

conjunction	1100 Mar 25 j 15:24	11°♃13'41	-16°-49'-14	minimum elong	1108 Apr 02 j 16:05	19°♃06'50	16°33'44
minimum elong	1100 Mar 25 j 15:28	11°♃13'41	16°49'15	max. Earth dist.	1108 Apr 04 j 06:20	19°♃09'03	49.79274 AU
max. Earth dist.	1100 Mar 27 j 12:32	11°♃16'20	49.19120 AU	retrograde	1108 Jul 14 j 12:44	20°♃37'48	
retrograde	1100 Jul 06 j 18:10	12°♃46'08		min. Earth dist.	1108 Oct 05 j 01:16	19°♃39'05	47.90941 AU
min. Earth dist.	1100 Sep 26 j 21:45	11°♃47'03	47.32451 AU	opposition	1108 Oct 06 j 11:53	19°♃37'26	-17°-12'-57
opposition	1100 Sep 28 j 15:35	11°♃45'03	-17°-30'-49	direct	1108 Dec 26 j 19:38	18°♃38'22	
direct	1100 Dec 18 j 18:37	10°♃45'20					
conjunction	1101 Mar 26 j 21:52	12°♃13'40	-16°-48'-18	conjunction	1109 Apr 03 j 21:54	20°♃05'27	-16°-30'-32
minimum elong	1101 Mar 26 j 21:57	12°♃13'40	16°48'20	minimum elong	1109 Apr 03 j 22:01	20°♃05'27	16°30'33
max. Earth dist.	1101 Mar 28 j 18:12	12°♃16'16	49.27770 AU	max. Earth dist.	1109 Apr 05 j 09:59	20°♃07'32	49.85182 AU
retrograde	1101 Jul 07 j 22:08	13°♃45'52		retrograde	1109 Jul 15 j 20:58	21°♃36'18	
min. Earth dist.	1101 Sep 28 j 03:40	12°♃46'50	47.40880 AU	min. Earth dist.	1109 Oct 06 j 07:08	20°♃37'38	47.96539 AU
opposition	1101 Sep 29 j 21:16	12°♃44'51	-17°-29'-37	opposition	1109 Oct 07 j 17:01	20°♃36'02	-17°-9'-29
direct	1101 Dec 20 j 01:03	11°♃45'11		direct	1109 Dec 27 j 23:17	19°♃37'02	
conjunction	1102 Mar 28 j 04:02	13°♃13'19	-16°-47'-5	conjunction	1110 Apr 05 j 03:51	21°♃04'01	-16°-27'-8
minimum elong	1102 Mar 28 j 04:07	13°♃13'19	16°47'05	minimum elong	1110 Apr 05 j 03:59	21°♃04'01	16°27'09
max. Earth dist.	1102 Mar 29 j 22:41	13°♃15'48	49.36042 AU	max. Earth dist.	1110 Apr 06 j 14:51	21°♃06'02	49.90562 AU
retrograde	1102 Jul 09 j 03:14	14°♃45'17		retrograde	1110 Jul 17 j 04:31	22°♃34'43	
min. Earth dist.	1102 Sep 29 j 10:45	13°♃46'16	47.48971 AU	opposition	1110 Oct 08 j 22:20	21°♃34'32	-17°-5'-47
opposition	1102 Oct 01 j 03:07	13°♃44'20	-17°-28'-7	min. Earth dist.	1110 Oct 07 j 14:43	21°♃36'01	48.01591 AU
direct	1102 Dec 21 j 08:11	12°♃44'44		direct	1110 Dec 29 j 02:36	20°♃35'35	
conjunction	1103 Mar 29 j 10:07	14°♃12'39	-16°-45'-34	conjunction	1111 Apr 06 j 09:37	22°♃02'27	-16°-23'-30
minimum elong	1103 Mar 29 j 10:12	14°♃12'39	16°45'36	minimum elong	1111 Apr 06 j 09:44	22°♃02'27	16°23'30
max. Earth dist.	1103 Mar 31 j 05:03	14°♃15'09	49.43997 AU	max. Earth dist.	1111 Apr 07 j 19:25	22°♃04'23	49.95415 AU
retrograde	1103 Jul 10 j 07:39	15°♃44'25		retrograde	1111 Jul 18 j 09:25	23°♃32'59	
min. Earth dist.	1103 Sep 30 j 17:24	14°♃45'26	47.56745 AU	min. Earth dist.	1111 Oct 08 j 20:15	22°♃34'20	48.06104 AU
opposition	1103 Oct 02 j 08:49	14°♃43'32	-17°-26'-19	opposition	1111 Oct 10 j 03:27	22°♃32'52	-17°-1'-51
direct	1103 Dec 22 j 16:23	13°♃44'01		direct	1111 Dec 30 j 06:56	21°♃33'58	
conjunction	1104 Mar 29 j 16:10	15°♃11'45	-16°-43'-46	conjunction	1112 Apr 06 j 15:21	23°♃00'42	-16°-19'-38
minimum elong	1104 Mar 29 j 16:16	15°♃11'45	16°43'47	minimum elong	1112 Apr 06 j 15:29	23°♃00'42	16°19'40
max. Earth dist.	1104 Mar 31 j 09:22	15°♃14'09	49.51668 AU	max. Earth dist.	1112 Apr 07 j 23:04	23°♃02'31	49.99740 AU
retrograde	1104 Jul 10 j 16:16	16°♃43'20		retrograde	1112 Jul 18 j 13:47	24°♃31'05	
min. Earth dist.	1104 Sep 30 j 22:54	15°♃44'25	47.64241 AU	min. Earth dist.	1112 Oct 09 j 03:10	23°♃32'23	48.10124 AU
opposition	1104 Oct 02 j 14:16	15°♃42'32	-17°-24'-13	opposition	1112 Oct 10 j 08:27	23°♃31'00	-16°-57'-40
direct	1104 Dec 22 j 19:43	14°♃43'05		direct	1112 Dec 30 j 13:20	22°♃32'08	
conjunction	1105 Mar 30 j 22:14	16°♃10'40	-16°-41'-40	conjunction	1113 Apr 07 j 21:10	23°♃58'44	-16°-15'-32
minimum elong	1105 Mar 30 j 22:19	16°♃10'40	16°41'42	minimum elong	1113 Apr 07 j 21:18	23°♃58'44	16°15'32
max. Earth dist.	1105 Apr 01 j 15:01	16°♃13'02	49.59049 AU	max. Earth dist.	1113 Apr 09 j 04:38	24°♃00'32	50.03599 AU
retrograde	1105 Jul 11 j 23:24	17°♃42'04		retrograde	1113 Jul 19 j 15:49	25°♃28'58	
min. Earth dist.	1105 Oct 02 j 06:21	16°♃43'10	47.71441 AU	min. Earth dist.	1113 Oct 10 j 09:09	24°♃30'15	48.13692 AU
opposition	1105 Oct 03 j 19:51	16°♃41'23	-17°-21'-50	opposition	1113 Oct 11 j 13:21	24°♃28'55	-16°-53'-14
direct	1105 Dec 23 j 23:35	15°♃42'01		direct	1113 Dec 31 j 22:14	23°♃30'04	
conjunction	1106 Apr 01 j 04:08	17°♃09'27	-16°-39'-17	conjunction	1114 Apr 09 j 02:35	24°♃56'33	-16°-11'-11
minimum elong	1106 Apr 01 j 04:15	17°♃09'28	16°39'19	minimum elong	1114 Apr 09 j 02:43	24°♃56'33	16°11'12
max. Earth dist.	1106 Apr 02 j 20:22	17°♃11'47	49.66143 AU	max. Earth dist.	1114 Apr 10 j 08:04	24°♃58'14	50.07049 AU
retrograde	1106 Jul 13 j 03:00	18°♃40'41		retrograde	1114 Jul 20 j 23:14	26°♃26'39	
min. Earth dist.	1106 Oct 03 j 11:38	17°♃41'53	47.78322 AU	opposition	1114 Oct 12 j 18:11	25°♃26'38	-16°-48'-33
opposition	1106 Oct 05 j 01:11	17°♃40'06	-17°-19'-9	min. Earth dist.	1114 Oct 11 j 14:23	25°♃27'56	48.16884 AU
direct	1106 Dec 25 j 05:58	16°♃40'51		direct	1115 Jan 02 j 02:22	24°♃27'48	
conjunction	1107 Apr 02 j 09:58	18°♃08'10	-16°-36'-38	conjunction	1115 Apr 10 j 08:07	25°♃54'09	-16°-6'-35
minimum elong	1107 Apr 02 j 10:04	18°♃08'10	16°36'39	minimum elong	1115 Apr 10 j 08:16	25°♃54'10	16°06'35
max. Earth dist.	1107 Apr 04 j 00:23	18°♃10'23	49.72901 AU	max. Earth dist.	1115 Apr 11 j 13:07	25°♃55'49	50.10138 AU
retrograde	1107 Jul 14 j 07:53	19°♃39'16		retrograde	1115 Jul 22 j 06:55	27°♃24'07	
min. Earth dist.	1107 Oct 04 j 18:34	18°♃40'30	47.84853 AU	opposition	1115 Oct 13 j 23:00	26°♃24'08	-16°-43'-36
opposition	1107 Oct 06 j 06:36	18°♃38'47	-17°-16'-11	min. Earth dist.	1115 Oct 12 j 21:03	26°♃25'22	48.19735 AU
direct	1107 Dec 26 j 12:20	17°♃39'37		direct	1116 Jan 03 j 05:26	25°♃25'20	
conjunction	1108 Apr 02 j 15:58	19°♃06'50	-16°-33'-43	conjunction	1116 Apr 10 j 13:37	26°♃51'35	-16°-1'-43
				minimum elong	1116 Apr 10 j 13:45	26°♃51'35	16°01'44

max. Earth dist.	1116 Apr 11 j 17:53	26°♃53'12	50.12921 AU	conjunction	1124 Apr 18 j 08:58	4°♃28'11	-15°-13'-56
retrograde	1116 Jul 22 j 10:54	28°♃21'24		minimum elong	1124 Apr 18 j 09:08	4°♃28'12	15°13'56
min. Earth dist.	1116 Oct 13 j 01:38	27°♃22'42	48.22272 AU	max. Earth dist.	1124 Apr 19 j 02:30	4°♃29'11	50.21577 AU
opposition	1116 Oct 14 j 03:40	27°♃21'28	-16°-38'-23	retrograde	1124 Jul 30 j 01:59	5°♃57'22	
direct	1117 Jan 03 j 09:56	26°♃22'41		opposition	1124 Oct 21 j 16:05	4°♃57'46	-15°-47'-40
				min. Earth dist.	1124 Oct 20 j 23:48	4°♃58'32	48.28363 AU
conjunction	1117 Apr 11 j 19:00	27°♃48'51	-15°-56'-35	direct	1125 Jan 11 j 02:22	3°♃59'11	
minimum elong	1117 Apr 11 j 19:10	27°♃48'52	15°56'35				
max. Earth dist.	1117 Apr 12 j 21:29	27°♃50'22	50.15387 AU	conjunction	1125 Apr 19 j 14:22	5°♃24'57	-15°-6'-57
retrograde	1117 Jul 23 j 14:40	29°♃18'34		minimum elong	1125 Apr 19 j 14:32	5°♃24'58	15°06'58
min. Earth dist.	1117 Oct 14 j 07:45	28°♃19'50	48.24504 AU	max. Earth dist.	1125 Apr 20 j 07:02	5°♃25'54	50.20497 AU
opposition	1117 Oct 15 j 08:19	28°♃18'41	-16°-32'-54	retrograde	1125 Jul 31 j 09:13	6°♃54'04	
direct	1118 Jan 04 j 15:11	27°♃19'56		opposition	1125 Oct 22 j 20:26	5°♃54'28	-15°-40'-18
				min. Earth dist.	1125 Oct 22 j 06:15	5°♃55'08	48.26960 AU
conjunction	1118 Apr 13 j 00:27	28°♃46'02	-15°-51'-12	direct	1126 Jan 12 j 05:21	4°♃55'52	
minimum elong	1118 Apr 13 j 00:36	28°♃46'02	15°51'13				
max. Earth dist.	1118 Apr 14 j 03:04	28°♃47'33	50.17551 AU	conjunction	1126 Apr 20 j 19:40	6°♃21'36	-14°-59'-44
	1118 Jun 15 j 14:26	0°♃		minimum elong	1126 Apr 20 j 19:51	6°♃21'37	14°59'44
retrograde	1118 Jul 24 j 17:18	0°♃15'39		max. Earth dist.	1126 Apr 21 j 11:26	6°♃22'30	50.19021 AU
	1118 Sep 02 j 09:45	30°♃		retrograde	1126 Aug 01 j 13:41	7°♃50'39	
opposition	1118 Oct 16 j 12:57	29°♃15'49	-16°-27'-9	min. Earth dist.	1126 Oct 23 j 10:27	6°♃51'44	48.25181 AU
min. Earth dist.	1118 Oct 15 j 13:18	29°♃16'55	48.26406 AU	opposition	1126 Oct 24 j 00:40	6°♃51'04	-15°-32'-41
direct	1119 Jan 05 j 22:38	28°♃17'07		direct	1127 Jan 13 j 08:55	5°♃52'27	
conjunction	1119 Apr 14 j 05:39	29°♃43'08	-15°-45'-33	conjunction	1127 Apr 22 j 00:44	7°♃18'11	-14°-52'-17
minimum elong	1119 Apr 14 j 05:49	29°♃43'09	15°45'34	minimum elong	1127 Apr 22 j 00:54	7°♃18'11	14°52'18
max. Earth dist.	1119 Apr 15 j 06:24	29°♃44'33	50.19384 AU	max. Earth dist.	1127 Apr 22 j 14:41	7°♃18'58	50.17187 AU
	1119 Apr 26 j 15:47	0°♃		retrograde	1127 Aug 02 j 17:28	8°♃47'10	
retrograde	1119 Jul 25 j 23:52	1°♃12'41		opposition	1127 Oct 25 j 05:04	7°♃47'36	-15°-24'-49
opposition	1119 Oct 17 j 17:34	0°♃12'54	-16°-21'-8	min. Earth dist.	1127 Oct 24 j 16:29	7°♃48'11	48.23076 AU
min. Earth dist.	1119 Oct 16 j 18:28	0°♃13'59	48.27955 AU	direct	1128 Jan 14 j 13:59	6°♃48'58	
	1119 Oct 29 j 05:59	30°♃					
direct	1120 Jan 07 j 02:44	29°♃14'15		conjunction	1128 Apr 22 j 06:06	8°♃14'42	-14°-44'-35
	1120 Mar 14 j 19:12	0°♃		minimum elong	1128 Apr 22 j 06:18	8°♃14'42	14°44'35
conjunction	1120 Apr 14 j 11:09	0°♃40'13	-15°-39'-40	max. Earth dist.	1128 Apr 22 j 20:12	8°♃15'29	50.15046 AU
minimum elong	1120 Apr 14 j 11:17	0°♃40'14	15°39'41	retrograde	1128 Aug 02 j 19:11	9°♃43'39	
max. Earth dist.	1120 Apr 15 j 11:01	0°♃41'35	50.20816 AU	opposition	1128 Oct 25 j 09:12	8°♃44'05	-15°-16'-42
retrograde	1120 Jul 26 j 06:51	2°♃09'42		min. Earth dist.	1128 Oct 24 j 21:22	8°♃44'39	48.20664 AU
opposition	1120 Oct 17 j 22:05	1°♃09'59	-16°-14'-53	direct	1129 Jan 14 j 21:38	7°♃45'28	
min. Earth dist.	1120 Oct 17 j 01:12	1°♃10'58	48.29069 AU				
direct	1121 Jan 07 j 06:16	0°♃11'22		conjunction	1129 Apr 23 j 11:18	9°♃11'11	-14°-36'-38
				minimum elong	1129 Apr 23 j 11:29	9°♃11'12	14°36'39
conjunction	1121 Apr 15 j 16:42	1°♃37'18	-15°-33'-33	max. Earth dist.	1129 Apr 23 j 23:30	9°♃11'53	50.12623 AU
minimum elong	1121 Apr 15 j 16:53	1°♃37'18	15°33'35	retrograde	1129 Aug 04 j 01:11	10°♃40'09	
max. Earth dist.	1121 Apr 16 j 15:26	1°♃38'35	50.21798 AU	opposition	1129 Oct 26 j 13:28	9°♃40'36	-15°-8'-19
retrograde	1121 Jul 27 j 12:51	3°♃06'41		min. Earth dist.	1129 Oct 26 j 02:03	9°♃41'09	48.17978 AU
min. Earth dist.	1121 Oct 18 j 06:10	2°♃07'59	48.29689 AU	direct	1130 Jan 16 j 01:37	8°♃41'59	
opposition	1121 Oct 19 j 02:34	2°♃07'02	-16°-8'-25				
direct	1122 Jan 08 j 09:19	1°♃08'26		conjunction	1130 Apr 24 j 16:25	10°♃07'43	-14°-28'-26
				minimum elong	1130 Apr 24 j 16:37	10°♃07'44	14°28'27
conjunction	1122 Apr 16 j 22:02	2°♃34'20	-15°-27'-14	max. Earth dist.	1130 Apr 25 j 04:06	10°♃08'23	50.09909 AU
minimum elong	1122 Apr 16 j 22:11	2°♃34'21	15°27'14	retrograde	1130 Aug 05 j 07:56	11°♃36'41	
max. Earth dist.	1122 Apr 17 j 18:27	2°♃35'30	50.22251 AU	opposition	1130 Oct 27 j 17:50	10°♃37'10	-14°-59'-41
retrograde	1122 Jul 28 j 17:52	4°♃03'40		min. Earth dist.	1130 Oct 27 j 08:05	10°♃37'38	48.14990 AU
opposition	1122 Oct 20 j 07:13	3°♃04'02	-16°-1'-43	direct	1131 Jan 17 j 05:00	9°♃38'34	
min. Earth dist.	1122 Oct 19 j 12:52	3°♃04'54	48.29775 AU				
direct	1123 Jan 09 j 13:59	2°♃05'27		conjunction	1131 Apr 25 j 21:43	11°♃04'20	-14°-19'-59
				minimum elong	1131 Apr 25 j 21:53	11°♃04'21	14°20'00
conjunction	1123 Apr 18 j 03:36	3°♃31'19	-15°-20'-41	max. Earth dist.	1131 Apr 26 j 08:40	11°♃04'57	50.06903 AU
minimum elong	1123 Apr 18 j 03:46	3°♃31'19	15°20'43	retrograde	1131 Aug 06 j 14:57	12°♃33'18	
max. Earth dist.	1123 Apr 18 j 23:29	3°♃32'26	50.22172 AU	opposition	1131 Oct 28 j 21:58	11°♃33'49	-14°-50'-47
retrograde	1123 Jul 29 j 19:43	5°♃00'34		min. Earth dist.	1131 Oct 28 j 12:23	11°♃34'16	48.11676 AU
opposition	1123 Oct 21 j 11:40	4°♃00'57	-15°-54'-48	direct	1132 Jan 18 j 06:42	10°♃35'13	
min. Earth dist.	1123 Oct 20 j 18:32	4°♃01'46	48.29315 AU				
direct	1124 Jan 10 j 21:52	3°♃02'22		conjunction	1132 Apr 26 j 03:00	12°♃01'03	-14°-11'-17
				minimum elong	1132 Apr 26 j 03:12	12°♃01'04	14°11'19
				max. Earth dist.	1132 Apr 26 j 11:56	12°♃01'34	50.03529 AU

retrograde	1132 Aug 06 j 20:51	13°♃30'01		minimum elong	1140 May 03 j 22:56	19°♃35'48	12°53'54
opposition	1132 Oct 29 j 02:19	12°♃30'35	-14°-41'-39	max. Earth dist.	1140 May 03 j 21:25	19°♃35'43	49.59649 AU
min. Earth dist.	1132 Oct 28 j 18:43	12°♃30'56	48.07968 AU	retrograde	1140 Aug 14 j 09:33	21°♃04'54	
direct	1133 Jan 18 j 09:46	11°♃31'59		opposition	1140 Nov 05 j 12:43	20°♃05'15	-13°-20'-28
				min. Earth dist.	1140 Nov 05 j 14:57	20°♃05'09	47.61234 AU
conjunction	1133 Apr 27 j 08:30	12°♃57'52	-14°-2'-23	direct	1141 Jan 26 j 02:57	19°♃06'17	
minimum elong	1133 Apr 27 j 08:41	12°♃57'53	14°02'23				
max. Earth dist.	1133 Apr 27 j 17:00	12°♃58'21	49.99723 AU	conjunction	1141 May 05 j 04:18	20°♃32'36	-12°-43'-9
retrograde	1133 Aug 07 j 22:25	14°♃26'52		minimum elong	1141 May 05 j 04:30	20°♃32'37	12°43'09
opposition	1133 Oct 30 j 06:31	13°♃27'26	-14°-32'-18	max. Earth dist.	1141 May 05 j 02:19	20°♃32'29	49.52432 AU
min. Earth dist.	1133 Oct 30 j 00:01	13°♃27'44	48.03782 AU	retrograde	1141 Aug 15 j 16:15	22°♃01'46	
direct	1134 Jan 19 j 17:18	12°♃28'50		opposition	1141 Nov 06 j 16:57	21°♃02'07	-13°-9'-14
				min. Earth dist.	1141 Nov 06 j 19:08	21°♃02'01	47.53724 AU
conjunction	1134 Apr 28 j 13:54	13°♃54'46	-13°-53'-15	direct	1142 Jan 27 j 05:34	20°♃03'05	
minimum elong	1134 Apr 28 j 14:06	13°♃54'47	13°53'16				
max. Earth dist.	1134 Apr 28 j 20:01	13°♃55'07	49.95426 AU	conjunction	1142 May 06 j 09:47	21°♃29'33	-12°-32'-10
	1134 Jun 21 j 10:27	15°♃		minimum elong	1142 May 06 j 09:58	21°♃29'33	12°32'12
retrograde	1134 Aug 09 j 03:07	15°♃23'47		max. Earth dist.	1142 May 06 j 05:54	21°♃29'20	49.44925 AU
	1134 Sep 27 j 12:22	15°♃		retrograde	1142 Aug 16 j 22:57	22°♃58'47	
opposition	1134 Oct 31 j 10:52	14°♃24'21	-14°-22'-43	opposition	1142 Nov 07 j 21:26	21°♃59'08	-12°-57'-44
min. Earth dist.	1134 Oct 31 j 05:24	14°♃24'36	47.99089 AU	min. Earth dist.	1142 Nov 08 j 01:18	21°♃58'57	47.45929 AU
direct	1135 Jan 20 j 23:02	13°♃25'43		direct	1143 Jan 28 j 08:12	21°♃00'04	
conjunction	1135 Apr 29 j 19:19	14°♃51'42	-13°-43'-54	conjunction	1143 May 07 j 15:26	22°♃26'40	-12°-20'-57
minimum elong	1135 Apr 29 j 19:31	14°♃51'42	13°43'54	minimum elong	1143 May 07 j 15:39	22°♃26'41	12°20'58
max. Earth dist.	1135 Apr 30 j 00:16	14°♃51'58	49.90595 AU	max. Earth dist.	1143 May 07 j 11:34	22°♃26'27	49.37120 AU
	1135 May 05 j 22:19	15°♃		retrograde	1143 Aug 18 j 02:03	23°♃56'01	
retrograde	1135 Aug 10 j 10:10	16°♃20'43		opposition	1143 Nov 09 j 01:53	22°♃56'21	-12°-45'-58
opposition	1135 Nov 01 j 15:18	15°♃21'16	-14°-12'-56	min. Earth dist.	1143 Nov 09 j 06:27	22°♃56'08	47.37795 AU
min. Earth dist.	1135 Nov 01 j 12:03	15°♃21'25	47.93857 AU	direct	1144 Jan 29 j 14:52	21°♃57'16	
	1135 Nov 20 j 21:02	15°♃					
direct	1136 Jan 22 j 02:56	14°♃22'35		conjunction	1144 May 07 j 21:11	23°♃24'01	-12°-9'-29
	1136 Mar 23 j 00:23	15°♃		minimum elong	1144 May 07 j 21:22	23°♃24'01	12°09'30
				max. Earth dist.	1144 May 07 j 15:11	23°♃23'40	49.28958 AU
conjunction	1136 Apr 30 j 00:54	15°♃48'36	-13°-34'-21	retrograde	1144 Aug 18 j 07:02	24°♃53'29	
minimum elong	1136 Apr 30 j 01:05	15°♃48'37	13°34'22	opposition	1144 Nov 09 j 06:16	23°♃53'49	-12°-33'-59
max. Earth dist.	1136 Apr 30 j 04:33	15°♃48'49	49.85255 AU	min. Earth dist.	1144 Nov 09 j 11:56	23°♃53'33	47.29280 AU
retrograde	1136 Aug 10 j 16:13	17°♃17'37		direct	1145 Jan 29 j 20:16	22°♃54'42	
opposition	1136 Nov 01 j 19:26	16°♃18'09	-14°-2'-55				
min. Earth dist.	1136 Nov 01 j 16:33	16°♃18'17	47.88123 AU	conjunction	1145 May 09 j 03:09	24°♃21'37	-11°-57'-48
direct	1137 Jan 22 j 05:42	15°♃19'24		minimum elong	1145 May 09 j 03:21	24°♃21'38	11°57'49
				max. Earth dist.	1145 May 08 j 20:04	24°♃21'13	49.20357 AU
conjunction	1137 May 01 j 06:22	16°♃45'28	-13°-24'-35	retrograde	1145 Aug 19 j 14:10	25°♃51'14	
minimum elong	1137 May 01 j 06:34	16°♃45'28	13°24'35	opposition	1145 Nov 10 j 10:57	24°♃51'33	-12°-21'-45
max. Earth dist.	1137 May 01 j 07:49	16°♃45'33	49.79429 AU	min. Earth dist.	1145 Nov 10 j 18:45	24°♃51'11	47.20289 AU
retrograde	1137 Aug 11 j 21:18	18°♃14'29		direct	1146 Jan 31 j 00:18	23°♃52'24	
opposition	1137 Nov 02 j 23:49	17°♃14'57	-13°-52'-40				
min. Earth dist.	1137 Nov 02 j 22:55	17°♃15'00	47.81944 AU	conjunction	1146 May 10 j 09:01	25°♃19'28	-11°-45'-53
direct	1138 Jan 23 j 10:00	16°♃16'09		minimum elong	1146 May 10 j 09:12	25°♃19'29	11°45'54
				max. Earth dist.	1146 May 10 j 00:37	25°♃18'59	49.11268 AU
conjunction	1138 May 02 j 11:46	17°♃42'16	-13°-14'-35	retrograde	1146 Aug 20 j 22:09	26°♃49'12	
minimum elong	1138 May 02 j 11:57	17°♃42'16	13°14'36	opposition	1146 Nov 11 j 15:36	25°♃49'30	-12°-9'-17
max. Earth dist.	1138 May 02 j 13:10	17°♃42'21	49.73184 AU	min. Earth dist.	1146 Nov 11 j 23:47	25°♃49'07	47.10778 AU
retrograde	1138 Aug 12 j 22:47	19°♃11'17		direct	1147 Feb 01 j 02:18	24°♃50'17	
opposition	1138 Nov 04 j 04:06	18°♃11'43	-13°-42'-11				
min. Earth dist.	1138 Nov 04 j 04:00	18°♃11'44	47.75365 AU	conjunction	1147 May 11 j 15:03	26°♃17'31	-11°-33'-46
direct	1139 Jan 24 j 17:30	17°♃12'51		minimum elong	1147 May 11 j 15:15	26°♃17'32	11°33'47
				max. Earth dist.	1147 May 11 j 04:12	26°♃16'54	49.01635 AU
conjunction	1139 May 03 j 17:11	18°♃39'01	-13°-4'-21	retrograde	1147 Aug 22 j 04:28	27°♃47'22	
minimum elong	1139 May 03 j 17:23	18°♃39'02	13°04'21	opposition	1147 Nov 12 j 20:21	26°♃47'37	-11°-56'-36
max. Earth dist.	1139 May 03 j 16:34	18°♃38'59	49.66581 AU	min. Earth dist.	1147 Nov 13 j 06:52	26°♃47'07	47.00731 AU
retrograde	1139 Aug 14 j 03:50	20°♃08'05		direct	1148 Feb 02 j 06:38	25°♃48'20	
opposition	1139 Nov 05 j 08:19	19°♃08'28	-13°-31'-27				
min. Earth dist.	1139 Nov 05 j 08:50	19°♃08'27	47.68457 AU	conjunction	1148 May 11 j 21:18	27°♃15'44	-11°-21'-25
direct	1140 Jan 25 j 22:13	18°♃09'33		minimum elong	1148 May 11 j 21:30	27°♃15'45	11°21'26
				max. Earth dist.	1148 May 11 j 09:53	27°♃15'05	48.91474 AU
conjunction	1140 May 03 j 22:45	19°♃35'47	-12°-53'-52	retrograde	1148 Aug 22 j 06:52	28°♃45'41	

opposition	1148 Nov 13 j 01:05	27° $\text{♁}$ 45'52	-11°-43'-41	max. Earth dist.	1156 May 19 j 03:00	5° $\text{♁}$ 04'34	47.96411 AU
min. Earth dist.	1148 Nov 13 j 12:35	27° $\text{♁}$ 45'19	46.90155 AU	retrograde	1156 Aug 30 j 07:40	6° $\text{♁}$ 37'00	
direct	1149 Feb 02 j 14:39	26° $\text{♁}$ 46'29		opposition	1156 Nov 20 j 16:46	5° $\text{♁}$ 36'34	-9°-51'-15
conjunction	1149 May 13 j 03:20	28° $\text{♁}$ 14'03	-11°-8'-51	min. Earth dist.	1156 Nov 21 j 12:05	5° $\text{♁}$ 35'38	45.92546 AU
minimum elong	1149 May 13 j 03:32	28° $\text{♁}$ 14'03	11°08'52	direct	1157 Feb 10 j 07:18	4° $\text{♁}$ 36'18	
max. Earth dist.	1149 May 12 j 13:31	28° $\text{♁}$ 13'15	48.80817 AU	max. Earth dist.	1157 May 20 j 07:38	6° $\text{♁}$ 04'13	47.83060 AU
retrograde	1149 Aug 23 j 11:43	29° $\text{♁}$ 44'07		conjunction	1157 May 21 j 06:46	6° $\text{♁}$ 05'33	-9°-19'-26
opposition	1149 Nov 14 j 05:47	28° $\text{♁}$ 44'13	-11°-30'-32	minimum elong	1157 May 21 j 06:57	6° $\text{♁}$ 05'34	9°19'27
min. Earth dist.	1149 Nov 14 j 18:20	28° $\text{♁}$ 43'37	46.79123 AU	retrograde	1157 Aug 31 j 15:57	7° $\text{♁}$ 37'00	
direct	1150 Feb 03 j 20:41	27° $\text{♁}$ 44'43		opposition	1157 Nov 21 j 22:13	6° $\text{♁}$ 36'29	-9°-36'-1
conjunction	1150 May 14 j 09:31	29° $\text{♁}$ 12'26	-10°-56'-3	min. Earth dist.	1157 Nov 22 j 19:48	6° $\text{♁}$ 35'26	45.78836 AU
minimum elong	1150 May 14 j 09:43	29° $\text{♁}$ 12'27	10°56'03	direct	1158 Feb 11 j 10:52	5° $\text{♁}$ 36'07	
max. Earth dist.	1150 May 13 j 18:49	29° $\text{♁}$ 11'36	48.69716 AU	conjunction	1158 May 22 j 13:53	7° $\text{♁}$ 05'38	-9°-4'-39
retrograde	1150 Jun 19 j 18:21	0° $\text{♁}$		minimum elong	1158 May 22 j 14:04	7° $\text{♁}$ 05'39	9°04'40
opposition	1150 Aug 24 j 17:02	0° $\text{♁}$ 42'39		max. Earth dist.	1158 May 21 j 14:16	7° $\text{♁}$ 04'16	47.69261 AU
min. Earth dist.	1150 Oct 31 j 02:36	30° $\text{♁}$		retrograde	1158 Sep 01 j 21:31	8° $\text{♁}$ 37'18	
direct	1150 Nov 15 j 10:37	29° $\text{♁}$ 42'40	-11°-17'-9	opposition	1158 Nov 23 j 03:43	7° $\text{♁}$ 36'42	-9°-20'-32
min. Earth dist.	1150 Nov 16 j 00:58	29° $\text{♁}$ 41'59	46.67679 AU	min. Earth dist.	1158 Nov 24 j 02:06	7° $\text{♁}$ 35'37	45.64643 AU
direct	1151 Feb 05 j 02:36	28° $\text{♁}$ 43'03		direct	1159 Feb 12 j 18:01	6° $\text{♁}$ 36'12	
conjunction	1151 May 07 j 16:29	0° $\text{♁}$		conjunction	1159 May 23 j 20:57	8° $\text{♁}$ 06'01	-8°-49'-37
minimum elong	1151 May 15 j 15:39	0° $\text{♁}$ 10'56	-10°-43'00	minimum elong	1159 May 23 j 21:07	8° $\text{♁}$ 06'02	8°49'37
max. Earth dist.	1151 May 15 j 15:51	0° $\text{♁}$ 10'56	10°43'01	max. Earth dist.	1159 May 22 j 18:43	8° $\text{♁}$ 04'29	47.54971 AU
retrograde	1151 Aug 26 j 00:37	1° $\text{♁}$ 41'16		retrograde	1159 Sep 03 j 03:55	9° $\text{♁}$ 37'54	
opposition	1151 Nov 16 j 15:24	0° $\text{♁}$ 41'12	-11°-3'-30	opposition	1159 Nov 24 j 09:22	8° $\text{♁}$ 37'12	-9°-4'-48
min. Earth dist.	1151 Nov 17 j 05:53	0° $\text{♁}$ 40'30	46.55887 AU	min. Earth dist.	1159 Nov 25 j 09:06	8° $\text{♁}$ 36'03	45.49957 AU
direct	1151 Dec 26 j 03:42	30° $\text{♁}$		direct	1160 Feb 14 j 00:38	7° $\text{♁}$ 36'34	
conjunction	1152 Feb 06 j 05:56	29° $\text{♁}$ 41'28		max. Earth dist.	1160 May 23 j 01:02	9° $\text{♁}$ 05'04	47.40170 AU
minimum elong	1152 Mar 18 j 22:38	0° $\text{♁}$		conjunction	1160 May 24 j 04:21	9° $\text{♁}$ 06'40	-8°-34'-20
max. Earth dist.	1152 May 15 j 21:56	1° $\text{♁}$ 09'32	-10°-29'-43	minimum elong	1160 May 24 j 04:32	9° $\text{♁}$ 06'40	8°34'22
retrograde	1152 May 15 j 22:08	1° $\text{♁}$ 09'33	10°29'43	retrograde	1160 Sep 03 j 09:17	10° $\text{♁}$ 38'47	
opposition	1152 May 15 j 04:24	1° $\text{♁}$ 08'32	48.46444 AU	opposition	1160 Nov 24 j 15:05	9° $\text{♁}$ 37'58	-8°-48'-49
min. Earth dist.	1152 Aug 26 j 09:22	2° $\text{♁}$ 40'00		min. Earth dist.	1160 Nov 25 j 16:46	9° $\text{♁}$ 36'43	45.34775 AU
direct	1152 Nov 16 j 20:17	1° $\text{♁}$ 39'51	-10°-49'-35	direct	1161 Feb 14 j 07:52	8° $\text{♁}$ 37'11	
min. Earth dist.	1152 Nov 17 j 12:33	1° $\text{♁}$ 39'04	46.43790 AU	max. Earth dist.	1161 May 24 j 07:10	10° $\text{♁}$ 05'53	47.24917 AU
direct	1153 Feb 06 j 08:03	0° $\text{♁}$ 40'00		conjunction	1161 May 25 j 11:45	10° $\text{♁}$ 07'33	-8°-18'-49
max. Earth dist.	1153 May 16 j 10:53	2° $\text{♁}$ 07'16	48.34354 AU	minimum elong	1161 May 25 j 11:55	10° $\text{♁}$ 07'34	8°18'50
conjunction	1153 May 17 j 04:23	2° $\text{♁}$ 08'17	-10°-16'-10	retrograde	1161 Sep 04 j 17:10	11° $\text{♁}$ 39'55	
minimum elong	1153 May 17 j 04:34	2° $\text{♁}$ 08'17	10°16'11	opposition	1161 Nov 25 j 20:51	10° $\text{♁}$ 38'59	-8°-32'-34
retrograde	1153 Aug 27 j 13:38	3° $\text{♁}$ 38'54		min. Earth dist.	1161 Nov 26 j 22:52	10° $\text{♁}$ 37'43	45.19165 AU
opposition	1153 Nov 18 j 01:18	2° $\text{♁}$ 38'40	-10°-35'-24	direct	1162 Feb 15 j 12:51	9° $\text{♁}$ 38'02	
min. Earth dist.	1153 Nov 18 j 17:55	2° $\text{♁}$ 37'52	46.31411 AU	conjunction	1162 May 26 j 19:00	11° $\text{♁}$ 08'42	-8°-3'-4
direct	1154 Feb 07 j 14:46	1° $\text{♁}$ 38'42		minimum elong	1162 May 26 j 19:10	11° $\text{♁}$ 08'43	8°03'05
conjunction	1154 May 18 j 10:36	3° $\text{♁}$ 07'12	-10°-2'-22	max. Earth dist.	1162 May 25 j 12:22	11° $\text{♁}$ 06'54	47.09244 AU
minimum elong	1154 May 18 j 10:47	3° $\text{♁}$ 07'12	10°02'23	retrograde	1162 Sep 06 j 03:06	12° $\text{♁}$ 41'20	
max. Earth dist.	1154 May 17 j 15:18	3° $\text{♁}$ 06'05	48.21999 AU	opposition	1162 Nov 27 j 02:52	11° $\text{♁}$ 40'15	-8°-16'-4
retrograde	1154 Aug 28 j 17:57	4° $\text{♁}$ 37'59		min. Earth dist.	1162 Nov 28 j 06:52	11° $\text{♁}$ 38'53	45.03176 AU
opposition	1154 Nov 19 j 06:25	3° $\text{♁}$ 37'41	-10°-20'-57	direct	1163 Feb 16 j 16:15	10° $\text{♁}$ 39'08	
min. Earth dist.	1154 Nov 19 j 23:49	3° $\text{♁}$ 36'51	46.18773 AU	max. Earth dist.	1163 May 26 j 19:59	12° $\text{♁}$ 08'19	46.93222 AU
direct	1155 Feb 08 j 21:14	2° $\text{♁}$ 37'37		conjunction	1163 May 28 j 02:40	12° $\text{♁}$ 10'08	-7°-47'-3
conjunction	1155 May 19 j 17:13	4° $\text{♁}$ 06'21	-9°-48'-19	minimum elong	1163 May 28 j 02:50	12° $\text{♁}$ 10'09	7°47'03
minimum elong	1155 May 19 j 17:24	4° $\text{♁}$ 06'21	9°48'20	retrograde	1163 Sep 07 j 09:47	13° $\text{♁}$ 43'01	
max. Earth dist.	1155 May 18 j 21:13	4° $\text{♁}$ 05'11	48.09360 AU	opposition	1163 Nov 28 j 08:46	12° $\text{♁}$ 41'48	-7°-59'-17
retrograde	1155 Aug 29 j 23:12	5° $\text{♁}$ 37'21		min. Earth dist.	1163 Nov 29 j 13:08	12° $\text{♁}$ 40'25	44.86860 AU
opposition	1155 Nov 20 j 11:34	4° $\text{♁}$ 36'58	-10°-6'-14	direct	1164 Feb 17 j 23:12	11° $\text{♁}$ 40'31	
min. Earth dist.	1155 Nov 21 j 06:39	4° $\text{♁}$ 36'03	46.05833 AU	max. Earth dist.	1164 May 27 j 01:35	13° $\text{♁}$ 09'55	46.76900 AU
direct	1156 Feb 10 j 03:54	3° $\text{♁}$ 36'49		conjunction	1164 May 28 j 10:19	13° $\text{♁}$ 11'51	-7°-30'-46
conjunction	1156 May 19 j 23:59	5° $\text{♁}$ 05'47	-9°-34'00	minimum elong	1164 May 28 j 10:29	13° $\text{♁}$ 11'52	7°30'47
minimum elong	1156 May 20 j 00:11	5° $\text{♁}$ 05'48	9°34'01	retrograde	1164 Sep 07 j 16:26	14° $\text{♁}$ 45'01	
				opposition	1164 Nov 28 j 14:56	13° $\text{♁}$ 43'41	-7°-42'-13

min. Earth dist.	1164 Nov 29 j 20:22	13°II42'14	44.70278 AU	conjunction	1173 Jun 07 j 15:54	22°II47'36	-4°-52'-17
direct	1165 Feb 18 j 05:57	12°II42'14		minimum elong	1173 Jun 07 j 16:01	22°II47'37	4°52'18
max. Earth dist.	1165 May 28 j 08:54	14°II11'57	46.60311 AU	retrograde	1173 Sep 17 j 21:55	24°II24'03	
conjunction	1165 May 29 j 18:07	14°II13'55	-7°-14'-13	opposition	1173 Dec 08 j 05:53	23°II21'28	-4°-55'-57
minimum elong	1165 May 29 j 18:17	14°II13'56	7°14'14	min. Earth dist.	1173 Dec 09 j 21:13	23°II19'28	43.07150 AU
retrograde	1165 Sep 08 j 21:10	15°II47'23		direct	1174 Feb 27 j 19:02	22°II18'23	
opposition	1165 Nov 29 j 21:16	14°II45'56	-7°-24'-52	max. Earth dist.	1174 Jun 07 j 03:47	23°II51'07	44.96589 AU
min. Earth dist.	1165 Dec 01 j 03:54	14°II44'25	44.53444 AU	conjunction	1174 Jun 09 j 01:27	23°II53'56	-4°-33'-22
direct	1166 Feb 19 j 14:51	13°II44'20		minimum elong	1174 Jun 09 j 01:34	23°II53'56	4°33'22
max. Earth dist.	1166 May 29 j 15:57	15°II14'21	46.43506 AU	retrograde	1174 Sep 19 j 08:13	25°II30'46	
conjunction	1166 May 31 j 02:02	15°II16'23	-6°-57'-24	opposition	1174 Dec 09 j 13:45	24°II27'58	-4°-36'-5
minimum elong	1166 May 31 j 02:11	15°II16'23	6°57'26	min. Earth dist.	1174 Dec 11 j 06:42	24°II25'53	42.87042 AU
retrograde	1166 Sep 10 j 06:08	16°II50'11		direct	1175 Mar 01 j 02:25	23°II24'39	
opposition	1166 Dec 01 j 03:38	15°II48'36	-7°-7'-14	max. Earth dist.	1175 Jun 08 j 13:12	24°II57'49	44.76402 AU
min. Earth dist.	1166 Dec 02 j 10:12	15°II47'05	44.36397 AU	conjunction	1175 Jun 10 j 11:22	25°II00'40	-4°-14'-11
direct	1167 Feb 20 j 19:43	14°II46'51		minimum elong	1175 Jun 10 j 11:28	25°II00'40	4°14'12
max. Earth dist.	1167 May 30 j 22:24	16°II17'10	46.26459 AU	retrograde	1175 Sep 20 j 15:06	26°II37'54	
conjunction	1167 Jun 01 j 10:07	16°II19'18	-6°-40'-19	opposition	1175 Dec 10 j 21:54	25°II34'54	-4°-15'-55
minimum elong	1167 Jun 01 j 10:17	16°II19'18	6°40'20	min. Earth dist.	1175 Dec 12 j 15:58	25°II32'46	42.66612 AU
retrograde	1167 Sep 11 j 16:22	17°II53'27		direct	1176 Mar 01 j 13:46	24°II31'20	
opposition	1167 Dec 02 j 10:19	16°II51'46	-6°-49'-19	max. Earth dist.	1176 Jun 08 j 21:54	26°II04'54	44.55931 AU
min. Earth dist.	1167 Dec 03 j 18:50	16°II50'09	44.19099 AU	conjunction	1176 Jun 10 j 21:23	26°II07'51	-3°-54'-44
direct	1168 Feb 21 j 23:17	15°II49'52		minimum elong	1176 Jun 10 j 21:29	26°II07'52	3°54'44
max. Earth dist.	1168 May 31 j 06:43	17°II20'35	46.09141 AU	retrograde	1176 Sep 21 j 00:02	27°II45'32	
conjunction	1168 Jun 01 j 18:36	17°II22'44	-6°-22'-58	opposition	1176 Dec 11 j 06:05	26°II42'19	-3°-55'-28
minimum elong	1168 Jun 01 j 18:45	17°II22'44	6°22'58	min. Earth dist.	1176 Dec 13 j 00:24	26°II40'09	42.45935 AU
retrograde	1168 Sep 12 j 01:11	18°II57'15		direct	1177 Mar 02 j 22:45	25°II38'30	
opposition	1168 Dec 02 j 16:58	17°II55'27	-6°-31'-7	max. Earth dist.	1177 Jun 10 j 06:49	27°II12'30	44.35212 AU
min. Earth dist.	1168 Dec 04 j 01:54	17°II53'49	44.01494 AU	conjunction	1177 Jun 12 j 07:39	27°II15'32	-3°-35'00
direct	1169 Feb 22 j 06:33	16°II53'24		minimum elong	1177 Jun 12 j 07:45	27°II15'32	3°35'01
max. Earth dist.	1169 Jun 01 j 12:55	18°II24'24	45.91483 AU	retrograde	1177 Sep 22 j 10:16	28°II53'41	
conjunction	1169 Jun 03 j 03:10	18°II26'42	-6°-5'-21	opposition	1177 Dec 12 j 14:46	27°II50'17	-3°-34'-43
minimum elong	1169 Jun 03 j 03:19	18°II26'43	6°05'21	min. Earth dist.	1177 Dec 14 j 10:50	27°II48'01	42.25043 AU
retrograde	1169 Sep 13 j 10:24	20°II01'36		direct	1178 Mar 04 j 05:49	26°II46'12	
opposition	1169 Dec 03 j 23:59	18°II59'41	-6°-12'-38	max. Earth dist.	1178 Jun 11 j 17:11	28°II20'44	44.14303 AU
min. Earth dist.	1169 Dec 05 j 10:22	18°II57'58	43.83527 AU	conjunction	1178 Jun 13 j 18:03	28°II23'47	-3°-15'00
direct	1170 Feb 23 j 13:50	17°II57'28		minimum elong	1178 Jun 13 j 18:08	28°II23'48	3°15'00
max. Earth dist.	1170 Jun 02 j 20:58	19°II28'52	45.73408 AU	retrograde	1178 Sep 09 j 12:31	0°☾	
conjunction	1170 Jun 04 j 11:58	19°II31'13	-5°-47'-28	retrograde	1178 Sep 23 j 21:27	0°☾02'27	
minimum elong	1170 Jun 04 j 12:06	19°II31'14	5°47'28	retrograde	1178 Oct 08 j 08:05	30°RII	
retrograde	1170 Sep 14 j 17:05	21°II06'30		opposition	1178 Dec 13 j 23:34	28°II58'50	-3°-13'-41
opposition	1170 Dec 05 j 07:16	20°II04'26	-5°-53'-52	min. Earth dist.	1178 Dec 15 j 19:28	28°II56'34	42.03961 AU
min. Earth dist.	1170 Dec 06 j 19:20	20°II02'38	43.65113 AU	direct	1179 Mar 05 j 14:04	27°II54'32	
direct	1171 Feb 24 j 22:55	19°II02'02		max. Earth dist.	1179 Jun 13 j 01:49	29°II29'30	43.93194 AU
max. Earth dist.	1171 Jun 04 j 04:26	20°II33'45	45.54884 AU	conjunction	1179 Jun 15 j 04:48	29°II32'42	-2°-54'-43
conjunction	1171 Jun 05 j 21:06	20°II36'14	-5°-29'-20	minimum elong	1179 Jun 15 j 04:52	29°II32'43	2°54'45
minimum elong	1171 Jun 05 j 21:14	20°II36'14	5°29'21	retrograde	1179 Jul 03 j 11:47	0°☾	
retrograde	1171 Sep 16 j 00:50	22°II11'53		retrograde	1179 Sep 25 j 10:58	1°☾11'53	
opposition	1171 Dec 06 j 14:31	21°II09'41	-5°-34'-51	opposition	1179 Dec 15 j 08:34	0°☾08'06	-2°-52'-20
min. Earth dist.	1171 Dec 08 j 03:14	21°II07'50	43.46241 AU	min. Earth dist.	1179 Dec 17 j 05:59	0°☾05'45	41.82685 AU
direct	1172 Feb 26 j 06:49	20°II07'04		retrograde	1179 Dec 21 j 21:07	30°RII	
max. Earth dist.	1172 Jun 04 j 11:32	21°II39'05	45.35878 AU	direct	1180 Mar 05 j 21:12	29°II03'33	
conjunction	1172 Jun 06 j 06:27	21°II41'42	-5°-10'-56	max. Earth dist.	1180 May 17 j 19:50	0°☾	
minimum elong	1172 Jun 06 j 06:34	21°II41'43	5°10'57	max. Earth dist.	1180 Jun 13 j 12:56	0°☾39'08	43.71858 AU
retrograde	1172 Sep 16 j 11:34	23°II17'45		conjunction	1180 Jun 15 j 16:01	0°☾42'22	-2°-34'-10
opposition	1172 Dec 06 j 22:12	22°II15'22	-5°-15'-32	minimum elong	1180 Jun 15 j 16:05	0°☾42'22	2°34'11
min. Earth dist.	1172 Dec 08 j 13:10	22°II13'24	43.26906 AU	retrograde	1180 Sep 25 j 21:30	2°☾22'06	
direct	1173 Feb 26 j 12:19	21°II12'32		opposition	1180 Dec 15 j 17:56	1°☾18'08	-2°-30'-42
max. Earth dist.	1173 Jun 05 j 20:36	22°II44'58	45.16432 AU	min. Earth dist.	1180 Dec 17 j 16:18	1°☾15'43	41.61155 AU
				direct	1181 Mar 07 j 07:44	0°☾13'22	

max. Earth dist.	1181 Jun 14 j 22:30	1°☾49'28	43.50245 AU	max. Earth dist.	1189 Jun 24 j 18:40	11°☾40'28	41.64621 AU
conjunction	1181 Jun 17 j 03:15	1°☾52'49	-2°-13'-21	conjunction	1189 Jun 27 j 09:53	11°☾44'41	0°42'38
minimum elong	1181 Jun 17 j 03:18	1°☾52'49	2°13'22	minimum elong	1189 Jun 27 j 09:52	11°☾44'41	0°42'39
retrograde	1181 Sep 27 j 07:58	3°☾33'08		retrograde	1189 Oct 07 j 14:25	13°☾30'02	
opposition	1181 Dec 17 j 03:31	2°☾28'59	-2°-8'-47	opposition	1189 Dec 26 j 19:19	12°☾23'49	0°56'51
min. Earth dist.	1181 Dec 19 j 02:38	2°☾26'31	41.39327 AU	min. Earth dist.	1189 Dec 29 j 03:35	12°☾20'45	39.52428 AU
direct	1182 Mar 08 j 17:48	1°☾23'59		direct	1190 Mar 18 j 05:44	11°☾16'18	
max. Earth dist.	1182 Jun 16 j 08:40	3°☾00'37	43.28274 AU	max. Earth dist.	1190 Jun 26 j 09:23	12°☾57'59	41.40389 AU
conjunction	1182 Jun 18 j 15:01	3°☾04'06	-1°-52'-16	conjunction	1190 Jun 29 j 00:14	13°☾02'12	1°05'46
minimum elong	1182 Jun 18 j 15:04	3°☾04'06	1°52'17	minimum elong	1190 Jun 29 j 00:12	13°☾02'12	1°05'45
retrograde	1182 Sep 28 j 18:32	4°☾45'00		retrograde	1190 Oct 09 j 05:06	14°☾48'16	
opposition	1182 Dec 18 j 13:28	3°☾40'39	-1°-46'-34	opposition	1190 Dec 28 j 07:41	13°☾41'45	1°21'18
min. Earth dist.	1182 Dec 20 j 14:39	3°☾38'04	41.17125 AU	min. Earth dist.	1190 Dec 30 j 15:51	13°☾38'42	39.28182 AU
direct	1183 Mar 10 j 03:13	2°☾35'24		direct	1191 Mar 19 j 17:16	12°☾33'55	
max. Earth dist.	1183 Jun 17 j 20:00	4°☾12'39	43.05920 AU	max. Earth dist.	1191 Jun 27 j 22:17	14°☾16'16	41.16082 AU
conjunction	1183 Jun 20 j 03:08	4°☾16'11	-1°-30'-55	conjunction	1191 Jun 30 j 14:52	14°☾20'38	1°29'09
minimum elong	1183 Jun 20 j 03:10	4°☾16'12	1°30'56	minimum elong	1191 Jun 30 j 14:49	14°☾20'38	1°29'10
retrograde	1183 Sep 30 j 07:33	5°☾57'42		retrograde	1191 Oct 10 j 21:59	16°☾07'28	
opposition	1183 Dec 19 j 23:40	4°☾53'08	-1°-24'-5	opposition	1191 Dec 29 j 20:32	15°☾00'41	1°46'01
min. Earth dist.	1183 Dec 22 j 01:10	4°☾50'31	40.94521 AU	min. Earth dist.	1192 Jan 01 j 05:40	14°☾57'33	39.03873 AU
direct	1184 Mar 10 j 11:21	3°☾47'36		direct	1192 Mar 20 j 05:13	13°☾52'30	
max. Earth dist.	1184 Jun 18 j 05:50	5°☾25'20	42.83145 AU	max. Earth dist.	1192 Jun 28 j 13:13	15°☾35'42	40.91674 AU
conjunction	1184 Jun 20 j 15:31	5°☾29'04	-1°-9'-18	conjunction	1192 Jul 01 j 06:05	15°☾40'07	1°52'46
minimum elong	1184 Jun 20 j 15:33	5°☾29'04	1°09'19	minimum elong	1192 Jul 01 j 06:01	15°☾40'06	1°52'45
retrograde	1184 Sep 30 j 21:38	7°☾11'11		retrograde	1192 Oct 11 j 12:19	17°☾27'43	
opposition	1184 Dec 20 j 10:11	6°☾06'22	-1°-1'-17	opposition	1192 Dec 30 j 09:48	16°☾20'40	2°11'00
min. Earth dist.	1184 Dec 22 j 13:49	6°☾03'38	40.71526 AU	min. Earth dist.	1193 Jan 01 j 20:01	16°☾17'27	38.79451 AU
direct	1185 Mar 11 j 19:48	5°☾00'32		direct	1193 Mar 21 j 20:33	15°☾12'09	
max. Earth dist.	1185 Jun 19 j 18:15	6°☾38'56	42.59989 AU	max. Earth dist.	1193 Jun 30 j 03:47	16°☾56'09	40.67141 AU
conjunction	1185 Jun 22 j 04:18	6°☾42'42	0°-47'-26	conjunction	1193 Jul 02 j 21:36	17°☾00'40	2°16'36
minimum elong	1185 Jun 22 j 04:19	6°☾42'42	0°47'27	minimum elong	1193 Jul 02 j 21:32	17°☾00'40	2°16'37
retrograde	1185 Oct 02 j 10:27	8°☾25'25		retrograde	1193 Oct 13 j 04:25	18°☾49'06	
opposition	1185 Dec 21 j 21:01	7°☾20'21	0°-38'-13	opposition	1193 Dec 31 j 23:26	17°☾41'46	2°36'13
min. Earth dist.	1185 Dec 24 j 01:21	7°☾17'34	40.48173 AU	min. Earth dist.	1194 Jan 03 j 09:47	17°☾38'32	38.54887 AU
direct	1186 Mar 13 j 08:27	6°☾14'12		direct	1194 Mar 23 j 10:27	16°☾32'55	
max. Earth dist.	1186 Jun 21 j 05:04	7°☾53'09	42.36507 AU	max. Earth dist.	1194 Jul 01 j 18:12	18°☾17'43	40.42402 AU
conjunction	1186 Jun 23 j 17:05	7°☾57'04	0°-25'-18	conjunction	1194 Jul 04 j 13:36	18°☾22'22	2°40'39
minimum elong	1186 Jun 23 j 17:06	7°☾57'04	0°25'20	minimum elong	1194 Jul 04 j 13:31	18°☾22'22	2°40'39
retrograde	1186 Oct 04 j 00:14	9°☾40'25		retrograde	1194 Oct 14 j 19:29	20°☾11'39	
opposition	1186 Dec 23 j 08:05	8°☾35'03	0°-14'-52	opposition	1195 Jan 02 j 13:42	19°☾04'01	3°01'41
min. Earth dist.	1186 Dec 25 j 13:19	8°☾32'13	40.24533 AU	min. Earth dist.	1195 Jan 05 j 02:05	19°☾00'39	38.30103 AU
direct	1187 Mar 14 j 20:45	7°☾28'35		direct	1195 Mar 24 j 22:56	17°☾54'50	
max. Earth dist.	1187 Jun 22 j 17:33	9°☾08'10	42.12735 AU	max. Earth dist.	1195 Jul 03 j 10:34	19°☾40'30	40.17423 AU
conjunction	1187 Jun 25 j 06:30	9°☾12'11	0°-2'-58	conjunction	1195 Jul 06 j 06:17	19°☾45'13	3°04'55
minimum elong	1187 Jun 25 j 06:29	9°☾12'11	0°02'59	minimum elong	1195 Jul 06 j 06:11	19°☾45'13	3°04'56
behind sun begin	1187 Jun 24 j 23:59	9°☾11'47		retrograde	1195 Oct 16 j 12:00	21°☾35'22	
behind sun end	1187 Jun 25 j 13:00	9°☾12'35		opposition	1196 Jan 04 j 04:13	20°☾27'26	3°27'23
asc. node	1187 Aug 11 j 16:30	10°☾21'04		min. Earth dist.	1196 Jan 06 j 16:49	20°☾24'01	38.05068 AU
retrograde	1187 Oct 05 j 11:10	10°☾56'10		direct	1196 Mar 25 j 12:51	19°☾17'51	
opposition	1187 Dec 24 j 19:27	9°☾50'31	0°08'45	max. Earth dist.	1196 Jul 04 j 01:13	21°☾04'18	39.92176 AU
min. Earth dist.	1187 Dec 27 j 02:18	9°☾47'34	40.00647 AU	conjunction	1196 Jul 06 j 23:20	21°☾09'13	3°29'24
direct	1188 Mar 15 j 09:15	8°☾43'42		minimum elong	1196 Jul 06 j 23:13	21°☾09'13	3°29'23
max. Earth dist.	1188 Jun 23 j 06:38	10°☾23'57	41.88759 AU	retrograde	1196 Oct 17 j 07:45	23°☾00'15	
conjunction	1188 Jun 25 j 20:07	10°☾28'02	0°19'45	opposition	1197 Jan 04 j 19:23	21°☾51'58	3°53'19
minimum elong	1188 Jun 25 j 20:07	10°☾28'02	0°19'45	min. Earth dist.	1197 Jan 07 j 09:38	21°☾48'28	37.79793 AU
retrograde	1188 Oct 05 j 23:05	12°☾12'41		direct	1197 Mar 27 j 01:23	20°☾42'01	
opposition	1188 Dec 25 j 07:08	11°☾06'45	0°32'40	max. Earth dist.	1197 Jul 05 j 18:33	22°☾29'24	39.66683 AU
min. Earth dist.	1188 Dec 27 j 13:52	11°☾03'48	39.76595 AU	conjunction	1197 Jul 08 j 16:47	22°☾34'22	3°54'04
direct	1189 Mar 16 j 20:58	9°☾59'36					

minimum elong	1197 Jul 08 j 16:39	22° $\mathfrak{E}$ 34'22	3°54'04	conjunction	1205 Jul 21 j 06:46	4° $\mathcal{O}$ 41'10	7°16'19
retrograde	1197 Oct 19 j 00:49	24° $\mathfrak{E}$ 26'17		minimum elong	1205 Jul 21 j 06:31	4° $\mathcal{O}$ 41'09	7°16'19
opposition	1198 Jan 06 j 10:59	23° $\mathfrak{E}$ 17'40	4°19'28	retrograde	1205 Oct 31 j 20:29	6° $\mathcal{O}$ 41'18	
min. Earth dist.	1198 Jan 09 j 01:55	23° $\mathfrak{E}$ 14'06	37.54294 AU	opposition	1206 Jan 18 j 10:01	5° $\mathcal{O}$ 29'50	7°54'10
direct	1198 Mar 28 j 17:22	22° $\mathfrak{E}$ 07'18		min. Earth dist.	1206 Jan 21 j 04:41	5° $\mathcal{O}$ 25'51	35.49338 AU
max. Earth dist.	1198 Jul 07 j 10:55	23° $\mathfrak{E}$ 55'33	39.40998 AU	direct	1206 Apr 09 j 12:40	4° $\mathcal{O}$ 16'07	
				max. Earth dist.	1206 Jul 20 j 01:04	6° $\mathcal{O}$ 12'59	37.34820 AU
conjunction	1198 Jul 10 j 10:39	24° $\mathfrak{E}$ 00'40	4°18'55				
minimum elong	1198 Jul 10 j 10:31	24° $\mathfrak{E}$ 00'40	4°18'54	conjunction	1206 Jul 23 j 05:19	6° $\mathcal{O}$ 18'49	7°41'54
retrograde	1198 Oct 20 j 19:50	25° $\mathfrak{E}$ 53'30		minimum elong	1206 Jul 23 j 05:04	6° $\mathcal{O}$ 18'48	7°41'54
opposition	1199 Jan 08 j 02:51	24° $\mathfrak{E}$ 44'32	4°45'49	retrograde	1206 Nov 02 j 19:14	8° $\mathcal{O}$ 20'07	
min. Earth dist.	1199 Jan 10 j 18:23	24° $\mathfrak{E}$ 40'54	37.28646 AU	opposition	1207 Jan 20 j 06:38	7° $\mathcal{O}$ 08'18	8°21'21
direct	1199 Mar 30 j 10:14	23° $\mathfrak{E}$ 33'44		min. Earth dist.	1207 Jan 23 j 02:59	7° $\mathcal{O}$ 04'12	35.23962 AU
max. Earth dist.	1199 Jul 09 j 04:30	25° $\mathfrak{E}$ 22'56	39.15158 AU	direct	1207 Apr 11 j 07:50	5° $\mathcal{O}$ 54'10	
				max. Earth dist.	1207 Jul 22 j 00:18	7° $\mathcal{O}$ 52'16	37.09216 AU
conjunction	1199 Jul 12 j 05:12	25° $\mathfrak{E}$ 28'10	4°43'55				
minimum elong	1199 Jul 12 j 05:02	25° $\mathfrak{E}$ 28'09	4°43'56	conjunction	1207 Jul 25 j 04:36	7° $\mathcal{O}$ 58'10	8°07'28
retrograde	1199 Oct 22 j 13:13	27° $\mathfrak{E}$ 21'55		minimum elong	1207 Jul 25 j 04:19	7° $\mathcal{O}$ 58'09	8°07'28
opposition	1200 Jan 09 j 19:25	26° $\mathfrak{E}$ 12'35	5°12'21	retrograde	1207 Nov 04 j 17:23	10° $\mathcal{O}$ 00'39	
min. Earth dist.	1200 Jan 12 j 12:27	26° $\mathfrak{E}$ 08'51	37.02889 AU	opposition	1208 Jan 22 j 03:58	8° $\mathcal{O}$ 48'28	8°48'34
direct	1200 Mar 31 j 03:06	25° $\mathfrak{E}$ 01'22		min. Earth dist.	1208 Jan 24 j 23:58	8° $\mathcal{O}$ 44'21	34.98557 AU
max. Earth dist.	1200 Jul 09 j 23:13	26° $\mathfrak{E}$ 51'34	38.89247 AU	direct	1208 Apr 12 j 04:47	7° $\mathcal{O}$ 33'53	
				max. Earth dist.	1208 Jul 22 j 22:21	9° $\mathcal{O}$ 33'07	36.83558 AU
conjunction	1200 Jul 13 j 00:03	26° $\mathfrak{E}$ 56'51	5°09'05				
minimum elong	1200 Jul 12 j 23:53	26° $\mathfrak{E}$ 56'50	5°09'05	conjunction	1208 Jul 26 j 04:25	9° $\mathcal{O}$ 39'13	8°33'01
retrograde	1200 Oct 23 j 07:25	28° $\mathfrak{E}$ 51'35		minimum elong	1208 Jul 26 j 04:08	9° $\mathcal{O}$ 39'11	8°33'02
opposition	1201 Jan 10 j 12:20	27° $\mathfrak{E}$ 41'53	5°39'03	retrograde	1208 Nov 05 j 17:37	11° $\mathcal{O}$ 42'54	
min. Earth dist.	1201 Jan 13 j 04:54	27° $\mathfrak{E}$ 38'09	36.77104 AU	opposition	1209 Jan 25 j 02:04	10° $\mathcal{O}$ 30'19	9°15'44
direct	1201 Apr 01 j 19:33	26° $\mathfrak{E}$ 30'14		min. Earth dist.	1209 Jan 25 j 23:31	10° $\mathcal{O}$ 26'05	34.73125 AU
max. Earth dist.	1201 Jul 11 j 17:09	28° $\mathfrak{E}$ 21'23	38.63320 AU	direct	1209 Apr 13 j 23:36	9° $\mathcal{O}$ 15'16	
				max. Earth dist.	1209 Jul 24 j 23:30	11° $\mathcal{O}$ 15'49	36.57875 AU
conjunction	1201 Jul 14 j 19:26	28° $\mathfrak{E}$ 26'49	5°34'22				
minimum elong	1201 Jul 14 j 19:15	28° $\mathfrak{E}$ 26'48	5°34'22	conjunction	1209 Jul 28 j 05:03	11° $\mathcal{O}$ 21'56	8°58'30
	1201 Sep 14 j 02:14	0° $\mathcal{O}$		minimum elong	1209 Jul 28 j 04:45	11° $\mathcal{O}$ 21'54	8°58'30
retrograde	1201 Oct 25 j 03:05	0° $\mathcal{O}$ 22'34		retrograde	1209 Nov 07 j 18:08	13° $\mathcal{O}$ 26'50	
	1201 Dec 05 j 19:00	30° $\mathfrak{R}$ $\mathfrak{E}$		opposition	1210 Jan 25 j 00:48	12° $\mathcal{O}$ 13'49	9°42'51
opposition	1202 Jan 12 j 05:56	29° $\mathfrak{E}$ 12'30	6°05'53	min. Earth dist.	1210 Jan 27 j 22:16	12° $\mathcal{O}$ 09'34	34.47687 AU
min. Earth dist.	1202 Jan 14 j 23:51	29° $\mathfrak{E}$ 08'39	36.51362 AU	direct	1210 Apr 15 j 21:17	10° $\mathcal{O}$ 58'18	
direct	1202 Apr 03 j 10:28	28° $\mathfrak{E}$ 00'25		max. Earth dist.	1210 Jul 26 j 23:07	13° $\mathcal{O}$ 00'01	36.32209 AU
max. Earth dist.	1202 Jul 13 j 13:49	29° $\mathfrak{E}$ 52'43	38.37454 AU				
				conjunction	1210 Jul 30 j 06:09	13° $\mathcal{O}$ 06'18	9°23'54
conjunction	1202 Jul 16 j 15:22	29° $\mathfrak{E}$ 58'08	5°59'45	minimum elong	1210 Jul 30 j 05:51	13° $\mathcal{O}$ 06'16	9°23'54
minimum elong	1202 Jul 16 j 15:10	29° $\mathfrak{E}$ 58'07	5°59'45		1210 Oct 11 j 20:17	15° $\mathcal{O}$	
	1202 Jul 17 j 16:36	0° $\mathcal{O}$		retrograde	1210 Nov 09 j 21:32	15° $\mathcal{O}$ 12'27	
retrograde	1202 Oct 27 j 00:05	1° $\mathcal{O}$ 54'55			1210 Dec 09 j 06:21	15° $\mathfrak{R}$ $\mathcal{O}$	
opposition	1203 Jan 14 j 00:04	0° $\mathcal{O}$ 44'29	6°32'50	opposition	1211 Jan 27 j 00:12	13° $\mathcal{O}$ 58'59	10°09'52
min. Earth dist.	1203 Jan 16 j 17:38	0° $\mathcal{O}$ 40'39	36.25701 AU	min. Earth dist.	1211 Jan 29 j 22:17	13° $\mathcal{O}$ 54'41	34.22305 AU
	1203 Feb 17 j 01:31	30° $\mathfrak{R}$ $\mathfrak{E}$		direct	1211 Apr 17 j 19:03	12° $\mathcal{O}$ 42'57	
direct	1203 Apr 05 j 03:35	29° $\mathfrak{E}$ 32'00		max. Earth dist.	1211 Jul 29 j 01:20	14° $\mathcal{O}$ 46'01	36.06598 AU
	1203 May 21 j 14:18	0° $\mathcal{O}$					
max. Earth dist.	1203 Jul 15 j 08:51	1° $\mathcal{O}$ 25'19	38.11682 AU	conjunction	1211 Aug 01 j 08:12	14° $\mathcal{O}$ 52'20	9°49'09
				minimum elong	1211 Aug 01 j 07:52	14° $\mathcal{O}$ 52'19	9°49'08
conjunction	1203 Jul 18 j 11:53	1° $\mathcal{O}$ 30'54	6°25'14		1211 Aug 05 j 07:39	15° $\mathcal{O}$	
minimum elong	1203 Jul 18 j 11:40	1° $\mathcal{O}$ 30'53	6°25'13	retrograde	1211 Nov 12 j 00:09	16° $\mathcal{O}$ 59'43	
retrograde	1203 Oct 28 j 23:09	3° $\mathcal{O}$ 28'46		opposition	1212 Jan 29 j 00:21	15° $\mathcal{O}$ 45'49	10°36'44
opposition	1204 Jan 15 j 18:41	2° $\mathcal{O}$ 17'59	6°59'53	min. Earth dist.	1212 Jan 31 j 23:05	15° $\mathcal{O}$ 41'26	33.97022 AU
min. Earth dist.	1204 Jan 18 j 12:53	2° $\mathcal{O}$ 14'05	36.00163 AU		1212 Mar 01 j 23:22	15° $\mathfrak{R}$ $\mathcal{O}$	
direct	1204 Apr 05 j 19:59	1° $\mathcal{O}$ 05'05		direct	1212 Apr 18 j 20:31	14° $\mathcal{O}$ 29'16	
max. Earth dist.	1204 Jul 16 j 06:26	2° $\mathcal{O}$ 59'37	37.86004 AU		1212 Jun 04 j 20:30	15° $\mathcal{O}$	
				max. Earth dist.	1212 Jul 30 j 03:34	16° $\mathcal{O}$ 23'38	35.81137 AU
conjunction	1204 Jul 19 j 09:11	3° $\mathcal{O}$ 05'13	6°50'45				
minimum elong	1204 Jul 19 j 08:57	3° $\mathcal{O}$ 05'12	6°50'45	conjunction	1212 Aug 02 j 10:42	16° $\mathcal{O}$ 40'03	10°14'12
retrograde	1204 Oct 29 j 20:50	5° $\mathcal{O}$ 04'12		minimum elong	1212 Aug 02 j 10:23	16° $\mathcal{O}$ 40'01	10°14'13
opposition	1205 Jan 16 j 14:07	3° $\mathcal{O}$ 53'04	7°27'00	retrograde	1212 Nov 13 j 05:06	18° $\mathcal{O}$ 48'41	
min. Earth dist.	1205 Jan 19 j 08:53	3° $\mathcal{O}$ 49'07	35.74715 AU	opposition	1213 Jan 30 j 01:11	17° $\mathcal{O}$ 34'20	11°03'24
direct	1205 Apr 07 j 15:51	2° $\mathcal{O}$ 39'46		min. Earth dist.	1213 Feb 01 j 23:15	17° $\mathcal{O}$ 29'57	33.71940 AU
max. Earth dist.	1205 Jul 18 j 03:28	4° $\mathcal{O}$ 35'28	37.60408 AU	direct	1213 Apr 20 j 22:03	16° $\mathcal{O}$ 17'16	

max. Earth dist.	1213 Aug 01 j 06:32	18°♁22'59	35.55886 AU	min. Earth dist.	1221 Feb 17 j 10:45	3°♃08'10	31.84055 AU
conjunction	1213 Aug 04 j 13:49	18°♁29'28	10°39'02	direct	1221 May 06 j 00:11	1°♃52'00	
minimum elong	1213 Aug 04 j 13:28	18°♁29'26	10°39'01	max. Earth dist.	1221 Aug 17 j 16:07	4°♃09'43	33.67043 AU
retrograde	1213 Nov 15 j 07:33	20°♁39'24		conjunction	1221 Aug 20 j 19:45	4°♃16'26	13°42'09
opposition	1214 Feb 01 j 02:55	19°♁24'36	11°29'47	minimum elong	1221 Aug 20 j 19:22	4°♃16'23	13°42'08
min. Earth dist.	1214 Feb 04 j 01:51	19°♁20'08	33.47126 AU	retrograde	1221 Dec 01 j 23:25	6°♃37'34	
direct	1214 Apr 22 j 22:22	18°♁07'02		opposition	1222 Feb 16 j 22:06	5°♃19'34	14°44'13
max. Earth dist.	1214 Aug 03 j 11:28	20°♁14'11	35.30949 AU	min. Earth dist.	1222 Feb 19 j 17:49	5°♃15'05	31.62218 AU
conjunction	1214 Aug 06 j 17:46	20°♁20'40	11°03'33	direct	1222 May 08 j 08:59	3°♃58'24	
minimum elong	1214 Aug 06 j 17:24	20°♁20'38	11°03'33	max. Earth dist.	1222 Aug 20 j 02:28	6°♃17'36	33.45093 AU
retrograde	1214 Nov 17 j 11:09	22°♁31'55		conjunction	1222 Aug 23 j 06:15	6°♃24'23	14°02'16
opposition	1215 Feb 03 j 05:09	21°♁16'41	11°55'52	minimum elong	1222 Aug 23 j 05:52	6°♃24'21	14°02'16
min. Earth dist.	1215 Feb 06 j 02:56	21°♁12'15	33.22658 AU	retrograde	1222 Dec 04 j 09:26	8°♃46'55	
direct	1215 Apr 25 j 00:29	19°♁58'37		opposition	1223 Feb 19 j 07:25	7°♃28'30	15°05'30
max. Earth dist.	1215 Aug 05 j 15:28	22°♁07'08	35.06375 AU	min. Earth dist.	1223 Feb 22 j 03:46	7°♃23'57	31.40790 AU
conjunction	1215 Aug 08 j 22:29	22°♁13'44	11°27'43	direct	1223 May 10 j 15:54	6°♃06'53	
minimum elong	1215 Aug 08 j 22:07	22°♁13'42	11°27'42	max. Earth dist.	1223 Aug 22 j 15:29	8°♃27'39	33.23596 AU
retrograde	1215 Nov 19 j 16:31	24°♁26'21		conjunction	1223 Aug 25 j 17:33	8°♃34'21	14°21'33
opposition	1216 Feb 05 j 08:28	23°♁10'42	12°21'32	minimum elong	1223 Aug 25 j 17:10	8°♃34'19	14°21'32
min. Earth dist.	1216 Feb 08 j 06:43	23°♁06'13	32.98592 AU	retrograde	1223 Dec 06 j 20:07	10°♃58'16	
direct	1216 Apr 26 j 00:06	21°♁52'10		opposition	1224 Feb 21 j 17:39	9°♃39'26	15°25'52
max. Earth dist.	1216 Aug 06 j 22:33	24°♁02'16	34.82211 AU	min. Earth dist.	1224 Feb 24 j 12:29	9°♃34'57	31.19831 AU
conjunction	1216 Aug 10 j 03:58	24°♁08'48	11°51'28	direct	1224 May 12 j 02:10	8°♃17'21	
minimum elong	1216 Aug 10 j 03:36	24°♁08'46	11°51'28	max. Earth dist.	1224 Aug 24 j 03:12	10°♃39'32	33.02611 AU
retrograde	1216 Nov 20 j 21:59	26°♁22'48		conjunction	1224 Aug 27 j 05:21	10°♃46'18	14°39'55
opposition	1217 Feb 06 j 12:33	25°♁06'46	12°46'46	minimum elong	1224 Aug 27 j 04:59	10°♃46'16	14°39'55
min. Earth dist.	1217 Feb 09 j 09:51	25°♁02'19	32.74934 AU	retrograde	1224 Dec 08 j 08:47	13°♃11'34	
direct	1217 Apr 28 j 03:00	23°♁47'48		opposition	1225 Feb 23 j 04:46	11°♃52'19	15°45'13
max. Earth dist.	1217 Aug 09 j 04:14	25°♁59'19	34.58460 AU	min. Earth dist.	1225 Feb 25 j 23:16	11°♃47'50	30.99430 AU
conjunction	1217 Aug 12 j 10:10	26°♁05'58	12°14'44	direct	1225 May 14 j 10:04	10°♃29'47	
minimum elong	1217 Aug 12 j 09:47	26°♁05'56	12°14'44	max. Earth dist.	1225 Aug 26 j 18:20	12°♃53'34	32.82233 AU
retrograde	1217 Nov 23 j 06:45	28°♁21'24		conjunction	1225 Aug 29 j 18:04	13°♃00'11	14°57'15
opposition	1218 Feb 08 j 17:22	27°♁04'58	13°11'30	minimum elong	1225 Aug 29 j 17:42	13°♃00'09	14°57'15
min. Earth dist.	1218 Feb 11 j 14:37	27°♁00'30	32.51692 AU	retrograde	1225 Dec 10 j 20:48	15°♃26'47	
direct	1218 Apr 30 j 05:50	25°♁45'34		opposition	1226 Feb 25 j 16:40	14°♃07'07	16°03'28
max. Earth dist.	1218 Aug 11 j 12:40	27°♁58'42	34.35085 AU	min. Earth dist.	1226 Feb 28 j 09:45	14°♃02'42	30.79663 AU
conjunction	1218 Aug 14 j 17:23	28°♁05'18	12°37'30	direct	1226 May 16 j 20:50	12°♃44'08	
minimum elong	1218 Aug 14 j 17:00	28°♁05'16	12°37'31	max. Earth dist.	1226 Aug 29 j 08:09	15°♃09'20	32.62555 AU
retrograde	1218 Oct 19 j 01:17	0°♃		conjunction	1226 Sep 01 j 07:21	15°♃15'57	15°13'30
opposition	1218 Nov 25 j 14:49	0°♃22'10		minimum elong	1226 Sep 01 j 07:00	15°♃15'55	15°13'31
min. Earth dist.	1219 Jan 02 j 23:00	30°♃♁		retrograde	1226 Dec 13 j 11:28	17°♃43'52	
direct	1219 Feb 10 j 23:15	29°♁05'21	13°35'40	opposition	1227 Feb 28 j 05:26	16°♃23'48	16°20'29
max. Earth dist.	1219 Aug 13 j 20:26	0°♃00'10	34.12063 AU	min. Earth dist.	1227 Mar 02 j 21:06	16°♃19'27	30.60632 AU
conjunction	1219 Aug 17 j 01:20	0°♃06'50	12°59'42	direct	1227 May 19 j 08:42	15°♃00'23	
minimum elong	1219 Aug 17 j 00:57	0°♃06'48	12°59'41	max. Earth dist.	1227 Sep 01 j 00:56	17°♃27'11	32.43650 AU
retrograde	1219 Nov 28 j 01:23	2°♃25'09		conjunction	1227 Sep 03 j 21:30	17°♃33'37	15°28'33
opposition	1220 Feb 13 j 05:52	1°♃07'57	13°59'13	minimum elong	1227 Sep 03 j 21:10	17°♃33'35	15°28'33
min. Earth dist.	1220 Feb 16 j 02:25	1°♃03'28	32.06260 AU	retrograde	1227 Dec 16 j 01:18	20°♃02'49	
direct	1220 Apr 04 j 21:51	30°♃♁		opposition	1228 Mar 01 j 19:11	18°♃42'22	16°36'10
max. Earth dist.	1220 Aug 15 j 05:46	2°♃03'51	33.89369 AU	min. Earth dist.	1228 Mar 04 j 09:44	18°♃38'06	30.42390 AU
conjunction	1220 Aug 18 j 10:17	2°♃10'34	13°21'16	direct	1228 May 20 j 21:43	17°♃18'35	
minimum elong	1220 Aug 18 j 09:54	2°♃10'32	13°21'17	max. Earth dist.	1228 Sep 02 j 17:00	19°♃46'49	32.25605 AU
retrograde	1220 Nov 29 j 11:13	4°♃30'18		conjunction	1228 Sep 05 j 12:15	19°♃53'10	15°42'19
opposition	1221 Feb 14 j 13:39	3°♃12'42	14°22'05	minimum elong	1228 Sep 05 j 11:57	19°♃53'09	15°42'19
				retrograde	1228 Dec 17 j 18:27	22°♃23'39	
				opposition	1229 Mar 04 j 09:40	21°♃02'53	16°50'28
				min. Earth dist.	1229 Mar 06 j 21:46	20°♃58'45	30.25006 AU
				direct	1229 May 23 j 11:20	19°♃38'45	
				max. Earth dist.	1229 Sep 05 j 10:41	22°♃08'29	32.08424 AU



conjunction	1229 Sep 08 j 03:41	22°♄14'41	15°54'43	conjunction	1237 Sep 28 j 05:30	12°♁07'15	16°37'40
minimum elong	1229 Sep 08 j 03:24	22°♄14'39	15°54'42	minimum elong	1237 Sep 28 j 05:28	12°♁07'15	16°37'40
retrograde	1229 Dec 20 j 10:58	24°♄46'24		retrograde	1238 Jan 09 j 18:47	14°♁46'28	
opposition	1230 Mar 07 j 01:05	23°♄25'19	17°03'15	opposition	1238 Mar 27 j 06:43	13°♁23'30	17°44'18
min. Earth dist.	1230 Mar 09 j 12:26	23°♄21'13	30.08464 AU	min. Earth dist.	1238 Mar 29 j 01:55	13°♁20'27	29.05764 AU
direct	1230 May 26 j 01:54	22°♄00'54		direct	1238 Jun 15 j 01:05	11°♁57'21	
max. Earth dist.	1230 Sep 08 j 04:56	24°♄32'04	31.92114 AU	max. Earth dist.	1238 Sep 29 j 05:37	14°♁37'20	30.92336 AU
conjunction	1230 Sep 10 j 19:52	24°♄38'06	16°05'41	conjunction	1238 Oct 01 j 01:36	14°♁41'46	16°35'10
minimum elong	1230 Sep 10 j 19:38	24°♄38'05	16°05'41	minimum elong	1238 Oct 01 j 01:38	14°♁41'46	16°35'10
retrograde	1230 Dec 23 j 05:37	27°♄11'01		retrograde	1239 Jan 12 j 13:35	17°♁21'31	
opposition	1231 Mar 09 j 17:07	25°♄49'39	17°14'30	opposition	1239 Mar 30 j 03:56	15°♁58'22	17°40'51
min. Earth dist.	1231 Mar 12 j 01:54	25°♄45'43	29.92750 AU	min. Earth dist.	1239 Mar 31 j 21:10	15°♁55'27	28.97056 AU
direct	1231 May 28 j 18:46	24°♄24'58		direct	1239 Jun 17 j 22:33	14°♁32'07	
max. Earth dist.	1231 Sep 10 j 23:30	26°♄57'28	31.76629 AU	max. Earth dist.	1239 Oct 02 j 04:09	17°♁12'46	30.84272 AU
conjunction	1231 Sep 13 j 12:51	27°♄03'24	16°15'10	conjunction	1239 Oct 03 j 21:43	17°♁16'57	16°30'46
minimum elong	1231 Sep 13 j 12:36	27°♄03'22	16°15'09	minimum elong	1239 Oct 03 j 21:45	17°♁16'58	16°30'45
retrograde	1231 Dec 25 j 23:04	29°♄37'27		retrograde	1240 Jan 15 j 11:10	19°♁57'10	
opposition	1232 Mar 11 j 10:16	28°♄15'49	17°24'07	opposition	1240 Apr 01 j 01:31	18°♁33'53	17°35'19
min. Earth dist.	1232 Mar 13 j 18:25	28°♄11'55	29.77842 AU	min. Earth dist.	1240 Apr 02 j 14:47	18°♁31'15	28.89488 AU
direct	1232 May 30 j 09:46	26°♄50'53		direct	1240 Jun 19 j 20:00	17°♁07'34	
max. Earth dist.	1232 Sep 12 j 19:43	29°♄24'45	31.61977 AU	max. Earth dist.	1240 Oct 04 j 04:16	19°♁48'55	30.77394 AU
conjunction	1232 Sep 15 j 06:17	29°♄30'27	16°23'06	conjunction	1240 Oct 05 j 18:00	19°♁52'44	16°24'25
minimum elong	1232 Sep 15 j 06:06	29°♄30'26	16°23'06	minimum elong	1240 Oct 05 j 18:06	19°♁52'45	16°24'24
	1232 Sep 27 j 23:12	0°♁		retrograde	1241 Jan 17 j 07:09	22°♁33'19	
retrograde	1232 Dec 27 j 18:05	2°♁05'34		opposition	1241 Apr 03 j 23:31	21°♁09'57	17°27'40
opposition	1233 Mar 14 j 04:06	0°♁43'42	17°32'03	min. Earth dist.	1241 Apr 05 j 10:45	21°♁07'28	28.83095 AU
min. Earth dist.	1233 Mar 16 j 09:39	0°♁39'58	29.63723 AU	direct	1241 Jun 22 j 16:59	19°♁43'38	
	1233 Apr 10 j 13:47	30°♄		max. Earth dist.	1241 Oct 07 j 03:47	22°♁25'31	30.71752 AU
direct	1233 Jun 02 j 03:57	29°♄18'32		conjunction	1241 Oct 08 j 14:24	22°♁29'01	16°16'06
	1233 Jul 22 j 18:53	0°♁		minimum elong	1241 Oct 08 j 14:31	22°♁29'02	16°16'06
max. Earth dist.	1233 Sep 15 j 14:58	1°♁53'32	31.48138 AU	retrograde	1242 Jan 20 j 05:17	25°♁09'52	
conjunction	1233 Sep 18 j 00:26	1°♁59'10	16°29'27	opposition	1242 Apr 06 j 21:25	23°♁46'28	17°17'55
minimum elong	1233 Sep 18 j 00:15	1°♁59'08	16°29'26	min. Earth dist.	1242 Apr 08 j 04:37	23°♁44'15	28.77890 AU
retrograde	1233 Dec 30 j 13:32	4°♁35'16		direct	1242 Jun 25 j 16:40	22°♁20'10	
opposition	1234 Mar 16 j 22:33	3°♁13'10	17°38'14	max. Earth dist.	1242 Oct 10 j 03:40	25°♁02'31	30.67310 AU
min. Earth dist.	1234 Mar 19 j 03:00	3°♁09'29	29.50410 AU	conjunction	1242 Oct 11 j 10:58	25°♁05'41	16°05'51
direct	1234 Jun 04 j 20:04	1°♁47'45		minimum elong	1242 Oct 11 j 11:09	25°♁05'43	16°05'51
max. Earth dist.	1234 Sep 18 j 12:52	4°♁24'00	31.35141 AU	retrograde	1243 Jan 23 j 01:51	27°♁46'43	
conjunction	1234 Sep 20 j 19:14	4°♁29'21	16°34'07	opposition	1243 Apr 09 j 19:51	26°♁23'19	17°06'04
minimum elong	1234 Sep 20 j 19:06	4°♁29'21	16°34'08	min. Earth dist.	1243 Apr 11 j 01:01	26°♁21'16	28.73850 AU
retrograde	1235 Jan 02 j 07:35	7°♁06'22		direct	1243 Jun 28 j 14:07	24°♁57'06	
opposition	1235 Mar 19 j 17:48	5°♁44'02	17°42'37	max. Earth dist.	1243 Oct 13 j 03:43	27°♁39'49	30.64051 AU
min. Earth dist.	1235 Mar 21 j 19:56	5°♁40'31	29.37901 AU	conjunction	1243 Oct 14 j 07:24	27°♁42'37	15°53'42
direct	1235 Jun 07 j 15:32	4°♁18'25		minimum elong	1243 Oct 14 j 07:36	27°♁42'39	15°53'42
max. Earth dist.	1235 Sep 21 j 09:06	6°♁55'37	31.23003 AU		1243 Dec 20 j 14:45	0°♄	
conjunction	1235 Sep 23 j 14:17	7°♁00'53	16°37'05	retrograde	1244 Jan 25 j 23:33	0°♄23'44	
minimum elong	1235 Sep 23 j 14:10	7°♁00'52	16°37'05		1244 Mar 03 j 13:35	30°♄	
retrograde	1236 Jan 05 j 03:21	9°♁38'44		opposition	1244 Apr 11 j 18:20	29°♁00'21	16°52'11
opposition	1236 Mar 21 j 13:37	8°♁16'10	17°45'08	min. Earth dist.	1244 Apr 12 j 19:37	28°♁58'34	28.70926 AU
min. Earth dist.	1236 Mar 23 j 13:47	8°♁12'47	29.26257 AU	direct	1244 Jun 30 j 13:42	27°♁34'15	
direct	1236 Jun 09 j 09:41	6°♁50'21			1244 Oct 08 j 01:40	0°♄	
max. Earth dist.	1236 Sep 23 j 08:21	9°♁28'38	31.11780 AU	max. Earth dist.	1244 Oct 15 j 02:49	0°♄17'07	30.61914 AU
conjunction	1236 Sep 25 j 09:53	9°♁33'35	16°38'17	conjunction	1244 Oct 16 j 03:49	0°♄19'39	15°39'40
minimum elong	1236 Sep 25 j 09:51	9°♁33'34	16°38'18	minimum elong	1244 Oct 16 j 04:04	0°♄19'41	15°39'40
retrograde	1237 Jan 06 j 22:13	12°♁12'09		retrograde	1245 Jan 27 j 21:40	3°♄00'44	
opposition	1237 Mar 24 j 10:00	10°♁49'23	17°45'43	opposition	1245 Apr 14 j 16:54	1°♄37'23	16°36'17
min. Earth dist.	1237 Mar 26 j 08:09	10°♁46'07	29.15517 AU	min. Earth dist.	1245 Apr 15 j 15:51	1°♄35'46	28.69098 AU
direct	1237 Jun 12 j 05:09	9°♁23'23		direct	1245 Jul 03 j 11:51	0°♄11'24	
max. Earth dist.	1237 Sep 26 j 05:41	12°♁02'28	31.01538 AU	max. Earth dist.	1245 Oct 18 j 02:59	2°♄54'26	30.60880 AU

conjunction	1245 Oct 19 j 00:09	2°M.56'34	15°23'48	minimum elong	1253 Nov 08 j 06:00	23°M.24'19	12°18'31
minimum elong	1245 Oct 19 j 00:25	2°M.56'36	15°23'49	max. Earth dist.	1253 Nov 08 j 10:25	23°M.24'45	30.90884 AU
retrograde	1246 Jan 30 j 17:19	5°M.37'30		retrograde	1254 Feb 19 j 18:05	26°M.00'37	
opposition	1246 Apr 17 j 15:27	4°M.14'13	16°18'26	opposition	1254 May 08 j 18:37	24°M.38'12	12°53'42
min. Earth dist.	1246 Apr 18 j 11:08	4°M.12'50	28.68303 AU	min. Earth dist.	1254 May 08 j 13:17	24°M.38'34	28.99860 AU
direct	1246 Jul 06 j 11:53	2°M.48'23		direct	1254 Jul 27 j 17:23	23°M.14'01	
conjunction	1246 Oct 21 j 20:14	5°M.33'10	15°06'11	conjunction	1254 Nov 10 j 21:51	25°M.52'15	11°49'06
minimum elong	1246 Oct 21 j 20:32	5°M.33'12	15°06'10	minimum elong	1254 Nov 10 j 22:15	25°M.52'18	11°49'06
max. Earth dist.	1246 Oct 21 j 01:14	5°M.31'15	30.60890 AU	max. Earth dist.	1254 Nov 11 j 05:59	25°M.53'04	30.99746 AU
retrograde	1247 Feb 02 j 14:05	8°M.13'51		retrograde	1255 Feb 22 j 10:38	28°M.27'44	
opposition	1247 Apr 20 j 13:54	6°M.50'38	15°58'42	opposition	1255 May 11 j 13:53	27°M.05'34	12°21'34
min. Earth dist.	1247 Apr 21 j 06:46	6°M.49'27	28.68538 AU	min. Earth dist.	1255 May 11 j 04:22	27°M.06'13	29.08887 AU
direct	1247 Jul 09 j 09:44	5°M.24'56		direct	1255 Jul 30 j 14:19	25°M.41'45	
conjunction	1247 Oct 24 j 16:12	8°M.09'15	14°46'51	conjunction	1255 Nov 13 j 13:29	28°M.18'52	11°18'37
minimum elong	1247 Oct 24 j 16:31	8°M.09'17	14°46'51	minimum elong	1255 Nov 13 j 13:53	28°M.18'55	11°18'38
max. Earth dist.	1247 Oct 24 j 01:20	8°M.07'45	30.61946 AU	max. Earth dist.	1255 Nov 14 j 00:41	28°M.19'58	31.09716 AU
retrograde	1248 Feb 05 j 09:16	10°M.49'34		retrograde	1255 Dec 30 j 09:20	0° <del>♁</del>	
opposition	1248 Apr 22 j 12:21	9°M.26'25	15°37'10	retrograde	1256 Feb 25 j 03:25	0° <del>♁</del> 53'27	
min. Earth dist.	1248 Apr 23 j 02:28	9°M.25'25	28.69777 AU	retrograde	1256 Apr 25 j 13:07	30°R.M.	
direct	1248 Jul 11 j 09:12	8°M.00'53		opposition	1256 May 13 j 08:47	29°M.31'33	11°48'20
conjunction	1248 Oct 26 j 11:34	10°M.44'35	14°25'51	min. Earth dist.	1256 May 12 j 20:34	29°M.32'22	29.19015 AU
minimum elong	1248 Oct 26 j 11:54	10°M.44'37	14°25'51	direct	1256 Aug 01 j 09:17	28°M.08'06	
max. Earth dist.	1248 Oct 25 j 22:48	10°M.43'17	30.64033 AU	direct	1256 Oct 27 j 01:29	0° <del>♁</del>	
retrograde	1249 Feb 07 j 04:53	13°M.24'26		conjunction	1256 Nov 15 j 04:29	0° <del>♁</del> 44'05	10°47'09
opposition	1249 Apr 25 j 10:23	12°M.01'21	15°13'52	minimum elong	1256 Nov 15 j 04:53	0° <del>♁</del> 44'07	10°47'09
min. Earth dist.	1249 Apr 25 j 20:56	12°M.00'37	28.72043 AU	max. Earth dist.	1256 Nov 15 j 19:21	0° <del>♁</del> 45'32	31.20745 AU
direct	1249 Jul 14 j 07:17	10°M.35'59		retrograde	1257 Feb 26 j 18:33	3° <del>♁</del> 17'42	
conjunction	1249 Oct 29 j 06:46	13°M.18'58	14°03'17	min. Earth dist.	1257 May 15 j 11:32	1° <del>♁</del> 57'08	29.30148 AU
minimum elong	1249 Oct 29 j 07:07	13°M.19'00	14°03'17	opposition	1257 May 16 j 02:58	1° <del>♁</del> 56'05	11°14'06
max. Earth dist.	1249 Oct 28 j 22:11	13°M.18'06	30.67162 AU	direct	1257 Aug 04 j 05:52	0° <del>♁</del> 33'03	
retrograde	1249 Dec 13 j 12:18	15°M.		conjunction	1257 Nov 17 j 18:52	3° <del>♁</del> 07'50	10°14'50
retrograde	1250 Feb 09 j 21:24	15°M.58'15		minimum elong	1257 Nov 17 j 19:15	3° <del>♁</del> 07'52	10°14'51
retrograde	1250 Apr 13 j 06:59	15°R.M.		max. Earth dist.	1257 Nov 18 j 11:54	3° <del>♁</del> 09'29	31.32733 AU
opposition	1250 Apr 28 j 08:02	14°M.35'15	14°48'53	retrograde	1258 Mar 01 j 09:20	5° <del>♁</del> 40'27	
min. Earth dist.	1250 Apr 28 j 16:17	14°M.34'41	28.75341 AU	opposition	1258 May 18 j 20:27	4° <del>♁</del> 19'08	10°39'01
direct	1250 Jul 17 j 05:50	13°M.10'04		min. Earth dist.	1258 May 18 j 02:04	4° <del>♁</del> 20'22	29.42234 AU
direct	1250 Oct 09 j 22:39	15°M.		direct	1258 Aug 06 j 22:54	2° <del>♁</del> 56'29	
conjunction	1250 Nov 01 j 01:18	15°M.52'14	13°39'11	conjunction	1258 Nov 20 j 08:47	5° <del>♁</del> 30'02	9°41'46
minimum elong	1250 Nov 01 j 01:41	15°M.52'16	13°39'11	minimum elong	1258 Nov 20 j 09:09	5° <del>♁</del> 30'04	9°41'45
max. Earth dist.	1250 Oct 31 j 19:01	15°M.51'36	30.71371 AU	max. Earth dist.	1258 Nov 21 j 05:33	5° <del>♁</del> 32'02	31.45624 AU
retrograde	1251 Feb 12 j 16:31	18°M.30'52		retrograde	1259 Mar 03 j 22:15	8° <del>♁</del> 01'37	
opposition	1251 May 01 j 05:20	17°M.07'58	14°22'18	opposition	1259 May 21 j 13:29	6° <del>♁</del> 40'36	10°03'12
min. Earth dist.	1251 May 01 j 09:24	17°M.07'41	28.79732 AU	min. Earth dist.	1259 May 20 j 16:46	6° <del>♁</del> 41'59	29.55187 AU
direct	1251 Jul 20 j 03:22	15°M.42'58		direct	1259 Aug 09 j 18:27	5° <del>♁</del> 18'21	
conjunction	1251 Nov 03 j 19:18	18°M.24'15	13°13'39	conjunction	1259 Nov 22 j 21:44	7° <del>♁</del> 50'37	9°08'02
minimum elong	1251 Nov 03 j 19:41	18°M.24'17	13°13'39	minimum elong	1259 Nov 22 j 22:05	7° <del>♁</del> 50'39	9°08'03
max. Earth dist.	1251 Nov 03 j 17:19	18°M.24'03	30.76694 AU	max. Earth dist.	1259 Nov 23 j 20:07	7° <del>♁</del> 52'45	31.59344 AU
retrograde	1252 Feb 15 j 08:25	21°M.02'10		retrograde	1260 Mar 05 j 12:34	10° <del>♁</del> 21'07	
opposition	1252 May 03 j 02:24	19°M.39'24	13°54'10	min. Earth dist.	1260 May 22 j 05:38	9° <del>♁</del> 02'00	29.68968 AU
min. Earth dist.	1252 May 03 j 04:06	19°M.39'17	28.85261 AU	opposition	1260 May 23 j 05:48	9° <del>♁</del> 00'23	9°26'44
direct	1252 Jul 22 j 00:07	18°M.14'38		direct	1260 Aug 11 j 11:17	7° <del>♁</del> 38'31	
conjunction	1252 Nov 05 j 12:43	20°M.54'56	12°46'43	conjunction	1260 Nov 24 j 10:17	10° <del>♁</del> 09'28	8°33'46
minimum elong	1252 Nov 05 j 13:07	20°M.54'58	12°46'43	minimum elong	1260 Nov 24 j 10:37	10° <del>♁</del> 09'30	8°33'46
max. Earth dist.	1252 Nov 05 j 13:40	20°M.55'02	30.83199 AU	max. Earth dist.	1260 Nov 25 j 12:11	10° <del>♁</del> 11'56	31.73845 AU
retrograde	1253 Feb 17 j 01:57	23°M.32'05		retrograde	1261 Mar 07 j 22:05	12° <del>♁</del> 38'51	
opposition	1253 May 05 j 22:39	22°M.09'28	13°24'37	opposition	1261 May 25 j 21:18	11° <del>♁</del> 18'25	8°49'45
min. Earth dist.	1253 May 05 j 19:50	22°M.09'40	28.91971 AU	min. Earth dist.	1261 May 24 j 19:35	11° <del>♁</del> 20'07	29.83520 AU
direct	1253 Jul 24 j 22:11	20°M.44'59		direct	1261 Aug 14 j 04:08	9° <del>♁</del> 56'55	
conjunction	1253 Nov 08 j 05:37	23°M.24'16	12°18'31	conjunction	1261 Nov 26 j 21:55	12° <del>♁</del> 26'30	7°59'03

minimum elong	1261 Nov 26 j 22:14	12°♂26'32	7°59'03	retrograde	1270 Mar 26 j 23:55	1°♂53'15	
max. Earth dist.	1261 Nov 28 j 01:16	12°♂29'05	31.89097 AU	min. Earth dist.	1270 Jun 13 j 06:45	0°♂38'39	31.49640 AU
retrograde	1262 Mar 10 j 08:58	14°♂54'43		opposition	1270 Jun 15 j 07:03	0°♂35'37	3°08'01
min. Earth dist.	1262 May 27 j 06:45	13°♂36'29	29.98827 AU		1270 Jul 09 j 19:05	30°R♂	
opposition	1262 May 28 j 12:01	13°♂34'34	8°12'21	direct	1270 Sep 03 j 20:48	29°♂17'43	
direct	1262 Aug 16 j 19:31	12°♂13'25			1270 Oct 27 j 00:45	0°♂	
conjunction	1262 Nov 29 j 08:46	14°♂41'38	7°23'57	conjunction	1270 Dec 15 j 20:51	1°♂35'03	2°39'10
minimum elong	1262 Nov 29 j 09:04	14°♂41'40	7°23'57	minimum elong	1270 Dec 15 j 20:57	1°♂35'04	2°39'10
max. Earth dist.	1262 Nov 30 j 15:26	14°♂44'30	32.05077 AU	max. Earth dist.	1270 Dec 17 j 21:52	1°♂39'22	33.60411 AU
retrograde	1263 Mar 12 j 18:08	17°♂08'41		retrograde	1271 Mar 29 j 04:40	3°♂52'45	
min. Earth dist.	1263 May 29 j 19:18	15°♂50'48	30.14902 AU	min. Earth dist.	1271 Jun 15 j 11:58	2°♂38'40	31.71513 AU
opposition	1263 May 31 j 02:10	15°♂48'47	7°34'36	opposition	1271 Jun 17 j 15:10	2°♂35'28	2°30'31
direct	1263 Aug 19 j 09:05	14°♂28'00		direct	1271 Sep 06 j 05:41	1°♂18'01	
conjunction	1263 Dec 01 j 18:50	16°♂54'47	6°48'34	conjunction	1271 Dec 18 j 01:26	3°♂34'03	2°04'08
minimum elong	1263 Dec 01 j 19:06	16°♂54'49	6°48'35	minimum elong	1271 Dec 18 j 01:31	3°♂34'04	2°04'09
max. Earth dist.	1263 Dec 03 j 03:41	16°♂57'51	32.21830 AU	max. Earth dist.	1271 Dec 20 j 04:49	3°♂38'32	33.82592 AU
retrograde	1264 Mar 14 j 03:31	19°♂20'38		retrograde	1272 Mar 30 j 08:29	5°♂50'38	
min. Earth dist.	1264 May 31 j 04:53	18°♂03'15	30.31777 AU	min. Earth dist.	1272 Jun 16 j 18:44	4°♂36'57	31.93818 AU
opposition	1264 Jun 01 j 15:21	18°♂01'01	6°56'36	opposition	1272 Jun 18 j 22:43	4°♂33'43	1°53'23
direct	1264 Aug 21 j 00:09	16°♂40'35		direct	1272 Sep 07 j 12:26	3°♂16'41	
conjunction	1264 Dec 03 j 04:01	19°♂05'59	6°12'59	conjunction	1272 Dec 19 j 05:24	5°♂31'27	1°29'25
minimum elong	1264 Dec 03 j 04:16	19°♂06'00	6°12'58	minimum elong	1272 Dec 19 j 05:27	5°♂31'27	1°29'24
max. Earth dist.	1264 Dec 04 j 15:38	19°♂09'16	32.39369 AU	max. Earth dist.	1272 Dec 21 j 10:01	5°♂36'00	34.05150 AU
retrograde	1265 Mar 16 j 12:55	21°♂30'38		retrograde	1273 Apr 01 j 12:06	7°♂46'55	
min. Earth dist.	1265 Jun 02 j 15:16	20°♂13'39	30.49490 AU	min. Earth dist.	1273 Jun 18 j 23:15	6°♂33'42	32.16468 AU
opposition	1265 Jun 04 j 03:55	20°♂11'17	6°18'27	opposition	1273 Jun 21 j 05:24	6°♂30'21	1°16'38
direct	1265 Aug 23 j 12:05	18°♂51'14		direct	1273 Sep 09 j 20:20	5°♂13'43	
conjunction	1265 Dec 05 j 12:38	21°♂15'14	5°37'15	conjunction	1273 Dec 21 j 08:40	7°♂27'13	0°55'04
minimum elong	1265 Dec 05 j 12:52	21°♂15'16	5°37'15	minimum elong	1273 Dec 21 j 08:42	7°♂27'13	0°55'04
max. Earth dist.	1265 Dec 07 j 03:04	21°♂18'45	32.57733 AU	max. Earth dist.	1273 Dec 23 j 14:25	7°♂31'50	34.28000 AU
retrograde	1266 Mar 18 j 20:54	23°♂38'42		retrograde	1274 Apr 03 j 16:46	9°♂41'35	
min. Earth dist.	1266 Jun 04 j 23:57	22°♂22'12	30.68026 AU	min. Earth dist.	1274 Jun 21 j 04:06	8°♂28'43	32.39437 AU
opposition	1266 Jun 06 j 15:28	22°♂19'39	5°40'12	opposition	1274 Jun 23 j 11:28	8°♂25'20	0°40'19
direct	1266 Aug 26 j 01:01	21°♂00'01		direct	1274 Sep 12 j 01:14	7°♂09'06	
conjunction	1266 Dec 07 j 20:25	23°♂22'39	5°01'28	conjunction	1274 Dec 23 j 11:25	9°♂21'20	0°21'08
minimum elong	1266 Dec 07 j 20:37	23°♂22'40	5°01'27	minimum elong	1274 Dec 23 j 11:26	9°♂21'20	0°21'07
max. Earth dist.	1266 Dec 09 j 12:48	23°♂26'18	32.76894 AU	max. Earth dist.	1274 Dec 25 j 19:07	9°♂26'04	34.51146 AU
retrograde	1267 Mar 21 j 05:42	25°♂44'56		retrograde	1275 Apr 05 j 19:06	11°♂34'35	
min. Earth dist.	1267 Jun 07 j 08:10	24°♂28'55	30.87386 AU	min. Earth dist.	1275 Jun 23 j 08:17	10°♂22'05	32.62703 AU
opposition	1267 Jun 09 j 02:31	24°♂26'13	5°01'58	opposition	1275 Jun 25 j 16:52	10°♂18'38	0°04'29
direct	1267 Aug 28 j 11:56	23°♂07'00		desc. node	1275 Aug 11 j 01:24	9°♂19'19	
conjunction	1267 Dec 10 j 03:32	25°♂28'16	4°25'42	direct	1275 Sep 14 j 07:44	9°♂02'47	
minimum elong	1267 Dec 10 j 03:43	25°♂28'17	4°25'42	conjunction	1275 Dec 25 j 13:13	11°♂13'46	0°-12'-26
max. Earth dist.	1267 Dec 11 j 23:19	25°♂32'13	32.96825 AU	minimum elong	1275 Dec 25 j 13:13	11°♂13'46	0°12'26
retrograde	1268 Mar 22 j 12:29	27°♂49'23		behind sun begin	1275 Dec 25 j 08:58	11°♂13'26	
min. Earth dist.	1268 Jun 08 j 16:32	26°♂33'50	31.07488 AU	behind sun end	1275 Dec 25 j 17:27	11°♂14'07	
opposition	1268 Jun 10 j 12:49	26°♂31'01	4°23'48	max. Earth dist.	1275 Dec 27 j 21:35	11°♂18'31	34.74580 AU
direct	1268 Aug 30 j 00:53	25°♂12'14		retrograde	1276 Apr 06 j 21:57	13°♂25'55	
conjunction	1268 Dec 11 j 09:55	27°♂32'11	3°50'01	min. Earth dist.	1276 Jun 24 j 10:46	12°♂13'51	32.86312 AU
minimum elong	1268 Dec 11 j 10:04	27°♂32'12	3°50'00	opposition	1276 Jun 26 j 21:33	12°♂10'17	0°-30'-49
max. Earth dist.	1268 Dec 13 j 06:56	27°♂36'12	33.17441 AU	direct	1276 Sep 15 j 12:16	10°♂54'47	
retrograde	1269 Mar 24 j 20:19	29°♂52'09		conjunction	1276 Dec 26 j 14:37	13°♂04'34	0°-45'-27
min. Earth dist.	1269 Jun 10 j 22:48	28°♂37'08	31.28273 AU	minimum elong	1276 Dec 26 j 14:35	13°♂04'34	0°45'28
opposition	1269 Jun 12 j 22:09	28°♂34'08	3°45'48	max. Earth dist.	1276 Dec 29 j 01:35	13°♂09'30	34.98345 AU
direct	1269 Sep 01 j 10:33	27°♂15'48		retrograde	1277 Apr 08 j 21:27	15°♂15'37	
conjunction	1269 Dec 13 j 15:48	29°♂34'26	3°14'29	min. Earth dist.	1277 Jun 26 j 13:57	14°♂03'52	33.10281 AU
minimum elong	1269 Dec 13 j 15:56	29°♂34'27	3°14'30	opposition	1277 Jun 29 j 01:22	14°♂00'17	-1°-5'-35
max. Earth dist.	1269 Dec 15 j 15:51	29°♂38'41	33.38665 AU	direct	1277 Sep 17 j 19:12	12°♂45'10	
	1269 Dec 25 j 18:00	0°♂		conjunction	1277 Dec 28 j 15:16	14°♂53'45	-1°-17'-59

minimum elong	1277 Dec 28 j 15:13	14°☾53'45	1°17'59	retrograde	1286 Apr 24 j 07:33	0°≈40'18	
max. Earth dist.	1277 Dec 31 j 02:43	14°☾58'41	35.22475 AU		1286 Jun 21 j 07:33	30°R☾	
retrograde	1278 Apr 10 j 22:37	17°☾03'45		min. Earth dist.	1286 Jul 12 j 12:48	29°☾31'51	35.38539 AU
min. Earth dist.	1278 Jun 28 j 14:30	15°☾52'28	33.34645 AU	opposition	1286 Jul 15 j 09:54	29°☾27'52	-5°-50'-22
opposition	1278 Jul 01 j 04:35	15°☾48'44	-1°-39'-47	direct	1286 Oct 04 j 06:45	28°☾16'08	
direct	1278 Sep 19 j 23:26	14°☾33'59			1287 Jan 04 j 18:05	0°≈	
conjunction	1278 Dec 30 j 15:16	16°☾41'24	-1°-50'00	conjunction	1287 Jan 12 j 21:49	0°≈15'10	-5°-45'-3
minimum elong	1278 Dec 30 j 15:12	16°☾41'24	1°50'01	minimum elong	1287 Jan 12 j 21:39	0°≈15'09	5°45'04
max. Earth dist.	1279 Jan 02 j 05:04	16°☾46'30	35.46974 AU	max. Earth dist.	1287 Jan 15 j 18:30	0°≈20'31	37.50407 AU
retrograde	1279 Apr 12 j 20:32	18°☾50'24		retrograde	1287 Apr 26 j 02:14	2°≈16'41	
min. Earth dist.	1279 Jun 30 j 16:42	17°☾39'27	33.59394 AU	min. Earth dist.	1287 Jul 14 j 09:53	1°≈08'32	35.64200 AU
opposition	1279 Jul 03 j 07:22	17°☾35'42	-2°-13'-23	opposition	1287 Jul 17 j 08:06	1°≈04'31	-6°-18'-40
direct	1279 Sep 22 j 02:54	16°☾21'21		direct	1287 Sep 13 j 13:29	30°R☾	
conjunction	1280 Jan 01 j 14:50	18°☾27'38	-2°-21'-28		1287 Oct 06 j 06:26	29°☾53'04	
minimum elong	1280 Jan 01 j 14:45	18°☾27'38	2°21'28		1287 Oct 28 j 10:27	0°≈	
max. Earth dist.	1280 Jan 04 j 05:41	18°☾32'47	35.71838 AU	conjunction	1288 Jan 14 j 17:28	1°≈51'08	-6°-11'-40
retrograde	1280 Apr 13 j 19:08	20°☾35'38		minimum elong	1288 Jan 14 j 17:17	1°≈51'07	6°11'41
min. Earth dist.	1280 Jul 01 j 16:26	19°☾25'08	33.84489 AU	max. Earth dist.	1288 Jan 17 j 14:33	1°≈56'28	37.75871 AU
opposition	1280 Jul 04 j 09:17	19°☾21'16	-2°-46'-22	retrograde	1288 Apr 26 j 22:41	3°≈51'45	
direct	1280 Sep 23 j 05:23	18°☾07'19		min. Earth dist.	1288 Jul 15 j 07:12	2°≈43'51	35.89836 AU
conjunction	1281 Jan 02 j 13:45	20°☾12'31	-2°-52'-21	opposition	1288 Jul 18 j 05:45	2°≈39'50	-6°-46'-17
minimum elong	1281 Jan 02 j 13:39	20°☾12'30	2°52'23	direct	1288 Oct 07 j 02:59	1°≈28'41	
max. Earth dist.	1281 Jan 05 j 05:54	20°☾17'43	35.96995 AU	conjunction	1289 Jan 15 j 12:43	3°≈25'46	-6°-37'-39
retrograde	1281 Apr 15 j 19:39	22°☾19'33		minimum elong	1289 Jan 15 j 12:31	3°≈25'46	6°37'40
min. Earth dist.	1281 Jul 03 j 16:58	21°☾09'25	34.09878 AU	max. Earth dist.	1289 Jan 18 j 11:05	3°≈31'10	38.01323 AU
opposition	1281 Jul 06 j 10:47	21°☾05'31	-3°-18'-42	retrograde	1289 Apr 28 j 17:27	5°≈25'32	
direct	1281 Sep 25 j 04:20	19°☾51'58		min. Earth dist.	1289 Jul 17 j 03:55	4°≈17'53	36.15470 AU
conjunction	1282 Jan 04 j 12:16	21°☾56'05	-3°-22'-39	opposition	1289 Jul 20 j 02:48	4°≈13'51	-7°-13'-12
minimum elong	1282 Jan 04 j 12:10	21°☾56'05	3°22'40	direct	1289 Oct 09 j 01:00	3°≈02'59	
max. Earth dist.	1282 Jan 07 j 06:02	22°☾01'23	36.22395 AU	conjunction	1290 Jan 17 j 07:16	4°≈59'09	-7°-2'-59
retrograde	1282 Apr 17 j 17:43	24°☾02'10		minimum elong	1290 Jan 17 j 07:05	4°≈59'09	7°03'01
min. Earth dist.	1282 Jul 05 j 16:54	22°☾52'25	34.35468 AU	max. Earth dist.	1290 Jan 20 j 05:22	5°≈04'29	38.26791 AU
opposition	1282 Jul 08 j 11:36	22°☾48'30	-3°-50'-22	retrograde	1290 Apr 30 j 14:10	6°≈58'04	
direct	1282 Sep 27 j 06:10	21°☾35'20		min. Earth dist.	1290 Jul 18 j 23:01	5°≈50'44	36.41167 AU
conjunction	1283 Jan 06 j 10:13	23°☾38'24	-3°-52'-22	opposition	1290 Jul 21 j 23:23	5°≈46'39	-7°-39'-26
minimum elong	1283 Jan 06 j 10:05	23°☾38'23	3°52'23	direct	1290 Oct 10 j 20:08	4°≈36'04	
max. Earth dist.	1283 Jan 09 j 04:06	23°☾43'40	36.47953 AU	conjunction	1291 Jan 19 j 01:35	6°≈31'21	-7°-27'-41
retrograde	1283 Apr 19 j 18:27	25°☾43'33		minimum elong	1291 Jan 19 j 01:23	6°≈31'20	7°27'42
min. Earth dist.	1283 Jul 07 j 15:49	24°☾34'12	34.61214 AU	max. Earth dist.	1291 Jan 22 j 01:29	6°≈36'47	38.52329 AU
opposition	1283 Jul 10 j 12:02	24°☾30'13	-4°-21'-23	retrograde	1291 May 02 j 07:59	8°≈29'27	
direct	1283 Sep 29 j 05:14	23°☾17'26		min. Earth dist.	1291 Jul 20 j 19:29	7°≈22'21	36.66939 AU
conjunction	1284 Jan 08 j 07:48	25°☾19'29	-4°-21'-28	opposition	1291 Jul 23 j 19:34	7°≈18'18	-8°-4'-57
minimum elong	1284 Jan 08 j 07:40	25°☾19'28	4°21'28	direct	1291 Oct 12 j 16:49	6°≈08'02	
max. Earth dist.	1284 Jan 11 j 03:35	25°☾24'52	36.73602 AU	conjunction	1292 Jan 20 j 19:21	8°≈02'27	-7°-51'-43
retrograde	1284 Apr 20 j 16:06	27°☾23'43		minimum elong	1292 Jan 20 j 19:09	8°≈02'26	7°51'45
min. Earth dist.	1284 Jul 08 j 15:57	26°☾14'38	34.87013 AU	max. Earth dist.	1292 Jan 23 j 19:10	8°≈07'51	38.77945 AU
opposition	1284 Jul 11 j 11:56	26°☾10'41	-4°-51'-43	retrograde	1292 May 03 j 00:30	9°≈59'46	
direct	1284 Sep 30 j 06:22	24°☾58'17		min. Earth dist.	1292 Jul 21 j 13:20	8°≈53'02	36.92777 AU
conjunction	1285 Jan 09 j 04:57	26°☾59'19	-4°-49'-57	opposition	1292 Jul 24 j 15:09	8°≈48'54	-8°-29'-46
minimum elong	1285 Jan 09 j 04:48	26°☾59'18	4°49'58	direct	1292 Oct 13 j 13:43	7°≈38'58	
max. Earth dist.	1285 Jan 12 j 00:19	27°☾04'38	36.99262 AU	conjunction	1293 Jan 21 j 12:49	9°≈32'33	-8°-15'-7
retrograde	1285 Apr 22 j 13:18	29°☾02'38		minimum elong	1293 Jan 21 j 12:37	9°≈32'32	8°15'08
min. Earth dist.	1285 Jul 10 j 13:26	27°☾53'56	35.12804 AU	max. Earth dist.	1293 Jan 24 j 13:40	9°≈37'59	39.03595 AU
opposition	1285 Jul 13 j 11:01	27°☾49'55	-5°-21'-23	retrograde	1293 May 04 j 16:53	11°≈29'07	
direct	1285 Oct 02 j 05:52	26°☾37'51		min. Earth dist.	1293 Jul 23 j 08:44	10°≈22'38	37.18648 AU
conjunction	1286 Jan 11 j 01:41	28°☾37'54	-5°-17'-49	opposition	1293 Jul 26 j 10:16	10°≈18'32	-8°-53'-53
minimum elong	1286 Jan 11 j 01:32	28°☾37'53	5°17'49	direct	1293 Oct 15 j 09:51	9°≈08'56	
max. Earth dist.	1286 Jan 13 j 22:13	28°☾43'15	37.24867 AU	conjunction	1294 Jan 23 j 05:56	11°≈01'43	-8°-37'-53
	1286 Feb 28 j 01:40	0°≈		minimum elong	1294 Jan 23 j 05:44	11°≈01'42	8°37'54

max. Earth dist.	1294 Jan 26 j 07:19	11°07'10	39.29262 AU	max. Earth dist.	1302 Feb 06 j 11:38	22°28'48	41.28525 AU
retrograde	1294 May 06 j 09:32	12°57'34		retrograde	1302 May 17 j 16:39	24°14'01	
min. Earth dist.	1294 Jul 25 j 02:42	11°51'24	37.44495 AU	min. Earth dist.	1302 Aug 05 j 18:33	23°09'40	39.44704 AU
opposition	1294 Jul 28 j 04:58	11°47'17	-9°-17'-19	opposition	1302 Aug 08 j 20:55	23°05'41	-12°-1'-30
direct	1294 Oct 17 j 05:00	10°38'00		direct	1302 Oct 28 j 20:18	21°58'33	
conjunction	1295 Jan 24 j 22:28	12°30'01	-9°00'00	conjunction	1303 Feb 05 j 00:30	23°44'44	-11°-35'-23
minimum elong	1295 Jan 24 j 22:15	12°30'00	9°00'00	minimum elong	1303 Feb 05 j 00:18	23°44'43	11°35'23
max. Earth dist.	1295 Jan 27 j 23:44	12°35'24	39.54869 AU	max. Earth dist.	1303 Feb 08 j 02:58	23°49'57	41.52554 AU
retrograde	1295 May 08 j 04:23	14°25'10		retrograde	1303 May 19 j 07:08	25°34'28	
min. Earth dist.	1295 Jul 26 j 20:47	13°19'17	37.70276 AU	min. Earth dist.	1303 Aug 07 j 10:36	24°30'16	39.68896 AU
opposition	1295 Jul 29 j 23:27	13°15'10	-9°-40'-5	opposition	1303 Aug 10 j 12:14	24°26'20	-12°-19'-13
direct	1295 Oct 18 j 21:34	12°06'13		direct	1303 Oct 30 j 11:11	23°19'27	
conjunction	1296 Jan 26 j 15:00	13°57'28	-9°-21'-30	conjunction	1304 Feb 06 j 14:14	25°04'59	-11°-52'-10
minimum elong	1296 Jan 26 j 14:47	13°57'27	9°21'31	minimum elong	1304 Feb 06 j 14:02	25°04'58	11°52'11
max. Earth dist.	1296 Jan 29 j 17:26	14°02'55	39.80367 AU	max. Earth dist.	1304 Feb 09 j 16:01	25°10'07	41.76494 AU
retrograde	1296 Mar 04 j 08:09	15°		retrograde	1304 May 19 j 21:13	26°54'05	
min. Earth dist.	1296 May 08 j 21:49	15°51'55		min. Earth dist.	1304 Aug 08 j 00:11	25°50'10	39.92995 AU
opposition	1296 Jul 17 j 02:25	15°R		opposition	1304 Aug 11 j 02:57	25°46'11	-12°-36'-18
direct	1296 Jul 27 j 15:16	14°46'17	37.95901 AU	direct	1304 Oct 31 j 01:11	24°39'31	
conjunction	1296 Jul 30 j 17:19	14°42'13	-10°-2'-11	conjunction	1305 Feb 07 j 03:41	26°24'26	-12°-8'-22
direct	1296 Oct 19 j 14:51	13°33'35		minimum elong	1305 Feb 07 j 03:29	26°24'25	12°08'23
conjunction	1297 Jan 13 j 09:06	15°		max. Earth dist.	1305 Feb 10 j 05:57	26°29'35	42.00326 AU
minimum elong	1297 Jan 27 j 07:05	15°24'06	-9°-42'-23	retrograde	1305 May 21 j 08:39	28°12'57	
max. Earth dist.	1297 Jan 27 j 06:52	15°24'05	9°42'24	min. Earth dist.	1305 Aug 09 j 15:39	27°09'12	40.16979 AU
retrograde	1297 Jan 30 j 08:24	15°29'26	40.05680 AU	opposition	1305 Aug 12 j 17:36	27°05'16	-12°-52'-47
min. Earth dist.	1297 May 10 j 16:29	17°17'51		direct	1305 Nov 01 j 17:36	25°58'52	
opposition	1297 Jul 29 j 07:58	16°12'31	38.21317 AU	conjunction	1306 Feb 08 j 16:48	27°43'10	-12°-24'-1
direct	1297 Aug 01 j 10:52	16°08'26	-10°-23'-38	minimum elong	1306 Feb 08 j 16:36	27°43'09	12°24'02
conjunction	1297 Oct 21 j 06:41	15°00'05		max. Earth dist.	1306 Feb 11 j 19:21	27°48'18	42.24038 AU
minimum elong	1298 Jan 28 j 22:52	16°49'52	-10°-2'-41	retrograde	1306 May 22 j 20:02	29°31'07	
max. Earth dist.	1298 Jan 28 j 22:40	16°49'51	10°02'43	min. Earth dist.	1306 Aug 11 j 05:31	28°27'37	40.40802 AU
retrograde	1298 Feb 01 j 00:57	16°55'13	40.30744 AU	opposition	1306 Aug 14 j 07:49	28°23'40	-13°-8'-40
min. Earth dist.	1298 May 12 j 06:29	18°42'57		direct	1306 Nov 03 j 09:44	27°17'32	
opposition	1298 Jul 31 j 02:32	17°37'47	38.46467 AU	conjunction	1307 Feb 10 j 05:40	29°01'14	-12°-39'-6
direct	1298 Aug 03 j 04:11	17°33'46	-10°-44'-27	minimum elong	1307 Feb 10 j 05:29	29°01'14	12°39'07
conjunction	1299 Jan 30 j 14:24	18°14'45	-10°-22'-24	max. Earth dist.	1307 Feb 13 j 07:31	29°06'18	42.47569 AU
minimum elong	1299 Jan 30 j 14:11	18°14'44	10°22'24	retrograde	1307 Mar 20 j 01:07	0°	
max. Earth dist.	1299 Feb 02 j 15:51	18°20'01	40.55546 AU	retrograde	1307 May 24 j 11:11	0°48'39	
retrograde	1299 May 13 j 19:17	20°07'08		min. Earth dist.	1307 Aug 01 j 01:25	30°R	
min. Earth dist.	1299 May 13 j 19:17	20°07'08		min. Earth dist.	1307 Aug 12 j 19:35	29°45'22	40.64437 AU
opposition	1299 Aug 01 j 18:35	19°02'13	38.71342 AU	opposition	1307 Aug 15 j 21:50	29°41'27	-13°-23'-59
direct	1299 Aug 04 j 20:58	18°58'11	-11°-4'-39	direct	1307 Nov 04 j 21:56	28°35'34	
conjunction	1299 Oct 24 j 20:46	17°50'22		direct	1308 Jan 31 j 06:57	0°	
minimum elong	1300 Feb 01 j 05:25	19°38'41	-10°-41'-31	conjunction	1308 Feb 11 j 18:28	0°18'42	-12°-53'-39
max. Earth dist.	1300 Feb 01 j 05:13	19°38'40	10°41'33	minimum elong	1308 Feb 11 j 18:16	0°18'41	12°53'41
retrograde	1300 Feb 04 j 06:47	19°43'55	40.80073 AU	max. Earth dist.	1308 Feb 14 j 21:01	0°23'47	42.70874 AU
min. Earth dist.	1300 May 14 j 10:11	21°30'23		retrograde	1308 May 25 j 00:12	2°05'35	
opposition	1300 Aug 02 j 11:40	20°25'38	38.95976 AU	min. Earth dist.	1308 Aug 13 j 10:24	1°02'28	40.87790 AU
direct	1300 Aug 05 j 13:27	20°21'38	-11°-24'-14	opposition	1308 Aug 16 j 11:31	0°58'37	-13°-38'-44
conjunction	1301 Feb 01 j 20:15	21°01'38	-11°00'-3	direct	1308 Oct 12 j 15:32	30°R	
minimum elong	1301 Feb 01 j 20:02	21°01'37	11°00'04	direct	1308 Nov 05 j 11:49	29°53'00	
max. Earth dist.	1301 Feb 04 j 22:07	21°06'53	41.04384 AU	direct	1308 Nov 28 j 22:34	0°	
retrograde	1301 May 15 j 23:50	22°52'40		conjunction	1309 Feb 12 j 06:59	1°35'35	-13°-7'-42
min. Earth dist.	1301 Aug 04 j 03:36	21°48'06	39.20402 AU	minimum elong	1309 Feb 12 j 06:49	1°35'34	13°07'43
opposition	1301 Aug 07 j 05:15	21°44'08	-11°-43'-11	max. Earth dist.	1309 Feb 15 j 08:03	1°40'32	42.93873 AU
direct	1301 Oct 27 j 06:49	20°36'46		retrograde	1309 May 26 j 14:15	3°21'55	
conjunction	1302 Feb 03 j 10:31	22°23'38	-11°-18'-1	min. Earth dist.	1309 Aug 14 j 23:19	2°19'03	41.10809 AU
minimum elong	1302 Feb 03 j 10:19	22°23'38	11°18'02	opposition	1309 Aug 18 j 00:46	2°15'12	-13°-52'-58
				direct	1309 Nov 06 j 23:20	1°09'49	

conjunction	1310 Feb 13 j 19:22	2° <del>✕</del> 51'52	-13°-21'-14	retrograde	1318 Jun 06 j 15:34	14° <del>✕</del> 21'04	
minimum elong	1310 Feb 13 j 19:11	2° <del>✕</del> 51'51	13°21'15	min. Earth dist.	1318 Aug 26 j 16:10	13° <del>✕</del> 19'32	43.02677 AU
max. Earth dist.	1310 Feb 16 j 20:37	2° <del>✕</del> 56'48	43.16504 AU	opposition	1318 Aug 29 j 12:49	13° <del>✕</del> 16'02	-15°-38'-15
retrograde	1310 May 28 j 02:11	4° <del>✕</del> 37'41		direct	1318 Nov 18 j 15:49	12° <del>✕</del> 12'28	
min. Earth dist.	1310 Aug 16 j 14:13	3° <del>✕</del> 34'56	41.33437 AU				
opposition	1310 Aug 19 j 14:03	3° <del>✕</del> 31'11	-14°-6'-40	conjunction	1319 Feb 24 j 22:59	13° <del>✕</del> 49'59	-15°-1'-31
direct	1310 Nov 08 j 12:50	2° <del>✕</del> 26'02		minimum elong	1319 Feb 24 j 22:52	13° <del>✕</del> 49'59	15°01'32
				max. Earth dist.	1319 Feb 27 j 19:56	13° <del>✕</del> 54'27	45.05551 AU
conjunction	1311 Feb 15 j 07:27	4° <del>✕</del> 07'32	-13°-34'-17	retrograde	1319 Jun 08 j 04:48	15° <del>✕</del> 31'31	
minimum elong	1311 Feb 15 j 07:17	4° <del>✕</del> 07'31	13°34'18	min. Earth dist.	1319 Aug 28 j 03:08	14° <del>✕</del> 30'10	43.22693 AU
max. Earth dist.	1311 Feb 18 j 07:51	4° <del>✕</del> 12'24	43.38743 AU	opposition	1319 Aug 30 j 23:37	14° <del>✕</del> 26'41	-15°-47'-29
retrograde	1311 May 29 j 12:12	5° <del>✕</del> 52'50		direct	1319 Nov 20 j 00:35	13° <del>✕</del> 23'19	
min. Earth dist.	1311 Aug 18 j 02:56	4° <del>✕</del> 50'16	41.55646 AU				
opposition	1311 Aug 21 j 02:53	4° <del>✕</del> 46'32	-14°-19'-52	conjunction	1320 Feb 26 j 09:10	15° <del>✕</del> 00'25	-15°-10'-20
direct	1311 Nov 10 j 03:31	3° <del>✕</del> 41'35		minimum elong	1320 Feb 26 j 09:04	15° <del>✕</del> 00'25	15°10'20
				max. Earth dist.	1320 Feb 29 j 06:37	15° <del>✕</del> 04'54	45.25258 AU
conjunction	1312 Feb 16 j 19:16	5° <del>✕</del> 22'32	-13°-46'-52	retrograde	1320 Jun 08 j 16:50	16° <del>✕</del> 41'32	
minimum elong	1312 Feb 16 j 19:06	5° <del>✕</del> 22'32	13°46'52	min. Earth dist.	1320 Aug 28 j 15:14	15° <del>✕</del> 40'17	43.42360 AU
max. Earth dist.	1312 Feb 19 j 18:37	5° <del>✕</del> 27'19	43.60566 AU	opposition	1320 Aug 31 j 10:03	15° <del>✕</del> 36'54	-15°-56'-17
retrograde	1312 May 30 j 00:01	7° <del>✕</del> 07'20		direct	1320 Nov 20 j 09:26	14° <del>✕</del> 33'44	
min. Earth dist.	1312 Aug 18 j 16:30	6° <del>✕</del> 04'53	41.77469 AU				
opposition	1312 Aug 21 j 15:24	6° <del>✕</del> 01'13	-14°-32'-35	conjunction	1321 Feb 26 j 19:08	16° <del>✕</del> 10'25	-15°-18'-43
direct	1312 Nov 10 j 16:47	4° <del>✕</del> 56'28		minimum elong	1321 Feb 26 j 19:01	16° <del>✕</del> 10'25	15°18'44
				max. Earth dist.	1321 Mar 01 j 15:04	16° <del>✕</del> 14'47	45.44600 AU
conjunction	1313 Feb 17 j 06:56	6° <del>✕</del> 36'52	-13°-58'-58	retrograde	1321 Jun 10 j 03:07	17° <del>✕</del> 51'07	
minimum elong	1313 Feb 17 j 06:47	6° <del>✕</del> 36'52	13°58'59	min. Earth dist.	1321 Aug 30 j 01:21	16° <del>✕</del> 50'03	43.61624 AU
max. Earth dist.	1313 Feb 20 j 06:42	6° <del>✕</del> 41'39	43.82031 AU	opposition	1321 Sep 01 j 20:19	16° <del>✕</del> 46'40	-16°-4'-39
retrograde	1313 May 31 j 11:55	8° <del>✕</del> 21'09		direct	1321 Nov 21 j 18:23	15° <del>✕</del> 43'41	
min. Earth dist.	1313 Aug 20 j 05:31	7° <del>✕</del> 18'50	41.98940 AU				
opposition	1313 Aug 23 j 03:37	7° <del>✕</del> 15'12	-14°-44'-47	conjunction	1322 Feb 28 j 04:48	17° <del>✕</del> 19'58	-15°-26'-43
direct	1313 Nov 12 j 05:13	6° <del>✕</del> 10'39		minimum elong	1322 Feb 28 j 04:43	17° <del>✕</del> 19'57	15°26'44
				max. Earth dist.	1322 Mar 03 j 00:00	17° <del>✕</del> 24'15	45.63500 AU
conjunction	1314 Feb 18 j 18:01	7° <del>✕</del> 50'32	-14°-10'-35	retrograde	1322 Jun 11 j 10:48	19° <del>✕</del> 00'15	
minimum elong	1314 Feb 18 j 17:52	7° <del>✕</del> 50'31	14°10'36	min. Earth dist.	1322 Aug 31 j 13:27	17° <del>✕</del> 59'15	43.80429 AU
max. Earth dist.	1314 Feb 21 j 16:26	7° <del>✕</del> 55'11	44.03184 AU	opposition	1322 Sep 03 j 06:38	17° <del>✕</del> 55'58	-16°-12'-36
retrograde	1314 Jun 02 j 01:41	9° <del>✕</del> 34'18		direct	1322 Nov 23 j 06:29	16° <del>✕</del> 53'09	
min. Earth dist.	1314 Aug 21 j 17:02	8° <del>✕</del> 32'10	42.20141 AU				
opposition	1314 Aug 24 j 15:37	8° <del>✕</del> 28'32	-14°-56'-29	conjunction	1323 Mar 01 j 14:35	18° <del>✕</del> 29'01	-15°-34'-19
direct	1314 Nov 13 j 14:47	7° <del>✕</del> 24'10		minimum elong	1323 Mar 01 j 14:29	18° <del>✕</del> 29'00	15°34'20
				max. Earth dist.	1323 Mar 04 j 09:15	18° <del>✕</del> 33'16	45.81940 AU
conjunction	1315 Feb 20 j 05:06	9° <del>✕</del> 03'32	-14°-21'-43	retrograde	1323 Jun 12 j 17:34	20° <del>✕</del> 08'53	
minimum elong	1315 Feb 20 j 04:58	9° <del>✕</del> 03'32	14°21'45	min. Earth dist.	1323 Sep 01 j 23:57	19° <del>✕</del> 08'00	43.98741 AU
max. Earth dist.	1315 Feb 23 j 04:12	9° <del>✕</del> 08'13	44.24089 AU	opposition	1323 Sep 04 j 16:28	19° <del>✕</del> 04'45	-16°-20'-10
retrograde	1315 Jun 03 j 11:49	10° <del>✕</del> 46'50		direct	1323 Nov 24 j 19:13	18° <del>✕</del> 02'05	
min. Earth dist.	1315 Aug 23 j 06:07	9° <del>✕</del> 44'47	42.41106 AU				
opposition	1315 Aug 26 j 03:20	9° <del>✕</del> 41'14	-15°-7'-40	conjunction	1324 Mar 01 j 23:59	19° <del>✕</del> 37'31	-15°-41'-33
direct	1315 Nov 15 j 02:39	8° <del>✕</del> 37'03		minimum elong	1324 Mar 01 j 23:55	19° <del>✕</del> 37'31	15°41'34
				max. Earth dist.	1324 Mar 04 j 16:49	19° <del>✕</del> 41'38	45.99896 AU
conjunction	1316 Feb 21 j 15:56	10° <del>✕</del> 15'56	-14°-32'-22	retrograde	1324 Jun 13 j 04:09	21° <del>✕</del> 16'59	
minimum elong	1316 Feb 21 j 15:48	10° <del>✕</del> 15'56	14°32'23	min. Earth dist.	1324 Sep 02 j 10:26	20° <del>✕</del> 16'10	44.16591 AU
max. Earth dist.	1316 Feb 24 j 14:16	10° <del>✕</del> 20'33	44.44789 AU	opposition	1324 Sep 05 j 02:12	20° <del>✕</del> 12'58	-16°-27'-20
retrograde	1316 Jun 03 j 20:45	11° <del>✕</del> 58'45		direct	1324 Nov 25 j 04:35	19° <del>✕</del> 10'26	
min. Earth dist.	1316 Aug 23 j 16:50	10° <del>✕</del> 56'55	42.61855 AU				
opposition	1316 Aug 26 j 14:42	10° <del>✕</del> 53'20	-15°-18'-21	conjunction	1325 Mar 03 j 09:16	20° <del>✕</del> 45'27	-15°-48'-23
direct	1316 Nov 15 j 15:04	9° <del>✕</del> 49'21		minimum elong	1325 Mar 03 j 09:11	20° <del>✕</del> 45'27	15°48'24
				max. Earth dist.	1325 Mar 06 j 02:16	20° <del>✕</del> 49'33	46.17409 AU
conjunction	1317 Feb 22 j 02:29	11° <del>✕</del> 27'47	-14°-42'-33	retrograde	1325 Jun 14 j 13:19	22° <del>✕</del> 24'30	
minimum elong	1317 Feb 22 j 02:21	11° <del>✕</del> 27'47	14°42'34	min. Earth dist.	1325 Sep 03 j 21:20	21° <del>✕</del> 23'44	44.34013 AU
max. Earth dist.	1317 Feb 25 j 00:30	11° <del>✕</del> 32'22	44.65267 AU	opposition	1325 Sep 06 j 11:34	21° <del>✕</del> 20'37	-16°-34'-6
retrograde	1317 Jun 05 j 06:26	13° <del>✕</del> 10'09		direct	1325 Nov 26 j 14:36	20° <del>✕</del> 18'12	
min. Earth dist.	1317 Aug 25 j 04:58	12° <del>✕</del> 08'27	42.82389 AU				
opposition	1317 Aug 28 j 01:52	12° <del>✕</del> 04'56	-15°-28'-33	conjunction	1326 Mar 04 j 18:14	21° <del>✕</del> 52'48	-15°-54'-50
direct	1317 Nov 17 j 03:10	11° <del>✕</del> 01'09		minimum elong	1326 Mar 04 j 18:11	21° <del>✕</del> 52'48	15°54'52
				max. Earth dist.	1326 Mar 07 j 09:46	21° <del>✕</del> 56'48	46.34553 AU
conjunction	1318 Feb 23 j 12:57	12° <del>✕</del> 39'07	-14°-52'-15	retrograde	1326 Jun 15 j 23:25	23° <del>✕</del> 31'26	
minimum elong	1318 Feb 23 j 12:50	12° <del>✕</del> 39'07	14°52'16	min. Earth dist.	1326 Sep 05 j 06:13	22° <del>✕</del> 30'48	44.51099 AU
max. Earth dist.	1318 Feb 26 j 11:15	12° <del>✕</del> 43'42	44.85538 AU	opposition	1326 Sep 07 j 20:45	22° <del>✕</del> 27'41	-16°-40'-28

direct	1326 Nov 27 j 21:53	21° <del>✕</del> 25'23		min. Earth dist.	1334 Sep 14 j 07:52	1° <del>∩</del> 12'47	45.77318 AU
				opposition	1334 Sep 16 j 15:55	1° <del>∩</del> 10'02	-17°-17'-3
conjunction	1327 Mar 06 j 02:58	22° <del>✕</del> 59'36	-16°00'-54	direct	1334 Dec 06 j 18:50	0° <del>∩</del> 09'00	
minimum elong	1327 Mar 06 j 02:53	22° <del>✕</del> 59'36	16°00'55				
max. Earth dist.	1327 Mar 08 j 18:22	23° <del>✕</del> 03'34	46.51378 AU	conjunction	1335 Mar 14 j 20:28	1° <del>∩</del> 40'41	-16°-35'-44
retrograde	1327 Jun 17 j 07:44	24° <del>✕</del> 37'51		minimum elong	1335 Mar 14 j 20:29	1° <del>∩</del> 40'41	16°35'44
min. Earth dist.	1327 Sep 06 j 16:51	23° <del>✕</del> 37'15	44.67892 AU	max. Earth dist.	1335 Mar 17 j 06:29	1° <del>∩</del> 44'13	47.75637 AU
opposition	1327 Sep 09 j 05:51	23° <del>✕</del> 34'13	-16°-46'-25	retrograde	1335 Jun 25 j 22:11	3° <del>∩</del> 16'24	
direct	1327 Nov 29 j 06:34	22° <del>✕</del> 32'04		min. Earth dist.	1335 Sep 15 j 17:03	2° <del>∩</del> 16'41	45.91311 AU
				opposition	1335 Sep 17 j 23:41	2° <del>∩</del> 14'01	-17°-20'-2
conjunction	1328 Mar 06 j 11:43	24° <del>✕</del> 05'55	-16°-6'-34	direct	1335 Dec 08 j 04:22	1° <del>∩</del> 13'06	
minimum elong	1328 Mar 06 j 11:41	24° <del>✕</del> 05'54	16°06'35				
max. Earth dist.	1328 Mar 09 j 02:52	24° <del>✕</del> 09'51	46.67945 AU	conjunction	1336 Mar 15 j 04:12	2° <del>∩</del> 44'29	-16°-38'-33
retrograde	1328 Jun 17 j 13:27	25° <del>✕</del> 43'47		minimum elong	1336 Mar 15 j 04:11	2° <del>∩</del> 44'29	16°38'34
min. Earth dist.	1328 Sep 07 j 01:21	24° <del>✕</del> 43'20	44.84417 AU	max. Earth dist.	1336 Mar 17 j 11:59	2° <del>∩</del> 47'52	47.89337 AU
opposition	1328 Sep 09 j 14:26	24° <del>✕</del> 40'18	-16°-51'-57	retrograde	1336 Jun 26 j 08:37	4° <del>∩</del> 19'53	
direct	1328 Nov 29 j 17:45	23° <del>✕</del> 38'17		min. Earth dist.	1336 Sep 16 j 00:55	3° <del>∩</del> 20'16	46.04814 AU
				opposition	1336 Sep 18 j 07:05	3° <del>∩</del> 17'37	-17°-22'-41
conjunction	1329 Mar 07 j 20:07	25° <del>✕</del> 11'47	-16°-11'-50	direct	1336 Dec 08 j 09:27	2° <del>∩</del> 16'48	
minimum elong	1329 Mar 07 j 20:04	25° <del>✕</del> 11'46	16°11'50				
max. Earth dist.	1329 Mar 10 j 09:55	25° <del>✕</del> 15'37	46.84258 AU	conjunction	1337 Mar 16 j 11:45	3° <del>∩</del> 47'54	-16°-41'-4
retrograde	1329 Jun 18 j 22:24	26° <del>✕</del> 49'19		minimum elong	1337 Mar 16 j 11:47	3° <del>∩</del> 47'54	16°41'05
min. Earth dist.	1329 Sep 08 j 10:38	25° <del>✕</del> 48'58	45.00704 AU	max. Earth dist.	1337 Mar 18 j 19:10	3° <del>∩</del> 51'15	48.02557 AU
opposition	1329 Sep 10 j 23:08	25° <del>✕</del> 45'58	-16°-57'-5	retrograde	1337 Jun 27 j 17:52	5° <del>∩</del> 22'59	
direct	1329 Dec 01 j 02:49	24° <del>✕</del> 44'07		min. Earth dist.	1337 Sep 17 j 10:22	4° <del>∩</del> 23'21	46.17863 AU
				opposition	1337 Sep 19 j 14:34	4° <del>∩</del> 20'49	-17°-25'-1
conjunction	1330 Mar 09 j 04:22	26° <del>✕</del> 17'17	-16°-16'-43	direct	1337 Dec 09 j 14:52	3° <del>∩</del> 20'06	
minimum elong	1330 Mar 09 j 04:20	26° <del>✕</del> 17'17	16°16'45				
max. Earth dist.	1330 Mar 11 j 18:51	26° <del>✕</del> 21'09	47.00330 AU	conjunction	1338 Mar 17 j 19:00	4° <del>∩</del> 50'53	-16°-43'-16
retrograde	1330 Jun 20 j 07:43	27° <del>✕</del> 54'30		minimum elong	1338 Mar 17 j 19:00	4° <del>∩</del> 50'53	16°43'17
min. Earth dist.	1330 Sep 09 j 20:14	26° <del>✕</del> 54'15	45.16720 AU	max. Earth dist.	1338 Mar 20 j 01:33	4° <del>∩</del> 54'10	48.15374 AU
opposition	1330 Sep 12 j 07:39	26° <del>✕</del> 51'19	-17°-1'-49	retrograde	1338 Jun 28 j 22:22	6° <del>∩</del> 25'39	
direct	1330 Dec 02 j 11:03	25° <del>✕</del> 49'38		min. Earth dist.	1338 Sep 18 j 17:27	5° <del>∩</del> 26'07	46.30524 AU
				opposition	1338 Sep 20 j 21:43	5° <del>∩</del> 23'35	-17°-27'-1
conjunction	1331 Mar 10 j 12:32	27° <del>✕</del> 22'29	-16°-21'-13	direct	1338 Dec 10 j 23:12	4° <del>∩</del> 22'57	
minimum elong	1331 Mar 10 j 12:31	27° <del>✕</del> 22'29	16°21'14				
max. Earth dist.	1331 Mar 13 j 01:30	27° <del>✕</del> 26'14	47.16139 AU	conjunction	1339 Mar 19 j 02:10	5° <del>∩</del> 53'26	-16°-45'-9
retrograde	1331 Jun 21 j 18:29	28° <del>✕</del> 59'23		minimum elong	1339 Mar 19 j 02:12	5° <del>∩</del> 53'26	16°45'10
min. Earth dist.	1331 Sep 11 j 04:12	27° <del>✕</del> 59'19	45.32454 AU	max. Earth dist.	1339 Mar 21 j 07:22	5° <del>∩</del> 56'38	48.27828 AU
opposition	1331 Sep 13 j 15:51	27° <del>✕</del> 56'23	-17°-6'-10	retrograde	1339 Jun 30 j 03:18	7° <del>∩</del> 27'55	
direct	1331 Dec 03 j 16:33	26° <del>✕</del> 54'52		min. Earth dist.	1339 Sep 20 j 01:47	6° <del>∩</del> 28'24	46.42861 AU
				opposition	1339 Sep 22 j 04:46	6° <del>∩</del> 25'56	-17°-28'-41
conjunction	1332 Mar 10 j 20:39	28° <del>✕</del> 27'25	-16°-25'-21	direct	1339 Dec 12 j 08:24	5° <del>∩</del> 25'23	
minimum elong	1332 Mar 10 j 20:38	28° <del>✕</del> 27'25	16°25'23				
max. Earth dist.	1332 Mar 13 j 09:21	28° <del>✕</del> 31'08	47.31630 AU	conjunction	1340 Mar 19 j 09:23	6° <del>∩</del> 55'36	-16°-46'-41
retrograde	1332 Jun 02 j 22:18	0° <del>∩</del>		minimum elong	1340 Mar 19 j 09:24	6° <del>∩</del> 55'36	16°46'42
min. Earth dist.	1332 Jun 22 j 01:47	0° <del>∩</del> 04'01		max. Earth dist.	1340 Mar 21 j 14:52	6° <del>∩</del> 58'49	48.39983 AU
opposition	1332 Jul 11 j 06:00	30° <del>☾</del>		retrograde	1340 Jun 30 j 08:42	8° <del>∩</del> 29'48	
direct	1332 Sep 11 j 14:22	29° <del>✕</del> 04'01	45.47838 AU	min. Earth dist.	1340 Sep 20 j 09:29	7° <del>∩</del> 30'20	46.54890 AU
				opposition	1340 Sep 22 j 11:37	7° <del>∩</del> 27'54	-17°-30'00
conjunction	1332 Sep 14 j 00:04	29° <del>✕</del> 01'11	-17°-10'-8	direct	1340 Dec 12 j 18:00	6° <del>∩</del> 27'28	
minimum elong	1332 Dec 04 j 00:35	27° <del>✕</del> 59'50					
max. Earth dist.	1333 Mar 12 j 04:42	29° <del>✕</del> 32'06	-16°-29'-8	conjunction	1341 Mar 20 j 16:13	7° <del>∩</del> 57'25	-16°-47'-54
retrograde	1333 Jun 23 j 06:55	1° <del>∩</del> 08'24		minimum elong	1341 Mar 20 j 16:16	7° <del>∩</del> 57'25	16°47'55
min. Earth dist.	1333 Sep 12 j 22:30	0° <del>∩</del> 08'33	45.62806 AU	max. Earth dist.	1341 Mar 22 j 20:02	8° <del>∩</del> 00'30	48.51854 AU
opposition	1333 Sep 15 j 07:57	0° <del>∩</del> 05'44	-17°-13'-46	retrograde	1341 Jul 01 j 17:43	9° <del>∩</del> 31'20	
direct	1333 Sep 20 j 05:11	30° <del>☾</del>		min. Earth dist.	1341 Sep 21 j 16:09	8° <del>∩</del> 31'59	46.66646 AU
				opposition	1341 Sep 23 j 18:20	8° <del>∩</del> 29'34	-17°-30'-59
conjunction	1333 Dec 05 j 10:13	29° <del>✕</del> 04'33		direct	1341 Dec 13 j 23:19	7° <del>∩</del> 29'13	
minimum elong	1334 Feb 15 j 22:17	0° <del>∩</del>					
max. Earth dist.	1334 Mar 13 j 12:34	0° <del>∩</del> 36'32	-16°-32'-35	conjunction	1342 Mar 21 j 23:06	8° <del>∩</del> 58'55	-16°-48'-47
retrograde	1334 Mar 13 j 12:33	0° <del>∩</del> 36'32	16°32'37	minimum elong	1342 Mar 21 j 23:08	8° <del>∩</del> 58'55	16°48'48
min. Earth dist.	1334 Mar 15 j 22:46	0° <del>∩</del> 40'06	47.61435 AU	max. Earth dist.	1342 Mar 24 j 02:50	9° <del>∩</del> 02'00	48.63450 AU
opposition	1334 Jun 24 j 15:03	2° <del>∩</del> 12'33		retrograde	1342 Jul 03 j 01:25	10° <del>∩</del> 32'35	
direct				min. Earth dist.	1342 Sep 23 j 00:33	9° <del>∩</del> 33'16	46.78115 AU
				opposition	1342 Sep 25 j 01:03	9° <del>∩</del> 30'56	-17°-31'-38
				direct	1342 Dec 15 j 04:47	8° <del>∩</del> 30'42	

conjunction	1343 Mar 23 j 05:53	10°♃00'10	-16°-49'-21	retrograde	1351 Jul 12 j 08:48	19°♃34'35	
minimum elong	1343 Mar 23 j 05:56	10°♃00'10	16°49'23	min. Earth dist.	1351 Oct 02 j 16:56	18°♃35'42	47.62085 AU
max. Earth dist.	1343 Mar 25 j 08:52	10°♃03'12	48.74769 AU	opposition	1351 Oct 04 j 08:09	18°♃33'50	-17°-24'-20
retrograde	1343 Jul 04 j 07:29	11°♃33'35		direct	1351 Dec 24 j 14:58	17°♃34'26	
min. Earth dist.	1343 Sep 24 j 07:01	10°♃34'24	46.89271 AU				
opposition	1343 Sep 26 j 07:32	10°♃32'03	-17°-31'-57	conjunction	1352 Mar 31 j 16:00	19°♃02'07	-16°-41'-51
direct	1343 Dec 16 j 10:38	9°♃31'57		minimum elong	1352 Mar 31 j 16:07	19°♃02'07	16°41'52
				max. Earth dist.	1352 Apr 02 j 08:54	19°♃04'29	49.56869 AU
conjunction	1344 Mar 23 j 12:36	11°♃01'12	-16°-49'-36	retrograde	1352 Jul 12 j 15:49	20°♃33'38	
minimum elong	1344 Mar 23 j 12:39	11°♃01'13	16°49'37	min. Earth dist.	1352 Oct 03 j 00:11	19°♃34'44	47.69240 AU
max. Earth dist.	1344 Mar 25 j 14:06	11°♃04'09	48.85743 AU	opposition	1352 Oct 04 j 13:39	19°♃32'57	-17°-22'-8
retrograde	1344 Jul 04 j 13:33	12°♃34'24		direct	1352 Dec 24 j 19:53	18°♃33'37	
min. Earth dist.	1344 Sep 24 j 14:59	11°♃35'15	47.00067 AU				
opposition	1344 Sep 26 j 13:55	11°♃33'00	-17°-31'-58	conjunction	1353 Apr 01 j 21:59	20°♃01'08	-16°-39'-40
direct	1344 Dec 16 j 17:18	10°♃33'01		minimum elong	1353 Apr 01 j 22:05	20°♃01'08	16°39'40
				max. Earth dist.	1353 Apr 03 j 13:54	20°♃03'27	49.63917 AU
conjunction	1345 Mar 24 j 19:23	12°♃02'04	-16°-49'-34	retrograde	1353 Jul 13 j 21:57	21°♃32'27	
minimum elong	1345 Mar 24 j 19:26	12°♃02'04	16°49'36	min. Earth dist.	1353 Oct 04 j 05:25	20°♃33'39	47.76093 AU
max. Earth dist.	1345 Mar 26 j 20:46	12°♃04'59	48.96332 AU	opposition	1353 Oct 05 j 19:04	20°♃31'52	-17°-19'-39
retrograde	1345 Jul 05 j 18:17	13°♃35'03		direct	1353 Dec 25 j 23:31	19°♃32'36	
min. Earth dist.	1345 Sep 25 j 22:27	12°♃35'59	47.10425 AU				
opposition	1345 Sep 27 j 20:14	12°♃33'47	-17°-31'-41	conjunction	1354 Apr 03 j 03:41	20°♃59'58	-16°-37'-11
direct	1345 Dec 18 j 01:56	11°♃33'55		minimum elong	1354 Apr 03 j 03:48	20°♃59'58	16°37'12
				max. Earth dist.	1354 Apr 04 j 18:21	21°♃02'12	49.70661 AU
conjunction	1346 Mar 26 j 01:52	13°♃02'46	-16°-49'-15	retrograde	1354 Jul 15 j 02:55	22°♃31'07	
minimum elong	1346 Mar 26 j 01:57	13°♃02'46	16°49'15	min. Earth dist.	1354 Oct 05 j 12:29	21°♃32'19	47.82648 AU
max. Earth dist.	1346 Mar 28 j 01:03	13°♃05'33	49.06464 AU	opposition	1354 Oct 07 j 00:37	21°♃30'37	-17°-16'-52
retrograde	1346 Jul 07 j 02:58	14°♃35'33		direct	1354 Dec 27 j 04:29	20°♃31'25	
min. Earth dist.	1346 Sep 27 j 05:30	13°♃36'33	47.20300 AU				
opposition	1346 Sep 29 j 02:34	13°♃34'23	-17°-31'-7	conjunction	1355 Apr 04 j 09:38	21°♃58'39	-16°-34'-25
direct	1346 Dec 19 j 07:15	12°♃34'38		minimum elong	1355 Apr 04 j 09:45	21°♃58'39	16°34'26
				max. Earth dist.	1355 Apr 06 j 00:19	22°♃00'53	49.77110 AU
conjunction	1347 Mar 27 j 08:35	14°♃03'17	-16°-48'-40	retrograde	1355 Jul 16 j 05:53	23°♃29'39	
minimum elong	1347 Mar 27 j 08:38	14°♃03'17	16°48'42	min. Earth dist.	1355 Oct 06 j 18:18	22°♃30'55	47.88876 AU
max. Earth dist.	1347 Mar 29 j 07:07	14°♃06'01	49.16073 AU	opposition	1355 Oct 08 j 05:47	22°♃29'14	-17°-13'-47
retrograde	1347 Jul 08 j 11:30	15°♃35'51		direct	1355 Dec 28 j 12:34	21°♃30'07	
min. Earth dist.	1347 Sep 28 j 13:59	14°♃36'51	47.29630 AU				
opposition	1347 Sep 30 j 08:45	14°♃34'48	-17°-30'-18	conjunction	1356 Apr 04 j 15:25	22°♃57'13	-16°-31'-23
direct	1347 Dec 20 j 11:53	13°♃35'08		minimum elong	1356 Apr 04 j 15:31	22°♃57'13	16°31'25
				max. Earth dist.	1356 Apr 06 j 04:06	22°♃59'20	49.83224 AU
conjunction	1348 Mar 27 j 15:12	15°♃03'35	-16°-47'-50	retrograde	1356 Jul 16 j 12:19	24°♃28'05	
minimum elong	1348 Mar 27 j 15:17	15°♃03'36	16°47'51	min. Earth dist.	1356 Oct 07 j 00:21	23°♃29'24	47.94750 AU
max. Earth dist.	1348 Mar 29 j 12:09	15°♃06'14	49.25156 AU	opposition	1356 Oct 08 j 11:02	23°♃27'45	-17°-10'-27
retrograde	1348 Jul 08 j 17:25	16°♃35'56		direct	1356 Dec 28 j 18:27	22°♃28'43	
min. Earth dist.	1348 Sep 28 j 20:15	15°♃37'00	47.38422 AU				
opposition	1348 Sep 30 j 14:45	15°♃34'58	-17°-29'-13	conjunction	1357 Apr 05 j 21:10	23°♃55'42	-16°-28'-6
direct	1348 Dec 20 j 17:00	14°♃35'22		minimum elong	1357 Apr 05 j 21:17	23°♃55'42	16°28'06
				max. Earth dist.	1357 Apr 07 j 09:31	23°♃57'47	49.88941 AU
conjunction	1349 Mar 28 j 21:27	16°♃03'38	-16°-46'-45	retrograde	1357 Jul 17 j 20:13	25°♃26'25	
minimum elong	1349 Mar 28 j 21:31	16°♃03'38	16°46'46	min. Earth dist.	1357 Oct 08 j 07:32	24°♃27'44	48.00192 AU
max. Earth dist.	1349 Mar 30 j 16:38	16°♃06'09	49.33710 AU	opposition	1357 Oct 09 j 16:15	24°♃26'11	-17°-6'-51
retrograde	1349 Jul 09 j 21:43	17°♃35'45		direct	1357 Dec 29 j 22:48	23°♃27'14	
min. Earth dist.	1349 Sep 30 j 04:10	16°♃36'48	47.46723 AU				
opposition	1349 Oct 01 j 20:44	16°♃34'52	-17°-27'-52	conjunction	1358 Apr 07 j 02:59	24°♃54'05	-16°-24'-33
direct	1349 Dec 22 j 00:46	15°♃35'20		minimum elong	1358 Apr 07 j 03:06	24°♃54'05	16°24'35
				max. Earth dist.	1358 Apr 08 j 13:48	24°♃56'05	49.94219 AU
conjunction	1350 Mar 30 j 03:48	17°♃03'23	-16°-45'-23	retrograde	1358 Jul 19 j 03:52	26°♃24'40	
minimum elong	1350 Mar 30 j 03:54	17°♃03'24	16°45'25	opposition	1358 Oct 10 j 21:17	25°♃24'31	-17°-3'00
max. Earth dist.	1350 Mar 31 j 22:56	17°♃05'55	49.41814 AU	min. Earth dist.	1358 Oct 09 j 12:55	25°♃26'02	48.05155 AU
retrograde	1350 Jul 11 j 00:59	18°♃35'18		direct	1358 Dec 31 j 01:10	24°♃25'36	
min. Earth dist.	1350 Oct 01 j 10:47	17°♃36'22	47.54587 AU				
opposition	1350 Oct 03 j 02:29	17°♃34'29	-17°-26'-15	conjunction	1359 Apr 08 j 08:46	25°♃52'21	-16°-20'-47
direct	1350 Dec 23 j 09:57	16°♃35'01		minimum elong	1359 Apr 08 j 08:54	25°♃52'21	16°20'47
				max. Earth dist.	1359 Apr 09 j 17:40	25°♃54'14	49.98981 AU
conjunction	1351 Mar 31 j 09:52	18°♃02'52	-16°-43'-46	retrograde	1359 Jul 20 j 08:26	27°♃22'46	
minimum elong	1351 Mar 31 j 09:56	18°♃02'53	16°43'47	min. Earth dist.	1359 Oct 10 j 20:19	26°♃24'06	48.09587 AU
max. Earth dist.	1351 Apr 02 j 02:56	18°♃05'16	49.49520 AU	opposition	1359 Oct 12 j 02:30	26°♃22'41	-16°-58'-55



direct	1360 Jan 01 j 06:54	25°♃23'49		opposition	1367 Oct 19 j 16:15	4°♁00'51	-16°-17'-20
				min. Earth dist.	1367 Oct 18 j 18:18	4°♁01'53	48.29757 AU
conjunction	1360 Apr 08 j 14:39	26°♃50'25	-16°-16'-47	direct	1368 Jan 09 j 02:01	3°♁02'12	
minimum elong	1360 Apr 08 j 14:46	26°♃50'26	16°16'48				
max. Earth dist.	1360 Apr 09 j 23:00	26°♃52'17	50.03210 AU	conjunction	1368 Apr 16 j 09:54	4°♁28'04	-15°-35'-58
retrograde	1360 Jul 20 j 09:49	28°♃20'42		minimum elong	1368 Apr 16 j 10:04	4°♁28'05	15°35'59
min. Earth dist.	1360 Oct 11 j 02:14	27°♃22'01	48.13474 AU	max. Earth dist.	1368 Apr 17 j 09:34	4°♁29'25	50.22640 AU
opposition	1360 Oct 12 j 07:21	27°♃20'38	-16°-54'-36	retrograde	1368 Jul 28 j 06:41	5°♁57'26	
direct	1361 Jan 01 j 15:17	26°♃21'48		opposition	1368 Oct 19 j 20:35	4°♁57'44	-16°-10'-58
				min. Earth dist.	1368 Oct 18 j 22:41	4°♁58'46	48.30804 AU
conjunction	1361 Apr 09 j 20:14	27°♃48'17	-16°-12'-33	direct	1369 Jan 09 j 03:13	3°♁59'08	
minimum elong	1361 Apr 09 j 20:23	27°♃48'17	16°12'34				
max. Earth dist.	1361 Apr 11 j 02:10	27°♃50'00	50.06927 AU	conjunction	1369 Apr 17 j 15:10	5°♁25'00	-15°-29'-44
retrograde	1361 Jul 21 j 15:28	29°♃18'24		minimum elong	1369 Apr 17 j 15:20	5°♁25'00	15°29'45
min. Earth dist.	1361 Oct 12 j 08:03	28°♃19'42	48.16880 AU	max. Earth dist.	1369 Apr 18 j 13:16	5°♁26'15	50.23594 AU
opposition	1361 Oct 13 j 12:18	28°♃18'22	-16°-50'-3	retrograde	1369 Jul 29 j 11:54	6°♁54'19	
direct	1362 Jan 02 j 20:54	27°♃19'33		min. Earth dist.	1369 Oct 20 j 05:25	5°♁55'37	48.31454 AU
				opposition	1369 Oct 21 j 01:11	5°♁54'41	-16°-4'-21
conjunction	1362 Apr 11 j 01:43	28°♃45'53	-16°-8'-6	direct	1370 Jan 10 j 06:59	4°♁56'09	
minimum elong	1362 Apr 11 j 01:51	28°♃45'54	16°08'07				
max. Earth dist.	1362 Apr 12 j 07:15	28°♃47'35	50.10179 AU	conjunction	1370 Apr 18 j 20:31	6°♁21'59	-15°-23'-15
	1362 Jun 13 j 11:00	0°♁		minimum elong	1370 Apr 18 j 20:42	6°♁22'00	15°23'16
retrograde	1362 Jul 22 j 21:12	0°♁15'52		max. Earth dist.	1370 Apr 19 j 18:16	6°♁23'13	50.24122 AU
	1362 Aug 31 j 17:41	30°♁		retrograde	1370 Jul 30 j 13:25	7°♁51'16	
opposition	1362 Oct 14 j 17:11	29°♃15'51	-16°-45'-16	min. Earth dist.	1370 Oct 21 j 10:43	6°♁52'35	48.31623 AU
min. Earth dist.	1362 Oct 13 j 14:51	29°♃17'06	48.19846 AU	opposition	1370 Oct 22 j 05:38	6°♁51'41	-15°-57'-30
direct	1363 Jan 04 j 02:38	28°♃17'03		direct	1371 Jan 11 j 14:34	5°♁53'11	
conjunction	1363 Apr 12 j 07:16	29°♃43'16	-16°-3'-23	conjunction	1371 Apr 20 j 01:55	7°♁19'01	-15°-16'-34
minimum elong	1363 Apr 12 j 07:25	29°♃43'16	16°03'24	minimum elong	1371 Apr 20 j 02:05	7°♁19'01	15°16'35
max. Earth dist.	1363 Apr 13 j 11:38	29°♃44'53	50.13040 AU	max. Earth dist.	1371 Apr 20 j 21:01	7°♁20'06	50.24147 AU
	1363 Apr 24 j 13:52	0°♁		retrograde	1371 Jul 31 j 18:31	8°♁48'14	
retrograde	1363 Jul 24 j 03:20	1°♁13'05		opposition	1371 Oct 23 j 10:03	7°♁48'43	-15°-50'-25
opposition	1363 Oct 15 j 21:45	0°♁13'07	-16°-40'-13	min. Earth dist.	1371 Oct 22 j 16:26	7°♁49'32	48.31276 AU
min. Earth dist.	1363 Oct 14 j 19:28	0°♁14'21	48.22441 AU	direct	1372 Jan 12 j 20:11	6°♁50'13	
	1363 Oct 27 j 14:07	30°♁					
direct	1364 Jan 05 j 05:43	29°♃14'18		conjunction	1372 Apr 20 j 07:27	8°♁16'01	-15°-9'-39
	1364 Mar 12 j 19:15	0°♁		minimum elong	1372 Apr 20 j 07:38	8°♁16'02	15°09'40
				max. Earth dist.	1372 Apr 21 j 01:46	8°♁17'04	50.23631 AU
conjunction	1364 Apr 12 j 12:40	0°♁40'26	-15°-58'-25	retrograde	1372 Aug 01 j 00:15	9°♁45'12	
minimum elong	1364 Apr 12 j 12:48	0°♁40'26	15°58'26	opposition	1372 Oct 23 j 14:34	8°♁45'42	-15°-43'-8
max. Earth dist.	1364 Apr 13 j 15:30	0°♁41'58	50.15545 AU	min. Earth dist.	1372 Oct 22 j 23:00	8°♁46'26	48.30379 AU
retrograde	1364 Jul 24 j 08:41	2°♁10'07		direct	1373 Jan 13 j 01:37	7°♁47'13	
min. Earth dist.	1364 Oct 15 j 01:55	1°♁11'20	48.24712 AU				
opposition	1364 Oct 16 j 02:30	1°♁10'11	-16°-34'-54	conjunction	1373 Apr 21 j 12:40	9°♁12'59	-15°-2'-32
direct	1365 Jan 05 j 09:24	0°♁11'24		minimum elong	1373 Apr 21 j 12:50	9°♁12'59	15°02'34
				max. Earth dist.	1373 Apr 22 j 05:25	9°♁13'55	50.22600 AU
conjunction	1365 Apr 13 j 17:59	1°♁37'26	-15°-53'-12	retrograde	1373 Aug 02 j 06:52	10°♁42'05	
minimum elong	1365 Apr 13 j 18:09	1°♁37'27	15°53'13	opposition	1373 Oct 24 j 18:54	9°♁42'36	-15°-35'-38
max. Earth dist.	1365 Apr 14 j 20:56	1°♁38'58	50.17749 AU	min. Earth dist.	1373 Oct 24 j 03:42	9°♁43'19	48.28980 AU
retrograde	1365 Jul 25 j 10:59	3°♁07'01		direct	1374 Jan 14 j 04:05	8°♁44'06	
min. Earth dist.	1365 Oct 16 j 06:52	2°♁08'16	48.26677 AU				
opposition	1365 Oct 17 j 07:05	2°♁07'07	-16°-29'-19	conjunction	1374 Apr 22 j 17:57	10°♁09'50	-14°-55'-12
direct	1366 Jan 06 j 16:27	1°♁08'22		minimum elong	1374 Apr 22 j 18:09	10°♁09'51	14°55'14
				max. Earth dist.	1374 Apr 23 j 08:52	10°♁10'40	50.21081 AU
conjunction	1366 Apr 14 j 23:14	2°♁34'20	-15°-47'-43	retrograde	1374 Aug 03 j 13:09	11°♁38'52	
minimum elong	1366 Apr 14 j 23:23	2°♁34'20	15°47'44	opposition	1374 Oct 25 j 23:16	10°♁39'23	-15°-27'-54
max. Earth dist.	1366 Apr 16 j 00:18	2°♁35'46	50.19674 AU	min. Earth dist.	1374 Oct 25 j 10:07	10°♁40'00	48.27132 AU
retrograde	1366 Jul 26 j 16:14	4°♁03'50		direct	1375 Jan 15 j 06:38	9°♁40'52	
opposition	1366 Oct 18 j 11:39	3°♁03'59	-16°-23'-28				
min. Earth dist.	1366 Oct 17 j 12:06	3°♁05'06	48.28373 AU	conjunction	1375 Apr 23 j 23:20	11°♁06'34	-14°-47'-38
direct	1367 Jan 07 j 21:32	2°♁05'17		minimum elong	1375 Apr 23 j 23:30	11°♁06'34	14°47'39
				max. Earth dist.	1375 Apr 24 j 14:01	11°♁07'24	50.19148 AU
conjunction	1367 Apr 16 j 04:35	3°♁31'12	-15°-41'-58	retrograde	1375 Aug 04 j 15:10	12°♁35'32	
minimum elong	1367 Apr 16 j 04:44	3°♁31'12	15°42'00	opposition	1375 Oct 27 j 03:31	11°♁36'02	-15°-19'-56
max. Earth dist.	1367 Apr 17 j 05:29	3°♁32'36	50.21310 AU	min. Earth dist.	1375 Oct 26 j 14:56	11°♁36'38	48.24879 AU
retrograde	1367 Jul 27 j 22:47	5°♁00'38		direct	1376 Jan 16 j 13:09	10°♁37'29	

conjunction	1376 Apr 24 j 04:31	12°♃03'10	-14°-39'-50	direct	1384 Jan 24 j 01:11	18°♃10'06	
minimum elong	1376 Apr 24 j 04:43	12°♃03'11	14°39'51				
max. Earth dist.	1376 Apr 24 j 17:08	12°♃03'53	50.16839 AU	conjunction	1384 May 01 j 23:14	19°♃36'04	-13°-28'-48
retrograde	1376 Aug 04 j 18:55	13°♃32'06		minimum elong	1384 May 01 j 23:25	19°♃36'05	13°28'49
opposition	1376 Oct 27 j 07:42	12°♃32'36	-15°-11'-42	max. Earth dist.	1384 May 02 j 01:58	19°♃36'13	49.85946 AU
min. Earth dist.	1376 Oct 26 j 20:05	12°♃33'09	48.22286 AU	retrograde	1384 Aug 12 j 14:49	21°♃05'03	
direct	1377 Jan 16 j 18:35	11°♃34'02		opposition	1384 Nov 03 j 18:07	20°♃05'37	-13°-57'-5
				min. Earth dist.	1384 Nov 03 j 16:21	20°♃05'42	47.88689 AU
conjunction	1377 Apr 25 j 09:47	12°♃59'42	-14°-31'-48	direct	1385 Jan 24 j 03:59	19°♃06'56	
minimum elong	1377 Apr 25 j 09:57	12°♃59'42	14°31'48				
max. Earth dist.	1377 Apr 25 j 22:04	13°♃00'23	50.14202 AU	conjunction	1385 May 03 j 04:49	20°♃32'58	-13°-18'-56
retrograde	1377 Aug 05 j 23:19	14°♃28'36		minimum elong	1385 May 03 j 05:02	20°♃32'59	13°18'57
opposition	1377 Oct 28 j 12:01	13°♃29'05	-15°-3'-14	max. Earth dist.	1385 May 03 j 07:03	20°♃33'06	49.79998 AU
min. Earth dist.	1377 Oct 28 j 01:48	13°♃29'34	48.19373 AU	retrograde	1385 Aug 13 j 17:43	22°♃01'58	
direct	1378 Jan 18 j 00:57	12°♃30'30		opposition	1385 Nov 04 j 22:25	21°♃02'31	-13°-46'-45
				min. Earth dist.	1385 Nov 04 j 21:23	21°♃02'34	47.82338 AU
conjunction	1378 Apr 26 j 14:54	13°♃56'10	-14°-23'-30	direct	1386 Jan 25 j 10:04	20°♃03'47	
minimum elong	1378 Apr 26 j 15:06	13°♃56'11	14°23'31				
max. Earth dist.	1378 Apr 27 j 02:09	13°♃56'48	50.11278 AU	conjunction	1386 May 04 j 10:10	21°♃29'53	-13°-8'-51
	1378 Jun 18 j 01:38	15°♃		minimum elong	1386 May 04 j 10:21	21°♃29'54	13°08'51
retrograde	1378 Aug 07 j 07:05	15°♃25'02		max. Earth dist.	1386 May 04 j 09:58	21°♃29'52	49.73555 AU
	1378 Sep 27 j 00:20	15°♃		retrograde	1386 Aug 14 j 22:25	22°♃58'55	
opposition	1378 Oct 29 j 16:15	14°♃25'33	-14°-54'-30	opposition	1386 Nov 06 j 02:48	21°♃59'25	-13°-36'-10
min. Earth dist.	1378 Oct 29 j 05:59	14°♃26'01	48.16168 AU	min. Earth dist.	1386 Nov 06 j 03:06	21°♃59'25	47.75526 AU
direct	1379 Jan 19 j 02:54	13°♃26'56		direct	1387 Jan 26 j 15:05	21°♃00'38	
conjunction	1379 Apr 27 j 20:10	14°♃52'38	-14°-14'-58	conjunction	1387 May 05 j 15:47	22°♃26'48	-12°-58'-32
minimum elong	1379 Apr 27 j 20:21	14°♃52'38	14°14'58	minimum elong	1387 May 05 j 15:59	22°♃26'49	12°58'33
max. Earth dist.	1379 Apr 28 j 05:54	14°♃53'11	50.08046 AU	max. Earth dist.	1387 May 05 j 14:59	22°♃26'45	49.66665 AU
	1379 May 03 j 06:55	15°♃		retrograde	1387 Aug 16 j 02:11	23°♃55'53	
retrograde	1379 Aug 08 j 13:30	16°♃21'29		opposition	1387 Nov 07 j 07:02	22°♃56'21	-13°-25'-22
opposition	1379 Oct 30 j 20:30	15°♃22'01	-14°-45'-31	min. Earth dist.	1387 Nov 07 j 08:58	22°♃56'15	47.68294 AU
min. Earth dist.	1379 Oct 30 j 12:10	15°♃22'24	48.12655 AU	direct	1388 Jan 27 j 21:50	21°♃57'29	
	1379 Nov 19 j 20:02	15°♃					
direct	1380 Jan 20 j 05:00	14°♃23'24		conjunction	1388 May 05 j 21:18	23°♃23'44	-12°-47'-59
	1380 Mar 20 j 12:04	15°♃		minimum elong	1388 May 05 j 21:29	23°♃23'45	12°48'00
				max. Earth dist.	1388 May 05 j 19:16	23°♃23'37	49.59404 AU
conjunction	1380 Apr 28 j 01:34	15°♃49'08	-14°-6'-11	retrograde	1388 Aug 16 j 09:51	24°♃52'51	
minimum elong	1380 Apr 28 j 01:45	15°♃49'09	14°06'13	opposition	1388 Nov 07 j 11:18	23°♃53'17	-13°-14'-19
max. Earth dist.	1380 Apr 28 j 11:09	15°♃49'40	50.04500 AU	min. Earth dist.	1388 Nov 07 j 13:21	23°♃53'12	47.60716 AU
retrograde	1380 Aug 08 j 15:54	17°♃18'00		direct	1389 Jan 28 j 00:09	22°♃54'22	
opposition	1380 Oct 31 j 00:44	16°♃18'32	-14°-36'-17				
min. Earth dist.	1380 Oct 30 j 16:54	16°♃18'54	48.08791 AU	conjunction	1389 May 07 j 02:38	24°♃20'43	-12°-37'-12
direct	1381 Jan 20 j 11:25	15°♃19'56		minimum elong	1389 May 07 j 02:50	24°♃20'43	12°37'13
				max. Earth dist.	1389 May 06 j 23:07	24°♃20'31	49.51803 AU
conjunction	1381 Apr 29 j 06:41	16°♃45'43	-13°-57'-10	retrograde	1389 Aug 17 j 17:34	25°♃49'54	
minimum elong	1381 Apr 29 j 06:52	16°♃45'44	13°57'11	opposition	1389 Nov 08 j 15:47	24°♃50'18	-13°-3'-1
max. Earth dist.	1381 Apr 29 j 14:02	16°♃46'08	50.00583 AU	min. Earth dist.	1389 Nov 08 j 19:40	24°♃50'07	47.52827 AU
retrograde	1381 Aug 09 j 20:08	18°♃14'36		direct	1390 Jan 29 j 01:20	23°♃51'19	
opposition	1381 Nov 01 j 05:04	17°♃15'10	-14°-26'-49				
min. Earth dist.	1381 Oct 31 j 22:23	17°♃15'29	48.04532 AU	conjunction	1390 May 08 j 08:16	25°♃17'46	-12°-26'-10
direct	1382 Jan 21 j 16:46	16°♃16'34		minimum elong	1390 May 08 j 08:28	25°♃17'47	12°26'11
				max. Earth dist.	1390 May 08 j 04:41	25°♃17'34	49.43919 AU
conjunction	1382 Apr 30 j 12:11	17°♃42'24	-13°-47'-56	retrograde	1390 Aug 18 j 20:20	26°♃47'02	
minimum elong	1382 Apr 30 j 12:22	17°♃42'25	13°47'57	opposition	1390 Nov 09 j 20:03	25°♃47'24	-12°-51'-27
max. Earth dist.	1382 Apr 30 j 18:54	17°♃42'47	49.96222 AU	min. Earth dist.	1390 Nov 10 j 00:06	25°♃47'12	47.44653 AU
retrograde	1382 Aug 11 j 01:09	19°♃11'20		direct	1391 Jan 30 j 07:56	24°♃48'21	
opposition	1382 Nov 02 j 09:23	18°♃11'55	-14°-17'-7				
min. Earth dist.	1382 Nov 02 j 04:46	18°♃12'08	47.99790 AU	conjunction	1391 May 09 j 13:51	26°♃14'57	-12°-14'-53
direct	1383 Jan 22 j 22:15	17°♃13'18		minimum elong	1391 May 09 j 14:03	26°♃14'58	12°14'55
				max. Earth dist.	1391 May 09 j 08:13	26°♃14'38	49.35759 AU
conjunction	1383 May 01 j 17:44	18°♃39'12	-13°-38'-28	retrograde	1391 Aug 19 j 23:53	27°♃44'18	
minimum elong	1383 May 01 j 17:56	18°♃39'13	13°38'29	opposition	1391 Nov 11 j 00:31	26°♃44'38	-12°-39'-38
max. Earth dist.	1383 May 01 j 22:42	18°♃39'29	49.91365 AU	min. Earth dist.	1391 Nov 11 j 05:36	26°♃44'24	47.36204 AU
retrograde	1383 Aug 12 j 08:01	20°♃08'09		direct	1392 Jan 31 j 14:01	25°♃45'33	
opposition	1383 Nov 03 j 13:42	19°♃08'44	-14°-7'-12				
min. Earth dist.	1383 Nov 03 j 09:35	19°♃08'56	47.94517 AU	conjunction	1392 May 09 j 19:34	27°♃12'17	-12°-3'-21

minimum elong	1392 May 09 j 19:46	27° $\mathcal{R}$ 12'18	12°03'22	conjunction	1400 May 17 j 20:11	4° $\mathbb{I}$ 57'09	-10°-22'-48
max. Earth dist.	1392 May 09 j 13:38	27° $\mathcal{R}$ 11'57	49.27298 AU	minimum elong	1400 May 17 j 20:23	4° $\mathbb{I}$ 57'09	10°22'49
retrograde	1392 Aug 20 j 04:09	28° $\mathcal{R}$ 41'45		max. Earth dist.	1400 May 17 j 03:26	4° $\mathbb{I}$ 56'11	48.44098 AU
opposition	1392 Nov 11 j 04:59	27° $\mathcal{R}$ 42'04	-12°-27'-33	retrograde	1400 Aug 28 j 05:07	6° $\mathbb{I}$ 27'35	
min. Earth dist.	1392 Nov 11 j 11:34	27° $\mathcal{R}$ 41'46	47.27432 AU	opposition	1400 Nov 18 j 18:50	5° $\mathbb{I}$ 27'24	-10°-42'-21
direct	1393 Jan 31 j 20:24	26° $\mathcal{R}$ 42'57		min. Earth dist.	1400 Nov 19 j 10:44	5° $\mathbb{I}$ 26'38	46.41269 AU
				direct	1401 Feb 08 j 08:49	4° $\mathbb{I}$ 27'31	
conjunction	1393 May 11 j 01:18	28° $\mathcal{R}$ 09'50	-11°-51'-35	max. Earth dist.	1401 May 18 j 07:37	5° $\mathbb{I}$ 54'40	48.31823 AU
minimum elong	1393 May 11 j 01:30	28° $\mathcal{R}$ 09'51	11°51'36				
max. Earth dist.	1393 May 10 j 18:03	28° $\mathcal{R}$ 09'25	49.18517 AU	conjunction	1401 May 19 j 02:25	5° $\mathbb{I}$ 55'45	-10°-9'-10
retrograde	1393 Aug 21 j 11:28	29° $\mathcal{R}$ 39'25		minimum elong	1401 May 19 j 02:36	5° $\mathbb{I}$ 55'46	10°09'11
opposition	1393 Nov 12 j 09:25	28° $\mathcal{R}$ 39'44	-12°-15'-14	retrograde	1401 Aug 29 j 10:23	7° $\mathbb{I}$ 26'21	
min. Earth dist.	1393 Nov 12 j 16:18	28° $\mathcal{R}$ 39'24	47.18309 AU	opposition	1401 Nov 19 j 23:50	6° $\mathbb{I}$ 26'05	-10°-28'-5
direct	1394 Feb 01 j 23:35	27° $\mathcal{R}$ 40'33		min. Earth dist.	1401 Nov 20 j 16:52	6° $\mathbb{I}$ 25'16	46.28712 AU
				direct	1402 Feb 09 j 14:28	5° $\mathbb{I}$ 26'05	
conjunction	1394 May 12 j 07:06	29° $\mathcal{R}$ 07'36	-11°-39'-34				
minimum elong	1394 May 12 j 07:18	29° $\mathcal{R}$ 07'36	11°39'34	conjunction	1402 May 20 j 08:51	6° $\mathbb{I}$ 54'33	-9°-55'-18
max. Earth dist.	1394 May 11 j 21:59	29° $\mathcal{R}$ 07'05	49.09327 AU	minimum elong	1402 May 20 j 09:02	6° $\mathbb{I}$ 54'33	9°55'19
	1394 Jun 22 j 03:24	0° $\mathbb{I}$		max. Earth dist.	1402 May 19 j 13:49	6° $\mathbb{I}$ 53'27	48.19269 AU
retrograde	1394 Aug 22 j 19:44	0° $\mathbb{I}$ 37'19		retrograde	1402 Aug 30 j 14:27	8° $\mathbb{I}$ 25'20	
	1394 Oct 24 j 09:57	30° $\mathcal{R}$		opposition	1402 Nov 21 j 04:59	7° $\mathbb{I}$ 24'58	-10°-13'-33
opposition	1394 Nov 13 j 14:08	29° $\mathcal{R}$ 37'35	-12°-2'-40	min. Earth dist.	1402 Nov 21 j 23:14	7° $\mathbb{I}$ 24'06	46.15876 AU
min. Earth dist.	1394 Nov 13 j 23:15	29° $\mathcal{R}$ 37'09	47.08745 AU	direct	1403 Feb 10 j 21:54	6° $\mathbb{I}$ 24'52	
direct	1395 Feb 03 j 01:49	28° $\mathcal{R}$ 38'21					
	1395 May 09 j 11:34	0° $\mathbb{I}$		conjunction	1403 May 21 j 15:24	7° $\mathbb{I}$ 53'34	-9°-41'-9
				minimum elong	1403 May 21 j 15:35	7° $\mathbb{I}$ 53'35	9°41'10
conjunction	1395 May 13 j 13:17	0° $\mathbb{I}$ 05'34	-11°-27'-20	max. Earth dist.	1403 May 20 j 19:08	7° $\mathbb{I}$ 52'24	48.06462 AU
minimum elong	1395 May 13 j 13:28	0° $\mathbb{I}$ 05'35	11°27'21	retrograde	1403 Aug 31 j 21:38	9° $\mathbb{I}$ 24'34	
max. Earth dist.	1395 May 13 j 03:34	0° $\mathbb{I}$ 05'01	48.99670 AU	opposition	1403 Nov 22 j 10:01	8° $\mathbb{I}$ 24'09	-9°-58'-45
retrograde	1395 Aug 24 j 00:59	1° $\mathbb{I}$ 35'24		min. Earth dist.	1403 Nov 23 j 04:20	8° $\mathbb{I}$ 23'16	46.02787 AU
opposition	1395 Nov 14 j 18:42	0° $\mathbb{I}$ 35'38	-11°-49'-52	direct	1404 Feb 12 j 02:15	7° $\mathbb{I}$ 23'57	
min. Earth dist.	1395 Nov 15 j 04:38	0° $\mathbb{I}$ 35'09	46.98676 AU				
	1395 Dec 18 j 05:19	30° $\mathcal{R}$		conjunction	1404 May 21 j 22:03	8° $\mathbb{I}$ 52'55	-9°-26'-45
direct	1396 Feb 04 j 06:43	29° $\mathcal{R}$ 36'19		minimum elong	1404 May 21 j 22:14	8° $\mathbb{I}$ 52'56	9°26'47
	1396 Mar 22 j 20:37	0° $\mathbb{I}$		max. Earth dist.	1404 May 21 j 00:16	8° $\mathbb{I}$ 51'39	47.93377 AU
				retrograde	1404 Sep 01 j 06:14	10° $\mathbb{I}$ 24'08	
conjunction	1396 May 13 j 19:21	1° $\mathbb{I}$ 03'42	-11°-14'-53	opposition	1404 Nov 22 j 15:25	9° $\mathbb{I}$ 23'40	-9°-43'-40
minimum elong	1396 May 13 j 19:33	1° $\mathbb{I}$ 03'43	11°14'54	min. Earth dist.	1404 Nov 23 j 11:38	9° $\mathbb{I}$ 22'41	45.89414 AU
max. Earth dist.	1396 May 13 j 06:58	1° $\mathbb{I}$ 03'00	48.89497 AU	direct	1405 Feb 12 j 05:17	8° $\mathbb{I}$ 23'23	
retrograde	1396 Aug 24 j 06:47	2° $\mathbb{I}$ 33'38		max. Earth dist.	1405 May 22 j 06:53	9° $\mathbb{I}$ 51'22	47.79995 AU
opposition	1396 Nov 14 j 23:30	1° $\mathbb{I}$ 33'49	-11°-36'-50				
min. Earth dist.	1396 Nov 15 j 10:58	1° $\mathbb{I}$ 33'16	46.88096 AU	conjunction	1405 May 23 j 04:45	9° $\mathbb{I}$ 52'38	-9°-12'-6
direct	1397 Feb 04 j 11:47	0° $\mathbb{I}$ 34'24		minimum elong	1405 May 23 j 04:56	9° $\mathbb{I}$ 52'39	9°12'07
				retrograde	1405 Sep 02 j 13:34	11° $\mathbb{I}$ 24'06	
conjunction	1397 May 15 j 01:25	2° $\mathbb{I}$ 01'56	-11°-2'-13	opposition	1405 Nov 23 j 20:47	10° $\mathbb{I}$ 23'34	-9°-28'-20
minimum elong	1397 May 15 j 01:36	2° $\mathbb{I}$ 01'57	11°02'14	min. Earth dist.	1405 Nov 24 j 17:22	10° $\mathbb{I}$ 22'35	45.75700 AU
max. Earth dist.	1397 May 14 j 12:13	2° $\mathbb{I}$ 01'11	48.78807 AU	direct	1406 Feb 13 j 10:07	9° $\mathbb{I}$ 23'12	
retrograde	1397 Aug 25 j 09:13	3° $\mathbb{I}$ 32'00		max. Earth dist.	1406 May 23 j 11:22	10° $\mathbb{I}$ 51'21	47.66233 AU
opposition	1397 Nov 16 j 04:23	2° $\mathbb{I}$ 32'05	-11°-23'-35				
min. Earth dist.	1397 Nov 16 j 17:31	2° $\mathbb{I}$ 31'28	46.77007 AU	conjunction	1406 May 24 j 11:43	10° $\mathbb{I}$ 52'46	-8°-57'-12
direct	1398 Feb 05 j 19:51	1° $\mathbb{I}$ 32'34		minimum elong	1406 May 24 j 11:53	10° $\mathbb{I}$ 52'47	8°57'14
				retrograde	1406 Sep 03 j 21:23	12° $\mathbb{I}$ 24'29	
conjunction	1398 May 16 j 07:37	3° $\mathbb{I}$ 00'15	-10°-49'-18	opposition	1406 Nov 25 j 02:14	11° $\mathbb{I}$ 23'54	-9°-12'-44
minimum elong	1398 May 16 j 07:49	3° $\mathbb{I}$ 00'16	10°49'20	min. Earth dist.	1406 Nov 26 j 00:31	11° $\mathbb{I}$ 22'49	45.61585 AU
max. Earth dist.	1398 May 15 j 16:57	2° $\mathbb{I}$ 59'25	48.67650 AU	direct	1407 Feb 14 j 15:16	10° $\mathbb{I}$ 23'26	
retrograde	1398 Aug 26 j 15:48	4° $\mathbb{I}$ 30'26					
opposition	1398 Nov 17 j 09:04	3° $\mathbb{I}$ 30'26	-11°-10'-5	conjunction	1407 May 25 j 19:03	11° $\mathbb{I}$ 53'19	-8°-42'-4
min. Earth dist.	1398 Nov 17 j 22:40	3° $\mathbb{I}$ 29'47	46.65477 AU	minimum elong	1407 May 25 j 19:14	11° $\mathbb{I}$ 53'19	8°42'04
direct	1399 Feb 07 j 00:31	2° $\mathbb{I}$ 30'48		max. Earth dist.	1407 May 24 j 17:54	11° $\mathbb{I}$ 51'50	47.52017 AU
				retrograde	1407 Sep 05 j 01:22	13° $\mathbb{I}$ 25'18	
conjunction	1399 May 17 j 13:53	3° $\mathbb{I}$ 58'39	-10°-36'-10	opposition	1407 Nov 26 j 07:58	12° $\mathbb{I}$ 24'38	-8°-56'-53
minimum elong	1399 May 17 j 14:04	3° $\mathbb{I}$ 58'40	10°36'12	min. Earth dist.	1407 Nov 27 j 07:51	12° $\mathbb{I}$ 23'28	45.46977 AU
max. Earth dist.	1399 May 16 j 21:20	3° $\mathbb{I}$ 57'42	48.56057 AU	direct	1408 Feb 15 j 23:27	11° $\mathbb{I}$ 24'02	
retrograde	1399 Aug 28 j 00:30	5° $\mathbb{I}$ 28'58		max. Earth dist.	1408 May 24 j 23:21	12° $\mathbb{I}$ 52'39	47.37306 AU
opposition	1399 Nov 18 j 14:01	4° $\mathbb{I}$ 28'52	-10°-56'-21				
min. Earth dist.	1399 Nov 19 j 05:44	4° $\mathbb{I}$ 28'07	46.53547 AU	conjunction	1408 May 26 j 02:19	12° $\mathbb{I}$ 54'14	-8°-26'-41
direct	1400 Feb 08 j 02:43	3° $\mathbb{I}$ 29'06		minimum elong	1408 May 26 j 02:29	12° $\mathbb{I}$ 54'14	8°26'42

retrograde	1408 Sep 05 j 08:19	14°II26'28		direct	1417 Feb 24 j 05:05	20°II42'51	
opposition	1408 Nov 26 j 13:43	13°II25'43	-8°-40'-47	max. Earth dist.	1417 Jun 03 j 12:12	22°II13'54	45.86901 AU
min. Earth dist.	1408 Nov 27 j 14:19	13°II24'31	45.31868 AU				
direct	1409 Feb 16 j 05:36	12°II24'59		conjunction	1417 Jun 05 j 01:53	22°II16'11	-5°-56'-57
max. Earth dist.	1409 May 26 j 04:44	13°II53'46	47.22080 AU	minimum elong	1417 Jun 05 j 02:01	22°II16'11	5°56'59
				retrograde	1417 Sep 15 j 08:03	23°II51'06	
conjunction	1409 May 27 j 09:45	13°II55'29	-8°-11'-4	opposition	1417 Dec 05 j 23:20	22°II49'06	-6°-3'-50
minimum elong	1409 May 27 j 09:56	13°II55'29	8°11'05	min. Earth dist.	1417 Dec 07 j 10:01	22°II47'22	43.78803 AU
retrograde	1409 Sep 06 j 18:28	15°II27'59		direct	1418 Feb 25 j 13:44	21°II46'48	
opposition	1409 Nov 27 j 19:41	14°II27'06	-8°-24'-26	max. Earth dist.	1418 Jun 04 j 19:18	23°II18'12	45.68682 AU
min. Earth dist.	1409 Nov 28 j 22:35	14°II25'47	45.16263 AU				
direct	1410 Feb 17 j 08:26	13°II26'14		conjunction	1418 Jun 06 j 10:40	23°II20'35	-5°-38'-59
max. Earth dist.	1410 May 27 j 11:44	14°II55'17	47.06384 AU	minimum elong	1418 Jun 06 j 10:48	23°II20'35	5°38'59
				retrograde	1418 Sep 16 j 15:27	24°II55'54	
conjunction	1410 May 28 j 17:21	14°II57'01	-7°-55'-12	opposition	1418 Dec 07 j 06:31	23°II53'46	-5°-44'-59
minimum elong	1410 May 28 j 17:31	14°II57'02	7°55'13	min. Earth dist.	1418 Dec 08 j 18:00	23°II51'59	43.60275 AU
retrograde	1410 Sep 08 j 01:52	16°II29'47		direct	1419 Feb 26 j 22:12	22°II51'17	
opposition	1410 Nov 29 j 01:38	15°II28'46	-8°-7'-49	max. Earth dist.	1419 Jun 06 j 02:41	24°II23'01	45.50038 AU
min. Earth dist.	1410 Nov 30 j 04:56	15°II27'26	45.00197 AU				
direct	1411 Feb 18 j 14:11	14°II27'43		conjunction	1419 Jun 07 j 19:51	24°II25'31	-5°-20'-46
max. Earth dist.	1411 May 28 j 16:58	15°II56'56	46.90246 AU	minimum elong	1419 Jun 07 j 19:58	24°II25'32	5°20'47
				retrograde	1419 Sep 18 j 00:33	26°II01'15	
conjunction	1411 May 30 j 01:00	15°II58'50	-7°-39'-6	opposition	1419 Dec 08 j 13:58	24°II58'58	-5°-25'-52
minimum elong	1411 May 30 j 01:10	15°II58'50	7°39'07	min. Earth dist.	1419 Dec 10 j 03:43	24°II57'04	43.41306 AU
retrograde	1411 Sep 09 j 09:37	17°II31'50		direct	1420 Feb 28 j 04:47	23°II56'18	
opposition	1411 Nov 30 j 07:40	16°II30'41	-7°-50'-57	max. Earth dist.	1420 Jun 06 j 11:16	25°II28'26	45.30949 AU
min. Earth dist.	1411 Dec 01 j 12:40	16°II29'16	44.83733 AU				
direct	1412 Feb 19 j 20:38	15°II29'27		conjunction	1420 Jun 08 j 05:14	25°II31'00	-5°-2'-17
max. Earth dist.	1412 May 29 j 00:27	16°II58'59	46.73726 AU	minimum elong	1420 Jun 08 j 05:21	25°II31'00	5°02'18
				retrograde	1420 Sep 18 j 10:31	27°II07'08	
conjunction	1412 May 30 j 08:52	17°II00'54	-7°-22'-44	opposition	1420 Dec 08 j 21:36	26°II04'41	-5°-6'-28
minimum elong	1412 May 30 j 09:02	17°II00'55	7°22'45	min. Earth dist.	1420 Dec 10 j 11:38	26°II02'46	43.21876 AU
retrograde	1412 Sep 09 j 13:47	18°II34'11		direct	1421 Feb 28 j 11:08	25°II01'48	
opposition	1412 Nov 30 j 13:58	17°II32'53	-7°-33'-48	max. Earth dist.	1421 Jun 07 j 18:05	26°II34'15	45.11391 AU
min. Earth dist.	1412 Dec 01 j 20:05	17°II31'24	44.66915 AU				
direct	1413 Feb 20 j 06:22	16°II31'28		conjunction	1421 Jun 09 j 14:35	26°II36'58	-4°-43'-33
max. Earth dist.	1413 May 30 j 06:46	18°II01'14	46.56893 AU	minimum elong	1421 Jun 09 j 14:42	26°II36'59	4°43'34
				retrograde	1421 Sep 19 j 21:46	28°II13'32	
conjunction	1413 May 31 j 16:34	18°II03'14	-7°-6'-7	opposition	1421 Dec 10 j 05:30	27°II10'54	-4°-46'-47
minimum elong	1413 May 31 j 16:44	18°II03'15	7°06'08	min. Earth dist.	1421 Dec 11 j 21:36	27°II08'52	43.01998 AU
retrograde	1413 Sep 10 j 20:38	19°II36'48		direct	1422 Mar 01 j 17:51	26°II07'47	
opposition	1413 Dec 01 j 20:18	18°II35'22	-7°-16'-23	max. Earth dist.	1422 Jun 09 j 03:28	27°II40'41	44.91390 AU
min. Earth dist.	1413 Dec 03 j 02:39	18°II33'51	44.49810 AU				
direct	1414 Feb 21 j 13:23	17°II33'45		conjunction	1422 Jun 11 j 00:28	27°II43'27	-4°-24'-33
max. Earth dist.	1414 May 31 j 13:28	19°II03'47	46.39771 AU	minimum elong	1422 Jun 11 j 00:35	27°II43'27	4°24'34
				retrograde	1422 Sep 21 j 05:47	29°II20'24	
conjunction	1414 Jun 02 j 00:39	19°II05'53	-6°-49'-13	opposition	1422 Dec 11 j 13:25	28°II17'35	-4°-26'-50
minimum elong	1414 Jun 02 j 00:48	19°II05'53	6°49'14	min. Earth dist.	1422 Dec 13 j 06:35	28°II15'30	42.81696 AU
retrograde	1414 Sep 12 j 05:03	20°II39'46		direct	1423 Mar 03 j 04:18	27°II14'14	
opposition	1414 Dec 03 j 02:49	19°II38'10	-6°-58'-40	max. Earth dist.	1423 Jun 10 j 11:25	28°II47'30	44.71000 AU
min. Earth dist.	1414 Dec 04 j 11:00	19°II36'34	44.32442 AU				
direct	1415 Feb 22 j 18:55	18°II36'23		conjunction	1423 Jun 12 j 10:24	28°II50'24	-4°-5'-18
max. Earth dist.	1415 Jun 01 j 21:38	20°II06'46	46.22408 AU	minimum elong	1423 Jun 12 j 10:30	28°II50'24	4°05'19
					1423 Aug 03 j 11:52	0°☾	
conjunction	1415 Jun 03 j 08:59	20°II08'53	-6°-32'-4	retrograde	1423 Sep 22 j 15:24	0°☾27'47	
minimum elong	1415 Jun 03 j 09:08	20°II08'53	6°32'06		1423 Nov 12 j 08:17	30°RII	
retrograde	1415 Sep 13 j 14:47	21°II43'05		opposition	1423 Dec 12 j 21:34	29°II24'46	-4°-6'-36
opposition	1415 Dec 04 j 09:28	20°II41'21	-6°-40'-41	min. Earth dist.	1423 Dec 14 j 15:30	29°II22'38	42.61046 AU
min. Earth dist.	1415 Dec 05 j 17:39	20°II39'45	44.14830 AU	direct	1424 Mar 03 j 13:13	28°II21'10	
direct	1416 Feb 24 j 00:11	19°II39'23		max. Earth dist.	1424 Jun 10 j 20:20	29°II54'51	44.50263 AU
max. Earth dist.	1416 Jun 02 j 03:44	21°II10'02	46.04792 AU				
				conjunction	1424 Jun 12 j 20:28	29°II57'50	-3°-45'-46
conjunction	1416 Jun 03 j 17:13	21°II12'17	-6°-14'-39	minimum elong	1424 Jun 12 j 20:34	29°II57'51	3°45'47
minimum elong	1416 Jun 03 j 17:21	21°II12'18	6°14'39		1424 Jun 14 j 07:13	0°☾	
retrograde	1416 Sep 14 j 01:29	22°II46'51		retrograde	1424 Sep 22 j 23:25	1°☾35'42	
opposition	1416 Dec 04 j 16:21	21°II44'59	-6°-22'-24	opposition	1424 Dec 13 j 06:02	0°☾32'28	-3°-46'-4
min. Earth dist.	1416 Dec 06 j 01:59	21°II43'18	43.96969 AU	min. Earth dist.	1424 Dec 15 j 01:41	0°☾30'13	42.40088 AU

	1425 Jan 09 j 21:41	30°R II		max. Earth dist.	1433 Jun 21 j 17:06	10°E30'42	42.53282 AU
direct	1425 Mar 04 j 22:07	29°II28'37					
	1425 Apr 27 j 01:15	0°E		conjunction	1433 Jun 24 j 03:35	10°E34'30	0°-37'-51
max. Earth dist.	1425 Jun 12 j 06:17	1°E02'47	44.29264 AU	minimum elong	1433 Jun 24 j 03:36	10°E34'30	0°37'52
				retrograde	1433 Oct 04 j 12:33	12°E17'25	
conjunction	1425 Jun 14 j 06:47	1°E05'48	-3°-25'-58	opposition	1433 Dec 23 j 21:13	11°E12'15	0°-28'-8
minimum elong	1425 Jun 14 j 06:52	1°E05'49	3°25'59	min. Earth dist.	1433 Dec 26 j 01:16	11°E09'29	40.41507 AU
retrograde	1425 Sep 24 j 10:16	2°E44'08		direct	1434 Mar 15 j 07:15	10°E06'02	
opposition	1425 Dec 14 j 14:30	1°E40'42	-3°-25'-15	max. Earth dist.	1434 Jun 23 j 05:27	11°E45'12	42.29864 AU
min. Earth dist.	1425 Dec 16 j 10:06	1°E38'27	42.18900 AU				
direct	1426 Mar 06 j 05:29	0°E36'35		conjunction	1434 Jun 25 j 16:48	11°E49'05	0°-15'-40
max. Earth dist.	1426 Jun 13 j 14:44	2°E11'11	44.08041 AU	minimum elong	1434 Jun 25 j 16:48	11°E49'05	0°15'42
				behind sun begin	1434 Jun 25 j 16:21	11°E49'04	
conjunction	1426 Jun 15 j 17:17	2°E14'21	-3°-5'-54	behind sun end	1434 Jun 25 j 17:16	11°E49'07	
minimum elong	1426 Jun 15 j 17:22	2°E14'21	3°05'55	retrograde	1434 Oct 05 j 23:24	13°E32'38	
retrograde	1426 Sep 26 j 00:12	3°E53'11		opposition	1434 Dec 25 j 08:30	12°E27'12	0°-4'-42
opposition	1426 Dec 15 j 23:25	2°E49'31	-3°-4'-7	min. Earth dist.	1434 Dec 27 j 14:01	12°E24'20	40.17909 AU
min. Earth dist.	1426 Dec 17 j 20:37	2°E47'11	41.97521 AU	asc. node	1435 Mar 08 j 17:43	11°E21'27	
direct	1427 Mar 07 j 10:48	1°E45'09		direct	1435 Mar 16 j 20:19	11°E20'39	
max. Earth dist.	1427 Jun 15 j 01:47	3°E20'20	43.86634 AU	max. Earth dist.	1435 Jun 24 j 17:42	13°E00'26	42.06128 AU
conjunction	1427 Jun 17 j 04:12	3°E23'30	-2°-45'-33	conjunction	1435 Jun 27 j 06:12	13°E04'25	0°06'51
minimum elong	1427 Jun 17 j 04:16	3°E23'30	2°45'34	minimum elong	1435 Jun 27 j 06:11	13°E04'25	0°06'52
retrograde	1427 Sep 27 j 10:17	5°E02'51		behind sun begin	1435 Jun 27 j 00:08	13°E04'03	
opposition	1427 Dec 17 j 08:28	3°E59'00	-2°-42'-43	behind sun end	1435 Jun 27 j 12:14	13°E04'48	
min. Earth dist.	1427 Dec 19 j 05:56	3°E56'38	41.75966 AU	retrograde	1435 Oct 07 j 11:01	14°E48'37	
direct	1428 Mar 07 j 20:37	2°E54'23		opposition	1435 Dec 26 j 19:55	13°E42'53	0°18'59
max. Earth dist.	1428 Jun 15 j 11:11	4°E30'03	43.65069 AU	min. Earth dist.	1435 Dec 29 j 01:45	13°E39'59	39.94032 AU
				direct	1436 Mar 17 j 09:08	12°E35'59	
conjunction	1428 Jun 17 j 15:13	4°E33'21	-2°-24'-56	max. Earth dist.	1436 Jun 25 j 05:40	14°E16'22	41.82117 AU
minimum elong	1428 Jun 17 j 15:16	4°E33'21	2°24'58				
retrograde	1428 Sep 27 j 21:07	6°E13'15		conjunction	1436 Jun 27 j 19:56	14°E20'31	0°29'31
opposition	1428 Dec 17 j 17:50	5°E09'12	-2°-21'00	minimum elong	1436 Jun 27 j 19:55	14°E20'31	0°29'31
min. Earth dist.	1428 Dec 19 j 16:00	5°E06'47	41.54262 AU	retrograde	1436 Oct 08 j 00:23	16°E05'22	
direct	1429 Mar 09 j 07:06	4°E04'21		opposition	1436 Dec 27 j 07:51	14°E59'21	0°42'58
max. Earth dist.	1429 Jun 16 j 21:46	5°E40'36	43.43310 AU	min. Earth dist.	1436 Dec 29 j 15:32	14°E56'20	39.69931 AU
				direct	1437 Mar 18 j 19:00	13°E52'06	
conjunction	1429 Jun 19 j 02:32	5°E43'58	-2°-4'-3	max. Earth dist.	1437 Jun 26 j 19:45	15°E33'13	41.57912 AU
minimum elong	1429 Jun 19 j 02:35	5°E43'58	2°04'03				
retrograde	1429 Sep 29 j 06:25	7°E24'26		conjunction	1437 Jun 29 j 09:55	15°E37'23	0°52'28
opposition	1429 Dec 19 j 03:34	6°E20'11	-1°-59'00	minimum elong	1437 Jun 29 j 09:53	15°E37'23	0°52'28
min. Earth dist.	1429 Dec 21 j 03:19	6°E17'41	41.32343 AU	retrograde	1437 Oct 09 j 14:17	17°E22'56	
direct	1430 Mar 10 j 18:12	5°E15'06		opposition	1437 Dec 28 j 20:02	16°E16'37	1°07'13
max. Earth dist.	1430 Jun 18 j 08:46	6°E51'56	43.21319 AU	min. Earth dist.	1437 Dec 31 j 03:34	16°E13'36	39.45662 AU
				direct	1438 Mar 20 j 06:53	15°E09'01	
conjunction	1430 Jun 20 j 14:19	6°E55'22	-1°-42'-53	max. Earth dist.	1438 Jun 28 j 08:16	16°E50'47	41.33556 AU
minimum elong	1430 Jun 20 j 14:21	6°E55'22	1°42'55				
retrograde	1430 Sep 30 j 17:50	8°E36'27		conjunction	1438 Jul 01 j 00:20	16°E55'06	1°15'39
opposition	1430 Dec 20 j 13:21	7°E32'00	-1°-36'-43	minimum elong	1438 Jul 01 j 00:17	16°E55'06	1°15'39
min. Earth dist.	1430 Dec 22 j 13:17	7°E29'29	41.10161 AU	retrograde	1438 Oct 11 j 07:11	18°E41'23	
direct	1431 Mar 12 j 03:18	6°E26'40		opposition	1438 Dec 30 j 08:33	17°E34'46	1°31'44
max. Earth dist.	1431 Jun 19 j 18:43	8°E04'01	42.99006 AU	min. Earth dist.	1439 Jan 01 j 17:20	17°E31'40	39.21291 AU
				direct	1439 Mar 21 j 17:48	16°E26'48	
conjunction	1431 Jun 22 j 02:28	8°E07'36	-1°-21'-28	max. Earth dist.	1439 Jun 29 j 23:19	18°E09'25	41.09097 AU
minimum elong	1431 Jun 22 j 02:30	8°E07'37	1°21'29				
retrograde	1431 Oct 02 j 07:35	9°E49'18		conjunction	1439 Jul 02 j 15:17	18°E13'45	1°39'05
opposition	1431 Dec 21 j 23:45	8°E44'38	-1°-14'-8	minimum elong	1439 Jul 02 j 15:14	18°E13'44	1°39'05
min. Earth dist.	1431 Dec 24 j 01:51	8°E42'00	40.87646 AU	retrograde	1439 Oct 12 j 22:07	20°E00'47	
direct	1432 Mar 12 j 11:04	7°E39'02		opposition	1439 Dec 31 j 21:38	18°E53'53	1°56'30
max. Earth dist.	1432 Jun 20 j 06:51	9°E17'02	42.76332 AU	min. Earth dist.	1440 Jan 03 j 07:01	18°E50'43	38.96839 AU
				direct	1440 Mar 22 j 08:10	17°E45'35	
conjunction	1432 Jun 22 j 14:53	9°E20'40	0°-59'-47	max. Earth dist.	1440 Jun 30 j 13:16	19°E28'58	40.84580 AU
minimum elong	1432 Jun 22 j 14:55	9°E20'40	0°59'49				
retrograde	1432 Oct 02 j 21:31	11°E02'58		conjunction	1440 Jul 03 j 06:19	19°E33'24	2°02'45
opposition	1432 Dec 22 j 10:23	9°E58'04	0°-51'-17	minimum elong	1440 Jul 03 j 06:16	19°E33'24	2°02'44
min. Earth dist.	1432 Dec 24 j 13:01	9°E55'23	40.64753 AU	retrograde	1440 Oct 13 j 14:25	21°E21'15	
direct	1433 Mar 13 j 21:11	8°E52'10		opposition	1441 Jan 01 j 11:00	20°E14'04	2°21'32

min. Earth dist.	1441 Jan 03 j 20:27	20°☾10'54	38.72339 AU	min. Earth dist.	1449 Jan 15 j 08:55	1°♁36'10	36.70136 AU
direct	1441 Mar 23 j 21:29	19°☾05'27		direct	1449 Apr 03 j 20:11	0°♁28'18	
max. Earth dist.	1441 Jul 02 j 03:59	20°☾49'39	40.59976 AU	max. Earth dist.	1449 Jul 13 j 20:14	2°♁19'53	38.56210 AU
conjunction	1441 Jul 04 j 22:03	20°☾54'12	2°26'37	conjunction	1449 Jul 16 j 21:40	2°♁25'16	5°44'32
minimum elong	1441 Jul 04 j 21:58	20°☾54'11	2°26'37	minimum elong	1449 Jul 16 j 21:28	2°♁25'15	5°44'32
retrograde	1441 Oct 15 j 04:15	22°☾42'53		retrograde	1449 Oct 27 j 06:10	4°♁21'24	
opposition	1442 Jan 03 j 00:48	21°☾35'26	2°46'48	opposition	1450 Jan 14 j 08:48	3°♁11'17	6°16'39
min. Earth dist.	1442 Jan 05 j 11:54	21°☾32'09	38.47749 AU	min. Earth dist.	1450 Jan 17 j 02:16	3°♁07'28	36.44200 AU
direct	1442 Mar 25 j 10:37	20°☾26'30		direct	1450 Apr 05 j 12:19	1°♁59'09	
max. Earth dist.	1442 Jul 03 j 20:05	22°☾11'36	40.35261 AU	max. Earth dist.	1450 Jul 15 j 14:42	3°♁51'41	38.30120 AU
conjunction	1442 Jul 06 j 14:18	22°☾16'12	2°50'43	conjunction	1450 Jul 18 j 17:50	3°♁57'14	6°09'56
minimum elong	1442 Jul 06 j 14:13	22°☾16'11	2°50'43	minimum elong	1450 Jul 18 j 17:38	3°♁57'13	6°09'57
retrograde	1442 Oct 16 j 20:27	24°☾05'46		retrograde	1450 Oct 29 j 04:07	5°♁54'25	
opposition	1443 Jan 04 j 15:02	22°☾58'03	3°12'18	opposition	1451 Jan 16 j 03:09	4°♁43'53	6°43'37
min. Earth dist.	1443 Jan 07 j 02:09	22°☾54'44	38.23017 AU	min. Earth dist.	1451 Jan 18 j 21:39	4°♁39'59	36.18309 AU
direct	1443 Mar 26 j 23:29	21°☾48'47		direct	1451 Apr 07 j 03:58	3°♁31'17	
max. Earth dist.	1443 Jul 05 j 10:32	23°☾34'41	40.10348 AU	max. Earth dist.	1451 Jul 17 j 11:58	5°♁24'58	38.04084 AU
conjunction	1443 Jul 08 j 06:58	23°☾39'28	3°15'01	conjunction	1451 Jul 20 j 14:36	5°♁30'32	6°35'24
minimum elong	1443 Jul 08 j 06:52	23°☾39'27	3°15'01	minimum elong	1451 Jul 20 j 14:24	5°♁30'31	6°35'24
retrograde	1443 Oct 18 j 15:17	25°☾29'56		retrograde	1451 Oct 31 j 01:42	7°♁28'46	
opposition	1444 Jan 06 j 05:50	24°☾21'56	3°38'02	opposition	1452 Jan 17 j 22:06	6°♁17'51	7°10'40
min. Earth dist.	1444 Jan 08 j 18:51	24°☾18'30	37.98083 AU	min. Earth dist.	1452 Jan 20 j 16:44	6°♁13'55	35.92508 AU
direct	1444 Mar 27 j 10:16	23°☾12'19		direct	1452 Apr 07 j 23:52	5°♁04'49	
max. Earth dist.	1444 Jul 06 j 03:42	24°☾59'11	39.85200 AU	max. Earth dist.	1452 Jul 18 j 08:24	6°♁59'35	37.78172 AU
conjunction	1444 Jul 09 j 00:16	25°☾04'00	3°39'30	conjunction	1452 Jul 21 j 11:50	7°♁05'16	7°00'55
minimum elong	1444 Jul 09 j 00:10	25°☾04'00	3°39'31	minimum elong	1452 Jul 21 j 11:37	7°♁05'15	7°00'56
retrograde	1444 Oct 19 j 09:03	26°☾55'23		retrograde	1452 Nov 01 j 01:54	9°♁04'35	
opposition	1445 Jan 06 j 21:09	25°☾47'05	4°04'00	opposition	1453 Jan 18 j 17:33	7°♁53'17	7°37'47
min. Earth dist.	1445 Jan 09 j 10:39	25°☾43'36	37.72904 AU	min. Earth dist.	1453 Jan 21 j 12:00	7°♁49'20	35.66861 AU
direct	1445 Mar 29 j 01:50	24°☾37'05		direct	1453 Apr 09 j 19:43	6°♁39'48	
max. Earth dist.	1445 Jul 07 j 19:16	26°☾24'48	39.59804 AU	max. Earth dist.	1453 Jul 20 j 06:05	8°♁35'46	37.52384 AU
conjunction	1445 Jul 10 j 17:50	26°☾29'48	4°04'11	conjunction	1453 Jul 23 j 09:49	8°♁41'31	7°26'28
minimum elong	1445 Jul 10 j 17:42	26°☾29'48	4°04'11	minimum elong	1453 Jul 23 j 09:34	8°♁41'30	7°26'27
retrograde	1445 Oct 21 j 05:31	28°☾22'06		retrograde	1453 Nov 02 j 23:45	10°♁41'58	
opposition	1446 Jan 08 j 12:54	27°☾13'28	4°30'10	opposition	1454 Jan 20 j 13:48	9°♁30'18	8°04'55
min. Earth dist.	1446 Jan 11 j 03:27	27°☾09'55	37.47489 AU	min. Earth dist.	1454 Jan 23 j 09:24	9°♁26'16	35.41338 AU
direct	1446 Mar 30 j 18:09	26°☾03'05		direct	1454 Apr 11 j 15:24	8°♁16'24	
max. Earth dist.	1446 Jul 09 j 12:47	27°☾51'44	39.34148 AU	max. Earth dist.	1454 Jul 22 j 04:51	10°♁13'35	37.26711 AU
conjunction	1446 Jul 12 j 12:12	27°☾56'51	4°29'03	conjunction	1454 Jul 25 j 08:29	10°♁19'24	7°52'00
minimum elong	1446 Jul 12 j 12:04	27°☾56'50	4°29'03	minimum elong	1454 Jul 25 j 08:13	10°♁19'22	7°52'00
retrograde	1446 Oct 22 j 23:49	29°☾50'04		retrograde	1454 Nov 04 j 21:51	12°♁21'01	
opposition	1447 Jan 10 j 05:10	28°☾41'05	4°56'32	opposition	1455 Jan 22 j 10:27	11°♁08'59	8°32'04
min. Earth dist.	1447 Jan 12 j 21:16	28°☾37'25	37.21844 AU	min. Earth dist.	1455 Jan 25 j 05:38	11°♁04'57	35.15917 AU
direct	1447 Apr 01 j 11:34	27°☾30'17		direct	1455 Apr 13 j 12:03	9°♁54'39	
max. Earth dist.	1447 Jul 11 j 06:38	29°☾19'53	39.08298 AU	max. Earth dist.	1455 Jul 24 j 02:46	11°♁53'00	37.01092 AU
conjunction	1447 Jul 14 j 06:55	29°☾25'06	4°54'05	conjunction	1455 Jul 27 j 07:52	11°♁58'58	8°17'31
minimum elong	1447 Jul 14 j 06:45	29°☾25'05	4°54'04	minimum elong	1455 Jul 27 j 07:35	11°♁58'57	8°17'30
retrograde	1447 Aug 03 j 17:50	0°♁		retrograde	1455 Nov 06 j 21:25	14°♁01'48	
retrograde	1447 Oct 24 j 17:19	1°♁19'16		opposition	1456 Jan 24 j 08:05	12°♁49'24	8°59'12
opposition	1448 Jan 11 j 21:52	0°♁09'55	5°23'05	min. Earth dist.	1456 Jan 27 j 04:42	12°♁45'15	34.90551 AU
min. Earth dist.	1448 Jan 14 j 13:57	0°♁06'14	36.96041 AU	direct	1456 Apr 14 j 06:25	11°♁34'38	
direct	1448 Jan 19 j 02:51	30°♁☾		max. Earth dist.	1456 Jul 25 j 03:20	13°♁34'18	36.75500 AU
direct	1448 Apr 02 j 04:48	28°☾58'41		conjunction	1456 Jul 28 j 07:50	13°♁40'17	8°42'59
max. Earth dist.	1448 Jun 12 j 12:55	0°♁		minimum elong	1456 Jul 28 j 07:32	13°♁40'16	8°42'59
conjunction	1448 Jul 15 j 01:57	0°♁54'34	5°19'15	retrograde	1456 Sep 12 j 05:20	15°♁	
minimum elong	1448 Jul 15 j 01:47	0°♁54'33	5°19'15	retrograde	1456 Nov 07 j 21:23	15°♁44'21	
retrograde	1448 Oct 25 j 10:59	2°♁49'43		opposition	1457 Jan 05 j 06:33	15°♁♁	
opposition	1449 Jan 12 j 15:11	1°♁39'59	5°49'48	opposition	1457 Jan 25 j 06:21	14°♁31'34	9°26'17
				min. Earth dist.	1457 Jan 28 j 02:46	14°♁27'23	34.65200 AU

direct	1457 Apr 16 j 03:27	13°♈16'20		opposition	1465 Feb 08 j 18:39	29°♈13'02	12°56'06
	1457 Jul 17 j 23:06	15°♈		min. Earth dist.	1465 Feb 11 j 16:03	29°♈08'34	32.67341 AU
max. Earth dist.	1457 Jul 27 j 02:25	15°♈17'11	36.49914 AU	direct	1465 Apr 30 j 07:26	27°♈53'54	
					1465 Aug 08 j 12:52	0°♈	
conjunction	1457 Jul 30 j 08:33	15°♈23'21	9°08'22	max. Earth dist.	1465 Aug 11 j 11:13	0°♈05'59	34.50777 AU
minimum elong	1457 Jul 30 j 08:15	15°♈23'20	9°08'21				
retrograde	1457 Nov 10 j 00:16	17°♈28'40		conjunction	1465 Aug 14 j 15:55	0°♈12'33	12°23'19
opposition	1458 Jan 27 j 05:11	16°♈15'28	9°53'17	minimum elong	1465 Aug 14 j 15:33	0°♈12'31	12°23'18
min. Earth dist.	1458 Jan 30 j 02:35	16°♈11'13	34.39875 AU	retrograde	1465 Nov 25 j 11:58	2°♈28'27	
	1458 Apr 14 j 00:56	15°♈♈		opposition	1466 Feb 10 j 23:44	1°♈11'51	13°20'34
direct	1458 Apr 18 j 00:20	14°♈59'46		min. Earth dist.	1466 Feb 13 j 20:42	1°♈07'23	32.44177 AU
	1458 Apr 22 j 00:56	15°♈			1466 Apr 09 j 17:23	30°♈♈	
max. Earth dist.	1458 Jul 29 j 04:14	17°♈01'58	36.24338 AU	direct	1466 May 02 j 11:16	29°♈52'17	
					1466 May 25 j 03:34	0°♈	
conjunction	1458 Aug 01 j 10:11	17°♈08'11	9°33'38	max. Earth dist.	1466 Aug 13 j 18:23	2°♈05'51	34.27550 AU
minimum elong	1458 Aug 01 j 09:51	17°♈08'09	9°33'38				
retrograde	1458 Nov 12 j 02:41	19°♈14'44		conjunction	1466 Aug 16 j 23:12	2°♈12'28	12°45'49
opposition	1459 Jan 29 j 04:57	18°♈01'08	10°20'11	minimum elong	1466 Aug 16 j 22:48	2°♈12'26	12°45'49
min. Earth dist.	1459 Feb 01 j 02:57	17°♈56'48	34.14581 AU	retrograde	1466 Nov 27 j 22:16	4°♈29'49	
direct	1459 Apr 20 j 00:43	16°♈44'57		opposition	1467 Feb 13 j 05:40	3°♈12'49	13°44'26
max. Earth dist.	1459 Jul 31 j 05:26	18°♈48'25	35.98825 AU	min. Earth dist.	1467 Feb 16 j 01:52	3°♈08'23	32.21488 AU
				direct	1467 May 04 j 15:56	1°♈52'49	
conjunction	1459 Aug 03 j 12:13	18°♈54'45	9°58'46	max. Earth dist.	1467 Aug 16 j 03:27	4°♈07'59	34.04758 AU
minimum elong	1459 Aug 03 j 11:53	18°♈54'44	9°58'45				
retrograde	1459 Nov 14 j 07:09	21°♈02'35		conjunction	1467 Aug 19 j 07:21	4°♈14'35	13°07'43
opposition	1460 Jan 31 j 05:16	19°♈48'33	10°46'55	minimum elong	1467 Aug 19 j 06:58	4°♈14'33	13°07'42
min. Earth dist.	1460 Feb 03 j 03:01	19°♈44'13	33.89388 AU	retrograde	1467 Nov 30 j 08:00	6°♈33'22	
direct	1460 Apr 21 j 01:10	18°♈31'52		opposition	1468 Feb 15 j 12:43	5°♈16'00	14°07'39
max. Earth dist.	1460 Aug 01 j 08:02	20°♈36'41	35.73417 AU	min. Earth dist.	1468 Feb 18 j 09:12	5°♈11'31	31.99221 AU
				direct	1468 May 05 j 22:58	3°♈55'35	
conjunction	1460 Aug 04 j 15:06	20°♈43'06	10°23'41	max. Earth dist.	1468 Aug 17 j 13:03	6°♈12'17	33.82397 AU
minimum elong	1460 Aug 04 j 14:45	20°♈43'04	10°23'41				
retrograde	1460 Nov 15 j 09:27	22°♈52'13		conjunction	1468 Aug 20 j 16:19	6°♈18'54	13°28'56
opposition	1461 Feb 01 j 06:25	21°♈37'44	11°13'26	minimum elong	1468 Aug 20 j 15:55	6°♈18'52	13°28'57
min. Earth dist.	1461 Feb 04 j 05:13	21°♈33'18	33.64351 AU	retrograde	1468 Dec 01 j 19:47	8°♈39'07	
direct	1461 Apr 23 j 01:35	20°♈20'34		opposition	1469 Feb 16 j 20:25	7°♈21'21	14°30'09
max. Earth dist.	1461 Aug 03 j 12:04	22°♈26'47	35.48210 AU	min. Earth dist.	1469 Feb 19 j 15:36	7°♈16'56	31.77369 AU
				direct	1469 May 08 j 07:10	6°♈00'30	
conjunction	1461 Aug 06 j 18:35	22°♈33'14	10°48'21	max. Earth dist.	1469 Aug 19 j 23:01	8°♈18'42	33.60428 AU
minimum elong	1461 Aug 06 j 18:14	22°♈33'12	10°48'21				
retrograde	1461 Nov 17 j 13:26	24°♈43'39		conjunction	1469 Aug 23 j 02:13	8°♈25'24	13°49'26
opposition	1462 Feb 03 j 08:12	23°♈28'44	11°39'41	minimum elong	1469 Aug 23 j 01:51	8°♈25'22	13°49'26
min. Earth dist.	1462 Feb 06 j 06:05	23°♈24'19	33.39549 AU	retrograde	1469 Dec 04 j 05:40	10°♈47'01	
direct	1462 Apr 25 j 03:36	22°♈11'03		opposition	1470 Feb 19 j 05:16	9°♈28'52	14°51'51
max. Earth dist.	1462 Aug 05 j 15:32	24°♈18'36	35.23254 AU	min. Earth dist.	1470 Feb 22 j 01:07	9°♈24'22	31.55909 AU
				direct	1470 May 10 j 13:52	8°♈07'35	
conjunction	1462 Aug 08 j 22:50	24°♈25'10	11°12'43	max. Earth dist.	1470 Aug 22 j 11:11	10°♈27'22	33.38872 AU
minimum elong	1462 Aug 08 j 22:28	24°♈25'09	11°12'44				
retrograde	1462 Nov 19 j 17:50	26°♈36'56		conjunction	1470 Aug 25 j 12:59	10°♈34'00	14°09'09
opposition	1463 Feb 05 j 10:51	25°♈21'34	12°05'35	minimum elong	1470 Aug 25 j 12:36	10°♈33'58	14°09'09
min. Earth dist.	1463 Feb 08 j 09:34	25°♈17'04	33.15063 AU	retrograde	1470 Dec 06 j 17:06	12°♈56'59	
direct	1463 Apr 27 j 02:52	24°♈03'23		opposition	1471 Feb 21 j 14:54	11°♈38'27	15°12'41
max. Earth dist.	1463 Aug 07 j 22:02	26°♈12'28	34.98656 AU	min. Earth dist.	1471 Feb 24 j 09:22	11°♈34'01	31.34860 AU
				direct	1471 May 12 j 23:30	10°♈16'44	
conjunction	1463 Aug 11 j 03:50	26°♈18'59	11°36'43	max. Earth dist.	1471 Aug 24 j 22:24	12°♈37'56	33.17751 AU
minimum elong	1463 Aug 11 j 03:29	26°♈18'57	11°36'42				
retrograde	1463 Nov 21 j 22:03	28°♈32'06		conjunction	1471 Aug 28 j 00:30	12°♈44'39	14°28'00
opposition	1464 Feb 07 j 14:22	27°♈16'18	12°31'05	minimum elong	1471 Aug 28 j 00:08	12°♈44'37	14°28'00
min. Earth dist.	1464 Feb 10 j 11:50	27°♈11'52	32.90970 AU	retrograde	1471 Dec 09 j 05:36	15°♈09'01	
direct	1464 Apr 28 j 06:00	25°♈57'39		opposition	1472 Feb 24 j 01:31	13°♈50'05	15°32'35
max. Earth dist.	1464 Aug 09 j 02:58	28°♈08'07	34.74484 AU	min. Earth dist.	1472 Feb 26 j 20:03	13°♈45'37	31.14276 AU
				direct	1472 May 14 j 06:54	12°♈27'54	
conjunction	1464 Aug 12 j 09:19	28°♈14'44	12°00'16	max. Earth dist.	1472 Aug 26 j 12:38	14°♈50'41	32.97126 AU
minimum elong	1464 Aug 12 j 08:56	28°♈14'43	12°00'16				
	1464 Oct 10 j 12:15	0°♈		conjunction	1472 Aug 29 j 12:44	14°♈57'17	14°45'55
retrograde	1464 Nov 23 j 05:19	0°♈29'15		minimum elong	1472 Aug 29 j 12:21	14°♈57'15	14°45'55
	1465 Jan 06 j 23:28	30°♈♈		retrograde	1472 Dec 10 j 16:50	17°♈23'01	

opposition	1473 Feb 25 j 12:57	16° $\mathring{\text{M}}$ 03'40	15°51'27	opposition	1481 Mar 16 j 14:16	4° $\mathring{\text{U}}$ 59'35	17°33'41
min. Earth dist.	1473 Feb 28 j 06:14	15° $\mathring{\text{M}}$ 59'15	30.94194 AU	min. Earth dist.	1481 Mar 18 j 19:38	4° $\mathring{\text{U}}$ 55'51	29.60363 AU
direct	1473 May 16 j 18:06	14° $\mathring{\text{M}}$ 41'03		direct	1481 Jun 04 j 11:45	3° $\mathring{\text{U}}$ 34'24	
max. Earth dist.	1473 Aug 29 j 01:40	17° $\mathring{\text{M}}$ 05'13	32.77057 AU	max. Earth dist.	1481 Sep 18 j 02:51	6° $\mathring{\text{U}}$ 09'53	31.44946 AU
conjunction	1473 Sep 01 j 01:42	17° $\mathring{\text{M}}$ 11'52	15°02'48	conjunction	1481 Sep 20 j 10:14	6° $\mathring{\text{U}}$ 15'20	16°30'34
minimum elong	1473 Sep 01 j 01:21	17° $\mathring{\text{M}}$ 11'50	15°02'47	minimum elong	1481 Sep 20 j 10:05	6° $\mathring{\text{U}}$ 15'19	16°30'33
retrograde	1473 Dec 13 j 06:41	19° $\mathring{\text{M}}$ 38'54		retrograde	1482 Jan 01 j 23:24	8° $\mathring{\text{U}}$ 51'45	
opposition	1474 Feb 28 j 01:03	18° $\mathring{\text{M}}$ 19'09	16°09'12	opposition	1482 Mar 19 j 08:54	7° $\mathring{\text{U}}$ 29'38	17°39'09
min. Earth dist.	1474 Mar 02 j 17:30	18° $\mathring{\text{M}}$ 14'46	30.74704 AU	min. Earth dist.	1482 Mar 21 j 11:51	7° $\mathring{\text{U}}$ 26'04	29.47420 AU
direct	1474 May 19 j 04:33	16° $\mathring{\text{M}}$ 56'05		direct	1482 Jun 07 j 06:48	6° $\mathring{\text{U}}$ 04'16	
max. Earth dist.	1474 Aug 31 j 17:51	19° $\mathring{\text{M}}$ 21'50	32.57617 AU	max. Earth dist.	1482 Sep 20 j 22:44	8° $\mathring{\text{U}}$ 40'47	31.32344 AU
conjunction	1474 Sep 03 j 15:32	19° $\mathring{\text{M}}$ 28'19	15°18'34	conjunction	1482 Sep 23 j 05:05	8° $\mathring{\text{U}}$ 46'09	16°34'34
minimum elong	1474 Sep 03 j 15:12	19° $\mathring{\text{M}}$ 28'18	15°18'35	minimum elong	1482 Sep 23 j 04:57	8° $\mathring{\text{U}}$ 46'08	16°34'34
retrograde	1474 Dec 15 j 19:56	21° $\mathring{\text{M}}$ 56'39		retrograde	1483 Jan 04 j 19:34	11° $\mathring{\text{U}}$ 23'28	
opposition	1475 Mar 02 j 14:17	20° $\mathring{\text{M}}$ 36'30	16°25'43	opposition	1483 Mar 22 j 04:22	10° $\mathring{\text{U}}$ 01'09	17°42'47
min. Earth dist.	1475 Mar 05 j 05:49	20° $\mathring{\text{M}}$ 32'10	30.55870 AU	min. Earth dist.	1483 Mar 24 j 05:40	9° $\mathring{\text{U}}$ 57'41	29.35316 AU
direct	1475 May 21 j 16:39	19° $\mathring{\text{M}}$ 13'02		direct	1483 Jun 09 j 23:50	8° $\mathring{\text{U}}$ 35'35	
max. Earth dist.	1475 Sep 03 j 09:07	21° $\mathring{\text{M}}$ 40'11	32.38912 AU	max. Earth dist.	1483 Sep 23 j 21:28	11° $\mathring{\text{U}}$ 13'16	31.20611 AU
conjunction	1475 Sep 06 j 05:44	21° $\mathring{\text{M}}$ 46'37	15°33'08	conjunction	1483 Sep 26 j 00:21	11° $\mathring{\text{U}}$ 18'19	16°36'50
minimum elong	1475 Sep 06 j 05:25	21° $\mathring{\text{M}}$ 46'36	15°33'08	minimum elong	1483 Sep 26 j 00:16	11° $\mathring{\text{U}}$ 18'19	16°36'49
retrograde	1475 Dec 18 j 12:17	24° $\mathring{\text{M}}$ 16'14		retrograde	1484 Jan 07 j 14:22	13° $\mathring{\text{U}}$ 56'27	
opposition	1476 Mar 04 j 04:12	22° $\mathring{\text{M}}$ 55'42	16°40'53	opposition	1484 Mar 24 j 00:27	12° $\mathring{\text{U}}$ 33'56	17°44'33
min. Earth dist.	1476 Mar 06 j 17:37	22° $\mathring{\text{M}}$ 51'29	30.37803 AU	min. Earth dist.	1484 Mar 25 j 23:44	12° $\mathring{\text{U}}$ 30'36	29.24045 AU
direct	1476 May 23 j 05:58	21° $\mathring{\text{M}}$ 31'50		direct	1484 Jun 11 j 18:51	11° $\mathring{\text{U}}$ 08'12	
max. Earth dist.	1476 Sep 05 j 02:31	24° $\mathring{\text{M}}$ 00'30	32.21013 AU	max. Earth dist.	1484 Sep 25 j 18:26	13° $\mathring{\text{U}}$ 46'42	31.09770 AU
conjunction	1476 Sep 07 j 20:53	24° $\mathring{\text{M}}$ 06'47	15°46'24	conjunction	1484 Sep 27 j 19:58	13° $\mathring{\text{U}}$ 51'39	16°37'20
minimum elong	1476 Sep 07 j 20:34	24° $\mathring{\text{M}}$ 06'45	15°46'25	minimum elong	1484 Sep 27 j 19:56	13° $\mathring{\text{U}}$ 51'39	16°37'20
retrograde	1476 Dec 20 j 03:54	26° $\mathring{\text{M}}$ 37'38		retrograde	1485 Jan 09 j 10:22	16° $\mathring{\text{U}}$ 30'29	
opposition	1477 Mar 06 j 19:00	25° $\mathring{\text{M}}$ 16'45	16°54'38	opposition	1485 Mar 26 j 20:48	15° $\mathring{\text{U}}$ 07'46	17°44'22
min. Earth dist.	1477 Mar 09 j 07:34	25° $\mathring{\text{M}}$ 12'34	30.20564 AU	min. Earth dist.	1485 Mar 28 j 17:41	15° $\mathring{\text{U}}$ 04'37	29.13662 AU
direct	1477 May 25 j 20:19	23° $\mathring{\text{M}}$ 52'33		direct	1485 Jun 14 j 14:44	13° $\mathring{\text{U}}$ 41'52	
max. Earth dist.	1477 Sep 07 j 20:11	26° $\mathring{\text{M}}$ 22'39	32.04010 AU	max. Earth dist.	1485 Sep 28 j 18:04	16° $\mathring{\text{U}}$ 21'20	30.99857 AU
conjunction	1477 Sep 10 j 12:38	26° $\mathring{\text{M}}$ 28'48	15°58'17	conjunction	1485 Sep 30 j 16:07	16° $\mathring{\text{U}}$ 25'57	16°36'01
minimum elong	1477 Sep 10 j 12:22	26° $\mathring{\text{M}}$ 28'46	15°58'16	minimum elong	1485 Sep 30 j 16:06	16° $\mathring{\text{U}}$ 25'57	16°36'00
retrograde	1477 Dec 22 j 21:51	29° $\mathring{\text{M}}$ 00'51		retrograde	1486 Jan 12 j 05:06	19° $\mathring{\text{U}}$ 05'23	
opposition	1478 Mar 09 j 10:34	27° $\mathring{\text{M}}$ 39'40	17°06'52	opposition	1486 Mar 29 j 17:52	17° $\mathring{\text{U}}$ 42'28	17°42'13
min. Earth dist.	1478 Mar 11 j 20:19	27° $\mathring{\text{M}}$ 35'41	30.04203 AU	min. Earth dist.	1486 Mar 31 j 13:00	17° $\mathring{\text{U}}$ 39'26	29.04191 AU
direct	1478 May 28 j 12:26	26° $\mathring{\text{M}}$ 15'10		direct	1486 Jun 17 j 11:32	16° $\mathring{\text{U}}$ 16'25	
max. Earth dist.	1478 Sep 10 j 14:32	28° $\mathring{\text{M}}$ 46'41	31.87902 AU	max. Earth dist.	1486 Oct 01 j 16:07	18° $\mathring{\text{U}}$ 56'33	30.90937 AU
conjunction	1478 Sep 13 j 05:07	28° $\mathring{\text{M}}$ 52'42	16°08'42	conjunction	1486 Oct 03 j 12:11	19° $\mathring{\text{U}}$ 00'59	16°32'50
minimum elong	1478 Sep 13 j 04:52	28° $\mathring{\text{M}}$ 52'40	16°08'43	minimum elong	1486 Oct 03 j 12:13	19° $\mathring{\text{U}}$ 00'59	16°32'51
	1478 Oct 13 j 07:41	0° $\mathring{\text{U}}$		retrograde	1487 Jan 15 j 02:30	21° $\mathring{\text{U}}$ 40'55	
retrograde	1478 Dec 25 j 15:02	1° $\mathring{\text{U}}$ 25'56		opposition	1487 Apr 01 j 15:10	20° $\mathring{\text{U}}$ 17'49	17°38'03
opposition	1479 Mar 12 j 03:04	0° $\mathring{\text{U}}$ 04'29	17°17'29	min. Earth dist.	1487 Apr 03 j 06:54	20° $\mathring{\text{U}}$ 15'01	28.95720 AU
	1479 Mar 14 j 19:47	30° $\mathring{\text{R}}$ $\mathring{\text{M}}$		direct	1487 Jun 20 j 08:21	18° $\mathring{\text{U}}$ 51'39	
min. Earth dist.	1479 Mar 14 j 12:06	0° $\mathring{\text{U}}$ 00'32	29.88726 AU	max. Earth dist.	1487 Oct 04 j 16:07	21° $\mathring{\text{U}}$ 32'30	30.83073 AU
direct	1479 May 31 j 02:48	28° $\mathring{\text{M}}$ 39'44					
	1479 Aug 11 j 13:48	0° $\mathring{\text{U}}$		conjunction	1487 Oct 06 j 08:34	21° $\mathring{\text{U}}$ 36'35	16°27'45
max. Earth dist.	1479 Sep 13 j 10:26	1° $\mathring{\text{U}}$ 12'41	31.72712 AU	minimum elong	1487 Oct 06 j 08:38	21° $\mathring{\text{U}}$ 36'35	16°27'45
				retrograde	1488 Jan 17 j 21:42	24° $\mathring{\text{U}}$ 16'54	
conjunction	1479 Sep 15 j 22:13	1° $\mathring{\text{U}}$ 18'28	16°17'35	opposition	1488 Apr 03 j 12:55	22° $\mathring{\text{U}}$ 53'39	17°31'48
minimum elong	1479 Sep 15 j 22:00	1° $\mathring{\text{U}}$ 18'27	16°17'35	min. Earth dist.	1488 Apr 05 j 02:45	22° $\mathring{\text{U}}$ 50'59	28.88318 AU
retrograde	1479 Dec 28 j 10:28	3° $\mathring{\text{U}}$ 52'50		direct	1488 Jun 22 j 06:13	21° $\mathring{\text{U}}$ 27'23	
opposition	1480 Mar 13 j 20:15	2° $\mathring{\text{U}}$ 31'09	17°26'27	max. Earth dist.	1488 Oct 06 j 15:17	24° $\mathring{\text{U}}$ 08'46	30.76365 AU
min. Earth dist.	1480 Mar 16 j 02:32	2° $\mathring{\text{U}}$ 27'22	29.74121 AU				
direct	1480 Jun 01 j 20:17	1° $\mathring{\text{U}}$ 06'11		conjunction	1488 Oct 08 j 04:50	24° $\mathring{\text{U}}$ 12'34	16°20'45
max. Earth dist.	1480 Sep 15 j 05:24	3° $\mathring{\text{U}}$ 40'21	31.58396 AU	minimum elong	1488 Oct 08 j 04:57	24° $\mathring{\text{U}}$ 12'35	16°20'46
				retrograde	1489 Jan 19 j 19:07	26° $\mathring{\text{U}}$ 53'11	
conjunction	1480 Sep 17 j 15:51	3° $\mathring{\text{U}}$ 46'03	16°24'54	opposition	1489 Apr 06 j 10:46	25° $\mathring{\text{U}}$ 29'48	17°23'28
minimum elong	1480 Sep 17 j 15:39	3° $\mathring{\text{U}}$ 46'02	16°24'54	min. Earth dist.	1489 Apr 07 j 20:35	25° $\mathring{\text{U}}$ 27'25	28.82059 AU
retrograde	1480 Dec 30 j 05:18	6° $\mathring{\text{U}}$ 21'30		direct	1489 Jun 25 j 05:40	24° $\mathring{\text{U}}$ 03'29	



max. Earth dist.	1489 Oct 09 j 15:13	26° <u>♁</u> 45'23	30.70850 AU	opposition	1497 Apr 27 j 20:44	16° <u>♁</u> 17'42	15°04'09
				min. Earth dist.	1497 Apr 28 j 06:52	16° <u>♁</u> 17'00	28.73709 AU
conjunction	1489 Oct 11 j 01:19	26° <u>♁</u> 48'50	16°11'49		1497 Jun 25 j 05:02	15° <u>♁</u>	
minimum elong	1489 Oct 11 j 01:27	26° <u>♁</u> 48'50	16°11'48	direct	1497 Jul 16 j 17:45	14° <u>♁</u> 52'25	
retrograde	1490 Jan 22 j 15:08	29° <u>♁</u> 29'39			1497 Aug 06 j 21:01	15° <u>♁</u>	
opposition	1490 Apr 09 j 08:55	28° <u>♁</u> 06'12	17°13'01				
min. Earth dist.	1490 Apr 10 j 16:37	28° <u>♁</u> 03'58	28.76996 AU	conjunction	1497 Oct 31 j 16:32	17° <u>♁</u> 35'07	13°53'56
direct	1490 Jun 28 j 02:45	26° <u>♁</u> 39'53		minimum elong	1497 Oct 31 j 16:54	17° <u>♁</u> 35'09	13°53'56
				max. Earth dist.	1497 Oct 31 j 08:04	17° <u>♁</u> 34'16	30.69202 AU
conjunction	1490 Oct 13 j 21:47	29° <u>♁</u> 25'16	16°00'55	retrograde	1498 Feb 12 j 08:29	20° <u>♁</u> 14'09	
minimum elong	1490 Oct 13 j 21:59	29° <u>♁</u> 25'17	16°00'56	opposition	1498 Apr 30 j 18:11	18° <u>♁</u> 51'15	14°38'34
max. Earth dist.	1490 Oct 12 j 15:22	29° <u>♁</u> 22'11	30.66591 AU	min. Earth dist.	1498 May 01 j 00:25	18° <u>♁</u> 50'49	28.77460 AU
	1490 Oct 28 j 06:59	0° <u>♁</u>		direct	1498 Jul 19 j 15:03	17° <u>♁</u> 26'09	
retrograde	1491 Jan 25 j 12:53	2° <u>♁</u> 06'12					
opposition	1491 Apr 12 j 07:12	0° <u>♁</u> 42'44	17°00'29	conjunction	1498 Nov 03 j 11:05	20° <u>♁</u> 08'03	13°29'18
min. Earth dist.	1491 Apr 13 j 10:45	0° <u>♁</u> 40'47	28.73145 AU	minimum elong	1498 Nov 03 j 11:28	20° <u>♁</u> 08'05	13°29'18
	1491 May 08 j 15:56	30° <u>♁</u>		max. Earth dist.	1498 Nov 03 j 06:40	20° <u>♁</u> 07'36	30.73834 AU
direct	1491 Jul 01 j 02:43	29° <u>♁</u> 16'29		retrograde	1499 Feb 15 j 00:29	22° <u>♁</u> 46'26	
	1491 Aug 21 j 06:41	0° <u>♁</u>		opposition	1499 May 03 j 15:28	21° <u>♁</u> 23'39	14°11'26
				min. Earth dist.	1499 May 03 j 19:35	21° <u>♁</u> 23'22	28.82246 AU
conjunction	1491 Oct 16 j 18:03	2° <u>♁</u> 01'49	15°48'07	direct	1499 Jul 22 j 12:35	19° <u>♁</u> 58'48	
minimum elong	1491 Oct 16 j 18:15	2° <u>♁</u> 01'50	15°48'07				
max. Earth dist.	1491 Oct 15 j 14:40	1° <u>♁</u> 59'02	30.63563 AU	conjunction	1499 Nov 06 j 04:47	22° <u>♁</u> 39'46	13°03'16
retrograde	1492 Jan 28 j 10:10	4° <u>♁</u> 42'46		minimum elong	1499 Nov 06 j 05:09	22° <u>♁</u> 39'48	13°03'16
opposition	1492 Apr 14 j 05:38	3° <u>♁</u> 19'19	16°45'53	max. Earth dist.	1499 Nov 06 j 02:56	22° <u>♁</u> 39'35	30.79540 AU
min. Earth dist.	1492 Apr 15 j 06:43	3° <u>♁</u> 17'33	28.70494 AU	retrograde	1500 Feb 17 j 18:17	25° <u>♁</u> 17'25	
direct	1492 Jul 03 j 00:42	1° <u>♁</u> 53'09		opposition	1500 May 05 j 12:04	23° <u>♁</u> 54'46	13°42'49
				min. Earth dist.	1500 May 05 j 11:57	23° <u>♁</u> 54'47	28.88109 AU
conjunction	1492 Oct 18 j 14:25	4° <u>♁</u> 38'20	15°33'26	direct	1500 Jul 24 j 10:41	22° <u>♁</u> 30'08	
minimum elong	1492 Oct 18 j 14:40	4° <u>♁</u> 38'21	15°33'26				
max. Earth dist.	1492 Oct 17 j 15:03	4° <u>♁</u> 35'58	30.61746 AU	conjunction	1500 Nov 07 j 22:06	25° <u>♁</u> 10'08	12°35'55
retrograde	1493 Jan 30 j 06:15	7° <u>♁</u> 19'12		minimum elong	1500 Nov 07 j 22:30	25° <u>♁</u> 10'11	12°35'54
opposition	1493 Apr 17 j 03:53	5° <u>♁</u> 55'48	16°29'17	max. Earth dist.	1500 Nov 08 j 00:10	25° <u>♁</u> 10'20	30.86336 AU
min. Earth dist.	1493 Apr 18 j 01:27	5° <u>♁</u> 54'17	28.68985 AU	retrograde	1501 Feb 19 j 10:07	27° <u>♁</u> 46'59	
direct	1493 Jul 06 j 00:18	4° <u>♁</u> 29'47		opposition	1501 May 08 j 08:12	26° <u>♁</u> 24'30	13°12'48
				min. Earth dist.	1501 May 08 j 05:47	26° <u>♁</u> 24'40	28.95095 AU
conjunction	1493 Oct 21 j 10:35	7° <u>♁</u> 14'42	15°16'56	direct	1501 Jul 27 j 05:49	25° <u>♁</u> 00'08	
minimum elong	1493 Oct 21 j 10:51	7° <u>♁</u> 14'43	15°16'55				
max. Earth dist.	1493 Oct 20 j 13:34	7° <u>♁</u> 12'34	30.61075 AU	conjunction	1501 Nov 10 j 14:45	27° <u>♁</u> 39'04	12°07'19
retrograde	1494 Feb 02 j 03:41	9° <u>♁</u> 55'24		minimum elong	1501 Nov 10 j 15:09	27° <u>♁</u> 39'07	12°07'19
opposition	1494 Apr 20 j 02:19	8° <u>♁</u> 32'04	16°10'44	max. Earth dist.	1501 Nov 10 j 20:04	27° <u>♁</u> 39'36	30.94291 AU
min. Earth dist.	1494 Apr 20 j 21:05	8° <u>♁</u> 30'45	28.68593 AU		1502 Jan 23 j 17:35	0° <u>♁</u>	
direct	1494 Jul 08 j 22:02	7° <u>♁</u> 06'12		retrograde	1502 Feb 22 j 02:59	0° <u>♁</u> 15'04	
					1502 Mar 24 j 10:07	30° <u>♁</u>	
conjunction	1494 Oct 24 j 06:33	9° <u>♁</u> 50'44	14°58'39	opposition	1502 May 11 j 03:50	28° <u>♁</u> 52'46	12°41'30
minimum elong	1494 Oct 24 j 06:52	9° <u>♁</u> 50'46	14°58'39	min. Earth dist.	1502 May 10 j 21:00	28° <u>♁</u> 53'14	29.03237 AU
max. Earth dist.	1494 Oct 23 j 13:49	9° <u>♁</u> 49'02	30.61519 AU	direct	1502 Jul 30 j 03:47	27° <u>♁</u> 28'42	
retrograde	1495 Feb 04 j 23:10	12° <u>♁</u> 31'10			1502 Nov 10 j 11:58	0° <u>♁</u>	
opposition	1495 Apr 23 j 00:45	11° <u>♁</u> 07'56	15°50'19				
min. Earth dist.	1495 Apr 23 j 16:36	11° <u>♁</u> 06'49	28.69259 AU	conjunction	1502 Nov 13 j 06:41	0° <u>♁</u> 06'33	11°37'33
direct	1495 Jul 11 j 21:26	9° <u>♁</u> 42'15		minimum elong	1502 Nov 13 j 07:06	0° <u>♁</u> 06'36	11°37'33
max. Earth dist.	1495 Oct 26 j 11:34	12° <u>♁</u> 24'47	30.63036 AU	max. Earth dist.	1502 Nov 13 j 15:25	0° <u>♁</u> 07'25	31.03406 AU
				retrograde	1503 Feb 24 j 19:38	2° <u>♁</u> 41'39	
conjunction	1495 Oct 27 j 02:13	12° <u>♁</u> 26'16	14°38'41	opposition	1503 May 13 j 23:02	1° <u>♁</u> 19'35	12°09'00
minimum elong	1495 Oct 27 j 02:32	12° <u>♁</u> 26'18	14°38'41	min. Earth dist.	1503 May 13 j 13:22	1° <u>♁</u> 20'14	29.12555 AU
	1496 Jan 19 j 23:12	15° <u>♁</u>			1503 Jul 17 j 01:00	30° <u>♁</u>	
retrograde	1496 Feb 07 j 19:10	15° <u>♁</u> 06'20		direct	1503 Aug 01 j 23:08	29° <u>♁</u> 55'51	
	1496 Feb 26 j 20:31	15° <u>♁</u>			1503 Aug 17 j 19:01	0° <u>♁</u>	
opposition	1496 Apr 24 j 22:47	13° <u>♁</u> 43'12	15°28'06				
min. Earth dist.	1496 Apr 25 j 11:17	13° <u>♁</u> 42'20	28.70981 AU	conjunction	1503 Nov 15 j 22:08	2° <u>♁</u> 32'34	11°06'44
direct	1496 Jul 13 j 19:15	12° <u>♁</u> 17'42		minimum elong	1503 Nov 15 j 22:31	2° <u>♁</u> 32'36	11°06'45
				max. Earth dist.	1503 Nov 16 j 10:33	2° <u>♁</u> 33'47	31.13687 AU
conjunction	1496 Oct 28 j 21:39	15° <u>♁</u> 01'08	14°17'05	retrograde	1504 Feb 27 j 10:35	5° <u>♁</u> 06'43	
minimum elong	1496 Oct 28 j 22:01	15° <u>♁</u> 01'10	14°17'05	opposition	1504 May 15 j 17:22	3° <u>♁</u> 44'55	11°35'25
max. Earth dist.	1496 Oct 28 j 11:12	15° <u>♁</u> 00'04	30.65604 AU	min. Earth dist.	1504 May 15 j 04:03	3° <u>♁</u> 45'49	29.23001 AU
	1496 Oct 28 j 10:29	15° <u>♁</u>		direct	1504 Aug 03 j 19:24	2° <u>♁</u> 21'33	
retrograde	1497 Feb 09 j 12:37	17° <u>♁</u> 40'43					

conjunction	1504 Nov 17 j 12:49	4° $\nearrow$ 57'05	10°34'58	retrograde	1513 Mar 18 j 18:33	25° $\nearrow$ 37'40	
minimum elong	1504 Nov 17 j 13:13	4° $\nearrow$ 57'08	10°34'58	min. Earth dist.	1513 Jun 04 j 20:46	24° $\nearrow$ 20'55	30.57271 AU
max. Earth dist.	1504 Nov 18 j 03:49	4° $\nearrow$ 58'33	31.25060 AU	opposition	1513 Jun 06 j 10:01	24° $\nearrow$ 18'31	6°04'02
retrograde	1505 Mar 01 j 02:16	7° $\nearrow$ 30'16		direct	1513 Aug 25 j 19:30	22° $\nearrow$ 58'39	
opposition	1505 May 18 j 11:15	6° $\nearrow$ 08'45	11°00'53				
min. Earth dist.	1505 May 17 j 18:51	6° $\nearrow$ 09'51	29.34529 AU	conjunction	1513 Dec 07 j 18:51	25° $\nearrow$ 22'11	5°23'47
direct	1505 Aug 06 j 13:04	4° $\nearrow$ 45'47		minimum elong	1513 Dec 07 j 19:04	25° $\nearrow$ 22'12	5°23'47
				max. Earth dist.	1513 Dec 09 j 09:02	25° $\nearrow$ 25'39	32.65677 AU
conjunction	1505 Nov 20 j 02:57	7° $\nearrow$ 20'06	10°02'22	retrograde	1514 Mar 21 j 03:45	27° $\nearrow$ 45'09	
minimum elong	1505 Nov 20 j 03:19	7° $\nearrow$ 20'08	10°02'23	min. Earth dist.	1514 Jun 07 j 05:48	26° $\nearrow$ 28'50	30.75963 AU
max. Earth dist.	1505 Nov 20 j 21:55	7° $\nearrow$ 21'56	31.37463 AU	opposition	1514 Jun 08 j 21:35	26° $\nearrow$ 26'17	5°25'50
retrograde	1506 Mar 03 j 16:18	9° $\nearrow$ 52'15		direct	1514 Aug 28 j 07:17	25° $\nearrow$ 06'49	
min. Earth dist.	1506 May 20 j 09:27	8° $\nearrow$ 32'19	29.47041 AU				
opposition	1506 May 21 j 04:33	8° $\nearrow$ 31'02	10°25'31	conjunction	1514 Dec 10 j 02:35	27° $\nearrow$ 28'58	4°48'02
direct	1506 Aug 09 j 09:13	7° $\nearrow$ 08'29		minimum elong	1514 Dec 10 j 02:47	27° $\nearrow$ 28'59	4°48'02
				max. Earth dist.	1514 Dec 11 j 20:01	27° $\nearrow$ 32'43	32.84957 AU
conjunction	1506 Nov 22 j 16:20	9° $\nearrow$ 41'33	9°29'03	retrograde	1515 Mar 23 j 11:07	29° $\nearrow$ 50'45	
minimum elong	1506 Nov 22 j 16:42	9° $\nearrow$ 41'35	9°29'03	min. Earth dist.	1515 Jun 09 j 14:17	28° $\nearrow$ 34'54	30.95420 AU
max. Earth dist.	1506 Nov 23 j 13:14	9° $\nearrow$ 43'33	31.50811 AU	opposition	1515 Jun 11 j 08:18	28° $\nearrow$ 32'13	4°47'39
retrograde	1507 Mar 06 j 06:32	12° $\nearrow$ 12'39		direct	1515 Aug 30 j 20:25	27° $\nearrow$ 13'09	
opposition	1507 May 23 j 21:11	10° $\nearrow$ 51'44	9°49'27				
min. Earth dist.	1507 May 22 j 22:34	10° $\nearrow$ 53'15	29.60492 AU	conjunction	1515 Dec 12 j 09:21	29° $\nearrow$ 33'58	4°12'20
direct	1507 Aug 12 j 01:57	9° $\nearrow$ 29'35		minimum elong	1515 Dec 12 j 09:31	29° $\nearrow$ 33'59	4°12'20
				max. Earth dist.	1515 Dec 14 j 04:15	29° $\nearrow$ 37'49	33.04972 AU
conjunction	1507 Nov 25 j 05:10	12° $\nearrow$ 01'22	8°55'07		1515 Dec 24 j 13:14	0° $\bar{\text{C}}$	
minimum elong	1507 Nov 25 j 05:30	12° $\nearrow$ 01'24	8°55'07	retrograde	1516 Mar 24 j 19:01	1° $\bar{\text{C}}$ 54'36	
max. Earth dist.	1507 Nov 26 j 05:48	12° $\nearrow$ 03'43	31.65031 AU	min. Earth dist.	1516 Jun 10 j 21:00	0° $\bar{\text{C}}$ 39'16	31.15629 AU
retrograde	1508 Mar 07 j 17:09	14° $\nearrow$ 31'22		opposition	1516 Jun 12 j 18:13	0° $\bar{\text{C}}$ 36'24	4°09'35
opposition	1508 May 25 j 13:13	13° $\nearrow$ 10'46	9°12'46		1516 Jul 07 j 13:43	30° $\text{R}$ $\nearrow$	
min. Earth dist.	1508 May 24 j 12:50	13° $\nearrow$ 12'24	29.74780 AU	direct	1516 Sep 01 j 06:08	29° $\nearrow$ 17'46	
direct	1508 Aug 13 j 19:28	11° $\nearrow$ 49'01			1516 Oct 24 j 04:48	0° $\bar{\text{C}}$	
conjunction	1508 Nov 26 j 17:16	14° $\nearrow$ 19'29	8°20'39	conjunction	1516 Dec 13 j 15:39	1° $\bar{\text{C}}$ 37'16	3°36'44
minimum elong	1508 Nov 26 j 17:36	14° $\nearrow$ 19'31	8°20'38	minimum elong	1516 Dec 13 j 15:47	1° $\bar{\text{C}}$ 37'16	3°36'43
max. Earth dist.	1508 Nov 27 j 19:20	14° $\nearrow$ 21'57	31.80045 AU	max. Earth dist.	1516 Dec 15 j 13:49	1° $\bar{\text{C}}$ 41'22	33.25683 AU
retrograde	1509 Mar 10 j 05:30	16° $\nearrow$ 48'22		retrograde	1517 Mar 26 j 23:08	3° $\bar{\text{C}}$ 56'44	
min. Earth dist.	1509 May 27 j 00:27	15° $\nearrow$ 29'55	29.89849 AU	min. Earth dist.	1517 Jun 13 j 04:54	2° $\bar{\text{C}}$ 41'51	31.36518 AU
opposition	1509 May 28 j 04:20	15° $\nearrow$ 28'04	8°35'36	opposition	1517 Jun 15 j 03:26	2° $\bar{\text{C}}$ 38'55	3°31'41
direct	1509 Aug 16 j 11:22	14° $\nearrow$ 06'42		direct	1517 Sep 03 j 17:28	1° $\bar{\text{C}}$ 20'43	
conjunction	1509 Nov 29 j 04:50	16° $\nearrow$ 35'49	7°45'47	conjunction	1517 Dec 15 j 21:09	3° $\bar{\text{C}}$ 38'55	3°01'18
minimum elong	1509 Nov 29 j 05:09	16° $\nearrow$ 35'51	7°45'47	minimum elong	1517 Dec 15 j 21:16	3° $\bar{\text{C}}$ 38'56	3°01'19
max. Earth dist.	1509 Nov 30 j 10:09	16° $\nearrow$ 38'34	31.95789 AU	max. Earth dist.	1517 Dec 17 j 20:25	3° $\bar{\text{C}}$ 43'06	33.47029 AU
retrograde	1510 Mar 12 j 15:10	19° $\nearrow$ 03'34		retrograde	1518 Mar 29 j 04:56	5° $\bar{\text{C}}$ 57'16	
opposition	1510 May 30 j 19:04	17° $\nearrow$ 43'34	7°58'04	min. Earth dist.	1518 Jun 15 j 10:18	4° $\bar{\text{C}}$ 42'56	31.58031 AU
min. Earth dist.	1510 May 29 j 13:47	17° $\nearrow$ 45'29	30.05647 AU	opposition	1518 Jun 17 j 11:59	4° $\bar{\text{C}}$ 39'49	2°54'02
direct	1510 Aug 19 j 02:13	16° $\nearrow$ 22'35		direct	1518 Sep 06 j 02:46	3° $\bar{\text{C}}$ 22'05	
conjunction	1510 Dec 01 j 15:28	18° $\nearrow$ 50'18	7°10'34	conjunction	1518 Dec 18 j 02:00	5° $\bar{\text{C}}$ 38'59	2°26'07
minimum elong	1510 Dec 01 j 15:46	18° $\nearrow$ 50'20	7°10'34	minimum elong	1518 Dec 18 j 02:06	5° $\bar{\text{C}}$ 39'00	2°26'06
max. Earth dist.	1510 Dec 02 j 22:33	18° $\nearrow$ 53'13	32.12233 AU	max. Earth dist.	1518 Dec 20 j 04:04	5° $\bar{\text{C}}$ 43'22	33.68922 AU
retrograde	1511 Mar 15 j 00:56	21° $\nearrow$ 16'52		retrograde	1519 Mar 31 j 08:43	7° $\bar{\text{C}}$ 56'15	
min. Earth dist.	1511 Jun 01 j 00:10	19° $\nearrow$ 59'18	30.22143 AU	min. Earth dist.	1519 Jun 17 j 17:26	6° $\bar{\text{C}}$ 42'19	31.80081 AU
opposition	1511 Jun 02 j 08:52	19° $\nearrow$ 57'09	7°20'14	opposition	1519 Jun 19 j 20:00	6° $\bar{\text{C}}$ 39'09	2°16'41
direct	1511 Aug 21 j 17:28	18° $\nearrow$ 36'33		direct	1519 Sep 08 j 10:42	5° $\bar{\text{C}}$ 21'52	
conjunction	1511 Dec 04 j 01:27	21° $\nearrow$ 02'53	6°35'07	conjunction	1519 Dec 20 j 06:21	7° $\bar{\text{C}}$ 37'30	1°51'12
minimum elong	1511 Dec 04 j 01:43	21° $\nearrow$ 02'54	6°35'08	minimum elong	1519 Dec 20 j 06:25	7° $\bar{\text{C}}$ 37'30	1°51'13
max. Earth dist.	1511 Dec 05 j 11:10	21° $\nearrow$ 06'00	32.29345 AU	max. Earth dist.	1519 Dec 22 j 09:41	7° $\bar{\text{C}}$ 41'58	33.91292 AU
retrograde	1512 Mar 16 j 10:10	23° $\nearrow$ 28'15		retrograde	1520 Apr 01 j 12:24	9° $\bar{\text{C}}$ 53'39	
min. Earth dist.	1512 Jun 02 j 11:30	22° $\nearrow$ 11'02	30.39349 AU	min. Earth dist.	1520 Jun 18 j 21:56	8° $\bar{\text{C}}$ 40'13	32.02577 AU
opposition	1512 Jun 03 j 21:50	22° $\nearrow$ 08'49	6°42'12	opposition	1520 Jun 21 j 02:58	8° $\bar{\text{C}}$ 36'56	1°39'42
direct	1512 Aug 23 j 05:43	20° $\nearrow$ 48'35		direct	1520 Sep 09 j 18:24	7° $\bar{\text{C}}$ 20'05	
conjunction	1512 Dec 05 j 10:39	23° $\nearrow$ 13'30	5°59'30	conjunction	1520 Dec 21 j 10:02	9° $\bar{\text{C}}$ 34'28	1°16'38
minimum elong	1512 Dec 05 j 10:54	23° $\nearrow$ 13'32	5°59'30	minimum elong	1520 Dec 21 j 10:05	9° $\bar{\text{C}}$ 34'28	1°16'38
max. Earth dist.	1512 Dec 06 j 22:47	23° $\nearrow$ 16'49	32.47158 AU	max. Earth dist.	1520 Dec 23 j 14:57	9° $\bar{\text{C}}$ 39'02	34.14036 AU

retrograde	1521 Apr 03 j 17:10	11°♁49'32		retrograde	1529 Apr 17 j 20:16	26°♁18'28	
min. Earth dist.	1521 Jun 21 j 03:26	10°♁36'29	32.25449 AU	min. Earth dist.	1529 Jul 05 j 19:48	25°♁08'22	34.18734 AU
opposition	1521 Jun 23 j 09:34	10°♁33'10	1°03'08	opposition	1529 Jul 08 j 13:13	25°♁04'30	-3°-30'-23
direct	1521 Sep 11 j 22:55	9°♁16'44		direct	1529 Sep 27 j 10:14	23°♁50'59	
conjunction	1521 Dec 23 j 13:07	11°♁29'51	0°42'27	conjunction	1530 Jan 06 j 15:13	25°♁54'40	-3°-33'-36
minimum elong	1521 Dec 23 j 13:09	11°♁29'52	0°42'28	minimum elong	1530 Jan 06 j 15:06	25°♁54'39	3°33'37
max. Earth dist.	1521 Dec 25 j 19:45	11°♁34'32	34.37101 AU	max. Earth dist.	1530 Jan 09 j 07:53	25°♁59'52	36.31176 AU
retrograde	1522 Apr 05 j 19:42	13°♁43'50		retrograde	1530 Apr 19 j 21:03	28°♁00'17	
min. Earth dist.	1522 Jun 23 j 07:54	12°♁31'12	32.48612 AU	min. Earth dist.	1530 Jul 07 j 18:53	26°♁50'34	34.44276 AU
opposition	1522 Jun 25 j 15:27	12°♁27'48	0°27'01	opposition	1530 Jul 10 j 13:55	26°♁46'39	-4°-1'-48
direct	1522 Sep 14 j 05:32	11°♁11'46		direct	1530 Sep 29 j 08:50	25°♁33'30	
conjunction	1522 Dec 25 j 15:34	13°♁23'39	0°08'43	conjunction	1531 Jan 08 j 13:03	27°♁36'09	-4°-3'-4
minimum elong	1522 Dec 25 j 15:34	13°♁23'39	0°08'44	minimum elong	1531 Jan 08 j 12:55	27°♁36'08	4°03'05
behind sun begin	1522 Dec 25 j 10:02	13°♁23'12		max. Earth dist.	1531 Jan 11 j 07:48	27°♁41'28	36.56704 AU
behind sun end	1522 Dec 25 j 21:07	13°♁24'06		retrograde	1531 Apr 21 j 18:48	29°♁40'50	
max. Earth dist.	1522 Dec 27 j 22:43	13°♁28'19	34.60413 AU	min. Earth dist.	1531 Jul 09 j 18:43	28°♁31'27	34.70013 AU
desc. node	1523 Mar 30 j 16:12	15°♁35'30		opposition	1531 Jul 12 j 13:55	28°♁27'32	-4°-32'-32
retrograde	1523 Apr 07 j 23:52	15°♁36'31		direct	1531 Oct 01 j 09:24	27°♁14'46	
min. Earth dist.	1523 Jun 25 j 11:20	14°♁24'17	32.72047 AU	conjunction	1532 Jan 10 j 10:16	29°♁16'25	-4°-31'-55
opposition	1523 Jun 27 j 20:37	14°♁20'48	0°-8'-35	minimum elong	1532 Jan 10 j 10:08	29°♁16'24	4°31'57
direct	1523 Sep 16 j 10:41	13°♁05'09		max. Earth dist.	1532 Jan 13 j 04:58	29°♁21'41	36.82383 AU
conjunction	1523 Dec 27 j 17:29	15°♁15'48	0°-24'-39	retrograde	1532 Feb 02 j 21:03	0°≈	
minimum elong	1523 Dec 27 j 17:28	15°♁15'48	0°24'40	retrograde	1532 Apr 22 j 16:48	1°≈20'11	
max. Earth dist.	1523 Dec 30 j 02:52	15°♁20'37	34.83961 AU	min. Earth dist.	1532 Jul 10 j 16:19	0°≈11'14	34.95882 AU
retrograde	1524 Apr 09 j 01:10	17°♁27'34		opposition	1532 Jul 13 j 13:25	0°≈07'13	-5°-2'-36
min. Earth dist.	1524 Jun 26 j 15:17	16°♁15'38	32.95714 AU	1532 Jul 18 j 17:56	30°R♁		
opposition	1524 Jun 29 j 01:06	16°♁12'08	0°-43'-41	direct	1532 Oct 02 j 08:54	28°♁54'50	
direct	1524 Sep 17 j 17:45	14°♁56'50		1532 Dec 11 j 17:56	0°≈		
conjunction	1524 Dec 28 j 18:33	17°♁06'16	0°-57'-29	conjunction	1533 Jan 11 j 07:06	0°≈55'29	-5°00'-9
minimum elong	1524 Dec 28 j 18:31	17°♁06'15	0°57'31	minimum elong	1533 Jan 11 j 06:57	0°≈55'29	5°00'10
max. Earth dist.	1524 Dec 31 j 04:12	17°♁11'04	35.07736 AU	max. Earth dist.	1533 Jan 14 j 03:28	1°≈00'52	37.08131 AU
retrograde	1525 Apr 11 j 03:06	19°♁16'56		retrograde	1533 Apr 24 j 11:56	2°≈58'23	
min. Earth dist.	1525 Jun 28 j 16:32	18°♁05'25	33.19655 AU	min. Earth dist.	1533 Jul 12 j 15:45	1°≈49'43	35.21799 AU
opposition	1525 Jul 01 j 04:45	18°♁01'47	-1°-18'-14	opposition	1533 Jul 15 j 12:30	1°≈45'44	-5°-31'-59
direct	1525 Sep 19 j 21:56	16°♁46'49		direct	1533 Oct 04 j 09:57	0°≈33'44	
conjunction	1525 Dec 30 j 19:07	18°♁55'02	-1°-29'-49	conjunction	1534 Jan 13 j 03:35	2°≈33'25	-5°-27'-46
minimum elong	1525 Dec 30 j 19:04	18°♁55'02	1°29'51	minimum elong	1534 Jan 13 j 03:25	2°≈33'25	5°27'47
max. Earth dist.	1526 Jan 02 j 07:06	19°♁00'00	35.31784 AU	max. Earth dist.	1534 Jan 15 j 23:55	2°≈38'45	37.33896 AU
retrograde	1526 Apr 13 j 00:29	21°♁04'38		retrograde	1534 Apr 26 j 07:30	4°≈35'27	
min. Earth dist.	1526 Jun 30 j 19:20	19°♁53'25	33.43915 AU	min. Earth dist.	1534 Jul 14 j 12:55	3°≈27'09	35.47701 AU
opposition	1526 Jul 03 j 07:59	19°♁49'46	-1°-52'-12	opposition	1534 Jul 17 j 11:01	3°≈23'07	-6°00'-41
direct	1526 Sep 22 j 03:18	18°♁35'09		direct	1534 Oct 06 j 09:36	2°≈11'27	
conjunction	1527 Jan 01 j 18:56	20°♁42'11	-2°-1'-37	conjunction	1535 Jan 14 j 23:31	4°≈10'12	-5°-54'-44
minimum elong	1527 Jan 01 j 18:52	20°♁42'11	2°01'39	minimum elong	1535 Jan 14 j 23:21	4°≈10'11	5°54'45
max. Earth dist.	1527 Jan 04 j 07:46	20°♁47'11	35.56156 AU	max. Earth dist.	1535 Jan 17 j 20:24	4°≈15'32	37.59598 AU
retrograde	1527 Apr 14 j 22:50	22°♁50'44		retrograde	1535 Apr 28 j 03:55	6°≈11'22	
min. Earth dist.	1527 Jul 02 j 19:20	21°♁39'55	33.68517 AU	min. Earth dist.	1535 Jul 16 j 11:05	5°≈03'20	35.73544 AU
opposition	1527 Jul 05 j 10:22	21°♁36'09	-2°-25'-34	opposition	1535 Jul 19 j 09:09	4°≈59'20	-6°-28'-42
direct	1527 Sep 24 j 07:16	20°♁21'53		direct	1535 Oct 08 j 07:04	3°≈48'00	
conjunction	1528 Jan 03 j 18:18	22°♁27'46	-2°-32'-52	conjunction	1536 Jan 16 j 19:13	5°≈45'47	-6°-21'-6
minimum elong	1528 Jan 03 j 18:12	22°♁27'46	2°32'53	minimum elong	1536 Jan 16 j 19:03	5°≈45'47	6°21'07
max. Earth dist.	1528 Jan 06 j 08:47	22°♁32'52	35.80851 AU	max. Earth dist.	1536 Jan 19 j 16:55	5°≈51'09	37.85219 AU
retrograde	1528 Apr 15 j 22:00	24°♁35'19		retrograde	1536 Apr 28 j 23:23	7°≈46'07	
min. Earth dist.	1528 Jul 03 j 20:09	23°♁24'50	33.93472 AU	min. Earth dist.	1536 Jul 17 j 08:03	6°≈38'22	35.99287 AU
opposition	1528 Jul 06 j 12:04	23°♁21'02	-2°-58'-18	opposition	1536 Jul 20 j 06:27	6°≈34'21	-6°-56'-2
direct	1528 Sep 25 j 08:08	22°♁07'08		direct	1536 Oct 09 j 04:49	5°≈23'20	
conjunction	1529 Jan 04 j 17:09	24°♁11'54	-3°-3'-32	conjunction	1537 Jan 17 j 14:13	7°≈20'11	-6°-46'-49
minimum elong	1529 Jan 04 j 17:02	24°♁11'54	3°03'33	minimum elong	1537 Jan 17 j 14:01	7°≈20'11	6°46'49
max. Earth dist.	1529 Jan 07 j 09:14	24°♁17'05	36.05878 AU	max. Earth dist.	1537 Jan 20 j 11:31	7°≈25'29	38.10749 AU

retrograde	1537 Apr 30 j 21:08	9°≈19'39		minimum elong	1545 Jan 29 j 07:10	19°≈16'07	9°49'34
min. Earth dist.	1537 Jul 19 j 04:01	8°≈12'12	36.24984 AU	max. Earth dist.	1545 Feb 01 j 09:48	19°≈21'31	40.15118 AU
opposition	1537 Jul 22 j 03:28	8°≈08'09	-7°-22'-41	retrograde	1545 May 12 j 13:49	21°≈09'35	
direct	1537 Oct 10 j 23:22	6°≈57'26		min. Earth dist.	1545 Jul 31 j 08:19	20°≈04'17	38.30899 AU
				opposition	1545 Aug 03 j 10:20	20°≈00'15	-10°-30'-57
conjunction	1538 Jan 19 j 08:44	8°≈53'23	-7°-11'-54	direct	1545 Oct 23 j 08:02	18°≈51'59	
minimum elong	1538 Jan 19 j 08:32	8°≈53'22	7°11'56				
max. Earth dist.	1538 Jan 22 j 07:41	8°≈58'45	38.36240 AU	conjunction	1546 Jan 30 j 22:55	20°≈41'30	-10°-9'-35
retrograde	1538 May 02 j 14:53	10°≈52'01		minimum elong	1546 Jan 30 j 22:41	20°≈41'29	10°09'36
min. Earth dist.	1538 Jul 21 j 00:53	9°≈44'46	36.50664 AU	max. Earth dist.	1546 Feb 03 j 00:34	20°≈46'49	40.40345 AU
opposition	1538 Jul 24 j 00:00	9°≈40'46	-7°-48'-38	retrograde	1546 May 14 j 04:26	22°≈34'16	
direct	1538 Oct 12 j 20:44	8°≈30'20		min. Earth dist.	1546 Aug 02 j 00:34	21°≈29'16	38.56214 AU
				opposition	1546 Aug 05 j 03:22	21°≈25'12	-10°-51'-29
conjunction	1539 Jan 21 j 02:49	10°≈25'23	-7°-36'-21	direct	1546 Oct 25 j 02:29	20°≈17'13	
minimum elong	1539 Jan 21 j 02:37	10°≈25'22	7°36'21				
max. Earth dist.	1539 Jan 24 j 01:28	10°≈30'42	38.61742 AU	conjunction	1547 Feb 01 j 14:19	22°≈06'01	-10°-29'-2
retrograde	1539 May 04 j 08:14	12°≈23'12		minimum elong	1547 Feb 01 j 14:07	22°≈06'00	10°29'02
min. Earth dist.	1539 Jul 22 j 18:59	11°≈16'17	36.76386 AU	max. Earth dist.	1547 Feb 04 j 16:06	22°≈11'18	40.65298 AU
opposition	1539 Jul 25 j 19:47	11°≈12'12	-8°-13'-53	retrograde	1547 May 15 j 19:03	23°≈58'06	
direct	1539 Oct 14 j 17:56	10°≈02'05		min. Earth dist.	1547 Aug 03 j 18:15	22°≈53'17	38.81246 AU
				opposition	1547 Aug 06 j 20:05	22°≈49'17	-11°-11'-24
conjunction	1540 Jan 22 j 20:31	11°≈56'16	-8°00'-9	direct	1547 Oct 26 j 20:02	21°≈41'34	
minimum elong	1540 Jan 22 j 20:18	11°≈56'15	8°00'10				
max. Earth dist.	1540 Jan 25 j 20:36	12°≈01'40	38.87283 AU	conjunction	1548 Feb 03 j 05:30	23°≈29'38	-10°-47'-54
retrograde	1540 May 05 j 00:20	13°≈53'18		minimum elong	1548 Feb 03 j 05:16	23°≈29'37	10°47'55
min. Earth dist.	1540 Jul 23 j 14:47	12°≈46'37	37.02163 AU	max. Earth dist.	1548 Feb 06 j 07:13	23°≈34'54	40.89957 AU
opposition	1540 Jul 26 j 15:20	12°≈42'34	-8°-38'-26	retrograde	1548 May 16 j 08:38	25°≈21'04	
direct	1540 Oct 15 j 15:04	11°≈32'45		min. Earth dist.	1548 Aug 04 j 10:35	24°≈16'27	39.05952 AU
				opposition	1548 Aug 07 j 12:20	24°≈12'27	-11°-30'-43
conjunction	1541 Jan 23 j 13:45	13°≈26'06	-8°-23'-18	direct	1548 Oct 27 j 13:54	23°≈04'59	
minimum elong	1541 Jan 23 j 13:33	13°≈26'05	8°23'18				
max. Earth dist.	1541 Jan 26 j 14:12	13°≈31'29	39.12884 AU	conjunction	1549 Feb 03 j 20:01	24°≈52'20	-11°-6'-12
	1541 Mar 25 j 23:51	15°≈		minimum elong	1549 Feb 03 j 19:49	24°≈52'20	11°06'13
retrograde	1541 May 06 j 16:09	15°≈22'22		max. Earth dist.	1549 Feb 06 j 20:46	24°≈57'29	41.14299 AU
	1541 Jun 18 j 19:10	15°≈		retrograde	1549 May 18 j 01:12	26°≈43'06	
min. Earth dist.	1541 Jul 25 j 08:26	14°≈16'02	37.27980 AU	min. Earth dist.	1549 Aug 06 j 02:31	25°≈38'41	39.30378 AU
opposition	1541 Jul 28 j 10:16	14°≈11'55	-9°-2'-18	opposition	1549 Aug 09 j 04:22	25°≈34'42	-11°-49'-26
direct	1541 Oct 17 j 11:27	13°≈02'24		direct	1549 Oct 29 j 04:24	24°≈27'28	
conjunction	1542 Jan 25 j 06:35	14°≈54'56	-8°-45'-48	conjunction	1550 Feb 05 j 10:26	26°≈14'07	-11°-23'-56
minimum elong	1542 Jan 25 j 06:23	14°≈54'55	8°45'50	minimum elong	1550 Feb 05 j 10:13	26°≈14'06	11°23'58
max. Earth dist.	1542 Jan 28 j 07:20	15°≈00'19	39.38511 AU	max. Earth dist.	1550 Feb 08 j 12:11	26°≈19'18	41.38384 AU
	1542 Jan 28 j 03:03	15°≈		retrograde	1550 May 19 j 15:59	28°≈04'13	
retrograde	1542 May 08 j 10:13	16°≈50'29		min. Earth dist.	1550 Aug 07 j 19:00	26°≈59'55	39.54564 AU
min. Earth dist.	1542 Jul 27 j 02:50	15°≈44'25	37.53831 AU	opposition	1550 Aug 10 j 19:56	26°≈56'01	-12°-7'-32
opposition	1542 Jul 30 j 04:59	15°≈40'19	-9°-25'-28	direct	1550 Oct 30 j 19:39	25°≈49'00	
	1542 Aug 31 j 11:41	15°≈					
direct	1542 Oct 19 j 05:01	14°≈31'08		conjunction	1551 Feb 07 j 00:21	27°≈34'58	-11°-41'-6
	1542 Dec 05 j 00:55	15°≈		minimum elong	1551 Feb 07 j 00:09	27°≈34'57	11°41'07
				max. Earth dist.	1551 Feb 10 j 01:12	27°≈40'04	41.62266 AU
conjunction	1543 Jan 26 j 23:11	16°≈22'52	-9°-7'-41	retrograde	1551 May 21 j 06:42	29°≈24'26	
minimum elong	1543 Jan 26 j 22:58	16°≈22'51	9°07'41	min. Earth dist.	1551 Aug 09 j 09:04	28°≈20'23	39.78573 AU
max. Earth dist.	1543 Jan 30 j 01:12	16°≈28'18	39.64141 AU	opposition	1551 Aug 12 j 11:05	28°≈16'26	-12°-25'-1
retrograde	1543 May 10 j 03:50	18°≈17'42		direct	1551 Nov 01 j 09:49	27°≈09'39	
min. Earth dist.	1543 Jul 28 j 21:02	17°≈11'54	37.79636 AU				
opposition	1543 Jul 31 j 23:10	17°≈07'49	-9°-47'-57	conjunction	1552 Feb 08 j 14:02	28°≈54'58	-11°-57'-41
direct	1543 Oct 20 j 22:22	15°≈58'57		minimum elong	1552 Feb 08 j 13:50	28°≈54'57	11°57'42
				max. Earth dist.	1552 Feb 11 j 15:36	29°≈00'04	41.85981 AU
conjunction	1544 Jan 28 j 15:22	17°≈49'55	-9°-28'-56		1552 Mar 21 j 09:13	0°≈	
minimum elong	1544 Jan 28 j 15:09	17°≈49'55	9°28'57	retrograde	1552 May 21 j 18:16	0°≈43'49	
max. Earth dist.	1544 Jan 31 j 16:41	17°≈55'16	39.89696 AU		1552 Jul 24 j 21:35	30°≈	
retrograde	1544 May 10 j 22:42	19°≈44'03		min. Earth dist.	1552 Aug 10 j 00:49	29°≈39'55	40.02437 AU
min. Earth dist.	1544 Jul 29 j 13:44	18°≈38'34	38.05352 AU	opposition	1552 Aug 13 j 01:51	29°≈36'02	-12°-41'-54
opposition	1544 Aug 01 j 16:49	18°≈34'27	-10°-9'-47	direct	1552 Nov 02 j 02:32	28°≈29'29	
direct	1544 Oct 21 j 13:35	17°≈25'53			1553 Jan 31 j 14:08	0°≈	
conjunction	1545 Jan 29 j 07:22	19°≈16'08	-9°-49'-33	conjunction	1553 Feb 09 j 03:27	0°≈14'10	-12°-13'-42

minimum elong	1553 Feb 09 j 03:16	0° $\text{K}$ 14'09	12°13'43	max. Earth dist.	1561 Feb 22 j 03:51	10° $\text{K}$ 30'04	43.90239 AU
max. Earth dist.	1553 Feb 12 j 04:57	0° $\text{K}$ 19'15	42.09580 AU	retrograde	1561 Jun 02 j 10:41	12° $\text{K}$ 09'31	
retrograde	1553 May 23 j 05:37	2° $\text{K}$ 02'26		min. Earth dist.	1561 Aug 22 j 03:25	11° $\text{K}$ 07'19	42.07133 AU
min. Earth dist.	1553 Aug 11 j 14:32	0° $\text{K}$ 58'47	40.26170 AU	opposition	1561 Aug 25 j 01:42	11° $\text{K}$ 03'42	-14°-48'-34
opposition	1553 Aug 14 j 16:18	0° $\text{K}$ 54'52	-12°-58'-11	direct	1561 Nov 14 j 03:13	9° $\text{K}$ 59'15	
	1553 Oct 04 j 05:13	30° $\text{R}$ $\approx$					
direct	1553 Nov 03 j 18:48	29° $\text{R}$ $\approx$ 48'34		conjunction	1562 Feb 20 j 16:52	11° $\text{K}$ 38'59	-14°-14'-11
	1553 Dec 03 j 14:59	0° $\text{K}$		minimum elong	1562 Feb 20 j 16:44	11° $\text{K}$ 38'58	14°14'12
				max. Earth dist.	1562 Feb 23 j 15:37	11° $\text{K}$ 43'39	44.11223 AU
conjunction	1554 Feb 10 j 16:22	1° $\text{K}$ 32'39	-12°-29'-10	retrograde	1562 Jun 03 j 22:27	13° $\text{K}$ 22'35	
minimum elong	1554 Feb 10 j 16:10	1° $\text{K}$ 32'39	12°29'10	min. Earth dist.	1562 Aug 23 j 16:45	12° $\text{K}$ 20'27	42.28119 AU
max. Earth dist.	1554 Feb 13 j 17:36	1° $\text{K}$ 37'42	42.33043 AU	opposition	1562 Aug 26 j 13:38	12° $\text{K}$ 16'54	-15°00'-5
retrograde	1554 May 24 j 19:54	3° $\text{K}$ 20'23		direct	1562 Nov 15 j 14:34	11° $\text{K}$ 12'37	
min. Earth dist.	1554 Aug 13 j 04:57	2° $\text{K}$ 16'56	40.49773 AU				
opposition	1554 Aug 16 j 06:35	2° $\text{K}$ 13'03	-13°-13'-53	conjunction	1563 Feb 22 j 03:51	12° $\text{K}$ 51'49	-14°-25'-10
direct	1554 Nov 05 j 08:19	1° $\text{K}$ 07'00		minimum elong	1563 Feb 22 j 03:42	12° $\text{K}$ 51'49	14°25'11
				max. Earth dist.	1563 Feb 25 j 01:24	12° $\text{K}$ 56'24	44.31899 AU
conjunction	1555 Feb 12 j 05:18	2° $\text{K}$ 50'30	-12°-44'-4	retrograde	1563 Jun 05 j 09:55	14° $\text{K}$ 34'54	
minimum elong	1555 Feb 12 j 05:08	2° $\text{K}$ 50'29	12°44'05	min. Earth dist.	1563 Aug 25 j 03:37	13° $\text{K}$ 32'56	42.48824 AU
max. Earth dist.	1555 Feb 15 j 07:24	2° $\text{K}$ 55'35	42.56362 AU	opposition	1563 Aug 28 j 01:00	13° $\text{K}$ 29'23	-15°-11'-7
retrograde	1555 May 26 j 09:03	4° $\text{K}$ 37'41		direct	1563 Nov 17 j 00:52	12° $\text{K}$ 25'15	
min. Earth dist.	1555 Aug 14 j 19:14	3° $\text{K}$ 34'27	40.73190 AU				
opposition	1555 Aug 17 j 20:17	3° $\text{K}$ 30'36	-13°-29'00	conjunction	1564 Feb 23 j 14:34	14° $\text{K}$ 03'58	-14°-35'-40
direct	1555 Nov 06 j 22:14	2° $\text{K}$ 24'49		minimum elong	1564 Feb 23 j 14:26	14° $\text{K}$ 03'57	14°35'41
				max. Earth dist.	1564 Feb 26 j 12:07	14° $\text{K}$ 08'31	44.52314 AU
conjunction	1556 Feb 13 j 17:51	4° $\text{K}$ 07'46	-12°-58'-26	retrograde	1564 Jun 05 j 19:14	15° $\text{K}$ 46'33	
minimum elong	1556 Feb 13 j 17:39	4° $\text{K}$ 07'45	12°58'26	min. Earth dist.	1564 Aug 25 j 16:11	14° $\text{K}$ 44'40	42.69297 AU
max. Earth dist.	1556 Feb 16 j 18:39	4° $\text{K}$ 12'43	42.79484 AU	opposition	1564 Aug 28 j 12:24	14° $\text{K}$ 41'11	-15°-21'-39
retrograde	1556 May 27 j 00:50	5° $\text{K}$ 54'25		direct	1564 Nov 17 j 12:53	13° $\text{K}$ 37'13	
min. Earth dist.	1556 Aug 15 j 08:17	4° $\text{K}$ 51'26	40.96393 AU				
opposition	1556 Aug 18 j 09:51	4° $\text{K}$ 47'35	-13°-43'-33	conjunction	1565 Feb 24 j 00:59	15° $\text{K}$ 15'26	-14°-45'-42
direct	1556 Nov 07 j 08:32	3° $\text{K}$ 42'03		minimum elong	1565 Feb 24 j 00:51	15° $\text{K}$ 15'26	14°45'43
				max. Earth dist.	1565 Feb 26 j 22:43	15° $\text{K}$ 19'59	44.72526 AU
conjunction	1557 Feb 14 j 06:08	5° $\text{K}$ 24'27	-13°-12'-16	retrograde	1565 Jun 07 j 02:34	16° $\text{K}$ 57'34	
minimum elong	1557 Feb 14 j 05:58	5° $\text{K}$ 24'27	13°12'18	min. Earth dist.	1565 Aug 27 j 03:01	15° $\text{K}$ 55'51	42.89555 AU
max. Earth dist.	1557 Feb 17 j 07:43	5° $\text{K}$ 29'26	43.02352 AU	opposition	1565 Aug 29 j 23:27	15° $\text{K}$ 52'21	-15°-31'-42
retrograde	1557 May 28 j 14:12	7° $\text{K}$ 10'36		direct	1565 Nov 19 j 02:56	14° $\text{K}$ 48'35	
min. Earth dist.	1557 Aug 16 j 23:11	6° $\text{K}$ 07'45	41.19309 AU				
opposition	1557 Aug 19 j 23:16	6° $\text{K}$ 04'00	-13°-57'-34	conjunction	1566 Feb 25 j 11:11	16° $\text{K}$ 26'19	-14°-55'-16
direct	1557 Nov 08 j 20:51	4° $\text{K}$ 58'44		minimum elong	1566 Feb 25 j 11:05	16° $\text{K}$ 26'19	14°55'17
				max. Earth dist.	1566 Feb 28 j 07:50	16° $\text{K}$ 30'47	44.92538 AU
conjunction	1558 Feb 15 j 18:22	6° $\text{K}$ 40'36	-13°-25'-36	retrograde	1566 Jun 08 j 14:15	18° $\text{K}$ 08'00	
minimum elong	1558 Feb 15 j 18:12	6° $\text{K}$ 40'35	13°25'37	min. Earth dist.	1566 Aug 28 j 14:01	17° $\text{K}$ 06'27	43.09623 AU
max. Earth dist.	1558 Feb 18 j 18:58	6° $\text{K}$ 45'30	43.24920 AU	opposition	1566 Aug 31 j 10:18	17° $\text{K}$ 02'58	-15°-41'-15
retrograde	1558 May 30 j 00:07	8° $\text{K}$ 26'14		direct	1566 Nov 20 j 13:18	15° $\text{K}$ 59'23	
min. Earth dist.	1558 Aug 18 j 11:45	7° $\text{K}$ 23'38	41.41881 AU				
opposition	1558 Aug 21 j 12:13	7° $\text{K}$ 19'52	-14°-11'-4	conjunction	1567 Feb 26 j 21:21	17° $\text{K}$ 36'40	-15°-4'-22
direct	1558 Nov 10 j 11:29	6° $\text{K}$ 14'49		minimum elong	1567 Feb 26 j 21:14	17° $\text{K}$ 36'40	15°04'23
				max. Earth dist.	1567 Mar 01 j 18:44	17° $\text{K}$ 41'09	45.12349 AU
conjunction	1559 Feb 17 j 06:20	7° $\text{K}$ 56'10	-13°-38'-27	retrograde	1567 Jun 10 j 01:06	19° $\text{K}$ 17'56	
minimum elong	1559 Feb 17 j 06:10	7° $\text{K}$ 56'09	13°38'29	min. Earth dist.	1567 Aug 30 j 01:47	18° $\text{K}$ 16'29	43.29455 AU
max. Earth dist.	1559 Feb 20 j 06:14	8° $\text{K}$ 01'00	43.47105 AU	opposition	1567 Sep 01 j 20:56	18° $\text{K}$ 13'05	-15°-50'-19
retrograde	1559 May 31 j 10:44	9° $\text{K}$ 41'18		direct	1567 Nov 21 j 23:47	17° $\text{K}$ 09'41	
min. Earth dist.	1559 Aug 20 j 01:58	8° $\text{K}$ 38'49	41.64056 AU				
opposition	1559 Aug 23 j 01:06	8° $\text{K}$ 35'08	-14°-24'-3	conjunction	1568 Feb 28 j 07:13	18° $\text{K}$ 46'33	-15°-13'-1
direct	1559 Nov 12 j 02:08	7° $\text{K}$ 30'19		minimum elong	1568 Feb 28 j 07:07	18° $\text{K}$ 46'33	15°13'02
				max. Earth dist.	1568 Mar 02 j 03:20	18° $\text{K}$ 50'56	45.31923 AU
conjunction	1560 Feb 18 j 18:14	9° $\text{K}$ 11'08	-13°-50'-50	retrograde	1568 Jun 10 j 12:21	20° $\text{K}$ 27'23	
minimum elong	1560 Feb 18 j 18:05	9° $\text{K}$ 11'07	13°50'50	min. Earth dist.	1568 Aug 30 j 11:35	19° $\text{K}$ 26'10	43.49027 AU
max. Earth dist.	1560 Feb 21 j 17:58	9° $\text{K}$ 15'55	43.68882 AU	opposition	1568 Sep 02 j 07:13	19° $\text{K}$ 22'45	-15°-58'-56
retrograde	1560 May 31 j 21:20	10° $\text{K}$ 55'45		direct	1568 Nov 22 j 08:02	18° $\text{K}$ 19'33	
min. Earth dist.	1560 Aug 20 j 15:02	9° $\text{K}$ 53'25	41.85790 AU				
opposition	1560 Aug 23 j 13:26	9° $\text{K}$ 49'46	-14°-36'-33	conjunction	1569 Feb 28 j 16:56	19° $\text{K}$ 56'01	-15°-21'-14
direct	1560 Nov 12 j 16:23	8° $\text{K}$ 45'08		minimum elong	1569 Feb 28 j 16:50	19° $\text{K}$ 56'00	15°21'15
				max. Earth dist.	1569 Mar 03 j 13:00	20° $\text{K}$ 00'22	45.51207 AU
conjunction	1561 Feb 19 j 05:40	10° $\text{K}$ 25'24	-14°-2'-45	retrograde	1569 Jun 11 j 21:34	21° $\text{K}$ 36'27	
minimum elong	1561 Feb 19 j 05:31	10° $\text{K}$ 25'24	14°02'46	min. Earth dist.	1569 Aug 31 j 23:31	20° $\text{K}$ 35'20	43.68284 AU

opposition	1569 Sep 03 j 17:32	20° <del>✕</del> 32'00	-16°-7'-7	direct	1577 Dec 03 j 01:15	28° <del>✕</del> 28'54	
direct	1569 Nov 23 j 18:25	19° <del>✕</del> 29'01			1578 Mar 09 j 17:59	0° <del>∇</del>	
conjunction	1570 Mar 02 j 02:34	21° <del>✕</del> 05'05	-15°-29'-2	conjunction	1578 Mar 11 j 01:35	0° <del>∇</del> 01'57	-16°-17'-44
minimum elong	1570 Mar 02 j 02:29	21° <del>✕</del> 05'05	15°29'04	minimum elong	1578 Mar 11 j 01:32	0° <del>∇</del> 01'57	16°17'45
max. Earth dist.	1570 Mar 04 j 22:05	21° <del>✕</del> 09'23	45.70158 AU	max. Earth dist.	1578 Mar 13 j 14:28	0° <del>∇</del> 05'43	47.06814 AU
retrograde	1570 Jun 13 j 05:01	22° <del>✕</del> 45'08		retrograde	1578 Jun 22 j 04:54	1° <del>∇</del> 39'03	
min. Earth dist.	1570 Sep 02 j 09:44	21° <del>✕</del> 44'11	43.87153 AU	min. Earth dist.	1578 Sep 11 j 16:24	0° <del>∇</del> 38'55	45.23145 AU
opposition	1570 Sep 05 j 03:30	21° <del>✕</del> 40'53	-16°-14'-52	opposition	1578 Sep 14 j 04:11	0° <del>∇</del> 35'59	-17°-2'-45
direct	1570 Nov 25 j 06:03	20° <del>✕</del> 38'05			1578 Oct 16 j 12:58	30° <del>R</del> <del>✕</del>	
				direct	1578 Dec 04 j 07:45	29° <del>✕</del> 34'23	
conjunction	1571 Mar 03 j 12:06	22° <del>✕</del> 13'46	-15°-36'-27		1579 Jan 20 j 19:24	0° <del>∇</del>	
minimum elong	1571 Mar 03 j 12:00	22° <del>✕</del> 13'46	15°36'27				
max. Earth dist.	1571 Mar 06 j 06:02	22° <del>✕</del> 17'58	45.88686 AU	conjunction	1579 Mar 12 j 09:47	1° <del>∇</del> 07'07	-16°-22'-6
retrograde	1571 Jun 14 j 15:20	23° <del>✕</del> 53'27		minimum elong	1579 Mar 12 j 09:46	1° <del>∇</del> 07'07	16°22'07
min. Earth dist.	1571 Sep 03 j 20:40	22° <del>✕</del> 52'37	44.05585 AU	max. Earth dist.	1579 Mar 14 j 22:51	1° <del>∇</del> 10'52	47.22465 AU
opposition	1571 Sep 06 j 13:16	22° <del>✕</del> 49'22	-16°-22'-13	retrograde	1579 Jun 23 j 14:07	2° <del>∇</del> 43'53	
direct	1571 Nov 26 j 15:54	21° <del>✕</del> 46'45		min. Earth dist.	1579 Sep 13 j 02:11	1° <del>∇</del> 43'49	45.38732 AU
				opposition	1579 Sep 15 j 12:21	1° <del>∇</del> 40'57	-17°-6'-58
conjunction	1572 Mar 03 j 21:36	23° <del>✕</del> 22'03	-15°-43'-29	direct	1579 Dec 05 j 14:15	0° <del>∇</del> 39'31	
minimum elong	1572 Mar 03 j 21:32	23° <del>✕</del> 22'03	15°43'30				
max. Earth dist.	1572 Mar 06 j 15:33	23° <del>✕</del> 26'14	46.06758 AU	conjunction	1580 Mar 12 j 17:49	2° <del>∇</del> 11'56	-16°-26'-6
retrograde	1572 Jun 15 j 00:49	25° <del>✕</del> 01'22		minimum elong	1580 Mar 12 j 17:47	2° <del>∇</del> 11'56	16°26'07
min. Earth dist.	1572 Sep 04 j 07:43	24° <del>✕</del> 00'37	44.23525 AU	max. Earth dist.	1580 Mar 15 j 05:57	2° <del>∇</del> 15'38	47.37845 AU
opposition	1572 Sep 06 j 22:55	23° <del>✕</del> 57'27	-16°-29'-11	retrograde	1580 Jun 23 j 21:39	3° <del>∇</del> 48'23	
direct	1572 Nov 27 j 02:22	22° <del>✕</del> 55'00		min. Earth dist.	1580 Sep 13 j 10:01	2° <del>∇</del> 48'29	45.54014 AU
				opposition	1580 Sep 15 j 20:21	2° <del>∇</del> 45'37	-17°-10'-48
conjunction	1573 Mar 05 j 06:38	24° <del>✕</del> 29'54	-15°-50'-8	direct	1580 Dec 05 j 21:06	1° <del>∇</del> 44'20	
minimum elong	1573 Mar 05 j 06:33	24° <del>✕</del> 29'54	15°50'08				
max. Earth dist.	1573 Mar 07 j 22:35	24° <del>✕</del> 33'56	46.24358 AU	conjunction	1581 Mar 14 j 01:31	3° <del>∇</del> 16'28	-16°-29'-45
retrograde	1573 Jun 16 j 12:46	26° <del>✕</del> 08'49		minimum elong	1581 Mar 14 j 01:31	3° <del>∇</del> 16'28	16°29'46
min. Earth dist.	1573 Sep 05 j 17:13	25° <del>✕</del> 08'12	44.41005 AU	max. Earth dist.	1581 Mar 16 j 12:40	3° <del>∇</del> 20'05	47.52893 AU
opposition	1573 Sep 08 j 08:23	25° <del>✕</del> 05'03	-16°-35'-46	retrograde	1581 Jun 25 j 04:46	4° <del>∇</del> 52'37	
direct	1573 Nov 28 j 08:56	24° <del>✕</del> 02'45		min. Earth dist.	1581 Sep 14 j 19:35	3° <del>∇</del> 52'47	45.68947 AU
				opposition	1581 Sep 17 j 04:27	3° <del>∇</del> 50'00	-17°-14'-16
conjunction	1574 Mar 06 j 15:39	25° <del>✕</del> 37'16	-15°-56'-25	direct	1581 Dec 07 j 05:58	2° <del>∇</del> 48'53	
minimum elong	1574 Mar 06 j 15:35	25° <del>✕</del> 37'16	15°56'27				
max. Earth dist.	1574 Mar 09 j 07:30	25° <del>✕</del> 41'16	46.41510 AU	conjunction	1582 Mar 15 j 09:29	4° <del>∇</del> 20'42	-16°-33'-3
retrograde	1574 Jun 17 j 22:04	27° <del>✕</del> 15'47		minimum elong	1582 Mar 15 j 09:28	4° <del>∇</del> 20'42	16°33'04
min. Earth dist.	1574 Sep 07 j 04:25	26° <del>✕</del> 15'12	44.58064 AU	max. Earth dist.	1582 Mar 17 j 20:33	4° <del>∇</del> 24'19	47.67566 AU
opposition	1574 Sep 09 j 17:36	26° <del>✕</del> 12'10	-16°-41'-57	retrograde	1582 Jun 26 j 09:58	5° <del>∇</del> 56'34	
direct	1574 Nov 29 j 17:07	25° <del>✕</del> 10'00		min. Earth dist.	1582 Sep 16 j 04:19	4° <del>∇</del> 56'50	45.83453 AU
				opposition	1582 Sep 18 j 12:09	4° <del>∇</del> 54'06	-17°-17'-24
conjunction	1575 Mar 08 j 00:29	26° <del>✕</del> 44'08	-16°-2'-19	direct	1582 Dec 18 16:49	3° <del>∇</del> 53'07	
minimum elong	1575 Mar 08 j 00:26	26° <del>✕</del> 44'08	16°02'20				
max. Earth dist.	1575 Mar 10 j 15:34	26° <del>✕</del> 48'05	46.58289 AU	conjunction	1583 Mar 26 17:15	5° <del>∇</del> 24'40	-16°-36'-2
retrograde	1575 Jun 19 j 03:23	28° <del>✕</del> 22'16		minimum elong	1583 Mar 26 17:16	5° <del>∇</del> 24'40	16°36'04
min. Earth dist.	1575 Sep 08 j 13:06	27° <del>✕</del> 21'49	44.74761 AU	max. Earth dist.	1583 Mar 29 02:06	5° <del>∇</del> 28'08	47.81788 AU
opposition	1575 Sep 11 j 02:28	27° <del>✕</del> 18'46	-16°-47'-45	retrograde	1583 Jul 07 20:07	7° <del>∇</del> 00'14	
direct	1575 Dec 01 j 04:32	26° <del>✕</del> 16'44		min. Earth dist.	1583 Sep 27 12:42	6° <del>∇</del> 00'36	45.97480 AU
				opposition	1583 Sep 29 19:51	5° <del>∇</del> 57'55	-17°-20'-13
conjunction	1576 Mar 08 j 08:57	27° <del>✕</del> 50'30	-16°-7'-51	direct	1583 Dec 19 23:27	4° <del>∇</del> 57'03	
minimum elong	1576 Mar 08 j 08:54	27° <del>✕</del> 50'30	16°07'52				
max. Earth dist.	1576 Mar 10 j 22:53	27° <del>✕</del> 54'22	46.74728 AU	conjunction	1584 Mar 27 00:58	6° <del>∇</del> 28'18	-16°-38'-43
retrograde	1576 Jun 19 j 10:33	29° <del>✕</del> 28'17		minimum elong	1584 Mar 27 00:57	6° <del>∇</del> 28'18	16°38'43
min. Earth dist.	1576 Sep 08 j 22:52	28° <del>✕</del> 27'55	44.91157 AU	max. Earth dist.	1584 Mar 29 09:25	6° <del>∇</del> 31'44	47.95496 AU
opposition	1576 Sep 11 j 11:14	28° <del>✕</del> 24'55	-16°-53'-9	retrograde	1584 Jul 08 05:16	8° <del>∇</del> 03'34	
direct	1576 Dec 01 j 15:00	27° <del>✕</del> 23'02		min. Earth dist.	1584 Sep 27 22:27	7° <del>∇</del> 03'57	46.10970 AU
				opposition	1584 Sep 30 03:27	7° <del>∇</del> 01'22	-17°-22'-43
conjunction	1577 Mar 09 j 17:27	28° <del>✕</del> 56'26	-16°-12'-59	direct	1584 Dec 20 06:19	6° <del>∇</del> 00'38	
minimum elong	1577 Mar 09 j 17:25	28° <del>✕</del> 56'26	16°12'59				
max. Earth dist.	1577 Mar 12 j 07:49	29° <del>✕</del> 00'19	46.90898 AU	conjunction	1585 Mar 28 08:33	7° <del>∇</del> 31'35	-16°-41'-5
	1577 Apr 25 j 05:27	0° <del>∇</del>		minimum elong	1585 Mar 28 08:34	7° <del>∇</del> 31'35	16°41'07
retrograde	1577 Jun 20 j 18:10	0° <del>∇</del> 33'52		max. Earth dist.	1585 Mar 30 15:28	7° <del>∇</del> 34'54	48.08693 AU
	1577 Aug 18 j 01:41	30° <del>R</del> <del>✕</del>		retrograde	1585 Jul 09 11:54	9° <del>∇</del> 06'32	
min. Earth dist.	1577 Sep 10 j 08:09	29° <del>✕</del> 33'36	45.07277 AU	min. Earth dist.	1585 Sep 29 05:58	8° <del>∇</del> 07'00	46.23945 AU
opposition	1577 Sep 12 j 19:47	29° <del>✕</del> 30'39	-16°-58'-9	opposition	1585 Oct 01 10:48	8° <del>∇</del> 04'26	-17°-24'-55

direct	1585 Dec 21 13:04	7°♃03'47		minimum elong	1594 Apr 06 22:20	16°♃45'11	16°48'30
				max. Earth dist.	1594 Apr 08 21:58	16°♃47'59	49.10289 AU
conjunction	1586 Mar 29 15:50	8°♃34'26	-16°-43'-10	retrograde	1594 Jul 18 23:38	18°♃17'53	
minimum elong	1586 Mar 29 15:51	8°♃34'26	16°43'11	min. Earth dist.	1594 Oct 09 02:40	17°♃18'52	47.24060 AU
max. Earth dist.	1586 Mar 31 21:18	8°♃37'39	48.21384 AU	opposition	1594 Oct 10 22:33	17°♃16'46	-17°-30'-14
retrograde	1586 Jul 10 17:45	10°♃09'05		direct	1594 Dec 31 03:58	16°♃17'04	
min. Earth dist.	1586 Sep 30 15:04	9°♃09'33	46.36446 AU				
opposition	1586 Oct 02 18:08	9°♃07'04	-17°-26'-48	conjunction	1595 Apr 08 04:49	17°♃45'38	-16°-47'-48
direct	1586 Dec 22 21:16	8°♃06'30		minimum elong	1595 Apr 08 04:52	17°♃45'38	16°47'48
				max. Earth dist.	1595 Apr 10 02:45	17°♃48'20	49.19825 AU
conjunction	1587 Mar 30 23:12	9°♃36'52	-16°-44'-56	retrograde	1595 Jul 20 07:08	19°♃18'08	
minimum elong	1587 Mar 30 23:13	9°♃36'52	16°44'58	min. Earth dist.	1595 Oct 10 08:50	18°♃19'13	47.33334 AU
max. Earth dist.	1587 Apr 02 04:32	9°♃40'04	48.33638 AU	opposition	1595 Oct 12 04:27	18°♃17'08	-17°-29'-17
retrograde	1587 Jul 11 22:03	11°♃11'12		direct	1596 Jan 01 07:41	17°♃17'32	
min. Earth dist.	1587 Oct 01 22:46	10°♃11'43	46.48522 AU				
opposition	1587 Oct 04 00:59	10°♃09'17	-17°-28'-22	conjunction	1596 Apr 08 11:15	18°♃45'56	-16°-46'-50
direct	1587 Dec 24 07:09	9°♃08'48		minimum elong	1596 Apr 08 11:20	18°♃45'56	16°46'51
				max. Earth dist.	1596 Apr 10 07:39	18°♃48'32	49.28851 AU
conjunction	1588 Mar 31 06:11	10°♃38'53	-16°-46'-24	retrograde	1596 Jul 20 12:50	20°♃18'12	
minimum elong	1588 Mar 31 06:14	10°♃38'53	16°46'24	min. Earth dist.	1596 Oct 10 17:07	19°♃19'17	47.42087 AU
max. Earth dist.	1588 Apr 02 09:42	10°♃41'58	48.45509 AU	opposition	1596 Oct 12 10:35	19°♃17'19	-17°-28'-5
retrograde	1588 Jul 12 06:10	12°♃12'57		direct	1597 Jan 01 13:34	18°♃17'48	
min. Earth dist.	1588 Oct 02 06:03	11°♃13'32	46.60254 AU				
opposition	1588 Oct 04 07:54	11°♃11'07	-17°-29'-37	conjunction	1597 Apr 09 17:35	19°♃46'00	-16°-45'-38
direct	1588 Dec 24 13:35	10°♃10'44		minimum elong	1597 Apr 09 17:40	19°♃46'00	16°45'38
				max. Earth dist.	1597 Apr 11 13:26	19°♃48'34	49.37366 AU
conjunction	1589 Apr 01 13:02	11°♃40'33	-16°-47'-32	retrograde	1597 Jul 21 15:16	21°♃18'03	
minimum elong	1589 Apr 01 13:03	11°♃40'33	16°47'34	min. Earth dist.	1597 Oct 11 23:48	20°♃19'11	47.50311 AU
max. Earth dist.	1589 Apr 03 16:44	11°♃43'38	48.57052 AU	opposition	1597 Oct 13 16:29	20°♃17'14	-17°-26'-37
retrograde	1589 Jul 13 13:57	13°♃14'21		direct	1598 Jan 02 22:20	19°♃17'47	
min. Earth dist.	1589 Oct 03 14:25	12°♃14'57	46.71665 AU				
opposition	1589 Oct 05 14:44	12°♃12'37	-17°-30'-31	conjunction	1598 Apr 10 23:48	20°♃45'47	-16°-44'-10
direct	1589 Dec 25 19:58	11°♃12'20		minimum elong	1598 Apr 10 23:53	20°♃45'47	16°44'12
				max. Earth dist.	1598 Apr 12 17:26	20°♃48'13	49.45375 AU
conjunction	1590 Apr 02 19:53	12°♃41'54	-16°-48'-21	retrograde	1598 Jul 22 21:27	22°♃17'37	
minimum elong	1590 Apr 02 19:57	12°♃41'54	16°48'22	min. Earth dist.	1598 Oct 13 06:38	21°♃18'45	47.58064 AU
max. Earth dist.	1590 Apr 04 22:27	12°♃44'54	48.68312 AU	opposition	1598 Oct 14 22:12	21°♃16'52	-17°-24'-53
retrograde	1590 Jul 14 21:45	14°♃15'26		direct	1599 Jan 04 04:45	20°♃17'27	
min. Earth dist.	1590 Oct 04 20:37	13°♃16'09	46.82789 AU				
opposition	1590 Oct 06 21:11	13°♃13'49	-17°-31'-6	conjunction	1599 Apr 12 06:02	21°♃45'15	-16°-42'-27
direct	1590 Dec 27 00:16	12°♃13'38		minimum elong	1599 Apr 12 06:07	21°♃45'15	16°42'27
				max. Earth dist.	1599 Apr 13 23:26	21°♃47'40	49.52932 AU
conjunction	1591 Apr 04 02:36	13°♃42'59	-16°-48'-51	retrograde	1599 Jul 24 03:31	23°♃16'53	
minimum elong	1591 Apr 04 02:38	13°♃42'59	16°48'52	min. Earth dist.	1599 Oct 14 13:55	22°♃17'59	47.65383 AU
max. Earth dist.	1591 Apr 06 04:14	13°♃45'56	48.79278 AU	opposition	1599 Oct 16 03:51	22°♃16'11	-17°-22'-53
retrograde	1591 Jul 16 03:58	15°♃16'17		direct	1600 Jan 05 12:06	21°♃16'49	
min. Earth dist.	1591 Oct 06 04:50	14°♃17'03	46.93624 AU				
opposition	1591 Oct 08 03:47	14°♃14'48	-17°-31'-21	conjunction	1600 Apr 12 11:56	22°♃44'24	-16°-40'-27
direct	1591 Dec 28 06:26	13°♃14'44		minimum elong	1600 Apr 12 12:02	22°♃44'24	16°40'28
				max. Earth dist.	1600 Apr 14 03:56	22°♃46'44	49.60105 AU
conjunction	1592 Apr 04 09:13	14°♃43'52	-16°-49'-2	retrograde	1600 Jul 24 11:41	24°♃15'49	
minimum elong	1592 Apr 04 09:18	14°♃43'52	16°49'03	min. Earth dist.	1600 Oct 14 19:21	23°♃16'58	47.72344 AU
max. Earth dist.	1592 Apr 06 10:52	14°♃46'49	48.89957 AU	opposition	1600 Oct 16 09:18	23°♃15'10	-17°-20'-36
retrograde	1592 Jul 16 07:12	16°♃16'57		direct	1601 Jan 05 15:09	22°♃15'51	
min. Earth dist.	1592 Oct 06 11:29	15°♃17'50	47.04136 AU				
opposition	1592 Oct 08 10:04	15°♃15'35	-17°-31'-17				
direct	1592 Dec 28 15:57	14°♃15'39					
conjunction	1593 Apr 05 15:41	15°♃44'35	-16°-48'-54				
minimum elong	1593 Apr 05 15:43	15°♃44'35	16°48'56				
max. Earth dist.	1593 Apr 07 15:23	15°♃47'25	49.00312 AU				
retrograde	1593 Jul 17 15:08	17°♃17'29					
min. Earth dist.	1593 Oct 07 18:31	16°♃18'26	47.14311 AU				
opposition	1593 Oct 09 16:21	16°♃16'14	-17°-30'-54				
direct	1593 Dec 29 22:18	15°♃16'25					
conjunction	1594 Apr 06 22:15	16°♃45'11	-16°-48'-29				