

direct	2100 Jan 15 20:40	2°♃21'45		conjunction	2108 May 01 17:10	11°♃29'37	-15°-51'-42
				minimum elong	2108 May 01 17:19	11°♃29'38	15°51'43
conjunction	2100 Apr 23 21:06	3°♃48'35	-16°-26'-30	max. Earth dist.	2108 May 02 20:23	11°♃31'10	50.23339 AU
minimum elong	2100 Apr 23 21:14	3°♃48'35	16°26'30	retrograde	2108 Aug 12 09:56	12°♃59'10	
max. Earth dist.	2100 Apr 25 09:02	3°♃50'39	49.91294 AU	min. Earth dist.	2108 Nov 03 06:41	12°♃00'33	48.32252 AU
retrograde	2100 Aug 04 18:15	5°♃19'09		opposition	2108 Nov 04 06:54	11°♃59'25	-16°-27'-45
min. Earth dist.	2100 Oct 26 07:12	4°♃20'26	48.02503 AU	direct	2109 Jan 24 16:47	11°♃00'49	
opposition	2100 Oct 27 15:58	4°♃18'53	-17°-5'-13				
direct	2101 Jan 17 00:31	3°♃19'54		conjunction	2109 May 02 22:31	12°♃26'42	-15°-46'-18
				minimum elong	2109 May 02 22:40	12°♃26'43	15°46'19
conjunction	2101 Apr 25 02:44	4°♃46'35	-16°-23'-3	max. Earth dist.	2109 May 03 23:30	12°♃28'08	50.25242 AU
minimum elong	2101 Apr 25 02:51	4°♃46'35	16°23'04	retrograde	2109 Aug 13 14:51	13°♃56'09	
max. Earth dist.	2101 Apr 26 13:50	4°♃48'36	49.96588 AU	opposition	2109 Nov 05 11:31	12°♃56'25	-16°-22'-1
retrograde	2101 Aug 06 00:51	6°♃17'00		min. Earth dist.	2109 Nov 04 12:06	12°♃57'31	48.33840 AU
min. Earth dist.	2101 Oct 27 11:58	5°♃18'21	48.07587 AU	direct	2110 Jan 25 22:22	11°♃57'50	
opposition	2101 Oct 28 20:57	5°♃16'48	-17°-1'-26				
direct	2102 Jan 18 02:56	4°♃17'52		conjunction	2110 May 04 03:42	13°♃23'37	-15°-40'-41
				minimum elong	2110 May 04 03:51	13°♃23'38	15°40'43
conjunction	2102 Apr 26 08:04	5°♃44'26	-16°-19'-19	max. Earth dist.	2110 May 05 04:08	13°♃25'01	50.26701 AU
minimum elong	2102 Apr 26 08:13	5°♃44'26	16°19'20	retrograde	2110 Aug 14 21:08	14°♃52'58	
max. Earth dist.	2102 Apr 27 17:46	5°♃46'22	50.01589 AU	opposition	2110 Nov 06 16:10	13°♃53'15	-16°-16'-2
retrograde	2102 Aug 07 05:07	7°♃14'42		min. Earth dist.	2110 Nov 05 18:34	13°♃54'16	48.35013 AU
min. Earth dist.	2102 Oct 28 18:32	6°♃16'04	48.12380 AU	direct	2111 Jan 27 03:02	12°♃54'41	
opposition	2102 Oct 30 02:03	6°♃14'35	-16°-57'-22				
direct	2103 Jan 19 08:23	5°♃15'43		conjunction	2111 May 05 08:57	14°♃20'24	-15°-34'-49
				minimum elong	2111 May 05 09:07	14°♃20'24	15°34'50
conjunction	2103 Apr 27 13:39	6°♃42'10	-16°-15'-19	max. Earth dist.	2111 May 06 08:28	14°♃21'44	50.27800 AU
minimum elong	2103 Apr 27 13:46	6°♃42'10	16°15'20		2111 Jun 04 11:10	15°♃	
max. Earth dist.	2103 Apr 28 23:29	6°♃44'07	50.06294 AU	retrograde	2111 Aug 16 03:52	15°♃49'38	
retrograde	2103 Aug 08 06:40	8°♃12'19			2111 Oct 29 21:22	15°♃	
min. Earth dist.	2103 Oct 30 00:17	7°♃13'42	48.16840 AU	opposition	2111 Nov 07 20:32	14°♃49'57	-16°-9'-48
opposition	2103 Oct 31 06:56	7°♃12'16	-16°-53'-2	min. Earth dist.	2111 Nov 06 22:51	14°♃50'58	48.35839 AU
direct	2104 Jan 20 16:31	6°♃13'28		direct	2112 Jan 28 04:59	13°♃51'24	
					2112 Apr 22 23:23	15°♃	
conjunction	2104 Apr 27 19:05	7°♃39'49	-16°-11'-3	conjunction	2112 May 05 14:07	15°♃17'04	-15°-28'-42
minimum elong	2104 Apr 27 19:14	7°♃39'50	16°11'04	minimum elong	2112 May 05 14:16	15°♃17'04	15°28'44
max. Earth dist.	2104 Apr 29 02:52	7°♃41'39	50.10651 AU	max. Earth dist.	2112 May 06 12:00	15°♃18'18	50.28559 AU
retrograde	2104 Aug 08 13:00	9°♃09'51		retrograde	2112 Aug 16 08:42	16°♃46'13	
min. Earth dist.	2104 Oct 30 05:47	8°♃11'18	48.20921 AU	min. Earth dist.	2112 Nov 07 05:06	15°♃47'30	48.36349 AU
opposition	2104 Oct 31 11:48	8°♃09'53	-16°-48'-26	opposition	2112 Nov 08 01:05	15°♃46'34	-16°-3'-18
direct	2105 Jan 20 21:38	7°♃11'09			2112 Dec 25 19:10	15°♃	
				direct	2113 Jan 28 09:10	14°♃48'02	
conjunction	2105 Apr 29 00:39	8°♃37'25	-16°-6'-33		2113 Mar 02 19:46	15°♃	
minimum elong	2105 Apr 29 00:47	8°♃37'25	16°06'33				
max. Earth dist.	2105 Apr 30 07:43	8°♃39'12	50.14577 AU	conjunction	2113 May 06 19:22	16°♃13'39	-15°-22'-20
retrograde	2105 Aug 09 19:43	10°♃07'21		minimum elong	2113 May 06 19:32	16°♃13'40	15°22'21
opposition	2105 Nov 01 16:37	9°♃07'27	-16°-43'-36	max. Earth dist.	2113 May 07 17:20	16°♃14'54	50.29015 AU
min. Earth dist.	2105 Oct 31 12:50	9°♃08'45	48.24536 AU	retrograde	2113 Aug 17 09:44	17°♃42'45	
direct	2106 Jan 22 02:32	8°♃08'46		min. Earth dist.	2113 Nov 08 09:56	16°♃44'03	48.36545 AU
				opposition	2113 Nov 09 05:22	16°♃43'09	-15°-56'-33
conjunction	2106 Apr 30 06:13	9°♃34'56	-16°-1'-49	direct	2114 Jan 29 16:40	15°♃44'38	
minimum elong	2106 Apr 30 06:23	9°♃34'57	16°01'50				
max. Earth dist.	2106 May 01 12:01	9°♃36'38	50.18029 AU	conjunction	2114 May 08 00:25	17°♃10'14	-15°-15'-43
retrograde	2106 Aug 11 01:59	11°♃04'44		minimum elong	2114 May 08 00:34	17°♃10'15	15°15'45
opposition	2106 Nov 02 21:25	10°♃04'55	-16°-38'-33	max. Earth dist.	2114 May 08 20:26	17°♃11'22	50.29178 AU
min. Earth dist.	2106 Nov 01 18:00	10°♃06'12	48.27640 AU	retrograde	2114 Aug 18 15:08	18°♃39'17	
direct	2107 Jan 23 05:40	9°♃06'16		opposition	2114 Nov 10 09:45	17°♃39'44	-15°-49'-32
				min. Earth dist.	2114 Nov 09 14:48	17°♃40'37	48.36450 AU
conjunction	2107 May 01 11:34	10°♃32'21	-15°-56'-52	direct	2115 Jan 30 21:40	16°♃41'16	
minimum elong	2107 May 01 11:42	10°♃32'22	15°56'52				
max. Earth dist.	2107 May 02 15:11	10°♃33'56	50.20946 AU	conjunction	2115 May 09 05:31	18°♃06'51	-15°-8'-52
retrograde	2107 Aug 12 07:32	12°♃02'02		minimum elong	2115 May 09 05:42	18°♃06'51	15°08'52
min. Earth dist.	2107 Nov 03 00:55	11°♃03'26	48.30210 AU	max. Earth dist.	2115 May 10 01:12	18°♃07'58	50.29024 AU
opposition	2107 Nov 04 02:20	11°♃02'15	-16°-33'-16	retrograde	2115 Aug 19 21:47	19°♃35'52	
direct	2108 Jan 24 09:26	10°♃03'38					

opposition	2115 Nov 11 14:13	18°♃36'22	-15°-42'-16	conjunction	2124 May 17 04:46	26°♃36'40	-13°-57'-7
min. Earth dist.	2115 Nov 10 21:08	18°♃37'11	48.36010 AU	minimum elong	2124 May 17 04:58	26°♃36'41	13°57'07
direct	2116 Feb 01 02:08	17°♃37'57		max. Earth dist.	2124 May 17 12:02	26°♃37'05	50.07024 AU
				retrograde	2124 Aug 27 16:30	28°♃05'23	
conjunction	2116 May 09 10:47	19°♃03'31	-15°-1'-45	opposition	2124 Nov 19 04:45	27°♃05'57	-14°-26'-48
minimum elong	2116 May 09 10:57	19°♃03'32	15°01'46	min. Earth dist.	2124 Nov 18 21:55	27°♃06'16	48.10864 AU
max. Earth dist.	2116 May 10 05:24	19°♃04'34	50.28520 AU	direct	2125 Feb 08 18:21	26°♃07'21	
retrograde	2116 Aug 20 04:15	20°♃32'30					
opposition	2116 Nov 11 18:23	19°♃33'05	-15°-34'-46	conjunction	2125 May 18 10:01	27°♃32'57	-13°-48'-1
min. Earth dist.	2116 Nov 11 01:34	19°♃33'52	48.35180 AU	minimum elong	2125 May 18 10:11	27°♃32'58	13°48'02
direct	2117 Feb 01 04:11	18°♃34'41		max. Earth dist.	2125 May 18 16:51	27°♃33'20	50.02488 AU
				retrograde	2125 Aug 28 21:35	29°♃01'40	
conjunction	2117 May 10 16:02	20°♃00'17	-14°-54'-25	opposition	2125 Nov 20 09:03	28°♃02'13	-14°-17'-14
minimum elong	2117 May 10 16:13	20°♃00'17	14°54'26	min. Earth dist.	2125 Nov 20 03:52	28°♃02'28	48.06051 AU
max. Earth dist.	2117 May 11 08:35	20°♃01'13	50.27579 AU	direct	2126 Feb 09 23:40	27°♃03'36	
retrograde	2117 Aug 21 10:39	21°♃29'14					
opposition	2117 Nov 12 22:50	20°♃29'51	-15°-27'-2	conjunction	2126 May 19 15:03	28°♃29'14	-13°-38'-40
min. Earth dist.	2117 Nov 12 08:07	20°♃30'33	48.33890 AU	minimum elong	2126 May 19 15:16	28°♃29'15	13°38'42
direct	2118 Feb 02 06:26	19°♃31'29		max. Earth dist.	2126 May 19 21:09	28°♃29'35	49.97678 AU
				retrograde	2126 Aug 30 03:41	29°♃57'58	
conjunction	2118 May 11 21:18	20°♃57'06	-14°-46'-52	opposition	2126 Nov 21 13:15	28°♃58'31	-14°-7'-25
minimum elong	2118 May 11 21:28	20°♃57'06	14°46'53	min. Earth dist.	2126 Nov 21 07:52	28°♃58'46	48.00954 AU
max. Earth dist.	2118 May 12 13:27	20°♃58'00	50.26147 AU	direct	2127 Feb 11 02:31	27°♃59'53	
retrograde	2118 Aug 22 12:58	22°♃26'01					
opposition	2118 Nov 14 03:15	21°♃26'40	-15°-19'-6	conjunction	2127 May 20 20:14	29°♃25'35	-13°-29'-5
min. Earth dist.	2118 Nov 13 13:36	21°♃27'19	48.32064 AU	minimum elong	2127 May 20 20:25	29°♃25'35	13°29'07
direct	2119 Feb 03 13:08	20°♃28'18		max. Earth dist.	2127 May 21 00:33	29°♃25'49	49.92567 AU
					2127 Jun 15 21:45	0°♂	
conjunction	2119 May 13 02:36	21°♃53'54	-14°-39'-7	retrograde	2127 Aug 31 10:37	0°♂54'21	
minimum elong	2119 May 13 02:47	21°♃53'55	14°39'09		2127 Nov 18 04:49	30°♂	
max. Earth dist.	2119 May 13 16:15	21°♃54'41	50.24176 AU	opposition	2127 Nov 22 17:32	29°♃54'54	-13°-57'-21
retrograde	2119 Aug 23 17:05	23°♃22'49		min. Earth dist.	2127 Nov 22 13:56	29°♃55'04	47.95552 AU
opposition	2119 Nov 15 07:35	22°♃23'28	-15°-10'-56	direct	2128 Feb 12 04:37	28°♃56'15	
min. Earth dist.	2119 Nov 14 19:08	22°♃24'03	48.29698 AU		2128 May 04 15:00	0°♂	
direct	2120 Feb 04 18:40	21°♃25'05					
				conjunction	2128 May 21 01:38	0°♂22'02	-13°-19'-15
conjunction	2120 May 13 07:59	22°♃50'40	-14°-31'-9	minimum elong	2128 May 21 01:51	0°♂22'03	13°19'17
minimum elong	2120 May 13 08:10	22°♃50'41	14°31'10	max. Earth dist.	2128 May 21 05:58	0°♂22'17	49.87132 AU
max. Earth dist.	2120 May 13 20:32	22°♃51'23	50.21651 AU	retrograde	2128 Aug 31 13:40	1°♂50'52	
retrograde	2120 Aug 23 22:22	24°♃19'33		opposition	2128 Nov 22 21:45	0°♂51'26	-13°-47'-3
opposition	2120 Nov 15 12:00	23°♃20'12	-15°-2'-34	min. Earth dist.	2128 Nov 22 18:57	0°♂51'34	47.89780 AU
min. Earth dist.	2120 Nov 15 01:38	23°♃20'41	48.26782 AU		2129 Jan 17 09:58	30°♂	
direct	2121 Feb 05 00:49	22°♃21'47		direct	2129 Feb 12 10:25	29°♃52'46	
					2129 Mar 10 07:16	0°♂	
conjunction	2121 May 14 13:16	23°♃47'21	-14°-22'-59				
minimum elong	2121 May 14 13:27	23°♃47'22	14°23'00	conjunction	2129 May 22 06:54	1°♂18'40	-13°-9'-12
max. Earth dist.	2121 May 15 00:32	23°♃47'59	50.18619 AU	minimum elong	2129 May 22 07:05	1°♂18'40	13°09'12
retrograde	2121 Aug 25 05:49	25°♃16'10		max. Earth dist.	2129 May 22 08:58	1°♂18'47	49.81300 AU
opposition	2121 Nov 16 16:08	24°♃16'48	-14°-53'-59	retrograde	2129 Sep 01 18:40	2°♂47'33	
min. Earth dist.	2121 Nov 16 06:06	24°♃17'16	48.23382 AU	opposition	2129 Nov 24 01:59	1°♂48'08	-13°-36'-30
direct	2122 Feb 06 02:56	23°♃18'21		min. Earth dist.	2129 Nov 24 00:17	1°♂48'13	47.83588 AU
				direct	2130 Feb 13 14:50	0°♂49'27	
conjunction	2122 May 15 18:24	24°♃43'54	-14°-14'-36				
minimum elong	2122 May 15 18:36	24°♃43'55	14°14'36	conjunction	2130 May 23 12:25	2°♂15'27	-12°-58'-55
max. Earth dist.	2122 May 16 03:46	24°♃44'26	50.15125 AU	minimum elong	2130 May 23 12:37	2°♂15'27	12°58'57
retrograde	2122 Aug 26 11:40	26°♃12'40		max. Earth dist.	2130 May 23 13:29	2°♂15'30	49.75001 AU
opposition	2122 Nov 17 20:27	25°♃13'17	-14°-45'-10	retrograde	2130 Sep 02 23:38	3°♂44'25	
min. Earth dist.	2122 Nov 17 12:20	25°♃13'40	48.19565 AU	opposition	2130 Nov 25 06:23	2°♂45'00	-13°-25'-44
direct	2123 Feb 07 05:31	24°♃14'47		min. Earth dist.	2130 Nov 25 06:43	2°♂44'59	47.76896 AU
				direct	2131 Feb 14 20:43	1°♂46'18	
conjunction	2123 May 16 23:36	25°♃40'20	-14°-5'-58				
minimum elong	2123 May 16 23:46	25°♃40'21	14°06'00	conjunction	2131 May 24 17:54	3°♂12'23	-12°-48'-26
max. Earth dist.	2123 May 17 08:52	25°♃40'52	50.11246 AU	minimum elong	2131 May 24 18:06	3°♂12'24	12°48'26
retrograde	2123 Aug 27 13:01	27°♃09'04		max. Earth dist.	2131 May 24 17:37	3°♂12'22	49.68202 AU
opposition	2123 Nov 19 00:39	26°♃09'39	-14°-36'-6	retrograde	2131 Sep 04 07:24	4°♂41'25	
min. Earth dist.	2123 Nov 18 17:09	26°♃10'00	48.15371 AU	opposition	2131 Nov 26 10:43	3°♂41'59	-13°-14'-46
direct	2124 Feb 08 12:37	25°♃11'06		min. Earth dist.	2131 Nov 26 11:31	3°♂41'57	47.69681 AU

direct	2132 Feb 15 23:04	2°II43'14		minimum elong	2140 Jun 01 21:04	11°II48'31	11°03'48
				max. Earth dist.	2140 Jun 01 09:55	11°II47'53	48.88333 AU
conjunction	2132 May 24 23:30	4°II09'26	-12°-37'-44	retrograde	2140 Sep 12 04:47	13°II18'23	
minimum elong	2132 May 24 23:42	4°II09'26	12°37'45	opposition	2140 Dec 04 03:02	12°II18'33	-11°-25'-12
max. Earth dist.	2132 May 24 20:52	4°II09'17	49.60866 AU	min. Earth dist.	2140 Dec 04 14:06	12°II18'01	46.86877 AU
retrograde	2132 Sep 04 14:54	5°II38'31		direct	2141 Feb 23 18:44	11°II19'10	
opposition	2132 Nov 26 15:06	4°II39'04	-13°-3'-34				
min. Earth dist.	2132 Nov 26 18:12	4°II38'55	47.61950 AU	conjunction	2141 Jun 03 02:58	12°II46'37	-10°-50'-57
direct	2133 Feb 16 00:39	3°II40'15		minimum elong	2141 Jun 03 03:10	12°II46'38	10°50'58
				max. Earth dist.	2141 Jun 02 14:56	12°II45'56	48.77830 AU
conjunction	2133 May 26 05:11	5°II06'32	-12°-26'-49	retrograde	2141 Sep 13 12:08	14°II16'39	
minimum elong	2133 May 26 05:23	5°II06'33	12°26'49	opposition	2141 Dec 05 07:46	13°II16'47	-11°-11'-46
max. Earth dist.	2133 May 26 02:08	5°II06'22	49.53039 AU	min. Earth dist.	2141 Dec 05 19:13	13°II16'14	46.76007 AU
retrograde	2133 Sep 05 17:16	6°II35'41		direct	2142 Feb 24 22:41	12°II17'20	
opposition	2133 Nov 27 19:28	5°II36'11	-12°-52'-8				
min. Earth dist.	2133 Nov 27 23:16	5°II36'00	47.53741 AU	conjunction	2142 Jun 04 08:58	13°II44'59	-10°-37'-53
direct	2134 Feb 17 07:43	4°II37'18		minimum elong	2142 Jun 04 09:09	13°II44'59	10°37'54
				max. Earth dist.	2142 Jun 03 18:44	13°II44'10	48.66871 AU
conjunction	2134 May 27 10:32	6°II03'42	-12°-15'-41	retrograde	2142 Sep 14 21:31	15°II15'11	
minimum elong	2134 May 27 10:43	6°II03'42	12°15'42	opposition	2142 Dec 06 12:48	14°II15'16	-10°-58'-6
max. Earth dist.	2134 May 27 05:20	6°II03'24	49.44772 AU	min. Earth dist.	2142 Dec 07 02:31	14°II14'36	46.64658 AU
retrograde	2134 Sep 06 20:24	7°II32'55		direct	2143 Feb 26 00:08	13°II15'43	
opposition	2134 Nov 28 23:53	6°II33'21	-12°-40'-29				
min. Earth dist.	2134 Nov 29 04:41	6°II33'07	47.45131 AU	conjunction	2143 Jun 05 15:25	14°II43'34	-10°-24'-36
direct	2135 Feb 18 14:14	5°II34'23		minimum elong	2143 Jun 05 15:36	14°II43'35	10°24'37
				max. Earth dist.	2143 Jun 05 00:35	14°II42'43	48.55413 AU
conjunction	2135 May 28 16:11	7°II00'54	-12°-4'-19	retrograde	2143 Sep 16 02:20	16°II13'56	
minimum elong	2135 May 28 16:24	7°II00'55	12°04'19	opposition	2143 Dec 07 17:41	15°II13'56	-10°-44'-12
max. Earth dist.	2135 May 28 10:23	7°II00'34	49.36114 AU	min. Earth dist.	2143 Dec 08 08:14	15°II13'14	46.52782 AU
retrograde	2135 Sep 08 01:08	8°II30'12		direct	2144 Feb 27 06:26	14°II14'17	
opposition	2135 Nov 30 04:17	7°II30'35	-12°-28'-34				
min. Earth dist.	2135 Nov 30 10:47	7°II30'16	47.36155 AU	conjunction	2144 Jun 05 21:49	15°II42'21	-10°-11'-5
direct	2136 Feb 19 20:22	6°II31'32		minimum elong	2144 Jun 05 22:00	15°II42'22	10°11'06
				max. Earth dist.	2144 Jun 05 04:25	15°II41'21	48.43432 AU
conjunction	2136 May 28 21:52	7°II58'09	-11°-52'-42	retrograde	2144 Sep 16 07:23	17°II12'51	
minimum elong	2136 May 28 22:03	7°II58'10	11°52'43	opposition	2144 Dec 07 22:46	16°II12'47	-10°-30'-4
max. Earth dist.	2136 May 28 15:05	7°II57'46	49.27133 AU	min. Earth dist.	2144 Dec 08 14:44	16°II12'01	46.40395 AU
retrograde	2136 Sep 08 07:53	9°II27'33		direct	2145 Feb 27 12:32	15°II13'01	
opposition	2136 Nov 30 08:40	8°II27'53	-12°-16'-25	max. Earth dist.	2145 Jun 06 09:53	16°II40'13	48.30936 AU
min. Earth dist.	2136 Nov 30 15:06	8°II27'34	47.26871 AU				
direct	2137 Feb 19 23:41	7°II28'45		conjunction	2145 Jun 07 04:15	16°II41'17	-9°-57'-21
				minimum elong	2145 Jun 07 04:27	16°II41'18	9°57'22
conjunction	2137 May 30 03:25	8°II55'31	-11°-40'-51	retrograde	2145 Sep 17 11:31	18°II11'57	
minimum elong	2137 May 30 03:38	8°II55'31	11°40'51	opposition	2145 Dec 09 03:53	17°II11'47	-10°-15'-42
max. Earth dist.	2137 May 29 18:56	8°II55'02	49.17845 AU	min. Earth dist.	2145 Dec 09 21:43	17°II10'55	46.27515 AU
retrograde	2137 Sep 09 15:39	10°II25'00		direct	2146 Feb 28 19:57	16°II11'53	
opposition	2137 Dec 01 13:13	9°II25'17	-12°-4'00				
min. Earth dist.	2137 Dec 01 21:19	9°II24'53	47.17304 AU	conjunction	2146 Jun 08 10:44	17°II40'22	-9°-43'-22
direct	2138 Feb 21 01:42	8°II26'05		minimum elong	2146 Jun 08 10:55	17°II40'22	9°43'23
				max. Earth dist.	2146 Jun 07 15:07	17°II39'13	48.17996 AU
conjunction	2138 May 31 09:12	9°II53'00	-11°-28'-45	retrograde	2146 Sep 18 18:14	19°II11'12	
minimum elong	2138 May 31 09:23	9°II53'00	11°28'46	opposition	2146 Dec 10 08:55	18°II10'56	-10°-1'-5
max. Earth dist.	2138 May 31 00:51	9°II52'31	49.08293 AU	min. Earth dist.	2146 Dec 11 02:57	18°II10'04	46.14219 AU
retrograde	2138 Sep 10 19:52	11°II22'35		direct	2147 Mar 02 00:43	17°II10'54	
opposition	2138 Dec 02 17:45	10°II22'49	-11°-51'-20				
min. Earth dist.	2138 Dec 03 02:13	10°II22'25	47.07465 AU	conjunction	2147 Jun 09 17:16	18°II39'36	-9°-29'-10
direct	2139 Feb 22 06:46	9°II23'33		minimum elong	2147 Jun 09 17:27	18°II39'36	9°29'11
				max. Earth dist.	2147 Jun 08 19:42	18°II38'21	48.04648 AU
conjunction	2139 Jun 01 14:52	10°II50'39	-11°-16'-23	retrograde	2147 Sep 20 02:30	20°II10'38	
minimum elong	2139 Jun 01 15:04	10°II50'39	11°16'24	opposition	2147 Dec 11 14:13	19°II10'15	-9°-46'-13
max. Earth dist.	2139 Jun 01 04:34	10°II50'03	48.98473 AU	min. Earth dist.	2147 Dec 12 10:17	19°II09'17	46.00548 AU
retrograde	2139 Sep 12 01:27	12°II20'22		direct	2148 Mar 02 04:10	18°II10'05	
opposition	2139 Dec 03 22:23	11°II20'34	-11°-38'-23	max. Earth dist.	2148 Jun 09 02:26	19°II37'47	47.90951 AU
min. Earth dist.	2139 Dec 04 07:42	11°II20'07	46.97346 AU				
direct	2140 Feb 23 11:25	10°II21'14		conjunction	2148 Jun 10 00:04	19°II39'02	-9°-14'-42
				minimum elong	2148 Jun 10 00:16	19°II39'03	9°14'42
conjunction	2140 Jun 01 20:53	11°II48'30	-11°-3'-48	retrograde	2148 Sep 20 08:34	21°II10'15	

opposition	2148 Dec 11 19:23	20°II09'47	-9°-31'-5	max. Earth dist.	2157 Jun 18 08:07	28°II47'16	46.52761 AU
min. Earth dist.	2148 Dec 12 15:50	20°II08'47	45.86546 AU				
direct	2149 Mar 03 09:43	19°II09'29		conjunction	2157 Jun 19 18:26	28°II49'18	-6°-53'-11
max. Earth dist.	2149 Jun 10 07:03	20°II37'19	47.76951 AU	minimum elong	2157 Jun 19 18:35	28°II49'19	6°53'11
					2157 Aug 14 15:38	0°☾	
conjunction	2149 Jun 11 06:47	20°II38'42	-9°00'00	retrograde	2157 Sep 30 01:16	0°☾23'02	
minimum elong	2149 Jun 11 06:57	20°II38'42	9°00'01		2157 Nov 15 22:52	30°RII	
retrograde	2149 Sep 21 15:36	22°II10'08		opposition	2157 Dec 21 00:50	29°II21'37	-7°-2'-51
opposition	2149 Dec 13 00:50	21°II09'34	-9°-15'-40	min. Earth dist.	2157 Dec 22 08:17	29°II20'04	44.45407 AU
min. Earth dist.	2149 Dec 13 22:12	21°II08'32	45.72270 AU	direct	2158 Mar 12 15:19	28°II20'04	
direct	2150 Mar 04 14:59	20°II09'09		max. Earth dist.	2158 Jun 19 15:55	29°II50'12	46.35262 AU
conjunction	2150 Jun 12 13:34	21°II38'38	-8°-45'-2	conjunction	2158 Jun 21 02:30	29°II52'15	-6°-36'-13
minimum elong	2150 Jun 12 13:45	21°II38'39	8°45'03	minimum elong	2158 Jun 21 02:39	29°II52'16	6°36'14
max. Earth dist.	2150 Jun 11 13:28	21°II37'14	47.62673 AU		2158 Jun 26 12:08	0°☾	
retrograde	2150 Sep 22 19:33	23°II10'20		retrograde	2158 Oct 01 10:33	1°☾26'17	
opposition	2150 Dec 14 06:28	22°II09'40	-9°00'00	opposition	2158 Dec 22 07:24	0°☾24'42	-6°-45'-4
min. Earth dist.	2150 Dec 15 05:06	22°II08'34	45.57717 AU	min. Earth dist.	2158 Dec 23 15:15	0°☾23'07	44.27583 AU
direct	2151 Mar 05 22:46	21°II09'08			2159 Jan 12 15:45	30°RII	
				direct	2159 Mar 13 20:59	29°II22'56	
conjunction	2151 Jun 13 20:37	22°II38'55	-8°-29'-48		2159 May 12 02:11	0°☾	
minimum elong	2151 Jun 13 20:47	22°II38'56	8°29'49	max. Earth dist.	2159 Jun 20 21:49	0°☾53'18	46.17384 AU
max. Earth dist.	2151 Jun 12 19:36	22°II37'27	47.48138 AU				
retrograde	2151 Sep 24 02:55	24°II10'53		conjunction	2159 Jun 22 10:45	0°☾55'30	-6°-19'00
opposition	2151 Dec 15 11:58	23°II10'09	-8°-44'-3	minimum elong	2159 Jun 22 10:54	0°☾55'31	6°19'00
min. Earth dist.	2151 Dec 16 10:46	23°II09'02	45.42896 AU	retrograde	2159 Oct 02 20:33	2°☾29'50	
direct	2152 Mar 06 04:05	22°II09'30		opposition	2159 Dec 23 14:02	1°☾28'04	-6°-27'00
max. Earth dist.	2152 Jun 13 00:56	23°II38'02	47.33299 AU	min. Earth dist.	2159 Dec 24 23:16	1°☾26'25	44.09426 AU
				direct	2160 Mar 14 02:32	0°☾26'05	
conjunction	2152 Jun 14 03:50	23°II39'37	-8°-14'-19	max. Earth dist.	2160 Jun 21 05:57	1°☾56'48	45.99181 AU
minimum elong	2152 Jun 14 04:00	23°II39'37	8°14'20				
retrograde	2152 Sep 24 13:49	25°II11'52		conjunction	2160 Jun 22 19:17	1°☾59'03	-6°-1'-31
opposition	2152 Dec 15 17:50	24°II11'02	-8°-27'-50	minimum elong	2160 Jun 22 19:25	1°☾59'03	6°01'32
min. Earth dist.	2152 Dec 16 18:40	24°II09'50	45.27756 AU	retrograde	2160 Oct 03 02:13	3°☾33'42	
direct	2153 Mar 07 05:52	23°II10'17		opposition	2160 Dec 23 20:57	2°☾31'46	-6°-8'-40
max. Earth dist.	2153 Jun 14 08:03	24°II39'09	47.18112 AU	min. Earth dist.	2160 Dec 25 07:18	2°☾30'03	43.90970 AU
				direct	2161 Mar 15 11:29	1°☾29'34	
conjunction	2153 Jun 15 11:11	24°II40'44	-7°-58'-35	max. Earth dist.	2161 Jun 22 13:21	3°☾00'36	45.80720 AU
minimum elong	2153 Jun 15 11:20	24°II40'45	7°58'35				
retrograde	2153 Sep 25 21:04	26°II13'17		conjunction	2161 Jun 24 03:42	3°☾02'55	-5°-43'-46
opposition	2153 Dec 16 23:41	25°II12'23	-8°-11'-21	minimum elong	2161 Jun 24 03:50	3°☾02'55	5°43'46
min. Earth dist.	2153 Dec 18 01:00	25°II11'09	45.12226 AU	retrograde	2161 Oct 04 08:31	4°☾37'55	
direct	2154 Mar 08 11:33	24°II11'30		opposition	2161 Dec 25 03:56	3°☾35'48	-5°-50'-2
				min. Earth dist.	2161 Dec 26 14:23	3°☾34'05	43.72283 AU
conjunction	2154 Jun 16 18:39	25°II42'19	-7°-42'-36	direct	2162 Mar 16 20:13	2°☾33'24	
minimum elong	2154 Jun 16 18:50	25°II42'19	7°42'37	max. Earth dist.	2162 Jun 23 20:34	4°☾04'45	45.62025 AU
max. Earth dist.	2154 Jun 15 13:08	25°II40'34	47.02506 AU				
retrograde	2154 Sep 27 04:40	27°II15'09		conjunction	2162 Jun 25 12:26	4°☾07'10	-5°-25'-45
opposition	2154 Dec 18 05:43	26°II14'09	-7°-54'-36	minimum elong	2162 Jun 25 12:33	4°☾07'11	5°25'46
min. Earth dist.	2154 Dec 19 08:40	26°II12'50	44.96260 AU	retrograde	2162 Oct 05 17:52	5°☾42'34	
direct	2155 Mar 09 17:51	25°II13'08		opposition	2162 Dec 26 11:11	4°☾40'17	-5°-31'-7
max. Earth dist.	2155 Jun 16 19:56	26°II42'29	46.86417 AU	min. Earth dist.	2162 Dec 27 23:22	4°☾38'27	43.53386 AU
				direct	2163 Mar 18 02:00	3°☾37'41	
conjunction	2155 Jun 18 02:29	26°II44'18	-7°-26'-22	max. Earth dist.	2163 Jun 25 05:35	5°☾09'28	45.43133 AU
minimum elong	2155 Jun 18 02:38	26°II44'18	7°26'22				
retrograde	2155 Sep 28 09:16	28°II17'26		conjunction	2163 Jun 26 21:26	5°☾11'53	-5°-7'-27
opposition	2155 Dec 19 12:02	27°II16'18	-7°-37'-37	minimum elong	2163 Jun 26 21:34	5°☾11'54	5°07'28
min. Earth dist.	2155 Dec 20 16:44	27°II14'53	44.79786 AU	retrograde	2163 Oct 07 03:23	6°☾47'41	
direct	2156 Mar 10 03:20	26°II15'08		opposition	2163 Dec 27 18:33	5°☾45'15	-5°-11'-55
max. Earth dist.	2156 Jun 17 02:11	27°II44'44	46.69834 AU	min. Earth dist.	2163 Dec 29 06:38	5°☾43'26	43.34274 AU
				direct	2164 Mar 18 08:16	4°☾42'27	
conjunction	2156 Jun 18 10:25	27°II46'38	-7°-9'-54	max. Earth dist.	2164 Jun 25 12:41	6°☾14'36	45.24007 AU
minimum elong	2156 Jun 18 10:34	27°II46'39	7°09'55				
retrograde	2156 Sep 28 16:13	29°II20'04		conjunction	2164 Jun 27 06:36	6°☾17'09	-4°-48'-54
opposition	2156 Dec 19 18:15	28°II18'48	-7°-20'-21	minimum elong	2164 Jun 27 06:43	6°☾17'09	4°48'54
min. Earth dist.	2156 Dec 20 23:30	28°II17'22	44.62825 AU	retrograde	2164 Oct 07 14:40	7°☾53'22	
direct	2157 Mar 11 10:18	27°II17'27		opposition	2164 Dec 28 02:07	6°☾50'47	-4°-52'-25

min. Earth dist.	2164 Dec 29 15:45	6° $\overline{48}$ '53	43.14924 AU	conjunction	2173 Jul 08 05:05	16° $\overline{32}$ '35	-1°-49'-58
direct	2165 Mar 19 14:16	5° $\overline{47}$ '49		minimum elong	2173 Jul 08 05:08	16° $\overline{32}$ '35	1°49'59
max. Earth dist.	2165 Jun 26 21:54	7° $\overline{20}$ '26	45.04601 AU	retrograde	2173 Oct 18 09:54	18° $\overline{13}$ '17	
				opposition	2174 Jan 07 09:05	17° $\overline{08}$ '54	-1°-44'-13
conjunction	2165 Jun 28 16:09	7° $\overline{23}$ '01	-4°-30'-4	min. Earth dist.	2174 Jan 09 08:02	17° $\overline{06}$ '26	41.24415 AU
minimum elong	2165 Jun 28 16:16	7° $\overline{23}$ '02	4°30'05	direct	2174 Mar 29 22:04	16° $\overline{03}$ '43	
retrograde	2165 Oct 08 22:48	8° $\overline{59}$ '42		max. Earth dist.	2174 Jul 07 10:18	17° $\overline{40}$ '36	43.13222 AU
opposition	2165 Dec 29 10:01	7° $\overline{56}$ '58	-4°-32'-38				
min. Earth dist.	2165 Dec 31 00:48	7° $\overline{55}$ '00	42.95262 AU	conjunction	2174 Jul 09 16:40	17° $\overline{44}$ '05	-1°-28'-46
direct	2166 Mar 21 00:00	6° $\overline{53}$ '48		minimum elong	2174 Jul 09 16:42	17° $\overline{44}$ '05	1°28'46
max. Earth dist.	2166 Jun 28 05:51	8° $\overline{26}$ '50	44.84860 AU	retrograde	2174 Oct 19 23:44	19° $\overline{25}$ '23	
				opposition	2175 Jan 08 19:13	18° $\overline{20}$ '46	-1°-21'-52
conjunction	2166 Jun 30 01:44	8° $\overline{29}$ '33	-4°-10'-58	min. Earth dist.	2175 Jan 10 19:44	18° $\overline{18}$ '13	41.01887 AU
minimum elong	2166 Jun 30 01:50	8° $\overline{29}$ '33	4°10'59	direct	2175 Mar 31 05:33	17° $\overline{15}$ '18	
retrograde	2166 Oct 10 08:22	10° $\overline{06}$ '41		max. Earth dist.	2175 Jul 08 22:39	18° $\overline{52}$ '51	42.90648 AU
opposition	2166 Dec 30 18:04	9° $\overline{03}$ '48	-4°-12'-34				
min. Earth dist.	2167 Jan 01 09:30	9° $\overline{01}$ '48	42.75234 AU	conjunction	2175 Jul 11 04:52	18° $\overline{56}$ '20	-1°-7'-18
direct	2167 Mar 22 08:31	8° $\overline{00}$ '26		minimum elong	2175 Jul 11 04:54	18° $\overline{56}$ '21	1°07'19
max. Earth dist.	2167 Jun 29 14:08	9° $\overline{33}$ '53	44.64697 AU	retrograde	2175 Oct 21 13:15	20° $\overline{38}$ '14	
				opposition	2176 Jan 10 05:29	19° $\overline{33}$ '24	0°-59'-14
conjunction	2167 Jul 01 11:52	9° $\overline{36}$ '43	-3°-51'-37	min. Earth dist.	2176 Jan 12 06:21	19° $\overline{30}$ '49	40.79208 AU
minimum elong	2167 Jul 01 11:58	9° $\overline{36}$ '43	3°51'38	direct	2176 Mar 31 15:34	18° $\overline{27}$ '39	
retrograde	2167 Oct 11 17:40	11° $\overline{14}$ '21		max. Earth dist.	2176 Jul 09 09:19	20° $\overline{05}$ '47	42.67923 AU
opposition	2168 Jan 01 02:25	10° $\overline{11}$ '17	-3°-52'-14				
min. Earth dist.	2168 Jan 02 20:07	10° $\overline{09}$ '09	42.54774 AU	conjunction	2176 Jul 11 17:15	20° $\overline{09}$ '25	0°-45'-34
direct	2168 Mar 22 16:20	9° $\overline{07}$ '42		minimum elong	2176 Jul 11 17:16	20° $\overline{09}$ '25	0°45'35
max. Earth dist.	2168 Jun 29 23:51	10° $\overline{41}$ '38	44.44103 AU	retrograde	2176 Oct 22 04:14	21° $\overline{51}$ '56	
				opposition	2177 Jan 10 16:10	20° $\overline{46}$ '53	0°-36'-19
conjunction	2168 Jul 01 22:16	10° $\overline{44}$ '31	-3°-31'-59	min. Earth dist.	2177 Jan 12 17:45	20° $\overline{44}$ '15	40.56373 AU
minimum elong	2168 Jul 01 22:21	10° $\overline{44}$ '32	3°32'00	direct	2177 Apr 02 01:30	19° $\overline{40}$ '52	
retrograde	2168 Oct 12 04:48	12° $\overline{22}$ '38		max. Earth dist.	2177 Jul 10 21:17	21° $\overline{19}$ '40	42.44988 AU
opposition	2169 Jan 01 10:57	11° $\overline{19}$ '24	-3°-31'-36				
min. Earth dist.	2169 Jan 03 05:03	11° $\overline{17}$ '14	42.33881 AU	conjunction	2177 Jul 13 05:57	21° $\overline{23}$ '22	0°-23'-35
direct	2169 Mar 23 23:47	10° $\overline{15}$ '34		minimum elong	2177 Jul 13 05:58	21° $\overline{23}$ '22	0°23'37
max. Earth dist.	2169 Jul 01 07:38	11° $\overline{49}$ '53	44.23077 AU	retrograde	2177 Oct 23 14:47	23° $\overline{06}$ '34	
				opposition	2178 Jan 12 03:15	22° $\overline{01}$ '16	0°-13'-7
conjunction	2169 Jul 03 08:36	11° $\overline{52}$ '56	-3°-12'-7	min. Earth dist.	2178 Jan 14 06:25	21° $\overline{58}$ '32	40.33306 AU
minimum elong	2169 Jul 03 08:41	11° $\overline{52}$ '57	3°12'08	direct	2178 Apr 03 13:43	20° $\overline{54}$ '59	
retrograde	2169 Oct 13 18:28	13° $\overline{31}$ '33		max. Earth dist.	2178 Jul 12 09:40	22° $\overline{34}$ '27	42.21799 AU
opposition	2170 Jan 02 19:47	12° $\overline{28}$ '05	-3°-10'-42				
min. Earth dist.	2170 Jan 04 15:43	12° $\overline{25}$ '50	42.12589 AU	conjunction	2178 Jul 14 19:07	22° $\overline{38}$ '14	0°-1'-22
direct	2170 Mar 25 05:41	11° $\overline{24}$ '00		minimum elong	2178 Jul 14 19:08	22° $\overline{38}$ '14	0°01'23
max. Earth dist.	2170 Jul 02 18:06	12° $\overline{58}$ '51	44.01663 AU	behind sun begin	2178 Jul 14 12:36	22° $\overline{37}$ '50	
				behind sun end	2178 Jul 15 01:39	22° $\overline{38}$ '38	
conjunction	2170 Jul 04 19:26	13° $\overline{01}$ '57	-2°-51'-58	asc. node	2178 Aug 05 18:59	23° $\overline{12}$ '21	
minimum elong	2170 Jul 04 19:30	13° $\overline{01}$ '57	2°51'59	retrograde	2178 Oct 25 02:27	24° $\overline{22}$ '06	
retrograde	2170 Oct 15 04:14	14° $\overline{41}$ '03		opposition	2179 Jan 13 14:27	23° $\overline{16}$ '35	0°10'20
opposition	2171 Jan 04 04:43	13° $\overline{37}$ '23	-2°-49'-31	min. Earth dist.	2179 Jan 15 17:58	23° $\overline{13}$ '49	40.09957 AU
min. Earth dist.	2171 Jan 06 01:34	13° $\overline{35}$ '04	41.90934 AU	direct	2179 Apr 05 01:45	22° $\overline{10}$ '00	
direct	2171 Mar 26 15:38	12° $\overline{33}$ '01		max. Earth dist.	2179 Jul 13 20:57	23° $\overline{50}$ '04	41.98273 AU
max. Earth dist.	2171 Jul 04 03:20	14° $\overline{08}$ '20	43.79923 AU				
				conjunction	2179 Jul 16 08:47	23° $\overline{54}$ '02	0°21'10
conjunction	2171 Jul 06 06:22	14° $\overline{11}$ '33	-2°-31'-34	minimum elong	2179 Jul 16 08:47	23° $\overline{54}$ '01	0°21'10
minimum elong	2171 Jul 06 06:26	14° $\overline{11}$ '33	2°31'36	retrograde	2179 Oct 26 16:52	25° $\overline{38}$ '36	
retrograde	2171 Oct 16 13:51	15° $\overline{51}$ '09		opposition	2180 Jan 15 02:18	24° $\overline{32}$ '49	0°34'05
opposition	2172 Jan 05 13:53	14° $\overline{47}$ '15	-2°-28'-2	min. Earth dist.	2180 Jan 17 08:00	24° $\overline{29}$ '55	39.86262 AU
min. Earth dist.	2172 Jan 07 11:27	14° $\overline{44}$ '53	41.68990 AU	direct	2180 Apr 05 10:37	23° $\overline{25}$ '55	
direct	2172 Mar 27 02:50	13° $\overline{42}$ '37		max. Earth dist.	2180 Jul 14 10:41	25° $\overline{06}$ '43	41.74383 AU
max. Earth dist.	2172 Jul 04 13:20	15° $\overline{18}$ '26	43.57888 AU				
				conjunction	2180 Jul 16 22:52	25° $\overline{10}$ '43	0°43'54
conjunction	2172 Jul 06 17:38	15° $\overline{21}$ '45	-2°-10'-54	minimum elong	2180 Jul 16 22:51	25° $\overline{10}$ '43	0°43'54
minimum elong	2172 Jul 06 17:41	15° $\overline{21}$ '45	2°10'54	retrograde	2180 Oct 27 06:45	26° $\overline{56}$ '00	
retrograde	2172 Oct 16 22:51	17° $\overline{01}$ '53		opposition	2181 Jan 15 14:23	25° $\overline{49}$ '56	0°58'07
opposition	2173 Jan 05 23:23	15° $\overline{57}$ '45	-2°-6'-16	min. Earth dist.	2181 Jan 17 20:31	25° $\overline{47}$ '00	39.62203 AU
min. Earth dist.	2173 Jan 07 22:37	15° $\overline{55}$ '17	41.46793 AU	direct	2181 Apr 06 22:29	24° $\overline{42}$ '42	
direct	2173 Mar 28 13:20	14° $\overline{52}$ '51		max. Earth dist.	2181 Jul 15 22:41	26° $\overline{24}$ '07	41.50141 AU
max. Earth dist.	2173 Jul 06 00:33	16° $\overline{29}$ '13	43.35644 AU				

conjunction	2181 Jul 18 13:10	26° \mathcal{E} 28'18	1°06'53	max. Earth dist.	2189 Jul 27 01:10	7° \mathcal{O} 18'54	39.49262 AU
minimum elong	2181 Jul 18 13:09	26° \mathcal{E} 28'18	1°06'53				
retrograde	2181 Oct 28 23:42	28° \mathcal{E} 14'17		conjunction	2189 Jul 29 22:21	7° \mathcal{O} 23'49	4°18'40
opposition	2182 Jan 17 02:51	27° \mathcal{E} 07'56	1°22'24	minimum elong	2189 Jul 29 22:13	7° \mathcal{O} 23'48	4°18'41
min. Earth dist.	2182 Jan 19 10:25	27° \mathcal{E} 04'55	39.37825 AU	retrograde	2189 Nov 09 11:33	9° \mathcal{O} 16'31	
direct	2182 Apr 08 09:44	26° \mathcal{E} 00'21		opposition	2190 Jan 27 20:59	8° \mathcal{O} 07'38	4°45'27
max. Earth dist.	2182 Jul 17 12:44	27° \mathcal{E} 42'30	41.25572 AU	min. Earth dist.	2190 Jan 30 10:55	8° \mathcal{O} 04'06	37.37097 AU
				direct	2190 Apr 19 02:08	6° \mathcal{O} 57'05	
conjunction	2182 Jul 20 03:55	27° \mathcal{E} 46'46	1°30'07	max. Earth dist.	2190 Jul 28 19:06	8° \mathcal{O} 46'09	39.23817 AU
minimum elong	2182 Jul 20 03:52	27° \mathcal{E} 46'45	1°30'06				
retrograde	2182 Oct 30 14:10	29° \mathcal{E} 33'29		conjunction	2190 Jul 31 16:35	8° \mathcal{O} 51'08	4°43'29
opposition	2183 Jan 18 15:46	28° \mathcal{E} 26'48	1°46'57	minimum elong	2190 Jul 31 16:26	8° \mathcal{O} 51'08	4°43'29
min. Earth dist.	2183 Jan 21 00:40	28° \mathcal{E} 23'41	39.13147 AU	retrograde	2190 Nov 11 04:50	10° \mathcal{O} 44'49	
direct	2183 Apr 10 00:16	27° \mathcal{E} 18'51		opposition	2191 Jan 29 13:20	9° \mathcal{O} 35'38	5°11'45
max. Earth dist.	2183 Jul 19 02:39	29° \mathcal{E} 01'44	41.00740 AU	min. Earth dist.	2191 Feb 01 03:08	9° \mathcal{O} 32'05	37.11706 AU
				direct	2191 Apr 20 18:25	8° \mathcal{O} 24'42	
conjunction	2183 Jul 21 19:02	29° \mathcal{E} 06'06	1°53'34	max. Earth dist.	2191 Jul 30 12:00	10° \mathcal{O} 14'41	38.98211 AU
minimum elong	2183 Jul 21 18:59	29° \mathcal{E} 06'06	1°53'34				
	2183 Aug 25 07:10	0° \mathcal{O}		conjunction	2191 Aug 02 11:32	10° \mathcal{O} 19'52	5°08'26
retrograde	2183 Nov 01 05:17	0° \mathcal{O} 53'34		minimum elong	2191 Aug 02 11:22	10° \mathcal{O} 19'51	5°08'27
	2184 Jan 09 23:27	30° \mathcal{R} \mathcal{E}		retrograde	2191 Nov 12 23:36	12° \mathcal{O} 14'33	
opposition	2184 Jan 20 04:47	29° \mathcal{E} 46'35	2°11'46	opposition	2192 Jan 31 06:18	11° \mathcal{O} 05'02	5°38'14
min. Earth dist.	2184 Jan 22 13:56	29° \mathcal{E} 43'26	38.88249 AU	min. Earth dist.	2192 Feb 02 22:00	11° \mathcal{O} 01'21	36.86157 AU
direct	2184 Apr 10 14:13	28° \mathcal{E} 38'15		direct	2192 Apr 21 08:29	9° \mathcal{O} 53'42	
	2184 Jul 06 05:41	0° \mathcal{O}		max. Earth dist.	2192 Jul 31 07:41	11° \mathcal{O} 44'46	38.72429 AU
max. Earth dist.	2184 Jul 19 16:39	0° \mathcal{O} 21'51	40.75689 AU				
				conjunction	2192 Aug 03 07:06	11° \mathcal{O} 49'59	5°33'32
conjunction	2184 Jul 22 10:34	0° \mathcal{O} 26'22	2°17'15	minimum elong	2192 Aug 03 06:55	11° \mathcal{O} 49'58	5°33'31
minimum elong	2184 Jul 22 10:30	0° \mathcal{O} 26'22	2°17'14	retrograde	2192 Nov 13 19:22	13° \mathcal{O} 45'41	
retrograde	2184 Nov 01 18:59	2° \mathcal{O} 14'37		opposition	2193 Jan 31 23:53	12° \mathcal{O} 35'49	6°04'53
opposition	2185 Jan 20 18:29	1° \mathcal{O} 07'18	2°36'49	min. Earth dist.	2193 Feb 03 15:47	12° \mathcal{O} 32'06	36.60433 AU
min. Earth dist.	2185 Jan 23 05:21	1° \mathcal{O} 04'02	38.63184 AU	direct	2193 Apr 23 00:19	11° \mathcal{O} 24'04	
	2185 Apr 01 12:34	30° \mathcal{R} \mathcal{E}		max. Earth dist.	2193 Aug 02 01:29	13° \mathcal{O} 16'04	38.46476 AU
direct	2185 Apr 12 02:59	29° \mathcal{E} 58'35					
	2185 Apr 22 14:28	0° \mathcal{O}		conjunction	2193 Aug 05 02:52	13° \mathcal{O} 21'28	5°58'45
max. Earth dist.	2185 Jul 21 08:39	1° \mathcal{O} 43'04	40.50505 AU	minimum elong	2193 Aug 05 02:41	13° \mathcal{O} 21'27	5°58'45
					2193 Oct 10 00:30	15° \mathcal{O}	
conjunction	2185 Jul 24 02:19	1° \mathcal{O} 47'35	2°41'09	retrograde	2193 Nov 15 17:25	15° \mathcal{O} 18'13	
minimum elong	2185 Jul 24 02:14	1° \mathcal{O} 47'35	2°41'09		2193 Dec 22 20:06	15° \mathcal{R} \mathcal{O}	
retrograde	2185 Nov 03 10:25	3° \mathcal{O} 36'40		opposition	2194 Feb 02 17:58	14° \mathcal{O} 07'57	6°31'39
opposition	2186 Jan 22 08:27	2° \mathcal{O} 29'01	3°02'07	min. Earth dist.	2194 Feb 05 10:58	14° \mathcal{O} 04'10	36.34571 AU
min. Earth dist.	2186 Jan 24 19:03	2° \mathcal{O} 25'45	38.38022 AU	direct	2194 Apr 24 15:56	12° \mathcal{O} 55'46	
direct	2186 Apr 13 15:58	1° \mathcal{O} 19'56		max. Earth dist.	2194 Aug 03 21:50	14° \mathcal{O} 48'51	38.20376 AU
max. Earth dist.	2186 Jul 22 23:00	3° \mathcal{O} 05'10	40.25241 AU				
				conjunction	2194 Aug 06 23:33	14° \mathcal{O} 54'19	6°24'04
conjunction	2186 Jul 25 18:32	3° \mathcal{O} 09'51	3°05'15	minimum elong	2194 Aug 06 23:21	14° \mathcal{O} 54'18	6°24'03
minimum elong	2186 Jul 25 18:26	3° \mathcal{O} 09'51	3°05'14		2194 Aug 10 04:01	15° \mathcal{O}	
retrograde	2186 Nov 05 04:55	4° \mathcal{O} 59'47		retrograde	2194 Nov 17 14:41	16° \mathcal{O} 52'06	
opposition	2187 Jan 23 22:48	3° \mathcal{O} 51'49	3°27'38	opposition	2195 Feb 04 12:32	15° \mathcal{O} 41'27	6°58'33
min. Earth dist.	2187 Jan 26 10:39	3° \mathcal{O} 48'28	38.12826 AU	min. Earth dist.	2195 Feb 07 06:32	15° \mathcal{O} 37'34	36.08594 AU
direct	2187 Apr 15 02:56	2° \mathcal{O} 42'21			2195 Mar 07 18:18	15° \mathcal{R} \mathcal{O}	
max. Earth dist.	2187 Jul 24 16:07	4° \mathcal{O} 28'33	39.99941 AU	direct	2195 Apr 26 12:04	14° \mathcal{O} 28'48	
					2195 Jun 14 11:28	15° \mathcal{O}	
conjunction	2187 Jul 27 11:25	4° \mathcal{O} 33'15	3°29'33	max. Earth dist.	2195 Aug 05 18:03	16° \mathcal{O} 22'56	37.94197 AU
minimum elong	2187 Jul 27 11:19	4° \mathcal{O} 33'15	3°29'33				
retrograde	2187 Nov 06 22:03	6° \mathcal{O} 24'04		conjunction	2195 Aug 08 20:41	16° \mathcal{O} 28'32	6°49'27
opposition	2188 Jan 25 13:45	5° \mathcal{O} 15'47	3°53'22	minimum elong	2195 Aug 08 20:27	16° \mathcal{O} 28'31	6°49'27
min. Earth dist.	2188 Jan 28 01:53	5° \mathcal{O} 12'24	37.87606 AU	retrograde	2195 Nov 19 14:00	18° \mathcal{O} 27'21	
direct	2188 Apr 15 18:02	4° \mathcal{O} 05'57		opposition	2196 Feb 06 07:38	17° \mathcal{O} 16'17	7°25'32
max. Earth dist.	2188 Jul 25 08:08	5° \mathcal{O} 53'03	39.74626 AU	min. Earth dist.	2196 Feb 09 01:37	17° \mathcal{O} 12'23	35.82581 AU
				direct	2196 Apr 27 08:38	16° \mathcal{O} 03'10	
conjunction	2188 Jul 28 04:33	5° \mathcal{O} 57'52	3°54'01	max. Earth dist.	2196 Aug 06 14:47	17° \mathcal{O} 58'23	37.67981 AU
minimum elong	2188 Jul 28 04:25	5° \mathcal{O} 57'52	3°54'01				
retrograde	2188 Nov 07 17:27	7° \mathcal{O} 49'36		conjunction	2196 Aug 09 18:21	18° \mathcal{O} 04'06	7°14'53
opposition	2189 Jan 26 05:03	6° \mathcal{O} 41'01	4°19'19	minimum elong	2196 Aug 09 18:07	18° \mathcal{O} 04'05	7°14'53
min. Earth dist.	2189 Jan 28 17:28	6° \mathcal{O} 37'36	37.62380 AU	retrograde	2196 Nov 20 10:54	20° \mathcal{O} 04'01	
direct	2189 Apr 17 10:09	5° \mathcal{O} 30'50		opposition	2197 Feb 07 03:29	18° \mathcal{O} 52'31	7°52'34

min. Earth dist.	2197 Feb 09 22:54	18°Ω48'30	35.56587 AU	retrograde	2204 Dec 05 20:36	3°♃56'10	
direct	2197 Apr 29 03:54	17°Ω38'55		opposition	2205 Feb 21 18:11	2°♃41'31	11°26'30
max. Earth dist.	2197 Aug 08 13:27	19°Ω35'19	37.41828 AU	min. Earth dist.	2205 Feb 24 14:28	2°♃37'14	33.55016 AU
				direct	2205 May 13 10:37	1°♃24'17	
conjunction	2197 Aug 11 16:36	19°Ω41'03	7°40'21	max. Earth dist.	2205 Aug 23 21:23	3°♃31'06	35.38917 AU
minimum elong	2197 Aug 11 16:20	19°Ω41'02	7°40'21				
retrograde	2197 Nov 22 07:30	21°Ω42'05		conjunction	2205 Aug 27 03:17	3°♃37'32	11°00'25
opposition	2198 Feb 08 23:46	20°Ω30'11	8°19'37	minimum elong	2205 Aug 27 02:55	3°♃37'30	11°00'25
min. Earth dist.	2198 Feb 11 18:30	20°Ω26'10	35.30702 AU	retrograde	2205 Dec 08 01:26	5°♃48'43	
direct	2198 May 01 00:24	19°Ω16'05		opposition	2206 Feb 23 20:27	4°♃33'39	11°52'23
max. Earth dist.	2198 Aug 10 10:52	21°Ω13'35	37.15797 AU	min. Earth dist.	2206 Feb 26 17:48	4°♃29'16	33.30561 AU
				direct	2206 May 15 09:06	3°♃15'56	
conjunction	2198 Aug 13 15:22	21°Ω19'29	8°05'47	max. Earth dist.	2206 Aug 26 03:06	5°♃24'15	35.14245 AU
minimum elong	2198 Aug 13 15:06	21°Ω19'28	8°05'47				
retrograde	2198 Nov 24 06:38	23°Ω21'40		conjunction	2206 Aug 29 08:08	5°♃30'40	11°24'26
opposition	2199 Feb 10 20:52	22°Ω09'20	8°46'40	minimum elong	2206 Aug 29 07:47	5°♃30'38	11°24'27
min. Earth dist.	2199 Feb 13 16:32	22°Ω05'14	35.04988 AU	retrograde	2206 Dec 10 05:38	7°♃43'13	
direct	2199 May 02 18:13	20°Ω54'45		opposition	2207 Feb 25 23:34	6°♃27'44	12°17'56
max. Earth dist.	2199 Aug 12 11:27	22°Ω53'35	36.89951 AU	min. Earth dist.	2207 Feb 28 20:36	6°♃23'20	33.06268 AU
				direct	2207 May 17 11:36	5°♃09'32	
conjunction	2199 Aug 15 15:00	22°Ω59'27	8°31'10	max. Earth dist.	2207 Aug 28 07:33	7°♃19'11	34.89767 AU
minimum elong	2199 Aug 15 14:42	22°Ω59'26	8°31'10				
retrograde	2199 Nov 26 05:50	25°Ω02'49		conjunction	2207 Aug 31 13:35	7°♃25'45	11°48'06
opposition	2200 Feb 12 18:33	23°Ω50'05	9°13'39	minimum elong	2207 Aug 31 13:12	7°♃25'43	11°48'06
min. Earth dist.	2200 Feb 15 13:51	23°Ω46'00	34.79485 AU	retrograde	2207 Dec 12 13:14	9°♃39'40	
direct	2200 May 04 14:38	22°Ω35'03		opposition	2208 Feb 28 03:21	8°♃23'45	12°43'05
max. Earth dist.	2200 Aug 14 10:41	24°Ω35'06	36.64336 AU	min. Earth dist.	2208 Mar 02 00:30	8°♃19'19	32.82215 AU
				direct	2208 May 18 14:06	7°♃05'03	
conjunction	2200 Aug 17 15:08	24°Ω41'05	8°56'28	max. Earth dist.	2208 Aug 29 14:47	9°♃16'14	34.65542 AU
minimum elong	2200 Aug 17 14:50	24°Ω41'04	8°56'28				
retrograde	2200 Nov 28 08:44	26°Ω45'42		conjunction	2208 Sep 01 19:56	9°♃22'47	12°11'19
opposition	2201 Feb 14 16:58	25°Ω32'34	9°40'33	minimum elong	2208 Sep 01 19:34	9°♃22'45	12°11'19
min. Earth dist.	2201 Feb 17 12:22	25°Ω28'27	34.54235 AU	retrograde	2208 Dec 13 19:31	11°♃38'03	
direct	2201 May 06 11:15	24°Ω17'06		opposition	2209 Mar 01 08:10	10°♃21'41	13°07'46
max. Earth dist.	2201 Aug 16 11:55	26°Ω18'30	36.38940 AU	min. Earth dist.	2209 Mar 04 05:32	10°♃17'13	32.58457 AU
				direct	2209 May 20 18:12	9°♃02'30	
conjunction	2201 Aug 19 15:58	26°Ω24'31	9°21'38	max. Earth dist.	2209 Aug 31 21:41	11°♃15'08	34.41669 AU
minimum elong	2201 Aug 19 15:39	26°Ω24'30	9°21'38				
retrograde	2201 Nov 30 10:56	28°Ω30'24		conjunction	2209 Sep 04 02:41	11°♃21'44	12°34'02
opposition	2202 Feb 16 16:11	27°Ω16'53	10°07'19	minimum elong	2209 Sep 04 02:17	11°♃21'42	12°34'02
min. Earth dist.	2202 Feb 19 12:14	27°Ω12'42	34.29196 AU	retrograde	2209 Dec 16 04:50	13°♃38'23	
direct	2202 May 08 10:37	26°Ω00'59		opposition	2210 Mar 03 13:36	12°♃21'34	13°31'54
max. Earth dist.	2202 Aug 18 13:20	28°Ω03'44	36.13743 AU	min. Earth dist.	2210 Mar 06 09:53	12°♃17'08	32.35092 AU
				direct	2210 May 22 23:40	11°♃01'53	
conjunction	2202 Aug 21 17:36	28°Ω09'50	9°46'39	max. Earth dist.	2210 Sep 03 05:52	13°♃16'00	34.18204 AU
minimum elong	2202 Aug 21 17:17	28°Ω09'49	9°46'39				
retrograde	2202 Oct 29 13:22	0°♃		conjunction	2210 Sep 06 10:29	13°♃22'38	12°56'12
	2202 Dec 02 15:13	0°♃17'01		minimum elong	2210 Sep 06 10:06	13°♃22'36	12°56'11
	2203 Jan 05 23:48	30°♃		retrograde	2210 Dec 18 13:40	15°♃40'40	
opposition	2203 Feb 18 15:53	29°Ω03'08	10°33'55	opposition	2211 Mar 05 19:56	14°♃23'25	13°55'24
min. Earth dist.	2203 Feb 21 11:26	28°Ω58'57	34.04341 AU	min. Earth dist.	2211 Mar 08 16:38	14°♃18'56	32.12185 AU
direct	2203 May 10 10:34	27°Ω46'48		direct	2211 May 25 05:42	13°♃03'15	
max. Earth dist.	2203 Aug 20 15:04	29°Ω50'53	35.88679 AU	max. Earth dist.	2211 Sep 05 15:47	15°♃18'57	33.95254 AU
conjunction	2203 Aug 23 20:09	29°Ω57'06	10°11'29	conjunction	2211 Sep 08 19:01	15°♃25'32	13°17'42
minimum elong	2203 Aug 23 19:48	29°Ω57'04	10°11'29	minimum elong	2211 Sep 08 18:38	15°♃25'30	13°17'42
retrograde	2203 Dec 04 17:26	2°♃05'36		retrograde	2211 Dec 21 00:19	17°♃44'57	
opposition	2204 Feb 20 16:42	0°♃51'21	11°00'19	opposition	2212 Mar 07 03:10	16°♃27'17	14°18'11
min. Earth dist.	2204 Feb 23 13:37	0°♃47'03	33.79618 AU	min. Earth dist.	2212 Mar 09 22:05	16°♃22'53	31.89818 AU
	2204 Mar 29 05:49	30°♃		direct	2212 May 26 13:25	15°♃06'39	
direct	2204 May 11 09:33	29°Ω34'34		max. Earth dist.	2212 Sep 07 01:09	17°♃23'51	33.72863 AU
	2204 Jun 22 19:17	0°♃					
max. Earth dist.	2204 Aug 21 18:52	1°♃40'05	35.63740 AU	conjunction	2212 Sep 10 04:14	17°♃30'29	13°38'29
				minimum elong	2212 Sep 10 03:52	17°♃30'27	13°38'28
conjunction	2204 Aug 24 23:19	1°♃46'20	10°36'05	retrograde	2212 Dec 22 09:18	19°♃51'19	
minimum elong	2204 Aug 24 23:00	1°♃46'18	10°36'05	opposition	2213 Mar 09 11:22	18°♃33'15	14°40'10
				min. Earth dist.	2213 Mar 12 06:26	18°♃28'49	31.68035 AU

direct	2213 May 28 18:59	17° \mathring{M} 12'11		direct	2221 Jun 15 13:10	5° \mathring{A} 12'34	
max. Earth dist.	2213 Sep 09 13:24	19° \mathring{M} 31'02	33.51076 AU	max. Earth dist.	2221 Sep 28 11:57	7° \mathring{A} 43'10	31.97350 AU
conjunction	2213 Sep 12 14:26	19° \mathring{M} 37'33	13°58'27	conjunction	2221 Oct 01 04:32	7° \mathring{A} 49'20	16°01'40
minimum elong	2213 Sep 12 14:02	19° \mathring{M} 37'31	13°58'27	minimum elong	2221 Oct 01 04:15	7° \mathring{A} 49'19	16°01'41
retrograde	2213 Dec 24 19:14	21° \mathring{M} 59'48		retrograde	2222 Jan 12 16:37	10° \mathring{A} 22'02	
opposition	2214 Mar 11 20:16	20° \mathring{M} 41'22	15°01'17	opposition	2222 Mar 30 04:31	9° \mathring{A} 00'43	17°10'14
min. Earth dist.	2214 Mar 14 13:53	20° \mathring{M} 37'00	31.46839 AU	min. Earth dist.	2222 Apr 01 15:05	8° \mathring{A} 56'39	29.97559 AU
direct	2214 May 31 03:06	19° \mathring{M} 19'54		direct	2222 Jun 18 03:17	7° \mathring{A} 36'09	
max. Earth dist.	2214 Sep 12 00:10	21° \mathring{M} 40'12	33.29875 AU	max. Earth dist.	2222 Oct 01 07:50	10° \mathring{A} 08'11	31.81161 AU
conjunction	2214 Sep 15 01:23	21° \mathring{M} 46'48	14°17'34	conjunction	2222 Oct 03 21:26	10° \mathring{A} 14'08	16°11'22
minimum elong	2214 Sep 15 01:01	21° \mathring{M} 46'46	14°17'35	minimum elong	2222 Oct 03 21:13	10° \mathring{A} 14'06	16°11'22
retrograde	2214 Dec 27 07:56	24° \mathring{M} 10'28		retrograde	2223 Jan 15 10:09	12° \mathring{A} 47'54	
opposition	2215 Mar 14 06:11	22° \mathring{M} 51'41	15°21'28	opposition	2223 Apr 01 21:13	11° \mathring{A} 26'16	17°20'05
min. Earth dist.	2215 Mar 16 23:30	22° \mathring{M} 47'19	31.26215 AU	min. Earth dist.	2223 Apr 04 05:16	11° \mathring{A} 22'22	29.81966 AU
direct	2215 Jun 02 09:31	21° \mathring{M} 29'48		direct	2223 Jun 20 20:26	10° \mathring{A} 01'24	
max. Earth dist.	2215 Sep 14 14:04	23° \mathring{M} 51'46	33.09223 AU	max. Earth dist.	2223 Oct 04 02:19	12° \mathring{A} 34'38	31.65875 AU
conjunction	2215 Sep 17 13:20	23° \mathring{M} 58'15	14°35'46	conjunction	2223 Oct 06 14:44	12° \mathring{A} 40'29	16°19'30
minimum elong	2215 Sep 17 12:57	23° \mathring{M} 58'13	14°35'46	minimum elong	2223 Oct 06 14:31	12° \mathring{A} 40'28	16°19'31
retrograde	2215 Dec 29 19:08	26° \mathring{M} 23'19		retrograde	2224 Jan 18 04:32	15° \mathring{A} 15'20	
opposition	2216 Mar 15 17:06	25° \mathring{M} 04'10	15°40'38	opposition	2224 Apr 03 14:40	13° \mathring{A} 53'24	17°28'14
min. Earth dist.	2216 Mar 18 09:40	24° \mathring{M} 59'49	31.06115 AU	min. Earth dist.	2224 Apr 05 21:06	13° \mathring{A} 49'35	29.67313 AU
direct	2216 Jun 03 19:05	23° \mathring{M} 41'54		direct	2224 Jun 22 11:28	12° \mathring{A} 28'14	
max. Earth dist.	2216 Sep 16 02:50	26° \mathring{M} 05'18	32.89117 AU	max. Earth dist.	2224 Oct 05 23:54	15° \mathring{A} 02'50	31.51590 AU
conjunction	2216 Sep 19 01:57	26° \mathring{M} 11'50	14°52'59	conjunction	2224 Oct 08 08:44	15° \mathring{A} 08'24	16°26'00
minimum elong	2216 Sep 19 01:36	26° \mathring{M} 11'48	14°52'59	minimum elong	2224 Oct 08 08:35	15° \mathring{A} 08'23	16°26'00
retrograde	2216 Dec 31 09:37	28° \mathring{M} 38'17		retrograde	2225 Jan 19 21:27	17° \mathring{A} 44'14	
opposition	2217 Mar 18 04:52	27° \mathring{M} 18'46	15°58'44	opposition	2225 Apr 06 08:49	16° \mathring{A} 22'03	17°34'35
min. Earth dist.	2217 Mar 20 20:21	27° \mathring{M} 14'29	30.86554 AU	min. Earth dist.	2225 Apr 08 12:48	16° \mathring{A} 18'24	29.53648 AU
direct	2217 Jun 06 05:56	25° \mathring{M} 56'06		direct	2225 Jun 25 05:21	14° \mathring{A} 56'40	
max. Earth dist.	2217 Sep 18 17:54	28° \mathring{M} 21'05	32.69543 AU	max. Earth dist.	2225 Oct 08 19:39	17° \mathring{A} 32'22	31.38356 AU
conjunction	2217 Sep 21 15:25	28° \mathring{M} 27'31	15°09'08	conjunction	2225 Oct 11 03:01	17° \mathring{A} 37'49	16°30'48
minimum elong	2217 Sep 21 15:04	28° \mathring{M} 27'29	15°09'08	minimum elong	2225 Oct 11 02:52	17° \mathring{A} 37'48	16°30'49
retrograde	2217 Nov 05 09:00	0° \mathring{A}		retrograde	2226 Jan 22 16:57	20° \mathring{A} 14'35	
retrograde	2218 Jan 02 22:56	0° \mathring{A} 55'18		opposition	2226 Apr 09 03:32	18° \mathring{A} 52'12	17°39'04
opposition	2218 Mar 05 09:56	30° \mathring{R} \mathring{M}		min. Earth dist.	2226 Apr 11 05:06	18° \mathring{A} 48'43	29.41015 AU
opposition	2218 Mar 20 17:39	29° \mathring{M} 35'25	16°15'41	direct	2226 Jun 27 22:17	17° \mathring{A} 26'37	
min. Earth dist.	2218 Mar 23 09:00	29° \mathring{M} 31'07	30.67514 AU	max. Earth dist.	2226 Oct 11 18:21	20° \mathring{A} 03'36	31.26169 AU
direct	2218 Jun 08 17:27	28° \mathring{M} 12'22		conjunction	2226 Oct 13 22:04	20° \mathring{A} 08'43	16°33'51
max. Earth dist.	2218 Sep 03 18:13	0° \mathring{A}		minimum elong	2226 Oct 13 21:58	20° \mathring{A} 08'42	16°33'50
conjunction	2218 Sep 24 05:40	0° \mathring{A} 45'12	15°24'10	retrograde	2227 Jan 25 11:32	22° \mathring{A} 46'21	
minimum elong	2218 Sep 24 05:21	0° \mathring{A} 45'10	15°24'09	opposition	2227 Apr 11 22:56	21° \mathring{A} 23'48	17°41'38
retrograde	2219 Jan 05 15:18	3° \mathring{A} 14'17		min. Earth dist.	2227 Apr 13 22:48	21° \mathring{A} 20'25	29.29384 AU
opposition	2219 Mar 23 07:01	1° \mathring{A} 54'02	16°31'24	direct	2227 Jun 30 15:44	19° \mathring{A} 58'04	
min. Earth dist.	2219 Mar 25 20:35	1° \mathring{A} 49'50	30.49041 AU	max. Earth dist.	2227 Oct 14 15:30	22° \mathring{A} 36'02	31.15022 AU
direct	2219 Jun 11 07:06	0° \mathring{A} 30'35		conjunction	2227 Oct 16 17:24	22° \mathring{A} 41'00	16°35'06
max. Earth dist.	2219 Sep 24 01:08	2° \mathring{A} 58'25	32.32117 AU	minimum elong	2227 Oct 16 17:19	22° \mathring{A} 40'59	16°35'06
conjunction	2219 Sep 26 20:45	3° \mathring{A} 04'47	15°37'59	retrograde	2228 Jan 28 08:06	25° \mathring{A} 19'26	
minimum elong	2219 Sep 26 20:26	3° \mathring{A} 04'45	15°37'59	opposition	2228 Apr 13 18:57	23° \mathring{A} 56'43	17°42'16
retrograde	2220 Jan 08 07:06	5° \mathring{A} 35'08		min. Earth dist.	2228 Apr 15 15:49	23° \mathring{A} 53'33	29.18754 AU
opposition	2220 Mar 24 21:32	4° \mathring{A} 14'31	16°45'48	direct	2228 Jul 02 11:27	22° \mathring{A} 30'52	
min. Earth dist.	2220 Mar 27 10:58	4° \mathring{A} 10'18	30.31175 AU	max. Earth dist.	2228 Oct 16 14:33	25° \mathring{A} 09'53	31.04875 AU
direct	2220 Jun 12 20:53	2° \mathring{A} 50'41		conjunction	2228 Oct 18 13:09	25° \mathring{A} 14'32	16°34'32
max. Earth dist.	2220 Sep 25 18:39	5° \mathring{A} 19'58	32.14371 AU	minimum elong	2228 Oct 18 13:08	25° \mathring{A} 14'32	16°34'31
conjunction	2220 Sep 28 12:15	5° \mathring{A} 26'12	15°50'31	retrograde	2229 Jan 30 03:20	27° \mathring{A} 53'40	
minimum elong	2220 Sep 28 11:59	5° \mathring{A} 26'10	15°50'31	opposition	2229 Apr 16 15:39	26° \mathring{A} 30'49	17°40'55
retrograde	2221 Jan 10 00:15	7° \mathring{A} 57'44		min. Earth dist.	2229 Apr 18 11:08	26° \mathring{A} 27'45	29.09081 AU
opposition	2221 Mar 27 12:40	6° \mathring{A} 36'46	16°58'46	direct	2229 Jul 05 07:35	25° \mathring{A} 04'52	
min. Earth dist.	2221 Mar 29 23:45	6° \mathring{A} 32'42	30.13986 AU	max. Earth dist.	2229 Oct 19 12:51	27° \mathring{A} 44'41	30.95726 AU

conjunction	2229 Oct 21 09:16	27° Ω 49'08	16°32'07	direct	2237 Jul 26 18:49	15° \mathbb{M} 54'48	
minimum elong	2229 Oct 21 09:16	27° Ω 49'08	16°32'07	max. Earth dist.	2237 Nov 10 10:03	18° \mathbb{M} 37'33	30.60129 AU
	2229 Dec 23 19:08	0° \mathbb{M}					
retrograde	2230 Feb 02 00:53	0° \mathbb{M} 28'52		conjunction	2237 Nov 11 05:05	18° \mathbb{M} 39'28	15°05'22
	2230 Mar 15 18:23	30° \mathbb{R} Ω		minimum elong	2237 Nov 11 05:23	18° \mathbb{M} 39'30	15°05'22
opposition	2230 Apr 19 12:30	29° Ω 05'53	17°37'35	retrograde	2238 Feb 22 20:38	21° \mathbb{M} 19'56	
min. Earth dist.	2230 Apr 21 04:42	29° Ω 03'03	29.00361 AU	opposition	2238 May 10 20:53	19° \mathbb{M} 56'32	15°57'58
direct	2230 Jul 08 04:50	27° Ω 39'51		min. Earth dist.	2238 May 11 14:53	19° \mathbb{M} 55'16	28.67659 AU
	2230 Oct 13 23:54	0° \mathbb{M}		direct	2238 Jul 29 17:07	18° \mathbb{M} 30'36	
max. Earth dist.	2230 Oct 22 12:03	0° \mathbb{M} 20'25	30.87546 AU	max. Earth dist.	2238 Nov 13 08:19	21° \mathbb{M} 13'09	30.61039 AU
conjunction	2230 Oct 24 05:48	0° \mathbb{M} 24'37	16°27'50	conjunction	2238 Nov 14 00:50	21° \mathbb{M} 14'49	14°46'13
minimum elong	2230 Oct 24 05:52	0° \mathbb{M} 24'38	16°27'50	minimum elong	2238 Nov 14 01:09	21° \mathbb{M} 14'51	14°46'13
retrograde	2231 Feb 04 21:19	3° \mathbb{M} 04'50		retrograde	2239 Feb 25 16:50	23° \mathbb{M} 54'58	
opposition	2231 Apr 22 10:06	1° \mathbb{M} 41'44	17°32'14	opposition	2239 May 13 18:50	22° \mathbb{M} 31'40	15°36'35
min. Earth dist.	2231 Apr 24 00:57	1° \mathbb{M} 39'00	28.92585 AU	min. Earth dist.	2239 May 14 08:39	22° \mathbb{M} 30'42	28.68872 AU
direct	2231 Jul 11 01:40	0° \mathbb{M} 15'39		direct	2239 Aug 01 14:59	21° \mathbb{M} 05'56	
max. Earth dist.	2231 Oct 25 11:31	2° \mathbb{M} 56'50	30.80361 AU				
conjunction	2231 Oct 27 02:21	3° \mathbb{M} 00'46	16°21'42	conjunction	2239 Nov 16 20:17	23° \mathbb{M} 49'38	14°25'22
minimum elong	2231 Oct 27 02:26	3° \mathbb{M} 00'46	16°21'42	minimum elong	2239 Nov 16 20:38	23° \mathbb{M} 49'40	14°25'22
retrograde	2232 Feb 07 19:02	5° \mathbb{M} 41'19		max. Earth dist.	2239 Nov 16 08:15	23° \mathbb{M} 48'25	30.63184 AU
opposition	2232 Apr 24 07:53	4° \mathbb{M} 18'08	17°24'51	retrograde	2240 Feb 28 10:25	26° \mathbb{M} 29'22	
min. Earth dist.	2232 Apr 25 19:19	4° \mathbb{M} 15'37	28.85769 AU	opposition	2240 May 15 16:46	25° \mathbb{M} 06'13	15°13'24
direct	2232 Jul 13 01:43	2° \mathbb{M} 51'59		min. Earth dist.	2240 May 16 04:15	25° \mathbb{M} 05'25	28.71275 AU
max. Earth dist.	2232 Oct 27 10:39	5° \mathbb{M} 33'39	30.74176 AU	direct	2240 Aug 03 12:42	23° \mathbb{M} 40'44	
conjunction	2232 Oct 28 23:05	5° \mathbb{M} 37'19	16°13'40	conjunction	2240 Nov 18 15:20	26° \mathbb{M} 23'48	14°02'53
minimum elong	2232 Oct 28 23:13	5° \mathbb{M} 37'20	16°13'40	minimum elong	2240 Nov 18 15:41	26° \mathbb{M} 23'51	14°02'53
retrograde	2233 Feb 09 15:29	8° \mathbb{M} 18'08		max. Earth dist.	2240 Nov 18 05:52	26° \mathbb{M} 22'51	30.66524 AU
opposition	2233 Apr 27 05:54	6° \mathbb{M} 54'50	17°15'26	retrograde	2241 Mar 02 06:32	29° \mathbb{M} 03'04	
min. Earth dist.	2233 Apr 28 15:34	6° \mathbb{M} 52'28	28.79955 AU	opposition	2241 May 18 14:11	27° \mathbb{M} 40'05	14°48'31
direct	2233 Jul 15 22:59	5° \mathbb{M} 28'39		min. Earth dist.	2241 May 18 21:29	27° \mathbb{M} 39'34	28.74825 AU
max. Earth dist.	2233 Oct 30 11:00	8° \mathbb{M} 10'46	30.69050 AU	direct	2241 Aug 06 10:04	26° \mathbb{M} 14'50	
conjunction	2233 Oct 31 19:47	8° \mathbb{M} 14'05	16°03'45	conjunction	2241 Nov 21 10:08	28° \mathbb{M} 57'13	13°38'52
minimum elong	2233 Oct 31 19:57	8° \mathbb{M} 14'06	16°03'46	minimum elong	2241 Nov 21 10:31	28° \mathbb{M} 57'15	13°38'52
retrograde	2234 Feb 12 12:34	10° \mathbb{M} 55'01		max. Earth dist.	2241 Nov 21 04:25	28° \mathbb{M} 56'39	30.70980 AU
opposition	2234 Apr 30 04:02	9° \mathbb{M} 31'39	17°03'59	retrograde	2241 Dec 18 05:17	0° \mathbb{M}	
min. Earth dist.	2234 May 01 10:20	9° \mathbb{M} 29'30	28.75168 AU	opposition	2242 Mar 04 23:54	1° \mathbb{M} 35'54	
direct	2234 Jul 18 22:58	8° \mathbb{M} 05'26		opposition	2242 May 21 11:33	0° \mathbb{M} 13'07	14°22'00
max. Earth dist.	2234 Nov 02 09:49	10° \mathbb{M} 47'45	30.65009 AU	min. Earth dist.	2242 May 21 16:54	0° \mathbb{M} 12'45	28.79455 AU
conjunction	2234 Nov 03 16:21	10° \mathbb{M} 50'51	15°51'57	direct	2242 May 29 09:01	30° \mathbb{R} \mathbb{M}	
minimum elong	2234 Nov 03 16:33	10° \mathbb{M} 50'52	15°51'57	direct	2242 Aug 09 06:44	28° \mathbb{M} 48'09	
retrograde	2235 Feb 15 10:03	13° \mathbb{M} 31'48			2242 Oct 15 10:32	0° \mathbb{M}	
opposition	2235 May 03 02:14	12° \mathbb{M} 08'21	16°50'30	conjunction	2242 Nov 24 04:24	1° \mathbb{M} 29'43	13°13'25
min. Earth dist.	2235 May 04 05:53	12° \mathbb{M} 06'24	28.71488 AU	minimum elong	2242 Nov 24 04:46	1° \mathbb{M} 29'45	13°13'24
direct	2235 Jul 21 21:18	10° \mathbb{M} 42'08		max. Earth dist.	2242 Nov 24 01:30	1° \mathbb{M} 29'26	30.76508 AU
max. Earth dist.	2235 Nov 05 10:42	13° \mathbb{M} 24'45	30.62138 AU	retrograde	2243 Mar 07 18:33	4° \mathbb{M} 07'46	
				opposition	2243 May 24 08:26	2° \mathbb{M} 45'10	13°54'00
conjunction	2235 Nov 06 12:52	13° \mathbb{M} 27'24	15°38'17	min. Earth dist.	2243 May 24 09:50	2° \mathbb{M} 45'04	28.85111 AU
minimum elong	2235 Nov 06 13:06	13° \mathbb{M} 27'26	15°38'17	direct	2243 Aug 12 05:44	1° \mathbb{M} 20'29	
	2235 Dec 17 00:20	15° \mathbb{M}					
retrograde	2236 Feb 18 04:57	16° \mathbb{M} 08'17		conjunction	2243 Nov 26 22:17	4° \mathbb{M} 01'10	12°46'37
	2236 Apr 26 00:10	15° \mathbb{R} \mathbb{M}		minimum elong	2243 Nov 26 22:41	4° \mathbb{M} 01'13	12°46'37
opposition	2236 May 05 00:37	14° \mathbb{M} 44'48	16°34'59	max. Earth dist.	2243 Nov 26 22:27	4° \mathbb{M} 01'12	30.83045 AU
min. Earth dist.	2236 May 06 00:59	14° \mathbb{M} 43'05	28.68972 AU	retrograde	2244 Mar 09 12:01	6° \mathbb{M} 38'30	
direct	2236 Jul 23 20:58	13° \mathbb{M} 18'38		opposition	2244 May 26 05:04	5° \mathbb{M} 16'05	13°24'35
	2236 Oct 12 10:56	15° \mathbb{M}		min. Earth dist.	2244 May 26 04:18	5° \mathbb{M} 16'09	28.91770 AU
max. Earth dist.	2236 Nov 07 09:15	16° \mathbb{M} 01'15	30.60497 AU	direct	2244 Aug 14 01:40	3° \mathbb{M} 51'42	
conjunction	2236 Nov 08 08:56	16° \mathbb{M} 03'38	15°22'44	conjunction	2244 Nov 28 15:32	6° \mathbb{M} 31'25	12°18'34
minimum elong	2236 Nov 08 09:11	16° \mathbb{M} 03'40	15°22'43	minimum elong	2244 Nov 28 15:55	6° \mathbb{M} 31'27	12°18'34
retrograde	2237 Feb 20 01:49	18° \mathbb{M} 44'21		max. Earth dist.	2244 Nov 28 18:55	6° \mathbb{M} 31'45	30.90575 AU
opposition	2237 May 07 22:49	17° \mathbb{M} 20'53	16°17'27	retrograde	2245 Mar 12 05:10	9° \mathbb{M} 07'55	
min. Earth dist.	2237 May 08 19:35	17° \mathbb{M} 19'25	28.67695 AU	opposition	2245 May 29 01:03	7° \mathbb{M} 45'43	12°53'54
				min. Earth dist.	2245 May 28 20:48	7° \mathbb{M} 46'01	28.99381 AU

direct	2245 Aug 16 23:51	6° 2 21'38		minimum elong	2253 Dec 19 20:36	27° 2 51'03	7°25'21
				max. Earth dist.	2253 Dec 21 02:13	27° 2 53'50	32.02639 AU
conjunction	2245 Dec 01 08:14	9° 2 00'17	11°49'22		2254 Feb 27 22:09	0° 3	
minimum elong	2245 Dec 01 08:39	9° 2 00'19	11°49'23	retrograde	2254 Apr 02 04:15	0° 3 18'07	
max. Earth dist.	2245 Dec 01 13:55	9° 2 00'50	30.99050 AU		2254 May 06 14:18	30° R	
retrograde	2246 Mar 14 22:58	11° 2 35'54		min. Earth dist.	2254 Jun 19 01:26	29° 2 00'20	30.12632 AU
opposition	2246 May 31 20:26	10° 2 13'54	12°22'00	opposition	2254 Jun 20 08:28	28° 2 58'18	7°36'09
min. Earth dist.	2246 May 31 13:35	10° 2 14'22	29.07954 AU	direct	2254 Sep 08 16:49	27° 2 37'26	
direct	2246 Aug 19 20:18	8° 2 50'05			2254 Dec 20 04:31	0° 3	
conjunction	2246 Dec 04 00:22	11° 2 27'37	11°19'07	conjunction	2254 Dec 22 06:40	0° 3 04'40	6°50'00
minimum elong	2246 Dec 04 00:45	11° 2 27'39	11°19'07	minimum elong	2254 Dec 22 06:56	0° 3 04'41	6°50'00
max. Earth dist.	2246 Dec 04 09:46	11° 2 28'32	31.08490 AU	max. Earth dist.	2254 Dec 23 14:51	0° 3 07'39	32.19715 AU
retrograde	2247 Mar 17 13:37	14° 2 02'16		retrograde	2255 Apr 04 15:19	2° 3 30'37	
opposition	2247 Jun 03 15:22	12° 2 40'29	11°49'02	opposition	2255 Jun 22 22:02	1° 3 11'07	6°58'11
min. Earth dist.	2247 Jun 03 05:38	12° 2 41'08	29.17485 AU	min. Earth dist.	2255 Jun 21 12:53	1° 3 13'16	30.29810 AU
direct	2247 Aug 22 17:48	11° 2 16'58			2255 Aug 17 14:25	30° R	
				direct	2255 Sep 11 05:17	29° 2 50'41	
conjunction	2247 Dec 06 15:30	13° 2 53'18	10°47'54		2255 Oct 05 11:38	0° 3	
minimum elong	2247 Dec 06 15:53	13° 2 53'20	10°47'54				
max. Earth dist.	2247 Dec 07 03:06	13° 2 54'26	31.18902 AU	conjunction	2255 Dec 24 16:21	2° 3 16'33	6°14'26
retrograde	2248 Mar 19 05:13	16° 2 26'57		minimum elong	2255 Dec 24 16:36	2° 3 16'34	6°14'26
opposition	2248 Jun 05 09:38	15° 2 05'22	11°15'03	max. Earth dist.	2255 Dec 26 03:17	2° 3 19'46	32.37495 AU
min. Earth dist.	2248 Jun 04 20:23	15° 2 06'15	29.28034 AU	retrograde	2256 Apr 06 00:11	4° 3 41'20	
direct	2248 Aug 24 12:26	13° 2 42'10		min. Earth dist.	2256 Jun 22 23:25	3° 3 24'28	30.47654 AU
				opposition	2256 Jun 24 10:46	3° 3 22'11	6°20'03
conjunction	2248 Dec 08 06:10	16° 2 17'15	10°15'47	direct	2256 Sep 12 19:40	2° 3 02'09	
minimum elong	2248 Dec 08 06:32	16° 2 17'17	10°15'47				
max. Earth dist.	2248 Dec 08 22:00	16° 2 18'47	31.30337 AU	conjunction	2256 Dec 26 01:19	4° 3 26'40	5°38'45
retrograde	2249 Mar 21 18:20	18° 2 49'51		minimum elong	2256 Dec 26 01:33	4° 3 26'42	5°38'45
min. Earth dist.	2249 Jun 07 11:24	17° 2 29'33	29.39620 AU	max. Earth dist.	2256 Dec 27 13:31	4° 3 29'59	32.55885 AU
opposition	2249 Jun 08 03:07	17° 2 28'30	10°40'11	retrograde	2257 Apr 08 10:23	6° 3 50'17	
direct	2249 Aug 27 08:29	16° 2 05'38		min. Earth dist.	2257 Jun 25 08:48	5° 3 33'53	30.66121 AU
				opposition	2257 Jun 26 22:37	5° 3 31'27	5°41'52
conjunction	2249 Dec 10 19:58	18° 2 39'27	9°42'53	direct	2257 Sep 15 08:01	4° 3 11'49	
minimum elong	2249 Dec 10 20:20	18° 2 39'29	9°42'53				
max. Earth dist.	2249 Dec 11 13:52	18° 2 41'10	31.42817 AU	conjunction	2257 Dec 28 09:45	6° 3 34'59	5°03'01
retrograde	2250 Mar 24 08:49	21° 2 10'58		minimum elong	2257 Dec 28 09:58	6° 3 35'00	5°03'02
opposition	2250 Jun 10 19:55	19° 2 49'53	10°04'31	max. Earth dist.	2257 Dec 30 00:54	6° 3 38'32	32.74845 AU
min. Earth dist.	2250 Jun 10 00:03	19° 2 51'13	29.52269 AU	retrograde	2258 Apr 10 17:49	8° 3 57'24	
direct	2250 Aug 30 02:10	18° 2 27'22		min. Earth dist.	2258 Jun 27 18:46	7° 3 41'24	30.85142 AU
				opposition	2258 Jun 29 09:56	7° 3 38'53	5°03'42
conjunction	2250 Dec 13 09:08	20° 2 59'54	9°09'17	direct	2258 Sep 17 22:09	6° 3 19'39	
minimum elong	2250 Dec 13 09:28	20° 2 59'56	9°09'17				
max. Earth dist.	2250 Dec 14 07:03	21° 2 02'00	31.56335 AU	conjunction	2258 Dec 30 17:10	8° 3 41'26	4°27'20
retrograde	2251 Mar 26 18:58	23° 2 30'20		minimum elong	2258 Dec 30 17:20	8° 3 41'27	4°27'20
opposition	2251 Jun 13 12:13	22° 2 09'32	9°28'10	max. Earth dist.	2259 Jan 01 09:15	8° 3 45'03	32.94333 AU
min. Earth dist.	2251 Jun 12 14:15	22° 2 11'00	29.65952 AU	retrograde	2259 Apr 13 01:57	11° 3 02'40	
direct	2251 Sep 01 19:09	20° 2 47'26		min. Earth dist.	2259 Jun 30 02:09	9° 3 47'08	31.04723 AU
				opposition	2259 Jul 01 20:24	9° 3 44'27	4°25'37
conjunction	2251 Dec 15 21:32	23° 2 18'39	8°35'06	direct	2259 Sep 20 09:30	8° 3 25'35	
minimum elong	2251 Dec 15 21:52	23° 2 18'41	8°35'06				
max. Earth dist.	2251 Dec 16 21:38	23° 2 20'56	31.70864 AU	conjunction	2260 Jan 02 00:00	10° 3 46'00	3°51'43
retrograde	2252 Mar 28 07:11	25° 2 47'59		minimum elong	2260 Jan 02 00:10	10° 3 46'01	3°51'43
min. Earth dist.	2252 Jun 14 01:42	24° 2 29'13	29.80628 AU	max. Earth dist.	2260 Jan 03 19:05	10° 3 49'51	33.14357 AU
opposition	2252 Jun 15 03:38	24° 2 27'30	8°51'15	retrograde	2260 Apr 14 05:54	13° 3 06'02	
direct	2252 Sep 03 11:03	23° 2 05'47		min. Earth dist.	2260 Jul 01 10:54	11° 3 50'51	31.24877 AU
				opposition	2260 Jul 03 06:10	11° 3 48'07	3°47'41
conjunction	2252 Dec 17 09:14	25° 2 35'41	8°00'25	direct	2260 Sep 21 21:00	10° 3 29'38	
minimum elong	2252 Dec 17 09:32	25° 2 35'43	8°00'25				
max. Earth dist.	2252 Dec 18 12:43	25° 2 38'17	31.86322 AU	conjunction	2261 Jan 03 05:56	12° 3 48'41	3°16'16
retrograde	2253 Mar 30 17:49	28° 2 03'55		minimum elong	2261 Jan 03 06:04	12° 3 48'41	3°16'15
opposition	2253 Jun 17 18:32	26° 2 43'45	8°13'53	max. Earth dist.	2261 Jan 05 02:17	12° 3 52'37	33.34953 AU
min. Earth dist.	2253 Jun 16 14:45	26° 2 45'35	29.96220 AU	retrograde	2261 Apr 16 10:57	15° 3 07'32	
direct	2253 Sep 06 00:48	25° 2 22'28		min. Earth dist.	2261 Jul 03 16:35	13° 3 52'50	31.45633 AU
				opposition	2261 Jul 05 14:59	13° 3 49'54	3°09'59
conjunction	2253 Dec 19 20:18	27° 2 51'02	7°25'21	direct	2261 Sep 24 07:06	12° 3 31'48	

conjunction	2262 Jan 05 11:11	14°☾49'31	2°41'00	direct	2269 Oct 10 09:09	27°☾50'41	
minimum elong	2262 Jan 05 11:18	14°☾49'31	2°41'00				
max. Earth dist.	2262 Jan 07 10:10	14°☾53'39	33.56132 AU	conjunction	2270 Jan 20 06:30	29°☾58'35	-1°-48'-2
retrograde	2262 Apr 18 15:04	17°☾07'13		minimum elong	2270 Jan 20 06:26	29°☾58'34	1°48'03
min. Earth dist.	2262 Jul 05 23:21	15°☾52'54	31.67025 AU		2270 Jan 20 23:44	0°☾	
opposition	2262 Jul 07 23:12	15°☾49'54	2°32'32	max. Earth dist.	2270 Jan 22 18:06	0°☾03'30	35.43480 AU
direct	2262 Sep 26 14:41	14°☾32'12		retrograde	2270 May 03 08:43	2°☾07'41	
				min. Earth dist.	2270 Jul 21 02:49	0°☾56'48	33.55805 AU
conjunction	2263 Jan 07 15:50	16°☾48'35	2°06'00	opposition	2270 Jul 23 16:03	0°☾53'08	-2°-11'-18
minimum elong	2263 Jan 07 15:54	16°☾48'35	2°06'00		2270 Sep 02 19:55	30°☾☽	
max. Earth dist.	2263 Jan 09 16:52	16°☾52'52	33.77938 AU	direct	2270 Oct 12 13:20	29°☾38'44	
retrograde	2263 Apr 20 18:59	19°☾05'09			2270 Nov 19 20:18	0°☾	
min. Earth dist.	2263 Jul 08 04:04	17°☾51'20	31.89041 AU				
opposition	2263 Jul 10 06:39	17°☾48'11	1°55'25	conjunction	2271 Jan 22 06:21	1°☾45'28	-2°-19'-30
direct	2263 Sep 28 23:26	16°☾30'53		minimum elong	2271 Jan 22 06:16	1°☾45'27	2°19'31
				max. Earth dist.	2271 Jan 24 18:47	1°☾50'25	35.68133 AU
conjunction	2264 Jan 09 19:35	18°☾46'00	1°31'19	retrograde	2271 May 05 09:07	3°☾53'33	
minimum elong	2264 Jan 09 19:39	18°☾46'00	1°31'19	min. Earth dist.	2271 Jul 23 04:17	2°☾42'59	33.80611 AU
max. Earth dist.	2264 Jan 11 22:20	18°☾50'23	34.00328 AU	opposition	2271 Jul 25 18:25	2°☾39'17	-2°-44'-17
retrograde	2264 Apr 22 00:48	21°☾01'28		direct	2271 Oct 14 14:09	1°☾25'14	
min. Earth dist.	2264 Jul 09 08:51	19°☾48'05	32.11661 AU				
opposition	2264 Jul 11 13:28	19°☾44'50	1°18'41	conjunction	2272 Jan 24 05:35	3°☾30'48	-2°-50'-24
direct	2264 Sep 30 04:15	18°☾27'58		minimum elong	2272 Jan 24 05:29	3°☾30'47	2°50'25
				max. Earth dist.	2272 Jan 26 19:39	3°☾35'51	35.92924 AU
conjunction	2265 Jan 10 22:58	20°☾41'49	0°56'59	retrograde	2272 May 06 07:28	5°☾37'52	
minimum elong	2265 Jan 10 23:00	20°☾41'49	0°56'59	min. Earth dist.	2272 Jul 24 05:07	4°☾27'36	34.05556 AU
max. Earth dist.	2265 Jan 13 04:14	20°☾46'24	34.23270 AU	opposition	2272 Jul 26 20:00	4°☾23'53	-3°-16'-38
retrograde	2265 Apr 24 03:20	22°☾56'11		direct	2272 Oct 15 17:28	3°☾10'09	
min. Earth dist.	2265 Jul 11 13:23	21°☾43'14	32.34800 AU				
opposition	2265 Jul 13 19:21	21°☾39'55	0°42'23	conjunction	2273 Jan 25 04:11	5°☾14'35	-3°-20'-43
direct	2265 Oct 02 10:56	20°☾23'29		minimum elong	2273 Jan 25 04:04	5°☾14'35	3°20'45
				max. Earth dist.	2273 Jan 27 18:22	5°☾19'36	36.17859 AU
conjunction	2266 Jan 13 01:34	22°☾36'07	0°23'03	retrograde	2273 May 08 08:08	7°☾20'38	
minimum elong	2266 Jan 13 01:34	22°☾36'07	0°23'04	min. Earth dist.	2273 Jul 26 04:11	6°☾10'43	34.30701 AU
max. Earth dist.	2266 Jan 15 07:36	22°☾40'43	34.46675 AU	opposition	2273 Jul 28 20:50	6°☾06'55	-3°-48'-20
retrograde	2266 Apr 26 07:45	24°☾49'25		direct	2273 Oct 17 17:16	4°☾53'30	
min. Earth dist.	2266 Jul 13 16:18	23°☾36'57	32.58404 AU				
opposition	2266 Jul 16 00:46	23°☾33'30	0°06'34	conjunction	2274 Jan 27 02:19	6°☾56'51	-3°-50'-27
desc. node	2266 Sep 21 21:20	22°☾19'56		minimum elong	2274 Jan 27 02:11	6°☾56'51	3°50'27
direct	2266 Oct 04 16:25	22°☾17'30		max. Earth dist.	2274 Jan 29 18:44	7°☾02'00	36.42993 AU
				retrograde	2274 May 10 05:48	9°☾01'55	
conjunction	2267 Jan 15 03:36	24°☾28'56	0°-10'-30	min. Earth dist.	2274 Jul 28 04:23	7°☾52'16	34.56070 AU
minimum elong	2267 Jan 15 03:35	24°☾28'56	0°10'31	opposition	2274 Jul 30 21:17	7°☾48'28	-4°-19'-22
behind sun begin	2267 Jan 14 22:34	24°☾28'32		direct	2274 Oct 19 18:37	6°☾35'24	
behind sun end	2267 Jan 15 08:36	24°☾29'20					
max. Earth dist.	2267 Jan 17 12:19	24°☾33'44	34.70476 AU	conjunction	2275 Jan 28 23:41	8°☾37'41	-4°-19'-33
retrograde	2267 Apr 28 09:13	26°☾41'11		minimum elong	2275 Jan 28 23:33	8°☾37'40	4°19'35
min. Earth dist.	2267 Jul 15 20:38	25°☾29'05	32.82378 AU	max. Earth dist.	2275 Jan 31 16:26	8°☾42'49	36.68361 AU
opposition	2267 Jul 18 05:39	25°☾25'37	0°-28'-44	retrograde	2275 May 12 02:48	10°☾41'47	
direct	2267 Oct 06 23:41	24°☾10'03		min. Earth dist.	2275 Jul 30 01:49	9°☾32'33	34.81691 AU
				opposition	2275 Aug 01 21:05	9°☾28'38	-4°-49'-42
conjunction	2268 Jan 17 05:05	26°☾20'17	0°-43'-30	direct	2275 Oct 21 19:19	8°☾15'55	
minimum elong	2268 Jan 17 05:03	26°☾20'17	0°43'30				
max. Earth dist.	2268 Jan 19 14:12	26°☾25'05	34.94597 AU	conjunction	2276 Jan 30 20:43	10°☾17'10	-4°-48'-2
retrograde	2268 Apr 29 11:32	28°☾31'29		minimum elong	2276 Jan 30 20:34	10°☾17'09	4°48'02
min. Earth dist.	2268 Jul 16 22:17	27°☾19'52	33.06655 AU	max. Earth dist.	2276 Feb 02 15:19	10°☾22'25	36.93958 AU
opposition	2268 Jul 19 09:40	27°☾16'16	-1°-3'-30	retrograde	2276 May 12 22:11	12°☾20'21	
direct	2268 Oct 08 04:31	26°☾01'06		min. Earth dist.	2276 Jul 31 00:49	11°☾11'26	35.07551 AU
				opposition	2276 Aug 02 20:20	11°☾07'31	-5°-19'-21
conjunction	2269 Jan 18 06:04	28°☾10'10	-1°-16'-2	direct	2276 Oct 22 20:01	9°☾55'09	
minimum elong	2269 Jan 18 06:01	28°☾10'10	1°16'03				
max. Earth dist.	2269 Jan 20 16:59	28°☾15'05	35.18949 AU	conjunction	2277 Jan 31 17:18	11°☾55'24	-5°-15'-52
	2269 Mar 24 21:09	0°☾		minimum elong	2277 Jan 31 17:08	11°☾55'24	5°15'54
retrograde	2269 May 01 09:58	0°☾20'20		max. Earth dist.	2277 Feb 03 12:38	12°☾00'41	37.19772 AU
	2269 Jun 09 05:14	30°☾☽		retrograde	2277 May 14 17:36	13°☾57'43	
min. Earth dist.	2269 Jul 19 01:42	29°☾09'02	33.31153 AU	min. Earth dist.	2277 Aug 01 21:57	12°☾49'11	35.33593 AU
opposition	2269 Jul 21 13:15	29°☾05'27	-1°-37'-42	opposition	2277 Aug 04 18:57	12°☾45'12	-5°-48'-19

direct	2277 Oct 24 19:43	11°33'13		min. Earth dist.	2285 Aug 14 15:28	25°12'39	37.41462 AU
				opposition	2285 Aug 17 15:36	25°08'39	-9°-15'-5
conjunction	2278 Feb 02 13:14	13°32'30	-5°-43'-5	direct	2285 Nov 06 16:48	23°59'18	
minimum elong	2278 Feb 02 13:04	13°32'29	5°43'05				
max. Earth dist.	2278 Feb 05 09:16	13°37'47	37.45725 AU	conjunction	2286 Feb 14 15:25	25°51'34	-8°-57'-53
	2278 Mar 27 00:09	15°		minimum elong	2286 Feb 14 15:13	25°51'33	8°57'54
retrograde	2278 May 16 14:51	15°33'58		max. Earth dist.	2286 Feb 17 15:20	25°56'52	39.51697 AU
	2278 Jul 08 11:06	15°R		retrograde	2286 May 28 18:00	27°46'41	
min. Earth dist.	2278 Aug 03 19:25	14°25'47	35.59778 AU	min. Earth dist.	2286 Aug 16 10:10	26°40'42	37.66925 AU
opposition	2278 Aug 06 17:14	14°21'46	-6°-16'-34	opposition	2286 Aug 19 10:04	26°36'43	-9°-37'-53
direct	2278 Oct 26 16:35	13°10'10		direct	2286 Nov 08 10:43	25°27'39	
	2279 Jan 30 18:31	15°					
				conjunction	2287 Feb 16 07:46	27°19'06	-9°-19'-24
conjunction	2279 Feb 04 08:59	15°08'31	-6°-9'-38	minimum elong	2287 Feb 16 07:33	27°19'05	9°19'26
minimum elong	2279 Feb 04 08:48	15°08'30	6°09'40	max. Earth dist.	2287 Feb 19 07:06	27°24'19	39.76936 AU
max. Earth dist.	2279 Feb 07 06:34	15°13'53	37.71782 AU	retrograde	2287 May 30 12:40	29°13'28	
retrograde	2279 May 18 11:05	17°09'10		min. Earth dist.	2287 Aug 18 02:41	28°07'47	37.92370 AU
min. Earth dist.	2279 Aug 05 16:53	16°01'18	35.86022 AU	opposition	2287 Aug 21 04:03	28°03'45	-10°00'00
opposition	2279 Aug 08 15:00	15°57'17	-6°-44'-7	direct	2287 Nov 10 02:38	26°54'57	
	2279 Sep 26 00:52	15°R					
direct	2279 Oct 28 14:11	14°46'04		conjunction	2288 Feb 17 23:48	28°45'37	-9°-40'-18
	2279 Nov 29 07:54	15°		minimum elong	2288 Feb 17 23:36	28°45'36	9°40'19
				max. Earth dist.	2288 Feb 21 00:28	28°50'54	40.02151 AU
conjunction	2280 Feb 06 04:07	16°43'30	-6°-35'-34		2288 Apr 04 12:28	0°	
minimum elong	2280 Feb 06 03:56	16°43'30	6°35'34	retrograde	2288 May 31 03:01	0°39'16	
max. Earth dist.	2280 Feb 09 01:18	16°48'49	37.97854 AU		2288 Jul 29 03:23	30°R	
retrograde	2280 May 19 09:22	18°43'20		min. Earth dist.	2288 Aug 18 21:01	29°33'46	38.17789 AU
min. Earth dist.	2280 Aug 06 12:52	17°35'50	36.12264 AU	opposition	2288 Aug 21 21:43	29°29'47	-10°-21'-26
opposition	2280 Aug 09 12:16	17°31'47	-7°-10'-58	direct	2288 Nov 10 21:47	28°21'16	
direct	2280 Oct 29 09:16	16°20'55			2289 Feb 12 04:51	0°	
				conjunction	2289 Feb 18 15:31	0°11'10	-10°00'-34
conjunction	2281 Feb 06 23:07	18°17'29	-7°00'-51	minimum elong	2289 Feb 18 15:18	0°11'10	10°00'35
minimum elong	2281 Feb 06 22:56	18°17'29	7°00'52	max. Earth dist.	2289 Feb 21 16:02	0°16'25	40.27343 AU
max. Earth dist.	2281 Feb 09 21:40	18°22'51	38.23867 AU	retrograde	2289 Jun 01 16:33	2°04'07	
retrograde	2281 May 21 03:48	20°16'31		min. Earth dist.	2289 Aug 20 12:53	0°58'56	38.43163 AU
min. Earth dist.	2281 Aug 08 10:27	19°09'16	36.38415 AU	opposition	2289 Aug 23 14:42	0°54'54	-10°-42'-13
opposition	2281 Aug 11 09:00	19°05'17	-7°-37'-9		2289 Oct 11 02:58	30°R	
direct	2281 Oct 31 06:27	17°54'46		direct	2289 Nov 12 16:58	29°46'40	
					2289 Dec 14 12:06	0°	
conjunction	2282 Feb 08 17:40	19°50'28	-7°-25'-30	conjunction	2290 Feb 20 06:48	1°35'51	-10°-20'-13
minimum elong	2282 Feb 08 17:28	19°50'27	7°25'30	minimum elong	2290 Feb 20 06:36	1°35'50	10°20'14
max. Earth dist.	2282 Feb 11 15:36	19°55'45	38.49762 AU	max. Earth dist.	2290 Feb 23 07:40	1°41'05	40.52470 AU
retrograde	2282 May 22 21:01	21°48'42		retrograde	2290 Jun 03 07:47	3°28'08	
min. Earth dist.	2282 Aug 10 05:32	20°41'47	36.64422 AU	min. Earth dist.	2290 Aug 22 05:56	2°23'10	38.68471 AU
opposition	2282 Aug 13 05:21	20°37'45	-8°-2'-38	opposition	2290 Aug 25 07:40	2°19'09	-11°-2'-20
direct	2282 Nov 02 04:49	19°27'33		direct	2290 Nov 14 10:10	1°11'13	
conjunction	2283 Feb 10 11:41	21°22'23	-7°-49'-32	conjunction	2291 Feb 21 21:48	2°59'41	-10°-39'-16
minimum elong	2283 Feb 10 11:29	21°22'23	7°49'33	minimum elong	2291 Feb 21 21:35	2°59'40	10°39'17
max. Earth dist.	2283 Feb 13 10:18	21°27'42	38.75478 AU	max. Earth dist.	2291 Feb 24 23:29	3°04'57	40.77508 AU
retrograde	2283 May 24 13:48	23°19'50		retrograde	2291 Jun 04 21:56	4°51'19	
min. Earth dist.	2283 Aug 12 02:08	22°13'09	36.90258 AU	min. Earth dist.	2291 Aug 23 22:29	3°46'36	38.93642 AU
opposition	2283 Aug 15 01:24	22°09'10	-8°-27'-27	opposition	2291 Aug 27 00:09	3°42'36	-11°-21'-49
direct	2283 Nov 04 02:10	20°59'16		direct	2291 Nov 16 03:42	2°34'57	
conjunction	2284 Feb 12 05:29	22°53'14	-8°-12'-56	conjunction	2292 Feb 23 12:30	4°22'43	-10°-57'-43
minimum elong	2284 Feb 12 05:17	22°53'13	8°12'56	minimum elong	2292 Feb 23 12:18	4°22'42	10°57'44
max. Earth dist.	2284 Feb 15 04:18	22°58'32	39.01026 AU	max. Earth dist.	2292 Feb 26 13:17	4°27'53	41.02380 AU
retrograde	2284 May 25 05:58	24°49'54		retrograde	2292 Jun 05 15:24	6°13'43	
min. Earth dist.	2284 Aug 12 20:57	23°43'28	37.15917 AU	min. Earth dist.	2292 Aug 24 14:05	5°09'16	39.18632 AU
opposition	2284 Aug 15 20:38	23°39'28	-8°-51'-36	opposition	2292 Aug 27 16:10	5°05'16	-11°-40'-41
direct	2284 Nov 04 23:05	22°29'51		direct	2292 Nov 16 17:27	3°57'54	
conjunction	2285 Feb 12 22:38	24°22'57	-8°-35'-43	conjunction	2293 Feb 24 03:06	5°45'00	-11°-15'-36
minimum elong	2285 Feb 12 22:26	24°22'56	8°35'45	minimum elong	2293 Feb 24 02:53	5°44'59	11°15'36
max. Earth dist.	2285 Feb 15 21:07	24°28'11	39.26410 AU				
retrograde	2285 May 27 00:33	26°18'51					

max. Earth dist.	2293 Feb 27 04:47	5° ✕ 50'12	41.27028 AU	opposition	2301 Sep 10 01:50	16° ✕ 53'51	-14°-4'-17
retrograde	2293 Jun 07 07:01	7° ✕ 35'23		direct	2301 Nov 30 04:54	15° ✕ 48'35	
min. Earth dist.	2293 Aug 26 07:09	6° ✕ 31'05	39.43354 AU				
opposition	2293 Aug 29 08:00	6° ✕ 27'11	-11°-58'-56	conjunction	2302 Mar 09 00:00	17° ✕ 30'07	-13°-31'-58
direct	2293 Nov 18 08:30	5° ✕ 20'05		minimum elong	2302 Mar 08 23:50	17° ✕ 30'06	13°31'59
				max. Earth dist.	2302 Mar 11 23:27	17° ✕ 34'56	43.36203 AU
conjunction	2294 Feb 25 17:13	7° ✕ 06'31	-11°-32'-54	retrograde	2302 Jun 20 00:25	19° ✕ 15'20	
minimum elong	2294 Feb 25 17:02	7° ✕ 06'30	11°32'56	min. Earth dist.	2302 Sep 08 15:14	18° ✕ 12'43	41.53266 AU
max. Earth dist.	2294 Feb 28 17:49	7° ✕ 11'36	41.51388 AU	opposition	2302 Sep 11 14:46	18° ✕ 08'59	-14°-17'-25
retrograde	2294 Jun 08 21:27	8° ✕ 56'16		direct	2302 Dec 01 18:51	17° ✕ 03'58	
min. Earth dist.	2294 Aug 27 21:53	7° ✕ 52'14	39.67760 AU				
opposition	2294 Aug 30 23:28	7° ✕ 48'18	-12°-16'-36	conjunction	2303 Mar 10 11:45	18° ✕ 44'59	-13°-44'-27
direct	2294 Nov 19 23:28	6° ✕ 41'28		minimum elong	2303 Mar 10 11:36	18° ✕ 44'58	13°44'28
				max. Earth dist.	2303 Mar 13 11:55	18° ✕ 49'49	43.58471 AU
conjunction	2295 Feb 27 07:13	8° ✕ 27'15	-11°-49'-40	retrograde	2303 Jun 21 12:02	20° ✕ 29'42	
minimum elong	2295 Feb 27 07:00	8° ✕ 27'14	11°49'41	min. Earth dist.	2303 Sep 10 04:19	19° ✕ 27'16	41.75597 AU
max. Earth dist.	2295 Mar 02 07:46	8° ✕ 32'18	41.75406 AU	opposition	2303 Sep 13 03:14	19° ✕ 23'36	-14°-30'-1
retrograde	2295 Jun 10 09:45	10° ✕ 16'24		direct	2303 Dec 03 08:07	18° ✕ 18'49	
min. Earth dist.	2295 Aug 29 14:23	9° ✕ 12'30	39.91823 AU				
opposition	2295 Sep 01 14:42	9° ✕ 08'38	-12°-33'-41	conjunction	2304 Mar 10 23:07	19° ✕ 59'19	-13°-56'-27
direct	2295 Nov 21 16:28	8° ✕ 02'02		minimum elong	2304 Mar 10 22:57	19° ✕ 59'18	13°56'28
				max. Earth dist.	2304 Mar 13 22:00	20° ✕ 04'02	43.80506 AU
conjunction	2296 Feb 28 20:56	9° ✕ 47'10	-12°-5'-54	retrograde	2304 Jun 22 02:07	21° ✕ 43'34	
minimum elong	2296 Feb 28 20:45	9° ✕ 47'09	12°05'55	min. Earth dist.	2304 Sep 10 16:15	20° ✕ 41'21	41.97670 AU
max. Earth dist.	2296 Mar 02 21:17	9° ✕ 52'11	41.99088 AU	opposition	2304 Sep 13 15:30	20° ✕ 37'41	-14°-42'-6
retrograde	2296 Jun 10 21:11	11° ✕ 35'42		direct	2304 Dec 03 18:16	19° ✕ 33'08	
min. Earth dist.	2296 Aug 30 05:09	10° ✕ 31'59	40.15532 AU				
opposition	2296 Sep 02 05:24	10° ✕ 28'09	-12°-50'-13	conjunction	2305 Mar 12 10:26	21° ✕ 13'09	-14°-7'-57
direct	2296 Nov 22 09:33	9° ✕ 21'46		minimum elong	2305 Mar 12 10:18	21° ✕ 13'08	14°07'58
				max. Earth dist.	2305 Mar 15 09:48	21° ✕ 17'52	44.02241 AU
conjunction	2297 Mar 01 10:10	11° ✕ 06'14	-12°-21'-35	retrograde	2305 Jun 23 14:10	22° ✕ 56'55	
minimum elong	2297 Mar 01 09:58	11° ✕ 06'14	12°21'36	min. Earth dist.	2305 Sep 12 05:55	21° ✕ 54'50	42.19405 AU
max. Earth dist.	2297 Mar 04 09:35	11° ✕ 11'10	42.22435 AU	opposition	2305 Sep 15 03:31	21° ✕ 51'15	-14°-53'-41
retrograde	2297 Jun 12 11:29	12° ✕ 54'11		direct	2305 Dec 05 05:11	20° ✕ 46'56	
min. Earth dist.	2297 Aug 31 19:35	11° ✕ 50'38	40.38953 AU				
opposition	2297 Sep 03 19:45	11° ✕ 46'49	-13°-6'-10	conjunction	2306 Mar 13 21:36	22° ✕ 26'27	-14°-19'00
direct	2297 Nov 23 23:13	10° ✕ 40'39		minimum elong	2306 Mar 13 21:26	22° ✕ 26'27	14°19'01
				max. Earth dist.	2306 Mar 16 19:43	22° ✕ 31'05	44.23627 AU
conjunction	2298 Mar 02 23:13	12° ✕ 24'29	-12°-36'-44	retrograde	2306 Jun 25 01:16	24° ✕ 09'45	
minimum elong	2298 Mar 02 23:01	12° ✕ 24'29	12°36'46	min. Earth dist.	2306 Sep 13 17:30	23° ✕ 07'52	42.40753 AU
max. Earth dist.	2298 Mar 05 23:31	12° ✕ 29'27	42.45529 AU	opposition	2306 Sep 16 15:19	23° ✕ 04'17	-15°-4'-47
retrograde	2298 Jun 14 00:29	14° ✕ 11'51		direct	2306 Dec 06 16:17	22° ✕ 00'10	
min. Earth dist.	2298 Sep 02 10:27	13° ✕ 08'26	40.62137 AU				
opposition	2298 Sep 05 09:50	13° ✕ 04'40	-13°-21'-33	conjunction	2307 Mar 15 08:26	23° ✕ 39'13	-14°-29'-36
direct	2298 Nov 25 13:39	11° ✕ 58'43		minimum elong	2307 Mar 15 08:19	23° ✕ 39'12	14°29'37
				max. Earth dist.	2307 Mar 18 05:53	23° ✕ 43'46	44.44594 AU
conjunction	2299 Mar 04 11:44	13° ✕ 41'57	-12°-51'-21	retrograde	2307 Jun 26 11:19	25° ✕ 22'02	
minimum elong	2299 Mar 04 11:33	13° ✕ 41'56	12°51'22	min. Earth dist.	2307 Sep 15 06:39	24° ✕ 20'15	42.61672 AU
max. Earth dist.	2299 Mar 07 11:00	13° ✕ 46'49	42.68426 AU	opposition	2307 Sep 18 03:02	24° ✕ 16'45	-15°-15'-27
retrograde	2299 Jun 15 15:11	15° ✕ 28'43		direct	2307 Dec 08 04:45	23° ✕ 12'50	
min. Earth dist.	2299 Sep 03 23:14	14° ✕ 25'33	40.85151 AU				
opposition	2299 Sep 06 23:32	14° ✕ 21'45	-13°-36'-22	conjunction	2308 Mar 15 19:19	24° ✕ 51'22	-14°-39'-46
direct	2299 Nov 27 01:02	13° ✕ 16'01		minimum elong	2308 Mar 15 19:11	24° ✕ 51'21	14°39'46
				max. Earth dist.	2308 Mar 18 16:33	24° ✕ 55'54	44.65134 AU
conjunction	2300 Mar 06 00:10	14° ✕ 58'40	-13°-5'-25	retrograde	2308 Jun 26 19:00	26° ✕ 33'43	
minimum elong	2300 Mar 05 23:59	14° ✕ 58'39	13°05'27	min. Earth dist.	2308 Sep 15 18:29	25° ✕ 32'03	42.82142 AU
max. Earth dist.	2300 Mar 09 00:16	15° ✕ 03'33	42.91161 AU	opposition	2308 Sep 18 14:10	25° ✕ 28'35	-15°-25'-39
retrograde	2300 Jun 17 03:46	16° ✕ 44'53		direct	2308 Dec 08 19:11	24° ✕ 24'50	
min. Earth dist.	2300 Sep 05 13:41	15° ✕ 41'51	41.08013 AU				
opposition	2300 Sep 08 12:51	15° ✕ 38'07	-13°-50'-36	conjunction	2309 Mar 17 05:44	26° ✕ 02'52	-14°-49'-30
direct	2300 Nov 28 13:38	14° ✕ 32'37		minimum elong	2309 Mar 17 05:37	26° ✕ 02'52	14°49'31
				max. Earth dist.	2309 Mar 20 01:17	26° ✕ 07'16	44.85252 AU
conjunction	2301 Mar 07 12:21	16° ✕ 14'42	-13°-18'-57	retrograde	2309 Jun 28 07:02	27° ✕ 44'44	
minimum elong	2301 Mar 07 12:11	16° ✕ 14'41	13°18'58	min. Earth dist.	2309 Sep 17 05:47	26° ✕ 43'11	43.02226 AU
max. Earth dist.	2301 Mar 10 12:10	16° ✕ 19'33	43.13764 AU	opposition	2309 Sep 20 01:15	26° ✕ 39'45	-15°-35'-24
retrograde	2301 Jun 18 13:06	18° ✕ 00'24		direct	2309 Dec 10 05:42	25° ✕ 36'09	
min. Earth dist.	2301 Sep 07 01:53	16° ✕ 57'36	41.30720 AU				

conjunction	2310 Mar 18 15:51	27° Υ 13'42	-14°-58'-48	direct	2317 Dec 19 10:13	4° Υ 47'16	
minimum elong	2310 Mar 18 15:44	27° Υ 13'42	14°58'49				
max. Earth dist.	2310 Mar 21 12:00	27° Υ 18'07	45.05009 AU	conjunction	2318 Mar 27 18:40	6° Υ 21'34	-15°-57'-43
retrograde	2310 Jun 29 18:03	28° Υ 55'06		minimum elong	2318 Mar 27 18:37	6° Υ 21'33	15°57'44
min. Earth dist.	2310 Sep 18 18:04	27° Υ 53'37	43.21970 AU	max. Earth dist.	2318 Mar 30 10:38	6° Υ 25'34	46.53471 AU
opposition	2310 Sep 21 12:07	27° Υ 50'16	-15°-44'-41	retrograde	2318 Jul 08 19:18	7° Υ 59'49	
direct	2310 Dec 11 16:25	26° Υ 46'49		min. Earth dist.	2318 Sep 28 04:21	6° Υ 59'28	44.70156 AU
				opposition	2318 Sep 30 18:20	6° Υ 56'24	-16°-43'-2
conjunction	2311 Mar 20 01:50	28° Υ 23'53	-15°-7'-40	direct	2318 Dec 20 22:00	5° Υ 54'25	
minimum elong	2311 Mar 20 01:44	28° Υ 23'53	15°07'41				
max. Earth dist.	2311 Mar 22 20:55	28° Υ 28'12	45.24474 AU	conjunction	2319 Mar 29 03:24	7° Υ 28'22	-16°-3'-19
	2311 Jun 10 14:39	0° Υ		minimum elong	2319 Mar 29 03:20	7° Υ 28'22	16°03'20
retrograde	2311 Jul 01 04:11	0° Υ 04'49		max. Earth dist.	2319 Mar 31 17:30	7° Υ 32'15	46.70451 AU
	2311 Jul 21 19:37	30° Υ		retrograde	2319 Jul 10 03:46	9° Υ 06'17	
min. Earth dist.	2311 Sep 20 03:52	29° Υ 03'30	43.41444 AU	min. Earth dist.	2319 Sep 29 14:34	8° Υ 06'02	44.86989 AU
opposition	2311 Sep 22 22:32	29° Υ 00'08	-15°-53'-31	opposition	2319 Oct 02 03:19	8° Υ 03'01	-16°-48'-31
direct	2311 Dec 13 01:35	27° Υ 56'51		direct	2319 Dec 22 08:11	7° Υ 01'12	
conjunction	2312 Mar 20 11:35	29° Υ 33'28	-15°-16'-5	conjunction	2320 Mar 29 12:11	8° Υ 34'48	-16°-8'-34
minimum elong	2312 Mar 20 11:29	29° Υ 33'27	15°16'05	minimum elong	2320 Mar 29 12:09	8° Υ 34'48	16°08'35
max. Earth dist.	2312 Mar 23 06:27	29° Υ 37'45	45.43681 AU	max. Earth dist.	2320 Apr 01 02:14	8° Υ 38'40	46.86934 AU
	2312 Apr 06 22:08	0° Υ		retrograde	2320 Jul 10 12:14	10° Υ 12'22	
retrograde	2312 Jul 01 12:57	1° Υ 13'57		min. Earth dist.	2320 Sep 30 00:58	9° Υ 12'09	45.03300 AU
min. Earth dist.	2312 Sep 20 15:26	0° Υ 12'43	43.60674 AU	opposition	2320 Oct 02 12:07	9° Υ 09'14	-16°-53'-39
opposition	2312 Sep 23 08:54	0° Υ 09'25	-16°-1'-54	direct	2320 Dec 22 18:22	8° Υ 07'33	
	2312 Oct 01 04:02	30° Υ					
direct	2312 Dec 13 12:24	29° Υ 06'18		conjunction	2321 Mar 30 20:31	9° Υ 40'47	-16°-13'-28
	2313 Feb 21 05:08	0° Υ		minimum elong	2321 Mar 30 20:28	9° Υ 40'47	16°13'29
				max. Earth dist.	2321 Apr 02 08:38	9° Υ 44'30	47.02926 AU
conjunction	2313 Mar 21 21:12	0° Υ 42'29	-15°-24'-4	retrograde	2321 Jul 11 22:37	11° Υ 17'59	
minimum elong	2313 Mar 21 21:07	0° Υ 42'29	15°24'05	min. Earth dist.	2321 Oct 01 09:31	10° Υ 17'54	45.19147 AU
max. Earth dist.	2313 Mar 24 16:08	0° Υ 46'46	45.62666 AU	opposition	2321 Oct 03 20:37	10° Υ 14'59	-16°-58'-26
retrograde	2313 Jul 02 19:49	2° Υ 22'34		direct	2321 Dec 24 01:07	9° Υ 13'26	
min. Earth dist.	2313 Sep 22 01:26	1° Υ 21'30	43.79662 AU				
opposition	2313 Sep 24 18:51	1° Υ 18'12	-16°-9'-49	conjunction	2322 Apr 01 04:45	10° Υ 46'18	-16°-18'-2
direct	2313 Dec 15 00:33	0° Υ 15'16		minimum elong	2322 Apr 01 04:43	10° Υ 46'18	16°18'03
				max. Earth dist.	2322 Apr 03 16:35	10° Υ 49'59	47.18479 AU
conjunction	2314 Mar 23 06:30	1° Υ 51'02	-15°-31'-36	retrograde	2322 Jul 13 07:17	12° Υ 23'08	
minimum elong	2314 Mar 23 06:25	1° Υ 51'02	15°31'37	min. Earth dist.	2322 Oct 02 19:47	11° Υ 23'04	45.34588 AU
max. Earth dist.	2314 Mar 26 00:15	1° Υ 55'13	45.81419 AU	opposition	2322 Oct 05 05:05	11° Υ 20'15	-17°-2'-52
retrograde	2314 Jul 04 06:21	3° Υ 30'43		direct	2322 Dec 25 08:19	10° Υ 18'48	
min. Earth dist.	2314 Sep 23 11:33	2° Υ 29'49	43.98424 AU				
opposition	2314 Sep 26 04:48	2° Υ 26'32	-16°-17'-17	conjunction	2323 Apr 02 12:48	11° Υ 51'20	-16°-22'-14
direct	2314 Dec 16 09:56	1° Υ 23'48		minimum elong	2323 Apr 02 12:45	11° Υ 51'20	16°22'15
				max. Earth dist.	2323 Apr 04 23:59	11° Υ 54'58	47.33674 AU
conjunction	2315 Mar 24 15:44	2° Υ 59'10	-15°-38'-44	retrograde	2323 Jul 14 13:07	13° Υ 27'48	
minimum elong	2315 Mar 24 15:39	2° Υ 59'10	15°38'45	min. Earth dist.	2323 Oct 04 03:50	12° Υ 27'51	45.49679 AU
max. Earth dist.	2315 Mar 27 10:08	3° Υ 03'23	45.99928 AU	opposition	2323 Oct 06 13:11	12° Υ 25'02	-17°-6'-55
retrograde	2315 Jul 05 16:19	4° Υ 38'29		direct	2323 Dec 26 16:40	11° Υ 23'42	
min. Earth dist.	2315 Sep 24 22:32	3° Υ 37'42	44.16902 AU				
opposition	2315 Sep 27 14:31	3° Υ 34'30	-16°-24'-20	conjunction	2324 Apr 02 20:39	12° Υ 55'53	-16°-26'-5
direct	2315 Dec 17 19:49	2° Υ 31'57		minimum elong	2324 Apr 02 20:38	12° Υ 55'53	16°26'06
				max. Earth dist.	2324 Apr 05 06:37	12° Υ 59'27	47.48539 AU
conjunction	2316 Mar 25 00:51	4° Υ 06'57	-15°-45'-27	retrograde	2324 Jul 14 20:09	14° Υ 32'02	
minimum elong	2316 Mar 25 00:47	4° Υ 06'57	15°45'27	min. Earth dist.	2324 Oct 04 12:46	13° Υ 32'08	45.64473 AU
max. Earth dist.	2316 Mar 27 17:44	4° Υ 11'03	46.18149 AU	opposition	2324 Oct 06 21:06	13° Υ 29'22	-17°-10'-36
retrograde	2316 Jul 06 04:01	5° Υ 45'54		direct	2324 Dec 27 01:44	12° Υ 28'10	
min. Earth dist.	2316 Sep 25 07:38	4° Υ 45'18	44.35062 AU				
opposition	2316 Sep 27 23:48	4° Υ 42'07	-16°-30'-57	conjunction	2325 Apr 04 04:28	14° Υ 00'01	-16°-29'-34
direct	2316 Dec 18 02:13	3° Υ 39'46		minimum elong	2325 Apr 04 04:27	14° Υ 00'01	16°29'35
				max. Earth dist.	2325 Apr 06 14:48	14° Υ 03'35	47.63129 AU
conjunction	2317 Mar 26 09:50	5° Υ 14'25	-15°-51'-46	retrograde	2325 Jul 16 01:34	15° Υ 35'51	
minimum elong	2317 Mar 26 09:45	5° Υ 14'25	15°51'47	min. Earth dist.	2325 Oct 05 21:21	14° Υ 36'01	45.78979 AU
max. Earth dist.	2317 Mar 29 02:26	5° Υ 18'28	46.36012 AU	opposition	2325 Oct 08 04:55	14° Υ 33'18	-17°-13'-54
retrograde	2317 Jul 07 13:31	6° Υ 53'01		direct	2325 Dec 28 12:37	13° Υ 32'13	
min. Earth dist.	2317 Sep 26 18:57	5° Υ 52'30	44.52837 AU				
opposition	2317 Sep 29 09:12	5° Υ 49'25	-16°-37'-11	conjunction	2326 Apr 05 11:52	15° Υ 03'45	-16°-32'-42

minimum elong	2326 Apr 05 11:52	15°♃03'45	16°32'43	min. Earth dist.	2334 Oct 15 22:21	23°♃56'52	46.92790 AU
max. Earth dist.	2326 Apr 07 20:39	15°♃07'13	47.77452 AU	opposition	2334 Oct 17 21:08	23°♃54'37	-17°-28'-38
retrograde	2326 Jul 17 11:48	16°♃39'16		direct	2335 Jan 07 02:08	22°♃54'35	
min. Earth dist.	2326 Oct 07 04:56	15°♃39'35	45.93218 AU				
opposition	2326 Oct 09 12:37	15°♃36'52	-17°-16'-50	conjunction	2335 Apr 15 03:49	24°♃23'42	-16°-46'-30
direct	2326 Dec 29 18:45	14°♃35'55		minimum elong	2335 Apr 15 03:53	24°♃23'43	16°46'31
				max. Earth dist.	2335 Apr 17 04:59	24°♃26'38	48.89143 AU
conjunction	2327 Apr 06 19:22	16°♃07'09	-16°-35'-29	retrograde	2335 Jul 26 23:17	25°♃56'46	
minimum elong	2327 Apr 06 19:22	16°♃07'09	16°35'29	min. Earth dist.	2335 Oct 17 05:21	24°♃57'36	47.03246 AU
max. Earth dist.	2327 Apr 09 04:13	16°♃10'36	47.91493 AU	opposition	2335 Oct 19 03:23	24°♃55'23	-17°-28'-45
retrograde	2327 Jul 18 21:29	17°♃42'22		direct	2336 Jan 08 11:54	23°♃55'25	
min. Earth dist.	2327 Oct 08 14:12	16°♃42'44	46.07159 AU				
opposition	2327 Oct 10 20:08	16°♃40'06	-17°-19'-25	conjunction	2336 Apr 15 10:17	25°♃24'19	-16°-46'-33
direct	2327 Dec 31 00:30	15°♃39'17		minimum elong	2336 Apr 15 10:19	25°♃24'19	16°46'34
				max. Earth dist.	2336 Apr 17 09:33	25°♃27'07	48.99441 AU
conjunction	2328 Apr 07 02:48	17°♃10'15	-16°-37'-55	retrograde	2336 Jul 27 07:12	26°♃57'07	
minimum elong	2328 Apr 07 02:49	17°♃10'15	16°37'57	min. Earth dist.	2336 Oct 17 11:51	25°♃58'02	47.13396 AU
max. Earth dist.	2328 Apr 09 10:52	17°♃13'38	48.05237 AU	opposition	2336 Oct 19 09:38	25°♃55'50	-17°-28'-33
retrograde	2328 Jul 19 03:21	18°♃45'10		direct	2337 Jan 08 18:05	24°♃55'58	
min. Earth dist.	2328 Oct 08 21:28	17°♃45'40	46.20760 AU				
opposition	2328 Oct 11 03:27	17°♃43'03	-17°-21'-40	conjunction	2337 Apr 16 16:37	26°♃24'39	-16°-46'-18
direct	2328 Dec 31 07:41	16°♃42'22		minimum elong	2337 Apr 16 16:41	26°♃24'39	16°46'19
				max. Earth dist.	2337 Apr 18 16:03	26°♃27'26	49.09439 AU
conjunction	2329 Apr 08 09:57	18°♃13'03	-16°-40'-2	retrograde	2337 Jul 28 15:48	27°♃57'14	
minimum elong	2329 Apr 08 09:58	18°♃13'03	16°40'02	min. Earth dist.	2337 Oct 18 19:41	26°♃58'10	47.23250 AU
max. Earth dist.	2329 Apr 10 16:33	18°♃16'21	48.18610 AU	opposition	2337 Oct 20 15:51	26°♃56'03	-17°-28'-2
retrograde	2329 Jul 20 09:22	19°♃47'43		direct	2338 Jan 09 23:14	25°♃56'17	
min. Earth dist.	2329 Oct 10 06:13	18°♃48'16	46.33975 AU				
opposition	2329 Oct 12 10:46	18°♃45'43	-17°-23'-34	conjunction	2338 Apr 17 22:55	27°♃24'45	-16°-45'-44
direct	2330 Jan 01 15:32	17°♃45'11		minimum elong	2338 Apr 17 22:59	27°♃24'45	16°45'44
				max. Earth dist.	2338 Apr 19 21:26	27°♃27'29	49.19177 AU
conjunction	2330 Apr 09 17:17	19°♃15'36	-16°-41'-50	retrograde	2338 Jul 29 21:58	28°♃57'07	
minimum elong	2330 Apr 09 17:18	19°♃15'36	16°41'51	min. Earth dist.	2338 Oct 20 01:17	27°♃58'10	47.32834 AU
max. Earth dist.	2330 Apr 11 23:52	19°♃18'54	48.31572 AU	opposition	2338 Oct 21 21:49	27°♃56'03	-17°-27'-12
retrograde	2330 Jul 21 14:34	20°♃50'00		direct	2339 Jan 11 03:24	26°♃56'23	
min. Earth dist.	2330 Oct 11 14:39	19°♃50'37	46.46730 AU				
opposition	2330 Oct 13 17:54	19°♃48'08	-17°-25'-10	conjunction	2339 Apr 19 05:03	28°♃24'39	-16°-44'-52
direct	2331 Jan 03 01:14	18°♃47'43		minimum elong	2339 Apr 19 05:08	28°♃24'40	16°44'53
				max. Earth dist.	2339 Apr 21 02:23	28°♃27'19	49.28631 AU
conjunction	2331 Apr 11 00:23	20°♃17'53	-16°-43'-20	retrograde	2339 Jul 31 03:15	29°♃56'49	
minimum elong	2331 Apr 11 00:26	20°♃17'53	16°43'20	min. Earth dist.	2339 Oct 21 08:52	28°♃57'55	47.42127 AU
max. Earth dist.	2331 Apr 13 04:48	20°♃21'02	48.44058 AU	opposition	2339 Oct 23 03:52	28°♃55'52	-17°-26'-3
retrograde	2331 Jul 22 23:14	21°♃52'01		direct	2340 Jan 12 09:17	27°♃56'19	
min. Earth dist.	2331 Oct 12 22:13	20°♃52'43	46.58987 AU				
opposition	2331 Oct 15 00:57	20°♃50'16	-17°-26'-28	conjunction	2340 Apr 19 11:20	29°♃24'26	-16°-43'-42
direct	2332 Jan 04 07:38	19°♃49'58		minimum elong	2340 Apr 19 11:25	29°♃24'26	16°43'42
				max. Earth dist.	2340 Apr 21 08:45	29°♃27'05	49.37785 AU
conjunction	2332 Apr 11 07:33	21°♃19'52	-16°-44'-33		2340 May 15 10:42	0°♃	
minimum elong	2332 Apr 11 07:34	21°♃19'52	16°44'34	retrograde	2340 Jul 31 06:06	0°♃56'24	
max. Earth dist.	2332 Apr 13 11:19	21°♃22'57	48.56024 AU		2340 Oct 19 12:37	30°R♃	
retrograde	2332 Jul 23 07:17	22°♃53'43		min. Earth dist.	2340 Oct 21 15:20	29°♃57'35	47.51078 AU
min. Earth dist.	2332 Oct 13 07:15	21°♃54'25	46.70716 AU	opposition	2340 Oct 23 09:35	29°♃55'34	-17°-24'-37
opposition	2332 Oct 15 07:47	21°♃52'05	-17°-27'-29	direct	2341 Jan 12 17:56	28°♃56'08	
direct	2333 Jan 04 13:54	20°♃51'52			2341 Apr 03 08:24	0°♃	
conjunction	2333 Apr 12 14:30	22°♃21'30	-16°-45'-29	conjunction	2341 Apr 20 17:22	0°♃24'04	-16°-42'-15
minimum elong	2333 Apr 12 14:34	22°♃21'30	16°45'30	minimum elong	2341 Apr 20 17:27	0°♃24'04	16°42'17
max. Earth dist.	2333 Apr 14 17:00	22°♃24'31	48.67498 AU	max. Earth dist.	2341 Apr 22 12:49	0°♃26'37	49.46584 AU
retrograde	2333 Jul 24 14:05	23°♃55'04		retrograde	2341 Aug 01 13:10	1°♃55'52	
min. Earth dist.	2333 Oct 14 14:04	22°♃55'51	46.81962 AU	min. Earth dist.	2341 Oct 22 21:48	0°♃57'09	47.59654 AU
opposition	2333 Oct 16 14:27	22°♃53'32	-17°-28'-12	opposition	2341 Oct 24 15:23	0°♃55'10	-17°-22'-53
direct	2334 Jan 05 19:15	21°♃53'24		direct	2341 Dec 25 12:43	30°R♃	
					2342 Jan 13 23:32	29°♃55'50	
conjunction	2334 Apr 13 21:04	23°♃22'47	-16°-46'-8		2342 Feb 02 04:55	0°♃	
minimum elong	2334 Apr 13 21:05	23°♃22'47	16°46'09				
max. Earth dist.	2334 Apr 15 22:09	23°♃25'42	48.78512 AU	conjunction	2342 Apr 21 23:24	1°♃23'36	-16°-40'-33
retrograde	2334 Jul 25 20:05	24°♃56'05		minimum elong	2342 Apr 21 23:30	1°♃23'37	16°40'33

max. Earth dist.	2342 Apr 23 18:31	1°♃26'07	49.54963 AU	opposition	2350 Nov 02 15:30	9°♃41'59	-16°-55'-52
retrograde	2342 Aug 02 20:41	2°♃55'15		direct	2351 Jan 23 01:13	8°♃43'08	
min. Earth dist.	2342 Oct 24 05:38	1°♃56'31	47.67767 AU				
opposition	2342 Oct 25 21:12	1°♃54'38	-17°-20'-54	conjunction	2351 May 01 03:08	10°♃09'28	-16°-13'-53
direct	2343 Jan 15 05:39	0°♃55'24		minimum elong	2351 May 01 03:16	10°♃09'29	16°13'54
				max. Earth dist.	2351 May 02 11:41	10°♃11'21	50.09713 AU
conjunction	2343 Apr 23 05:35	2°♃23'01	-16°-38'-35	retrograde	2351 Aug 11 20:18	11°♃39'30	
minimum elong	2343 Apr 23 05:40	2°♃23'01	16°38'36	opposition	2351 Nov 03 20:20	10°♃39'28	-16°-51'-31
max. Earth dist.	2343 Apr 24 23:08	2°♃25'26	49.62865 AU	min. Earth dist.	2351 Nov 02 13:24	10°♃40'55	48.20212 AU
retrograde	2343 Aug 04 04:59	3°♃54'27		direct	2352 Jan 24 06:14	9°♃40'41	
min. Earth dist.	2343 Oct 25 11:34	2°♃55'48	47.75367 AU				
opposition	2343 Oct 27 02:41	2°♃53'57	-17°-18'-40	conjunction	2352 May 01 08:40	11°♃06'56	-16°-9'-38
direct	2344 Jan 16 08:31	1°♃54'47		minimum elong	2352 May 01 08:48	11°♃06'56	16°09'39
				max. Earth dist.	2352 May 02 17:02	11°♃08'47	50.14021 AU
conjunction	2344 Apr 23 11:38	3°♃22'14	-16°-36'-22	retrograde	2352 Aug 12 02:02	12°♃36'51	
minimum elong	2344 Apr 23 11:45	3°♃22'14	16°36'23	min. Earth dist.	2352 Nov 02 20:03	11°♃38'17	48.24267 AU
max. Earth dist.	2344 Apr 25 03:23	3°♃24'32	49.70229 AU	opposition	2352 Nov 04 01:15	11°♃36'55	-16°-46'-55
retrograde	2344 Aug 04 11:35	4°♃53'28		direct	2353 Jan 24 12:14	10°♃38'13	
min. Earth dist.	2344 Oct 25 19:20	3°♃54'48	47.82429 AU				
opposition	2344 Oct 27 08:22	3°♃53'03	-17°-16'-11	conjunction	2353 May 02 13:59	12°♃04'22	-16°-5'-6
direct	2345 Jan 16 12:21	2°♃53'56		minimum elong	2353 May 02 14:07	12°♃04'22	16°05'07
				max. Earth dist.	2353 May 03 21:07	12°♃06'09	50.17972 AU
conjunction	2345 Apr 24 17:34	4°♃21'12	-16°-33'-56	retrograde	2353 Aug 13 09:32	13°♃34'11	
minimum elong	2345 Apr 24 17:39	4°♃21'12	16°33'57	min. Earth dist.	2353 Nov 04 01:00	12°♃35'42	48.27929 AU
max. Earth dist.	2345 Apr 26 08:50	4°♃23'29	49.77072 AU	opposition	2353 Nov 05 06:02	12°♃34'20	-16°-42'-4
retrograde	2345 Aug 05 13:17	5°♃52'15		direct	2354 Jan 25 14:39	11°♃35'42	
min. Earth dist.	2345 Oct 27 01:38	4°♃53'35	47.88967 AU				
opposition	2345 Oct 28 13:48	4°♃51'52	-17°-13'-28	conjunction	2354 May 03 19:24	13°♃01'48	-16°00'-21
direct	2346 Jan 17 21:20	3°♃52'49		minimum elong	2354 May 03 19:32	13°♃01'48	16°00'23
				max. Earth dist.	2354 May 05 00:54	13°♃03'29	50.21487 AU
conjunction	2346 Apr 25 23:20	5°♃19'53	-16°-31'-14	retrograde	2354 Aug 14 16:40	14°♃31'32	
minimum elong	2346 Apr 25 23:27	5°♃19'54	16°31'16	min. Earth dist.	2354 Nov 05 08:04	13°♃33'01	48.31132 AU
max. Earth dist.	2346 Apr 27 12:25	5°♃22'02	49.83430 AU	opposition	2354 Nov 06 10:53	13°♃31'46	-16°-36'-58
retrograde	2346 Aug 06 17:54	6°♃50'44		direct	2355 Jan 26 16:43	12°♃33'12	
min. Earth dist.	2346 Oct 28 07:49	5°♃52'05	47.95060 AU				
opposition	2346 Oct 29 19:08	5°♃50'24	-17°-10'-29	conjunction	2355 May 05 01:00	13°♃59'13	-15°-55'-22
direct	2347 Jan 19 04:26	4°♃51'23		minimum elong	2355 May 05 01:10	13°♃59'14	15°55'22
				max. Earth dist.	2355 May 06 05:54	14°♃00'52	50.24516 AU
conjunction	2347 Apr 27 05:06	6°♃18'17	-16°-28'-18	retrograde	2355 Jun 22 19:11	15°♃	
minimum elong	2347 Apr 27 05:12	6°♃18'17	16°28'19	opposition	2355 Aug 15 19:18	15°♃28'52	
max. Earth dist.	2347 Apr 28 17:58	6°♃20'25	49.89359 AU	min. Earth dist.	2355 Oct 09 19:10	15°♃	
retrograde	2347 Aug 08 00:18	7°♃48'56		opposition	2355 Nov 07 15:38	14°♃29'09	-16°-31'-39
min. Earth dist.	2347 Oct 29 14:54	6°♃50'14	48.00742 AU	min. Earth dist.	2355 Nov 06 13:41	14°♃30'22	48.33797 AU
opposition	2347 Oct 31 00:25	6°♃48'39	-17°-7'-14	direct	2356 Jan 27 23:54	13°♃30'38	
direct	2348 Jan 20 10:46	5°♃49'40					
				conjunction	2356 May 05 06:26	14°♃56'36	-15°-50'-10
conjunction	2348 Apr 27 10:46	7°♃16'24	-16°-25'-6	minimum elong	2356 May 05 06:34	14°♃56'36	15°50'11
minimum elong	2348 Apr 27 10:54	7°♃16'24	16°25'07	max. Earth dist.	2356 May 06 08:44	14°♃58'06	50.26995 AU
max. Earth dist.	2348 Apr 28 22:25	7°♃18'27	49.94920 AU		2356 May 07 18:07	15°♃	
retrograde	2348 Aug 08 06:49	8°♃46'52		retrograde	2356 Aug 15 23:08	16°♃26'08	
min. Earth dist.	2348 Oct 29 19:43	7°♃48'13	48.06073 AU	opposition	2356 Nov 07 20:19	15°♃26'29	-16°-26'-7
opposition	2348 Oct 31 05:22	7°♃46'38	-17°-3'-43	min. Earth dist.	2356 Nov 06 19:43	15°♃27'38	48.35916 AU
direct	2349 Jan 20 14:14	6°♃47'41		direct	2356 Dec 02 06:17	15°♃	
				direct	2357 Jan 28 06:25	14°♃28'00	
conjunction	2349 Apr 28 16:15	8°♃14'16	-16°-21'-38		2357 Mar 24 21:59	15°♃	
minimum elong	2349 Apr 28 16:22	8°♃14'16	16°21'38				
max. Earth dist.	2349 Apr 30 02:36	8°♃16'14	50.00146 AU	conjunction	2357 May 06 11:52	15°♃53'52	-15°-44'-45
retrograde	2349 Aug 09 12:26	9°♃44'34		minimum elong	2357 May 06 12:03	15°♃53'53	15°44'46
min. Earth dist.	2349 Oct 31 02:30	8°♃45'54	48.11093 AU	max. Earth dist.	2357 May 07 13:36	15°♃55'20	50.28928 AU
opposition	2349 Nov 01 10:32	8°♃44'23	-16°-59'-56	retrograde	2357 Aug 17 04:48	17°♃23'19	
direct	2350 Jan 21 18:18	7°♃45'29		min. Earth dist.	2357 Nov 08 02:23	16°♃24'45	48.37496 AU
				opposition	2357 Nov 09 01:02	16°♃23'41	-16°-20'-22
conjunction	2350 Apr 29 21:43	9°♃11'56	-16°-17'-54	direct	2358 Jan 29 12:38	15°♃25'13	
minimum elong	2350 Apr 29 21:51	9°♃11'57	16°17'55				
max. Earth dist.	2350 May 01 08:14	9°♃13'55	50.05080 AU	conjunction	2358 May 07 17:05	16°♃51'00	-15°-39'-7
retrograde	2350 Aug 10 14:41	10°♃42'06		minimum elong	2358 May 07 17:14	16°♃51'01	15°39'08
min. Earth dist.	2350 Nov 01 07:56	9°♃43'28	48.15803 AU	max. Earth dist.	2358 May 08 17:13	16°♃52'23	50.30368 AU

retrograde	2358 Aug 18 12:07	18°♃20'20		direct	2367 Feb 07 03:08	23°♃54'42	
min. Earth dist.	2358 Nov 09 07:07	17°♃21'48	48.38602 AU				
opposition	2358 Nov 10 05:34	17°♃20'45	-16°-14'-23	conjunction	2367 May 16 15:21	25°♃20'09	-14°-37'-37
direct	2359 Jan 30 15:24	16°♃22'16		minimum elong	2367 May 16 15:31	25°♃20'09	14°37'38
				max. Earth dist.	2367 May 17 06:12	25°♃20'59	50.27162 AU
conjunction	2359 May 08 22:20	17°♃47'59	-15°-33'-16	retrograde	2367 Aug 27 04:44	26°♃48'55	
minimum elong	2359 May 08 22:31	17°♃47'59	15°33'17	opposition	2367 Nov 18 20:37	25°♃49'33	-15°-9'-20
max. Earth dist.	2359 May 09 20:55	17°♃49'15	50.31349 AU	min. Earth dist.	2367 Nov 18 08:24	25°♃50'08	48.32758 AU
retrograde	2359 Aug 19 17:35	19°♃17'12		direct	2368 Feb 08 09:55	24°♃51'10	
opposition	2359 Nov 11 10:01	18°♃17'37	-16°-8'-9				
min. Earth dist.	2359 Nov 10 13:37	18°♃18'34	48.39292 AU	conjunction	2368 May 16 20:39	26°♃16'37	-14°-29'-37
direct	2360 Jan 31 18:35	17°♃19'09		minimum elong	2368 May 16 20:50	26°♃16'38	14°29'38
				max. Earth dist.	2368 May 17 09:43	26°♃17'21	50.24839 AU
conjunction	2360 May 09 03:39	18°♃44'47	-15°-27'-10	retrograde	2368 Aug 27 11:40	27°♃45'21	
minimum elong	2360 May 09 03:48	18°♃44'47	15°27'11	opposition	2368 Nov 19 00:53	26°♃46'01	-15°00'-56
max. Earth dist.	2360 May 10 02:06	18°♃46'03	50.31952 AU	min. Earth dist.	2368 Nov 18 13:03	26°♃46'34	48.30038 AU
retrograde	2360 Aug 19 19:18	20°♃13'53		direct	2369 Feb 08 13:07	25°♃47'37	
opposition	2360 Nov 11 14:25	19°♃14'20	-16°-1'-41				
min. Earth dist.	2360 Nov 10 18:26	19°♃15'16	48.39615 AU	conjunction	2369 May 18 01:43	27°♃13'04	-14°-21'-26
direct	2361 Feb 01 00:34	18°♃15'51		minimum elong	2369 May 18 01:53	27°♃13'04	14°21'27
				max. Earth dist.	2369 May 18 12:54	27°♃13'42	50.21975 AU
conjunction	2361 May 10 08:33	19°♃41'26	-15°-20'-49	retrograde	2369 Aug 28 17:49	28°♃41'46	
minimum elong	2361 May 10 08:43	19°♃41'26	15°20'51	opposition	2369 Nov 20 05:18	27°♃42'25	-14°-52'-19
max. Earth dist.	2361 May 11 05:03	19°♃42'36	50.32218 AU	min. Earth dist.	2369 Nov 19 19:45	27°♃42'52	48.26797 AU
retrograde	2361 Aug 20 23:15	21°♃10'27		direct	2370 Feb 09 15:57	26°♃44'00	
opposition	2361 Nov 12 18:51	20°♃10'54	-15°-54'-58				
min. Earth dist.	2361 Nov 11 23:34	20°♃11'48	48.39630 AU	conjunction	2370 May 19 07:01	28°♃09'27	-14°-13'-1
direct	2362 Feb 02 05:58	19°♃12'26		minimum elong	2370 May 19 07:13	28°♃09'28	14°13'02
				max. Earth dist.	2370 May 19 17:49	28°♃10'03	50.18623 AU
conjunction	2362 May 11 13:43	20°♃37'57	-15°-14'-14	retrograde	2370 Aug 29 20:45	29°♃38'07	
minimum elong	2362 May 11 13:52	20°♃37'58	15°14'15	opposition	2370 Nov 21 09:25	28°♃38'46	-14°-43'-29
max. Earth dist.	2362 May 12 10:06	20°♃39'07	50.32185 AU	min. Earth dist.	2370 Nov 21 00:31	28°♃39'11	48.23079 AU
retrograde	2362 Aug 22 03:09	22°♃06'55		direct	2371 Feb 10 21:19	27°♃40'18	
opposition	2362 Nov 13 23:13	21°♃07'23	-15°-47'-59				
min. Earth dist.	2362 Nov 13 05:22	21°♃08'13	48.39347 AU	conjunction	2371 May 20 12:10	29°♃05'46	-14°-4'-23
direct	2363 Feb 03 12:36	20°♃08'56		minimum elong	2371 May 20 12:20	29°♃05'47	14°04'24
				max. Earth dist.	2371 May 20 20:34	29°♃06'15	50.14824 AU
conjunction	2363 May 12 18:49	21°♃34'24	-15°-7'-23		2371 Jul 02 13:30	0°♂	
minimum elong	2363 May 12 19:00	21°♃34'25	15°07'25	retrograde	2371 Aug 31 00:45	0°♂♂34'25	
max. Earth dist.	2363 May 13 14:07	21°♃35'30	50.31877 AU		2371 Oct 30 15:19	30°♂♂	
retrograde	2363 Aug 23 10:09	23°♃03'18		opposition	2371 Nov 22 13:38	29°♃35'03	-14°-34'-25
min. Earth dist.	2363 Nov 14 09:36	22°♃04'39	48.38775 AU	min. Earth dist.	2371 Nov 22 05:51	29°♃35'25	48.18952 AU
opposition	2363 Nov 15 03:29	22°♃03'49	-15°-40'-44	direct	2372 Feb 12 02:32	28°♃36'33	
direct	2364 Feb 04 15:43	21°♃05'22			2372 May 19 05:15	0°♂	
conjunction	2364 May 12 23:51	22°♃30'49	-15°00'-18	conjunction	2372 May 20 17:21	0°♂♂02'02	-13°-55'-32
minimum elong	2364 May 13 00:01	22°♃30'50	15°00'18	minimum elong	2372 May 20 17:33	0°♂♂02'03	13°55'33
max. Earth dist.	2364 May 13 17:43	22°♃31'50	50.31258 AU	max. Earth dist.	2372 May 21 01:28	0°♂♂02'30	50.10629 AU
retrograde	2364 Aug 23 18:08	23°♃59'40		retrograde	2372 Aug 31 04:12	1°♂♂30'41	
opposition	2364 Nov 15 07:49	23°♃00'13	-15°-33'-14	opposition	2372 Nov 22 17:48	0°♂♂31'18	-14°-25'-7
min. Earth dist.	2364 Nov 14 15:45	23°♃00'58	48.37886 AU	min. Earth dist.	2372 Nov 22 11:32	0°♂♂31'36	48.14450 AU
direct	2365 Feb 04 16:36	22°♃01'47			2372 Dec 22 01:33	30°♂♂	
				direct	2373 Feb 12 08:50	29°♃32'46	
conjunction	2365 May 14 05:00	23°♃27'14	-14°-52'-58		2373 Apr 04 15:16	0°♂	
minimum elong	2365 May 14 05:10	23°♃27'15	14°53'00				
max. Earth dist.	2365 May 14 22:45	23°♃28'14	50.30315 AU	conjunction	2373 May 21 22:28	0°♂♂58'17	-13°-46'-26
retrograde	2365 Aug 24 21:24	24°♃56'03		minimum elong	2373 May 21 22:39	0°♂♂58'18	13°46'26
opposition	2365 Nov 16 12:02	23°♃56'38	-15°-25'-30	max. Earth dist.	2373 May 22 05:26	0°♂♂58'41	50.06109 AU
min. Earth dist.	2365 Nov 15 20:30	23°♃57'21	48.36630 AU	retrograde	2373 Sep 01 10:37	2°♂♂26'57	
direct	2366 Feb 05 21:42	22°♃58'14		opposition	2373 Nov 23 21:55	1°♂♂27'33	-14°-15'-34
				min. Earth dist.	2373 Nov 23 15:37	1°♂♂27'51	48.09642 AU
conjunction	2366 May 15 09:59	24°♃23'40	-14°-45'-24	direct	2374 Feb 13 12:05	0°♂♂29'00	
minimum elong	2366 May 15 10:10	24°♃23'41	14°45'24				
max. Earth dist.	2366 May 16 01:33	24°♃24'33	50.28976 AU	conjunction	2374 May 23 03:30	1°♂♂54'34	-13°-37'-6
retrograde	2366 Aug 26 00:54	25°♃52'28		minimum elong	2374 May 23 03:42	1°♂♂54'35	13°37'07
opposition	2366 Nov 17 16:23	24°♃53'05	-15°-17'-31	max. Earth dist.	2374 May 23 09:01	1°♂♂54'53	50.01281 AU
min. Earth dist.	2366 Nov 17 02:08	24°♃53'45	48.34949 AU	retrograde	2374 Sep 02 18:39	3°♂♂23'15	

opposition	2374 Nov 25 02:13	2°II23'52	-14°-5'-45	conjunction	2383 Jun 01 04:25	10°II26'37	-12°-2'-40
min. Earth dist.	2374 Nov 24 21:40	2°II24'04	48.04540 AU	minimum elong	2383 Jun 01 04:37	10°II26'37	12°02'41
direct	2375 Feb 14 13:10	1°II25'17		max. Earth dist.	2383 May 31 22:41	10°II26'17	49.40800 AU
				retrograde	2383 Sep 11 13:42	11°II55'50	
conjunction	2375 May 24 08:49	2°II50'55	-13°-27'-31	opposition	2383 Dec 03 17:05	10°II56'18	-12°-26'-51
minimum elong	2375 May 24 09:00	2°II50'56	13°27'31	min. Earth dist.	2383 Dec 03 22:37	10°II56'02	47.40793 AU
max. Earth dist.	2375 May 24 14:18	2°II51'14	49.96175 AU	direct	2384 Feb 23 08:47	9°II57'19	
retrograde	2375 Sep 03 22:43	4°II19'38					
opposition	2375 Nov 26 06:17	3°II20'15	-13°-55'-42	conjunction	2384 Jun 01 10:03	11°II23'51	-11°-51'-5
min. Earth dist.	2375 Nov 26 01:58	3°II20'27	47.99144 AU	minimum elong	2384 Jun 01 10:14	11°II23'51	11°51'05
direct	2376 Feb 15 17:15	2°II21'40		max. Earth dist.	2384 Jun 01 02:32	11°II23'25	49.31747 AU
				retrograde	2384 Sep 11 21:37	12°II53'09	
conjunction	2376 May 24 13:58	3°II47'23	-13°-17'-41	opposition	2384 Dec 03 21:39	11°II53'32	-12°-14'-43
minimum elong	2376 May 24 14:09	3°II47'24	13°17'43	min. Earth dist.	2384 Dec 04 05:07	11°II53'11	47.31414 AU
max. Earth dist.	2376 May 24 17:28	3°II47'35	49.90775 AU	direct	2385 Feb 23 11:22	10°II54'28	
retrograde	2376 Sep 04 02:41	5°II16'09					
opposition	2376 Nov 26 10:34	4°II16'47	-13°-45'-23	conjunction	2385 Jun 02 15:37	12°II21'07	-11°-39'-15
min. Earth dist.	2376 Nov 26 07:21	4°II16'56	47.93450 AU	minimum elong	2385 Jun 02 15:49	12°II21'07	11°39'16
direct	2377 Feb 15 22:09	3°II18'12		max. Earth dist.	2385 Jun 02 08:06	12°II20'41	49.22344 AU
				retrograde	2385 Sep 13 03:09	13°II50'29	
conjunction	2377 May 25 19:08	4°II44'01	-13°-7'-38	opposition	2385 Dec 05 02:08	12°II50'48	-12°-2'-20
minimum elong	2377 May 25 19:20	4°II44'02	13°07'38	min. Earth dist.	2385 Dec 05 09:49	12°II50'26	47.21695 AU
max. Earth dist.	2377 May 25 22:21	4°II44'12	49.85044 AU	direct	2386 Feb 24 15:08	11°II51'39	
retrograde	2377 Sep 05 05:34	6°II12'52					
opposition	2377 Nov 27 14:55	5°II13'30	-13°-34'-50	conjunction	2386 Jun 03 21:17	13°II18'26	-11°-27'-11
min. Earth dist.	2377 Nov 27 13:13	5°II13'35	47.87390 AU	minimum elong	2386 Jun 03 21:29	13°II18'26	11°27'12
direct	2378 Feb 17 05:39	4°II14'54		max. Earth dist.	2386 Jun 03 11:42	13°II17'53	49.12624 AU
				retrograde	2386 Sep 14 08:38	14°II47'54	
conjunction	2378 May 27 00:32	5°II40'49	-12°-57'-20	opposition	2386 Dec 06 06:38	13°II48'10	-11°-49'-42
minimum elong	2378 May 27 00:43	5°II40'50	12°57'22	min. Earth dist.	2386 Dec 06 15:28	13°II47'44	47.11685 AU
max. Earth dist.	2378 May 27 02:17	5°II40'55	49.78934 AU	direct	2387 Feb 25 19:29	12°II48'55	
retrograde	2378 Sep 06 13:06	7°II09'45					
opposition	2378 Nov 28 19:05	6°II10'24	-13°-24'-3	conjunction	2387 Jun 05 03:11	14°II15'51	-11°-14'-52
min. Earth dist.	2378 Nov 28 17:51	6°II10'28	47.80911 AU	minimum elong	2387 Jun 05 03:23	14°II15'52	11°14'54
direct	2379 Feb 18 08:47	5°II11'47		max. Earth dist.	2387 Jun 04 17:15	14°II15'17	49.02608 AU
				retrograde	2387 Sep 15 11:03	15°II45'27	
conjunction	2379 May 28 06:03	6°II37'49	-12°-46'-49	opposition	2387 Dec 07 11:19	14°II45'39	-11°-36'-48
minimum elong	2379 May 28 06:15	6°II37'49	12°46'50	min. Earth dist.	2387 Dec 07 21:22	14°II45'11	47.01376 AU
max. Earth dist.	2379 May 28 05:52	6°II37'48	49.72348 AU	direct	2388 Feb 27 03:15	13°II46'21	
retrograde	2379 Sep 07 20:49	8°II06'49					
opposition	2379 Nov 29 23:34	7°II07'28	-13°-13'-3	conjunction	2388 Jun 05 08:58	15°II13'27	-11°-2'-19
min. Earth dist.	2379 Nov 30 00:43	7°II07'24	47.73929 AU	minimum elong	2388 Jun 05 09:09	15°II13'28	11°02'19
direct	2380 Feb 19 10:31	6°II08'48		max. Earth dist.	2388 Jun 04 21:54	15°II12'49	48.92312 AU
				retrograde	2388 Sep 15 17:22	16°II43'12	
conjunction	2380 May 28 11:39	7°II34'56	-12°-36'-6	opposition	2388 Dec 07 15:54	15°II43'22	-11°-23'-39
minimum elong	2380 May 28 11:50	7°II34'57	12°36'07	min. Earth dist.	2388 Dec 08 02:02	15°II42'53	46.90774 AU
max. Earth dist.	2380 May 28 10:45	7°II34'53	49.65241 AU	direct	2389 Feb 27 07:39	14°II43'59	
retrograde	2380 Sep 08 01:18	9°II03'59					
opposition	2380 Nov 30 03:54	8°II04'37	-13°-1'-50	conjunction	2389 Jun 06 14:52	16°II11'18	-10°-49'-31
min. Earth dist.	2380 Nov 30 05:48	8°II04'32	47.66398 AU	minimum elong	2389 Jun 06 15:04	16°II11'18	10°49'32
direct	2381 Feb 19 15:24	7°II05'54		max. Earth dist.	2389 Jun 06 02:15	16°II10'34	48.81694 AU
				retrograde	2389 Sep 17 01:46	17°II41'13	
conjunction	2381 May 29 17:09	8°II32'09	-12°-25'-10	opposition	2389 Dec 08 20:42	16°II41'21	-11°-10'-15
minimum elong	2381 May 29 17:21	8°II32'09	12°25'11	min. Earth dist.	2389 Dec 09 08:58	16°II40'46	46.79838 AU
max. Earth dist.	2381 May 29 13:37	8°II31'57	49.57595 AU	direct	2390 Feb 28 09:40	15°II41'54	
retrograde	2381 Sep 09 05:30	10°II01'15					
opposition	2381 Dec 01 08:22	9°II01'50	-12°-50'-23	conjunction	2390 Jun 07 21:00	17°II09'25	-10°-36'-28
min. Earth dist.	2381 Dec 01 11:43	9°II01'40	47.58346 AU	minimum elong	2390 Jun 07 21:12	17°II09'26	10°36'28
direct	2382 Feb 20 20:33	8°II03'02		max. Earth dist.	2390 Jun 07 08:02	17°II08'41	48.70717 AU
				retrograde	2390 Sep 18 07:39	18°II39'31	
conjunction	2382 May 30 22:46	9°II29'23	-12°-14'-2	opposition	2390 Dec 10 01:29	17°II39'37	-10°-56'-36
minimum elong	2382 May 30 22:57	9°II29'23	12°14'02	min. Earth dist.	2390 Dec 10 14:13	17°II39'00	46.68491 AU
max. Earth dist.	2382 May 30 18:32	9°II29'08	49.49429 AU	direct	2391 Mar 01 14:37	16°II40'06	
retrograde	2382 Sep 10 08:22	10°II58'33		max. Earth dist.	2391 Jun 08 11:41	18°II06'58	48.59291 AU
opposition	2382 Dec 02 12:50	9°II59'04	-12°-38'-44				
min. Earth dist.	2382 Dec 02 17:59	9°II58'49	47.49787 AU	conjunction	2391 Jun 09 03:14	18°II07'52	-10°-23'-11
direct	2383 Feb 22 03:35	9°II00'11		minimum elong	2391 Jun 09 03:25	18°II07'52	10°23'12

retrograde	2391 Sep 19 13:43	19°II38'07		direct	2400 Mar 09 15:39	25°II33'56	
opposition	2391 Dec 11 06:21	18°II38'11	-10°-42'-43				
min. Earth dist.	2391 Dec 11 20:47	18°II37'29	46.56676 AU	conjunction	2400 Jun 17 15:14	27°II03'54	-8°-13'-12
direct	2392 Mar 01 19:25	17°II38'35		minimum elong	2400 Jun 17 15:25	27°II03'55	8°13'13
				max. Earth dist.	2400 Jun 16 13:32	27°II02'24	47.36686 AU
conjunction	2392 Jun 09 09:42	19°II06'35	-10°-9'-41	retrograde	2400 Sep 27 22:57	28°II36'02	
minimum elong	2392 Jun 09 09:54	19°II06'36	10°09'42	opposition	2400 Dec 19 06:10	27°II35'12	-8°-26'-40
max. Earth dist.	2392 Jun 08 17:22	19°II05'39	48.47361 AU	min. Earth dist.	2400 Dec 20 05:50	27°II34'03	45.31123 AU
retrograde	2392 Sep 19 17:39	20°II37'02		direct	2401 Mar 10 20:35	26°II34'26	
opposition	2392 Dec 11 11:28	19°II37'01	-10°-28'-36				
min. Earth dist.	2392 Dec 12 03:36	19°II36'15	46.44336 AU	conjunction	2401 Jun 18 22:15	28°II04'44	-7°-57'-29
direct	2393 Mar 03 02:50	18°II37'21		minimum elong	2401 Jun 18 22:25	28°II04'44	7°57'30
				max. Earth dist.	2401 Jun 17 18:31	28°II03'06	47.21514 AU
conjunction	2393 Jun 10 15:58	20°II05'33	-9°-55'-58	retrograde	2401 Sep 29 08:13	29°II37'08	
minimum elong	2393 Jun 10 16:09	20°II05'33	9°55'59	opposition	2401 Dec 20 12:03	28°II36'12	-8°-10'-12
max. Earth dist.	2393 Jun 09 21:54	20°II04'30	48.34923 AU	min. Earth dist.	2401 Dec 21 13:10	28°II34'59	45.15666 AU
retrograde	2393 Sep 20 23:40	21°II36'11		direct	2402 Mar 12 00:32	27°II35'19	
opposition	2393 Dec 12 16:34	20°II36'06	-10°-14'-15	max. Earth dist.	2402 Jun 19 01:44	29°II04'18	47.06016 AU
min. Earth dist.	2393 Dec 13 09:15	20°II35'18	46.31493 AU				
direct	2394 Mar 04 08:30	19°II36'18		conjunction	2402 Jun 20 05:48	29°II05'57	-7°-41'-32
				minimum elong	2402 Jun 20 05:57	29°II05'58	7°41'33
conjunction	2394 Jun 11 22:30	21°II04'43	-9°-42'-1		2402 Jul 30 23:35	0°☾	
minimum elong	2394 Jun 11 22:42	21°II04'44	9°42'03	retrograde	2402 Sep 30 13:57	0°☾38'38	
max. Earth dist.	2394 Jun 11 02:27	21°II03'34	48.21976 AU		2402 Dec 02 05:12	30°RII	
retrograde	2394 Sep 22 08:03	22°II35'33		opposition	2402 Dec 21 17:58	29°II37'37	-7°-53'-29
opposition	2394 Dec 13 21:43	21°II35'22	-9°-59'-40	min. Earth dist.	2402 Dec 22 20:31	29°II36'19	44.99846 AU
min. Earth dist.	2394 Dec 14 16:38	21°II34'27	46.18170 AU	direct	2403 Mar 13 08:28	28°II36'36	
direct	2395 Mar 05 12:01	20°II35'26			2403 Jun 16 04:55	0°☾	
max. Earth dist.	2395 Jun 12 08:45	22°II02'54	48.08585 AU	max. Earth dist.	2403 Jun 20 07:37	0°☾05'50	46.90130 AU
conjunction	2395 Jun 13 05:12	22°II04'05	-9°-27'-50	conjunction	2403 Jun 21 13:28	0°☾07'35	-7°-25'-19
minimum elong	2395 Jun 13 05:23	22°II04'06	9°27'51	minimum elong	2403 Jun 21 13:38	0°☾07'36	7°25'20
retrograde	2395 Sep 23 15:57	23°II35'05		retrograde	2403 Oct 01 20:31	1°☾40'35	
opposition	2395 Dec 15 02:52	22°II34'48	-9°-44'-50	opposition	2403 Dec 23 00:05	0°☾39'27	-7°-36'-30
min. Earth dist.	2395 Dec 15 22:11	22°II33'52	46.04423 AU	min. Earth dist.	2403 Dec 24 03:17	0°☾38'07	44.83607 AU
direct	2396 Mar 05 15:32	21°II34'44			2404 Jan 28 09:26	30°RII	
				direct	2404 Mar 13 15:16	29°II38'17	
conjunction	2396 Jun 13 11:40	23°II03'37	-9°-13'-25		2404 Apr 27 07:58	0°☾	
minimum elong	2396 Jun 13 11:51	23°II03'38	9°13'26				
max. Earth dist.	2396 Jun 12 12:59	23°II02'18	47.94795 AU	conjunction	2404 Jun 21 21:13	1°☾09'38	-7°-8'-52
retrograde	2396 Sep 23 23:18	24°II34'49		minimum elong	2404 Jun 21 21:22	1°☾09'38	7°08'53
opposition	2396 Dec 15 08:09	23°II34'25	-9°-29'-44	max. Earth dist.	2404 Jun 20 13:28	1°☾07'45	46.73773 AU
min. Earth dist.	2396 Dec 16 04:51	23°II33'25	45.90321 AU	retrograde	2404 Oct 02 04:03	2°☾42'56	
direct	2397 Mar 06 19:55	22°II34'12		opposition	2404 Dec 23 06:31	1°☾41'41	-7°-19'-16
				min. Earth dist.	2404 Dec 24 11:56	1°☾40'14	44.66884 AU
conjunction	2397 Jun 14 18:25	24°II03'20	-8°-58'-45	direct	2405 Mar 14 21:35	0°☾40'21	
minimum elong	2397 Jun 14 18:35	24°II03'21	8°58'45	max. Earth dist.	2405 Jun 21 20:53	2°☾10'07	46.56943 AU
max. Earth dist.	2397 Jun 13 19:24	24°II02'00	47.80668 AU				
retrograde	2397 Sep 25 01:31	25°II34'44		conjunction	2405 Jun 23 05:16	2°☾12'03	-6°-52'-10
opposition	2397 Dec 16 13:29	24°II34'13	-9°-14'-22	minimum elong	2405 Jun 23 05:26	2°☾12'03	6°52'11
min. Earth dist.	2397 Dec 17 11:15	24°II33'10	45.75905 AU	retrograde	2405 Oct 03 13:15	3°☾45'40	
direct	2398 Mar 08 04:53	23°II33'52		opposition	2405 Dec 24 12:53	2°☾44'16	-7°-1'-46
max. Earth dist.	2398 Jun 15 00:58	25°II01'51	47.66266 AU	min. Earth dist.	2405 Dec 25 18:46	2°☾42'47	44.49683 AU
				direct	2406 Mar 16 02:42	1°☾42'45	
conjunction	2398 Jun 16 01:09	25°II03'16	-8°-43'-49	max. Earth dist.	2406 Jun 23 02:19	3°☾12'44	46.39636 AU
minimum elong	2398 Jun 16 01:20	25°II03'16	8°43'50				
retrograde	2398 Sep 26 06:56	26°II34'53		conjunction	2406 Jun 24 13:21	3°☾14'49	-6°-35'-13
opposition	2398 Dec 17 18:54	25°II34'15	-8°-58'-45	minimum elong	2406 Jun 24 13:30	3°☾14'50	6°35'14
min. Earth dist.	2398 Dec 18 16:49	25°II33'11	45.61229 AU	retrograde	2406 Oct 04 23:23	4°☾48'45	
direct	2399 Mar 09 11:51	24°II33'45		opposition	2406 Dec 25 19:31	3°☾47'12	-6°-44'-1
max. Earth dist.	2399 Jun 16 06:30	26°II01'56	47.51593 AU	min. Earth dist.	2406 Dec 27 03:17	3°☾45'38	44.32032 AU
				direct	2407 Mar 17 07:17	2°☾45'29	
conjunction	2399 Jun 17 08:07	26°II03'26	-8°-28'-38	max. Earth dist.	2407 Jun 24 10:11	4°☾15'49	46.21887 AU
minimum elong	2399 Jun 17 08:18	26°II03'27	8°28'38				
retrograde	2399 Sep 27 15:28	27°II35'18		conjunction	2407 Jun 25 21:46	4°☾17'56	-6°-18'-2
opposition	2399 Dec 19 00:29	26°II34'34	-8°-42'-50	minimum elong	2407 Jun 25 21:55	4°☾17'57	6°18'03
min. Earth dist.	2399 Dec 20 00:13	26°II33'24	45.46301 AU	retrograde	2407 Oct 06 05:16	5°☾52'11	

opposition	2407 Dec 27 02:10	4° \mathring{E} 50'28	-6°-25'-59	max. Earth dist.	2416 Jul 03 09:49	14° \mathring{E} 04'08	44.48801 AU
min. Earth dist.	2407 Dec 28 11:03	4° \mathring{E} 48'50	44.13963 AU				
direct	2408 Mar 17 16:17	3° \mathring{E} 48'34		conjunction	2416 Jul 05 08:39	14° \mathring{E} 07'03	-3°-31'-24
max. Earth dist.	2408 Jun 24 16:59	5° \mathring{E} 19'10	46.03765 AU	minimum elong	2416 Jul 05 08:44	14° \mathring{E} 07'03	3°31'24
				retrograde	2416 Oct 15 18:12	15° \mathring{E} 45'07	
conjunction	2408 Jun 26 06:08	5° \mathring{E} 21'24	-6°00'-35	opposition	2417 Jan 04 22:55	14° \mathring{E} 41'59	-3°-31'00
minimum elong	2408 Jun 26 06:16	5° \mathring{E} 21'25	6°00'35	min. Earth dist.	2417 Jan 06 17:13	14° \mathring{E} 39'49	42.38642 AU
retrograde	2408 Oct 06 12:02	6° \mathring{E} 55'59		direct	2417 Mar 27 07:54	13° \mathring{E} 38'16	
opposition	2408 Dec 27 08:59	5° \mathring{E} 54'06	-6°-7'-41	max. Earth dist.	2417 Jul 04 19:48	15° \mathring{E} 12'36	44.27882 AU
min. Earth dist.	2408 Dec 28 18:23	5° \mathring{E} 52'26	43.95560 AU				
direct	2409 Mar 19 00:40	4° \mathring{E} 52'00		conjunction	2417 Jul 06 19:08	15° \mathring{E} 15'34	-3°-11'-34
max. Earth dist.	2409 Jun 26 00:07	6° \mathring{E} 22'55	45.85310 AU	minimum elong	2417 Jul 06 19:13	15° \mathring{E} 15'34	3°11'35
				retrograde	2417 Oct 17 04:31	16° \mathring{E} 54'07	
conjunction	2409 Jun 27 14:35	6° \mathring{E} 25'14	-5°-42'-52	opposition	2418 Jan 06 07:46	15° \mathring{E} 50'46	-3°-10'-8
minimum elong	2409 Jun 27 14:43	6° \mathring{E} 25'15	5°42'53	min. Earth dist.	2418 Jan 08 02:55	15° \mathring{E} 48'33	42.17420 AU
retrograde	2409 Oct 07 20:11	8° \mathring{E} 00'11		direct	2418 Mar 28 17:45	14° \mathring{E} 46'48	
opposition	2409 Dec 28 16:08	6° \mathring{E} 58'09	-5°-49'-6	max. Earth dist.	2418 Jul 06 04:22	16° \mathring{E} 21'33	44.06522 AU
min. Earth dist.	2409 Dec 30 03:22	6° \mathring{E} 56'23	43.76855 AU				
direct	2410 Mar 20 07:23	5° \mathring{E} 55'50		conjunction	2418 Jul 08 05:55	16° \mathring{E} 24'39	-2°-51'-28
max. Earth dist.	2410 Jun 27 08:40	7° \mathring{E} 27'09	45.66588 AU	minimum elong	2418 Jul 08 05:59	16° \mathring{E} 24'40	2°51'29
				retrograde	2418 Oct 18 15:40	18° \mathring{E} 03'42	
conjunction	2410 Jun 28 23:24	7° \mathring{E} 29'30	-5°-24'-53	opposition	2419 Jan 07 16:39	17° \mathring{E} 00'07	-2°-49'00
minimum elong	2410 Jun 28 23:31	7° \mathring{E} 29'31	5°24'54	min. Earth dist.	2419 Jan 09 12:59	16° \mathring{E} 57'50	41.95786 AU
retrograde	2410 Oct 09 05:15	9° \mathring{E} 04'50		direct	2419 Mar 30 03:55	15° \mathring{E} 55'53	
opposition	2410 Dec 29 23:10	8° \mathring{E} 02'38	-5°-30'-14	max. Earth dist.	2419 Jul 07 14:12	17° \mathring{E} 31'06	43.84744 AU
min. Earth dist.	2410 Dec 31 10:18	8° \mathring{E} 00'52	43.57902 AU				
direct	2411 Mar 21 13:40	7° \mathring{E} 00'07		conjunction	2419 Jul 09 17:02	17° \mathring{E} 34'18	-2°-31'-7
max. Earth dist.	2411 Jun 28 15:33	8° \mathring{E} 31'46	45.47622 AU	minimum elong	2419 Jul 09 17:06	17° \mathring{E} 34'19	2°31'08
				retrograde	2419 Oct 20 00:46	19° \mathring{E} 13'51	
conjunction	2411 Jun 30 08:19	8° \mathring{E} 34'14	-5°-6'-39	opposition	2420 Jan 09 02:00	18° \mathring{E} 10'01	-2°-27'-34
minimum elong	2411 Jun 30 08:27	8° \mathring{E} 34'15	5°06'41	min. Earth dist.	2420 Jan 11 00:11	18° \mathring{E} 07'38	41.73769 AU
retrograde	2411 Oct 10 17:05	10° \mathring{E} 09'59		direct	2420 Mar 30 15:04	17° \mathring{E} 05'30	
opposition	2411 Dec 31 06:40	9° \mathring{E} 07'37	-5°-11'-4	max. Earth dist.	2420 Jul 08 00:33	18° \mathring{E} 41'13	43.62625 AU
min. Earth dist.	2412 Jan 01 19:16	9° \mathring{E} 05'47	43.38731 AU				
direct	2412 Mar 21 18:29	8° \mathring{E} 04'55		conjunction	2420 Jul 10 04:07	18° \mathring{E} 44'30	-2°-10'-30
max. Earth dist.	2412 Jun 29 00:44	9° \mathring{E} 37'03	45.28435 AU	minimum elong	2420 Jul 10 04:11	18° \mathring{E} 44'30	2°10'31
				retrograde	2420 Oct 20 10:13	20° \mathring{E} 24'33	
conjunction	2412 Jun 30 17:25	9° \mathring{E} 39'31	-4°-48'-8	opposition	2421 Jan 09 11:24	19° \mathring{E} 20'29	-2°-5'-52
minimum elong	2412 Jun 30 17:32	9° \mathring{E} 39'32	4°48'09	min. Earth dist.	2421 Jan 11 09:36	19° \mathring{E} 18'04	41.51445 AU
retrograde	2412 Oct 11 01:52	11° \mathring{E} 15'41		direct	2421 Apr 01 01:14	18° \mathring{E} 15'39	
opposition	2412 Dec 31 14:18	10° \mathring{E} 13'10	-4°-51'-38	max. Earth dist.	2421 Jul 09 09:58	19° \mathring{E} 51'49	43.40209 AU
min. Earth dist.	2413 Jan 02 03:32	10° \mathring{E} 11'18	43.19332 AU				
direct	2413 Mar 23 03:13	9° \mathring{E} 10'17		conjunction	2421 Jul 11 15:32	19° \mathring{E} 55'14	-1°-49'-37
max. Earth dist.	2413 Jun 30 08:26	10° \mathring{E} 42'49	45.09026 AU	minimum elong	2421 Jul 11 15:35	19° \mathring{E} 55'14	1°49'38
				retrograde	2421 Oct 21 22:24	21° \mathring{E} 35'50	
conjunction	2413 Jul 02 02:43	10° \mathring{E} 45'24	-4°-29'-21	opposition	2422 Jan 10 21:06	20° \mathring{E} 31'30	-1°-43'-52
minimum elong	2413 Jul 02 02:49	10° \mathring{E} 45'25	4°29'23	min. Earth dist.	2422 Jan 12 21:08	20° \mathring{E} 28'59	41.28874 AU
retrograde	2413 Oct 12 11:32	12° \mathring{E} 22'01		direct	2422 Apr 02 08:52	19° \mathring{E} 26'22	
opposition	2414 Jan 01 22:00	11° \mathring{E} 19'22	-4°-31'-54	max. Earth dist.	2422 Jul 10 21:57	21° \mathring{E} 03'09	43.17568 AU
min. Earth dist.	2414 Jan 03 11:51	11° \mathring{E} 17'27	42.99699 AU				
direct	2414 Mar 24 10:55	10° \mathring{E} 16'18		conjunction	2422 Jul 13 03:23	21° \mathring{E} 06'34	-1°-28'-28
max. Earth dist.	2414 Jul 01 16:52	11° \mathring{E} 49'16	44.89325 AU	minimum elong	2422 Jul 13 03:25	21° \mathring{E} 06'35	1°28'29
				retrograde	2422 Oct 23 11:07	22° \mathring{E} 47'44	
conjunction	2414 Jul 03 12:25	11° \mathring{E} 51'57	-4°-10'-18	opposition	2423 Jan 12 07:06	21° \mathring{E} 43'08	-1°-21'-35
minimum elong	2414 Jul 03 12:31	11° \mathring{E} 51'57	4°10'18	min. Earth dist.	2423 Jan 14 07:19	21° \mathring{E} 40'36	41.06099 AU
retrograde	2414 Oct 13 18:43	13° \mathring{E} 29'02		direct	2423 Apr 03 18:02	20° \mathring{E} 37'42	
opposition	2415 Jan 03 06:07	12° \mathring{E} 26'14	-4°-11'-52	max. Earth dist.	2423 Jul 12 08:02	22° \mathring{E} 15'00	42.94746 AU
min. Earth dist.	2415 Jan 04 21:54	12° \mathring{E} 24'13	42.79744 AU				
direct	2415 Mar 25 20:16	11° \mathring{E} 22'59		conjunction	2423 Jul 14 15:19	22° \mathring{E} 18'34	-1°-7'-4
max. Earth dist.	2415 Jul 03 02:12	12° \mathring{E} 56'25	44.69275 AU	minimum elong	2423 Jul 14 15:21	22° \mathring{E} 18'34	1°07'04
				retrograde	2423 Oct 25 01:03	24° \mathring{E} 00'18	
conjunction	2415 Jul 04 22:25	12° \mathring{E} 59'10	-3°-50'-59	opposition	2424 Jan 13 17:20	22° \mathring{E} 55'27	0°-59'-1
minimum elong	2415 Jul 04 22:31	12° \mathring{E} 59'10	3°51'00	min. Earth dist.	2424 Jan 15 18:24	22° \mathring{E} 52'52	40.83182 AU
retrograde	2415 Oct 15 05:02	14° \mathring{E} 36'45		direct	2424 Apr 04 02:42	21° \mathring{E} 49'43	
opposition	2416 Jan 04 14:17	13° \mathring{E} 33'47	-3°-51'-34	max. Earth dist.	2424 Jul 12 20:01	23° \mathring{E} 27'40	42.71776 AU
min. Earth dist.	2416 Jan 06 06:27	13° \mathring{E} 31'44	42.59407 AU				
direct	2416 Mar 26 03:27	12° \mathring{E} 30'18		conjunction	2424 Jul 15 03:43	23° \mathring{E} 31'17	0°-45'-24

minimum elong	2424 Jul 15 03:44	23°☾31'17	0°45'25	min. Earth dist.	2432 Jan 26 01:50	3°♃03'39	38.92176 AU
retrograde	2424 Oct 25 11:44	25°☾13'39		direct	2432 Apr 14 00:42	1°♃58'37	
opposition	2425 Jan 14 04:02	24°☾08'33	0°-36'-10	max. Earth dist.	2432 Jul 23 03:40	3°♃42'12	40.79630 AU
min. Earth dist.	2425 Jan 16 06:07	24°☾05'54	40.60129 AU				
direct	2425 Apr 05 15:04	23°☾02'32		conjunction	2432 Jul 25 20:10	3°♃46'37	2°16'56
max. Earth dist.	2425 Jul 14 07:58	24°☾41'09	42.48681 AU	minimum elong	2432 Jul 25 20:06	3°♃46'37	2°16'55
				retrograde	2432 Nov 05 04:35	5°♃34'50	
conjunction	2425 Jul 16 16:15	24°☾44'49	0°-23'-28	opposition	2433 Jan 24 05:39	4°♃27'36	2°36'27
minimum elong	2425 Jul 16 16:16	24°☾44'49	0°23'29	min. Earth dist.	2433 Jan 26 15:11	4°♃24'25	38.67113 AU
retrograde	2425 Oct 26 23:37	26°☾27'51		direct	2433 Apr 15 13:15	3°♃19'00	
opposition	2426 Jan 15 14:55	25°☾22'32	0°-13'-2	max. Earth dist.	2433 Jul 24 17:20	5°♃03'19	40.54424 AU
min. Earth dist.	2426 Jan 17 17:02	25°☾19'51	40.36937 AU				
direct	2426 Apr 07 02:41	24°☾16'14		conjunction	2433 Jul 27 11:51	5°♃07'54	2°40'46
max. Earth dist.	2426 Jul 15 19:19	25°☾55'28	42.25398 AU	minimum elong	2433 Jul 27 11:46	5°♃07'53	2°40'47
				retrograde	2433 Nov 06 21:50	6°♃56'56	
conjunction	2426 Jul 18 05:24	25°☾59'16	0°-1'-19	opposition	2434 Jan 25 19:37	5°♃49'21	3°01'41
minimum elong	2426 Jul 18 05:23	25°☾59'16	0°01'21	min. Earth dist.	2434 Jan 28 06:44	5°♃46'04	38.41912 AU
behind sun begin	2426 Jul 17 22:51	25°☾58'52		direct	2434 Apr 16 23:51	4°♃40'22	
behind sun end	2426 Jul 18 11:55	25°☾59'40		max. Earth dist.	2434 Jul 26 09:52	6°♃25'34	40.29094 AU
asc. node	2426 Aug 08 09:08	26°☾32'06					
retrograde	2426 Oct 28 13:01	27°☾43'00		conjunction	2434 Jul 29 04:13	6°♃30'10	3°04'48
opposition	2427 Jan 17 02:10	26°☾37'27	0°10'22	minimum elong	2434 Jul 29 04:07	6°♃30'10	3°04'48
min. Earth dist.	2427 Jan 19 06:19	26°☾34'39	40.13547 AU	retrograde	2434 Nov 08 14:43	8°♃20'02	
direct	2427 Apr 08 11:26	25°☾30'52		opposition	2435 Jan 27 09:54	7°♃12'08	3°27'08
max. Earth dist.	2427 Jul 17 08:44	27°☾10'51	42.01881 AU	min. Earth dist.	2435 Jan 29 21:16	7°♃08'48	38.16626 AU
				direct	2435 Apr 18 14:36	6°♃02'45	
conjunction	2427 Jul 19 18:57	27°☾14'42	0°21'10	max. Earth dist.	2435 Jul 28 01:10	7°♃48'46	40.03712 AU
minimum elong	2427 Jul 19 18:57	27°☾14'42	0°21'11				
retrograde	2427 Oct 30 02:51	28°☾59'09		conjunction	2435 Jul 30 20:50	7°♃53'30	3°29'02
opposition	2428 Jan 18 13:49	27°☾53'22	0°34'03	minimum elong	2435 Jul 30 20:43	7°♃53'30	3°29'03
min. Earth dist.	2428 Jan 20 18:11	27°☾50'32	39.89892 AU	retrograde	2435 Nov 10 10:23	9°♃44'13	
direct	2428 Apr 08 22:36	26°☾46'30		opposition	2436 Jan 29 00:43	8°♃35'59	3°52'48
max. Earth dist.	2428 Jul 17 20:07	28°☾27'06	41.78064 AU	min. Earth dist.	2436 Jan 31 12:23	8°♃32'37	37.91330 AU
				direct	2436 Apr 19 05:24	7°♃26'12	
conjunction	2428 Jul 20 08:38	28°☾31'08	0°43'50	max. Earth dist.	2436 Jul 28 17:52	9°♃13'10	39.78310 AU
minimum elong	2428 Jul 20 08:36	28°☾31'08	0°43'50				
	2428 Sep 24 05:40	0°♃		conjunction	2436 Jul 31 13:52	9°♃17'57	3°53'28
retrograde	2428 Oct 30 20:00	0°♃16'18		minimum elong	2436 Jul 31 13:45	9°♃17'57	3°53'27
	2428 Dec 06 14:10	30°♃☾		retrograde	2436 Nov 11 03:44	11°♃09'35	
opposition	2429 Jan 19 01:55	29°☾10'16	0°58'00	opposition	2437 Jan 29 16:07	10°♃01'00	4°18'41
min. Earth dist.	2429 Jan 21 07:51	29°☾07'21	39.65934 AU	min. Earth dist.	2437 Feb 01 04:53	9°♃57'34	37.66040 AU
direct	2429 Apr 10 08:22	28°☾03'06		direct	2437 Apr 20 21:05	8°♃50'51	
max. Earth dist.	2429 Jul 19 09:55	29°☾44'28	41.53910 AU	max. Earth dist.	2437 Jul 30 11:17	10°♃38'46	39.52931 AU
conjunction	2429 Jul 21 23:00	29°☾48'33	1°06'45	conjunction	2437 Aug 02 07:30	10°♃43'37	4°18'03
minimum elong	2429 Jul 21 22:58	29°☾48'33	1°06'46	minimum elong	2437 Aug 02 07:21	10°♃43'37	4°18'02
	2429 Jul 29 02:01	0°♃		retrograde	2437 Nov 12 20:02	12°♃36'10	
retrograde	2429 Nov 01 10:52	1°♃34'28		opposition	2438 Jan 31 07:43	11°♃27'17	4°44'44
opposition	2430 Jan 20 14:17	0°♃28'09	1°22'14	min. Earth dist.	2438 Feb 02 20:09	11°♃23'50	37.40771 AU
min. Earth dist.	2430 Jan 22 21:30	0°♃25'09	39.41639 AU	direct	2438 Apr 22 13:23	10°♃16'46	
	2430 Feb 11 19:50	30°♃☾		max. Earth dist.	2438 Aug 01 03:53	12°♃05'35	39.27530 AU
direct	2430 Apr 11 21:44	29°☾20'39					
	2430 Jun 08 20:54	0°♃		conjunction	2438 Aug 04 01:43	12°♃10'36	4°42'47
max. Earth dist.	2430 Jul 20 22:56	1°♃02'43	41.29437 AU	minimum elong	2438 Aug 04 01:34	12°♃10'35	4°42'47
				retrograde	2438 Nov 14 13:45	14°♃04'07	
conjunction	2430 Jul 23 13:39	1°♃06'57	1°29'55	opposition	2439 Feb 02 00:05	12°♃54'55	5°10'58
minimum elong	2430 Jul 23 13:37	1°♃06'57	1°29'54	min. Earth dist.	2439 Feb 04 14:10	12°♃51'21	37.15475 AU
retrograde	2430 Nov 03 01:41	2°♃53'37		direct	2439 Apr 24 03:27	11°♃44'01	
opposition	2431 Jan 22 03:01	1°♃47'01	1°46'43	max. Earth dist.	2439 Aug 02 23:01	13°♃33'55	39.02063 AU
min. Earth dist.	2431 Jan 24 10:47	1°♃43'58	39.17043 AU				
direct	2431 Apr 13 11:07	0°♃39'09		conjunction	2439 Aug 05 20:30	13°♃38'57	5°07'40
max. Earth dist.	2431 Jul 22 12:22	2°♃21'56	41.04650 AU	minimum elong	2439 Aug 05 20:20	13°♃38'56	5°07'40
					2439 Sep 26 12:15	15°♃	
conjunction	2431 Jul 25 04:43	2°♃26'19	1°53'19	retrograde	2439 Nov 16 08:15	15°♃33'28	
minimum elong	2431 Jul 25 04:40	2°♃26'18	1°53'19		2440 Jan 07 06:12	15°♃♃	
retrograde	2431 Nov 04 14:13	4°♃13'44		opposition	2440 Feb 03 16:54	14°♃23'57	5°37'22
opposition	2432 Jan 23 16:12	3°♃06'50	2°11'28	min. Earth dist.	2440 Feb 06 07:01	14°♃20'22	36.90090 AU

direct	2440 Apr 24 18:39	13°♊12'39		direct	2448 May 06 23:18	25°♊52'50	
	2440 Aug 01 16:19	15°♊		max. Earth dist.	2448 Aug 16 19:56	27°♊52'46	36.68622 AU
max. Earth dist.	2440 Aug 03 16:20	15°♊03'29	38.76477 AU				
conjunction	2440 Aug 06 15:47	15°♊08'42	5°32'41	conjunction	2448 Aug 19 23:49	27°♊58'42	8°55'07
minimum elong	2440 Aug 06 15:37	15°♊08'41	5°32'41	minimum elong	2448 Aug 19 23:31	27°♊58'41	8°55'07
retrograde	2440 Nov 17 05:57	17°♊04'15		retrograde	2448 Nov 15 23:56	0°♐	
opposition	2441 Feb 04 10:19	15°♊54'23	6°03'55	retrograde	2448 Nov 30 19:11	0°♐03'13	
min. Earth dist.	2441 Feb 07 01:44	15°♊50'42	36.64587 AU	opposition	2448 Dec 15 14:51	30°♐♊	
	2441 Mar 20 18:51	15°♐♊		min. Earth dist.	2449 Feb 17 03:15	28°♊50'10	9°39'04
direct	2441 Apr 26 09:28	14°♊42'42		direct	2449 Feb 19 23:03	28°♊46'01	34.58419 AU
	2441 Jun 01 19:25	15°♊		max. Earth dist.	2449 May 08 21:54	27°♊34'49	
max. Earth dist.	2441 Aug 05 12:00	16°♊34'36	38.50731 AU	max. Earth dist.	2449 Aug 18 20:29	29°♊36'02	36.43068 AU
conjunction	2441 Aug 08 11:48	16°♊39'52	5°57'49	conjunction	2449 Aug 22 00:34	29°♊42'03	9°20'15
minimum elong	2441 Aug 08 11:36	16°♊39'52	5°57'49	minimum elong	2449 Aug 22 00:15	29°♊42'02	9°20'14
retrograde	2441 Nov 19 02:59	18°♊36'28		retrograde	2449 Aug 31 11:56	0°♐	
opposition	2442 Feb 06 04:26	17°♊26'14	6°30'37	retrograde	2449 Dec 02 22:23	1°♐47'50	
min. Earth dist.	2442 Feb 08 20:50	17°♊22'29	36.38918 AU	opposition	2450 Feb 19 02:15	0°♐34'23	10°05'47
direct	2442 Apr 28 04:11	16°♊14'07		min. Earth dist.	2450 Feb 21 21:22	0°♐30'16	34.33234 AU
max. Earth dist.	2442 Aug 07 07:15	18°♊07'03	38.24829 AU	direct	2450 Mar 15 05:54	30°♐♊	
conjunction	2442 Aug 10 08:21	18°♊12'28	6°23'03	direct	2450 May 10 20:57	29°♊18'36	
minimum elong	2442 Aug 10 08:09	18°♊12'27	6°23'03	max. Earth dist.	2450 Jul 05 01:55	0°♐	
retrograde	2442 Nov 21 02:02	20°♊10'06		max. Earth dist.	2450 Aug 20 21:38	1°♐21'09	36.17732 AU
opposition	2443 Feb 07 22:54	18°♊59'30	6°57'25	conjunction	2450 Aug 24 02:14	1°♐27'16	9°45'13
min. Earth dist.	2443 Feb 10 15:34	18°♊55'42	36.13116 AU	minimum elong	2450 Aug 24 01:55	1°♐27'15	9°45'14
direct	2443 Apr 29 23:11	17°♊46'56		retrograde	2450 Dec 04 23:47	3°♐34'20	
max. Earth dist.	2443 Aug 09 03:17	19°♊40'55	37.98782 AU	opposition	2451 Feb 21 02:05	2°♐20'32	10°32'21
conjunction	2443 Aug 12 05:33	19°♊46'28	6°48'22	min. Earth dist.	2451 Feb 23 22:21	2°♐16'18	34.08274 AU
minimum elong	2443 Aug 12 05:19	19°♊46'27	6°48'21	direct	2451 May 12 19:33	1°♐04'19	
retrograde	2443 Nov 22 22:18	21°♊45'11		max. Earth dist.	2451 Aug 23 00:44	3°♐08'18	35.92613 AU
opposition	2444 Feb 09 18:13	20°♊34'11	7°24'19	conjunction	2451 Aug 26 04:36	3°♐14'26	10°10'00
min. Earth dist.	2444 Feb 12 12:31	20°♊30'15	35.87210 AU	minimum elong	2451 Aug 26 04:16	3°♐14'24	10°10'00
direct	2444 Apr 30 17:56	19°♊21'10		retrograde	2451 Dec 07 02:42	5°♐22'49	
max. Earth dist.	2444 Aug 10 00:53	21°♊16'17	37.72660 AU	opposition	2452 Feb 23 02:40	4°♐08'39	10°58'42
conjunction	2444 Aug 13 03:05	21°♊21'54	7°13'44	min. Earth dist.	2452 Feb 25 22:11	4°♐04'26	33.83513 AU
minimum elong	2444 Aug 13 02:51	21°♊21'53	7°13'44	direct	2452 May 13 19:42	2°♐51'59	
retrograde	2444 Nov 23 18:55	23°♊21'42		max. Earth dist.	2452 Aug 24 02:24	4°♐57'17	35.67654 AU
opposition	2445 Feb 10 13:54	22°♊10'18	7°51'17	conjunction	2452 Aug 27 07:33	5°♐03'34	10°34'33
min. Earth dist.	2445 Feb 13 07:52	22°♊06'22	35.61263 AU	minimum elong	2452 Aug 27 07:13	5°♐03'32	10°34'34
direct	2445 May 02 13:59	20°♊56'49		retrograde	2452 Dec 08 06:34	7°♐13'19	
max. Earth dist.	2445 Aug 11 21:24	22°♊53'00	37.46509 AU	opposition	2453 Feb 24 04:06	5°♐58'45	11°24'49
conjunction	2445 Aug 15 01:19	22°♊58'47	7°39'07	min. Earth dist.	2453 Feb 27 00:50	5°♐54'26	33.58914 AU
minimum elong	2445 Aug 15 01:03	22°♊58'46	7°39'07	direct	2453 May 15 17:24	4°♐41'38	
retrograde	2445 Nov 25 17:22	24°♊59'43		max. Earth dist.	2453 Aug 26 07:13	6°♐48'24	35.42834 AU
opposition	2446 Feb 12 10:11	23°♊47'54	8°18'16	conjunction	2453 Aug 29 11:36	6°♐54'41	10°58'51
min. Earth dist.	2446 Feb 15 05:33	23°♊43'51	35.35344 AU	minimum elong	2453 Aug 29 11:14	6°♐54'40	10°58'50
direct	2446 May 04 07:05	22°♊33'56		retrograde	2453 Dec 10 09:31	9°♐05'47	
max. Earth dist.	2446 Aug 13 21:04	24°♊31'22	37.20405 AU	opposition	2454 Feb 26 06:14	7°♐50'49	11°50'40
conjunction	2446 Aug 17 00:18	24°♊37'10	8°04'31	min. Earth dist.	2454 Mar 01 02:43	7°♐46'29	33.34447 AU
minimum elong	2446 Aug 17 00:02	24°♊37'08	8°04'31	direct	2454 May 17 19:05	6°♐33'14	
retrograde	2446 Nov 27 15:46	26°♊39'15		max. Earth dist.	2454 Aug 28 10:37	8°♐41'19	35.18154 AU
opposition	2447 Feb 14 07:12	25°♊22'01	8°45'16	conjunction	2454 Aug 31 16:18	8°♐47'46	11°22'50
min. Earth dist.	2447 Feb 17 02:18	25°♊22'58	35.09512 AU	minimum elong	2454 Aug 31 15:56	8°♐47'45	11°22'50
direct	2447 May 06 03:11	24°♊12'35		retrograde	2454 Dec 12 16:10	11°♐00'13	
max. Earth dist.	2447 Aug 15 19:16	26°♊11'11	36.94423 AU	opposition	2455 Feb 28 09:15	9°♐44'49	12°16'10
conjunction	2447 Aug 18 23:36	26°♊17'06	8°29'51	min. Earth dist.	2455 Mar 03 06:05	9°♐40'27	33.10143 AU
minimum elong	2447 Aug 18 23:19	26°♊17'05	8°29'51	direct	2455 May 19 19:54	8°♐26'45	
retrograde	2447 Nov 29 17:48	28°♊20'23		max. Earth dist.	2455 Aug 30 16:45	10°♐36'19	34.93631 AU
opposition	2448 Feb 16 04:51	27°♊07'44	9°12'12	conjunction	2455 Sep 02 21:47	10°♐42'47	11°46'27
min. Earth dist.	2448 Feb 19 00:14	27°♊03'39	34.83857 AU	minimum elong	2455 Sep 02 21:25	10°♐42'45	11°46'26
				retrograde	2455 Dec 14 21:20	12°♐56'36	

opposition	2456 Mar 01 13:10	11° \mathring{M} 40'45	12°41'17	max. Earth dist.	2464 Sep 18 10:56	29° \mathring{M} 18'53	32.91414 AU
min. Earth dist.	2456 Mar 04 10:25	11° \mathring{M} 36'19	32.86022 AU				
direct	2456 May 20 22:31	10° \mathring{M} 22'11		conjunction	2464 Sep 21 09:12	29° \mathring{M} 25'19	14°51'30
max. Earth dist.	2456 Aug 31 22:38	12° \mathring{M} 33'09	34.69338 AU	minimum elong	2464 Sep 21 08:51	29° \mathring{M} 25'17	14°51'31
					2464 Oct 07 06:30	0° $\underline{\text{E}}$	
conjunction	2456 Sep 04 03:56	12° \mathring{M} 39'42	12°09'39	retrograde	2465 Jan 02 16:13	1° $\underline{\text{E}}$ 51'35	
minimum elong	2456 Sep 04 03:34	12° \mathring{M} 39'40	12°09'39	opposition	2465 Mar 20 13:13	0° $\underline{\text{E}}$ 32'02	15°57'08
retrograde	2456 Dec 16 06:04	14° \mathring{M} 54'52		min. Earth dist.	2465 Mar 23 05:04	0° $\underline{\text{E}}$ 27'43	30.88826 AU
opposition	2457 Mar 03 17:37	13° \mathring{M} 38'34	13°05'56		2465 Apr 09 19:18	30° \mathring{R} \mathring{M}	
min. Earth dist.	2457 Mar 06 14:14	13° \mathring{M} 34'09	32.62167 AU	direct	2465 Jun 08 13:54	29° \mathring{M} 09'23	
direct	2457 May 23 03:28	12° \mathring{M} 19'29			2465 Aug 05 07:11	0° $\underline{\text{E}}$	
max. Earth dist.	2457 Sep 03 05:41	14° \mathring{M} 31'53	34.45320 AU	max. Earth dist.	2465 Sep 21 01:08	1° $\underline{\text{E}}$ 34'08	32.71865 AU
conjunction	2457 Sep 06 10:59	14° \mathring{M} 38'30	12°32'21	conjunction	2465 Sep 23 22:31	1° $\underline{\text{E}}$ 40'33	15°07'40
minimum elong	2457 Sep 06 10:36	14° \mathring{M} 38'28	12°32'21	minimum elong	2465 Sep 23 22:10	1° $\underline{\text{E}}$ 40'31	15°07'39
retrograde	2457 Dec 18 14:12	16° \mathring{M} 55'01		retrograde	2466 Jan 05 08:14	4° $\underline{\text{E}}$ 08'11	
opposition	2458 Mar 05 23:08	15° \mathring{M} 38'15	13°30'04	opposition	2466 Mar 23 01:40	2° $\underline{\text{E}}$ 48'17	16°14'05
min. Earth dist.	2458 Mar 08 20:27	15° \mathring{M} 33'46	32.38628 AU	min. Earth dist.	2466 Mar 25 15:45	2° $\underline{\text{E}}$ 44'04	30.69828 AU
direct	2458 May 25 09:00	14° \mathring{M} 18'40		direct	2466 Jun 11 02:27	1° $\underline{\text{E}}$ 25'16	
max. Earth dist.	2458 Sep 05 14:24	16° \mathring{M} 32'35	34.21669 AU	max. Earth dist.	2466 Sep 23 16:13	3° $\underline{\text{E}}$ 51'30	32.52892 AU
conjunction	2458 Sep 08 18:42	16° \mathring{M} 39'11	12°54'31	conjunction	2466 Sep 26 12:41	3° $\underline{\text{E}}$ 57'53	15°22'42
minimum elong	2458 Sep 08 18:19	16° \mathring{M} 39'09	12°54'32	minimum elong	2466 Sep 26 12:22	3° $\underline{\text{E}}$ 57'52	15°22'42
retrograde	2458 Dec 20 23:10	18° \mathring{M} 57'03		retrograde	2467 Jan 07 23:42	6° $\underline{\text{E}}$ 26'51	
opposition	2459 Mar 08 05:18	17° \mathring{M} 39'50	13°53'35	opposition	2467 Mar 25 15:09	5° $\underline{\text{E}}$ 06'37	16°29'48
min. Earth dist.	2459 Mar 11 01:11	17° \mathring{M} 35'24	32.15497 AU	min. Earth dist.	2467 Mar 28 05:17	5° $\underline{\text{E}}$ 02'23	30.51406 AU
direct	2459 May 27 16:08	16° \mathring{M} 19'44		direct	2467 Jun 13 15:02	3° $\underline{\text{E}}$ 43'15	
max. Earth dist.	2459 Sep 07 22:43	18° \mathring{M} 35'05	33.98462 AU	max. Earth dist.	2467 Sep 26 08:52	6° $\underline{\text{E}}$ 11'00	32.34542 AU
conjunction	2459 Sep 11 03:07	18° \mathring{M} 41'46	13°16'03	conjunction	2467 Sep 29 03:34	6° $\underline{\text{E}}$ 17'16	15°36'32
minimum elong	2459 Sep 11 02:44	18° \mathring{M} 41'44	13°16'03	minimum elong	2467 Sep 29 03:16	6° $\underline{\text{E}}$ 17'14	15°36'31
retrograde	2459 Dec 23 07:23	21° \mathring{M} 01'01		retrograde	2468 Jan 10 16:07	8° $\underline{\text{E}}$ 47'31	
opposition	2460 Mar 09 12:30	19° \mathring{M} 43'21	14°16'24	opposition	2468 Mar 27 05:22	7° $\underline{\text{E}}$ 26'57	16°44'13
min. Earth dist.	2460 Mar 12 08:39	19° \mathring{M} 38'52	31.92868 AU	min. Earth dist.	2468 Mar 29 17:20	7° $\underline{\text{E}}$ 22'50	30.33597 AU
direct	2460 May 28 21:01	18° \mathring{M} 22'45		direct	2468 Jun 15 06:01	6° $\underline{\text{E}}$ 03'13	
max. Earth dist.	2460 Sep 09 09:54	20° \mathring{M} 39'43	33.75802 AU	max. Earth dist.	2468 Sep 28 01:00	8° $\underline{\text{E}}$ 32'19	32.16835 AU
conjunction	2460 Sep 12 12:14	20° \mathring{M} 46'17	13°36'52	conjunction	2468 Sep 30 19:04	8° $\underline{\text{E}}$ 38'35	15°49'05
minimum elong	2460 Sep 12 11:52	20° \mathring{M} 46'15	13°36'52	minimum elong	2468 Sep 30 18:47	8° $\underline{\text{E}}$ 38'33	15°49'05
retrograde	2460 Dec 24 16:18	23° \mathring{M} 06'55		retrograde	2469 Jan 12 08:05	11° $\underline{\text{E}}$ 10'03	
opposition	2461 Mar 11 20:30	21° \mathring{M} 48'49	14°38'26	opposition	2469 Mar 29 20:28	9° $\underline{\text{E}}$ 49'08	16°57'13
min. Earth dist.	2461 Mar 14 15:07	21° \mathring{M} 44'25	31.70806 AU	min. Earth dist.	2469 Apr 01 08:10	9° $\underline{\text{E}}$ 45'02	30.16444 AU
direct	2461 May 31 04:26	20° \mathring{M} 27'46		direct	2469 Jun 17 19:08	8° $\underline{\text{E}}$ 25'03	
max. Earth dist.	2461 Sep 11 19:44	22° \mathring{M} 46'11	33.53748 AU	max. Earth dist.	2469 Sep 30 19:55	10° $\underline{\text{E}}$ 55'38	31.99833 AU
conjunction	2461 Sep 14 22:13	22° \mathring{M} 52'49	13°56'54	conjunction	2469 Oct 03 11:23	11° $\underline{\text{E}}$ 01'42	16°00'17
minimum elong	2461 Sep 14 21:50	22° \mathring{M} 52'47	13°56'53	minimum elong	2469 Oct 03 11:07	11° $\underline{\text{E}}$ 01'40	16°00'16
retrograde	2461 Dec 27 03:37	25° \mathring{M} 14'51		retrograde	2470 Jan 15 01:08	13° $\underline{\text{E}}$ 34'19	
opposition	2462 Mar 14 05:13	23° \mathring{M} 56'22	14°59'36	opposition	2470 Apr 01 12:11	12° $\underline{\text{E}}$ 13'05	17°08'44
min. Earth dist.	2462 Mar 16 23:21	23° \mathring{M} 51'58	31.49376 AU	min. Earth dist.	2470 Apr 03 21:51	12° $\underline{\text{E}}$ 09'05	29.99994 AU
direct	2462 Jun 02 09:59	22° \mathring{M} 34'52		direct	2470 Jun 20 11:10	10° $\underline{\text{E}}$ 48'39	
max. Earth dist.	2462 Sep 14 08:48	24° \mathring{M} 54'57	33.32336 AU	max. Earth dist.	2470 Oct 03 13:28	13° $\underline{\text{E}}$ 20'28	31.83598 AU
conjunction	2462 Sep 17 09:10	25° \mathring{M} 01'28	14°16'03	conjunction	2470 Oct 06 04:12	13° $\underline{\text{E}}$ 26'30	16°10'02
minimum elong	2462 Sep 17 08:48	25° \mathring{M} 01'26	14°16'03	minimum elong	2470 Oct 06 03:58	13° $\underline{\text{E}}$ 26'29	16°10'02
retrograde	2462 Dec 29 13:49	27° \mathring{M} 24'55		retrograde	2471 Jan 17 18:33	16° $\underline{\text{E}}$ 00'13	
opposition	2463 Mar 16 15:03	26° \mathring{M} 06'03	15°19'49	opposition	2471 Apr 04 04:47	14° $\underline{\text{E}}$ 38'40	17°18'39
min. Earth dist.	2463 Mar 19 08:14	26° \mathring{M} 01'41	31.28574 AU	min. Earth dist.	2471 Apr 06 13:15	14° $\underline{\text{E}}$ 34'45	29.84345 AU
direct	2463 Jun 04 18:35	24° \mathring{M} 44'10		direct	2471 Jun 23 01:32	13° $\underline{\text{E}}$ 13'55	
max. Earth dist.	2463 Sep 16 20:40	27° \mathring{M} 05'45	33.11570 AU	max. Earth dist.	2471 Oct 06 10:03	15° $\underline{\text{E}}$ 47'06	31.68222 AU
conjunction	2463 Sep 19 20:37	27° \mathring{M} 12'17	14°34'17	conjunction	2471 Oct 08 21:30	15° $\underline{\text{E}}$ 52'53	16°18'15
minimum elong	2463 Sep 19 20:15	27° \mathring{M} 12'15	14°34'16	minimum elong	2471 Oct 08 21:18	15° $\underline{\text{E}}$ 52'51	16°18'14
retrograde	2464 Jan 01 03:39	29° \mathring{M} 37'09		retrograde	2472 Jan 20 10:27	18° $\underline{\text{E}}$ 27'38	
opposition	2464 Mar 18 01:40	28° \mathring{M} 17'57	15°39'01	opposition	2472 Apr 05 22:09	17° $\underline{\text{E}}$ 05'47	17°26'54
min. Earth dist.	2464 Mar 20 17:35	28° \mathring{M} 13'39	31.08406 AU	min. Earth dist.	2472 Apr 08 04:32	17° $\underline{\text{E}}$ 01'59	29.69561 AU
direct	2464 Jun 06 04:01	26° \mathring{M} 55'40		direct	2472 Jun 24 18:55	15° $\underline{\text{E}}$ 40'43	

max. Earth dist.	2472 Oct 08 05:10	18°♁15'03	31.53793 AU	max. Earth dist.	2480 Oct 29 17:48	8°♁43'50	30.76139 AU
conjunction	2472 Oct 10 15:18	18°♁20'44	16°24'51	conjunction	2480 Oct 31 05:23	8°♁47'26	16°13'17
minimum elong	2472 Oct 10 15:09	18°♁20'43	16°24'52	minimum elong	2480 Oct 31 05:32	8°♁47'26	16°13'17
retrograde	2473 Jan 22 05:18	20°♁56'28		retrograde	2481 Feb 11 23:05	11°♁28'08	
opposition	2473 Apr 08 15:57	19°♁34'20	17°33'22	opposition	2481 Apr 29 12:13	10°♁04'55	17°15'03
min. Earth dist.	2473 Apr 10 20:01	19°♁30'41	29.55749 AU	min. Earth dist.	2481 Apr 30 21:17	10°♁02'34	28.81911 AU
direct	2473 Jun 27 11:11	18°♁08'59		direct	2481 Jul 18 06:24	8°♁38'47	
max. Earth dist.	2473 Oct 11 03:10	20°♁44'38	31.40386 AU	max. Earth dist.	2481 Nov 01 16:23	11°♁20'45	30.71010 AU
conjunction	2473 Oct 13 09:51	20°♁50'00	16°29'46	conjunction	2481 Nov 03 02:12	11°♁24'10	16°03'29
minimum elong	2473 Oct 13 09:42	20°♁49'59	16°29'46	minimum elong	2481 Nov 03 02:21	11°♁24'11	16°03'29
retrograde	2474 Jan 24 22:56	23°♁26'39		retrograde	2482 Feb 14 20:50	14°♁05'02	
opposition	2474 Apr 11 10:43	22°♁04'16	17°37'59	opposition	2482 May 02 10:26	12°♁41'45	17°03'42
min. Earth dist.	2474 Apr 13 13:00	22°♁00'44	29.42949 AU	min. Earth dist.	2482 May 03 17:06	12°♁39'35	28.77115 AU
direct	2474 Jun 30 03:54	20°♁38'43		direct	2482 Jul 21 04:07	11°♁15'37	
max. Earth dist.	2474 Oct 13 23:58	23°♁15'25	31.28062 AU	conjunction	2482 Nov 05 22:57	14°♁01'00	15°51'48
conjunction	2474 Oct 16 04:36	23°♁20'37	16°32'56	minimum elong	2482 Nov 05 23:10	14°♁01'01	15°51'48
minimum elong	2474 Oct 16 04:31	23°♁20'37	16°32'57	max. Earth dist.	2482 Nov 04 17:10	13°♁57'59	30.66921 AU
retrograde	2475 Jan 27 18:42	25°♁58'07		2482 Nov 30 18:50	15°♁		
opposition	2475 Apr 14 05:57	24°♁35'33	17°40'41	retrograde	2483 Feb 17 16:05	16°♁41'55	
min. Earth dist.	2475 Apr 16 05:05	24°♁32'14	29.31212 AU	opposition	2483 May 05 08:48	15°♁18'35	16°50'22
direct	2475 Jul 02 23:31	23°♁09'49		min. Earth dist.	2483 May 06 12:43	15°♁16'37	28.73335 AU
max. Earth dist.	2475 Oct 16 22:35	25°♁47'39	31.16821 AU	2483 May 16 10:05	15°♁		
conjunction	2475 Oct 19 00:00	25°♁52'33	16°34'18	direct	2483 Jul 24 03:45	13°♁52'29	
minimum elong	2475 Oct 18 23:55	25°♁52'33	16°34'18	2483 Sep 26 16:18	15°♁		
retrograde	2476 Jan 30 13:36	28°♁30'50		conjunction	2483 Nov 08 19:29	16°♁37'44	15°38'16
opposition	2476 Apr 16 01:52	27°♁08'06	17°41'25	minimum elong	2483 Nov 08 19:41	16°♁37'46	15°38'17
min. Earth dist.	2476 Apr 17 23:33	27°♁04'53	29.20524 AU	max. Earth dist.	2483 Nov 07 15:43	16°♁34'56	30.63915 AU
direct	2476 Jul 04 18:19	25°♁42'15		retrograde	2484 Feb 20 13:08	19°♁18'36	
max. Earth dist.	2476 Oct 18 20:41	28°♁21'02	31.06661 AU	opposition	2484 May 07 06:58	17°♁55'14	16°35'00
conjunction	2476 Oct 20 19:35	28°♁25'42	16°33'49	min. Earth dist.	2484 May 08 07:38	17°♁53'30	28.70656 AU
minimum elong	2476 Oct 20 19:34	28°♁25'42	16°33'49	direct	2484 Jul 26 01:37	16°♁29'10	
2476 Dec 01 20:12	0°♁			conjunction	2484 Nov 10 15:54	19°♁14'12	15°22'53
retrograde	2477 Feb 01 10:55	1°♁04'41		minimum elong	2484 Nov 10 16:11	19°♁14'14	15°22'53
2477 Apr 08 02:18	30°♁			max. Earth dist.	2484 Nov 09 16:35	19°♁11'51	30.62055 AU
opposition	2477 Apr 18 22:11	29°♁41'49	17°40'10	retrograde	2485 Feb 22 08:13	21°♁54'54	
min. Earth dist.	2477 Apr 20 16:30	29°♁38'50	29.10855 AU	opposition	2485 May 10 05:17	20°♁31'33	16°17'41
direct	2477 Jul 07 14:59	28°♁15'52		min. Earth dist.	2485 May 11 03:27	20°♁29'59	28.69113 AU
2477 Sep 28 02:05	0°♁			direct	2485 Jul 28 23:50	19°♁05'34	
max. Earth dist.	2477 Oct 21 19:21	0°♁55'31	30.97520 AU	conjunction	2485 Nov 13 11:56	21°♁50'15	15°05'42
conjunction	2477 Oct 23 15:42	0°♁59'57	16°31'29	minimum elong	2485 Nov 13 12:12	21°♁50'16	15°05'42
minimum elong	2477 Oct 23 15:42	0°♁59'57	16°31'29	max. Earth dist.	2485 Nov 12 15:06	21°♁48'08	30.61400 AU
retrograde	2478 Feb 04 07:21	3°♁39'31		retrograde	2486 Feb 25 04:12	24°♁30'42	
opposition	2478 Apr 21 19:10	2°♁16'32	17°36'55	opposition	2486 May 13 03:20	23°♁07'24	15°58'24
min. Earth dist.	2478 Apr 23 12:10	2°♁13'39	29.02171 AU	min. Earth dist.	2486 May 13 21:20	23°♁06'08	28.68785 AU
direct	2478 Jul 10 11:07	0°♁50'31		direct	2486 Jul 31 22:20	21°♁41'31	
max. Earth dist.	2478 Oct 24 18:49	3°♁30'58	30.89401 AU	conjunction	2486 Nov 16 07:52	24°♁25'47	14°46'44
conjunction	2478 Oct 26 12:06	3°♁35'07	16°27'18	minimum elong	2486 Nov 16 08:11	24°♁25'49	14°46'44
minimum elong	2478 Oct 26 12:10	3°♁35'07	16°27'18	max. Earth dist.	2486 Nov 15 15:27	24°♁24'08	30.61995 AU
retrograde	2479 Feb 07 05:01	6°♁15'10		retrograde	2487 Feb 27 22:06	27°♁05'56	
opposition	2479 Apr 24 16:33	4°♁52'06	17°31'39	opposition	2487 May 16 01:28	25°♁42'42	15°37'13
min. Earth dist.	2479 Apr 26 06:16	4°♁49'26	28.94454 AU	min. Earth dist.	2487 May 16 16:57	25°♁41'37	28.69695 AU
direct	2479 Jul 13 10:14	3°♁26'02		direct	2487 Aug 03 20:11	24°♁17'00	
max. Earth dist.	2479 Oct 27 17:26	6°♁07'04	30.82268 AU	conjunction	2487 Nov 19 03:13	27°♁00'44	14°26'03
conjunction	2479 Oct 29 08:34	6°♁11'00	16°21'14	minimum elong	2487 Nov 19 03:32	27°♁00'46	14°26'04
minimum elong	2479 Oct 29 08:38	6°♁11'01	16°21'13	max. Earth dist.	2487 Nov 18 13:39	26°♁59'22	30.63863 AU
retrograde	2480 Feb 10 01:51	8°♁51'28		retrograde	2488 Mar 01 18:28	29°♁40'29	
opposition	2480 Apr 26 14:22	7°♁28'17	17°24'21	opposition	2488 May 17 23:10	28°♁17'23	15°14'13
min. Earth dist.	2480 Apr 28 02:25	7°♁25'45	28.87704 AU	min. Earth dist.	2488 May 18 10:15	28°♁16'36	28.71836 AU
direct	2480 Jul 15 06:52	6°♁02'11		direct	2488 Aug 05 17:45	26°♁51'54	

conjunction	2488 Nov 20 22:26	29° \mathbb{L} 35'01	14°03'44	conjunction	2496 Dec 10 13:43	19° \mathbb{Z} 29'27	10°17'28
minimum elong	2488 Nov 20 22:49	29° \mathbb{L} 35'04	14°03'44	minimum elong	2496 Dec 10 14:06	19° \mathbb{Z} 29'30	10°17'27
max. Earth dist.	2488 Nov 20 12:43	29° \mathbb{L} 34'03	30.66947 AU	max. Earth dist.	2496 Dec 11 03:34	19° \mathbb{Z} 30'48	31.29634 AU
	2488 Dec 01 07:46	0° \mathbb{Z}		retrograde	2497 Mar 24 02:20	22° \mathbb{Z} 02'04	
retrograde	2489 Mar 04 12:12	2° \mathbb{Z} 14'18		opposition	2497 Jun 10 09:25	20° \mathbb{Z} 40'43	10°42'03
opposition	2489 May 20 20:38	0° \mathbb{Z} 51'21	14°49'30	min. Earth dist.	2497 Jun 09 17:44	20° \mathbb{Z} 41'46	29.38798 AU
min. Earth dist.	2489 May 21 05:35	0° \mathbb{Z} 50'43	28.75162 AU	direct	2497 Aug 29 14:46	19° \mathbb{Z} 17'47	
	2489 Jun 22 19:09	30° \mathbb{R} \mathbb{L}					
direct	2489 Aug 08 15:01	29° \mathbb{L} 26'07		conjunction	2497 Dec 13 03:45	21° \mathbb{Z} 51'41	9°44'40
	2489 Sep 22 20:27	0° \mathbb{Z}		minimum elong	2497 Dec 13 04:07	21° \mathbb{Z} 51'43	9°44'41
				max. Earth dist.	2497 Dec 13 21:36	21° \mathbb{Z} 53'24	31.41825 AU
conjunction	2489 Nov 23 17:14	2° \mathbb{Z} 08'33	13°39'51	retrograde	2498 Mar 26 13:22	24° \mathbb{Z} 23'13	
minimum elong	2489 Nov 23 17:36	2° \mathbb{Z} 08'35	13°39'52	min. Earth dist.	2498 Jun 12 08:42	23° \mathbb{Z} 03'17	29.51145 AU
max. Earth dist.	2489 Nov 23 10:40	2° \mathbb{Z} 07'53	30.71215 AU	opposition	2498 Jun 13 02:30	23° \mathbb{Z} 02'05	10°06'30
retrograde	2490 Mar 07 07:22	4° \mathbb{Z} 47'15		direct	2498 Sep 01 08:36	21° \mathbb{Z} 39'29	
opposition	2490 May 23 17:51	3° \mathbb{Z} 24'29	14°23'08				
min. Earth dist.	2490 May 23 22:48	3° \mathbb{Z} 24'08	28.79616 AU	conjunction	2498 Dec 15 16:49	24° \mathbb{Z} 12'05	9°11'10
direct	2490 Aug 11 14:12	1° \mathbb{Z} 59'31		minimum elong	2498 Dec 15 17:10	24° \mathbb{Z} 12'07	9°11'10
				max. Earth dist.	2498 Dec 16 13:02	24° \mathbb{Z} 14'01	31.55046 AU
conjunction	2490 Nov 26 11:30	4° \mathbb{Z} 41'10	13°14'32	retrograde	2499 Mar 29 02:15	26° \mathbb{Z} 42'31	
minimum elong	2490 Nov 26 11:53	4° \mathbb{Z} 41'12	13°14'31	opposition	2499 Jun 15 18:40	25° \mathbb{Z} 21'39	9°30'15
max. Earth dist.	2490 Nov 26 08:07	4° \mathbb{Z} 40'49	30.76583 AU	min. Earth dist.	2499 Jun 14 20:40	25° \mathbb{Z} 23'07	29.64534 AU
retrograde	2491 Mar 10 01:29	7° \mathbb{Z} 19'14		direct	2499 Sep 04 01:34	23° \mathbb{Z} 59'24	
opposition	2491 May 26 14:51	5° \mathbb{Z} 56'39	13°55'15				
min. Earth dist.	2491 May 26 17:27	5° \mathbb{Z} 56'28	28.85152 AU	conjunction	2499 Dec 18 05:21	26° \mathbb{Z} 30'41	8°37'04
direct	2491 Aug 14 10:19	4° \mathbb{Z} 31'58		minimum elong	2499 Dec 18 05:42	26° \mathbb{Z} 30'43	8°37'05
				max. Earth dist.	2499 Dec 19 05:06	26° \mathbb{Z} 32'57	31.69285 AU
conjunction	2491 Nov 29 05:25	7° \mathbb{Z} 12'44	12°47'50	retrograde	2500 Mar 31 13:16	29° \mathbb{Z} 00'01	
minimum elong	2491 Nov 29 05:48	7° \mathbb{Z} 12'46	12°47'51	min. Earth dist.	2500 Jun 17 10:01	27° \mathbb{Z} 41'03	29.78955 AU
max. Earth dist.	2491 Nov 29 05:30	7° \mathbb{Z} 12'44	30.83019 AU	opposition	2500 Jun 18 10:06	27° \mathbb{Z} 39'27	8°53'25
retrograde	2492 Mar 11 19:24	9° \mathbb{Z} 50'04		direct	2500 Sep 06 16:12	26° \mathbb{Z} 17'36	
opposition	2492 May 28 11:12	8° \mathbb{Z} 27'41	13°25'57				
min. Earth dist.	2492 May 28 10:23	8° \mathbb{Z} 27'45	28.91703 AU	conjunction	2500 Dec 20 17:10	28° \mathbb{Z} 47'34	8°02'27
direct	2492 Aug 16 09:02	7° \mathbb{Z} 03'18		minimum elong	2500 Dec 20 17:29	28° \mathbb{Z} 47'36	8°02'27
				max. Earth dist.	2500 Dec 21 19:40	28° \mathbb{Z} 50'04	31.84525 AU
conjunction	2492 Nov 30 22:45	9° \mathbb{Z} 43'05	12°19'54		2501 Jan 23 03:13	0° \mathbb{Z}	
minimum elong	2492 Nov 30 23:09	9° \mathbb{Z} 43'08	12°19'53	retrograde	2501 Apr 03 00:36	1° \mathbb{Z} 15'47	
max. Earth dist.	2492 Dec 01 01:05	9° \mathbb{Z} 43'19	30.90447 AU		2501 Jun 18 05:10	30° \mathbb{R} \mathbb{Z}	
retrograde	2493 Mar 14 14:05	12° \mathbb{Z} 19'37		min. Earth dist.	2501 Jun 19 21:05	29° \mathbb{Z} 57'22	29.94343 AU
opposition	2493 May 31 07:15	10° \mathbb{Z} 57'26	12°55'21	opposition	2501 Jun 21 00:49	29° \mathbb{Z} 55'32	8°16'06
min. Earth dist.	2493 May 31 03:42	10° \mathbb{Z} 57'41	28.99239 AU	direct	2501 Sep 09 08:48	28° \mathbb{Z} 34'06	
direct	2493 Aug 19 06:00	9° \mathbb{Z} 33'20			2501 Nov 24 07:36	0° \mathbb{Z}	
conjunction	2493 Dec 03 15:34	12° \mathbb{Z} 12'05	11°50'47	conjunction	2501 Dec 23 04:06	1° \mathbb{Z} 02'46	7°27'26
minimum elong	2493 Dec 03 15:57	12° \mathbb{Z} 12'08	11°50'48	minimum elong	2501 Dec 23 04:24	1° \mathbb{Z} 02'48	7°27'27
max. Earth dist.	2493 Dec 03 21:35	12° \mathbb{Z} 12'41	30.98840 AU	max. Earth dist.	2501 Dec 24 09:14	1° \mathbb{Z} 05'30	32.00675 AU
retrograde	2494 Mar 17 05:09	14° \mathbb{Z} 47'44		retrograde	2502 Apr 05 12:28	3° \mathbb{Z} 29'52	
opposition	2494 Jun 03 02:46	13° \mathbb{Z} 25'46	12°23'34	min. Earth dist.	2502 Jun 22 08:48	2° \mathbb{Z} 11'56	30.10648 AU
min. Earth dist.	2494 Jun 02 20:33	13° \mathbb{Z} 26'11	29.07705 AU	opposition	2502 Jun 23 15:00	2° \mathbb{Z} 09'58	7°38'25
direct	2494 Aug 22 03:42	12° \mathbb{Z} 01'57		direct	2502 Sep 11 21:54	0° \mathbb{Z} 48'58	
conjunction	2494 Dec 06 07:39	14° \mathbb{Z} 39'34	11°20'37	conjunction	2502 Dec 25 14:31	3° \mathbb{Z} 16'19	6°52'07
minimum elong	2494 Dec 06 08:02	14° \mathbb{Z} 39'37	11°20'37	minimum elong	2502 Dec 25 14:48	3° \mathbb{Z} 16'20	6°52'06
max. Earth dist.	2494 Dec 06 15:33	14° \mathbb{Z} 40'21	31.08165 AU	max. Earth dist.	2502 Dec 26 22:46	3° \mathbb{Z} 19'18	32.17685 AU
retrograde	2495 Mar 19 21:55	17° \mathbb{Z} 14'16		retrograde	2503 Apr 07 22:03	5° \mathbb{Z} 42'17	
opposition	2495 Jun 05 21:42	15° \mathbb{Z} 52'29	11°50'41	min. Earth dist.	2503 Jun 24 19:39	4° \mathbb{Z} 24'52	30.27773 AU
min. Earth dist.	2495 Jun 05 12:07	15° \mathbb{Z} 53'09	29.17120 AU	opposition	2503 Jun 26 04:22	4° \mathbb{Z} 22'44	7°00'28
direct	2495 Aug 24 23:22	14° \mathbb{Z} 28'58		direct	2503 Sep 14 12:42	3° \mathbb{Z} 02'11	
conjunction	2495 Dec 08 23:06	17° \mathbb{Z} 05'24	10°49'29	conjunction	2503 Dec 28 00:05	5° \mathbb{Z} 28'12	6°16'34
minimum elong	2495 Dec 08 23:29	17° \mathbb{Z} 05'26	10°49'30	minimum elong	2503 Dec 28 00:20	5° \mathbb{Z} 28'13	6°16'34
max. Earth dist.	2495 Dec 09 11:01	17° \mathbb{Z} 06'34	31.18426 AU	max. Earth dist.	2503 Dec 29 09:55	5° \mathbb{Z} 31'19	32.35452 AU
retrograde	2496 Mar 21 11:48	19° \mathbb{Z} 39'05		retrograde	2504 Apr 09 09:29	7° \mathbb{Z} 53'02	
opposition	2496 Jun 07 16:00	18° \mathbb{Z} 17'30	11°16'49	min. Earth dist.	2504 Jun 26 05:36	6° \mathbb{Z} 36'08	30.45652 AU
min. Earth dist.	2496 Jun 07 04:17	18° \mathbb{Z} 18'18	29.27469 AU	opposition	2504 Jun 27 17:03	6° \mathbb{Z} 33'50	6°22'21
direct	2496 Aug 26 20:03	16° \mathbb{Z} 54'16		direct	2504 Sep 16 01:53	5° \mathbb{Z} 13'44	

conjunction	2504 Dec 29 09:11	7°☾38'25	5°40'54	retrograde	2513 Apr 27 12:29	26°☾10'24	
minimum elong	2504 Dec 29 09:25	7°☾38'26	5°40'53	min. Earth dist.	2513 Jul 14 19:58	24°☾57'26	32.32858 AU
max. Earth dist.	2504 Dec 30 22:12	7°☾41'48	32.53901 AU	opposition	2513 Jul 17 02:12	24°☾54'06	0°44'37
retrograde	2505 Apr 11 17:58	10°☾02'06		direct	2513 Oct 05 18:24	23°☾37'35	
min. Earth dist.	2505 Jun 28 16:05	8°☾45'38	30.64185 AU				
opposition	2505 Jun 30 05:01	8°☾43'15	5°44'10	conjunction	2514 Jan 16 10:14	25°☾50'20	0°25'08
direct	2505 Sep 18 16:26	7°☾23'35		minimum elong	2514 Jan 16 10:15	25°☾50'20	0°25'09
				max. Earth dist.	2514 Jan 18 16:55	25°☾54'59	34.44717 AU
conjunction	2505 Dec 31 17:29	9°☾46'56	5°05'10	retrograde	2514 Apr 29 14:57	28°☾03'38	
minimum elong	2505 Dec 31 17:41	9°☾46'57	5°05'11	min. Earth dist.	2514 Jul 17 00:39	26°☾51'04	32.56445 AU
max. Earth dist.	2506 Jan 02 07:32	9°☾50'24	32.72958 AU	opposition	2514 Jul 19 07:47	26°☾47'41	0°08'47
retrograde	2506 Apr 14 02:53	12°☾09'28		direct	2514 Oct 08 01:45	25°☾31'36	
min. Earth dist.	2506 Jul 01 00:15	10°☾53'32	30.83327 AU	desc. node	2514 Oct 18 01:02	25°☾33'05	
opposition	2506 Jul 02 16:18	10°☾50'58	5°06'00				
direct	2506 Sep 21 04:09	9°☾31'42		conjunction	2515 Jan 18 12:13	27°☾43'08	0°-8'-26
				minimum elong	2515 Jan 18 12:13	27°☾43'08	0°08'28
conjunction	2507 Jan 03 01:07	11°☾53'43	4°29'28	behind sun begin	2515 Jan 18 06:36	27°☾42'41	
minimum elong	2507 Jan 03 01:18	11°☾53'43	4°29'28	behind sun end	2515 Jan 18 17:49	27°☾43'35	
max. Earth dist.	2507 Jan 04 18:06	11°☾57'24	32.92563 AU	max. Earth dist.	2515 Jan 20 19:37	27°☾47'48	34.68539 AU
retrograde	2507 Apr 16 07:52	14°☾15'04		retrograde	2515 May 01 17:33	29°☾55'22	
min. Earth dist.	2507 Jul 03 09:57	12°☾59'30	31.03016 AU	min. Earth dist.	2515 Jul 19 02:44	28°☾43'17	32.80460 AU
opposition	2507 Jul 05 02:58	12°☾56'53	4°27'54	opposition	2515 Jul 21 12:33	28°☾39'46	0°-26'-32
direct	2507 Sep 23 16:41	11°☾38'02		direct	2515 Oct 10 07:04	27°☾24'06	
conjunction	2508 Jan 05 08:04	13°☾58'41	3°53'51	conjunction	2516 Jan 20 13:49	29°☾34'26	0°-41'-27
minimum elong	2508 Jan 05 08:13	13°☾58'42	3°53'52	minimum elong	2516 Jan 20 13:48	29°☾34'26	0°41'27
max. Earth dist.	2508 Jan 07 02:03	14°☾02'26	33.12686 AU	max. Earth dist.	2516 Jan 22 23:22	29°☾39'16	34.92715 AU
retrograde	2508 Apr 17 14:08	16°☾18'51			2516 Feb 02 08:21	0°≈	
min. Earth dist.	2508 Jul 04 16:37	15°☾03'46	31.23230 AU	retrograde	2516 May 02 17:00	1°≈45'38	
opposition	2508 Jul 06 12:29	15°☾00'59	3°49'58	min. Earth dist.	2516 Jul 20 06:30	0°≈33'55	33.04818 AU
direct	2508 Sep 25 03:43	13°☾42'31		opposition	2516 Jul 22 16:41	0°≈30'23	-1°-1'-20
					2516 Aug 13 05:30	30°R☾	
conjunction	2509 Jan 06 14:14	16°☾01'48	3°18'23	direct	2516 Oct 11 12:24	29°☾15'09	
minimum elong	2509 Jan 06 14:22	16°☾01'48	3°18'23		2516 Dec 06 15:12	0°≈	
max. Earth dist.	2509 Jan 08 10:36	16°☾05'44	33.33305 AU				
retrograde	2509 Apr 19 18:38	18°☾20'47		conjunction	2517 Jan 21 14:52	1°≈24'18	-1°-14'00
min. Earth dist.	2509 Jul 07 00:31	17°☾06'03	31.43989 AU	minimum elong	2517 Jan 21 14:50	1°≈24'18	1°14'01
opposition	2509 Jul 08 21:35	17°☾03'13	3°12'15	max. Earth dist.	2517 Jan 24 01:16	1°≈29'10	35.17182 AU
direct	2509 Sep 27 12:41	15°☾45'07		retrograde	2517 May 04 16:55	3°≈34'28	
				min. Earth dist.	2517 Jul 22 08:11	2°≈23'11	33.29431 AU
conjunction	2510 Jan 08 19:33	18°☾03'02	2°43'08	opposition	2517 Jul 24 20:13	2°≈19'35	-1°-35'-33
minimum elong	2510 Jan 08 19:40	18°☾03'02	2°43'08	direct	2517 Oct 13 17:02	1°≈04'44	
max. Earth dist.	2510 Jan 10 17:56	18°☾07'07	33.54464 AU				
retrograde	2510 Apr 21 22:42	20°☾20'51		conjunction	2518 Jan 23 15:13	3°≈12'45	-1°-46'-2
min. Earth dist.	2510 Jul 09 06:07	19°☾06'34	31.65312 AU	minimum elong	2518 Jan 23 15:09	3°≈12'44	1°46'02
opposition	2510 Jul 11 05:50	19°☾03'35	2°34'48	max. Earth dist.	2518 Jan 26 02:42	3°≈17'39	35.41839 AU
direct	2510 Sep 29 22:22	17°☾45'52		retrograde	2518 May 06 17:59	5°≈21'54	
				min. Earth dist.	2518 Jul 24 10:25	4°≈10'59	33.54240 AU
conjunction	2511 Jan 11 00:10	20°☾02'26	2°08'08	opposition	2518 Jul 26 23:21	4°≈07'21	-2°-9'-11
minimum elong	2511 Jan 11 00:15	20°☾02'26	2°08'07	direct	2518 Oct 15 18:47	2°≈52'54	
max. Earth dist.	2511 Jan 13 00:18	20°☾06'38	33.76178 AU				
retrograde	2511 Apr 24 04:27	22°☾19'05		conjunction	2519 Jan 25 15:17	4°≈59'46	-2°-17'-31
min. Earth dist.	2511 Jul 11 11:31	21°☾05'13	31.87250 AU	minimum elong	2519 Jan 25 15:12	4°≈59'45	2°17'32
opposition	2511 Jul 13 13:21	21°☾02'07	1°57'41	max. Earth dist.	2519 Jan 28 04:14	5°≈04'46	35.66643 AU
direct	2511 Oct 02 03:56	19°☾44'47		retrograde	2519 May 08 17:28	7°≈07'55	
				min. Earth dist.	2519 Jul 26 11:58	5°≈57'21	33.79162 AU
conjunction	2512 Jan 13 04:13	22°☾00'04	1°33'26	opposition	2519 Jul 29 01:37	5°≈53'41	-2°-42'-11
minimum elong	2512 Jan 13 04:16	22°☾00'04	1°33'26	direct	2519 Oct 17 22:17	4°≈39'36	
max. Earth dist.	2512 Jan 15 07:00	22°☾04'27	33.98485 AU				
retrograde	2512 Apr 25 07:17	24°☾15'35		conjunction	2520 Jan 27 14:38	6°≈45'21	-2°-48'-26
min. Earth dist.	2512 Jul 12 16:37	23°☾02'07	32.09770 AU	minimum elong	2520 Jan 27 14:32	6°≈45'20	2°48'27
opposition	2512 Jul 14 20:08	22°☾58'56	1°20'56	max. Earth dist.	2520 Jan 30 03:28	6°≈50'18	35.91527 AU
direct	2512 Oct 03 12:08	21°☾42'00		retrograde	2520 May 09 19:09	8°≈52'29	
				min. Earth dist.	2520 Jul 27 12:12	7°≈42'17	34.04183 AU
conjunction	2513 Jan 14 07:27	23°☾56'00	0°59'05	opposition	2520 Jul 30 03:22	7°≈38'33	-3°-14'-34
minimum elong	2513 Jan 14 07:29	23°☾56'00	0°59'04	direct	2520 Oct 18 22:46	6°≈24'50	
max. Earth dist.	2513 Jan 16 11:12	24°☾00'26	34.21343 AU				

conjunction	2521 Jan 28 13:28	8°29'28	-3°-18'-47	direct	2528 Nov 01 18:12	19°37'55	
minimum elong	2521 Jan 28 13:21	8°29'28	3°18'49				
max. Earth dist.	2521 Jan 31 04:12	8°34'32	36.16487 AU	conjunction	2529 Feb 10 08:47	21°34'36	-6°-59'-14
retrograde	2521 May 11 17:12	10°35'37		minimum elong	2529 Feb 10 08:35	21°34'35	6°59'15
min. Earth dist.	2521 Jul 29 13:25	9°25'41	34.29293 AU	max. Earth dist.	2529 Feb 13 05:59	21°39'53	38.21401 AU
opposition	2521 Aug 01 04:32	9°21'58	-3°-46'-18	retrograde	2529 May 24 11:57	23°33'40	
direct	2521 Oct 21 00:52	8°08'36		min. Earth dist.	2529 Aug 11 17:46	22°26'27	36.35932 AU
				opposition	2529 Aug 14 17:02	22°22'25	-7°-35'-28
conjunction	2522 Jan 30 11:38	10°12'08	-3°-48'-33	direct	2529 Nov 03 16:23	21°11'50	
minimum elong	2522 Jan 30 11:30	10°12'07	3°48'34				
max. Earth dist.	2522 Feb 02 02:24	10°17'09	36.41554 AU	conjunction	2530 Feb 12 03:18	23°07'39	-7°-23'-54
retrograde	2522 May 13 14:53	12°17'18		minimum elong	2530 Feb 12 03:06	23°07'39	7°23'56
min. Earth dist.	2522 Jul 31 11:46	11°07'45	34.54551 AU	max. Earth dist.	2530 Feb 15 01:31	23°12'58	38.47310 AU
opposition	2522 Aug 03 05:01	11°03'56	-4°-17'-22	retrograde	2530 May 26 05:43	25°05'56	
direct	2522 Oct 23 02:49	9°50'53		min. Earth dist.	2530 Aug 13 14:47	23°58'57	36.61992 AU
				opposition	2530 Aug 16 13:32	23°54'58	-8°00'-59
conjunction	2523 Feb 01 09:13	11°53'21	-4°-17'-41	direct	2530 Nov 05 13:49	22°44'43	
minimum elong	2523 Feb 01 09:05	11°53'20	4°17'43				
max. Earth dist.	2523 Feb 04 01:54	11°58'30	36.66764 AU	conjunction	2531 Feb 13 21:28	24°39'39	-7°-47'-58
retrograde	2523 May 15 10:41	13°57'34		minimum elong	2531 Feb 13 21:16	24°39'38	7°47'58
min. Earth dist.	2523 Aug 02 11:35	12°48'18	34.79994 AU	max. Earth dist.	2531 Feb 16 19:48	24°44'57	38.73100 AU
opposition	2523 Aug 05 05:01	12°44'29	-4°-47'-46	retrograde	2531 May 27 22:02	26°37'08	
direct	2523 Oct 25 04:41	11°31'47		min. Earth dist.	2531 Aug 15 10:03	25°30'27	36.87887 AU
				opposition	2531 Aug 18 09:25	25°26'27	-8°-25'-50
conjunction	2524 Feb 03 06:23	13°33'12	-4°-46'-13	direct	2531 Nov 07 11:32	24°16'30	
minimum elong	2524 Feb 03 06:15	13°33'12	4°46'13				
max. Earth dist.	2524 Feb 05 23:43	13°38'22	36.92169 AU	conjunction	2532 Feb 15 15:12	26°10'34	-8°-11'-23
	2524 Mar 25 04:22	15°		minimum elong	2532 Feb 15 15:00	26°10'33	8°11'24
retrograde	2524 May 16 06:13	15°36'30		max. Earth dist.	2532 Feb 18 13:07	26°15'48	38.98698 AU
	2524 Jul 09 20:49	15°		retrograde	2532 May 28 16:15	28°07'16	
min. Earth dist.	2524 Aug 03 08:58	14°27'36	35.05634 AU	min. Earth dist.	2532 Aug 16 05:23	27°00'48	37.13602 AU
opposition	2524 Aug 06 04:06	14°23'42	-5°-17'-28	opposition	2532 Aug 19 04:50	26°56'49	-8°-50'00
direct	2524 Oct 26 05:24	13°11'21		direct	2532 Nov 08 06:26	25°47'10	
	2525 Jan 28 20:36	15°					
conjunction	2525 Feb 04 02:58	15°11'46	-5°-14'-6	conjunction	2533 Feb 16 08:38	27°40'22	-8°-34'-12
minimum elong	2525 Feb 04 02:49	15°11'45	5°14'07	minimum elong	2533 Feb 16 08:25	27°40'21	8°34'13
max. Earth dist.	2525 Feb 06 21:11	15°16'58	37.17760 AU	max. Earth dist.	2533 Feb 19 07:33	27°45'38	39.24113 AU
retrograde	2525 May 18 03:21	17°14'11		retrograde	2533 May 30 09:35	29°36'17	
min. Earth dist.	2525 Aug 05 06:58	16°05'37	35.31485 AU	min. Earth dist.	2533 Aug 18 00:49	28°30'00	37.39131 AU
opposition	2525 Aug 08 02:59	16°01'41	-5°-46'-28	opposition	2533 Aug 20 23:53	28°26'04	-9°-13'-30
	2525 Sep 30 09:56	15°		direct	2533 Nov 10 01:29	27°16'40	
direct	2525 Oct 28 03:13	14°49'42					
	2525 Nov 24 04:37	15°		conjunction	2534 Feb 18 01:19	29°09'01	-8°-56'-23
conjunction	2526 Feb 05 23:04	16°49'08	-5°-41'-21	minimum elong	2534 Feb 18 01:07	29°09'00	8°56'25
minimum elong	2526 Feb 05 22:54	16°49'07	5°41'21	max. Earth dist.	2534 Feb 20 23:35	29°14'11	39.49364 AU
max. Earth dist.	2526 Feb 08 18:59	16°54'25	37.43538 AU		2534 Mar 19 22:18	0°	
retrograde	2526 May 19 23:53	18°50'41		retrograde	2534 Jun 01 04:01	1°04'09	
min. Earth dist.	2526 Aug 07 04:33	17°42'27	35.57491 AU		2534 Aug 18 08:22	30°	
opposition	2526 Aug 10 01:16	17°38'30	-6°-14'-46	min. Earth dist.	2534 Aug 19 18:09	29°58'08	37.64536 AU
direct	2526 Oct 30 01:08	16°26'52		opposition	2534 Aug 22 18:26	29°54'09	-9°-36'-21
				direct	2534 Nov 11 18:41	28°45'00	
conjunction	2527 Feb 07 18:41	18°25'22	-6°-7'-57		2535 Jan 29 14:06	0°	
minimum elong	2527 Feb 07 18:30	18°25'21	6°07'58	conjunction	2535 Feb 19 17:49	0°36'31	-9°-17'-57
max. Earth dist.	2527 Feb 10 14:33	18°30'36	37.69442 AU	minimum elong	2535 Feb 19 17:36	0°36'30	9°17'58
retrograde	2527 May 21 22:21	20°26'04		max. Earth dist.	2535 Feb 22 17:24	0°41'45	39.74506 AU
min. Earth dist.	2527 Aug 09 00:41	19°18'12	35.83621 AU	retrograde	2535 Jun 02 19:23	2°30'54	
opposition	2527 Aug 11 22:55	19°14'12	-6°-42'-22	min. Earth dist.	2535 Aug 21 12:53	1°25'03	37.89863 AU
direct	2527 Oct 31 20:06	18°02'55		opposition	2535 Aug 24 12:27	1°21'07	-9°-58'-31
				direct	2535 Nov 13 13:58	0°12'14	
conjunction	2528 Feb 09 14:01	20°00'31	-6°-33'-55				
minimum elong	2528 Feb 09 13:51	20°00'30	6°33'55	conjunction	2536 Feb 21 09:53	2°02'57	-9°-38'-54
max. Earth dist.	2528 Feb 12 11:35	20°05'51	37.95420 AU	minimum elong	2536 Feb 21 09:41	2°02'56	9°38'55
retrograde	2528 May 22 17:14	22°00'24		max. Earth dist.	2536 Feb 24 09:14	2°08'08	39.99603 AU
min. Earth dist.	2528 Aug 09 22:28	20°52'48	36.09788 AU	retrograde	2536 Jun 03 10:12	3°56'35	
opposition	2528 Aug 12 20:15	20°48'50	-7°-9'-16	min. Earth dist.	2536 Aug 22 05:07	2°51'02	38.15154 AU
				opposition	2536 Aug 25 05:58	2°47'02	-10°-20'00

direct	2536 Nov 14 08:49	1° ✕ 38'25		minimum elong	2545 Mar 04 19:54	14° ✕ 23'41	12°20'18
				max. Earth dist.	2545 Mar 07 20:34	14° ✕ 28'43	42.20794 AU
conjunction	2537 Feb 22 01:25	3° ✕ 28'22	-9°-59'-13	retrograde	2545 Jun 15 20:41	16° ✕ 11'45	
minimum elong	2537 Feb 22 01:12	3° ✕ 28'21	9°59'13	min. Earth dist.	2545 Sep 04 04:38	15° ✕ 08'15	40.37377 AU
max. Earth dist.	2537 Feb 25 01:26	3° ✕ 33'35	40.24665 AU	opposition	2545 Sep 07 04:17	15° ✕ 04'28	-13°-4'-49
retrograde	2537 Jun 05 01:22	5° ✕ 21'18		direct	2545 Nov 27 08:30	13° ✕ 58'20	
min. Earth dist.	2537 Aug 23 22:29	4° ✕ 15'59	38.40434 AU				
opposition	2537 Aug 26 23:19	4° ✕ 12'00	-10°-40'-50	conjunction	2546 Mar 06 09:05	15° ✕ 42'19	-12°-35'-26
direct	2537 Nov 16 02:36	3° ✕ 03'40		minimum elong	2546 Mar 06 08:53	15° ✕ 42'18	12°35'28
				max. Earth dist.	2546 Mar 09 08:11	15° ✕ 47'12	42.44053 AU
conjunction	2538 Feb 23 16:50	4° ✕ 52'53	-10°-18'-54	retrograde	2546 Jun 17 12:44	17° ✕ 29'46	
minimum elong	2538 Feb 23 16:38	4° ✕ 52'52	10°18'55	min. Earth dist.	2546 Sep 05 18:11	16° ✕ 26'28	40.60693 AU
max. Earth dist.	2538 Feb 26 17:43	4° ✕ 58'07	40.49722 AU	opposition	2546 Sep 08 18:22	16° ✕ 22'40	-13°-20'-12
retrograde	2538 Jun 06 15:24	6° ✕ 45'09		direct	2546 Nov 28 19:45	15° ✕ 16'45	
min. Earth dist.	2538 Aug 25 14:50	5° ✕ 40'05	38.65678 AU				
opposition	2538 Aug 28 16:05	5° ✕ 36'06	-11°00'-59	conjunction	2547 Mar 07 21:51	17° ✕ 00'07	-12°-50'-4
direct	2538 Nov 17 20:41	4° ✕ 28'04		minimum elong	2547 Mar 07 21:40	17° ✕ 00'06	12°50'05
				max. Earth dist.	2547 Mar 10 21:41	17° ✕ 05'01	42.67030 AU
conjunction	2539 Feb 25 07:43	6° ✕ 16'33	-10°-37'-58	retrograde	2547 Jun 19 01:44	18° ✕ 46'59	
minimum elong	2539 Feb 25 07:31	6° ✕ 16'32	10°37'59	min. Earth dist.	2547 Sep 07 09:20	17° ✕ 43'46	40.83752 AU
max. Earth dist.	2539 Feb 28 08:03	6° ✕ 21'44	40.74728 AU	opposition	2547 Sep 10 08:13	17° ✕ 40'03	-13°-35'-2
retrograde	2539 Jun 08 09:08	8° ✕ 08'11		direct	2547 Nov 30 08:59	16° ✕ 34'21	
min. Earth dist.	2539 Aug 27 06:36	7° ✕ 03'25	38.90866 AU				
opposition	2539 Aug 30 08:33	6° ✕ 59'25	-11°-20'-30	conjunction	2548 Mar 08 10:18	18° ✕ 17'06	-13°-4'-9
direct	2539 Nov 19 10:43	5° ✕ 51'40		minimum elong	2548 Mar 08 10:07	18° ✕ 17'05	13°04'10
				max. Earth dist.	2548 Mar 11 09:37	18° ✕ 21'57	42.89790 AU
conjunction	2540 Feb 26 22:31	7° ✕ 39'29	-10°-56'-27	retrograde	2548 Jun 19 11:28	20° ✕ 03'23	
minimum elong	2540 Feb 26 22:18	7° ✕ 39'28	10°56'28	min. Earth dist.	2548 Sep 07 21:49	19° ✕ 00'24	41.06606 AU
max. Earth dist.	2540 Mar 01 00:05	7° ✕ 44'43	40.99644 AU	opposition	2548 Sep 10 21:30	18° ✕ 56'39	-13°-49'-19
retrograde	2540 Jun 09 00:50	9° ✕ 30'30		direct	2548 Dec 01 00:24	17° ✕ 51'09	
min. Earth dist.	2540 Aug 27 23:31	8° ✕ 25'55	39.15925 AU				
opposition	2540 Aug 31 00:34	8° ✕ 21'59	-11°-39'-22	conjunction	2549 Mar 09 22:24	19° ✕ 33'19	-13°-17'-43
direct	2540 Nov 20 01:52	7° ✕ 14'33		minimum elong	2549 Mar 09 22:14	19° ✕ 33'19	13°17'44
				max. Earth dist.	2549 Mar 12 21:35	19° ✕ 38'08	43.12364 AU
conjunction	2541 Feb 27 12:53	9° ✕ 01'43	-11°-14'-20	retrograde	2549 Jun 20 22:11	21° ✕ 19'03	
minimum elong	2541 Feb 27 12:41	9° ✕ 01'42	11°14'20	min. Earth dist.	2549 Sep 09 11:34	20° ✕ 16'14	41.29300 AU
max. Earth dist.	2541 Mar 02 13:38	9° ✕ 06'51	41.24418 AU	opposition	2549 Sep 12 10:46	20° ✕ 12'31	-14°-3'-1
retrograde	2541 Jun 10 16:01	10° ✕ 52'06		direct	2549 Dec 02 14:54	19° ✕ 07'14	
min. Earth dist.	2541 Aug 29 14:13	9° ✕ 47'51	39.40813 AU				
opposition	2541 Sep 01 16:19	9° ✕ 43'53	-11°-57'-38	conjunction	2550 Mar 11 10:19	20° ✕ 48'50	-13°-30'-46
direct	2541 Nov 21 16:39	8° ✕ 36'44		minimum elong	2550 Mar 11 10:08	20° ✕ 48'49	13°30'46
				max. Earth dist.	2550 Mar 14 10:06	20° ✕ 53'40	43.34790 AU
conjunction	2542 Mar 01 02:58	10° ✕ 23'15	-11°-31'-38	retrograde	2550 Jun 22 08:33	22° ✕ 34'02	
minimum elong	2542 Mar 01 02:46	10° ✕ 23'14	11°31'40	min. Earth dist.	2550 Sep 11 00:40	21° ✕ 31'23	41.51815 AU
max. Earth dist.	2542 Mar 04 04:15	10° ✕ 28'24	41.48974 AU	opposition	2550 Sep 13 23:37	21° ✕ 27'41	-14°-16'-11
retrograde	2542 Jun 12 05:02	12° ✕ 13'04		direct	2550 Dec 04 05:40	20° ✕ 22'38	
min. Earth dist.	2542 Aug 31 07:00	11° ✕ 08'59	39.65457 AU				
opposition	2542 Sep 03 07:55	11° ✕ 05'05	-12°-15'-17	conjunction	2551 Mar 12 21:57	22° ✕ 03'41	-13°-43'-17
direct	2542 Nov 23 09:37	9° ✕ 58'14		minimum elong	2551 Mar 12 21:47	22° ✕ 03'40	13°43'18
				max. Earth dist.	2551 Mar 15 20:42	22° ✕ 08'25	43.57037 AU
conjunction	2543 Mar 02 17:02	11° ✕ 44'08	-11°-48'-23	retrograde	2551 Jun 23 22:15	23° ✕ 48'23	
minimum elong	2543 Mar 02 16:50	11° ✕ 44'07	11°48'24	min. Earth dist.	2551 Sep 12 12:45	22° ✕ 45'57	41.74149 AU
max. Earth dist.	2543 Mar 05 17:54	11° ✕ 49'13	41.73261 AU	opposition	2551 Sep 15 12:05	22° ✕ 42'15	-14°-28'-48
retrograde	2543 Jun 13 16:49	13° ✕ 33'20		direct	2551 Dec 05 16:43	21° ✕ 37'25	
min. Earth dist.	2543 Sep 01 21:52	12° ✕ 29'31	39.89782 AU				
opposition	2543 Sep 04 22:51	12° ✕ 25'37	-12°-32'-21	conjunction	2552 Mar 13 09:27	23° ✕ 17'56	-13°-55'-18
direct	2543 Nov 25 02:43	11° ✕ 19'02		minimum elong	2552 Mar 13 09:17	23° ✕ 17'55	13°55'18
				max. Earth dist.	2552 Mar 16 09:01	23° ✕ 22'42	43.79080 AU
conjunction	2544 Mar 03 06:42	13° ✕ 04'17	-12°-4'-36	retrograde	2552 Jun 24 11:03	25° ✕ 02'09	
minimum elong	2544 Mar 03 06:29	13° ✕ 04'17	12°04'37	min. Earth dist.	2552 Sep 13 02:22	23° ✕ 59'51	41.96247 AU
max. Earth dist.	2544 Mar 06 06:38	13° ✕ 09'17	41.97202 AU	opposition	2552 Sep 16 00:28	23° ✕ 56'13	-14°-40'-55
retrograde	2544 Jun 14 07:20	14° ✕ 52'56		direct	2552 Dec 06 03:57	22° ✕ 51'37	
min. Earth dist.	2544 Sep 02 13:14	13° ✕ 49'17	40.13762 AU				
opposition	2544 Sep 05 13:46	13° ✕ 45'26	-12°-48'-52	conjunction	2553 Mar 14 20:34	24° ✕ 31'38	-14°-6'-49
direct	2544 Nov 25 17:17	12° ✕ 39'05		minimum elong	2553 Mar 14 20:26	24° ✕ 31'38	14°06'51
				max. Earth dist.	2553 Mar 17 19:07	24° ✕ 36'19	44.00879 AU
conjunction	2545 Mar 04 20:04	14° ✕ 23'42	-12°-20'-17	retrograde	2553 Jun 25 23:46	26° ✕ 15'22	

min. Earth dist.	2553 Sep 14 13:55	25° \mathring{K} 13'17	42.18064 AU	min. Earth dist.	2561 Sep 24 11:33	4° \mathring{V} 40'40	43.78351 AU
opposition	2553 Sep 17 12:32	25° \mathring{K} 09'40	-14°-52'-30	opposition	2561 Sep 27 04:23	4° \mathring{V} 37'25	-16°-8'-49
direct	2553 Dec 07 14:07	24° \mathring{K} 05'17		direct	2561 Dec 17 10:05	3° \mathring{V} 34'30	
conjunction	2554 Mar 16 07:39	25° \mathring{K} 44'49	-14°-17'-52	conjunction	2562 Mar 25 17:06	5° \mathring{V} 10'20	-15°-30'-40
minimum elong	2554 Mar 16 07:30	25° \mathring{K} 44'48	14°17'53	minimum elong	2562 Mar 25 17:02	5° \mathring{V} 10'20	15°30'41
max. Earth dist.	2554 Mar 19 05:55	25° \mathring{K} 49'27	44.22362 AU	max. Earth dist.	2562 Mar 28 11:16	5° \mathring{V} 14'33	45.80029 AU
retrograde	2554 Jun 27 09:57	27° \mathring{K} 28'05		retrograde	2562 Jul 06 15:57	6° \mathring{V} 50'04	
min. Earth dist.	2554 Sep 16 03:18	26° \mathring{K} 26'08	42.39545 AU	min. Earth dist.	2562 Sep 25 22:15	5° \mathring{V} 49'07	43.96929 AU
opposition	2554 Sep 19 00:26	26° \mathring{K} 22'35	-15°-3'-37	opposition	2562 Sep 28 14:12	5° \mathring{V} 45'54	-16°-16'-21
direct	2554 Dec 09 02:38	25° \mathring{K} 18'26		direct	2562 Dec 18 21:06	4° \mathring{V} 43'10	
conjunction	2555 Mar 17 18:42	26° \mathring{K} 57'29	-14°-28'-28	conjunction	2563 Mar 27 02:18	6° \mathring{V} 18'36	-15°-37'-50
minimum elong	2555 Mar 17 18:34	26° \mathring{K} 57'28	14°28'30	minimum elong	2563 Mar 27 02:12	6° \mathring{V} 18'35	15°37'51
max. Earth dist.	2555 Mar 20 16:44	27° \mathring{K} 02'05	44.43481 AU	max. Earth dist.	2563 Mar 29 19:00	6° \mathring{V} 22'42	45.98378 AU
retrograde	2555 Jun 28 18:13	28° \mathring{K} 40'17		retrograde	2563 Jul 08 04:36	7° \mathring{V} 57'57	
min. Earth dist.	2555 Sep 17 15:21	27° \mathring{K} 38'30	42.60603 AU	min. Earth dist.	2563 Sep 27 07:25	6° \mathring{V} 57'11	44.15270 AU
opposition	2555 Sep 20 11:59	27° \mathring{K} 34'59	-15°-14'-16	opposition	2563 Sep 29 23:50	6° \mathring{V} 53'57	-16°-23'-26
direct	2555 Dec 10 16:53	26° \mathring{K} 31'03		direct	2563 Dec 20 03:43	5° \mathring{V} 51'24	
conjunction	2556 Mar 18 05:23	28° \mathring{K} 09'37	-14°-38'-38	conjunction	2564 Mar 27 11:18	7° \mathring{V} 26'27	-15°-44'-36
minimum elong	2556 Mar 18 05:15	28° \mathring{K} 09'37	14°38'38	minimum elong	2564 Mar 27 11:14	7° \mathring{V} 26'27	15°44'37
max. Earth dist.	2556 Mar 21 01:39	28° \mathring{K} 14'05	44.64156 AU	max. Earth dist.	2564 Mar 30 04:14	7° \mathring{V} 30'33	46.16469 AU
retrograde	2556 Jun 29 06:18	29° \mathring{K} 51'58		retrograde	2564 Jul 08 14:02	9° \mathring{V} 05'25	
min. Earth dist.	2556 Sep 18 03:13	28° \mathring{K} 50'20	42.81214 AU	min. Earth dist.	2564 Sep 27 18:33	8° \mathring{V} 04'45	44.33339 AU
opposition	2556 Sep 20 23:21	28° \mathring{K} 46'52	-15°-24'-27	opposition	2564 Sep 30 09:21	8° \mathring{V} 01'37	-16°-30'-6
direct	2556 Dec 11 03:47	27° \mathring{K} 43'07		direct	2564 Dec 20 11:56	6° \mathring{V} 59'15	
conjunction	2557 Mar 19 16:03	29° \mathring{K} 21'12	-14°-48'-22	conjunction	2565 Mar 28 20:14	8° \mathring{V} 33'55	-15°-50'-57
minimum elong	2557 Mar 19 15:55	29° \mathring{K} 21'12	14°48'23	minimum elong	2565 Mar 28 20:10	8° \mathring{V} 33'55	15°50'58
max. Earth dist.	2557 Mar 22 12:31	29° \mathring{K} 25'40	44.84380 AU	max. Earth dist.	2565 Mar 31 12:38	8° \mathring{V} 37'58	46.34293 AU
retrograde	2557 Apr 14 03:29	0° \mathring{V}		retrograde	2565 Jul 09 20:38	10° \mathring{V} 12'32	
min. Earth dist.	2557 Jun 30 17:01	1° \mathring{V} 03'06		min. Earth dist.	2565 Sep 29 03:38	9° \mathring{V} 12'02	44.51100 AU
opposition	2557 Sep 19 16:05	0° \mathring{V} 01'33	43.01359 AU	opposition	2565 Oct 01 18:36	9° \mathring{V} 08'54	-16°-36'-21
direct	2557 Sep 20 22:28	30° \mathring{R} \mathring{K}		direct	2565 Dec 21 22:19	8° \mathring{V} 06'42	
conjunction	2557 Sep 22 10:32	29° \mathring{K} 58'10	-15°-34'-13	conjunction	2566 Mar 30 04:54	9° \mathring{V} 41'02	-15°-56'-55
opposition	2557 Dec 12 15:30	28° \mathring{K} 54'36		minimum elong	2566 Mar 30 04:51	9° \mathring{V} 41'02	15°56'56
direct	2558 Feb 27 23:57	0° \mathring{V}		max. Earth dist.	2566 Apr 01 20:06	9° \mathring{V} 45'00	46.51777 AU
conjunction	2558 Mar 21 02:15	0° \mathring{V} 32'12	-14°-57'-41	retrograde	2566 Jul 11 04:24	11° \mathring{V} 19'17	
minimum elong	2558 Mar 21 02:09	0° \mathring{V} 32'12	14°57'41	min. Earth dist.	2566 Sep 30 14:00	10° \mathring{V} 18'54	44.68501 AU
max. Earth dist.	2558 Mar 23 21:11	0° \mathring{V} 36'32	45.04170 AU	opposition	2566 Oct 03 03:48	10° \mathring{V} 15'50	-16°-42'-12
retrograde	2558 Jul 02 04:24	2° \mathring{V} 13'38		direct	2566 Dec 23 08:29	9° \mathring{V} 13'49	
min. Earth dist.	2558 Sep 21 02:37	1° \mathring{V} 12'14	43.21088 AU	conjunction	2567 Mar 31 13:45	10° \mathring{V} 47'47	-16°-2'-30
opposition	2558 Sep 23 21:22	1° \mathring{V} 08'51	-15°-43'-32	minimum elong	2567 Mar 31 13:42	10° \mathring{V} 47'47	16°02'30
direct	2558 Dec 14 00:31	0° \mathring{V} 05'26		max. Earth dist.	2567 Apr 03 04:57	10° \mathring{V} 51'44	46.68870 AU
conjunction	2559 Mar 22 12:20	1° \mathring{V} 42'36	-15°-6'-34	retrograde	2567 Jul 12 11:37	12° \mathring{V} 25'42	
minimum elong	2559 Mar 22 12:12	1° \mathring{V} 42'35	15°06'36	min. Earth dist.	2567 Oct 02 00:08	11° \mathring{V} 25'24	44.85458 AU
max. Earth dist.	2559 Mar 25 07:06	1° \mathring{V} 46'54	45.23564 AU	opposition	2567 Oct 04 12:36	11° \mathring{V} 22'24	-16°-47'-41
retrograde	2559 Jul 03 13:55	3° \mathring{V} 23'34		direct	2567 Dec 24 19:30	10° \mathring{V} 20'33	
min. Earth dist.	2559 Sep 22 14:45	2° \mathring{V} 22'13	43.40460 AU	conjunction	2568 Mar 31 22:19	11° \mathring{V} 54'09	-16°-7'-44
opposition	2559 Sep 25 07:54	2° \mathring{V} 18'56	-15°-52'-25	minimum elong	2568 Mar 31 22:16	11° \mathring{V} 54'09	16°07'46
direct	2559 Dec 15 10:59	1° \mathring{V} 15'41		max. Earth dist.	2568 Apr 03 11:31	11° \mathring{V} 57'58	46.85508 AU
conjunction	2560 Mar 22 22:13	2° \mathring{V} 52'23	-15°-15'-2	retrograde	2568 Jul 12 22:19	13° \mathring{V} 31'43	
minimum elong	2560 Mar 22 22:07	2° \mathring{V} 52'23	15°15'03	min. Earth dist.	2568 Oct 02 09:14	12° \mathring{V} 31'32	45.01944 AU
max. Earth dist.	2560 Mar 25 16:39	2° \mathring{V} 56'39	45.42646 AU	opposition	2568 Oct 04 21:25	12° \mathring{V} 28'34	-16°-52'-48
retrograde	2560 Jul 03 20:58	4° \mathring{V} 32'55		direct	2568 Dec 25 03:18	11° \mathring{V} 26'51	
min. Earth dist.	2560 Sep 23 00:52	3° \mathring{V} 31'44	43.59527 AU	conjunction	2569 Apr 02 06:39	13° \mathring{V} 00'06	-16°-12'-38
opposition	2560 Sep 25 18:10	3° \mathring{V} 28'26	-16°00'-51	minimum elong	2569 Apr 02 06:37	13° \mathring{V} 00'06	16°12'38
direct	2560 Dec 15 23:05	2° \mathring{V} 25'21		max. Earth dist.	2569 Apr 04 19:36	13° \mathring{V} 03'53	47.01656 AU
conjunction	2561 Mar 24 07:36	4° \mathring{V} 01'37	-15°-23'-4	retrograde	2569 Jul 14 08:27	14° \mathring{V} 37'18	
minimum elong	2561 Mar 24 07:29	4° \mathring{V} 01'36	15°23'05	min. Earth dist.	2569 Oct 03 19:55	13° \mathring{V} 37'08	45.17934 AU
max. Earth dist.	2561 Mar 27 01:02	4° \mathring{V} 05'48	45.61452 AU	opposition	2569 Oct 06 06:11	13° \mathring{V} 34'16	-16°-57'-35
retrograde	2561 Jul 05 06:27	5° \mathring{V} 41'45		direct	2569 Dec 26 10:38	12° \mathring{V} 32'41	

conjunction	2570 Apr 03 14:59	14°♃05'34	-16°-17'-11	retrograde	2578 Jul 24 00:44	24°♃08'09	
minimum elong	2570 Apr 03 14:57	14°♃05'34	16°17'13	min. Earth dist.	2578 Oct 13 22:56	23°♃08'49	46.46164 AU
max. Earth dist.	2570 Apr 06 02:43	14°♃09'15	47.17341 AU	opposition	2578 Oct 16 03:12	23°♃06'17	-17°-24'-22
retrograde	2570 Jul 15 16:23	15°♃42'23		direct	2579 Jan 05 10:32	22°♃05'53	
min. Earth dist.	2570 Oct 05 04:16	14°♃42'19	45.33466 AU				
opposition	2570 Oct 07 14:24	14°♃39'28	-17°-2'00	conjunction	2579 Apr 13 10:20	23°♃36'04	-16°-42'-32
direct	2570 Dec 27 17:45	13°♃37'59		minimum elong	2579 Apr 13 10:23	23°♃36'04	16°42'34
				max. Earth dist.	2579 Apr 15 16:04	23°♃39'17	48.43633 AU
conjunction	2571 Apr 04 22:59	15°♃10'31	-16°-21'-24	retrograde	2579 Jul 25 09:46	25°♃10'13	
minimum elong	2571 Apr 04 22:58	15°♃10'30	16°21'25	min. Earth dist.	2579 Oct 15 08:01	24°♃10'56	46.58687 AU
max. Earth dist.	2571 Apr 07 09:29	15°♃14'06	47.32592 AU	opposition	2579 Oct 17 10:16	24°♃08'31	-17°-25'-38
retrograde	2571 Jul 16 22:50	16°♃46'58		direct	2580 Jan 06 16:52	23°♃08'15	
min. Earth dist.	2571 Oct 06 13:54	15°♃46'56	45.48605 AU				
opposition	2571 Oct 08 22:40	15°♃44'09	-17°-6'-4	conjunction	2580 Apr 13 17:21	24°♃38'12	-16°-43'-44
direct	2571 Dec 29 03:24	14°♃42'47		minimum elong	2580 Apr 13 17:22	24°♃38'12	16°43'44
				max. Earth dist.	2580 Apr 15 21:23	24°♃41'19	48.55889 AU
conjunction	2572 Apr 05 06:53	16°♃14'57	-16°-25'-16	retrograde	2580 Jul 25 19:05	26°♃12'06	
minimum elong	2572 Apr 05 06:51	16°♃14'56	16°25'18	min. Earth dist.	2580 Oct 15 15:03	25°♃12'56	46.70700 AU
max. Earth dist.	2572 Apr 07 17:38	16°♃18'33	47.47484 AU	opposition	2580 Oct 17 17:08	25°♃10'31	-17°-26'-36
retrograde	2572 Jul 17 03:19	17°♃51'03		direct	2581 Jan 06 20:40	24°♃10'22	
min. Earth dist.	2572 Oct 06 22:31	16°♃51'06	45.63395 AU				
opposition	2572 Oct 09 06:34	16°♃48'21	-17°-9'-46	conjunction	2581 Apr 15 00:17	25°♃40'05	-16°-44'-38
direct	2572 Dec 29 14:41	15°♃47'05		minimum elong	2581 Apr 15 00:20	25°♃40'05	16°44'40
				max. Earth dist.	2581 Apr 17 02:53	25°♃43'06	48.67619 AU
conjunction	2573 Apr 06 14:31	17°♃18'55	-16°-28'-47	retrograde	2581 Jul 27 01:11	27°♃13'44	
minimum elong	2573 Apr 06 14:31	17°♃18'55	16°28'47	min. Earth dist.	2581 Oct 17 00:02	26°♃14'34	46.82190 AU
max. Earth dist.	2573 Apr 08 23:36	17°♃22'24	47.62073 AU	opposition	2581 Oct 19 00:02	26°♃12'16	-17°-27'-18
retrograde	2573 Jul 18 12:36	18°♃54'41		direct	2582 Jan 08 03:32	25°♃12'13	
min. Earth dist.	2573 Oct 08 06:15	17°♃54'51	45.77911 AU				
opposition	2573 Oct 10 14:23	17°♃52'06	-17°-13'-6	conjunction	2582 Apr 16 07:12	26°♃41'41	-16°-45'-16
direct	2573 Dec 30 21:48	16°♃50'58		minimum elong	2582 Apr 16 07:15	26°♃41'41	16°45'17
				max. Earth dist.	2582 Apr 18 09:23	26°♃44'40	48.78844 AU
conjunction	2574 Apr 07 22:05	18°♃22'28	-16°-31'-56	retrograde	2582 Jul 28 03:38	28°♃15'03	
minimum elong	2574 Apr 07 22:04	18°♃22'28	16°31'57	min. Earth dist.	2582 Oct 18 07:25	27°♃15'57	46.93166 AU
max. Earth dist.	2574 Apr 10 07:27	18°♃25'57	47.76391 AU	opposition	2582 Oct 20 06:38	27°♃13'41	-17°-27'-43
retrograde	2574 Jul 19 21:15	19°♃57'56		direct	2583 Jan 09 13:44	26°♃13'43	
min. Earth dist.	2574 Oct 09 15:35	18°♃58'08	45.92152 AU				
opposition	2574 Oct 11 22:06	18°♃55'28	-17°-16'-3	conjunction	2583 Apr 17 13:51	27°♃42'56	-16°-45'-37
direct	2575 Jan 01 05:09	17°♃54'28		minimum elong	2583 Apr 17 13:54	27°♃42'56	16°45'39
				max. Earth dist.	2583 Apr 19 13:51	27°♃45'47	48.89585 AU
conjunction	2575 Apr 09 05:35	19°♃25'40	-16°-34'-44	retrograde	2583 Jul 29 10:10	29°♃16'03	
minimum elong	2575 Apr 09 05:37	19°♃25'40	16°34'44	min. Earth dist.	2583 Oct 19 14:35	28°♃16'59	47.03700 AU
max. Earth dist.	2575 Apr 11 14:05	19°♃29'06	47.90458 AU	opposition	2583 Oct 21 13:00	28°♃14'45	-17°-27'-50
retrograde	2575 Jul 21 04:26	21°♃00'50		direct	2584 Jan 10 21:26	27°♃14'52	
min. Earth dist.	2575 Oct 10 22:31	20°♃01'11	46.06125 AU				
opposition	2575 Oct 13 05:24	19°♃58'31	-17°-18'-39	conjunction	2584 Apr 17 20:26	28°♃43'50	-16°-45'-42
direct	2576 Jan 02 11:11	18°♃57'39		minimum elong	2584 Apr 17 20:30	28°♃43'50	16°45'42
				max. Earth dist.	2584 Apr 19 20:28	28°♃46'40	48.99911 AU
conjunction	2576 Apr 09 12:50	20°♃28'35	-16°-37'-10		2584 Jun 19 18:36	0°♃	
minimum elong	2576 Apr 09 12:50	20°♃28'35	16°37'11	retrograde	2584 Jul 29 17:11	0°♃16'41	
max. Earth dist.	2576 Apr 11 20:22	20°♃31'57	48.04248 AU		2584 Sep 08 07:09	30°♃♃	
retrograde	2576 Jul 21 11:10	22°♃03'28		min. Earth dist.	2584 Oct 19 22:37	29°♃17'37	47.13840 AU
min. Earth dist.	2576 Oct 11 07:18	21°♃03'54	46.19819 AU	opposition	2584 Oct 21 19:24	29°♃15'29	-17°-27'-40
opposition	2576 Oct 13 12:53	21°♃01'18	-17°-20'-54	direct	2585 Jan 11 04:56	28°♃15'40	
direct	2577 Jan 02 18:10	20°♃00'35					
				conjunction	2585 Apr 19 02:43	29°♃44'22	-16°-45'-28
conjunction	2577 Apr 10 20:01	21°♃31'16	-16°-39'-17	minimum elong	2585 Apr 19 02:47	29°♃44'23	16°45'29
minimum elong	2577 Apr 10 20:03	21°♃31'16	16°39'18	max. Earth dist.	2585 Apr 21 01:34	29°♃47'08	49.09890 AU
max. Earth dist.	2577 Apr 13 03:45	21°♃34'38	48.17751 AU		2585 Apr 30 04:33	0°♃	
retrograde	2577 Jul 22 16:13	23°♃05'54		retrograde	2585 Jul 31 00:50	1°♃16'59	
min. Earth dist.	2577 Oct 12 15:15	22°♃06'27	46.33178 AU	min. Earth dist.	2585 Oct 21 04:36	0°♃18'00	47.23648 AU
opposition	2577 Oct 14 20:09	22°♃03'53	-17°-22'-47	opposition	2585 Oct 23 01:34	0°♃15'51	-17°-27'-11
direct	2578 Jan 04 03:39	21°♃03'20			2585 Nov 06 01:05	30°♃♃	
				direct	2586 Jan 12 09:04	29°♃16'07	
conjunction	2578 Apr 12 03:08	22°♃33'45	-16°-41'-4		2586 Mar 18 07:36	0°♃	
minimum elong	2578 Apr 12 03:09	22°♃33'45	16°41'05				
max. Earth dist.	2578 Apr 14 09:01	22°♃37'00	48.30901 AU	conjunction	2586 Apr 20 09:02	0°♃44'36	-16°-44'-56

minimum elong	2586 Apr 20 09:07	0°8'44"36	16°44'57	min. Earth dist.	2594 Oct 30 18:30	9°8'10"56	47.95502 AU
max. Earth dist.	2586 Apr 22 06:55	0°8'47"18	49.19544 AU	opposition	2594 Nov 01 04:59	9°8'09"18	-17°-9'-49
retrograde	2586 Aug 01 07:51	2°8'16"58		direct	2595 Jan 21 15:50	8°8'10"18	
min. Earth dist.	2586 Oct 22 12:15	1°8'18"00	47.33149 AU				
opposition	2586 Oct 24 07:38	1°8'15"55	-17°-26'-23	conjunction	2595 Apr 29 15:13	9°8'37"11	-16°-27'-41
direct	2587 Jan 13 13:14	0°8'16"16		minimum elong	2595 Apr 29 15:20	9°8'37"12	16°27'42
				max. Earth dist.	2595 May 01 03:26	9°8'39"17	49.89803 AU
conjunction	2587 Apr 21 15:22	1°8'44"33	-16°-44'-7	retrograde	2595 Aug 10 10:40	11°8'07"50	
minimum elong	2587 Apr 21 15:26	1°8'44"33	16°44'08	min. Earth dist.	2595 Oct 31 23:51	10°8'09"12	48.01136 AU
max. Earth dist.	2587 Apr 23 13:11	1°8'47"14	49.28911 AU	opposition	2595 Nov 02 10:11	10°8'07"35	-17°-6'-36
retrograde	2587 Aug 02 11:04	3°8'16"40		direct	2596 Jan 22 19:45	9°8'08"37	
min. Earth dist.	2587 Oct 23 18:31	2°8'17"47	47.42342 AU				
opposition	2587 Oct 25 13:33	2°8'15"44	-17°-25'-17	conjunction	2596 Apr 29 20:42	10°8'35"21	-16°-24'-31
direct	2588 Jan 14 20:42	1°8'16"10		minimum elong	2596 Apr 29 20:48	10°8'35"21	16°24'33
				max. Earth dist.	2596 May 01 07:45	10°8'37"22	49.95274 AU
conjunction	2588 Apr 21 21:18	2°8'44"14	-16°-42'-59	retrograde	2596 Aug 10 17:14	12°8'05"50	
minimum elong	2588 Apr 21 21:24	2°8'44"14	16°43'00	min. Earth dist.	2596 Nov 01 06:58	11°8'07"09	48.06368 AU
max. Earth dist.	2588 Apr 23 17:25	2°8'46"49	49.37976 AU	opposition	2596 Nov 02 15:26	11°8'05"37	-17°-3'-8
retrograde	2588 Aug 02 16:35	4°8'16"10		direct	2597 Jan 22 23:14	10°8'06"42	
min. Earth dist.	2588 Oct 24 01:03	3°8'17"20	47.51235 AU				
opposition	2588 Oct 25 19:28	3°8'15"19	-17°-23'-53	conjunction	2597 May 01 02:20	11°8'33"17	-16°-21'-6
direct	2589 Jan 15 03:25	2°8'15"51		minimum elong	2597 May 01 02:28	11°8'33"18	16°21'06
				max. Earth dist.	2597 May 02 13:14	11°8'35"18	50.00391 AU
conjunction	2589 Apr 23 03:27	3°8'43"43	-16°-41'-34	retrograde	2597 Aug 11 20:01	13°8'03"36	
minimum elong	2589 Apr 23 03:31	3°8'43"44	16°41'35	opposition	2597 Nov 03 20:24	12°8'03"27	-16°-59'-24
max. Earth dist.	2589 Apr 24 23:38	3°8'46"18	49.46725 AU	min. Earth dist.	2597 Nov 02 12:11	12°8'04"57	48.11253 AU
retrograde	2589 Aug 03 22:31	5°8'15"28		direct	2598 Jan 24 05:01	11°8'04"33	
min. Earth dist.	2589 Oct 25 08:27	4°8'16"40	47.59780 AU				
opposition	2589 Oct 27 01:16	4°8'14"43	-17°-22'-11	conjunction	2598 May 02 07:44	12°8'31"01	-16°-17'-24
direct	2590 Jan 16 11:06	3°8'15"21		minimum elong	2598 May 02 07:51	12°8'31"02	16°17'26
				max. Earth dist.	2598 May 03 16:46	12°8'32"55	50.05185 AU
conjunction	2590 Apr 24 09:29	4°8'43"03	-16°-39'-53	retrograde	2598 Aug 13 00:55	14°8'01"11	
minimum elong	2590 Apr 24 09:35	4°8'43"03	16°39'54	min. Earth dist.	2598 Nov 03 18:05	13°8'02"34	48.15838 AU
max. Earth dist.	2590 Apr 26 04:11	4°8'45"32	49.55120 AU	opposition	2598 Nov 05 01:24	13°8'01"06	-16°-55'-23
retrograde	2590 Aug 05 07:17	6°8'14"36		direct	2599 Jan 25 10:43	12°8'02"16	
min. Earth dist.	2590 Oct 26 14:15	5°8'15"54	47.67931 AU				
opposition	2590 Oct 28 06:55	5°8'13"58	-17°-20'-13	conjunction	2599 May 03 13:13	13°8'28"36	-16°-13'-27
direct	2591 Jan 17 14:33	4°8'14"42		minimum elong	2599 May 03 13:22	13°8'28"37	16°13'27
				max. Earth dist.	2599 May 04 22:21	13°8'30"30	50.09683 AU
conjunction	2591 Apr 25 15:32	5°8'42"14	-16°-37'-55	retrograde	2599 Aug 14 04:52	14°8'58"38	
minimum elong	2591 Apr 25 15:37	5°8'42"15	16°37'56	min. Earth dist.	2599 Nov 05 00:10	14°8'00"02	48.20123 AU
max. Earth dist.	2591 Apr 27 08:54	5°8'44"39	49.63074 AU	opposition	2599 Nov 06 06:15	13°8'58"37	-16°-51'-5
retrograde	2591 Aug 06 14:16	7°8'13"37		direct	2600 Jan 26 18:32	12°8'59"50	
min. Earth dist.	2591 Oct 27 22:07	6°8'14"54	47.75618 AU				
opposition	2591 Oct 29 12:32	6°8'13"05	-17°-17'-59	conjunction	2600 May 04 18:32	14°8'26"04	-16°-9'-13
direct	2592 Jan 18 18:23	5°8'13"53		minimum elong	2600 May 04 18:39	14°8'26"05	16°09'14
				max. Earth dist.	2600 May 06 02:19	14°8'27"54	50.13909 AU
conjunction	2592 Apr 25 21:39	6°8'41"17	-16°-35'-43		2600 May 30 01:43	15°8'	
minimum elong	2592 Apr 25 21:45	6°8'41"17	16°35'44	retrograde	2600 Aug 15 13:08	15°8'55"59	
max. Earth dist.	2592 Apr 27 14:25	6°8'43"39	49.70547 AU		2600 Nov 03 22:49	15°R8'	
retrograde	2592 Aug 06 17:17	8°8'12"28		min. Earth dist.	2600 Nov 06 04:52	14°8'57"28	48.24127 AU
min. Earth dist.	2592 Oct 28 04:23	7°8'13"48	47.82780 AU	opposition	2600 Nov 07 11:03	14°8'56"03	-16°-46'-31
opposition	2592 Oct 29 18:05	7°8'12"01	-17°-15'-30				
direct	2593 Jan 19 01:54	6°8'12"55					
conjunction	2593 Apr 27 03:26	7°8'40"08	-16°-33'-17				
minimum elong	2593 Apr 27 03:32	7°8'40"09	16°33'17				
max. Earth dist.	2593 Apr 28 17:45	7°8'42"22	49.77485 AU				
retrograde	2593 Aug 07 22:19	9°8'11"09					
min. Earth dist.	2593 Oct 29 11:12	8°8'12"30	47.89407 AU				
opposition	2593 Oct 30 23:40	8°8'10"47	-17°-12'-47				
direct	2594 Jan 20 08:37	7°8'11"43					
conjunction	2594 Apr 28 09:26	8°8'38"47	-16°-30'-36				
minimum elong	2594 Apr 28 09:33	8°8'38"47	16°30'37				
max. Earth dist.	2594 Apr 29 23:24	8°8'40"59	49.83887 AU				
retrograde	2594 Aug 09 03:37	10°8'09"37					