

opposition	1100 Jan 21 j 03:15	6°Ω58'36	0°10'10	direct	1107 Apr 26 j 06:00	21°Ω00'10	
min. Earth dist.	1100 Jan 21 j 14:33	6°Ω57'49	29.07970 AU	max. Earth dist.	1107 Aug 10 j 09:20	23°Ω30'12	31.13888 AU
direct	1100 Apr 09 j 19:00	5°Ω33'27		conjunction	1107 Aug 11 j 04:00	23°Ω31'56	0°39'32
conjunction	1100 Jul 25 j 10:40	8°Ω05'18	0°11'39	minimum elong	1107 Aug 11 j 04:00	23°Ω31'56	0°39'32
minimum elong	1100 Jul 25 j 10:40	8°Ω05'18	0°11'38	retrograde	1107 Nov 22 j 08:25	25°Ω59'50	
behind sun begin	1100 Jul 25 j 06:03	8°Ω04'53		opposition	1108 Feb 07 j 13:59	24°Ω37'17	0°44'13
behind sun end	1100 Jul 25 j 15:17	8°Ω05'42		min. Earth dist.	1108 Feb 08 j 07:31	24°Ω36'03	29.14315 AU
max. Earth dist.	1100 Jul 24 j 20:49	8°Ω04'01	31.08499 AU	direct	1108 Apr 27 j 18:16	23°Ω11'54	
retrograde	1100 Nov 06 j 08:52	10°Ω34'14		conjunction	1108 Aug 12 j 16:14	25°Ω43'39	0°43'19
opposition	1101 Jan 22 j 13:43	9°Ω11'26	0°14'34	minimum elong	1108 Aug 12 j 16:14	25°Ω43'39	0°43'18
min. Earth dist.	1101 Jan 23 j 02:54	9°Ω10'30	29.09029 AU	max. Earth dist.	1108 Aug 11 j 20:30	25°Ω41'50	31.14707 AU
direct	1101 Apr 12 j 06:10	7°Ω46'16		retrograde	1108 Nov 23 j 20:46	28°Ω11'26	
conjunction	1101 Jul 27 j 23:40	10°Ω18'08	0°15'44	opposition	1109 Feb 09 j 00:18	26°Ω48'56	0°48'14
minimum elong	1101 Jul 27 j 23:40	10°Ω18'08	0°15'44	min. Earth dist.	1109 Feb 09 j 17:04	26°Ω47'46	29.15195 AU
behind sun begin	1101 Jul 27 j 23:04	10°Ω18'04		direct	1109 Apr 30 j 07:31	25°Ω23'34	
behind sun end	1101 Jul 28 j 00:16	10°Ω18'11		max. Earth dist.	1109 Aug 14 j 09:00	27°Ω53'33	31.15639 AU
max. Earth dist.	1101 Jul 27 j 08:45	10°Ω16'45	31.09506 AU	conjunction	1109 Aug 15 j 04:20	27°Ω55'20	0°47'02
retrograde	1101 Nov 08 j 19:14	12°Ω46'55		minimum elong	1109 Aug 15 j 04:20	27°Ω55'20	0°47'02
opposition	1102 Jan 25 j 00:04	11°Ω24'11	0°18'56		1109 Oct 20 j 07:52	0°♄	
min. Earth dist.	1102 Jan 25 j 13:07	11°Ω23'16	29.09975 AU	retrograde	1109 Nov 26 j 06:56	0°♄23'02	
direct	1102 Apr 14 j 19:11	9°Ω59'00			1110 Jan 02 j 19:42	30°♄	
conjunction	1102 Jul 30 j 12:43	12°Ω30'52	0°19'48	opposition	1110 Feb 11 j 10:46	29°Ω00'35	0°52'10
minimum elong	1102 Jul 30 j 12:43	12°Ω30'52	0°19'47	min. Earth dist.	1110 Feb 12 j 04:43	28°Ω59'20	29.16193 AU
max. Earth dist.	1102 Jul 29 j 20:30	12°Ω29'22	31.10389 AU	direct	1110 May 02 j 18:50	27°Ω35'16	
retrograde	1102 Nov 11 j 05:11	14°Ω59'30			1110 Aug 14 j 12:39	0°♄	
opposition	1103 Jan 27 j 10:24	13°Ω36'49	0°23'16	conjunction	1110 Aug 17 j 16:25	0°♄07'02	0°50'41
min. Earth dist.	1103 Jan 28 j 01:03	13°Ω35'47	29.10816 AU	minimum elong	1110 Aug 17 j 16:24	0°♄07'02	0°50'40
direct	1103 Apr 17 j 05:30	12°Ω11'36		max. Earth dist.	1110 Aug 16 j 20:43	0°♄05'13	31.16688 AU
max. Earth dist.	1103 Aug 01 j 09:10	14°Ω41'56	31.11176 AU	retrograde	1110 Nov 28 j 16:57	2°♄34'38	
conjunction	1103 Aug 02 j 01:43	14°Ω43'27	0°23'50	opposition	1111 Feb 13 j 20:58	1°♄12'18	0°56'02
minimum elong	1103 Aug 02 j 01:43	14°Ω43'27	0°23'51	min. Earth dist.	1111 Feb 14 j 14:21	1°♄11'06	29.17269 AU
	1103 Aug 09 j 12:17	15°Ω			1111 Apr 06 j 13:45	30°♄	
retrograde	1103 Nov 13 j 15:00	17°Ω11'56		direct	1111 May 05 j 07:23	29°Ω47'02	
opposition	1104 Jan 29 j 20:44	15°Ω49'17	0°27'34		1111 Jun 02 j 14:04	0°♄	
min. Earth dist.	1104 Jan 30 j 11:46	15°Ω48'14	29.11546 AU	max. Earth dist.	1111 Aug 19 j 08:09	2°♄16'56	31.17773 AU
	1104 Mar 01 j 02:47	15°♄		conjunction	1111 Aug 20 j 04:32	2°♄18'49	0°54'16
direct	1104 Apr 18 j 17:51	14°Ω24'02		minimum elong	1111 Aug 20 j 04:31	2°♄18'49	0°54'16
	1104 Jun 05 j 11:01	15°Ω		retrograde	1111 Dec 01 j 03:11	4°♄46'21	
conjunction	1104 Aug 03 j 14:28	16°Ω55'52	0°27'50	opposition	1112 Feb 16 j 07:30	3°♄24'06	0°59'49
minimum elong	1104 Aug 03 j 14:28	16°Ω55'52	0°27'50	min. Earth dist.	1112 Feb 17 j 02:01	3°♄22'49	29.18365 AU
max. Earth dist.	1104 Aug 02 j 20:15	16°Ω54'11	31.11865 AU	direct	1112 May 06 j 17:22	1°♄58'53	
retrograde	1104 Nov 15 j 01:28	19°Ω24'12		conjunction	1112 Aug 21 j 16:34	4°♄30'41	0°57'46
opposition	1105 Jan 31 j 07:04	18°Ω01'34	0°31'49	minimum elong	1112 Aug 21 j 16:33	4°♄30'41	0°57'45
min. Earth dist.	1105 Jan 31 j 22:54	18°Ω00'27	29.12219 AU	max. Earth dist.	1112 Aug 20 j 20:19	4°♄28'48	31.18846 AU
direct	1105 Apr 21 j 04:48	16°Ω36'16		retrograde	1112 Dec 02 j 12:51	6°♄58'09	
max. Earth dist.	1105 Aug 05 j 09:29	19°Ω06'26	31.12518 AU	opposition	1113 Feb 17 j 18:05	5°♄35'59	1°03'31
conjunction	1105 Aug 06 j 03:13	19°Ω08'05	0°31'47	min. Earth dist.	1113 Feb 18 j 12:45	5°♄34'41	29.19402 AU
minimum elong	1105 Aug 06 j 03:12	19°Ω08'05	0°31'48	direct	1113 May 09 j 05:03	4°♄10'47	
retrograde	1105 Nov 17 j 11:09	21°Ω36'15		max. Earth dist.	1113 Aug 23 j 06:51	6°♄40'34	31.19838 AU
opposition	1106 Feb 02 j 17:25	20°Ω13'39	0°36'00	conjunction	1113 Aug 24 j 04:30	6°♄42'35	1°01'11
min. Earth dist.	1106 Feb 03 j 10:01	20°Ω12'29	29.12867 AU	minimum elong	1113 Aug 24 j 04:30	6°♄42'35	1°01'11
direct	1106 Apr 23 j 18:06	18°Ω48'19		retrograde	1113 Dec 04 j 23:03	9°♄09'59	
conjunction	1106 Aug 08 j 15:30	21°Ω20'05	0°35'41	opposition	1114 Feb 20 j 04:41	7°♄47'52	1°07'06
minimum elong	1106 Aug 08 j 15:30	21°Ω20'05	0°35'41	min. Earth dist.	1114 Feb 20 j 23:58	7°♄46'32	29.20362 AU
max. Earth dist.	1106 Aug 07 j 20:13	21°Ω18'18	31.13178 AU	direct	1114 May 11 j 15:39	6°♄22'42	
retrograde	1106 Nov 19 j 22:35	23°Ω48'08		conjunction	1114 Aug 26 j 16:27	8°♄54'29	1°04'30
opposition	1107 Feb 05 j 03:40	22°Ω25'32	0°40'09	minimum elong	1114 Aug 26 j 16:27	8°♄54'29	1°04'29
min. Earth dist.	1107 Feb 05 j 20:03	22°Ω24'23	29.13555 AU				

max. Earth dist.	1114 Aug 25 j 19:18	8° $\mathring{M}$ 52'31	31.20730 AU	min. Earth dist.	1123 Mar 13 j 02:26	27° $\mathring{M}$ 27'37	29.26228 AU
retrograde	1114 Dec 07 j 08:05	11° $\mathring{M}$ 21'48		direct	1123 Jun 01 j 04:25	26° $\mathring{M}$ 03'56	
opposition	1115 Feb 22 j 15:26	9° $\mathring{M}$ 59'43	1°10'36				
min. Earth dist.	1115 Feb 23 j 11:35	9° $\mathring{M}$ 58'20	29.21188 AU	conjunction	1123 Sep 15 j 22:26	28° $\mathring{M}$ 35'15	1°29'36
direct	1115 May 14 j 04:04	8° $\mathring{M}$ 34'34		minimum elong	1123 Sep 15 j 22:26	28° $\mathring{M}$ 35'15	1°29'36
max. Earth dist.	1115 Aug 28 j 05:23	11° $\mathring{M}$ 04'11	31.21493 AU	max. Earth dist.	1123 Sep 15 j 00:11	28° $\mathring{M}$ 33'10	31.26541 AU
					1123 Oct 26 j 05:02	0° $\mathring{M}$	
conjunction	1115 Aug 29 j 04:16	11° $\mathring{M}$ 06'19	1°07'44	retrograde	1123 Dec 27 j 02:28	1° $\mathring{M}$ 01'52	
minimum elong	1115 Aug 29 j 04:16	11° $\mathring{M}$ 06'19	1°07'44		1124 Mar 01 j 10:20	30° $\mathring{R}$ $\mathring{M}$	
retrograde	1115 Dec 09 j 19:24	13° $\mathring{M}$ 33'31		opposition	1124 Mar 13 j 16:27	29° $\mathring{M}$ 39'58	1°36'52
opposition	1116 Feb 25 j 02:00	12° $\mathring{M}$ 11'28	1°14'00	min. Earth dist.	1124 Mar 14 j 13:52	29° $\mathring{M}$ 38'29	29.27046 AU
min. Earth dist.	1116 Feb 25 j 22:01	12° $\mathring{M}$ 10'05	29.21899 AU	direct	1124 Jun 02 j 15:54	28° $\mathring{M}$ 14'55	
direct	1116 May 15 j 15:05	10° $\mathring{M}$ 46'18			1124 Aug 27 j 09:26	0° $\mathring{M}$	
				max. Earth dist.	1124 Sep 16 j 09:57	0° $\mathring{M}$ 44'01	31.27355 AU
conjunction	1116 Aug 30 j 16:08	13° $\mathring{M}$ 18'00	1°10'51				
minimum elong	1116 Aug 30 j 16:07	13° $\mathring{M}$ 18'00	1°10'50	conjunction	1124 Sep 17 j 09:18	0° $\mathring{M}$ 46'12	1°31'47
max. Earth dist.	1116 Aug 29 j 17:43	13° $\mathring{M}$ 15'55	31.22139 AU	minimum elong	1124 Sep 17 j 09:17	0° $\mathring{M}$ 46'12	1°31'46
retrograde	1116 Dec 11 j 05:02	15° $\mathring{M}$ 45'07		retrograde	1124 Dec 28 j 14:01	3° $\mathring{M}$ 12'50	
opposition	1117 Feb 26 j 12:51	14° $\mathring{M}$ 23'04	1°17'17	opposition	1125 Mar 16 j 03:31	1° $\mathring{M}$ 50'58	1°39'08
min. Earth dist.	1117 Feb 27 j 10:11	14° $\mathring{M}$ 21'36	29.22500 AU	min. Earth dist.	1125 Mar 17 j 00:17	1° $\mathring{M}$ 49'33	29.27844 AU
direct	1117 May 18 j 03:41	12° $\mathring{M}$ 57'54		direct	1125 Jun 05 j 01:59	0° $\mathring{M}$ 26'00	
max. Earth dist.	1117 Sep 01 j 04:01	15° $\mathring{M}$ 27'20	31.22703 AU				
				conjunction	1125 Sep 19 j 20:08	2° $\mathring{M}$ 57'15	1°33'50
conjunction	1117 Sep 02 j 03:31	15° $\mathring{M}$ 29'31	1°13'52	minimum elong	1125 Sep 19 j 20:08	2° $\mathring{M}$ 57'15	1°33'50
minimum elong	1117 Sep 02 j 03:31	15° $\mathring{M}$ 29'31	1°13'53	max. Earth dist.	1125 Sep 18 j 21:40	2° $\mathring{M}$ 55'10	31.28102 AU
retrograde	1117 Dec 13 j 16:55	17° $\mathring{M}$ 56'31		retrograde	1125 Dec 30 j 23:50	5° $\mathring{M}$ 23'54	
opposition	1118 Feb 28 j 23:30	16° $\mathring{M}$ 34'28	1°20'27	opposition	1126 Mar 18 j 14:47	4° $\mathring{M}$ 02'06	1°41'15
min. Earth dist.	1118 Mar 01 j 20:12	16° $\mathring{M}$ 33'02	29.23035 AU	min. Earth dist.	1126 Mar 19 j 12:40	4° $\mathring{M}$ 00'35	29.28545 AU
direct	1118 May 20 j 17:30	15° $\mathring{M}$ 09'16		direct	1126 Jun 07 j 13:57	2° $\mathring{M}$ 37'11	
				max. Earth dist.	1126 Sep 21 j 07:30	5° $\mathring{M}$ 06'14	31.28743 AU
conjunction	1118 Sep 04 j 15:01	17° $\mathring{M}$ 40'49	1°16'47				
minimum elong	1118 Sep 04 j 15:00	17° $\mathring{M}$ 40'49	1°16'47	conjunction	1126 Sep 22 j 06:56	5° $\mathring{M}$ 08'25	1°35'45
max. Earth dist.	1118 Sep 03 j 15:49	17° $\mathring{M}$ 38'40	31.23209 AU	minimum elong	1126 Sep 22 j 06:56	5° $\mathring{M}$ 08'25	1°35'44
retrograde	1118 Dec 16 j 02:32	20° $\mathring{M}$ 07'43		retrograde	1127 Jan 02 j 11:59	7° $\mathring{M}$ 35'03	
opposition	1119 Mar 03 j 10:09	18° $\mathring{M}$ 45'39	1°23'31	opposition	1127 Mar 21 j 01:49	6° $\mathring{M}$ 13'16	1°43'14
min. Earth dist.	1119 Mar 04 j 08:06	18° $\mathring{M}$ 44'08	29.23546 AU	min. Earth dist.	1127 Mar 21 j 23:00	6° $\mathring{M}$ 11'49	29.29118 AU
direct	1119 May 23 j 05:27	17° $\mathring{M}$ 20'26		direct	1127 Jun 10 j 03:03	4° $\mathring{M}$ 48'24	
max. Earth dist.	1119 Sep 06 j 02:59	19° $\mathring{M}$ 49'45	31.23729 AU				
				conjunction	1127 Sep 24 j 17:52	7° $\mathring{M}$ 19'36	1°37'32
conjunction	1119 Sep 07 j 02:19	19° $\mathring{M}$ 51'55	1°19'35	minimum elong	1127 Sep 24 j 17:51	7° $\mathring{M}$ 19'36	1°37'32
minimum elong	1119 Sep 07 j 02:19	19° $\mathring{M}$ 51'55	1°19'36	max. Earth dist.	1127 Sep 23 j 18:39	7° $\mathring{M}$ 17'27	31.29233 AU
retrograde	1119 Dec 18 j 12:29	22° $\mathring{M}$ 18'42		retrograde	1128 Jan 04 j 22:19	9° $\mathring{M}$ 46'15	
opposition	1120 Mar 04 j 20:54	20° $\mathring{M}$ 56'39	1°26'26	opposition	1128 Mar 22 j 13:15	8° $\mathring{M}$ 24'28	1°45'03
min. Earth dist.	1120 Mar 05 j 17:58	20° $\mathring{M}$ 55'11	29.24084 AU	min. Earth dist.	1128 Mar 23 j 11:40	8° $\mathring{M}$ 22'56	29.29543 AU
direct	1120 May 24 j 18:49	19° $\mathring{M}$ 31'24		direct	1128 Jun 11 j 14:42	6° $\mathring{M}$ 59'39	
				max. Earth dist.	1128 Sep 25 j 05:09	9° $\mathring{M}$ 28'37	31.29583 AU
conjunction	1120 Sep 08 j 13:24	22° $\mathring{M}$ 02'49	1°22'16				
minimum elong	1120 Sep 08 j 13:23	22° $\mathring{M}$ 02'49	1°22'16	conjunction	1128 Sep 26 j 04:29	9° $\mathring{M}$ 30'47	1°39'10
max. Earth dist.	1120 Sep 07 j 13:53	22° $\mathring{M}$ 00'38	31.24290 AU	minimum elong	1128 Sep 26 j 04:29	9° $\mathring{M}$ 30'47	1°39'09
retrograde	1120 Dec 19 j 22:37	24° $\mathring{M}$ 29'33		retrograde	1129 Jan 06 j 08:34	11° $\mathring{M}$ 57'24	
opposition	1121 Mar 07 j 07:47	23° $\mathring{M}$ 07'29	1°29'15	opposition	1129 Mar 25 j 00:35	10° $\mathring{M}$ 35'38	1°46'43
min. Earth dist.	1121 Mar 08 j 05:18	23° $\mathring{M}$ 06'00	29.24706 AU	min. Earth dist.	1129 Mar 25 j 22:13	10° $\mathring{M}$ 34'09	29.29815 AU
direct	1121 May 27 j 05:52	21° $\mathring{M}$ 42'16		direct	1129 Jun 14 j 04:20	9° $\mathring{M}$ 10'49	
max. Earth dist.	1121 Sep 10 j 01:47	24° $\mathring{M}$ 11'30	31.24961 AU				
				conjunction	1129 Sep 28 j 15:07	11° $\mathring{M}$ 41'54	1°40'39
conjunction	1121 Sep 11 j 00:29	24° $\mathring{M}$ 13'37	1°24'50	minimum elong	1129 Sep 28 j 15:07	11° $\mathring{M}$ 41'54	1°40'40
minimum elong	1121 Sep 11 j 00:29	24° $\mathring{M}$ 13'37	1°24'51	max. Earth dist.	1129 Sep 27 j 15:18	11° $\mathring{M}$ 39'41	31.29786 AU
retrograde	1121 Dec 22 j 07:39	26° $\mathring{M}$ 40'17		retrograde	1130 Jan 08 j 19:26	14° $\mathring{M}$ 08'29	
opposition	1122 Mar 09 j 18:36	25° $\mathring{M}$ 18'16	1°31'55	opposition	1130 Mar 27 j 11:53	12° $\mathring{M}$ 46'42	1°48'15
min. Earth dist.	1122 Mar 10 j 15:39	25° $\mathring{M}$ 16'48	29.25423 AU	min. Earth dist.	1130 Mar 28 j 10:13	12° $\mathring{M}$ 45'10	29.29975 AU
direct	1122 May 29 j 18:10	23° $\mathring{M}$ 53'05		direct	1130 Jun 16 j 16:10	11° $\mathring{M}$ 21'53	
max. Earth dist.	1122 Sep 12 j 11:58	26° $\mathring{M}$ 22'13	31.25723 AU	max. Earth dist.	1130 Sep 30 j 02:32	13° $\mathring{M}$ 50'44	31.29895 AU
conjunction	1122 Sep 13 j 11:24	26° $\mathring{M}$ 24'24	1°27'17	conjunction	1130 Oct 01 j 01:38	13° $\mathring{M}$ 52'53	1°42'00
minimum elong	1122 Sep 13 j 11:24	26° $\mathring{M}$ 24'24	1°27'16	minimum elong	1130 Oct 01 j 01:38	13° $\mathring{M}$ 52'53	1°42'00
retrograde	1122 Dec 24 j 17:42	28° $\mathring{M}$ 51'02		retrograde	1131 Jan 11 j 04:17	16° $\mathring{M}$ 19'26	
opposition	1123 Mar 12 j 05:28	27° $\mathring{M}$ 29'04	1°34'28	opposition	1131 Mar 29 j 23:15	14° $\mathring{M}$ 57'37	1°49'37

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min. Earth dist. direct	1131 Mar 30 j 21:15 1131 Jun 19 j 05:36	14°♁56'07 13°♁32'48	29.30035 AU	min. Earth dist. direct	1139 Apr 17 j 15:05 1139 Jul 07 j 01:19	2°♁21'06 0°♁57'56	29.31579 AU
conjunction minimum elong max. Earth dist. retrograde opposition min. Earth dist. direct	1131 Oct 03 j 11:53 1131 Oct 03 j 11:53 1131 Oct 02 j 12:08 1132 Jan 13 j 13:41 1132 Mar 31 j 10:37 1132 Apr 01 j 08:19 1132 Jun 20 j 16:30	16°♁03'42 16°♁03'42 16°♁01'29 18°♁30'14 17°♁08'22 17°♁06'53 15°♁43'33	1°43'13 31.29933 AU 29.30079 AU	conjunction minimum elong max. Earth dist. retrograde opposition min. Earth dist. direct max. Earth dist.	1139 Oct 20 j 19:43 1139 Oct 20 j 19:43 1139 Oct 20 j 00:25 1140 Jan 30 j 23:41 1140 Apr 18 j 07:48 1140 Apr 19 j 02:37 1140 Jul 08 j 14:47 1140 Oct 21 j 09:30	3°♁28'17 3°♁28'17 3°♁26'28 5°♁55'03 4°♁33'10 4°♁31'53 3°♁08'44 5°♁37'07	1°47'25 31.31482 AU 29.31597 AU 31.31435 AU
conjunction minimum elong max. Earth dist. retrograde opposition min. Earth dist. direct max. Earth dist.	1132 Oct 04 j 22:10 1132 Oct 04 j 22:10 1132 Oct 03 j 23:58 1133 Jan 14 j 21:34 1133 Apr 02 j 22:09 1133 Apr 03 j 19:48 1133 Jun 23 j 04:14 1133 Oct 06 j 09:22	18°♁14'21 18°♁14'21 18°♁12'17 20°♁40'52 19°♁18'58 19°♁17'30 17°♁54'10 20°♁22'45	1°44'16 31.29984 AU 29.30155 AU 31.30100 AU	conjunction minimum elong retrograde opposition min. Earth dist. direct max. Earth dist.	1140 Oct 22 j 05:31 1140 Oct 22 j 05:31 1141 Feb 01 j 10:13 1141 Apr 20 j 19:48 1141 Apr 21 j 14:16 1141 Jul 11 j 01:45 1141 Oct 24 j 15:21 1141 Oct 24 j 15:21 1141 Oct 23 j 20:41 1142 Feb 03 j 18:39 1142 Apr 23 j 07:52 1142 Apr 24 j 02:33 1142 Jul 13 j 14:11 1142 Oct 26 j 05:38	5°♁39'00 5°♁39'00 8°♁05'50 6°♁43'55 6°♁42'39 5°♁19'30 7°♁49'41 7°♁49'41 7°♁47'56 10°♁16'34 8°♁54'36 8°♁53'20 7°♁30'13 9°♁58'29	1°47'15 1°47'15 1°54'25 29.31489 AU 31.30940 AU
conjunction minimum elong retrograde opposition min. Earth dist. direct	1133 Oct 07 j 08:03 1133 Oct 07 j 08:03 1134 Jan 17 j 08:35 1134 Apr 05 j 09:32 1134 Apr 06 j 05:52 1134 Jun 25 j 14:21	20°♁24'52 20°♁24'52 22°♁51'23 21°♁29'28 21°♁28'05 20°♁04'41	1°45'11 29.30318 AU	conjunction minimum elong max. Earth dist. retrograde opposition min. Earth dist. direct max. Earth dist.	1141 Oct 24 j 15:21 1141 Oct 24 j 15:21 1141 Oct 23 j 20:41 1142 Feb 03 j 18:39 1142 Apr 23 j 07:52 1142 Apr 24 j 02:33 1142 Jul 13 j 14:11 1142 Oct 26 j 05:38 1142 Oct 27 j 01:00 1142 Oct 27 j 01:00 1143 Feb 06 j 05:43 1143 Apr 25 j 19:43 1143 Apr 26 j 13:16 1143 Jul 16 j 01:01 1143 Oct 29 j 10:42 1143 Oct 29 j 10:42 1143 Oct 28 j 16:39 1144 Feb 08 j 14:43 1144 Apr 27 j 07:55 1144 Apr 28 j 01:52 1144 Jul 17 j 12:43 1144 Oct 30 j 20:00 1144 Oct 30 j 20:00 1144 Oct 30 j 02:12 1144 Nov 17 j 05:09 1145 Feb 10 j 01:58 1145 Apr 29 j 19:56 1145 Apr 30 j 12:08 1145 May 16 j 02:58 1145 Jul 20 j 00:10 1145 Sep 19 j 12:28 1145 Nov 02 j 05:27 1145 Nov 02 j 05:27 1145 Nov 01 j 12:41 1146 Feb 12 j 12:24 1146 May 02 j 07:58 1146 May 03 j 00:21 1146 Jul 22 j 10:04 1146 Nov 04 j 14:51 1146 Nov 04 j 14:51 1146 Nov 03 j 23:11 1147 Feb 14 j 23:21 1147 May 04 j 20:03	7°♁49'41 7°♁49'41 7°♁47'56 10°♁16'34 8°♁54'36 8°♁53'20 7°♁30'13 9°♁58'29 10°♁00'18 10°♁00'18 12°♁27'13 11°♁05'13 11°♁04'01 9°♁40'49 12°♁10'49 12°♁10'49 12°♁09'07 14°♁37'47 13°♁15'42 13°♁14'29 11°♁51'19 14°♁21'12 14°♁21'12 14°♁19'32 15°♁ 16°♁48'13 15°♁26'05 15°♁24'59 15°♁ 14°♁01'43 15°♁ 16°♁31'31 16°♁31'31 16°♁29'56 18°♁58'36 17°♁36'24 17°♁35'18 16°♁12'04 18°♁41'48 18°♁41'48 18°♁40'19 21°♁08'58 19°♁46'45	1°46'56 1°46'56 31.31252 AU 1°54'00 29.31228 AU 31.30940 AU 1°46'28 1°46'27 1°53'25 29.30865 AU 1°45'51 1°45'51 31.30538 AU 1°52'41 29.30443 AU 1°45'05 1°45'05 31.30124 AU 1°51'47 29.30039 AU 1°47'17 1°47'18 31.31181 AU 1°44'10 1°44'10 31.29746 AU 1°50'44 29.29710 AU 1°43'06 1°43'06 31.29472 AU 1°49'31
conjunction minimum elong max. Earth dist. retrograde opposition min. Earth dist. direct	1134 Oct 09 j 18:12 1134 Oct 09 j 18:11 1134 Oct 08 j 20:54 1135 Jan 19 j 17:34 1135 Apr 07 j 21:00 1135 Apr 08 j 17:48 1135 Jun 28 j 01:55 1135 Oct 11 j 06:43	22°♁35'19 22°♁35'19 22°♁33'19 25°♁01'51 23°♁39'57 23°♁38'32 22°♁15'13 24°♁43'46	1°45'56 1°45'55 31.30301 AU 29.30559 AU 31.30585 AU	conjunction minimum elong max. Earth dist. retrograde opposition min. Earth dist. direct max. Earth dist.	1143 Oct 29 j 10:42 1143 Oct 29 j 10:42 1143 Oct 28 j 16:39 1144 Feb 08 j 14:43 1144 Apr 27 j 07:55 1144 Apr 28 j 01:52 1144 Jul 17 j 12:43 1144 Oct 30 j 20:00 1144 Oct 30 j 20:00 1144 Oct 30 j 02:12 1144 Nov 17 j 05:09 1145 Feb 10 j 01:58 1145 Apr 29 j 19:56 1145 Apr 30 j 12:08 1145 May 16 j 02:58 1145 Jul 20 j 00:10 1145 Sep 19 j 12:28 1145 Nov 02 j 05:27 1145 Nov 02 j 05:27 1145 Nov 01 j 12:41 1146 Feb 12 j 12:24 1146 May 02 j 07:58 1146 May 03 j 00:21 1146 Jul 22 j 10:04 1146 Nov 04 j 14:51 1146 Nov 04 j 14:51 1146 Nov 03 j 23:11 1147 Feb 14 j 23:21 1147 May 04 j 20:03	12°♁10'49 12°♁10'49 12°♁09'07 14°♁37'47 13°♁15'42 13°♁14'29 11°♁51'19 14°♁21'12 14°♁21'12 14°♁19'32 15°♁ 16°♁48'13 15°♁26'05 15°♁24'59 15°♁ 14°♁01'43 15°♁ 16°♁31'31 16°♁31'31 16°♁29'56 18°♁58'36 17°♁36'24 17°♁35'18 16°♁12'04 18°♁41'48 18°♁41'48 18°♁40'19 21°♁08'58 19°♁46'45	1°46'28 1°46'27 1°53'25 29.30865 AU 1°45'51 1°45'51 31.30538 AU 1°52'41 29.30443 AU 1°45'05 1°45'05 31.30124 AU 1°51'47 29.30039 AU 1°47'17 1°47'18 31.31181 AU 1°44'10 1°44'10 31.29746 AU 1°50'44 29.29710 AU 1°43'06 1°43'06 31.29472 AU 1°49'31
conjunction minimum elong max. Earth dist. retrograde opposition min. Earth dist. direct	1135 Oct 12 j 04:07 1135 Oct 12 j 04:07 1136 Jan 22 j 05:13 1136 Apr 09 j 08:32 1136 Apr 10 j 03:53 1136 Jun 29 j 13:40	24°♁45'47 24°♁45'47 27°♁12'21 25°♁50'27 25°♁49'08 24°♁25'47	1°46'32 1°46'33 29.30859 AU	conjunction minimum elong max. Earth dist. retrograde opposition min. Earth dist. direct	1143 Oct 29 j 10:42 1143 Oct 29 j 10:42 1143 Oct 28 j 16:39 1144 Feb 08 j 14:43 1144 Apr 27 j 07:55 1144 Apr 28 j 01:52 1144 Jul 17 j 12:43 1144 Oct 30 j 20:00 1144 Oct 30 j 20:00 1144 Oct 30 j 02:12 1144 Nov 17 j 05:09 1145 Feb 10 j 01:58 1145 Apr 29 j 19:56 1145 Apr 30 j 12:08 1145 May 16 j 02:58 1145 Jul 20 j 00:10 1145 Sep 19 j 12:28 1145 Nov 02 j 05:27 1145 Nov 02 j 05:27 1145 Nov 01 j 12:41 1146 Feb 12 j 12:24 1146 May 02 j 07:58 1146 May 03 j 00:21 1146 Jul 22 j 10:04 1146 Nov 04 j 14:51 1146 Nov 04 j 14:51 1146 Nov 03 j 23:11 1147 Feb 14 j 23:21 1147 May 04 j 20:03	12°♁10'49 12°♁10'49 12°♁09'07 14°♁37'47 13°♁15'42 13°♁14'29 11°♁51'19 14°♁21'12 14°♁21'12 14°♁19'32 15°♁ 16°♁48'13 15°♁26'05 15°♁24'59 15°♁ 14°♁01'43 15°♁ 16°♁31'31 16°♁31'31 16°♁29'56 18°♁58'36 17°♁36'24 17°♁35'18 16°♁12'04 18°♁41'48 18°♁41'48 18°♁40'19 21°♁08'58 19°♁46'45	1°45'51 1°45'51 31.30538 AU 1°52'41 29.30443 AU 1°45'05 1°45'05 31.30124 AU 1°51'47 29.30039 AU 1°47'17 1°47'18 31.31181 AU 1°44'10 1°44'10 31.29746 AU 1°50'44 29.29710 AU 1°43'06 1°43'06 31.29472 AU 1°49'31
conjunction minimum elong max. Earth dist. retrograde opposition min. Earth dist. direct	1136 Oct 13 j 13:59 1136 Oct 13 j 13:59 1136 Oct 12 j 17:27 1137 Jan 23 j 15:42 1137 Apr 11 j 20:20 1137 Apr 12 j 16:20 1137 Jul 02 j 00:08	26°♁56'18 26°♁56'18 26°♁54'23 29°♁22'56 28°♁01'02 27°♁59'41 26°♁36'26	1°46'59 1°46'59 31.30889 AU 29.31165 AU	conjunction minimum elong max. Earth dist. retrograde opposition min. Earth dist. direct	1144 Oct 30 j 20:00 1144 Oct 30 j 20:00 1144 Oct 30 j 02:12 1144 Nov 17 j 05:09 1145 Feb 10 j 01:58 1145 Apr 29 j 19:56 1145 Apr 30 j 12:08 1145 May 16 j 02:58 1145 Jul 20 j 00:10 1145 Sep 19 j 12:28 1145 Nov 02 j 05:27 1145 Nov 02 j 05:27 1145 Nov 01 j 12:41 1146 Feb 12 j 12:24 1146 May 02 j 07:58 1146 May 03 j 00:21 1146 Jul 22 j 10:04 1146 Nov 04 j 14:51 1146 Nov 04 j 14:51 1146 Nov 03 j 23:11 1147 Feb 14 j 23:21 1147 May 04 j 20:03	14°♁21'12 14°♁21'12 14°♁19'32 15°♁ 16°♁48'13 15°♁26'05 15°♁24'59 15°♁ 14°♁01'43 15°♁ 16°♁31'31 16°♁31'31 16°♁29'56 18°♁58'36 17°♁36'24 17°♁35'18 16°♁12'04 18°♁41'48 18°♁41'48 18°♁40'19 21°♁08'58 19°♁46'45	1°45'05 1°45'05 31.30124 AU 1°51'47 29.30039 AU 1°47'17 1°47'18 31.31181 AU 1°44'10 1°44'10 31.29746 AU 1°50'44 29.29710 AU 1°43'06 1°43'06 31.29472 AU 1°49'31
conjunction minimum elong max. Earth dist. retrograde opposition min. Earth dist. direct	1137 Oct 15 j 23:54 1137 Oct 15 j 23:54 1137 Oct 15 j 03:52 1137 Nov 09 j 02:40 1138 Jan 26 j 02:33 1138 Apr 14 j 07:55 1138 Apr 15 j 02:50 1138 Apr 21 j 12:19 1138 Jul 04 j 13:34 1138 Sep 12 j 03:22	29°♁06'54 29°♁06'54 29°♁05'01 0°♁ 1°♁33'34 0°♁11'42 0°♁10'24 30°♁ 28°♁47'09 0°♁	1°47'17 1°47'18 31.31181 AU 29.31418 AU	conjunction minimum elong max. Earth dist. retrograde opposition min. Earth dist. direct	1145 Nov 02 j 05:27 1145 Nov 02 j 05:27 1145 Nov 01 j 12:41 1146 Feb 12 j 12:24 1146 May 02 j 07:58 1146 May 03 j 00:21 1146 Jul 22 j 10:04 1146 Nov 04 j 14:51 1146 Nov 04 j 14:51 1146 Nov 03 j 23:11 1147 Feb 14 j 23:21 1147 May 04 j 20:03	16°♁31'31 16°♁31'31 16°♁29'56 18°♁58'36 17°♁36'24 17°♁35'18 16°♁12'04 18°♁41'48 18°♁41'48 18°♁40'19 21°♁08'58 19°♁46'45	1°44'10 1°44'10 31.29746 AU 1°50'44 29.29710 AU 1°43'06 1°43'06 31.29472 AU 1°49'31
conjunction minimum elong max. Earth dist. retrograde opposition	1138 Oct 18 j 09:48 1138 Oct 18 j 09:48 1138 Oct 17 j 13:30 1139 Jan 28 j 14:21 1139 Apr 16 j 19:50	1°♁17'34 1°♁17'34 1°♁15'40 3°♁44'18 2°♁22'25	1°47'26 1°47'25 31.31386 AU 1°54'46	conjunction minimum elong max. Earth dist. retrograde opposition	1146 Nov 04 j 14:51 1146 Nov 04 j 14:51 1146 Nov 03 j 23:11 1147 Feb 14 j 23:21 1147 May 04 j 20:03	18°♁41'48 18°♁41'48 18°♁40'19 21°♁08'58 19°♁46'45	1°43'06 1°43'06 31.29472 AU 1°49'31

min. Earth dist.	1147 May 05 j 10:39	19°M45'46	29.29473 AU	min. Earth dist.	1155 May 23 j 10:12	7°Z13'03	29.27241 AU
direct	1147 Jul 24 j 23:27	18°M22'28		direct	1155 Aug 11 j 18:32	5°Z49'56	
max. Earth dist.	1147 Nov 06 j 08:44	20°M50'42	31.29284 AU				
conjunction	1147 Nov 07 j 00:04	20°M52'09	1°41'54	conjunction	1155 Nov 24 j 02:52	8°Z19'04	1°27'05
minimum elong	1147 Nov 07 j 00:05	20°M52'09	1°41'54	minimum elong	1155 Nov 24 j 02:52	8°Z19'04	1°27'06
retrograde	1148 Feb 17 j 11:55	23°M19'25		max. Earth dist.	1155 Nov 23 j 17:15	8°Z18'09	31.26807 AU
opposition	1148 May 06 j 08:18	21°M57'12	1°48'09	retrograde	1156 Mar 06 j 00:33	10°Z47'12	
min. Earth dist.	1148 May 06 j 22:32	21°M56'14	29.29333 AU	opposition	1156 May 24 j 12:24	9°Z24'43	1°31'45
direct	1148 Jul 26 j 10:45	20°M32'59		min. Earth dist.	1156 May 24 j 21:19	9°Z24'07	29.26495 AU
				direct	1156 Aug 13 j 08:04	8°Z00'53	
conjunction	1148 Nov 08 j 09:26	23°M02'37	1°40'32	conjunction	1156 Nov 25 j 12:04	10°Z29'55	1°24'39
minimum elong	1148 Nov 08 j 09:26	23°M02'37	1°40'32	minimum elong	1156 Nov 25 j 12:04	10°Z29'55	1°24'39
max. Earth dist.	1148 Nov 07 j 19:49	23°M01'20	31.29182 AU	max. Earth dist.	1156 Nov 25 j 02:32	10°Z29'01	31.26043 AU
retrograde	1149 Feb 18 j 21:41	25°M30'00		retrograde	1157 Mar 08 j 13:15	12°Z58'08	
opposition	1149 May 08 j 20:32	24°M07'47	1°46'37	opposition	1157 May 27 j 01:04	11°Z35'33	1°29'05
min. Earth dist.	1149 May 09 j 09:46	24°M06'53	29.29238 AU	min. Earth dist.	1157 May 27 j 09:41	11°Z34'58	29.25732 AU
direct	1149 Jul 28 j 23:27	22°M43'40		direct	1157 Aug 15 j 18:52	10°Z11'43	
conjunction	1149 Nov 10 j 18:37	25°M13'15	1°39'02	conjunction	1157 Nov 27 j 21:18	12°Z40'38	1°22'05
minimum elong	1149 Nov 10 j 18:37	25°M13'15	1°39'02	minimum elong	1157 Nov 27 j 21:18	12°Z40'38	1°22'05
max. Earth dist.	1149 Nov 10 j 04:46	25°M11'56	31.29102 AU	max. Earth dist.	1157 Nov 27 j 13:39	12°Z39'55	31.25289 AU
retrograde	1150 Feb 21 j 08:54	27°M40'45		retrograde	1158 Mar 10 j 23:04	15°Z08'57	
opposition	1150 May 11 j 08:50	26°M18'32	1°44'56	opposition	1158 May 29 j 13:45	13°Z46'16	1°26'17
min. Earth dist.	1150 May 11 j 21:17	26°M17'41	29.29152 AU	min. Earth dist.	1158 May 29 j 21:07	13°Z45'47	29.24988 AU
direct	1150 Jul 31 j 10:21	24°M54'30		direct	1158 Aug 18 j 07:46	12°Z22'27	
conjunction	1150 Nov 13 j 04:01	27°M24'02	1°37'23	conjunction	1158 Nov 30 j 06:21	14°Z51'17	1°19'24
minimum elong	1150 Nov 13 j 04:01	27°M24'02	1°37'22	minimum elong	1158 Nov 30 j 06:21	14°Z51'17	1°19'24
max. Earth dist.	1150 Nov 12 j 15:54	27°M22'54	31.28990 AU	max. Earth dist.	1158 Nov 29 j 22:43	14°Z50'34	31.24588 AU
retrograde	1151 Feb 23 j 18:05	29°M51'39		retrograde	1159 Mar 13 j 11:04	17°Z19'43	
opposition	1151 May 13 j 21:14	28°M29'26	1°43'06	opposition	1159 Jun 01 j 02:25	15°Z56'59	1°23'22
min. Earth dist.	1151 May 14 j 09:39	28°M28'36	29.29000 AU	min. Earth dist.	1159 Jun 01 j 08:34	15°Z56'34	29.24334 AU
direct	1151 Aug 02 j 23:04	27°M05'29		direct	1159 Aug 20 j 19:05	14°Z33'11	
conjunction	1151 Nov 15 j 13:20	29°M34'57	1°35'35	conjunction	1159 Dec 02 j 15:38	17°Z01'58	1°16'37
minimum elong	1151 Nov 15 j 13:20	29°M34'58	1°35'35	minimum elong	1159 Dec 02 j 15:38	17°Z01'58	1°16'37
max. Earth dist.	1151 Nov 15 j 00:51	29°M33'47	31.28808 AU	max. Earth dist.	1159 Dec 02 j 10:08	17°Z01'27	31.23979 AU
	1151 Nov 26 j 15:57	0°Z		retrograde	1160 Mar 14 j 21:07	19°Z30'31	
retrograde	1152 Feb 26 j 06:08	2°Z02'42		opposition	1160 Jun 02 j 15:16	18°Z07'44	1°20'19
opposition	1152 May 15 j 09:47	0°Z40'28	1°41'06	min. Earth dist.	1160 Jun 02 j 20:47	18°Z07'22	29.23762 AU
min. Earth dist.	1152 May 15 j 20:47	0°Z39'44	29.28766 AU	direct	1160 Aug 22 j 07:56	16°Z44'01	
	1152 Jun 10 j 10:54	30°RM					
direct	1152 Aug 04 j 10:06	29°M16'34		conjunction	1160 Dec 04 j 00:39	19°Z12'44	1°13'42
	1152 Sep 25 j 19:00	0°Z		minimum elong	1160 Dec 04 j 00:39	19°Z12'44	1°13'42
conjunction	1152 Nov 16 j 22:42	1°Z45'59	1°33'40	max. Earth dist.	1160 Dec 03 j 19:21	19°Z12'14	31.23461 AU
minimum elong	1152 Nov 16 j 22:42	1°Z45'59	1°33'39	retrograde	1161 Mar 17 j 09:25	21°Z41'26	
max. Earth dist.	1152 Nov 16 j 11:27	1°Z44'55	31.28508 AU	opposition	1161 Jun 05 j 04:00	20°Z18'38	1°17'09
retrograde	1153 Feb 27 j 15:07	4°Z13'51		min. Earth dist.	1161 Jun 05 j 07:41	20°Z18'23	29.23268 AU
opposition	1153 May 17 j 22:30	2°Z51'35	1°38'59	direct	1161 Aug 24 j 18:56	18°Z54'58	
min. Earth dist.	1153 May 18 j 09:58	2°Z50'48	29.28398 AU	conjunction	1161 Dec 06 j 09:57	21°Z23'39	1°10'41
direct	1153 Aug 06 j 21:27	1°Z27'44		minimum elong	1161 Dec 06 j 09:57	21°Z23'39	1°10'41
				max. Earth dist.	1161 Dec 06 j 06:08	21°Z23'18	31.22982 AU
conjunction	1153 Nov 19 j 08:07	3°Z57'03	1°31'36	retrograde	1162 Mar 19 j 18:58	23°Z52'32	
minimum elong	1153 Nov 19 j 08:07	3°Z57'03	1°31'36	opposition	1162 Jun 07 j 16:47	22°Z29'43	1°13'51
max. Earth dist.	1153 Nov 18 j 20:55	3°Z56'00	31.28080 AU	min. Earth dist.	1162 Jun 07 j 20:35	22°Z29'27	29.22794 AU
retrograde	1154 Mar 02 j 02:22	6°Z25'01		direct	1162 Aug 27 j 05:59	21°Z06'08	
opposition	1154 May 20 j 10:55	5°Z02'41	1°36'42				
min. Earth dist.	1154 May 20 j 20:56	5°Z02'01	29.27887 AU	conjunction	1162 Dec 08 j 19:14	23°Z34'47	1°07'33
direct	1154 Aug 09 j 08:27	3°Z38'51		minimum elong	1162 Dec 08 j 19:14	23°Z34'47	1°07'33
				max. Earth dist.	1162 Dec 08 j 16:02	23°Z34'29	31.22518 AU
conjunction	1154 Nov 21 j 17:35	6°Z08'06	1°29'24	retrograde	1163 Mar 22 j 06:47	26°Z03'50	
minimum elong	1154 Nov 21 j 17:35	6°Z08'06	1°29'24	opposition	1163 Jun 10 j 05:39	24°Z41'00	1°10'28
max. Earth dist.	1154 Nov 21 j 06:54	6°Z07'05	31.27498 AU	min. Earth dist.	1163 Jun 10 j 07:38	24°Z40'52	29.22304 AU
retrograde	1155 Mar 04 j 13:20	8°Z36'10		direct	1163 Aug 29 j 16:40	23°Z17'30	
opposition	1155 May 22 j 23:43	7°Z13'46	1°34'18				

conjunction	1163 Dec 11 j 04:29	25° <del>2</del> 46'07	1°04'20	direct	1171 Sep 16 j 14:10	10° <del>3</del> 51'31	
minimum elong	1163 Dec 11 j 04:29	25° <del>2</del> 46'07	1°04'20				
max. Earth dist.	1163 Dec 11 j 02:00	25° <del>2</del> 45'53	31.21999 AU	conjunction	1171 Dec 28 j 08:16	13° <del>3</del> 19'40	0°35'35
retrograde	1164 Mar 23 j 18:33	28° <del>2</del> 15'21		minimum elong	1171 Dec 28 j 08:16	13° <del>3</del> 19'40	0°35'35
opposition	1164 Jun 11 j 18:48	26° <del>2</del> 52'30	1°06'58	max. Earth dist.	1171 Dec 28 j 12:12	13° <del>3</del> 20'02	31.14454 AU
min. Earth dist.	1164 Jun 11 j 21:05	26° <del>2</del> 52'21	29.21754 AU	retrograde	1172 Apr 10 j 17:19	15° <del>3</del> 50'00	
direct	1164 Aug 31 j 02:13	25° <del>2</del> 29'05		opposition	1172 Jun 30 j 03:13	14° <del>3</del> 26'30	0°35'56
				min. Earth dist.	1172 Jun 29 j 21:56	14° <del>3</del> 26'52	29.13995 AU
conjunction	1164 Dec 12 j 13:59	27° <del>2</del> 57'40	1°01'00	direct	1172 Sep 18 j 01:47	13° <del>3</del> 03'10	
minimum elong	1164 Dec 12 j 13:59	27° <del>2</del> 57'40	1°01'00				
max. Earth dist.	1164 Dec 12 j 12:41	27° <del>2</del> 57'32	31.21407 AU	conjunction	1172 Dec 29 j 17:47	15° <del>3</del> 31'16	0°31'42
	1165 Feb 13 j 15:18	0° <del>3</del>		minimum elong	1172 Dec 29 j 17:47	15° <del>3</del> 31'16	0°31'42
retrograde	1165 Mar 26 j 06:39	0° <del>3</del> 27'04		max. Earth dist.	1172 Dec 29 j 22:34	15° <del>3</del> 31'43	31.13539 AU
	1165 May 07 j 12:21	30° <del>R</del>		retrograde	1173 Apr 13 j 04:42	18° <del>3</del> 01'46	
opposition	1165 Jun 14 j 07:41	29° <del>2</del> 04'11	1°03'22	opposition	1173 Jul 02 j 16:13	16° <del>3</del> 38'13	0°31'45
min. Earth dist.	1165 Jun 14 j 08:31	29° <del>2</del> 04'08	29.21093 AU	min. Earth dist.	1173 Jul 02 j 10:57	16° <del>3</del> 38'34	29.13135 AU
direct	1165 Sep 02 j 14:45	27° <del>2</del> 40'48		direct	1173 Sep 20 j 11:39	15° <del>3</del> 14'54	
	1165 Dec 10 j 20:29	0° <del>3</del>					
conjunction	1165 Dec 14 j 23:25	0° <del>3</del> 09'22	0°57'36	conjunction	1174 Jan 01 j 03:24	17° <del>3</del> 42'58	0°27'46
minimum elong	1165 Dec 14 j 23:26	0° <del>3</del> 09'22	0°57'36	minimum elong	1174 Jan 01 j 03:24	17° <del>3</del> 42'58	0°27'46
max. Earth dist.	1165 Dec 14 j 21:49	0° <del>3</del> 09'13	31.20681 AU	max. Earth dist.	1174 Jan 01 j 09:48	17° <del>3</del> 43'34	31.12726 AU
retrograde	1166 Mar 28 j 20:29	2° <del>3</del> 38'56		retrograde	1174 Apr 15 j 16:13	20° <del>3</del> 13'37	
opposition	1166 Jun 16 j 20:49	1° <del>3</del> 16'00	0°59'40	opposition	1174 Jul 05 j 05:12	18° <del>3</del> 50'02	0°27'31
min. Earth dist.	1166 Jun 16 j 21:37	1° <del>3</del> 15'57	29.20300 AU	min. Earth dist.	1174 Jul 04 j 22:04	18° <del>3</del> 50'31	29.12344 AU
	1166 Aug 14 j 17:12	30° <del>R</del>		direct	1174 Sep 22 j 23:26	17° <del>3</del> 26'45	
direct	1166 Sep 05 j 00:44	29° <del>2</del> 52'39					
	1166 Sep 26 j 03:18	0° <del>3</del>		conjunction	1175 Jan 03 j 12:52	19° <del>3</del> 54'48	0°23'47
conjunction	1166 Dec 17 j 09:01	2° <del>3</del> 21'10	0°54'06	minimum elong	1175 Jan 03 j 12:52	19° <del>3</del> 54'48	0°23'47
minimum elong	1166 Dec 17 j 09:01	2° <del>3</del> 21'10	0°54'06	max. Earth dist.	1175 Jan 03 j 19:21	19° <del>3</del> 55'24	31.11961 AU
max. Earth dist.	1166 Dec 17 j 08:55	2° <del>3</del> 21'10	31.19812 AU	retrograde	1175 Apr 18 j 05:37	22° <del>3</del> 25'38	
retrograde	1167 Mar 31 j 07:11	4° <del>3</del> 50'53		opposition	1175 Jul 07 j 18:24	21° <del>3</del> 01'59	0°23'14
opposition	1167 Jun 19 j 09:55	3° <del>3</del> 27'53	0°55'54	min. Earth dist.	1175 Jul 07 j 10:55	21° <del>3</del> 02'30	29.11601 AU
min. Earth dist.	1167 Jun 19 j 09:51	3° <del>3</del> 27'53	29.19345 AU	direct	1175 Sep 25 j 08:26	19° <del>3</del> 38'46	
direct	1167 Sep 07 j 13:16	2° <del>3</del> 04'33					
conjunction	1167 Dec 19 j 18:29	4° <del>3</del> 33'00	0°50'32	conjunction	1176 Jan 05 j 22:41	22° <del>3</del> 06'48	0°19'46
minimum elong	1167 Dec 19 j 18:29	4° <del>3</del> 33'00	0°50'32	minimum elong	1176 Jan 05 j 22:41	22° <del>3</del> 06'48	0°19'46
max. Earth dist.	1167 Dec 19 j 17:59	4° <del>3</del> 32'57	31.18806 AU	max. Earth dist.	1176 Jan 06 j 07:04	22° <del>3</del> 07'35	31.11224 AU
retrograde	1168 Apr 01 j 20:36	7° <del>3</del> 02'50		retrograde	1176 Apr 19 j 17:18	24° <del>3</del> 37'48	
opposition	1168 Jun 20 j 23:03	5° <del>3</del> 39'44	0°52'02	opposition	1176 Jul 09 j 07:31	23° <del>3</del> 14'07	0°18'55
min. Earth dist.	1168 Jun 20 j 22:12	5° <del>3</del> 39'47	29.18286 AU	min. Earth dist.	1176 Jul 08 j 22:58	23° <del>3</del> 14'42	29.10852 AU
direct	1168 Sep 09 j 01:03	4° <del>3</del> 16'24		direct	1176 Sep 26 j 20:24	21° <del>3</del> 50'57	
conjunction	1168 Dec 21 j 03:59	6° <del>3</del> 44'47	0°46'53				
minimum elong	1168 Dec 21 j 03:59	6° <del>3</del> 44'47	0°46'53	conjunction	1177 Jan 07 j 08:26	24° <del>3</del> 18'57	0°15'44
max. Earth dist.	1168 Dec 21 j 05:17	6° <del>3</del> 44'54	31.17702 AU	minimum elong	1177 Jan 07 j 08:25	24° <del>3</del> 18'57	0°15'43
retrograde	1169 Apr 04 j 07:45	9° <del>3</del> 14'44		behind sun begin	1177 Jan 07 j 06:45	24° <del>3</del> 18'48	
opposition	1169 Jun 23 j 12:11	7° <del>3</del> 51'31	0°48'07	behind sun end	1177 Jan 07 j 10:06	24° <del>3</del> 19'07	
min. Earth dist.	1169 Jun 23 j 11:01	7° <del>3</del> 51'36	29.17147 AU	max. Earth dist.	1177 Jan 07 j 16:32	24° <del>3</del> 19'43	31.10464 AU
direct	1169 Sep 11 j 14:39	6° <del>3</del> 28'10		retrograde	1177 Apr 22 j 07:52	26° <del>3</del> 50'09	
				opposition	1177 Jul 11 j 20:42	25° <del>3</del> 26'25	0°14'35
conjunction	1169 Dec 23 j 13:24	8° <del>3</del> 56'28	0°43'11	min. Earth dist.	1177 Jul 11 j 11:29	25° <del>3</del> 27'03	29.10065 AU
minimum elong	1169 Dec 23 j 13:24	8° <del>3</del> 56'28	0°43'10	direct	1177 Sep 29 j 07:14	24° <del>3</del> 03'17	
max. Earth dist.	1169 Dec 23 j 14:48	8° <del>3</del> 56'36	31.16567 AU				
retrograde	1170 Apr 06 j 20:02	11° <del>3</del> 26'32		conjunction	1178 Jan 09 j 18:29	26° <del>3</del> 31'17	0°11'40
opposition	1170 Jun 26 j 01:02	10° <del>3</del> 03'13	0°44'07	minimum elong	1178 Jan 09 j 18:29	26° <del>3</del> 31'17	0°11'39
min. Earth dist.	1170 Jun 25 j 22:09	10° <del>3</del> 03'25	29.16022 AU	behind sun begin	1178 Jan 09 j 13:53	26° <del>3</del> 30'52	
direct	1170 Sep 14 j 02:04	8° <del>3</del> 39'51		behind sun end	1178 Jan 09 j 23:06	26° <del>3</del> 31'43	
				max. Earth dist.	1178 Jan 10 j 04:08	26° <del>3</del> 32'11	31.09623 AU
conjunction	1170 Dec 25 j 22:54	11° <del>3</del> 08'05	0°39'24	retrograde	1178 Apr 24 j 20:04	29° <del>3</del> 02'39	
minimum elong	1170 Dec 25 j 22:54	11° <del>3</del> 08'05	0°39'24	opposition	1178 Jul 14 j 09:51	27° <del>3</del> 38'52	0°10'13
max. Earth dist.	1170 Dec 26 j 01:47	11° <del>3</del> 08'21	31.15460 AU	min. Earth dist.	1178 Jul 14 j 00:33	27° <del>3</del> 39'30	29.09173 AU
retrograde	1171 Apr 09 j 05:28	13° <del>3</del> 38'16		direct	1178 Oct 01 j 19:51	26° <del>3</del> 15'45	
opposition	1171 Jun 28 j 14:13	12° <del>3</del> 14'52	0°40'03				
min. Earth dist.	1171 Jun 28 j 11:08	12° <del>3</del> 15'04	29.14957 AU	conjunction	1179 Jan 12 j 04:34	28° <del>3</del> 43'45	0°07'35
				minimum elong	1179 Jan 12 j 04:33	28° <del>3</del> 43'45	0°07'35
retrograde	1171 Apr 09 j 05:28	13° <del>3</del> 38'16		behind sun begin	1179 Jan 11 j 22:43	28° <del>3</del> 43'13	
opposition	1171 Jun 28 j 14:13	12° <del>3</del> 14'52	0°40'03	behind sun end	1179 Jan 12 j 10:23	28° <del>3</del> 44'17	
min. Earth dist.	1171 Jun 28 j 11:08	12° <del>3</del> 15'04	29.14957 AU	max. Earth dist.	1179 Jan 12 j 13:59	28° <del>3</del> 44'38	31.08686 AU

	1179 Feb 16 j 06:04	0°		conjunction	1186 Jan 27 j 03:46	14°11'40"	0°-21'-7"
retrograde	1179 Apr 27 j 09:43	1°15'16"		minimum elong	1186 Jan 27 j 03:46	14°11'40"	0°21'08"
	1179 Jul 11 j 16:30	30°R		max. Earth dist.	1186 Jan 27 j 18:35	14°13'03"	31.01196 AU
opposition	1179 Jul 16 j 23:07	29°51'25"	0°05'49"		1186 Feb 17 j 17:39	15°	
min. Earth dist.	1179 Jul 16 j 12:28	29°52'08"	29.08177 AU	retrograde	1186 May 12 j 23:49	16°44'11"	
direct	1179 Oct 04 j 07:12	28°28'19"		opposition	1186 Aug 01 j 18:29	15°19'47"	0°-24'-45"
	1179 Dec 20 j 06:59	0°		min. Earth dist.	1186 Aug 01 j 02:35	15°20'52"	29.00834 AU
					1186 Aug 13 j 22:34	15°R	
conjunction	1180 Jan 14 j 14:38	0°56'17"	0°03'29"	direct	1186 Oct 19 j 13:01	13°56'41"	
minimum elong	1180 Jan 14 j 14:38	0°56'17"	0°03'30"		1186 Dec 21 j 03:34	15°	
behind sun begin	1180 Jan 14 j 08:17	0°55'43"					
behind sun end	1180 Jan 14 j 21:00	0°56'52"		conjunction	1187 Jan 29 j 14:16	16°24'32"	0°-25'-9"
max. Earth dist.	1180 Jan 15 j 00:58	0°57'15"	31.07623 AU	minimum elong	1187 Jan 29 j 14:16	16°24'32"	0°25'10"
retrograde	1180 Apr 28 j 20:49	3°27'57"		max. Earth dist.	1187 Jan 30 j 06:55	16°26'07"	31.00454 AU
opposition	1180 Jul 18 j 12:27	2°04'01"	0°01'26"	retrograde	1187 May 15 j 12:31	18°57'14"	
min. Earth dist.	1180 Jul 18 j 02:10	2°04'43"	29.07061 AU	opposition	1187 Aug 04 j 07:34	17°32'48"	0°-29'-2"
direct	1180 Oct 05 j 19:38	0°40'55"		min. Earth dist.	1187 Aug 03 j 15:17	17°33'55"	29.00135 AU
desc. node	1180 Nov 15 j 04:43	1°08'14"		direct	1187 Oct 22 j 00:41	16°09'44"	
conjunction	1181 Jan 16 j 00:52	3°08'50"	0°00'-42"	conjunction	1188 Feb 01 j 00:42	18°37'37"	0°-29'-8"
minimum elong	1181 Jan 16 j 00:51	3°08'50"	0°00'43"	minimum elong	1188 Feb 01 j 00:42	18°37'37"	0°29'09"
behind sun begin	1181 Jan 15 j 18:27	3°08'16"		max. Earth dist.	1188 Feb 01 j 17:29	18°39'12"	30.99797 AU
behind sun end	1181 Jan 16 j 07:14	3°09'25"		retrograde	1188 May 17 j 02:58	21°10'29"	
max. Earth dist.	1181 Jan 16 j 11:45	3°09'52"	31.06473 AU	opposition	1188 Aug 05 j 20:36	19°46'01"	0°-33'-17"
retrograde	1181 May 01 j 09:40	5°40'37"		min. Earth dist.	1188 Aug 05 j 02:58	19°47'14"	28.99500 AU
opposition	1181 Jul 21 j 01:22	4°16'36"	0°-2'-57"	direct	1188 Oct 23 j 11:23	18°23'00"	
min. Earth dist.	1181 Jul 20 j 13:30	4°17'24"	29.05875 AU				
direct	1181 Oct 08 j 07:50	2°53'28"		conjunction	1189 Feb 02 j 11:29	20°50'55"	0°-33'-5"
				minimum elong	1189 Feb 02 j 11:29	20°50'55"	0°33'06"
conjunction	1182 Jan 18 j 10:58	5°21'22"	0°-4'-51"	max. Earth dist.	1189 Feb 03 j 05:09	20°52'35"	30.99157 AU
minimum elong	1182 Jan 18 j 10:58	5°21'22"	0°04'52"	retrograde	1189 May 19 j 15:47	23°23'56"	
behind sun begin	1182 Jan 18 j 04:43	5°20'48"		opposition	1189 Aug 08 j 09:34	21°59'27"	0°-37'-29"
behind sun end	1182 Jan 18 j 17:13	5°21'56"		min. Earth dist.	1189 Aug 07 j 16:24	22°00'38"	28.98862 AU
max. Earth dist.	1182 Jan 18 j 22:16	5°22'25"	31.05267 AU	direct	1189 Oct 25 j 23:51	20°36'29"	
retrograde	1182 May 03 j 20:57	7°53'17"					
opposition	1182 Jul 23 j 14:32	6°29'09"	0°-7'-20"	conjunction	1190 Feb 04 j 22:23	23°04'25"	0°-37'00"
min. Earth dist.	1182 Jul 23 j 02:58	6°29'57"	29.04682 AU	minimum elong	1190 Feb 04 j 22:23	23°04'25"	0°37'00"
direct	1182 Oct 10 j 18:19	5°06'01"		max. Earth dist.	1190 Feb 05 j 16:33	23°06'08"	30.98504 AU
				retrograde	1190 May 22 j 06:37	25°37'35"	
conjunction	1183 Jan 20 j 21:02	7°33'52"	0°-8'-56"	opposition	1190 Aug 10 j 22:34	24°13'05"	0°-41'-38"
minimum elong	1183 Jan 20 j 21:03	7°33'52"	0°08'57"	min. Earth dist.	1190 Aug 10 j 04:02	24°14'21"	28.98179 AU
behind sun begin	1183 Jan 20 j 15:32	7°33'22"		direct	1190 Oct 28 j 12:23	22°50'07"	
behind sun end	1183 Jan 21 j 02:34	7°34'22"					
max. Earth dist.	1183 Jan 21 j 10:00	7°35'05"	31.04096 AU	conjunction	1191 Feb 07 j 09:16	25°18'05"	0°-40'-51"
retrograde	1183 May 06 j 08:09	10°05'55"		minimum elong	1191 Feb 07 j 09:15	25°18'05"	0°40'52"
opposition	1183 Jul 26 j 03:32	8°41'42"	0°-11'-43"	max. Earth dist.	1191 Feb 08 j 03:25	25°19'48"	30.97768 AU
min. Earth dist.	1183 Jul 25 j 14:09	8°42'37"	29.03545 AU	retrograde	1191 May 24 j 18:21	27°51'25"	
direct	1183 Oct 13 j 06:19	7°18'33"		opposition	1191 Aug 13 j 11:50	26°26'51"	0°-45'-44"
				min. Earth dist.	1191 Aug 12 j 18:03	26°28'04"	28.97403 AU
conjunction	1184 Jan 23 j 07:12	9°46'23"	0°-13'-1"	direct	1191 Oct 30 j 23:10	25°03'54"	
minimum elong	1184 Jan 23 j 07:12	9°46'23"	0°13'01"				
behind sun begin	1184 Jan 23 j 03:14	9°46'01"		conjunction	1192 Feb 09 j 20:32	27°31'51"	0°-44'-39"
behind sun end	1184 Jan 23 j 11:09	9°46'44"		minimum elong	1192 Feb 09 j 20:31	27°31'51"	0°44'39"
max. Earth dist.	1184 Jan 23 j 20:08	9°47'36"	31.03007 AU	max. Earth dist.	1192 Feb 10 j 15:39	27°33'40"	30.96936 AU
retrograde	1184 May 07 j 21:14	12°18'35"			1192 May 08 j 05:28	0°	
opposition	1184 Jul 27 j 16:35	10°54'17"	0°-16'-5"	retrograde	1192 May 26 j 06:23	0°05'18"	
min. Earth dist.	1184 Jul 27 j 02:51	10°55'13"	29.02526 AU		1192 Jun 13 j 12:44	30°R	
direct	1184 Oct 14 j 14:58	9°31'08"		min. Earth dist.	1192 Aug 14 j 05:55	28°41'58"	28.96510 AU
				opposition	1192 Aug 15 j 00:46	28°40'40"	0°-49'-45"
conjunction	1185 Jan 24 j 17:32	11°58'57"	0°-17'-4"	direct	1192 Nov 01 j 11:39	27°17'42"	
minimum elong	1185 Jan 24 j 17:32	11°58'57"	0°17'06"				
max. Earth dist.	1185 Jan 25 j 08:27	12°00'22"	31.02042 AU	conjunction	1193 Feb 11 j 07:41	29°45'39"	0°-48'-22"
retrograde	1185 May 10 j 09:03	14°31'19"		minimum elong	1193 Feb 11 j 07:41	29°45'39"	0°48'23"
opposition	1185 Jul 30 j 05:32	13°06'58"	0°-20'-25"	max. Earth dist.	1193 Feb 12 j 02:03	29°47'24"	30.95987 AU
min. Earth dist.	1185 Jul 29 j 14:31	13°08'00"	29.01618 AU		1193 Feb 17 j 15:01	0°	
direct	1185 Oct 17 j 02:47	11°43'50"		retrograde	1193 May 28 j 19:33	2°19'12"	
				opposition	1193 Aug 17 j 13:52	0°54'29"	0°-53'-42"

min. Earth dist.	1193 Aug 16 j 19:25	0° $\Upsilon$ 55'45	28.95524 AU	direct	1201 Nov 21 j 17:54	17° $\Upsilon$ 21'59	
	1193 Sep 22 j 12:02	30° $\Re$ $\approx$					
direct	1193 Nov 03 j 21:25	29° $\approx$ 31'28		conjunction	1202 Mar 03 j 15:15	19° $\Upsilon$ 50'10	-1°-18'-5
	1193 Dec 14 j 21:56	0° $\Upsilon$		minimum elong	1202 Mar 03 j 15:15	19° $\Upsilon$ 50'10	1°18'06
				max. Earth dist.	1202 Mar 04 j 13:58	19° $\Upsilon$ 52'19	30.89185 AU
conjunction	1194 Feb 13 j 18:58	1° $\Upsilon$ 59'24	0°-52'-2	retrograde	1202 Jun 18 j 19:25	22° $\Upsilon$ 24'40	
minimum elong	1194 Feb 13 j 18:57	1° $\Upsilon$ 59'24	0°52'03	min. Earth dist.	1202 Sep 06 j 10:31	21° $\Upsilon$ 01'05	28.89037 AU
max. Earth dist.	1194 Feb 14 j 14:44	2° $\Upsilon$ 01'16	30.94962 AU	opposition	1202 Sep 07 j 08:25	20° $\Upsilon$ 59'34	-1°-25'-1
retrograde	1194 May 31 j 07:01	4° $\Upsilon$ 33'01		direct	1202 Nov 24 j 03:31	19° $\Upsilon$ 36'32	
min. Earth dist.	1194 Aug 19 j 07:31	3° $\Upsilon$ 09'32	28.94481 AU				
opposition	1194 Aug 20 j 02:44	3° $\Upsilon$ 08'13	0°-57'-35	conjunction	1203 Mar 06 j 03:32	22° $\Upsilon$ 04'48	-1°-20'-52
direct	1194 Nov 06 j 10:01	1° $\Upsilon$ 45'10		minimum elong	1203 Mar 06 j 03:32	22° $\Upsilon$ 04'48	1°20'53
				max. Earth dist.	1203 Mar 07 j 03:20	22° $\Upsilon$ 07'03	30.88702 AU
conjunction	1195 Feb 16 j 06:09	4° $\Upsilon$ 13'04	0°-55'-36	retrograde	1203 Jun 21 j 07:21	24° $\Upsilon$ 39'24	
minimum elong	1195 Feb 16 j 06:09	4° $\Upsilon$ 13'04	0°55'38	opposition	1203 Sep 09 j 21:03	23° $\Upsilon$ 14'18	-1°-27'-55
max. Earth dist.	1195 Feb 17 j 01:26	4° $\Upsilon$ 14'54	30.93928 AU	min. Earth dist.	1203 Sep 08 j 22:48	23° $\Upsilon$ 15'50	28.88518 AU
retrograde	1195 Jun 02 j 20:48	6° $\Upsilon$ 46'47		direct	1203 Nov 26 j 15:55	21° $\Upsilon$ 51'16	
opposition	1195 Aug 22 j 15:38	5° $\Upsilon$ 21'52	-1°-1'-22				
min. Earth dist.	1195 Aug 21 j 19:59	5° $\Upsilon$ 23'14	28.93478 AU	conjunction	1204 Mar 07 j 15:48	24° $\Upsilon$ 19'35	-1°-23'-31
direct	1195 Nov 08 j 20:07	3° $\Upsilon$ 58'46		minimum elong	1204 Mar 07 j 15:48	24° $\Upsilon$ 19'35	1°23'32
				max. Earth dist.	1204 Mar 08 j 14:24	24° $\Upsilon$ 21'44	30.88137 AU
conjunction	1196 Feb 18 j 17:29	6° $\Upsilon$ 26'41	0°-59'-6	retrograde	1204 Jun 22 j 21:03	26° $\Upsilon$ 54'17	
minimum elong	1196 Feb 18 j 17:29	6° $\Upsilon$ 26'41	0°59'07	min. Earth dist.	1204 Sep 10 j 11:46	25° $\Upsilon$ 30'41	28.87905 AU
max. Earth dist.	1196 Feb 19 j 14:19	6° $\Upsilon$ 28'39	30.92943 AU	opposition	1204 Sep 11 j 09:46	25° $\Upsilon$ 29'09	-1°-30'-42
retrograde	1196 Jun 04 j 08:46	9° $\Upsilon$ 00'29		direct	1204 Nov 28 j 01:48	24° $\Upsilon$ 06'07	
min. Earth dist.	1196 Aug 23 j 08:38	7° $\Upsilon$ 36'51	28.92540 AU				
opposition	1196 Aug 24 j 04:28	7° $\Upsilon$ 35'29	-1°-5'-3	conjunction	1205 Mar 10 j 04:21	26° $\Upsilon$ 34'29	-1°-26'-3
direct	1196 Nov 10 j 07:37	6° $\Upsilon$ 12'22		minimum elong	1205 Mar 10 j 04:21	26° $\Upsilon$ 34'29	1°26'04
				max. Earth dist.	1205 Mar 11 j 03:41	26° $\Upsilon$ 36'41	30.87453 AU
conjunction	1197 Feb 20 j 04:53	8° $\Upsilon$ 40'16	-1°-2'-31	retrograde	1205 Jun 25 j 09:03	29° $\Upsilon$ 09'14	
minimum elong	1197 Feb 20 j 04:53	8° $\Upsilon$ 40'16	1°02'31	opposition	1205 Sep 13 j 22:15	27° $\Upsilon$ 44'03	-1°-33'-20
max. Earth dist.	1197 Feb 21 j 01:38	8° $\Upsilon$ 42'14	30.92060 AU	min. Earth dist.	1205 Sep 13 j 00:48	27° $\Upsilon$ 45'33	28.87169 AU
retrograde	1197 Jun 06 j 23:19	11° $\Upsilon$ 14'10		direct	1205 Nov 30 j 12:52	26° $\Upsilon$ 20'58	
opposition	1197 Aug 26 j 17:01	9° $\Upsilon$ 49'07	-1°-8'-39				
min. Earth dist.	1197 Aug 25 j 20:00	9° $\Upsilon$ 50'34	28.91721 AU	conjunction	1206 Mar 12 j 16:47	28° $\Upsilon$ 49'22	-1°-28'-27
direct	1197 Nov 12 j 18:26	8° $\Upsilon$ 25'58		minimum elong	1206 Mar 12 j 16:46	28° $\Upsilon$ 49'22	1°28'28
				max. Earth dist.	1206 Mar 13 j 15:19	28° $\Upsilon$ 51'30	30.86687 AU
conjunction	1198 Feb 22 j 16:21	10° $\Upsilon$ 53'55	-1°-5'-50		1206 Apr 14 j 00:00	0° $\Upsilon$	
minimum elong	1198 Feb 22 j 16:21	10° $\Upsilon$ 53'55	1°05'50	retrograde	1206 Jun 27 j 23:28	1° $\Upsilon$ 24'09	
max. Earth dist.	1198 Feb 23 j 13:59	10° $\Upsilon$ 55'58	30.91287 AU		1206 Sep 15 j 19:06	30° $\Re$ $\Upsilon$	
retrograde	1198 Jun 09 j 12:31	13° $\Upsilon$ 27'55		opposition	1206 Sep 16 j 10:45	29° $\Upsilon$ 58'55	-1°-35'-50
min. Earth dist.	1198 Aug 28 j 09:04	12° $\Upsilon$ 04'16	28.91018 AU	min. Earth dist.	1206 Sep 15 j 12:48	0° $\Upsilon$ 00'26	28.86378 AU
opposition	1198 Aug 29 j 05:47	12° $\Upsilon$ 02'50	-1°-12'-9	direct	1206 Dec 03 j 00:08	28° $\Upsilon$ 35'45	
direct	1198 Nov 15 j 06:36	10° $\Upsilon$ 39'42			1207 Feb 14 j 00:19	0° $\Upsilon$	
conjunction	1199 Feb 25 j 03:49	13° $\Upsilon$ 07'41	-1°-9'-3	conjunction	1207 Mar 15 j 05:09	1° $\Upsilon$ 04'10	-1°-30'-44
minimum elong	1199 Feb 25 j 03:49	13° $\Upsilon$ 07'41	1°09'04	minimum elong	1207 Mar 15 j 05:08	1° $\Upsilon$ 04'10	1°30'44
max. Earth dist.	1199 Feb 26 j 02:07	13° $\Upsilon$ 09'48	30.90649 AU	max. Earth dist.	1207 Mar 16 j 04:05	1° $\Upsilon$ 06'20	30.85870 AU
retrograde	1199 Jun 12 j 03:30	15° $\Upsilon$ 41'48		retrograde	1207 Jun 30 j 12:18	3° $\Upsilon$ 38'59	
opposition	1199 Aug 31 j 18:26	14° $\Upsilon$ 16'41	-1°-15'-32	opposition	1207 Sep 18 j 23:15	2° $\Upsilon$ 13'40	-1°-38'-11
min. Earth dist.	1199 Aug 30 j 20:12	14° $\Upsilon$ 18'14	28.90435 AU	min. Earth dist.	1207 Sep 18 j 02:06	2° $\Upsilon$ 15'08	28.85570 AU
direct	1199 Nov 17 j 19:00	12° $\Upsilon$ 53'34		direct	1207 Dec 05 j 12:44	0° $\Upsilon$ 50'27	
conjunction	1200 Feb 27 j 15:29	15° $\Upsilon$ 21'37	-1°-12'-10	conjunction	1208 Mar 16 j 17:44	3° $\Upsilon$ 18'53	-1°-32'-51
minimum elong	1200 Feb 27 j 15:28	15° $\Upsilon$ 21'37	1°12'11	minimum elong	1208 Mar 16 j 17:43	3° $\Upsilon$ 18'53	1°32'53
max. Earth dist.	1200 Feb 28 j 13:53	15° $\Upsilon$ 23'44	30.90105 AU	max. Earth dist.	1208 Mar 17 j 16:46	3° $\Upsilon$ 21'04	30.85088 AU
retrograde	1200 Jun 13 j 16:02	17° $\Upsilon$ 55'52		retrograde	1208 Jul 02 j 02:34	5° $\Upsilon$ 53'42	
min. Earth dist.	1200 Sep 01 j 09:36	16° $\Upsilon$ 32'14	28.89942 AU	opposition	1208 Sep 20 j 11:21	4° $\Upsilon$ 28'19	-1°-40'-24
opposition	1200 Sep 02 j 07:06	16° $\Upsilon$ 30'45	-1°-18'-49	min. Earth dist.	1208 Sep 19 j 13:10	4° $\Upsilon$ 29'52	28.84822 AU
direct	1200 Nov 19 j 05:29	15° $\Upsilon$ 07'40		direct	1208 Dec 07 j 01:16	3° $\Upsilon$ 05'01	
conjunction	1201 Mar 01 j 03:26	17° $\Upsilon$ 35'46	-1°-15'-11	conjunction	1209 Mar 19 j 06:17	5° $\Upsilon$ 33'30	-1°-34'-51
minimum elong	1201 Mar 01 j 03:25	17° $\Upsilon$ 35'46	1°15'12	minimum elong	1209 Mar 19 j 06:17	5° $\Upsilon$ 33'30	1°34'52
max. Earth dist.	1201 Mar 02 j 02:55	17° $\Upsilon$ 38'00	30.89640 AU	max. Earth dist.	1209 Mar 20 j 05:08	5° $\Upsilon$ 35'39	30.84372 AU
retrograde	1201 Jun 16 j 05:27	20° $\Upsilon$ 10'08		retrograde	1209 Jul 04 j 15:30	8° $\Upsilon$ 08'20	
opposition	1201 Sep 04 j 19:41	18° $\Upsilon$ 45'02	-1°-21'-58	opposition	1209 Sep 22 j 23:39	6° $\Upsilon$ 42'53	-1°-42'-27
min. Earth dist.	1201 Sep 03 j 21:07	18° $\Upsilon$ 46'36	28.89490 AU	min. Earth dist.	1209 Sep 22 j 02:22	6° $\Upsilon$ 44'22	28.84173 AU

direct	1209 Dec 09 j 12:26	5°♃19'33		minimum elong	1218 Apr 09 j 03:38	25°♃46'58	1°46'01
				max. Earth dist.	1218 Apr 10 j 01:11	25°♃49'00	30.82178 AU
conjunction	1210 Mar 21 j 18:50	7°♃48'02	-1°-36'-42	retrograde	1218 Jul 25 j 14:48	28°♃21'56	
minimum elong	1210 Mar 21 j 18:50	7°♃48'02	1°36'43	opposition	1218 Oct 13 j 11:40	26°♃56'32	-1°-53'-36
max. Earth dist.	1210 Mar 22 j 18:41	7°♃50'18	30.83784 AU	min. Earth dist.	1218 Oct 12 j 16:20	26°♃57'53	28.82155 AU
retrograde	1210 Jul 07 j 05:45	10°♃22'53		direct	1218 Dec 29 j 19:51	25°♃33'00	
opposition	1210 Sep 25 j 11:44	8°♃57'24	-1°-44'-21				
min. Earth dist.	1210 Sep 24 j 13:22	8°♃58'58	28.83652 AU	conjunction	1219 Apr 11 j 17:16	28°♃02'08	-1°-46'-27
direct	1210 Dec 12 j 01:56	7°♃34'01		minimum elong	1219 Apr 11 j 17:16	28°♃02'08	1°46'27
				max. Earth dist.	1219 Apr 12 j 15:01	28°♃04'11	30.81878 AU
conjunction	1211 Mar 24 j 07:28	10°♃02'34	-1°-38'-24		1219 Jun 09 j 22:23	0°♃	
minimum elong	1211 Mar 24 j 07:27	10°♃02'34	1°38'25	retrograde	1219 Jul 28 j 05:22	0°♃37'03	
max. Earth dist.	1211 Mar 25 j 06:32	10°♃04'45	30.83333 AU		1219 Sep 15 j 12:05	30°♃	
retrograde	1211 Jul 09 j 19:22	12°♃37'26		opposition	1219 Oct 15 j 23:17	29°♃11'38	-1°-54'00
opposition	1211 Sep 27 j 23:54	11°♃11'56	-1°-46'-5	min. Earth dist.	1219 Oct 15 j 03:33	29°♃13'01	28.81840 AU
min. Earth dist.	1211 Sep 27 j 02:07	11°♃13'27	28.83286 AU	direct	1220 Jan 01 j 09:46	27°♃48'02	
direct	1211 Dec 14 j 12:35	9°♃48'31			1220 Apr 05 j 15:22	0°♃	
				conjunction	1220 Apr 13 j 06:47	0°♃17'14	-1°-46'-44
conjunction	1212 Mar 25 j 20:20	12°♃17'07	-1°-39'-57	minimum elong	1220 Apr 13 j 06:47	0°♃17'14	1°46'46
minimum elong	1212 Mar 25 j 20:20	12°♃17'07	1°39'59	max. Earth dist.	1220 Apr 14 j 03:12	0°♃19'09	30.81568 AU
max. Earth dist.	1212 Mar 26 j 20:36	12°♃19'25	30.83032 AU	retrograde	1220 Jul 29 j 18:41	2°♃52'06	
retrograde	1212 Jul 11 j 07:11	14°♃52'01		opposition	1220 Oct 17 j 11:01	1°♃26'39	-1°-54'-14
opposition	1212 Sep 29 j 11:54	13°♃26'31	-1°-47'-40	min. Earth dist.	1220 Oct 16 j 16:25	1°♃27'57	28.81556 AU
min. Earth dist.	1212 Sep 28 j 13:35	13°♃28'05	28.83044 AU	direct	1221 Jan 02 j 21:09	0°♃03'00	
direct	1212 Dec 16 j 00:59	12°♃03'06					
				conjunction	1221 Apr 15 j 20:25	2°♃32'15	-1°-46'-52
conjunction	1213 Mar 28 j 09:10	14°♃31'46	-1°-41'-21	minimum elong	1221 Apr 15 j 20:25	2°♃32'15	1°46'52
minimum elong	1213 Mar 28 j 09:10	14°♃31'46	1°41'22	max. Earth dist.	1221 Apr 16 j 17:33	2°♃34'14	30.81311 AU
max. Earth dist.	1213 Mar 29 j 08:22	14°♃33'57	30.82851 AU	retrograde	1221 Aug 01 j 06:51	5°♃07'02	
retrograde	1213 Jul 13 j 20:47	17°♃06'41		opposition	1221 Oct 19 j 22:27	3°♃41'35	-1°-54'-17
opposition	1213 Oct 01 j 23:52	15°♃41'12	-1°-49'-5	min. Earth dist.	1221 Oct 19 j 03:38	3°♃42'55	28.81338 AU
min. Earth dist.	1213 Oct 01 j 01:45	15°♃42'45	28.82918 AU	direct	1222 Jan 05 j 10:03	2°♃17'53	
direct	1213 Dec 18 j 10:52	14°♃17'48					
				conjunction	1222 Apr 18 j 09:53	4°♃47'11	-1°-46'-50
conjunction	1214 Mar 30 j 22:15	16°♃46'33	-1°-42'-36	minimum elong	1222 Apr 18 j 09:53	4°♃47'11	1°46'51
minimum elong	1214 Mar 30 j 22:14	16°♃46'33	1°42'37	max. Earth dist.	1222 Apr 19 j 05:40	4°♃49'03	30.81156 AU
max. Earth dist.	1214 Mar 31 j 22:25	16°♃48'50	30.82755 AU	retrograde	1222 Aug 03 j 20:47	7°♃21'55	
retrograde	1214 Jul 16 j 08:56	19°♃21'30		opposition	1222 Oct 22 j 09:57	5°♃56'29	-1°-54'-9
opposition	1214 Oct 04 j 11:52	17°♃56'03	-1°-50'-19	min. Earth dist.	1222 Oct 21 j 15:28	5°♃57'47	28.81255 AU
min. Earth dist.	1214 Oct 03 j 14:14	17°♃57'34	28.82846 AU	direct	1223 Jan 07 j 20:38	4°♃32'43	
direct	1214 Dec 20 j 21:42	16°♃32'39					
				conjunction	1223 Apr 20 j 23:31	7°♃02'06	-1°-46'-38
conjunction	1215 Apr 02 j 11:17	19°♃01'29	-1°-43'-41	minimum elong	1223 Apr 20 j 23:31	7°♃02'06	1°46'38
minimum elong	1215 Apr 02 j 11:17	19°♃01'29	1°43'41	max. Earth dist.	1223 Apr 21 j 20:11	7°♃04'02	30.81135 AU
max. Earth dist.	1215 Apr 03 j 10:29	19°♃03'40	30.82700 AU	retrograde	1223 Aug 06 j 08:24	9°♃36'46	
retrograde	1215 Jul 18 j 22:56	21°♃36'28		opposition	1223 Oct 24 j 21:25	8°♃11'21	-1°-53'-51
opposition	1215 Oct 06 j 23:51	20°♃11'03	-1°-51'-24	min. Earth dist.	1223 Oct 24 j 03:23	8°♃12'38	28.81301 AU
min. Earth dist.	1215 Oct 06 j 02:05	20°♃12'35	28.82784 AU	direct	1224 Jan 10 j 07:57	6°♃47'34	
direct	1215 Dec 23 j 08:38	18°♃47'38					
				conjunction	1224 Apr 22 j 13:12	9°♃17'00	-1°-46'-16
conjunction	1216 Apr 04 j 00:45	21°♃16'34	-1°-44'-37	minimum elong	1224 Apr 22 j 13:12	9°♃17'00	1°46'17
minimum elong	1216 Apr 04 j 00:45	21°♃16'34	1°44'38	max. Earth dist.	1224 Apr 23 j 08:44	9°♃18'50	30.81266 AU
max. Earth dist.	1216 Apr 04 j 23:51	21°♃18'45	30.82601 AU	retrograde	1224 Aug 07 j 21:08	11°♃51'38	
retrograde	1216 Jul 20 j 11:15	23°♃51'35		opposition	1224 Oct 26 j 08:40	10°♃26'15	-1°-53'-23
opposition	1216 Oct 08 j 11:46	22°♃26'11	-1°-52'-18	min. Earth dist.	1224 Oct 25 j 14:25	10°♃27'32	28.81505 AU
min. Earth dist.	1216 Oct 07 j 15:22	22°♃27'37	28.82655 AU	direct	1225 Jan 11 j 18:53	9°♃02'26	
direct	1216 Dec 24 j 20:11	21°♃02'45					
				conjunction	1225 Apr 25 j 02:59	11°♃31'58	-1°-45'-45
conjunction	1217 Apr 06 j 14:17	23°♃31'46	-1°-45'-23	minimum elong	1225 Apr 25 j 02:59	11°♃31'58	1°45'45
minimum elong	1217 Apr 06 j 14:17	23°♃31'46	1°45'23	max. Earth dist.	1225 Apr 25 j 22:47	11°♃33'49	30.81534 AU
max. Earth dist.	1217 Apr 07 j 12:39	23°♃33'52	30.82437 AU	retrograde	1225 Aug 10 j 08:25	14°♃06'33	
retrograde	1217 Jul 23 j 01:40	26°♃06'45		opposition	1225 Oct 28 j 20:06	12°♃41'13	-1°-52'-44
opposition	1217 Oct 10 j 23:40	24°♃41'21	-1°-53'-2	min. Earth dist.	1225 Oct 28 j 02:56	12°♃42'26	28.81838 AU
min. Earth dist.	1217 Oct 10 j 02:49	24°♃42'49	28.82443 AU	direct	1226 Jan 14 j 05:32	11°♃17'25	
direct	1217 Dec 27 j 08:24	23°♃17'53					
				conjunction	1226 Apr 27 j 16:40	13°♃47'02	-1°-45'-3
conjunction	1218 Apr 09 j 03:38	25°♃46'58	-1°-46'00				



minimum elong	1226 Apr 27 j 16:40	13°♃47'02	1°45'05		1234 Mar 23 j 16:41	0°♄	
max. Earth dist.	1226 Apr 28 j 11:53	13°♃48'50	30.81936 AU				
	1226 May 31 j 09:36	15°♃		conjunction	1234 May 16 j 10:00	1°♄48'18	-1°-33'-54
retrograde	1226 Aug 12 j 22:29	16°♃21'34		minimum elong	1234 May 16 j 10:00	1°♄48'18	1°33'56
	1226 Oct 29 j 03:12	15°♃		max. Earth dist.	1234 May 16 j 22:54	1°♄49'31	30.84400 AU
opposition	1226 Oct 31 j 07:25	14°♃56'18	-1°-51'-54	retrograde	1234 Aug 31 j 04:28	4°♄21'57	
min. Earth dist.	1226 Oct 30 j 13:43	14°♃57'34	28.82275 AU	opposition	1234 Nov 18 j 00:37	2°♄56'58	-1°-39'-19
direct	1227 Jan 16 j 16:36	13°♃32'29		min. Earth dist.	1234 Nov 17 j 14:03	2°♄57'43	28.84630 AU
	1227 Apr 01 j 19:32	15°♃		direct	1235 Feb 03 j 17:31	1°♄32'44	
conjunction	1227 Apr 30 j 06:38	16°♃02'13	-1°-44'-12	conjunction	1235 May 19 j 00:12	4°♄02'57	-1°-31'-51
minimum elong	1227 Apr 30 j 06:38	16°♃02'13	1°44'13	minimum elong	1235 May 19 j 00:12	4°♄02'57	1°31'51
max. Earth dist.	1227 May 01 j 01:07	16°♃03'56	30.82396 AU	max. Earth dist.	1235 May 19 j 12:04	4°♄04'04	30.84718 AU
retrograde	1227 Aug 15 j 10:49	18°♃36'42		retrograde	1235 Sep 02 j 17:27	6°♄36'27	
opposition	1227 Nov 02 j 18:43	17°♃11'31	-1°-50'-54	opposition	1235 Nov 20 j 11:17	5°♄11'31	-1°-37'-3
min. Earth dist.	1227 Nov 02 j 02:45	17°♃12'39	28.82749 AU	min. Earth dist.	1235 Nov 20 j 00:19	5°♄12'17	28.84997 AU
direct	1228 Jan 19 j 03:50	15°♃47'41		direct	1236 Feb 06 j 04:50	3°♄47'13	
conjunction	1228 May 01 j 20:52	18°♃17'31	-1°-43'-11	conjunction	1236 May 20 j 14:24	6°♄17'30	-1°-29'-39
minimum elong	1228 May 01 j 20:52	18°♃17'31	1°43'13	minimum elong	1236 May 20 j 14:24	6°♄17'30	1°29'41
max. Earth dist.	1228 May 02 j 15:05	18°♃19'13	30.82868 AU	max. Earth dist.	1236 May 21 j 01:36	6°♄18'33	30.85142 AU
retrograde	1228 Aug 17 j 00:56	20°♃51'55		retrograde	1236 Sep 04 j 04:19	8°♄50'53	
opposition	1228 Nov 04 j 05:59	19°♃26'48	-1°-49'-44	opposition	1236 Nov 21 j 22:12	7°♄26'00	-1°-34'-38
min. Earth dist.	1228 Nov 03 j 13:57	19°♃27'56	28.83187 AU	min. Earth dist.	1236 Nov 21 j 12:43	7°♄26'41	28.85488 AU
direct	1229 Jan 20 j 17:33	18°♃02'57		direct	1237 Feb 07 j 16:00	6°♄01'40	
conjunction	1229 May 04 j 10:56	20°♃32'53	-1°-42'-1	conjunction	1237 May 23 j 04:30	8°♄32'02	-1°-27'-19
minimum elong	1229 May 04 j 10:56	20°♃32'53	1°42'01	minimum elong	1237 May 23 j 04:30	8°♄32'02	1°27'20
max. Earth dist.	1229 May 05 j 03:23	20°♃34'25	30.83267 AU	max. Earth dist.	1237 May 23 j 15:34	8°♄33'04	30.85709 AU
retrograde	1229 Aug 19 j 14:08	23°♃07'12		retrograde	1237 Sep 06 j 17:06	11°♄05'18	
opposition	1229 Nov 06 j 17:20	21°♃42'08	-1°-48'-24	opposition	1237 Nov 24 j 08:53	9°♄40'30	-1°-32'-4
min. Earth dist.	1229 Nov 06 j 02:54	21°♃43'09	28.83549 AU	min. Earth dist.	1237 Nov 23 j 23:01	9°♄41'12	28.86110 AU
direct	1230 Jan 23 j 04:57	20°♃18'14		direct	1238 Feb 10 j 05:03	8°♄16'08	
conjunction	1230 May 07 j 01:15	22°♃48'14	-1°-40'-42	conjunction	1238 May 25 j 18:36	10°♄46'37	-1°-24'-51
minimum elong	1230 May 07 j 01:15	22°♃48'14	1°40'43	minimum elong	1238 May 25 j 18:37	10°♄46'37	1°24'53
max. Earth dist.	1230 May 07 j 17:41	22°♃49'46	30.83586 AU	max. Earth dist.	1238 May 26 j 04:20	10°♄47'31	30.86398 AU
retrograde	1230 Aug 22 j 03:19	25°♃22'26		retrograde	1238 Sep 09 j 05:44	13°♄19'46	
opposition	1230 Nov 09 j 04:31	23°♃57'24	-1°-46'-54	opposition	1238 Nov 26 j 19:38	11°♄55'04	-1°-29'-21
min. Earth dist.	1230 Nov 08 j 14:26	23°♃58'23	28.83812 AU	min. Earth dist.	1238 Nov 26 j 11:09	11°♄55'40	28.86855 AU
direct	1231 Jan 25 j 18:19	22°♃33'27		direct	1239 Feb 12 j 15:41	10°♄30'42	
conjunction	1231 May 09 j 15:24	25°♃03'29	-1°-39'-13	conjunction	1239 May 28 j 08:56	13°♄01'17	-1°-22'-15
minimum elong	1231 May 09 j 15:25	25°♃03'29	1°39'13	minimum elong	1239 May 28 j 08:56	13°♄01'17	1°22'16
max. Earth dist.	1231 May 10 j 05:43	25°♃04'49	30.83820 AU	max. Earth dist.	1239 May 28 j 18:50	13°♄02'13	30.87189 AU
retrograde	1231 Aug 24 j 17:43	27°♃37'34		retrograde	1239 Sep 11 j 18:55	15°♄34'20	
opposition	1231 Nov 11 j 15:42	26°♃12'32	-1°-45'-14	opposition	1239 Nov 29 j 06:18	14°♄09'44	-1°-26'-30
min. Earth dist.	1231 Nov 11 j 02:37	26°♃13'27	28.84014 AU	min. Earth dist.	1239 Nov 28 j 22:08	14°♄10'19	28.87653 AU
direct	1232 Jan 28 j 06:22	24°♃48'31		direct	1240 Feb 15 j 04:50	12°♄45'23	
conjunction	1232 May 11 j 05:47	27°♃18'36	-1°-37'-36	conjunction	1240 May 29 j 23:12	15°♄16'05	-1°-19'-32
minimum elong	1232 May 11 j 05:47	27°♃18'36	1°37'37	minimum elong	1240 May 29 j 23:12	15°♄16'05	1°19'33
max. Earth dist.	1232 May 11 j 20:17	27°♃19'57	30.83999 AU	max. Earth dist.	1240 May 30 j 06:58	15°♄16'48	30.87999 AU
retrograde	1232 Aug 26 j 04:44	29°♃52'31		retrograde	1240 Sep 13 j 09:26	17°♄49'01	
opposition	1232 Nov 13 j 02:40	28°♃27'30	-1°-43'-25	opposition	1240 Nov 30 j 16:58	16°♄24'31	-1°-23'-31
min. Earth dist.	1232 Nov 12 j 14:37	28°♃28'21	28.84175 AU	min. Earth dist.	1240 Nov 30 j 09:52	16°♄25'01	28.88455 AU
direct	1233 Jan 29 j 18:54	27°♃03'25		direct	1241 Feb 16 j 16:56	15°♄00'09	
conjunction	1233 May 13 j 19:56	29°♃33'32	-1°-35'-49	conjunction	1241 Jun 01 j 13:40	17°♄30'58	-1°-16'-41
minimum elong	1233 May 13 j 19:56	29°♃33'32	1°35'50	minimum elong	1241 Jun 01 j 13:41	17°♄30'58	1°16'41
max. Earth dist.	1233 May 14 j 08:46	29°♃34'44	30.84180 AU	max. Earth dist.	1241 Jun 01 j 21:27	17°♄31'41	30.88772 AU
	1233 May 25 j 16:14	0°♄		retrograde	1241 Sep 15 j 20:43	20°♄03'47	
retrograde	1233 Aug 28 j 17:39	2°♄07'19		opposition	1241 Dec 03 j 03:45	18°♄39'22	-1°-20'-25
opposition	1233 Nov 15 j 13:37	0°♄42'19	-1°-41'-27	min. Earth dist.	1241 Dec 02 j 21:52	18°♄39'47	28.89184 AU
min. Earth dist.	1233 Nov 15 j 01:43	0°♄43'09	28.84372 AU	direct	1242 Feb 19 j 05:35	17°♄15'00	
	1233 Dec 11 j 14:29	30°♃		conjunction	1242 Jun 04 j 03:53	19°♄45'52	-1°-13'-43
direct	1234 Feb 01 j 06:28	29°♃18'08					

minimum elong	1242 Jun 04 j 03:53	19°II45'52	1°13'45	minimum elong	1250 Jun 22 j 20:48	7°♄39'26	0°46'38
max. Earth dist.	1242 Jun 04 j 09:30	19°II46'23	30.89468 AU	max. Earth dist.	1250 Jun 22 j 20:18	7°♄39'23	30.94318 AU
retrograde	1242 Sep 18 j 10:18	22°II18'32		retrograde	1250 Oct 06 j 04:48	10°♄10'39	
opposition	1242 Dec 05 j 14:27	20°II54'12	-1°-17'-11	opposition	1250 Dec 23 j 01:44	8°♄46'40	0°-47'-49
min. Earth dist.	1242 Dec 05 j 09:07	20°II54'35	28.89826 AU	min. Earth dist.	1250 Dec 23 j 02:52	8°♄46'35	28.94832 AU
direct	1243 Feb 21 j 17:32	19°II29'47		direct	1251 Mar 11 j 17:22	7°♄21'45	
conjunction	1243 Jun 06 j 18:23	22°II00'43	-1°-10'-39	conjunction	1251 Jun 25 j 10:41	9°♄53'00	0°-42'-51
minimum elong	1243 Jun 06 j 18:23	22°II00'43	1°10'40	minimum elong	1251 Jun 25 j 10:41	9°♄53'00	0°42'52
max. Earth dist.	1243 Jun 06 j 23:34	22°II01'12	30.90056 AU	max. Earth dist.	1251 Jun 25 j 08:23	9°♄52'47	30.95344 AU
retrograde	1243 Sep 20 j 21:35	24°II33'13		retrograde	1251 Oct 08 j 18:20	12°♄24'03	
opposition	1243 Dec 08 j 01:06	23°II08'56	-1°-13'-51	opposition	1251 Dec 25 j 11:52	11°♄00'11	0°-43'-46
min. Earth dist.	1243 Dec 07 j 21:36	23°II09'11	28.90365 AU	min. Earth dist.	1251 Dec 25 j 13:12	11°♄00'05	28.95900 AU
direct	1244 Feb 24 j 04:54	21°II44'27		direct	1252 Mar 13 j 05:21	9°♄35'16	
conjunction	1244 Jun 08 j 08:43	24°II15'26	-1°-7'-29	conjunction	1252 Jun 27 j 00:42	12°♄06'36	0°-39'-2
minimum elong	1244 Jun 08 j 08:43	24°II15'26	1°07'31	minimum elong	1252 Jun 27 j 00:43	12°♄06'36	0°39'03
max. Earth dist.	1244 Jun 08 j 12:12	24°II15'45	30.90572 AU	max. Earth dist.	1252 Jun 26 j 22:28	12°♄06'24	30.96436 AU
retrograde	1244 Sep 22 j 09:50	26°II47'45		retrograde	1252 Oct 10 j 05:35	14°♄37'32	
opposition	1244 Dec 09 j 11:36	25°II23'30	-1°-10'-25	opposition	1252 Dec 26 j 22:16	13°♄13'46	0°-39'-40
min. Earth dist.	1244 Dec 09 j 08:06	25°II23'45	28.90845 AU	min. Earth dist.	1252 Dec 27 j 01:16	13°♄13'33	28.97002 AU
direct	1245 Feb 25 j 16:39	23°II58'56		direct	1253 Mar 15 j 16:54	11°♄48'52	
conjunction	1245 Jun 10 j 22:49	26°II29'56	-1°-4'-13	conjunction	1253 Jun 29 j 14:26	14°♄20'16	0°-35'-9
minimum elong	1245 Jun 10 j 22:49	26°II29'56	1°04'14	minimum elong	1253 Jun 29 j 14:26	14°♄20'16	0°35'10
max. Earth dist.	1245 Jun 11 j 01:25	26°II30'11	30.91033 AU	max. Earth dist.	1253 Jun 29 j 10:37	14°♄19'55	30.97540 AU
retrograde	1245 Sep 24 j 19:12	29°II02'04		retrograde	1253 Oct 12 j 17:55	16°♄51'04	
opposition	1245 Dec 11 j 22:12	27°II37'51	-1°-6'-52	opposition	1253 Dec 29 j 08:33	15°♄27'24	0°-35'-29
min. Earth dist.	1245 Dec 11 j 20:29	27°II37'58	28.91305 AU	min. Earth dist.	1253 Dec 29 j 11:28	15°♄27'12	28.98081 AU
direct	1246 Feb 28 j 04:06	26°II13'13		direct	1254 Mar 18 j 04:51	14°♄02'30	
conjunction	1246 Jun 13 j 12:58	28°II44'14	-1°00'-52	conjunction	1254 Jul 02 j 04:24	16°♄33'59	0°-31'-14
minimum elong	1246 Jun 13 j 12:59	28°II44'14	1°00'53	minimum elong	1254 Jul 02 j 04:24	16°♄33'59	0°31'15
max. Earth dist.	1246 Jun 13 j 14:58	28°II44'25	30.91514 AU	max. Earth dist.	1254 Jul 01 j 23:38	16°♄33'32	30.98577 AU
retrograde	1246 Jul 18 j 23:06	0°♄		retrograde	1254 Oct 15 j 03:50	19°♄04'37	
opposition	1246 Sep 27 j 06:45	1°♄16'10		opposition	1254 Dec 31 j 18:53	17°♄41'04	0°-31'-16
min. Earth dist.	1246 Dec 09 j 15:04	30°RII		min. Earth dist.	1254 Dec 31 j 23:51	17°♄40'43	28.99080 AU
direct	1246 Dec 14 j 08:26	29°II51'58	-1°-3'-14	direct	1255 Mar 20 j 15:38	16°♄16'09	
conjunction	1246 Dec 14 j 06:39	29°II52'06	28.91797 AU	conjunction	1255 Jul 04 j 18:23	18°♄47'41	0°-27'-15
direct	1247 Mar 02 j 16:35	28°II27'14		minimum elong	1255 Jul 04 j 18:23	18°♄47'41	0°27'16
conjunction	1247 Jun 16 j 03:00	0°♄58'18	0°-57'-25	max. Earth dist.	1255 Jul 04 j 12:30	18°♄47'08	30.99534 AU
minimum elong	1247 Jun 16 j 03:01	0°♄58'18	0°57'26	retrograde	1255 Oct 17 j 15:27	21°♄18'09	
max. Earth dist.	1247 Jun 16 j 03:35	0°♄58'21	30.92039 AU	opposition	1256 Jan 03 j 05:11	19°♄54'41	0°-27'00
retrograde	1247 Sep 29 j 17:50	3°♄30'03		min. Earth dist.	1256 Jan 03 j 10:19	19°♄54'19	28.99974 AU
opposition	1247 Dec 16 j 18:51	2°♄05'52	0°-59'-31	direct	1256 Mar 22 j 03:46	18°♄29'44	
min. Earth dist.	1247 Dec 16 j 18:28	2°♄05'54	28.92369 AU	conjunction	1256 Jul 06 j 08:09	21°♄01'18	0°-23'-15
direct	1248 Mar 04 j 03:08	0°♄41'04		minimum elong	1256 Jul 06 j 08:09	21°♄01'18	0°23'16
conjunction	1248 Jun 17 j 17:04	3°♄12'09	0°-53'-53	max. Earth dist.	1256 Jul 06 j 00:38	21°♄00'37	31.00377 AU
minimum elong	1248 Jun 17 j 17:05	3°♄12'09	0°53'55	retrograde	1256 Oct 19 j 01:56	23°♄31'37	
max. Earth dist.	1248 Jun 17 j 17:50	3°♄12'13	30.92663 AU	opposition	1257 Jan 04 j 15:32	22°♄08'12	0°-22'-42
retrograde	1248 Oct 01 j 05:06	5°♄43'42		min. Earth dist.	1257 Jan 04 j 22:19	22°♄07'44	29.00784 AU
opposition	1248 Dec 18 j 05:05	4°♄19'35	0°-55'-42	direct	1257 Mar 24 j 13:59	20°♄43'12	
min. Earth dist.	1248 Dec 18 j 04:49	4°♄19'36	28.93045 AU	conjunction	1257 Jul 08 j 21:55	23°♄14'48	0°-19'-13
direct	1249 Mar 06 j 16:49	2°♄54'43		minimum elong	1257 Jul 08 j 21:55	23°♄14'48	0°19'14
conjunction	1249 Jun 20 j 06:54	5°♄25'50	0°-50'-17	max. Earth dist.	1257 Jul 08 j 14:12	23°♄14'06	31.01156 AU
minimum elong	1249 Jun 20 j 06:54	5°♄25'50	0°50'18	retrograde	1257 Oct 21 j 12:28	25°♄44'57	
max. Earth dist.	1249 Jun 20 j 05:54	5°♄25'45	30.93415 AU	opposition	1258 Jan 07 j 01:44	24°♄21'35	0°-18'-22
retrograde	1249 Oct 03 j 17:59	7°♄57'13		min. Earth dist.	1258 Jan 07 j 09:00	24°♄21'04	29.01530 AU
opposition	1249 Dec 20 j 15:24	6°♄33'09	0°-51'-48	direct	1258 Mar 27 j 03:35	22°♄56'32	
min. Earth dist.	1249 Dec 20 j 15:40	6°♄33'08	28.93876 AU	conjunction	1258 Jul 11 j 11:25	25°♄28'09	0°-15'-10
direct	1250 Mar 09 j 04:50	5°♄08'14		minimum elong	1258 Jul 11 j 11:24	25°♄28'09	0°15'11
conjunction	1250 Jun 22 j 20:48	7°♄39'26	0°-46'-36	behind sun begin	1258 Jul 11 j 09:35	25°♄27'59	
				behind sun end	1258 Jul 11 j 13:14	25°♄28'19	

max. Earth dist.	1258 Jul 11 j 01:42	25° $\mathcal{E}$ 27'16	31.01892 AU	retrograde	1264 Nov 05 j 19:11	11° $\mathcal{Q}$ 14'18	
retrograde	1258 Oct 24 j 00:31	27° $\mathcal{E}$ 58'07		opposition	1265 Jan 22 j 00:58	9° $\mathcal{Q}$ 51'25	0°12'12
opposition	1259 Jan 09 j 11:57	26° $\mathcal{E}$ 34'47	0°-14'-1	min. Earth dist.	1265 Jan 22 j 11:59	9° $\mathcal{Q}$ 50'38	29.08274 AU
min. Earth dist.	1259 Jan 09 j 20:01	26° $\mathcal{E}$ 34'13	29.02266 AU	direct	1265 Apr 11 j 16:09	8° $\mathcal{Q}$ 26'15	
direct	1259 Mar 29 j 15:39	25° $\mathcal{E}$ 09'41					
				conjunction	1265 Jul 27 j 07:53	10° $\mathcal{Q}$ 58'02	0°13'31
conjunction	1259 Jul 14 j 01:02	27° $\mathcal{E}$ 41'19	0°-11'-6	minimum elong	1265 Jul 27 j 07:53	10° $\mathcal{Q}$ 58'02	0°13'31
minimum elong	1259 Jul 14 j 01:02	27° $\mathcal{E}$ 41'19	0°11'06	behind sun begin	1265 Jul 27 j 04:21	10° $\mathcal{Q}$ 57'43	
behind sun begin	1259 Jul 13 j 20:11	27° $\mathcal{E}$ 40'54		behind sun end	1265 Jul 27 j 11:25	10° $\mathcal{Q}$ 58'21	
behind sun end	1259 Jul 14 j 05:52	27° $\mathcal{E}$ 41'45		max. Earth dist.	1265 Jul 26 j 18:04	10° $\mathcal{Q}$ 56'46	31.08886 AU
max. Earth dist.	1259 Jul 13 j 15:35	27° $\mathcal{E}$ 40'28	31.02629 AU	retrograde	1265 Nov 08 j 04:59	13° $\mathcal{Q}$ 26'57	
	1259 Sep 30 j 22:31	0° $\mathcal{Q}$		opposition	1266 Jan 24 j 11:14	12° $\mathcal{Q}$ 04'09	0°16'33
retrograde	1259 Oct 26 j 10:35	0° $\mathcal{Q}$ 11'06		min. Earth dist.	1266 Jan 24 j 23:41	12° $\mathcal{Q}$ 03'16	29.09511 AU
	1259 Nov 21 j 06:17	30° $\mathcal{R}$ $\mathcal{E}$		direct	1266 Apr 14 j 01:59	10° $\mathcal{Q}$ 39'00	
opposition	1260 Jan 11 j 22:05	28° $\mathcal{E}$ 47'49	0°-9'-40				
min. Earth dist.	1260 Jan 12 j 07:12	28° $\mathcal{E}$ 47'11	29.03014 AU	conjunction	1266 Jul 29 j 21:00	13° $\mathcal{Q}$ 10'49	0°17'34
direct	1260 Mar 31 j 04:08	27° $\mathcal{E}$ 22'40		minimum elong	1266 Jul 29 j 21:00	13° $\mathcal{Q}$ 10'49	0°17'34
				max. Earth dist.	1266 Jul 29 j 07:05	13° $\mathcal{Q}$ 09'32	31.10087 AU
conjunction	1260 Jul 15 j 14:19	29° $\mathcal{E}$ 54'19	0°-7'-2		1266 Sep 22 j 15:06	15° $\mathcal{Q}$	
minimum elong	1260 Jul 15 j 14:20	29° $\mathcal{E}$ 54'19	0°07'03	retrograde	1266 Nov 10 j 14:41	15° $\mathcal{Q}$ 39'36	
behind sun begin	1260 Jul 15 j 08:15	29° $\mathcal{E}$ 53'47			1266 Dec 30 j 22:37	15° $\mathcal{R}$ $\mathcal{Q}$	
behind sun end	1260 Jul 15 j 20:24	29° $\mathcal{E}$ 54'51		opposition	1267 Jan 26 j 21:35	14° $\mathcal{Q}$ 16'53	0°20'52
max. Earth dist.	1260 Jul 15 j 03:10	29° $\mathcal{E}$ 53'18	31.03416 AU	min. Earth dist.	1267 Jan 27 j 10:35	14° $\mathcal{Q}$ 15'59	29.10658 AU
	1260 Jul 18 j 03:37	0° $\mathcal{Q}$		direct	1267 Apr 16 j 14:59	12° $\mathcal{Q}$ 51'45	
retrograde	1260 Oct 27 j 23:40	2° $\mathcal{Q}$ 23'55			1267 Jul 21 j 18:51	15° $\mathcal{Q}$	
opposition	1261 Jan 13 j 08:16	1° $\mathcal{Q}$ 00'41	0°-5'-17				
min. Earth dist.	1261 Jan 13 j 17:16	1° $\mathcal{Q}$ 00'03	29.03849 AU	conjunction	1267 Aug 01 j 10:02	15° $\mathcal{Q}$ 23'35	0°21'35
	1261 Feb 22 j 07:06	30° $\mathcal{R}$ $\mathcal{E}$		minimum elong	1267 Aug 01 j 10:02	15° $\mathcal{Q}$ 23'35	0°21'35
direct	1261 Apr 02 j 17:00	29° $\mathcal{E}$ 35'30		max. Earth dist.	1267 Jul 31 j 18:03	15° $\mathcal{Q}$ 22'07	31.11176 AU
	1261 May 11 j 13:50	0° $\mathcal{Q}$		retrograde	1267 Nov 13 j 02:09	17° $\mathcal{Q}$ 52'14	
conjunction	1261 Jul 18 j 03:30	2° $\mathcal{Q}$ 07'09	0°-2'-57	opposition	1268 Jan 29 j 07:56	16° $\mathcal{Q}$ 29'35	0°25'09
minimum elong	1261 Jul 18 j 03:29	2° $\mathcal{Q}$ 07'09	0°02'58	min. Earth dist.	1268 Jan 29 j 21:45	16° $\mathcal{Q}$ 28'37	29.11698 AU
behind sun begin	1261 Jul 17 j 20:54	2° $\mathcal{Q}$ 06'35		direct	1268 Apr 18 j 01:55	15° $\mathcal{Q}$ 04'26	
behind sun end	1261 Jul 18 j 10:03	2° $\mathcal{Q}$ 07'44		conjunction	1268 Aug 02 j 23:07	17° $\mathcal{Q}$ 36'17	0°25'35
max. Earth dist.	1261 Jul 17 j 16:48	2° $\mathcal{Q}$ 06'11	31.04293 AU	minimum elong	1268 Aug 02 j 23:07	17° $\mathcal{Q}$ 36'17	0°25'35
retrograde	1261 Oct 30 j 10:11	4° $\mathcal{Q}$ 36'36		max. Earth dist.	1268 Aug 02 j 07:15	17° $\mathcal{Q}$ 34'49	31.12147 AU
opposition	1262 Jan 15 j 18:31	3° $\mathcal{Q}$ 13'25	0°00'-54	retrograde	1268 Nov 14 j 12:01	20° $\mathcal{Q}$ 04'46	
min. Earth dist.	1262 Jan 16 j 04:48	3° $\mathcal{Q}$ 12'41	29.04789 AU	opposition	1269 Jan 30 j 18:27	18° $\mathcal{Q}$ 42'11	0°29'24
asc. node	1262 Apr 03 j 00:34	1° $\mathcal{Q}$ 48'18		min. Earth dist.	1269 Jan 31 j 09:28	18° $\mathcal{Q}$ 41'08	29.12604 AU
direct	1262 Apr 05 j 05:27	1° $\mathcal{Q}$ 48'13		direct	1269 Apr 20 j 14:13	17° $\mathcal{Q}$ 17'01	
conjunction	1262 Jul 20 j 16:35	4° $\mathcal{Q}$ 19'53	0°01'15	conjunction	1269 Aug 05 j 11:46	19° $\mathcal{Q}$ 48'50	0°29'32
minimum elong	1262 Jul 20 j 16:36	4° $\mathcal{Q}$ 19'53	0°01'15	minimum elong	1269 Aug 05 j 11:46	19° $\mathcal{Q}$ 48'50	0°29'31
behind sun begin	1262 Jul 20 j 10:00	4° $\mathcal{Q}$ 19'18		max. Earth dist.	1269 Aug 04 j 17:57	19° $\mathcal{Q}$ 47'11	31.12997 AU
behind sun end	1262 Jul 20 j 23:11	4° $\mathcal{Q}$ 20'28		retrograde	1269 Nov 17 j 00:24	22° $\mathcal{Q}$ 17'11	
max. Earth dist.	1262 Jul 20 j 04:43	4° $\mathcal{Q}$ 18'48	31.05304 AU	opposition	1270 Feb 02 j 04:47	20° $\mathcal{Q}$ 54'37	0°33'36
retrograde	1262 Nov 01 j 21:46	6° $\mathcal{Q}$ 49'10		min. Earth dist.	1270 Feb 02 j 19:57	20° $\mathcal{Q}$ 53'34	29.13405 AU
opposition	1263 Jan 18 j 04:31	5° $\mathcal{Q}$ 26'04	0°03'28	direct	1270 Apr 23 j 03:22	19° $\mathcal{Q}$ 29'25	
min. Earth dist.	1263 Jan 18 j 14:15	5° $\mathcal{Q}$ 25'23	29.05859 AU	max. Earth dist.	1270 Aug 07 j 06:58	21° $\mathcal{Q}$ 59'35	31.13740 AU
direct	1263 Apr 07 j 17:54	4° $\mathcal{Q}$ 00'52					
				conjunction	1270 Aug 08 j 00:38	22° $\mathcal{Q}$ 01'13	0°33'26
conjunction	1263 Jul 23 j 05:50	6° $\mathcal{Q}$ 32'35	0°05'23	minimum elong	1270 Aug 08 j 00:38	22° $\mathcal{Q}$ 01'13	0°33'26
minimum elong	1263 Jul 23 j 05:49	6° $\mathcal{Q}$ 32'35	0°05'22	retrograde	1270 Nov 19 j 10:18	24° $\mathcal{Q}$ 29'25	
behind sun begin	1263 Jul 22 j 23:28	6° $\mathcal{Q}$ 32'01		opposition	1271 Feb 04 j 15:08	23° $\mathcal{Q}$ 06'52	0°37'44
behind sun end	1263 Jul 23 j 12:11	6° $\mathcal{Q}$ 33'08		min. Earth dist.	1271 Feb 05 j 07:57	23° $\mathcal{Q}$ 05'42	29.14110 AU
max. Earth dist.	1263 Jul 22 j 17:40	6° $\mathcal{Q}$ 31'28	31.06429 AU	direct	1271 Apr 25 j 16:13	21° $\mathcal{Q}$ 41'38	
retrograde	1263 Nov 04 j 07:39	9° $\mathcal{Q}$ 01'43					
opposition	1264 Jan 20 j 14:49	7° $\mathcal{Q}$ 38'43	0°07'50	conjunction	1271 Aug 10 j 13:14	24° $\mathcal{Q}$ 13'24	0°37'17
min. Earth dist.	1264 Jan 21 j 02:01	7° $\mathcal{Q}$ 37'56	29.07040 AU	minimum elong	1271 Aug 10 j 13:14	24° $\mathcal{Q}$ 13'24	0°37'16
direct	1264 Apr 09 j 04:29	6° $\mathcal{Q}$ 13'32		max. Earth dist.	1271 Aug 09 j 18:11	24° $\mathcal{Q}$ 11'39	31.14421 AU
				retrograde	1271 Nov 21 j 21:44	26° $\mathcal{Q}$ 41'26	
conjunction	1264 Jul 24 j 18:49	8° $\mathcal{Q}$ 45'17	0°09'27	opposition	1272 Feb 07 j 01:26	25° $\mathcal{Q}$ 18'55	0°41'49
minimum elong	1264 Jul 24 j 18:50	8° $\mathcal{Q}$ 45'17	0°09'27	min. Earth dist.	1272 Feb 07 j 17:49	25° $\mathcal{Q}$ 17'47	29.14774 AU
behind sun begin	1264 Jul 24 j 13:23	8° $\mathcal{Q}$ 44'48		direct	1272 Apr 27 j 05:23	23° $\mathcal{Q}$ 53'38	
behind sun end	1264 Jul 25 j 00:17	8° $\mathcal{Q}$ 45'46		max. Earth dist.	1272 Aug 11 j 06:25	26° $\mathcal{Q}$ 23'37	31.15069 AU
max. Earth dist.	1264 Jul 24 j 06:10	8° $\mathcal{Q}$ 44'07	31.07650 AU				

conjunction	1272 Aug 12 j 01:37	26°♁25'23	0°41'04	conjunction	1280 Aug 30 j 01:39	13°♃59'15	1°08'43
minimum elong	1272 Aug 12 j 01:37	26°♁25'23	0°41'04	minimum elong	1280 Aug 30 j 01:39	13°♃59'15	1°08'43
retrograde	1272 Nov 23 j 07:25	28°♁53'17		retrograde	1280 Dec 10 j 18:50	16°♃26'29	
opposition	1273 Feb 08 j 11:54	27°♁30'47	0°45'50	opposition	1281 Feb 25 j 23:57	15°♃04'27	1°15'01
min. Earth dist.	1273 Feb 09 j 05:38	27°♁29'32	29.15445 AU	min. Earth dist.	1281 Feb 26 j 19:42	15°♃03'05	29.22517 AU
direct	1273 Apr 29 j 16:50	26°♁05'28		direct	1281 May 17 j 14:49	13°♃39'21	
conjunction	1273 Aug 14 j 13:53	28°♁37'11	0°44'48	conjunction	1281 Sep 01 j 13:27	16°♃11'03	1°11'46
minimum elong	1273 Aug 14 j 13:53	28°♁37'11	0°44'47	minimum elong	1281 Sep 01 j 13:27	16°♃11'03	1°11'46
max. Earth dist.	1273 Aug 13 j 18:23	28°♁35'23	31.15765 AU	max. Earth dist.	1281 Aug 31 j 14:52	16°♃08'57	31.22763 AU
	1273 Sep 22 j 22:00	0°♃		retrograde	1281 Dec 13 j 05:14	18°♃38'12	
retrograde	1273 Nov 25 j 18:06	1°♃04'56		opposition	1282 Feb 28 j 10:40	17°♃16'11	1°18'13
	1274 Jan 31 j 09:05	30°♃		min. Earth dist.	1282 Mar 01 j 07:55	17°♃14'43	29.23130 AU
opposition	1274 Feb 10 j 22:07	29°♁42'28	0°49'47	direct	1282 May 20 j 02:58	15°♃51'05	
min. Earth dist.	1274 Feb 11 j 15:22	29°♁41'16	29.16173 AU	max. Earth dist.	1282 Sep 03 j 02:04	18°♃20'35	31.23314 AU
direct	1274 May 02 j 05:14	28°♁17'08		conjunction	1282 Sep 04 j 01:08	18°♃22'43	1°14'43
	1274 Jul 25 j 18:20	0°♃		minimum elong	1282 Sep 04 j 01:08	18°♃22'43	1°14'43
max. Earth dist.	1274 Aug 16 j 05:54	0°♃46'58	31.16531 AU	retrograde	1282 Dec 15 j 16:09	20°♃49'46	
conjunction	1274 Aug 17 j 02:04	0°♃48'50	0°48'27	opposition	1283 Mar 02 j 21:24	19°♃27'46	1°21'19
minimum elong	1274 Aug 17 j 02:04	0°♃48'50	0°48'27	min. Earth dist.	1283 Mar 03 j 18:20	19°♃26'19	29.23617 AU
retrograde	1274 Nov 28 j 03:24	3°♃16'29		direct	1283 May 22 j 16:44	18°♃02'38	
opposition	1275 Feb 13 j 08:34	1°♃54'04	0°53'39	conjunction	1283 Sep 06 j 12:37	20°♃34'13	1°17'33
min. Earth dist.	1275 Feb 14 j 02:37	1°♃52'48	29.17004 AU	minimum elong	1283 Sep 06 j 12:37	20°♃34'13	1°17'33
direct	1275 May 04 j 15:28	0°♃28'45		max. Earth dist.	1283 Sep 05 j 12:47	20°♃32'00	31.23748 AU
conjunction	1275 Aug 19 j 14:14	3°♃00'26	0°52'02	retrograde	1283 Dec 18 j 00:58	23°♃01'10	
minimum elong	1275 Aug 19 j 14:14	3°♃00'26	0°52'02	opposition	1284 Mar 04 j 08:12	21°♃39'09	1°24'17
max. Earth dist.	1275 Aug 18 j 18:38	2°♃58'37	31.17409 AU	min. Earth dist.	1284 Mar 05 j 06:01	21°♃37'39	29.24029 AU
retrograde	1275 Nov 30 j 12:15	5°♃27'59		direct	1284 May 24 j 03:43	20°♃14'00	
opposition	1276 Feb 15 j 18:59	4°♃05'38	0°57'27	max. Earth dist.	1284 Sep 07 j 00:49	22°♃43'21	31.24134 AU
min. Earth dist.	1276 Feb 16 j 12:56	4°♃04'23	29.17924 AU	conjunction	1284 Sep 08 j 00:01	22°♃45'30	1°20'16
direct	1276 May 06 j 03:47	2°♃40'21		minimum elong	1284 Sep 08 j 00:01	22°♃45'30	1°20'16
max. Earth dist.	1276 Aug 20 j 05:22	5°♃10'08	31.18376 AU	retrograde	1284 Dec 19 j 09:07	25°♃12'20	
conjunction	1276 Aug 21 j 02:11	5°♃12'04	0°55'33	opposition	1285 Mar 06 j 18:59	23°♃50'19	1°27'07
minimum elong	1276 Aug 21 j 02:11	5°♃12'03	0°55'33	min. Earth dist.	1285 Mar 07 j 16:44	23°♃48'49	29.24402 AU
retrograde	1276 Dec 01 j 23:23	7°♃39'33		direct	1285 May 26 j 16:30	22°♃25'08	
opposition	1277 Feb 17 j 05:25	6°♃17'16	1°01'09	max. Earth dist.	1285 Sep 09 j 10:51	24°♃54'18	31.24510 AU
min. Earth dist.	1277 Feb 17 j 23:29	6°♃16'01	29.18935 AU	conjunction	1285 Sep 10 j 11:03	24°♃56'33	1°22'52
direct	1277 May 08 j 13:25	4°♃52'02		minimum elong	1285 Sep 10 j 11:02	24°♃56'33	1°22'52
conjunction	1277 Aug 23 j 14:06	7°♃23'45	0°58'59	retrograde	1285 Dec 21 j 19:29	27°♃23'18	
minimum elong	1277 Aug 23 j 14:06	7°♃23'45	0°58'59	opposition	1286 Mar 09 j 05:44	26°♃01'15	1°29'50
max. Earth dist.	1277 Aug 22 j 18:05	7°♃21'54	31.19394 AU	min. Earth dist.	1286 Mar 10 j 03:16	25°♃59'46	29.24809 AU
retrograde	1277 Dec 04 j 08:53	9°♃51'11		direct	1286 May 29 j 02:32	24°♃36'03	
opposition	1278 Feb 19 j 16:00	8°♃29'00	1°04'46	conjunction	1286 Sep 12 j 22:12	27°♃07'23	1°25'21
min. Earth dist.	1278 Feb 20 j 10:59	8°♃27'41	29.19947 AU	minimum elong	1286 Sep 12 j 22:12	27°♃07'23	1°25'21
direct	1278 May 11 j 00:51	7°♃03'49		max. Earth dist.	1286 Sep 11 j 23:10	27°♃05'14	31.24938 AU
max. Earth dist.	1278 Aug 25 j 04:24	9°♃33'32	31.20389 AU	retrograde	1286 Dec 24 j 03:42	29°♃34'04	
conjunction	1278 Aug 26 j 01:59	9°♃35'32	1°02'19	opposition	1287 Mar 11 j 16:32	28°♃12'01	1°32'25
minimum elong	1278 Aug 26 j 01:59	9°♃35'32	1°02'19	min. Earth dist.	1287 Mar 12 j 14:29	28°♃10'30	29.25280 AU
retrograde	1278 Dec 06 j 21:12	12°♃02'55		direct	1287 May 31 j 14:34	26°♃46'48	
opposition	1279 Feb 22 j 02:26	10°♃40'48	1°08'17	max. Earth dist.	1287 Sep 14 j 09:14	29°♃15'51	31.25464 AU
min. Earth dist.	1279 Feb 22 j 21:15	10°♃39'30	29.20916 AU	conjunction	1287 Sep 15 j 09:06	29°♃18'05	1°27'42
direct	1279 May 13 j 13:29	9°♃15'39		minimum elong	1287 Sep 15 j 09:06	29°♃18'05	1°27'42
conjunction	1279 Aug 28 j 14:00	11°♃47'24	1°05'34	1287 Oct 04 j 09:03	0°♁		
minimum elong	1279 Aug 28 j 14:00	11°♃47'24	1°05'34	retrograde	1287 Dec 26 j 14:50	1°♁44'42	
max. Earth dist.	1279 Aug 27 j 16:51	11°♃45'26	31.21298 AU	opposition	1288 Mar 13 j 03:23	0°♁22'40	1°34'53
retrograde	1279 Dec 09 j 07:16	14°♃14'42		min. Earth dist.	1288 Mar 14 j 00:20	0°♁21'13	29.25868 AU
opposition	1280 Feb 24 j 13:15	12°♃52'38	1°11'43	1288 Mar 26 j 23:57	30°♃		
min. Earth dist.	1280 Feb 25 j 09:34	12°♃51'14	29.21778 AU	direct	1288 Jun 02 j 02:05	28°♃57'29	
direct	1280 May 15 j 01:51	11°♃27'31		1288 Aug 05 j 08:50	0°♁		
max. Earth dist.	1280 Aug 29 j 03:19	13°♃57'10	31.22100 AU	conjunction	1288 Sep 16 j 19:56	1°♁28'43	1°29'56

minimum elong	1288 Sep 16 j 19:55	1° <u>♁</u> 28'43	1°29'56	opposition	1297 Apr 02 j 08:10	20° <u>♁</u> 00'26	1°50'26
max. Earth dist.	1288 Sep 15 j 21:17	1° <u>♁</u> 26'36	31.26096 AU	min. Earth dist.	1297 Apr 03 j 05:19	19° <u>♁</u> 59'00	29.30173 AU
retrograde	1288 Dec 28 j 00:19	3° <u>♁</u> 55'19		direct	1297 Jun 22 j 12:01	18° <u>♁</u> 35'39	
opposition	1289 Mar 15 j 14:24	2° <u>♁</u> 33'18	1°37'11				
min. Earth dist.	1289 Mar 16 j 12:08	2° <u>♁</u> 31'48	29.26548 AU	conjunction	1297 Oct 06 j 19:13	21° <u>♁</u> 06'27	1°43'52
direct	1289 Jun 04 j 13:15	1° <u>♁</u> 08'11		minimum elong	1297 Oct 06 j 19:13	21° <u>♁</u> 06'27	1°43'51
max. Earth dist.	1289 Sep 18 j 07:37	3° <u>♁</u> 37'14	31.26814 AU	max. Earth dist.	1297 Oct 05 j 20:52	21° <u>♁</u> 04'21	31.30079 AU
				retrograde	1298 Jan 16 j 19:14	23° <u>♁</u> 33'00	
conjunction	1289 Sep 19 j 06:41	3° <u>♁</u> 39'23	1°32'02	opposition	1298 Apr 04 j 19:32	22° <u>♁</u> 11'07	1°51'24
minimum elong	1289 Sep 19 j 06:41	3° <u>♁</u> 39'23	1°32'02	min. Earth dist.	1298 Apr 05 j 17:29	22° <u>♁</u> 09'37	29.30234 AU
retrograde	1289 Dec 30 j 11:45	6° <u>♁</u> 05'58		direct	1298 Jun 24 j 22:38	20° <u>♁</u> 46'20	
opposition	1290 Mar 18 j 01:08	4° <u>♁</u> 44'00	1°39'22	max. Earth dist.	1298 Oct 08 j 06:53	23° <u>♁</u> 14'56	31.30154 AU
min. Earth dist.	1290 Mar 18 j 21:49	4° <u>♁</u> 42'35	29.27281 AU				
direct	1290 Jun 07 j 01:34	3° <u>♁</u> 18'56		conjunction	1298 Oct 09 j 05:19	23° <u>♁</u> 17'02	1°44'42
				minimum elong	1298 Oct 09 j 05:19	23° <u>♁</u> 17'02	1°44'42
conjunction	1290 Sep 21 j 17:33	5° <u>♁</u> 50'08	1°34'00	retrograde	1299 Jan 19 j 06:21	25° <u>♁</u> 43'35	
minimum elong	1290 Sep 21 j 17:33	5° <u>♁</u> 50'08	1°34'01	opposition	1299 Apr 07 j 06:59	24° <u>♁</u> 21'40	1°52'13
max. Earth dist.	1290 Sep 20 j 18:46	5° <u>♁</u> 48'01	31.27541 AU	min. Earth dist.	1299 Apr 08 j 03:24	24° <u>♁</u> 20'17	29.30330 AU
retrograde	1291 Jan 01 j 22:36	8° <u>♁</u> 16'43		direct	1299 Jun 27 j 11:15	22° <u>♁</u> 56'54	
opposition	1291 Mar 20 j 12:18	6° <u>♁</u> 54'49	1°41'24				
min. Earth dist.	1291 Mar 21 j 09:59	6° <u>♁</u> 53'19	29.28004 AU	conjunction	1299 Oct 11 j 15:17	25° <u>♁</u> 27'31	1°45'23
direct	1291 Jun 09 j 13:23	5° <u>♁</u> 29'49		minimum elong	1299 Oct 11 j 15:17	25° <u>♁</u> 27'31	1°45'22
max. Earth dist.	1291 Sep 23 j 05:33	7° <u>♁</u> 58'52	31.28236 AU	max. Earth dist.	1299 Oct 10 j 17:36	25° <u>♁</u> 25'29	31.30278 AU
				retrograde	1300 Jan 21 j 17:24	27° <u>♁</u> 54'05	
conjunction	1291 Sep 24 j 04:14	8° <u>♁</u> 00'59	1°35'50	opposition	1300 Apr 08 j 18:38	26° <u>♁</u> 32'09	1°52'51
minimum elong	1291 Sep 24 j 04:13	8° <u>♁</u> 00'59	1°35'50	min. Earth dist.	1300 Apr 09 j 15:21	26° <u>♁</u> 30'44	29.30508 AU
retrograde	1292 Jan 04 j 09:32	10° <u>♁</u> 27'34		direct	1300 Jun 28 j 23:24	25° <u>♁</u> 07'25	
opposition	1292 Mar 21 j 23:27	9° <u>♁</u> 05'43	1°43'17	max. Earth dist.	1300 Oct 12 j 04:23	27° <u>♁</u> 36'01	31.30508 AU
min. Earth dist.	1292 Mar 22 j 20:30	9° <u>♁</u> 04'16	29.28655 AU				
direct	1292 Jun 11 j 02:54	7° <u>♁</u> 40'47		conjunction	1300 Oct 13 j 01:15	27° <u>♁</u> 37'58	1°45'54
				minimum elong	1300 Oct 13 j 01:15	27° <u>♁</u> 37'58	1°45'55
conjunction	1292 Sep 25 j 14:56	10° <u>♁</u> 11'55	1°37'32	1301 Jan 06 j 19:36		0° <u>♁</u>	
minimum elong	1292 Sep 25 j 14:55	10° <u>♁</u> 11'55	1°37'32	retrograde	1301 Jan 23 j 04:16	0° <u>♁</u> 04'33	
max. Earth dist.	1292 Sep 24 j 15:42	10° <u>♁</u> 09'45	31.28833 AU	1301 Feb 08 j 14:47		30° <u>R</u> <u>♁</u>	
retrograde	1293 Jan 05 j 19:24	12° <u>♁</u> 38'31		opposition	1301 Apr 11 j 06:05	28° <u>♁</u> 42'37	1°53'21
opposition	1293 Mar 24 j 10:43	11° <u>♁</u> 16'41	1°45'01	min. Earth dist.	1301 Apr 12 j 01:32	28° <u>♁</u> 41'17	29.30774 AU
min. Earth dist.	1293 Mar 25 j 08:23	11° <u>♁</u> 15'12	29.29215 AU	direct	1301 Jul 01 j 12:47	27° <u>♁</u> 17'56	
direct	1293 Jun 13 j 13:29	9° <u>♁</u> 51'49					
max. Earth dist.	1293 Sep 27 j 03:04	12° <u>♁</u> 20'49	31.29324 AU	conjunction	1301 Oct 15 j 11:07	29° <u>♁</u> 48'26	1°46'17
				minimum elong	1301 Oct 15 j 11:07	29° <u>♁</u> 48'26	1°46'17
conjunction	1293 Sep 28 j 01:35	12° <u>♁</u> 22'55	1°39'05	max. Earth dist.	1301 Oct 14 j 14:15	29° <u>♁</u> 46'29	31.30810 AU
minimum elong	1293 Sep 28 j 01:35	12° <u>♁</u> 22'55	1°39'05	1301 Oct 20 j 14:41		0° <u>♁</u>	
retrograde	1294 Jan 08 j 04:01	14° <u>♁</u> 49'30		retrograde	1302 Jan 25 j 14:25	2° <u>♁</u> 15'04	
opposition	1294 Mar 26 j 22:01	13° <u>♁</u> 27'42	1°46'36	opposition	1302 Apr 13 j 17:43	0° <u>♁</u> 53'09	1°53'40
min. Earth dist.	1294 Mar 27 j 19:42	13° <u>♁</u> 26'13	29.29629 AU	min. Earth dist.	1302 Apr 14 j 13:10	0° <u>♁</u> 51'50	29.31105 AU
direct	1294 Jun 16 j 02:21	12° <u>♁</u> 02'52		1302 May 18 j 21:45		30° <u>R</u> <u>♁</u>	
				direct	1302 Jul 03 j 23:16	29° <u>♁</u> 28'32	
conjunction	1294 Sep 30 j 12:07	14° <u>♁</u> 33'55	1°40'30	1302 Aug 17 j 15:39		0° <u>♁</u>	
minimum elong	1294 Sep 30 j 12:07	14° <u>♁</u> 33'55	1°40'30				
max. Earth dist.	1294 Sep 29 j 12:27	14° <u>♁</u> 31'42	31.29669 AU	conjunction	1302 Oct 17 j 21:02	1° <u>♁</u> 58'59	1°46'30
retrograde	1295 Jan 10 j 14:53	17° <u>♁</u> 00'30		minimum elong	1302 Oct 17 j 21:02	1° <u>♁</u> 58'59	1°46'30
opposition	1295 Mar 29 j 09:18	15° <u>♁</u> 38'42	1°48'02	max. Earth dist.	1302 Oct 17 j 01:34	1° <u>♁</u> 57'10	31.31151 AU
min. Earth dist.	1295 Mar 30 j 06:48	15° <u>♁</u> 37'13	29.29917 AU	retrograde	1303 Jan 27 j 23:33	4° <u>♁</u> 25'40	
direct	1295 Jun 18 j 12:28	14° <u>♁</u> 13'53		opposition	1303 Apr 16 j 05:26	3° <u>♁</u> 03'46	1°53'49
				min. Earth dist.	1303 Apr 17 j 00:25	3° <u>♁</u> 02'29	29.31432 AU
conjunction	1295 Oct 02 j 22:44	16° <u>♁</u> 44'52	1°41'46	direct	1303 Jul 06 j 12:45	1° <u>♁</u> 39'15	
minimum elong	1295 Oct 02 j 22:44	16° <u>♁</u> 44'52	1°41'46	max. Earth dist.	1303 Oct 19 j 10:45	4° <u>♁</u> 07'45	31.31467 AU
max. Earth dist.	1295 Oct 02 j 00:06	16° <u>♁</u> 42'45	31.29891 AU				
retrograde	1296 Jan 12 j 23:14	19° <u>♁</u> 11'26		conjunction	1303 Oct 20 j 06:50	4° <u>♁</u> 09'38	1°46'34
opposition	1296 Mar 30 j 20:49	17° <u>♁</u> 49'38	1°49'19	minimum elong	1303 Oct 20 j 06:50	4° <u>♁</u> 09'38	1°46'34
min. Earth dist.	1296 Mar 31 j 18:54	17° <u>♁</u> 48'07	29.30081 AU	retrograde	1304 Jan 30 j 11:07	6° <u>♁</u> 36'22	
direct	1296 Jun 20 j 00:44	16° <u>♁</u> 24'50		opposition	1304 Apr 17 j 17:16	5° <u>♁</u> 14'30	1°53'48
max. Earth dist.	1296 Oct 03 j 09:24	18° <u>♁</u> 53'31	31.30016 AU	min. Earth dist.	1304 Apr 18 j 11:35	5° <u>♁</u> 13'15	29.31727 AU
				direct	1304 Jul 07 j 23:22	3° <u>♁</u> 50'02	
conjunction	1296 Oct 04 j 08:54	18° <u>♁</u> 55'43	1°42'53				
minimum elong	1296 Oct 04 j 08:54	18° <u>♁</u> 55'43	1°42'54	conjunction	1304 Oct 21 j 16:40	6° <u>♁</u> 20'22	1°46'29
retrograde	1297 Jan 14 j 10:04	21° <u>♁</u> 22'17		minimum elong	1304 Oct 21 j 16:40	6° <u>♁</u> 20'22	1°46'29

max. Earth dist.	1304 Oct 20 j 21:58	6°M.18'37	31.31713 AU	conjunction	1312 Nov 07 j 21:32	23°M.45'19	1°40'24
retrograde	1305 Jan 31 j 19:29	8°M.47'10		minimum elong	1312 Nov 07 j 21:32	23°M.45'19	1°40'24
opposition	1305 Apr 20 j 05:15	7°M.25'18	1°53'38	max. Earth dist.	1312 Nov 07 j 05:44	23°M.43'49	31.29606 AU
min. Earth dist.	1305 Apr 20 j 23:59	7°M.24'01	29.31914 AU	retrograde	1313 Feb 18 j 08:55	26°M.12'34	
direct	1305 Jul 10 j 11:34	6°M.00'54		opposition	1313 May 08 j 06:06	24°M.50'20	1°46'31
max. Earth dist.	1305 Oct 23 j 07:01	8°M.29'20	31.31843 AU	min. Earth dist.	1313 May 08 j 20:12	24°M.49'23	29.29556 AU
				direct	1313 Jul 28 j 10:03	23°M.26'08	
conjunction	1305 Oct 24 j 02:29	8°M.31'10	1°46'15				
minimum elong	1305 Oct 24 j 02:29	8°M.31'10	1°46'14	conjunction	1313 Nov 10 j 06:57	25°M.55'43	1°38'59
retrograde	1306 Feb 03 j 06:16	10°M.58'00		minimum elong	1313 Nov 10 j 06:58	25°M.55'43	1°38'58
opposition	1306 Apr 22 j 17:03	9°M.36'08	1°53'18	max. Earth dist.	1313 Nov 09 j 17:00	25°M.54'24	31.29313 AU
min. Earth dist.	1306 Apr 23 j 10:47	9°M.34'56	29.31973 AU	retrograde	1314 Feb 20 j 17:19	28°M.23'04	
direct	1306 Jul 12 j 22:16	8°M.11'46		opposition	1314 May 10 j 18:19	27°M.00'50	1°44'56
				min. Earth dist.	1314 May 11 j 08:13	26°M.59'54	29.29289 AU
conjunction	1306 Oct 26 j 12:27	10°M.41'58	1°45'51	direct	1314 Jul 30 j 22:07	25°M.36'42	
minimum elong	1306 Oct 26 j 12:27	10°M.41'58	1°45'52				
max. Earth dist.	1306 Oct 25 j 17:57	10°M.40'14	31.31819 AU	conjunction	1314 Nov 12 j 16:13	28°M.06'14	1°37'25
retrograde	1307 Feb 05 j 15:58	13°M.08'53		minimum elong	1314 Nov 12 j 16:13	28°M.06'14	1°37'26
opposition	1307 Apr 25 j 05:15	11°M.46'58	1°52'48	max. Earth dist.	1314 Nov 12 j 02:15	28°M.04'55	31.29089 AU
min. Earth dist.	1307 Apr 25 j 23:49	11°M.45'43	29.31873 AU		1315 Jan 09 j 00:14	0°Z	
direct	1307 Jul 15 j 08:47	10°M.22'39		retrograde	1315 Feb 23 j 04:17	0°Z33'43	
					1315 Apr 11 j 07:42	30°RM	
conjunction	1307 Oct 28 j 22:08	12°M.52'45	1°45'19	opposition	1315 May 13 j 06:38	29°M.11'29	1°43'11
minimum elong	1307 Oct 28 j 22:09	12°M.52'45	1°45'18	min. Earth dist.	1315 May 13 j 18:53	29°M.10'39	29.29077 AU
max. Earth dist.	1307 Oct 28 j 03:32	12°M.51'00	31.31650 AU	direct	1315 Aug 02 j 08:31	27°M.47'25	
	1308 Jan 04 j 22:37	15°M			1315 Nov 07 j 13:37	0°Z	
retrograde	1308 Feb 08 j 03:14	15°M.19'43					
	1308 Mar 14 j 08:38	15°RM		conjunction	1315 Nov 15 j 01:29	0°Z16'55	1°35'43
opposition	1308 Apr 26 j 17:20	13°M.57'46	1°52'09	minimum elong	1315 Nov 15 j 01:29	0°Z16'55	1°35'43
min. Earth dist.	1308 Apr 27 j 10:32	13°M.56'36	29.31621 AU	max. Earth dist.	1315 Nov 14 j 13:01	0°Z15'45	31.28880 AU
direct	1308 Jul 16 j 21:23	12°M.33'27		retrograde	1316 Feb 25 j 14:24	2°Z44'32	
	1308 Oct 28 j 18:58	15°M		opposition	1316 May 14 j 19:12	1°Z22'18	1°41'17
				min. Earth dist.	1316 May 15 j 07:46	1°Z21'27	29.28861 AU
conjunction	1308 Oct 30 j 07:53	15°M.03'28	1°44'37		1316 Jul 24 j 12:34	30°RM	
minimum elong	1308 Oct 30 j 07:53	15°M.03'28	1°44'38	direct	1316 Aug 03 j 18:17	29°M.58'19	
max. Earth dist.	1308 Oct 29 j 13:35	15°M.01'45	31.31328 AU		1316 Aug 13 j 23:45	0°Z	
retrograde	1309 Feb 09 j 14:27	17°M.30'28					
opposition	1309 Apr 29 j 05:25	16°M.08'28	1°51'20	conjunction	1316 Nov 16 j 10:49	2°Z27'45	1°33'52
min. Earth dist.	1309 Apr 29 j 23:13	16°M.07'15	29.31246 AU	minimum elong	1316 Nov 16 j 10:49	2°Z27'45	1°33'53
	1309 Jun 17 j 07:33	15°RM		max. Earth dist.	1316 Nov 15 j 22:46	2°Z26'37	31.28655 AU
direct	1309 Jul 19 j 08:53	14°M.44'10		retrograde	1317 Feb 27 j 02:00	4°Z55'30	
	1309 Aug 19 j 19:27	15°M		opposition	1317 May 17 j 07:29	3°Z33'16	1°39'15
				min. Earth dist.	1317 May 17 j 18:26	3°Z32'31	29.28597 AU
conjunction	1309 Nov 01 j 17:30	17°M.14'04	1°43'47	direct	1317 Aug 06 j 06:09	2°Z09'21	
minimum elong	1309 Nov 01 j 17:30	17°M.14'04	1°43'47				
max. Earth dist.	1309 Nov 01 j 00:00	17°M.12'26	31.30912 AU	conjunction	1317 Nov 18 j 20:12	4°Z38'45	1°31'53
retrograde	1310 Feb 12 j 01:09	19°M.41'07		minimum elong	1317 Nov 18 j 20:12	4°Z38'45	1°31'53
opposition	1310 May 01 j 17:30	18°M.19'02	1°50'22	max. Earth dist.	1317 Nov 18 j 08:33	4°Z37'39	31.28345 AU
min. Earth dist.	1310 May 02 j 10:06	18°M.17'55	29.30782 AU	retrograde	1318 Mar 01 j 14:08	7°Z06'38	
direct	1310 Jul 21 j 22:18	16°M.54'44		opposition	1318 May 19 j 20:08	5°Z44'21	1°37'03
max. Earth dist.	1310 Nov 03 j 09:24	19°M.22'55	31.30433 AU	min. Earth dist.	1318 May 20 j 07:28	5°Z43'35	29.28238 AU
				direct	1318 Aug 08 j 16:34	4°Z20'30	
conjunction	1310 Nov 04 j 02:53	19°M.24'34	1°42'48				
minimum elong	1310 Nov 04 j 02:53	19°M.24'34	1°42'48	conjunction	1318 Nov 21 j 05:34	6°Z49'50	1°29'47
retrograde	1311 Feb 14 j 11:46	21°M.51'40		minimum elong	1318 Nov 21 j 05:35	6°Z49'50	1°29'47
opposition	1311 May 04 j 05:42	20°M.29'31	1°49'14	max. Earth dist.	1318 Nov 20 j 18:57	6°Z48'50	31.27931 AU
min. Earth dist.	1311 May 04 j 22:02	20°M.28'24	29.30313 AU	retrograde	1319 Mar 04 j 01:26	9°Z17'50	
direct	1311 Jul 24 j 09:18	19°M.05'14		opposition	1319 May 22 j 08:47	7°Z55'31	1°34'44
				min. Earth dist.	1319 May 22 j 18:51	7°Z54'51	29.27745 AU
conjunction	1311 Nov 06 j 12:21	21°M.34'57	1°41'41	direct	1319 Aug 11 j 04:54	6°Z31'43	
minimum elong	1311 Nov 06 j 12:21	21°M.34'57	1°41'40				
max. Earth dist.	1311 Nov 05 j 20:42	21°M.33'29	31.29983 AU	conjunction	1319 Nov 23 j 14:57	9°Z00'59	1°27'32
retrograde	1312 Feb 16 j 21:08	24°M.02'07		minimum elong	1319 Nov 23 j 14:58	9°Z00'59	1°27'32
opposition	1312 May 05 j 17:56	22°M.39'55	1°47'57	max. Earth dist.	1319 Nov 23 j 04:04	8°Z59'58	31.27374 AU
min. Earth dist.	1312 May 06 j 09:18	22°M.38'53	29.29888 AU	retrograde	1320 Mar 05 j 13:21	11°Z29'06	
direct	1312 Jul 25 j 23:07	21°M.15'40		opposition	1320 May 23 j 21:31	10°Z06'43	1°32'16
				min. Earth dist.	1320 May 24 j 07:30	10°Z06'03	29.27126 AU

direct	1320 Aug 12 j 15:58	8° $\nearrow$ 42'56		minimum elong	1328 Dec 12 j 01:53	28° $\nearrow$ 38'51	1°02'13
				max. Earth dist.	1328 Dec 11 j 23:09	28° $\nearrow$ 38'36	31.20983 AU
conjunction	1320 Nov 25 j 00:23	11° $\nearrow$ 12'07	1°25'10		1329 Jan 18 j 19:17	0° $\overline{\zeta}$	
minimum elong	1320 Nov 25 j 00:24	11° $\nearrow$ 12'07	1°25'11	retrograde	1329 Mar 25 j 17:18	1° $\overline{\zeta}$ 08'03	
max. Earth dist.	1320 Nov 24 j 15:02	11° $\nearrow$ 11'14	31.26686 AU		1329 Jun 04 j 10:11	30° $\text{R}$ $\nearrow$	
retrograde	1321 Mar 08 j 00:06	13° $\nearrow$ 40'19		opposition	1329 Jun 13 j 16:10	29° $\nearrow$ 45'06	1°04'41
opposition	1321 May 26 j 10:13	12° $\nearrow$ 17'52	1°29'41	min. Earth dist.	1329 Jun 13 j 17:52	29° $\nearrow$ 44'59	29.20768 AU
min. Earth dist.	1321 May 26 j 19:35	12° $\nearrow$ 17'14	29.26357 AU	direct	1329 Sep 01 j 23:51	28° $\nearrow$ 21'34	
direct	1321 Aug 15 j 06:15	10° $\nearrow$ 54'05			1329 Nov 21 j 23:31	0° $\overline{\zeta}$	
conjunction	1321 Nov 27 j 09:39	13° $\nearrow$ 23'10	1°22'41	conjunction	1329 Dec 14 j 11:16	0° $\overline{\zeta}$ 50'08	0°58'52
minimum elong	1321 Nov 27 j 09:39	13° $\nearrow$ 23'10	1°22'41	minimum elong	1329 Dec 14 j 11:17	0° $\overline{\zeta}$ 50'08	0°58'51
max. Earth dist.	1321 Nov 26 j 23:49	13° $\nearrow$ 22'15	31.25872 AU	max. Earth dist.	1329 Dec 14 j 10:25	0° $\overline{\zeta}$ 50'03	31.20467 AU
retrograde	1322 Mar 10 j 12:15	15° $\nearrow$ 51'27		retrograde	1330 Mar 28 j 05:09	3° $\overline{\zeta}$ 19'29	
opposition	1322 May 28 j 22:47	14° $\nearrow$ 28'54	1°26'58	opposition	1330 Jun 16 j 05:06	1° $\overline{\zeta}$ 56'32	1°01'05
min. Earth dist.	1322 May 29 j 07:10	14° $\nearrow$ 28'20	29.25500 AU	min. Earth dist.	1330 Jun 16 j 06:00	1° $\overline{\zeta}$ 56'28	29.20214 AU
direct	1322 Aug 17 j 17:48	13° $\nearrow$ 05'06		direct	1330 Sep 04 j 12:59	0° $\overline{\zeta}$ 33'04	
conjunction	1322 Nov 29 j 19:00	15° $\nearrow$ 34'05	1°20'05	conjunction	1330 Dec 16 j 20:38	3° $\overline{\zeta}$ 01'37	0°55'27
minimum elong	1322 Nov 29 j 19:01	15° $\nearrow$ 34'05	1°20'06	minimum elong	1330 Dec 16 j 20:38	3° $\overline{\zeta}$ 01'37	0°55'27
max. Earth dist.	1322 Nov 29 j 10:57	15° $\nearrow$ 33'20	31.24990 AU	max. Earth dist.	1330 Dec 16 j 19:25	3° $\overline{\zeta}$ 01'30	31.19889 AU
retrograde	1323 Mar 12 j 20:54	18° $\nearrow$ 02'27		retrograde	1331 Mar 30 j 18:45	5° $\overline{\zeta}$ 31'09	
opposition	1323 May 31 j 11:36	16° $\nearrow$ 39'48	1°24'08	opposition	1331 Jun 18 j 18:12	4° $\overline{\zeta}$ 08'09	0°57'22
min. Earth dist.	1323 May 31 j 19:43	16° $\nearrow$ 39'15	29.24605 AU	min. Earth dist.	1331 Jun 18 j 18:03	4° $\overline{\zeta}$ 08'10	29.19592 AU
direct	1323 Aug 20 j 06:37	15° $\nearrow$ 15'59		direct	1331 Sep 06 j 23:47	2° $\overline{\zeta}$ 44'46	
conjunction	1323 Dec 02 j 04:01	17° $\nearrow$ 44'52	1°17'23	conjunction	1331 Dec 19 j 06:09	5° $\overline{\zeta}$ 13'17	0°51'57
minimum elong	1323 Dec 02 j 04:01	17° $\nearrow$ 44'52	1°17'22	minimum elong	1331 Dec 19 j 06:09	5° $\overline{\zeta}$ 13'17	0°51'56
max. Earth dist.	1323 Dec 01 j 20:13	17° $\nearrow$ 44'07	31.24120 AU	max. Earth dist.	1331 Dec 19 j 06:29	5° $\overline{\zeta}$ 13'19	31.19204 AU
retrograde	1324 Mar 14 j 07:47	20° $\nearrow$ 13'19		retrograde	1332 Apr 01 j 04:56	7° $\overline{\zeta}$ 42'59	
opposition	1324 Jun 02 j 00:16	18° $\nearrow$ 50'34	1°21'11	opposition	1332 Jun 20 j 07:24	6° $\overline{\zeta}$ 19'57	0°53'35
min. Earth dist.	1324 Jun 02 j 06:29	18° $\nearrow$ 50'09	29.23759 AU	min. Earth dist.	1332 Jun 20 j 07:15	6° $\overline{\zeta}$ 19'58	29.18838 AU
direct	1324 Aug 21 j 18:19	17° $\nearrow$ 26'45		direct	1332 Sep 08 j 12:27	4° $\overline{\zeta}$ 56'36	
conjunction	1324 Dec 03 j 13:16	19° $\nearrow$ 55'32	1°14'33	conjunction	1332 Dec 20 j 15:44	7° $\overline{\zeta}$ 25'05	0°48'22
minimum elong	1324 Dec 03 j 13:16	19° $\nearrow$ 55'32	1°14'34	minimum elong	1332 Dec 20 j 15:44	7° $\overline{\zeta}$ 25'05	0°48'23
max. Earth dist.	1324 Dec 03 j 07:02	19° $\nearrow$ 54'57	31.23308 AU	max. Earth dist.	1332 Dec 20 j 15:54	7° $\overline{\zeta}$ 25'06	31.18395 AU
retrograde	1325 Mar 16 j 17:48	22° $\nearrow$ 24'06		retrograde	1333 Apr 03 j 17:08	9° $\overline{\zeta}$ 54'56	
opposition	1325 Jun 04 j 12:54	21° $\nearrow$ 01'17	1°18'06	opposition	1333 Jun 22 j 20:19	8° $\overline{\zeta}$ 31'50	0°49'43
min. Earth dist.	1325 Jun 04 j 19:06	21° $\nearrow$ 00'52	29.22998 AU	min. Earth dist.	1333 Jun 22 j 18:46	8° $\overline{\zeta}$ 31'57	29.17955 AU
direct	1325 Aug 24 j 05:01	19° $\nearrow$ 37'30		direct	1333 Sep 11 j 00:29	7° $\overline{\zeta}$ 08'31	
conjunction	1325 Dec 05 j 22:26	22° $\nearrow$ 06'12	1°11'38	conjunction	1333 Dec 23 j 01:23	9° $\overline{\zeta}$ 36'56	0°44'43
minimum elong	1325 Dec 05 j 22:26	22° $\nearrow$ 06'12	1°11'37	minimum elong	1333 Dec 23 j 01:23	9° $\overline{\zeta}$ 36'56	0°44'43
max. Earth dist.	1325 Dec 05 j 17:10	22° $\nearrow$ 05'42	31.22610 AU	max. Earth dist.	1333 Dec 23 j 02:31	9° $\overline{\zeta}$ 37'03	31.17443 AU
retrograde	1326 Mar 19 j 04:53	24° $\nearrow$ 34'53		retrograde	1334 Apr 06 j 04:05	12° $\overline{\zeta}$ 06'56	
opposition	1326 Jun 07 j 01:33	23° $\nearrow$ 12'01	1°14'55	opposition	1334 Jun 25 j 09:33	10° $\overline{\zeta}$ 43'45	0°45'47
min. Earth dist.	1326 Jun 07 j 05:32	23° $\nearrow$ 11'45	29.22341 AU	min. Earth dist.	1334 Jun 25 j 08:24	10° $\overline{\zeta}$ 43'50	29.16947 AU
direct	1326 Aug 26 j 16:34	21° $\nearrow$ 48'17		direct	1334 Sep 13 j 11:54	9° $\overline{\zeta}$ 20'26	
conjunction	1326 Dec 08 j 07:29	24° $\nearrow$ 16'56	1°08'35	conjunction	1334 Dec 25 j 10:50	11° $\overline{\zeta}$ 48'47	0°41'00
minimum elong	1326 Dec 08 j 07:29	24° $\nearrow$ 16'56	1°08'36	minimum elong	1334 Dec 25 j 10:50	11° $\overline{\zeta}$ 48'47	0°41'01
max. Earth dist.	1326 Dec 08 j 03:01	24° $\nearrow$ 16'30	31.22002 AU	max. Earth dist.	1334 Dec 25 j 12:48	11° $\overline{\zeta}$ 48'58	31.16404 AU
retrograde	1327 Mar 21 j 16:46	26° $\nearrow$ 45'47		retrograde	1335 Apr 08 j 14:59	14° $\overline{\zeta}$ 18'54	
opposition	1327 Jun 09 j 14:29	25° $\nearrow$ 22'52	1°11'37	opposition	1335 Jun 27 j 22:38	12° $\overline{\zeta}$ 55'38	0°41'47
min. Earth dist.	1327 Jun 09 j 18:15	25° $\nearrow$ 22'37	29.21778 AU	min. Earth dist.	1335 Jun 27 j 19:35	12° $\overline{\zeta}$ 55'50	29.15872 AU
direct	1327 Aug 29 j 02:11	23° $\nearrow$ 59'11		direct	1335 Sep 15 j 23:59	11° $\overline{\zeta}$ 32'18	
conjunction	1327 Dec 10 j 16:44	26° $\nearrow$ 27'48	1°05'27	conjunction	1335 Dec 27 j 20:19	14° $\overline{\zeta}$ 00'34	0°37'14
minimum elong	1327 Dec 10 j 16:44	26° $\nearrow$ 27'48	1°05'27	minimum elong	1335 Dec 27 j 20:19	14° $\overline{\zeta}$ 00'34	0°37'14
max. Earth dist.	1327 Dec 10 j 13:56	26° $\nearrow$ 27'32	31.21481 AU	max. Earth dist.	1335 Dec 27 j 22:46	14° $\overline{\zeta}$ 00'48	31.15320 AU
retrograde	1328 Mar 23 j 04:18	28° $\nearrow$ 56'48		retrograde	1336 Apr 10 j 02:27	16° $\overline{\zeta}$ 30'50	
opposition	1328 Jun 11 j 03:14	27° $\nearrow$ 33'53	1°08'12	opposition	1336 Jun 29 j 11:43	15° $\overline{\zeta}$ 07'27	0°37'44
min. Earth dist.	1328 Jun 11 j 05:19	27° $\nearrow$ 33'44	29.21266 AU	min. Earth dist.	1336 Jun 29 j 08:39	15° $\overline{\zeta}$ 07'39	29.14806 AU
direct	1328 Aug 30 j 13:32	26° $\nearrow$ 10'16		direct	1336 Sep 17 j 09:34	13° $\overline{\zeta}$ 44'07	
conjunction	1328 Dec 12 j 01:53	28° $\nearrow$ 38'51	1°02'12	conjunction	1336 Dec 29 j 05:53	16° $\overline{\zeta}$ 12'19	0°33'25

minimum elong	1336 Dec 29 j 05:53	16°☾12'19	0°33'25	retrograde	1344 Apr 28 j 06:03	4°≈08'25	
max. Earth dist.	1336 Dec 29 j 10:04	16°☾12'42	31.14279 AU	opposition	1344 Jul 17 j 20:31	2°≈44'36	0°03'38
retrograde	1337 Apr 12 j 13:48	18°☾42'42		min. Earth dist.	1344 Jul 17 j 09:32	2°≈45'21	29.08378 AU
opposition	1337 Jul 02 j 00:41	17°☾19'14	0°33'37	direct	1344 Oct 05 j 05:40	1°≈21'32	
min. Earth dist.	1337 Jul 01 j 19:48	17°☾19'34	29.13792 AU				
direct	1337 Sep 19 j 20:55	15°☾55'54		conjunction	1345 Jan 15 j 12:17	3°≈49'33	0°01'26
				minimum elong	1345 Jan 15 j 12:17	3°≈49'33	0°01'27
conjunction	1337 Dec 31 j 15:17	18°☾24'02	0°29'32	behind sun begin	1345 Jan 15 j 05:53	3°≈48'59	
minimum elong	1337 Dec 31 j 15:17	18°☾24'02	0°29'31	behind sun end	1345 Jan 15 j 18:41	3°≈50'08	
max. Earth dist.	1337 Dec 31 j 19:38	18°☾24'27	31.13311 AU	max. Earth dist.	1345 Jan 15 j 22:27	3°≈50'30	31.07903 AU
retrograde	1338 Apr 15 j 02:56	20°☾54'35		retrograde	1345 Apr 30 j 18:09	6°≈21'16	
opposition	1338 Jul 04 j 13:46	19°☾31'02	0°29'27	desc. node	1345 May 19 j 23:22	6°≈15'24	
min. Earth dist.	1338 Jul 04 j 08:14	19°☾31'25	29.12881 AU	opposition	1345 Jul 20 j 09:53	4°≈57'23	0°00'-43
direct	1338 Sep 22 j 07:21	18°☾07'43		min. Earth dist.	1345 Jul 19 j 23:22	4°≈58'06	29.07415 AU
				direct	1345 Oct 07 j 15:48	3°≈34'20	
conjunction	1339 Jan 03 j 00:58	20°☾35'50	0°25'37	conjunction	1346 Jan 17 j 22:32	6°≈02'19	0°-2'-45
minimum elong	1339 Jan 03 j 00:58	20°☾35'50	0°25'37	minimum elong	1346 Jan 17 j 22:33	6°≈02'19	0°02'47
max. Earth dist.	1339 Jan 03 j 07:29	20°☾36'26	31.12451 AU	behind sun begin	1346 Jan 17 j 16:10	6°≈01'44	
retrograde	1339 Apr 17 j 15:23	23°☾06'31		behind sun end	1346 Jan 18 j 04:57	6°≈02'54	
opposition	1339 Jul 07 j 02:51	21°☾42'55	0°25'14	max. Earth dist.	1346 Jan 18 j 09:59	6°≈03'23	31.06872 AU
min. Earth dist.	1339 Jul 06 j 20:08	21°☾43'22	29.12064 AU	retrograde	1346 May 03 j 06:00	8°≈34'10	
direct	1339 Sep 24 j 19:36	20°☾19'38		opposition	1346 Jul 22 j 23:07	7°≈10'12	0°-5'-5
				min. Earth dist.	1346 Jul 22 j 11:17	7°≈11'01	29.06311 AU
conjunction	1340 Jan 05 j 10:29	22°☾47'43	0°21'39	direct	1346 Oct 10 j 03:48	5°≈47'09	
minimum elong	1340 Jan 05 j 10:29	22°☾47'43	0°21'39				
max. Earth dist.	1340 Jan 05 j 17:00	22°☾48'19	31.11687 AU	conjunction	1347 Jan 20 j 08:48	8°≈15'05	0°-6'-50
retrograde	1340 Apr 19 j 05:00	25°☾18'34		minimum elong	1347 Jan 20 j 08:47	8°≈15'05	0°06'50
opposition	1340 Jul 08 j 15:56	23°☾54'55	0°20'58	behind sun begin	1347 Jan 20 j 02:48	8°≈14'33	
min. Earth dist.	1340 Jul 08 j 07:55	23°☾55'28	29.11337 AU	behind sun end	1347 Jan 20 j 14:46	8°≈15'38	
direct	1340 Sep 26 j 05:39	22°☾31'41		max. Earth dist.	1347 Jan 20 j 19:48	8°≈16'07	31.05720 AU
				retrograde	1347 May 05 j 19:16	10°≈47'05	
conjunction	1341 Jan 06 j 20:17	24°☾59'45	0°17'39	opposition	1347 Jul 25 j 12:25	9°≈23'01	0°-9'-26
minimum elong	1341 Jan 06 j 20:17	24°☾59'45	0°17'40	min. Earth dist.	1347 Jul 25 j 00:33	9°≈23'49	29.05126 AU
max. Earth dist.	1341 Jan 07 j 04:33	25°☾00'31	31.10978 AU	direct	1347 Oct 12 j 14:09	7°≈59'56	
retrograde	1341 Apr 21 j 16:28	27°☾30'46					
opposition	1341 Jul 11 j 04:56	26°☾07'05	0°16'40	conjunction	1348 Jan 22 j 19:07	10°≈27'50	0°-10'-53
min. Earth dist.	1341 Jul 10 j 20:41	26°☾07'38	29.10640 AU	minimum elong	1348 Jan 22 j 19:07	10°≈27'50	0°10'54
direct	1341 Sep 28 j 18:10	24°☾43'54		behind sun begin	1348 Jan 22 j 14:13	10°≈27'23	
				behind sun end	1348 Jan 23 j 00:02	10°≈28'17	
conjunction	1342 Jan 09 j 06:06	27°☾11'57	0°13'38	max. Earth dist.	1348 Jan 23 j 07:55	10°≈29'02	31.04504 AU
minimum elong	1342 Jan 09 j 06:06	27°☾11'57	0°13'37	retrograde	1348 May 07 j 07:28	12°≈59'56	
behind sun begin	1342 Jan 09 j 02:29	27°☾11'37		opposition	1348 Jul 27 j 01:33	11°≈35'46	0°-13'-47
behind sun end	1342 Jan 09 j 09:42	27°☾12'17		min. Earth dist.	1348 Jul 26 j 12:53	11°≈36'38	29.03896 AU
max. Earth dist.	1342 Jan 09 j 14:36	27°☾12'45	31.10298 AU	direct	1348 Oct 14 j 02:17	10°≈12'39	
retrograde	1342 Apr 24 j 06:24	29°☾43'08					
opposition	1342 Jul 13 j 18:05	28°☾19'25	0°12'21	conjunction	1349 Jan 24 j 05:22	12°≈40'32	0°-14'-55
min. Earth dist.	1342 Jul 13 j 08:14	28°☾20'05	29.09952 AU	minimum elong	1349 Jan 24 j 05:22	12°≈40'32	0°14'56
direct	1342 Oct 01 j 06:19	26°☾56'17		behind sun begin	1349 Jan 24 j 02:47	12°≈40'18	
				behind sun end	1349 Jan 24 j 07:57	12°≈40'46	
conjunction	1343 Jan 11 j 15:57	29°☾24'20	0°09'35	max. Earth dist.	1349 Jan 24 j 17:55	12°≈41'43	31.03288 AU
minimum elong	1343 Jan 11 j 15:57	29°☾24'20	0°09'36				
behind sun begin	1343 Jan 11 j 10:37	29°☾23'51		retrograde	1349 Apr 11 j 20:25	15°≈	
behind sun end	1343 Jan 11 j 21:17	29°☾24'49		opposition	1349 May 09 j 21:07	15°≈12'46	
max. Earth dist.	1343 Jan 12 j 01:31	29°☾25'13	31.09582 AU				
	1343 Jan 27 j 10:59	0°≈		opposition	1349 Jul 29 j 14:31	13°≈48'30	0°-18'-6
retrograde	1343 Apr 26 j 18:15	1°≈55'42		min. Earth dist.	1349 Jul 29 j 00:50	13°≈49'26	29.02713 AU
opposition	1343 Jul 16 j 07:27	0°≈31'56	0°08'00	direct	1349 Oct 16 j 12:19	12°≈25'22	
min. Earth dist.	1343 Jul 15 j 22:00	0°≈32'35	29.09211 AU				
	1343 Aug 05 j 09:54	30°☾		conjunction	1350 Jan 26 j 15:46	14°≈53'14	0°-18'-56
direct	1343 Oct 03 j 17:42	29°☾08'51		minimum elong	1350 Jan 26 j 15:46	14°≈53'14	0°18'58
	1343 Nov 28 j 18:28	0°≈		max. Earth dist.	1350 Jan 27 j 06:00	14°≈54'34	31.02132 AU
					1350 Jan 29 j 15:10	15°≈	
conjunction	1344 Jan 14 j 02:07	1°≈36'53	0°05'32	retrograde	1350 May 12 j 09:21	17°≈25'36	
minimum elong	1344 Jan 14 j 02:06	1°≈36'53	0°05'32	opposition	1350 Aug 01 j 03:39	16°≈01'15	0°-22'-24
behind sun begin	1344 Jan 13 j 19:56	1°≈36'19		min. Earth dist.	1350 Jul 31 j 13:32	16°≈02'13	29.01610 AU
behind sun end	1344 Jan 14 j 08:16	1°≈37'26					
max. Earth dist.	1344 Jan 14 j 12:23	1°≈37'50	31.08806 AU	direct	1350 Oct 19 j 00:56	14°≈38'07	



	1350 Nov 24 j 00:06	15° $\approx$		direct	1358 Nov 05 j 17:23	2° $\times$ 25'36	
conjunction	1351 Jan 29 j 02:02	17° $\approx$ 05'58	0°-22'-57	conjunction	1359 Feb 15 j 17:06	4° $\times$ 53'37	0°-53'-22
minimum elong	1351 Jan 29 j 02:01	17° $\approx$ 05'58	0°22'57	minimum elong	1359 Feb 15 j 17:06	4° $\times$ 53'37	0°53'22
max. Earth dist.	1351 Jan 29 j 16:42	17° $\approx$ 07'21	31.01093 AU	max. Earth dist.	1359 Feb 16 j 12:41	4° $\times$ 55'28	30.94554 AU
retrograde	1351 May 15 j 00:08	19° $\approx$ 38'30		retrograde	1359 Jun 02 j 05:42	7° $\times$ 27'19	
opposition	1351 Aug 03 j 16:40	18° $\approx$ 14'05	0°-26'-40	min. Earth dist.	1359 Aug 21 j 06:01	6° $\times$ 03'49	28.94084 AU
min. Earth dist.	1351 Aug 03 j 00:50	18° $\approx$ 15'09	29.00631 AU	opposition	1359 Aug 22 j 00:45	6° $\times$ 02'31	0°-58'-58
direct	1351 Oct 21 j 13:08	16° $\approx$ 50'57		direct	1359 Nov 08 j 06:08	4° $\times$ 39'29	
conjunction	1352 Jan 31 j 12:32	19° $\approx$ 18'49	0°-26'-55	conjunction	1360 Feb 18 j 04:29	7° $\times$ 07'28	0°-56'-52
minimum elong	1352 Jan 31 j 12:32	19° $\approx$ 18'49	0°26'56	minimum elong	1360 Feb 18 j 04:29	7° $\times$ 07'28	0°56'53
max. Earth dist.	1352 Feb 01 j 04:19	19° $\approx$ 20'19	31.00158 AU	max. Earth dist.	1360 Feb 18 j 23:51	7° $\times$ 09'18	30.93520 AU
retrograde	1352 May 16 j 12:13	21° $\approx$ 51'30		retrograde	1360 Jun 03 j 20:30	9° $\times$ 41'14	
opposition	1352 Aug 05 j 05:37	20° $\approx$ 27'02	0°-30'-54	opposition	1360 Aug 23 j 13:27	8° $\times$ 16'21	-1°-2'-40
min. Earth dist.	1352 Aug 04 j 14:01	20° $\approx$ 28'06	28.99758 AU	min. Earth dist.	1360 Aug 22 j 17:41	8° $\times$ 17'43	28.93038 AU
direct	1352 Oct 23 j 00:17	19° $\approx$ 03'56		direct	1360 Nov 09 j 18:12	6° $\times$ 53'15	
conjunction	1353 Feb 01 j 23:08	21° $\approx$ 31'49	0°-30'-51	conjunction	1361 Feb 19 j 15:51	9° $\times$ 21'14	-1°00'-17
minimum elong	1353 Feb 01 j 23:08	21° $\approx$ 31'49	0°30'51	minimum elong	1361 Feb 19 j 15:51	9° $\times$ 21'14	1°00'18
max. Earth dist.	1353 Feb 02 j 15:55	21° $\approx$ 33'25	30.99340 AU	max. Earth dist.	1361 Feb 20 j 11:52	9° $\times$ 23'08	30.92464 AU
retrograde	1353 May 19 j 00:36	24° $\approx$ 04'40		retrograde	1361 Jun 06 j 08:37	11° $\times$ 55'05	
opposition	1353 Aug 07 j 18:32	22° $\approx$ 40'10	0°-35'-5	min. Earth dist.	1361 Aug 25 j 07:07	10° $\times$ 31'25	28.92011 AU
min. Earth dist.	1353 Aug 07 j 01:08	22° $\approx$ 41'22	28.98980 AU	opposition	1361 Aug 26 j 02:20	10° $\times$ 30'06	-1°-6'-17
direct	1353 Oct 25 j 12:21	21° $\approx$ 17'07		direct	1361 Nov 12 j 05:36	9° $\times$ 06'57	
conjunction	1354 Feb 04 j 09:37	23° $\approx$ 45'01	0°-34'-44	conjunction	1362 Feb 22 j 03:09	11° $\times$ 34'55	-1°-3'-37
minimum elong	1354 Feb 04 j 09:37	23° $\approx$ 45'01	0°34'46	minimum elong	1362 Feb 22 j 03:09	11° $\times$ 34'55	1°03'39
max. Earth dist.	1354 Feb 05 j 02:37	23° $\approx$ 46'37	30.98588 AU	max. Earth dist.	1362 Feb 23 j 00:03	11° $\times$ 36'54	30.91475 AU
retrograde	1354 May 21 j 13:23	26° $\approx$ 18'02		retrograde	1362 Jun 08 j 22:18	14° $\times$ 08'50	
opposition	1354 Aug 10 j 07:41	24° $\approx$ 53'30	0°-39'-13	opposition	1362 Aug 28 j 15:02	12° $\times$ 43'46	-1°-9'-48
min. Earth dist.	1354 Aug 09 j 14:35	24° $\approx$ 54'41	28.98263 AU	min. Earth dist.	1362 Aug 27 j 18:14	12° $\times$ 45'12	28.91073 AU
direct	1354 Oct 27 j 22:36	23° $\approx$ 30'29		direct	1362 Nov 14 j 18:37	11° $\times$ 20'35	
conjunction	1355 Feb 06 j 20:31	25° $\approx$ 58'25	0°-38'-35	conjunction	1363 Feb 24 j 14:35	13° $\times$ 48'33	-1°-6'-52
minimum elong	1355 Feb 06 j 20:30	25° $\approx$ 58'25	0°38'36	minimum elong	1363 Feb 24 j 14:35	13° $\times$ 48'33	1°06'52
max. Earth dist.	1355 Feb 07 j 14:59	26° $\approx$ 00'10	30.97886 AU	max. Earth dist.	1363 Feb 25 j 11:29	13° $\times$ 50'32	30.90583 AU
retrograde	1355 May 24 j 01:42	28° $\approx$ 31'36		retrograde	1363 Jun 11 j 11:44	16° $\times$ 22'34	
opposition	1355 Aug 12 j 20:36	27° $\approx$ 07'03	0°-43'-19	min. Earth dist.	1363 Aug 30 j 07:22	14° $\times$ 58'50	28.90261 AU
min. Earth dist.	1355 Aug 12 j 02:12	27° $\approx$ 08'19	28.97562 AU	opposition	1363 Aug 31 j 03:45	14° $\times$ 57'25	-1°-13'-13
direct	1355 Oct 30 j 10:21	25° $\approx$ 44'04		direct	1363 Nov 17 j 05:35	13° $\times$ 34'13	
conjunction	1356 Feb 09 j 07:23	28° $\approx$ 12'01	0°-42'-23	conjunction	1364 Feb 27 j 02:14	16° $\times$ 02'13	-1°-10'00
minimum elong	1356 Feb 09 j 07:23	28° $\approx$ 12'01	0°42'25	minimum elong	1364 Feb 27 j 02:14	16° $\times$ 02'13	1°10'02
max. Earth dist.	1356 Feb 10 j 01:20	28° $\approx$ 13'43	30.97172 AU	max. Earth dist.	1364 Feb 28 j 00:33	16° $\times$ 04'20	30.89835 AU
retrograde	1356 Apr 01 j 22:39	0° $\times$		retrograde	1364 Jun 12 j 23:54	18° $\times$ 36'19	
retrograde	1356 May 25 j 14:43	0° $\times$ 45'22		opposition	1364 Sep 01 j 16:19	17° $\times$ 11'08	-1°-16'-31
opposition	1356 Jul 20 j 14:52	30° $\times$		min. Earth dist.	1364 Aug 31 j 18:32	17° $\times$ 12'38	28.89578 AU
opposition	1356 Aug 14 j 09:41	29° $\approx$ 20'47	0°-47'-20	direct	1364 Nov 18 j 17:55	15° $\times$ 47'56	
min. Earth dist.	1356 Aug 13 j 15:32	29° $\approx$ 22'02	28.96834 AU	conjunction	1365 Feb 28 j 13:45	18° $\times$ 15'57	-1°-13'-3
direct	1356 Oct 31 j 20:12	27° $\approx$ 57'49		minimum elong	1365 Feb 28 j 13:45	18° $\times$ 15'57	1°13'03
direct	1357 Jan 30 j 09:27	0° $\times$		max. Earth dist.	1365 Mar 01 j 11:38	18° $\times$ 18'02	30.89214 AU
conjunction	1357 Feb 10 j 18:37	0° $\times$ 25'49	0°-46'-7	retrograde	1365 Jun 15 j 12:41	20° $\times$ 50'10	
minimum elong	1357 Feb 10 j 18:37	0° $\times$ 25'49	0°46'07	min. Earth dist.	1365 Sep 03 j 07:17	19° $\times$ 26'28	28.89033 AU
max. Earth dist.	1357 Feb 11 j 13:57	0° $\times$ 27'38	30.96395 AU	opposition	1365 Sep 04 j 04:57	19° $\times$ 24'58	-1°-19'-42
retrograde	1357 May 28 j 02:39	2° $\times$ 59'17		direct	1365 Nov 21 j 03:39	18° $\times$ 01'47	
opposition	1357 Aug 16 j 22:37	1° $\times$ 34'40	0°-51'-17	conjunction	1366 Mar 03 j 01:35	20° $\times$ 29'52	-1°-15'-58
min. Earth dist.	1357 Aug 16 j 04:04	1° $\times$ 35'56	28.96011 AU	minimum elong	1366 Mar 03 j 01:34	20° $\times$ 29'51	1°16'00
direct	1357 Nov 03 j 07:27	0° $\times$ 11'42		max. Earth dist.	1366 Mar 04 j 01:06	20° $\times$ 32'05	30.88722 AU
conjunction	1358 Feb 13 j 05:48	2° $\times$ 39'42	0°-49'-46	retrograde	1366 Jun 18 j 00:40	23° $\times$ 04'11	
minimum elong	1358 Feb 13 j 05:48	2° $\times$ 39'42	0°49'48	opposition	1366 Sep 06 j 17:33	21° $\times$ 38'58	-1°-22'-47
max. Earth dist.	1358 Feb 14 j 00:21	2° $\times$ 41'27	30.95527 AU	min. Earth dist.	1366 Sep 05 j 19:16	21° $\times$ 40'31	28.88592 AU
retrograde	1358 May 30 j 17:05	5° $\times$ 13'18		direct	1366 Nov 23 j 14:39	20° $\times$ 15'49	
opposition	1358 Aug 19 j 11:42	3° $\times$ 48'36	0°-55'-10	conjunction	1367 Mar 05 j 13:21	22° $\times$ 43'58	-1°-18'-47
min. Earth dist.	1358 Aug 18 j 16:44	3° $\times$ 49'54	28.95099 AU				

minimum elong	1367 Mar 05 j 13:20	22° <del>✕</del> 43'58	1°18'48	minimum elong	1375 Mar 23 j 17:04	10° <del>∇</del> 41'59	1°36'45
max. Earth dist.	1367 Mar 06 j 12:15	22° <del>✕</del> 46'08	30.88329 AU	max. Earth dist.	1375 Mar 24 j 16:54	10° <del>∇</del> 44'14	30.84124 AU
retrograde	1367 Jun 20 j 15:16	25° <del>✕</del> 18'25		retrograde	1375 Jul 09 j 03:00	13° <del>∇</del> 16'51	
min. Earth dist.	1367 Sep 08 j 07:36	23° <del>✕</del> 54'47	28.88234 AU	min. Earth dist.	1375 Sep 26 j 11:42	11° <del>∇</del> 52'58	28.83983 AU
opposition	1367 Sep 09 j 06:12	23° <del>✕</del> 53'13	-1°-25'-44	opposition	1375 Sep 27 j 09:34	11° <del>∇</del> 51'26	-1°-44'-21
direct	1367 Nov 26 j 00:13	22° <del>✕</del> 30'05		direct	1375 Dec 13 j 23:22	10° <del>∇</del> 28'06	
conjunction	1368 Mar 07 j 01:31	24° <del>✕</del> 58'19	-1°-21'-29	conjunction	1376 Mar 25 j 05:47	12° <del>∇</del> 56'41	-1°-38'-22
minimum elong	1368 Mar 07 j 01:30	24° <del>✕</del> 58'19	1°21'31	minimum elong	1376 Mar 25 j 05:47	12° <del>∇</del> 56'41	1°38'23
max. Earth dist.	1368 Mar 08 j 01:23	25° <del>✕</del> 00'34	30.87970 AU	max. Earth dist.	1376 Mar 26 j 04:41	12° <del>∇</del> 58'50	30.83654 AU
retrograde	1368 Jun 22 j 03:49	27° <del>✕</del> 32'52		retrograde	1376 Jul 10 j 16:15	15° <del>∇</del> 31'34	
opposition	1368 Sep 10 j 18:40	26° <del>✕</del> 07'41	-1°-28'-33	opposition	1376 Sep 28 j 21:35	14° <del>∇</del> 06'07	-1°-46'00
min. Earth dist.	1368 Sep 09 j 20:30	26° <del>✕</del> 09'14	28.87879 AU	min. Earth dist.	1376 Sep 27 j 23:37	14° <del>∇</del> 07'39	28.83585 AU
direct	1368 Nov 27 j 11:56	24° <del>✕</del> 44'36		direct	1376 Dec 15 j 09:40	12° <del>∇</del> 42'45	
conjunction	1369 Mar 09 j 13:45	27° <del>✕</del> 12'54	-1°-24'-4	conjunction	1377 Mar 27 j 18:39	15° <del>∇</del> 11'22	-1°-39'-50
minimum elong	1369 Mar 09 j 13:45	27° <del>✕</del> 12'54	1°24'04	minimum elong	1377 Mar 27 j 18:39	15° <del>∇</del> 11'22	1°39'50
max. Earth dist.	1369 Mar 10 j 13:06	27° <del>✕</del> 15'06	30.87607 AU	max. Earth dist.	1377 Mar 28 j 18:31	15° <del>∇</del> 13'37	30.83310 AU
retrograde	1369 Jun 24 j 19:04	29° <del>✕</del> 47'34		retrograde	1377 Jul 13 j 03:14	17° <del>∇</del> 46'16	
min. Earth dist.	1369 Sep 12 j 08:25	28° <del>✕</del> 23'58	28.87493 AU	min. Earth dist.	1377 Sep 30 j 11:57	16° <del>∇</del> 22'20	28.83311 AU
opposition	1369 Sep 13 j 07:14	28° <del>✕</del> 22'23	-1°-31'-14	opposition	1377 Oct 01 j 09:41	16° <del>∇</del> 20'48	-1°-47'-30
direct	1369 Nov 29 j 23:17	26° <del>✕</del> 59'18		direct	1377 Dec 17 j 21:01	14° <del>∇</del> 57'25	
conjunction	1370 Mar 12 j 02:02	29° <del>✕</del> 27'41	-1°-26'-31	conjunction	1378 Mar 30 j 07:23	17° <del>∇</del> 26'05	-1°-41'-9
minimum elong	1370 Mar 12 j 02:02	29° <del>✕</del> 27'41	1°26'33	minimum elong	1378 Mar 30 j 07:23	17° <del>∇</del> 26'05	1°41'10
max. Earth dist.	1370 Mar 13 j 01:31	29° <del>✕</del> 29'54	30.87166 AU	max. Earth dist.	1378 Mar 31 j 06:47	17° <del>∇</del> 28'18	30.83113 AU
	1370 Mar 26 j 09:58	0° <del>∇</del>		retrograde	1378 Jul 15 j 17:39	20° <del>∇</del> 01'01	
retrograde	1370 Jun 27 j 08:01	2° <del>∇</del> 02'27		opposition	1378 Oct 03 j 21:44	18° <del>∇</del> 35'33	-1°-48'-49
opposition	1370 Sep 15 j 19:57	0° <del>∇</del> 37'15	-1°-33'-47	min. Earth dist.	1378 Oct 02 j 23:15	18° <del>∇</del> 37'08	28.83176 AU
min. Earth dist.	1370 Sep 14 j 22:15	0° <del>∇</del> 38'45	28.87013 AU	direct	1378 Dec 20 j 07:38	17° <del>∇</del> 12'09	
	1370 Oct 08 j 22:27	30° <del>R</del> <del>✕</del>		conjunction	1379 Apr 01 j 20:27	19° <del>∇</del> 40'54	-1°-42'-19
direct	1370 Dec 02 j 10:19	29° <del>✕</del> 14'09		minimum elong	1379 Apr 01 j 20:27	19° <del>∇</del> 40'54	1°42'19
	1371 Jan 23 j 21:15	0° <del>∇</del>		max. Earth dist.	1379 Apr 02 j 20:09	19° <del>∇</del> 43'08	30.83022 AU
conjunction	1371 Mar 14 j 14:38	1° <del>∇</del> 42'35	-1°-28'-50	retrograde	1379 Jul 18 j 06:03	22° <del>∇</del> 15'50	
minimum elong	1371 Mar 14 j 14:38	1° <del>∇</del> 42'35	1°28'51	opposition	1379 Oct 06 j 09:42	20° <del>∇</del> 50'24	-1°-49'-58
max. Earth dist.	1371 Mar 15 j 14:07	1° <del>∇</del> 44'48	30.86642 AU	min. Earth dist.	1379 Oct 05 j 12:20	20° <del>∇</del> 51'54	28.83134 AU
retrograde	1371 Jun 29 j 23:09	4° <del>∇</del> 17'24		direct	1379 Dec 22 j 18:08	19° <del>∇</del> 27'00	
min. Earth dist.	1371 Sep 17 j 09:54	2° <del>∇</del> 53'44	28.86438 AU	conjunction	1380 Apr 03 j 09:41	21° <del>∇</del> 55'50	-1°-43'-19
opposition	1371 Sep 18 j 08:21	2° <del>∇</del> 52'10	-1°-36'-12	minimum elong	1380 Apr 03 j 09:41	21° <del>∇</del> 55'50	1°43'21
direct	1371 Dec 04 j 23:49	1° <del>∇</del> 29'03		max. Earth dist.	1380 Apr 04 j 09:22	21° <del>∇</del> 58'04	30.83022 AU
conjunction	1372 Mar 16 j 03:12	3° <del>∇</del> 57'31	-1°-31'-2	retrograde	1380 Jul 19 j 20:59	24° <del>∇</del> 30'47	
minimum elong	1372 Mar 16 j 03:12	3° <del>∇</del> 57'31	1°31'03	opposition	1380 Oct 07 j 21:37	23° <del>∇</del> 05'23	-1°-50'-57
max. Earth dist.	1372 Mar 17 j 01:54	3° <del>∇</del> 59'40	30.86018 AU	min. Earth dist.	1380 Oct 06 j 23:34	23° <del>∇</del> 06'56	28.83149 AU
retrograde	1372 Jul 01 j 13:25	6° <del>∇</del> 32'22		direct	1380 Dec 24 j 07:17	21° <del>∇</del> 41'59	
opposition	1372 Sep 19 j 20:52	5° <del>∇</del> 07'05	-1°-38'-28	conjunction	1381 Apr 05 j 22:50	24° <del>∇</del> 10'54	-1°-44'-9
min. Earth dist.	1372 Sep 18 j 23:36	5° <del>∇</del> 08'34	28.85791 AU	minimum elong	1381 Apr 05 j 22:50	24° <del>∇</del> 10'54	1°44'10
direct	1372 Dec 06 j 11:40	3° <del>∇</del> 43'55		max. Earth dist.	1381 Apr 06 j 21:43	24° <del>∇</del> 13'04	30.83030 AU
conjunction	1373 Mar 18 j 15:47	6° <del>∇</del> 12'25	-1°-33'-5	retrograde	1381 Jul 22 j 10:44	26° <del>∇</del> 45'53	
minimum elong	1373 Mar 18 j 15:47	6° <del>∇</del> 12'25	1°33'05	opposition	1381 Oct 10 j 09:41	25° <del>∇</del> 20'30	-1°-51'-46
max. Earth dist.	1373 Mar 19 j 15:16	6° <del>∇</del> 14'38	30.85353 AU	min. Earth dist.	1381 Oct 09 j 13:03	25° <del>∇</del> 21'57	28.83155 AU
retrograde	1373 Jul 04 j 01:41	8° <del>∇</del> 47'16		direct	1381 Dec 26 j 18:41	23° <del>∇</del> 57'06	
min. Earth dist.	1373 Sep 21 j 11:00	7° <del>∇</del> 23'29	28.85123 AU	conjunction	1382 Apr 08 j 12:24	26° <del>∇</del> 26'07	-1°-44'-50
opposition	1373 Sep 22 j 09:07	7° <del>∇</del> 21'57	-1°-40'-35	minimum elong	1382 Apr 08 j 12:24	26° <del>∇</del> 26'07	1°44'52
direct	1373 Dec 09 j 00:45	5° <del>∇</del> 58'43		max. Earth dist.	1382 Apr 09 j 11:31	26° <del>∇</del> 28'18	30.83013 AU
conjunction	1374 Mar 21 j 04:20	8° <del>∇</del> 27'14	-1°-34'-59	retrograde	1382 Jul 25 j 00:34	29° <del>∇</del> 01'06	
minimum elong	1374 Mar 21 j 04:20	8° <del>∇</del> 27'14	1°35'01	opposition	1382 Oct 12 j 21:34	27° <del>∇</del> 35'44	-1°-52'-25
max. Earth dist.	1374 Mar 22 j 02:53	8° <del>∇</del> 29'22	30.84701 AU	min. Earth dist.	1382 Oct 12 j 00:36	27° <del>∇</del> 37'13	28.83095 AU
retrograde	1374 Jul 06 j 14:52	11° <del>∇</del> 02'06		direct	1382 Dec 29 j 07:43	26° <del>∇</del> 12'19	
opposition	1374 Sep 24 j 21:26	9° <del>∇</del> 36'43	-1°-42'-33	conjunction	1383 Apr 11 j 01:55	28° <del>∇</del> 41'24	-1°-45'-22
min. Earth dist.	1374 Sep 23 j 23:55	9° <del>∇</del> 38'13	28.84513 AU	minimum elong	1383 Apr 11 j 01:55	28° <del>∇</del> 41'24	1°45'22
direct	1374 Dec 11 j 11:25	8° <del>∇</del> 13'26		max. Earth dist.	1383 Apr 11 j 23:22	28° <del>∇</del> 43'25	30.82905 AU
conjunction	1375 Mar 23 j 17:04	10° <del>∇</del> 41'59	-1°-36'-45		1383 May 17 j 12:45	0° <del>♁</del>	

retrograde	1383 Jul 27 j 14:59	1°♄16'22		minimum elong	1391 Apr 29 j 15:21	16°♄41'46	1°43'48
	1383 Oct 10 j 01:36	30°♁♂		max. Earth dist.	1391 Apr 30 j 10:30	16°♄43'34	30.81908 AU
opposition	1383 Oct 15 j 09:35	29°♂51'01	-1°-52'-53	retrograde	1391 Aug 14 j 20:33	19°♄16'14	
min. Earth dist.	1383 Oct 14 j 13:53	29°♂52'24	28.82939 AU	opposition	1391 Nov 02 j 05:30	17°♄50'56	-1°-50'-31
direct	1383 Dec 31 j 19:02	28°♂27'33		min. Earth dist.	1391 Nov 01 j 12:15	17°♄52'10	28.82183 AU
	1384 Mar 17 j 22:21	0°♄		direct	1392 Jan 18 j 16:51	16°♄27'04	
conjunction	1384 Apr 12 j 15:41	0°♄56'42	-1°-45'-44	conjunction	1392 May 01 j 05:07	18°♄56'45	-1°-42'-52
minimum elong	1384 Apr 12 j 15:41	0°♄56'42	1°45'45	minimum elong	1392 May 01 j 05:07	18°♄56'45	1°42'53
max. Earth dist.	1384 Apr 13 j 13:34	0°♄58'46	30.82694 AU	max. Earth dist.	1392 May 01 j 22:54	18°♄58'25	30.82264 AU
retrograde	1384 Jul 29 j 03:41	3°♄31'37		retrograde	1392 Aug 16 j 11:10	21°♄31'10	
opposition	1384 Oct 16 j 21:19	2°♄06'16	-1°-53'-11	opposition	1392 Nov 03 j 16:44	20°♄05'56	-1°-49'-26
min. Earth dist.	1384 Oct 16 j 01:56	2°♄07'38	28.82677 AU	min. Earth dist.	1392 Nov 03 j 00:36	20°♄07'05	28.82591 AU
direct	1385 Jan 02 j 07:50	0°♄42'45		direct	1393 Jan 20 j 04:23	18°♄42'04	
conjunction	1385 Apr 15 j 05:14	3°♄11'57	-1°-45'-56	conjunction	1393 May 03 j 19:10	21°♄11'52	-1°-41'-47
minimum elong	1385 Apr 15 j 05:14	3°♄11'57	1°45'57	minimum elong	1393 May 03 j 19:10	21°♄11'52	1°41'48
max. Earth dist.	1385 Apr 16 j 01:29	3°♄13'51	30.82412 AU	max. Earth dist.	1393 May 04 j 13:31	21°♄13'35	30.82709 AU
retrograde	1385 Jul 31 j 16:48	5°♄46'48		retrograde	1393 Aug 19 j 00:09	23°♄46'12	
opposition	1385 Oct 19 j 09:04	4°♄21'26	-1°-53'-19	opposition	1393 Nov 06 j 03:55	22°♄21'03	-1°-48'-12
min. Earth dist.	1385 Oct 18 j 14:12	4°♄22'46	28.82381 AU	min. Earth dist.	1393 Nov 05 j 12:07	22°♄22'10	28.83045 AU
direct	1386 Jan 04 j 18:51	2°♄57'51		direct	1394 Jan 22 j 17:29	20°♄57'11	
conjunction	1386 Apr 17 j 18:50	5°♄27'05	-1°-45'-59	conjunction	1394 May 06 j 09:06	23°♄27'04	-1°-40'-33
minimum elong	1386 Apr 17 j 18:50	5°♄27'05	1°46'00	minimum elong	1394 May 06 j 09:06	23°♄27'04	1°40'34
max. Earth dist.	1386 Apr 18 j 15:35	5°♄29'02	30.82105 AU	max. Earth dist.	1394 May 07 j 01:38	23°♄28'37	30.83174 AU
retrograde	1386 Aug 03 j 03:38	8°♄01'53		retrograde	1394 Aug 21 j 13:44	26°♄01'21	
opposition	1386 Oct 21 j 20:45	6°♄36'29	-1°-53'-17	opposition	1394 Nov 08 j 15:11	24°♄36'16	-1°-46'-47
min. Earth dist.	1386 Oct 21 j 02:39	6°♄37'46	28.82081 AU	min. Earth dist.	1394 Nov 08 j 00:12	24°♄37'19	28.83496 AU
direct	1387 Jan 07 j 06:39	5°♄12'50		direct	1395 Jan 25 j 04:35	23°♄12'22	
conjunction	1387 Apr 20 j 08:29	7°♄42'08	-1°-45'-52	conjunction	1395 May 08 j 23:27	25°♄42'21	-1°-39'-10
minimum elong	1387 Apr 20 j 08:29	7°♄42'08	1°45'52	minimum elong	1395 May 08 j 23:27	25°♄42'21	1°39'10
max. Earth dist.	1387 Apr 21 j 04:07	7°♄43'58	30.81840 AU	max. Earth dist.	1395 May 09 j 15:59	25°♄43'54	30.83586 AU
retrograde	1387 Aug 05 j 17:32	10°♄16'51		retrograde	1395 Aug 24 j 01:35	28°♄16'32	
opposition	1387 Oct 24 j 08:06	8°♄51'27	-1°-53'-4	opposition	1395 Nov 11 j 02:19	26°♄51'30	-1°-45'-13
min. Earth dist.	1387 Oct 23 j 13:42	8°♄52'45	28.81852 AU	min. Earth dist.	1395 Nov 10 j 12:36	26°♄52'28	28.83863 AU
direct	1388 Jan 09 j 17:17	7°♄27'43		direct	1396 Jan 27 j 16:37	25°♄27'34	
conjunction	1388 Apr 21 j 22:11	9°♄57'05	-1°-45'-35	conjunction	1396 May 10 j 13:41	27°♄57'37	-1°-37'-38
minimum elong	1388 Apr 21 j 22:12	9°♄57'05	1°45'36	minimum elong	1396 May 10 j 13:42	27°♄57'37	1°37'39
max. Earth dist.	1388 Apr 22 j 17:53	9°♄58'56	30.81648 AU	max. Earth dist.	1396 May 11 j 04:20	27°♄58'59	30.83924 AU
retrograde	1388 Aug 07 j 04:35	12°♄31'44		retrograde	1396 Jul 12 j 07:13	0°♁	
opposition	1388 Oct 25 j 19:36	11°♄06'20	-1°-52'-41	opposition	1396 Aug 25 j 15:37	0°♁31'40	
min. Earth dist.	1388 Oct 25 j 02:23	11°♄07'33	28.81720 AU	min. Earth dist.	1396 Oct 09 j 14:01	30°♁♂	
direct	1389 Jan 11 j 03:57	9°♄42'33		direct	1396 Nov 12 j 13:29	29°♄06'40	-1°-43'-30
conjunction	1389 Apr 24 j 11:46	12°♄11'58	-1°-45'-9	conjunction	1396 Nov 11 j 23:55	29°♄07'38	28.84154 AU
minimum elong	1389 Apr 24 j 11:46	12°♄11'58	1°45'09	minimum elong	1397 Jan 29 j 03:46	27°♄42'40	
max. Earth dist.	1389 Apr 25 j 07:16	12°♄13'48	30.81589 AU	max. Earth dist.	1397 May 07 j 11:10	0°♁	
retrograde	1389 Aug 09 j 18:12	14°♄46'34		retrograde	1397 May 13 j 03:48	0°♁12'46	-1°-35'-57
opposition	1389 Oct 28 j 06:55	13°♄21'11	-1°-52'-8	opposition	1397 May 13 j 03:49	0°♁12'46	1°35'57
min. Earth dist.	1389 Oct 27 j 12:58	13°♄22'27	28.81727 AU	min. Earth dist.	1397 May 13 j 18:02	0°♁14'06	30.84173 AU
direct	1390 Jan 13 j 17:07	11°♄57'21		direct	1397 Aug 28 j 01:39	2°♁46'42	
conjunction	1390 Apr 27 j 01:27	14°♄26'51	-1°-44'-33	conjunction	1397 Nov 15 j 00:40	1°♁21'43	-1°-41'-37
minimum elong	1390 Apr 27 j 01:27	14°♄26'51	1°44'34	minimum elong	1397 Nov 14 j 12:48	1°♁22'34	28.84373 AU
max. Earth dist.	1390 Apr 27 j 20:18	14°♄28'37	30.81668 AU	max. Earth dist.	1398 Jan 19 j 22:21	30°♁♂	
retrograde	1390 May 11 j 21:16	15°♄		retrograde	1398 Jan 31 j 15:00	29°♄57'39	
opposition	1390 Aug 12 j 06:47	17°♄01'23		opposition	1398 Feb 12 j 08:09	0°♁	
min. Earth dist.	1390 Oct 30 j 18:16	15°♄36'02	-1°-51'-24	min. Earth dist.	1398 May 15 j 18:03	2°♁27'46	-1°-34'-7
direct	1390 Oct 30 j 01:35	15°♄37'13	28.81888 AU	direct	1398 May 15 j 18:03	2°♁27'46	1°34'08
conjunction	1390 Nov 21 j 16:25	15°♁♂		conjunction	1398 May 16 j 07:17	2°♁29'01	30.84391 AU
opposition	1391 Jan 16 j 04:04	14°♄12'10		opposition	1398 Aug 30 j 14:10	5°♁01'33	
min. Earth dist.	1391 Mar 11 j 02:34	15°♄		min. Earth dist.	1398 Nov 17 j 11:29	3°♁36'35	-1°-39'-35
direct	1391 Apr 29 j 15:21	16°♄41'46	-1°-43'-47	direct	1398 Nov 16 j 23:29	3°♁37'26	28.84575 AU
conjunction				conjunction	1399 Feb 03 j 03:44	2°♁12'25	

conjunction	1399 May 18 j 08:15	4°II42'36	-1°-32'-9	retrograde	1407 Sep 20 j 05:42	25°II10'56	
minimum elong	1399 May 18 j 08:16	4°II42'36	1°32'10	opposition	1407 Dec 07 j 11:42	23°II46'36	-1°-15'00
max. Earth dist.	1399 May 18 j 20:27	4°II43'44	30.84597 AU	min. Earth dist.	1407 Dec 07 j 05:46	23°II47'01	28.90328 AU
retrograde	1399 Sep 02 j 01:38	7°II16'13		direct	1408 Feb 23 j 13:45	22°II22'11	
opposition	1399 Nov 19 j 22:27	5°II51'15	-1°-37'-25				
min. Earth dist.	1399 Nov 19 j 12:09	5°II51'59	28.84803 AU	conjunction	1408 Jun 07 j 15:42	24°II53'04	-1°-8'-36
direct	1400 Feb 05 j 14:22	4°II27'00		minimum elong	1408 Jun 07 j 15:42	24°II53'04	1°08'36
				max. Earth dist.	1408 Jun 07 j 20:58	24°II53'34	30.90683 AU
conjunction	1400 May 19 j 22:24	6°II57'13	-1°-30'-3	retrograde	1408 Sep 21 j 16:54	27°II25'32	
minimum elong	1400 May 19 j 22:24	6°II57'13	1°30'03	opposition	1408 Dec 08 j 22:27	26°II01'17	-1°-11'-38
max. Earth dist.	1400 May 20 j 10:28	6°II58'21	30.84860 AU	min. Earth dist.	1408 Dec 08 j 18:30	26°II01'34	28.91112 AU
retrograde	1400 Sep 03 j 14:05	9°II30'41		direct	1409 Feb 24 j 23:31	24°II36'49	
opposition	1400 Nov 21 j 09:08	8°II05'45	-1°-35'-5				
min. Earth dist.	1400 Nov 20 j 22:31	8°II06'30	28.85097 AU	conjunction	1409 Jun 10 j 06:04	27°II07'47	-1°-5'-24
direct	1401 Feb 07 j 03:39	6°II41'26		minimum elong	1409 Jun 10 j 06:04	27°II07'47	1°05'25
				max. Earth dist.	1409 Jun 10 j 10:33	27°II08'12	30.91428 AU
conjunction	1401 May 22 j 12:24	9°II11'41	-1°-27'-48	retrograde	1409 Sep 24 j 04:37	29°II40'05	
minimum elong	1401 May 22 j 12:24	9°II11'41	1°27'49	opposition	1409 Dec 11 j 08:56	28°II15'54	-1°-8'-10
max. Earth dist.	1401 May 22 j 22:58	9°II12'41	30.85212 AU	min. Earth dist.	1409 Dec 11 j 05:10	28°II16'10	28.91800 AU
retrograde	1401 Sep 06 j 03:13	11°II45'01		direct	1410 Feb 27 j 12:53	26°II51'24	
opposition	1401 Nov 23 j 19:55	10°II20'06	-1°-32'-38				
min. Earth dist.	1401 Nov 23 j 10:24	10°II20'46	28.85518 AU	conjunction	1410 Jun 12 j 20:17	29°II22'24	-1°-2'-6
direct	1402 Feb 09 j 15:18	8°II55'43		minimum elong	1410 Jun 12 j 20:17	29°II22'24	1°02'07
				max. Earth dist.	1410 Jun 12 j 22:46	29°II22'38	30.92080 AU
conjunction	1402 May 25 j 02:30	11°II26'03	-1°-25'-26		1410 Jun 29 j 19:55	0°☾	
minimum elong	1402 May 25 j 02:31	11°II26'03	1°25'27	retrograde	1410 Sep 26 j 16:48	1°☾54'32	
max. Earth dist.	1402 May 25 j 13:36	11°II27'05	30.85702 AU	opposition	1410 Dec 13 j 19:32	0°☾30'24	-1°-4'-36
retrograde	1402 Sep 08 j 15:18	13°II59'13		min. Earth dist.	1410 Dec 13 j 17:20	0°☾30'33	28.92419 AU
opposition	1402 Nov 26 j 06:36	12°II34'22	-1°-30'-1		1411 Jan 01 j 02:02	30°RII	
min. Earth dist.	1402 Nov 25 j 21:15	12°II35'02	28.86066 AU	direct	1411 Mar 02 j 00:48	29°II05'49	
direct	1403 Feb 12 j 04:41	11°II09'57			1411 Apr 29 j 11:15	0°☾	
conjunction	1403 May 27 j 16:34	13°II40'21	-1°-22'-56	conjunction	1411 Jun 15 j 10:38	1°☾36'52	0°-58'-44
minimum elong	1403 May 27 j 16:34	13°II40'21	1°22'57	minimum elong	1411 Jun 15 j 10:38	1°☾36'52	0°58'45
max. Earth dist.	1403 May 28 j 01:57	13°II41'14	30.86333 AU	max. Earth dist.	1411 Jun 15 j 13:00	1°☾37'06	30.92677 AU
retrograde	1403 Sep 11 j 04:42	16°II13'24		retrograde	1411 Sep 29 j 04:07	4°☾08'48	
opposition	1403 Nov 28 j 17:12	14°II48'37	-1°-27'-16	opposition	1411 Dec 16 j 05:54	2°☾44'42	-1°00'-56
min. Earth dist.	1403 Nov 28 j 08:23	14°II49'15	28.86772 AU	min. Earth dist.	1411 Dec 16 j 04:22	2°☾44'49	28.92991 AU
direct	1404 Feb 14 j 15:47	13°II24'11		direct	1412 Mar 03 j 14:22	1°☾20'03	
conjunction	1404 May 29 j 06:46	15°II54'41	-1°-20'-18	conjunction	1412 Jun 17 j 00:40	3°☾51'08	0°-55'-16
minimum elong	1404 May 29 j 06:46	15°II54'41	1°20'19	minimum elong	1412 Jun 17 j 00:41	3°☾51'08	0°55'16
max. Earth dist.	1404 May 29 j 16:38	15°II55'37	30.87107 AU	max. Earth dist.	1412 Jun 17 j 01:02	3°☾51'10	30.93259 AU
retrograde	1404 Sep 12 j 16:46	18°II27'37		retrograde	1412 Sep 30 j 17:10	6°☾22'53	
opposition	1404 Nov 30 j 03:54	17°II02'56	-1°-24'-24	opposition	1412 Dec 17 j 16:19	4°☾58'49	0°-57'-12
min. Earth dist.	1404 Nov 29 j 19:59	17°II03'30	28.87599 AU	min. Earth dist.	1412 Dec 17 j 15:31	4°☾58'52	28.93589 AU
direct	1405 Feb 16 j 03:54	15°II38'31		direct	1413 Mar 06 j 01:58	3°☾34'05	
conjunction	1405 May 31 j 20:42	18°II09'07	-1°-17'-33	conjunction	1413 Jun 19 j 14:39	6°☾05'12	0°-51'-43
minimum elong	1405 May 31 j 20:42	18°II09'07	1°17'34	minimum elong	1413 Jun 19 j 14:39	6°☾05'12	0°51'45
max. Earth dist.	1405 Jun 01 j 04:57	18°II09'53	30.88000 AU	max. Earth dist.	1413 Jun 19 j 15:22	6°☾05'16	30.93875 AU
retrograde	1405 Sep 15 j 06:34	20°II41'56		retrograde	1413 Oct 03 j 04:53	8°☾36'45	
opposition	1405 Dec 02 j 14:30	19°II17'22	-1°-21'-23	opposition	1413 Dec 20 j 02:43	7°☾12'43	0°-53'-22
min. Earth dist.	1405 Dec 02 j 06:36	19°II17'56	28.88520 AU	min. Earth dist.	1413 Dec 20 j 03:01	7°☾12'41	28.94229 AU
direct	1406 Feb 18 j 14:56	17°II52'58		direct	1414 Mar 08 j 15:40	5°☾47'56	
conjunction	1406 Jun 03 j 11:02	20°II23'40	-1°-14'-41	conjunction	1414 Jun 22 j 04:35	8°☾19'04	0°-48'-6
minimum elong	1406 Jun 03 j 11:02	20°II23'40	1°14'42	minimum elong	1414 Jun 22 j 04:35	8°☾19'04	0°48'07
max. Earth dist.	1406 Jun 03 j 19:00	20°II24'24	30.88933 AU	max. Earth dist.	1414 Jun 22 j 03:31	8°☾18'58	30.94568 AU
retrograde	1406 Sep 17 j 16:55	22°II56'23		retrograde	1414 Oct 05 j 17:22	10°☾50'25	
opposition	1406 Dec 05 j 01:06	21°II31'57	-1°-18'-15	opposition	1414 Dec 22 j 12:53	9°☾26'25	0°-49'-28
min. Earth dist.	1406 Dec 04 j 19:04	21°II32'22	28.89449 AU	min. Earth dist.	1414 Dec 22 j 13:05	9°☾26'24	28.94973 AU
direct	1407 Feb 21 j 01:43	20°II07'32		direct	1415 Mar 11 j 03:58	8°☾01'35	
conjunction	1407 Jun 06 j 01:25	22°II38'20	-1°-11'-41	conjunction	1415 Jun 24 j 18:36	10°☾32'45	0°-44'-25
minimum elong	1407 Jun 06 j 01:25	22°II38'20	1°11'42	minimum elong	1415 Jun 24 j 18:36	10°☾32'45	0°44'27
max. Earth dist.	1407 Jun 06 j 07:57	22°II38'57	30.89854 AU	max. Earth dist.	1415 Jun 24 j 17:31	10°☾32'39	30.95362 AU

retrograde	1415 Oct 08 j 03:35	13° $\mathring{E}$ 03'56		retrograde	1423 Oct 25 j 23:50	0° $\Omega$ 51'08	
opposition	1415 Dec 24 j 23:18	11° $\mathring{E}$ 40'00	0°-45'-29		1423 Dec 22 j 21:30	30° $\mathring{R}$ $\mathring{E}$	
min. Earth dist.	1415 Dec 25 j 00:57	11° $\mathring{E}$ 39'53	28.95828 AU	opposition	1424 Jan 11 j 09:35	29° $\mathring{E}$ 27'51	0°-11'-47
direct	1416 Mar 12 j 15:20	10° $\mathring{E}$ 15'08		min. Earth dist.	1424 Jan 11 j 17:24	29° $\mathring{E}$ 27'18	29.03401 AU
				direct	1424 Mar 30 j 15:09	28° $\mathring{E}$ 02'49	
conjunction	1416 Jun 26 j 08:19	12° $\mathring{E}$ 46'20	0°-40'-40		1424 Jun 29 j 08:19	0° $\Omega$	
minimum elong	1416 Jun 26 j 08:19	12° $\mathring{E}$ 46'20	0°40'41				
max. Earth dist.	1416 Jun 26 j 06:11	12° $\mathring{E}$ 46'09	30.96291 AU	conjunction	1424 Jul 14 j 22:27	0° $\Omega$ 34'25	0°-9'-1
retrograde	1416 Oct 09 j 16:01	15° $\mathring{E}$ 17'21		minimum elong	1424 Jul 14 j 22:28	0° $\Omega$ 34'25	0°09'02
opposition	1416 Dec 26 j 09:31	13° $\mathring{E}$ 53'30	0°-41'-27	behind sun begin	1424 Jul 14 j 16:52	0° $\Omega$ 33'55	
min. Earth dist.	1416 Dec 26 j 10:46	13° $\mathring{E}$ 53'25	28.96809 AU	behind sun end	1424 Jul 15 j 04:03	0° $\Omega$ 34'55	
direct	1417 Mar 15 j 03:15	12° $\mathring{E}$ 28'37		max. Earth dist.	1424 Jul 14 j 12:38	0° $\Omega$ 33'31	31.03724 AU
				retrograde	1424 Oct 27 j 09:55	3° $\Omega$ 04'10	
conjunction	1417 Jun 28 j 22:08	14° $\mathring{E}$ 59'53	0°-36'-51	opposition	1425 Jan 12 j 19:53	1° $\Omega$ 40'56	0°-7'-27
minimum elong	1417 Jun 28 j 22:08	14° $\mathring{E}$ 59'53	0°36'53	min. Earth dist.	1425 Jan 13 j 05:23	1° $\Omega$ 40'16	29.04059 AU
max. Earth dist.	1417 Jun 28 j 19:23	14° $\mathring{E}$ 59'38	30.97325 AU	direct	1425 Apr 02 j 03:06	0° $\Omega$ 15'51	
retrograde	1417 Oct 12 j 02:28	17° $\mathring{E}$ 30'45					
opposition	1417 Dec 28 j 19:47	16° $\mathring{E}$ 07'00	0°-37'-20	conjunction	1425 Jul 17 j 11:49	2° $\Omega$ 47'27	0°-4'-59
min. Earth dist.	1417 Dec 28 j 22:44	16° $\mathring{E}$ 06'48	28.97890 AU	minimum elong	1425 Jul 17 j 11:49	2° $\Omega$ 47'27	0°05'01
direct	1418 Mar 17 j 12:39	14° $\mathring{E}$ 42'06		behind sun begin	1425 Jul 17 j 05:25	2° $\Omega$ 46'53	
				behind sun end	1425 Jul 17 j 18:14	2° $\Omega$ 48'01	
conjunction	1418 Jul 01 j 12:02	17° $\mathring{E}$ 13'27	0°-32'-59	max. Earth dist.	1425 Jul 17 j 00:42	2° $\Omega$ 46'26	31.04390 AU
minimum elong	1418 Jul 01 j 12:02	17° $\mathring{E}$ 13'27	0°33'00	retrograde	1425 Oct 29 j 22:04	5° $\Omega$ 17'01	
max. Earth dist.	1418 Jul 01 j 08:44	17° $\mathring{E}$ 13'08	30.98439 AU	opposition	1426 Jan 15 j 05:52	3° $\Omega$ 53'50	0°-3'-6
retrograde	1418 Oct 14 j 13:21	19° $\mathring{E}$ 44'10		min. Earth dist.	1426 Jan 15 j 15:09	3° $\Omega$ 53'10	29.04733 AU
opposition	1418 Dec 31 j 06:01	18° $\mathring{E}$ 20'32	0°-33'-10	direct	1426 Apr 04 j 15:35	2° $\Omega$ 28'41	
min. Earth dist.	1418 Dec 31 j 09:00	18° $\mathring{E}$ 20'19	28.98997 AU				
direct	1419 Mar 20 j 01:40	16° $\mathring{E}$ 55'38		conjunction	1426 Jul 20 j 01:12	5° $\Omega$ 00'18	0°00'-53
				minimum elong	1426 Jul 20 j 01:10	5° $\Omega$ 00'18	0°00'53
conjunction	1419 Jul 04 j 01:51	19° $\mathring{E}$ 27'03	0°-29'-4	behind sun begin	1426 Jul 19 j 18:35	4° $\Omega$ 59'43	
minimum elong	1419 Jul 04 j 01:51	19° $\mathring{E}$ 27'03	0°29'05	behind sun end	1426 Jul 20 j 07:45	5° $\Omega$ 00'53	
max. Earth dist.	1419 Jul 03 j 20:47	19° $\mathring{E}$ 26'35	30.99532 AU	max. Earth dist.	1426 Jul 19 j 13:29	4° $\Omega$ 59'14	31.05081 AU
retrograde	1419 Oct 17 j 00:41	21° $\mathring{E}$ 57'38		asc. node	1426 Oct 06 j 13:02	7° $\Omega$ 18'25	
opposition	1420 Jan 02 j 16:20	20° $\mathring{E}$ 34'06	0°-28'-57	retrograde	1426 Nov 01 j 07:41	7° $\Omega$ 29'42	
min. Earth dist.	1420 Jan 02 j 20:50	20° $\mathring{E}$ 33'47	29.00074 AU	opposition	1427 Jan 17 j 16:06	6° $\Omega$ 06'33	0°01'13
direct	1420 Mar 21 j 12:14	19° $\mathring{E}$ 09'12		min. Earth dist.	1427 Jan 18 j 02:54	6° $\Omega$ 05'47	29.05468 AU
				direct	1427 Apr 07 j 01:31	4° $\Omega$ 41'21	
conjunction	1420 Jul 05 j 15:47	21° $\mathring{E}$ 40'41	0°-25'-6				
minimum elong	1420 Jul 05 j 15:47	21° $\mathring{E}$ 40'41	0°25'07	conjunction	1427 Jul 22 j 14:19	7° $\Omega$ 12'59	0°03'16
max. Earth dist.	1420 Jul 05 j 10:30	21° $\mathring{E}$ 40'12	31.00571 AU	minimum elong	1427 Jul 22 j 14:19	7° $\Omega$ 12'59	0°03'16
retrograde	1420 Oct 18 j 11:45	24° $\mathring{E}$ 11'07		behind sun begin	1427 Jul 22 j 07:46	7° $\Omega$ 12'24	
opposition	1421 Jan 04 j 02:42	22° $\mathring{E}$ 47'41	0°-24'-42	behind sun end	1427 Jul 22 j 20:52	7° $\Omega$ 13'33	
min. Earth dist.	1421 Jan 04 j 07:58	22° $\mathring{E}$ 47'18	29.01056 AU	max. Earth dist.	1427 Jul 22 j 02:22	7° $\Omega$ 11'53	31.05862 AU
direct	1421 Mar 24 j 01:00	21° $\mathring{E}$ 22'46		retrograde	1427 Nov 03 j 17:09	9° $\Omega$ 42'13	
				opposition	1428 Jan 20 j 02:11	8° $\Omega$ 19'07	0°05'33
conjunction	1421 Jul 08 j 05:26	23° $\mathring{E}$ 54'17	0°-21'-7	min. Earth dist.	1428 Jan 20 j 12:37	8° $\Omega$ 18'23	29.06299 AU
minimum elong	1421 Jul 08 j 05:25	23° $\mathring{E}$ 54'17	0°21'08	direct	1428 Apr 08 j 14:40	6° $\Omega$ 53'54	
max. Earth dist.	1421 Jul 07 j 21:55	23° $\mathring{E}$ 53'36	31.01504 AU				
retrograde	1421 Oct 21 j 00:22	26° $\mathring{E}$ 24'34		conjunction	1428 Jul 24 j 03:21	9° $\Omega$ 25'32	0°07'18
opposition	1422 Jan 06 j 13:04	25° $\mathring{E}$ 01'11	0°-20'-25	minimum elong	1428 Jul 24 j 03:20	9° $\Omega$ 25'32	0°07'19
min. Earth dist.	1422 Jan 06 j 19:16	25° $\mathring{E}$ 00'45	29.01939 AU	behind sun begin	1428 Jul 23 j 21:19	9° $\Omega$ 25'00	
direct	1422 Mar 26 j 12:39	23° $\mathring{E}$ 36'14		behind sun end	1428 Jul 24 j 09:21	9° $\Omega$ 26'04	
				max. Earth dist.	1428 Jul 23 j 14:15	9° $\Omega$ 24'20	31.06755 AU
conjunction	1422 Jul 10 j 19:20	26° $\mathring{E}$ 07'48	0°-17'-6	retrograde	1428 Nov 05 j 03:26	11° $\Omega$ 54'38	
minimum elong	1422 Jul 10 j 19:20	26° $\mathring{E}$ 07'48	0°17'07	opposition	1429 Jan 21 j 12:23	10° $\Omega$ 31'36	0°09'53
max. Earth dist.	1422 Jul 10 j 11:47	26° $\mathring{E}$ 07'07	31.02326 AU	min. Earth dist.	1429 Jan 21 j 23:38	10° $\Omega$ 30'49	29.07271 AU
retrograde	1422 Oct 23 j 11:33	28° $\mathring{E}$ 37'55		direct	1429 Apr 11 j 00:15	9° $\Omega$ 06'22	
opposition	1423 Jan 08 j 23:20	27° $\mathring{E}$ 14'36	0°-16'-7				
min. Earth dist.	1423 Jan 09 j 07:01	27° $\mathring{E}$ 14'03	29.02703 AU	conjunction	1429 Jul 26 j 16:19	11° $\Omega$ 38'03	0°11'20
direct	1423 Mar 29 j 02:25	25° $\mathring{E}$ 49'36		minimum elong	1429 Jul 26 j 16:19	11° $\Omega$ 38'03	0°11'19
				behind sun begin	1429 Jul 26 j 11:34	11° $\Omega$ 37'37	
conjunction	1423 Jul 13 j 09:00	28° $\mathring{E}$ 21'12	0°-13'-4	behind sun end	1429 Jul 26 j 21:04	11° $\Omega$ 38'28	
minimum elong	1423 Jul 13 j 08:59	28° $\mathring{E}$ 21'12	0°13'06	max. Earth dist.	1429 Jul 26 j 03:39	11° $\Omega$ 36'53	31.07790 AU
behind sun begin	1423 Jul 13 j 05:11	28° $\mathring{E}$ 20'51		retrograde	1429 Nov 07 j 13:31	14° $\Omega$ 07'00	
behind sun end	1423 Jul 13 j 12:48	28° $\mathring{E}$ 21'32		opposition	1430 Jan 23 j 22:33	12° $\Omega$ 44'04	0°14'12
max. Earth dist.	1423 Jul 12 j 23:17	28° $\mathring{E}$ 20'18	31.03057 AU	min. Earth dist.	1430 Jan 24 j 10:08	12° $\Omega$ 43'15	29.08347 AU
	1423 Aug 30 j 14:29	0° $\Omega$		direct	1430 Apr 13 j 12:00	11° $\Omega$ 18'51	

conjunction	1430 Jul 29 j 05:16	13°Ω50'33	0°15'21	min. Earth dist.	1438 Feb 11 j 02:21	0°♄21'30	29.15813 AU
minimum elong	1430 Jul 29 j 05:15	13°Ω50'33	0°15'21		1438 Feb 24 j 02:05	30°♄Ω	
behind sun begin	1430 Jul 29 j 03:40	13°Ω50'25		direct	1438 May 01 j 12:34	28°Ω57'25	
behind sun end	1430 Jul 29 j 06:51	13°Ω50'42			1438 Jul 04 j 16:07	0°♄	
max. Earth dist.	1430 Jul 28 j 14:58	13°Ω49'14	31.08913 AU				
	1430 Aug 30 j 14:08	15°Ω		conjunction	1438 Aug 16 j 10:48	1°♄29'06	0°46'10
retrograde	1430 Nov 10 j 01:15	16°Ω19'24		minimum elong	1438 Aug 16 j 10:48	1°♄29'06	0°46'11
	1431 Jan 24 j 07:31	15°♄Ω		max. Earth dist.	1438 Aug 15 j 15:34	1°♄27'19	31.16110 AU
opposition	1431 Jan 26 j 08:38	14°Ω56'33	0°18'29	retrograde	1438 Nov 27 j 12:49	3°♄56'50	
min. Earth dist.	1431 Jan 26 j 20:41	14°Ω55'43	29.09505 AU	opposition	1439 Feb 12 j 19:15	2°♄34'22	0°51'13
direct	1431 Apr 15 j 23:11	13°Ω31'21		min. Earth dist.	1439 Feb 13 j 13:00	2°♄33'08	29.16486 AU
	1431 Jul 02 j 12:45	15°Ω		direct	1439 May 04 j 00:47	1°♄09'02	
conjunction	1431 Jul 31 j 18:19	16°Ω03'07	0°19'21	conjunction	1439 Aug 18 j 22:54	3°♄40'41	0°49'46
minimum elong	1431 Jul 31 j 18:19	16°Ω03'07	0°19'20	minimum elong	1439 Aug 18 j 22:54	3°♄40'41	0°49'45
max. Earth dist.	1431 Jul 31 j 04:31	16°Ω01'51	31.10074 AU	max. Earth dist.	1439 Aug 18 j 02:21	3°♄38'46	31.16809 AU
retrograde	1431 Nov 12 j 11:54	18°Ω31'51		retrograde	1439 Nov 29 j 23:29	6°♄08'18	
opposition	1432 Jan 28 j 18:59	17°Ω09'05	0°22'45	opposition	1440 Feb 15 j 05:38	4°♄45'51	0°55'01
min. Earth dist.	1432 Jan 29 j 08:15	17°Ω08'10	29.10659 AU	min. Earth dist.	1440 Feb 15 j 23:21	4°♄44'36	29.17238 AU
direct	1432 Apr 17 j 12:25	15°Ω43'55		direct	1440 May 05 j 11:50	3°♄20'30	
conjunction	1432 Aug 02 j 07:00	18°Ω15'42	0°23'19	conjunction	1440 Aug 20 j 10:53	5°♄52'07	0°53'17
minimum elong	1432 Aug 02 j 07:00	18°Ω15'42	0°23'20	minimum elong	1440 Aug 20 j 10:52	5°♄52'07	0°53'17
max. Earth dist.	1432 Aug 01 j 15:23	18°Ω14'16	31.11208 AU	max. Earth dist.	1440 Aug 19 j 15:21	5°♄50'18	31.17599 AU
retrograde	1432 Nov 13 j 23:58	20°Ω44'19		retrograde	1440 Dec 01 j 08:56	8°♄19'37	
opposition	1433 Jan 30 j 05:14	19°Ω21'38	0°26'58	opposition	1441 Feb 16 j 16:06	6°♄57'12	0°58'44
min. Earth dist.	1433 Jan 30 j 18:27	19°Ω20'43	29.11764 AU	min. Earth dist.	1441 Feb 17 j 10:31	6°♄55'55	29.18082 AU
direct	1433 Apr 20 j 00:33	17°Ω56'28		direct	1441 May 08 j 00:20	5°♄31'53	
conjunction	1433 Aug 04 j 19:58	20°Ω28'17	0°27'15	conjunction	1441 Aug 22 j 22:46	8°♄03'29	0°56'43
minimum elong	1433 Aug 04 j 19:58	20°Ω28'17	0°27'14	minimum elong	1441 Aug 22 j 22:46	8°♄03'29	0°56'42
max. Earth dist.	1433 Aug 04 j 04:14	20°Ω26'50	31.12255 AU	max. Earth dist.	1441 Aug 22 j 02:02	8°♄01'34	31.18505 AU
retrograde	1433 Nov 16 j 10:33	22°Ω56'46		retrograde	1441 Dec 03 j 20:31	10°♄30'54	
opposition	1434 Feb 01 j 15:34	21°Ω34'09	0°31'09	opposition	1442 Feb 19 j 02:19	9°♄08'34	1°02'22
min. Earth dist.	1434 Feb 02 j 06:36	21°Ω33'06	29.12765 AU	min. Earth dist.	1442 Feb 19 j 20:03	9°♄07'19	29.19047 AU
direct	1434 Apr 22 j 12:48	20°Ω08'59		direct	1442 May 10 j 11:46	7°♄43'15	
conjunction	1434 Aug 07 j 08:47	22°Ω40'47	0°31'09	conjunction	1442 Aug 25 j 10:48	10°♄14'53	1°00'05
minimum elong	1434 Aug 07 j 08:46	22°Ω40'47	0°31'09	minimum elong	1442 Aug 25 j 10:48	10°♄14'53	1°00'05
max. Earth dist.	1434 Aug 06 j 15:32	22°Ω39'12	31.13202 AU	max. Earth dist.	1442 Aug 24 j 14:40	10°♄13'01	31.19508 AU
retrograde	1434 Nov 18 j 22:55	25°Ω09'07		retrograde	1442 Dec 06 j 06:58	12°♄42'14	
opposition	1435 Feb 04 j 01:52	23°Ω46'33	0°35'18	opposition	1443 Feb 21 j 12:53	11°♄19'59	1°05'54
min. Earth dist.	1435 Feb 04 j 16:45	23°Ω45'31	29.13650 AU	min. Earth dist.	1443 Feb 22 j 07:51	11°♄18'40	29.20090 AU
direct	1435 Apr 25 j 02:17	22°Ω21'22		direct	1443 May 12 j 23:51	9°♄54'45	
conjunction	1435 Aug 09 j 21:27	24°Ω53'09	0°34'59	conjunction	1443 Aug 27 j 22:30	12°♄26'23	1°03'21
minimum elong	1435 Aug 09 j 21:27	24°Ω53'09	0°34'59	minimum elong	1443 Aug 27 j 22:30	12°♄26'23	1°03'21
max. Earth dist.	1435 Aug 09 j 03:35	24°Ω51'30	31.14023 AU	max. Earth dist.	1443 Aug 27 j 01:36	12°♄24'27	31.20574 AU
retrograde	1435 Nov 21 j 08:24	27°Ω21'21		retrograde	1443 Dec 08 j 19:23	14°♄53'41	
opposition	1436 Feb 06 j 12:21	25°Ω58'49	0°39'22	opposition	1444 Feb 23 j 23:22	13°♄31'30	1°09'21
min. Earth dist.	1436 Feb 07 j 04:53	25°Ω57'39	29.14434 AU	min. Earth dist.	1444 Feb 24 j 17:42	13°♄30'14	29.21158 AU
direct	1436 Apr 26 j 13:22	24°Ω33'36		direct	1444 May 14 j 13:07	12°♄06'20	
conjunction	1436 Aug 11 j 10:02	27°Ω05'21	0°38'47	conjunction	1444 Aug 29 j 10:21	14°♄38'00	1°06'31
minimum elong	1436 Aug 11 j 10:02	27°Ω05'21	0°38'47	minimum elong	1444 Aug 29 j 10:20	14°♄38'00	1°06'32
max. Earth dist.	1436 Aug 10 j 15:41	27°Ω03'39	31.14767 AU	max. Earth dist.	1444 Aug 28 j 13:16	14°♄36'02	31.21621 AU
retrograde	1436 Nov 22 j 17:54	29°Ω33'22		retrograde	1444 Dec 10 j 05:16	17°♄05'15	
opposition	1437 Feb 07 j 22:35	28°Ω10'52	0°43'23	opposition	1445 Feb 25 j 09:58	15°♄43'09	1°12'42
min. Earth dist.	1437 Feb 08 j 15:01	28°Ω09'43	29.15139 AU	min. Earth dist.	1445 Feb 26 j 05:43	15°♄41'47	29.22192 AU
direct	1437 Apr 29 j 02:28	26°Ω45'37		direct	1445 May 16 j 23:56	14°♄18'02	
conjunction	1437 Aug 13 j 22:25	29°Ω17'20	0°42'30	conjunction	1445 Aug 31 j 22:08	16°♄49'42	1°09'36
minimum elong	1437 Aug 13 j 22:24	29°Ω17'20	0°42'30	minimum elong	1445 Aug 31 j 22:08	16°♄49'42	1°09'36
max. Earth dist.	1437 Aug 13 j 02:48	29°Ω15'31	31.15444 AU	max. Earth dist.	1445 Aug 31 j 00:48	16°♄47'43	31.22608 AU
	1437 Sep 02 j 08:19	0°♄		retrograde	1445 Dec 12 j 15:03	19°♄16'54	
retrograde	1437 Nov 25 j 03:51	1°♄45'13		opposition	1446 Feb 27 j 20:39	17°♄54'53	1°15'56
opposition	1438 Feb 10 j 08:57	0°♄22'43	0°47'20	min. Earth dist.	1446 Feb 28 j 16:14	17°♄53'31	29.23118 AU

direct	1446 May 19 j 12:56	16° $\mathring{\text{M}}$ 29'48		opposition	1454 Mar 17 j 11:23	5° $\mathring{\text{U}}$ 25'06	1°37'27
max. Earth dist.	1446 Sep 02 j 11:21	18° $\mathring{\text{M}}$ 59'22	31.23461 AU	min. Earth dist.	1454 Mar 18 j 09:19	5° $\mathring{\text{U}}$ 23'35	29.27211 AU
conjunction	1446 Sep 03 j 09:53	19° $\mathring{\text{M}}$ 01'28	1°12'35	direct	1454 Jun 06 j 11:10	4° $\mathring{\text{U}}$ 00'00	
minimum elong	1446 Sep 03 j 09:52	19° $\mathring{\text{M}}$ 01'28	1°12'35	max. Earth dist.	1454 Sep 20 j 04:39	6° $\mathring{\text{U}}$ 29'03	31.27398 AU
retrograde	1446 Dec 15 j 01:28	21° $\mathring{\text{M}}$ 28'35		conjunction	1454 Sep 21 j 03:30	6° $\mathring{\text{U}}$ 31'11	1°32'14
opposition	1447 Mar 02 j 07:25	20° $\mathring{\text{M}}$ 06'38	1°19'03	minimum elong	1454 Sep 21 j 03:29	6° $\mathring{\text{U}}$ 31'11	1°32'15
min. Earth dist.	1447 Mar 03 j 03:53	20° $\mathring{\text{M}}$ 05'13	29.23920 AU	retrograde	1455 Jan 01 j 08:58	8° $\mathring{\text{U}}$ 57'44	
direct	1447 May 21 j 22:58	18° $\mathring{\text{M}}$ 41'34		opposition	1455 Mar 19 j 22:21	7° $\mathring{\text{U}}$ 35'47	1°39'32
conjunction	1447 Sep 05 j 21:37	21° $\mathring{\text{M}}$ 13'12	1°15'27	min. Earth dist.	1455 Mar 20 j 19:25	7° $\mathring{\text{U}}$ 34'20	29.27803 AU
minimum elong	1447 Sep 05 j 21:37	21° $\mathring{\text{M}}$ 13'12	1°15'27	direct	1455 Jun 09 j 00:27	6° $\mathring{\text{U}}$ 10'45	
max. Earth dist.	1447 Sep 04 j 23:25	21° $\mathring{\text{M}}$ 11'08	31.24188 AU	conjunction	1455 Sep 23 j 14:13	8° $\mathring{\text{U}}$ 41'53	1°34'08
retrograde	1447 Dec 17 j 10:23	23° $\mathring{\text{M}}$ 40'15		minimum elong	1455 Sep 23 j 14:13	8° $\mathring{\text{U}}$ 41'53	1°34'08
opposition	1448 Mar 03 j 18:18	22° $\mathring{\text{M}}$ 18'20	1°22'04	max. Earth dist.	1455 Sep 22 j 14:56	8° $\mathring{\text{U}}$ 39'43	31.28021 AU
min. Earth dist.	1448 Mar 04 j 15:13	22° $\mathring{\text{M}}$ 16'53	29.24574 AU	retrograde	1456 Jan 03 j 19:47	11° $\mathring{\text{U}}$ 08'26	
direct	1448 May 23 j 11:17	20° $\mathring{\text{M}}$ 53'17		opposition	1456 Mar 21 j 09:26	9° $\mathring{\text{U}}$ 46'31	1°41'29
max. Earth dist.	1448 Sep 06 j 09:18	23° $\mathring{\text{M}}$ 22'39	31.24775 AU	min. Earth dist.	1456 Mar 22 j 06:40	9° $\mathring{\text{U}}$ 45'04	29.28458 AU
conjunction	1448 Sep 07 j 08:59	23° $\mathring{\text{M}}$ 24'51	1°18'13	direct	1456 Jun 10 j 10:59	8° $\mathring{\text{U}}$ 21'32	
minimum elong	1448 Sep 07 j 08:59	23° $\mathring{\text{M}}$ 24'51	1°18'13	max. Earth dist.	1456 Sep 24 j 02:37	10° $\mathring{\text{U}}$ 50'34	31.28671 AU
retrograde	1448 Dec 18 j 20:28	25° $\mathring{\text{M}}$ 51'50		conjunction	1456 Sep 25 j 00:53	10° $\mathring{\text{U}}$ 52'39	1°35'53
opposition	1449 Mar 06 j 05:05	24° $\mathring{\text{M}}$ 29'55	1°24'57	minimum elong	1456 Sep 25 j 00:52	10° $\mathring{\text{U}}$ 52'39	1°35'53
min. Earth dist.	1449 Mar 07 j 02:08	24° $\mathring{\text{M}}$ 28'27	29.25109 AU	retrograde	1457 Jan 05 j 04:32	13° $\mathring{\text{U}}$ 19'12	
direct	1449 May 25 j 22:17	23° $\mathring{\text{M}}$ 04'51		opposition	1457 Mar 23 j 20:34	11° $\mathring{\text{U}}$ 57'20	1°43'17
conjunction	1449 Sep 09 j 20:32	25° $\mathring{\text{M}}$ 36'23	1°20'51	min. Earth dist.	1457 Mar 24 j 17:56	11° $\mathring{\text{U}}$ 55'52	29.29083 AU
minimum elong	1449 Sep 09 j 20:32	25° $\mathring{\text{M}}$ 36'22	1°20'51	direct	1457 Jun 12 j 23:25	10° $\mathring{\text{U}}$ 32'25	
max. Earth dist.	1449 Sep 08 j 21:34	25° $\mathring{\text{M}}$ 34'14	31.25243 AU	conjunction	1457 Sep 27 j 11:30	13° $\mathring{\text{U}}$ 03'29	1°37'30
retrograde	1449 Dec 21 j 05:09	28° $\mathring{\text{M}}$ 03'16		minimum elong	1457 Sep 27 j 11:30	13° $\mathring{\text{U}}$ 03'29	1°37'29
opposition	1450 Mar 08 j 15:51	26° $\mathring{\text{M}}$ 41'20	1°27'43	max. Earth dist.	1457 Sep 26 j 12:09	13° $\mathring{\text{U}}$ 01'18	31.29267 AU
min. Earth dist.	1450 Mar 09 j 13:56	26° $\mathring{\text{M}}$ 39'48	29.25528 AU	retrograde	1458 Jan 07 j 14:52	15° $\mathring{\text{U}}$ 30'03	
direct	1450 May 28 j 10:13	25° $\mathring{\text{M}}$ 16'15		opposition	1458 Mar 26 j 07:40	14° $\mathring{\text{U}}$ 08'13	1°44'56
max. Earth dist.	1450 Sep 11 j 07:36	27° $\mathring{\text{M}}$ 45'27	31.25631 AU	min. Earth dist.	1458 Mar 27 j 04:48	14° $\mathring{\text{U}}$ 06'46	29.29647 AU
conjunction	1450 Sep 12 j 07:46	27° $\mathring{\text{M}}$ 47'42	1°23'23	direct	1458 Jun 15 j 09:45	12° $\mathring{\text{U}}$ 43'21	
minimum elong	1450 Sep 12 j 07:46	27° $\mathring{\text{M}}$ 47'42	1°23'23	conjunction	1458 Sep 29 j 22:16	15° $\mathring{\text{U}}$ 14'24	1°38'58
retrograde	1450 Nov 24 j 13:51	0° $\mathring{\text{U}}$		minimum elong	1458 Sep 29 j 22:16	15° $\mathring{\text{U}}$ 14'24	1°38'58
opposition	1450 Dec 23 j 16:15	0° $\mathring{\text{U}}$ 14'30		max. Earth dist.	1458 Sep 28 j 23:58	15° $\mathring{\text{U}}$ 12'19	31.29769 AU
min. Earth dist.	1451 Jan 22 j 08:13	30° $\mathring{\text{R}}$ $\mathring{\text{M}}$		retrograde	1459 Jan 09 j 23:51	17° $\mathring{\text{U}}$ 40'59	
direct	1451 Mar 11 j 02:40	28° $\mathring{\text{M}}$ 52'33	1°30'21	opposition	1459 Mar 28 j 19:08	16° $\mathring{\text{U}}$ 19'10	1°46'25
conjunction	1451 Sep 14 j 18:50	29° $\mathring{\text{M}}$ 58'49	1°25'47	min. Earth dist.	1459 Mar 29 j 17:04	16° $\mathring{\text{U}}$ 17'40	29.30089 AU
minimum elong	1451 Sep 14 j 18:50	29° $\mathring{\text{M}}$ 58'49	1°25'47	direct	1459 Jun 17 j 21:01	14° $\mathring{\text{U}}$ 54'22	
max. Earth dist.	1451 Sep 13 j 19:27	29° $\mathring{\text{M}}$ 56'38	31.25982 AU	max. Earth dist.	1459 Oct 01 j 09:23	17° $\mathring{\text{U}}$ 23'10	31.30147 AU
retrograde	1451 Sep 15 j 07:37	0° $\mathring{\text{U}}$		conjunction	1459 Oct 02 j 08:41	17° $\mathring{\text{U}}$ 25'21	1°40'18
opposition	1451 Dec 26 j 02:01	2° $\mathring{\text{U}}$ 25'33		minimum elong	1459 Oct 02 j 08:41	17° $\mathring{\text{U}}$ 25'21	1°40'17
min. Earth dist.	1452 Mar 12 j 13:38	1° $\mathring{\text{U}}$ 03'34	1°32'51	retrograde	1460 Jan 12 j 11:11	19° $\mathring{\text{U}}$ 51'56	
direct	1452 Mar 13 j 11:58	1° $\mathring{\text{U}}$ 02'01	29.26266 AU	opposition	1460 Mar 30 j 06:28	18° $\mathring{\text{U}}$ 30'09	1°47'46
conjunction	1452 Apr 24 j 23:00	30° $\mathring{\text{R}}$ $\mathring{\text{M}}$		min. Earth dist.	1460 Mar 31 j 03:32	18° $\mathring{\text{U}}$ 28'42	29.30402 AU
minimum elong	1452 Jun 01 j 10:25	29° $\mathring{\text{M}}$ 38'27		direct	1460 Jun 19 j 07:56	17° $\mathring{\text{U}}$ 05'22	
max. Earth dist.	1452 Jul 08 j 07:57	0° $\mathring{\text{U}}$		conjunction	1460 Oct 03 j 19:19	19° $\mathring{\text{U}}$ 36'18	1°41'29
retrograde	1452 Sep 15 j 06:01	2° $\mathring{\text{U}}$ 07'31	31.26374 AU	minimum elong	1460 Oct 03 j 19:18	19° $\mathring{\text{U}}$ 36'18	1°41'29
conjunction	1452 Sep 16 j 05:45	2° $\mathring{\text{U}}$ 09'43	1°28'04	max. Earth dist.	1460 Oct 02 j 20:36	19° $\mathring{\text{U}}$ 34'11	31.30379 AU
minimum elong	1452 Sep 16 j 05:44	2° $\mathring{\text{U}}$ 09'43	1°28'04	retrograde	1461 Jan 13 j 21:15	22° $\mathring{\text{U}}$ 02'54	
retrograde	1452 Dec 27 j 13:30	4° $\mathring{\text{U}}$ 36'23		opposition	1461 Apr 01 j 17:51	20° $\mathring{\text{U}}$ 41'06	1°48'58
opposition	1453 Mar 15 j 00:22	3° $\mathring{\text{U}}$ 14'23	1°35'13	min. Earth dist.	1461 Apr 02 j 16:04	20° $\mathring{\text{U}}$ 39'34	29.30569 AU
min. Earth dist.	1453 Mar 15 j 21:37	3° $\mathring{\text{U}}$ 12'55	29.26693 AU	direct	1461 Jun 21 j 20:17	19° $\mathring{\text{U}}$ 16'20	
direct	1453 Jun 03 j 23:56	1° $\mathring{\text{U}}$ 49'16		max. Earth dist.	1461 Oct 05 j 06:34	21° $\mathring{\text{U}}$ 45'02	31.30484 AU
conjunction	1453 Sep 18 j 16:41	4° $\mathring{\text{U}}$ 20'29	1°30'13	conjunction	1461 Oct 06 j 05:46	21° $\mathring{\text{U}}$ 47'12	1°42'31
minimum elong	1453 Sep 18 j 16:41	4° $\mathring{\text{U}}$ 20'29	1°30'13	minimum elong	1461 Oct 06 j 05:46	21° $\mathring{\text{U}}$ 47'12	1°42'31
max. Earth dist.	1453 Sep 17 j 17:16	4° $\mathring{\text{U}}$ 18'19	31.26835 AU	retrograde	1462 Jan 16 j 08:56	24° $\mathring{\text{U}}$ 13'47	
retrograde	1453 Dec 29 j 23:11	6° $\mathring{\text{U}}$ 47'06		opposition	1462 Apr 04 j 05:14	22° $\mathring{\text{U}}$ 51'58	1°50'00
				min. Earth dist.	1462 Apr 05 j 02:31	22° $\mathring{\text{U}}$ 50'31	29.30605 AU
				direct	1462 Jun 24 j 09:36	21° $\mathring{\text{U}}$ 27'13	

conjunction	1462 Oct 08 j 16:04	23°♁58'01	1°43'25	conjunction	1470 Oct 25 j 22:57	11°♁22'05	1°45'12
minimum elong	1462 Oct 08 j 16:04	23°♁58'01	1°43'26	minimum elong	1470 Oct 25 j 22:58	11°♁22'05	1°45'12
max. Earth dist.	1462 Oct 07 j 17:02	23°♁55'52	31.30463 AU	max. Earth dist.	1470 Oct 25 j 04:12	11°♁20'19	31.31175 AU
retrograde	1463 Jan 18 j 18:48	26°♁24'36		retrograde	1471 Feb 05 j 03:10	13°♁48'56	
opposition	1463 Apr 06 j 16:48	25°♁02'44	1°50'52	opposition	1471 Apr 24 j 13:56	12°♁27'01	1°52'09
min. Earth dist.	1463 Apr 07 j 14:50	25°♁01'14	29.30554 AU	min. Earth dist.	1471 Apr 25 j 07:20	12°♁25'50	29.31345 AU
direct	1463 Jun 26 j 20:56	23°♁37'59		direct	1471 Jul 14 j 18:06	11°♁02'37	
max. Earth dist.	1463 Oct 10 j 03:58	26°♁06'37	31.30390 AU				
conjunction	1463 Oct 11 j 02:16	26°♁08'42	1°44'10	conjunction	1471 Oct 28 j 08:45	13°♁32'48	1°44'44
minimum elong	1463 Oct 11 j 02:16	26°♁08'42	1°44'10	minimum elong	1471 Oct 28 j 08:45	13°♁32'48	1°44'44
retrograde	1464 Jan 21 j 04:36	28°♁35'15		max. Earth dist.	1471 Oct 27 j 14:13	13°♁31'04	31.31257 AU
opposition	1464 Apr 08 j 04:14	27°♁13'21	1°51'36		1471 Dec 08 j 16:21	15°♁	
min. Earth dist.	1464 Apr 09 j 01:19	27°♁11'55	29.30465 AU	retrograde	1472 Feb 07 j 14:00	15°♁59'44	
direct	1464 Jun 28 j 10:51	25°♁48'37			1472 Apr 12 j 06:20	15°♁	
conjunction	1464 Oct 12 j 12:11	28°♁19'14	1°44'46	opposition	1472 Apr 26 j 01:59	14°♁37'47	1°51'35
minimum elong	1464 Oct 12 j 12:10	28°♁19'14	1°44'46	min. Earth dist.	1472 Apr 26 j 19:59	14°♁36'34	29.31381 AU
max. Earth dist.	1464 Oct 11 j 13:38	28°♁17'07	31.30307 AU	direct	1472 Jul 16 j 04:44	13°♁13'27	
	1464 Nov 30 j 19:07	0°♁			1472 Oct 10 j 03:46	15°♁	
retrograde	1465 Jan 22 j 15:31	0°♁45'47		conjunction	1472 Oct 29 j 18:30	15°♁43'33	1°44'08
	1465 Mar 18 j 19:21	30°♁		minimum elong	1472 Oct 29 j 18:30	15°♁43'33	1°44'08
opposition	1465 Apr 10 j 15:43	29°♁23'51	1°52'10	max. Earth dist.	1472 Oct 29 j 00:47	15°♁41'53	31.31229 AU
min. Earth dist.	1465 Apr 11 j 12:35	29°♁22'25	29.30415 AU	retrograde	1473 Feb 09 j 00:47	18°♁10'32	
direct	1465 Jun 30 j 22:25	27°♁59'06		opposition	1473 Apr 28 j 14:01	16°♁48'34	1°50'51
	1465 Oct 01 j 15:19	0°♁		min. Earth dist.	1473 Apr 29 j 07:09	16°♁47'24	29.31269 AU
conjunction	1465 Oct 14 j 22:11	0°♁29'39	1°45'13	direct	1473 Jul 18 j 18:49	15°♁24'16	
minimum elong	1465 Oct 14 j 22:11	0°♁29'39	1°45'12	max. Earth dist.	1473 Oct 31 j 09:53	17°♁52'35	31.31048 AU
max. Earth dist.	1465 Oct 14 j 01:08	0°♁27'41	31.30286 AU	conjunction	1473 Nov 01 j 04:10	17°♁54'18	1°43'23
retrograde	1466 Jan 24 j 23:43	2°♁56'13		minimum elong	1473 Nov 01 j 04:10	17°♁54'18	1°43'22
opposition	1466 Apr 13 j 03:13	1°♁34'16	1°52'34	retrograde	1474 Feb 11 j 12:35	20°♁21'19	
min. Earth dist.	1466 Apr 13 j 23:35	1°♁32'52	29.30431 AU	opposition	1474 May 01 j 02:07	18°♁59'19	1°49'58
direct	1466 Jul 03 j 11:17	0°♁09'33		min. Earth dist.	1474 May 01 j 19:10	18°♁58'09	29.31025 AU
max. Earth dist.	1466 Oct 16 j 10:32	2°♁38'00	31.30361 AU	direct	1474 Jul 21 j 06:38	17°♁35'01	
conjunction	1466 Oct 17 j 07:59	2°♁40'01	1°45'31	conjunction	1474 Nov 03 j 13:56	20°♁04'58	1°42'29
minimum elong	1466 Oct 17 j 07:59	2°♁40'01	1°45'31	minimum elong	1474 Nov 03 j 13:56	20°♁04'58	1°42'29
retrograde	1467 Jan 27 j 09:34	5°♁06'37		max. Earth dist.	1474 Nov 02 j 20:59	20°♁03'22	31.30743 AU
opposition	1467 Apr 15 j 14:49	3°♁44'39	1°52'48	retrograde	1475 Feb 13 j 21:21	22°♁32'02	
min. Earth dist.	1467 Apr 16 j 10:05	3°♁43'20	29.30562 AU	opposition	1475 May 03 j 14:21	21°♁09'59	1°48'56
direct	1467 Jul 05 j 21:41	2°♁20'00		min. Earth dist.	1475 May 04 j 07:06	21°♁08'50	29.30654 AU
conjunction	1467 Oct 19 j 17:44	4°♁50'24	1°45'40	direct	1475 Jul 23 j 19:50	19°♁45'42	
minimum elong	1467 Oct 19 j 17:44	4°♁50'24	1°45'39	conjunction	1475 Nov 05 j 23:17	22°♁15'32	1°41'26
max. Earth dist.	1467 Oct 18 j 22:05	4°♁48'34	31.30532 AU	minimum elong	1475 Nov 05 j 23:18	22°♁15'32	1°41'26
retrograde	1468 Jan 29 j 18:17	7°♁17'04		max. Earth dist.	1475 Nov 05 j 05:51	22°♁13'53	31.30337 AU
opposition	1468 Apr 17 j 02:34	5°♁55'06	1°52'53	retrograde	1476 Feb 16 j 07:46	24°♁42'39	
min. Earth dist.	1468 Apr 17 j 22:00	5°♁53'47	29.30762 AU	opposition	1476 May 05 j 02:29	23°♁20'31	1°47'45
direct	1468 Jul 07 j 08:30	4°♁30'31		min. Earth dist.	1476 May 05 j 18:16	23°♁19'27	29.30218 AU
max. Earth dist.	1468 Oct 20 j 07:29	6°♁58'59	31.30764 AU	direct	1476 Jul 25 j 07:15	21°♁56'15	
conjunction	1468 Oct 21 j 03:26	7°♁00'52	1°45'40	conjunction	1476 Nov 07 j 08:50	24°♁25'58	1°40'15
minimum elong	1468 Oct 21 j 03:26	7°♁00'52	1°45'40	minimum elong	1476 Nov 07 j 08:50	24°♁25'59	1°40'15
retrograde	1469 Jan 31 j 05:26	9°♁27'35		max. Earth dist.	1476 Nov 06 j 17:05	24°♁24'30	31.29882 AU
opposition	1469 Apr 19 j 14:03	8°♁05'39	1°52'48	retrograde	1477 Feb 17 j 16:30	26°♁53'09	
min. Earth dist.	1469 Apr 20 j 08:06	8°♁04'25	29.31000 AU	opposition	1477 May 07 j 14:36	25°♁30'57	1°46'24
direct	1469 Jul 09 j 18:56	6°♁41'07		min. Earth dist.	1477 May 08 j 06:30	25°♁29'52	29.29761 AU
conjunction	1469 Oct 23 j 13:18	9°♁11'25	1°45'30	direct	1477 Jul 27 j 19:02	24°♁06'41	
minimum elong	1469 Oct 23 j 13:18	9°♁11'25	1°45'30	conjunction	1477 Nov 09 j 18:10	26°♁36'19	1°38'55
max. Earth dist.	1469 Oct 22 j 18:23	9°♁09'39	31.30990 AU	minimum elong	1477 Nov 09 j 18:10	26°♁36'19	1°38'55
retrograde	1470 Feb 02 j 15:33	11°♁38'13		max. Earth dist.	1477 Nov 09 j 02:28	26°♁34'50	31.29453 AU
opposition	1470 Apr 22 j 02:01	10°♁16'17	1°52'33	retrograde	1478 Feb 20 j 03:27	27°♁03'33	
min. Earth dist.	1470 Apr 22 j 20:43	10°♁15'01	29.31209 AU	opposition	1478 May 10 j 02:47	27°♁41'19	1°44'54
direct	1470 Jul 12 j 06:14	8°♁51'50		min. Earth dist.	1478 May 10 j 16:48	27°♁40'22	29.29359 AU
				direct	1478 Jul 30 j 06:08	26°♁17'05	



conjunction	1478 Nov 12 j 03:27	28° <del>M</del> 46'37	1°37'27	conjunction	1486 Nov 29 j 06:08	16° <del>7</del> 13'50	1°20'47
minimum elong	1478 Nov 12 j 03:27	28° <del>M</del> 46'38	1°37'27	minimum elong	1486 Nov 29 j 06:08	16° <del>7</del> 13'50	1°20'48
max. Earth dist.	1478 Nov 11 j 13:10	28° <del>M</del> 45'17	31.29087 AU	max. Earth dist.	1486 Nov 28 j 20:55	16° <del>7</del> 12'57	31.26442 AU
	1478 Dec 16 j 01:40	0° <del>7</del>		retrograde	1487 Mar 12 j 07:24	18° <del>7</del> 42'10	
retrograde	1479 Feb 22 j 13:27	1° <del>7</del> 13'58		opposition	1487 May 30 j 19:37	17° <del>7</del> 19'43	1°24'55
	1479 May 07 j 12:03	30° <del>R</del> <del>M</del>		min. Earth dist.	1487 May 31 j 03:29	17° <del>7</del> 19'11	29.26112 AU
opposition	1479 May 12 j 15:12	29° <del>M</del> 51'41	1°43'16	direct	1487 Aug 19 j 14:57	15° <del>7</del> 56'01	
min. Earth dist.	1479 May 13 j 05:15	29° <del>M</del> 50'44	29.29042 AU				
direct	1479 Aug 01 j 16:55	28° <del>M</del> 27'30		conjunction	1487 Dec 01 j 15:36	18° <del>7</del> 25'04	1°18'09
	1479 Oct 19 j 15:35	0° <del>7</del>		minimum elong	1487 Dec 01 j 15:36	18° <del>7</del> 25'04	1°18'09
				max. Earth dist.	1487 Dec 01 j 07:17	18° <del>7</del> 24'17	31.25630 AU
conjunction	1479 Nov 14 j 12:45	0° <del>7</del> 56'59	1°35'50	retrograde	1488 Mar 13 j 17:00	20° <del>7</del> 53'31	
minimum elong	1479 Nov 14 j 12:45	0° <del>7</del> 56'59	1°35'50	opposition	1488 Jun 01 j 08:23	19° <del>7</del> 30'58	1°22'02
max. Earth dist.	1479 Nov 13 j 23:16	0° <del>7</del> 55'43	31.28826 AU	min. Earth dist.	1488 Jun 01 j 16:40	19° <del>7</del> 30'25	29.25249 AU
retrograde	1480 Feb 25 j 01:00	3° <del>7</del> 24'27		direct	1488 Aug 21 j 01:53	18° <del>7</del> 07'16	
opposition	1480 May 14 j 03:20	2° <del>7</del> 02'09	1°41'28				
min. Earth dist.	1480 May 14 j 15:31	2° <del>7</del> 01'20	29.28811 AU	conjunction	1488 Dec 03 j 00:54	20° <del>7</del> 36'13	1°15'24
direct	1480 Aug 03 j 03:47	0° <del>7</del> 38'02		minimum elong	1488 Dec 03 j 00:55	20° <del>7</del> 36'13	1°15'24
				max. Earth dist.	1488 Dec 02 j 17:21	20° <del>7</del> 35'30	31.24741 AU
conjunction	1480 Nov 15 j 22:01	3° <del>7</del> 07'29	1°34'05	retrograde	1489 Mar 16 j 03:58	23° <del>7</del> 04'44	
minimum elong	1480 Nov 15 j 22:01	3° <del>7</del> 07'29	1°34'06	opposition	1489 Jun 03 j 21:05	21° <del>7</del> 42'06	1°19'02
max. Earth dist.	1480 Nov 15 j 09:09	3° <del>7</del> 06'16	31.28627 AU	min. Earth dist.	1489 Jun 04 j 03:35	21° <del>7</del> 41'40	29.24325 AU
retrograde	1481 Feb 26 j 12:24	5° <del>7</del> 35'04		direct	1489 Aug 23 j 13:05	20° <del>7</del> 18'23	
opposition	1481 May 16 j 15:44	4° <del>7</del> 12'47	1°39'31				
min. Earth dist.	1481 May 17 j 04:00	4° <del>7</del> 11'57	29.28632 AU	conjunction	1489 Dec 05 j 10:03	22° <del>7</del> 47'13	1°12'32
direct	1481 Aug 05 j 13:45	2° <del>7</del> 48'45		minimum elong	1489 Dec 05 j 10:03	22° <del>7</del> 47'13	1°12'32
				max. Earth dist.	1489 Dec 05 j 03:04	22° <del>7</del> 46'33	31.23813 AU
conjunction	1481 Nov 18 j 07:18	5° <del>7</del> 18'09	1°32'12	retrograde	1490 Mar 18 j 15:24	25° <del>7</del> 15'51	
minimum elong	1481 Nov 18 j 07:18	5° <del>7</del> 18'09	1°32'11	opposition	1490 Jun 06 j 09:58	23° <del>7</del> 53'06	1°15'56
max. Earth dist.	1481 Nov 17 j 19:53	5° <del>7</del> 17'05	31.28460 AU	min. Earth dist.	1490 Jun 06 j 16:21	23° <del>7</del> 52'41	29.23419 AU
retrograde	1482 Feb 28 j 23:55	7° <del>7</del> 45'52		direct	1490 Aug 25 j 23:37	22° <del>7</del> 29'23	
opposition	1482 May 19 j 04:08	6° <del>7</del> 23'35	1°37'26				
min. Earth dist.	1482 May 19 j 15:04	6° <del>7</del> 22'51	29.28446 AU	conjunction	1490 Dec 07 j 19:20	24° <del>7</del> 58'08	1°09'35
direct	1482 Aug 08 j 03:08	4° <del>7</del> 59'39		minimum elong	1490 Dec 07 j 19:20	24° <del>7</del> 58'08	1°09'35
				max. Earth dist.	1490 Dec 07 j 14:10	24° <del>7</del> 57'38	31.22943 AU
conjunction	1482 Nov 20 j 16:34	7° <del>7</del> 29'01	1°30'10	retrograde	1491 Mar 21 j 02:52	27° <del>7</del> 26'52	
minimum elong	1482 Nov 20 j 16:34	7° <del>7</del> 29'01	1°30'10	opposition	1491 Jun 08 j 22:44	26° <del>7</del> 04'02	1°12'43
max. Earth dist.	1482 Nov 20 j 04:59	7° <del>7</del> 27'56	31.28266 AU	min. Earth dist.	1491 Jun 09 j 03:23	26° <del>7</del> 03'43	29.22580 AU
retrograde	1483 Mar 03 j 13:04	9° <del>7</del> 56'53		direct	1491 Aug 28 j 12:26	24° <del>7</del> 40'20	
opposition	1483 May 21 j 16:44	8° <del>7</del> 34'35	1°35'12				
min. Earth dist.	1483 May 22 j 03:13	8° <del>7</del> 33'52	29.28230 AU	conjunction	1491 Dec 10 j 04:26	27° <del>7</del> 09'00	1°06'31
direct	1483 Aug 10 j 14:16	7° <del>7</del> 10'43		minimum elong	1491 Dec 10 j 04:26	27° <del>7</del> 09'00	1°06'31
				max. Earth dist.	1491 Dec 09 j 23:22	27° <del>7</del> 08'31	31.22155 AU
conjunction	1483 Nov 23 j 01:55	9° <del>7</del> 40'04	1°28'00	retrograde	1492 Mar 22 j 15:57	29° <del>7</del> 37'52	
minimum elong	1483 Nov 23 j 01:55	9° <del>7</del> 40'04	1°28'00	opposition	1492 Jun 10 j 11:33	28° <del>7</del> 14'58	1°09'23
max. Earth dist.	1483 Nov 22 j 15:58	9° <del>7</del> 39'08	31.28007 AU	min. Earth dist.	1492 Jun 10 j 15:18	28° <del>7</del> 14'43	29.21841 AU
retrograde	1484 Mar 04 j 22:42	12° <del>7</del> 08'03		direct	1492 Aug 29 j 22:48	26° <del>7</del> 51'18	
opposition	1484 May 23 j 05:23	10° <del>7</del> 45'45	1°32'49				
min. Earth dist.	1484 May 23 j 15:27	10° <del>7</del> 45'04	29.27907 AU	conjunction	1492 Dec 11 j 13:45	29° <del>7</del> 19'55	1°03'21
direct	1484 Aug 12 j 02:49	9° <del>7</del> 21'58		minimum elong	1492 Dec 11 j 13:46	29° <del>7</del> 19'55	1°03'22
				max. Earth dist.	1492 Dec 11 j 10:44	29° <del>7</del> 19'38	31.21456 AU
conjunction	1484 Nov 24 j 11:16	11° <del>7</del> 51'15	1°25'43		1492 Dec 29 j 10:03	0° <del>7</del>	
minimum elong	1484 Nov 24 j 11:16	11° <del>7</del> 51'15	1°25'43	retrograde	1493 Mar 25 j 02:08	1° <del>7</del> 48'56	
max. Earth dist.	1484 Nov 24 j 00:46	11° <del>7</del> 50'16	31.27631 AU	opposition	1493 Jun 13 j 00:18	0° <del>7</del> 25'59	1°05'58
retrograde	1485 Mar 07 j 10:12	14° <del>7</del> 19'22		min. Earth dist.	1493 Jun 13 j 03:08	0° <del>7</del> 25'48	29.21166 AU
opposition	1485 May 25 j 17:56	12° <del>7</del> 57'02	1°30'19		1493 Jun 29 j 07:20	30° <del>R</del> <del>7</del>	
min. Earth dist.	1485 May 26 j 03:06	12° <del>7</del> 56'25	29.27463 AU	direct	1493 Sep 01 j 11:11	29° <del>7</del> 02'22	
direct	1485 Aug 14 j 14:42	11° <del>7</del> 33'18			1493 Oct 31 j 20:20	0° <del>7</del>	
conjunction	1485 Nov 26 j 20:50	14° <del>7</del> 02'32	1°23'19	conjunction	1493 Dec 13 j 22:57	1° <del>7</del> 30'57	1°00'06
minimum elong	1485 Nov 26 j 20:51	14° <del>7</del> 02'32	1°23'18	minimum elong	1493 Dec 13 j 22:57	1° <del>7</del> 30'57	1°00'06
max. Earth dist.	1485 Nov 26 j 11:46	14° <del>7</del> 01'41	31.27109 AU	max. Earth dist.	1493 Dec 17 j 19:57	1° <del>7</del> 30'40	31.20826 AU
retrograde	1486 Mar 09 j 20:18	16° <del>7</del> 30'46		retrograde	1494 Mar 27 j 15:00	4° <del>7</del> 00'06	
opposition	1486 May 28 j 06:50	15° <del>7</del> 08'23	1°27'40	opposition	1494 Jun 15 j 13:14	2° <del>7</del> 37'09	1°02'26
min. Earth dist.	1486 May 28 j 16:16	15° <del>7</del> 07'45	29.26858 AU	min. Earth dist.	1494 Jun 15 j 14:38	2° <del>7</del> 37'03	29.20553 AU
direct	1486 Aug 17 j 03:11	13° <del>7</del> 44'41		direct	1494 Sep 03 j 22:50	1° <del>7</del> 13'35	

conjunction	1494 Dec 16 j 08:15	3°☾42'08	0°56'45	retrograde	1503 Apr 17 j 02:30	23°☾46'37	
minimum elong	1494 Dec 16 j 08:15	3°☾42'08	0°56'46	opposition	1503 Jul 06 j 10:55	22°☾23'03	0°27'11
max. Earth dist.	1494 Dec 16 j 07:06	3°☾42'02	31.20218 AU	min. Earth dist.	1503 Jul 06 j 05:23	22°☾23'25	29.12165 AU
retrograde	1495 Mar 30 j 02:01	6°☾11'28		direct	1503 Sep 24 j 05:41	20°☾59'42	
opposition	1495 Jun 18 j 02:19	4°☾48'28	0°58'48				
min. Earth dist.	1495 Jun 18 j 03:39	4°☾48'23	29.19939 AU	conjunction	1504 Jan 04 j 22:10	23°☾27'50	0°23'31
direct	1495 Sep 06 j 11:02	3°☾24'59		minimum elong	1504 Jan 04 j 22:11	23°☾27'51	0°23'30
				max. Earth dist.	1504 Jan 05 j 04:03	23°☾28'23	31.11640 AU
conjunction	1495 Dec 18 j 17:38	5°☾53'30	0°53'19	retrograde	1504 Apr 18 j 14:07	25°☾58'32	
minimum elong	1495 Dec 18 j 17:38	5°☾53'30	0°53'19	opposition	1504 Jul 07 j 23:52	24°☾34'53	0°22'59
max. Earth dist.	1495 Dec 18 j 16:44	5°☾53'25	31.19601 AU	min. Earth dist.	1504 Jul 07 j 18:01	24°☾35'17	29.11167 AU
retrograde	1496 Mar 31 j 13:53	8°☾23'00		direct	1504 Sep 25 j 17:54	23°☾11'33	
opposition	1496 Jun 19 j 15:06	6°☾59'59	0°55'06				
min. Earth dist.	1496 Jun 19 j 14:45	7°☾00'01	29.19291 AU	conjunction	1505 Jan 06 j 07:47	25°☾39'40	0°19'34
direct	1496 Sep 07 j 22:21	5°☾36'33		minimum elong	1505 Jan 06 j 07:47	25°☾39'40	0°19'35
				max. Earth dist.	1505 Jan 06 j 14:16	25°☾40'16	31.10711 AU
conjunction	1496 Dec 20 j 03:08	8°☾05'03	0°49'48	retrograde	1505 Apr 21 j 02:07	28°☾10'31	
minimum elong	1496 Dec 20 j 03:09	8°☾05'03	0°49'49	opposition	1505 Jul 10 j 12:51	26°☾46'49	0°18'45
max. Earth dist.	1496 Dec 20 j 03:05	8°☾05'03	31.18910 AU	min. Earth dist.	1505 Jul 10 j 04:55	26°☾47'21	29.10291 AU
retrograde	1497 Apr 03 j 00:27	10°☾34'45		direct	1505 Sep 28 j 05:27	25°☾23'31	
opposition	1497 Jun 22 j 04:16	9°☾11'41	0°51'18				
min. Earth dist.	1497 Jun 22 j 04:18	9°☾11'41	29.18555 AU	conjunction	1506 Jan 08 j 17:21	27°☾51'36	0°15'36
direct	1497 Sep 10 j 09:07	7°☾48'19		minimum elong	1506 Jan 08 j 17:21	27°☾51'36	0°15'36
				behind sun begin	1506 Jan 08 j 15:30	27°☾51'26	
conjunction	1497 Dec 22 j 12:39	10°☾16'47	0°46'13	behind sun end	1506 Jan 08 j 19:12	27°☾51'46	
minimum elong	1497 Dec 22 j 12:39	10°☾16'47	0°46'13	max. Earth dist.	1506 Jan 09 j 01:00	27°☾52'18	31.09881 AU
max. Earth dist.	1497 Dec 22 j 13:24	10°☾16'51	31.18125 AU		1506 Mar 17 j 05:31	0°≈	
retrograde	1498 Apr 05 j 12:11	12°☾46'38		retrograde	1506 Apr 23 j 12:56	0°≈22'37	
opposition	1498 Jun 24 j 17:22	11°☾23'32	0°47'26		1506 Jun 01 j 00:01	30°R☾	
min. Earth dist.	1498 Jun 24 j 15:43	11°☾23'39	29.17698 AU	opposition	1506 Jul 13 j 02:04	28°☾58'52	0°14'29
direct	1498 Sep 12 j 20:13	10°☾00'12		min. Earth dist.	1506 Jul 12 j 18:05	28°☾59'25	29.09512 AU
				direct	1506 Sep 30 j 16:44	27°☾35'37	
conjunction	1498 Dec 24 j 22:14	12°☾28'37	0°42'34		1507 Jan 09 j 12:27	0°≈	
minimum elong	1498 Dec 24 j 22:14	12°☾28'37	0°42'35				
max. Earth dist.	1498 Dec 24 j 23:03	12°☾28'42	31.17203 AU	conjunction	1507 Jan 11 j 03:09	0°≈03'41	0°11'37
retrograde	1499 Apr 08 j 00:28	14°☾58'39		minimum elong	1507 Jan 11 j 03:09	0°≈03'40	0°11'37
opposition	1499 Jun 27 j 06:34	13°☾35'29	0°43'29	behind sun begin	1507 Jan 10 j 22:31	0°≈03'15	
min. Earth dist.	1499 Jun 27 j 05:13	13°☾35'34	29.16719 AU	behind sun end	1507 Jan 11 j 07:46	0°≈04'06	
direct	1499 Sep 15 j 06:28	12°☾12'09		max. Earth dist.	1507 Jan 11 j 12:05	0°≈04'30	31.09151 AU
				retrograde	1507 Apr 26 j 01:15	2°≈34'52	
conjunction	1499 Dec 27 j 07:56	14°☾40'32	0°38'51	opposition	1507 Jul 15 j 15:02	1°≈11'05	0°10'12
minimum elong	1499 Dec 27 j 07:56	14°☾40'32	0°38'51	min. Earth dist.	1507 Jul 15 j 05:07	1°≈11'45	29.08804 AU
max. Earth dist.	1499 Dec 27 j 10:11	14°☾40'44	31.16165 AU		1507 Sep 05 j 16:49	30°R☾	
retrograde	1500 Apr 09 j 12:29	17°☾10'41		direct	1507 Oct 03 j 04:10	29°☾47'53	
opposition	1500 Jun 28 j 19:39	15°☾47'26	0°39'29		1507 Oct 29 j 21:51	0°≈	
min. Earth dist.	1500 Jun 28 j 17:02	15°☾47'37	29.15608 AU				
direct	1500 Sep 16 j 18:57	14°☾24'06		conjunction	1508 Jan 13 j 12:57	2°≈15'56	0°07'36
				minimum elong	1508 Jan 13 j 12:57	2°≈15'56	0°07'36
conjunction	1500 Dec 28 j 17:26	16°☾52'25	0°35'05	behind sun begin	1508 Jan 13 j 07:07	2°≈15'24	
minimum elong	1500 Dec 28 j 17:26	16°☾52'25	0°35'05	behind sun end	1508 Jan 13 j 18:47	2°≈16'27	
max. Earth dist.	1500 Dec 28 j 19:22	16°☾52'36	31.15016 AU	max. Earth dist.	1508 Jan 13 j 22:09	2°≈16'47	31.08456 AU
retrograde	1501 Apr 12 j 01:52	19°☾22'43		retrograde	1508 Apr 27 j 13:22	4°≈47'19	
opposition	1501 Jul 01 j 08:42	17°☾59'21	0°35'26	opposition	1508 Jul 17 j 04:15	3°≈23'29	0°05'53
min. Earth dist.	1501 Jul 01 j 05:36	17°☾59'34	29.14436 AU	min. Earth dist.	1508 Jul 16 j 18:29	3°≈24'09	29.08120 AU
direct	1501 Sep 19 j 05:00	16°☾36'01		direct	1508 Oct 04 j 14:04	2°≈00'20	
conjunction	1501 Dec 31 j 03:05	19°☾04'16	0°31'16	conjunction	1509 Jan 14 j 22:57	4°≈28'22	0°03'35
minimum elong	1501 Dec 31 j 03:05	19°☾04'16	0°31'15	minimum elong	1509 Jan 14 j 22:58	4°≈28'22	0°03'35
max. Earth dist.	1501 Dec 31 j 06:57	19°☾04'38	31.13835 AU	behind sun begin	1509 Jan 14 j 16:37	4°≈27'47	
retrograde	1502 Apr 14 j 12:43	21°☾34'41		behind sun end	1509 Jan 15 j 05:19	4°≈28'56	
opposition	1502 Jul 03 j 21:51	20°☾11'13	0°31'20	max. Earth dist.	1509 Jan 15 j 09:50	4°≈29'23	31.07762 AU
min. Earth dist.	1502 Jul 03 j 17:49	20°☾11'30	29.13260 AU	retrograde	1509 Apr 30 j 01:04	6°≈59'55	
direct	1502 Sep 21 j 17:32	18°☾47'52		opposition	1509 Jul 19 j 17:20	5°≈36'04	0°01'34
				min. Earth dist.	1509 Jul 19 j 06:18	5°≈36'49	29.07400 AU
conjunction	1503 Jan 02 j 12:29	21°☾16'03	0°27'25	direct	1509 Oct 07 j 01:39	4°≈12'57	
minimum elong	1503 Jan 02 j 12:29	21°☾16'03	0°27'25	desc. node	1509 Nov 29 j 01:19	4°≈59'01	
max. Earth dist.	1503 Jan 02 j 16:30	21°☾16'26	31.12696 AU				

conjunction	1510 Jan 17 j 09:02	6°40'59	0°00'-33	conjunction	1517 Feb 01 j 09:37	22°10'40	0°-28'-33
minimum elong	1510 Jan 17 j 09:02	6°40'59	0°00'34	minimum elong	1517 Feb 01 j 09:37	22°10'40	0°28'34
behind sun begin	1510 Jan 17 j 02:39	6°40'24		max. Earth dist.	1517 Feb 02 j 00:51	22°12'06	30.99848 AU
behind sun end	1510 Jan 17 j 15:25	6°41'34		retrograde	1517 May 18 j 07:29	24°43'21	
max. Earth dist.	1510 Jan 17 j 19:28	6°41'57	31.07015 AU	min. Earth dist.	1517 Aug 06 j 10:54	23°19'56	28.99437 AU
retrograde	1510 May 02 j 15:03	9°12'43		opposition	1517 Aug 07 j 02:31	23°18'51	0°-32'-38
opposition	1510 Jul 22 j 06:40	7°48'48	0°-2'-45	direct	1517 Oct 24 j 21:15	21°55'44	
min. Earth dist.	1510 Jul 21 j 19:21	7°49'34	29.06622 AU				
direct	1510 Oct 09 j 10:55	6°25'43		conjunction	1518 Feb 03 j 20:17	24°23'36	0°-32'-26
				minimum elong	1518 Feb 03 j 20:17	24°23'36	0°32'28
conjunction	1511 Jan 19 j 19:20	8°53'44	0°-4'-39	max. Earth dist.	1518 Feb 04 j 13:21	24°25'13	30.99006 AU
minimum elong	1511 Jan 19 j 19:20	8°53'44	0°04'40	retrograde	1518 May 20 j 19:07	26°56'27	
behind sun begin	1511 Jan 19 j 13:04	8°53'10		opposition	1518 Aug 09 j 15:30	25°31'55	0°-36'-45
behind sun end	1511 Jan 20 j 01:37	8°54'19		min. Earth dist.	1518 Aug 08 j 22:23	25°33'06	28.98649 AU
max. Earth dist.	1511 Jan 20 j 07:18	8°54'52	31.06178 AU	direct	1518 Oct 27 j 08:35	24°08'50	
retrograde	1511 May 05 j 03:06	11°25'38					
opposition	1511 Jul 24 j 19:57	10°01'39	0°-7'-5	conjunction	1519 Feb 06 j 06:51	26°36'43	0°-36'-17
min. Earth dist.	1511 Jul 24 j 08:09	10°02'28	29.05721 AU	minimum elong	1519 Feb 06 j 06:50	26°36'43	0°36'18
direct	1511 Oct 11 j 23:25	8°38'35		max. Earth dist.	1519 Feb 06 j 23:40	26°38'19	30.98270 AU
				retrograde	1519 May 23 j 09:06	29°09'44	
conjunction	1512 Jan 22 j 05:42	11°06'35	0°-8'-40	min. Earth dist.	1519 Aug 11 j 11:05	27°46'23	28.97966 AU
minimum elong	1512 Jan 22 j 05:41	11°06'35	0°08'41	opposition	1519 Aug 12 j 04:34	27°45'11	0°-40'-50
behind sun begin	1512 Jan 22 j 00:06	11°06'05		direct	1519 Oct 29 j 17:21	26°22'07	
behind sun end	1512 Jan 22 j 11:16	11°07'05					
max. Earth dist.	1512 Jan 22 j 17:08	11°07'39	31.05223 AU	conjunction	1520 Feb 08 j 17:45	28°50'03	0°-40'-4
retrograde	1512 May 06 j 17:52	13°38'36		minimum elong	1520 Feb 08 j 17:45	28°50'03	0°40'05
opposition	1512 Jul 26 j 09:01	12°14'33	0°-11'-24	max. Earth dist.	1520 Feb 09 j 12:17	28°51'48	30.97611 AU
min. Earth dist.	1512 Jul 25 j 20:27	12°15'25	29.04709 AU				
direct	1512 Oct 13 j 10:53	10°51'28		retrograde	1520 Mar 11 j 15:00	0°✠	
					1520 May 24 j 21:19	1°✠23'14	
conjunction	1513 Jan 23 j 16:08	13°19'27	0°-12'-41		1520 Aug 12 j 21:54	30°R	
minimum elong	1513 Jan 23 j 16:09	13°19'27	0°12'42	opposition	1520 Aug 13 j 17:27	29°58'39	0°-44'-52
behind sun begin	1513 Jan 23 j 12:01	13°19'04		min. Earth dist.	1520 Aug 12 j 23:22	29°59'54	28.97330 AU
behind sun end	1513 Jan 23 j 20:16	13°19'49		direct	1520 Oct 31 j 05:14	28°35'39	
max. Earth dist.	1513 Jan 24 j 04:49	13°20'38	31.04148 AU		1521 Jan 12 j 08:39	0°✠	
retrograde	1513 Mar 12 j 21:49	15°		conjunction	1521 Feb 10 j 04:37	1°✠03'37	0°-43'-48
				minimum elong	1521 Feb 10 j 04:37	1°✠03'37	0°43'49
opposition	1513 Jul 08 j 11:36	15°R		max. Earth dist.	1521 Feb 10 j 22:51	1°✠05'20	30.96997 AU
min. Earth dist.	1513 Jul 28 j 22:17	14°27'27	0°-15'-42	retrograde	1521 May 27 j 12:48	3°✠36'57	
direct	1513 Jul 28 j 09:54	14°28'17	29.03593 AU	min. Earth dist.	1521 Aug 15 j 11:37	2°✠13'40	28.96725 AU
	1513 Oct 15 j 23:03	13°04'21		opposition	1521 Aug 16 j 06:31	2°✠12'22	0°-48'-49
	1514 Jan 11 j 19:57	15°		direct	1521 Nov 02 j 15:51	0°✠49'24	
conjunction	1514 Jan 26 j 02:22	15°32'16	0°-16'-42				
minimum elong	1514 Jan 26 j 02:22	15°32'16	0°16'43	conjunction	1522 Feb 12 j 15:39	3°✠17'25	0°-47'-28
max. Earth dist.	1514 Jan 26 j 15:22	15°33'30	31.03019 AU	minimum elong	1522 Feb 12 j 15:39	3°✠17'25	0°47'29
retrograde	1514 May 11 j 19:08	18°04'32		max. Earth dist.	1522 Feb 13 j 11:06	3°✠19'15	30.96367 AU
opposition	1514 Jul 31 j 11:24	16°40'17	0°-19'-59	retrograde	1522 May 30 j 01:21	5°✠50'55	
min. Earth dist.	1514 Jul 30 j 21:24	16°41'15	29.02457 AU	opposition	1522 Aug 18 j 19:40	4°✠26'18	0°-52'-43
direct	1514 Oct 18 j 11:14	15°17'10		min. Earth dist.	1522 Aug 18 j 01:10	4°✠27'35	28.96075 AU
				direct	1522 Nov 05 j 02:59	3°✠03'22	
conjunction	1515 Jan 28 j 12:47	17°45'04	0°-20'-41				
minimum elong	1515 Jan 28 j 12:47	17°45'04	0°20'41	conjunction	1523 Feb 15 j 02:57	5°✠31'25	0°-51'-5
max. Earth dist.	1515 Jan 29 j 02:33	17°46'21	31.01881 AU	minimum elong	1523 Feb 15 j 02:57	5°✠31'25	0°51'05
retrograde	1515 May 14 j 06:57	20°17'27		max. Earth dist.	1523 Feb 15 j 22:19	5°✠33'15	30.95684 AU
min. Earth dist.	1515 Aug 02 j 10:44	18°54'02	29.01355 AU	retrograde	1523 Jun 01 j 16:18	8°✠05'03	
opposition	1515 Aug 03 j 00:29	18°53'06	0°-24'-14	opposition	1523 Aug 21 j 08:34	6°✠40'24	0°-56'-32
direct	1515 Oct 20 j 22:59	17°29'58		min. Earth dist.	1523 Aug 20 j 13:02	6°✠41'45	28.95347 AU
				direct	1523 Nov 07 j 15:09	5°✠17'28	
conjunction	1516 Jan 30 j 23:16	19°57'50	0°-24'-38				
minimum elong	1516 Jan 30 j 23:16	19°57'50	0°24'39	conjunction	1524 Feb 17 j 14:23	7°✠45'33	0°-54'-36
max. Earth dist.	1516 Jan 31 j 14:14	19°59'15	31.00820 AU	minimum elong	1524 Feb 17 j 14:23	7°✠45'33	0°54'37
retrograde	1516 May 15 j 19:45	22°30'22		max. Earth dist.	1524 Feb 18 j 09:47	7°✠47'23	30.94884 AU
opposition	1516 Aug 04 j 13:24	21°05'56	0°-28'-27	retrograde	1524 Jun 03 j 05:58	10°✠19'19	
min. Earth dist.	1516 Aug 03 j 21:45	21°07'00	29.00338 AU	opposition	1524 Aug 22 j 21:43	8°✠54'36	-1°00'-15
direct	1516 Oct 22 j 11:09	19°42'48		min. Earth dist.	1524 Aug 22 j 03:02	8°✠55'53	28.94493 AU
				direct	1524 Nov 09 j 03:36	7°✠31'39	

conjunction	1525 Feb 19 j 01:48	9° $\Upsilon$ 59'44	0°-58'-3			1533 May 14 j 14:14	0° $\Upsilon$
minimum elong	1525 Feb 19 j 01:48	9° $\Upsilon$ 59'44	0°58'04	retrograde		1533 Jun 24 j 03:01	0° $\Upsilon$ 26'18
max. Earth dist.	1525 Feb 19 j 21:46	10° $\Upsilon$ 01'38	30.93973 AU			1533 Aug 04 j 13:18	30° $\Re$ $\Upsilon$
retrograde	1525 Jun 05 j 19:44	12° $\Upsilon$ 33'35		opposition		1533 Sep 12 j 16:10	29° $\Upsilon$ 01'03 -1°-29'-7
opposition	1525 Aug 25 j 10:41	11° $\Upsilon$ 08'48	-1°-3'-54	min. Earth dist.		1533 Sep 11 j 18:20	29° $\Upsilon$ 02'34 28.87433 AU
min. Earth dist.	1525 Aug 24 j 14:45	11° $\Upsilon$ 10'10	28.93526 AU	direct		1533 Nov 29 j 10:27	27° $\Upsilon$ 37'53
direct	1525 Nov 11 j 16:49	9° $\Upsilon$ 45'49				1534 Mar 08 j 18:19	0° $\Upsilon$
conjunction	1526 Feb 21 j 13:15	12° $\Upsilon$ 13'53	-1°-1'-24	conjunction		1534 Mar 11 j 11:26	0° $\Upsilon$ 06'10 -1°-24'-34
minimum elong	1526 Feb 21 j 13:15	12° $\Upsilon$ 13'53	1°01'26	minimum elong		1534 Mar 11 j 11:26	0° $\Upsilon$ 06'10 1°24'35
max. Earth dist.	1526 Feb 22 j 08:49	12° $\Upsilon$ 15'44	30.92965 AU	max. Earth dist.		1534 Mar 12 j 11:13	0° $\Upsilon$ 08'25 30.87155 AU
retrograde	1526 Jun 08 j 07:33	14° $\Upsilon$ 47'49		retrograde		1534 Jun 26 j 17:32	2° $\Upsilon$ 40'47
opposition	1526 Aug 27 j 23:42	13° $\Upsilon$ 22'56	-1°-7'-26	min. Earth dist.		1534 Sep 14 j 05:43	1° $\Upsilon$ 17'08 28.87052 AU
min. Earth dist.	1526 Aug 27 j 04:29	13° $\Upsilon$ 24'15	28.92505 AU	opposition		1534 Sep 15 j 04:36	1° $\Upsilon$ 15'33 -1°-31'-43
direct	1526 Nov 14 j 03:35	11° $\Upsilon$ 59'53				1534 Nov 10 j 18:18	30° $\Re$ $\Upsilon$
conjunction	1527 Feb 24 j 00:52	14° $\Upsilon$ 27'56	-1°-4'-40	direct		1534 Dec 01 j 23:06	29° $\Upsilon$ 52'24
minimum elong	1527 Feb 24 j 00:52	14° $\Upsilon$ 27'56	1°04'41			1534 Dec 22 j 18:49	0° $\Upsilon$
max. Earth dist.	1527 Feb 24 j 21:47	14° $\Upsilon$ 29'55	30.91932 AU	conjunction		1535 Mar 13 j 23:45	2° $\Upsilon$ 20'46 -1°-26'-56
retrograde	1527 Jun 10 j 19:25	17° $\Upsilon$ 01'56		minimum elong		1535 Mar 13 j 23:45	2° $\Upsilon$ 20'46 1°26'57
opposition	1527 Aug 30 j 12:28	15° $\Upsilon$ 36'57	-1°-10'-53	max. Earth dist.		1535 Mar 14 j 22:52	2° $\Upsilon$ 22'57 30.86757 AU
min. Earth dist.	1527 Aug 29 j 16:14	15° $\Upsilon$ 38'21	28.91477 AU	retrograde		1535 Jun 29 j 06:54	4° $\Upsilon$ 55'29
direct	1527 Nov 16 j 16:15	14° $\Upsilon$ 13'52		opposition		1535 Sep 17 j 17:14	3° $\Upsilon$ 30'15 -1°-34'-11
conjunction	1528 Feb 26 j 12:21	16° $\Upsilon$ 41'54	-1°-7'-50	min. Earth dist.		1535 Sep 16 j 19:27	3° $\Upsilon$ 31'45 28.86641 AU
minimum elong	1528 Feb 26 j 12:21	16° $\Upsilon$ 41'54	1°07'51	direct		1535 Dec 04 j 09:45	2° $\Upsilon$ 07'07
max. Earth dist.	1528 Feb 27 j 08:39	16° $\Upsilon$ 43'49	30.90923 AU	conjunction		1536 Mar 15 j 12:21	4° $\Upsilon$ 35'32 -1°-29'-10
retrograde	1528 Jun 12 j 08:44	19° $\Upsilon$ 15'58		minimum elong		1536 Mar 15 j 12:21	4° $\Upsilon$ 35'32 1°29'11
min. Earth dist.	1528 Aug 31 j 04:55	17° $\Upsilon$ 52'17	28.90518 AU	max. Earth dist.		1536 Mar 16 j 12:15	4° $\Upsilon$ 37'48 30.86304 AU
opposition	1528 Sep 01 j 01:08	17° $\Upsilon$ 50'53	-1°-14'-13	retrograde		1536 Jun 30 j 20:25	7° $\Upsilon$ 10'20
direct	1528 Nov 18 j 02:03	16° $\Upsilon$ 27'45		min. Earth dist.		1536 Sep 18 j 07:21	5° $\Upsilon$ 46'38 28.86143 AU
conjunction	1529 Feb 28 j 00:02	18° $\Upsilon$ 55'47	-1°-10'-54	opposition		1536 Sep 19 j 05:39	5° $\Upsilon$ 45'05 -1°-36'-30
minimum elong	1529 Feb 28 j 00:02	18° $\Upsilon$ 55'47	1°10'55	direct		1536 Dec 05 j 22:34	4° $\Upsilon$ 21'57
max. Earth dist.	1529 Feb 28 j 21:55	18° $\Upsilon$ 57'51	30.90003 AU	conjunction		1537 Mar 18 j 00:53	6° $\Upsilon$ 50'26 -1°-31'-16
retrograde	1529 Jun 14 j 19:53	21° $\Upsilon$ 29'55		minimum elong		1537 Mar 18 j 00:53	6° $\Upsilon$ 50'26 1°31'17
opposition	1529 Sep 03 j 13:49	20° $\Upsilon$ 04'47	-1°-17'-26	max. Earth dist.		1537 Mar 18 j 23:29	6° $\Upsilon$ 52'35 30.85762 AU
min. Earth dist.	1529 Sep 02 j 16:56	20° $\Upsilon$ 06'13	28.89658 AU	retrograde		1537 Jul 03 j 10:07	9° $\Upsilon$ 25'18
direct	1529 Nov 20 j 14:13	18° $\Upsilon$ 41'36		opposition		1537 Sep 21 j 18:14	8° $\Upsilon$ 00'01 -1°-38'-40
conjunction	1530 Mar 02 j 11:35	21° $\Upsilon$ 09'39	-1°-13'-52	min. Earth dist.		1537 Sep 20 j 20:36	8° $\Upsilon$ 01'31 28.85567 AU
minimum elong	1530 Mar 02 j 11:35	21° $\Upsilon$ 09'39	1°13'53	direct		1537 Dec 08 j 08:49	6° $\Upsilon$ 36'51
max. Earth dist.	1530 Mar 03 j 09:07	21° $\Upsilon$ 11'41	30.89210 AU	conjunction		1538 Mar 20 j 13:33	9° $\Upsilon$ 05'22 -1°-33'-14
retrograde	1530 Jun 17 j 10:01	23° $\Upsilon$ 43'53		minimum elong		1538 Mar 20 j 13:33	9° $\Upsilon$ 05'22 1°33'14
min. Earth dist.	1530 Sep 05 j 04:49	22° $\Upsilon$ 20'11	28.88938 AU	max. Earth dist.		1538 Mar 21 j 13:02	9° $\Upsilon$ 07'35 30.85140 AU
opposition	1530 Sep 06 j 02:28	22° $\Upsilon$ 18'41	-1°-20'-32	retrograde		1538 Jul 05 j 21:14	11° $\Upsilon$ 40'15
direct	1530 Nov 23 j 00:18	20° $\Upsilon$ 55'29		min. Earth dist.		1538 Sep 23 j 09:01	10° $\Upsilon$ 16'26 28.84911 AU
conjunction	1531 Mar 04 j 23:27	23° $\Upsilon$ 23'34	-1°-16'-43	opposition		1538 Sep 24 j 06:37	10° $\Upsilon$ 14'56 -1°-40'-42
minimum elong	1531 Mar 04 j 23:26	23° $\Upsilon$ 23'34	1°16'44	direct		1538 Dec 10 j 21:20	8° $\Upsilon$ 51'43
max. Earth dist.	1531 Mar 05 j 22:12	23° $\Upsilon$ 25'43	30.88539 AU	conjunction		1539 Mar 23 j 02:14	11° $\Upsilon$ 20'15 -1°-35'-3
retrograde	1531 Jun 19 j 22:07	25° $\Upsilon$ 57'53		minimum elong		1539 Mar 23 j 02:14	11° $\Upsilon$ 20'15 1°35'04
opposition	1531 Sep 08 j 14:58	24° $\Upsilon$ 32'39	-1°-23'-32	max. Earth dist.		1539 Mar 24 j 00:37	11° $\Upsilon$ 22'22 30.84478 AU
min. Earth dist.	1531 Sep 07 j 17:34	24° $\Upsilon$ 34'08	28.88334 AU	retrograde		1539 Jul 08 j 10:45	13° $\Upsilon$ 55'09
direct	1531 Nov 25 j 10:55	23° $\Upsilon$ 09'27		opposition		1539 Sep 26 j 18:46	12° $\Upsilon$ 29'47 -1°-42'-34
conjunction	1532 Mar 06 j 11:21	25° $\Upsilon$ 37'36	-1°-19'-27	min. Earth dist.		1539 Sep 25 j 21:06	12° $\Upsilon$ 31'17 28.84255 AU
minimum elong	1532 Mar 06 j 11:21	25° $\Upsilon$ 37'36	1°19'28	direct		1539 Dec 13 j 07:26	11° $\Upsilon$ 06'30
max. Earth dist.	1532 Mar 07 j 10:10	25° $\Upsilon$ 39'45	30.88000 AU	conjunction		1540 Mar 24 j 15:00	13° $\Upsilon$ 35'04 -1°-36'-44
retrograde	1532 Jun 21 j 13:13	28° $\Upsilon$ 12'00		minimum elong		1540 Mar 24 j 15:00	13° $\Upsilon$ 35'04 1°36'44
min. Earth dist.	1532 Sep 09 j 04:55	26° $\Upsilon$ 48'19	28.87847 AU	max. Earth dist.		1540 Mar 25 j 14:11	13° $\Upsilon$ 37'16 30.83824 AU
opposition	1532 Sep 10 j 03:29	26° $\Upsilon$ 46'45	-1°-26'-23	retrograde		1540 Jul 09 j 22:27	16° $\Upsilon$ 09'58
direct	1532 Nov 26 j 22:46	25° $\Upsilon$ 23'34		min. Earth dist.		1540 Sep 27 j 09:53	14° $\Upsilon$ 46'02 28.83635 AU
conjunction	1533 Mar 08 j 23:12	27° $\Upsilon$ 51'47	-1°-22'-4	opposition		1540 Sep 28 j 07:00	14° $\Upsilon$ 44'33 -1°-44'-17
minimum elong	1533 Mar 08 j 23:12	27° $\Upsilon$ 51'47	1°22'05	direct		1540 Dec 14 j 17:58	13° $\Upsilon$ 21'13
max. Earth dist.	1533 Mar 09 j 22:24	27° $\Upsilon$ 53'58	30.87543 AU	conjunction		1541 Mar 27 j 03:34	15° $\Upsilon$ 49'49 -1°-38'-15

minimum elong	1541 Mar 27 j 03:34	15° $\Upsilon$ 49'49	1°38'17	minimum elong	1549 Apr 14 j 12:48	3° $\text{C}$ 49'02	1°45'00
max. Earth dist.	1541 Mar 28 j 02:32	15° $\Upsilon$ 51'59	30.83256 AU	max. Earth dist.	1549 Apr 15 j 11:01	3° $\text{C}$ 51'08	30.82643 AU
retrograde	1541 Jul 12 j 12:30	18° $\Upsilon$ 24'43		retrograde	1549 Jul 30 j 23:07	6° $\text{C}$ 23'57	
opposition	1541 Sep 30 j 19:06	16° $\Upsilon$ 59'15	-1°-45'-51	opposition	1549 Oct 18 j 18:21	4° $\text{C}$ 58'36	-1°-52'-21
min. Earth dist.	1541 Sep 29 j 21:06	17° $\Upsilon$ 00'48	28.83125 AU	min. Earth dist.	1549 Oct 17 j 22:56	4° $\text{C}$ 59'58	28.82751 AU
direct	1541 Dec 17 j 06:18	15° $\Upsilon$ 35'52		direct	1550 Jan 04 j 03:00	3° $\text{C}$ 35'06	
conjunction	1542 Mar 29 j 16:23	18° $\Upsilon$ 04'31	-1°-39'-39	conjunction	1550 Apr 17 j 02:32	6° $\text{C}$ 04'18	-1°-45'-6
minimum elong	1542 Mar 29 j 16:23	18° $\Upsilon$ 04'31	1°39'39	minimum elong	1550 Apr 17 j 02:32	6° $\text{C}$ 04'18	1°45'07
max. Earth dist.	1542 Mar 30 j 15:31	18° $\Upsilon$ 06'42	30.82796 AU	max. Earth dist.	1550 Apr 17 j 23:33	6° $\text{C}$ 06'16	30.82598 AU
retrograde	1542 Jul 15 j 01:17	20° $\Upsilon$ 39'25		retrograde	1550 Aug 02 j 12:31	8° $\text{C}$ 39'09	
min. Earth dist.	1542 Oct 02 j 10:01	19° $\Upsilon$ 15'24	28.82743 AU	min. Earth dist.	1550 Oct 20 j 10:30	7° $\text{C}$ 15'11	28.82663 AU
opposition	1542 Oct 03 j 07:09	19° $\Upsilon$ 13'55	-1°-47'-14	opposition	1550 Oct 21 j 06:00	7° $\text{C}$ 13'49	-1°-52'-23
direct	1542 Dec 19 j 17:46	17° $\Upsilon$ 50'29		direct	1551 Jan 06 j 15:05	5° $\text{C}$ 50'14	
conjunction	1543 Apr 01 j 05:19	20° $\Upsilon$ 19'12	-1°-40'-52	conjunction	1551 Apr 19 j 16:18	8° $\text{C}$ 19'30	-1°-45'-4
minimum elong	1543 Apr 01 j 05:19	20° $\Upsilon$ 19'12	1°40'54	minimum elong	1551 Apr 19 j 16:18	8° $\text{C}$ 19'30	1°45'06
max. Earth dist.	1543 Apr 02 j 04:50	20° $\Upsilon$ 21'25	30.82491 AU	max. Earth dist.	1551 Apr 20 j 12:49	8° $\text{C}$ 21'26	30.82470 AU
retrograde	1543 Jul 17 j 15:24	22° $\Upsilon$ 54'06		retrograde	1551 Aug 05 j 00:25	10° $\text{C}$ 54'18	
opposition	1543 Oct 05 j 19:02	21° $\Upsilon$ 28'36	-1°-48'-29	opposition	1551 Oct 23 j 17:46	9° $\text{C}$ 28'57	-1°-52'-16
min. Earth dist.	1543 Oct 04 j 20:48	21° $\Upsilon$ 30'09	28.82508 AU	min. Earth dist.	1551 Oct 22 j 23:47	9° $\text{C}$ 30'13	28.82514 AU
direct	1543 Dec 22 j 06:17	20° $\Upsilon$ 05'08		direct	1552 Jan 09 j 02:20	8° $\text{C}$ 05'19	
conjunction	1544 Apr 02 j 18:09	22° $\Upsilon$ 33'54	-1°-41'-57	conjunction	1552 Apr 21 j 05:57	10° $\text{C}$ 34'37	-1°-44'-53
minimum elong	1544 Apr 02 j 18:09	22° $\Upsilon$ 33'54	1°41'58	minimum elong	1552 Apr 21 j 05:57	10° $\text{C}$ 34'37	1°44'53
max. Earth dist.	1544 Apr 03 j 17:08	22° $\Upsilon$ 36'04	30.82320 AU	max. Earth dist.	1552 Apr 22 j 02:09	10° $\text{C}$ 36'31	30.82323 AU
retrograde	1544 Jul 19 j 05:07	25° $\Upsilon$ 08'49		retrograde	1552 Aug 06 j 14:07	13° $\text{C}$ 09'20	
min. Earth dist.	1544 Oct 06 j 09:42	23° $\Upsilon$ 44'49	28.82416 AU	min. Earth dist.	1552 Oct 24 j 10:41	11° $\text{C}$ 45'17	28.82369 AU
opposition	1544 Oct 07 j 07:03	23° $\Upsilon$ 43'19	-1°-49'-33	opposition	1552 Oct 25 j 05:15	11° $\text{C}$ 43'58	-1°-51'-59
direct	1544 Dec 23 j 17:20	22° $\Upsilon$ 19'51		direct	1553 Jan 10 j 15:01	10° $\text{C}$ 20'16	
conjunction	1545 Apr 05 j 07:15	24° $\Upsilon$ 48'41	-1°-42'-53	conjunction	1553 Apr 23 j 19:36	12° $\text{C}$ 49'38	-1°-44'-32
minimum elong	1545 Apr 05 j 07:15	24° $\Upsilon$ 48'41	1°42'54	minimum elong	1553 Apr 23 j 19:36	12° $\text{C}$ 49'38	1°44'33
max. Earth dist.	1545 Apr 06 j 07:14	24° $\Upsilon$ 50'57	30.82297 AU	max. Earth dist.	1553 Apr 24 j 14:50	12° $\text{C}$ 51'26	30.82198 AU
retrograde	1545 Jul 21 j 19:35	27° $\Upsilon$ 23'36		retrograde	1553 Jul 01 j 10:49	15° $\text{C}$	
opposition	1545 Oct 09 j 18:52	25° $\Upsilon$ 58'08	-1°-50'-27	retrograde	1553 Aug 09 j 03:20	15° $\text{C}$ 24'16	
min. Earth dist.	1545 Oct 08 j 20:54	25° $\Upsilon$ 59'40	28.82446 AU	opposition	1553 Sep 17 j 10:02	15° $\text{R}$ $\text{C}$	
direct	1545 Dec 26 j 06:42	24° $\Upsilon$ 34'40		opposition	1553 Oct 27 j 16:46	13° $\text{C}$ 58'54	-1°-51'-31
conjunction	1546 Apr 07 j 20:17	27° $\Upsilon$ 03'35	-1°-43'-38	min. Earth dist.	1553 Oct 26 j 23:32	14° $\text{C}$ 00'07	28.82284 AU
minimum elong	1546 Apr 07 j 20:18	27° $\Upsilon$ 03'35	1°43'39	direct	1554 Jan 13 j 02:29	12° $\text{C}$ 35'08	
max. Earth dist.	1546 Apr 08 j 19:07	27° $\Upsilon$ 05'44	30.82376 AU	1554 Apr 24 j 08:46	15° $\text{C}$		
retrograde	1546 Jul 24 j 09:00	29° $\Upsilon$ 38'31		conjunction	1554 Apr 26 j 09:24	15° $\text{C}$ 04'34	-1°-44'-1
min. Earth dist.	1546 Oct 11 j 09:37	28° $\Upsilon$ 14'34	28.82561 AU	minimum elong	1554 Apr 26 j 09:24	15° $\text{C}$ 04'34	1°44'01
opposition	1546 Oct 12 j 06:49	28° $\Upsilon$ 13'05	-1°-51'-11	max. Earth dist.	1554 Apr 27 j 05:10	15° $\text{C}$ 06'25	30.82159 AU
direct	1546 Dec 28 j 17:15	26° $\Upsilon$ 49'37		retrograde	1554 Aug 11 j 17:17	17° $\text{C}$ 39'07	
conjunction	1547 Apr 10 j 09:48	29° $\Upsilon$ 18'37	-1°-44'-15	min. Earth dist.	1554 Oct 29 j 10:29	16° $\text{C}$ 15'00	28.82288 AU
minimum elong	1547 Apr 10 j 09:48	29° $\Upsilon$ 18'37	1°44'16	opposition	1554 Oct 30 j 04:06	16° $\text{C}$ 13'46	-1°-50'-53
max. Earth dist.	1547 Apr 11 j 09:19	29° $\Upsilon$ 20'50	30.82499 AU	1554 Dec 22 j 06:35	15° $\text{R}$ $\text{C}$		
retrograde	1547 Jul 26 j 21:10	1° $\text{C}$ 53'33		direct	1555 Jan 15 j 16:23	14° $\text{C}$ 49'57	
opposition	1547 Oct 14 j 18:31	0° $\text{C}$ 28'10	-1°-51'-44	1555 Feb 08 j 17:34	15° $\text{C}$		
min. Earth dist.	1547 Oct 13 j 21:38	0° $\text{C}$ 29'38	28.82679 AU	conjunction	1555 Apr 28 j 23:06	17° $\text{C}$ 19'26	-1°-43'-21
direct	1547 Oct 31 j 18:59	30° $\text{R}$ $\Upsilon$		minimum elong	1555 Apr 28 j 23:06	17° $\text{C}$ 19'26	1°43'22
1547 Dec 31 j 05:32	29° $\Upsilon$ 04'42			max. Earth dist.	1555 Apr 29 j 17:28	17° $\text{C}$ 21'10	30.82222 AU
1548 Feb 27 j 05:15	0° $\text{C}$			retrograde	1555 Aug 14 j 06:15	19° $\text{C}$ 53'55	
conjunction	1548 Apr 11 j 23:14	1° $\text{C}$ 33'47	-1°-44'-41	opposition	1555 Nov 01 j 15:24	18° $\text{C}$ 28'35	-1°-50'-5
minimum elong	1548 Apr 11 j 23:14	1° $\text{C}$ 33'47	1°44'42	min. Earth dist.	1555 Oct 31 j 22:37	18° $\text{C}$ 29'46	28.82423 AU
max. Earth dist.	1548 Apr 12 j 21:12	1° $\text{C}$ 35'51	30.82608 AU	direct	1556 Jan 18 j 03:15	17° $\text{C}$ 04'44	
retrograde	1548 Jul 28 j 11:28	4° $\text{C}$ 08'43		conjunction	1556 Apr 30 j 12:58	19° $\text{C}$ 34'19	-1°-42'-31
min. Earth dist.	1548 Oct 15 j 09:50	2° $\text{C}$ 44'48	28.82764 AU	minimum elong	1556 Apr 30 j 12:58	19° $\text{C}$ 34'19	1°42'32
opposition	1548 Oct 16 j 06:24	2° $\text{C}$ 43'21	-1°-52'-7	max. Earth dist.	1556 May 01 j 08:07	19° $\text{C}$ 36'06	30.82424 AU
direct	1549 Jan 01 j 15:54	1° $\text{C}$ 19'53		retrograde	1556 Aug 15 j 18:54	22° $\text{C}$ 08'43	
conjunction	1549 Apr 14 j 12:48	3° $\text{C}$ 49'02	-1°-44'-59	min. Earth dist.	1556 Nov 02 j 09:57	20° $\text{C}$ 44'37	28.82688 AU
				opposition	1556 Nov 03 j 02:41	20° $\text{C}$ 43'26	-1°-49'-7
				direct	1557 Jan 19 j 15:54	19° $\text{C}$ 19'34	

conjunction	1557 May 03 j 02:36	21°♄49'13	-1°-41'-32	conjunction	1565 May 21 j 20:00	9°♃50'29	-1°-28'-14
minimum elong	1557 May 03 j 02:36	21°♄49'13	1°41'34	minimum elong	1565 May 21 j 20:00	9°♃50'29	1°28'15
max. Earth dist.	1557 May 03 j 20:19	21°♄50'53	30.82770 AU	max. Earth dist.	1565 May 22 j 08:02	9°♃51'37	30.85939 AU
retrograde	1557 Aug 18 j 09:22	24°♄23'34		retrograde	1565 Sep 05 j 13:06	12°♃23'58	
opposition	1557 Nov 05 j 13:59	22°♄58'21	-1°-47'-59	opposition	1565 Nov 23 j 06:39	10°♃59'07	-1°-33'-8
min. Earth dist.	1557 Nov 04 j 21:25	22°♄59'31	28.83097 AU	min. Earth dist.	1565 Nov 22 j 20:41	10°♃59'49	28.86124 AU
direct	1558 Jan 22 j 02:34	21°♄34'28		direct	1566 Feb 09 j 02:13	9°♃34'52	
conjunction	1558 May 05 j 16:38	24°♄04'13	-1°-40'-24	conjunction	1566 May 24 j 10:09	12°♃05'09	-1°-25'-57
minimum elong	1558 May 05 j 16:38	24°♄04'13	1°40'24	minimum elong	1566 May 24 j 10:09	12°♃05'09	1°25'57
max. Earth dist.	1558 May 06 j 10:49	24°♄05'56	30.83230 AU	max. Earth dist.	1566 May 24 j 20:15	12°♃06'06	30.86185 AU
retrograde	1558 Aug 20 j 20:30	26°♄38'30		retrograde	1566 Sep 08 j 02:42	14°♃38'28	
min. Earth dist.	1558 Nov 07 j 09:39	25°♄14'28	28.83593 AU	opposition	1566 Nov 25 j 17:19	13°♃13'37	-1°-30'-37
opposition	1558 Nov 08 j 01:08	25°♄13'22	-1°-46'-40	min. Earth dist.	1566 Nov 25 j 07:49	13°♃14'17	28.86404 AU
direct	1559 Jan 24 j 13:34	23°♄49'30		direct	1567 Feb 11 j 14:14	11°♃49'17	
conjunction	1559 May 08 j 06:41	26°♄19'21	-1°-39'-6	conjunction	1567 May 27 j 00:24	14°♃19'38	-1°-23'-32
minimum elong	1559 May 08 j 06:41	26°♄19'21	1°39'08	minimum elong	1567 May 27 j 00:24	14°♃19'38	1°23'33
max. Earth dist.	1559 May 08 j 23:37	26°♄20'56	30.83770 AU	max. Earth dist.	1567 May 27 j 10:49	14°♃20'36	30.86504 AU
retrograde	1559 Aug 23 j 09:29	28°♄53'34		retrograde	1567 Sep 10 j 13:18	16°♃52'46	
opposition	1559 Nov 10 j 12:18	27°♄28'31	-1°-45'-12	opposition	1567 Nov 28 j 04:05	15°♃27'57	-1°-27'-58
min. Earth dist.	1559 Nov 09 j 20:47	27°♄29'37	28.84143 AU	min. Earth dist.	1567 Nov 27 j 19:39	15°♃28'33	28.86773 AU
direct	1560 Jan 27 j 01:01	26°♄04'39		direct	1568 Feb 14 j 02:18	14°♃03'34	
conjunction	1560 May 09 j 20:42	28°♄34'36	-1°-37'-39	conjunction	1568 May 28 j 14:17	16°♃33'56	-1°-21'00
minimum elong	1560 May 09 j 20:42	28°♄34'36	1°37'39	minimum elong	1568 May 28 j 14:17	16°♃33'56	1°21'00
max. Earth dist.	1560 May 10 j 13:11	28°♄36'09	30.84307 AU	max. Earth dist.	1568 May 28 j 23:26	16°♃34'47	30.86947 AU
retrograde	1560 Jun 19 j 01:24	0°♃		retrograde	1568 Sep 12 j 02:03	19°♃06'55	
retrograde	1560 Aug 24 j 21:15	1°♃08'46		opposition	1568 Nov 29 j 14:42	17°♃42'09	-1°-25'-11
opposition	1560 Nov 02 j 08:46	30°♃		min. Earth dist.	1568 Nov 29 j 06:00	17°♃42'46	28.87282 AU
opposition	1560 Nov 11 j 23:35	29°♄43'47	-1°-43'-34	direct	1569 Feb 15 j 13:55	16°♃17'43	
min. Earth dist.	1560 Nov 11 j 09:48	29°♄44'46	28.84662 AU	conjunction	1569 May 31 j 04:24	18°♃48'09	-1°-18'-20
direct	1561 Jan 28 j 11:08	28°♄19'54		minimum elong	1569 May 31 j 04:24	18°♃48'09	1°18'22
direct	1561 Apr 19 j 19:40	0°♃		max. Earth dist.	1569 May 31 j 13:26	18°♃48'59	30.87525 AU
conjunction	1561 May 12 j 10:57	0°♃49'56	-1°-36'-3	retrograde	1569 Sep 14 j 13:10	21°♃20'59	
minimum elong	1561 May 12 j 10:58	0°♃49'56	1°36'04	opposition	1569 Dec 02 j 01:20	19°♃56'18	-1°-22'-16
max. Earth dist.	1561 May 13 j 02:29	0°♃51'23	30.84804 AU	min. Earth dist.	1569 Dec 01 j 18:05	19°♃56'49	28.87933 AU
retrograde	1561 Aug 27 j 10:29	3°♃24'00		direct	1570 Feb 17 j 23:58	18°♃31'49	
opposition	1561 Nov 14 j 10:39	1°♃59'05	-1°-41'-46	conjunction	1570 Jun 02 j 18:32	21°♃02'20	-1°-15'-33
min. Earth dist.	1561 Nov 13 j 20:46	2°♃00'04	28.85107 AU	minimum elong	1570 Jun 02 j 18:33	21°♃02'20	1°15'34
direct	1562 Jan 30 j 23:13	0°♃35'09		max. Earth dist.	1570 Jun 03 j 02:48	21°♃03'06	30.88259 AU
conjunction	1562 May 15 j 01:15	3°♃05'16	-1°-34'-18	retrograde	1570 Sep 17 j 01:23	23°♃35'03	
minimum elong	1562 May 15 j 01:15	3°♃05'16	1°34'19	opposition	1570 Dec 04 j 11:51	22°♃10'27	-1°-19'-14
max. Earth dist.	1562 May 15 j 15:12	3°♃06'34	30.85195 AU	min. Earth dist.	1570 Dec 04 j 04:10	22°♃11'00	28.88716 AU
retrograde	1562 Aug 29 j 22:42	5°♃39'13		direct	1571 Feb 20 j 11:47	20°♃45'58	
opposition	1562 Nov 16 j 21:53	4°♃14'20	-1°-39'-50	conjunction	1571 Jun 05 j 08:36	23°♃16'34	-1°-12'-39
min. Earth dist.	1562 Nov 16 j 09:52	4°♃15'11	28.85448 AU	minimum elong	1571 Jun 05 j 08:36	23°♃16'35	1°12'40
direct	1563 Feb 02 j 11:08	2°♃50'21		max. Earth dist.	1571 Jun 05 j 15:49	23°♃17'15	30.89093 AU
conjunction	1563 May 17 j 15:37	5°♃20'31	-1°-32'-25	retrograde	1571 Sep 19 j 12:38	25°♃49'11	
minimum elong	1563 May 17 j 15:37	5°♃20'31	1°32'26	opposition	1571 Dec 06 j 22:27	24°♃24'41	-1°-16'-4
max. Earth dist.	1563 May 18 j 05:16	5°♃21'48	30.85495 AU	min. Earth dist.	1571 Dec 06 j 16:24	24°♃25'07	28.89591 AU
retrograde	1563 Sep 01 j 11:32	7°♃54'19		direct	1572 Feb 22 j 22:35	23°♃00'12	
opposition	1563 Nov 19 j 08:48	6°♃29'28	-1°-37'-44	conjunction	1572 Jun 06 j 22:49	25°♃30'55	-1°-9'-38
min. Earth dist.	1563 Nov 18 j 20:58	6°♃30'18	28.85694 AU	minimum elong	1572 Jun 06 j 22:49	25°♃30'55	1°09'39
direct	1564 Feb 05 j 01:08	5°♃05'23		max. Earth dist.	1572 Jun 07 j 05:50	25°♃31'34	30.90001 AU
conjunction	1564 May 19 j 05:48	7°♃35'36	-1°-30'-23	retrograde	1572 Sep 21 j 01:04	28°♃03'25	
minimum elong	1564 May 19 j 05:48	7°♃35'37	1°30'24	opposition	1572 Dec 08 j 08:56	26°♃39'02	-1°-12'-48
max. Earth dist.	1564 May 19 j 17:32	7°♃36'42	30.85723 AU	min. Earth dist.	1572 Dec 08 j 03:02	26°♃39'27	28.90493 AU
retrograde	1564 Sep 03 j 00:27	10°♃09'15		direct	1573 Feb 24 j 11:25	25°♃14'33	
opposition	1564 Nov 20 j 19:48	8°♃44'24	-1°-35'-30	conjunction	1573 Jun 09 j 12:56	27°♃45'22	-1°-6'-31
min. Earth dist.	1564 Nov 20 j 09:18	8°♃45'08	28.85911 AU	minimum elong	1573 Jun 09 j 12:56	27°♃45'22	1°06'33
direct	1565 Feb 06 j 12:20	7°♃20'14		max. Earth dist.	1573 Jun 09 j 18:01	27°♃45'50	30.90893 AU

	1573 Aug 21 j 22:20	0°♄		minimum elong	1581 Jun 28 j 05:18	15°♄38'04	0°38'35
retrograde	1573 Sep 23 j 13:56	0°♄17'45		max. Earth dist.	1581 Jun 28 j 03:27	15°♄37'54	30.96458 AU
	1573 Oct 26 j 14:32	30°♃II		retrograde	1581 Oct 11 j 10:19	18°♄09'02	
opposition	1573 Dec 10 j 19:35	28°♃53'28	-1°-9'-25	opposition	1581 Dec 28 j 06:24	16°♄45'11	0°-39'-12
min. Earth dist.	1573 Dec 10 j 15:12	28°♃53'46	28.91360 AU	min. Earth dist.	1581 Dec 28 j 08:02	16°♄45'04	28.96934 AU
direct	1574 Feb 26 j 22:02	27°♃28'58		direct	1582 Mar 16 j 22:49	15°♄20'15	
conjunction	1574 Jun 12 j 03:22	29°♃59'53	-1°-3'-19	conjunction	1582 Jun 30 j 19:02	17°♄51'27	0°-34'-46
minimum elong	1574 Jun 12 j 03:22	29°♃59'53	1°03'19	minimum elong	1582 Jun 30 j 19:02	17°♄51'27	0°34'46
max. Earth dist.	1574 Jun 12 j 08:17	0°♄00'20	30.91718 AU	max. Earth dist.	1582 Jun 30 j 15:42	17°♄51'09	30.97421 AU
	1574 Jun 12 j 04:42	0°♄		retrograde	1582 Oct 23 21:38	20°♄22'16	
retrograde	1574 Sep 26 j 02:37	2°♄32'06		opposition	1583 Jan 09 16:36	18°♄58'29	0°-35'-6
opposition	1574 Dec 13 j 06:05	1°♄07'54	-1°-5'-55	min. Earth dist.	1583 Jan 09 19:13	18°♄58'18	28.97971 AU
min. Earth dist.	1574 Dec 13 j 02:36	1°♄08'09	28.92129 AU	direct	1583 Mar 29 09:09	17°♄33'32	
	1575 Jan 28 j 15:54	30°♃II					
direct	1575 Mar 01 j 11:56	29°♃43'23		conjunction	1583 Jul 13 08:52	20°♄04'48	0°-30'-54
	1575 Apr 01 j 23:39	0°♄		minimum elong	1583 Jul 13 08:52	20°♄04'48	0°30'56
				max. Earth dist.	1583 Jul 13 05:55	20°♄04'32	30.98523 AU
conjunction	1575 Jun 14 j 17:34	2°♄14'22	-1°00'00	retrograde	1583 Oct 26 08:54	22°♄35'27	
minimum elong	1575 Jun 14 j 17:34	2°♄14'22	1°00'02	opposition	1584 Jan 12 02:50	21°♄11'47	0°-30'-57
max. Earth dist.	1575 Jun 14 j 20:05	2°♄14'36	30.92450 AU	min. Earth dist.	1584 Jan 12 05:58	21°♄11'33	28.99112 AU
retrograde	1575 Sep 28 j 16:06	4°♄46'26		direct	1584 Mar 30 22:34	19°♄46'50	
opposition	1575 Dec 15 j 16:38	3°♄22'18	-1°-2'-20				
min. Earth dist.	1575 Dec 15 j 13:54	3°♄22'29	28.92818 AU	conjunction	1584 Jul 14 22:20	22°♄18'10	0°-27'00
direct	1576 Mar 03 j 00:21	1°♄57'43		minimum elong	1584 Jul 14 22:21	22°♄18'10	0°27'01
				max. Earth dist.	1584 Jul 14 17:32	22°♄17'43	30.99710 AU
conjunction	1576 Jun 16 j 07:40	4°♄28'45	0°-56'-37	retrograde	1584 Oct 27 21:43	24°♄48'41	
minimum elong	1576 Jun 16 j 07:41	4°♄28'45	0°56'37	opposition	1585 Jan 13 13:02	23°♄25'06	0°-26'-46
max. Earth dist.	1576 Jun 16 j 10:08	4°♄28'59	30.93098 AU	min. Earth dist.	1585 Jan 13 16:40	23°♄24'51	29.00320 AU
retrograde	1576 Sep 30 j 02:49	7°♄00'40		direct	1585 Apr 02 10:26	22°♄00'10	
opposition	1576 Dec 17 j 03:11	5°♄36'34	0°-58'-40				
min. Earth dist.	1576 Dec 17 j 01:56	5°♄36'39	28.93428 AU	conjunction	1585 Jul 17 12:13	24°♄31'35	0°-23'-4
direct	1577 Mar 05 j 12:54	4°♄11'56		minimum elong	1585 Jul 17 12:13	24°♄31'35	0°23'06
				max. Earth dist.	1585 Jul 17 07:28	24°♄31'09	31.00911 AU
conjunction	1577 Jun 18 j 21:44	6°♄43'00	0°-53'-8	retrograde	1585 Oct 30 08:41	27°♄01'57	
minimum elong	1577 Jun 18 j 21:44	6°♄43'00	0°53'10	opposition	1586 Jan 15 23:15	25°♄38'29	0°-22'-32
max. Earth dist.	1577 Jun 18 j 22:18	6°♄43'03	30.93702 AU	min. Earth dist.	1586 Jan 16 04:28	25°♄38'07	29.01499 AU
retrograde	1577 Oct 02 j 15:49	9°♄14'43		direct	1586 Apr 04 22:35	24°♄13'33	
opposition	1577 Dec 19 j 13:23	7°♄50'40	0°-54'-55				
min. Earth dist.	1577 Dec 19 j 12:20	7°♄50'44	28.94018 AU	conjunction	1586 Jul 20 01:59	26°♄45'01	0°-19'-6
direct	1578 Mar 08 j 01:07	6°♄25'58		minimum elong	1586 Jul 20 01:59	26°♄45'01	0°19'07
				max. Earth dist.	1586 Jul 19 19:10	26°♄44'24	31.02063 AU
conjunction	1578 Jun 21 j 11:51	8°♄57'04	0°-49'-36	retrograde	1586 Nov 01 22:08	29°♄15'14	
minimum elong	1578 Jun 21 j 11:51	8°♄57'04	0°49'36	opposition	1587 Jan 18 09:31	27°♄51'52	0°-18'-16
max. Earth dist.	1578 Jun 21 j 12:02	8°♄57'05	30.94288 AU	min. Earth dist.	1587 Jan 18 14:57	27°♄51'29	29.02606 AU
retrograde	1578 Oct 05 j 02:40	11°♄28'35		direct	1587 Apr 07 11:18	26°♄26'56	
opposition	1578 Dec 21 j 23:48	10°♄04'34	0°-51'-6				
min. Earth dist.	1578 Dec 22 j 00:29	10°♄04'31	28.94615 AU	conjunction	1587 Jul 22 15:40	28°♄58'27	0°-15'-6
direct	1579 Mar 10 j 11:48	8°♄39'48		minimum elong	1587 Jul 22 15:40	28°♄58'27	0°15'07
				behind sun begin	1587 Jul 22 13:45	28°♄58'16	
conjunction	1579 Jun 24 j 01:42	11°♄10'55	0°-45'-59	behind sun end	1587 Jul 22 17:36	28°♄58'37	
minimum elong	1579 Jun 24 j 01:42	11°♄10'55	0°46'00	max. Earth dist.	1587 Jul 22 08:24	28°♄57'47	31.03107 AU
max. Earth dist.	1579 Jun 24 j 00:53	11°♄10'50	30.94917 AU		1587 Aug 20 01:51	0°♂	
retrograde	1579 Oct 07 j 13:23	13°♄42'14		retrograde	1587 Nov 04 08:47	1°♂28'30	
opposition	1579 Dec 24 j 09:58	12°♄18'16	0°-47'-12	opposition	1588 Jan 20 19:56	0°♂05'12	0°-13'-59
min. Earth dist.	1579 Dec 24 j 10:17	12°♄18'15	28.95273 AU	min. Earth dist.	1588 Jan 21 03:19	0°♂04'41	29.03600 AU
direct	1580 Mar 12 j 00:13	10°♄53'26			1588 Jan 23 21:48	30°♃♄	
				direct	1588 Apr 08 22:41	28°♄40'15	
conjunction	1580 Jun 25 j 15:30	13°♄24'35	0°-42'-18		1588 Jun 20 15:53	0°♂	
minimum elong	1580 Jun 25 j 15:30	13°♄24'35	0°42'19				
max. Earth dist.	1580 Jun 25 j 13:45	13°♄24'25	30.95620 AU	conjunction	1588 Jul 24 05:18	1°♂11'47	0°-11'-5
retrograde	1580 Oct 08 j 23:12	15°♄55'43		minimum elong	1588 Jul 24 05:18	1°♂11'47	0°11'06
opposition	1580 Dec 25 j 20:13	14°♄31'48	0°-43'-13	behind sun begin	1588 Jul 24 00:27	1°♂11'22	
min. Earth dist.	1580 Dec 25 j 22:00	14°♄31'40	28.96042 AU	behind sun end	1588 Jul 24 10:08	1°♂12'13	
direct	1581 Mar 14 j 10:43	13°♄06'54		max. Earth dist.	1588 Jul 23 20:35	1°♂11'00	31.04055 AU
				retrograde	1588 Nov 05 19:59	3°♂41'41	
conjunction	1581 Jun 28 j 05:18	15°♄38'04	0°-38'-33	opposition	1589 Jan 22 06:05	2°♂18'27	0°-9'-41

min. Earth dist.	1589 Jan 22 13:27	2°Ω17'56	29.04490 AU	conjunction	1595 Aug 10 01:40	16°Ω41'12	0°17'06
direct	1589 Apr 11 11:24	0°Ω53'27		minimum elong	1595 Aug 10 01:39	16°Ω41'12	0°17'05
				retrograde	1595 Nov 21 23:55	19°Ω09'59	
conjunction	1589 Jul 26 18:53	3°Ω25'01	0°-7'-5	opposition	1596 Feb 07 05:26	17°Ω47'08	0°20'20
minimum elong	1589 Jul 26 18:54	3°Ω25'01	0°07'06	min. Earth dist.	1596 Feb 07 17:08	17°Ω46'19	29.10492 AU
behind sun begin	1589 Jul 26 12:49	3°Ω24'29		direct	1596 Apr 26 22:46	16°Ω21'58	
behind sun end	1589 Jul 27 00:58	3°Ω25'34					
max. Earth dist.	1589 Jul 26 08:56	3°Ω24'07	31.04894 AU	conjunction	1596 Aug 11 14:36	18°Ω53'39	0°21'03
retrograde	1589 Nov 08 05:59	5°Ω54'44		minimum elong	1596 Aug 11 14:36	18°Ω53'39	0°21'03
opposition	1590 Jan 24 16:25	4°Ω31'34	0°-5'-22	max. Earth dist.	1596 Aug 11 00:34	18°Ω52'21	31.11045 AU
min. Earth dist.	1590 Jan 25 01:35	4°Ω30'55	29.05295 AU	retrograde	1596 Nov 23 10:22	21°Ω22'19	
direct	1590 Apr 13 21:59	3°Ω06'31		opposition	1597 Feb 08 15:37	19°Ω59'34	0°24'32
				min. Earth dist.	1597 Feb 09 04:56	19°Ω58'38	29.11637 AU
conjunction	1590 Jul 29 08:25	5°Ω38'06	0°-3'-3	direct	1597 Apr 29 10:21	18°Ω34'25	
minimum elong	1590 Jul 29 08:24	5°Ω38'06	0°03'04				
behind sun begin	1590 Jul 29 01:50	5°Ω37'31		conjunction	1597 Aug 14 03:27	21°Ω06'09	0°24'58
behind sun end	1590 Jul 29 14:58	5°Ω38'41		minimum elong	1597 Aug 14 03:27	21°Ω06'09	0°24'58
max. Earth dist.	1590 Jul 28 21:54	5°Ω37'08	31.05669 AU	max. Earth dist.	1597 Aug 13 12:22	21°Ω04'45	31.12202 AU
retrograde	1590 Nov 10 16:24	8°Ω07'38		retrograde	1597 Nov 25 21:34	23°Ω34'42	
opposition	1591 Jan 27 02:33	6°Ω44'31	0°-1'-3	opposition	1598 Feb 11 01:49	22°Ω12'04	0°28'43
min. Earth dist.	1591 Jan 27 11:54	6°Ω43'51	29.06038 AU	min. Earth dist.	1598 Feb 11 14:52	22°Ω11'09	29.12777 AU
direct	1591 Apr 16 10:04	5°Ω19'25		direct	1598 May 01 23:01	20°Ω46'56	
asc. node	1591 Apr 28 12:56	5°Ω21'51					
				conjunction	1598 Aug 16 16:18	23°Ω18'42	0°28'51
conjunction	1591 Jul 31 21:40	7°Ω51'00	0°01'04	minimum elong	1598 Aug 16 16:18	23°Ω18'42	0°28'52
minimum elong	1591 Jul 31 21:41	7°Ω51'00	0°01'04	max. Earth dist.	1598 Aug 16 00:20	23°Ω17'14	31.13304 AU
behind sun begin	1591 Jul 31 15:06	7°Ω50'25		retrograde	1598 Nov 28 08:01	25°Ω47'09	
behind sun end	1591 Aug 01 04:16	7°Ω51'35		opposition	1599 Feb 13 12:13	24°Ω24'35	0°32'51
max. Earth dist.	1591 Jul 31 09:37	7°Ω49'54	31.06404 AU	min. Earth dist.	1599 Feb 14 02:53	24°Ω23'33	29.13853 AU
retrograde	1591 Nov 13 02:51	10°Ω20'22		direct	1599 May 04 09:28	22°Ω59'29	
opposition	1592 Jan 29 12:48	8°Ω57'17	0°03'14				
min. Earth dist.	1592 Jan 29 23:12	8°Ω56'33	29.06790 AU	conjunction	1599 Aug 19 05:07	25°Ω31'15	0°32'42
direct	1592 Apr 17 20:34	7°Ω32'09		minimum elong	1599 Aug 19 05:07	25°Ω31'15	0°32'42
				max. Earth dist.	1599 Aug 18 12:40	25°Ω29'44	31.14328 AU
conjunction	1592 Aug 02 10:48	10°Ω03'44	0°05'08	retrograde	1599 Nov 30 18:24	27°Ω59'34	
minimum elong	1592 Aug 02 10:48	10°Ω03'44	0°05'08	opposition	1600 Feb 15 22:35	26°Ω37'05	0°36'55
behind sun begin	1592 Aug 02 04:25	10°Ω03'10		min. Earth dist.	1600 Feb 16 13:26	26°Ω36'02	29.14816 AU
behind sun end	1592 Aug 02 17:11	10°Ω04'17		direct	1600 May 05 21:24	25°Ω11'58	
max. Earth dist.	1592 Aug 01 23:09	10°Ω02'40	31.07165 AU				
retrograde	1592 Nov 14 12:50	12°Ω32'56		conjunction	1600 Aug 20 17:43	27°Ω43'44	0°36'29
opposition	1593 Jan 30 22:58	11°Ω09'53	0°07'32	minimum elong	1600 Aug 20 17:43	27°Ω43'44	0°36'29
min. Earth dist.	1593 Jan 31 09:55	11°Ω09'07	29.07568 AU	max. Earth dist.	1600 Aug 19 23:39	27°Ω42'04	31.15225 AU
direct	1593 Apr 20 09:57	9°Ω44'43			1600 Nov 05 18:01	0°♁	
				retrograde	1600 Dec 02 04:06	0°♁	11'56
conjunction	1593 Aug 04 23:49	12°Ω16'18	0°09'08		1600 Dec 28 21:53	30°RΩ	
minimum elong	1593 Aug 04 23:49	12°Ω16'18	0°09'07				
behind sun begin	1593 Aug 04 18:16	12°Ω15'49					
behind sun end	1593 Aug 05 05:23	12°Ω16'48					
max. Earth dist.	1593 Aug 04 10:25	12°Ω15'04	31.07982 AU				
retrograde	1593 Nov 17 00:35	14°Ω45'22					
opposition	1594 Feb 02 09:01	13°Ω22'21	0°11'49				
min. Earth dist.	1594 Feb 02 20:06	13°Ω21'35	29.08439 AU				
direct	1594 Apr 22 21:33	11°Ω57'09					
conjunction	1594 Aug 07 12:57	14°Ω28'46	0°13'07				
minimum elong	1594 Aug 07 12:57	14°Ω28'46	0°13'07				
behind sun begin	1594 Aug 07 09:09	14°Ω28'26					
behind sun end	1594 Aug 07 16:45	14°Ω29'07					
max. Earth dist.	1594 Aug 07 00:05	14°Ω27'36	31.08897 AU				
	1594 Aug 21 15:52	15°Ω					
retrograde	1594 Nov 19 10:52	16°Ω57'41					
opposition	1595 Feb 04 19:18	15°Ω34'45	0°16'05				
min. Earth dist.	1595 Feb 05 07:25	15°Ω33'54	29.09409 AU				
	1595 Feb 26 00:39	15°RΩ					
direct	1595 Apr 25 09:38	14°Ω09'34					
	1595 Jun 21 07:42	15°Ω					
max. Earth dist.	1595 Aug 09 11:25	16°Ω39'53	31.09929 AU				