17:01	2° ∇ 19'54	-1°-16'-9
max. Earth dist.	2182 Mar 05 14:50	14° ✕ 29'09	30.93412 AU	minimum elong	2190 Mar 22 17:00	2° ∇ 19'54	1°16'11
retrograde	2182 Jun 19 05:57	17° ✕ 00'52		max. Earth dist.	2190 Mar 23 14:34	2° ∇ 21'57	30.88076 AU
opposition	2182 Sep 07 22:59	15° ✕ 36'00	0°-57'-21	retrograde	2190 Jul 07 14:34	4° ∇ 54'22	
min. Earth dist.	2182 Sep 07 04:10	15° ✕ 37'18	28.93029 AU	min. Earth dist.	2190 Sep 25 10:06	3° ∇ 30'41	28.87733 AU
direct	2182 Nov 25 09:07	14° ✕ 12'48		opposition	2190 Sep 26 06:22	3° ∇ 29'16	-1°-22'-50
				direct	2190 Dec 13 03:28	2° ∇ 06'10	
conjunction	2183 Mar 07 07:49	16° ✕ 40'51	0°-55'-17				
minimum elong	2183 Mar 07 07:49	16° ✕ 40'51	0°55'17	conjunction	2191 Mar 25 05:00	4° ∇ 34'31	-1°-18'-43
max. Earth dist.	2183 Mar 08 02:40	16° ✕ 42'38	30.92589 AU	minimum elong	2191 Mar 25 05:00	4° ∇ 34'31	1°18'44
retrograde	2183 Jun 21 18:31	19° ✕ 14'25		max. Earth dist.	2191 Mar 26 02:26	4° ∇ 36'33	30.87242 AU
opposition	2183 Sep 10 12:01	17° ✕ 49'30	-1°00'-53	retrograde	2191 Jul 10 05:05	7° ∇ 09'01	
min. Earth dist.	2183 Sep 09 17:33	17° ✕ 50'47	28.92281 AU	opposition	2191 Sep 28 19:03	5° ∇ 43'52	-1°-25'-31
direct	2183 Nov 27 20:08	16° ✕ 26'19		min. Earth dist.	2191 Sep 27 21:44	5° ∇ 45'20	28.86902 AU
				direct	2191 Dec 15 15:07	4° ∇ 20'42	
conjunction	2184 Mar 08 19:01	18° ✕ 54'23	0°-58'-32				
minimum elong	2184 Mar 08 19:01	18° ✕ 54'23	0°58'34	conjunction	2192 Mar 26 17:00	6° ∇ 49'04	-1°-21'-9
max. Earth dist.	2184 Mar 09 15:02	18° ✕ 56'17	30.91904 AU	minimum elong	2192 Mar 26 17:00	6° ∇ 49'04	1°21'11
retrograde	2184 Jun 23 08:18	21° ✕ 28'05		max. Earth dist.	2192 Mar 27 14:45	6° ∇ 51'07	30.86412 AU
min. Earth dist.	2184 Sep 11 04:50	20° ✕ 04'33	28.91642 AU	retrograde	2192 Jul 11 17:54	9° ∇ 23'38	
opposition	2184 Sep 12 00:53	20° ✕ 03'10	-1°-4'-19	min. Earth dist.	2192 Sep 29 11:13	7° ∇ 59'49	28.86111 AU
direct	2184 Nov 29 08:55	18° ✕ 40'01		opposition	2192 Sep 30 07:46	7° ∇ 58'24	-1°-28'-3
				direct	2192 Dec 17 02:27	6° ∇ 35'12	
conjunction	2185 Mar 11 06:18	21° ✕ 08'08	-1°-1'-43				
minimum elong	2185 Mar 11 06:17	21° ✕ 08'08	1°01'44	conjunction	2193 Mar 29 05:09	9° ∇ 03'34	-1°-23'-29
max. Earth dist.	2185 Mar 12 02:07	21° ✕ 10'00	30.91297 AU	minimum elong	2193 Mar 29 05:08	9° ∇ 03'34	1°23'29
retrograde	2185 Jun 25 22:08	23° ✕ 41'59		max. Earth dist.	2193 Mar 30 03:41	9° ∇ 05'42	30.85664 AU
opposition	2185 Sep 14 13:45	22° ✕ 17'02	-1°-7'-41	retrograde	2193 Jul 14 08:28	11° ∇ 38'10	
min. Earth dist.	2185 Sep 13 18:12	22° ✕ 18'23	28.91077 AU	opposition	2193 Oct 02 20:07	10° ∇ 12'53	-1°-30'-28
direct	2185 Dec 01 19:21	20° ✕ 53'56		min. Earth dist.	2193 Oct 01 22:17	10° ∇ 14'24	28.85416 AU
				direct	2193 Dec 19 16:06	8° ∇ 49'39	
conjunction	2186 Mar 13 17:50	23° ✕ 22'06	-1°-4'-48				
minimum elong	2186 Mar 13 17:50	23° ✕ 22'06	1°04'50	conjunction	2194 Mar 31 17:13	11° ∇ 18'03	-1°-25'-40
max. Earth dist.	2186 Mar 14 15:04	23° ✕ 24'07	30.90748 AU				

minimum elong	2194 Mar 31 17:13	11° Υ 18'03	1°25'41	retrograde	2202 Aug 05 08:36	1° B 52'03	
max. Earth dist.	2194 Apr 01 15:26	11° Υ 20'09	30.85024 AU	opposition	2202 Oct 24 11:52	0° B 26'42	-1°-45'-39
retrograde	2194 Jul 16 22:30	13° Υ 52'42		min. Earth dist.	2202 Oct 23 14:12	0° B 28'13	28.82995 AU
min. Earth dist.	2194 Oct 04 11:25	12° Υ 28'51	28.84857 AU		2202 Nov 09 16:00	30° R Υ	
opposition	2194 Oct 05 08:44	12° Υ 27'22	-1°-32'-45	direct	2203 Jan 09 23:50	29° Υ 03'23	
direct	2194 Dec 22 03:28	11° Υ 04'06			2203 Mar 09 16:35	0° B	
conjunction	2195 Apr 03 05:25	13° Υ 32'32	-1°-27'-44	conjunction	2203 Apr 22 11:38	1° B 32'15	-1°-39'-14
minimum elong	2195 Apr 03 05:25	13° Υ 32'32	1°27'45	minimum elong	2203 Apr 22 11:38	1° B 32'15	1°39'15
max. Earth dist.	2195 Apr 04 05:00	13° Υ 34'46	30.84533 AU	max. Earth dist.	2203 Apr 23 09:46	1° B 34'20	30.82683 AU
retrograde	2195 Jul 19 10:37	16° Υ 07'15		retrograde	2203 Aug 07 22:15	4° B 07'16	
opposition	2195 Oct 07 21:10	14° Υ 41'53	-1°-34'-53	min. Earth dist.	2203 Oct 26 03:49	2° B 43'17	28.82592 AU
min. Earth dist.	2195 Oct 06 22:45	14° Υ 43'26	28.84434 AU	opposition	2203 Oct 27 00:11	2° B 41'52	-1°-46'-34
direct	2195 Dec 24 16:08	13° Υ 18'37		direct	2204 Jan 12 11:32	1° B 18'30	
conjunction	2196 Apr 04 17:42	15° Υ 47'05	-1°-29'-40	conjunction	2204 Apr 24 00:57	3° B 47'23	-1°-40'-1
minimum elong	2196 Apr 04 17:42	15° Υ 47'05	1°29'41	minimum elong	2204 Apr 24 00:57	3° B 47'23	1°40'02
max. Earth dist.	2196 Apr 05 16:34	15° Υ 49'14	30.84179 AU	max. Earth dist.	2204 Apr 24 23:42	3° B 49'32	30.82273 AU
retrograde	2196 Jul 21 00:24	18° Υ 21'51		retrograde	2204 Aug 09 11:16	6° B 22'21	
min. Earth dist.	2196 Oct 08 11:20	16° Υ 58'01	28.84155 AU	opposition	2204 Oct 28 12:05	4° B 56'56	-1°-47'-19
opposition	2196 Oct 09 09:34	16° Υ 56'28	-1°-36'-53	min. Earth dist.	2204 Oct 27 15:13	4° B 58'24	28.82182 AU
direct	2196 Dec 26 02:33	15° Υ 33'13		direct	2205 Jan 14 00:44	3° B 33'30	
conjunction	2197 Apr 07 06:15	18° Υ 01'44	-1°-31'-28	conjunction	2205 Apr 26 14:04	6° B 02'26	-1°-40'-38
minimum elong	2197 Apr 07 06:15	18° Υ 01'44	1°31'29	minimum elong	2205 Apr 26 14:04	6° B 02'26	1°40'39
max. Earth dist.	2197 Apr 08 06:29	18° Υ 04'01	30.83949 AU	max. Earth dist.	2205 Apr 27 11:36	6° B 04'28	30.81885 AU
retrograde	2197 Jul 23 12:44	20° Υ 36'33		retrograde	2205 Aug 12 01:35	8° B 37'23	
opposition	2197 Oct 11 21:59	19° Υ 11'11	-1°-38'-44	min. Earth dist.	2205 Oct 30 03:53	7° B 13'21	28.81836 AU
min. Earth dist.	2197 Oct 10 23:34	19° Υ 12'45	28.83970 AU	opposition	2205 Oct 31 00:09	7° B 11'56	-1°-47'-54
direct	2197 Dec 28 14:09	17° Υ 47'57		direct	2206 Jan 16 12:03	5° B 48'27	
conjunction	2198 Apr 09 18:38	20° Υ 16'31	-1°-33'-8	conjunction	2206 Apr 29 03:13	8° B 17'25	-1°-41'-7
minimum elong	2198 Apr 09 18:37	20° Υ 16'31	1°33'09	minimum elong	2206 Apr 29 03:14	8° B 17'25	1°41'07
max. Earth dist.	2198 Apr 10 18:08	20° Υ 18'44	30.83810 AU	max. Earth dist.	2206 Apr 30 01:53	8° B 19'34	30.81575 AU
retrograde	2198 Jul 26 02:28	22° Υ 51'25		retrograde	2206 Aug 14 13:46	10° B 52'20	
min. Earth dist.	2198 Oct 13 11:45	21° Υ 27'39	28.83863 AU	opposition	2206 Nov 02 12:06	9° B 26'53	-1°-48'-19
opposition	2198 Oct 14 10:27	21° Υ 26'04	-1°-40'-25	min. Earth dist.	2206 Nov 01 15:46	9° B 28'18	28.81577 AU
direct	2198 Dec 31 00:39	20° Υ 02'50		direct	2207 Jan 19 00:28	8° B 03'21	
conjunction	2199 Apr 12 07:26	22° Υ 31'28	-1°-34'-38	conjunction	2207 May 01 16:26	10° B 32'22	-1°-41'-26
minimum elong	2199 Apr 12 07:26	22° Υ 31'28	1°34'40	minimum elong	2207 May 01 16:26	10° B 32'22	1°41'27
max. Earth dist.	2199 Apr 13 07:37	22° Υ 33'45	30.83703 AU	max. Earth dist.	2207 May 02 14:04	10° B 34'25	30.81386 AU
retrograde	2199 Jul 28 14:17	25° Υ 06'25		retrograde	2207 Aug 17 02:55	13° B 07'16	
opposition	2199 Oct 16 22:51	23° Υ 41'05	-1°-41'-58	opposition	2207 Nov 04 23:53	11° B 41'49	-1°-48'-34
min. Earth dist.	2199 Oct 16 00:56	23° Υ 42'37	28.83757 AU	min. Earth dist.	2207 Nov 04 03:27	11° B 43'15	28.81459 AU
direct	2200 Jan 02 11:49	22° Υ 17'52		direct	2208 Jan 21 11:16	10° B 18'15	
conjunction	2200 Apr 14 20:23	24° Υ 46'35	-1°-36'-1	conjunction	2208 May 03 05:50	12° B 47'20	-1°-41'-35
minimum elong	2200 Apr 14 20:23	24° Υ 46'35	1°36'02	minimum elong	2208 May 03 05:51	12° B 47'20	1°41'36
max. Earth dist.	2200 Apr 15 19:53	24° Υ 48'48	30.83582 AU	max. Earth dist.	2208 May 04 04:10	12° B 49'27	30.81325 AU
retrograde	2200 Jul 31 05:05	27° Υ 21'34			2208 Jul 12 14:18	15° B	
opposition	2200 Oct 19 11:13	25° Υ 56'15	-1°-43'-21	retrograde	2208 Aug 18 14:03	15° B 22'13	
min. Earth dist.	2200 Oct 18 12:47	25° Υ 57'49	28.83602 AU		2208 Sep 25 05:48	15° R B	
direct	2201 Jan 04 22:53	24° Υ 33'00		opposition	2208 Nov 06 11:43	13° B 56'47	-1°-48'-39
conjunction	2201 Apr 17 09:26	27° Υ 01'47	-1°-37'-14	min. Earth dist.	2208 Nov 05 15:54	13° B 58'10	28.81465 AU
minimum elong	2201 Apr 17 09:26	27° Υ 01'47	1°37'15	direct	2209 Jan 22 22:17	12° B 33'12	
max. Earth dist.	2201 Apr 18 08:35	27° Υ 03'58	30.83367 AU		2209 May 04 18:04	15° B	
retrograde	2201 Aug 02 17:50	29° Υ 36'49		conjunction	2209 May 05 19:10	15° B 02'22	-1°-41'-36
opposition	2201 Oct 21 23:36	28° Υ 11'29	-1°-44'-35	minimum elong	2209 May 05 19:10	15° B 02'22	1°41'37
min. Earth dist.	2201 Oct 21 02:34	28° Υ 12'57	28.83342 AU	max. Earth dist.	2209 May 06 16:50	15° B 04'24	30.81407 AU
direct	2202 Jan 07 10:12	26° Υ 48'13		retrograde	2209 Aug 21 04:24	17° B 37'13	
conjunction	2202 Apr 19 22:37	29° Υ 17'02	-1°-38'-19	opposition	2209 Nov 08 23:21	16° B 11'49	-1°-48'-35
minimum elong	2202 Apr 19 22:37	29° Υ 17'02	1°38'20	min. Earth dist.	2209 Nov 08 02:51	16° B 13'16	28.81608 AU
max. Earth dist.	2202 Apr 20 21:44	29° Υ 19'13	30.83068 AU		2209 Dec 30 00:31	15° R B	
	2202 May 09 03:18	0° B		direct	2210 Jan 25 08:33	14° B 48'14	
					2210 Feb 20 11:22	15° B	

conjunction	2210 May 08 08:37	17°♄17'29	-1°-41'-26	conjunction	2218 May 26 23:27	5°♃19'38	-1°-34'-42
minimum elong	2210 May 08 08:37	17°♄17'29	1°41'28	minimum elong	2218 May 26 23:28	5°♃19'38	1°34'43
max. Earth dist.	2210 May 09 06:16	17°♄19'31	30.81602 AU	max. Earth dist.	2218 May 27 15:53	5°♃21'10	30.82881 AU
retrograde	2210 Aug 23 16:02	19°♄52'20		retrograde	2218 Sep 11 02:37	7°♃53'47	
opposition	2210 Nov 11 11:07	18°♄26'59	-1°-48'-20	opposition	2218 Nov 29 06:51	6°♃28'35	-1°-40'-29
min. Earth dist.	2210 Nov 10 15:52	18°♄28'21	28.81853 AU	min. Earth dist.	2218 Nov 28 15:33	6°♃29'40	28.83055 AU
direct	2211 Jan 27 19:22	17°♄03'24		direct	2219 Feb 14 20:55	5°♃04'34	
conjunction	2211 May 10 22:14	19°♄32'44	-1°-41'-8	conjunction	2219 May 29 13:20	7°♃34'19	-1°-33'-12
minimum elong	2211 May 10 22:14	19°♄32'44	1°41'09	minimum elong	2219 May 29 13:20	7°♃34'19	1°33'14
max. Earth dist.	2211 May 11 19:49	19°♄34'46	30.81892 AU	max. Earth dist.	2219 May 30 05:35	7°♃35'51	30.83069 AU
retrograde	2211 Aug 26 06:13	22°♄07'34		retrograde	2219 Sep 13 12:52	10°♃08'22	
opposition	2211 Nov 13 22:43	20°♄42'16	-1°-47'-55	opposition	2219 Dec 01 18:02	8°♃43'10	-1°-38'-48
min. Earth dist.	2211 Nov 13 03:00	20°♄43'40	28.82150 AU	min. Earth dist.	2219 Dec 01 04:04	8°♃44'09	28.83306 AU
direct	2212 Jan 30 08:21	19°♄18'41		direct	2220 Feb 17 07:58	7°♃19'06	
conjunction	2212 May 12 11:59	21°♄48'07	-1°-40'-40	conjunction	2220 May 31 03:17	9°♃48'54	-1°-31'-34
minimum elong	2212 May 12 11:59	21°♄48'07	1°40'40	minimum elong	2220 May 31 03:18	9°♃48'54	1°31'34
max. Earth dist.	2212 May 13 08:25	21°♄50'03	30.82184 AU	max. Earth dist.	2220 May 31 19:13	9°♃50'23	30.83398 AU
retrograde	2212 Aug 27 19:26	24°♄22'55		retrograde	2220 Sep 15 01:38	12°♃22'48	
opposition	2212 Nov 15 10:21	22°♄57'41	-1°-47'-20	opposition	2220 Dec 03 04:54	10°♃57'39	-1°-36'-58
min. Earth dist.	2212 Nov 14 16:15	22°♄58'57	28.82435 AU	min. Earth dist.	2220 Dec 02 14:22	10°♃58'41	28.83699 AU
direct	2213 Jan 31 19:13	21°♄34'04		direct	2221 Feb 18 20:12	9°♃33'32	
conjunction	2213 May 15 01:58	24°♄03'36	-1°-40'-3	conjunction	2221 Jun 02 17:08	12°♃03'24	-1°-29'-47
minimum elong	2213 May 15 01:58	24°♄03'36	1°40'03	minimum elong	2221 Jun 02 17:09	12°♃03'24	1°29'49
max. Earth dist.	2213 May 15 22:29	24°♄05'31	30.82443 AU	max. Earth dist.	2221 Jun 03 08:14	12°♃04'49	30.83868 AU
retrograde	2213 Aug 30 09:22	26°♄38'20		retrograde	2221 Sep 17 13:42	14°♃37'13	
opposition	2213 Nov 17 21:58	25°♄13'08	-1°-46'-35	opposition	2221 Dec 05 16:01	13°♃12'07	-1°-34'-59
min. Earth dist.	2213 Nov 17 03:46	25°♄14'25	28.82647 AU	min. Earth dist.	2221 Dec 05 02:44	13°♃13'04	28.84252 AU
direct	2214 Feb 03 08:28	23°♄49'29		direct	2222 Feb 21 06:21	11°♃47'59	
conjunction	2214 May 17 15:41	26°♄19'05	-1°-39'-16	conjunction	2222 Jun 05 07:00	14°♃17'56	-1°-27'-52
minimum elong	2214 May 17 15:42	26°♄19'05	1°39'17	minimum elong	2222 Jun 05 07:00	14°♃17'56	1°27'53
max. Earth dist.	2214 May 18 10:22	26°♄20'50	30.82615 AU	max. Earth dist.	2222 Jun 05 22:27	14°♃19'22	30.84502 AU
retrograde	2214 Sep 02 00:19	28°♄53'44		retrograde	2222 Sep 20 02:48	16°♃51'39	
opposition	2214 Nov 20 09:40	27°♄28'32	-1°-45'-40	opposition	2222 Dec 08 02:57	15°♃26'38	-1°-32'-52
min. Earth dist.	2214 Nov 19 16:39	27°♄29'44	28.82779 AU	min. Earth dist.	2222 Dec 07 13:20	15°♃27'36	28.84937 AU
direct	2215 Feb 05 20:47	26°♄04'51		direct	2223 Feb 23 19:19	14°♃02'29	
conjunction	2215 May 20 05:47	28°♄34'29	-1°-38'-21	conjunction	2223 Jun 07 20:58	16°♃32'32	-1°-25'-49
minimum elong	2215 May 20 05:47	28°♄34'29	1°38'22	minimum elong	2223 Jun 07 20:59	16°♃32'32	1°25'50
max. Earth dist.	2215 May 21 00:48	28°♄36'16	30.82708 AU	max. Earth dist.	2223 Jun 08 10:48	16°♃33'49	30.85250 AU
retrograde	2215 Jun 29 09:36	0°♃		retrograde	2223 Sep 22 17:02	19°♃06'10	
opposition	2215 Sep 04 12:17	1°♃09'01		opposition	2223 Dec 10 13:50	17°♃41'14	-1°-30'-35
min. Earth dist.	2215 Nov 13 06:39	30°♃		min. Earth dist.	2223 Dec 10 01:20	17°♃42'07	28.85729 AU
opposition	2215 Nov 22 21:04	29°♄43'49	-1°-44'-36	direct	2224 Feb 26 06:52	16°♃17'06	
min. Earth dist.	2215 Nov 22 04:39	29°♄44'59	28.82830 AU	conjunction	2224 Jun 09 11:13	18°♃47'16	-1°-23'-37
direct	2216 Feb 08 10:09	28°♄20'04		minimum elong	2224 Jun 09 11:13	18°♃47'16	1°23'38
	2216 Apr 29 08:11	0°♃		max. Earth dist.	2224 Jun 10 01:25	18°♃48'35	30.86066 AU
conjunction	2216 May 21 19:43	0°♃49'43	-1°-37'-17	retrograde	2224 Sep 24 05:15	21°♃20'48	
minimum elong	2216 May 21 19:44	0°♃49'43	1°37'18	opposition	2224 Dec 12 00:44	19°♃55'59	-1°-28'-11
max. Earth dist.	2216 May 22 12:58	0°♃51'20	30.82750 AU	min. Earth dist.	2224 Dec 11 12:54	19°♃56'49	28.86542 AU
retrograde	2216 Sep 06 01:51	3°♃24'08		direct	2225 Feb 27 19:43	18°♃31'51	
opposition	2216 Nov 24 08:28	1°♃58'56	-1°-43'-23	conjunction	2225 Jun 12 01:12	21°♃02'07	-1°-21'-18
min. Earth dist.	2216 Nov 23 16:32	2°♃00'04	28.82864 AU	minimum elong	2225 Jun 12 01:12	21°♃02'07	1°21'20
direct	2217 Feb 09 21:45	0°♃35'05		max. Earth dist.	2225 Jun 12 13:25	21°♃03'15	30.86877 AU
conjunction	2217 May 24 09:37	3°♃04'46	-1°-36'-4	retrograde	2225 Sep 26 19:30	23°♃35'34	
minimum elong	2217 May 24 09:37	3°♃04'46	1°36'05	opposition	2225 Dec 14 11:39	22°♃10'50	-1°-25'-38
max. Earth dist.	2217 May 25 03:11	3°♃06'25	30.82782 AU	min. Earth dist.	2225 Dec 14 00:32	22°♃11'37	28.87331 AU
retrograde	2217 Sep 08 13:08	5°♃39'03		direct	2226 Mar 02 07:10	20°♃46'42	
opposition	2217 Nov 26 19:45	4°♃13'51	-1°-42'00	conjunction	2226 Jun 14 15:32	23°♃17'03	-1°-18'-52
min. Earth dist.	2217 Nov 26 04:50	4°♃14'54	28.82914 AU	minimum elong	2226 Jun 14 15:32	23°♃17'03	1°18'53
direct	2218 Feb 12 09:42	2°♃49'56		max. Earth dist.	2226 Jun 15 03:40	23°♃18'11	30.87626 AU

retrograde	2226 Sep 29 07:45	25°II50'22		minimum elong	2234 Jul 03 08:10	11°☾12'27	0°55'32
opposition	2226 Dec 16 22:33	24°II25'43	-1°-22'-58	max. Earth dist.	2234 Jul 03 12:32	11°☾12'51	30.92981 AU
min. Earth dist.	2226 Dec 16 12:55	24°II26'24	28.88033 AU	retrograde	2234 Oct 17 06:56	13°☾44'26	
direct	2227 Mar 04 19:18	23°II01'34		opposition	2235 Jan 03 11:05	12°☾20'10	0°-57'-35
				min. Earth dist.	2235 Jan 03 06:36	12°☾20'29	28.93532 AU
conjunction	2227 Jun 17 05:47	25°II31'59	-1°-16'-19	direct	2235 Mar 22 17:23	10°☾55'33	
minimum elong	2227 Jun 17 05:47	25°II31'59	1°16'20				
max. Earth dist.	2227 Jun 17 15:59	25°II32'56	30.88297 AU	conjunction	2235 Jul 05 22:14	13°☾26'19	0°-52'-11
retrograde	2227 Oct 01 21:10	28°II05'09		minimum elong	2235 Jul 05 22:15	13°☾26'19	0°52'13
opposition	2227 Dec 19 09:21	26°II40'34	-1°-20'-10	max. Earth dist.	2235 Jul 06 02:58	13°☾26'45	30.94049 AU
min. Earth dist.	2227 Dec 18 23:52	26°II41'14	28.88652 AU	retrograde	2235 Oct 19 18:46	15°☾58'09	
direct	2228 Mar 06 06:59	25°II16'21		opposition	2236 Jan 05 21:32	14°☾33'59	0°-53'-58
				min. Earth dist.	2236 Jan 05 18:18	14°☾34'12	28.94637 AU
conjunction	2228 Jun 18 20:04	27°II46'49	-1°-13'-39	direct	2236 Mar 24 06:06	13°☾09'23	
minimum elong	2228 Jun 18 20:05	27°II46'49	1°13'39				
max. Earth dist.	2228 Jun 19 05:34	27°II47'42	30.88874 AU	conjunction	2236 Jul 07 12:08	15°☾40'12	0°-48'-46
	2228 Aug 29 14:33	0°☾		minimum elong	2236 Jul 07 12:09	15°☾40'12	0°48'46
retrograde	2228 Oct 03 07:02	0°☾19'50		max. Earth dist.	2236 Jul 07 15:11	15°☾40'29	30.95199 AU
	2228 Nov 07 08:58	30°RII		retrograde	2236 Oct 21 07:47	18°☾11'54	
opposition	2228 Dec 20 20:07	28°II55'18	-1°-17'-15	opposition	2237 Jan 07 07:49	16°☾47'50	0°-50'-16
min. Earth dist.	2228 Dec 20 12:29	28°II55'50	28.89200 AU	min. Earth dist.	2237 Jan 07 04:34	16°☾48'04	28.95800 AU
direct	2229 Mar 08 18:13	27°II31'01		direct	2237 Mar 26 18:06	15°☾23'14	
	2229 Jun 20 17:56	0°☾					
conjunction	2229 Jun 21 10:15	0°☾01'31	-1°-10'-52	conjunction	2237 Jul 10 02:11	17°☾54'09	0°-45'-16
minimum elong	2229 Jun 21 10:15	0°☾01'31	1°10'54	minimum elong	2237 Jul 10 02:11	17°☾54'09	0°45'18
max. Earth dist.	2229 Jun 21 18:46	0°☾02'19	30.89421 AU	max. Earth dist.	2237 Jul 10 04:44	17°☾54'23	30.96356 AU
retrograde	2229 Oct 05 19:32	2°☾34'22		retrograde	2237 Oct 23 18:37	20°☾25'42	
opposition	2229 Dec 23 06:43	1°☾09'52	-1°-14'-14	opposition	2238 Jan 09 18:18	19°☾01'45	0°-46'-30
min. Earth dist.	2229 Dec 22 22:55	1°☾10'25	28.89733 AU	min. Earth dist.	2238 Jan 09 16:57	19°☾01'50	28.96943 AU
	2230 Feb 09 16:54	30°RII		direct	2238 Mar 29 04:57	17°☾37'09	
direct	2230 Mar 11 06:10	29°II45'31		conjunction	2238 Jul 12 16:11	20°☾08'07	0°-41'-43
	2230 Apr 09 12:59	0°☾		minimum elong	2238 Jul 12 16:11	20°☾08'07	0°41'43
				max. Earth dist.	2238 Jul 12 17:24	20°☾08'14	30.97472 AU
conjunction	2230 Jun 24 00:14	2°☾16'03	-1°-7'-59	retrograde	2238 Oct 26 07:32	22°☾39'31	
minimum elong	2230 Jun 24 00:14	2°☾16'03	1°08'00	opposition	2239 Jan 12 04:41	21°☾15'40	0°-42'-39
max. Earth dist.	2230 Jun 24 07:38	2°☾16'44	30.89962 AU	min. Earth dist.	2239 Jan 12 03:27	21°☾15'45	28.98001 AU
retrograde	2230 Oct 08 06:18	4°☾48'43		direct	2239 Mar 31 16:58	19°☾51'02	
opposition	2230 Dec 25 17:24	3°☾24'15	-1°-11'-6				
min. Earth dist.	2230 Dec 25 11:17	3°☾24'41	28.90295 AU	conjunction	2239 Jul 15 06:17	22°☾22'04	0°-38'-5
direct	2231 Mar 13 16:00	1°☾59'49		minimum elong	2239 Jul 15 06:17	22°☾22'04	0°38'07
				max. Earth dist.	2239 Jul 15 06:01	22°☾22'03	30.98470 AU
conjunction	2231 Jun 26 14:25	4°☾30'23	-1°-5'-1	retrograde	2239 Oct 28 17:53	24°☾53'18	
minimum elong	2231 Jun 26 14:26	4°☾30'23	1°05'02	opposition	2240 Jan 14 15:06	23°☾29'32	0°-38'-45
max. Earth dist.	2231 Jun 26 21:42	4°☾31'03	30.90559 AU	min. Earth dist.	2240 Jan 14 15:53	23°☾29'28	28.98946 AU
retrograde	2231 Oct 10 17:36	7°☾02'52		direct	2240 Apr 02 02:50	22°☾04'52	
opposition	2231 Dec 28 03:45	5°☾38'26	-1°-7'-52				
min. Earth dist.	2231 Dec 27 21:34	5°☾38'52	28.90919 AU	conjunction	2240 Jul 16 20:22	24°☾35'56	0°-34'-25
direct	2232 Mar 15 05:33	4°☾13'56		minimum elong	2240 Jul 16 20:22	24°☾35'56	0°34'26
				max. Earth dist.	2240 Jul 16 19:27	24°☾35'51	30.99363 AU
conjunction	2232 Jun 28 04:24	6°☾44'32	-1°-1'-56	retrograde	2240 Oct 30 04:40	27°☾07'00	
minimum elong	2232 Jun 28 04:24	6°☾44'32	1°01'57	opposition	2241 Jan 16 01:28	25°☾43'17	0°-34'-48
max. Earth dist.	2232 Jun 28 09:59	6°☾45'03	30.91236 AU	min. Earth dist.	2241 Jan 16 02:32	25°☾43'13	28.99775 AU
retrograde	2232 Oct 12 05:58	9°☾16'51		direct	2241 Apr 04 16:11	24°☾18'35	
opposition	2232 Dec 29 14:18	7°☾52'27	-1°-4'-32				
min. Earth dist.	2232 Dec 29 09:05	7°☾52'49	28.91660 AU	conjunction	2241 Jul 19 10:04	26°☾49'40	0°-30'-42
direct	2233 Mar 17 17:02	6°☾27'54		minimum elong	2241 Jul 19 10:04	26°☾49'40	0°30'44
				max. Earth dist.	2241 Jul 19 07:09	26°☾49'24	31.00152 AU
conjunction	2233 Jun 30 18:18	8°☾58'32	0°-58'-47	retrograde	2241 Nov 01 16:06	29°☾20'34	
minimum elong	2233 Jun 30 18:18	8°☾58'32	0°58'48	opposition	2242 Jan 18 11:49	27°☾56'54	0°-30'-48
max. Earth dist.	2233 Jul 01 00:24	8°☾59'06	30.92039 AU	min. Earth dist.	2242 Jan 18 14:13	27°☾56'43	29.00534 AU
retrograde	2233 Oct 14 17:14	11°☾30'41		direct	2242 Apr 07 03:12	26°☾32'08	
opposition	2234 Jan 01 00:45	10°☾06'21	-1°-1'-6				
min. Earth dist.	2233 Dec 31 19:55	10°☾06'41	28.92521 AU	conjunction	2242 Jul 21 23:59	29°☾03'15	0°-26'-57
direct	2234 Mar 20 05:41	8°☾41'45		minimum elong	2242 Jul 21 23:59	29°☾03'15	0°26'57
				max. Earth dist.	2242 Jul 21 21:04	29°☾02'59	31.00885 AU
conjunction	2234 Jul 03 08:10	11°☾12'26	0°-55'-31		2242 Aug 17 01:58	0°♁	

retrograde	2242 Nov 04 02:39	1°Ω33'57		behind sun end	2249 Aug 07 04:12	14°Ω34'56	
opposition	2243 Jan 20 21:57	0°Ω10'19	0°-26'-46	max. Earth dist.	2249 Aug 06 14:01	14°Ω33'40	31.07487 AU
min. Earth dist.	2243 Jan 21 01:12	0°Ω10'06	29.01242 AU		2249 Aug 18 11:28	15°Ω	
	2243 Jan 27 00:14	30°R☿		retrograde	2249 Nov 19 09:16	17°Ω03'59	
direct	2243 Apr 09 15:42	28°Ω45'30		opposition	2250 Feb 04 20:46	15°Ω40'52	0°02'08
	2243 Jun 18 12:23	0°Ω		min. Earth dist.	2250 Feb 05 04:11	15°Ω40'21	29.08080 AU
					2250 Mar 02 02:30	15°RΩ	
conjunction	2243 Jul 24 13:41	1°Ω16'38	0°-23'-9	direct	2250 Apr 25 03:03	14°Ω15'56	
minimum elong	2243 Jul 24 13:41	1°Ω16'38	0°23'11		2250 Jun 16 22:14	15°Ω	
max. Earth dist.	2243 Jul 24 08:42	1°Ω16'11	31.01597 AU				
retrograde	2243 Nov 06 15:28	3°Ω47'09		conjunction	2250 Aug 09 11:25	16°Ω47'20	0°04'02
opposition	2244 Jan 23 08:07	2°Ω23'34	0°-22'-42	minimum elong	2250 Aug 09 11:25	16°Ω47'20	0°04'03
min. Earth dist.	2244 Jan 23 11:54	2°Ω23'18	29.01966 AU	behind sun begin	2250 Aug 09 04:54	16°Ω46'45	
direct	2244 Apr 11 03:55	0°Ω58'41		behind sun end	2250 Aug 09 17:55	16°Ω47'54	
				max. Earth dist.	2250 Aug 09 01:29	16°Ω46'26	31.08660 AU
conjunction	2244 Jul 26 03:18	3°Ω29'51	0°-19'-20	retrograde	2250 Nov 21 20:14	19°Ω16'47	
minimum elong	2244 Jul 26 03:18	3°Ω29'51	0°19'20	opposition	2251 Feb 07 06:51	17°Ω53'45	0°06'18
max. Earth dist.	2244 Jul 25 22:41	3°Ω29'25	31.02332 AU	min. Earth dist.	2251 Feb 07 15:32	17°Ω53'08	29.09230 AU
retrograde	2244 Nov 08 02:15	6°Ω00'11		direct	2251 Apr 27 12:42	16°Ω28'48	
opposition	2245 Jan 24 18:18	4°Ω36'37	0°-18'-36				
min. Earth dist.	2245 Jan 24 23:18	4°Ω36'16	29.02732 AU	conjunction	2251 Aug 12 00:52	19°Ω00'15	0°07'55
direct	2245 Apr 13 17:11	3°Ω11'42		minimum elong	2251 Aug 12 00:51	19°Ω00'15	0°07'54
				behind sun begin	2251 Aug 11 18:58	18°Ω59'43	
conjunction	2245 Jul 28 16:42	5°Ω42'53	0°-15'-30	behind sun end	2251 Aug 12 06:44	19°Ω00'46	
minimum elong	2245 Jul 28 16:43	5°Ω42'53	0°15'31	max. Earth dist.	2251 Aug 11 14:49	18°Ω59'20	31.09758 AU
behind sun begin	2245 Jul 28 15:32	5°Ω42'47		retrograde	2251 Nov 24 06:17	21°Ω29'33	
behind sun end	2245 Jul 28 17:53	5°Ω42'59		opposition	2252 Feb 09 17:06	20°Ω06'36	0°10'27
max. Earth dist.	2245 Jul 28 10:31	5°Ω42'19	31.03151 AU	min. Earth dist.	2252 Feb 10 02:45	20°Ω05'55	29.10268 AU
retrograde	2245 Nov 10 14:29	8°Ω13'03		direct	2252 Apr 29 00:40	18°Ω41'38	
opposition	2246 Jan 27 04:18	6°Ω49'33	0°-14'-29				
min. Earth dist.	2246 Jan 27 08:58	6°Ω49'13	29.03606 AU	conjunction	2252 Aug 13 13:55	21°Ω13'04	0°11'46
direct	2246 Apr 16 05:33	5°Ω24'35		minimum elong	2252 Aug 13 13:55	21°Ω13'04	0°11'47
				behind sun begin	2252 Aug 13 09:23	21°Ω12'40	
conjunction	2246 Jul 31 06:09	7°Ω55'48	0°-11'-38	behind sun end	2252 Aug 13 18:27	21°Ω13'29	
minimum elong	2246 Jul 31 06:09	7°Ω55'48	0°11'38	max. Earth dist.	2252 Aug 13 01:43	21°Ω11'57	31.10740 AU
behind sun begin	2246 Jul 31 01:32	7°Ω55'23		retrograde	2252 Nov 25 18:02	23°Ω42'13	
behind sun end	2246 Jul 31 10:45	7°Ω56'12		opposition	2253 Feb 11 03:17	22°Ω19'19	0°14'35
max. Earth dist.	2246 Jul 30 23:55	7°Ω55'14	31.04076 AU	min. Earth dist.	2253 Feb 11 13:31	22°Ω18'36	29.11202 AU
retrograde	2246 Nov 13 00:57	10°Ω25'48		direct	2253 May 01 12:51	20°Ω54'19	
opposition	2247 Jan 29 14:31	9°Ω02'22	0°-10'-20				
min. Earth dist.	2247 Jan 29 20:37	9°Ω01'56	29.04593 AU	conjunction	2253 Aug 16 03:09	23°Ω25'46	0°15'37
direct	2247 Apr 18 16:50	7°Ω37'24		minimum elong	2253 Aug 16 03:08	23°Ω25'46	0°15'36
				behind sun begin	2253 Aug 16 02:07	23°Ω25'41	
conjunction	2247 Aug 02 19:32	10°Ω08'39	0°-7'-46	behind sun end	2253 Aug 16 04:10	23°Ω25'52	
minimum elong	2247 Aug 02 19:33	10°Ω08'39	0°07'47	max. Earth dist.	2253 Aug 15 15:03	23°Ω24'40	31.11612 AU
behind sun begin	2247 Aug 02 13:38	10°Ω08'08		retrograde	2253 Nov 28 03:58	25°Ω54'45	
behind sun end	2247 Aug 03 01:28	10°Ω09'11		opposition	2254 Feb 13 13:28	24°Ω31'52	0°18'41
max. Earth dist.	2247 Aug 02 12:24	10°Ω08'01	31.05132 AU	min. Earth dist.	2254 Feb 14 01:14	24°Ω31'03	29.12026 AU
retrograde	2247 Nov 15 13:38	12°Ω38'30		direct	2254 May 04 01:50	23°Ω06'50	
opposition	2248 Feb 01 00:28	11°Ω15'10	0°-6'-11				
min. Earth dist.	2248 Feb 01 06:12	11°Ω14'46	29.05696 AU	conjunction	2254 Aug 18 16:05	25°Ω38'16	0°19'26
direct	2248 Apr 20 04:50	9°Ω50'12		minimum elong	2254 Aug 18 16:05	25°Ω38'16	0°19'27
				max. Earth dist.	2254 Aug 18 02:07	25°Ω36'59	31.12401 AU
conjunction	2248 Aug 04 08:55	12°Ω21'30	0°-3'-53	retrograde	2254 Nov 30 15:54	28°Ω07'04	
minimum elong	2248 Aug 04 08:54	12°Ω21'30	0°03'54	opposition	2255 Feb 15 23:31	26°Ω44'13	0°22'45
behind sun begin	2248 Aug 04 02:23	12°Ω20'56		min. Earth dist.	2255 Feb 16 11:12	26°Ω43'23	29.12777 AU
behind sun end	2248 Aug 04 15:26	12°Ω22'05		direct	2255 May 06 14:28	25°Ω19'07	
max. Earth dist.	2248 Aug 04 01:01	12°Ω20'48	31.06280 AU				
retrograde	2248 Nov 16 23:16	14°Ω51'13		conjunction	2255 Aug 21 05:04	27°Ω50'32	0°23'13
opposition	2249 Feb 02 10:41	13°Ω28'00	0°-2'-1	minimum elong	2255 Aug 21 05:04	27°Ω50'32	0°23'13
min. Earth dist.	2249 Feb 02 17:56	13°Ω27'29	29.06885 AU	max. Earth dist.	2255 Aug 20 14:53	27°Ω49'14	31.13117 AU
direct	2249 Apr 22 14:23	12°Ω03'03			2255 Oct 30 09:32	0°R♃	
asc. node	2249 Jul 31 11:41	14°Ω20'06		retrograde	2255 Dec 03 02:06	0°R♃	19'09
					2256 Jan 06 05:10	30°RΩ	
conjunction	2249 Aug 06 22:05	14°Ω34'24	0°00'04	opposition	2256 Feb 18 09:41	28°Ω56'19	0°26'47
minimum elong	2249 Aug 06 22:07	14°Ω34'24	0°00'04	min. Earth dist.	2256 Feb 18 23:02	28°Ω55'23	29.13487 AU
behind sun begin	2249 Aug 06 16:01	14°Ω33'52		direct	2256 May 08 02:41	27°Ω31'10	

	2256 Aug 21 14:08	0°♆		conjunction	2264 Sep 09 20:32	17°♆35'49	0°55'04
				minimum elong	2264 Sep 09 20:32	17°♆35'49	0°55'04
conjunction	2256 Aug 22 17:46	0°♆02'33	0°26'58	max. Earth dist.	2264 Sep 09 01:46	17°♆34'05	31.21810 AU
minimum elong	2256 Aug 22 17:46	0°♆02'33	0°26'59	retrograde	2264 Dec 21 23:55	20°♆03'25	
max. Earth dist.	2256 Aug 22 02:38	0°♆01'10	31.13832 AU	opposition	2265 Mar 09 05:14	18°♆41'11	1°00'31
retrograde	2256 Dec 04 13:52	2°♆30'59		min. Earth dist.	2265 Mar 09 22:59	18°♆39'57	29.22314 AU
opposition	2257 Feb 19 19:43	1°♆08'11	0°30'46	direct	2265 May 28 10:51	17°♆16'09	
min. Earth dist.	2257 Feb 20 08:38	1°♆07'16	29.14213 AU				
	2257 Apr 07 20:36	30°♆♂		conjunction	2265 Sep 12 08:31	19°♆47'37	0°58'16
direct	2257 May 10 15:50	29°♆♂42'59		minimum elong	2265 Sep 12 08:31	19°♆47'37	0°58'16
	2257 Jun 12 00:08	0°♆		max. Earth dist.	2265 Sep 11 12:43	19°♆45'47	31.22688 AU
				retrograde	2265 Dec 24 11:59	22°♆15'07	
conjunction	2257 Aug 25 06:13	2°♆14'21	0°30'41	opposition	2266 Mar 11 15:34	20°♆52'55	1°03'53
minimum elong	2257 Aug 25 06:13	2°♆14'21	0°30'41	min. Earth dist.	2266 Mar 12 09:04	20°♆51'42	29.23124 AU
max. Earth dist.	2257 Aug 24 14:35	2°♆12'55	31.14576 AU	direct	2266 May 31 00:35	19°♆27'53	
retrograde	2257 Dec 06 22:59	4°♆42'38					
opposition	2258 Feb 22 05:52	3°♆19'51	0°34'42	conjunction	2266 Sep 14 20:38	21°♆59'21	1°01'23
min. Earth dist.	2258 Feb 22 20:04	3°♆18'51	29.15006 AU	minimum elong	2266 Sep 14 20:37	21°♆59'21	1°01'23
direct	2258 May 13 02:20	1°♆54'38		max. Earth dist.	2266 Sep 14 00:01	21°♆57'26	31.23428 AU
				retrograde	2266 Dec 26 21:09	24°♆26'44	
conjunction	2258 Aug 27 18:46	4°♆25'58	0°34'21	opposition	2267 Mar 14 01:57	23°♆04'34	1°07'10
minimum elong	2258 Aug 27 18:46	4°♆25'58	0°34'21	min. Earth dist.	2267 Mar 14 20:56	23°♆03'15	29.23819 AU
max. Earth dist.	2258 Aug 27 03:13	4°♆24'32	31.15415 AU	direct	2267 Jun 02 11:35	21°♆39'31	
retrograde	2258 Dec 09 08:21	6°♆54'06		max. Earth dist.	2267 Sep 16 11:55	24°♆09'01	31.24073 AU
opposition	2259 Feb 24 15:49	5°♆31'22	0°38'35				
min. Earth dist.	2259 Feb 25 05:45	5°♆30'24	29.15894 AU	conjunction	2267 Sep 17 08:37	24°♆10'56	1°04'24
direct	2259 May 15 14:53	4°♆06'08		minimum elong	2267 Sep 17 08:36	24°♆10'56	1°04'24
				retrograde	2267 Dec 29 06:29	26°♆38'11	
conjunction	2259 Aug 30 07:11	6°♆37'29	0°37'57	opposition	2268 Mar 15 12:22	25°♆16'03	1°10'20
minimum elong	2259 Aug 30 07:10	6°♆37'29	0°37'56	min. Earth dist.	2268 Mar 16 07:19	25°♆14'44	29.24417 AU
max. Earth dist.	2259 Aug 29 14:28	6°♆35'57	31.16360 AU	direct	2268 Jun 04 00:44	23°♆50'59	
retrograde	2259 Dec 11 18:45	9°♆05'30					
opposition	2260 Feb 27 01:59	7°♆42'50	0°42'25	conjunction	2268 Sep 18 20:12	26°♆22'21	1°07'19
min. Earth dist.	2260 Feb 27 16:24	7°♆41'50	29.16913 AU	minimum elong	2268 Sep 18 20:12	26°♆22'21	1°07'20
direct	2260 May 17 00:13	6°♆17'37		max. Earth dist.	2268 Sep 17 22:20	26°♆20'19	31.24638 AU
				retrograde	2268 Dec 30 16:39	28°♆49'30	
conjunction	2260 Aug 31 19:28	8°♆48'59	0°41'30	opposition	2269 Mar 17 22:47	27°♆27'21	1°13'25
minimum elong	2260 Aug 31 19:28	8°♆48'59	0°41'31	min. Earth dist.	2269 Mar 18 18:16	27°♆26'00	29.24979 AU
max. Earth dist.	2260 Aug 31 03:26	8°♆47'30	31.17430 AU	direct	2269 Jun 06 10:44	26°♆02'15	
retrograde	2260 Dec 13 03:58	11°♆16'55		max. Earth dist.	2269 Sep 20 10:43	28°♆31'36	31.25187 AU
opposition	2261 Feb 28 12:09	9°♆54'21	0°46'11				
min. Earth dist.	2261 Mar 01 03:01	9°♆53'18	29.18020 AU	conjunction	2269 Sep 21 07:53	28°♆33'33	1°10'09
direct	2261 May 19 11:38	8°♆29'10		minimum elong	2269 Sep 21 07:52	28°♆33'33	1°10'09
					2269 Nov 01 16:05	0°♆	
conjunction	2261 Sep 03 07:41	11°♆00'33	0°45'00	retrograde	2270 Jan 02 00:38	1°♆00'35	
minimum elong	2261 Sep 03 07:40	11°♆00'33	0°45'00		2270 Mar 07 06:29	30°♆♂	
max. Earth dist.	2261 Sep 02 14:07	10°♆58'56	31.18574 AU	opposition	2270 Mar 20 09:07	29°♆38'27	1°16'22
retrograde	2261 Dec 15 15:24	13°♆28'24		min. Earth dist.	2270 Mar 21 05:02	29°♆37'04	29.25532 AU
opposition	2262 Mar 02 22:10	12°♆05'56	0°49'53	direct	2270 Jun 08 23:02	28°♆13'20	
min. Earth dist.	2262 Mar 03 13:10	12°♆04'53	29.19189 AU		2270 Sep 03 11:41	0°♆	
direct	2262 May 21 22:38	10°♆40'48					
				conjunction	2270 Sep 23 19:19	0°♆44'34	1°12'52
conjunction	2262 Sep 05 20:05	13°♆12'14	0°48'26	minimum elong	2270 Sep 23 19:19	0°♆44'34	1°12'52
minimum elong	2262 Sep 05 20:04	13°♆12'14	0°48'26	max. Earth dist.	2270 Sep 22 20:54	0°♆42'29	31.25762 AU
max. Earth dist.	2262 Sep 05 03:02	13°♆10'40	31.19727 AU	retrograde	2271 Jan 04 10:38	3°♆11'29	
retrograde	2262 Dec 18 01:13	15°♆40'01		opposition	2271 Mar 22 19:33	1°♆49'21	1°19'14
opposition	2263 Mar 05 08:30	14°♆17'37	0°53'30	min. Earth dist.	2271 Mar 23 15:05	1°♆48'00	29.26150 AU
min. Earth dist.	2263 Mar 06 00:54	14°♆16'29	29.20320 AU	direct	2271 Jun 11 09:48	0°♆24'13	
direct	2263 May 24 10:39	12°♆52'33		max. Earth dist.	2271 Sep 25 09:24	2°♆53'27	31.26408 AU
conjunction	2263 Sep 08 08:15	15°♆24'00	0°51'47	conjunction	2271 Sep 26 06:44	2°♆55'25	1°15'29
minimum elong	2263 Sep 08 08:15	15°♆24'00	0°51'47	minimum elong	2271 Sep 26 06:43	2°♆55'25	1°15'29
max. Earth dist.	2263 Sep 07 13:36	15°♆22'17	31.20822 AU	retrograde	2272 Jan 06 19:18	5°♆22'16	
retrograde	2263 Dec 20 13:12	17°♆51'42		opposition	2272 Mar 24 06:08	4°♆00'09	1°21'58
opposition	2264 Mar 06 18:45	16°♆29'23	0°57'03	min. Earth dist.	2272 Mar 25 02:26	3°♆58'44	29.26847 AU
min. Earth dist.	2264 Mar 07 10:51	16°♆28'16	29.21374 AU	direct	2272 Jun 12 20:56	2°♆35'02	
direct	2264 May 25 22:32	15°♆04'20					

conjunction	2272 Sep 27 17:56	5° <u>♁</u> 06'11	1°18'00	retrograde	2281 Jan 25 14:02	24° <u>♁</u> 59'44	
minimum elong	2272 Sep 27 17:56	5° <u>♁</u> 06'11	1°18'00	opposition	2281 Apr 13 07:17	23° <u>♁</u> 37'53	1°40'51
max. Earth dist.	2272 Sep 26 19:46	5° <u>♁</u> 04'08	31.27159 AU	min. Earth dist.	2281 Apr 14 05:51	23° <u>♁</u> 36'20	29.31878 AU
retrograde	2273 Jan 08 06:38	7° <u>♁</u> 32'58		direct	2281 Jul 03 06:21	22° <u>♁</u> 13'03	
opposition	2273 Mar 26 16:35	6° <u>♁</u> 10'53	1°24'35				
min. Earth dist.	2273 Mar 27 11:53	6° <u>♁</u> 09'33	29.27643 AU	conjunction	2281 Oct 17 21:00	24° <u>♁</u> 43'54	1°35'06
direct	2273 Jun 15 08:16	4° <u>♁</u> 45'49		minimum elong	2281 Oct 17 21:00	24° <u>♁</u> 43'54	1°35'06
max. Earth dist.	2273 Sep 29 07:33	7° <u>♁</u> 14'57	31.27979 AU	max. Earth dist.	2281 Oct 16 21:01	24° <u>♁</u> 41'40	31.31809 AU
				retrograde	2282 Jan 28 00:54	27° <u>♁</u> 10'21	
conjunction	2273 Sep 30 05:09	7° <u>♁</u> 16'57	1°20'23	opposition	2282 Apr 15 18:11	25° <u>♁</u> 48'29	1°42'15
minimum elong	2273 Sep 30 05:09	7° <u>♁</u> 16'57	1°20'23	min. Earth dist.	2282 Apr 16 15:42	25° <u>♁</u> 47'01	29.31943 AU
retrograde	2274 Jan 10 16:58	9° <u>♁</u> 43'41		direct	2282 Jul 05 17:55	24° <u>♁</u> 23'37	
opposition	2274 Mar 29 03:15	8° <u>♁</u> 21'40	1°27'05	max. Earth dist.	2282 Oct 19 08:16	26° <u>♁</u> 52'15	31.31861 AU
min. Earth dist.	2274 Mar 29 23:42	8° <u>♁</u> 20'15	29.28486 AU				
direct	2274 Jun 17 20:19	6° <u>♁</u> 56'39		conjunction	2282 Oct 20 07:33	26° <u>♁</u> 54'25	1°36'21
				minimum elong	2282 Oct 20 07:33	26° <u>♁</u> 54'25	1°36'21
conjunction	2274 Oct 02 16:19	9° <u>♁</u> 27'46	1°22'40	retrograde	2283 Jan 30 10:55	29° <u>♁</u> 20'50	
minimum elong	2274 Oct 02 16:19	9° <u>♁</u> 27'46	1°22'40	opposition	2283 Apr 18 05:16	27° <u>♁</u> 58'57	1°43'31
max. Earth dist.	2274 Oct 01 18:17	9° <u>♁</u> 25'43	31.28825 AU	min. Earth dist.	2283 Apr 19 03:36	27° <u>♁</u> 57'25	29.32019 AU
retrograde	2275 Jan 13 04:31	11° <u>♁</u> 54'28		direct	2283 Jul 08 06:12	26° <u>♁</u> 34'05	
opposition	2275 Mar 31 13:47	10° <u>♁</u> 32'30	1°29'27				
min. Earth dist.	2275 Apr 01 09:37	10° <u>♁</u> 31'08	29.29311 AU	conjunction	2283 Oct 22 17:55	29° <u>♁</u> 04'49	1°37'28
direct	2275 Jun 20 09:36	9° <u>♁</u> 07'32		minimum elong	2283 Oct 22 17:55	29° <u>♁</u> 04'49	1°37'28
max. Earth dist.	2275 Oct 04 05:08	11° <u>♁</u> 36'35	31.29614 AU	max. Earth dist.	2283 Oct 21 18:48	29° <u>♁</u> 02'39	31.31969 AU
					2283 Nov 16 23:39	0° <u>♁</u>	
conjunction	2275 Oct 05 03:32	11° <u>♁</u> 38'40	1°24'50	retrograde	2284 Feb 01 22:07	1° <u>♁</u> 31'13	
minimum elong	2275 Oct 05 03:32	11° <u>♁</u> 38'40	1°24'49	opposition	2284 Apr 19 16:20	0° <u>♁</u> 09'18	1°44'38
retrograde	2276 Jan 15 14:33	14° <u>♁</u> 05'20		min. Earth dist.	2284 Apr 20 13:20	0° <u>♁</u> 07'52	29.32162 AU
opposition	2276 Apr 02 00:40	12° <u>♁</u> 43'25	1°31'41		2284 Apr 25 08:32	30° <u>♁</u>	
min. Earth dist.	2276 Apr 02 21:35	12° <u>♁</u> 41'59	29.30074 AU	direct	2284 Jul 09 19:17	28° <u>♁</u> 44'28	
direct	2276 Jun 21 20:22	11° <u>♁</u> 18'30			2284 Sep 18 23:27	0° <u>♁</u>	
				max. Earth dist.	2284 Oct 23 05:14	1° <u>♁</u> 13'01	31.32155 AU
conjunction	2276 Oct 06 14:34	13° <u>♁</u> 49'36	1°26'52				
minimum elong	2276 Oct 06 14:33	13° <u>♁</u> 49'36	1°26'51	conjunction	2284 Oct 24 04:05	1° <u>♁</u> 15'08	1°38'26
max. Earth dist.	2276 Oct 05 16:26	13° <u>♁</u> 47'33	31.30318 AU	minimum elong	2284 Oct 24 04:05	1° <u>♁</u> 15'08	1°38'26
retrograde	2277 Jan 17 00:21	16° <u>♁</u> 16'14		retrograde	2285 Feb 03 07:58	3° <u>♁</u> 41'33	
opposition	2277 Apr 04 11:31	14° <u>♁</u> 54'23	1°33'48	opposition	2285 Apr 22 03:29	2° <u>♁</u> 19'39	1°45'36
min. Earth dist.	2277 Apr 05 08:18	14° <u>♁</u> 52'57	29.30709 AU	min. Earth dist.	2285 Apr 23 00:51	2° <u>♁</u> 18'11	29.32405 AU
direct	2277 Jun 24 09:41	13° <u>♁</u> 29'30		direct	2285 Jul 12 05:54	0° <u>♁</u> 54'51	
max. Earth dist.	2277 Oct 08 02:17	15° <u>♁</u> 58'25	31.30880 AU				
				conjunction	2285 Oct 26 14:23	3° <u>♁</u> 25'29	1°39'16
conjunction	2277 Oct 09 01:37	16° <u>♁</u> 00'35	1°28'46	minimum elong	2285 Oct 26 14:23	3° <u>♁</u> 25'29	1°39'16
minimum elong	2277 Oct 09 01:37	16° <u>♁</u> 00'35	1°28'46	max. Earth dist.	2285 Oct 25 16:32	3° <u>♁</u> 23'27	31.32442 AU
retrograde	2278 Jan 19 11:04	18° <u>♁</u> 27'11		retrograde	2286 Feb 05 17:56	5° <u>♁</u> 51'53	
opposition	2278 Apr 06 22:18	17° <u>♁</u> 05'21	1°35'46	opposition	2286 Apr 24 14:28	4° <u>♁</u> 30'02	1°46'24
min. Earth dist.	2278 Apr 07 19:34	17° <u>♁</u> 03'53	29.31212 AU	min. Earth dist.	2286 Apr 25 11:08	4° <u>♁</u> 28'37	29.32714 AU
direct	2278 Jun 26 20:06	15° <u>♁</u> 40'30		direct	2286 Jul 14 19:31	3° <u>♁</u> 05'17	
				max. Earth dist.	2286 Oct 28 02:10	5° <u>♁</u> 33'48	31.32775 AU
conjunction	2278 Oct 11 12:47	18° <u>♁</u> 11'32	1°30'33				
minimum elong	2278 Oct 11 12:47	18° <u>♁</u> 11'32	1°30'33	conjunction	2286 Oct 29 00:33	5° <u>♁</u> 35'54	1°39'57
max. Earth dist.	2278 Oct 10 14:01	18° <u>♁</u> 09'25	31.31299 AU	minimum elong	2286 Oct 29 00:33	5° <u>♁</u> 35'54	1°39'57
retrograde	2279 Jan 21 19:23	20° <u>♁</u> 38'06		retrograde	2287 Feb 08 05:16	8° <u>♁</u> 02'20	
opposition	2279 Apr 09 09:19	19° <u>♁</u> 16'17	1°37'36	opposition	2287 Apr 27 01:43	6° <u>♁</u> 40'30	1°47'04
min. Earth dist.	2279 Apr 10 07:12	19° <u>♁</u> 14'47	29.31551 AU	min. Earth dist.	2287 Apr 27 22:10	6° <u>♁</u> 39'06	29.33063 AU
direct	2279 Jun 29 08:46	17° <u>♁</u> 51'27		direct	2287 Jul 17 06:29	5° <u>♁</u> 15'49	
conjunction	2279 Oct 13 23:34	20° <u>♁</u> 22'26	1°32'12	conjunction	2287 Oct 31 10:41	7° <u>♁</u> 46'23	1°40'30
minimum elong	2279 Oct 13 23:34	20° <u>♁</u> 22'26	1°32'12	minimum elong	2287 Oct 31 10:41	7° <u>♁</u> 46'23	1°40'30
max. Earth dist.	2279 Oct 12 23:28	20° <u>♁</u> 20'12	31.31570 AU	max. Earth dist.	2287 Oct 30 13:37	7° <u>♁</u> 44'25	31.33112 AU
retrograde	2280 Jan 24 05:28	22° <u>♁</u> 48'58		retrograde	2288 Feb 10 13:28	10° <u>♁</u> 12'52	
opposition	2280 Apr 10 20:17	21° <u>♁</u> 27'09	1°39'18	opposition	2288 Apr 28 13:10	8° <u>♁</u> 51'04	1°47'34
min. Earth dist.	2280 Apr 11 17:50	21° <u>♁</u> 25'40	29.31766 AU	min. Earth dist.	2288 Apr 29 09:46	8° <u>♁</u> 49'39	29.33374 AU
direct	2280 Jun 30 19:29	20° <u>♁</u> 02'18		direct	2288 Jul 18 18:58	7° <u>♁</u> 26'27	
max. Earth dist.	2280 Oct 14 11:17	22° <u>♁</u> 31'05	31.31724 AU				
				conjunction	2288 Nov 01 20:44	9° <u>♁</u> 56'59	1°40'54
conjunction	2280 Oct 15 10:28	22° <u>♁</u> 33'14	1°33'43	minimum elong	2288 Nov 01 20:44	9° <u>♁</u> 56'59	1°40'54
minimum elong	2280 Oct 15 10:28	22° <u>♁</u> 33'14	1°33'43	max. Earth dist.	2288 Oct 31 22:47	9° <u>♁</u> 54'55	31.33396 AU

retrograde	2289 Feb 11 23:33	12°M.23'29		retrograde	2297 Mar 01 08:09	29°M.46'48	
opposition	2289 May 01 00:27	11°M.01'42	1°47'55	opposition	2297 May 18 21:46	28°M.24'44	1°45'15
min. Earth dist.	2289 May 01 20:23	11°M.00'20	29.33622 AU	min. Earth dist.	2297 May 19 15:38	28°M.23'31	29.32038 AU
direct	2289 Jul 21 05:22	9°M.37'07		direct	2297 Aug 08 04:42	27°M.00'16	
max. Earth dist.	2289 Nov 03 10:04	12°M.05'40	31.33580 AU				
conjunction	2289 Nov 04 06:56	12°M.07'37	1°41'09	conjunction	2297 Nov 21 13:08	29°M.30'08	1°38'04
minimum elong	2289 Nov 04 06:56	12°M.07'37	1°41'09	minimum elong	2297 Nov 21 13:08	29°M.30'08	1°38'04
retrograde	2290 Feb 14 08:32	14°M.34'09		max. Earth dist.	2297 Nov 20 18:40	29°M.28'24	31.31863 AU
opposition	2290 May 03 12:04	13°M.12'22	1°48'07		2297 Dec 04 21:21	0°Z	
min. Earth dist.	2290 May 04 08:52	13°M.10'57	29.33741 AU	retrograde	2298 Mar 03 18:37	1°Z56'55	
direct	2290 Jul 23 16:09	11°M.47'50		opposition	2298 May 21 09:31	0°Z34'51	1°44'14
				min. Earth dist.	2298 May 22 02:00	0°Z33'44	29.31916 AU
conjunction	2290 Nov 06 16:57	14°M.18'15	1°41'16		2298 Jun 12 10:48	30°RM	
minimum elong	2290 Nov 06 16:57	14°M.18'15	1°41'15	direct	2298 Aug 10 15:25	29°M.10'27	
max. Earth dist.	2290 Nov 05 19:25	14°M.16'14	31.33636 AU		2298 Oct 06 01:40	0°Z	
	2290 Nov 25 12:48	15°M.		conjunction	2298 Nov 23 22:39	1°Z40'17	1°37'03
retrograde	2291 Feb 16 19:15	16°M.44'49		minimum elong	2298 Nov 23 22:39	1°Z40'17	1°37'02
opposition	2291 May 05 23:35	15°M.23'01	1°48'10	max. Earth dist.	2298 Nov 23 05:55	1°Z38'43	31.31774 AU
min. Earth dist.	2291 May 06 19:15	15°M.21'41	29.33725 AU	retrograde	2299 Mar 06 03:54	4°Z07'11	
	2291 May 20 05:59	15°RM.		opposition	2299 May 23 21:31	2°Z45'07	1°43'04
direct	2291 Jul 26 03:45	13°M.58'30		min. Earth dist.	2299 May 24 14:14	2°Z43'59	29.31850 AU
	2291 Sep 27 17:28	15°M.		direct	2299 Aug 13 02:02	1°Z20'49	
max. Earth dist.	2291 Nov 08 06:01	16°M.26'53	31.33545 AU				
conjunction	2291 Nov 09 03:04	16°M.28'51	1°41'14	conjunction	2299 Nov 26 08:04	3°Z50'36	1°35'53
minimum elong	2291 Nov 09 03:04	16°M.28'51	1°41'14	minimum elong	2299 Nov 26 08:04	3°Z50'36	1°35'53
retrograde	2292 Feb 19 05:20	18°M.55'27		max. Earth dist.	2299 Nov 25 15:25	3°Z49'02	31.31738 AU
opposition	2292 May 07 11:21	17°M.33'36	1°48'03	retrograde	2300 Mar 08 15:00	6°Z17'37	
min. Earth dist.	2292 May 08 07:53	17°M.32'12	29.33574 AU	opposition	2300 May 26 09:27	4°Z55'34	1°41'45
direct	2292 Jul 27 15:07	16°M.09'06		min. Earth dist.	2300 May 27 00:29	4°Z54'33	29.31810 AU
				direct	2300 Aug 15 12:59	3°Z31'20	
conjunction	2292 Nov 10 12:55	18°M.39'22	1°41'03	conjunction	2300 Nov 28 17:31	6°Z01'07	1°34'35
minimum elong	2292 Nov 10 12:55	18°M.39'22	1°41'03	minimum elong	2300 Nov 28 17:31	6°Z01'07	1°34'34
max. Earth dist.	2292 Nov 09 16:01	18°M.37'24	31.33338 AU	max. Earth dist.	2300 Nov 28 01:43	5°Z59'38	31.31682 AU
retrograde	2293 Feb 20 16:07	21°M.05'58		retrograde	2301 Mar 11 01:42	8°Z28'15	
opposition	2293 May 09 22:56	19°M.44'05	1°47'47	opposition	2301 May 28 21:36	7°Z06'13	1°40'17
min. Earth dist.	2293 May 10 18:24	19°M.42'45	29.33297 AU	min. Earth dist.	2301 May 29 13:11	7°Z05'09	29.31730 AU
direct	2293 Jul 30 03:41	18°M.19'34		direct	2301 Aug 17 23:15	5°Z42'04	
				max. Earth dist.	2301 Nov 30 11:45	8°Z10'22	31.31570 AU
conjunction	2293 Nov 12 22:47	20°M.49'44	1°40'44	conjunction	2301 Dec 01 03:02	8°Z11'48	1°33'08
minimum elong	2293 Nov 12 22:47	20°M.49'44	1°40'44	minimum elong	2301 Dec 01 03:02	8°Z11'48	1°33'08
max. Earth dist.	2293 Nov 12 01:49	20°M.47'47	31.33014 AU	retrograde	2302 Mar 13 13:02	10°Z39'03	
retrograde	2294 Feb 23 02:28	23°M.16'22		opposition	2302 May 31 09:38	9°Z17'01	1°38'40
opposition	2294 May 12 10:32	21°M.54'24	1°47'23	min. Earth dist.	2302 May 31 23:57	9°Z16'03	29.31557 AU
min. Earth dist.	2294 May 13 06:28	21°M.53'03	29.32948 AU	direct	2302 Aug 20 10:31	7°Z52'56	
direct	2294 Aug 01 14:44	20°M.29'53					
conjunction	2294 Nov 15 08:35	22°M.59'58	1°40'17	conjunction	2302 Dec 03 12:35	10°Z22'39	1°31'34
minimum elong	2294 Nov 15 08:35	22°M.59'58	1°40'17	minimum elong	2302 Dec 03 12:36	10°Z22'39	1°31'33
max. Earth dist.	2294 Nov 14 12:51	22°M.58'07	31.32652 AU	max. Earth dist.	2302 Dec 02 21:17	10°Z21'12	31.31341 AU
retrograde	2295 Feb 25 12:30	25°M.26'36		retrograde	2303 Mar 16 00:37	12°Z50'00	
opposition	2295 May 14 22:17	24°M.04'35	1°46'49	opposition	2303 Jun 02 22:02	11°Z27'57	1°36'55
min. Earth dist.	2295 May 15 17:18	24°M.03'18	29.32575 AU	min. Earth dist.	2303 Jun 03 12:39	11°Z26'58	29.31272 AU
direct	2295 Aug 04 04:49	22°M.40'04		direct	2303 Aug 22 21:09	10°Z03'56	
conjunction	2295 Nov 17 18:02	25°M.10'04	1°39'41	conjunction	2303 Dec 05 22:05	12°Z33'35	1°29'51
minimum elong	2295 Nov 17 18:02	25°M.10'04	1°39'41	minimum elong	2303 Dec 05 22:06	12°Z33'35	1°29'51
max. Earth dist.	2295 Nov 16 22:05	25°M.08'12	31.32299 AU	max. Earth dist.	2303 Dec 05 08:01	12°Z32'16	31.30988 AU
retrograde	2296 Feb 27 23:49	27°M.36'44		retrograde	2304 Mar 17 11:59	15°Z01'02	
opposition	2296 May 16 10:03	26°M.14'40	1°46'07	opposition	2304 Jun 04 10:24	13°Z38'58	1°35'02
min. Earth dist.	2296 May 17 04:19	26°M.13'26	29.32265 AU	min. Earth dist.	2304 Jun 05 00:16	13°Z38'02	29.30833 AU
direct	2296 Aug 05 16:13	24°M.50'10		direct	2304 Aug 24 11:06	12°Z14'58	
max. Earth dist.	2296 Nov 18 09:31	27°M.18'23	31.32030 AU				
conjunction	2296 Nov 19 03:41	27°M.20'05	1°38'57	conjunction	2304 Dec 07 07:35	14°Z44'34	1°28'01
minimum elong	2296 Nov 19 03:41	27°M.20'05	1°38'57	minimum elong	2304 Dec 07 07:35	14°Z44'34	1°28'01
				max. Earth dist.	2304 Dec 06 16:53	14°Z43'11	31.30482 AU

retrograde	2305 Mar 20 00:20	17°♂12'06		minimum elong	2312 Dec 24 09:59	2°♁10'22	1°09'06
opposition	2305 Jun 06 22:39	15°♂49'58	1°33'00	max. Earth dist.	2312 Dec 24 02:58	2°♁09'42	31.25388 AU
min. Earth dist.	2305 Jun 07 12:06	15°♂49'04	29.30260 AU	retrograde	2313 Apr 06 12:52	4°♁38'44	
direct	2305 Aug 26 22:33	14°♂25'59		opposition	2313 Jun 25 02:44	3°♁16'10	1°12'19
				min. Earth dist.	2313 Jun 25 09:35	3°♁15'42	29.25176 AU
conjunction	2305 Dec 09 17:12	16°♂55'31	1°26'04	direct	2313 Sep 13 19:26	1°♁52'25	
minimum elong	2305 Dec 09 17:12	16°♂55'31	1°26'04				
max. Earth dist.	2305 Dec 09 03:56	16°♂54'16	31.29843 AU	conjunction	2313 Dec 26 19:17	4°♁21'23	1°06'14
retrograde	2306 Mar 22 09:16	19°♂23'07		minimum elong	2313 Dec 26 19:17	4°♁21'23	1°06'15
opposition	2306 Jun 09 11:07	18°♂00'55	1°30'51	max. Earth dist.	2313 Dec 26 11:56	4°♁20'41	31.24873 AU
min. Earth dist.	2306 Jun 10 00:27	18°♂00'01	29.29553 AU	retrograde	2314 Apr 09 02:02	6°♁49'54	
direct	2306 Aug 29 11:32	16°♂36'57		opposition	2314 Jun 27 15:31	5°♁27'19	1°09'12
				min. Earth dist.	2314 Jun 27 21:39	5°♁26'54	29.24633 AU
conjunction	2306 Dec 12 02:26	19°♂06'21	1°23'59	direct	2314 Sep 16 05:58	4°♁03'38	
minimum elong	2306 Dec 12 02:26	19°♂06'21	1°23'59				
max. Earth dist.	2306 Dec 11 12:51	19°♂05'05	31.29106 AU	conjunction	2314 Dec 29 04:41	6°♁32'34	1°03'17
retrograde	2307 Mar 24 20:08	21°♂34'01		minimum elong	2314 Dec 29 04:42	6°♁32'34	1°03'17
opposition	2307 Jun 11 23:32	20°♂11'45	1°28'34	max. Earth dist.	2314 Dec 28 23:02	6°♁32'02	31.24283 AU
min. Earth dist.	2307 Jun 12 11:31	20°♂10'56	29.28789 AU	retrograde	2315 Apr 11 12:27	9°♁01'15	
direct	2307 Aug 31 23:55	18°♂47'46		opposition	2315 Jun 30 04:30	7°♁38'38	1°05'59
				min. Earth dist.	2315 Jun 30 10:21	7°♁38'15	29.23985 AU
conjunction	2307 Dec 14 11:49	21°♂17'05	1°21'47	direct	2315 Sep 18 18:38	6°♁15'01	
minimum elong	2307 Dec 14 11:49	21°♂17'05	1°21'48				
max. Earth dist.	2307 Dec 13 23:54	21°♂15'57	31.28332 AU	conjunction	2315 Dec 31 14:07	8°♁43'55	1°00'14
retrograde	2308 Mar 26 05:48	23°♂44'49		minimum elong	2315 Dec 31 14:07	8°♁43'55	1°00'14
opposition	2308 Jun 13 12:03	22°♂22'27	1°26'10	max. Earth dist.	2315 Dec 31 08:06	8°♁43'21	31.23587 AU
min. Earth dist.	2308 Jun 14 00:07	22°♂21'38	29.28027 AU	retrograde	2316 Apr 13 00:59	11°♁12'45	
direct	2308 Sep 02 11:51	20°♂58'28		opposition	2316 Jul 01 17:18	9°♁50'06	1°02'41
				min. Earth dist.	2316 Jul 01 21:57	9°♁49'47	29.23224 AU
conjunction	2308 Dec 15 20:58	23°♂27'41	1°19'29	direct	2316 Sep 20 06:41	8°♁26'31	
minimum elong	2308 Dec 15 20:58	23°♂27'41	1°19'28				
max. Earth dist.	2308 Dec 15 09:31	23°♂26'36	31.27605 AU	conjunction	2317 Jan 01 23:41	10°♁55'23	0°57'05
retrograde	2309 Mar 28 16:01	25°♂55'31		minimum elong	2317 Jan 01 23:41	10°♁55'23	0°57'05
opposition	2309 Jun 16 00:26	24°♂33'05	1°23'38	max. Earth dist.	2317 Jan 01 18:54	10°♁54'56	31.22748 AU
min. Earth dist.	2309 Jun 16 10:25	24°♂32'24	29.27327 AU	retrograde	2317 Apr 15 11:51	13°♁24'22	
direct	2309 Sep 04 23:29	23°♂09'06		opposition	2317 Jul 04 06:20	12°♁01'39	0°59'17
				min. Earth dist.	2317 Jul 04 11:23	12°♁01'19	29.22306 AU
conjunction	2309 Dec 18 06:13	25°♂38'15	1°17'03	direct	2317 Sep 22 18:51	10°♁38'06	
minimum elong	2309 Dec 18 06:13	25°♂38'15	1°17'03				
max. Earth dist.	2309 Dec 17 19:49	25°♂37'16	31.26941 AU	conjunction	2318 Jan 04 09:10	13°♁06'55	0°53'52
retrograde	2310 Mar 31 02:03	28°♂06'11		minimum elong	2318 Jan 04 09:10	13°♁06'55	0°53'52
opposition	2310 Jun 18 12:57	26°♂43'42	1°20'59	max. Earth dist.	2318 Jan 04 04:33	13°♁06'29	31.21769 AU
min. Earth dist.	2310 Jun 18 22:57	26°♂43'01	29.26709 AU	retrograde	2318 Apr 17 22:40	15°♁36'02	
direct	2310 Sep 07 09:37	25°♂19'46		opposition	2318 Jul 06 19:11	14°♁13'15	0°55'48
				min. Earth dist.	2318 Jul 06 22:34	14°♁13'01	29.21252 AU
conjunction	2310 Dec 20 15:29	27°♂48'50	1°14'31	direct	2318 Sep 25 06:54	12°♁49'42	
minimum elong	2310 Dec 20 15:30	27°♂48'50	1°14'30				
max. Earth dist.	2310 Dec 20 06:19	27°♂47'58	31.26379 AU	conjunction	2319 Jan 06 18:39	15°♁18'26	0°50'34
	2311 Mar 01 17:37	0°♁		minimum elong	2319 Jan 06 18:39	15°♁18'26	0°50'34
retrograde	2311 Apr 02 13:07	0°♁16'54		max. Earth dist.	2319 Jan 06 14:39	15°♁18'04	31.20662 AU
	2311 May 05 08:11	30°♁♂		retrograde	2319 Apr 20 09:05	17°♁47'41	
opposition	2311 Jun 21 01:30	28°♂54'23	1°18'12	opposition	2319 Jul 09 08:16	16°♁24'48	0°52'14
min. Earth dist.	2311 Jun 21 09:35	28°♂53'50	29.26169 AU	min. Earth dist.	2319 Jul 09 11:54	16°♁24'33	29.20110 AU
direct	2311 Sep 09 20:38	27°♂30'30		direct	2319 Sep 27 17:29	15°♁01'15	
conjunction	2311 Dec 23 00:36	29°♂59'32	1°11'52	conjunction	2320 Jan 09 04:01	17°♁29'55	0°47'12
minimum elong	2311 Dec 23 00:36	29°♂59'32	1°11'52	minimum elong	2320 Jan 09 04:01	17°♁29'55	0°47'12
max. Earth dist.	2311 Dec 22 15:51	29°♂58'42	31.25870 AU	max. Earth dist.	2320 Jan 09 01:17	17°♁29'39	31.19509 AU
	2311 Dec 23 05:37	0°♁		retrograde	2320 Apr 21 20:04	19°♁59'17	
retrograde	2312 Apr 04 01:15	2°♁27'45		opposition	2320 Jul 10 21:10	18°♁36'18	0°48'36
opposition	2312 Jun 22 14:12	1°♁05'12	1°15'19	min. Earth dist.	2320 Jul 10 22:59	18°♁36'11	29.18940 AU
min. Earth dist.	2312 Jun 22 22:07	1°♁04'40	29.25680 AU	direct	2320 Sep 29 04:47	17°♁12'44	
	2312 Aug 07 14:09	30°♁♂					
direct	2312 Sep 11 06:53	29°♂41'23		conjunction	2321 Jan 10 13:22	19°♁41'19	0°43'47
	2312 Oct 15 03:37	0°♁		minimum elong	2321 Jan 10 13:22	19°♁41'20	0°43'46
				max. Earth dist.	2321 Jan 10 10:56	19°♁41'06	31.18353 AU
conjunction	2312 Dec 24 09:59	2°♁10'22	1°09'06	retrograde	2321 Apr 24 08:06	22°♁10'50	

opposition	2321 Jul 13 10:00	20°☾47'45	0°44'54	max. Earth dist.	2329 Jan 27 23:30	7°≈16'11	31.11365 AU
min. Earth dist.	2321 Jul 13 11:33	20°☾47'39	29.17822 AU	retrograde	2329 May 12 08:46	9°≈46'30	
direct	2321 Oct 01 15:13	19°☾24'11		opposition	2329 Jul 31 18:30	8°≈22'59	0°13'16
				min. Earth dist.	2329 Jul 31 12:15	8°≈23'24	29.10864 AU
conjunction	2322 Jan 12 22:51	21°☾52'43	0°40'17	direct	2329 Oct 19 12:18	6°≈59'43	
minimum elong	2322 Jan 12 22:51	21°☾52'43	0°40'17				
max. Earth dist.	2322 Jan 12 22:27	21°☾52'41	31.17276 AU	conjunction	2330 Jan 30 03:53	9°≈28'02	0°10'33
retrograde	2322 Apr 26 19:55	24°☾22'22		minimum elong	2330 Jan 30 03:52	9°≈28'02	0°10'33
opposition	2322 Jul 15 22:58	22°☾59'13	0°41'08	behind sun begin	2330 Jan 29 22:50	9°≈27'34	
min. Earth dist.	2322 Jul 15 23:00	22°☾59'13	29.16786 AU	behind sun end	2330 Jan 30 08:54	9°≈28'29	
direct	2322 Oct 04 03:15	21°☾35'40		max. Earth dist.	2330 Jan 30 09:12	9°≈28'31	31.10328 AU
				retrograde	2330 May 14 21:02	11°≈59'01	
conjunction	2323 Jan 15 08:04	24°☾04'09	0°36'43	opposition	2330 Aug 03 07:53	10°≈35'25	0°09'09
minimum elong	2323 Jan 15 08:04	24°☾04'09	0°36'43	min. Earth dist.	2330 Aug 03 01:46	10°≈35'50	29.09774 AU
max. Earth dist.	2323 Jan 15 07:45	24°☾04'08	31.16301 AU	direct	2330 Oct 21 22:40	9°≈12'09	
retrograde	2323 Apr 29 09:08	26°☾33'58					
opposition	2323 Jul 18 11:59	25°☾10'45	0°37'18	conjunction	2331 Feb 01 13:51	11°≈40'24	0°06'42
min. Earth dist.	2323 Jul 18 10:49	25°☾10'49	29.15867 AU	minimum elong	2331 Feb 01 13:51	11°≈40'24	0°06'43
direct	2323 Oct 06 12:58	23°☾47'14		behind sun begin	2331 Feb 01 07:51	11°≈39'52	
				behind sun end	2331 Feb 01 19:50	11°≈40'57	
conjunction	2324 Jan 17 17:36	26°☾15'42	0°33'07	max. Earth dist.	2331 Feb 01 20:50	11°≈41'03	31.09186 AU
minimum elong	2324 Jan 17 17:36	26°☾15'42	0°33'07	retrograde	2331 May 17 08:28	14°≈11'31	
max. Earth dist.	2324 Jan 17 19:21	26°☾15'51	31.15427 AU	opposition	2331 Aug 05 21:08	12°≈47'49	0°05'01
retrograde	2324 Apr 30 20:20	28°☾45'40		min. Earth dist.	2331 Aug 05 13:58	12°≈48'18	29.08579 AU
opposition	2324 Jul 20 00:54	27°☾22'24	0°33'24	direct	2331 Oct 24 10:40	11°≈24'32	
min. Earth dist.	2324 Jul 19 23:04	27°☾22'31	29.15030 AU				
direct	2324 Oct 08 01:19	25°☾58'56		conjunction	2332 Feb 03 23:45	13°≈52'44	0°02'51
				minimum elong	2332 Feb 03 23:46	13°≈52'44	0°02'52
conjunction	2325 Jan 19 03:02	28°☾27'22	0°29'27	behind sun begin	2332 Feb 03 17:23	13°≈52'10	
minimum elong	2325 Jan 19 03:02	28°☾27'22	0°29'26	behind sun end	2332 Feb 04 06:08	13°≈53'19	
max. Earth dist.	2325 Jan 19 04:54	28°☾27'32	31.14634 AU	max. Earth dist.	2332 Feb 04 06:25	13°≈53'20	31.07970 AU
	2325 Mar 03 23:42	0°≈			2332 Mar 05 13:43	15°≈	
retrograde	2325 May 03 10:14	0°≈57'30		retrograde	2332 May 18 21:51	16°≈23'59	
	2325 Jul 06 10:15	30°☾		opposition	2332 Aug 07 10:12	15°≈00'10	0°00'53
opposition	2325 Jul 22 13:52	29°☾34'11	0°29'28	min. Earth dist.	2332 Aug 07 02:21	15°≈00'42	29.07358 AU
min. Earth dist.	2325 Jul 22 10:26	29°☾34'25	29.14257 AU		2332 Aug 07 12:40	15°≈	
direct	2325 Oct 10 13:26	28°☾10'46		direct	2332 Oct 25 20:28	13°≈36'51	
	2326 Jan 04 02:35	0°≈		desc. node	2332 Oct 25 05:09	13°≈36'52	
					2333 Jan 06 21:19	15°≈	
conjunction	2326 Jan 21 12:34	0°≈39'12	0°25'44	conjunction	2333 Feb 05 09:49	16°≈05'01	0°-1'-7
minimum elong	2326 Jan 21 12:34	0°≈39'12	0°25'44	minimum elong	2333 Feb 05 09:49	16°≈05'01	0°01'08
max. Earth dist.	2326 Jan 21 16:01	0°≈39'32	31.13864 AU	behind sun begin	2333 Feb 05 03:25	16°≈04'26	
retrograde	2326 May 05 21:56	3°≈09'31		behind sun end	2333 Feb 05 16:12	16°≈05'35	
opposition	2326 Jul 25 03:03	1°≈46'10	0°25'28	max. Earth dist.	2333 Feb 05 18:16	16°≈05'48	31.06744 AU
min. Earth dist.	2326 Jul 24 23:42	1°≈46'24	29.13489 AU	retrograde	2333 May 21 09:28	18°≈36'23	
direct	2326 Oct 13 01:13	0°≈22'49		opposition	2333 Aug 09 23:20	17°≈12'28	0°-3'-14
				min. Earth dist.	2333 Aug 09 14:52	17°≈13'03	29.06153 AU
conjunction	2327 Jan 23 22:14	2°≈51'13	0°21'59	direct	2333 Oct 28 09:00	15°≈49'09	
minimum elong	2327 Jan 23 22:14	2°≈51'13	0°21'58				
max. Earth dist.	2327 Jan 24 02:15	2°≈51'35	31.13101 AU	conjunction	2334 Feb 07 19:37	18°≈17'16	0°-5'-1
retrograde	2327 May 08 09:40	5°≈21'42		minimum elong	2334 Feb 07 19:38	18°≈17'16	0°05'02
opposition	2327 Jul 27 16:10	3°≈58'19	0°21'26	behind sun begin	2334 Feb 07 13:24	18°≈16'42	
min. Earth dist.	2327 Jul 27 11:00	3°≈58'40	29.12703 AU	behind sun end	2334 Feb 08 01:51	18°≈17'50	
direct	2327 Oct 15 13:14	2°≈35'00		max. Earth dist.	2334 Feb 08 04:19	18°≈18'04	31.05582 AU
				retrograde	2334 May 23 23:48	20°≈48'47	
conjunction	2328 Jan 26 07:58	5°≈03'23	0°18'11	opposition	2334 Aug 12 12:25	19°≈24'46	0°-7'-22
minimum elong	2328 Jan 26 07:57	5°≈03'23	0°18'11	min. Earth dist.	2334 Aug 12 02:17	19°≈25'28	29.05044 AU
max. Earth dist.	2328 Jan 26 12:31	5°≈03'48	31.12276 AU	direct	2334 Oct 30 20:46	18°≈01'27	
retrograde	2328 May 09 21:05	7°≈34'03					
opposition	2328 Jul 29 05:28	6°≈10'36	0°17'22	conjunction	2335 Feb 10 05:44	20°≈29'34	0°-8'-51
min. Earth dist.	2328 Jul 29 00:41	6°≈10'55	29.11841 AU	minimum elong	2335 Feb 10 05:44	20°≈29'33	0°08'52
direct	2328 Oct 17 00:17	4°≈47'19		behind sun begin	2335 Feb 10 00:11	20°≈29'03	
				behind sun end	2335 Feb 10 11:16	20°≈30'04	
conjunction	2329 Jan 27 17:56	7°≈15'40	0°14'23	max. Earth dist.	2335 Feb 10 16:00	20°≈30'31	31.04519 AU
minimum elong	2329 Jan 27 17:56	7°≈15'40	0°14'22	retrograde	2335 May 26 11:49	23°≈01'15	
behind sun begin	2329 Jan 27 14:51	7°≈15'23		opposition	2335 Aug 15 01:35	21°≈37'10	0°-11'-30
behind sun end	2329 Jan 27 21:01	7°≈15'57					

min. Earth dist.	2335 Aug 14 15:20	21° \approx 37'52	29.04048 AU	retrograde	2343 Jun 13 19:10	10° \times 47'48	
direct	2335 Nov 02 08:13	20° \approx 13'52		opposition	2343 Sep 02 11:05	9° \times 23'23	0°-43'-33
				min. Earth dist.	2343 Sep 01 19:05	9° \times 24'29	28.97451 AU
conjunction	2336 Feb 12 15:47	22° \approx 41'58	0°-12'-42	direct	2343 Nov 20 01:42	8° \times 00'21	
minimum elong	2336 Feb 12 15:47	22° \approx 41'58	0°12'42				
behind sun begin	2336 Feb 12 11:39	22° \approx 41'35		conjunction	2344 Mar 01 04:36	10° \times 28'31	0°-42'-29
behind sun end	2336 Feb 12 19:54	22° \approx 42'20		minimum elong	2344 Mar 01 04:36	10° \times 28'31	0°42'30
max. Earth dist.	2336 Feb 13 02:54	22° \approx 43'00	31.03591 AU	max. Earth dist.	2344 Mar 01 20:38	10° \times 30'02	30.96866 AU
retrograde	2336 May 28 00:33	25° \approx 13'49		retrograde	2344 Jun 15 07:13	13° \times 01'42	
opposition	2336 Aug 16 14:36	23° \approx 49'41	0°-15'-37	min. Earth dist.	2344 Sep 03 08:48	11° \times 38'15	28.96329 AU
min. Earth dist.	2336 Aug 16 02:20	23° \approx 50'32	29.03172 AU	opposition	2344 Sep 04 00:19	11° \times 37'11	0°-47'-20
direct	2336 Nov 03 20:19	22° \approx 26'26		direct	2344 Nov 21 13:04	10° \times 14'06	
conjunction	2337 Feb 14 01:56	24° \approx 54'33	0°-16'-32	conjunction	2345 Mar 03 15:34	12° \times 42'15	0°-46'00
minimum elong	2337 Feb 14 01:56	24° \approx 54'33	0°16'33	minimum elong	2345 Mar 03 15:33	12° \times 42'15	0°46'01
max. Earth dist.	2337 Feb 14 13:43	24° \approx 55'39	31.02755 AU	max. Earth dist.	2345 Mar 04 08:02	12° \times 43'48	30.95734 AU
retrograde	2337 May 30 12:52	27° \approx 26'35		retrograde	2345 Jun 17 21:13	15° \times 15'30	
opposition	2337 Aug 19 03:43	26° \approx 02'25	0°-19'-42	opposition	2345 Sep 06 13:18	13° \times 50'53	0°-51'-3
min. Earth dist.	2337 Aug 18 15:36	26° \approx 03'15	29.02388 AU	min. Earth dist.	2345 Sep 05 20:16	13° \times 52'03	28.95200 AU
direct	2337 Nov 06 07:21	24° \approx 39'14		direct	2345 Nov 24 02:15	12° \times 27'46	
conjunction	2338 Feb 16 12:16	27° \approx 07'21	0°-20'-21	conjunction	2346 Mar 06 02:31	14° \times 55'53	0°-49'-26
minimum elong	2338 Feb 16 12:16	27° \approx 07'21	0°20'21	minimum elong	2346 Mar 06 02:31	14° \times 55'53	0°49'27
max. Earth dist.	2338 Feb 17 01:30	27° \approx 08'36	31.02013 AU	max. Earth dist.	2346 Mar 06 19:24	14° \times 57'29	30.94615 AU
retrograde	2338 Jun 02 01:25	29° \approx 39'34		retrograde	2346 Jun 20 10:39	17° \times 29'15	
opposition	2338 Aug 21 16:51	28° \approx 15'24	0°-23'-47	min. Earth dist.	2346 Sep 08 09:46	16° \times 05'40	28.94130 AU
min. Earth dist.	2338 Aug 21 02:57	28° \approx 16'21	29.01666 AU	opposition	2346 Sep 09 02:29	16° \times 04'32	0°-54'-41
direct	2338 Nov 08 19:18	26° \approx 52'16		direct	2346 Nov 26 14:17	14° \times 41'23	
conjunction	2339 Feb 18 22:30	29° \approx 20'24	0°-24'-8	conjunction	2347 Mar 08 13:35	17° \times 09'29	0°-52'-48
minimum elong	2339 Feb 18 22:30	29° \approx 20'24	0°24'09	minimum elong	2347 Mar 08 13:34	17° \times 09'29	0°52'49
max. Earth dist.	2339 Feb 19 11:44	29° \approx 21'39	31.01305 AU	max. Earth dist.	2347 Mar 09 07:49	17° \times 11'12	30.93590 AU
	2339 Mar 08 11:54	0° \times		retrograde	2347 Jun 22 23:13	19° \times 42'57	
retrograde	2339 Jun 04 13:51	1° \times 52'50		opposition	2347 Sep 11 15:27	18° \times 18'08	0°-58'-14
opposition	2339 Aug 24 06:11	0° \times 28'38	0°-27'-49	min. Earth dist.	2347 Sep 10 21:01	18° \times 19'24	28.93157 AU
min. Earth dist.	2339 Aug 23 16:25	0° \times 29'34	29.00971 AU	direct	2347 Nov 29 03:11	16° \times 54'58	
	2339 Sep 11 01:45	30° \times					
direct	2339 Nov 11 05:12	29° \approx 05'33		conjunction	2348 Mar 10 00:41	19° \times 23'03	0°-56'-5
	2340 Jan 07 22:40	0° \times		minimum elong	2348 Mar 10 00:41	19° \times 23'03	0°56'05
				max. Earth dist.	2348 Mar 10 18:47	19° \times 24'46	30.92668 AU
conjunction	2340 Feb 21 09:12	1° \times 33'42	0°-27'-54	retrograde	2348 Jun 24 11:28	21° \times 56'39	
minimum elong	2340 Feb 21 09:12	1° \times 33'42	0°27'54	min. Earth dist.	2348 Sep 12 10:04	20° \times 33'02	28.92307 AU
max. Earth dist.	2340 Feb 22 00:05	1° \times 35'07	31.00594 AU	opposition	2348 Sep 13 04:20	20° \times 31'46	-1°-1'-42
retrograde	2340 Jun 06 01:32	4° \times 06'19		direct	2348 Nov 30 13:27	19° \times 08'36	
opposition	2340 Aug 25 19:14	2° \times 42'06	0°-31'-50				
min. Earth dist.	2340 Aug 25 04:37	2° \times 43'06	29.00234 AU	conjunction	2349 Mar 12 12:00	21° \times 36'42	0°-59'-17
direct	2340 Nov 12 16:22	1° \times 19'03		minimum elong	2349 Mar 12 12:00	21° \times 36'42	0°59'18
				max. Earth dist.	2349 Mar 13 07:52	21° \times 38'35	30.91871 AU
conjunction	2341 Feb 22 19:52	3° \times 47'14	0°-31'-37	retrograde	2349 Jun 26 23:13	24° \times 10'24	
minimum elong	2341 Feb 22 19:52	3° \times 47'14	0°31'38	opposition	2349 Sep 15 17:15	22° \times 45'30	-1°-5'-5
max. Earth dist.	2341 Feb 23 10:05	3° \times 48'35	30.99822 AU	min. Earth dist.	2349 Sep 14 21:51	22° \times 46'50	28.91565 AU
retrograde	2341 Jun 08 15:48	6° \times 20'02		direct	2349 Dec 03 01:22	21° \times 22'21	
opposition	2341 Aug 28 08:31	4° \times 55'46	0°-35'-47				
min. Earth dist.	2341 Aug 27 17:36	4° \times 56'47	28.99425 AU	conjunction	2350 Mar 14 23:07	23° \times 50'28	-1°-2'-24
direct	2341 Nov 15 01:44	3° \times 32'45		minimum elong	2350 Mar 14 23:06	23° \times 50'28	1°02'25
				max. Earth dist.	2350 Mar 15 18:36	23° \times 52'19	30.91185 AU
conjunction	2342 Feb 25 06:41	6° \times 00'57	0°-35'-18	retrograde	2350 Jun 29 13:19	26° \times 24'19	
minimum elong	2342 Feb 25 06:41	6° \times 00'57	0°35'18	min. Earth dist.	2350 Sep 17 10:26	25° \times 00'44	28.90934 AU
max. Earth dist.	2342 Feb 25 22:15	6° \times 02'25	30.98945 AU	opposition	2350 Sep 18 06:16	24° \times 59'22	-1°-8'-22
retrograde	2342 Jun 11 04:05	8° \times 33'53		direct	2350 Dec 05 11:02	23° \times 36'14	
opposition	2342 Aug 30 21:53	7° \times 09'33	0°-39'-42				
min. Earth dist.	2342 Aug 30 06:48	7° \times 10'35	28.98488 AU	conjunction	2351 Mar 17 10:38	26° \times 04'24	-1°-5'-26
direct	2342 Nov 17 14:15	5° \times 46'33		minimum elong	2351 Mar 17 10:38	26° \times 04'24	1°05'27
				max. Earth dist.	2351 Mar 18 07:39	26° \times 06'24	30.90581 AU
conjunction	2343 Feb 27 17:36	8° \times 14'44	0°-38'-55	retrograde	2351 Jul 02 01:09	28° \times 38'23	
minimum elong	2343 Feb 27 17:36	8° \times 14'44	0°38'57	opposition	2351 Sep 20 19:08	27° \times 13'26	-1°-11'-34
max. Earth dist.	2343 Feb 28 08:43	8° \times 16'10	30.97958 AU	min. Earth dist.	2351 Sep 19 23:05	27° \times 14'49	28.90360 AU

direct	2351 Dec 07 22:40	25° Υ 50'20		direct	2359 Dec 25 20:32	13° Υ 47'08	
conjunction	2352 Mar 18 22:14	28° Υ 18'33	-1°-8'-21	conjunction	2360 Apr 05 22:52	16° Υ 15'36	-1°-27'-45
minimum elong	2352 Mar 18 22:14	28° Υ 18'33	1°08'22	minimum elong	2360 Apr 05 22:52	16° Υ 15'36	1°27'45
max. Earth dist.	2352 Mar 19 18:50	28° Υ 20'30	30.90027 AU	max. Earth dist.	2360 Apr 06 21:47	16° Υ 17'47	30.83941 AU
	2352 May 06 13:50	0° Υ		retrograde	2360 Jul 22 01:29	18° Υ 50'21	
retrograde	2352 Jul 03 16:07	0° Υ 52'41		opposition	2360 Oct 10 14:05	17° Υ 24'59	-1°-34'-51
	2352 Sep 02 08:19	30° Υ 30'		min. Earth dist.	2360 Oct 09 16:44	17° Υ 26'28	28.83734 AU
min. Earth dist.	2352 Sep 21 11:14	29° Υ 29'09	28.89810 AU	direct	2360 Dec 27 08:23	16° Υ 01'42	
opposition	2352 Sep 22 08:02	29° Υ 27'43	-1°-14'-38				
direct	2352 Dec 09 09:09	28° Υ 04'38		conjunction	2361 Apr 08 11:03	18° Υ 30'12	-1°-29'-36
	2353 Mar 06 20:19	0° Υ		minimum elong	2361 Apr 08 11:03	18° Υ 30'12	1°29'38
				max. Earth dist.	2361 Apr 09 09:32	18° Υ 32'19	30.83374 AU
conjunction	2353 Mar 21 09:59	0° Υ 32'55	-1°-11'-11	retrograde	2361 Jul 24 15:28	21° Υ 05'00	
minimum elong	2353 Mar 21 09:59	0° Υ 32'55	1°11'13	min. Earth dist.	2361 Oct 12 04:19	19° Υ 41'08	28.83248 AU
max. Earth dist.	2353 Mar 22 07:21	0° Υ 34'57	30.89447 AU	opposition	2361 Oct 13 02:31	19° Υ 39'35	-1°-36'-46
retrograde	2353 Jul 06 04:44	3° Υ 07'11		direct	2361 Dec 29 18:25	18° Υ 16'17	
opposition	2353 Sep 24 21:00	1° Υ 42'12	-1°-17'-36				
min. Earth dist.	2353 Sep 24 00:55	1° Υ 43'36	28.89212 AU	conjunction	2362 Apr 10 23:29	20° Υ 44'50	-1°-31'-20
direct	2353 Dec 11 19:52	0° Υ 19'09		minimum elong	2362 Apr 10 23:29	20° Υ 44'50	1°31'20
				max. Earth dist.	2362 Apr 11 22:54	20° Υ 47'03	30.82952 AU
conjunction	2354 Mar 23 21:57	2° Υ 47'30	-1°-13'-54	retrograde	2362 Jul 27 03:31	23° Υ 19'41	
minimum elong	2354 Mar 23 21:57	2° Υ 47'30	1°13'55	opposition	2362 Oct 15 14:58	21° Υ 54'16	-1°-38'-33
max. Earth dist.	2354 Mar 24 19:19	2° Υ 49'31	30.88819 AU	min. Earth dist.	2362 Oct 14 17:16	21° Υ 55'47	28.82903 AU
retrograde	2354 Jul 08 20:07	5° Υ 21'52		direct	2363 Jan 01 04:38	20° Υ 30'58	
opposition	2354 Sep 27 09:56	3° Υ 56'52	-1°-20'-27				
min. Earth dist.	2354 Sep 26 12:52	3° Υ 58'20	28.88541 AU	conjunction	2363 Apr 13 11:59	22° Υ 59'33	-1°-32'-55
direct	2354 Dec 14 08:48	2° Υ 33'49		minimum elong	2363 Apr 13 11:58	22° Υ 59'33	1°32'57
				max. Earth dist.	2363 Apr 14 11:32	23° Υ 01'47	30.82682 AU
conjunction	2355 Mar 26 09:57	5° Υ 02'12	-1°-16'-31	retrograde	2363 Jul 29 18:11	25° Υ 34'27	
minimum elong	2355 Mar 26 09:57	5° Υ 02'12	1°16'32	min. Earth dist.	2363 Oct 17 04:33	24° Υ 10'38	28.82688 AU
max. Earth dist.	2355 Mar 27 07:01	5° Υ 04'12	30.88084 AU	opposition	2363 Oct 18 03:17	24° Υ 09'03	-1°-40'-10
retrograde	2355 Jul 11 10:23	7° Υ 36'41		direct	2364 Jan 03 17:15	22° Υ 45'44	
opposition	2355 Sep 29 22:59	6° Υ 11'38	-1°-23'-11				
min. Earth dist.	2355 Sep 29 02:57	6° Υ 13'01	28.87760 AU	conjunction	2364 Apr 15 00:37	25° Υ 14'24	-1°-34'-22
direct	2355 Dec 16 20:52	4° Υ 48'33		minimum elong	2364 Apr 15 00:37	25° Υ 14'24	1°34'22
				max. Earth dist.	2364 Apr 16 00:05	25° Υ 16'37	30.82502 AU
conjunction	2356 Mar 27 22:12	7° Υ 16'58	-1°-19'00	retrograde	2364 Jul 31 07:36	27° Υ 49'22	
minimum elong	2356 Mar 27 22:12	7° Υ 16'58	1°19'00	opposition	2364 Oct 19 15:37	26° Υ 23'57	-1°-41'-38
max. Earth dist.	2356 Mar 28 19:49	7° Υ 19'01	30.87257 AU	min. Earth dist.	2364 Oct 18 17:55	26° Υ 25'28	28.82551 AU
retrograde	2356 Jul 12 23:42	9° Υ 51'31		direct	2365 Jan 05 04:16	25° Υ 00'39	
opposition	2356 Oct 01 11:37	8° Υ 26'24	-1°-25'-47				
min. Earth dist.	2356 Sep 30 14:36	8° Υ 27'51	28.86889 AU	conjunction	2365 Apr 17 13:28	27° Υ 29'24	-1°-35'-40
direct	2356 Dec 18 10:07	7° Υ 03'17		minimum elong	2365 Apr 17 13:27	27° Υ 29'24	1°35'41
				max. Earth dist.	2365 Apr 18 13:27	27° Υ 31'40	30.82393 AU
conjunction	2357 Mar 30 10:15	9° Υ 31'43	-1°-21'-23		2365 Jul 17 13:06	0° Υ	
minimum elong	2357 Mar 30 10:15	9° Υ 31'43	1°21'24	retrograde	2365 Aug 02 21:53	0° Υ 04'24	
max. Earth dist.	2357 Mar 31 07:09	9° Υ 33'42	30.86360 AU		2365 Aug 19 09:40	30° Υ	
retrograde	2357 Jul 15 12:49	12° Υ 06'19		min. Earth dist.	2365 Oct 21 05:18	28° Υ 40'36	28.82445 AU
min. Earth dist.	2357 Oct 03 04:09	10° Υ 42'32	28.85996 AU	opposition	2365 Oct 22 03:52	28° Υ 39'01	-1°-42'-57
opposition	2357 Oct 04 00:27	10° Υ 41'08	-1°-28'-15	direct	2366 Jan 07 17:00	27° Υ 15'43	
direct	2357 Dec 20 21:12	9° Υ 17'58					
				conjunction	2366 Apr 20 02:14	29° Υ 44'31	-1°-36'-49
conjunction	2358 Apr 01 22:22	11° Υ 46'24	-1°-23'-38	minimum elong	2366 Apr 20 02:14	29° Υ 44'31	1°36'49
minimum elong	2358 Apr 01 22:22	11° Υ 46'24	1°23'38	max. Earth dist.	2366 Apr 21 01:14	29° Υ 46'42	30.82274 AU
max. Earth dist.	2358 Apr 02 20:41	11° Υ 48'31	30.85473 AU		2366 Apr 26 22:16	0° Υ	
retrograde	2358 Jul 18 01:25	14° Υ 21'03		retrograde	2366 Aug 05 12:25	2° Υ 19'34	
opposition	2358 Oct 06 13:06	12° Υ 55'47	-1°-30'-36	opposition	2366 Oct 24 16:19	0° Υ 54'12	-1°-44'-6
min. Earth dist.	2358 Oct 05 16:01	12° Υ 57'15	28.85134 AU	min. Earth dist.	2366 Oct 23 18:54	0° Υ 55'41	28.82313 AU
direct	2358 Dec 23 10:07	11° Υ 32'35			2366 Nov 28 18:11	30° Υ	
				direct	2367 Jan 10 04:24	29° Υ 30'53	
conjunction	2359 Apr 04 10:31	14° Υ 01'01	-1°-25'-45		2367 Feb 20 13:01	0° Υ	
minimum elong	2359 Apr 04 10:30	14° Υ 01'01	1°25'46				
max. Earth dist.	2359 Apr 05 08:06	14° Υ 03'04	30.84651 AU	conjunction	2367 Apr 22 15:31	1° Υ 59'46	-1°-37'-50
retrograde	2359 Jul 20 14:44	16° Υ 35'43		minimum elong	2367 Apr 22 15:31	1° Υ 59'46	1°37'51
min. Earth dist.	2359 Oct 08 04:30	15° Υ 11'52	28.84376 AU	max. Earth dist.	2367 Apr 23 15:11	2° Υ 02'00	30.82102 AU
opposition	2359 Oct 09 01:36	15° Υ 10'24	-1°-32'-48	retrograde	2367 Aug 08 02:15	4° Υ 34'48	

min. Earth dist.	2367 Oct 26 06:56	3°♄10'56	28.82094 AU	min. Earth dist.	2375 Nov 13 08:27	21°♄10'52	28.81012 AU
opposition	2367 Oct 27 04:28	3°♄09'26	-1°-45'-6	opposition	2375 Nov 14 03:50	21°♄09'30	-1°-47'-15
direct	2368 Jan 12 17:56	1°♄46'06		direct	2376 Jan 30 13:56	19°♄45'51	
conjunction	2368 Apr 24 04:40	4°♄15'01	-1°-38'-41	conjunction	2376 May 12 15:22	22°♄15'12	-1°-40'-6
minimum elong	2368 Apr 24 04:40	4°♄15'01	1°38'41	minimum elong	2376 May 12 15:22	22°♄15'12	1°40'06
max. Earth dist.	2368 Apr 25 02:47	4°♄17'06	30.81844 AU	max. Earth dist.	2376 May 13 13:18	22°♄17'16	30.81076 AU
retrograde	2368 Aug 09 15:41	6°♄50'03		retrograde	2376 Aug 28 00:33	24°♄49'59	
opposition	2368 Oct 28 16:46	5°♄24'39	-1°-45'-56	opposition	2376 Nov 15 15:27	23°♄24'38	-1°-46'-46
min. Earth dist.	2368 Oct 27 19:55	5°♄26'07	28.81801 AU	min. Earth dist.	2376 Nov 14 19:47	23°♄26'01	28.81381 AU
direct	2369 Jan 14 04:59	4°♄01'16		direct	2377 Feb 01 03:28	22°♄01'00	
conjunction	2369 Apr 26 17:52	6°♄30'13	-1°-39'-24	conjunction	2377 May 15 04:47	24°♄30'26	-1°-39'-34
minimum elong	2369 Apr 26 17:52	6°♄30'13	1°39'25	minimum elong	2377 May 15 04:47	24°♄30'26	1°39'36
max. Earth dist.	2369 Apr 27 16:40	6°♄32'22	30.81512 AU	max. Earth dist.	2377 May 16 01:22	24°♄32'22	30.81490 AU
retrograde	2369 Aug 12 03:12	9°♄05'14		retrograde	2377 Aug 30 14:17	27°♄05'13	
min. Earth dist.	2369 Oct 30 08:26	7°♄41'14	28.81447 AU	min. Earth dist.	2377 Nov 17 08:15	25°♄41'16	28.81825 AU
opposition	2369 Oct 31 04:56	7°♄39'48	-1°-46'-37	opposition	2377 Nov 18 03:11	25°♄39'56	-1°-46'-8
direct	2370 Jan 16 17:31	6°♄16'22		direct	2378 Feb 03 14:12	24°♄16'18	
conjunction	2370 Apr 29 07:03	8°♄45'20	-1°-39'-57	conjunction	2378 May 17 18:41	26°♄45'51	-1°-38'-54
minimum elong	2370 Apr 29 07:03	8°♄45'20	1°39'58	minimum elong	2378 May 17 18:41	26°♄45'51	1°38'55
max. Earth dist.	2370 Apr 30 04:43	8°♄47'23	30.81167 AU	max. Earth dist.	2378 May 18 15:49	26°♄47'50	30.81938 AU
retrograde	2370 Aug 14 17:16	11°♄20'18		retrograde	2378 Sep 02 03:17	29°♄20'35	
opposition	2370 Nov 02 16:54	9°♄54'51	-1°-47'-8	opposition	2378 Nov 20 14:44	27°♄55'22	-1°-45'-20
min. Earth dist.	2370 Nov 01 20:14	9°♄56'18	28.81116 AU	min. Earth dist.	2378 Nov 19 20:31	27°♄56'40	28.82259 AU
direct	2371 Jan 19 04:12	8°♄31'21		direct	2379 Feb 06 02:51	26°♄31'45	
conjunction	2371 May 01 20:22	11°♄00'21	-1°-40'-22	conjunction	2379 May 20 08:37	29°♄01'22	-1°-38'-4
minimum elong	2371 May 01 20:22	11°♄00'21	1°40'23	minimum elong	2379 May 20 08:37	29°♄01'22	1°38'06
max. Earth dist.	2371 May 02 18:31	11°♄02'26	30.80849 AU	max. Earth dist.	2379 May 21 03:58	29°♄03'12	30.82355 AU
retrograde	2371 Aug 17 04:28	13°♄35'17		retrograde	2379 Jun 15 23:53	0°♂	
min. Earth dist.	2371 Nov 04 09:07	12°♄11'12	28.80835 AU	retrograde	2379 Sep 04 18:08	1°♂36'04	
opposition	2371 Nov 05 04:53	12°♄09'48	-1°-47'-29	min. Earth dist.	2379 Nov 22 08:28	0°♂12'10	28.82637 AU
direct	2372 Jan 21 15:07	10°♄46'15		opposition	2379 Nov 23 02:22	0°♂10'54	-1°-44'-22
conjunction	2372 May 03 09:40	13°♄15'17	-1°-40'-37	direct	2379 Nov 29 13:33	30°♂	
minimum elong	2372 May 03 09:40	13°♄15'17	1°40'37	direct	2380 Feb 08 13:57	28°♄47'15	
max. Earth dist.	2372 May 04 07:28	13°♄17'21	30.80623 AU	direct	2380 Apr 16 03:58	0°♂	
retrograde	2372 Jun 23 04:23	15°♄		conjunction	2380 May 21 22:40	1°♂16'57	-1°-37'-6
retrograde	2372 Aug 18 17:55	15°♄50'11		minimum elong	2380 May 21 22:40	1°♂16'57	1°37'06
retrograde	2372 Oct 16 02:54	15°♂		max. Earth dist.	2380 May 22 17:52	1°♂18'45	30.82675 AU
opposition	2372 Nov 06 16:35	14°♄24'42	-1°-47'-40	retrograde	2380 Sep 06 04:53	3°♂51'33	
min. Earth dist.	2372 Nov 05 20:04	14°♄26'09	28.80666 AU	opposition	2380 Nov 24 13:57	2°♂26'26	-1°-43'-14
direct	2373 Jan 23 03:27	13°♄01'05		min. Earth dist.	2380 Nov 23 21:30	2°♂27'36	28.82905 AU
direct	2373 Apr 22 12:23	15°♄		direct	2381 Feb 10 01:22	1°♂02'44	
conjunction	2373 May 05 22:56	15°♄30'12	-1°-40'-43	conjunction	2381 May 24 12:40	3°♂32'28	-1°-35'-58
minimum elong	2373 May 05 22:56	15°♄30'12	1°40'44	minimum elong	2381 May 24 12:40	3°♂32'28	1°36'00
max. Earth dist.	2373 May 06 20:35	15°♄32'14	30.80511 AU	max. Earth dist.	2381 May 25 06:40	3°♂34'10	30.82915 AU
retrograde	2373 Aug 21 06:14	18°♄05'04		retrograde	2381 Sep 08 17:46	6°♂06'58	
min. Earth dist.	2373 Nov 08 08:59	16°♄40'57	28.80633 AU	min. Earth dist.	2381 Nov 26 08:49	4°♂43'02	28.83102 AU
opposition	2373 Nov 09 04:28	16°♄39'35	-1°-47'-42	opposition	2381 Nov 27 01:23	4°♂41'52	-1°-41'-57
direct	2374 Jan 25 14:03	15°♄15'57		direct	2382 Feb 12 13:30	3°♂18'06	
conjunction	2374 May 08 12:16	17°♄45'07	-1°-40'-40	conjunction	2382 May 27 02:37	5°♂47'52	-1°-34'-42
minimum elong	2374 May 08 12:16	17°♄45'07	1°40'40	minimum elong	2382 May 27 02:37	5°♂47'52	1°34'43
max. Earth dist.	2374 May 09 10:19	17°♄47'11	30.80561 AU	max. Earth dist.	2382 May 27 19:54	5°♂49'29	30.83080 AU
retrograde	2374 Aug 23 20:15	20°♄19'57		retrograde	2382 Sep 11 05:27	8°♂22'15	
opposition	2374 Nov 11 16:10	18°♄54'30	-1°-47'-33	opposition	2382 Nov 29 12:52	6°♂57'08	-1°-40'-32
min. Earth dist.	2374 Nov 10 19:45	18°♄55'56	28.80750 AU	min. Earth dist.	2382 Nov 28 21:59	6°♂58'12	28.83249 AU
direct	2375 Jan 28 02:36	17°♄30'51		direct	2383 Feb 14 23:45	5°♂33'18	
conjunction	2375 May 11 01:42	20°♄00'06	-1°-40'-27	conjunction	2383 May 29 16:43	8°♂03'06	-1°-33'-18
minimum elong	2375 May 11 01:42	20°♄00'06	1°40'29	minimum elong	2383 May 29 16:43	8°♂03'06	1°33'19
max. Earth dist.	2375 May 11 22:49	20°♄02'05	30.80749 AU	max. Earth dist.	2383 May 30 09:36	8°♂04'41	30.83233 AU
retrograde	2375 Aug 26 10:31	22°♄34'55		retrograde	2383 Sep 13 18:01	10°♂37'20	

opposition	2383 Dec 01 23:56	9°II12'14	-1°-38'-57	conjunction	2392 Jun 18 23:17	28°II15'56	-1°-14'-34
min. Earth dist.	2383 Dec 01 08:42	9°II13'18	28.83399 AU	minimum elong	2392 Jun 18 23:18	28°II15'56	1°14'35
direct	2384 Feb 17 12:44	7°II48'18		max. Earth dist.	2392 Jun 19 10:11	28°II16'57	30.88289 AU
					2392 Aug 08 21:05	0°☾	
conjunction	2384 May 31 06:41	10°II18'08	-1°-31'-45	retrograde	2392 Oct 03 11:51	0°☾49'06	
minimum elong	2384 May 31 06:41	10°II18'08	1°31'45		2392 Nov 29 13:24	30°RII	
max. Earth dist.	2384 May 31 22:15	10°II19'35	30.83404 AU	opposition	2392 Dec 21 02:46	29°II24'32	-1°-18'-17
retrograde	2384 Sep 15 06:32	12°II52'14		min. Earth dist.	2392 Dec 20 17:06	29°II25'14	28.88682 AU
opposition	2384 Dec 03 11:13	11°II27'07	-1°-37'-13	direct	2393 Mar 08 22:51	28°II00'20	
min. Earth dist.	2384 Dec 02 21:18	11°II28'06	28.83609 AU		2393 Jun 07 17:08	0°☾	
direct	2385 Feb 19 00:22	10°II03'07					
				conjunction	2393 Jun 21 13:23	0°☾30'48	-1°-11'-52
conjunction	2385 Jun 02 20:34	12°II32'59	-1°-30'-4	minimum elong	2393 Jun 21 13:23	0°☾30'48	1°11'54
minimum elong	2385 Jun 02 20:34	12°II32'59	1°30'05	max. Earth dist.	2393 Jun 21 22:34	0°☾31'40	30.88943 AU
max. Earth dist.	2385 Jun 03 12:40	12°II34'29	30.83660 AU	retrograde	2393 Oct 05 23:37	3°☾03'51	
retrograde	2385 Sep 17 19:08	15°II06'56		opposition	2393 Dec 23 13:43	1°☾39'20	-1°-15'-21
opposition	2385 Dec 05 22:18	13°II41'51	-1°-35'-20	min. Earth dist.	2393 Dec 23 05:50	1°☾39'54	28.89292 AU
min. Earth dist.	2385 Dec 05 08:13	13°II42'50	28.83907 AU	direct	2394 Mar 11 10:05	0°☾15'05	
direct	2386 Feb 21 14:02	12°II17'46					
				conjunction	2394 Jun 24 03:45	2°☾45'37	-1°-9'-5
conjunction	2386 Jun 05 10:29	14°II47'41	-1°-28'-14	minimum elong	2394 Jun 24 03:45	2°☾45'37	1°09'06
minimum elong	2386 Jun 05 10:29	14°II47'41	1°28'15	max. Earth dist.	2394 Jun 24 12:42	2°☾46'27	30.89520 AU
max. Earth dist.	2386 Jun 06 01:04	14°II49'03	30.84024 AU	retrograde	2394 Oct 08 11:38	5°☾18'29	
retrograde	2386 Sep 20 08:35	17°II21'31		opposition	2394 Dec 26 00:19	3°☾54'01	-1°-12'-18
opposition	2386 Dec 08 09:18	15°II56'27	-1°-33'-19	min. Earth dist.	2394 Dec 25 16:49	3°☾54'33	28.89824 AU
min. Earth dist.	2386 Dec 07 20:00	15°II57'23	28.84340 AU	direct	2395 Mar 13 23:24	2°☾29'41	
direct	2387 Feb 24 00:57	14°II32'19					
				conjunction	2395 Jun 26 17:55	5°☾00'16	-1°-6'-11
conjunction	2387 Jun 08 00:37	17°II02'18	-1°-26'-17	minimum elong	2395 Jun 26 17:55	5°☾00'16	1°06'12
minimum elong	2387 Jun 08 00:37	17°II02'18	1°26'19	max. Earth dist.	2395 Jun 27 00:49	5°☾00'54	30.90039 AU
max. Earth dist.	2387 Jun 08 15:48	17°II03'43	30.84523 AU	retrograde	2395 Oct 11 00:32	7°☾32'58	
retrograde	2387 Sep 22 21:22	19°II36'00		opposition	2395 Dec 28 11:01	6°☾08'32	-1°-9'-9
opposition	2387 Dec 10 20:19	18°II10'59	-1°-31'-9	min. Earth dist.	2395 Dec 28 04:41	6°☾08'58	28.90335 AU
min. Earth dist.	2387 Dec 10 07:27	18°II11'54	28.84898 AU	direct	2396 Mar 15 10:25	4°☾44'07	
direct	2388 Feb 26 14:14	16°II46'50					
				conjunction	2396 Jun 28 08:00	7°☾14'44	-1°-3'-11
conjunction	2388 Jun 09 14:29	19°II16'53	-1°-24'-12	minimum elong	2396 Jun 28 08:00	7°☾14'44	1°03'12
minimum elong	2388 Jun 09 14:29	19°II16'53	1°24'12	max. Earth dist.	2396 Jun 28 15:13	7°☾15'24	30.90549 AU
max. Earth dist.	2388 Jun 10 04:06	19°II18'09	30.85158 AU	retrograde	2396 Oct 12 12:51	9°☾47'16	
retrograde	2388 Sep 24 11:21	21°II50'28		opposition	2396 Dec 29 21:34	8°☾22'50	-1°-5'-54
opposition	2388 Dec 12 07:14	20°II25'32	-1°-28'-50	min. Earth dist.	2396 Dec 29 16:00	8°☾23'14	28.90852 AU
min. Earth dist.	2388 Dec 11 18:24	20°II26'26	28.85594 AU	direct	2397 Mar 18 00:37	6°☾58'22	
direct	2389 Feb 28 01:42	19°II01'22					
				conjunction	2397 Jun 30 21:54	9°☾29'00	-1°00'-6
conjunction	2389 Jun 12 04:35	21°II31'30	-1°-21'-58	minimum elong	2397 Jun 30 21:55	9°☾29'00	1°00'07
minimum elong	2389 Jun 12 04:35	21°II31'30	1°22'00	max. Earth dist.	2397 Jul 01 03:15	9°☾29'30	30.91107 AU
max. Earth dist.	2389 Jun 12 18:27	21°II32'48	30.85907 AU	retrograde	2397 Oct 15 01:45	12°☾01'21	
retrograde	2389 Sep 26 22:31	24°II05'00		opposition	2398 Jan 01 07:56	10°☾36'57	-1°-2'-34
opposition	2389 Dec 14 18:10	22°II40'09	-1°-26'-24	min. Earth dist.	2398 Jan 01 02:35	10°☾37'20	28.91452 AU
min. Earth dist.	2389 Dec 14 06:39	22°II40'58	28.86378 AU	direct	2398 Mar 20 12:53	9°☾12'25	
direct	2390 Mar 02 12:59	21°II16'00					
				conjunction	2398 Jul 03 11:56	11°☾43'05	0°-56'-56
conjunction	2390 Jun 14 18:40	23°II46'13	-1°-19'-37	minimum elong	2398 Jul 03 11:56	11°☾43'05	0°56'56
minimum elong	2390 Jun 14 18:40	23°II46'13	1°19'38	max. Earth dist.	2398 Jul 03 17:28	11°☾43'36	30.91749 AU
max. Earth dist.	2390 Jun 15 07:17	23°II47'24	30.86732 AU	retrograde	2398 Oct 17 12:38	14°☾15'15	
retrograde	2390 Sep 29 11:56	26°II19'37		opposition	2399 Jan 03 18:25	12°☾50'54	0°-59'-8
opposition	2390 Dec 17 05:01	24°II54'53	-1°-23'-49	min. Earth dist.	2399 Jan 03 14:20	12°☾51'11	28.92144 AU
min. Earth dist.	2390 Dec 16 17:28	24°II55'42	28.87201 AU	direct	2399 Mar 23 00:56	11°☾26'18	
direct	2391 Mar 05 00:33	23°II30'43					
				conjunction	2399 Jul 06 01:50	13°☾57'00	0°-53'-41
conjunction	2391 Jun 17 08:58	26°II01'03	-1°-17'-9	minimum elong	2399 Jul 06 01:50	13°☾57'00	0°53'41
minimum elong	2391 Jun 17 08:58	26°II01'03	1°17'10	max. Earth dist.	2399 Jul 06 06:04	13°☾57'24	30.92516 AU
max. Earth dist.	2391 Jun 17 20:47	26°II02'09	30.87536 AU	retrograde	2399 Oct 20 01:45	16°☾28'59	
retrograde	2391 Oct 01 23:39	28°II34'20		opposition	2400 Jan 06 04:40	15°☾04'41	0°-55'-36
opposition	2391 Dec 19 15:55	27°II09'42	-1°-21'-7	min. Earth dist.	2400 Jan 06 00:15	15°☾05'00	28.92976 AU
min. Earth dist.	2391 Dec 19 06:20	27°II10'22	28.87982 AU	direct	2400 Mar 24 12:58	13°☾40'03	
direct	2392 Mar 06 10:10	25°II45'31					

conjunction	2400 Jul 07 15:43	16°☾10'48	0°-50'-21	conjunction	2408 Jul 26 06:45	4°♁00'12	0°-21'-25
minimum elong	2400 Jul 07 15:43	16°☾10'48	0°50'22	minimum elong	2408 Jul 26 06:45	4°♁00'12	0°21'26
max. Earth dist.	2400 Jul 07 19:42	16°☾11'10	30.93418 AU	max. Earth dist.	2408 Jul 26 02:19	3°♁59'48	31.01712 AU
retrograde	2400 Oct 21 12:40	18°☾42'37		retrograde	2408 Nov 08 10:06	6°♁30'43	
opposition	2401 Jan 07 15:08	17°☾18'24	0°-52'00	opposition	2409 Jan 25 01:25	5°♁07'07	0°-20'-51
min. Earth dist.	2401 Jan 07 12:11	17°☾18'37	28.93954 AU	min. Earth dist.	2409 Jan 25 04:39	5°♁06'53	29.02122 AU
direct	2401 Mar 26 22:49	15°☾53'45		direct	2409 Apr 13 23:07	3°♁42'15	
conjunction	2401 Jul 10 05:29	18°☾24'32	0°-46'-56	conjunction	2409 Jul 28 20:19	6°♁13'24	0°-17'-37
minimum elong	2401 Jul 10 05:29	18°☾24'32	0°46'57	minimum elong	2409 Jul 28 20:19	6°♁13'24	0°17'38
max. Earth dist.	2401 Jul 10 08:56	18°☾24'51	30.94476 AU	max. Earth dist.	2409 Jul 28 15:28	6°♁12'57	31.02525 AU
retrograde	2401 Oct 23 23:43	20°☾56'12		retrograde	2409 Nov 10 20:25	8°♁43'43	
opposition	2402 Jan 10 01:25	19°☾32'05	0°-48'-19	opposition	2410 Jan 27 11:39	7°♁20'10	0°-16'-47
min. Earth dist.	2402 Jan 09 22:06	19°☾32'19	28.95055 AU	min. Earth dist.	2410 Jan 27 16:39	7°♁19'49	29.02947 AU
direct	2402 Mar 29 11:19	18°☾07'25		direct	2410 Apr 16 09:52	5°♁55'15	
conjunction	2402 Jul 12 19:24	20°☾38'17	0°-43'-27	conjunction	2410 Jul 31 09:53	8°♁26'24	0°-13'-48
minimum elong	2402 Jul 12 19:24	20°☾38'17	0°43'28	minimum elong	2410 Jul 31 09:53	8°♁26'24	0°13'49
max. Earth dist.	2402 Jul 12 21:33	20°☾38'29	30.95622 AU	behind sun begin	2410 Jul 31 06:36	8°♁26'06	
retrograde	2402 Oct 26 10:39	23°☾09'48		behind sun end	2410 Jul 31 13:09	8°♁26'41	
opposition	2403 Jan 12 11:42	21°☾45'48	0°-44'-33	max. Earth dist.	2410 Jul 31 04:13	8°♁25'53	31.03376 AU
min. Earth dist.	2403 Jan 12 10:00	21°☾45'55	28.96233 AU	retrograde	2410 Nov 13 06:54	10°♁56'31	
direct	2403 Mar 31 21:12	20°☾21'07		opposition	2411 Jan 29 21:35	9°♁33'02	0°-12'-41
conjunction	2403 Jul 15 09:28	22°☾52'04	0°-39'-54	min. Earth dist.	2411 Jan 30 02:18	9°♁32'42	29.03822 AU
minimum elong	2403 Jul 15 09:28	22°☾52'04	0°39'55	direct	2411 Apr 18 22:40	8°♁08'04	
max. Earth dist.	2403 Jul 15 11:25	22°☾52'15	30.96812 AU	conjunction	2411 Aug 02 23:18	10°♁39'15	0°-9'-59
retrograde	2403 Oct 28 22:08	25°☾23'26		minimum elong	2411 Aug 02 23:18	10°♁39'15	0°10'00
opposition	2404 Jan 14 22:01	23°☾59'32	0°-40'-44	behind sun begin	2411 Aug 02 18:01	10°♁38'47	
min. Earth dist.	2404 Jan 14 20:43	23°☾59'38	28.97402 AU	behind sun end	2411 Aug 03 04:35	10°♁39'43	
direct	2404 Apr 02 09:19	22°☾34'52		max. Earth dist.	2411 Aug 02 16:34	10°♁38'39	31.04290 AU
conjunction	2404 Jul 16 23:14	25°☾05'51	0°-36'-18	retrograde	2411 Nov 15 17:09	13°♁09'13	
minimum elong	2404 Jul 16 23:14	25°☾05'51	0°36'19	opposition	2412 Feb 01 07:48	11°♁45'47	0°-8'-35
max. Earth dist.	2404 Jul 16 23:09	25°☾05'51	30.97958 AU	min. Earth dist.	2412 Feb 01 13:45	11°♁45'22	29.04799 AU
retrograde	2404 Oct 30 10:12	27°☾37'05		direct	2412 Apr 20 08:23	10°♁20'48	
opposition	2405 Jan 16 08:26	26°☾13'16	0°-36'-50	conjunction	2412 Aug 04 12:30	12°♁51'59	0°-6'-9
min. Earth dist.	2405 Jan 16 08:21	26°☾13'16	28.98521 AU	minimum elong	2412 Aug 04 12:30	12°♁51'59	0°06'10
direct	2405 Apr 04 20:08	24°☾48'34		behind sun begin	2412 Aug 04 06:16	12°♁51'26	
conjunction	2405 Jul 19 13:17	27°☾19'37	0°-32'-38	behind sun end	2412 Aug 04 18:45	12°♁52'32	
minimum elong	2405 Jul 19 13:17	27°☾19'37	0°32'39	max. Earth dist.	2412 Aug 04 05:56	12°♁51'24	31.05325 AU
max. Earth dist.	2405 Jul 19 13:09	27°☾19'36	30.99028 AU	retrograde	2412 Oct 12 01:28	15°♁	
retrograde	2405 Nov 01 21:34	29°☾50'41		retrograde	2412 Nov 17 03:26	15°♁21'48	
opposition	2406 Jan 18 18:44	28°☾26'56	0°-32'-54	retrograde	2412 Dec 23 18:30	15°♁	
min. Earth dist.	2406 Jan 18 19:49	28°☾26'52	28.99535 AU	opposition	2413 Feb 02 17:52	13°♁58'27	0°-4'-27
direct	2406 Apr 07 09:44	27°☾02'13		min. Earth dist.	2413 Feb 02 23:46	13°♁58'02	29.05888 AU
conjunction	2406 Jul 22 03:09	29°☾33'18	0°-28'-56	direct	2413 Apr 22 19:53	12°♁33'27	
minimum elong	2406 Jul 22 03:09	29°☾33'18	0°28'57	direct	2413 Aug 04 23:10	15°♁	
max. Earth dist.	2406 Jul 22 00:39	29°☾33'04	31.00002 AU	conjunction	2413 Aug 07 01:43	15°♁04'41	0°-2'-17
retrograde	2406 Aug 03 04:09	0°♁		minimum elong	2413 Aug 07 01:42	15°♁04'41	0°02'18
retrograde	2406 Nov 04 10:17	2°♁04'11		behind sun begin	2413 Aug 06 19:06	15°♁04'06	
opposition	2407 Jan 21 05:01	0°♁40'30	0°-28'-55	behind sun end	2413 Aug 07 08:18	15°♁05'16	
min. Earth dist.	2407 Jan 21 06:37	0°♁40'23	29.00461 AU	max. Earth dist.	2413 Aug 06 17:37	15°♁03'57	31.06480 AU
direct	2407 Feb 15 02:14	30°♁		retrograde	2413 Nov 19 14:25	17°♁34'22	
direct	2407 Apr 09 22:00	29°☾15'43		opposition	2414 Feb 05 03:53	16°♁11'06	0°00'-20
conjunction	2407 Jul 24 17:04	1°♁46'50	0°-25'-11	min. Earth dist.	2414 Feb 05 10:31	16°♁10'38	29.07108 AU
minimum elong	2407 Jul 24 17:05	1°♁46'50	0°25'12	asc. node	2414 Mar 07 16:48	15°♁22'35	
max. Earth dist.	2407 Jul 24 14:22	1°♁46'35	31.00879 AU	direct	2414 Mar 27 00:44	15°♁	
retrograde	2407 Nov 06 21:06	4°♁17'32		direct	2414 Apr 25 06:12	14°♁46'07	
opposition	2408 Jan 23 15:18	2°♁53'54	0°-24'-54	direct	2414 May 24 09:41	15°♁	
min. Earth dist.	2408 Jan 23 18:35	2°♁53'40	29.01303 AU	conjunction	2414 Aug 09 15:04	17°♁17'24	0°01'41
direct	2408 Apr 11 10:24	1°♁29'05		minimum elong	2414 Aug 09 15:04	17°♁17'24	0°01'41
				behind sun begin	2414 Aug 09 08:29	17°♁16'49	
				behind sun end	2414 Aug 09 21:40	17°♁17'59	
				max. Earth dist.	2414 Aug 09 07:27	17°♁16'43	31.07744 AU

retrograde	2414 Nov 22 00:55	19° Ω 46'57		min. Earth dist.	2422 Feb 23 02:20	3° \mp 51'06	29.15532 AU
opposition	2415 Feb 07 13:59	18° Ω 23'48	0°03'47	direct	2422 May 13 07:24	2° \mp 26'57	
min. Earth dist.	2415 Feb 07 21:29	18° Ω 23'16	29.08395 AU				
direct	2415 Apr 27 19:04	16° Ω 58'51		conjunction	2422 Aug 27 23:25	4° \mp 58'19	0°31'56
				minimum elong	2422 Aug 27 23:25	4° \mp 58'19	0°31'55
conjunction	2415 Aug 12 04:11	19° Ω 30'11	0°05'34	max. Earth dist.	2422 Aug 27 07:15	4° \mp 56'49	31.15874 AU
minimum elong	2415 Aug 12 04:10	19° Ω 30'11	0°05'34	retrograde	2422 Dec 09 15:47	7° \mp 26'37	
behind sun begin	2415 Aug 11 21:50	19° Ω 29'38		opposition	2423 Feb 24 23:15	6° \mp 03'55	0°36'00
behind sun end	2415 Aug 12 10:30	19° Ω 30'45		min. Earth dist.	2423 Feb 25 13:12	6° \mp 02'57	29.16259 AU
max. Earth dist.	2415 Aug 11 18:40	19° Ω 29'20	31.09051 AU	direct	2423 May 15 18:14	4° \mp 38'47	
retrograde	2415 Nov 24 13:11	21° Ω 59'37					
opposition	2416 Feb 10 00:03	20° Ω 36'35	0°07'55	conjunction	2423 Aug 30 11:58	7° \mp 10'07	0°35'32
min. Earth dist.	2416 Feb 10 07:46	20° Ω 36'02	29.09705 AU	minimum elong	2423 Aug 30 11:58	7° \mp 10'07	0°35'33
direct	2416 Apr 29 06:21	19° Ω 11'38		max. Earth dist.	2423 Aug 29 20:26	7° \mp 08'41	31.16604 AU
				retrograde	2423 Dec 12 00:32	9° \mp 38'15	
conjunction	2416 Aug 13 17:29	21° Ω 43'02	0°09'24	opposition	2424 Feb 27 09:25	8° \mp 15'35	0°39'50
minimum elong	2416 Aug 13 17:29	21° Ω 43'03	0°09'24	min. Earth dist.	2424 Feb 28 00:02	8° \mp 14'33	29.17013 AU
behind sun begin	2416 Aug 13 12:00	21° Ω 42'33		direct	2424 May 17 06:31	6° \mp 50'25	
behind sun end	2416 Aug 13 22:57	21° Ω 43'32		max. Earth dist.	2424 Aug 31 07:15	9° \mp 20'08	31.17399 AU
max. Earth dist.	2416 Aug 13 08:01	21° Ω 42'11	31.10334 AU				
retrograde	2416 Nov 26 00:09	24° Ω 12'21		conjunction	2424 Sep 01 00:17	9° \mp 21'42	0°39'06
opposition	2417 Feb 11 10:16	22° Ω 49'24	0°12'01	minimum elong	2424 Sep 01 00:17	9° \mp 21'42	0°39'05
min. Earth dist.	2417 Feb 11 19:40	22° Ω 48'44	29.10956 AU	retrograde	2424 Dec 13 11:52	11° \mp 49'43	
direct	2417 May 01 18:29	21° Ω 24'29		opposition	2425 Feb 28 19:25	10° \mp 27'04	0°43'36
				min. Earth dist.	2425 Mar 01 09:43	10° \mp 26'04	29.17868 AU
conjunction	2417 Aug 16 06:36	23° Ω 55'55	0°13'13	direct	2425 May 19 17:19	9° \mp 01'52	
minimum elong	2417 Aug 16 06:35	23° Ω 55'55	0°13'14				
behind sun begin	2417 Aug 16 02:52	23° Ω 55'35		conjunction	2425 Sep 03 12:41	11° \mp 33'10	0°42'35
behind sun end	2417 Aug 16 10:19	23° Ω 56'15		minimum elong	2425 Sep 03 12:41	11° \mp 33'10	0°42'36
max. Earth dist.	2417 Aug 15 19:17	23° Ω 54'53	31.11541 AU	max. Earth dist.	2425 Sep 02 20:16	11° \mp 31'39	31.18297 AU
retrograde	2417 Nov 28 13:21	26° Ω 25'04		retrograde	2425 Dec 15 21:40	14° \mp 01'03	
opposition	2418 Feb 13 20:26	25° Ω 02'12	0°16'07	opposition	2426 Mar 03 05:39	12° \mp 38'27	0°47'19
min. Earth dist.	2418 Feb 14 05:53	25° Ω 01'33	29.12103 AU	min. Earth dist.	2426 Mar 03 21:04	12° \mp 37'23	29.18819 AU
direct	2418 May 04 07:59	23° Ω 37'17		direct	2426 May 22 05:28	11° \mp 13'16	
				max. Earth dist.	2426 Sep 05 07:20	13° \mp 42'57	31.19303 AU
conjunction	2418 Aug 18 19:53	26° Ω 08'45	0°17'02				
minimum elong	2418 Aug 18 19:53	26° Ω 08'45	0°17'01	conjunction	2426 Sep 06 00:55	13° \mp 44'35	0°46'01
max. Earth dist.	2418 Aug 18 07:56	26° Ω 07'39	31.12611 AU	minimum elong	2426 Sep 06 00:55	13° \mp 44'35	0°46'01
retrograde	2418 Nov 30 23:30	28° Ω 37'45		retrograde	2426 Dec 18 09:58	16° \mp 12'21	
opposition	2419 Feb 16 06:41	27° Ω 14'56	0°20'10	opposition	2427 Mar 05 15:41	14° \mp 49'50	0°50'57
min. Earth dist.	2419 Feb 16 18:08	27° Ω 14'08	29.13116 AU	min. Earth dist.	2427 Mar 06 06:32	14° \mp 48'48	29.19865 AU
direct	2419 May 06 19:38	25° Ω 50'00		direct	2427 May 24 18:26	13° \mp 24'41	
conjunction	2419 Aug 21 09:00	28° Ω 21'27	0°20'49	conjunction	2427 Sep 08 13:11	15° \mp 56'02	0°49'23
minimum elong	2419 Aug 21 09:00	28° Ω 21'27	0°20'49	minimum elong	2427 Sep 08 13:11	15° \mp 56'02	0°49'24
max. Earth dist.	2419 Aug 20 19:56	28° Ω 20'15	31.13565 AU	max. Earth dist.	2427 Sep 07 19:43	15° \mp 54'25	31.20372 AU
retrograde	2419 Oct 08 14:49	0° \mp		retrograde	2427 Dec 20 20:07	18° \mp 23'43	
retrograde	2419 Dec 03 10:19	0° \mp 50'16		opposition	2428 Mar 07 02:00	17° \mp 01'18	0°54'30
	2420 Jan 29 20:44	30° Ω		min. Earth dist.	2428 Mar 07 18:18	17° \mp 00'09	29.20958 AU
opposition	2420 Feb 18 16:53	29° Ω 27'31	0°24'12	direct	2428 May 26 05:36	15° \mp 36'12	
min. Earth dist.	2420 Feb 19 04:15	29° Ω 26'43	29.14005 AU	max. Earth dist.	2428 Sep 09 07:11	18° \mp 05'53	31.21463 AU
direct	2420 May 08 08:42	28° Ω 02'33					
	2420 Aug 07 11:59	0° \mp		conjunction	2428 Sep 10 01:11	18° \mp 07'33	0°52'41
conjunction	2420 Aug 22 21:49	0° \mp 33'58	0°24'33	minimum elong	2428 Sep 10 01:11	18° \mp 07'33	0°52'41
minimum elong	2420 Aug 22 21:49	0° \mp 33'58	0°24'33	retrograde	2428 Dec 22 07:00	20° \mp 35'10	
max. Earth dist.	2420 Aug 22 07:30	0° \mp 32'39	31.14397 AU	opposition	2429 Mar 09 12:12	19° \mp 12'50	0°57'59
retrograde	2420 Dec 04 20:44	3° \mp 02'38		min. Earth dist.	2429 Mar 10 04:12	19° \mp 11'43	29.22023 AU
opposition	2421 Feb 20 03:07	1° \mp 39'54	0°28'11	direct	2429 May 28 18:19	17° \mp 47'47	
min. Earth dist.	2421 Feb 20 16:00	1° \mp 38'59	29.14803 AU				
direct	2421 May 10 19:10	0° \mp 14'52		conjunction	2429 Sep 12 13:20	20° \mp 19'10	0°55'54
				minimum elong	2429 Sep 12 13:19	20° \mp 19'10	0°55'54
conjunction	2421 Aug 25 10:43	2° \mp 46'16	0°28'16	max. Earth dist.	2429 Sep 11 18:19	20° \mp 17'25	31.22483 AU
minimum elong	2421 Aug 25 10:43	2° \mp 46'16	0°28'16	retrograde	2429 Dec 24 17:49	22° \mp 46'42	
max. Earth dist.	2421 Aug 24 20:11	2° \mp 44'56	31.15159 AU	opposition	2430 Mar 11 22:27	21° \mp 24'27	1°01'22
retrograde	2421 Dec 07 06:02	5° \mp 14'44		min. Earth dist.	2430 Mar 12 15:48	21° \mp 23'14	29.23011 AU
opposition	2422 Feb 22 13:07	3° \mp 52'02	0°32'07	direct	2430 May 31 04:39	19° \mp 59'25	
				max. Earth dist.	2430 Sep 14 06:21	22° \mp 29'03	31.23409 AU

conjunction	2430 Sep 15 01:30	22° \mathring{M} 30'49	0°59'02	minimum elong	2438 Oct 02 21:55	9° \mathring{U} 59'54	1°20'35
minimum elong	2430 Sep 15 01:29	22° \mathring{M} 30'49	0°59'01	max. Earth dist.	2438 Oct 01 23:37	9° \mathring{U} 57'50	31.28090 AU
retrograde	2430 Dec 27 03:11	24° \mathring{M} 58'16		retrograde	2439 Jan 13 11:41	12° \mathring{U} 26'35	
opposition	2431 Mar 14 08:53	23° \mathring{M} 36'05	1°04'40	opposition	2439 Mar 31 20:16	11° \mathring{U} 04'30	1°27'16
min. Earth dist.	2431 Mar 15 02:33	23° \mathring{M} 34'51	29.23869 AU	min. Earth dist.	2439 Apr 01 16:31	11° \mathring{U} 03'06	29.28555 AU
direct	2431 Jun 02 16:54	22° \mathring{M} 11'04		direct	2439 Jun 20 15:12	9° \mathring{U} 39'26	
				max. Earth dist.	2439 Oct 04 11:22	12° \mathring{U} 08'29	31.28865 AU
conjunction	2431 Sep 17 13:21	24° \mathring{M} 42'27	1°02'05				
minimum elong	2431 Sep 17 13:21	24° \mathring{M} 42'27	1°02'05	conjunction	2439 Oct 05 08:55	12° \mathring{U} 10'29	1°22'49
max. Earth dist.	2431 Sep 16 16:37	24° \mathring{M} 40'32	31.24198 AU	minimum elong	2439 Oct 05 08:55	12° \mathring{U} 10'29	1°22'49
retrograde	2431 Dec 29 12:51	27° \mathring{M} 09'49		retrograde	2440 Jan 15 20:29	14° \mathring{U} 37'07	
opposition	2432 Mar 15 19:19	25° \mathring{M} 47'40	1°07'53	opposition	2440 Apr 02 06:51	13° \mathring{U} 15'05	1°29'34
min. Earth dist.	2432 Mar 16 13:38	25° \mathring{M} 46'24	29.24608 AU	min. Earth dist.	2440 Apr 03 02:51	13° \mathring{U} 13'42	29.29351 AU
direct	2432 Jun 04 03:30	24° \mathring{M} 22'40		direct	2440 Jun 22 03:49	11° \mathring{U} 50'04	
max. Earth dist.	2432 Sep 18 05:05	26° \mathring{M} 52'08	31.24867 AU				
conjunction	2432 Sep 19 01:20	26° \mathring{M} 54'01	1°05'02	conjunction	2440 Oct 06 19:53	14° \mathring{U} 21'06	1°24'54
minimum elong	2432 Sep 19 01:20	26° \mathring{M} 54'01	1°05'01	minimum elong	2440 Oct 06 19:53	14° \mathring{U} 21'06	1°24'54
retrograde	2432 Dec 30 21:13	29° \mathring{M} 21'16		max. Earth dist.	2440 Oct 05 21:23	14° \mathring{U} 19'00	31.29678 AU
opposition	2433 Mar 18 05:41	27° \mathring{M} 59'09	1°10'59	retrograde	2441 Jan 17 06:23	16° \mathring{U} 47'41	
min. Earth dist.	2433 Mar 19 00:57	27° \mathring{M} 57'49	29.25219 AU	opposition	2441 Apr 04 17:20	15° \mathring{U} 25'44	1°31'44
direct	2433 Jun 06 15:08	26° \mathring{M} 34'08		min. Earth dist.	2441 Apr 05 13:30	15° \mathring{U} 24'20	29.30175 AU
				direct	2441 Jun 24 13:54	14° \mathring{U} 00'46	
				max. Earth dist.	2441 Oct 08 09:25	16° \mathring{U} 29'46	31.30475 AU
conjunction	2433 Sep 21 13:04	29° \mathring{M} 05'27	1°07'53				
minimum elong	2433 Sep 21 13:04	29° \mathring{M} 05'27	1°07'54	conjunction	2441 Oct 09 07:01	16° \mathring{U} 31'46	1°26'52
max. Earth dist.	2433 Sep 20 15:07	29° \mathring{M} 03'25	31.25429 AU	minimum elong	2441 Oct 09 07:01	16° \mathring{U} 31'46	1°26'53
	2433 Oct 16 14:27	0° \mathring{U}		retrograde	2442 Jan 19 14:50	18° \mathring{U} 58'20	
retrograde	2434 Jan 02 08:15	1° \mathring{U} 32'36		opposition	2442 Apr 07 04:08	17° \mathring{U} 36'26	1°33'46
opposition	2434 Mar 20 16:02	0° \mathring{U} 10'29	1°13'59	min. Earth dist.	2442 Apr 08 01:01	17° \mathring{U} 35'00	29.30936 AU
min. Earth dist.	2434 Mar 21 11:08	0° \mathring{U} 09'10	29.25741 AU	direct	2442 Jun 27 01:15	16° \mathring{U} 11'31	
	2434 Mar 26 23:31	30° \mathring{R} \mathring{M}					
direct	2434 Jun 09 01:33	28° \mathring{M} 45'26		conjunction	2442 Oct 11 17:54	18° \mathring{U} 42'30	1°28'42
	2434 Aug 18 20:48	0° \mathring{U}		minimum elong	2442 Oct 11 17:53	18° \mathring{U} 42'30	1°28'42
max. Earth dist.	2434 Sep 23 03:23	1° \mathring{U} 14'43	31.25906 AU	max. Earth dist.	2442 Oct 10 18:59	18° \mathring{U} 40'22	31.31190 AU
conjunction	2434 Sep 24 00:49	1° \mathring{U} 16'43	1°10'39	retrograde	2443 Jan 22 01:56	21° \mathring{U} 09'03	
minimum elong	2434 Sep 24 00:48	1° \mathring{U} 16'42	1°10'39	opposition	2443 Apr 09 14:55	19° \mathring{U} 47'11	1°35'40
retrograde	2435 Jan 04 17:15	3° \mathring{U} 43'45		min. Earth dist.	2443 Apr 10 11:19	19° \mathring{U} 45'47	29.31605 AU
opposition	2435 Mar 23 02:30	2° \mathring{U} 21'38	1°16'52	direct	2443 Jun 29 11:34	18° \mathring{U} 22'18	
min. Earth dist.	2435 Mar 23 22:52	2° \mathring{U} 20'13	29.26202 AU	max. Earth dist.	2443 Oct 13 06:39	20° \mathring{U} 51'11	31.31789 AU
direct	2435 Jun 11 14:09	0° \mathring{U} 56'34					
				conjunction	2443 Oct 14 04:56	20° \mathring{U} 53'16	1°30'25
				minimum elong	2443 Oct 14 04:56	20° \mathring{U} 53'16	1°30'26
conjunction	2435 Sep 26 12:14	3° \mathring{U} 27'46	1°13'18	retrograde	2444 Jan 24 10:56	23° \mathring{U} 19'47	
minimum elong	2435 Sep 26 12:14	3° \mathring{U} 27'46	1°13'19	opposition	2444 Apr 11 01:55	21° \mathring{U} 57'57	1°37'26
max. Earth dist.	2435 Sep 25 13:49	3° \mathring{U} 25'41	31.26365 AU	min. Earth dist.	2444 Apr 11 23:31	21° \mathring{U} 56'28	29.32146 AU
retrograde	2436 Jan 07 04:44	5° \mathring{U} 54'42		direct	2444 Jun 30 23:17	20° \mathring{U} 33'06	
opposition	2436 Mar 24 12:52	4° \mathring{U} 32'34	1°19'39				
min. Earth dist.	2436 Mar 25 08:26	4° \mathring{U} 31'13	29.26673 AU	conjunction	2444 Oct 15 15:39	23° \mathring{U} 04'01	1°32'00
direct	2436 Jun 13 03:20	3° \mathring{U} 07'28		minimum elong	2444 Oct 15 15:39	23° \mathring{U} 04'01	1°32'00
				max. Earth dist.	2444 Oct 14 16:22	23° \mathring{U} 01'51	31.32264 AU
conjunction	2436 Sep 27 23:30	5° \mathring{U} 38'37	1°15'51	retrograde	2445 Jan 25 22:14	25° \mathring{U} 30'30	
minimum elong	2436 Sep 27 23:29	5° \mathring{U} 38'37	1°15'50	opposition	2445 Apr 13 12:45	24° \mathring{U} 08'40	1°39'03
max. Earth dist.	2436 Sep 27 01:31	5° \mathring{U} 36'35	31.26847 AU	min. Earth dist.	2445 Apr 14 09:40	24° \mathring{U} 07'14	29.32547 AU
retrograde	2437 Jan 08 14:11	8° \mathring{U} 05'28		direct	2445 Jul 03 11:40	22° \mathring{U} 43'51	
opposition	2437 Mar 26 23:23	6° \mathring{U} 43'19	1°22'19	max. Earth dist.	2445 Oct 17 03:20	25° \mathring{U} 12'33	31.32588 AU
min. Earth dist.	2437 Mar 27 20:00	6° \mathring{U} 41'54	29.27201 AU				
direct	2437 Jun 15 14:39	5° \mathring{U} 18'13		conjunction	2445 Oct 18 02:31	25° \mathring{U} 14'43	1°33'27
				minimum elong	2445 Oct 18 02:31	25° \mathring{U} 14'43	1°33'28
conjunction	2437 Sep 30 10:44	7° \mathring{U} 49'19	1°18'17	retrograde	2446 Jan 28 08:03	27° \mathring{U} 41'10	
minimum elong	2437 Sep 30 10:44	7° \mathring{U} 49'19	1°18'17	opposition	2446 Apr 15 23:44	26° \mathring{U} 19'21	1°40'32
max. Earth dist.	2437 Sep 29 12:43	7° \mathring{U} 47'16	31.27420 AU	min. Earth dist.	2446 Apr 16 21:55	26° \mathring{U} 17'49	29.32817 AU
retrograde	2438 Jan 11 00:38	10° \mathring{U} 16'03		direct	2446 Jul 05 22:43	24° \mathring{U} 54'32	
opposition	2438 Mar 29 09:41	8° \mathring{U} 53'56	1°24'51				
min. Earth dist.	2438 Mar 30 05:24	8° \mathring{U} 52'34	29.27821 AU	conjunction	2446 Oct 20 13:12	27° \mathring{U} 25'20	1°34'47
direct	2438 Jun 18 03:57	7° \mathring{U} 28'50		minimum elong	2446 Oct 20 13:12	27° \mathring{U} 25'20	1°34'46
				max. Earth dist.	2446 Oct 19 13:59	27° \mathring{U} 23'10	31.32806 AU
conjunction	2438 Oct 02 21:55	9° \mathring{U} 59'54	1°20'36	retrograde	2447 Jan 30 18:34	29° \mathring{U} 51'45	

opposition	2447 Apr 18 10:43	28° Ω 29'55	1°41'52	max. Earth dist.	2454 Nov 06 01:58	14° \mathbb{M} 46'25	31.34704 AU
min. Earth dist.	2447 Apr 19 08:08	28° Ω 28'27	29.32981 AU		2454 Nov 12 03:18	15° \mathbb{M}	
direct	2447 Jul 08 12:26	27° Ω 05'06		retrograde	2455 Feb 17 01:25	17° \mathbb{M} 14'54	
conjunction	2447 Oct 22 23:35	29° Ω 35'50	1°35'58	opposition	2455 May 06 04:22	15° \mathbb{M} 53'08	1°47'13
minimum elong	2447 Oct 22 23:35	29° Ω 35'50	1°35'58	min. Earth dist.	2455 May 07 00:44	15° \mathbb{M} 51'45	29.34932 AU
max. Earth dist.	2447 Oct 22 00:01	29° Ω 33'38	31.32933 AU	direct	2455 Jun 10 08:29	15° $\mathbb{R}\mathbb{M}$	
	2447 Nov 02 19:57	0° \mathbb{M}			2455 Sep 08 23:28	15° \mathbb{M}	
retrograde	2448 Feb 02 05:41	2° \mathbb{M} 02'13		conjunction	2455 Nov 09 08:52	16° \mathbb{M} 59'02	1°40'23
opposition	2448 Apr 19 21:48	0° \mathbb{M} 40'22	1°43'04	minimum elong	2455 Nov 09 08:52	16° \mathbb{M} 59'02	1°40'23
min. Earth dist.	2448 Apr 20 19:41	0° \mathbb{M} 38'51	29.33100 AU	max. Earth dist.	2455 Nov 08 12:15	16° \mathbb{M} 57'06	31.34899 AU
	2448 May 15 11:36	30° $\mathbb{R}\Omega$		retrograde	2456 Feb 19 12:31	19° \mathbb{M} 25'36	
direct	2448 Jul 10 00:16	29° Ω 15'33		opposition	2456 May 07 15:54	18° \mathbb{M} 03'51	1°47'12
	2448 Sep 01 14:21	0° \mathbb{M}		min. Earth dist.	2456 May 08 11:24	18° \mathbb{M} 02'31	29.35051 AU
max. Earth dist.	2448 Oct 23 11:24	1° \mathbb{M} 44'06	31.33045 AU	direct	2456 Jul 27 19:38	16° \mathbb{M} 39'25	
conjunction	2448 Oct 24 10:02	1° \mathbb{M} 46'13	1°37'00	conjunction	2456 Nov 10 18:56	19° \mathbb{M} 09'44	1°40'18
minimum elong	2448 Oct 24 10:01	1° \mathbb{M} 46'13	1°37'00	minimum elong	2456 Nov 10 18:56	19° \mathbb{M} 09'44	1°40'17
retrograde	2449 Feb 03 14:11	4° \mathbb{M} 12'34		max. Earth dist.	2456 Nov 09 21:48	19° \mathbb{M} 07'46	31.34943 AU
opposition	2449 Apr 22 08:43	2° \mathbb{M} 50'41	1°44'06	retrograde	2457 Feb 21 00:34	21° \mathbb{M} 36'19	
min. Earth dist.	2449 Apr 23 06:13	2° \mathbb{M} 49'13	29.33214 AU	opposition	2457 May 10 03:26	20° \mathbb{M} 14'33	1°47'01
direct	2449 Jul 12 13:26	1° \mathbb{M} 25'53		min. Earth dist.	2457 May 10 23:25	20° \mathbb{M} 13'12	29.35029 AU
conjunction	2449 Oct 26 20:17	3° \mathbb{M} 56'29	1°37'55	direct	2457 Jul 30 07:19	18° \mathbb{M} 50'09	
minimum elong	2449 Oct 26 20:17	3° \mathbb{M} 56'29	1°37'56	max. Earth dist.	2457 Nov 12 08:46	21° \mathbb{M} 18'31	31.34841 AU
max. Earth dist.	2449 Oct 25 21:00	3° \mathbb{M} 54'19	31.33182 AU	conjunction	2457 Nov 13 05:04	21° \mathbb{M} 20'25	1°40'04
retrograde	2450 Feb 05 23:57	6° \mathbb{M} 22'50		minimum elong	2457 Nov 13 05:04	21° \mathbb{M} 20'25	1°40'04
opposition	2450 Apr 24 19:49	5° \mathbb{M} 00'57	1°45'00	retrograde	2458 Feb 23 09:33	23° \mathbb{M} 47'01	
min. Earth dist.	2450 Apr 25 16:51	4° \mathbb{M} 59'30	29.33396 AU	opposition	2458 May 12 15:11	22° \mathbb{M} 25'14	1°46'42
direct	2450 Jul 15 00:06	3° \mathbb{M} 36'10		min. Earth dist.	2458 May 13 10:55	22° \mathbb{M} 23'53	29.34837 AU
max. Earth dist.	2450 Oct 28 08:50	6° \mathbb{M} 04'42	31.33398 AU	direct	2458 Aug 01 20:40	21° \mathbb{M} 00'50	
conjunction	2450 Oct 29 06:32	6° \mathbb{M} 06'43	1°38'41	conjunction	2458 Nov 15 14:52	23° \mathbb{M} 31'01	1°39'41
minimum elong	2450 Oct 29 06:32	6° \mathbb{M} 06'43	1°38'41	minimum elong	2458 Nov 15 14:52	23° \mathbb{M} 31'01	1°39'41
retrograde	2451 Feb 08 08:05	8° \mathbb{M} 33'04		max. Earth dist.	2458 Nov 14 17:45	23° \mathbb{M} 29'02	31.34582 AU
opposition	2451 Apr 27 07:05	7° \mathbb{M} 11'12	1°45'45	retrograde	2459 Feb 25 20:11	25° \mathbb{M} 57'38	
min. Earth dist.	2451 Apr 28 04:09	7° \mathbb{M} 09'45	29.33652 AU	opposition	2459 May 15 02:55	24° \mathbb{M} 35'48	1°46'14
direct	2451 Jul 17 11:39	5° \mathbb{M} 46'28		min. Earth dist.	2459 May 15 22:18	24° \mathbb{M} 34'29	29.34518 AU
conjunction	2451 Oct 31 16:37	8° \mathbb{M} 16'58	1°39'19	direct	2459 Aug 04 08:20	23° \mathbb{M} 11'23	
minimum elong	2451 Oct 31 16:37	8° \mathbb{M} 16'58	1°39'20	max. Earth dist.	2459 Nov 17 05:04	25° \mathbb{M} 39'38	31.34204 AU
max. Earth dist.	2451 Oct 30 18:20	8° \mathbb{M} 14'54	31.33704 AU	conjunction	2459 Nov 18 00:47	25° \mathbb{M} 41'29	1°39'10
retrograde	2452 Feb 10 19:07	10° \mathbb{M} 43'21		minimum elong	2459 Nov 18 00:47	25° \mathbb{M} 41'29	1°39'12
opposition	2452 Apr 28 18:10	9° \mathbb{M} 21'31	1°46'21	retrograde	2460 Feb 28 04:42	28° \mathbb{M} 08'07	
min. Earth dist.	2452 Apr 29 14:03	9° \mathbb{M} 20'09	29.33994 AU	opposition	2460 May 16 14:38	26° \mathbb{M} 46'13	1°45'36
direct	2452 Jul 18 21:41	7° \mathbb{M} 56'50		min. Earth dist.	2460 May 17 10:18	26° \mathbb{M} 44'52	29.34092 AU
max. Earth dist.	2452 Nov 01 05:41	10° \mathbb{M} 25'21	31.34061 AU	direct	2460 Aug 05 21:10	25° \mathbb{M} 21'48	
conjunction	2452 Nov 02 02:45	10° \mathbb{M} 27'19	1°39'48	conjunction	2460 Nov 19 10:23	27° \mathbb{M} 51'47	1°38'31
minimum elong	2452 Nov 02 02:45	10° \mathbb{M} 27'19	1°39'47	minimum elong	2460 Nov 19 10:23	27° \mathbb{M} 51'47	1°38'31
retrograde	2453 Feb 12 03:50	12° \mathbb{M} 53'45		max. Earth dist.	2460 Nov 18 14:08	27° \mathbb{M} 49'53	31.33759 AU
opposition	2453 May 01 05:31	11° \mathbb{M} 31'57	1°46'47		2461 Jan 27 13:20	0° \mathbb{Z}	
min. Earth dist.	2453 May 02 02:07	11° \mathbb{M} 30'32	29.34354 AU	retrograde	2461 Mar 01 15:20	0° \mathbb{Z} 18'26	
direct	2453 Jul 21 08:45	10° \mathbb{M} 07'21			2461 Apr 04 13:49	30° $\mathbb{R}\mathbb{M}$	
conjunction	2453 Nov 04 12:47	12° \mathbb{M} 37'48	1°40'08	opposition	2461 May 19 02:18	28° \mathbb{M} 56'28	1°44'50
minimum elong	2453 Nov 04 12:47	12° \mathbb{M} 37'48	1°40'09	min. Earth dist.	2461 May 19 20:39	28° \mathbb{M} 55'13	29.33633 AU
max. Earth dist.	2453 Nov 03 15:21	12° \mathbb{M} 35'47	31.34417 AU	direct	2461 Aug 08 08:30	27° \mathbb{M} 32'02	
	2454 Jan 29 21:04	15° \mathbb{M}			2461 Nov 20 23:27	0° \mathbb{Z}	
retrograde	2454 Feb 14 15:00	15° \mathbb{M} 04'15		conjunction	2461 Nov 21 20:00	0° \mathbb{Z} 01'56	1°37'44
	2454 Mar 02 14:31	15° $\mathbb{R}\mathbb{M}$		minimum elong	2461 Nov 21 20:00	0° \mathbb{Z} 01'56	1°37'44
opposition	2454 May 03 16:45	13° \mathbb{M} 42'29	1°47'05	max. Earth dist.	2461 Nov 21 01:08	0° \mathbb{Z} 00'09	31.33296 AU
min. Earth dist.	2454 May 04 12:14	13° \mathbb{M} 41'09	29.34682 AU	retrograde	2462 Mar 03 23:31	2° \mathbb{Z} 28'37	
direct	2454 Jul 23 19:49	12° \mathbb{M} 17'57		opposition	2462 May 21 14:09	1° \mathbb{Z} 06'35	1°43'55
conjunction	2454 Nov 06 22:55	14° \mathbb{M} 48'23	1°40'20	min. Earth dist.	2462 May 22 08:48	1° \mathbb{Z} 05'19	29.33192 AU
minimum elong	2454 Nov 06 22:55	14° \mathbb{M} 48'22	1°40'19		2462 Jul 07 15:44	30° $\mathbb{R}\mathbb{M}$	

direct	2462 Aug 10 19:46	29° \mathring{M} 42'10		conjunction	2470 Dec 11 09:05	19° \mathring{Z} 35'52	1°24'30
	2462 Sep 13 04:37	0° \mathring{Z}		minimum elong	2470 Dec 11 09:05	19° \mathring{Z} 35'52	1°24'30
max. Earth dist.	2462 Nov 23 10:53	2° \mathring{Z} 10'14	31.32901 AU	max. Earth dist.	2470 Dec 10 19:38	19° \mathring{Z} 34'36	31.30258 AU
				retrograde	2471 Mar 23 23:32	22° \mathring{Z} 03'27	
conjunction	2462 Nov 24 05:27	2° \mathring{Z} 11'58	1°36'48	opposition	2471 Jun 11 03:12	20° \mathring{Z} 41'17	1°29'10
minimum elong	2462 Nov 24 05:28	2° \mathring{Z} 11'58	1°36'48	min. Earth dist.	2471 Jun 11 16:44	20° \mathring{Z} 40'22	29.29975 AU
retrograde	2463 Mar 06 10:11	4° \mathring{Z} 38'42		direct	2471 Aug 31 03:45	19° \mathring{Z} 17'20	
opposition	2463 May 24 01:58	3° \mathring{Z} 16'39	1°42'51				
min. Earth dist.	2463 May 24 18:46	3° \mathring{Z} 15'30	29.32834 AU	conjunction	2471 Dec 13 18:25	21° \mathring{Z} 46'44	1°22'24
direct	2463 Aug 13 06:41	1° \mathring{Z} 52'15		minimum elong	2471 Dec 13 18:25	21° \mathring{Z} 46'44	1°22'24
				max. Earth dist.	2471 Dec 13 05:08	21° \mathring{Z} 45'29	31.29518 AU
conjunction	2463 Nov 26 14:51	4° \mathring{Z} 22'00	1°35'44	retrograde	2472 Mar 25 10:10	24° \mathring{Z} 14'24	
minimum elong	2463 Nov 26 14:51	4° \mathring{Z} 22'00	1°35'45	opposition	2472 Jun 12 15:31	22° \mathring{Z} 52'10	1°26'51
max. Earth dist.	2463 Nov 25 21:14	4° \mathring{Z} 20'21	31.32587 AU	min. Earth dist.	2472 Jun 13 03:30	22° \mathring{Z} 51'21	29.29169 AU
retrograde	2464 Mar 07 20:36	6° \mathring{Z} 48'50		direct	2472 Sep 01 14:52	21° \mathring{Z} 28'12	
opposition	2464 May 25 13:55	5° \mathring{Z} 26'44	1°41'39				
min. Earth dist.	2464 May 26 06:57	5° \mathring{Z} 25'35	29.32566 AU	conjunction	2472 Dec 15 03:47	23° \mathring{Z} 57'31	1°20'10
direct	2464 Aug 14 16:22	4° \mathring{Z} 02'24		minimum elong	2472 Dec 15 03:48	23° \mathring{Z} 57'31	1°20'10
max. Earth dist.	2464 Nov 27 07:45	6° \mathring{Z} 30'33	31.32362 AU	max. Earth dist.	2472 Dec 14 15:05	23° \mathring{Z} 56'19	31.28672 AU
				retrograde	2473 Mar 27 20:36	26° \mathring{Z} 25'16	
conjunction	2464 Nov 28 00:19	6° \mathring{Z} 32'06	1°34'32	opposition	2473 Jun 15 03:53	25° \mathring{Z} 02'57	1°24'25
minimum elong	2464 Nov 28 00:19	6° \mathring{Z} 32'06	1°34'31	min. Earth dist.	2473 Jun 15 16:15	25° \mathring{Z} 02'06	29.28303 AU
retrograde	2465 Mar 10 07:38	8° \mathring{Z} 59'01		direct	2473 Sep 04 01:00	23° \mathring{Z} 38'58	
opposition	2465 May 28 01:40	7° \mathring{Z} 36'57	1°40'17				
min. Earth dist.	2465 May 28 17:15	7° \mathring{Z} 35'53	29.32352 AU	conjunction	2473 Dec 17 13:06	26° \mathring{Z} 08'11	1°17'50
direct	2465 Aug 17 05:17	6° \mathring{Z} 12'40		minimum elong	2473 Dec 17 13:07	26° \mathring{Z} 08'11	1°17'51
				max. Earth dist.	2473 Dec 17 01:43	26° \mathring{Z} 07'07	31.27810 AU
conjunction	2465 Nov 30 09:45	8° \mathring{Z} 42'21	1°33'11	retrograde	2474 Mar 30 07:27	28° \mathring{Z} 36'01	
minimum elong	2465 Nov 30 09:45	8° \mathring{Z} 42'21	1°33'12	opposition	2474 Jun 17 16:19	27° \mathring{Z} 13'36	1°21'52
max. Earth dist.	2465 Nov 29 17:13	8° \mathring{Z} 40'48	31.32167 AU	min. Earth dist.	2474 Jun 18 02:58	27° \mathring{Z} 12'53	29.27443 AU
retrograde	2466 Mar 12 20:19	11° \mathring{Z} 09'23		direct	2474 Sep 06 13:56	25° \mathring{Z} 49'38	
opposition	2466 May 30 13:46	9° \mathring{Z} 47'18	1°38'46				
min. Earth dist.	2466 May 31 05:12	9° \mathring{Z} 46'16	29.32165 AU	conjunction	2474 Dec 19 22:10	28° \mathring{Z} 18'46	1°15'24
direct	2466 Aug 19 16:00	8° \mathring{Z} 23'07		minimum elong	2474 Dec 19 22:10	28° \mathring{Z} 18'46	1°15'23
				max. Earth dist.	2474 Dec 19 11:01	28° \mathring{Z} 17'43	31.26982 AU
conjunction	2466 Dec 02 19:09	10° \mathring{Z} 52'46	1°31'42		2475 Feb 07 02:21	0° \mathring{Z}	
minimum elong	2466 Dec 02 19:09	10° \mathring{Z} 52'46	1°31'42	retrograde	2475 Apr 01 20:00	0° \mathring{Z} 46'42	
max. Earth dist.	2466 Dec 02 04:10	10° \mathring{Z} 51'22	31.31972 AU		2475 May 28 08:56	30° \mathring{R} \mathring{Z}	
retrograde	2467 Mar 15 06:01	13° \mathring{Z} 19'56		opposition	2475 Jun 20 04:51	29° \mathring{Z} 24'11	1°19'12
opposition	2467 Jun 02 01:57	11° \mathring{Z} 57'51	1°37'07	min. Earth dist.	2475 Jun 20 14:54	29° \mathring{Z} 23'31	29.26666 AU
min. Earth dist.	2467 Jun 02 16:42	11° \mathring{Z} 56'52	29.31935 AU	direct	2475 Sep 08 23:54	28° \mathring{Z} 00'13	
direct	2467 Aug 22 04:32	10° \mathring{Z} 33'44			2475 Dec 09 07:09	0° \mathring{Z}	
conjunction	2467 Dec 05 04:33	13° \mathring{Z} 03'22	1°30'06	conjunction	2475 Dec 22 07:28	0° \mathring{Z} 29'17	1°12'51
minimum elong	2467 Dec 05 04:33	13° \mathring{Z} 03'22	1°30'07	minimum elong	2475 Dec 22 07:28	0° \mathring{Z} 29'17	1°12'52
max. Earth dist.	2467 Dec 04 13:04	13° \mathring{Z} 01'55	31.31716 AU	max. Earth dist.	2475 Dec 21 22:17	0° \mathring{Z} 28'25	31.26256 AU
retrograde	2468 Mar 16 17:47	15° \mathring{Z} 30'38		retrograde	2476 Apr 03 05:47	2° \mathring{Z} 57'19	
opposition	2468 Jun 03 14:02	14° \mathring{Z} 08'34	1°35'20	opposition	2476 Jun 21 17:11	1° \mathring{Z} 34'46	1°16'25
min. Earth dist.	2468 Jun 04 04:11	14° \mathring{Z} 07'37	29.31642 AU	min. Earth dist.	2476 Jun 22 02:04	1° \mathring{Z} 34'10	29.25981 AU
direct	2468 Aug 23 15:53	12° \mathring{Z} 44'31		direct	2476 Sep 10 12:09	0° \mathring{Z} 10'50	
conjunction	2468 Dec 06 14:08	15° \mathring{Z} 14'07	1°28'21	conjunction	2476 Dec 23 16:35	2° \mathring{Z} 39'50	1°10'11
minimum elong	2468 Dec 06 14:08	15° \mathring{Z} 14'07	1°28'21	minimum elong	2476 Dec 23 16:35	2° \mathring{Z} 39'50	1°10'11
max. Earth dist.	2468 Dec 06 00:08	15° \mathring{Z} 12'48	31.31364 AU	max. Earth dist.	2476 Dec 23 07:21	2° \mathring{Z} 38'58	31.25632 AU
retrograde	2469 Mar 19 03:34	17° \mathring{Z} 41'30		retrograde	2477 Apr 05 18:32	5° \mathring{Z} 08'00	
opposition	2469 Jun 06 02:23	16° \mathring{Z} 19'25	1°33'25	opposition	2477 Jun 24 05:40	3° \mathring{Z} 45'24	1°13'31
min. Earth dist.	2469 Jun 06 16:43	16° \mathring{Z} 18'27	29.31220 AU	min. Earth dist.	2477 Jun 24 13:20	3° \mathring{Z} 44'53	29.25401 AU
direct	2469 Aug 26 04:50	14° \mathring{Z} 55'25		direct	2477 Sep 12 23:34	2° \mathring{Z} 21'31	
conjunction	2469 Dec 08 23:31	17° \mathring{Z} 24'58	1°26'29	conjunction	2477 Dec 26 01:48	4° \mathring{Z} 50'29	1°07'25
minimum elong	2469 Dec 08 23:31	17° \mathring{Z} 24'58	1°26'30	minimum elong	2477 Dec 26 01:48	4° \mathring{Z} 50'29	1°07'26
max. Earth dist.	2469 Dec 08 09:01	17° \mathring{Z} 23'36	31.30883 AU	max. Earth dist.	2477 Dec 25 18:37	4° \mathring{Z} 49'49	31.25086 AU
retrograde	2470 Mar 21 14:57	19° \mathring{Z} 52'27		retrograde	2478 Apr 08 05:10	7° \mathring{Z} 18'47	
opposition	2470 Jun 08 14:41	18° \mathring{Z} 30'20	1°31'21	opposition	2478 Jun 26 18:22	5° \mathring{Z} 56'10	1°10'31
min. Earth dist.	2470 Jun 09 03:43	18° \mathring{Z} 29'27	29.30667 AU	min. Earth dist.	2478 Jun 27 01:40	5° \mathring{Z} 55'40	29.24874 AU
direct	2470 Aug 28 16:20	17° \mathring{Z} 06'22		direct	2478 Sep 15 12:21	4° \mathring{Z} 32'21	

conjunction	2478 Dec 28 10:58	7°☾01'16	1°04'33	retrograde	2487 Apr 28 13:43	27°☾01'47	
minimum elong	2478 Dec 28 10:58	7°☾01'17	1°04'33	opposition	2487 Jul 17 14:27	25°☾38'40	0°39'20
max. Earth dist.	2478 Dec 28 03:53	7°☾00'36	31.24590 AU	min. Earth dist.	2487 Jul 17 15:12	25°☾38'37	29.17331 AU
retrograde	2479 Apr 10 17:10	9°☾29'44		direct	2487 Oct 05 19:25	24°☾15'08	
opposition	2479 Jun 29 06:58	8°☾07'05	1°07'24				
min. Earth dist.	2479 Jun 29 12:33	8°☾06'43	29.24379 AU	conjunction	2488 Jan 16 23:52	26°☾43'38	0°35'02
direct	2479 Sep 17 23:26	6°☾43'20		minimum elong	2488 Jan 16 23:52	26°☾43'38	0°35'03
				max. Earth dist.	2488 Jan 16 23:33	26°☾43'37	31.16807 AU
conjunction	2479 Dec 30 20:15	9°☾12'14	1°01'35	retrograde	2488 Apr 30 02:03	29°☾13'25	
minimum elong	2479 Dec 30 20:15	9°☾12'14	1°01'36	opposition	2488 Jul 19 03:20	27°☾50'13	0°35'30
max. Earth dist.	2479 Dec 30 14:29	9°☾11'42	31.24080 AU	min. Earth dist.	2488 Jul 19 02:08	27°☾50'18	29.16325 AU
retrograde	2480 Apr 12 02:51	11°☾40'51		direct	2488 Oct 07 06:43	26°☾26'43	
opposition	2480 Jun 30 19:49	10°☾18'11	1°04'11				
min. Earth dist.	2480 Jul 01 01:40	10°☾17'48	29.23845 AU	conjunction	2489 Jan 18 09:21	28°☾55'11	0°31'26
direct	2480 Sep 19 10:58	8°☾54'31		minimum elong	2489 Jan 18 09:21	28°☾55'11	0°31'25
				max. Earth dist.	2489 Jan 18 10:27	28°☾55'17	31.15839 AU
conjunction	2481 Jan 01 05:37	11°☾23'22	0°58'32		2489 Feb 16 20:01	0°☾	
minimum elong	2481 Jan 01 05:37	11°☾23'22	0°58'31	retrograde	2489 May 02 12:07	1°☾25'07	
max. Earth dist.	2481 Jan 01 00:19	11°☾22'52	31.23521 AU	opposition	2489 Jul 21 16:22	0°☾01'52	0°31'38
retrograde	2481 Apr 14 14:21	13°☾52'08		min. Earth dist.	2489 Jul 21 15:02	0°☾01'57	29.15407 AU
opposition	2481 Jul 03 08:30	12°☾29'28	1°00'52		2489 Jul 22 19:53	30°☾☾	
min. Earth dist.	2481 Jul 03 12:43	12°☾29'11	29.23232 AU	direct	2489 Oct 09 18:52	28°☾38'24	
direct	2481 Sep 21 22:22	11°☾05'51			2489 Dec 21 07:50	0°☾	
conjunction	2482 Jan 03 15:05	13°☾34'40	0°55'24	conjunction	2490 Jan 20 18:51	1°☾06'51	0°27'47
minimum elong	2482 Jan 03 15:05	13°☾34'40	0°55'24	minimum elong	2490 Jan 20 18:52	1°☾06'51	0°27'48
max. Earth dist.	2482 Jan 03 10:13	13°☾34'13	31.22854 AU	max. Earth dist.	2490 Jan 20 20:59	1°☾07'03	31.14981 AU
retrograde	2482 Apr 17 01:44	16°☾03'37		retrograde	2490 May 05 00:29	3°☾36'57	
opposition	2482 Jul 05 21:36	14°☾40'54	0°57'28	opposition	2490 Jul 24 05:22	2°☾13'39	0°27'42
min. Earth dist.	2482 Jul 06 02:12	14°☾40'35	29.22510 AU	min. Earth dist.	2490 Jul 24 01:55	2°☾13'53	29.14581 AU
direct	2482 Sep 24 08:28	13°☾17'19		direct	2490 Oct 12 06:43	0°☾50'15	
conjunction	2483 Jan 06 00:34	15°☾46'06	0°52'10	conjunction	2491 Jan 23 04:20	3°☾18'40	0°24'06
minimum elong	2483 Jan 06 00:34	15°☾46'06	0°52'10	minimum elong	2491 Jan 23 04:20	3°☾18'40	0°24'05
max. Earth dist.	2483 Jan 05 20:52	15°☾45'45	31.22072 AU	max. Earth dist.	2491 Jan 23 07:11	3°☾18'56	31.14183 AU
retrograde	2483 Apr 19 13:09	18°☾15'12		retrograde	2491 May 07 11:43	5°☾48'58	
opposition	2483 Jul 08 10:34	16°☾52'26	0°53'59	opposition	2491 Jul 26 18:32	4°☾25'38	0°23'43
min. Earth dist.	2483 Jul 08 13:48	16°☾52'13	29.21646 AU	min. Earth dist.	2491 Jul 26 15:11	4°☾25'52	29.13809 AU
direct	2483 Sep 26 20:49	15°☾28'53		direct	2491 Oct 14 16:50	3°☾02'17	
conjunction	2484 Jan 08 10:06	17°☾57'37	0°48'52	conjunction	2492 Jan 25 14:04	5°☾30'41	0°20'22
minimum elong	2484 Jan 08 10:06	17°☾57'37	0°48'53	minimum elong	2492 Jan 25 14:04	5°☾30'41	0°20'22
max. Earth dist.	2484 Jan 08 06:03	17°☾57'15	31.21141 AU	max. Earth dist.	2492 Jan 25 18:28	5°☾31'05	31.13426 AU
retrograde	2484 Apr 21 02:11	20°☾26'52		retrograde	2492 May 08 22:48	8°☾01'09	
opposition	2484 Jul 09 23:27	19°☾04'01	0°50'25	opposition	2492 Jul 28 07:26	6°☾37'48	0°19'43
min. Earth dist.	2484 Jul 10 02:36	19°☾03'48	29.20654 AU	min. Earth dist.	2492 Jul 28 02:32	6°☾38'08	29.13041 AU
direct	2484 Sep 28 06:25	17°☾40'29		direct	2492 Oct 16 04:28	5°☾14'30	
conjunction	2485 Jan 09 19:44	20°☾09'10	0°45'30	conjunction	2493 Jan 26 23:47	7°☾42'54	0°16'36
minimum elong	2485 Jan 09 19:44	20°☾09'10	0°45'30	minimum elong	2493 Jan 26 23:47	7°☾42'54	0°16'35
max. Earth dist.	2485 Jan 09 17:16	20°☾08'56	31.20095 AU	max. Earth dist.	2493 Jan 27 04:00	7°☾43'17	31.12646 AU
retrograde	2485 Apr 23 12:49	22°☾38'32		retrograde	2493 May 11 12:01	10°☾13'34	
opposition	2485 Jul 12 12:26	21°☾15'36	0°46'47	opposition	2493 Jul 30 20:41	8°☾50'09	0°15'40
min. Earth dist.	2485 Jul 12 14:44	21°☾15'26	29.19551 AU	min. Earth dist.	2493 Jul 30 15:34	8°☾50'30	29.12245 AU
direct	2485 Sep 30 18:56	19°☾52'04		direct	2493 Oct 18 13:15	7°☾26'54	
conjunction	2486 Jan 12 05:00	22°☾20'41	0°42'05	conjunction	2494 Jan 29 09:38	9°☾55'17	0°12'48
minimum elong	2486 Jan 12 05:00	22°☾20'41	0°42'05	minimum elong	2494 Jan 29 09:38	9°☾55'17	0°12'49
max. Earth dist.	2486 Jan 12 02:23	22°☾20'26	31.18975 AU	behind sun begin	2494 Jan 29 05:33	9°☾54'54	
retrograde	2486 Apr 26 02:22	24°☾50'10		behind sun end	2494 Jan 29 13:42	9°☾55'39	
opposition	2486 Jul 15 01:28	23°☾27'08	0°43'05	max. Earth dist.	2494 Jan 29 15:34	9°☾55'49	31.11811 AU
min. Earth dist.	2486 Jul 15 02:40	23°☾27'03	29.18426 AU	retrograde	2494 May 13 23:38	12°☾26'08	
direct	2486 Oct 03 06:37	22°☾03'36		opposition	2494 Aug 02 09:58	11°☾02'40	0°11'35
conjunction	2487 Jan 14 14:31	24°☾32'10	0°38'35	min. Earth dist.	2494 Aug 02 04:00	11°☾03'04	29.11358 AU
minimum elong	2487 Jan 14 14:31	24°☾32'10	0°38'35	direct	2494 Oct 21 01:41	9°☾39'27	
max. Earth dist.	2487 Jan 14 13:53	24°☾32'06	31.17855 AU	conjunction	2495 Jan 31 19:33	12°☾07'48	0°09'00

minimum elong	2495 Jan 31 19:34	12°07'48	0°09'00	max. Earth dist.	2501 Feb 14 19:03	25°23'56	31.03564 AU
behind sun begin	2495 Jan 31 14:04	12°07'18		retrograde	2501 May 30 14:19	27°54'44	
behind sun end	2495 Feb 01 01:03	12°08'18		opposition	2501 Aug 19 06:23	26°30'36	0°-17'-3
max. Earth dist.	2495 Feb 01 01:02	12°08'18	31.10876 AU	min. Earth dist.	2501 Aug 18 18:58	26°31'23	29.03026 AU
retrograde	2495 May 16 14:11	14°38'49		direct	2501 Nov 06 12:52	25°07'19	
opposition	2495 Aug 04 23:11	13°15'18	0°07'30				
min. Earth dist.	2495 Aug 04 16:33	13°15'45	29.10368 AU	conjunction	2502 Feb 16 18:08	27°35'24	0°-17'-51
direct	2495 Oct 23 12:25	11°52'05		minimum elong	2502 Feb 16 18:09	27°35'24	0°17'51
				max. Earth dist.	2502 Feb 17 05:06	27°36'26	31.02505 AU
conjunction	2496 Feb 03 05:44	14°20'25	0°05'11		2502 May 11 21:20	0°K	
minimum elong	2496 Feb 03 05:43	14°20'25	0°05'12	retrograde	2502 Jun 02 03:24	0°K07'25	
behind sun begin	2496 Feb 02 23:30	14°19'52			2502 Jun 23 18:18	30°R	
behind sun end	2496 Feb 03 11:56	14°20'59		opposition	2502 Aug 21 19:37	28°43'13	0°-21'-6
max. Earth dist.	2496 Feb 03 12:35	14°21'03	31.09808 AU	min. Earth dist.	2502 Aug 21 07:44	28°44'01	29.02036 AU
	2496 Feb 20 19:11	15°		direct	2502 Nov 08 21:53	27°19'57	
retrograde	2496 May 18 02:07	16°51'35					
opposition	2496 Aug 06 12:31	15°27'58	0°03'24	conjunction	2503 Feb 19 04:31	29°48'02	0°-21'-37
min. Earth dist.	2496 Aug 06 05:55	15°28'25	29.09227 AU	minimum elong	2503 Feb 19 04:31	29°48'02	0°21'38
	2496 Aug 24 00:20	15°R		max. Earth dist.	2503 Feb 19 17:27	29°49'15	31.01564 AU
direct	2496 Oct 25 00:43	14°04'45			2503 Feb 24 10:27	0°K	
	2496 Dec 22 12:58	15°		retrograde	2503 Jun 04 15:06	2°K20'13	
				opposition	2503 Aug 24 08:37	0°K55'59	0°-25'-7
conjunction	2497 Feb 04 15:43	16°33'02	0°01'19	min. Earth dist.	2503 Aug 23 19:36	0°K56'52	29.01140 AU
minimum elong	2497 Feb 04 15:43	16°33'02	0°01'18		2503 Sep 30 17:24	30°R	
behind sun begin	2497 Feb 04 09:19	16°32'28		direct	2503 Nov 11 09:51	29°32'46	
behind sun end	2497 Feb 04 22:07	16°33'37			2503 Dec 21 15:56	0°K	
max. Earth dist.	2497 Feb 04 22:27	16°33'39	31.08614 AU				
retrograde	2497 May 20 15:30	19°04'20		conjunction	2504 Feb 21 14:48	2°K00'52	0°-25'-21
desc. node	2497 Jun 06 09:34	18°59'48		minimum elong	2504 Feb 21 14:48	2°K00'52	0°25'22
opposition	2497 Aug 09 01:44	17°40'36	0°00'-42	max. Earth dist.	2504 Feb 22 03:34	2°K02'05	31.00715 AU
min. Earth dist.	2497 Aug 08 17:44	17°41'09	29.07976 AU	retrograde	2504 Jun 06 05:45	4°K33'15	
direct	2497 Oct 27 12:29	16°17'22		opposition	2504 Aug 25 21:45	3°K08'59	0°-29'-6
				min. Earth dist.	2504 Aug 25 07:51	3°K09'55	29.00327 AU
conjunction	2498 Feb 07 01:51	18°45'36	0°-2'-37	direct	2504 Nov 12 19:40	1°K45'48	
minimum elong	2498 Feb 07 01:50	18°45'36	0°02'38				
behind sun begin	2498 Feb 06 19:26	18°45'01		conjunction	2505 Feb 23 01:15	4°K13'57	0°-29'-4
behind sun end	2498 Feb 07 08:13	18°46'11		minimum elong	2505 Feb 23 01:15	4°K13'57	0°29'05
max. Earth dist.	2498 Feb 07 09:33	18°46'19	31.07319 AU	max. Earth dist.	2505 Feb 23 15:44	4°K15'19	30.99910 AU
retrograde	2498 May 23 03:09	21°17'01		retrograde	2505 Jun 08 18:02	6°K46'31	
opposition	2498 Aug 11 15:06	19°53'10	0°-4'-48	opposition	2505 Aug 28 10:59	5°K22'13	0°-33'-3
min. Earth dist.	2498 Aug 11 07:18	19°53'42	29.06665 AU	min. Earth dist.	2505 Aug 27 20:56	5°K23'10	28.99535 AU
direct	2498 Oct 30 01:20	18°29'55		direct	2505 Nov 15 06:51	3°K59'06	
conjunction	2499 Feb 09 11:51	20°58'05	0°-6'-27	conjunction	2506 Feb 25 11:51	6°K27'16	0°-32'-44
minimum elong	2499 Feb 09 11:51	20°58'05	0°06'29	minimum elong	2506 Feb 25 11:50	6°K27'16	0°32'44
behind sun begin	2499 Feb 09 05:49	20°57'32		max. Earth dist.	2506 Feb 26 02:22	6°K28'38	30.99127 AU
behind sun end	2499 Feb 09 17:53	20°58'38		retrograde	2506 Jun 11 08:48	9°K00'01	
max. Earth dist.	2499 Feb 09 20:29	20°58'53	31.06012 AU	min. Earth dist.	2506 Aug 30 08:48	7°K36'44	28.98743 AU
retrograde	2499 May 25 16:10	23°29'37		opposition	2506 Aug 31 00:09	7°K35'41	0°-36'-57
opposition	2499 Aug 14 04:13	22°05'39	0°-8'-54	direct	2506 Nov 17 17:55	6°K12'36	
min. Earth dist.	2499 Aug 13 18:31	22°06'19	29.05368 AU				
direct	2499 Nov 01 14:08	20°42'22		conjunction	2507 Feb 27 22:36	8°K40'48	0°-36'-21
				minimum elong	2507 Feb 27 22:36	8°K40'48	0°36'23
conjunction	2500 Feb 11 21:56	23°10'30	0°-10'-15	max. Earth dist.	2507 Feb 28 13:51	8°K42'15	30.98295 AU
minimum elong	2500 Feb 11 21:56	23°10'30	0°10'16	retrograde	2507 Jun 13 22:13	11°K13'44	
behind sun begin	2500 Feb 11 16:49	23°10'02		opposition	2507 Sep 02 13:27	9°K49'21	0°-40'-48
behind sun end	2500 Feb 12 03:04	23°10'58		min. Earth dist.	2507 Sep 01 22:39	9°K50'22	28.97880 AU
max. Earth dist.	2500 Feb 12 07:05	23°11'21	31.04735 AU	direct	2507 Nov 20 06:38	8°K26'19	
retrograde	2500 May 28 03:10	25°42'10					
opposition	2500 Aug 16 17:18	24°18'07	0°-12'-59	conjunction	2508 Mar 01 09:36	10°K54'32	0°-39'-55
min. Earth dist.	2500 Aug 16 07:44	24°18'46	29.04144 AU	minimum elong	2508 Mar 01 09:36	10°K54'32	0°39'56
direct	2500 Nov 04 00:47	22°54'49		max. Earth dist.	2508 Mar 02 01:15	10°K56'01	30.97386 AU
				retrograde	2508 Jun 15 12:45	13°K27'36	
conjunction	2501 Feb 14 08:09	25°22'55	0°-14'-3	min. Earth dist.	2508 Sep 03 10:18	12°K04'17	28.96917 AU
minimum elong	2501 Feb 14 08:09	25°22'55	0°14'05	opposition	2508 Sep 04 02:28	12°K03'11	0°-44'-35
behind sun begin	2501 Feb 14 04:51	25°22'37		direct	2508 Nov 21 19:31	10°K40'08	
behind sun end	2501 Feb 14 11:27	25°23'13					

conjunction	2509 Mar 03 20:33	13° ✕ 08'21	0°-43'-26	conjunction	2517 Mar 21 14:10	0° ∇ 58'34	-1°-8'-48
minimum elong	2509 Mar 03 20:33	13° ✕ 08'21	0°43'27	minimum elong	2517 Mar 21 14:10	0° ∇ 58'34	1°08'50
max. Earth dist.	2509 Mar 04 12:05	13° ✕ 09'50	30.96363 AU	max. Earth dist.	2517 Mar 22 11:15	1° ∇ 00'34	30.89141 AU
retrograde	2509 Jun 18 00:26	15° ✕ 41'34		retrograde	2517 Jul 06 08:23	3° ∇ 32'40	
opposition	2509 Sep 06 15:48	14° ✕ 17'03	0°-48'-18	opposition	2517 Sep 24 23:26	2° ∇ 07'38	-1°-15'-5
min. Earth dist.	2509 Sep 06 00:18	14° ✕ 18'07	28.95853 AU	min. Earth dist.	2517 Sep 24 02:17	2° ∇ 09'05	28.88961 AU
direct	2509 Nov 24 06:35	12° ✕ 54'00		direct	2517 Dec 12 02:14	0° ∇ 44'29	
conjunction	2510 Mar 06 07:35	15° ✕ 22'12	0°-46'-53	conjunction	2518 Mar 24 01:42	3° ∇ 12'45	-1°-11'-34
minimum elong	2510 Mar 06 07:34	15° ✕ 22'12	0°46'53	minimum elong	2518 Mar 24 01:42	3° ∇ 12'45	1°11'35
max. Earth dist.	2510 Mar 07 00:22	15° ✕ 23'47	30.95263 AU	max. Earth dist.	2518 Mar 24 22:49	3° ∇ 14'45	30.88662 AU
retrograde	2510 Jun 20 12:32	17° ✕ 55'30		retrograde	2518 Jul 08 21:43	5° ∇ 46'59	
opposition	2510 Sep 09 04:55	16° ✕ 30'54	0°-51'-57	opposition	2518 Sep 27 12:28	4° ∇ 21'57	-1°-17'-59
min. Earth dist.	2510 Sep 08 12:10	16° ✕ 32'03	28.94721 AU	min. Earth dist.	2518 Sep 26 16:07	4° ∇ 23'21	28.88503 AU
direct	2510 Nov 26 19:46	15° ✕ 07'49		direct	2518 Dec 14 13:09	2° ∇ 58'50	
conjunction	2511 Mar 08 18:35	17° ✕ 35'59	0°-50'-15	conjunction	2519 Mar 26 13:41	5° ∇ 27'10	-1°-14'-14
minimum elong	2511 Mar 08 18:34	17° ✕ 35'59	0°50'17	minimum elong	2519 Mar 26 13:41	5° ∇ 27'10	1°14'15
max. Earth dist.	2511 Mar 09 10:54	17° ✕ 37'32	30.94118 AU	max. Earth dist.	2519 Mar 27 11:51	5° ∇ 29'16	30.88197 AU
retrograde	2511 Jun 23 01:40	20° ✕ 09'24		retrograde	2519 Jul 11 11:42	8° ∇ 01'31	
opposition	2511 Sep 11 17:54	18° ✕ 44'42	0°-55'-32	min. Earth dist.	2519 Sep 29 03:55	6° ∇ 37'56	28.88019 AU
min. Earth dist.	2511 Sep 11 01:18	18° ✕ 45'50	28.93594 AU	opposition	2519 Sep 30 01:10	6° ∇ 36'28	-1°-20'-46
direct	2511 Nov 29 05:52	17° ✕ 21'33		direct	2519 Dec 17 02:15	5° ∇ 13'23	
conjunction	2512 Mar 10 05:46	19° ✕ 49'43	0°-53'-34	conjunction	2520 Mar 28 01:40	7° ∇ 41'46	-1°-16'-46
minimum elong	2512 Mar 10 05:45	19° ✕ 49'43	0°53'34	minimum elong	2520 Mar 28 01:40	7° ∇ 41'46	1°16'47
max. Earth dist.	2512 Mar 10 23:45	19° ✕ 51'25	30.93005 AU	max. Earth dist.	2520 Mar 28 22:52	7° ∇ 43'47	30.87676 AU
retrograde	2512 Jun 24 12:33	22° ✕ 23'13		retrograde	2520 Jul 13 01:47	10° ∇ 16'15	
opposition	2512 Sep 13 06:52	20° ✕ 58'25	0°-59'-1	opposition	2520 Oct 01 14:11	8° ∇ 51'11	-1°-23'-25
min. Earth dist.	2512 Sep 12 13:17	20° ✕ 59'38	28.92518 AU	min. Earth dist.	2520 Sep 30 17:35	8° ∇ 52'36	28.87467 AU
direct	2512 Nov 30 18:31	19° ✕ 35'15		direct	2520 Dec 18 12:45	7° ∇ 28'06	
conjunction	2513 Mar 12 16:42	22° ✕ 03'22	0°-56'-47	conjunction	2521 Mar 30 13:48	9° ∇ 56'32	-1°-19'-12
minimum elong	2513 Mar 12 16:42	22° ✕ 03'22	0°56'49	minimum elong	2521 Mar 30 13:48	9° ∇ 56'32	1°19'13
max. Earth dist.	2513 Mar 13 10:27	22° ✕ 05'03	30.91979 AU	max. Earth dist.	2521 Mar 31 12:03	9° ∇ 58'39	30.87065 AU
retrograde	2513 Jun 27 01:51	24° ✕ 37'00		retrograde	2521 Jul 15 13:29	12° ∇ 31'06	
opposition	2513 Sep 15 19:53	23° ✕ 12'06	-1°-2'-26	min. Earth dist.	2521 Oct 03 06:08	11° ∇ 07'28	28.86802 AU
min. Earth dist.	2513 Sep 15 01:30	23° ✕ 13'22	28.91562 AU	opposition	2521 Oct 04 03:07	11° ∇ 06'00	-1°-25'-57
direct	2513 Dec 03 04:18	21° ✕ 48'54		direct	2521 Dec 21 01:35	9° ∇ 42'56	
conjunction	2514 Mar 15 03:58	24° ✕ 17'03	0°-59'-56	conjunction	2522 Apr 02 02:00	12° ∇ 11'23	-1°-21'-31
minimum elong	2514 Mar 15 03:58	24° ✕ 17'03	0°59'56	minimum elong	2522 Apr 02 01:59	12° ∇ 11'23	1°21'31
max. Earth dist.	2514 Mar 15 23:24	24° ✕ 18'53	30.91075 AU	max. Earth dist.	2522 Apr 02 23:11	12° ∇ 13'23	30.86360 AU
retrograde	2514 Jun 29 13:41	26° ✕ 50'46		retrograde	2522 Jul 18 03:05	14° ∇ 46'01	
opposition	2514 Sep 18 08:49	25° ✕ 25'49	-1°-5'-45	opposition	2522 Oct 06 15:56	13° ∇ 20'52	-1°-28'-22
min. Earth dist.	2514 Sep 17 14:11	25° ✕ 27'06	28.90731 AU	min. Earth dist.	2522 Oct 05 19:00	13° ∇ 22'20	28.86063 AU
direct	2514 Dec 05 15:07	24° ✕ 02'37		direct	2522 Dec 23 11:44	11° ∇ 57'45	
conjunction	2515 Mar 17 15:14	26° ✕ 30'46	-1°-2'-59	conjunction	2523 Apr 04 14:21	14° ∇ 26'14	-1°-23'-42
minimum elong	2515 Mar 17 15:14	26° ✕ 30'46	1°03'00	minimum elong	2523 Apr 04 14:21	14° ∇ 26'14	1°23'43
max. Earth dist.	2515 Mar 18 10:46	26° ✕ 32'37	30.90318 AU	max. Earth dist.	2523 Apr 05 12:31	14° ∇ 28'20	30.85581 AU
retrograde	2515 Jul 02 04:22	29° ✕ 04'36		retrograde	2523 Jul 20 15:01	17° ∇ 00'56	
opposition	2515 Sep 20 21:41	27° ✕ 39'36	-1°-8'-58	min. Earth dist.	2523 Oct 08 08:06	15° ∇ 37'09	28.85270 AU
min. Earth dist.	2515 Sep 20 01:42	27° ✕ 40'59	28.90041 AU	opposition	2523 Oct 09 04:40	15° ∇ 35'43	-1°-30'-38
direct	2515 Dec 08 02:14	26° ✕ 16'24		direct	2523 Dec 25 22:53	14° ∇ 12'34	
conjunction	2516 Mar 19 02:38	28° ✕ 44'35	-1°-5'-57	conjunction	2524 Apr 06 02:33	16° ∇ 41'03	-1°-25'-45
minimum elong	2516 Mar 19 02:37	28° ✕ 44'35	1°05'57	minimum elong	2524 Apr 06 02:33	16° ∇ 41'03	1°25'46
max. Earth dist.	2516 Mar 19 23:01	28° ✕ 46'31	30.89671 AU	max. Earth dist.	2524 Apr 07 00:18	16° ∇ 43'07	30.84796 AU
retrograde	2516 Apr 22 17:03	0° ∇		retrograde	2524 Jul 22 04:56	19° ∇ 15'48	
opposition	2516 Jul 03 17:39	1° ∇ 18'33		opposition	2524 Oct 10 17:13	17° ∇ 50'31	-1°-32'-46
min. Earth dist.	2516 Sep 18 12:44	30° ∇		min. Earth dist.	2524 Oct 09 19:51	17° ∇ 52'01	28.84507 AU
opposition	2516 Sep 22 10:34	29° ✕ 53'32	-1°-12'-5	direct	2524 Dec 27 10:22	16° ∇ 27'19	
min. Earth dist.	2516 Sep 21 14:56	29° ✕ 54'53	28.89456 AU	conjunction	2525 Apr 08 14:54	18° ∇ 55'50	-1°-27'-41
direct	2516 Dec 09 14:01	28° ✕ 30'21		minimum elong	2525 Apr 08 14:53	18° ∇ 55'50	1°27'42
	2517 Feb 23 04:16	0° ∇		max. Earth dist.	2525 Apr 09 13:12	18° ∇ 57'57	30.84053 AU

retrograde	2525 Jul 24 17:35	21°♃30'38		minimum elong	2533 Apr 26 20:54	6°♃56'12	1°38'07
min. Earth dist.	2525 Oct 12 09:04	20°♃06'45	28.83820 AU	max. Earth dist.	2533 Apr 27 19:28	6°♃58'20	30.81749 AU
opposition	2525 Oct 13 05:51	20°♃05'18	-1°-34'-45	retrograde	2533 Aug 12 06:48	9°♃31'19	
direct	2525 Dec 29 22:05	18°♃42'03		min. Earth dist.	2533 Oct 30 11:25	8°♃07'28	28.81743 AU
conjunction	2526 Apr 11 03:15	21°♃10'36	-1°-29'-29	opposition	2533 Oct 31 08:47	8°♃05'58	-1°-45'-16
minimum elong	2526 Apr 11 03:14	21°♃10'36	1°29'29	direct	2534 Jan 16 20:14	6°♃42'38	
max. Earth dist.	2526 Apr 12 01:57	21°♃12'45	30.83425 AU	conjunction	2534 Apr 29 10:14	9°♃11'40	-1°-38'-44
retrograde	2526 Jul 27 07:52	23°♃45'26		minimum elong	2534 Apr 29 10:13	9°♃11'39	1°38'45
opposition	2526 Oct 15 18:16	22°♃20'04	-1°-36'-36	max. Earth dist.	2534 Apr 30 08:40	9°♃13'47	30.81479 AU
min. Earth dist.	2526 Oct 14 20:12	22°♃21'36	28.83250 AU	retrograde	2534 Aug 14 18:40	11°♃46'45	
direct	2527 Jan 01 10:06	20°♃56'46		opposition	2534 Nov 02 21:07	10°♃21'23	-1°-45'-52
conjunction	2527 Apr 13 15:43	23°♃25'23	-1°-31'-8	min. Earth dist.	2534 Nov 02 01:03	10°♃22'47	28.81426 AU
minimum elong	2527 Apr 13 15:43	23°♃25'23	1°31'09	direct	2535 Jan 19 07:31	8°♃58'00	
max. Earth dist.	2527 Apr 14 14:17	23°♃27'31	30.82908 AU	conjunction	2535 May 01 23:39	11°♃27'03	-1°-39'-14
retrograde	2527 Jul 29 21:24	26°♃00'15		minimum elong	2535 May 01 23:39	11°♃27'03	1°39'15
min. Earth dist.	2527 Oct 17 09:25	24°♃36'21	28.82810 AU	max. Earth dist.	2535 May 02 21:34	11°♃29'07	30.81133 AU
opposition	2527 Oct 18 06:40	24°♃34'52	-1°-38'-18	retrograde	2535 Aug 17 08:38	14°♃02'05	
direct	2528 Jan 03 21:22	23°♃11'34		opposition	2535 Nov 05 09:05	12°♃36'41	-1°-46'-19
conjunction	2528 Apr 15 04:21	25°♃40'13	-1°-32'-40	min. Earth dist.	2535 Nov 04 12:26	12°♃38'08	28.81048 AU
minimum elong	2528 Apr 15 04:21	25°♃40'13	1°32'40	direct	2536 Jan 21 19:30	11°♃13'13	
max. Earth dist.	2528 Apr 16 03:59	25°♃42'27	30.82536 AU	conjunction	2536 May 03 12:57	13°♃42'18	-1°-39'-34
retrograde	2528 Jul 31 12:20	28°♃15'08		minimum elong	2536 May 03 12:57	13°♃42'18	1°39'35
opposition	2528 Oct 19 19:01	26°♃49'44	-1°-39'-51	max. Earth dist.	2536 May 04 10:13	13°♃44'18	30.80741 AU
min. Earth dist.	2528 Oct 18 20:40	26°♃51'18	28.82498 AU		2536 Jun 08 11:08	15°♃	
direct	2529 Jan 05 11:03	25°♃26'26		retrograde	2536 Aug 18 21:25	16°♃17'18	
conjunction	2529 Apr 17 16:47	27°♃55'09	-1°-34'-2		2536 Nov 02 01:05	15°♃♂	
minimum elong	2529 Apr 17 16:47	27°♃55'09	1°34'04	opposition	2536 Nov 06 21:13	14°♃51'51	-1°-46'-36
max. Earth dist.	2529 Apr 18 15:42	27°♃57'19	30.82284 AU	min. Earth dist.	2536 Nov 06 01:51	14°♃53'13	28.80666 AU
retrograde	2529 Jun 20 15:17	0°♃		direct	2537 Jan 23 07:14	13°♃28'19	
opposition	2529 Aug 03 02:08	0°♃30'08			2537 Apr 10 01:42	15°♃	
min. Earth dist.	2529 Sep 16 09:39	30°♃♂		conjunction	2537 May 06 02:14	15°♃57'26	-1°-39'-46
opposition	2529 Oct 21 09:44	29°♃06'15	28.82309 AU	minimum elong	2537 May 06 02:15	15°♃57'26	1°39'47
direct	2529 Oct 22 07:33	29°♃04'44	-1°-41'-15	max. Earth dist.	2537 May 07 00:06	15°♃59'29	30.80384 AU
conjunction	2530 Jan 07 22:01	27°♃41'26		retrograde	2537 Aug 21 11:27	18°♃32'22	
minimum elong	2530 Apr 15 17:40	0°♃		opposition	2537 Nov 09 09:06	17°♃06'53	-1°-46'-43
max. Earth dist.	2530 Apr 20 05:41	0°♃10'13	-1°-35'-17	min. Earth dist.	2537 Nov 08 13:03	17°♃08'18	28.80335 AU
retrograde	2530 Apr 20 05:41	0°♃10'13	1°35'17	direct	2538 Jan 25 21:05	15°♃43'17	
opposition	2530 Apr 21 05:47	0°♃12'29	30.82135 AU	conjunction	2538 May 08 15:34	18°♃12'26	-1°-39'-48
min. Earth dist.	2530 Aug 05 14:39	2°♃45'14		minimum elong	2538 May 08 15:34	18°♃12'26	1°39'49
direct	2530 Oct 24 19:47	1°♃19'52	-1°-42'-30	max. Earth dist.	2538 Aug 09 12:23	18°♃14'24	30.80096 AU
conjunction	2530 Oct 23 21:38	1°♃21'24	28.82188 AU	retrograde	2538 Aug 24 00:47	20°♃47'19	
opposition	2530 Dec 27 06:18	30°♃♂		opposition	2538 Nov 11 20:53	19°♃21'50	-1°-46'-41
min. Earth dist.	2531 Jan 10 10:37	29°♃56'35		min. Earth dist.	2538 Nov 11 01:46	19°♃23'10	28.80112 AU
direct	2531 Jan 24 08:58	0°♃		direct	2539 Jan 28 08:16	17°♃58'10	
conjunction	2531 Apr 22 18:35	2°♃25'25	-1°-36'-22	conjunction	2539 May 11 05:07	20°♃27'22	-1°-39'-41
minimum elong	2531 Apr 22 18:35	2°♃25'25	1°36'23	minimum elong	2539 May 11 05:07	20°♃27'22	1°39'42
max. Earth dist.	2531 Apr 23 17:30	2°♃27'35	30.82037 AU	max. Earth dist.	2539 May 12 02:50	20°♃29'24	30.79933 AU
retrograde	2531 Aug 08 05:13	5°♃00'29		retrograde	2539 Aug 26 13:45	23°♃02'12	
min. Earth dist.	2531 Oct 26 10:17	3°♃36'40	28.82098 AU	opposition	2539 Nov 14 08:36	21°♃36'42	-1°-46'-29
opposition	2531 Oct 27 08:09	3°♃35'08	-1°-43'-35	min. Earth dist.	2539 Nov 13 13:07	21°♃38'05	28.80012 AU
direct	2532 Jan 12 21:16	2°♃11'51		direct	2540 Jan 30 21:22	20°♃13'01	
conjunction	2532 Apr 24 07:41	4°♃40'46	-1°-37'-18	conjunction	2540 May 12 18:22	22°♃42'16	-1°-39'-25
minimum elong	2532 Apr 24 07:41	4°♃40'46	1°37'19	minimum elong	2540 May 12 18:22	22°♃42'16	1°39'26
max. Earth dist.	2532 Apr 25 07:21	4°♃43'00	30.81920 AU	max. Earth dist.	2540 May 13 14:53	22°♃44'12	30.79912 AU
retrograde	2532 Aug 09 17:19	7°♃15'52		retrograde	2540 Aug 28 04:20	25°♃17'04	
opposition	2532 Oct 28 20:29	5°♃50'32	-1°-44'-30	opposition	2540 Nov 15 20:19	23°♃51'35	-1°-46'-7
min. Earth dist.	2532 Oct 27 23:18	5°♃52'01	28.81955 AU	min. Earth dist.	2540 Nov 15 00:57	23°♃52'57	28.80076 AU
direct	2533 Jan 14 08:52	4°♃27'14		direct	2541 Feb 01 08:29	22°♃27'52	
conjunction	2533 Apr 26 20:54	6°♃56'12	-1°-38'-6	conjunction	2541 May 15 07:55	24°♃57'12	-1°-39'00

minimum elong	2541 May 15 07:55	24°♄57'12	1°39'02	minimum elong	2549 Jun 02 23:02	12°♁59'45	1°30'19
max. Earth dist.	2541 May 16 05:23	24°♄59'13	30.80049 AU	max. Earth dist.	2549 Jun 03 14:31	13°♁01'12	30.82662 AU
retrograde	2541 Aug 30 16:02	27°♄31'58		retrograde	2549 Sep 18 01:41	15°♁33'55	
opposition	2541 Nov 18 07:55	26°♄06'32	-1°-45'-35	opposition	2549 Dec 06 03:34	14°♁08'49	-1°-35'-38
min. Earth dist.	2541 Nov 17 13:00	26°♄07'53	28.80284 AU	min. Earth dist.	2549 Dec 05 13:17	14°♁09'50	28.82864 AU
direct	2542 Feb 03 20:12	24°♄42'49		direct	2550 Feb 21 18:40	12°♁44'49	
conjunction	2542 May 17 21:28	27°♄12'14	-1°-38'-26	conjunction	2550 Jun 05 13:08	15°♁14'46	-1°-28'-34
minimum elong	2542 May 17 21:28	27°♄12'14	1°38'27	minimum elong	2550 Jun 05 13:08	15°♁14'46	1°28'36
max. Earth dist.	2542 May 18 17:57	27°♄14'09	30.80340 AU	max. Earth dist.	2550 Jun 06 05:06	15°♁16'16	30.82909 AU
retrograde	2542 Sep 02 05:26	29°♄46'58		retrograde	2550 Sep 20 12:48	17°♁48'47	
opposition	2542 Nov 20 19:30	28°♄21'36	-1°-44'-54	opposition	2550 Dec 08 14:42	16°♁23'42	-1°-33'-43
min. Earth dist.	2542 Nov 20 00:19	28°♄22'58	28.80630 AU	min. Earth dist.	2550 Dec 08 01:12	16°♁24'39	28.83139 AU
direct	2543 Feb 06 07:12	26°♄57'53		direct	2551 Feb 24 07:24	14°♁59'37	
conjunction	2543 May 20 11:12	29°♄27'24	-1°-37'-43	conjunction	2551 Jun 08 03:02	17°♁29'36	-1°-26'-43
minimum elong	2543 May 20 11:13	29°♄27'24	1°37'44	minimum elong	2551 Jun 08 03:03	17°♁29'36	1°26'43
max. Earth dist.	2543 May 21 07:51	29°♄29'20	30.80724 AU	max. Earth dist.	2551 Jun 08 17:38	17°♁30'58	30.83240 AU
retrograde	2543 Jun 04 00:19	0°♁		retrograde	2551 Sep 23 02:18	20°♁03'28	
opposition	2543 Sep 04 17:11	2°♁02'06		opposition	2551 Dec 11 01:39	18°♁38'24	-1°-31'-40
opposition	2543 Nov 23 07:02	0°♁36'49	-1°-44'-2	min. Earth dist.	2551 Dec 10 12:04	18°♁39'22	28.83526 AU
min. Earth dist.	2543 Nov 22 13:08	0°♁38'05	28.81047 AU	direct	2552 Feb 26 19:08	17°♁14'15	
direct	2543 Dec 15 19:06	30°♁♄		conjunction	2552 Jun 09 17:01	19°♁44'17	-1°-24'-43
direct	2544 Feb 08 17:26	29°♄13'07		minimum elong	2552 Jun 09 17:01	19°♁44'17	1°24'45
direct	2544 Apr 02 00:42	0°♁		max. Earth dist.	2552 Jun 10 07:49	19°♁45'40	30.83686 AU
conjunction	2544 May 22 01:02	1°♁42'43	-1°-36'-50	retrograde	2552 Sep 24 13:48	22°♁18'01	
minimum elong	2544 May 22 01:02	1°♁42'43	1°36'51	opposition	2552 Dec 12 12:43	20°♁52'58	-1°-29'-28
max. Earth dist.	2544 May 22 20:58	1°♁44'36	30.81172 AU	min. Earth dist.	2552 Dec 12 00:17	20°♁53'51	28.84043 AU
retrograde	2544 Sep 06 07:10	4°♁17'24		direct	2553 Feb 28 06:02	19°♁28'47	
opposition	2544 Nov 24 18:32	2°♁52'11	-1°-43'-1	conjunction	2553 Jun 12 06:53	21°♁58'50	-1°-22'-37
min. Earth dist.	2544 Nov 24 00:13	2°♁53'29	28.81491 AU	minimum elong	2553 Jun 12 06:54	21°♁58'51	1°22'37
direct	2545 Feb 10 04:22	1°♁28'28		max. Earth dist.	2553 Jun 12 20:56	22°♁00'09	30.84291 AU
conjunction	2545 May 24 14:51	3°♁58'10	-1°-35'-49	retrograde	2553 Sep 27 02:33	24°♁32'27	
minimum elong	2545 May 24 14:51	3°♁58'10	1°35'49	opposition	2553 Dec 14 23:37	23°♁07'28	-1°-27'-8
max. Earth dist.	2545 May 25 09:52	3°♁59'57	30.81594 AU	min. Earth dist.	2553 Dec 14 10:35	23°♁08'23	28.84714 AU
retrograde	2545 Sep 08 19:16	6°♁32'48		direct	2554 Mar 02 17:33	21°♁43'15	
opposition	2545 Nov 27 06:13	5°♁07'39	-1°-41'-51	conjunction	2554 Jun 14 20:56	24°♁13'22	-1°-20'-22
min. Earth dist.	2545 Nov 26 13:37	5°♁08'49	28.81887 AU	minimum elong	2554 Jun 14 20:56	24°♁13'22	1°20'23
direct	2546 Feb 12 15:56	3°♁43'54		max. Earth dist.	2554 Jun 15 10:20	24°♁14'37	30.85032 AU
conjunction	2546 May 27 05:02	6°♁13'41	-1°-34'-39	retrograde	2554 Sep 29 13:22	26°♁46'52	
minimum elong	2546 May 27 05:02	6°♁13'41	1°34'40	opposition	2554 Dec 17 10:32	25°♁21'57	-1°-24'-40
max. Earth dist.	2546 May 27 23:47	6°♁15'27	30.81959 AU	min. Earth dist.	2554 Dec 16 22:59	25°♁22'47	28.85522 AU
retrograde	2546 Sep 11 08:48	8°♁48'14		direct	2555 Mar 05 04:14	23°♁57'44	
opposition	2546 Nov 29 17:33	7°♁23'07	-1°-40'-31	conjunction	2555 Jun 17 11:03	26°♁27'56	-1°-18'00
min. Earth dist.	2546 Nov 29 00:54	7°♁24'18	28.82199 AU	minimum elong	2555 Jun 17 11:04	26°♁27'56	1°18'01
direct	2547 Feb 15 05:18	5°♁59'20		max. Earth dist.	2555 Jun 18 00:21	26°♁29'10	30.85911 AU
conjunction	2547 May 29 19:05	8°♁29'11	-1°-33'-20	retrograde	2555 Oct 02 02:09	29°♁01'18	
minimum elong	2547 May 29 19:05	8°♁29'11	1°33'21	opposition	2555 Dec 19 21:21	27°♁36'30	-1°-22'-4
max. Earth dist.	2547 May 30 12:05	8°♁30'46	30.82232 AU	min. Earth dist.	2555 Dec 19 09:31	27°♁37'21	28.86435 AU
retrograde	2547 Sep 13 22:01	11°♁03'37		direct	2556 Mar 06 16:23	26°♁12'17	
opposition	2547 Dec 02 05:05	9°♁38'31	-1°-39'-2	conjunction	2556 Jun 19 00:57	28°♁42'34	-1°-15'-30
min. Earth dist.	2547 Dec 01 13:55	9°♁39'35	28.82441 AU	minimum elong	2556 Jun 19 00:57	28°♁42'34	1°15'32
direct	2548 Feb 17 16:22	8°♁14'40		max. Earth dist.	2556 Jun 19 12:51	28°♁43'41	30.86858 AU
conjunction	2548 May 31 09:05	10°♁44'33	-1°-31'-53	retrograde	2556 Jul 25 04:23	0°♁	
minimum elong	2548 May 31 09:05	10°♁44'33	1°31'54	retrograde	2556 Oct 03 14:47	1°♁15'52	
max. Earth dist.	2548 Jun 01 02:23	10°♁46'10	30.82453 AU	opposition	2556 Dec 16 03:04	30°♁♁	
retrograde	2548 Sep 15 11:14	13°♁18'51		opposition	2556 Dec 21 08:18	29°♁51'10	-1°-19'-20
opposition	2548 Dec 03 16:24	11°♁53'45	-1°-37'-24	min. Earth dist.	2556 Dec 20 21:58	29°♁51'53	28.87400 AU
min. Earth dist.	2548 Dec 03 01:24	11°♁54'49	28.82638 AU	direct	2557 Mar 09 02:38	28°♁26'56	
direct	2549 Feb 19 06:15	10°♁29'50		direct	2557 May 26 10:08	0°♁	
conjunction	2549 Jun 02 23:01	12°♁59'45	-1°-30'-18	conjunction	2557 Jun 21 15:17	0°♁57'20	-1°-12'-54

minimum elong	2557 Jun 21 15:18	0°☾57'20	1°12'55	opposition	2566 Jan 10 07:58	20°☾01'05	0°-50'-5
max. Earth dist.	2557 Jun 22 03:14	0°☾58'27	30.87821 AU	min. Earth dist.	2566 Jan 10 05:06	20°☾01'17	28.94098 AU
retrograde	2557 Oct 06 03:42	3°☾30'30		direct	2566 Mar 29 13:31	18°☾36'27	
opposition	2557 Dec 23 19:03	2°☾05'54	-1°-16'-29				
min. Earth dist.	2557 Dec 23 09:14	2°☾06'36	28.88332 AU	conjunction	2566 Jul 12 22:26	21°☾07'16	0°-45'-8
direct	2558 Mar 11 16:00	0°☾41'40		minimum elong	2566 Jul 12 22:27	21°☾07'16	0°45'10
				max. Earth dist.	2566 Jul 13 02:00	21°☾07'36	30.94553 AU
conjunction	2558 Jun 24 05:33	3°☾12'10	-1°-10'-11	retrograde	2566 Oct 26 14:47	23°☾38'57	
minimum elong	2558 Jun 24 05:34	3°☾12'10	1°10'12	opposition	2567 Jan 12 18:21	22°☾14'52	0°-46'-24
max. Earth dist.	2558 Jun 24 15:11	3°☾13'03	30.88723 AU	min. Earth dist.	2567 Jan 12 15:36	22°☾15'03	28.95078 AU
retrograde	2558 Oct 08 17:52	5°☾45'13		direct	2567 Apr 01 02:53	20°☾50'12	
opposition	2558 Dec 26 05:56	4°☾20'42	-1°-13'-32				
min. Earth dist.	2558 Dec 25 21:11	4°☾21'19	28.89190 AU	conjunction	2567 Jul 15 12:09	23°☾21'04	0°-41'-40
direct	2559 Mar 14 04:12	2°☾56'26		minimum elong	2567 Jul 15 12:09	23°☾21'04	0°41'40
				max. Earth dist.	2567 Jul 15 13:56	23°☾21'14	30.95601 AU
conjunction	2559 Jun 26 19:56	5°☾27'00	-1°-7'-22	retrograde	2567 Oct 29 03:31	25°☾52'37	
minimum elong	2559 Jun 26 19:56	5°☾27'00	1°07'22	opposition	2568 Jan 15 04:42	24°☾28'36	0°-42'-38
max. Earth dist.	2559 Jun 27 05:28	5°☾27'54	30.89524 AU	min. Earth dist.	2568 Jan 15 02:33	24°☾28'45	28.96183 AU
retrograde	2559 Oct 11 05:20	7°☾59'55		direct	2568 Apr 02 14:23	23°☾03'56	
opposition	2559 Dec 28 16:46	6°☾35'28	-1°-10'-28				
min. Earth dist.	2559 Dec 28 09:15	6°☾36'00	28.89932 AU	conjunction	2568 Jul 17 02:06	25°☾34'52	0°-38'-7
direct	2560 Mar 15 16:58	5°☾11'11		minimum elong	2568 Jul 17 02:06	25°☾34'52	0°38'09
				max. Earth dist.	2568 Jul 17 04:14	25°☾35'04	30.96749 AU
conjunction	2560 Jun 28 10:07	7°☾41'47	-1°-4'-26	retrograde	2568 Oct 30 14:44	28°☾06'16	
minimum elong	2560 Jun 28 10:07	7°☾41'47	1°04'28	opposition	2569 Jan 16 14:59	26°☾42'21	0°-38'-49
max. Earth dist.	2560 Jun 28 17:35	7°☾42'29	30.90238 AU	min. Earth dist.	2569 Jan 16 13:57	26°☾42'26	28.97349 AU
retrograde	2560 Oct 12 19:23	10°☾14'32		direct	2569 Apr 05 02:19	25°☾17'41	
opposition	2560 Dec 30 03:27	8°☾50'08	-1°-7'-17				
min. Earth dist.	2560 Dec 29 20:21	8°☾50'38	28.90606 AU	conjunction	2569 Jul 19 15:56	27°☾48'41	0°-34'-31
direct	2561 Mar 18 05:13	7°☾25'48		minimum elong	2569 Jul 19 15:56	27°☾48'41	0°34'31
				max. Earth dist.	2569 Jul 19 16:06	27°☾48'42	30.97935 AU
conjunction	2561 Jul 01 00:21	9°☾56'27	-1°-1'-26		2569 Sep 28 13:13	0°♁	
minimum elong	2561 Jul 01 00:21	9°☾56'27	1°01'26	retrograde	2569 Nov 02 04:49	0°♁19'56	
max. Earth dist.	2561 Jul 01 07:33	9°☾57'07	30.90879 AU		2569 Dec 07 03:49	30°♁☾	
retrograde	2561 Oct 15 06:58	12°☾29'01		opposition	2570 Jan 19 01:18	28°☾56'07	0°-34'-57
opposition	2562 Jan 01 14:11	11°☾04'40	-1°-4'-1	min. Earth dist.	2570 Jan 19 00:38	28°☾56'10	28.98523 AU
min. Earth dist.	2562 Jan 01 08:49	11°☾05'03	28.91222 AU	direct	2570 Apr 07 15:04	27°☾31'27	
direct	2562 Mar 20 16:52	9°☾40'16			2570 Jul 21 02:45	0°♁	
conjunction	2562 Jul 03 14:32	12°☾10'57	0°-58'-20	conjunction	2570 Jul 22 05:59	0°♁02'31	0°-30'-52
minimum elong	2562 Jul 03 14:32	12°☾10'57	0°58'21	minimum elong	2570 Jul 22 05:59	0°♁02'31	0°30'53
max. Earth dist.	2562 Jul 03 20:18	12°☾11'29	30.91499 AU	max. Earth dist.	2570 Jul 22 05:52	0°♁02'31	30.99070 AU
retrograde	2562 Oct 17 19:02	14°☾43'20		retrograde	2570 Nov 04 15:56	2°♁33'37	
opposition	2563 Jan 04 00:35	13°☾19'02	-1°00'-40	opposition	2571 Jan 21 11:41	1°♁09'53	0°-31'-1
min. Earth dist.	2563 Jan 03 19:04	13°☾19'25	28.91837 AU	min. Earth dist.	2571 Jan 21 12:54	1°♁09'48	28.99620 AU
direct	2563 Mar 23 05:00	11°☾54'33			2571 Mar 10 23:50	30°♁☾	
				direct	2571 Apr 10 03:14	29°☾45'12	
conjunction	2563 Jul 06 04:37	14°☾25'16	0°-55'-9		2571 May 09 22:54	0°♁	
minimum elong	2563 Jul 06 04:37	14°☾25'16	0°55'09				
max. Earth dist.	2563 Jul 06 09:34	14°☾25'44	30.92126 AU	conjunction	2571 Jul 24 19:52	2°♁16'18	0°-27'-11
retrograde	2563 Oct 20 04:59	16°☾57'29		minimum elong	2571 Jul 24 19:52	2°♁16'18	0°27'11
opposition	2564 Jan 06 11:12	15°☾33'12	0°-57'-13	max. Earth dist.	2571 Jul 24 18:01	2°♁16'08	31.00129 AU
min. Earth dist.	2564 Jan 06 07:18	15°☾33'29	28.92495 AU	retrograde	2571 Nov 07 04:24	4°♁47'13	
direct	2564 Mar 24 15:49	14°☾08'41		opposition	2572 Jan 23 22:01	3°♁23'34	0°-27'-3
				min. Earth dist.	2572 Jan 23 23:13	3°♁23'29	29.00623 AU
conjunction	2564 Jul 07 18:29	16°☾39'25	0°-51'-53	direct	2572 Apr 11 15:52	1°♁58'50	
minimum elong	2564 Jul 07 18:29	16°☾39'25	0°51'55				
max. Earth dist.	2564 Jul 07 23:07	16°☾39'51	30.92830 AU	conjunction	2572 Jul 26 09:37	4°♁29'58	0°-23'-27
retrograde	2564 Oct 21 16:51	19°☾11'27		minimum elong	2572 Jul 26 09:37	4°♁29'58	0°23'29
opposition	2565 Jan 07 21:36	17°☾47'13	0°-53'-41	max. Earth dist.	2572 Jul 26 06:44	4°♁29'42	31.01074 AU
min. Earth dist.	2565 Jan 07 17:26	17°☾47'31	28.93235 AU	retrograde	2572 Nov 08 14:51	7°♁00'42	
direct	2565 Mar 27 03:33	16°☾22'37		opposition	2573 Jan 25 08:27	5°♁37'06	0°-23'-3
				min. Earth dist.	2573 Jan 25 11:36	5°♁36'53	29.01521 AU
conjunction	2565 Jul 10 08:24	18°☾53'24	0°-48'-33	direct	2573 Apr 14 02:46	4°♁12'20	
minimum elong	2565 Jul 10 08:24	18°☾53'24	0°48'34				
max. Earth dist.	2565 Jul 10 11:43	18°☾53'42	30.93625 AU	conjunction	2573 Jul 28 23:28	6°♁43'28	0°-19'-42
retrograde	2565 Oct 24 03:39	21°☾25'16		minimum elong	2573 Jul 28 23:28	6°♁43'28	0°19'43

max. Earth dist.	2573 Jul 28 19:38	6°Ω43'08	31.01934 AU	conjunction	2580 Aug 13 20:52	22°Ω12'57	0°07'02
retrograde	2573 Nov 11 02:24	9°Ω14'00		minimum elong	2580 Aug 13 20:52	22°Ω12'57	0°07'02
opposition	2574 Jan 27 18:32	7°Ω50'27	0°-19'-2	behind sun begin	2580 Aug 13 14:47	22°Ω12'25	
min. Earth dist.	2574 Jan 27 21:51	7°Ω50'13	29.02331 AU	behind sun end	2580 Aug 14 02:57	22°Ω13'29	
direct	2574 Apr 16 14:54	6°Ω25'37		max. Earth dist.	2580 Aug 13 11:42	22°Ω12'07	31.08426 AU
				retrograde	2580 Nov 26 07:22	24°Ω42'19	
conjunction	2574 Jul 31 13:11	8°Ω56'46	0°-15'-55	opposition	2581 Feb 11 17:06	23°Ω19'11	0°09'28
minimum elong	2574 Jul 31 13:11	8°Ω56'46	0°15'57	min. Earth dist.	2581 Feb 12 00:33	23°Ω18'40	29.09065 AU
max. Earth dist.	2574 Jul 31 07:45	8°Ω56'17	31.02716 AU	direct	2581 May 02 02:26	21°Ω54'11	
retrograde	2574 Nov 13 12:18	11°Ω27'07					
opposition	2575 Jan 30 04:48	10°Ω03'36	0°-14'-59	conjunction	2581 Aug 16 10:04	24°Ω25'31	0°10'50
min. Earth dist.	2575 Jan 30 09:40	10°Ω03'16	29.03104 AU	minimum elong	2581 Aug 16 10:04	24°Ω25'31	0°10'50
direct	2575 Apr 19 01:16	8°Ω38'42		behind sun begin	2581 Aug 16 05:06	24°Ω25'04	
				behind sun end	2581 Aug 16 15:01	24°Ω25'57	
conjunction	2575 Aug 03 02:42	11°Ω09'51	0°-12'-8	max. Earth dist.	2581 Aug 16 00:21	24°Ω24'37	31.09708 AU
minimum elong	2575 Aug 03 02:42	11°Ω09'51	0°12'09	retrograde	2581 Nov 28 18:08	26°Ω54'45	
behind sun begin	2575 Aug 02 22:20	11°Ω09'28		opposition	2582 Feb 14 03:10	25°Ω31'44	0°13'32
behind sun end	2575 Aug 03 07:03	11°Ω10'15		min. Earth dist.	2582 Feb 14 12:21	25°Ω31'05	29.10362 AU
max. Earth dist.	2575 Aug 02 21:20	11°Ω09'23	31.03482 AU	direct	2582 May 04 13:01	24°Ω06'45	
retrograde	2575 Nov 15 22:07	13°Ω40'01					
opposition	2576 Feb 01 14:54	12°Ω16'32	0°-10'-55	conjunction	2582 Aug 18 23:13	26°Ω38'08	0°14'36
min. Earth dist.	2576 Feb 01 20:08	12°Ω16'10	29.03868 AU	minimum elong	2582 Aug 18 23:13	26°Ω38'08	0°14'36
direct	2576 Apr 20 14:17	10°Ω51'35		behind sun begin	2582 Aug 18 20:38	26°Ω37'54	
				behind sun end	2582 Aug 19 01:49	26°Ω38'22	
conjunction	2576 Aug 04 16:03	13°Ω22'44	0°-8'-20	max. Earth dist.	2582 Aug 18 12:46	26°Ω37'11	31.10997 AU
minimum elong	2576 Aug 04 16:03	13°Ω22'44	0°08'22	retrograde	2582 Dec 01 05:57	29°Ω07'15	
behind sun begin	2576 Aug 04 10:16	13°Ω22'13		opposition	2583 Feb 16 13:17	27°Ω44'20	0°17'34
behind sun end	2576 Aug 04 21:49	13°Ω23'15		min. Earth dist.	2583 Feb 16 22:29	27°Ω43'41	29.11619 AU
max. Earth dist.	2576 Aug 04 08:50	13°Ω22'05	31.04270 AU	direct	2583 May 07 00:51	26°Ω19'23	
	2576 Sep 21 01:20	15°Ω					
retrograde	2576 Nov 17 09:39	15°Ω52'43		conjunction	2583 Aug 21 12:08	28°Ω50'47	0°18'22
	2577 Jan 15 10:35	15°RΩ		minimum elong	2583 Aug 21 12:08	28°Ω50'47	0°18'23
opposition	2577 Feb 03 00:54	14°Ω29'16	0°-6'-50	max. Earth dist.	2583 Aug 21 00:15	28°Ω49'42	31.12209 AU
min. Earth dist.	2577 Feb 03 06:44	14°Ω28'51	29.04696 AU		2583 Sep 22 19:16	0°♄	
direct	2577 Apr 23 01:17	13°Ω04'15		retrograde	2583 Dec 03 15:20	1°♄19'47	
	2577 Jul 22 03:41	15°Ω			2584 Feb 17 04:07	30°RΩ	
				opposition	2584 Feb 18 23:32	29°Ω56'57	0°21'35
conjunction	2577 Aug 07 05:30	15°Ω35'25	0°-4'-32	min. Earth dist.	2584 Feb 19 10:12	29°Ω56'12	29.12799 AU
minimum elong	2577 Aug 07 05:30	15°Ω35'25	0°04'33	direct	2584 May 08 11:07	28°Ω32'00	
behind sun begin	2577 Aug 06 23:02	15°Ω34'51			2584 Jul 24 15:03	0°♄	
behind sun end	2577 Aug 07 11:57	15°Ω36'00					
max. Earth dist.	2577 Aug 06 22:42	15°Ω34'49	31.05131 AU	conjunction	2584 Aug 23 01:14	1°♄03'25	0°22'06
retrograde	2577 Nov 19 19:46	18°Ω05'13		minimum elong	2584 Aug 23 01:14	1°♄03'25	0°22'05
opposition	2578 Feb 05 11:01	16°Ω41'50	0°-2'-45	max. Earth dist.	2584 Aug 22 13:12	1°♄02'19	31.13331 AU
min. Earth dist.	2578 Feb 05 17:44	16°Ω41'21	29.05602 AU	retrograde	2584 Dec 05 00:32	3°♄32'16	
direct	2578 Apr 25 13:16	15°Ω16'47		opposition	2585 Feb 20 09:36	2°♄09'30	0°25'33
				min. Earth dist.	2585 Feb 20 20:56	2°♄08'42	29.13857 AU
conjunction	2578 Aug 09 18:39	17°Ω47'58	0°00'-40	direct	2585 May 10 23:25	0°♄44'32	
minimum elong	2578 Aug 09 18:40	17°Ω47'58	0°00'42				
behind sun begin	2578 Aug 09 12:05	17°Ω47'24		conjunction	2585 Aug 25 14:10	3°♄15'57	0°25'48
behind sun end	2578 Aug 10 01:14	17°Ω48'33		minimum elong	2585 Aug 25 14:10	3°♄15'57	0°25'48
max. Earth dist.	2578 Aug 09 10:13	17°Ω47'13	31.06100 AU	max. Earth dist.	2585 Aug 25 00:01	3°♄14'39	31.14333 AU
asc. node	2578 Oct 12 12:28	19°Ω49'58		retrograde	2585 Dec 07 11:42	5°♄44'39	
retrograde	2578 Nov 22 08:44	20°Ω17'37		opposition	2586 Feb 22 19:46	4°♄21'55	0°29'29
opposition	2579 Feb 07 20:59	18°Ω54'17	0°01'19	min. Earth dist.	2586 Feb 23 07:50	4°♄21'05	29.14814 AU
min. Earth dist.	2579 Feb 08 03:32	18°Ω53'49	29.06639 AU	direct	2586 May 13 09:41	2°♄56'55	
direct	2579 Apr 28 02:03	17°Ω29'14					
				conjunction	2586 Aug 28 03:05	5°♄28'19	0°29'28
conjunction	2579 Aug 12 07:55	20°Ω00'28	0°03'14	minimum elong	2586 Aug 28 03:05	5°♄28'19	0°29'27
minimum elong	2579 Aug 12 07:55	20°Ω00'28	0°03'14	max. Earth dist.	2586 Aug 27 13:07	5°♄27'02	31.15232 AU
behind sun begin	2579 Aug 12 01:21	19°Ω59'53		retrograde	2586 Dec 09 20:49	7°♄56'51	
behind sun end	2579 Aug 12 14:28	20°Ω01'02		opposition	2587 Feb 25 05:59	6°♄34'09	0°33'22
max. Earth dist.	2579 Aug 11 23:52	19°Ω59'44	31.07198 AU	min. Earth dist.	2587 Feb 25 19:15	6°♄33'14	29.15669 AU
retrograde	2579 Nov 24 19:12	22°Ω29'58		direct	2587 May 15 21:44	5°♄09'07	
opposition	2580 Feb 10 07:08	21°Ω06'43	0°05'24				
min. Earth dist.	2580 Feb 10 15:00	21°Ω06'10	29.07802 AU	conjunction	2587 Aug 30 15:42	7°♄40'29	0°33'04
direct	2580 Apr 29 14:03	19°Ω41'41		minimum elong	2587 Aug 30 15:41	7°♄40'29	0°33'05

max. Earth dist.	2587 Aug 29 23:52	7° $\mathring{\mu}$ 39'02	31.16063 AU	min. Earth dist.	2596 Mar 16 18:57	26° $\mathring{\mu}$ 16'23	29.24627 AU
retrograde	2587 Dec 12 08:38	10° $\mathring{\mu}$ 08'51		direct	2596 Jun 04 06:57	24° $\mathring{\mu}$ 52'37	
opposition	2588 Feb 27 16:00	8° $\mathring{\mu}$ 46'10	0°37'12	max. Earth dist.	2596 Sep 18 09:19	27° $\mathring{\mu}$ 22'04	31.25065 AU
min. Earth dist.	2588 Feb 28 05:15	8° $\mathring{\mu}$ 45'14	29.16487 AU				
direct	2588 May 17 10:40	7° $\mathring{\mu}$ 21'04		conjunction	2596 Sep 19 05:24	27° $\mathring{\mu}$ 23'55	1°02'43
				minimum elong	2596 Sep 19 05:24	27° $\mathring{\mu}$ 23'55	1°02'42
conjunction	2588 Sep 01 04:15	9° $\mathring{\mu}$ 52'25	0°36'38	retrograde	2596 Dec 31 05:10	29° $\mathring{\mu}$ 51'16	
minimum elong	2588 Sep 01 04:15	9° $\mathring{\mu}$ 52'25	0°36'38	opposition	2597 Mar 18 11:48	28° $\mathring{\mu}$ 29'08	1°08'31
max. Earth dist.	2588 Aug 31 12:44	9° $\mathring{\mu}$ 50'59	31.16860 AU	min. Earth dist.	2597 Mar 19 05:14	28° $\mathring{\mu}$ 27'55	29.25574 AU
retrograde	2588 Dec 13 18:01	12° $\mathring{\mu}$ 20'36		direct	2597 Jun 06 19:11	27° $\mathring{\mu}$ 04'10	
opposition	2589 Mar 01 02:12	10° $\mathring{\mu}$ 57'56	0°40'59				
min. Earth dist.	2589 Mar 01 16:57	10° $\mathring{\mu}$ 56'54	29.17287 AU	conjunction	2597 Sep 21 17:29	29° $\mathring{\mu}$ 35'28	1°05'36
direct	2589 May 19 22:54	9° $\mathring{\mu}$ 32'49		minimum elong	2597 Sep 21 17:28	29° $\mathring{\mu}$ 35'28	1°05'36
				max. Earth dist.	2597 Sep 20 21:33	29° $\mathring{\mu}$ 33'38	31.25926 AU
conjunction	2589 Sep 03 16:40	12° $\mathring{\mu}$ 04'06	0°40'08		2597 Oct 02 19:02	0° $\mathring{\mu}$	
minimum elong	2589 Sep 03 16:39	12° $\mathring{\mu}$ 04'06	0°40'08	retrograde	2598 Jan 02 14:36	2° $\mathring{\mu}$ 02'44	
max. Earth dist.	2589 Sep 03 00:02	12° $\mathring{\mu}$ 02'34	31.17676 AU	opposition	2598 Mar 20 22:18	0° $\mathring{\mu}$ 40'38	1°11'33
retrograde	2589 Dec 16 05:32	14° $\mathring{\mu}$ 32'08		min. Earth dist.	2598 Mar 21 17:23	0° $\mathring{\mu}$ 39'19	29.26368 AU
opposition	2590 Mar 03 12:08	13° $\mathring{\mu}$ 09'29	0°44'41		2598 Apr 15 09:07	30° $\mathring{\mu}$	
min. Earth dist.	2590 Mar 04 02:19	13° $\mathring{\mu}$ 08'30	29.18127 AU	direct	2598 Jun 09 06:49	29° $\mathring{\mu}$ 15'41	
direct	2590 May 22 11:50	11° $\mathring{\mu}$ 44'19			2598 Aug 01 19:02	0° $\mathring{\mu}$	
				max. Earth dist.	2598 Sep 23 08:08	1° $\mathring{\mu}$ 45'01	31.26654 AU
conjunction	2590 Sep 06 05:01	14° $\mathring{\mu}$ 15'36	0°43'34				
minimum elong	2590 Sep 06 05:01	14° $\mathring{\mu}$ 15'36	0°43'34	conjunction	2598 Sep 24 05:18	1° $\mathring{\mu}$ 46'58	1°08'24
max. Earth dist.	2590 Sep 05 12:15	14° $\mathring{\mu}$ 14'03	31.18544 AU	minimum elong	2598 Sep 24 05:17	1° $\mathring{\mu}$ 46'58	1°08'23
retrograde	2590 Dec 18 15:56	16° $\mathring{\mu}$ 43'28		retrograde	2599 Jan 05 02:12	4° $\mathring{\mu}$ 14'08	
opposition	2591 Mar 05 22:23	15° $\mathring{\mu}$ 20'51	0°48'20	opposition	2599 Mar 23 08:44	2° $\mathring{\mu}$ 52'04	1°14'29
min. Earth dist.	2591 Mar 06 13:45	15° $\mathring{\mu}$ 19'47	29.19056 AU	min. Earth dist.	2599 Mar 24 03:21	2° $\mathring{\mu}$ 50'47	29.27029 AU
direct	2591 May 24 23:22	13° $\mathring{\mu}$ 55'41		direct	2599 Jun 11 19:48	1° $\mathring{\mu}$ 27'07	
conjunction	2591 Sep 08 17:05	16° $\mathring{\mu}$ 26'56	0°46'57	conjunction	2599 Sep 26 16:55	3° $\mathring{\mu}$ 58'22	1°11'05
minimum elong	2591 Sep 08 17:05	16° $\mathring{\mu}$ 26'56	0°46'57	minimum elong	2599 Sep 26 16:55	3° $\mathring{\mu}$ 58'22	1°11'05
max. Earth dist.	2591 Sep 08 00:11	16° $\mathring{\mu}$ 25'22	31.19528 AU	max. Earth dist.	2599 Sep 25 19:26	3° $\mathring{\mu}$ 56'23	31.27244 AU
retrograde	2591 Dec 21 02:42	18° $\mathring{\mu}$ 54'40		retrograde	2600 Jan 07 12:54	6° $\mathring{\mu}$ 25'26	
opposition	2592 Mar 07 08:30	17° $\mathring{\mu}$ 32'08	0°51'54	opposition	2600 Mar 25 19:16	5° $\mathring{\mu}$ 03'22	1°17'19
min. Earth dist.	2592 Mar 07 23:19	17° $\mathring{\mu}$ 31'05	29.20089 AU	min. Earth dist.	2600 Mar 26 15:19	5° $\mathring{\mu}$ 01'59	29.27577 AU
direct	2592 May 26 12:06	16° $\mathring{\mu}$ 06'58		direct	2600 Jun 14 08:01	3° $\mathring{\mu}$ 38'25	
max. Earth dist.	2592 Sep 09 11:31	18° $\mathring{\mu}$ 36'35	31.20610 AU	max. Earth dist.	2600 Sep 28 06:42	6° $\mathring{\mu}$ 07'36	31.27749 AU
conjunction	2592 Sep 10 05:13	18° $\mathring{\mu}$ 38'13	0°50'16	conjunction	2600 Sep 29 04:31	6° $\mathring{\mu}$ 09'37	1°13'41
minimum elong	2592 Sep 10 05:13	18° $\mathring{\mu}$ 38'13	0°50'15	minimum elong	2600 Sep 29 04:31	6° $\mathring{\mu}$ 09'37	1°13'40
retrograde	2592 Dec 22 12:09	21° $\mathring{\mu}$ 05'51					
opposition	2593 Mar 09 18:34	19° $\mathring{\mu}$ 43'23	0°55'24				
min. Earth dist.	2593 Mar 10 10:18	19° $\mathring{\mu}$ 42'17	29.21227 AU				
direct	2593 May 28 22:08	18° $\mathring{\mu}$ 18'15					
conjunction	2593 Sep 12 17:27	20° $\mathring{\mu}$ 49'31	0°53'30				
minimum elong	2593 Sep 12 17:26	20° $\mathring{\mu}$ 49'31	0°53'30				
max. Earth dist.	2593 Sep 12 00:12	20° $\mathring{\mu}$ 47'56	31.21776 AU				
retrograde	2593 Dec 24 21:15	23° $\mathring{\mu}$ 17'04					
opposition	2594 Mar 12 04:48	21° $\mathring{\mu}$ 54'42	0°58'49				
min. Earth dist.	2594 Mar 12 20:48	21° $\mathring{\mu}$ 53'35	29.22398 AU				
direct	2594 May 31 09:58	20° $\mathring{\mu}$ 29'38					
max. Earth dist.	2594 Sep 14 10:38	22° $\mathring{\mu}$ 59'11	31.22941 AU				
conjunction	2594 Sep 15 05:23	23° $\mathring{\mu}$ 00'55	0°56'39				
minimum elong	2594 Sep 15 05:23	23° $\mathring{\mu}$ 00'55	0°56'39				
retrograde	2594 Dec 27 08:21	25° $\mathring{\mu}$ 28'24					
opposition	2595 Mar 14 15:04	24° $\mathring{\mu}$ 06'07	1°02'08				
min. Earth dist.	2595 Mar 15 07:24	24° $\mathring{\mu}$ 04'59	29.23558 AU				
direct	2595 Jun 02 19:30	22° $\mathring{\mu}$ 41'05					
conjunction	2595 Sep 17 17:31	25° $\mathring{\mu}$ 12'23	0°59'43				
minimum elong	2595 Sep 17 17:31	25° $\mathring{\mu}$ 12'23	0°59'44				
max. Earth dist.	2595 Sep 16 23:13	25° $\mathring{\mu}$ 10'42	31.24056 AU				
retrograde	2595 Dec 29 17:22	27° $\mathring{\mu}$ 39'48					
opposition	2596 Mar 16 01:26	26° $\mathring{\mu}$ 17'36	1°05'23				