

retrograde	100 Feb 12 j 22:11	3°♌53'13		conjunction	105 Dec 24 j 23:04	2°♄42'50	0°10'38
opposition	100 Apr 22 j 13:19	0°♌36'11	2°36'07	minimum elong	105 Dec 24 j 23:05	2°♄42'50	0°10'39
min. Earth dist.	100 Apr 22 j 17:59	0°♌35'19	9.03345 AU	behind sun begin	105 Dec 24 j 17:38	2°♄41'14	
	100 Apr 30 j 17:16	30°♌		behind sun end	105 Dec 25 j 04:32	2°♄44'26	
direct	100 Jul 02 j 21:53	27°♌15'15		max. Earth dist.	105 Dec 24 j 15:14	2°♄40'31	10.95992 AU
	100 Sep 01 j 03:22	0°♌		morning rise	106 Jan 10 j 16:13	4°♄41'29	
evening set	100 Oct 13 j 19:42	4°♌23'37		retrograde	106 Apr 23 j 06:43	11°♄53'54	
				desc. node	106 May 16 j 09:28	11°♄28'27	
conjunction	100 Oct 30 j 10:23	6°♌20'13	2°01'39	opposition	106 Jul 03 j 05:34	8°♄33'20	0°-4'-22
minimum elong	100 Oct 30 j 10:25	6°♌20'14	2°01'39	min. Earth dist.	106 Jul 03 j 11:51	8°♄32'10	8.92063 AU
max. Earth dist.	100 Oct 30 j 04:12	6°♌18'24	11.05376 AU	direct	106 Sep 11 j 02:57	5°♄14'37	
morning rise	100 Nov 15 j 22:47	8°♌16'10		evening set	106 Dec 19 j 21:39	12°♄18'53	
	101 Feb 07 j 15:51	15°♌					
retrograde	101 Feb 23 j 13:35	15°♌12'39		conjunction	107 Jan 05 j 14:31	14°♄18'23	0°-17'-32
	101 Mar 11 j 15:54	15°♌		minimum elong	107 Jan 05 j 14:30	14°♄18'23	0°17'33
opposition	101 May 04 j 14:58	11°♌55'34	2°19'43	max. Earth dist.	107 Jan 05 j 07:44	14°♄16'22	10.87750 AU
min. Earth dist.	101 May 04 j 20:37	11°♌54'32	9.07141 AU	morning rise	107 Jan 22 j 09:47	16°♄18'42	
direct	101 Jul 14 j 23:22	8°♌35'27		retrograde	107 May 05 j 20:34	23°♄38'46	
	101 Oct 19 j 09:22	15°♌		opposition	107 Jul 15 j 17:09	20°♄16'57	0°-38'-57
evening set	101 Oct 25 j 04:22	15°♌39'34		min. Earth dist.	107 Jul 15 j 22:22	20°♄15'59	8.82971 AU
				direct	107 Sep 23 j 02:38	16°♄57'55	
conjunction	101 Nov 10 j 18:03	17°♌35'36	1°46'04	evening set	107 Dec 31 j 17:59	24°♄06'47	
minimum elong	101 Nov 10 j 18:05	17°♌35'37	1°46'03				
max. Earth dist.	101 Nov 10 j 11:15	17°♌33'36	11.08071 AU	conjunction	108 Jan 17 j 12:33	26°♄08'02	0°-45'-24
morning rise	101 Nov 27 j 06:09	19°♌31'13		minimum elong	108 Jan 17 j 12:32	26°♄08'02	0°45'26
retrograde	102 Mar 07 j 05:55	26°♌27'48		max. Earth dist.	108 Jan 17 j 06:08	26°♄06'06	10.77910 AU
opposition	102 May 16 j 15:23	23°♌10'25	1°58'04	morning rise	108 Feb 03 j 10:23	28°♄10'19	
min. Earth dist.	102 May 16 j 21:03	23°♌09'22	9.08654 AU		108 Feb 19 j 06:27	0°≈	
direct	102 Jul 26 j 21:50	19°♌50'57		retrograde	108 May 17 j 18:46	5°≈39'11	
evening set	102 Nov 05 j 10:29	26°♌52'08		opposition	108 Jul 27 j 09:55	2°≈16'03	-1°-12'-40
				min. Earth dist.	108 Jul 27 j 14:30	2°≈15'11	8.72490 AU
conjunction	102 Nov 21 j 23:55	28°♌48'05	1°26'27		108 Aug 29 j 06:11	30°♌	
minimum elong	102 Nov 21 j 23:57	28°♌48'05	1°26'26	direct	108 Oct 04 j 05:41	28°♄56'27	
max. Earth dist.	102 Nov 21 j 17:11	28°♌46'06	11.08453 AU		108 Nov 08 j 09:11	0°≈	
	102 Dec 02 j 05:05	0°♌		evening set	109 Jan 11 j 22:04	6°≈11'21	
morning rise	102 Dec 08 j 12:21	0°♌43'49					
retrograde	103 Mar 19 j 01:48	7°♌42'01		conjunction	109 Jan 28 j 18:42	8°≈14'37	-1°-11'-51
opposition	103 May 28 j 16:06	4°♌24'09	1°31'57	minimum elong	109 Jan 28 j 18:39	8°≈14'36	1°11'53
min. Earth dist.	103 May 28 j 22:09	4°♌23'02	9.07831 AU	max. Earth dist.	109 Jan 28 j 12:40	8°≈12'46	10.66876 AU
direct	103 Aug 07 j 17:15	1°♌05'12		morning rise	109 Feb 14 j 19:25	10°≈19'09	
evening set	103 Nov 16 j 15:54	8°♌04'50			109 Mar 30 j 07:51	15°≈	
				retrograde	109 May 30 j 23:39	17°≈57'40	
conjunction	103 Dec 03 j 05:26	10°♌01'06	1°03'29		109 Aug 03 j 12:17	15°≈	
minimum elong	103 Dec 03 j 05:28	10°♌01'06	1°03'29	opposition	109 Aug 09 j 08:22	14°≈33'09	-1°-43'-59
max. Earth dist.	103 Dec 02 j 21:52	9°♌58'52	11.06511 AU	min. Earth dist.	109 Aug 09 j 12:27	14°≈32'22	8.61054 AU
morning rise	103 Dec 19 j 18:57	11°♌57'25		direct	109 Oct 16 j 14:03	11°≈12'47	
retrograde	104 Mar 29 j 21:47	18°♌58'49			109 Dec 23 j 18:05	15°≈	
opposition	104 Jun 08 j 18:06	15°♌40'15	1°02'12	evening set	110 Jan 24 j 11:21	18°≈35'01	
min. Earth dist.	104 Jun 09 j 00:57	15°♌38'59	9.04709 AU				
direct	104 Aug 18 j 10:32	12°♌21'35		conjunction	110 Feb 10 j 10:32	20°≈40'32	-1°-35'-35
evening set	104 Nov 26 j 22:27	19°♌21'13		minimum elong	110 Feb 10 j 10:29	20°≈40'31	1°35'37
				max. Earth dist.	110 Feb 10 j 06:03	20°≈39'08	10.55112 AU
conjunction	104 Dec 13 j 12:35	21°♌18'11	0°37'55	morning rise	110 Feb 27 j 14:15	22°≈47'27	
minimum elong	104 Dec 13 j 12:36	21°♌18'12	0°37'56		110 May 17 j 16:31	0°♌	
max. Earth dist.	104 Dec 13 j 04:05	21°♌15'41	11.02314 AU	retrograde	110 Jun 13 j 11:32	0°♌36'06	
morning rise	104 Dec 30 j 03:48	23°♌15'30			110 Jul 10 j 13:09	30°≈	
	105 Mar 20 j 21:33	0°♄		opposition	110 Aug 22 j 12:46	27°≈10'13	-2°-11'-13
retrograde	105 Apr 10 j 23:14	0°♄21'39		min. Earth dist.	110 Aug 22 j 15:35	27°≈09'40	8.49167 AU
	105 May 02 j 07:10	30°≈		direct	110 Oct 29 j 07:16	23°≈48'55	
opposition	105 Jun 20 j 22:14	27°♌02'11	0°29'44		111 Jan 26 j 11:46	0°♌	
min. Earth dist.	105 Jun 21 j 05:23	27°♌00'52	8.99398 AU	evening set	111 Feb 06 j 10:41	1°♌19'24	
direct	105 Aug 30 j 06:37	23°♌43'35					
	105 Dec 01 j 20:21	0°♄		conjunction	111 Feb 23 j 12:55	3°♌27'23	-1°-55'-14
evening set	105 Dec 08 j 07:43	0°♄44'45		minimum elong	111 Feb 23 j 12:52	3°♌27'23	1°55'15
				max. Earth dist.	111 Feb 23 j 10:50	3°♌26'44	10.43161 AU

morning rise	111 Mar 12 j 19:49	5°♂36'52		min. Earth dist.	117 Nov 26 j 08:37	3°♄53'51	7.99282 AU
retrograde	111 Jun 27 j 09:28	13°♂35'32		direct	118 Feb 01 j 04:46	0°♄23'40	
opposition	111 Sep 04 j 23:31	10°♂08'20	-2°-32'-39	evening set	118 May 17 j 01:32	8°♄39'59	
min. Earth dist.	111 Sep 05 j 00:22	10°♂08'10	8.37391 AU				
direct	111 Nov 11 j 05:56	6°♂45'58		conjunction	118 Jun 04 j 06:09	11°♄01'35	-1°00'-35
evening set	112 Feb 19 j 20:40	14°♂25'14		minimum elong	118 Jun 04 j 06:12	11°♄01'36	1°00'35
				max. Earth dist.	118 Jun 04 j 14:36	11°♄04'21	10.00406 AU
conjunction	112 Mar 08 j 02:25	16°♂35'49	-2°-9'-25	morning rise	118 Jun 22 j 10:44	13°♄23'12	
minimum elong	112 Mar 08 j 02:23	16°♂35'48	2°09'25	retrograde	118 Oct 05 j 05:42	21°♄38'46	
max. Earth dist.	112 Mar 08 j 02:27	16°♂35'50	10.31605 AU	opposition	118 Dec 10 j 20:27	18°♄10'04	0°-55'-59
morning rise	112 Mar 25 j 12:53	18°♂47'57		min. Earth dist.	118 Dec 10 j 13:33	18°♄11'30	8.02356 AU
retrograde	112 Jul 10 j 14:56	26°♂55'49		direct	119 Feb 15 j 19:42	14°♄40'38	
opposition	112 Sep 17 j 16:16	23°♂27'26	-2°-46'-36	evening set	119 Jun 01 j 06:16	22°♄56'15	
min. Earth dist.	112 Sep 17 j 15:18	23°♂27'38	8.26289 AU				
direct	112 Nov 23 j 11:38	20°♂03'53		conjunction	119 Jun 19 j 11:24	25°♄17'12	0°-28'-21
evening set	113 Mar 04 j 17:32	27°♂52'03		minimum elong	119 Jun 19 j 11:25	25°♄17'13	0°28'22
	113 Mar 21 j 10:46	0°♄		max. Earth dist.	119 Jun 19 j 20:35	25°♄20'11	10.05000 AU
conjunction	113 Mar 22 j 03:13	0°♄05'17	-2°-16'-55	morning rise	119 Jul 07 j 15:04	27°♄37'43	
minimum elong	113 Mar 22 j 03:13	0°♄05'17	2°16'55	retrograde	119 Jul 26 j 22:07	0°♄	
max. Earth dist.	113 Mar 22 j 04:28	0°♄05'41	10.21008 AU	opposition	119 Oct 19 j 10:16	5°♄45'25	
morning rise	113 Apr 08 j 17:33	2°♄20'02		min. Earth dist.	119 Dec 24 j 22:46	2°♄17'50	0°-14'-38
retrograde	113 Jul 25 j 01:58	10°♄35'35			119 Dec 24 j 15:42	2°♄19'17	8.08300 AU
opposition	113 Oct 01 j 14:19	7°♄06'16	-2°-51'-36	direct	120 Jan 24 j 11:10	30°♄	
min. Earth dist.	113 Oct 01 j 12:22	7°♄06'40	8.16395 AU		120 Mar 01 j 08:58	28°♄48'10	
direct	113 Dec 07 j 01:49	3°♄41'27		asc. node	120 Apr 07 j 03:00	0°♄	
evening set	114 Mar 19 j 00:29	11°♄38'11		evening set	120 May 05 j 16:43	2°♄20'56	
					120 Jun 15 j 06:50	7°♄00'55	
conjunction	114 Apr 05 j 14:30	13°♄54'00	-2°-16'-48	conjunction	120 Jul 03 j 10:39	9°♄20'18	0°05'15
minimum elong	114 Apr 05 j 14:31	13°♄54'00	2°16'48	minimum elong	120 Jul 03 j 10:38	9°♄20'18	0°05'15
max. Earth dist.	114 Apr 05 j 16:42	13°♄54'43	10.11895 AU	behind sun begin	120 Jul 03 j 03:32	9°♄18'02	
morning rise	114 Apr 23 j 08:52	16°♄11'13		behind sun end	120 Jul 03 j 17:44	9°♄22'33	
retrograde	114 Aug 08 j 16:49	24°♄32'26		max. Earth dist.	120 Jul 03 j 19:40	9°♄23'11	10.12261 AU
opposition	114 Oct 15 j 17:04	21°♄02'32	-2°-46'-42	morning rise	120 Jul 21 j 11:44	11°♄38'49	
min. Earth dist.	114 Oct 15 j 14:25	21°♄03'05	8.08227 AU	retrograde	120 Nov 01 j 07:43	19°♄37'17	
direct	114 Dec 20 j 23:49	17°♄36'29		opposition	121 Jan 06 j 20:33	16°♄11'02	0°26'49
evening set	115 Apr 02 j 16:18	25°♄40'53		min. Earth dist.	121 Jan 06 j 14:11	16°♄12'20	8.16703 AU
				direct	121 Mar 15 j 19:40	12°♄41'29	
conjunction	115 Apr 20 j 10:50	27°♄59'04	-2°-8'-36	evening set	121 Jun 30 j 00:23	20°♄49'25	
minimum elong	115 Apr 20 j 10:53	27°♄59'05	2°08'36				
max. Earth dist.	115 Apr 20 j 14:18	28°♄00'12	10.04815 AU	conjunction	121 Jul 18 j 01:09	23°♄06'26	0°37'51
	115 May 05 j 23:33	0°♄		minimum elong	121 Jul 18 j 01:07	23°♄06'26	0°37'51
morning rise	115 May 08 j 09:09	0°♄18'27		max. Earth dist.	121 Jul 18 j 09:02	23°♄08'57	10.21696 AU
retrograde	115 Aug 23 j 10:19	8°♄42'45		morning rise	121 Aug 04 j 22:19	25°♄22'18	
opposition	115 Oct 29 j 23:11	5°♄12'37	-2°-31'-38		121 Sep 14 j 21:06	0°♄	
min. Earth dist.	115 Oct 29 j 19:43	5°♄13'20	8.02362 AU	retrograde	121 Nov 14 j 20:11	3°♄10'56	
direct	116 Jan 04 j 04:32	1°♄45'26			122 Jan 17 j 15:56	30°♄	
evening set	116 Apr 16 j 15:36	9°♄55'58		opposition	122 Jan 20 j 12:43	29°♄46'06	1°05'47
				min. Earth dist.	122 Jan 20 j 07:20	29°♄47'11	8.27022 AU
conjunction	116 May 04 j 14:28	12°♄16'04	-1°-52'-28	direct	122 Mar 30 j 02:14	26°♄16'58	
minimum elong	116 May 04 j 14:32	12°♄16'05	1°52'29		122 Jun 06 j 08:02	0°♄	
max. Earth dist.	116 May 04 j 19:34	12°♄17'44	10.00326 AU	evening set	122 Jul 14 j 09:04	4°♄18'37	
morning rise	116 May 22 j 16:06	14°♄37'02					
	116 May 25 j 16:04	15°♄		conjunction	122 Aug 01 j 05:34	6°♄32'45	1°07'44
retrograde	116 Sep 06 j 03:53	23°♄01'21		minimum elong	122 Aug 01 j 05:31	6°♄32'44	1°07'43
opposition	116 Nov 12 j 06:51	19°♄31'21	-2°-7'00	max. Earth dist.	122 Aug 01 j 11:44	6°♄34'41	10.32721 AU
min. Earth dist.	116 Nov 12 j 02:16	19°♄32'18	7.99291 AU	morning rise	122 Aug 18 j 21:52	8°♄45'32	
direct	117 Jan 17 j 14:47	16°♄03'10			122 Oct 19 j 06:36	15°♄	
evening set	117 May 01 j 19:44	24°♄17'47		retrograde	122 Nov 27 j 22:32	16°♄24'17	
					123 Jan 07 j 09:09	15°♄	
conjunction	117 May 19 j 22:09	26°♄39'05	-1°-29'-18	opposition	123 Feb 02 j 22:37	13°♄00'55	1°40'11
minimum elong	117 May 19 j 22:12	26°♄39'07	1°29'18	min. Earth dist.	123 Feb 02 j 18:02	13°♄01'50	8.38633 AU
max. Earth dist.	117 May 20 j 05:04	26°♄41'22	9.98811 AU	direct	123 Apr 13 j 03:47	9°♄32'29	
morning rise	117 Jun 07 j 01:59	29°♄00'51			123 Jul 07 j 11:15	15°♄	
	117 Jun 14 j 20:34	0°♄		evening set	123 Jul 28 j 07:31	17°♄26'50	
retrograde	117 Sep 20 j 19:10	7°♄22'07					
opposition	117 Nov 26 j 14:35	3°♄52'36	-1°-34'-21	conjunction	123 Aug 14 j 23:04	19°♄37'48	1°33'22

minimum elong	123 Aug 14 j 23:00	19°♄37'47	1°33'22	morning rise	129 Nov 11 j 08:27	3°♋33'49	
max. Earth dist.	123 Aug 15 j 03:40	19°♄39'14	10.44697 AU	retrograde	130 Feb 18 j 21:17	10°♋30'12	
morning rise	123 Sep 01 j 09:59	21°♄47'20		opposition	130 Apr 29 j 17:11	7°♋13'28	2°27'27
retrograde	123 Dec 10 j 18:26	29°♄16'43		min. Earth dist.	130 Apr 29 j 20:44	7°♋12'48	9.07174 AU
opposition	124 Feb 16 j 02:23	25°♄54'45	2°08'29	direct	130 Jul 10 j 01:50	3°♋53'24	
min. Earth dist.	124 Feb 15 j 22:22	25°♄55'32	8.50880 AU	evening set	130 Oct 20 j 14:22	10°♋58'40	
direct	124 Apr 25 j 20:58	22°♄27'18					
	124 Aug 07 j 21:32	0°♄		conjunction	130 Nov 06 j 04:28	12°♋54'45	1°53'21
evening set	124 Aug 09 j 19:06	0°♄13'41		minimum elong	130 Nov 06 j 04:30	12°♋54'46	1°53'20
				max. Earth dist.	130 Nov 05 j 23:26	12°♋53'17	11.08796 AU
conjunction	124 Aug 27 j 05:27	2°♄21'30	1°53'45	morning rise	130 Nov 22 j 16:27	14°♋50'17	
minimum elong	124 Aug 27 j 05:24	2°♄21'29	1°53'44		130 Nov 24 j 02:18	15°♋	
max. Earth dist.	124 Aug 27 j 09:00	2°♄22'36	10.56984 AU	retrograde	131 Mar 02 j 12:12	21°♋45'59	
morning rise	124 Sep 13 j 10:51	4°♄27'49		opposition	131 May 11 j 17:41	18°♋29'16	2°08'01
retrograde	124 Dec 22 j 07:31	11°♄48'39		min. Earth dist.	131 May 11 j 23:00	18°♋28'17	9.10089 AU
opposition	125 Feb 28 j 00:12	8°♄28'01	2°29'45	direct	131 Jul 22 j 00:06	15°♋10'03	
min. Earth dist.	125 Feb 27 j 21:05	8°♄28'38	8.63141 AU	evening set	131 Oct 31 j 21:19	22°♋11'47	
direct	125 May 09 j 06:01	5°♄01'45					
evening set	125 Aug 22 j 19:55	12°♄39'59		conjunction	131 Nov 17 j 10:35	24°♋07'30	1°35'26
				minimum elong	131 Nov 17 j 10:37	24°♋07'31	1°35'25
conjunction	125 Sep 09 j 01:14	14°♄44'50	2°08'16	max. Earth dist.	131 Nov 17 j 03:38	24°♋05'28	11.10557 AU
minimum elong	125 Sep 09 j 01:12	14°♄44'49	2°08'16	morning rise	131 Dec 03 j 22:48	26°♋02'57	
max. Earth dist.	125 Sep 09 j 03:47	14°♄45'36	10.68997 AU		132 Jan 10 j 20:08	0°♄	
morning rise	125 Sep 26 j 01:32	16°♄48'13		retrograde	132 Mar 13 j 05:24	2°♄59'32	
retrograde	126 Jan 03 j 13:21	24°♄01'32			132 May 18 j 18:28	30°♋	
opposition	126 Mar 12 j 16:28	20°♄42'07	2°43'35	opposition	132 May 22 j 18:01	29°♋42'31	1°43'48
min. Earth dist.	126 Mar 12 j 15:08	20°♄42'23	8.74854 AU	min. Earth dist.	132 May 23 j 00:18	29°♋41'22	9.10607 AU
direct	126 May 22 j 08:01	17°♄17'07		direct	132 Aug 01 j 21:12	26°♋23'57	
evening set	126 Sep 04 j 10:31	24°♄47'25			132 Oct 10 j 06:47	0°♄	
				evening set	132 Nov 11 j 02:31	3°♄23'25	
conjunction	126 Sep 21 j 11:11	26°♄49'35	2°16'43				
minimum elong	126 Sep 21 j 11:10	26°♄49'35	2°16'42	conjunction	132 Nov 27 j 15:47	5°♄19'15	1°13'53
max. Earth dist.	126 Sep 21 j 11:40	26°♄49'44	10.80203 AU	minimum elong	132 Nov 27 j 15:49	5°♄19'16	1°13'52
morning rise	126 Oct 08 j 07:16	28°♄50'26		max. Earth dist.	132 Nov 27 j 08:24	5°♄17'05	11.09887 AU
	126 Oct 18 j 07:19	0°♄		morning rise	132 Dec 14 j 04:47	7°♄15'03	
retrograde	127 Jan 15 j 14:25	5°♄57'28		retrograde	133 Mar 25 j 00:23	14°♄14'04	
opposition	127 Mar 25 j 03:55	2°♄39'06	2°49'55	opposition	133 Jun 03 j 18:57	10°♄56'27	1°15'36
min. Earth dist.	127 Mar 25 j 04:31	2°♄38'59	8.85503 AU	min. Earth dist.	133 Jun 04 j 01:21	10°♄55'17	9.08662 AU
	127 May 04 j 10:48	30°♋		direct	133 Aug 13 j 15:51	7°♄38'17	
direct	127 Jun 04 j 03:14	29°♄15'25		evening set	133 Nov 22 j 08:06	14°♄37'00	
	127 Jul 04 j 13:36	0°♄					
evening set	127 Sep 16 j 16:00	6°♄38'13		conjunction	133 Dec 08 j 21:57	16°♄33'22	0°49'25
				minimum elong	133 Dec 08 j 21:59	16°♄33'23	0°49'25
conjunction	127 Oct 03 j 12:40	8°♄38'09	2°19'07	max. Earth dist.	133 Dec 08 j 14:28	16°♄31'10	11.06738 AU
minimum elong	127 Oct 03 j 12:40	8°♄38'09	2°19'07	morning rise	133 Dec 25 j 12:10	18°♄29'56	
max. Earth dist.	127 Oct 03 j 10:47	8°♄37'35	10.90130 AU	retrograde	134 Apr 06 j 00:39	25°♄32'58	
morning rise	127 Oct 20 j 05:25	10°♄36'55		opposition	134 Jun 15 j 21:26	22°♄14'32	0°44'18
retrograde	128 Jan 27 j 09:44	17°♄38'58		min. Earth dist.	134 Jun 16 j 04:06	22°♄13'18	9.04245 AU
opposition	128 Apr 05 j 11:12	14°♄21'24	2°49'01	direct	134 Aug 25 j 10:32	18°♄56'30	
min. Earth dist.	128 Apr 05 j 13:02	14°♄21'04	8.94657 AU	evening set	134 Dec 03 j 15:51	25°♄56'05	
direct	128 Jun 15 j 16:16	10°♄59'02					
evening set	128 Sep 27 j 13:26	18°♄15'04		conjunction	134 Dec 20 j 06:32	27°♄53'24	0°22'50
				minimum elong	134 Dec 20 j 06:33	27°♄53'24	0°22'51
conjunction	128 Oct 14 j 07:05	20°♄13'12	2°15'44	max. Earth dist.	134 Dec 19 j 21:58	27°♄50'52	11.01155 AU
minimum elong	128 Oct 14 j 07:06	20°♄13'13	2°15'45	morning rise	135 Jan 05 j 22:33	29°♄51'11	
max. Earth dist.	128 Oct 14 j 03:54	20°♄12'16	10.98399 AU		135 Jan 07 j 05:02	0°♄	
morning rise	128 Oct 30 j 21:21	22°♄10'23		retrograde	135 Apr 18 j 05:15	6°♄59'50	
retrograde	129 Feb 07 j 03:48	29°♄08'55		opposition	135 Jun 28 j 03:04	3°♄40'21	0°10'52
opposition	129 Apr 17 j 15:20	25°♄51'53	2°41'20	min. Earth dist.	135 Jun 28 j 10:33	3°♄38'58	8.97488 AU
min. Earth dist.	129 Apr 17 j 17:43	25°♄51'26	9.01970 AU	direct	135 Sep 06 j 04:47	0°♄22'13	
direct	129 Jun 28 j 00:29	22°♄30'44		desc. node	135 Oct 25 j 15:36	2°♄20'13	
evening set	129 Oct 09 j 04:14	29°♄40'50		evening set	135 Dec 15 j 03:18	7°♄24'18	
	129 Oct 11 j 22:30	0°♋					
conjunction	129 Oct 25 j 19:48	1°♋37'43	2°06'59	conjunction	135 Dec 31 j 19:12	9°♄22'55	0°-5'-4
minimum elong	129 Oct 25 j 19:49	1°♋37'44	2°06'59	minimum elong	135 Dec 31 j 19:12	9°♄22'55	0°05'04
max. Earth dist.	129 Oct 25 j 16:10	1°♋36'39	11.04698 AU	behind sun begin	135 Dec 31 j 12:24	9°♄20'55	
				behind sun end	136 Jan 01 j 02:00	9°♄24'55	

max. Earth dist.	135 Dec 31 j 09:51	9°♁20'08	10.93361 AU		142 May 02 j 12:59	0°♃	
morning rise	136 Jan 17 j 13:28	11°♁22'16		retrograde	142 Jul 18 j 21:56	4°♃41'36	
retrograde	136 Apr 29 j 14:24	18°♁38'06		opposition	142 Sep 25 j 17:44	1°♃12'05	-2°-50'-40
opposition	136 Jul 09 j 12:37	15°♁17'20	0°-23'-35	min. Earth dist.	142 Sep 25 j 17:34	1°♃12'07	8.18766 AU
min. Earth dist.	136 Jul 09 j 20:18	15°♁15'54	8.88695 AU		142 Oct 10 j 22:19	30°♃	
direct	136 Sep 17 j 03:11	11°♁58'46		direct	142 Dec 01 j 09:59	27°♃47'12	
evening set	136 Dec 25 j 20:22	19°♁04'56			143 Jan 20 j 03:39	0°♃	
				evening set	143 Mar 12 j 23:07	5°♃40'57	
conjunction	137 Jan 11 j 14:00	21°♁05'13	0°-33'-5				
minimum elong	137 Jan 11 j 13:59	21°♁05'13	0°33'06	conjunction	143 Mar 30 j 11:18	7°♃55'53	-2°-17'-53
max. Earth dist.	137 Jan 11 j 05:22	21°♁02'37	10.83695 AU	minimum elong	143 Mar 30 j 11:18	7°♃55'53	2°17'53
morning rise	137 Jan 28 j 10:41	23°♁06'27		max. Earth dist.	143 Mar 30 j 13:06	7°♃56'28	10.13754 AU
	137 Apr 17 j 06:57	0°♁		morning rise	143 Apr 17 j 03:54	10°♃12'17	
retrograde	137 May 12 j 08:14	0°♁30'44		retrograde	143 Aug 02 j 11:21	18°♃32'13	
	137 Jun 06 j 16:03	30°♃		opposition	143 Oct 09 j 18:51	15°♃01'53	-2°-50'-18
opposition	137 Jul 22 j 02:39	27°♁08'29	0°-57'-49	min. Earth dist.	143 Oct 09 j 16:31	15°♃02'22	8.09568 AU
min. Earth dist.	137 Jul 22 j 09:29	27°♁07'11	8.78247 AU	direct	143 Dec 15 j 04:29	11°♃35'46	
direct	137 Sep 29 j 05:33	23°♁49'16		evening set	144 Mar 26 j 11:28	19°♃37'44	
	137 Dec 29 j 05:13	0°♁					
evening set	138 Jan 06 j 20:32	1°♁00'59		conjunction	144 Apr 13 j 04:14	21°♃55'12	-2°-13'-19
				minimum elong	144 Apr 13 j 04:16	21°♃55'13	2°13'19
conjunction	138 Jan 23 j 16:17	3°♁03'13	-1°00'-18	max. Earth dist.	144 Apr 13 j 08:28	21°♃56'35	10.05627 AU
minimum elong	138 Jan 23 j 16:15	3°♁03'12	1°00'19	morning rise	144 May 01 j 00:48	24°♃13'56	
max. Earth dist.	138 Jan 23 j 09:13	3°♁01'04	10.72565 AU		144 Jun 21 j 13:39	0°♃	
morning rise	138 Feb 09 j 15:31	5°♁06'36		retrograde	144 Aug 16 j 05:39	2°♃38'14	
retrograde	138 May 25 j 09:41	12°♁40'23			144 Oct 12 j 06:31	30°♃	
opposition	138 Aug 03 j 22:10	9°♁16'31	-1°-30'-22	opposition	144 Oct 22 j 23:59	29°♃07'28	-2°-39'-45
min. Earth dist.	138 Aug 04 j 03:21	9°♁15'31	8.66582 AU	min. Earth dist.	144 Oct 22 j 19:47	29°♃08'20	8.02656 AU
direct	138 Oct 11 j 11:37	5°♁56'28		direct	144 Dec 28 j 05:19	25°♃40'11	
evening set	139 Jan 19 j 05:13	13°♁15'03			145 Mar 09 j 13:11	0°♃	
	139 Feb 02 j 12:03	15°♁		evening set	145 Apr 10 j 08:08	3°♃49'01	
conjunction	139 Feb 05 j 03:14	15°♁19'30	-1°-25'-23	conjunction	145 Apr 28 j 05:19	6°♃08'37	-2°00'-39
minimum elong	139 Feb 05 j 03:12	15°♁19'29	1°25'25	minimum elong	145 Apr 28 j 05:22	6°♃08'38	2°00'39
max. Earth dist.	139 Feb 04 j 21:12	15°♁17'38	10.60449 AU	max. Earth dist.	145 Apr 28 j 11:28	6°♃10'38	10.00055 AU
morning rise	139 Feb 22 j 05:22	17°♁25'16		morning rise	145 May 16 j 05:28	8°♃29'13	
retrograde	139 Jun 07 j 19:21	25°♁09'14			145 Jul 15 j 08:13	15°♃	
opposition	139 Aug 16 j 23:47	21°♁43'46	-1°-59'-38	retrograde	145 Aug 31 j 00:51	16°♃54'50	
min. Earth dist.	139 Aug 17 j 03:42	21°♁43'00	8.54213 AU		145 Oct 17 j 06:53	15°♃	
direct	139 Oct 24 j 00:02	18°♁22'39		opposition	145 Nov 06 j 07:32	13°♃24'06	-2°-19'-12
evening set	140 Jan 31 j 23:44	25°♁49'17		min. Earth dist.	145 Nov 06 j 02:02	13°♃25'14	7.98489 AU
				direct	146 Jan 11 j 13:10	9°♃55'49	
conjunction	140 Feb 18 j 00:27	27°♁56'10	-1°-47'-1		146 Mar 30 j 14:46	15°♃	
minimum elong	140 Feb 18 j 00:24	27°♁56'10	1°47'03	evening set	146 Apr 25 j 10:45	18°♃09'39	
max. Earth dist.	140 Feb 17 j 19:21	27°♁54'35	10.47903 AU				
morning rise	140 Mar 05 j 15:04	0°♃		conjunction	146 May 13 j 11:44	20°♃30'45	-1°-40'-26
retrograde	140 Jun 20 j 13:35	7°♃58'50		minimum elong	146 May 13 j 11:48	20°♃30'46	1°40'27
opposition	140 Aug 29 j 07:37	4°♃31'50	-2°-23'-55	max. Earth dist.	146 May 13 j 19:12	20°♃33'12	9.97432 AU
min. Earth dist.	140 Aug 29 j 10:32	4°♃31'16	8.41716 AU	morning rise	146 May 31 j 14:44	22°♃52'30	
direct	140 Nov 04 j 18:35	1°♃09'31			146 Aug 08 j 04:58	0°♃	
evening set	141 Feb 13 j 04:44	8°♃45'01		retrograde	146 Sep 14 j 18:13	1°♃16'20	
					146 Oct 22 j 11:51	30°♃	
conjunction	141 Mar 02 j 08:44	10°♃54'31	-2°-3'-49	opposition	146 Nov 20 j 15:58	27°♃46'04	-1°-49'-48
minimum elong	141 Mar 02 j 08:41	10°♃54'30	2°03'50	min. Earth dist.	146 Nov 20 j 09:48	27°♃47'21	7.97381 AU
max. Earth dist.	141 Mar 02 j 05:10	10°♃53'24	10.35521 AU	direct	147 Jan 26 j 01:55	24°♃17'02	
morning rise	141 Mar 19 j 17:43	13°♃05'35			147 Apr 19 j 23:57	0°♃	
retrograde	141 Jul 04 j 14:26	21°♃09'48		evening set	147 May 10 j 16:31	2°♃33'35	
opposition	141 Sep 11 j 21:45	17°♃41'26	-2°-41'-28	conjunction	147 May 28 j 20:19	4°♃55'23	-1°-13'-55
min. Earth dist.	141 Sep 11 j 23:30	17°♃41'05	8.29691 AU	minimum elong	147 May 28 j 20:22	4°♃55'24	1°13'55
direct	141 Nov 17 j 22:07	14°♃17'50		max. Earth dist.	147 May 29 j 04:40	4°♃58'07	9.97953 AU
evening set	142 Feb 26 j 20:36	22°♃02'35		morning rise	147 Jun 16 j 00:54	7°♃17'25	
				retrograde	147 Sep 29 j 07:29	15°♃36'34	
conjunction	142 Mar 16 j 04:26	24°♃14'47	-2°-14'-29	opposition	147 Dec 04 j 23:22	12°♃07'10	-1°-13'-33
minimum elong	142 Mar 16 j 04:25	24°♃14'47	2°14'29	min. Earth dist.	147 Dec 04 j 16:43	12°♃08'33	7.99424 AU
max. Earth dist.	142 Mar 16 j 03:27	24°♃14'29	10.23921 AU	direct	148 Feb 09 j 17:28	8°♃37'40	
morning rise	142 Apr 02 j 17:08	26°♃28'34		evening set	148 May 24 j 22:44	16°♃54'35	

conjunction	148 Jun 12 j 03:47	19°♄16'08	0°-42'-55	evening set	154 Aug 17 j 16:02	7°♄36'48	
minimum elong	148 Jun 12 j 03:49	19°♄16'08	0°42'55				
max. Earth dist.	148 Jun 12 j 12:42	19°♄19'02	10.01588 AU	conjunction	154 Sep 03 j 23:23	9°♄42'51	2°02'39
morning rise	148 Jun 30 j 08:17	21°♄37'26		minimum elong	154 Sep 03 j 23:20	9°♄42'51	2°02'38
retrograde	148 Oct 12 j 14:41	29°♄49'31		max. Earth dist.	154 Sep 04 j 01:12	9°♄43'25	10.64638 AU
opposition	148 Dec 18 j 03:57	26°♄21'20	0°-33'-4	morning rise	154 Sep 21 j 01:59	11°♄47'27	
min. Earth dist.	148 Dec 17 j 20:52	26°♄22'48	8.04496 AU	retrograde	154 Dec 29 j 17:02	19°♄03'55	
direct	149 Feb 23 j 08:30	22°♄51'41		opposition	155 Mar 07 j 15:48	15°♄44'26	2°38'24
	149 May 31 j 04:59	0°♄		min. Earth dist.	155 Mar 07 j 14:32	15°♄44'41	8.70587 AU
evening set	149 Jun 09 j 02:05	1°♄06'37		direct	155 May 17 j 03:29	12°♄19'16	
				evening set	155 Aug 30 j 11:31	19°♄53'06	
conjunction	149 Jun 27 j 06:38	3°♄26'57	0°-9'-38	conjunction	155 Sep 16 j 14:05	21°♄56'22	2°13'43
minimum elong	149 Jun 27 j 06:38	3°♄26'57	0°09'39	minimum elong	155 Sep 16 j 14:03	21°♄56'21	2°13'42
behind sun begin	149 Jun 27 j 00:38	3°♄25'01		max. Earth dist.	155 Sep 16 j 13:56	21°♄56'19	10.76049 AU
behind sun end	149 Jun 27 j 12:39	3°♄28'52		morning rise	155 Oct 03 j 12:02	23°♄58'15	
max. Earth dist.	149 Jun 27 j 15:51	3°♄29'55	10.08100 AU		155 Dec 05 j 12:13	0°♄	
morning rise	149 Jul 15 j 09:17	5°♄46'36		retrograde	156 Jan 10 j 21:20	1°♄08'01	
asc. node	149 Oct 13 j 17:23	13°♄40'28			156 Feb 17 j 01:30	30°R♄	
retrograde	149 Oct 26 j 15:55	13°♄49'56		opposition	156 Mar 19 j 05:38	27°♄49'34	2°47'56
opposition	150 Jan 01 j 04:31	10°♄23'09	0°08'45	min. Earth dist.	156 Mar 19 j 05:34	27°♄49'35	8.81450 AU
min. Earth dist.	149 Dec 31 j 20:57	10°♄24'42	8.12269 AU	direct	156 May 29 j 02:27	24°♄25'39	
direct	150 Mar 09 j 21:37	6°♄53'41			156 Aug 25 j 12:24	0°♄	
evening set	150 Jun 23 j 23:34	15°♄04'30		evening set	156 Sep 10 j 21:13	1°♄51'50	
conjunction	150 Jul 12 j 01:56	17°♄22'45	0°23'46	conjunction	156 Sep 27 j 19:40	3°♄52'44	2°18'41
minimum elong	150 Jul 12 j 01:54	17°♄22'45	0°23'46	minimum elong	156 Sep 27 j 19:40	3°♄52'44	2°18'41
max. Earth dist.	150 Jul 12 j 11:15	17°♄25'44	10.17059 AU	max. Earth dist.	156 Sep 27 j 18:22	3°♄52'20	10.86211 AU
morning rise	150 Jul 30 j 01:08	19°♄39'59		morning rise	156 Oct 14 j 13:42	5°♄52'21	
retrograde	150 Nov 09 j 09:01	27°♄33'33		retrograde	157 Jan 21 j 20:10	12°♄56'42	
opposition	151 Jan 14 j 23:48	24°♄08'18	0°49'10	opposition	157 Mar 31 j 15:11	9°♄39'02	2°50'07
min. Earth dist.	151 Jan 14 j 16:13	24°♄09'51	8.22236 AU	min. Earth dist.	157 Mar 31 j 16:43	9°♄38'45	8.90878 AU
direct	151 Mar 24 j 06:46	20°♄39'18		direct	157 Jun 10 j 17:22	6°♄16'18	
evening set	151 Jul 08 j 13:13	28°♄44'18		evening set	157 Sep 22 j 22:31	13°♄35'28	
	151 Jul 18 j 14:56	0°♄					
conjunction	151 Jul 26 j 11:55	0°♄59'49	0°55'06	conjunction	157 Oct 09 j 17:32	15°♄34'25	2°17'44
minimum elong	151 Jul 26 j 11:52	0°♄59'48	0°55'06	minimum elong	157 Oct 09 j 17:33	15°♄34'25	2°17'45
max. Earth dist.	151 Jul 26 j 20:48	1°♄02'38	10.27884 AU	max. Earth dist.	157 Oct 09 j 14:33	15°♄33'32	10.94788 AU
morning rise	151 Aug 13 j 06:26	3°♄14'03		morning rise	157 Oct 26 j 08:41	17°♄32'17	
retrograde	151 Nov 22 j 17:25	10°♄57'31		retrograde	158 Feb 02 j 15:05	24°♄32'31	
opposition	152 Jan 28 j 13:05	7°♄33'51	1°25'50	opposition	158 Apr 12 j 21:00	21°♄15'22	2°45'17
min. Earth dist.	152 Jan 28 j 06:33	7°♄35'10	8.33765 AU	min. Earth dist.	158 Apr 13 j 00:44	21°♄14'40	8.98558 AU
direct	152 Apr 06 j 10:19	4°♄05'33		direct	158 Jun 23 j 03:47	17°♄53'41	
evening set	152 Jul 21 j 17:07	12°♄03'26		evening set	158 Oct 04 j 16:36	25°♄06'40	
conjunction	152 Aug 08 j 11:03	14°♄15'50	1°22'46	conjunction	158 Oct 21 j 08:58	27°♄04'08	2°11'13
minimum elong	152 Aug 08 j 11:00	14°♄15'49	1°22'46	minimum elong	158 Oct 21 j 09:00	27°♄04'09	2°11'14
max. Earth dist.	152 Aug 08 j 18:24	14°♄18'08	10.39903 AU	max. Earth dist.	158 Oct 21 j 03:33	27°♄02'32	11.01492 AU
	152 Aug 14 j 08:11	15°♄		morning rise	158 Nov 06 j 22:22	29°♄00'46	
morning rise	152 Aug 26 j 00:13	16°♄26'47			158 Nov 15 j 14:00	0°♄	
retrograde	152 Dec 04 j 17:45	24°♄00'23		retrograde	159 Feb 14 j 07:42	5°♄58'17	
opposition	153 Feb 09 j 20:13	20°♄38'15	1°56'56	opposition	159 Apr 25 j 00:08	2°♄41'21	2°33'59
min. Earth dist.	153 Feb 09 j 15:26	20°♄39'12	8.46152 AU	min. Earth dist.	159 Apr 25 j 05:09	2°♄40'25	9.04222 AU
direct	153 Apr 20 j 06:41	17°♄10'50			159 Jun 06 j 06:49	30°R♄	
evening set	153 Aug 04 j 10:02	25°♄00'47		direct	159 Jul 05 j 08:46	29°♄20'36	
					159 Aug 03 j 02:31	0°♄	
conjunction	153 Aug 21 j 22:38	27°♄09'57	1°45'33	evening set	159 Oct 16 j 04:54	6°♄28'21	
minimum elong	153 Aug 21 j 22:35	27°♄09'56	1°45'32				
max. Earth dist.	153 Aug 22 j 03:29	27°♄11'27	10.52394 AU	conjunction	159 Nov 01 j 19:31	8°♄24'51	1°59'36
morning rise	153 Sep 08 j 06:22	29°♄17'37		minimum elong	159 Nov 01 j 19:33	8°♄24'52	1°59'36
	153 Sep 14 j 03:42	0°♄		max. Earth dist.	159 Nov 01 j 13:05	8°♄22'57	11.06092 AU
retrograde	153 Dec 17 j 09:11	6°♄42'06		morning rise	159 Nov 18 j 07:55	10°♄20'44	
opposition	154 Feb 22 j 21:02	3°♄21'22	2°21'20		160 Jan 03 j 07:44	15°♄	
min. Earth dist.	154 Feb 22 j 18:16	3°♄21'54	8.58655 AU	retrograde	160 Feb 25 j 23:12	17°♄17'03	
	154 Apr 23 j 22:43	30°R♄			160 Apr 22 j 07:00	15°R♄	
direct	154 May 03 j 20:34	29°♄55'00		opposition	160 May 06 j 01:27	14°♄00'02	2°16'49
	154 May 13 j 19:09	0°♄		min. Earth dist.	160 May 06 j 06:50	13°♄59'02	9.07680 AU

direct	160 Jul 16 j 10:27	10°♄40'04		min. Earth dist.	166 Jul 17 j 11:01	22°♄24'51	8.81469 AU
	160 Oct 01 j 12:00	15°♄		direct	166 Sep 24 j 12:46	19°♄06'42	
evening set	160 Oct 26 j 13:07	17°♄43'45		evening set	167 Jan 02 j 05:06	26°♄16'25	
conjunction	160 Nov 12 j 02:53	19°♄39'45	1°43'26	conjunction	167 Jan 18 j 23:48	28°♄17'55	0°-49'-8
minimum elong	160 Nov 12 j 02:56	19°♄39'46	1°43'25	minimum elong	167 Jan 18 j 23:46	28°♄17'55	0°49'10
max. Earth dist.	160 Nov 11 j 20:23	19°♄37'51	11.08436 AU	max. Earth dist.	167 Jan 18 j 16:25	28°♄15'41	10.76287 AU
morning rise	160 Nov 28 j 14:58	21°♄35'21			167 Feb 02 j 01:21	0°≈	
retrograde	161 Mar 08 j 17:15	28°♄31'58		morning rise	167 Feb 04 j 22:00	0°≈20'30	
opposition	161 May 18 j 01:56	25°♄14'37	1°54'32	retrograde	167 May 20 j 07:38	7°≈50'34	
min. Earth dist.	161 May 18 j 07:45	25°♄13'33	9.08832 AU	opposition	167 Jul 29 j 22:54	4°≈27'12	-1°-17'-7
direct	161 Jul 28 j 07:54	21°♄55'17		min. Earth dist.	167 Jul 30 j 04:15	4°≈26'11	8.70757 AU
evening set	161 Nov 06 j 19:04	28°♄56'11		direct	167 Oct 06 j 16:47	1°≈07'23	
	161 Nov 15 j 22:51	0°♄		evening set	168 Jan 14 j 10:11	8°≈23'21	
conjunction	161 Nov 23 j 08:30	0°♄52'09	1°23'19	conjunction	168 Jan 31 j 07:06	10°≈26'55	-1°-15'-16
minimum elong	161 Nov 23 j 08:33	0°♄52'09	1°23'19	minimum elong	168 Jan 31 j 07:03	10°≈26'54	1°15'17
max. Earth dist.	161 Nov 23 j 01:09	0°♄49'59	11.08455 AU	max. Earth dist.	168 Jan 31 j 01:04	10°≈25'04	10.65050 AU
morning rise	161 Dec 09 j 21:07	2°♄47'57		morning rise	168 Feb 17 j 08:07	12°≈31'45	
retrograde	162 Mar 20 j 10:58	9°♄46'22			168 Mar 09 j 17:19	15°≈	
opposition	162 May 30 j 02:43	6°♄28'29	1°27'54	retrograde	168 Jun 01 j 13:08	20°≈11'41	
min. Earth dist.	162 May 30 j 09:39	6°♄27'12	9.07646 AU	opposition	168 Aug 10 j 22:15	16°≈46'53	-1°-47'-56
direct	162 Aug 09 j 01:41	3°♄09'34		min. Earth dist.	168 Aug 11 j 02:26	16°≈46'05	8.59157 AU
evening set	162 Nov 18 j 00:36	10°♄09'11		direct	168 Sep 04 j 07:32	15°≈	
					168 Oct 18 j 04:01	13°≈26'17	
conjunction	162 Dec 04 j 14:09	12°♄05'30	0°59'59		168 Nov 29 j 15:12	15°≈	
minimum elong	162 Dec 04 j 14:11	12°♄05'30	0°59'58	evening set	169 Jan 26 j 00:43	20°≈49'43	
max. Earth dist.	162 Dec 04 j 05:33	12°♄02'58	11.06149 AU				
morning rise	162 Dec 21 j 03:58	14°♄01'56		conjunction	169 Feb 12 j 00:19	22°≈55'36	-1°-38'-29
retrograde	163 Apr 01 j 08:16	21°♄03'46		minimum elong	169 Feb 12 j 00:17	22°≈55'35	1°38'31
opposition	163 Jun 11 j 04:48	17°♄45'07	0°57'45	max. Earth dist.	169 Feb 11 j 20:29	22°≈54'25	10.53156 AU
min. Earth dist.	163 Jun 11 j 12:20	17°♄43'44	9.04162 AU	morning rise	169 Mar 01 j 04:18	25°≈02'53	
direct	163 Aug 20 j 21:33	14°♄26'25			169 Apr 15 j 20:01	0°♄	
evening set	163 Nov 29 j 07:21	21°♄26'15		retrograde	169 Jun 15 j 04:30	2°♄53'02	
					169 Aug 17 j 00:55	30°≈	
conjunction	163 Dec 15 j 21:40	23°♄23'21	0°34'10	opposition	169 Aug 24 j 03:36	29°≈26'52	-2°-14'-28
minimum elong	163 Dec 15 j 21:41	23°♄23'21	0°34'10	min. Earth dist.	169 Aug 24 j 05:53	29°≈26'25	8.47185 AU
max. Earth dist.	163 Dec 15 j 13:07	23°♄20'49	11.01595 AU	direct	169 Oct 30 j 20:28	26°≈05'20	
morning rise	164 Jan 01 j 13:04	25°♄20'48			170 Jan 07 j 13:15	0°♄	
	164 Feb 16 j 01:27	0°♄		evening set	170 Feb 08 j 01:35	3°♄37'10	
retrograde	164 Apr 12 j 10:24	2°♄27'37					
	164 Jun 10 j 13:07	30°≈		conjunction	170 Feb 25 j 04:13	5°♄45'32	-1°-57'-26
opposition	164 Jun 22 j 09:17	29°♄08'00	0°25'02	minimum elong	170 Feb 25 j 04:11	5°♄45'31	1°57'27
min. Earth dist.	164 Jun 22 j 16:15	29°♄06'42	8.98501 AU	max. Earth dist.	170 Feb 25 j 02:28	5°♄44'59	10.41163 AU
direct	164 Aug 31 j 16:41	25°♄49'21		morning rise	170 Mar 14 j 11:27	7°♄55'25	
	164 Nov 13 j 20:39	0°♄		retrograde	170 Jun 29 j 03:50	15°♄55'34	
evening set	164 Dec 09 j 17:04	2°♄50'54		opposition	170 Sep 06 j 15:25	12°♄28'07	-2°-34'-56
				min. Earth dist.	170 Sep 06 j 15:45	12°♄28'03	8.35419 AU
conjunction	164 Dec 26 j 08:40	4°♄49'08	0°06'45	direct	170 Nov 12 j 19:38	9°♄05'32	
minimum elong	164 Dec 26 j 08:40	4°♄49'08	0°06'46	evening set	171 Feb 21 j 13:06	16°♄46'15	
behind sun begin	164 Dec 26 j 02:08	4°♄47'13					
behind sun end	164 Dec 26 j 15:11	4°♄51'04		conjunction	171 Mar 10 j 19:12	18°♄57'13	-2°-10'-45
max. Earth dist.	164 Dec 26 j 01:08	4°♄46'55	10.94931 AU	minimum elong	171 Mar 10 j 19:10	18°♄57'13	2°10'46
morning rise	165 Jan 12 j 01:56	6°♄47'59		max. Earth dist.	171 Mar 10 j 19:03	18°♄57'11	10.29681 AU
desc. node	165 Mar 26 j 09:35	13°♄19'28		morning rise	171 Mar 28 j 06:07	21°♄09'45	
retrograde	165 Apr 24 j 18:32	14°♄01'16		retrograde	171 Jul 13 j 09:39	29°♄19'03	
opposition	165 Jul 04 j 17:09	10°♄40'31	0°-9'-10	opposition	171 Sep 20 j 09:21	25°♄50'28	-2°-47'-42
min. Earth dist.	165 Jul 04 j 23:12	10°♄39'23	8.90843 AU	min. Earth dist.	171 Sep 20 j 08:13	25°♄50'42	8.24459 AU
direct	165 Sep 12 j 13:27	7°♄21'42		direct	171 Nov 26 j 03:30	22°♄26'43	
evening set	165 Dec 21 j 07:50	14°♄26'33			172 Mar 04 j 07:30	0°♄	
				evening set	172 Mar 06 j 11:30	0°♄16'20	
conjunction	166 Jan 07 j 00:51	16°♄26'17	0°-21'-26				
minimum elong	166 Jan 07 j 00:50	16°♄26'17	0°21'27	conjunction	172 Mar 23 j 21:35	2°♄29'57	-2°-17'-14
max. Earth dist.	166 Jan 06 j 17:26	16°♄24'04	10.86384 AU	minimum elong	172 Mar 23 j 21:35	2°♄29'57	2°17'14
morning rise	166 Jan 23 j 20:24	18°♄26'50		max. Earth dist.	172 Mar 23 j 22:43	2°♄30'19	10.19309 AU
retrograde	166 May 07 j 10:23	25°♄47'55		morning rise	172 Apr 10 j 12:29	4°♄45'06	
opposition	166 Jul 17 j 05:18	22°♄25'55	0°-43'-40	retrograde	172 Jul 26 j 21:10	13°♄01'50	

opposition	172 Oct 03 j 08:26	9°Υ32'23	-2°-51'-22	asc. node	179 Mar 14 j 23:56	1°♄24'32	
min. Earth dist.	172 Oct 03 j 06:32	9°Υ32'46	8.14870 AU	evening set	179 Jun 18 j 04:00	9°♄30'29	
direct	172 Dec 08 j 19:05	6°Υ07'23					
evening set	173 Mar 20 j 19:52	14°Υ05'22		conjunction	179 Jul 06 j 07:27	11°♄49'37	0°10'01
				minimum elong	179 Jul 06 j 07:26	11°♄49'37	0°10'01
conjunction	173 Apr 07 j 10:23	16°Υ21'32	-2°-16'00	behind sun begin	179 Jul 06 j 01:34	11°♄47'45	
minimum elong	173 Apr 07 j 10:25	16°Υ21'33	2°16'00	behind sun end	179 Jul 06 j 13:17	11°♄51'29	
max. Earth dist.	173 Apr 07 j 12:59	16°Υ22'23	10.10575 AU	max. Earth dist.	179 Jul 06 j 16:00	11°♄52'22	10.13335 AU
morning rise	173 Apr 25 j 05:20	18°Υ39'06		morning rise	179 Jul 24 j 08:13	14°♄07'53	
retrograde	173 Aug 10 j 12:59	27°Υ01'04		retrograde	179 Nov 04 j 01:48	22°♄05'17	
opposition	173 Oct 17 j 11:54	23°Υ31'05	-2°-45'-2	opposition	180 Jan 09 j 14:59	18°♄39'17	0°32'37
min. Earth dist.	173 Oct 17 j 09:10	23°Υ31'39	8.07127 AU	min. Earth dist.	180 Jan 09 j 08:56	18°♄40'31	8.17927 AU
direct	173 Dec 22 j 18:05	20°Υ04'52		direct	180 Mar 17 j 16:17	15°♄09'50	
evening set	174 Apr 04 j 12:49	28°Υ10'13		evening set	180 Jul 01 j 20:46	23°♄17'09	
	174 Apr 18 j 16:02	0°♄					
conjunction	174 Apr 22 j 07:55	0°♄28'42	-2°-6'-40	conjunction	180 Jul 19 j 21:02	25°♄33'50	0°42'20
minimum elong	174 Apr 22 j 07:58	0°♄28'43	2°06'40	minimum elong	180 Jul 19 j 20:59	25°♄33'49	0°42'21
max. Earth dist.	174 Apr 22 j 12:12	0°♄30'06	10.03935 AU	max. Earth dist.	180 Jul 20 j 04:17	25°♄36'08	10.23048 AU
morning rise	174 May 10 j 06:38	2°♄48'20		morning rise	180 Aug 06 j 17:44	27°♄49'21	
retrograde	174 Aug 25 j 06:39	11°♄12'57		retrograde	180 Aug 24 j 18:45	0°♄	
opposition	174 Oct 31 j 18:25	7°♄42'48	-2°-28'-34	retrograde	180 Nov 16 j 11:57	5°♄36'50	
min. Earth dist.	174 Oct 31 j 14:28	7°♄43'37	8.01697 AU	opposition	181 Jan 22 j 06:24	2°♄12'15	1°11'02
direct	175 Jan 06 j 00:22	4°♄15'31		min. Earth dist.	181 Jan 22 j 00:51	2°♄13'22	8.28487 AU
evening set	175 Apr 19 j 12:50	12°♄26'43		direct	181 Feb 20 j 22:14	30°♄	
				direct	181 Mar 31 j 22:54	28°♄43'16	
conjunction	175 May 07 j 12:14	14°♄47'02	-1°-49'-29	evening set	181 May 09 j 16:09	0°♄	
minimum elong	175 May 07 j 12:18	14°♄47'03	1°49'30	evening set	181 Jul 16 j 04:19	6°♄44'05	
max. Earth dist.	175 May 07 j 18:28	14°♄49'04	9.99875 AU	conjunction	181 Aug 03 j 00:15	8°♄57'49	1°11'40
	175 May 09 j 03:50	15°♄		minimum elong	181 Aug 03 j 00:12	8°♄57'48	1°11'41
morning rise	175 May 25 j 14:07	17°♄08'09		max. Earth dist.	181 Aug 03 j 06:20	8°♄59'43	10.34276 AU
retrograde	175 Sep 08 j 23:57	25°♄32'26		morning rise	181 Aug 20 j 15:57	11°♄10'11	
opposition	175 Nov 15 j 02:19	22°♄02'28	-2°-2'-42		181 Sep 23 j 04:15	15°♄	
min. Earth dist.	175 Nov 14 j 20:53	22°♄03'36	7.99045 AU	retrograde	181 Nov 29 j 14:41	18°♄47'48	
direct	176 Jan 20 j 11:08	18°♄34'16		opposition	182 Feb 04 j 15:36	15°♄24'38	1°44'37
evening set	176 May 03 j 17:27	26°♄49'16		min. Earth dist.	182 Feb 04 j 10:25	15°♄25'40	8.40260 AU
					182 Feb 09 j 19:28	15°♄	
conjunction	176 May 21 j 20:17	29°♄10'41	-1°-25'-26	direct	182 Apr 14 j 22:08	11°♄56'24	
minimum elong	176 May 21 j 20:20	29°♄10'43	1°25'27		182 Jun 15 j 20:53	15°♄	
max. Earth dist.	176 May 22 j 04:16	29°♄13'19	9.98776 AU	evening set	182 Jul 30 j 01:19	19°♄49'40	
	176 May 28 j 02:51	0°♄					
morning rise	176 Jun 09 j 00:14	1°♄32'30		conjunction	182 Aug 16 j 16:20	22°♄00'15	1°36'35
retrograde	176 Sep 22 j 15:05	9°♄53'24		minimum elong	182 Aug 16 j 16:17	22°♄00'14	1°36'35
opposition	176 Nov 28 j 10:03	6°♄24'00	-1°-29'-6	max. Earth dist.	182 Aug 16 j 21:32	22°♄01'52	10.46371 AU
min. Earth dist.	176 Nov 28 j 03:26	6°♄25'23	7.99441 AU	morning rise	182 Sep 03 j 02:33	24°♄09'21	
direct	177 Feb 03 j 00:39	2°♄55'05			182 Oct 30 j 07:20	0°♄	
evening set	177 May 18 j 23:34	11°♄11'31		retrograde	182 Dec 12 j 10:20	1°♄37'36	
					183 Jan 25 j 13:59	30°♄	
conjunction	177 Jun 06 j 04:19	13°♄33'08	0°-56'-6	opposition	183 Feb 17 j 18:31	28°♄15'49	2°11'55
minimum elong	177 Jun 06 j 04:22	13°♄33'08	0°56'06	min. Earth dist.	183 Feb 17 j 14:13	28°♄16'39	8.52583 AU
max. Earth dist.	177 Jun 06 j 13:23	13°♄36'05	10.00768 AU	direct	183 Apr 28 j 13:42	24°♄48'32	
morning rise	177 Jun 24 j 08:49	15°♄54'40			183 Jul 21 j 06:19	0°♄	
retrograde	177 Oct 07 j 01:50	24°♄09'33		evening set	183 Aug 12 j 11:36	2°♄33'46	
opposition	177 Dec 12 j 15:45	20°♄41'03	0°-50'-8				
min. Earth dist.	177 Dec 12 j 08:43	20°♄42'30	8.02903 AU	conjunction	183 Aug 29 j 21:24	4°♄41'12	1°56'08
direct	178 Feb 17 j 14:34	17°♄11'39		minimum elong	183 Aug 29 j 21:20	4°♄41'11	1°56'07
evening set	178 Jun 03 j 04:04	25°♄27'07		max. Earth dist.	183 Aug 30 j 01:26	4°♄42'26	10.58690 AU
				morning rise	183 Sep 16 j 02:06	6°♄47'06	
conjunction	178 Jun 21 j 09:04	27°♄47'58	0°-23'-33	retrograde	183 Dec 24 j 21:18	14°♄06'49	
minimum elong	178 Jun 21 j 09:05	27°♄47'58	0°23'34	opposition	184 Mar 01 j 15:27	10°♄46'21	2°32'07
max. Earth dist.	178 Jun 21 j 18:19	27°♄50'57	10.05736 AU	min. Earth dist.	184 Mar 01 j 12:49	10°♄46'52	8.64836 AU
	178 Jul 08 j 10:25	0°♄		direct	184 May 10 j 22:40	7°♄20'13	
morning rise	178 Jul 09 j 12:29	0°♄08'17		evening set	184 Aug 24 j 11:06	14°♄57'17	
retrograde	178 Oct 21 j 06:32	8°♄15'05					
opposition	178 Dec 26 j 17:47	4°♄47'44	0°-8'-37	conjunction	184 Sep 10 j 15:47	17°♄01'44	2°09'46
min. Earth dist.	178 Dec 26 j 11:02	4°♄49'07	8.09210 AU	minimum elong	184 Sep 10 j 15:45	17°♄01'43	2°09'45
direct	179 Mar 04 j 04:34	1°♄18'09		max. Earth dist.	184 Sep 10 j 17:57	17°♄02'23	10.70651 AU

morning rise	184 Sep 27 j 15:34	19°♎04'44		retrograde	191 Mar 15 j 15:19	5°♌05'11	
retrograde	185 Jan 05 j 02:40	26°♎17'02		opposition	191 May 25 j 05:08	1°♌48'06	1°39'54
opposition	185 Mar 14 j 06:59	22°♎57'44	2°44'50	min. Earth dist.	191 May 25 j 11:08	1°♌47'00	9.10644 AU
min. Earth dist.	185 Mar 14 j 06:18	22°♎57'52	8.76463 AU		191 Jun 20 j 04:52	30°♎	
direct	185 May 23 j 23:49	19°♎32'52		direct	191 Aug 04 j 08:01	28°♎29'34	
evening set	185 Sep 06 j 00:16	27°♎01'58		evening set	191 Sep 17 j 02:08	0°♌	
					191 Nov 13 j 11:45	5°♌28'48	
conjunction	185 Sep 23 j 00:22	29°♎03'47	2°17'19				
minimum elong	185 Sep 23 j 00:21	29°♎03'47	2°17'18	conjunction	191 Nov 30 j 01:11	7°♌24'40	1°10'29
max. Earth dist.	185 Sep 22 j 23:59	29°♎03'40	10.81737 AU	minimum elong	191 Nov 30 j 01:13	7°♌24'41	1°10'29
	185 Sep 30 j 19:39	0°♌		max. Earth dist.	191 Nov 29 j 18:15	7°♌22'38	11.09775 AU
morning rise	185 Oct 09 j 20:05	1°♌04'19		morning rise	191 Dec 16 j 14:14	9°♌20'31	
retrograde	186 Jan 17 j 01:23	8°♌10'25		retrograde	192 Mar 26 j 12:28	16°♌19'47	
opposition	186 Mar 26 j 17:33	4°♌52'07	2°50'05	opposition	192 Jun 05 j 06:09	13°♌02'06	1°11'15
min. Earth dist.	186 Mar 26 j 18:12	4°♌51'59	8.86959 AU	min. Earth dist.	192 Jun 05 j 12:20	13°♌00'57	9.08401 AU
direct	186 Jun 05 j 17:44	1°♌28'32		direct	192 Aug 15 j 02:57	9°♌43'58	
evening set	186 Sep 18 j 04:26	8°♌50'13		evening set	192 Nov 23 j 17:29	16°♌42'37	
conjunction	186 Oct 05 j 00:46	10°♌49'51	2°18'51	conjunction	192 Dec 10 j 07:24	18°♌39'05	0°45'43
minimum elong	186 Oct 05 j 00:46	10°♌49'51	2°18'51	minimum elong	192 Dec 10 j 07:25	18°♌39'05	0°45'43
max. Earth dist.	186 Oct 04 j 22:42	10°♌49'14	10.91485 AU	max. Earth dist.	192 Dec 09 j 23:37	18°♌36'48	11.06355 AU
morning rise	186 Oct 21 j 17:14	12°♌48'21		morning rise	192 Dec 26 j 21:48	20°♌35'45	
retrograde	187 Jan 28 j 21:09	19°♌49'39		retrograde	193 Apr 07 j 11:55	27°♌39'12	
opposition	187 Apr 07 j 23:56	16°♌32'06	2°48'10	opposition	193 Jun 17 j 08:58	24°♌20'42	0°39'37
min. Earth dist.	187 Apr 08 j 01:23	16°♌31'50	8.95895 AU	min. Earth dist.	193 Jun 17 j 16:07	24°♌19'23	9.03746 AU
direct	187 Jun 18 j 07:03	13°♌09'49		direct	193 Aug 26 j 19:42	21°♌02'40	
evening set	187 Sep 30 j 00:46	20°♌24'49		evening set	193 Dec 05 j 01:29	28°♌02'24	
conjunction	187 Oct 16 j 18:16	22°♌22'45	2°14'41	conjunction	193 Dec 21 j 16:14	29°♌59'49	0°18'57
minimum elong	187 Oct 16 j 18:17	22°♌22'45	2°14'41	minimum elong	193 Dec 21 j 16:15	29°♌59'49	0°18'57
max. Earth dist.	187 Oct 16 j 15:31	22°♌21'56	10.99510 AU	max. Earth dist.	193 Dec 21 j 06:57	29°♌57'04	11.00554 AU
morning rise	187 Nov 02 j 08:15	24°♌19'43			193 Dec 21 j 16:52	0°♌	
	188 Jan 01 j 00:15	0°♎		morning rise	194 Jan 07 j 08:35	1°♌57'44	
retrograde	188 Feb 09 j 15:44	1°♎17'37		retrograde	194 Apr 19 j 15:47	9°♌07'01	
	188 Mar 21 j 08:26	30°♎		opposition	194 Jun 29 j 14:51	5°♌47'26	0°06'02
opposition	188 Apr 19 j 03:29	28°♌00'35	2°39'34	min. Earth dist.	194 Jun 29 j 22:54	5°♌45'56	8.96776 AU
min. Earth dist.	188 Apr 19 j 06:06	28°♌00'06	9.02937 AU	desc. node	194 Sep 03 j 23:58	2°♌29'56	
direct	188 Jun 29 j 12:33	24°♌39'32		direct	194 Sep 07 j 15:49	2°♌29'15	
	188 Sep 24 j 09:40	0°♎		evening set	194 Dec 16 j 13:25	9°♌31'43	
evening set	188 Oct 10 j 14:45	1°♎48'44					
conjunction	188 Oct 27 j 06:07	3°♎45'28	2°05'12	conjunction	195 Jan 02 j 05:32	11°♌30'30	0°-9'00
minimum elong	188 Oct 27 j 06:09	3°♎45'28	2°05'12	minimum elong	195 Jan 02 j 05:31	11°♌30'29	0°09'00
max. Earth dist.	188 Oct 27 j 02:07	3°♎44'17	11.05521 AU	behind sun begin	195 Jan 01 j 23:31	11°♌28'43	
morning rise	188 Nov 12 j 18:40	5°♎41'26		behind sun end	195 Jan 02 j 11:31	11°♌32'16	
retrograde	189 Feb 20 j 06:57	12°♎37'23		max. Earth dist.	195 Jan 01 j 20:18	11°♌27'45	10.92535 AU
opposition	189 May 01 j 04:58	9°♎20'38	2°24'51	morning rise	195 Jan 19 j 00:00	13°♌30'00	
min. Earth dist.	189 May 01 j 09:21	9°♎19'49	9.07844 AU	retrograde	195 May 02 j 03:31	20°♌46'40	
direct	189 Jul 11 j 13:07	6°♎00'36		opposition	195 Jul 12 j 00:45	17°♌25'47	0°-28'-24
evening set	189 Oct 22 j 00:14	13°♎05'12		min. Earth dist.	195 Jul 12 j 08:17	17°♌24'23	8.87755 AU
				direct	195 Sep 19 j 14:51	14°♌07'14	
				evening set	195 Dec 28 j 07:11	21°♌13'58	
conjunction	189 Nov 07 j 14:10	15°♎01'11	1°50'56	conjunction	196 Jan 14 j 01:05	23°♌14'27	0°-36'-57
minimum elong	189 Nov 07 j 14:13	15°♎01'12	1°50'55	minimum elong	196 Jan 14 j 01:04	23°♌14'27	0°36'58
max. Earth dist.	189 Nov 07 j 08:10	14°♎59'25	11.09316 AU	max. Earth dist.	196 Jan 13 j 16:57	23°♌12'00	10.82640 AU
	189 Nov 07 j 10:08	15°♎		morning rise	196 Jan 30 j 21:53	25°♌15'53	
morning rise	189 Nov 24 j 02:18	16°♎56'40			196 Mar 16 j 01:06	0°♎	
retrograde	190 Mar 03 j 22:35	23°♎52'09		retrograde	196 May 13 j 21:52	2°♎41'13	
opposition	190 May 13 j 05:03	20°♎35'23	2°04'43		196 Jul 14 j 12:09	30°♎	
min. Earth dist.	190 May 13 j 10:52	20°♎34'19	9.10447 AU	opposition	196 Jul 23 j 15:28	29°♌18'51	-1°-2'-26
direct	190 Jul 23 j 12:05	17°♎16'12		min. Earth dist.	196 Jul 23 j 21:47	29°♌17'40	8.77092 AU
evening set	190 Nov 02 j 06:41	24°♎17'27		direct	196 Sep 30 j 16:29	25°♌59'39	
					196 Dec 10 j 18:38	0°♎	
conjunction	190 Nov 18 j 20:01	26°♎13'10	1°32'28	evening set	197 Jan 08 j 08:21	3°♎12'10	
minimum elong	190 Nov 18 j 20:04	26°♎13'10	1°32'28				
max. Earth dist.	190 Nov 18 j 12:55	26°♎11'05	11.10760 AU				
morning rise	190 Dec 05 j 08:22	28°♎08'36		conjunction	197 Jan 25 j 04:16	5°♎14'38	-1°-3'-53
	190 Dec 22 j 00:47	0°♌		minimum elong	197 Jan 25 j 04:14	5°♎14'38	1°03'55



max. Earth dist.	197 Jan 24 j 20:58	5°≈12'24	10.71312 AU	opposition	203 Oct 25 j 18:24	1°♁35'49	-2°-37'-20
morning rise	197 Feb 11 j 03:46	7°≈18'16		min. Earth dist.	203 Oct 25 j 14:11	1°♁36'42	8.01896 AU
retrograde	197 May 27 j 00:43	14°≈53'15			203 Nov 14 j 21:25	30°♁♁	
opposition	197 Aug 05 j 11:49	11°≈29'18	-1°-34'-34	direct	203 Dec 30 j 23:34	28°♁08'24	
min. Earth dist.	197 Aug 05 j 17:02	11°≈28'18	8.65252 AU		204 Feb 14 j 04:48	0°♁	
direct	197 Oct 12 j 23:42	8°≈09'13		evening set	204 Apr 12 j 04:25	6°♁17'58	
	198 Jan 16 j 18:27	15°≈					
evening set	198 Jan 20 j 18:18	15°≈28'49		conjunction	204 Apr 30 j 02:00	8°♁37'47	-1°-58'-11
				minimum elong	204 Apr 30 j 02:03	8°♁37'48	1°58'11
conjunction	198 Feb 06 j 16:29	17°≈33'32	-1°-28'-33	max. Earth dist.	204 Apr 30 j 07:45	8°♁39'40	9.99474 AU
minimum elong	198 Feb 06 j 16:26	17°≈33'31	1°28'34	morning rise	204 May 18 j 02:39	10°♁58'34	
max. Earth dist.	198 Feb 06 j 09:37	17°≈31'24	10.59052 AU		204 Jun 20 j 16:56	15°♁	
morning rise	198 Feb 23 j 19:00	19°≈39'36		retrograde	204 Sep 01 j 20:15	19°♁24'11	
retrograde	198 Jun 09 j 11:51	27°≈24'50		opposition	204 Nov 08 j 02:12	15°♁53'27	-2°-15'-30
opposition	198 Aug 18 j 14:15	23°≈59'18	-2°-3'-13	min. Earth dist.	204 Nov 07 j 21:04	15°♁54'31	7.98082 AU
min. Earth dist.	198 Aug 18 j 18:45	23°≈58'25	8.52770 AU		204 Nov 18 j 22:30	15°♁	
direct	198 Oct 25 j 12:13	20°≈38'07		direct	205 Jan 13 j 08:47	12°♁25'01	
evening set	199 Feb 02 j 14:03	28°≈05'55			205 Mar 08 j 05:41	15°♁	
	199 Feb 17 j 21:14	0°♁		evening set	205 Apr 27 j 07:33	20°♁39'17	
conjunction	199 Feb 19 j 15:03	0°♁13'06	-1°-49'-34	conjunction	205 May 15 j 08:54	23°♁00'31	-1°-37'-1
minimum elong	199 Feb 19 j 15:00	0°♁13'05	1°49'35	minimum elong	205 May 15 j 08:58	23°♁00'32	1°37'02
max. Earth dist.	199 Feb 19 j 09:41	0°♁11'25	10.46431 AU	max. Earth dist.	205 May 15 j 15:57	23°♁02'50	9.97216 AU
morning rise	199 Mar 08 j 20:51	2°♁21'47		morning rise	205 Jun 02 j 12:15	25°♁22'22	
retrograde	199 Jun 23 j 05:39	10°♁17'23			205 Jul 11 j 19:18	0°♁	
opposition	199 Aug 31 j 23:06	6°♁50'19	-2°-26'-38	retrograde	205 Sep 16 j 12:33	3°♁45'48	
min. Earth dist.	199 Sep 01 j 02:21	6°♁49'40	8.40240 AU	opposition	205 Nov 22 j 10:38	0°♁15'33	-1°-45'-3
direct	199 Nov 07 j 08:59	3°♁27'55		min. Earth dist.	205 Nov 22 j 04:41	0°♁16'48	7.97343 AU
evening set	200 Feb 15 j 20:19	11°♁04'39			205 Nov 25 j 13:25	30°♁♁	
				direct	206 Jan 27 j 21:56	26°♁46'23	
conjunction	200 Mar 04 j 00:45	13°♁14'29	-2°-5'-34		206 Mar 29 j 21:12	0°♁	
minimum elong	200 Mar 04 j 00:43	13°♁14'28	2°05'35	evening set	206 May 12 j 13:23	5°♁03'02	
max. Earth dist.	200 Mar 03 j 21:51	13°♁13'33	10.34055 AU				
morning rise	200 Mar 21 j 10:04	15°♁25'52		conjunction	206 May 30 j 17:24	7°♁24'52	-1°-9'-47
retrograde	200 Jul 06 j 07:09	23°♁31'21		minimum elong	206 May 30 j 17:27	7°♁24'53	1°09'48
opposition	200 Sep 13 j 14:08	20°♁02'53	-2°-43'-6	max. Earth dist.	206 May 31 j 01:46	7°♁27'36	9.98105 AU
min. Earth dist.	200 Sep 13 j 15:32	20°♁02'36	8.28268 AU	morning rise	206 Jun 17 j 22:07	9°♁46'51	
direct	200 Nov 19 j 14:21	16°♁39'12		retrograde	206 Oct 01 j 01:19	18°♁05'20	
evening set	201 Feb 28 j 13:39	24°♁25'08		opposition	206 Dec 06 j 17:45	14°♁35'57	-1°-8'-5
				min. Earth dist.	206 Dec 06 j 10:49	14°♁37'23	7.99750 AU
conjunction	201 Mar 17 j 22:01	26°♁37'43	-2°-15'-16	direct	207 Feb 11 j 12:56	11°♁06'20	
minimum elong	201 Mar 17 j 22:00	26°♁37'42	2°15'16	evening set	207 May 27 j 19:15	19°♁23'01	
max. Earth dist.	201 Mar 17 j 21:54	26°♁37'40	10.22552 AU				
morning rise	201 Apr 04 j 11:03	28°♁51'49		conjunction	207 Jun 15 j 00:25	21°♁44'29	0°-38'-21
	201 Apr 13 j 15:13	0°♁		minimum elong	207 Jun 15 j 00:27	21°♁44'30	0°38'22
retrograde	201 Jul 20 j 16:38	7°♁05'55		max. Earth dist.	207 Jun 15 j 09:50	21°♁47'33	10.02092 AU
opposition	201 Sep 27 j 10:50	3°♁36'18	-2°-51'-2	morning rise	207 Jul 03 j 04:49	24°♁05'40	
min. Earth dist.	201 Sep 27 j 09:57	3°♁36'29	8.17483 AU		207 Aug 25 j 16:15	0°♁	
direct	201 Dec 03 j 01:50	0°♁11'19		retrograde	207 Oct 15 j 08:44	2°♁16'49	
evening set	202 Mar 14 j 17:31	8°♁06'12			207 Dec 06 j 05:17	30°♁♁	
				opposition	207 Dec 20 j 21:49	28°♁48'39	0°-27'-17
conjunction	202 Apr 01 j 06:11	10°♁21'28	-2°-17'-36	min. Earth dist.	207 Dec 20 j 14:06	28°♁50'14	8.05153 AU
minimum elong	202 Apr 01 j 06:12	10°♁21'28	2°17'36	direct	208 Feb 26 j 03:50	25°♁18'56	
max. Earth dist.	202 Apr 01 j 08:25	10°♁22'11	10.12570 AU		208 May 12 j 02:45	0°♁	
morning rise	202 Apr 18 j 23:11	12°♁38'10		evening set	208 Jun 10 j 22:03	3°♁33'23	
retrograde	202 Aug 04 j 08:00	20°♁58'53					
opposition	202 Oct 11 j 12:42	17°♁28'29	-2°-49'-17	conjunction	208 Jun 29 j 02:34	5°♁53'32	0°-5'00
min. Earth dist.	202 Oct 11 j 09:50	17°♁29'04	8.08508 AU	minimum elong	208 Jun 29 j 02:33	5°♁53'32	0°05'00
direct	202 Dec 16 j 20:22	14°♁02'14		behind sun begin	208 Jun 28 j 19:24	5°♁51'15	
evening set	203 Mar 29 j 06:54	22°♁05'10		behind sun end	208 Jun 29 j 09:41	5°♁55'49	
				max. Earth dist.	208 Jun 29 j 12:30	5°♁56'44	10.08909 AU
conjunction	203 Apr 16 j 00:05	24°♁22'55	-2°-11'-55	morning rise	208 Jul 17 j 04:50	8°♁12'57	
minimum elong	203 Apr 16 j 00:08	24°♁22'55	2°11'55	asc. node	208 Aug 23 j 23:02	12°♁36'10	
max. Earth dist.	203 Apr 16 j 04:17	24°♁24'16	10.04711 AU	retrograde	208 Oct 28 j 08:59	16°♁15'11	
morning rise	203 May 03 j 21:07	26°♁41'56		opposition	209 Jan 02 j 21:45	12°♁48'28	0°14'29
	203 May 31 j 02:02	0°♁		min. Earth dist.	209 Jan 02 j 13:45	12°♁50'07	8.13204 AU
retrograde	203 Aug 19 j 02:23	5°♁06'38		direct	209 Mar 11 j 16:35	9°♁18'59	

evening set	209 Jun 25 j 18:44	17°♄29'08		conjunction	215 Sep 30 j 07:07	6°♃02'21	2°18'46
				minimum elong	215 Sep 30 j 07:07	6°♃02'21	2°18'46
conjunction	209 Jul 13 j 20:47	19°♄47'06	0°28'15	max. Earth dist.	215 Sep 30 j 05:44	6°♃01'56	10.87754 AU
minimum elong	209 Jul 13 j 20:45	19°♄47'06	0°28'15	morning rise	215 Oct 17 j 00:46	8°♃01'42	
max. Earth dist.	209 Jul 14 j 06:45	19°♄50'17	10.18112 AU	retrograde	216 Jan 24 j 06:51	15°♃05'14	
morning rise	209 Jul 31 j 19:25	22°♄04'00		opposition	216 Apr 02 j 03:13	11°♃47'44	2°49'41
retrograde	209 Nov 11 j 01:03	29°♄56'28		min. Earth dist.	216 Apr 02 j 05:30	11°♃47'18	8.92346 AU
opposition	210 Jan 16 j 16:24	26°♄31'19	0°54'30	direct	216 Jun 12 j 06:22	8°♃25'11	
min. Earth dist.	210 Jan 16 j 08:54	26°♄32'51	8.23392 AU	evening set	216 Sep 24 j 09:21	15°♃43'23	
direct	210 Mar 26 j 00:40	23°♄02'21					
	210 Jul 01 j 05:35	0°♃		conjunction	216 Oct 11 j 03:58	17°♃42'05	2°17'01
evening set	210 Jul 10 j 07:18	1°♃06'32		minimum elong	216 Oct 11 j 03:59	17°♃42'05	2°17'02
				max. Earth dist.	216 Oct 11 j 00:02	17°♃40'55	10.96156 AU
conjunction	210 Jul 28 j 05:27	3°♃21'43	0°59'09	morning rise	216 Oct 27 j 18:58	19°♃39'44	
minimum elong	210 Jul 28 j 05:24	3°♃21'42	0°59'09	retrograde	217 Feb 04 j 01:07	26°♃39'20	
max. Earth dist.	210 Jul 28 j 14:28	3°♃24'34	10.29127 AU	opposition	217 Apr 14 j 08:30	23°♃22'19	2°43'54
morning rise	210 Aug 14 j 23:23	5°♃35'35		min. Earth dist.	217 Apr 14 j 12:32	23°♃21'34	8.99816 AU
retrograde	210 Nov 24 j 08:56	13°♃17'57		direct	217 Jun 24 j 15:31	20°♃00'51	
opposition	211 Jan 30 j 04:57	9°♃54'25	1°30'28	evening set	217 Oct 06 j 02:25	27°♃12'57	
min. Earth dist.	211 Jan 29 j 22:55	9°♃55'38	8.35092 AU				
direct	211 Apr 09 j 02:54	6°♃26'11		conjunction	217 Oct 22 j 18:36	29°♃10'15	2°09'45
evening set	211 Jul 24 j 10:02	14°♃23'12		minimum elong	217 Oct 22 j 18:37	29°♃10'16	2°09'46
	211 Jul 29 j 09:38	15°♃		max. Earth dist.	217 Oct 22 j 12:54	29°♃08'34	11.02624 AU
					217 Oct 29 j 19:15	0°♃	
conjunction	211 Aug 11 j 03:18	16°♃35'14	1°26'12	morning rise	217 Nov 08 j 07:53	1°♃06'44	
minimum elong	211 Aug 11 j 03:15	16°♃35'13	1°26'11	retrograde	218 Feb 15 j 16:52	8°♃03'50	
max. Earth dist.	211 Aug 11 j 10:07	16°♃37'22	10.41290 AU	opposition	218 Apr 26 j 11:04	4°♃47'00	2°31'44
morning rise	211 Aug 28 j 15:56	18°♃45'49		min. Earth dist.	218 Apr 26 j 15:45	4°♃46'08	9.05211 AU
retrograde	211 Dec 07 j 07:45	26°♃18'21		direct	218 Jul 06 j 20:23	1°♃26'27	
opposition	212 Feb 12 j 11:18	22°♃56'23	2°00'41	evening set	218 Oct 17 j 14:04	8°♃33'30	
min. Earth dist.	212 Feb 12 j 06:45	22°♃57'17	8.47607 AU				
direct	212 Apr 21 j 23:13	19°♃29'06		conjunction	218 Nov 03 j 04:43	10°♃29'53	1°57'28
evening set	212 Aug 06 j 01:47	27°♃18'07		minimum elong	218 Nov 03 j 04:45	10°♃29'54	1°57'28
				max. Earth dist.	218 Nov 02 j 22:37	10°♃28'05	11.06935 AU
conjunction	212 Aug 23 j 13:43	29°♃26'54	1°48'12	morning rise	218 Nov 19 j 16:59	12°♃25'40	
minimum elong	212 Aug 23 j 13:40	29°♃26'53	1°48'11		218 Dec 13 j 03:54	15°♃	
max. Earth dist.	212 Aug 23 j 18:08	29°♃28'16	10.53897 AU	retrograde	219 Feb 27 j 10:39	19°♃21'43	
	212 Aug 28 j 00:57	0°♃		opposition	219 May 08 j 11:58	16°♃04'47	2°13'51
morning rise	212 Sep 09 j 20:56	1°♃34'12		min. Earth dist.	219 May 08 j 17:22	16°♃03'48	9.08358 AU
retrograde	212 Dec 18 j 21:16	8°♃57'41			219 May 23 j 10:16	15°♃	
opposition	213 Feb 24 j 11:20	5°♃37'06	2°24'03	direct	219 Jul 18 j 21:06	12°♃45'01	
min. Earth dist.	213 Feb 24 j 08:03	5°♃37'45	8.60216 AU		219 Sep 10 j 23:32	15°♃	
direct	213 May 05 j 13:29	2°♃10'55		evening set	219 Oct 28 j 21:56	19°♃48'08	
evening set	213 Aug 19 j 06:26	9°♃51'40					
				conjunction	219 Nov 14 j 11:40	21°♃44'06	1°40'44
conjunction	213 Sep 05 j 13:14	11°♃57'21	2°04'28	minimum elong	219 Nov 14 j 11:42	21°♃44'07	1°40'43
minimum elong	213 Sep 05 j 13:11	11°♃57'20	2°04'27	max. Earth dist.	219 Nov 14 j 04:49	21°♃42'05	11.08956 AU
max. Earth dist.	213 Sep 05 j 15:30	11°♃58'02	10.66243 AU	morning rise	219 Nov 30 j 23:46	23°♃39'40	
morning rise	213 Sep 22 j 15:16	14°♃01'34			220 Feb 11 j 22:00	0°♃	
retrograde	213 Dec 31 j 06:02	21°♃17'05		retrograde	220 Mar 10 j 02:22	0°♃36'10	
opposition	214 Mar 09 j 05:22	17°♃57'43	2°40'03		220 Apr 06 j 17:06	30°♃	
min. Earth dist.	214 Mar 09 j 03:22	17°♃58'06	8.72221 AU	opposition	220 May 19 j 12:25	27°♃18'54	1°50'56
direct	214 May 18 j 18:14	14°♃32'45		min. Earth dist.	220 May 19 j 19:02	27°♃17'41	9.09178 AU
evening set	214 Sep 01 j 00:30	22°♃05'24		direct	220 Jul 29 j 16:29	23°♃59'41	
					220 Oct 30 j 06:50	0°♃	
conjunction	214 Sep 18 j 02:40	24°♃08'20	2°14'39	evening set	220 Nov 08 j 03:38	1°♃00'14	
minimum elong	214 Sep 18 j 02:39	24°♃08'20	2°14'39				
max. Earth dist.	214 Sep 18 j 03:22	24°♃08'33	10.77682 AU	conjunction	220 Nov 24 j 17:00	2°♃56'11	1°20'09
morning rise	214 Oct 05 j 00:04	26°♃09'53		minimum elong	220 Nov 24 j 17:03	2°♃56'12	1°20'08
	214 Nov 09 j 07:52	0°♃		max. Earth dist.	220 Nov 24 j 08:35	2°♃53'43	11.08641 AU
retrograde	215 Jan 12 j 09:03	3°♃18'43		morning rise	220 Dec 11 j 05:51	4°♃52'01	
opposition	215 Mar 21 j 18:24	0°♃00'24	2°48'32	retrograde	221 Mar 21 j 20:29	11°♃50'34	
	215 Mar 21 j 20:31	30°♃		opposition	221 May 31 j 13:13	8°♃32'40	1°23'47
min. Earth dist.	215 Mar 21 j 18:26	0°♃00'24	8.83054 AU	min. Earth dist.	221 May 31 j 20:51	8°♃31'16	9.07657 AU
direct	215 May 31 j 14:49	26°♃36'41		direct	221 Aug 10 j 12:32	5°♃13'48	
	215 Aug 06 j 17:34	0°♃		evening set	221 Nov 19 j 09:07	12°♃13'15	
evening set	215 Sep 13 j 09:05	4°♃01'46					

conjunction	221 Dec 05 j 22:47	14°♄09'38	0°56'27	conjunction	228 Feb 14 j 13:06	25°♃08'04	-1°-41'-16
minimum elong	221 Dec 05 j 22:49	14°♄09'38	0°56'27	minimum elong	228 Feb 14 j 13:03	25°♃08'03	1°41'17
max. Earth dist.	221 Dec 05 j 13:57	14°♄07'01	11.05998 AU	max. Earth dist.	228 Feb 14 j 09:27	25°♃06'56	10.51484 AU
morning rise	221 Dec 22 j 12:48	16°♄06'08		morning rise	228 Mar 02 j 17:20	27°♃15'39	
retrograde	222 Apr 02 j 18:20	23°♄08'15			228 Mar 26 j 04:54	0°♃	
opposition	222 Jun 12 j 15:11	19°♄49'33	0°53'16	retrograde	228 Jun 16 j 19:58	5°♃07'05	
min. Earth dist.	222 Jun 12 j 22:41	19°♄48'10	9.03837 AU	opposition	228 Aug 25 j 17:21	1°♃40'40	-2°-17'-32
direct	222 Aug 22 j 07:14	16°♄30'52		min. Earth dist.	228 Aug 25 j 19:15	1°♃40'17	8.45483 AU
evening set	222 Nov 30 j 16:02	23°♄30'43			228 Sep 17 j 04:24	30°♃	
				direct	228 Nov 01 j 08:10	28°♃18'56	
conjunction	222 Dec 17 j 06:35	25°♄27'55	0°30'24		228 Dec 15 j 03:23	0°♃	
minimum elong	222 Dec 17 j 06:36	25°♄27'55	0°30'24	evening set	229 Feb 09 j 15:23	5°♃51'57	
max. Earth dist.	222 Dec 16 j 22:24	25°♄25'30	11.01104 AU				
morning rise	223 Jan 02 j 22:05	27°♄25'28		conjunction	229 Feb 26 j 18:18	8°♃00'39	-1°-59'-30
	223 Jan 26 j 05:17	0°♃		minimum elong	229 Feb 26 j 18:15	8°♃00'38	1°59'31
retrograde	223 Apr 14 j 21:08	4°♃32'47		max. Earth dist.	229 Feb 26 j 16:01	7°♃59'55	10.39440 AU
opposition	223 Jun 24 j 19:55	1°♃13'02	0°20'20	morning rise	229 Mar 16 j 01:57	10°♃10'52	
min. Earth dist.	223 Jun 25 j 02:38	1°♃11'48	8.97844 AU	retrograde	229 Jun 30 j 19:46	18°♃12'19	
	223 Jul 11 j 15:30	30°♃		opposition	229 Sep 08 j 06:06	14°♃44'39	-2°-37'-2
direct	223 Sep 03 j 02:41	27°♄54'21		min. Earth dist.	229 Sep 08 j 06:37	14°♃44'33	8.33705 AU
	223 Oct 24 j 05:38	0°♃		direct	229 Nov 14 j 09:03	11°♃21'51	
evening set	223 Dec 12 j 02:12	4°♃56'08		evening set	230 Feb 23 j 04:19	19°♃03'52	
conjunction	223 Dec 28 j 17:53	6°♃54'31	0°02'53	conjunction	230 Mar 12 j 10:44	21°♃15'12	-2°-11'-57
minimum elong	223 Dec 28 j 17:53	6°♃54'31	0°02'54	minimum elong	230 Mar 12 j 10:42	21°♃15'12	2°11'58
behind sun begin	223 Dec 28 j 10:55	6°♃52'28		max. Earth dist.	230 Mar 12 j 09:58	21°♃14'57	10.27998 AU
behind sun end	223 Dec 29 j 00:51	6°♃56'34		morning rise	230 Mar 29 j 22:08	23°♃28'06	
max. Earth dist.	223 Dec 28 j 09:55	6°♃52'10	10.94120 AU		230 May 31 j 21:52	0°♃	
morning rise	224 Jan 14 j 11:22	8°♃53'30		retrograde	230 Jul 15 j 02:46	1°♃38'37	
desc. node	224 Feb 04 j 16:39	11°♃16'06			230 Aug 28 j 21:37	30°♃	
retrograde	224 Apr 26 j 06:52	16°♃07'29		opposition	230 Sep 22 j 00:56	28°♃09'54	-2°-48'-38
opposition	224 Jul 06 j 04:16	12°♃46'34	0°-13'-55	min. Earth dist.	230 Sep 22 j 00:16	28°♃10'02	8.22839 AU
min. Earth dist.	224 Jul 06 j 10:46	12°♃45'21	8.89885 AU	direct	230 Nov 27 j 17:46	24°♃45'56	
direct	224 Sep 13 j 23:19	9°♃27'39			231 Feb 15 j 14:27	0°♃	
evening set	224 Dec 22 j 17:34	16°♃32'57		evening set	231 Mar 09 j 04:01	2°♃36'52	
conjunction	225 Jan 08 j 10:39	18°♃32'50	0°-25'-16	conjunction	231 Mar 26 j 14:34	4°♃50'51	-2°-17'-25
minimum elong	225 Jan 08 j 10:38	18°♃32'50	0°25'17	minimum elong	231 Mar 26 j 14:34	4°♃50'51	2°17'26
max. Earth dist.	225 Jan 08 j 02:19	18°♃30'20	10.85295 AU	max. Earth dist.	231 Mar 26 j 15:52	4°♃51'16	10.17786 AU
morning rise	225 Jan 25 j 06:33	20°♃33'37		morning rise	231 Apr 13 j 05:56	7°♃06'22	
retrograde	225 May 08 j 21:17	27°♃55'33		retrograde	231 Jul 29 j 15:08	15°♃24'10	
opposition	225 Jul 18 j 16:56	24°♃33'21	0°-48'-19	opposition	231 Oct 06 j 00:57	11°♃54'38	-2°-50'-58
min. Earth dist.	225 Jul 18 j 23:26	24°♃32'07	8.80253 AU	min. Earth dist.	231 Oct 05 j 23:01	11°♃55'01	8.13480 AU
direct	225 Sep 25 j 22:33	21°♃13'59		direct	231 Dec 11 j 10:55	8°♃29'28	
evening set	226 Jan 03 j 15:32	28°♃24'22		evening set	232 Mar 22 j 13:38	16°♃28'39	
	226 Jan 16 j 20:46	0°♃					
conjunction	226 Jan 20 j 10:28	0°♃26'05	0°-52'-48	conjunction	232 Apr 09 j 04:45	18°♃45'10	-2°-15'-6
minimum elong	226 Jan 20 j 10:27	0°♃26'04	0°52'49	minimum elong	232 Apr 09 j 04:47	18°♃45'11	2°15'06
max. Earth dist.	226 Jan 20 j 02:53	0°♃23'46	10.74955 AU	max. Earth dist.	232 Apr 09 j 08:22	18°♃46'21	10.09354 AU
morning rise	226 Feb 06 j 08:58	2°♃28'53		morning rise	232 Apr 27 j 00:07	21°♃03'04	
retrograde	226 May 21 j 19:39	10°♃00'00		retrograde	232 Aug 12 j 07:05	29°♃25'46	
opposition	226 Jul 31 j 11:02	6°♃36'24	-1°-21'-27	opposition	232 Oct 19 j 05:05	25°♃55'43	-2°-43'-15
min. Earth dist.	226 Jul 31 j 16:41	6°♃35'19	8.69321 AU	min. Earth dist.	232 Oct 19 j 01:39	25°♃56'25	8.06106 AU
direct	226 Oct 08 j 05:02	3°♃16'24		direct	232 Dec 24 j 11:55	22°♃29'23	
evening set	227 Jan 15 j 21:33	10°♃33'13			233 Apr 01 j 15:34	0°♃	
				evening set	233 Apr 06 j 07:46	0°♃35'40	
conjunction	227 Feb 01 j 18:47	12°♃37'03	-1°-18'-34	conjunction	233 Apr 24 j 03:28	2°♃54'26	-2°-4'-41
minimum elong	227 Feb 01 j 18:44	12°♃37'02	1°18'36	minimum elong	233 Apr 24 j 03:31	2°♃54'27	2°04'41
max. Earth dist.	227 Feb 01 j 13:18	12°♃35'22	10.63515 AU	max. Earth dist.	233 Apr 24 j 08:59	2°♃56'14	10.03125 AU
morning rise	227 Feb 18 j 19:58	14°♃42'08		morning rise	233 May 12 j 02:30	5°♃14'17	
	227 Feb 21 j 07:29	15°♃		retrograde	233 Aug 27 j 00:37	13°♃39'12	
retrograde	227 Jun 04 j 03:40	22°♃23'16		opposition	233 Nov 02 j 11:56	10°♃09'01	-2°-25'-27
opposition	227 Aug 13 j 11:06	18°♃58'14	-1°-51'-45	min. Earth dist.	233 Nov 02 j 07:07	10°♃10'01	8.01095 AU
min. Earth dist.	227 Aug 13 j 14:50	18°♃57'30	8.57552 AU	direct	234 Jan 07 j 18:02	6°♃41'38	
direct	227 Oct 20 j 15:39	15°♃37'26		evening set	234 Apr 21 j 08:29	14°♃53'27	
evening set	228 Jan 28 j 13:13	23°♃01'54			234 Apr 22 j 04:52	15°♃	

conjunction	234 May 09 j 08:21	17°♄13'59	-1°-46'-30	minimum elong	240 Aug 04 j 17:39	11°♄19'58	1°15'27
minimum elong	234 May 09 j 08:25	17°♄14'00	1°46'31	max. Earth dist.	240 Aug 05 j 00:24	11°♄22'05	10.35565 AU
max. Earth dist.	234 May 09 j 15:29	17°♄16'19	9.99475 AU	morning rise	240 Aug 22 j 08:44	13°♄32'00	
morning rise	234 May 27 j 10:27	19°♄35'14			240 Sep 03 j 12:38	15°♄	
retrograde	234 Sep 10 j 18:47	27°♄59'27		retrograde	240 Dec 01 j 06:43	21°♄08'39	
opposition	234 Nov 16 j 20:04	24°♄29'32	-1°-58'-26	opposition	241 Feb 06 j 07:31	17°♄45'40	1°48'50
min. Earth dist.	234 Nov 16 j 14:03	24°♄30'47	7.98830 AU	min. Earth dist.	241 Feb 06 j 02:00	17°♄46'46	8.41609 AU
direct	235 Jan 22 j 04:10	21°♄01'16			241 Mar 18 j 15:59	15°♄♄	
evening set	235 May 06 j 13:25	29°♄16'38		direct	241 Apr 16 j 14:41	14°♄17'36	
	235 May 12 j 03:50	0°♄			241 May 15 j 11:42	15°♄	
				evening set	241 Jul 31 j 18:07	22°♄10'01	
conjunction	235 May 24 j 16:31	1°♄38'10	-1°-21'-38	conjunction	241 Aug 18 j 08:36	24°♄20'15	1°39'39
minimum elong	235 May 24 j 16:35	1°♄38'11	1°21'38	minimum elong	241 Aug 18 j 08:32	24°♄20'14	1°39'39
max. Earth dist.	235 May 25 j 00:52	1°♄40'54	9.98747 AU	max. Earth dist.	241 Aug 18 j 14:26	24°♄22'04	10.47764 AU
morning rise	235 Jun 11 j 20:37	4°♄00'02		morning rise	241 Sep 04 j 18:06	26°♄28'59	
retrograde	235 Sep 25 j 10:36	12°♄20'35			241 Oct 05 j 17:33	0°♄	
opposition	235 Dec 01 j 03:51	8°♄51'18	-1°-23'-57	retrograde	241 Dec 14 j 00:25	3°♄56'17	
min. Earth dist.	235 Nov 30 j 21:15	8°♄52'40	7.99579 AU	opposition	242 Feb 19 j 09:54	0°♄34'41	2°15'11
direct	236 Feb 05 j 17:57	5°♄22'21		min. Earth dist.	242 Feb 19 j 05:53	0°♄35'28	8.54011 AU
evening set	236 May 20 j 19:45	13°♄38'55			242 Feb 26 j 19:11	30°♄♄	
				direct	242 Apr 30 j 06:27	27°♄07'34	
conjunction	236 Jun 08 j 00:34	16°♄00'32	0°-51'-44		242 Jun 29 j 17:24	0°♄	
minimum elong	236 Jun 08 j 00:37	16°♄00'33	0°51'44	evening set	242 Aug 14 j 03:15	4°♄51'50	
max. Earth dist.	236 Jun 08 j 09:20	16°♄03'24	10.01077 AU				
morning rise	236 Jun 26 j 05:06	18°♄22'03		conjunction	242 Aug 31 j 12:25	6°♄58'54	1°58'23
retrograde	236 Oct 08 j 20:58	26°♄36'19		minimum elong	242 Aug 31 j 12:23	6°♄58'53	1°58'22
opposition	236 Dec 14 j 09:23	23°♄07'58	0°-44'-28	max. Earth dist.	242 Aug 31 j 16:21	7°♄00'06	10.60129 AU
min. Earth dist.	236 Dec 14 j 02:48	23°♄09'20	8.03366 AU	morning rise	242 Sep 17 j 16:35	9°♄04'27	
direct	237 Feb 19 j 09:15	19°♄38'36		retrograde	242 Dec 26 j 11:10	16°♄23'15	
evening set	237 Jun 05 j 00:06	27°♄54'01		opposition	243 Mar 04 j 06:06	13°♄02'55	2°34'18
	237 Jun 21 j 07:30	0°♄		min. Earth dist.	243 Mar 04 j 04:03	13°♄03'19	8.66283 AU
conjunction	237 Jun 23 j 04:56	0°♄14'44	0°-18'-55	direct	243 May 13 j 14:03	9°♄36'54	
minimum elong	237 Jun 23 j 04:57	0°♄14'44	0°18'56	evening set	243 Aug 27 j 01:35	17°♄12'58	
max. Earth dist.	237 Jun 23 j 13:32	0°♄17'31	10.06353 AU				
morning rise	237 Jul 11 j 08:14	2°♄34'56		conjunction	243 Sep 13 j 05:39	19°♄17'05	2°11'09
retrograde	237 Oct 22 j 23:40	10°♄40'57		minimum elong	243 Sep 13 j 05:37	19°♄17'04	2°11'08
opposition	237 Dec 28 j 11:13	7°♄13'48	0°-2'-48	max. Earth dist.	243 Sep 13 j 07:03	19°♄17'30	10.72076 AU
min. Earth dist.	237 Dec 28 j 04:46	7°♄15'08	8.09967 AU	morning rise	243 Sep 30 j 05:03	21°♄19'46	
asc. node	238 Jan 23 j 00:33	5°♄15'26		retrograde	244 Jan 07 j 14:28	28°♄31'11	
direct	238 Mar 06 j 00:14	3°♄44'18		opposition	244 Mar 15 j 20:54	25°♄11'58	2°45'56
evening set	238 Jun 19 j 23:26	11°♄56'19		min. Earth dist.	244 Mar 15 j 20:13	25°♄12'06	8.77862 AU
				direct	244 May 25 j 14:51	21°♄47'13	
conjunction	238 Jul 08 j 02:34	14°♄15'15	0°14'37	evening set	244 Sep 07 j 13:33	29°♄15'17	
minimum elong	238 Jul 08 j 02:33	14°♄15'14	0°14'38		244 Sep 13 j 20:44	0°♄	
behind sun begin	238 Jul 07 j 23:43	14°♄14'20		conjunction	244 Sep 24 j 13:11	1°♄16'48	2°17'49
behind sun end	238 Jul 08 j 05:23	14°♄16'08		minimum elong	244 Sep 24 j 13:10	1°♄16'48	2°17'48
max. Earth dist.	238 Jul 08 j 10:39	14°♄17'50	10.14226 AU	max. Earth dist.	244 Sep 24 j 12:41	1°♄16'39	10.83088 AU
morning rise	238 Jul 26 j 03:03	16°♄33'16		morning rise	244 Oct 11 j 08:32	3°♄17'03	
retrograde	238 Nov 05 j 17:24	24°♄29'50		retrograde	245 Jan 18 j 12:58	10°♄22'23	
opposition	239 Jan 11 j 08:00	21°♄04'02	0°38'12	opposition	245 Mar 28 j 06:48	7°♄04'06	2°50'08
min. Earth dist.	239 Jan 11 j 01:43	21°♄05'18	8.18939 AU	min. Earth dist.	245 Mar 28 j 06:55	7°♄04'05	8.88253 AU
direct	239 Mar 20 j 11:10	17°♄34'42		direct	245 Jun 07 j 09:24	3°♄40'39	
evening set	239 Jul 04 j 15:30	25°♄41'29		evening set	245 Sep 19 j 16:31	11°♄01'17	
conjunction	239 Jul 22 j 15:23	27°♄57'54	0°46'39	conjunction	245 Oct 06 j 12:37	13°♄00'40	2°18'30
minimum elong	239 Jul 22 j 15:21	27°♄57'53	0°46'39	minimum elong	245 Oct 06 j 12:37	13°♄00'40	2°18'30
max. Earth dist.	239 Jul 22 j 22:40	28°♄00'12	10.24169 AU	max. Earth dist.	245 Oct 06 j 11:12	13°♄00'15	10.92711 AU
	239 Aug 07 j 17:36	0°♄		morning rise	245 Oct 23 j 04:42	14°♄58'55	
morning rise	239 Aug 09 j 11:37	0°♄13'06		retrograde	246 Jan 30 j 09:34	21°♄59'31	
retrograde	239 Nov 19 j 04:06	7°♄59'40		opposition	246 Apr 09 j 12:35	18°♄42'00	2°47'13
opposition	240 Jan 24 j 22:48	4°♄35'17	1°16'04	min. Earth dist.	246 Apr 09 j 13:53	18°♄41'45	8.97040 AU
min. Earth dist.	240 Jan 24 j 16:38	4°♄36'31	8.29700 AU	direct	246 Jun 19 j 19:30	15°♄19'49	
direct	240 Apr 02 j 16:17	1°♄06'27		evening set	246 Oct 01 j 11:55	22°♄33'49	
evening set	240 Jul 17 j 22:12	9°♄06'33					
				conjunction	246 Oct 18 j 05:12	24°♄31'34	2°13'32
conjunction	240 Aug 04 j 17:42	11°♄19'59	1°15'27				

minimum elong	246 Oct 18 j 05:13	24°♄31'34	2°13'33	behind sun begin	252 Dec 22 j 22:33	2°♄03'46	
max. Earth dist.	246 Oct 18 j 02:34	24°♄30'47	11.00568 AU	behind sun end	252 Dec 23 j 03:53	2°♄05'20	
morning rise	246 Nov 03 j 18:59	26°♄28'22		max. Earth dist.	252 Dec 22 j 16:05	2°♄01'51	11.00309 AU
	246 Dec 06 j 18:16	0°♄		morning rise	253 Jan 08 j 17:46	4°♄02'32	
retrograde	247 Feb 11 j 01:49	3°♄25'39		retrograde	253 Apr 21 j 02:55	11°♄12'13	
opposition	247 Apr 21 j 15:34	0°♄08'38	2°37'42	opposition	253 Jul 01 j 01:43	7°♄52'34	0°01'18
min. Earth dist.	247 Apr 21 j 18:50	0°♄08'02	9.03897 AU	min. Earth dist.	253 Jul 01 j 09:31	7°♄51'07	8.96450 AU
	247 Apr 23 j 14:06	30°♄		desc. node	253 Jul 15 j 08:30	6°♄50'04	
direct	247 Jul 02 j 00:15	26°♄47'39		direct	253 Sep 09 j 02:35	4°♄34'25	
	247 Sep 05 j 12:58	0°♄		evening set	253 Dec 17 j 22:36	11°♄36'58	
evening set	247 Oct 13 j 01:08	3°♄56'01					
				conjunction	254 Jan 03 j 14:55	13°♄35'50	0°-12'-50
conjunction	247 Oct 29 j 16:16	5°♄52'35	2°03'20	minimum elong	254 Jan 03 j 14:55	13°♄35'50	0°12'51
minimum elong	247 Oct 29 j 16:18	5°♄52'35	2°03'21	behind sun begin	254 Jan 03 j 10:30	13°♄34'31	
max. Earth dist.	247 Oct 29 j 11:27	5°♄51'10	11.06378 AU	behind sun end	254 Jan 03 j 19:20	13°♄37'08	
morning rise	247 Nov 15 j 04:50	7°♄48'26		max. Earth dist.	254 Jan 03 j 06:24	13°♄33'17	10.92123 AU
retrograde	248 Feb 22 j 17:18	14°♄43'57		morning rise	254 Jan 20 j 09:29	15°♄35'27	
opposition	248 May 02 j 16:33	11°♄27'11	2°22'10	retrograde	254 May 03 j 14:29	22°♄52'37	
min. Earth dist.	248 May 02 j 21:22	11°♄26'18	9.08589 AU	opposition	254 Jul 13 j 11:37	19°♄31'40	0°-33'-4
direct	248 Jul 13 j 01:44	8°♄07'13		min. Earth dist.	254 Jul 13 j 18:37	19°♄30'22	8.87254 AU
	248 Oct 21 j 19:04	15°♄		direct	254 Sep 21 j 00:18	16°♄13'09	
evening set	248 Oct 23 j 09:54	15°♄11'06		evening set	254 Dec 29 j 16:54	23°♄20'11	
conjunction	248 Nov 08 j 23:45	17°♄06'59	1°48'27	conjunction	255 Jan 15 j 10:55	25°♄20'46	0°-40'-40
minimum elong	248 Nov 08 j 23:48	17°♄07'00	1°48'27	minimum elong	255 Jan 15 j 10:53	25°♄20'46	0°40'41
max. Earth dist.	248 Nov 08 j 17:32	17°♄05'09	11.09950 AU	max. Earth dist.	255 Jan 15 j 02:38	25°♄18'17	10.82042 AU
morning rise	248 Nov 25 j 11:56	19°♄02'23		morning rise	255 Feb 01 j 07:52	27°♄22'20	
retrograde	249 Mar 05 j 08:08	25°♄57'37			255 Feb 24 j 14:16	0°≈	
opposition	249 May 14 j 16:17	22°♄40'48	2°01'21	retrograde	255 May 16 j 10:31	4°≈48'20	
min. Earth dist.	249 May 14 j 21:41	22°♄39'49	9.10956 AU	opposition	255 Jul 26 j 02:47	1°≈25'56	-1°-6'-51
direct	249 Jul 24 j 23:10	19°♄21'42		min. Earth dist.	255 Jul 26 j 09:07	1°≈24'44	8.76401 AU
evening set	249 Nov 03 j 15:44	26°♄22'23			255 Aug 14 j 16:42	30°♄	
				direct	255 Oct 03 j 02:42	28°♄06'44	
conjunction	249 Nov 20 j 05:12	28°♄18'02	1°29'29		255 Nov 19 j 14:31	0°≈	
minimum elong	249 Nov 20 j 05:14	28°♄18'03	1°29'28	evening set	256 Jan 10 j 18:42	5°≈19'43	
max. Earth dist.	249 Nov 19 j 22:46	28°♄16'09	11.11150 AU				
	249 Dec 04 j 18:47	0°♄		conjunction	256 Jan 27 j 14:40	7°≈22'21	-1°-7'-19
morning rise	249 Dec 06 j 17:33	0°♄13'27		minimum elong	256 Jan 27 j 14:38	7°≈22'20	1°07'20
retrograde	250 Mar 17 j 02:21	7°♄09'58		max. Earth dist.	256 Jan 27 j 06:27	7°≈19'50	10.70532 AU
opposition	250 May 26 j 16:02	3°♄52'50	1°35'59	morning rise	256 Feb 13 j 14:28	9°≈26'10	
min. Earth dist.	250 May 26 j 21:38	3°♄51'48	9.10904 AU		256 Apr 07 j 23:28	15°≈	
direct	250 Aug 05 j 19:08	0°♄34'22		retrograde	256 May 28 j 13:46	17°≈01'57	
evening set	250 Nov 14 j 20:39	7°♄33'13			256 Jul 19 j 14:04	15°≈	
				opposition	256 Aug 06 j 23:41	13°≈37'59	-1°-38'-33
conjunction	250 Dec 01 j 10:08	9°♄29'05	1°07'06	min. Earth dist.	256 Aug 07 j 05:34	13°≈36'51	8.64389 AU
minimum elong	250 Dec 01 j 10:10	9°♄29'06	1°07'05	direct	256 Oct 14 j 09:18	10°≈17'51	
max. Earth dist.	250 Dec 01 j 03:06	9°♄27'01	11.09918 AU		256 Dec 30 j 10:31	15°≈	
morning rise	250 Dec 17 j 23:18	11°♄24'57		evening set	257 Jan 22 j 05:30	17°≈38'09	
retrograde	251 Mar 28 j 22:53	18°♄24'16					
opposition	251 Jun 07 j 16:54	15°♄06'34	1°06'54	conjunction	257 Feb 08 j 03:53	19°≈43'03	-1°-31'-31
min. Earth dist.	251 Jun 07 j 23:30	15°♄05'22	9.08425 AU	minimum elong	257 Feb 08 j 03:50	19°≈43'02	1°31'32
direct	251 Aug 17 j 11:51	11°♄48'30		max. Earth dist.	257 Feb 07 j 20:35	19°≈40'47	10.58116 AU
evening set	251 Nov 26 j 02:20	18°♄46'59		morning rise	257 Feb 25 j 06:42	21°≈49'20	
				retrograde	257 Jun 10 j 23:58	29°≈35'28	
conjunction	251 Dec 12 j 16:13	20°♄43'27	0°42'02	opposition	257 Aug 20 j 02:35	26°≈09'53	-2°-6'-32
minimum elong	251 Dec 12 j 16:15	20°♄43'28	0°42'02	min. Earth dist.	257 Aug 20 j 07:39	26°≈08'54	8.51771 AU
max. Earth dist.	251 Dec 12 j 07:45	20°♄40'58	11.06283 AU	direct	257 Oct 26 j 23:46	22°≈48'39	
morning rise	251 Dec 29 j 06:53	22°♄40'12			258 Feb 01 j 17:33	0°♄	
retrograde	252 Apr 08 j 21:28	29°♄43'54		evening set	258 Feb 04 j 02:12	0°♄17'19	
opposition	252 Jun 18 j 19:49	26°♄25'21	0°35'00				
min. Earth dist.	252 Jun 19 j 03:25	26°♄23'57	9.03578 AU	conjunction	258 Feb 21 j 03:33	2°♄24'44	-1°-51'-54
direct	252 Aug 28 j 06:06	23°♄07'22		minimum elong	258 Feb 21 j 03:30	2°♄24'43	1°51'55
	252 Dec 05 j 09:56	0°♄		max. Earth dist.	258 Feb 20 j 22:32	2°♄23'10	10.45373 AU
evening set	252 Dec 06 j 10:20	0°♄07'04		morning rise	258 Mar 10 j 09:34	4°♄33'38	
				retrograde	258 Jun 24 j 18:47	12°♄30'14	
conjunction	252 Dec 23 j 01:13	2°♄04'33	0°15'07	opposition	258 Sep 02 j 12:01	9°♄03'06	-2°-29'-6
minimum elong	252 Dec 23 j 01:13	2°♄04'33	0°15'07	min. Earth dist.	258 Sep 02 j 15:09	9°♄02'29	8.39146 AU

direct	258 Nov 08 j 22:07	5° $\Upsilon$ 40'38		direct	265 Jan 29 j 14:46	29° $\Upsilon$ 08'52	
evening set	259 Feb 17 j 09:31	13° $\Upsilon$ 18'17			265 Feb 28 j 22:16	0° $\Pi$	
				evening set	265 May 14 j 07:41	7° $\Pi$ 25'48	
conjunction	259 Mar 06 j 14:20	15° $\Upsilon$ 28'24	-2°-7'-8				
minimum elong	259 Mar 06 j 14:18	15° $\Upsilon$ 28'23	2°07'08	conjunction	265 Jun 01 j 12:00	9° $\Pi$ 47'42	-1°-5'-48
max. Earth dist.	259 Mar 06 j 11:57	15° $\Upsilon$ 27'39	10.32932 AU	minimum elong	265 Jun 01 j 12:03	9° $\Pi$ 47'43	1°05'49
morning rise	259 Mar 23 j 23:52	17° $\Upsilon$ 40'03		max. Earth dist.	265 Jun 01 j 20:58	9° $\Pi$ 50'38	9.98045 AU
retrograde	259 Jul 08 j 23:07	25° $\Upsilon$ 46'31		morning rise	265 Jun 19 j 16:44	12° $\Pi$ 09'42	
opposition	259 Sep 16 j 03:46	22° $\Upsilon$ 17'58	-2°-44'-30	retrograde	265 Oct 02 j 17:48	20° $\Pi$ 27'43	
min. Earth dist.	259 Sep 16 j 04:40	22° $\Upsilon$ 17'47	8.27147 AU	opposition	265 Dec 08 j 09:42	16° $\Pi$ 58'21	-1°-2'-50
direct	259 Nov 22 j 02:08	18° $\Upsilon$ 54'13		min. Earth dist.	265 Dec 08 j 02:08	16° $\Pi$ 59'55	7.99831 AU
evening set	260 Mar 02 j 04:01	26° $\Upsilon$ 41'07		direct	266 Feb 13 j 06:12	13° $\Pi$ 28'39	
				evening set	266 May 29 j 13:28	21° $\Pi$ 45'22	
conjunction	260 Mar 19 j 12:46	28° $\Upsilon$ 53'58	-2°-15'-54				
minimum elong	260 Mar 19 j 12:45	28° $\Upsilon$ 53'58	2°15'54	conjunction	266 Jun 16 j 18:43	24° $\Pi$ 06'47	0°-33'-59
max. Earth dist.	260 Mar 19 j 12:39	28° $\Upsilon$ 53'56	10.21443 AU	minimum elong	266 Jun 16 j 18:45	24° $\Pi$ 06'48	0°34'00
	260 Mar 28 j 02:41	0° $\Upsilon$		max. Earth dist.	266 Jun 17 j 04:58	24° $\Pi$ 10'07	10.02321 AU
morning rise	260 Apr 06 j 02:09	1° $\Upsilon$ 08'22		morning rise	266 Jul 04 j 22:54	26° $\Pi$ 27'52	
retrograde	260 Jul 22 j 09:40	9° $\Upsilon$ 23'19			266 Aug 03 j 08:46	0° $\Upsilon$	
opposition	260 Sep 29 j 01:12	5° $\Upsilon$ 53'39	-2°-51'-14	retrograde	266 Oct 17 j 00:31	4° $\Upsilon$ 38'23	
min. Earth dist.	260 Sep 29 j 00:07	5° $\Upsilon$ 53'52	8.16412 AU	opposition	266 Dec 22 j 13:32	1° $\Upsilon$ 10'15	0°-21'-43
direct	260 Dec 04 j 14:30	2° $\Upsilon$ 28'33		min. Earth dist.	266 Dec 22 j 05:24	1° $\Upsilon$ 11'56	8.05519 AU
evening set	261 Mar 16 j 09:06	10° $\Upsilon$ 24'25			267 Jan 06 j 00:35	30° $\Upsilon$	
				direct	267 Feb 27 j 20:47	27° $\Pi$ 40'27	
conjunction	261 Apr 02 j 22:09	12° $\Upsilon$ 39'57	-2°-17'-13		267 Apr 20 j 17:28	0° $\Upsilon$	
minimum elong	261 Apr 02 j 22:10	12° $\Upsilon$ 39'58	2°17'13	evening set	267 Jun 13 j 15:51	5° $\Upsilon$ 54'43	
max. Earth dist.	261 Apr 02 j 23:47	12° $\Upsilon$ 40'29	10.11553 AU				
morning rise	261 Apr 20 j 15:38	14° $\Upsilon$ 56'57		conjunction	267 Jul 01 j 20:12	8° $\Upsilon$ 14'43	0°00'-28
retrograde	261 Aug 06 j 00:46	23° $\Upsilon$ 18'18		minimum elong	267 Jul 01 j 20:13	8° $\Upsilon$ 14'43	0°00'29
opposition	261 Oct 13 j 03:44	19° $\Upsilon$ 47'51	-2°-48'-10	behind sun begin	267 Jul 01 j 12:53	8° $\Upsilon$ 12'22	
min. Earth dist.	261 Oct 13 j 01:14	19° $\Upsilon$ 48'22	8.07561 AU	behind sun end	267 Jul 02 j 03:34	8° $\Upsilon$ 17'04	
direct	261 Dec 18 j 11:19	16° $\Upsilon$ 21'28		max. Earth dist.	267 Jul 02 j 06:44	8° $\Upsilon$ 18'06	10.09410 AU
evening set	262 Mar 30 j 23:29	24° $\Upsilon$ 25'19		asc. node	267 Jul 07 j 03:41	8° $\Upsilon$ 55'53	
				morning rise	267 Jul 19 j 22:10	10° $\Upsilon$ 33'57	
conjunction	262 Apr 17 j 17:03	26° $\Upsilon$ 43'19	-2°-10'-29	retrograde	267 Oct 31 j 00:25	18° $\Upsilon$ 35'25	
minimum elong	262 Apr 17 j 17:06	26° $\Upsilon$ 43'20	2°10'29	opposition	268 Jan 05 j 13:07	15° $\Upsilon$ 08'46	0°19'58
max. Earth dist.	262 Apr 17 j 20:34	26° $\Upsilon$ 44'28	10.03859 AU	min. Earth dist.	268 Jan 05 j 05:14	15° $\Upsilon$ 10'23	8.13827 AU
morning rise	262 May 05 j 14:34	29° $\Upsilon$ 02'35		direct	268 Mar 13 j 08:11	11° $\Upsilon$ 39'14	
	262 May 13 j 04:05	0° $\Upsilon$		evening set	268 Jun 27 j 12:03	19° $\Upsilon$ 49'01	
retrograde	262 Aug 20 j 18:25	7° $\Upsilon$ 27'41					
opposition	262 Oct 27 j 09:59	3° $\Upsilon$ 56'52	-2°-34'-54	conjunction	268 Jul 15 j 13:42	22° $\Upsilon$ 06'46	0°32'32
min. Earth dist.	262 Oct 27 j 06:17	3° $\Upsilon$ 57'38	8.01145 AU	minimum elong	268 Jul 15 j 13:40	22° $\Upsilon$ 06'46	0°32'33
direct	263 Jan 01 j 15:26	0° $\Upsilon$ 29'18		max. Earth dist.	268 Jul 15 j 23:36	22° $\Upsilon$ 09'56	10.18848 AU
evening set	263 Apr 14 j 21:47	8° $\Upsilon$ 39'35		morning rise	268 Aug 02 j 11:54	24° $\Upsilon$ 23'25	
					268 Sep 23 j 02:33	0° $\Omega$	
conjunction	263 May 02 j 19:47	10° $\Upsilon$ 59'38	-1°-55'-44	retrograde	268 Nov 12 j 16:20	2° $\Omega$ 15'01	
minimum elong	263 May 02 j 19:50	10° $\Upsilon$ 59'39	1°55'44		269 Jan 03 j 14:26	30° $\Upsilon$	
max. Earth dist.	263 May 03 j 01:13	11° $\Upsilon$ 01'25	9.98852 AU	opposition	269 Jan 18 j 07:17	28° $\Upsilon$ 49'59	0°59'35
morning rise	263 May 20 j 20:51	13° $\Upsilon$ 20'38		min. Earth dist.	269 Jan 18 j 00:19	28° $\Upsilon$ 51'24	8.24233 AU
	263 Jun 03 j 00:46	15° $\Upsilon$		direct	269 Mar 27 j 16:09	25° $\Upsilon$ 20'59	
retrograde	263 Sep 04 j 12:35	21° $\Upsilon$ 46'21			269 Jun 12 j 18:41	0° $\Omega$	
opposition	263 Nov 10 j 18:08	18° $\Upsilon$ 15'36	-2°-11'-53	evening set	269 Jul 11 j 23:45	3° $\Omega$ 24'41	
min. Earth dist.	263 Nov 10 j 13:15	18° $\Upsilon$ 16'37	7.97587 AU				
	263 Dec 31 j 22:50	15° $\Upsilon$		conjunction	269 Jul 29 j 21:20	5° $\Omega$ 39'35	1°03'01
direct	264 Jan 16 j 00:56	14° $\Upsilon$ 47'01		minimum elong	269 Jul 29 j 21:18	5° $\Omega$ 39'34	1°03'02
	264 Jan 31 j 02:30	15° $\Upsilon$		max. Earth dist.	269 Jul 30 j 05:44	5° $\Omega$ 42'14	10.30057 AU
evening set	264 Apr 29 j 01:30	23° $\Upsilon$ 01'48		morning rise	269 Aug 16 j 14:48	7° $\Omega$ 53'10	
					269 Oct 31 j 18:39	15° $\Omega$	
conjunction	264 May 17 j 03:17	25° $\Upsilon$ 23'12	-1°-33'-42	retrograde	269 Nov 25 j 22:16	15° $\Omega$ 34'40	
minimum elong	264 May 17 j 03:21	25° $\Upsilon$ 23'14	1°33'42		269 Dec 21 j 06:08	15° $\Upsilon$	
max. Earth dist.	264 May 17 j 10:31	25° $\Upsilon$ 25'35	9.96868 AU	opposition	270 Jan 31 j 19:20	12° $\Omega$ 11'16	1°34'53
morning rise	264 Jun 04 j 06:55	27° $\Upsilon$ 45'10		min. Earth dist.	270 Jan 31 j 13:29	12° $\Omega$ 12'26	8.36113 AU
	264 Jun 22 j 07:23	0° $\Pi$		direct	270 Apr 10 j 19:05	8° $\Omega$ 43'05	
retrograde	264 Sep 18 j 05:17	6° $\Pi$ 08'25			270 Jul 12 j 04:27	15° $\Omega$	
opposition	264 Nov 24 j 02:39	2° $\Pi$ 38'10	-1°-40'-27	evening set	270 Jul 26 j 01:23	16° $\Omega$ 39'28	
min. Earth dist.	264 Nov 23 j 20:28	2° $\Pi$ 39'27	7.97133 AU				
	264 Dec 30 j 03:30	30° $\Upsilon$		conjunction	270 Aug 12 j 18:04	18° $\Omega$ 51'11	1°29'27

minimum elong	270 Aug 12 j 18:01	18°♏51'10	1°29'27	morning rise	276 Nov 09 j 16:28	3°♐10'40	
max. Earth dist.	270 Aug 13 j 00:26	18°♏53'10	10.42380 AU	retrograde	277 Feb 17 j 03:11	10°♐07'15	
morning rise	270 Aug 30 j 06:15	21°♏01'28		opposition	277 Apr 27 j 21:08	6°♐50'30	2°29'29
retrograde	270 Dec 08 j 19:20	28°♏33'12		min. Earth dist.	277 Apr 28 j 01:29	6°♐49'42	9.06316 AU
opposition	271 Feb 14 j 01:03	25°♏11'22	2°04'14	direct	277 Jul 08 j 07:15	3°♐30'10	
min. Earth dist.	271 Feb 13 j 20:00	25°♏12'22	8.48767 AU	evening set	277 Oct 18 j 22:17	10°♐36'21	
direct	271 Apr 24 j 15:39	21°♏44'12					
evening set	271 Aug 08 j 16:07	29°♏32'30		conjunction	277 Nov 04 j 12:52	12°♐32'37	1°55'20
	271 Aug 12 j 10:55	0°♐		minimum elong	277 Nov 04 j 12:55	12°♐32'37	1°55'20
				max. Earth dist.	277 Nov 04 j 06:52	12°♐30'51	11.07931 AU
conjunction	271 Aug 26 j 03:35	1°♐40'57	1°50'42	morning rise	277 Nov 21 j 01:04	14°♐28'16	
minimum elong	271 Aug 26 j 03:32	1°♐40'56	1°50'42		277 Nov 25 j 16:15	15°♐	
max. Earth dist.	271 Aug 26 j 08:21	1°♐42'26	10.55115 AU	retrograde	278 Feb 28 j 18:48	21°♐23'55	
morning rise	271 Sep 12 j 10:14	3°♐47'56		opposition	278 May 09 j 21:36	18°♐07'04	2°10'52
retrograde	271 Dec 21 j 10:25	11°♐10'39		min. Earth dist.	278 May 10 j 03:34	18°♐05'58	9.09224 AU
opposition	272 Feb 27 j 00:27	7°♐50'12	2°26'37		278 Jul 03 j 23:38	15°♐	
min. Earth dist.	272 Feb 26 j 20:24	7°♐50'59	8.61493 AU	direct	278 Jul 20 j 04:51	14°♐47'27	
direct	272 May 07 j 03:09	4°♐24'12			278 Aug 05 j 09:21	15°♐	
evening set	272 Aug 20 j 19:43	12°♐04'05		evening set	278 Oct 30 j 05:44	21°♐49'55	
conjunction	272 Sep 07 j 02:05	14°♐09'28	2°06'09	conjunction	278 Nov 15 j 19:22	23°♐45'46	1°38'03
minimum elong	272 Sep 07 j 02:03	14°♐09'27	2°06'08	minimum elong	278 Nov 15 j 19:24	23°♐45'47	1°38'03
max. Earth dist.	272 Sep 07 j 05:24	14°♐10'28	10.67578 AU	max. Earth dist.	278 Nov 15 j 11:34	23°♐43'29	11.09694 AU
morning rise	272 Sep 24 j 03:31	16°♐13'22		morning rise	278 Dec 02 j 07:37	25°♐41'17	
retrograde	273 Jan 01 j 17:55	23°♐28'04			279 Jan 13 j 08:14	0°♐	
opposition	273 Mar 10 j 18:02	20°♐08'51	2°41'34	retrograde	279 Mar 12 j 10:30	2°♐37'33	
min. Earth dist.	273 Mar 10 j 15:44	20°♐09'18	8.73613 AU		279 May 12 j 20:11	30°♐	
direct	273 May 20 j 06:53	16°♐44'04		opposition	279 May 21 j 21:45	29°♐20'19	1°47'22
evening set	273 Sep 02 j 12:34	24°♐15'43		min. Earth dist.	279 May 22 j 05:07	29°♐18'58	9.09768 AU
				direct	279 Aug 01 j 02:24	26°♐01'12	
conjunction	273 Sep 19 j 14:16	26°♐18'21	2°15'30		279 Oct 13 j 11:01	0°♐	
minimum elong	273 Sep 19 j 14:15	26°♐18'20	2°15'29	evening set	279 Nov 10 j 11:04	3°♐01'16	
max. Earth dist.	273 Sep 19 j 15:32	26°♐18'43	10.79118 AU				
morning rise	273 Oct 06 j 11:13	28°♐19'36		conjunction	279 Nov 27 j 00:27	4°♐57'10	1°17'03
	273 Oct 21 j 00:24	0°♐		minimum elong	279 Nov 27 j 00:29	4°♐57'11	1°17'02
retrograde	274 Jan 13 j 19:23	5°♐27'37		max. Earth dist.	279 Nov 26 j 15:37	4°♐54'34	11.09088 AU
opposition	274 Mar 23 j 06:24	2°♐09'26	2°49'00	morning rise	279 Dec 13 j 13:26	6°♐52'58	
min. Earth dist.	274 Mar 23 j 06:47	2°♐09'22	8.84517 AU	retrograde	280 Mar 23 j 05:02	13°♐51'28	
	274 Apr 23 j 03:25	30°♐		opposition	280 Jun 01 j 22:21	10°♐33'34	1°19'46
direct	274 Jun 02 j 03:58	28°♐45'52		min. Earth dist.	280 Jun 02 j 05:57	10°♐32'10	9.07942 AU
	274 Jul 11 j 14:50	0°♐		direct	280 Aug 11 j 21:47	7°♐14'47	
evening set	274 Sep 14 j 20:03	6°♐09'55		evening set	280 Nov 20 j 16:21	14°♐13'53	
conjunction	274 Oct 01 j 17:37	8°♐10'12	2°18'47	conjunction	280 Dec 07 j 06:12	16°♐10'15	0°53'02
minimum elong	274 Oct 01 j 17:37	8°♐10'12	2°18'47	minimum elong	280 Dec 07 j 06:14	16°♐10'16	0°53'02
max. Earth dist.	274 Oct 01 j 15:44	8°♐09'38	10.89211 AU	max. Earth dist.	280 Dec 06 j 21:48	16°♐07'47	11.06131 AU
morning rise	274 Oct 18 j 11:02	10°♐09'17		morning rise	280 Dec 23 j 20:16	18°♐06'47	
retrograde	275 Jan 25 j 16:41	17°♐12'02		retrograde	281 Apr 04 j 03:07	25°♐09'02	
opposition	275 Apr 04 j 14:22	13°♐54'39	2°49'09	opposition	281 Jun 14 j 00:17	21°♐50'16	0°48'56
min. Earth dist.	275 Apr 04 j 16:50	13°♐54'11	8.93776 AU	min. Earth dist.	281 Jun 14 j 07:28	21°♐48'56	9.03806 AU
direct	275 Jun 14 j 17:52	10°♐32'17		direct	281 Aug 23 j 15:56	18°♐31'37	
evening set	275 Sep 26 j 19:13	17°♐49'27		evening set	281 Dec 01 j 23:21	25°♐31'18	
conjunction	275 Oct 13 j 13:31	19°♐47'55	2°16'14	conjunction	281 Dec 18 j 14:01	27°♐28'33	0°26'46
minimum elong	275 Oct 13 j 13:32	19°♐47'55	2°16'15	minimum elong	281 Dec 18 j 14:02	27°♐28'33	0°26'47
max. Earth dist.	275 Oct 13 j 09:20	19°♐46'40	10.97533 AU	max. Earth dist.	281 Dec 18 j 05:37	27°♐26'04	11.00917 AU
morning rise	275 Oct 30 j 04:23	21°♐45'21		morning rise	282 Jan 04 j 05:40	29°♐26'10	
retrograde	276 Feb 06 j 09:33	28°♐44'17			282 Jan 09 j 03:15	0°♐	
opposition	276 Apr 15 j 19:01	25°♐27'22	2°42'27	retrograde	282 Apr 16 j 07:12	6°♐33'45	
min. Earth dist.	276 Apr 15 j 22:32	25°♐26'43	9.01116 AU	opposition	282 Jun 26 j 05:02	3°♐13'57	0°15'50
direct	276 Jun 26 j 03:10	22°♐06'06		min. Earth dist.	282 Jun 26 j 12:12	3°♐12'37	8.97497 AU
evening set	276 Oct 07 j 11:18	29°♐17'16			282 Aug 25 j 14:50	30°♐	
	276 Oct 13 j 14:31	0°♐		direct	282 Sep 04 j 10:35	29°♐55'14	
					282 Sep 14 j 04:56	0°♐	
conjunction	276 Oct 24 j 03:23	1°♐14'22	2°08'15	evening set	282 Dec 13 j 09:50	6°♐57'05	
minimum elong	276 Oct 24 j 03:24	1°♐14'23	2°08'16	desc. node	282 Dec 18 j 07:00	7°♐31'29	
max. Earth dist.	276 Oct 23 j 22:19	1°♐12'53	11.03839 AU				

conjunction	282 Dec 30 j 01:33	8°♁55'32	0°00'-53	max. Earth dist.	289 Mar 13 j 22:58	23°♁26'47	10.26450 AU
minimum elong	282 Dec 30 j 01:31	8°♁55'32	0°00'54	morning rise	289 Mar 31 j 11:39	25°♁40'18	
behind sun begin	282 Dec 29 j 18:32	8°♁53'28			289 May 08 j 01:30	0°♁	
behind sun end	282 Dec 30 j 08:30	8°♁57'35		retrograde	289 Jul 16 j 16:44	3°♁51'57	
max. Earth dist.	282 Dec 29 j 16:27	8°♁52'51	10.93623 AU	opposition	289 Sep 23 j 13:54	0°♁23'06	-2°-49'-22
morning rise	283 Jan 15 j 19:16	10°♁54'38		min. Earth dist.	289 Sep 23 j 13:30	0°♁23'11	8.21322 AU
retrograde	283 Apr 28 j 15:11	18°♁09'04			289 Sep 28 j 09:04	30°♁	
opposition	283 Jul 08 j 13:36	14°♁48'03	0°-18'-27	direct	289 Nov 29 j 06:28	26°♁58'58	
min. Earth dist.	283 Jul 08 j 21:03	14°♁46'39	8.89239 AU		290 Jan 27 j 01:30	0°♁	
direct	283 Sep 16 j 07:01	11°♁29'03		evening set	290 Mar 10 j 17:57	4°♁51'11	
evening set	283 Dec 25 j 01:31	18°♁34'39					
				conjunction	290 Mar 28 j 05:02	7°♁05'31	-2°-17'-29
conjunction	284 Jan 10 j 18:43	20°♁34'40	0°-28'-54	minimum elong	290 Mar 28 j 05:02	7°♁05'31	2°17'29
minimum elong	284 Jan 10 j 18:42	20°♁34'39	0°28'55	max. Earth dist.	290 Mar 28 j 07:01	7°♁06'10	10.16322 AU
max. Earth dist.	284 Jan 10 j 10:01	20°♁32'03	10.84511 AU	morning rise	290 Apr 14 j 20:44	9°♁21'22	
morning rise	284 Jan 27 j 14:51	22°♁35'34		retrograde	290 Jul 31 j 05:25	17°♁40'13	
retrograde	284 May 10 j 06:31	29°♁58'12		opposition	290 Oct 07 j 14:45	14°♁10'35	-2°-50'-27
opposition	284 Jul 20 j 02:38	26°♁35'50	0°-52'-41	min. Earth dist.	290 Oct 07 j 12:19	14°♁11'05	8.12107 AU
min. Earth dist.	284 Jul 20 j 09:28	26°♁34'33	8.79337 AU	direct	290 Dec 13 j 00:56	10°♁45'18	
direct	284 Sep 27 j 08:40	23°♁16'21		evening set	291 Mar 25 j 04:44	18°♁45'41	
	285 Jan 01 j 04:04	0°♁					
evening set	285 Jan 05 j 00:01	0°♁27'13		conjunction	291 Apr 11 j 20:25	21°♁02'34	-2°-14'-8
				minimum elong	291 Apr 11 j 20:27	21°♁02'34	2°14'08
conjunction	285 Jan 21 j 19:14	2°♁29'08	0°-56'-14	max. Earth dist.	291 Apr 12 j 01:08	21°♁04'06	10.08103 AU
minimum elong	285 Jan 21 j 19:12	2°♁29'07	0°56'15	morning rise	291 Apr 29 j 16:06	23°♁20'46	
max. Earth dist.	285 Jan 21 j 12:04	2°♁26'56	10.73910 AU		291 Jul 01 j 05:17	0°♁	
morning rise	285 Feb 07 j 17:52	4°♁32'07		retrograde	291 Aug 14 j 22:26	1°♁44'18	
retrograde	285 May 23 j 07:07	12°♁04'06			291 Sep 29 j 06:28	30°♁	
opposition	285 Aug 01 j 21:07	8°♁40'19	-1°-25'-29	opposition	291 Oct 21 j 19:37	28°♁14'11	-2°-41'-26
min. Earth dist.	285 Aug 02 j 02:26	8°♁39'18	8.68164 AU	min. Earth dist.	291 Oct 21 j 15:15	28°♁15'05	8.05017 AU
direct	285 Oct 09 j 13:48	5°♁20'11		direct	291 Dec 27 j 01:40	24°♁47'45	
evening set	286 Jan 17 j 06:57	12°♁37'42			292 Mar 15 j 04:40	0°♁	
				evening set	292 Apr 08 j 00:05	2°♁55'01	
conjunction	286 Feb 03 j 04:24	14°♁41'45	-1°-21'-38				
minimum elong	286 Feb 03 j 04:22	14°♁41'44	1°21'40	conjunction	292 Apr 25 j 20:17	5°♁14'05	-2°-2'-41
max. Earth dist.	286 Feb 02 j 22:54	14°♁40'03	10.62243 AU	minimum elong	292 Apr 25 j 20:20	5°♁14'06	2°02'41
	286 Feb 05 j 15:37	15°♁		max. Earth dist.	292 Apr 26 j 02:41	5°♁16'10	10.02233 AU
morning rise	286 Feb 20 j 05:45	16°♁47'04		morning rise	292 May 13 j 19:39	7°♁34'12	
retrograde	286 Jun 05 j 15:23	24°♁29'12			292 Jul 26 j 12:23	15°♁	
opposition	286 Aug 14 j 21:42	21°♁03'58	-1°-55'-16	retrograde	292 Aug 28 j 17:37	15°♁59'29	
min. Earth dist.	286 Aug 15 j 01:15	21°♁03'17	8.56192 AU		292 Oct 01 j 02:28	15°♁	
direct	286 Oct 22 j 00:42	17°♁43'02		opposition	292 Nov 04 j 02:57	12°♁29'17	-2°-22'-23
evening set	287 Jan 29 j 23:38	25°♁08'24		min. Earth dist.	292 Nov 03 j 21:31	12°♁30'24	8.00410 AU
				direct	293 Jan 09 j 07:29	9°♁01'47	
conjunction	287 Feb 15 j 23:39	27°♁14'50	-1°-43'-48		293 Apr 05 j 02:13	15°♁	
minimum elong	287 Feb 15 j 23:36	27°♁14'49	1°43'50	evening set	293 Apr 23 j 01:41	17°♁14'17	
max. Earth dist.	287 Feb 15 j 19:12	27°♁13'26	10.50044 AU				
morning rise	287 Mar 05 j 04:11	29°♁22'41		conjunction	293 May 11 j 01:53	19°♁35'00	-1°-43'-35
	287 Mar 10 j 07:15	0°♁		minimum elong	293 May 11 j 01:57	19°♁35'01	1°43'35
retrograde	287 Jun 19 j 08:26	7°♁15'15		max. Earth dist.	293 May 11 j 09:14	19°♁37'25	9.99004 AU
opposition	287 Aug 28 j 04:49	3°♁48'39	-2°-20'-19	morning rise	293 May 29 j 04:16	21°♁56'26	
min. Earth dist.	287 Aug 28 j 07:06	3°♁48'12	8.43987 AU		293 Aug 24 j 05:40	0°♁	
direct	287 Nov 03 j 18:29	0°♁26'45		retrograde	293 Sep 12 j 12:33	0°♁20'34	
evening set	288 Feb 12 j 02:49	8°♁00'49			293 Oct 01 j 17:30	30°♁	
				opposition	293 Nov 18 j 11:26	26°♁50'42	-1°-54'-18
conjunction	288 Feb 29 j 05:57	10°♁09'49	-2°-1'-22	min. Earth dist.	293 Nov 18 j 05:26	26°♁51'57	7.98549 AU
minimum elong	288 Feb 29 j 05:55	10°♁09'48	2°01'23	direct	294 Jan 23 j 19:26	23°♁22'20	
max. Earth dist.	288 Feb 29 j 02:54	10°♁08'51	10.37905 AU		294 Apr 25 j 06:39	0°♁	
morning rise	288 Mar 17 j 14:02	12°♁20'21		evening set	294 May 08 j 06:56	1°♁38'06	
retrograde	288 Jul 02 j 09:46	20°♁23'00					
opposition	288 Sep 09 j 18:23	16°♁55'10	-2°-38'-53	conjunction	294 May 26 j 10:12	3°♁59'43	-1°-17'-58
min. Earth dist.	288 Sep 09 j 19:31	16°♁54'57	8.32154 AU	minimum elong	294 May 26 j 10:16	3°♁59'44	1°17'58
direct	288 Nov 15 j 19:38	13°♁32'11		max. Earth dist.	294 May 26 j 18:10	4°♁02'20	9.98656 AU
evening set	289 Feb 24 j 17:01	21°♁15'24		morning rise	294 Jun 13 j 14:30	6°♁21'40	
				retrograde	294 Sep 27 j 03:03	14°♁41'50	
conjunction	289 Mar 13 j 23:51	23°♁27'04	-2°-12'-58	opposition	294 Dec 02 j 19:18	11°♁12'40	-1°-19'-1
minimum elong	289 Mar 13 j 23:49	23°♁27'03	2°12'58	min. Earth dist.	294 Dec 02 j 13:07	11°♁13'57	7.99655 AU



direct	295 Feb 07 j 10:44	7°♄43'40			301 Apr 03 j 22:36	30°♃♄	
evening set	295 May 23 j 13:23	16°♄00'25		direct	301 May 01 j 20:24	29°♃21'17	
					301 May 29 j 16:52	0°♃	
conjunction	295 Jun 10 j 18:15	18°♄22'01	0°-47'-33	evening set	301 Aug 15 j 16:57	7°♃04'44	
minimum elong	295 Jun 10 j 18:18	18°♄22'02	0°47'34				
max. Earth dist.	295 Jun 11 j 02:24	18°♄24'40	10.01322 AU	conjunction	301 Sep 02 j 01:28	9°♃11'27	2°00'25
morning rise	295 Jun 28 j 22:53	20°♄43'30		minimum elong	301 Sep 02 j 01:25	9°♃11'26	2°00'24
retrograde	295 Oct 11 j 11:44	28°♄57'11		max. Earth dist.	301 Sep 02 j 04:45	9°♃12'28	10.61444 AU
opposition	295 Dec 17 j 00:42	25°♄29'00	0°-39'-4	morning rise	301 Sep 19 j 05:11	11°♃16'42	
min. Earth dist.	295 Dec 16 j 18:23	25°♄30'19	8.03759 AU	retrograde	301 Dec 27 j 21:56	18°♃34'39	
direct	296 Feb 22 j 02:39	21°♄59'38		opposition	302 Mar 05 j 18:51	15°♃14'28	2°36'17
	296 Jun 04 j 18:14	0°♄		min. Earth dist.	302 Mar 05 j 16:48	15°♃14'52	8.67611 AU
evening set	296 Jun 06 j 17:39	0°♄15'00		direct	302 May 15 j 04:05	11°♃48'35	
				evening set	302 Aug 28 j 14:06	19°♃23'45	
conjunction	296 Jun 24 j 22:23	2°♄35'37	0°-14'-31				
minimum elong	296 Jun 24 j 22:24	2°♄35'37	0°14'31	conjunction	302 Sep 14 j 17:42	21°♃27'33	2°12'21
behind sun begin	296 Jun 24 j 19:28	2°♄34'40		minimum elong	302 Sep 14 j 17:40	21°♃27'32	2°12'20
behind sun end	296 Jun 25 j 01:21	2°♄36'33		max. Earth dist.	302 Sep 14 j 18:52	21°♃27'54	10.73390 AU
max. Earth dist.	296 Jun 25 j 06:38	2°♄38'16	10.06892 AU	morning rise	302 Oct 01 j 16:42	23°♃29'57	
morning rise	296 Jul 13 j 01:35	4°♄55'40			302 Dec 12 j 04:06	0°♄	
retrograde	296 Oct 24 j 13:36	13°♄00'58		retrograde	303 Jan 09 j 00:57	0°♄40'36	
asc. node	296 Dec 05 j 18:00	11°♄27'17			303 Feb 06 j 08:52	30°♃♄	
opposition	296 Dec 30 j 02:18	9°♄34'00	0°02'41	opposition	303 Mar 18 j 08:57	27°♃21'28	2°46'52
min. Earth dist.	296 Dec 29 j 19:35	9°♄35'23	8.10633 AU	min. Earth dist.	303 Mar 18 j 07:43	27°♃21'43	8.79152 AU
direct	297 Mar 07 j 16:34	6°♄04'33		direct	303 May 28 j 05:06	23°♃56'51	
evening set	297 Jun 21 j 16:32	14°♄16'17			303 Aug 28 j 20:57	0°♄	
				evening set	303 Sep 10 j 01:03	1°♄23'59	
conjunction	297 Jul 09 j 19:26	16°♄35'02	0°18'58				
minimum elong	297 Jul 09 j 19:25	16°♄35'01	0°18'58	conjunction	303 Sep 27 j 00:22	3°♄25'14	2°18'11
max. Earth dist.	297 Jul 10 j 03:46	16°♄37'42	10.15015 AU	minimum elong	303 Sep 27 j 00:21	3°♄25'13	2°18'11
morning rise	297 Jul 27 j 19:31	18°♄52'50		max. Earth dist.	303 Sep 27 j 00:29	3°♄25'16	10.84337 AU
retrograde	297 Nov 07 j 08:26	26°♄48'37		morning rise	303 Oct 13 j 19:16	5°♄25'12	
opposition	298 Jan 12 j 22:44	23°♄22'58	0°43'26	retrograde	304 Jan 21 j 00:33	12°♄29'50	
min. Earth dist.	298 Jan 12 j 15:49	23°♄24'23	8.19838 AU	opposition	304 Mar 29 j 18:18	9°♄11'37	2°50'03
direct	298 Mar 22 j 02:34	19°♄53'45		min. Earth dist.	304 Mar 29 j 18:11	9°♄11'38	8.89450 AU
evening set	298 Jul 06 j 07:53	28°♄00'02		direct	304 Jun 08 j 21:11	5°♄48'18	
	298 Jul 22 j 04:28	0°♄		evening set	304 Sep 21 j 03:02	13°♄07'59	
conjunction	298 Jul 24 j 07:27	0°♄16'12	0°50'41	conjunction	304 Oct 07 j 22:51	15°♄07'09	2°18'04
minimum elong	298 Jul 24 j 07:25	0°♄16'12	0°50'41	minimum elong	304 Oct 07 j 22:51	15°♄07'09	2°18'05
max. Earth dist.	298 Jul 24 j 15:31	0°♄18'46	10.25169 AU	max. Earth dist.	304 Oct 07 j 21:48	15°♄06'50	10.93849 AU
morning rise	298 Aug 11 j 03:08	2°♄31'08		morning rise	304 Oct 24 j 14:36	17°♄05'12	
retrograde	298 Nov 20 j 18:27	10°♄16'51		retrograde	305 Jan 31 j 18:53	24°♄05'10	
opposition	299 Jan 26 j 13:06	6°♄52'38	1°20'46	opposition	305 Apr 10 j 23:40	20°♄47'41	2°46'11
min. Earth dist.	299 Jan 26 j 06:35	6°♄53'57	8.30788 AU	min. Earth dist.	305 Apr 11 j 01:27	20°♄47'21	8.98115 AU
direct	299 Apr 05 j 07:33	3°♄23'56		direct	305 Jun 21 j 06:15	17°♄25'37	
evening set	299 Jul 20 j 13:48	11°♄23'24		evening set	305 Oct 02 j 21:27	24°♄38'44	
conjunction	299 Aug 07 j 08:52	13°♄36'32	1°18'58	conjunction	305 Oct 19 j 14:27	26°♄36'17	2°12'21
minimum elong	299 Aug 07 j 08:49	13°♄36'31	1°18'58	minimum elong	305 Oct 19 j 14:28	26°♄36'18	2°12'22
max. Earth dist.	299 Aug 07 j 16:11	13°♄38'50	10.36725 AU	max. Earth dist.	305 Oct 19 j 11:13	26°♄35'20	11.01568 AU
	299 Aug 18 j 11:22	15°♄		morning rise	305 Nov 05 j 04:11	28°♄32'56	
morning rise	299 Aug 24 j 23:16	15°♄48'14			305 Nov 18 j 00:23	0°♄	
retrograde	299 Dec 03 j 19:46	23°♄24'02		retrograde	306 Feb 12 j 10:58	5°♄29'43	
opposition	300 Feb 08 j 21:21	20°♄01'14	1°52'45	opposition	306 Apr 23 j 02:03	2°♄12'44	2°35'48
min. Earth dist.	300 Feb 08 j 16:10	20°♄02'16	8.42831 AU	min. Earth dist.	306 Apr 23 j 05:46	2°♄12'02	9.04818 AU
direct	300 Apr 18 j 05:50	16°♄33'17			306 May 25 j 17:27	30°♃♄	
evening set	300 Aug 02 j 08:54	24°♄24'59		direct	306 Jul 03 j 11:29	28°♄51'49	
					306 Aug 10 j 12:23	0°♄	
conjunction	300 Aug 19 j 22:45	26°♄34'52	1°42'29	evening set	306 Oct 14 j 09:54	5°♄59'24	
minimum elong	300 Aug 19 j 22:42	26°♄34'51	1°42'29				
max. Earth dist.	300 Aug 20 j 04:27	26°♄36'38	10.49026 AU	conjunction	306 Oct 31 j 00:52	7°♄55'50	2°01'29
morning rise	300 Sep 06 j 07:40	28°♄43'16		minimum elong	306 Oct 31 j 00:54	7°♄55'50	2°01'29
	300 Sep 17 j 01:03	0°♄		max. Earth dist.	306 Oct 30 j 19:37	7°♄54'17	11.07211 AU
retrograde	300 Dec 15 j 13:20	6°♄09'43		morning rise	306 Nov 16 j 13:28	9°♄51'34	
opposition	301 Feb 20 j 23:15	2°♄48'17	2°18'10		307 Jan 08 j 00:39	15°♄	
min. Earth dist.	301 Feb 20 j 19:46	2°♄48'58	8.55314 AU	retrograde	307 Feb 24 j 01:20	16°♄46'41	

	307 Apr 13 j 22:32	15°♈		morning rise	313 Jan 21 j 17:18	17°♄36'44	
opposition	307 May 05 j 02:24	13°♈29'54	2°19'31	retrograde	313 May 05 j 00:24	24°♄54'17	
min. Earth dist.	307 May 05 j 06:54	13°♈29'05	9.09320 AU	opposition	313 Jul 14 j 20:48	21°♄33'17	0°-37'-30
direct	307 Jul 15 j 11:48	10°♈10'02		min. Earth dist.	313 Jul 15 j 03:39	21°♄32'00	8.86945 AU
	307 Oct 05 j 14:08	15°♈		direct	313 Sep 22 j 08:50	18°♄14'46	
evening set	307 Oct 25 j 17:56	17°♈13'15		evening set	313 Dec 31 j 00:50	25°♄21'56	
conjunction	307 Nov 11 j 07:51	19°♈09'02	1°46'01	conjunction	314 Jan 16 j 18:52	27°♄22'36	0°-44'-10
minimum elong	307 Nov 11 j 07:53	19°♈09'03	1°46'01	minimum elong	314 Jan 16 j 18:51	27°♄22'36	0°44'11
max. Earth dist.	307 Nov 11 j 02:09	19°♈07'22	11.10584 AU	max. Earth dist.	314 Jan 16 j 09:55	27°♄19'54	10.81670 AU
morning rise	307 Nov 27 j 19:58	21°♈04'22		morning rise	314 Feb 02 j 16:05	29°♄24'16	
retrograde	308 Mar 06 j 17:58	27°♈59'22			314 Feb 07 j 17:49	0°♁	
opposition	308 May 16 j 01:51	24°♈42'32	1°58'03	retrograde	314 May 17 j 20:40	6°♁50'42	
min. Earth dist.	308 May 16 j 06:44	24°♈41'38	9.11476 AU	opposition	314 Jul 27 j 12:07	3°♁28'16	-1°-11'00
direct	308 Jul 26 j 09:33	21°♈23'31		min. Earth dist.	314 Jul 27 j 19:03	3°♁26'57	8.75965 AU
evening set	308 Nov 04 j 23:17	28°♈23'38		direct	314 Oct 04 j 09:57	0°♁09'04	
	308 Nov 18 j 19:05	0°♁		evening set	315 Jan 12 j 03:04	7°♁22'22	
conjunction	308 Nov 21 j 12:48	0°♁19'15	1°26'34	conjunction	315 Jan 28 j 23:07	9°♁25'05	-1°-10'-31
minimum elong	308 Nov 21 j 12:50	0°♁19'16	1°26'33	minimum elong	315 Jan 28 j 23:05	9°♁25'04	1°10'32
max. Earth dist.	308 Nov 21 j 06:38	0°♁17'27	11.11569 AU	max. Earth dist.	315 Jan 28 j 14:32	9°♁22'27	10.70029 AU
morning rise	308 Dec 08 j 01:11	2°♁14'38		morning rise	315 Feb 14 j 23:08	11°♁29'00	
retrograde	309 Mar 18 j 11:20	9°♁11'02			315 Mar 18 j 10:04	15°♁	
opposition	309 May 28 j 01:24	5°♁53'54	1°32'10	retrograde	315 May 30 j 22:25	19°♁05'23	
min. Earth dist.	309 May 28 j 07:15	5°♁52'50	9.11211 AU	opposition	315 Aug 09 j 09:19	15°♁41'22	-1°-42'-14
direct	309 Aug 07 j 02:48	2°♁35'31		min. Earth dist.	315 Aug 09 j 15:40	15°♁40'09	8.63825 AU
evening set	309 Nov 16 j 04:01	9°♁33'57			315 Aug 18 j 10:39	15°♁	
conjunction	309 Dec 02 j 17:28	11°♁29'48	1°03'48	direct	315 Oct 16 j 18:38	12°♁21'14	
minimum elong	309 Dec 02 j 17:30	11°♁29'49	1°03'48		315 Dec 12 j 00:12	15°♁	
max. Earth dist.	309 Dec 02 j 09:42	11°♁27'31	11.10129 AU	evening set	316 Jan 24 j 14:25	19°♁41'59	
morning rise	309 Dec 19 j 06:52	13°♁25'41		conjunction	316 Feb 10 j 13:03	21°♁47'01	-1°-34'-15
retrograde	310 Mar 30 j 06:05	20°♁25'03		minimum elong	316 Feb 10 j 13:00	21°♁47'01	1°34'16
opposition	310 Jun 09 j 02:01	17°♁07'20	1°02'42	max. Earth dist.	316 Feb 10 j 06:15	21°♁44'55	10.57489 AU
min. Earth dist.	310 Jun 09 j 09:14	17°♁06'00	9.08532 AU	morning rise	316 Feb 27 j 16:01	23°♁53'26	
direct	310 Aug 18 j 20:17	13°♁49'18			316 Apr 28 j 02:25	0°♁	
evening set	310 Nov 27 j 09:35	20°♁47'35		retrograde	316 Jun 12 j 10:14	1°♁40'17	
conjunction	310 Dec 13 j 23:33	22°♁44'04	0°38'29		316 Jul 28 j 17:55	30°♁	
minimum elong	310 Dec 13 j 23:34	22°♁44'04	0°38'29	opposition	316 Aug 21 j 12:33	28°♁14'38	-2°-9'-35
max. Earth dist.	310 Dec 13 j 14:56	22°♁41'32	11.06303 AU	min. Earth dist.	316 Aug 21 j 17:25	28°♁13'41	8.51098 AU
morning rise	310 Dec 30 j 14:26	24°♁40'51		direct	316 Oct 28 j 09:52	24°♁53'23	
	311 Feb 23 j 02:37	0°♁			317 Jan 16 j 09:09	0°♁	
retrograde	311 Apr 11 j 06:39	1°♁44'45		evening set	317 Feb 05 j 11:56	2°♁22'36	
opposition	311 May 30 j 01:49	30°♁		conjunction	317 Feb 22 j 13:36	4°♁30'12	-1°-54'-2
min. Earth dist.	311 Jun 21 j 04:54	28°♁26'10	0°30'34	minimum elong	317 Feb 22 j 13:33	4°♁30'11	1°54'03
direct	311 Jun 21 j 12:20	28°♁24'48	9.03509 AU	max. Earth dist.	317 Feb 22 j 09:02	4°♁28'46	10.44648 AU
	311 Aug 30 j 15:26	25°♁08'14		morning rise	317 Mar 11 j 19:46	6°♁39'17	
evening set	311 Nov 19 j 15:56	0°♁		retrograde	317 Jun 26 j 07:25	14°♁36'36	
	311 Dec 08 j 17:34	2°♁07'49		opposition	317 Sep 03 j 22:23	11°♁09'23	-2°-31'-18
conjunction	311 Dec 25 j 08:39	4°♁05'21	0°11'27	min. Earth dist.	317 Sep 04 j 01:04	11°♁08'52	8.38393 AU
minimum elong	311 Dec 25 j 08:39	4°♁05'21	0°11'27	direct	317 Nov 10 j 06:43	7°♁46'54	
behind sun begin	311 Dec 25 j 03:32	4°♁03'51		evening set	318 Feb 18 j 20:11	15°♁25'14	
behind sun end	311 Dec 25 j 13:46	4°♁06'51		conjunction	318 Mar 08 j 01:15	17°♁35'31	-2°-8'-30
max. Earth dist.	311 Dec 25 j 00:24	4°♁02'55	11.00171 AU	minimum elong	318 Mar 08 j 01:13	17°♁35'31	2°08'31
morning rise	312 Jan 11 j 01:16	6°♁03'24		max. Earth dist.	318 Mar 07 j 22:37	17°♁34'41	10.32151 AU
retrograde	312 Apr 22 j 11:42	13°♁13'24		morning rise	318 Mar 25 j 11:01	19°♁47'22	
desc. node	312 May 27 j 23:21	12°♁15'19		retrograde	318 Jul 10 j 11:51	27°♁54'31	
opposition	312 Jul 02 j 10:51	9°♁53'41	0°-3'-12	opposition	318 Sep 17 j 14:40	24°♁25'55	-2°-45'-42
min. Earth dist.	312 Jul 02 j 17:51	9°♁52'23	8.96250 AU	min. Earth dist.	318 Sep 17 j 15:29	24°♁25'46	8.26364 AU
direct	312 Sep 10 j 10:36	6°♁35'35		direct	318 Nov 23 j 11:44	21°♁02'06	
evening set	312 Dec 19 j 06:09	13°♁38'08		evening set	319 Mar 04 j 15:34	28°♁49'45	
conjunction	313 Jan 04 j 22:36	15°♁37'04	0°-16'-29		319 Mar 13 j 20:48	0°♁	
minimum elong	313 Jan 04 j 22:36	15°♁37'03	0°16'30	conjunction	319 Mar 22 j 00:33	1°♁02'48	-2°-16'-24
max. Earth dist.	313 Jan 04 j 14:22	15°♁34'37	10.91868 AU	minimum elong	319 Mar 22 j 00:32	1°♁02'48	2°16'24

max. Earth dist.	319 Mar 21 j 23:38	1°♃02'31	10.20671 AU	opposition	325 Dec 24 j 01:49	3°♄22'55	0°-16'-36
morning rise	319 Apr 08 j 14:19	3°♃17'24		min. Earth dist.	325 Dec 23 j 18:00	3°♄24'32	8.05821 AU
retrograde	319 Jul 24 j 22:01	11°♃32'57			326 Feb 18 j 04:38	30°♃	
opposition	319 Oct 01 j 12:42	8°♃03'15	-2°-51'-17	direct	326 Mar 01 j 08:52	29°♃53'04	
min. Earth dist.	319 Oct 01 j 12:05	8°♃03'23	8.15666 AU		326 Mar 12 j 14:44	0°♄	
direct	319 Dec 07 j 01:35	4°♃38'04		asc. node	326 May 23 j 08:36	5°♄20'34	
evening set	320 Mar 17 j 21:30	12°♃34'40		evening set	326 Jun 15 j 06:00	8°♄07'12	
conjunction	320 Apr 04 j 10:53	14°♃50'25	-2°-16'-45	conjunction	326 Jul 03 j 10:08	10°♄27'06	0°03'42
minimum elong	320 Apr 04 j 10:54	14°♃50'26	2°16'46	minimum elong	326 Jul 03 j 10:07	10°♄27'06	0°03'42
max. Earth dist.	320 Apr 04 j 11:48	14°♃50'43	10.10854 AU	behind sun begin	326 Jul 03 j 02:50	10°♄24'46	
morning rise	320 Apr 22 j 04:50	17°♃07'38		behind sun end	326 Jul 03 j 17:24	10°♄29'25	
retrograde	320 Aug 07 j 13:17	25°♃29'24		max. Earth dist.	326 Jul 03 j 20:14	10°♄30'20	10.09805 AU
opposition	320 Oct 14 j 15:41	21°♃58'58	-2°-47'-1	morning rise	326 Jul 21 j 11:50	12°♄46'12	
min. Earth dist.	320 Oct 14 j 13:50	21°♃59'21	8.06914 AU	retrograde	326 Nov 01 j 13:13	20°♄47'03	
direct	320 Dec 19 j 23:06	18°♃32'28		opposition	327 Jan 07 j 01:07	17°♄20'28	0°24'59
evening set	321 Apr 01 j 12:45	26°♃36'59		min. Earth dist.	327 Jan 06 j 17:49	17°♄21'58	8.14309 AU
conjunction	321 Apr 19 j 06:44	28°♃55'12	-2°-9'-3	direct	327 Mar 15 j 21:01	13°♄50'52	
minimum elong	321 Apr 19 j 06:47	28°♃55'13	2°09'03	evening set	327 Jun 30 j 01:45	22°♄00'26	
max. Earth dist.	321 Apr 19 j 10:03	28°♃56'17	10.03282 AU	conjunction	327 Jul 18 j 03:01	24°♄18'00	0°36'27
	321 Apr 27 j 13:22	0°♄		minimum elong	327 Jul 18 j 02:59	24°♄18'00	0°36'27
morning rise	321 May 07 j 04:38	1°♄14'40		max. Earth dist.	327 Jul 18 j 12:05	24°♄20'54	10.19405 AU
retrograde	321 Aug 22 j 07:18	9°♄39'58		morning rise	327 Aug 05 j 00:56	26°♄34'29	
opposition	321 Oct 28 j 22:10	6°♄09'09	-2°-32'-33		327 Sep 03 j 02:29	0°♅	
min. Earth dist.	321 Oct 28 j 18:42	6°♄09'52	8.00645 AU	retrograde	327 Nov 15 j 02:51	4°♅25'23	
direct	322 Jan 03 j 03:42	2°♄41'29		opposition	328 Jan 20 j 18:51	1°♅00'27	1°04'13
evening set	322 Apr 16 j 11:36	10°♄52'20		min. Earth dist.	328 Jan 20 j 12:12	1°♅01'48	8.24863 AU
conjunction	322 May 04 j 10:03	13°♄12'33	-1°-53'-23		328 Feb 02 j 09:49	30°♃	
minimum elong	322 May 04 j 10:06	13°♄12'34	1°53'23	direct	328 Mar 29 j 06:03	27°♄31'27	
max. Earth dist.	322 May 04 j 15:52	13°♄14'28	9.98445 AU	evening set	328 Jul 13 j 12:48	5°♅34'49	
	322 May 18 j 02:54	15°♄		conjunction	328 Jul 31 j 09:56	7°♅49'29	1°06'32
morning rise	322 May 22 j 11:22	15°♄33'42		minimum elong	328 Jul 31 j 09:53	7°♅49'28	1°06'32
retrograde	322 Sep 06 j 01:46	23°♄59'25		max. Earth dist.	328 Jul 31 j 17:42	7°♅51'56	10.30743 AU
opposition	322 Nov 12 j 06:32	20°♄28'41	-2°-8'-26	morning rise	328 Aug 18 j 03:01	10°♅02'50	
min. Earth dist.	322 Nov 12 j 01:19	20°♄29'46	7.97274 AU		328 Oct 02 j 02:09	15°♅	
direct	323 Jan 17 j 14:19	17°♄00'02		retrograde	328 Nov 27 j 07:58	17°♅43'43	
evening set	323 May 01 j 15:41	25°♄15'11			329 Jan 24 j 23:07	15°♃	
conjunction	323 May 19 j 17:52	27°♄36'43	-1°-30'-34	opposition	329 Feb 02 j 06:33	14°♅20'25	1°38'53
minimum elong	323 May 19 j 17:56	27°♄36'44	1°30'35	min. Earth dist.	329 Feb 02 j 00:19	14°♅21'40	8.36852 AU
max. Earth dist.	323 May 20 j 01:49	27°♄39'20	9.96662 AU	direct	329 Apr 12 j 08:22	10°♅52'17	
morning rise	323 Jun 06 j 21:37	29°♄58'46			329 Jun 24 j 03:11	15°♅	
	323 Jun 07 j 01:27	0°♃		evening set	329 Jul 27 j 13:30	18°♅48'12	
retrograde	323 Sep 20 j 18:01	8°♃21'49		conjunction	329 Aug 14 j 05:46	20°♅59'41	1°32'23
opposition	323 Nov 26 j 15:05	4°♃51'35	-1°-36'-9	minimum elong	329 Aug 14 j 05:42	20°♅59'40	1°32'23
min. Earth dist.	323 Nov 26 j 08:20	4°♃52'59	7.97026 AU	max. Earth dist.	329 Aug 14 j 12:22	21°♅01'44	10.43161 AU
direct	324 Feb 01 j 04:03	1°♃22'13		morning rise	329 Aug 31 j 17:26	23°♅09'42	
evening set	324 May 15 j 22:13	9°♃39'22			329 Nov 12 j 17:58	0°♆	
conjunction	324 Jun 03 j 02:46	12°♃01'19	-1°-2'-6	retrograde	329 Dec 10 j 06:13	0°♆40'53	
minimum elong	324 Jun 03 j 02:49	12°♃01'20	1°02'06		330 Jan 07 j 02:00	30°♃	
max. Earth dist.	324 Jun 03 j 12:19	12°♃04'27	9.98049 AU	opposition	330 Feb 15 j 11:51	27°♅19'07	2°07'25
morning rise	324 Jun 21 j 07:27	14°♃23'20		min. Earth dist.	330 Feb 15 j 06:10	27°♅20'14	8.49589 AU
retrograde	324 Oct 04 j 06:31	22°♃40'56		direct	330 Apr 26 j 02:50	23°♅52'04	
opposition	324 Dec 09 j 22:01	19°♃11'37	0°-57'-57		330 Jul 27 j 00:44	0°♆	
min. Earth dist.	324 Dec 09 j 14:17	19°♃13'14	7.99932 AU	evening set	330 Aug 10 j 03:24	1°♆39'48	
direct	325 Feb 14 j 18:49	15°♃41'51		conjunction	330 Aug 27 j 14:29	3°♆48'03	1°52'57
evening set	325 May 31 j 04:00	23°♃58'37		minimum elong	330 Aug 27 j 14:26	3°♆48'02	1°52'56
conjunction	325 Jun 18 j 09:14	26°♃20'01	0°-29'-57	max. Earth dist.	330 Aug 27 j 20:07	3°♆49'47	10.55972 AU
minimum elong	325 Jun 18 j 09:16	26°♃20'01	0°29'58	morning rise	330 Sep 13 j 20:35	5°♆54'46	
max. Earth dist.	325 Jun 18 j 19:36	26°♃23'23	10.02527 AU	retrograde	330 Dec 22 j 20:23	13°♆16'56	
morning rise	325 Jul 06 j 13:14	28°♃41'00		opposition	331 Feb 28 j 10:49	9°♆56'35	2°28'54
	325 Jul 17 j 01:12	0°♄		min. Earth dist.	331 Feb 28 j 06:38	9°♆57'24	8.62387 AU
retrograde	325 Oct 18 j 13:31	6°♄51'00		direct	331 May 09 j 13:29	6°♆30'42	

evening set	331 Aug 23 j 06:14	14°♎10'01		conjunction	337 Nov 17 j 01:25	25°♍43'02	1°35'28
				minimum elong	337 Nov 17 j 01:27	25°♍43'03	1°35'27
conjunction	331 Sep 09 j 12:11	16°♎15'09	2°07'38	max. Earth dist.	337 Nov 16 j 17:14	25°♍40'38	11.10437 AU
minimum elong	331 Sep 09 j 12:09	16°♎15'09	2°07'37	morning rise	337 Dec 03 j 13:49	27°♍38'28	
max. Earth dist.	331 Sep 09 j 16:01	16°♎16'19	10.68510 AU		337 Dec 25 j 00:52	0°♌	
morning rise	331 Sep 26 j 13:08	18°♎18'50		retrograde	338 Mar 13 j 17:06	4°♌34'29	
retrograde	332 Jan 04 j 03:04	25°♎32'59		opposition	338 May 23 j 05:16	1°♌17'18	1°43'56
opposition	332 Mar 12 j 04:07	22°♎13'54	2°42'53	min. Earth dist.	338 May 23 j 12:29	1°♌15'58	9.10416 AU
min. Earth dist.	332 Mar 12 j 02:09	22°♎14'16	8.74593 AU		338 Jun 10 j 05:32	30°♍	
direct	332 May 21 j 17:49	18°♎49'14		direct	338 Aug 02 j 09:56	27°♍58'19	
evening set	332 Sep 03 j 22:18	26°♎20'12			338 Sep 22 j 12:49	0°♌	
				evening set	338 Nov 11 j 16:49	4°♌57'50	
conjunction	332 Sep 20 j 23:29	28°♎22'35	2°16'11	conjunction	338 Nov 28 j 06:19	6°♌53'41	1°14'03
minimum elong	332 Sep 20 j 23:28	28°♎22'35	2°16'11	minimum elong	338 Nov 28 j 06:21	6°♌53'42	1°14'03
max. Earth dist.	332 Sep 21 j 00:31	28°♎22'54	10.80143 AU	max. Earth dist.	338 Nov 27 j 22:03	6°♌51'15	11.09641 AU
	332 Oct 04 j 12:20	0°♌		morning rise	338 Dec 14 j 19:19	8°♌49'27	
morning rise	332 Oct 07 j 20:07	0°♌23'37		retrograde	339 Mar 25 j 11:39	15°♌47'48	
retrograde	333 Jan 15 j 03:57	7°♌31'02		opposition	339 Jun 04 j 05:36	12°♌29'55	1°15'55
opposition	333 Mar 24 j 16:04	4°♌12'57	2°49'20	min. Earth dist.	339 Jun 04 j 12:36	12°♌28'37	9.08385 AU
min. Earth dist.	333 Mar 24 j 16:24	4°♌12'53	8.85591 AU	direct	339 Aug 14 j 04:57	9°♌11'15	
direct	333 Jun 03 j 14:01	0°♌49'31		evening set	339 Nov 22 j 21:55	16°♌09'56	
evening set	333 Sep 16 j 04:49	8°♌12'45					
conjunction	333 Oct 03 j 02:01	10°♌12'49	2°18'42	conjunction	339 Dec 09 j 11:51	18°♌06'17	0°49'45
minimum elong	333 Oct 03 j 02:01	10°♌12'49	2°18'42	minimum elong	339 Dec 09 j 11:52	18°♌06'17	0°49'45
max. Earth dist.	333 Oct 03 j 00:03	10°♌12'14	10.90315 AU	max. Earth dist.	339 Dec 09 j 03:39	18°♌03'52	11.06472 AU
morning rise	333 Oct 19 j 19:15	12°♌11'43		morning rise	339 Dec 26 j 01:59	20°♌02'47	
retrograde	334 Jan 26 j 23:20	19°♌13'51		retrograde	340 Apr 05 j 11:09	27°♌05'01	
opposition	334 Apr 05 j 23:24	15°♌56'31	2°48'34	opposition	340 Jun 15 j 07:33	23°♌46'15	0°44'48
min. Earth dist.	334 Apr 06 j 01:12	15°♌56'11	8.94886 AU	min. Earth dist.	340 Jun 15 j 14:51	23°♌44'54	9.04036 AU
direct	334 Jun 16 j 04:03	12°♌34'18		direct	340 Aug 24 j 22:35	20°♌27'41	
evening set	334 Sep 28 j 03:05	19°♌50'38		evening set	340 Dec 03 j 04:52	27°♌27'04	
conjunction	334 Oct 14 j 21:15	21°♌48'53	2°15'25	conjunction	340 Dec 19 j 19:31	29°♌24'18	0°23'20
minimum elong	334 Oct 14 j 21:16	21°♌48'54	2°15'25	minimum elong	340 Dec 19 j 19:32	29°♌24'18	0°23'20
max. Earth dist.	334 Oct 14 j 17:48	21°♌47'52	10.98631 AU	max. Earth dist.	340 Dec 19 j 10:23	29°♌21'36	11.01046 AU
morning rise	334 Oct 31 j 11:53	23°♌46'09			340 Dec 24 j 20:04	0°♌	
	335 Jan 08 j 23:10	0°♍		morning rise	341 Jan 05 j 11:25	1°♌21'58	
retrograde	335 Feb 07 j 18:28	0°♍44'33		retrograde	341 Apr 17 j 13:00	8°♌29'38	
	335 Mar 10 j 02:00	30°♍		opposition	341 Jun 27 j 12:15	5°♌09'48	0°11'34
opposition	335 Apr 18 j 03:32	27°♌27'42	2°41'00	min. Earth dist.	341 Jun 27 j 20:08	5°♌08'20	8.97516 AU
min. Earth dist.	335 Apr 18 j 06:30	27°♌27'09	9.02175 AU	direct	341 Sep 05 j 16:12	1°♌51'06	
direct	335 Jun 28 j 12:42	24°♌06'35		desc. node	341 Nov 02 j 13:21	4°♌29'56	
	335 Sep 28 j 10:21	0°♍		evening set	341 Dec 14 j 15:25	8°♌52'50	
evening set	335 Oct 09 j 18:30	1°♍16'55					
conjunction	335 Oct 26 j 10:28	3°♍13'53	2°06'45	conjunction	341 Dec 31 j 07:11	10°♌51'19	0°-4'-25
minimum elong	335 Oct 26 j 10:30	3°♍13'53	2°06'46	minimum elong	341 Dec 31 j 07:10	10°♌51'19	0°04'26
max. Earth dist.	335 Oct 26 j 05:58	3°♍12'34	11.04854 AU	behind sun begin	341 Dec 31 j 00:19	10°♌49'17	
morning rise	335 Nov 11 j 23:22	5°♍10'01		behind sun end	341 Dec 31 j 14:02	10°♌53'20	
retrograde	336 Feb 19 j 10:25	12°♍06'08		max. Earth dist.	341 Dec 30 j 21:42	10°♌48'30	10.93540 AU
opposition	336 Apr 29 j 05:21	8°♍49'28	2°27'15	morning rise	342 Jan 17 j 01:09	12°♌50'28	
min. Earth dist.	336 Apr 29 j 09:58	8°♍48'37	9.07271 AU	retrograde	342 Apr 29 j 21:41	20°♌05'08	
direct	336 Jul 09 j 14:08	5°♍29'17		opposition	342 Jul 09 j 20:41	16°♌44'03	0°-22'-41
evening set	336 Oct 20 j 04:56	12°♍34'44		min. Earth dist.	342 Jul 10 j 04:27	16°♌42'36	8.89048 AU
				direct	342 Sep 17 j 14:38	13°♌25'02	
conjunction	336 Nov 05 j 19:20	14°♍30'52	1°53'15	evening set	342 Dec 26 j 07:16	20°♌30'40	
minimum elong	336 Nov 05 j 19:22	14°♍30'52	1°53'15				
max. Earth dist.	336 Nov 05 j 12:51	14°♍28'57	11.08825 AU	conjunction	343 Jan 12 j 00:40	22°♌30'44	0°-32'-18
	336 Nov 09 j 22:35	15°♍		minimum elong	343 Jan 12 j 00:39	22°♌30'44	0°32'19
morning rise	336 Nov 22 j 07:35	16°♍26'25		max. Earth dist.	343 Jan 11 j 16:27	22°♌28'16	10.84214 AU
retrograde	337 Mar 02 j 01:06	23°♍21'42		morning rise	343 Jan 28 j 20:51	24°♌31'42	
opposition	337 May 11 j 05:32	20°♍04'56	2°07'59		343 Mar 24 j 09:13	0°♌	
min. Earth dist.	337 May 11 j 12:01	20°♍03'44	9.10045 AU	retrograde	343 May 12 j 14:32	1°♌54'44	
direct	337 Jul 21 j 13:11	16°♍45'26			343 Jul 02 j 08:31	30°♍	
evening set	337 Oct 31 j 11:50	23°♍47'16		opposition	343 Jul 22 j 09:49	28°♌32'16	0°-56'-44
				min. Earth dist.	343 Jul 22 j 16:14	28°♌31'03	8.78940 AU
				direct	343 Sep 29 j 15:09	25°♌12'46	

	343 Dec 17 j 06:41	0°♊		conjunction	350 Apr 13 j 07:05	23°♑08'10	-2°-13'-11
evening set	344 Jan 07 j 06:06	2°♊23'48		minimum elong	350 Apr 13 j 07:07	23°♑08'10	2°13'11
				max. Earth dist.	350 Apr 13 j 11:51	23°♑09'43	10.07145 AU
conjunction	344 Jan 24 j 01:27	4°♊25'47	0°-59'-23	morning rise	350 May 01 j 03:04	25°♑26'38	
minimum elong	344 Jan 24 j 01:25	4°♊25'46	0°59'25		350 Jun 09 j 01:01	0°♄	
max. Earth dist.	344 Jan 23 j 18:28	4°♊23'39	10.73410 AU	retrograde	350 Aug 16 j 10:39	3°♄50'45	
morning rise	344 Feb 10 j 00:10	6°♊28'52		opposition	350 Oct 23 j 05:22	0°♄20'36	-2°-39'-42
retrograde	344 May 24 j 14:49	14°♊01'22		min. Earth dist.	350 Oct 23 j 00:47	0°♄21'32	8.04136 AU
opposition	344 Aug 03 j 04:29	10°♊37'28	-1°-29'-10		350 Oct 27 j 09:45	30°♑♑	
min. Earth dist.	344 Aug 03 j 09:32	10°♊36'30	8.67575 AU	direct	350 Dec 28 j 09:53	26°♑54'04	
direct	344 Oct 10 j 20:07	7°♊17'16			351 Feb 25 j 18:57	0°♄	
evening set	345 Jan 18 j 13:38	14°♊35'09		evening set	351 Apr 10 j 11:16	5°♄02'09	
	345 Jan 21 j 23:38	15°♊					
				conjunction	351 Apr 28 j 07:47	7°♄21'26	-2°00'-50
conjunction	345 Feb 04 j 11:08	16°♊39'19	-1°-24'-25	minimum elong	351 Apr 28 j 07:50	7°♄21'27	2°00'50
minimum elong	345 Feb 04 j 11:06	16°♊39'18	1°24'27	max. Earth dist.	351 Apr 28 j 13:57	7°♄23'28	10.01471 AU
max. Earth dist.	345 Feb 04 j 04:48	16°♊37'22	10.61564 AU	morning rise	351 May 16 j 07:32	9°♄41'48	
morning rise	345 Feb 21 j 12:43	18°♊44'46			351 Jul 01 j 12:55	15°♄	
retrograde	345 Jun 07 j 00:05	26°♊27'29		retrograde	351 Aug 31 j 05:54	18°♄07'25	
opposition	345 Aug 16 j 05:13	23°♊02'09	-1°-58'-25		351 Nov 01 j 22:53	15°♑♄	
min. Earth dist.	345 Aug 16 j 09:17	23°♊01'22	8.55435 AU	opposition	351 Nov 06 j 13:13	14°♄37'12	-2°-19'-34
direct	345 Oct 23 j 06:59	19°♊41'06		min. Earth dist.	351 Nov 06 j 07:56	14°♄38'18	7.99786 AU
evening set	346 Jan 31 j 06:50	27°♊07'00		direct	352 Jan 11 j 18:04	11°♄09'36	
					352 Mar 18 j 13:54	15°♄	
conjunction	346 Feb 17 j 06:57	29°♊13'34	-1°-46'-5	evening set	352 Apr 24 j 13:37	19°♄22'44	
minimum elong	346 Feb 17 j 06:54	29°♊13'33	1°46'06				
max. Earth dist.	346 Feb 17 j 01:33	29°♊11'53	10.49213 AU	conjunction	352 May 12 j 14:05	21°♄43'36	-1°-40'-55
	346 Feb 26 j 11:44	0°♄		minimum elong	352 May 12 j 14:09	21°♄43'38	1°40'56
morning rise	346 Mar 03 j 11:46	1°♄21'36		max. Earth dist.	352 May 12 j 21:01	21°♄45'53	9.98545 AU
retrograde	346 Jun 20 j 17:13	9°♄14'50		morning rise	352 May 30 j 16:49	24°♄05'12	
opposition	346 Aug 29 j 12:41	5°♄48'07	-2°-22'-45		352 Jul 22 j 12:37	0°♄	
min. Earth dist.	346 Aug 29 j 15:48	5°♄47'31	8.43092 AU	retrograde	352 Sep 13 j 23:23	2°♄29'18	
direct	346 Nov 05 j 01:02	2°♄26'04			352 Nov 07 j 13:49	30°♑♄	
evening set	347 Feb 13 j 10:33	10°♄00'50		opposition	352 Nov 19 j 21:59	28°♄59'27	-1°-50'-33
				min. Earth dist.	352 Nov 19 j 16:24	29°♄00'37	7.98240 AU
conjunction	347 Mar 02 j 13:57	12°♄10'00	-2°-2'-59	direct	353 Jan 25 j 07:09	25°♄31'00	
minimum elong	347 Mar 02 j 13:55	12°♄10'00	2°02'59		353 Apr 08 j 08:25	0°♄	
max. Earth dist.	347 Mar 02 j 10:48	12°♄09'00	10.36955 AU	evening set	353 May 09 j 19:16	3°♄47'08	
morning rise	347 Mar 19 j 22:16	14°♄20'44					
retrograde	347 Jul 04 j 17:42	22°♄24'08		conjunction	353 May 27 j 22:42	6°♄08'50	-1°-14'-39
opposition	347 Sep 12 j 02:37	18°♄56'11	-2°-40'-27	minimum elong	353 May 27 j 22:45	6°♄08'51	1°14'39
min. Earth dist.	347 Sep 12 j 04:05	18°♄55'53	8.31164 AU	max. Earth dist.	353 May 28 j 06:12	6°♄11'17	9.98493 AU
direct	347 Nov 18 j 04:14	15°♄33'03		morning rise	353 Jun 15 j 03:11	8°♄30'49	
evening set	348 Feb 27 j 01:30	23°♄17'02		retrograde	353 Sep 28 j 13:02	16°♄50'45	
				opposition	353 Dec 04 j 05:55	13°♄21'38	-1°-14'-35
conjunction	348 Mar 15 j 08:45	25°♄28'57	-2°-13'-48	min. Earth dist.	353 Dec 03 j 23:55	13°♄22'53	7.99614 AU
minimum elong	348 Mar 15 j 08:43	25°♄28'56	2°13'48	direct	354 Feb 08 j 22:16	9°♄52'35	
max. Earth dist.	348 Mar 15 j 08:21	25°♄28'49	10.25430 AU	evening set	354 May 25 j 01:46	18°♄09'30	
morning rise	348 Apr 01 j 20:46	27°♄42'24					
	348 Apr 20 j 18:32	0°♑		conjunction	354 Jun 12 j 06:44	20°♄31'08	0°-43'-48
retrograde	348 Jul 18 j 01:23	5°♑54'49		minimum elong	354 Jun 12 j 06:46	20°♄31'09	0°43'49
opposition	348 Sep 24 j 22:30	2°♑25'51	-2°-49'-54	max. Earth dist.	354 Jun 12 j 14:48	20°♄33'46	10.01398 AU
min. Earth dist.	348 Sep 24 j 21:50	2°♑25'59	8.20290 AU	morning rise	354 Jun 30 j 11:22	22°♄52'35	
	348 Oct 28 j 14:20	30°♑♄			354 Sep 08 j 07:28	0°♄	
direct	348 Nov 30 j 15:05	29°♄01'35		retrograde	354 Oct 12 j 22:10	1°♄05'55	
	349 Jan 02 j 02:33	0°♑			354 Nov 16 j 19:45	30°♑♄	
evening set	349 Mar 12 j 03:22	6°♑54'37		opposition	354 Dec 18 j 11:15	27°♄37'49	0°-34'-14
				min. Earth dist.	354 Dec 18 j 04:37	27°♄39'11	8.03935 AU
conjunction	349 Mar 29 j 14:52	9°♑09'15	-2°-17'-27	direct	355 Feb 23 j 13:48	24°♄08'25	
minimum elong	349 Mar 29 j 14:53	9°♑09'15	2°17'27		355 May 20 j 17:09	0°♄	
max. Earth dist.	349 Mar 29 j 17:18	9°♑10'02	10.15291 AU	evening set	355 Jun 09 j 06:01	2°♄23'50	
morning rise	349 Apr 16 j 06:49	11°♑25'20					
retrograde	349 Aug 01 j 16:14	19°♑44'54		conjunction	355 Jun 27 j 10:47	4°♄44'24	0°-10'-35
opposition	349 Oct 08 j 23:53	16°♑15'10	-2°-49'-52	minimum elong	355 Jun 27 j 10:47	4°♄44'24	0°10'36
min. Earth dist.	349 Oct 08 j 20:57	16°♑15'46	8.11099 AU	behind sun begin	355 Jun 27 j 05:10	4°♄42'36	
direct	349 Dec 14 j 08:33	12°♑49'46		behind sun end	355 Jun 27 j 16:25	4°♄46'13	
evening set	350 Mar 26 j 15:03	20°♑51'01		max. Earth dist.	355 Jun 27 j 19:25	4°♄47'11	10.07164 AU

morning rise	355 Jul 15 j 13:45	7°♄04'22			362 Mar 11 j 20:12	30°♃♄	
asc. node	355 Oct 24 j 16:14	15°♄08'56		opposition	362 Mar 19 j 18:14	29°♄23'53	2°47'38
retrograde	355 Oct 27 j 00:40	15°♄09'15		min. Earth dist.	362 Mar 19 j 16:33	29°♄24'12	8.80042 AU
opposition	356 Jan 01 j 12:45	11°♄42'22	0°07'35	direct	362 May 29 j 14:06	25°♄59'24	
min. Earth dist.	356 Jan 01 j 05:30	11°♄43'51	8.10989 AU		362 Aug 11 j 01:30	0°♄	
direct	356 Mar 09 j 03:41	8°♄12'57		evening set	362 Sep 11 j 09:46	3°♄25'53	
evening set	356 Jun 23 j 04:51	16°♄24'38					
conjunction	356 Jul 11 j 07:36	18°♄43'15	0°22'51	conjunction	362 Sep 28 j 08:49	5°♄26'57	2°18'26
minimum elong	356 Jul 11 j 07:35	18°♄43'15	0°22'51	minimum elong	362 Sep 28 j 08:48	5°♄26'57	2°18'26
max. Earth dist.	356 Jul 11 j 16:37	18°♄46'08	10.15450 AU	max. Earth dist.	362 Sep 28 j 09:34	5°♄27'11	10.85216 AU
morning rise	356 Jul 29 j 07:15	21°♄00'54		morning rise	362 Oct 15 j 03:21	7°♄26'44	
retrograde	356 Nov 08 j 19:02	28°♄56'12		retrograde	363 Jan 22 j 08:09	14°♄30'54	
opposition	357 Jan 14 j 09:07	25°♄30'41	0°48'07	opposition	363 Apr 01 j 03:10	11°♄12'46	2°49'53
min. Earth dist.	357 Jan 14 j 01:59	25°♄32'08	8.20347 AU	min. Earth dist.	363 Apr 01 j 03:25	11°♄12'43	8.90313 AU
direct	357 Mar 23 j 13:58	22°♄01'32		direct	363 Jun 11 j 05:44	7°♄49'33	
	357 Jul 06 j 19:16	0°♄		evening set	363 Sep 23 j 11:03	15°♄08'36	
evening set	357 Jul 07 j 19:56	0°♄07'39		conjunction	363 Oct 10 j 06:31	17°♄07'35	2°17'35
conjunction	357 Jul 25 j 19:08	2°♄23'38	0°54'17	minimum elong	363 Oct 10 j 06:31	17°♄07'35	2°17'35
minimum elong	357 Jul 25 j 19:06	2°♄23'38	0°54'17	max. Earth dist.	363 Oct 10 j 05:07	17°♄07'10	10.94687 AU
max. Earth dist.	357 Jul 26 j 03:41	2°♄26'21	10.25747 AU	morning rise	363 Oct 26 j 22:07	19°♄05'28	
morning rise	357 Aug 12 j 14:17	4°♄38'22		retrograde	364 Feb 03 j 02:37	26°♄05'01	
retrograde	357 Nov 22 j 04:46	12°♄23'36		opposition	364 Apr 12 j 08:14	22°♄47'36	2°45'08
opposition	358 Jan 27 j 23:27	8°♄59'32	1°24'57	min. Earth dist.	364 Apr 12 j 10:23	22°♄47'12	8.98924 AU
min. Earth dist.	358 Jan 27 j 17:16	9°♄00'47	8.31436 AU	direct	364 Jun 22 j 15:42	19°♄25'37	
direct	358 Apr 06 j 18:11	5°♄30'54		evening set	364 Oct 04 j 04:38	26°♄38'04	
evening set	358 Jul 22 j 01:22	13°♄30'06		conjunction	364 Oct 20 j 21:23	28°♄35'28	2°11'10
	358 Aug 03 j 02:46	15°♄		minimum elong	364 Oct 20 j 21:24	28°♄35'28	2°11'11
conjunction	358 Aug 08 j 19:56	15°♄43'01	1°22'05	max. Earth dist.	364 Oct 20 j 17:46	28°♄34'24	11.02343 AU
minimum elong	358 Aug 08 j 19:53	15°♄43'00	1°22'05		364 Nov 01 j 20:56	0°♄	
max. Earth dist.	358 Aug 09 j 03:05	15°♄45'15	10.37428 AU	morning rise	364 Nov 06 j 11:05	0°♄31'59	
morning rise	358 Aug 26 j 09:52	17°♄54'29		retrograde	365 Feb 13 j 17:07	7°♄28'24	
retrograde	358 Dec 05 j 05:58	25°♄29'47		opposition	365 Apr 24 j 10:09	4°♄11'25	2°33'57
opposition	359 Feb 10 j 07:31	22°♄07'09	1°56'15	min. Earth dist.	365 Apr 24 j 13:26	4°♄10'48	9.05548 AU
min. Earth dist.	359 Feb 10 j 02:52	22°♄08'04	8.43595 AU	direct	365 Jul 04 j 19:39	0°♄50'36	
direct	359 Apr 20 j 16:12	18°♄39'17		evening set	365 Oct 15 j 16:21	7°♄57'32	
evening set	359 Aug 04 j 20:00	26°♄30'37		conjunction	365 Nov 01 j 07:20	9°♄53'51	1°59'41
conjunction	359 Aug 22 j 09:17	28°♄40'17	1°44'59	minimum elong	365 Nov 01 j 07:22	9°♄53'51	1°59'41
minimum elong	359 Aug 22 j 09:13	28°♄40'16	1°44'59	max. Earth dist.	365 Nov 01 j 02:40	9°♄52'28	11.07897 AU
max. Earth dist.	359 Aug 22 j 14:13	28°♄41'49	10.49827 AU	morning rise	365 Nov 17 j 19:51	11°♄49'29	
	359 Sep 02 j 03:12	0°♄			365 Dec 17 j 08:54	15°♄	
morning rise	359 Sep 08 j 17:48	0°♄48'27		retrograde	366 Feb 25 j 08:29	18°♄44'18	
retrograde	359 Dec 17 j 21:46	8°♄14'23		opposition	366 May 06 j 09:57	15°♄27'30	2°16'58
opposition	360 Feb 23 j 09:06	4°♄53'05	2°20'48	min. Earth dist.	366 May 06 j 13:45	15°♄26'48	9.09943 AU
min. Earth dist.	360 Feb 23 j 05:36	4°♄53'47	8.56157 AU	direct	366 May 12 j 15:48	15°♄	
direct	360 May 03 j 07:36	1°♄26'13			366 Jul 16 j 20:26	12°♄07'43	
evening set	360 Aug 17 j 03:19	9°♄09'12		evening set	366 Sep 16 j 13:01	15°♄	
conjunction	360 Sep 03 j 11:21	11°♄15'41	2°02'13	conjunction	366 Oct 26 j 23:53	19°♄10'20	
minimum elong	360 Sep 03 j 11:19	11°♄15'40	2°02'12	minimum elong	366 Nov 12 j 13:50	21°♄06'02	1°43'41
max. Earth dist.	360 Sep 03 j 14:25	11°♄16'37	10.62309 AU	max. Earth dist.	366 Nov 12 j 13:52	21°♄06'03	1°43'41
morning rise	360 Sep 20 j 14:40	13°♄20'43		morning rise	366 Nov 12 j 08:43	21°♄04'32	11.11150 AU
retrograde	360 Dec 29 j 06:24	20°♄38'13		retrograde	366 Nov 29 j 01:55	23°♄01'17	
opposition	361 Mar 07 j 04:28	17°♄18'07	2°38'00	retrograde	367 Mar 09 j 01:01	29°♄56'01	
min. Earth dist.	361 Mar 07 j 01:45	17°♄18'38	8.68497 AU	opposition	367 May 18 j 09:08	26°♄39'11	1°54'55
direct	361 May 16 j 15:42	13°♄52'23		min. Earth dist.	367 May 18 j 14:06	26°♄38'16	9.11970 AU
evening set	361 Aug 29 j 23:33	21°♄26'57		direct	367 Jul 28 j 15:42	23°♄20'15	
conjunction	361 Sep 16 j 02:49	23°♄30'33	2°13'23	evening set	367 Nov 04 j 07:21	0°♄	
minimum elong	361 Sep 16 j 02:48	23°♄30'32	2°13'22		367 Nov 07 j 04:52	0°♄19'49	
max. Earth dist.	361 Sep 16 j 04:43	23°♄31'07	10.74282 AU	conjunction	367 Nov 23 j 18:17	2°♄15'22	1°23'48
morning rise	361 Oct 03 j 01:24	25°♄32'44		minimum elong	367 Nov 23 j 18:19	2°♄15'23	1°23'47
	361 Nov 14 j 00:20	0°♄		max. Earth dist.	367 Nov 23 j 11:39	2°♄13'26	11.12001 AU
retrograde	362 Jan 10 j 10:29	2°♄42'55		morning rise	367 Dec 10 j 06:48	4°♄10'44	
				retrograde	368 Mar 19 j 16:32	11°♄06'58	

opposition	368 May 29 j 08:28	7°♄49'48	1°28'34	retrograde	374 Jun 01 j 05:33	21°♃01'11	
min. Earth dist.	368 May 29 j 14:52	7°♄48'37	9.11570 AU	opposition	374 Aug 10 j 15:48	17°♃37'07	-1°-45'-33
direct	368 Aug 08 j 09:23	4°♄31'26		min. Earth dist.	374 Aug 10 j 21:56	17°♃35'57	8.63554 AU
evening set	368 Nov 17 j 09:14	11°♄29'28			374 Sep 18 j 22:35	15°♃	
				direct	374 Oct 18 j 01:20	14°♃16'59	
conjunction	368 Dec 03 j 22:42	13°♄25'17	1°00'42		374 Nov 15 j 14:39	15°♃	
minimum elong	368 Dec 03 j 22:44	13°♄25'17	1°00'42	evening set	375 Jan 25 j 20:21	21°♃37'57	
max. Earth dist.	368 Dec 03 j 14:38	13°♄22'55	11.10427 AU				
morning rise	368 Dec 20 j 12:19	15°♄21'09		conjunction	375 Feb 11 j 19:11	23°♃43'05	-1°-36'-42
retrograde	369 Mar 31 j 12:31	22°♄20'27		minimum elong	375 Feb 11 j 19:08	23°♃43'04	1°36'43
opposition	369 Jun 10 j 08:44	19°♄02'41	0°58'46	max. Earth dist.	375 Feb 11 j 12:52	23°♃41'07	10.57151 AU
min. Earth dist.	369 Jun 10 j 15:52	19°♄01'22	9.08755 AU	morning rise	375 Feb 28 j 22:12	25°♃49'34	
direct	369 Aug 20 j 03:44	15°♄44'40			375 Apr 07 j 10:50	0°♃	
evening set	369 Nov 28 j 14:33	22°♄42'37		retrograde	375 Jun 14 j 18:36	3°♃36'52	
				opposition	375 Aug 23 j 19:20	0°♃11'11	-2°-12'-16
conjunction	369 Dec 15 j 04:42	24°♄39'07	0°35'10	min. Earth dist.	375 Aug 23 j 23:39	0°♃10'20	8.50713 AU
minimum elong	369 Dec 15 j 04:44	24°♄39'07	0°35'11		375 Aug 26 j 04:53	30°♃	
max. Earth dist.	369 Dec 14 j 20:46	24°♄36'47	11.06459 AU	direct	375 Oct 30 j 15:02	26°♃49'56	
morning rise	369 Dec 31 j 19:40	26°♄35'55			375 Dec 31 j 00:11	0°♃	
	370 Feb 01 j 13:32	0°♃		evening set	376 Feb 07 j 18:27	4°♃19'30	
retrograde	370 Apr 12 j 12:21	3°♃39'51					
opposition	370 Jun 22 j 11:20	0°♃21'12	0°26'26	conjunction	376 Feb 24 j 20:14	6°♃27'12	-1°-55'-54
min. Earth dist.	370 Jun 22 j 18:07	0°♃19'57	9.03595 AU	minimum elong	376 Feb 24 j 20:12	6°♃27'11	1°55'55
	370 Jun 27 j 06:41	30°♃		max. Earth dist.	376 Feb 24 j 15:17	6°♃25'39	10.44208 AU
direct	370 Aug 31 j 21:03	27°♄03'19		morning rise	376 Mar 13 j 02:37	8°♃36'23	
	370 Nov 01 j 09:31	0°♃		retrograde	376 Jun 27 j 15:29	16°♃34'12	
evening set	370 Dec 09 j 22:33	4°♃02'42		opposition	376 Sep 05 j 05:30	13°♃06'58	-2°-33'-12
				min. Earth dist.	376 Sep 05 j 08:14	13°♃06'26	8.37914 AU
conjunction	370 Dec 26 j 13:45	6°♃00'14	0°08'03	direct	376 Nov 11 j 12:44	9°♃44'28	
minimum elong	370 Dec 26 j 13:45	6°♃00'14	0°08'03	evening set	377 Feb 20 j 03:29	17°♃23'18	
behind sun begin	370 Dec 26 j 07:30	5°♃58'25					
behind sun end	370 Dec 26 j 19:59	6°♃02'04		conjunction	377 Mar 09 j 08:39	19°♃33'43	-2°-9'-39
max. Earth dist.	370 Dec 26 j 05:58	5°♃57'57	11.00199 AU	minimum elong	377 Mar 09 j 08:37	19°♃33'42	2°09'40
morning rise	371 Jan 12 j 06:26	7°♃58'18		max. Earth dist.	377 Mar 09 j 05:03	19°♃32'34	10.31637 AU
desc. node	371 Apr 14 j 00:41	15°♃02'48		morning rise	377 Mar 26 j 18:44	21°♃45'42	
retrograde	371 Apr 24 j 19:02	15°♃08'26		retrograde	377 Jul 11 j 19:48	29°♃53'19	
opposition	371 Jul 04 j 17:17	11°♃48'40	0°-7'-23	opposition	377 Sep 18 j 22:03	26°♃24'45	-2°-46'-40
min. Earth dist.	371 Jul 04 j 23:57	11°♃47'26	8.96231 AU	min. Earth dist.	377 Sep 18 j 23:31	26°♃24'27	8.25827 AU
direct	371 Sep 12 j 16:41	8°♃30'36		direct	377 Nov 24 j 18:34	23°♃00'53	
evening set	371 Dec 21 j 11:15	15°♃33'02			378 Feb 27 j 09:49	0°♃	
				evening set	378 Mar 05 j 23:28	0°♃49'06	
conjunction	372 Jan 07 j 03:41	17°♃31'58	0°-19'-52				
minimum elong	372 Jan 07 j 03:40	17°♃31'58	0°19'53	conjunction	378 Mar 23 j 08:40	3°♃02'19	-2°-16'-45
max. Earth dist.	372 Jan 06 j 19:01	17°♃29'23	10.91817 AU	minimum elong	378 Mar 23 j 08:39	3°♃02'19	2°16'46
morning rise	372 Jan 23 j 22:36	19°♃31'42		max. Earth dist.	378 Mar 23 j 07:03	3°♃01'48	10.20126 AU
retrograde	372 May 06 j 07:05	26°♃49'24		morning rise	378 Apr 09 j 22:46	5°♃17'05	
opposition	372 Jul 16 j 03:19	23°♃28'21	0°-41'-33	retrograde	378 Jul 26 j 06:54	13°♃33'04	
min. Earth dist.	372 Jul 16 j 10:36	23°♃26'59	8.86863 AU	opposition	378 Oct 02 j 20:30	10°♃03'24	-2°-51'-12
direct	372 Sep 23 j 13:36	20°♃09'49		min. Earth dist.	378 Oct 02 j 20:31	10°♃03'24	8.15122 AU
evening set	373 Jan 01 j 06:05	27°♃16'58		direct	378 Dec 08 j 08:41	6°♃38'10	
				evening set	379 Mar 20 j 05:58	14°♃35'21	
conjunction	373 Jan 18 j 00:10	29°♃17'39	0°-47'-22				
minimum elong	373 Jan 18 j 00:09	29°♃17'38	0°47'24	conjunction	379 Apr 06 j 19:44	16°♃51'17	-2°-16'-15
max. Earth dist.	373 Jan 17 j 14:57	29°♃14'52	10.81554 AU	minimum elong	379 Apr 06 j 19:45	16°♃51'18	2°16'15
	373 Jan 23 j 20:21	0°♃		max. Earth dist.	379 Apr 06 j 20:40	16°♃51'36	10.10328 AU
morning rise	373 Feb 03 j 21:38	1°♃19'22		morning rise	379 Apr 24 j 13:58	19°♃08'40	
retrograde	373 May 19 j 01:23	8°♃46'02		retrograde	379 Aug 09 j 22:08	27°♃30'49	
opposition	373 Jul 28 j 18:36	5°♃23'32	-1°-14'-46	opposition	379 Oct 16 j 23:46	24°♃00'24	-2°-45'-50
min. Earth dist.	373 Jul 29 j 01:56	5°♃22'09	8.75805 AU	min. Earth dist.	379 Oct 16 j 22:04	24°♃00'45	8.06414 AU
direct	373 Oct 05 j 16:16	2°♃04'19		direct	379 Dec 22 j 07:28	20°♃33'51	
evening set	374 Jan 13 j 08:34	9°♃17'44		evening set	380 Apr 02 j 21:57	28°♃38'57	
					380 Apr 13 j 08:47	0°♃	
conjunction	374 Jan 30 j 04:49	11°♃20'30	-1°-13'-24				
minimum elong	374 Jan 30 j 04:46	11°♃20'29	1°13'26	conjunction	380 Apr 20 j 16:24	0°♃57'21	-2°-7'-40
max. Earth dist.	374 Jan 29 j 20:42	11°♃18'01	10.69810 AU	minimum elong	380 Apr 20 j 16:27	0°♃57'22	2°07'40
morning rise	374 Feb 16 j 04:55	13°♃24'28		max. Earth dist.	380 Apr 20 j 20:13	0°♃58'36	10.02824 AU
	374 Mar 01 j 19:22	15°♃		morning rise	380 May 08 j 14:32	3°♃16'58	

retrograde	380 Aug 23 j 16:00	11°♄42'29		retrograde	386 Nov 16 j 09:45	6°♄27'23	
opposition	380 Oct 30 j 06:24	8°♄11'43	-2°-30'-19	opposition	387 Jan 22 j 02:56	3°♄02'28	1°08'23
min. Earth dist.	380 Oct 30 j 02:36	8°♄12'30	8.00233 AU	min. Earth dist.	387 Jan 21 j 19:52	3°♄03'54	8.25332 AU
direct	381 Jan 04 j 12:46	4°♄44'01			387 Mar 09 j 03:13	30°♄♁	
evening set	381 Apr 17 j 21:25	12°♄55'22		direct	387 Mar 31 j 15:15	29°♄33'28	
	381 May 03 j 20:15	15°♄		evening set	387 Apr 23 j 01:46	0°♄	
					387 Jul 15 j 22:01	7°♄36'32	
conjunction	381 May 05 j 20:16	15°♄15'46	-1°-51'-11	conjunction	387 Aug 02 j 18:52	9°♄51'02	1°09'41
minimum elong	381 May 05 j 20:20	15°♄15'47	1°51'11	minimum elong	387 Aug 02 j 18:49	9°♄51'01	1°09'40
max. Earth dist.	381 May 06 j 02:40	15°♄17'52	9.98095 AU	max. Earth dist.	387 Aug 03 j 02:54	9°♄53'34	10.31259 AU
morning rise	381 May 23 j 21:44	17°♄37'01		morning rise	387 Aug 20 j 11:31	12°♄04'11	
retrograde	381 Sep 07 j 10:34	26°♄02'49			387 Sep 14 j 09:09	15°♄	
opposition	381 Nov 13 j 15:02	22°♄32'07	-2°-5'-15	retrograde	387 Nov 29 j 16:08	19°♄44'34	
min. Earth dist.	381 Nov 13 j 09:21	22°♄33'18	7.96987 AU	opposition	388 Feb 04 j 14:19	16°♄21'17	1°42'27
direct	382 Jan 18 j 22:41	19°♄03'27		min. Earth dist.	388 Feb 04 j 07:32	16°♄22'39	8.37409 AU
evening set	382 May 03 j 01:50	27°♄18'58			388 Feb 22 j 00:56	15°♄♄	
conjunction	382 May 21 j 04:18	29°♄40'38	-1°-27'-41	direct	388 Apr 13 j 16:21	12°♄53'11	
minimum elong	382 May 21 j 04:21	29°♄40'39	1°27'41		388 Jun 03 j 10:20	15°♄	
max. Earth dist.	382 May 21 j 12:36	29°♄43'21	9.96455 AU	evening set	388 Jul 28 j 22:06	20°♄48'43	
	382 May 23 j 15:18	0°♄		conjunction	388 Aug 15 j 14:01	23°♄00'01	1°35'00
morning rise	382 Jun 08 j 08:08	2°♄02'45		minimum elong	388 Aug 15 j 13:58	22°♄59'59	1°34'59
retrograde	382 Sep 22 j 03:51	10°♄25'42		max. Earth dist.	388 Aug 15 j 21:26	23°♄02'19	10.43753 AU
opposition	382 Nov 27 j 23:45	6°♄55'31	-1°-32'-12	morning rise	388 Sep 02 j 01:07	25°♄09'49	
min. Earth dist.	382 Nov 27 j 16:56	6°♄56'56	7.96894 AU		388 Oct 16 j 12:50	0°♄	
direct	383 Feb 02 j 11:38	3°♄26'06		retrograde	388 Dec 11 j 13:24	2°♄40'32	
evening set	383 May 18 j 08:40	11°♄43'31			389 Feb 08 j 01:00	30°♄♄	
conjunction	383 Jun 05 j 13:20	14°♄05'32	0°-58'-42	opposition	389 Feb 16 j 19:24	29°♄18'49	2°10'16
minimum elong	383 Jun 05 j 13:23	14°♄05'33	0°58'42	min. Earth dist.	389 Feb 16 j 13:40	29°♄19'56	8.50213 AU
max. Earth dist.	383 Jun 05 j 22:42	14°♄08'36	9.98006 AU	direct	389 Apr 27 j 10:49	25°♄51'48	
morning rise	383 Jun 23 j 18:04	16°♄27'34			389 Jul 10 j 00:19	0°♄	
retrograde	383 Oct 06 j 16:58	24°♄44'53		evening set	389 Aug 11 j 11:21	3°♄39'06	
opposition	383 Dec 12 j 06:42	21°♄15'38	0°-53'-31	conjunction	389 Aug 28 j 22:01	5°♄47'08	1°54'55
min. Earth dist.	383 Dec 11 j 23:28	21°♄17'08	7.99968 AU	minimum elong	389 Aug 28 j 21:58	5°♄47'07	1°54'55
direct	384 Feb 17 j 03:22	17°♄45'47		max. Earth dist.	389 Aug 29 j 04:04	5°♄49'00	10.56623 AU
evening set	384 Jun 01 j 14:32	26°♄02'42		morning rise	389 Sep 15 j 03:37	7°♄53'40	
conjunction	384 Jun 19 j 19:41	28°♄24'04	0°-26'-17	retrograde	389 Dec 24 j 02:44	15°♄15'22	
minimum elong	384 Jun 19 j 19:43	28°♄24'05	0°26'17	opposition	390 Mar 01 j 18:06	11°♄55'06	2°30'53
max. Earth dist.	384 Jun 20 j 05:19	28°♄27'12	10.02648 AU	min. Earth dist.	390 Mar 01 j 14:21	11°♄55'50	8.63072 AU
	384 Jul 02 j 03:13	0°♄		direct	390 May 10 j 21:47	8°♄29'16	
morning rise	384 Jul 07 j 23:39	0°♄45'02		evening set	390 Aug 24 j 13:34	16°♄08'06	
retrograde	384 Oct 19 j 22:49	8°♄54'36		conjunction	390 Sep 10 j 19:02	18°♄13'02	2°08'54
opposition	384 Dec 25 j 10:29	5°♄26'36	0°-11'-58	minimum elong	390 Sep 10 j 19:00	18°♄13'02	2°08'53
min. Earth dist.	384 Dec 25 j 03:18	5°♄28'05	8.06019 AU	max. Earth dist.	390 Sep 10 j 22:30	18°♄14'06	10.69220 AU
direct	385 Mar 02 j 18:52	1°♄56'41		morning rise	390 Sep 27 j 19:41	20°♄16'32	
asc. node	385 Apr 12 j 17:13	3°♄25'26		retrograde	391 Jan 05 j 09:22	27°♄30'15	
evening set	385 Jun 16 j 16:14	10°♄10'49		opposition	391 Mar 14 j 11:03	24°♄11'13	2°43'59
conjunction	385 Jul 04 j 20:06	12°♄30'35	0°07'24	min. Earth dist.	391 Mar 14 j 09:15	24°♄11'34	8.75342 AU
minimum elong	385 Jul 04 j 20:06	12°♄30'35	0°07'24	direct	391 May 24 j 00:48	20°♄46'39	
behind sun begin	385 Jul 04 j 13:24	12°♄28'27		evening set	391 Sep 06 j 05:00	28°♄17'05	
behind sun end	385 Jul 05 j 02:47	12°♄32'44			391 Sep 20 j 13:46	0°♄	
max. Earth dist.	385 Jul 05 j 05:21	12°♄33'34	10.10078 AU	conjunction	391 Sep 23 j 05:47	0°♄19'16	2°16'44
morning rise	385 Jul 22 j 21:39	14°♄49'36		minimum elong	391 Sep 23 j 05:46	0°♄19'16	2°16'44
retrograde	385 Nov 02 j 20:21	22°♄49'58		max. Earth dist.	391 Sep 23 j 06:35	0°♄19'31	10.80928 AU
opposition	386 Jan 08 j 09:34	19°♄23'27	0°29'32	morning rise	391 Oct 10 j 02:12	2°♄20'08	
min. Earth dist.	386 Jan 08 j 02:26	19°♄24'55	8.14656 AU	retrograde	392 Jan 17 j 08:30	9°♄27'06	
direct	386 Mar 17 j 07:52	15°♄53'50		opposition	392 Mar 25 j 22:40	6°♄09'04	2°49'33
evening set	386 Jul 01 j 11:29	24°♄03'13		min. Earth dist.	392 Mar 25 j 22:15	6°♄09'08	8.86420 AU
conjunction	386 Jul 19 j 12:29	26°♄20'38	0°39'58	direct	392 Jun 04 j 22:00	2°♄45'44	
minimum elong	386 Jul 19 j 12:27	26°♄20'37	0°39'58	evening set	392 Sep 17 j 10:44	10°♄08'19	
max. Earth dist.	386 Jul 19 j 21:08	26°♄23'23	10.19815 AU	conjunction	392 Oct 04 j 07:43	12°♄08'12	2°18'32
morning rise	386 Aug 06 j 10:08	28°♄36'57		minimum elong	392 Oct 04 j 07:43	12°♄08'12	2°18'32
	386 Aug 17 j 16:33	0°♄					



max. Earth dist.	392 Oct 04 j 06:37	12°♌07'52	10.91185 AU	max. Earth dist.	398 Dec 10 j 06:09	19°♏53'20	11.06853 AU
morning rise	392 Oct 21 j 00:41	14°♌06'54		morning rise	398 Dec 27 j 05:18	21°♏52'26	
retrograde	393 Jan 28 j 05:36	21°♌08'35		retrograde	399 Apr 07 j 14:17	28°♏54'38	
opposition	393 Apr 07 j 05:38	17°♌51'17	2°47'55	opposition	399 Jun 17 j 12:08	25°♏35'54	0°40'59
min. Earth dist.	393 Apr 07 j 06:37	17°♌51'06	8.95782 AU	min. Earth dist.	399 Jun 17 j 20:06	25°♏34'26	9.04330 AU
direct	393 Jun 17 j 11:39	14°♌29'11		direct	399 Aug 27 j 01:33	22°♏17'25	
evening set	393 Sep 29 j 08:13	21°♌44'46		evening set	399 Dec 05 j 07:54	29°♏16'35	
					399 Dec 11 j 12:47	0°♏	
conjunction	393 Oct 16 j 02:17	23°♌42'52	2°14'35	conjunction	399 Dec 21 j 22:33	1°♏13'48	0°20'09
minimum elong	393 Oct 16 j 02:18	23°♌42'52	2°14'36	minimum elong	399 Dec 21 j 22:34	1°♏13'48	0°20'09
max. Earth dist.	393 Oct 15 j 23:44	23°♌42'06	10.99540 AU	max. Earth dist.	399 Dec 21 j 12:58	1°♏10'58	11.01262 AU
morning rise	393 Nov 01 j 16:41	25°♌39'58		morning rise	400 Jan 07 j 14:40	3°♏11'28	
	393 Dec 13 j 12:40	0°♌		retrograde	400 Apr 18 j 17:07	10°♏19'14	
retrograde	394 Feb 08 j 23:24	2°♌37'51		opposition	400 Jun 28 j 16:44	6°♏59'24	0°07'38
	394 Apr 10 j 14:32	30°♌♌		min. Earth dist.	400 Jun 29 j 00:53	6°♏57'53	8.97645 AU
opposition	394 Apr 19 j 09:23	29°♌21'04	2°39'35	direct	400 Sep 06 j 21:25	3°♏40'45	
min. Earth dist.	394 Apr 19 j 12:24	29°♌20'30	9.03075 AU	desc. node	400 Sep 21 j 07:48	3°♏51'14	
direct	394 Jun 29 j 17:07	26°♌00'04		evening set	400 Dec 15 j 18:29	10°♏42'21	
	394 Sep 11 j 15:54	0°♌					
evening set	394 Oct 10 j 23:07	3°♌09'42		conjunction	401 Jan 01 j 10:25	12°♏40'51	0°-7'-36
				minimum elong	401 Jan 01 j 10:25	12°♏40'51	0°07'37
conjunction	394 Oct 27 j 14:53	5°♌06'31	2°05'19	behind sun begin	401 Jan 01 j 04:04	12°♏38'59	
minimum elong	394 Oct 27 j 14:55	5°♌06'31	2°05'19	behind sun end	401 Jan 01 j 16:46	12°♏42'43	
max. Earth dist.	394 Oct 27 j 10:09	5°♌05'07	11.05733 AU	max. Earth dist.	401 Jan 01 j 01:26	12°♏38'11	10.93586 AU
morning rise	394 Nov 13 j 03:45	7°♌02'33		morning rise	401 Jan 18 j 04:28	14°♏40'02	
retrograde	395 Feb 20 j 14:18	13°♌58'13		retrograde	401 May 01 j 02:16	21°♏54'52	
opposition	395 May 01 j 10:47	10°♌41'37	2°25'07	opposition	401 Jul 11 j 00:55	18°♏33'45	0°-26'-34
min. Earth dist.	395 May 01 j 15:56	10°♌40'40	9.08116 AU	min. Earth dist.	401 Jul 11 j 08:14	18°♏32'23	8.89009 AU
direct	395 Jul 11 j 19:57	7°♌21'33		direct	401 Sep 18 j 18:08	15°♏14'46	
evening set	395 Oct 22 j 08:59	14°♌26'23		evening set	401 Dec 27 j 10:30	22°♏20'24	
	395 Oct 27 j 05:29	15°♌					
conjunction	395 Nov 07 j 23:14	16°♌22'23	1°51'16	conjunction	402 Jan 13 j 04:03	24°♏20'30	0°-35'-24
minimum elong	395 Nov 07 j 23:17	16°♌22'24	1°51'16	minimum elong	402 Jan 13 j 04:02	24°♏20'30	0°35'25
max. Earth dist.	395 Nov 07 j 16:15	16°♌20'20	11.09629 AU	max. Earth dist.	402 Jan 12 j 20:08	24°♏18'07	10.84088 AU
morning rise	395 Nov 24 j 11:35	18°♌17'51		morning rise	402 Jan 30 j 00:17	26°♏21'31	
retrograde	396 Mar 03 j 05:19	25°♌12'49			402 Mar 04 j 08:04	0°♏	
opposition	396 May 12 j 10:42	21°♌56'06	2°05'15	retrograde	402 May 13 j 18:54	3°♏44'48	
min. Earth dist.	396 May 12 j 16:57	21°♌54'57	9.10794 AU	opposition	402 Jul 23 j 14:04	0°♏22'17	-1°00'-25
direct	396 Jul 22 j 18:49	18°♌36'45		min. Earth dist.	402 Jul 23 j 20:10	0°♏21'08	8.78736 AU
evening set	396 Nov 01 j 15:18	25°♌38'00			402 Jul 28 j 12:20	30°♌♌	
				direct	402 Sep 30 j 18:39	27°♏02'47	
conjunction	396 Nov 18 j 04:58	27°♌33'41	1°33'01		402 Nov 30 j 02:12	0°♏	
minimum elong	396 Nov 18 j 05:00	27°♌33'42	1°33'01	evening set	403 Jan 08 j 09:35	4°♏13'56	
max. Earth dist.	396 Nov 17 j 21:21	27°♌31'27	11.11129 AU				
morning rise	396 Dec 04 j 17:23	29°♌29'04		conjunction	403 Jan 25 j 04:56	6°♏15'58	-1°-2'-15
	396 Dec 09 j 06:01	0°♏		minimum elong	403 Jan 25 j 04:54	6°♏15'57	1°02'17
retrograde	397 Mar 14 j 21:21	6°♏24'52		max. Earth dist.	403 Jan 24 j 21:17	6°♏13'38	10.73129 AU
opposition	397 May 24 j 10:06	3°♏07'43	1°40'43	morning rise	403 Feb 11 j 03:48	8°♏19'07	
min. Earth dist.	397 May 24 j 16:38	3°♏06'31	9.11032 AU		403 Apr 24 j 05:45	15°♏	
	397 Jul 19 j 08:10	30°♌♌		retrograde	403 May 26 j 20:27	15°♏51'57	
direct	397 Aug 03 j 14:56	29°♌48'53			403 Jun 28 j 19:17	15°♌♌	
	397 Aug 18 j 18:02	0°♏		opposition	403 Aug 05 j 08:53	12°♏27'59	-1°-32'-30
evening set	397 Nov 12 j 20:04	6°♏47'56		min. Earth dist.	403 Aug 05 j 14:23	12°♏26'56	8.67225 AU
				direct	403 Oct 12 j 23:30	9°♏07'45	
conjunction	397 Nov 29 j 09:41	8°♏43'44	1°11'16		404 Jan 08 j 14:46	15°♏	
minimum elong	397 Nov 29 j 09:44	8°♏43'45	1°11'15	evening set	404 Jan 20 j 17:24	16°♏25'51	
max. Earth dist.	397 Nov 29 j 01:53	8°♏41'27	11.10184 AU				
morning rise	397 Dec 15 j 22:42	10°♏39'27		conjunction	404 Feb 06 j 14:57	18°♏30'05	-1°-26'-56
retrograde	398 Mar 26 j 17:00	17°♏37'39		minimum elong	404 Feb 06 j 14:55	18°♏30'04	1°26'57
opposition	398 Jun 05 j 10:10	14°♏19'50	1°12'20	max. Earth dist.	404 Feb 06 j 07:51	18°♏27'53	10.61153 AU
min. Earth dist.	398 Jun 05 j 17:10	14°♏18'33	9.08843 AU	morning rise	404 Feb 23 j 16:48	20°♏35'38	
direct	398 Aug 15 j 08:52	11°♏01'18		retrograde	404 Jun 08 j 04:42	28°♏18'44	
evening set	398 Nov 24 j 01:05	17°♏59'37		opposition	404 Aug 17 j 09:44	24°♏53'20	-2°-1'-14
				min. Earth dist.	404 Aug 17 j 14:34	24°♏52'24	8.54965 AU
conjunction	398 Dec 10 j 14:59	19°♏55'56	0°46'42	direct	404 Oct 24 j 10:23	21°♏32'11	
minimum elong	398 Dec 10 j 15:01	19°♏55'57	0°46'42	evening set	405 Feb 01 j 10:58	28°♏58'27	

	405 Feb 09 j 18:37	0°♄		evening set	411 Apr 26 j 20:57	21°♄20'18	
conjunction	405 Feb 18 j 11:18	1°♄05'07	-1°-48'-6	conjunction	411 May 14 j 21:43	23°♄41'18	-1°-38'-30
minimum elong	405 Feb 18 j 11:15	1°♄05'06	1°48'06	minimum elong	411 May 14 j 21:47	23°♄41'20	1°38'31
max. Earth dist.	405 Feb 18 j 05:53	1°♄03'25	10.48685 AU	max. Earth dist.	411 May 15 j 04:41	23°♄43'35	9.98231 AU
morning rise	405 Mar 07 j 16:18	3°♄13'15		morning rise	411 Jun 02 j 00:44	26°♄03'00	
retrograde	405 Jun 21 j 20:56	11°♄06'55		retrograde	411 Jul 04 j 22:01	0°♄	
opposition	405 Aug 30 j 17:16	7°♄40'06	-2°-24'-54	retrograde	411 Sep 16 j 05:13	4°♄27'03	
min. Earth dist.	405 Aug 30 j 20:41	7°♄39'26	8.42515 AU	opposition	411 Nov 22 j 04:13	0°♄57'12	-1°-47'-9
direct	405 Nov 06 j 06:23	4°♄17'57		min. Earth dist.	411 Nov 21 j 22:31	0°♄58'23	7.98060 AU
evening set	406 Feb 14 j 15:06	11°♄53'09		direct	411 Dec 03 j 19:22	30°♄	
				direct	412 Jan 27 j 13:40	27°♄28'40	
conjunction	406 Mar 03 j 18:47	14°♄02'28	-2°-4'-23	evening set	412 Mar 20 j 22:35	0°♄	
minimum elong	406 Mar 03 j 18:45	14°♄02'27	2°04'23	evening set	412 May 11 j 02:59	5°♄44'59	
max. Earth dist.	406 Mar 03 j 16:10	14°♄01'38	10.36327 AU	conjunction	412 May 29 j 06:39	8°♄06'45	-1°-11'-41
morning rise	406 Mar 21 j 03:11	16°♄13'19		minimum elong	412 May 29 j 06:42	8°♄06'46	1°11'41
retrograde	406 Jul 05 j 22:39	24°♄17'12		max. Earth dist.	412 May 29 j 14:35	8°♄09'21	9.98449 AU
opposition	406 Sep 13 j 07:26	20°♄49'07	-2°-41'-47	morning rise	412 Jun 16 j 11:12	10°♄28'46	
min. Earth dist.	406 Sep 13 j 08:32	20°♄48'54	8.30505 AU	retrograde	412 Sep 29 j 19:36	18°♄48'23	
direct	406 Nov 19 j 09:06	17°♄25'53		opposition	412 Dec 05 j 12:02	15°♄19'17	-1°-10'-37
evening set	407 Feb 28 j 06:35	25°♄10'21		min. Earth dist.	412 Dec 05 j 05:34	15°♄20'37	7.99679 AU
				direct	413 Feb 10 j 05:14	11°♄50'10	
conjunction	407 Mar 17 j 14:06	27°♄22'25	-2°-14'-30	evening set	413 May 26 j 09:29	20°♄07'08	
minimum elong	407 Mar 17 j 14:05	27°♄22'25	2°14'30				
max. Earth dist.	407 Mar 17 j 13:59	27°♄22'23	10.24739 AU	conjunction	413 Jun 13 j 14:35	22°♄28'44	0°-40'-29
morning rise	407 Apr 04 j 02:17	29°♄36'02		minimum elong	413 Jun 13 j 14:37	22°♄28'45	0°40'30
	407 Apr 07 j 07:07	0°♄		max. Earth dist.	413 Jun 13 j 23:19	22°♄31'35	10.01559 AU
retrograde	407 Jul 20 j 08:43	7°♄48'56		morning rise	413 Jul 01 j 19:05	24°♄50'09	
opposition	407 Sep 27 j 03:37	4°♄19'50	-2°-50'-18				
min. Earth dist.	407 Sep 27 j 02:34	4°♄20'03	8.19588 AU	retrograde	413 Aug 15 j 21:58	0°♄	
direct	407 Dec 02 j 18:20	0°♄55'27		retrograde	413 Oct 14 j 04:34	3°♄03'05	
evening set	408 Mar 13 j 09:04	8°♄49'02			413 Dec 14 j 16:12	30°♄	
				opposition	413 Dec 19 j 17:20	29°♄35'01	0°-29'-59
conjunction	408 Mar 30 j 20:51	11°♄03'50	-2°-17'-21	min. Earth dist.	413 Dec 19 j 10:09	29°♄36'30	8.04166 AU
minimum elong	408 Mar 30 j 20:51	11°♄03'50	2°17'21	direct	414 Feb 24 j 20:46	26°♄05'38	
max. Earth dist.	408 Mar 30 j 22:51	11°♄04'29	10.14585 AU		414 May 04 j 09:20	0°♄	
morning rise	408 Apr 17 j 13:06	13°♄20'07		evening set	414 Jun 10 j 13:32	4°♄20'59	
retrograde	408 Aug 02 j 23:42	21°♄40'05					
opposition	408 Oct 10 j 05:19	18°♄10'16	-2°-49'-16	conjunction	414 Jun 28 j 18:18	6°♄41'29	0°-7'-9
min. Earth dist.	408 Oct 10 j 02:32	18°♄10'50	8.10403 AU	minimum elong	414 Jun 28 j 18:18	6°♄41'30	0°07'09
direct	408 Dec 15 j 13:17	14°♄44'44		behind sun begin	414 Jun 28 j 11:33	6°♄39'20	
evening set	409 Mar 27 j 21:26	22°♄46'36		behind sun end	414 Jun 29 j 01:04	6°♄43'40	
				max. Earth dist.	414 Jun 29 j 03:36	6°♄44'29	10.07457 AU
conjunction	409 Apr 14 j 13:41	25°♄03'55	-2°-12'-16	morning rise	414 Jul 16 j 21:01	9°♄01'22	
minimum elong	409 Apr 14 j 13:43	25°♄03'56	2°12'16	asc. node	414 Sep 16 j 22:21	15°♄33'00	
max. Earth dist.	409 Apr 14 j 17:34	25°♄05'11	10.06479 AU	retrograde	414 Oct 28 j 06:48	17°♄05'51	
morning rise	409 May 02 j 10:02	27°♄22'34		opposition	415 Jan 02 j 18:45	13°♄39'04	0°11'52
	409 May 23 j 18:11	0°♄		min. Earth dist.	415 Jan 02 j 11:29	13°♄40'33	8.11328 AU
retrograde	409 Aug 17 j 17:12	5°♄47'00		direct	415 Mar 11 j 10:15	10°♄09'40	
opposition	409 Oct 24 j 11:08	2°♄16'49	-2°-38'-4	evening set	415 Jun 25 j 12:21	18°♄21'17	
min. Earth dist.	409 Oct 24 j 07:07	2°♄17'38	8.03515 AU				
	409 Nov 23 j 19:26	30°♄		conjunction	415 Jul 13 j 14:54	20°♄39'48	0°26'13
direct	409 Dec 29 j 16:01	28°♄50'10		minimum elong	415 Jul 13 j 14:52	20°♄39'47	0°26'14
	410 Feb 03 j 02:20	0°♄		max. Earth dist.	415 Jul 13 j 23:59	20°♄42'42	10.15829 AU
evening set	410 Apr 11 j 18:10	6°♄58'50		morning rise	415 Jul 31 j 14:13	22°♄57'18	
					415 Oct 11 j 05:46	0°♄	
conjunction	410 Apr 29 j 14:55	9°♄18'18	-1°-59'-7	retrograde	415 Nov 11 j 01:17	0°♄52'14	
minimum elong	410 Apr 29 j 14:58	9°♄18'19	1°59'08		415 Dec 12 j 02:40	30°♄	
max. Earth dist.	410 Apr 29 j 20:28	9°♄20'07	10.00929 AU	opposition	416 Jan 16 j 15:03	27°♄26'51	0°52'11
morning rise	410 May 17 j 15:02	11°♄38'49		min. Earth dist.	416 Jan 16 j 08:29	27°♄28'11	8.20760 AU
	410 Jun 14 j 04:10	15°♄		direct	416 Mar 24 j 19:38	23°♄57'45	
retrograde	410 Sep 01 j 11:48	20°♄04'38			416 Jun 22 j 01:13	0°♄	
opposition	410 Nov 07 j 19:20	16°♄34'25	-2°-16'-58	evening set	416 Jul 09 j 03:14	2°♄03'47	
min. Earth dist.	410 Nov 07 j 14:27	16°♄35'26	7.99341 AU				
	410 Nov 27 j 13:21	15°♄		conjunction	416 Jul 27 j 02:03	4°♄19'38	0°57'24
direct	411 Jan 13 j 00:46	13°♄06'44		minimum elong	416 Jul 27 j 02:00	4°♄19'37	0°57'24
	411 Feb 27 j 15:26	15°♄		max. Earth dist.	416 Jul 27 j 10:00	4°♄22'10	10.26183 AU

morning rise	416 Aug 13 j 20:50	6°♊34'12		opposition	423 Apr 14 j 13:32	24°♌40'11	2°44'06
retrograde	416 Nov 23 j 11:16	14°♊19'07		min. Earth dist.	423 Apr 14 j 15:21	24°♌39'50	8.99345 AU
opposition	417 Jan 29 j 05:27	10°♊55'12	1°28'34	direct	423 Jun 24 j 20:59	21°♌18'18	
min. Earth dist.	417 Jan 28 j 23:52	10°♊56'19	8.31902 AU	evening set	423 Oct 06 j 08:55	28°♌30'20	
direct	417 Apr 08 j 00:20	7°♊26'39			423 Oct 19 j 03:48	0°♌	
	417 Jul 19 j 20:02	15°♊					
evening set	417 Jul 23 j 08:13	15°♊25'42		conjunction	423 Oct 23 j 01:34	0°♌27'39	2°10'01
				minimum elong	423 Oct 23 j 01:35	0°♌27'40	2°10'01
conjunction	417 Aug 10 j 02:19	17°♊38'28	1°24'46	max. Earth dist.	423 Oct 22 j 22:26	0°♌26'44	11.02743 AU
minimum elong	417 Aug 10 j 02:15	17°♊38'27	1°24'46	morning rise	423 Nov 08 j 15:09	2°♌24'07	
max. Earth dist.	417 Aug 10 j 08:37	17°♊40'27	10.37907 AU	retrograde	424 Feb 15 j 22:05	9°♌20'23	
morning rise	417 Aug 27 j 15:57	19°♊49'48		opposition	424 Apr 25 j 15:17	6°♌03'23	2°32'11
retrograde	417 Dec 06 j 10:30	27°♊24'49		min. Earth dist.	424 Apr 25 j 17:46	6°♌02'55	9.05916 AU
opposition	418 Feb 11 j 13:24	24°♊02'19	1°59'14	direct	424 Jul 06 j 02:12	2°♌42'38	
min. Earth dist.	418 Feb 11 j 08:46	24°♊03'14	8.44097 AU	evening set	424 Oct 16 j 20:11	9°♌49'08	
direct	418 Apr 21 j 23:40	20°♊34'35					
evening set	418 Aug 06 j 02:27	28°♊25'44		conjunction	424 Nov 02 j 11:10	11°♌45'24	1°57'58
	418 Aug 18 j 21:35	0°♎		minimum elong	424 Nov 02 j 11:12	11°♌45'24	1°57'58
				max. Earth dist.	424 Nov 02 j 07:25	11°♌44'18	11.08243 AU
conjunction	418 Aug 23 j 15:21	0°♎35'14	1°47'08	morning rise	424 Nov 18 j 23:35	13°♌40'59	
minimum elong	418 Aug 23 j 15:18	0°♎35'13	1°47'07		424 Nov 30 j 16:17	15°♌	
max. Earth dist.	418 Aug 23 j 19:55	0°♎36'39	10.50335 AU	retrograde	425 Feb 26 j 13:41	20°♌35'38	
morning rise	418 Sep 09 j 23:33	2°♎43'16		opposition	425 May 07 j 14:53	17°♌18'49	2°14'33
retrograde	418 Dec 19 j 02:36	10°♎08'59		min. Earth dist.	425 May 07 j 18:34	17°♌18'09	9.10258 AU
opposition	419 Feb 24 j 14:48	6°♎47'48	2°23'03		425 Jun 11 j 10:04	15°♌	
min. Earth dist.	419 Feb 24 j 10:44	6°♎48'36	8.56671 AU	direct	425 Jul 18 j 00:25	13°♌59'05	
direct	419 May 05 j 14:50	3°♎21'05			425 Aug 22 j 22:06	15°♌	
evening set	419 Aug 19 j 09:23	11°♎03'50		evening set	425 Oct 28 j 03:24	21°♌01'16	
conjunction	419 Sep 05 j 17:08	13°♎10'11	2°03'43	conjunction	425 Nov 13 j 17:18	22°♌56'56	1°41'29
minimum elong	419 Sep 05 j 17:06	13°♎10'10	2°03'43	minimum elong	425 Nov 13 j 17:20	22°♌56'57	1°41'28
max. Earth dist.	419 Sep 05 j 20:44	13°♎11'17	10.62823 AU	max. Earth dist.	425 Nov 13 j 12:00	22°♌55'23	11.11440 AU
morning rise	419 Sep 22 j 20:02	15°♎15'03		morning rise	425 Nov 30 j 05:28	24°♌52'11	
retrograde	419 Dec 31 j 12:59	22°♎32'21			426 Jan 21 j 19:35	0°♏	
opposition	420 Mar 08 j 10:12	19°♎12'22	2°39'26	retrograde	426 Mar 10 j 03:39	1°♏46'46	
min. Earth dist.	420 Mar 08 j 07:05	19°♎12'58	8.69002 AU		426 Apr 28 j 07:21	30°♌	
direct	420 May 17 j 20:42	15°♎46'48		opposition	426 May 19 j 13:50	28°♌29'53	1°51'58
evening set	420 Aug 31 j 05:08	23°♎21'03		min. Earth dist.	426 May 19 j 19:17	28°♌28'53	9.12228 AU
				direct	426 Jul 29 j 19:32	25°♌10'57	
conjunction	420 Sep 17 j 08:08	25°♎24'31	2°14'12		426 Oct 19 j 15:11	0°♏	
minimum elong	420 Sep 17 j 08:06	25°♎24'31	2°14'12	evening set	426 Nov 08 j 08:06	2°♏10'10	
max. Earth dist.	420 Sep 17 j 10:43	25°♎25'18	10.74781 AU				
morning rise	420 Oct 04 j 06:18	27°♎26'35		conjunction	426 Nov 24 j 21:28	4°♏05'41	1°21'12
	420 Oct 26 j 20:20	0°♐		minimum elong	426 Nov 24 j 21:30	4°♏05'42	1°21'11
retrograde	421 Jan 11 j 15:20	4°♐36'35		max. Earth dist.	426 Nov 24 j 14:27	4°♏03'38	11.12234 AU
opposition	421 Mar 20 j 23:57	1°♐17'39	2°48'13	morning rise	426 Dec 11 j 10:10	6°♏01'02	
min. Earth dist.	421 Mar 20 j 22:35	1°♐17'55	8.80531 AU	retrograde	427 Mar 21 j 20:36	12°♏57'10	
	421 Apr 07 j 09:46	30°♌		opposition	427 May 31 j 12:56	9°♏39'57	1°25'11
direct	421 May 30 j 19:37	27°♎53'17		min. Earth dist.	427 May 31 j 19:16	9°♏38'47	9.11769 AU
	421 Jul 21 j 21:15	0°♐		direct	427 Aug 10 j 14:44	6°♏21'36	
evening set	421 Sep 12 j 14:57	5°♐19'26		evening set	427 Nov 19 j 12:08	13°♏19'17	
conjunction	421 Sep 29 j 13:41	7°♐20'23	2°18'35	conjunction	427 Dec 06 j 01:44	15°♏15'05	0°57'48
minimum elong	421 Sep 29 j 13:40	7°♐20'23	2°18'34	minimum elong	427 Dec 06 j 01:46	15°♏15'06	0°57'48
max. Earth dist.	421 Sep 29 j 14:14	7°♐20'33	10.85693 AU	max. Earth dist.	427 Dec 05 j 18:23	15°♏12'56	11.10599 AU
morning rise	421 Oct 16 j 08:02	9°♐20'04		morning rise	427 Dec 22 j 15:24	17°♏10'57	
retrograde	422 Jan 23 j 13:01	16°♐24'02		retrograde	428 Apr 01 j 15:57	24°♏10'14	
opposition	422 Apr 02 j 08:41	13°♐05'59	2°49'38	opposition	428 Jun 11 j 13:03	20°♏52'22	0°55'05
min. Earth dist.	422 Apr 02 j 09:25	13°♐05'51	8.90777 AU	min. Earth dist.	428 Jun 11 j 19:18	20°♏51'13	9.08895 AU
direct	422 Jun 12 j 11:45	9°♐42'51		direct	428 Aug 21 j 07:33	17°♏34'23	
evening set	422 Sep 24 j 15:49	17°♐01'32		evening set	428 Nov 29 j 17:18	24°♏32'02	
conjunction	422 Oct 11 j 11:00	19°♐00'25	2°17'03	conjunction	428 Dec 16 j 07:36	26°♏28'31	0°32'05
minimum elong	422 Oct 11 j 11:00	19°♐00'25	2°17'03	minimum elong	428 Dec 16 j 07:37	26°♏28'32	0°32'05
max. Earth dist.	422 Oct 11 j 09:01	18°♐59'50	10.95132 AU	max. Earth dist.	428 Dec 16 j 00:27	26°♏26'25	11.06573 AU
morning rise	422 Oct 28 j 02:33	20°♐58'14		morning rise	429 Jan 01 j 22:38	28°♏25'19	
retrograde	423 Feb 04 j 06:12	27°♐57'36			429 Jan 15 j 23:27	0°♑	

retrograde	429 Apr 13 j 17:04	5°♄29'16		minimum elong	435 Feb 25 j 23:37	8°♄16'08	1°57'32
opposition	429 Jun 23 j 15:30	2°♄10'33	0°22'35	max. Earth dist.	435 Feb 25 j 17:48	8°♄14'18	10.44247 AU
min. Earth dist.	429 Jun 23 j 21:49	2°♄09'23	9.03684 AU	morning rise	435 Mar 15 j 06:16	10°♄25'22	
	429 Jul 25 j 21:26	30°♄		retrograde	435 Jun 29 j 19:45	18°♄23'17	
direct	429 Sep 02 j 01:10	28°♄52'40		opposition	435 Sep 07 j 09:09	14°♄56'07	-2°-34'-49
	429 Oct 09 j 04:40	0°♄		min. Earth dist.	435 Sep 07 j 12:33	14°♄55'26	8.37930 AU
evening set	429 Dec 11 j 01:23	5°♄51'50		direct	435 Nov 13 j 15:38	11°♄33'38	
				evening set	436 Feb 22 j 07:11	19°♄12'36	
conjunction	429 Dec 27 j 16:34	7°♄49'22	0°04'54	conjunction	436 Mar 10 j 12:31	21°♄23'03	-2°-10'-38
minimum elong	429 Dec 27 j 16:34	7°♄49'22	0°04'54	minimum elong	436 Mar 10 j 12:30	21°♄23'03	2°10'38
behind sun begin	429 Dec 27 j 09:46	7°♄47'23		max. Earth dist.	436 Mar 10 j 08:23	21°♄21'45	10.31632 AU
behind sun end	429 Dec 27 j 23:23	7°♄51'22		morning rise	436 Mar 27 j 22:52	23°♄35'06	
max. Earth dist.	429 Dec 27 j 08:32	7°♄47'01	11.00273 AU		436 May 28 j 17:38	0°♄	
morning rise	430 Jan 13 j 09:26	9°♄47'28		retrograde	436 Jul 13 j 00:05	1°♄42'48	
desc. node	430 Mar 03 j 05:34	14°♄43'31			436 Aug 27 j 22:28	30°♄	
retrograde	430 Apr 25 j 22:48	16°♄57'36		opposition	436 Sep 20 j 01:38	28°♄14'18	-2°-47'-25
opposition	430 Jul 05 j 21:21	13°♄37'48	0°-11'-15	min. Earth dist.	436 Sep 20 j 03:47	28°♄13'52	8.25800 AU
min. Earth dist.	430 Jul 06 j 04:17	13°♄36'31	8.96299 AU	direct	436 Nov 25 j 21:42	24°♄50'27	
direct	430 Sep 13 j 18:54	10°♄19'44			437 Feb 13 j 05:13	0°♄	
evening set	430 Dec 22 j 14:06	17°♄22'01		evening set	437 Mar 07 j 03:27	2°♄38'54	
				conjunction	437 Mar 24 j 12:58	4°♄52'11	-2°-17'00
conjunction	431 Jan 08 j 06:32	19°♄20'56	0°-22'-59	minimum elong	437 Mar 24 j 12:57	4°♄52'11	2°17'00
minimum elong	431 Jan 08 j 06:31	19°♄20'56	0°23'00	max. Earth dist.	437 Mar 24 j 11:28	4°♄51'42	10.20079 AU
max. Earth dist.	431 Jan 07 j 21:41	19°♄18'18	10.91893 AU	morning rise	437 Apr 11 j 03:14	7°♄07'01	
morning rise	431 Jan 25 j 01:39	21°♄20'40		retrograde	437 Jul 27 j 10:16	15°♄23'04	
retrograde	431 May 08 j 09:29	28°♄38'27		opposition	437 Oct 04 j 00:05	11°♄53'28	-2°-51'-2
opposition	431 Jul 18 j 07:22	25°♄17'21	0°-45'-17	min. Earth dist.	437 Oct 04 j 00:13	11°♄53'27	8.15059 AU
min. Earth dist.	431 Jul 18 j 14:45	25°♄15'58	8.86956 AU	direct	437 Dec 09 j 13:15	8°♄28'16	
direct	431 Sep 25 j 17:46	21°♄58'48		evening set	438 Mar 21 j 10:10	16°♄25'41	
evening set	432 Jan 03 j 08:54	29°♄05'49					
	432 Jan 10 j 22:45	0°♄		conjunction	438 Apr 08 j 00:17	18°♄41'43	-2°-15'-44
conjunction	432 Jan 20 j 03:08	1°♄06'29	0°-50'-19	minimum elong	438 Apr 08 j 00:18	18°♄41'44	2°15'44
minimum elong	432 Jan 20 j 03:06	1°♄06'29	0°50'20	max. Earth dist.	438 Apr 08 j 01:45	18°♄42'12	10.10253 AU
max. Earth dist.	432 Jan 19 j 18:47	1°♄03'58	10.81662 AU	morning rise	438 Apr 25 j 18:38	20°♄59'10	
morning rise	432 Feb 06 j 00:39	3°♄08'11		retrograde	438 Aug 11 j 01:41	29°♄21'23	
retrograde	432 May 20 j 05:29	10°♄34'56		opposition	438 Oct 18 j 03:25	25°♄51'01	-2°-44'-43
opposition	432 Jul 29 j 22:26	7°♄12'22	-1°-18'-12	min. Earth dist.	438 Oct 18 j 01:20	25°♄51'26	8.06333 AU
min. Earth dist.	432 Jul 30 j 05:12	7°♄11'05	8.75928 AU	direct	438 Dec 23 j 11:13	22°♄24'31	
direct	432 Oct 06 j 20:47	3°♄53'09			439 Apr 01 j 04:48	0°♄	
evening set	433 Jan 14 j 11:36	11°♄06'27		evening set	439 Apr 05 j 02:28	0°♄29'49	
				conjunction	439 Apr 22 j 21:17	2°♄48'21	-2°-6'-24
conjunction	433 Jan 31 j 08:00	13°♄09'12	-1°-16'-2	minimum elong	439 Apr 22 j 21:20	2°♄48'22	2°06'24
minimum elong	433 Jan 31 j 07:58	13°♄09'12	1°16'03	max. Earth dist.	439 Apr 23 j 01:23	2°♄49'42	10.02747 AU
max. Earth dist.	433 Jan 31 j 00:37	13°♄06'57	10.69922 AU	morning rise	439 May 10 j 19:34	5°♄08'02	
	433 Feb 15 j 12:10	15°♄		retrograde	439 Aug 25 j 20:38	13°♄33'33	
morning rise	433 Feb 17 j 08:06	15°♄13'11		opposition	439 Nov 01 j 10:05	10°♄02'50	-2°-28'-17
retrograde	433 Jun 02 j 10:02	22°♄49'56		min. Earth dist.	439 Nov 01 j 06:02	10°♄03'40	8.00157 AU
opposition	433 Aug 11 j 19:22	19°♄25'51	-1°-48'-31	direct	440 Jan 06 j 15:25	6°♄35'09	
min. Earth dist.	433 Aug 12 j 00:53	19°♄24'47	8.63662 AU	evening set	440 Apr 19 j 02:18	14°♄46'43	
direct	433 Oct 19 j 03:40	16°♄05'45			440 Apr 20 j 19:32	15°♄	
evening set	434 Jan 26 j 23:37	23°♄26'42		conjunction	440 May 07 j 01:24	17°♄07'13	-1°-49'-13
conjunction	434 Feb 12 j 22:28	25°♄31'49	-1°-38'-53	minimum elong	440 May 07 j 01:28	17°♄07'14	1°49'14
minimum elong	434 Feb 12 j 22:26	25°♄31'48	1°38'54	max. Earth dist.	440 May 07 j 07:29	17°♄09'13	9.98033 AU
max. Earth dist.	434 Feb 12 j 15:52	25°♄29'46	10.57234 AU	morning rise	440 May 25 j 03:03	19°♄28'34	
morning rise	434 Mar 02 j 01:35	27°♄38'19		retrograde	440 Sep 08 j 16:09	27°♄54'14	
	434 Mar 22 j 06:31	0°♄		opposition	440 Nov 14 j 18:48	24°♄23'37	-2°-2'-25
retrograde	434 Jun 15 j 22:38	5°♄25'41		min. Earth dist.	440 Nov 14 j 13:28	24°♄24'44	7.96931 AU
opposition	434 Aug 24 j 22:56	2°♄00'01	-2°-14'-38	direct	441 Jan 20 j 01:23	20°♄54'56	
min. Earth dist.	434 Aug 25 j 03:14	1°♄59'11	8.50777 AU	evening set	441 May 04 j 06:55	29°♄10'40	
	434 Sep 21 j 12:10	30°♄			441 May 10 j 15:18	0°♄	
direct	434 Oct 31 j 18:00	28°♄38'48		conjunction	441 May 22 j 09:28	1°♄32'23	-1°-25'-9
	434 Dec 09 j 23:15	0°♄		minimum elong	441 May 22 j 09:32	1°♄32'24	1°25'09
evening set	435 Feb 08 j 21:52	6°♄08'26					

max. Earth dist.	441 May 22 j 16:58	1° $\Pi$ 34'51	9.96422 AU	minimum elong	447 Aug 17 j 17:55	24° $\Omega$ 49'45	1°37'14
morning rise	441 Jun 09 j 13:27	3° $\Pi$ 54'35		max. Earth dist.	447 Aug 18 j 01:33	24° $\Omega$ 52'08	10.43952 AU
retrograde	441 Sep 23 j 09:21	12° $\Pi$ 17'21		morning rise	447 Sep 04 j 04:39	26° $\Omega$ 59'26	
opposition	441 Nov 29 j 03:36	8° $\Pi$ 47'14	-1°-28'-45		447 Sep 30 j 04:31	0° $\Upsilon$	
min. Earth dist.	441 Nov 28 j 21:30	8° $\Pi$ 48'30	7.96879 AU	retrograde	447 Dec 13 j 16:36	4° $\Upsilon$ 29'56	
direct	442 Feb 03 j 16:10	5° $\Pi$ 17'47		opposition	448 Feb 18 j 22:52	1° $\Upsilon$ 08'14	2°12'42
evening set	442 May 19 j 13:47	13° $\Pi$ 35'22		min. Earth dist.	448 Feb 18 j 17:46	1° $\Upsilon$ 09'14	8.50432 AU
					448 Mar 04 j 16:07	30° $\Upsilon$ 0	
conjunction	442 Jun 06 j 18:27	15° $\Pi$ 57'24	0°-55'-45	direct	448 Apr 28 j 14:36	27° $\Omega$ 41'11	
minimum elong	442 Jun 06 j 18:30	15° $\Pi$ 57'25	0°55'46		448 Jun 21 j 08:16	0° $\Upsilon$	
max. Earth dist.	442 Jun 07 j 02:48	16° $\Pi$ 00'08	9.98020 AU	evening set	448 Aug 12 j 15:17	5° $\Upsilon$ 28'21	
morning rise	442 Jun 24 j 23:20	18° $\Pi$ 19'28					
retrograde	442 Oct 07 j 20:42	26° $\Pi$ 36'33		conjunction	448 Aug 30 j 01:29	7° $\Upsilon$ 36'15	1°56'36
opposition	442 Dec 13 j 10:30	23° $\Pi$ 07'22	0°-49'-39	minimum elong	448 Aug 30 j 01:26	7° $\Upsilon$ 36'14	1°56'36
min. Earth dist.	442 Dec 13 j 04:01	23° $\Pi$ 08'43	8.00004 AU	max. Earth dist.	448 Aug 30 j 06:59	7° $\Upsilon$ 37'56	10.56852 AU
direct	443 Feb 18 j 08:45	19° $\Pi$ 37'28		morning rise	448 Sep 16 j 06:49	9° $\Upsilon$ 42'39	
evening set	443 Jun 03 j 19:40	27° $\Pi$ 54'31		retrograde	448 Dec 25 j 05:45	17° $\Upsilon$ 04'10	
	443 Jun 20 j 00:03	0° $\Upsilon$		opposition	449 Mar 02 j 21:34	13° $\Upsilon$ 43'55	2°32'35
conjunction	443 Jun 22 j 00:47	0° $\Upsilon$ 15'52	0°-23'-6	min. Earth dist.	449 Mar 02 j 18:02	13° $\Upsilon$ 44'36	8.63329 AU
minimum elong	443 Jun 22 j 00:48	0° $\Upsilon$ 15'52	0°23'07	direct	449 May 12 j 01:14	10° $\Upsilon$ 18'06	
max. Earth dist.	443 Jun 22 j 09:28	0° $\Upsilon$ 18'41	10.02709 AU	evening set	449 Aug 25 j 16:59	17° $\Upsilon$ 56'43	
morning rise	443 Jul 10 j 04:47	2° $\Upsilon$ 36'48					
retrograde	443 Oct 22 j 01:27	10° $\Upsilon$ 46'06		conjunction	449 Sep 11 j 22:05	20° $\Upsilon$ 01'32	2°09'58
opposition	443 Dec 27 j 14:12	7° $\Upsilon$ 18'09	0°-7'-58	minimum elong	449 Sep 11 j 22:03	20° $\Upsilon$ 01'31	2°09'57
min. Earth dist.	443 Dec 27 j 07:18	7° $\Upsilon$ 19'34	8.06101 AU	max. Earth dist.	449 Sep 12 j 01:09	20° $\Upsilon$ 02'28	10.69494 AU
direct	444 Mar 04 j 00:03	3° $\Upsilon$ 48'11		morning rise	449 Sep 28 j 22:33	22° $\Upsilon$ 04'56	
asc. node	444 Mar 08 j 15:18	3° $\Upsilon$ 49'22		retrograde	450 Jan 06 j 10:43	29° $\Upsilon$ 18'30	
evening set	444 Jun 17 j 21:18	12° $\Upsilon$ 02'21		opposition	450 Mar 15 j 14:22	25° $\Upsilon$ 59'28	2°44'53
				min. Earth dist.	450 Mar 15 j 11:57	25° $\Upsilon$ 59'56	8.75644 AU
conjunction	444 Jul 06 j 01:03	14° $\Upsilon$ 22'06	0°10'35	direct	450 May 25 j 05:39	22° $\Upsilon$ 34'56	
minimum elong	444 Jul 06 j 01:03	14° $\Upsilon$ 22'05	0°10'35		450 Sep 06 j 14:36	0° $\Omega$	
behind sun begin	444 Jul 05 j 19:25	14° $\Upsilon$ 20'17		evening set	450 Sep 07 j 08:03	0° $\Omega$ 05'08	
behind sun end	444 Jul 06 j 06:40	14° $\Upsilon$ 23'53					
max. Earth dist.	444 Jul 06 j 09:56	14° $\Upsilon$ 24'56	10.10178 AU	conjunction	450 Sep 24 j 08:38	2° $\Omega$ 07'12	2°17'10
morning rise	444 Jul 24 j 02:26	16° $\Upsilon$ 41'00		minimum elong	450 Sep 24 j 08:37	2° $\Omega$ 07'12	2°17'09
retrograde	444 Nov 03 j 23:30	24° $\Upsilon$ 41'08		max. Earth dist.	450 Sep 24 j 10:05	2° $\Omega$ 07'38	10.81263 AU
opposition	445 Jan 09 j 13:12	21° $\Upsilon$ 14'37	0°33'26	morning rise	450 Oct 11 j 04:48	4° $\Omega$ 07'58	
min. Earth dist.	445 Jan 09 j 05:42	21° $\Upsilon$ 16'09	8.14777 AU	retrograde	451 Jan 18 j 12:04	11° $\Omega$ 14'48	
direct	445 Mar 18 j 12:01	17° $\Upsilon$ 44'57		opposition	451 Mar 28 j 01:52	7° $\Omega$ 56'46	2°49'40
evening set	445 Jul 02 j 16:16	25° $\Upsilon$ 54'18		min. Earth dist.	451 Mar 28 j 00:34	7° $\Omega$ 57'01	8.86792 AU
				direct	451 Jun 07 j 01:54	4° $\Omega$ 33'32	
conjunction	445 Jul 20 j 17:07	28° $\Upsilon$ 11'39	0°43'00	evening set	451 Sep 19 j 13:25	11° $\Omega$ 55'45	
minimum elong	445 Jul 20 j 17:05	28° $\Upsilon$ 11'38	0°43'00				
max. Earth dist.	445 Jul 21 j 02:08	28° $\Upsilon$ 14'32	10.19954 AU	conjunction	451 Oct 06 j 10:17	13° $\Omega$ 55'32	2°18'19
	445 Aug 03 j 21:42	0° $\Omega$		minimum elong	451 Oct 06 j 10:18	13° $\Omega$ 55'32	2°18'20
morning rise	445 Aug 07 j 14:25	0° $\Omega$ 27'50		max. Earth dist.	451 Oct 06 j 10:23	13° $\Omega$ 55'34	10.91611 AU
retrograde	445 Nov 17 j 14:02	8° $\Omega$ 18'02		morning rise	451 Oct 23 j 02:58	15° $\Omega$ 54'08	
opposition	446 Jan 23 j 06:29	4° $\Omega$ 53'07	1°11'58	retrograde	452 Jan 30 j 08:34	22° $\Omega$ 55'37	
min. Earth dist.	446 Jan 22 j 23:00	4° $\Omega$ 54'37	8.25490 AU	opposition	452 Apr 08 j 08:56	19° $\Omega$ 38'20	2°47'16
direct	446 Apr 01 j 18:55	1° $\Omega$ 24'04		min. Earth dist.	452 Apr 08 j 09:41	19° $\Omega$ 38'11	8.96258 AU
evening set	446 Jul 17 j 02:29	9° $\Omega$ 27'02		direct	452 Jun 18 j 13:43	16° $\Omega$ 16'19	
				evening set	452 Sep 30 j 10:26	23° $\Omega$ 31'26	
conjunction	446 Aug 03 j 23:08	11° $\Omega$ 41'26	1°12'23				
minimum elong	446 Aug 03 j 23:05	11° $\Omega$ 41'25	1°12'22	conjunction	452 Oct 17 j 04:18	25° $\Omega$ 29'25	2°13'46
max. Earth dist.	446 Aug 04 j 07:48	11° $\Omega$ 44'10	10.31433 AU	minimum elong	452 Oct 17 j 04:19	25° $\Omega$ 29'26	2°13'46
morning rise	446 Aug 21 j 15:21	13° $\Omega$ 54'28		max. Earth dist.	452 Oct 17 j 02:02	25° $\Omega$ 28'45	11.00067 AU
	446 Aug 30 j 14:31	15° $\Omega$		morning rise	452 Nov 02 j 18:37	27° $\Omega$ 26'27	
retrograde	446 Nov 30 j 19:20	21° $\Omega$ 34'37			452 Nov 25 j 23:06	0° $\Upsilon$	
opposition	447 Feb 05 j 17:48	18° $\Omega$ 11'20	1°45'32	retrograde	453 Feb 10 j 01:10	4° $\Upsilon$ 24'06	
min. Earth dist.	447 Feb 05 j 11:08	18° $\Omega$ 12'40	8.37599 AU	opposition	453 Apr 20 j 12:29	1° $\Upsilon$ 07'20	2°38'13
	447 Mar 28 j 19:43	15° $\Upsilon$ 0		min. Earth dist.	453 Apr 20 j 15:43	1° $\Upsilon$ 06'44	9.03638 AU
direct	447 Apr 15 j 20:30	14° $\Omega$ 43'11			453 May 05 j 22:24	30° $\Upsilon$ 0	
	447 May 03 j 21:10	15° $\Omega$		direct	453 Jun 30 j 20:36	27° $\Omega$ 46'26	
evening set	447 Jul 31 j 02:24	22° $\Omega$ 38'36		evening set	453 Aug 23 j 19:47	0° $\Upsilon$	
					453 Oct 12 j 00:57	4° $\Upsilon$ 55'34	
conjunction	447 Aug 17 j 17:58	24° $\Omega$ 49'46	1°37'14	conjunction	453 Oct 28 j 16:33	6° $\Upsilon$ 52'17	2°03'56

minimum elong	453 Oct 28 j 16:34	6°♌52'18	2°03'56	conjunction	460 Jan 03 j 11:04	14°♊24'14	0°-10'-30
max. Earth dist.	453 Oct 28 j 11:30	6°♌50'48	11.06320 AU	minimum elong	460 Jan 03 j 11:04	14°♊24'14	0°10'31
morning rise	453 Nov 14 j 05:29	8°♌48'15		behind sun begin	460 Jan 03 j 05:34	14°♊22'37	
	454 Jan 22 j 23:33	15°♌		behind sun end	460 Jan 03 j 16:34	14°♊25'51	
retrograde	454 Feb 21 j 15:54	15°♌43'39		max. Earth dist.	460 Jan 03 j 02:43	14°♊21'45	10.93819 AU
	454 Mar 23 j 22:20	15°♌		morning rise	460 Jan 20 j 05:08	16°♊23'24	
opposition	454 May 02 j 13:29	12°♌27'07	2°23'07	retrograde	460 May 02 j 04:05	23°♊38'16	
min. Earth dist.	454 May 02 j 18:21	12°♌26'13	9.08710 AU	opposition	460 Jul 12 j 02:25	20°♊17'08	0°-30'-5
direct	454 Jul 12 j 22:45	9°♌07'10		min. Earth dist.	460 Jul 12 j 09:18	20°♊15'51	8.89190 AU
	454 Oct 12 j 20:23	15°♌		direct	460 Sep 19 j 19:21	16°♊58'13	
evening set	454 Oct 23 j 10:23	16°♌11'31		evening set	460 Dec 28 j 11:07	24°♊03'41	
conjunction	454 Nov 09 j 00:39	18°♌07'27	1°49'24	conjunction	461 Jan 14 j 04:39	26°♊03'48	0°-38'-11
minimum elong	454 Nov 09 j 00:41	18°♌07'28	1°49'23	minimum elong	461 Jan 14 j 04:38	26°♊03'47	0°38'13
max. Earth dist.	454 Nov 08 j 18:13	18°♌05'34	11.10223 AU	max. Earth dist.	461 Jan 13 j 20:14	26°♊01'16	10.84212 AU
morning rise	454 Nov 25 j 12:58	20°♌02'51		morning rise	461 Jan 31 j 01:02	28°♊04'48	
retrograde	455 Mar 05 j 06:51	26°♌57'37			461 Feb 16 j 19:55	0°♊	
opposition	455 May 14 j 13:10	23°♌40'57	2°02'42	retrograde	461 May 14 j 21:16	5°♊28'07	
min. Earth dist.	455 May 14 j 18:29	23°♌39'58	9.11368 AU	opposition	461 Jul 24 j 15:26	2°♊05'36	-1°-3'-44
direct	455 Jul 24 j 21:38	20°♌21'46		min. Earth dist.	461 Jul 24 j 22:00	2°♊04'22	8.78805 AU
evening set	455 Nov 03 j 16:23	27°♌22'34			461 Aug 23 j 14:39	30°♊	
conjunction	455 Nov 20 j 06:07	29°♌18'12	1°30'45	direct	461 Oct 01 j 19:04	28°♊46'06	
minimum elong	455 Nov 20 j 06:09	29°♌18'12	1°30'45		461 Nov 08 j 22:54	0°♊	
max. Earth dist.	455 Nov 19 j 23:24	29°♌16'14	11.11688 AU	evening set	462 Jan 09 j 10:15	5°♊57'11	
	455 Nov 26 j 04:52	0°♊		conjunction	462 Jan 26 j 05:34	7°♊59'12	-1°-4'-49
morning rise	455 Dec 06 j 18:28	1°♊13'31		minimum elong	462 Jan 26 j 05:31	7°♊59'12	1°04'50
retrograde	456 Mar 16 j 00:39	8°♊09'10		max. Earth dist.	462 Jan 25 j 21:09	7°♊56'39	10.73143 AU
opposition	456 May 25 j 12:26	4°♊52'06	1°37'43	morning rise	462 Feb 12 j 04:37	10°♊02'23	
min. Earth dist.	456 May 25 j 18:38	4°♊50'58	9.11561 AU		462 Mar 31 j 08:36	15°♊	
direct	456 Aug 04 j 17:04	1°♊33'26		retrograde	462 May 27 j 20:57	17°♊35'18	
evening set	456 Nov 13 j 21:01	8°♊32'03			462 Jul 26 j 16:43	15°♊	
conjunction	456 Nov 30 j 10:36	10°♊27'49	1°08'41	opposition	462 Aug 06 j 10:10	14°♊11'18	-1°-35'-27
minimum elong	456 Nov 30 j 10:39	10°♊27'50	1°08'40	min. Earth dist.	462 Aug 06 j 16:24	14°♊10'06	8.67185 AU
max. Earth dist.	456 Nov 30 j 02:35	10°♊25'28	11.10690 AU	direct	462 Oct 13 j 23:48	10°♊51'01	
morning rise	456 Dec 16 j 23:44	12°♊23'31			462 Dec 24 j 23:55	15°♊	
retrograde	457 Mar 27 j 17:41	19°♊21'34		evening set	463 Jan 21 j 18:04	18°♊09'09	
opposition	457 Jun 06 j 12:15	16°♊03'51	1°09'01	conjunction	463 Feb 07 j 15:44	20°♊13'24	-1°-29'-8
min. Earth dist.	457 Jun 06 j 19:45	16°♊02'28	9.09312 AU	minimum elong	463 Feb 07 j 15:42	20°♊13'23	1°29'09
direct	457 Aug 16 j 09:14	12°♊45'25		max. Earth dist.	463 Feb 07 j 08:45	20°♊11'14	10.61056 AU
evening set	457 Nov 25 j 01:52	19°♊43'26		morning rise	463 Feb 24 j 17:40	22°♊18'57	
conjunction	457 Dec 11 j 15:45	21°♊39'43	0°43'54		463 Jun 03 j 14:02	0°♊	
minimum elong	457 Dec 11 j 15:47	21°♊39'43	0°43'54	retrograde	463 Jun 10 j 04:42	0°♊02'13	
max. Earth dist.	457 Dec 11 j 06:22	21°♊36'57	11.07288 AU		463 Jun 16 j 21:00	30°♊	
morning rise	457 Dec 28 j 06:16	23°♊36'12		opposition	463 Aug 19 j 10:57	26°♊36'44	-2°-3'-41
retrograde	458 Mar 11 j 12:04	0°♊		min. Earth dist.	463 Aug 19 j 15:57	26°♊35'46	8.54817 AU
	458 Apr 08 j 15:29	0°♊38'19		direct	463 Oct 26 j 12:51	23°♊15'31	
	458 May 07 j 06:05	30°♊		evening set	464 Jan 28 j 17:38	0°♊	
opposition	458 Jun 18 j 13:58	27°♊19'39	0°37'28		464 Feb 03 j 11:47	0°♊41'51	
min. Earth dist.	458 Jun 18 j 22:10	27°♊18'08	9.04715 AU	conjunction	464 Feb 20 j 12:21	2°♊48'35	-1°-49'-50
direct	458 Aug 28 j 04:11	24°♊01'15		minimum elong	464 Feb 20 j 12:18	2°♊48'34	1°49'51
	458 Nov 27 j 13:32	0°♊		max. Earth dist.	464 Feb 20 j 07:31	2°♊47'05	10.48476 AU
evening set	458 Dec 06 j 08:29	1°♊00'09		morning rise	464 Mar 08 j 17:22	4°♊56'45	
conjunction	458 Dec 22 j 23:15	2°♊57'21	0°17'14	retrograde	464 Jun 22 j 23:04	12°♊50'37	
minimum elong	458 Dec 22 j 23:16	2°♊57'21	0°17'15	opposition	464 Aug 31 j 18:23	9°♊23'42	-2°-26'-43
max. Earth dist.	458 Dec 22 j 14:12	2°♊54'40	11.01602 AU	min. Earth dist.	464 Aug 31 j 21:24	9°♊23'07	8.42259 AU
morning rise	459 Jan 08 j 15:25	4°♊55'00		direct	464 Nov 07 j 07:05	6°♊01'28	
retrograde	459 Apr 20 j 18:47	12°♊02'45		evening set	465 Feb 15 j 16:17	13°♊36'49	
opposition	459 Jun 30 j 18:23	8°♊42'56	0°04'03	conjunction	465 Mar 04 j 20:07	15°♊46'12	-2°-5'-34
min. Earth dist.	459 Jul 01 j 01:58	8°♊41'31	8.97931 AU	minimum elong	465 Mar 04 j 20:05	15°♊46'11	2°05'35
desc. node	459 Sep 04 j 18:22	5°♊55'02		max. Earth dist.	465 Mar 04 j 17:25	15°♊45'20	10.36009 AU
direct	459 Sep 08 j 22:41	5°♊24'23		morning rise	465 Mar 22 j 04:35	17°♊57'07	
evening set	459 Dec 17 j 19:00	12°♊25'45		retrograde	465 Jul 07 j 01:28	26°♊01'11	
				opposition	465 Sep 14 j 08:30	22°♊33'00	-2°-42'-52

min. Earth dist.	465 Sep 14 j 09:25	22° $\Upsilon$ 32'50	8.30142 AU	opposition	471 Dec 07 j 14:10	17° $\Pi$ 06'35	-1°-7'-7
direct	465 Nov 20 j 08:50	19° $\Upsilon$ 09'40		min. Earth dist.	471 Dec 07 j 07:09	17° $\Pi$ 08'02	7.99618 AU
evening set	466 Mar 01 j 08:04	26° $\Upsilon$ 54'24		direct	472 Feb 12 j 07:44	13° $\Pi$ 37'26	
				evening set	472 May 27 j 13:05	21° $\Pi$ 54'31	
conjunction	466 Mar 18 j 15:40	29° $\Upsilon$ 06'33	-2°-15'-2				
minimum elong	466 Mar 18 j 15:39	29° $\Upsilon$ 06'32	2°15'03	conjunction	472 Jun 14 j 18:16	24° $\Pi$ 16'09	0°-37'-33
max. Earth dist.	466 Mar 18 j 14:42	29° $\Upsilon$ 06'14	10.24331 AU	minimum elong	472 Jun 14 j 18:18	24° $\Pi$ 16'10	0°37'34
	466 Mar 25 j 14:46	0° $\Upsilon$		max. Earth dist.	472 Jun 15 j 03:33	24° $\Pi$ 19'10	10.01589 AU
morning rise	466 Apr 05 j 04:03	1° $\Upsilon$ 20'15		morning rise	472 Jul 02 j 22:39	26° $\Pi$ 37'32	
retrograde	466 Jul 21 j 10:42	9° $\Upsilon$ 33'22			472 Jul 30 j 20:20	0° $\Theta$	
opposition	466 Sep 28 j 04:55	6° $\Upsilon$ 04'10	-2°-50'-34	retrograde	472 Oct 15 j 07:22	4° $\Theta$ 50'13	
min. Earth dist.	466 Sep 28 j 04:17	6° $\Upsilon$ 04'17	8.19144 AU	opposition	472 Dec 20 j 19:34	1° $\Theta$ 22'13	0°-26'-13
direct	466 Dec 03 j 19:37	2° $\Upsilon$ 39'39		min. Earth dist.	472 Dec 20 j 12:25	1° $\Theta$ 23'41	8.04262 AU
evening set	467 Mar 15 j 10:49	10° $\Upsilon$ 33'34			473 Jan 06 j 21:00	30° $\Upsilon$	
				direct	473 Feb 25 j 22:23	27° $\Pi$ 52'48	
conjunction	467 Apr 01 j 22:44	12° $\Upsilon$ 48'29	-2°-17'-12		473 Apr 16 j 06:12	0° $\Theta$	
minimum elong	467 Apr 01 j 22:45	12° $\Upsilon$ 48'29	2°17'12	evening set	473 Jun 11 j 17:01	6° $\Theta$ 08'11	
max. Earth dist.	467 Apr 01 j 23:39	12° $\Upsilon$ 48'47	10.14117 AU				
morning rise	467 Apr 19 j 15:19	15° $\Upsilon$ 04'53		conjunction	473 Jun 29 j 21:38	8° $\Theta$ 28'40	0°-4'-7
retrograde	467 Aug 05 j 01:03	23° $\Upsilon$ 25'04		minimum elong	473 Jun 29 j 21:39	8° $\Theta$ 28'40	0°04'08
opposition	467 Oct 12 j 06:47	19° $\Upsilon$ 55'10	-2°-48'-38	behind sun begin	473 Jun 29 j 14:24	8° $\Theta$ 26'21	
min. Earth dist.	467 Oct 12 j 04:49	19° $\Upsilon$ 55'35	8.09911 AU	behind sun end	473 Jun 30 j 04:54	8° $\Theta$ 31'00	
direct	467 Dec 17 j 14:53	16° $\Upsilon$ 29'30		max. Earth dist.	473 Jun 30 j 06:51	8° $\Theta$ 31'38	10.07605 AU
evening set	468 Mar 28 j 23:40	24° $\Upsilon$ 31'46		morning rise	473 Jul 18 j 00:12	10° $\Theta$ 48'28	
				asc. node	473 Aug 14 j 17:37	14° $\Theta$ 08'10	
conjunction	468 Apr 15 j 16:10	26° $\Upsilon$ 49'14	-2°-11'-24	retrograde	473 Oct 29 j 10:07	18° $\Theta$ 52'43	
minimum elong	468 Apr 15 j 16:12	26° $\Upsilon$ 49'15	2°11'24	opposition	474 Jan 03 j 21:01	15° $\Theta$ 26'02	0°15'38
max. Earth dist.	468 Apr 15 j 19:15	26° $\Upsilon$ 50'15	10.05984 AU	min. Earth dist.	474 Jan 03 j 14:23	15° $\Theta$ 27'23	8.11517 AU
morning rise	468 May 03 j 12:50	29° $\Upsilon$ 08'02		direct	474 Mar 12 j 12:01	11° $\Theta$ 56'38	
	468 May 10 j 09:11	0° $\Upsilon$		evening set	474 Jun 26 j 15:43	20° $\Theta$ 08'17	
retrograde	468 Aug 18 j 19:03	7° $\Upsilon$ 32'38					
opposition	468 Oct 25 j 12:44	4° $\Upsilon$ 02'25	-2°-36'-34	conjunction	474 Jul 14 j 18:01	22° $\Theta$ 26'45	0°29'11
min. Earth dist.	468 Oct 25 j 09:22	4° $\Upsilon$ 03'06	8.03020 AU	minimum elong	474 Jul 14 j 17:59	22° $\Theta$ 26'44	0°29'11
direct	468 Dec 30 j 17:40	0° $\Upsilon$ 35'38		max. Earth dist.	474 Jul 15 j 02:18	22° $\Theta$ 29'24	10.16044 AU
evening set	469 Apr 12 j 20:49	8° $\Upsilon$ 44'46		morning rise	474 Aug 01 j 17:12	24° $\Theta$ 44'11	
					474 Sep 18 j 01:50	0° $\Omega$	
conjunction	469 Apr 30 j 17:53	11° $\Upsilon$ 04'24	-1°-57'-34	retrograde	474 Nov 12 j 03:54	2° $\Omega$ 38'53	
minimum elong	469 Apr 30 j 17:56	11° $\Upsilon$ 04'25	1°57'34		475 Jan 08 j 02:56	30° $\Upsilon$	
max. Earth dist.	469 Apr 30 j 23:22	11° $\Upsilon$ 06'12	10.00459 AU	opposition	475 Jan 17 j 17:16	29° $\Theta$ 13'37	0°55'44
morning rise	469 May 18 j 18:13	13° $\Upsilon$ 25'03		min. Earth dist.	475 Jan 17 j 11:20	29° $\Theta$ 14'50	8.21002 AU
	469 May 31 j 07:54	15° $\Upsilon$		direct	475 Mar 26 j 22:34	25° $\Theta$ 44'33	
retrograde	469 Sep 02 j 14:09	21° $\Upsilon$ 51'01			475 Jun 08 j 02:51	0° $\Omega$	
opposition	469 Nov 08 j 21:11	18° $\Upsilon$ 20'48	-2°-14'-39	evening set	475 Jul 11 j 06:30	3° $\Omega$ 50'40	
min. Earth dist.	469 Nov 08 j 16:14	18° $\Upsilon$ 21'50	7.98909 AU				
	470 Jan 03 j 01:50	15° $\Upsilon$		conjunction	475 Jul 29 j 04:59	6° $\Omega$ 06'24	1°00'07
direct	470 Jan 14 j 02:55	14° $\Upsilon$ 53'02		minimum elong	475 Jul 29 j 04:57	6° $\Omega$ 06'23	1°00'07
	470 Jan 25 j 03:20	15° $\Upsilon$		max. Earth dist.	475 Jul 29 j 12:00	6° $\Omega$ 08'38	10.26435 AU
evening set	470 Apr 27 j 23:56	23° $\Upsilon$ 07'01		morning rise	475 Aug 15 j 23:37	8° $\Omega$ 20'54	
					475 Oct 21 j 17:41	15° $\Omega$	
conjunction	470 May 16 j 01:02	25° $\Upsilon$ 28'10	-1°-36'-20	retrograde	475 Nov 25 j 11:59	16° $\Omega$ 05'39	
minimum elong	470 May 16 j 01:06	25° $\Upsilon$ 28'12	1°36'20		475 Dec 30 j 18:34	15° $\Upsilon$	
max. Earth dist.	470 May 16 j 08:43	25° $\Upsilon$ 30'42	9.97870 AU	opposition	476 Jan 31 j 07:42	12° $\Omega$ 41'51	1°31'43
morning rise	470 Jun 03 j 04:10	27° $\Upsilon$ 49'59		min. Earth dist.	476 Jan 31 j 02:08	12° $\Omega$ 42'58	8.32170 AU
	470 Jun 20 j 12:37	0° $\Pi$		direct	476 Apr 09 j 04:32	9° $\Omega$ 13'24	
retrograde	470 Sep 17 j 07:51	6° $\Pi$ 14'06			476 Jul 05 j 21:37	15° $\Omega$	
opposition	470 Nov 23 j 06:18	2° $\Pi$ 44'15	-1°-44'-8	evening set	476 Jul 24 j 11:14	17° $\Omega$ 12'28	
min. Earth dist.	470 Nov 22 j 23:55	2° $\Pi$ 45'35	7.97787 AU				
	470 Dec 31 j 09:05	30° $\Upsilon$		conjunction	476 Aug 11 j 05:00	19° $\Omega$ 25'07	1°27'07
direct	471 Jan 28 j 16:35	29° $\Upsilon$ 15'41		minimum elong	476 Aug 11 j 04:57	19° $\Omega$ 25'06	1°27'06
	471 Feb 25 j 20:08	0° $\Pi$		max. Earth dist.	476 Aug 11 j 11:02	19° $\Omega$ 27'00	10.38179 AU
evening set	471 May 13 j 06:23	7° $\Pi$ 32'18		morning rise	476 Aug 28 j 18:22	21° $\Omega$ 36'20	
				retrograde	476 Dec 07 j 12:39	29° $\Omega$ 11'18	
conjunction	471 May 31 j 10:20	9° $\Pi$ 54'09	-1°-9'-3	opposition	477 Feb 12 j 15:41	25° $\Omega$ 48'54	2°01'50
minimum elong	471 May 31 j 10:24	9° $\Pi$ 54'10	1°09'03	min. Earth dist.	477 Feb 12 j 10:27	25° $\Omega$ 49'56	8.44377 AU
max. Earth dist.	471 May 31 j 19:13	9° $\Pi$ 57'03	9.98288 AU	direct	477 Apr 23 j 02:22	22° $\Omega$ 21'17	
morning rise	471 Jun 18 j 14:54	12° $\Pi$ 16'12			477 Aug 05 j 12:13	0° $\Upsilon$	
retrograde	471 Oct 01 j 21:53	20° $\Pi$ 35'41		evening set	477 Aug 07 j 05:11	0° $\Upsilon$ 12'23	

conjunction	477 Aug 24 j 17:52	2°♄21'48	1°48'58		483 Nov 17 j 07:22	15°♍	
minimum elong	477 Aug 24 j 17:49	2°♄21'47	1°48'58	morning rise	483 Nov 21 j 00:44	15°♍25'48	
max. Earth dist.	477 Aug 24 j 23:02	2°♄23'24	10.50618 AU	retrograde	484 Feb 28 j 14:17	22°♍20'22	
morning rise	477 Sep 11 j 01:41	4°♄29'43		opposition	484 May 08 j 17:15	19°♍03'30	2°12'18
retrograde	477 Dec 20 j 05:43	11°♄55'23		min. Earth dist.	484 May 08 j 21:22	19°♍02'45	9.10413 AU
opposition	478 Feb 25 j 17:06	8°♄34'18	2°24'59	direct	484 Jul 19 j 01:54	15°♍43'45	
min. Earth dist.	478 Feb 25 j 12:41	8°♄35'10	8.56955 AU	evening set	484 Oct 29 j 04:19	22°♍45'37	
direct	478 May 06 j 16:20	5°♄07'42					
evening set	478 Aug 20 j 11:55	12°♄50'22		conjunction	484 Nov 14 j 18:08	24°♍41'15	1°39'25
				minimum elong	484 Nov 14 j 18:10	24°♍41'16	1°39'25
conjunction	478 Sep 06 j 19:28	14°♄56'38	2°05'00	max. Earth dist.	484 Nov 14 j 12:21	24°♍39'34	11.11584 AU
minimum elong	478 Sep 06 j 19:26	14°♄56'37	2°04'59	morning rise	484 Dec 01 j 06:29	26°♍36'29	
max. Earth dist.	478 Sep 06 j 23:44	14°♄57'56	10.63105 AU				
morning rise	478 Sep 23 j 21:58	17°♄01'25		retrograde	485 Mar 11 j 05:10	3°♁31'01	
retrograde	479 Jan 01 j 14:44	24°♄18'39		opposition	485 May 20 j 15:59	0°♁14'04	1°49'13
opposition	479 Mar 10 j 12:35	20°♄58'46	2°40'38	min. Earth dist.	485 May 20 j 21:21	0°♁13'05	9.12353 AU
min. Earth dist.	479 Mar 10 j 09:53	20°♄59'17	8.69282 AU				
direct	479 May 19 j 23:04	17°♄33'18		direct	485 Jul 30 j 22:42	26°♍55'07	
evening set	479 Sep 02 j 07:32	25°♄07'27					
				evening set	485 Nov 09 j 08:48	3°♁54'02	
conjunction	479 Sep 19 j 10:11	27°♄10'49	2°14'53				
minimum elong	479 Sep 19 j 10:10	27°♄10'48	2°14'52	conjunction	485 Nov 25 j 22:15	5°♁49'32	1°18'46
max. Earth dist.	479 Sep 19 j 12:34	27°♄11'32	10.75051 AU	minimum elong	485 Nov 25 j 22:18	5°♁49'33	1°18'46
morning rise	479 Oct 06 j 08:07	29°♄12'48		max. Earth dist.	485 Nov 25 j 15:44	5°♁47'37	11.12342 AU
	479 Oct 13 j 01:14	0°♁		morning rise	485 Dec 12 j 11:02	7°♁44'52	
retrograde	480 Jan 13 j 17:50	6°♁22'45		retrograde	486 Mar 22 j 21:22	14°♁40'58	
opposition	480 Mar 22 j 02:27	3°♁03'53	2°48'40	opposition	486 Jun 01 j 14:48	11°♁23'39	1°22'03
min. Earth dist.	480 Mar 22 j 01:35	3°♁04'03	8.80800 AU	min. Earth dist.	486 Jun 01 j 20:19	11°♁22'38	9.11852 AU
	480 May 11 j 10:35	30°♁		direct	486 Aug 11 j 16:15	8°♁05'18	
direct	480 May 31 j 22:17	29°♄39'37		evening set	486 Nov 20 j 12:40	15°♁02'42	
	480 Jun 21 j 08:46	0°♁					
evening set	480 Sep 13 j 17:02	7°♁05'34		conjunction	486 Dec 07 j 02:24	16°♁58'30	0°55'07
				minimum elong	486 Dec 07 j 02:26	16°♁58'31	0°55'08
conjunction	480 Sep 30 j 15:26	9°♁06'26	2°18'38	max. Earth dist.	486 Dec 06 j 19:56	16°♁56'36	11.10663 AU
minimum elong	480 Sep 30 j 15:26	9°♁06'26	2°18'38	morning rise	486 Dec 23 j 16:04	18°♁54'22	
max. Earth dist.	480 Sep 30 j 15:27	9°♁06'26	10.85953 AU	retrograde	487 Apr 03 j 18:21	25°♁53'39	
morning rise	480 Oct 17 j 09:44	11°♁06'04		opposition	487 Jun 13 j 14:54	22°♁35'42	0°51'41
retrograde	481 Jan 24 j 14:04	18°♁09'59		min. Earth dist.	487 Jun 13 j 20:34	22°♁34'40	9.08937 AU
opposition	481 Apr 03 j 11:07	14°♁51'56	2°49'19	direct	487 Aug 23 j 09:28	19°♁17'43	
min. Earth dist.	481 Apr 03 j 11:35	14°♁51'51	8.91031 AU	evening set	487 Dec 01 j 17:46	26°♁15'07	
direct	481 Jun 13 j 14:11	11°♁28'53					
evening set	481 Sep 25 j 17:30	18°♁47'19		conjunction	487 Dec 18 j 08:05	28°♁11'36	0°29'14
				minimum elong	487 Dec 18 j 08:06	28°♁11'37	0°29'14
conjunction	481 Oct 12 j 12:35	20°♁46'08	2°16'30	max. Earth dist.	487 Dec 18 j 00:49	28°♁09'28	11.06602 AU
minimum elong	481 Oct 12 j 12:36	20°♁46'09	2°16'30				
max. Earth dist.	481 Oct 12 j 10:55	20°♁45'39	10.95373 AU	morning rise	488 Jan 02 j 18:07	0°♁	
morning rise	481 Oct 29 j 04:03	22°♁43'55		retrograde	488 Jan 03 j 23:15	0°♁08'25	
retrograde	482 Feb 05 j 07:51	29°♁43'13		opposition	488 Apr 14 j 18:36	7°♁12'23	
opposition	482 Apr 15 j 15:50	26°♁25'47	2°43'04	min. Earth dist.	488 Jun 24 j 17:19	3°♁53'36	0°19'03
min. Earth dist.	482 Apr 15 j 16:54	26°♁25'35	8.99566 AU	direct	488 Jun 24 j 23:53	3°♁52'24	9.03701 AU
direct	482 Jun 26 j 00:40	23°♁03'56		evening set	488 Sep 03 j 01:29	0°♁35'43	
	482 Oct 05 j 03:44	0°♍					
evening set	482 Oct 07 j 10:20	0°♍15'42		conjunction	488 Dec 28 j 17:04	9°♁32'14	0°01'59
				minimum elong	488 Dec 28 j 17:05	9°♁32'14	0°01'59
conjunction	482 Oct 24 j 03:00	2°♍12'59	2°08'54	behind sun begin	488 Dec 28 j 10:06	9°♁30'12	
minimum elong	482 Oct 24 j 03:01	2°♍12'59	2°08'54	behind sun end	488 Dec 29 j 00:03	9°♁34'17	
max. Earth dist.	482 Oct 24 j 00:46	2°♍12'19	11.02948 AU	max. Earth dist.	488 Dec 28 j 08:41	9°♁29'46	11.00288 AU
morning rise	482 Nov 09 j 16:25	4°♍09'23		morning rise	489 Jan 14 j 10:10	11°♁30'21	
retrograde	483 Feb 17 j 00:56	11°♍05'34		desc. node	489 Jan 23 j 21:05	12°♁35'12	
opposition	483 Apr 27 j 17:35	7°♍48'32	2°30'30	retrograde	489 Apr 26 j 22:45	18°♁40'33	
min. Earth dist.	483 Apr 27 j 19:52	7°♍48'07	9.06100 AU	opposition	489 Jul 06 j 22:54	15°♁20'42	0°-14'-47
direct	483 Jul 08 j 03:41	4°♍27'50		min. Earth dist.	489 Jul 07 j 06:04	15°♁19'22	8.96313 AU
evening set	483 Oct 18 j 21:25	11°♍33'59		direct	489 Sep 14 j 20:36	12°♁02'38	
				evening set	489 Dec 23 j 14:36	19°♁04'49	
conjunction	483 Nov 04 j 12:19	13°♍30'13	1°56'21				
minimum elong	483 Nov 04 j 12:21	13°♍30'14	1°56'21	conjunction	490 Jan 09 j 07:10	21°♁03'45	0°-25'-49
max. Earth dist.	483 Nov 04 j 08:40	13°♍29'09	11.08413 AU	minimum elong	490 Jan 09 j 07:08	21°♁03'45	0°25'51



max. Earth dist.	490 Jan 08 j 23:01	21°☾01'19	10.91916 AU	minimum elong	496 Mar 25 j 14:27	6°♃35'35	2°17'10
morning rise	490 Jan 26 j 02:20	23°☾03'29		max. Earth dist.	496 Mar 25 j 13:29	6°♃35'16	10.20202 AU
	490 Apr 18 j 13:23	0°♁		morning rise	496 Apr 12 j 04:48	8°♃50'26	
retrograde	490 May 09 j 11:22	0°♁21'22		retrograde	496 Jul 28 j 11:23	17°♃06'27	
	490 May 30 j 14:15	30°♁		opposition	496 Oct 05 j 00:50	13°♃36'55	-2°-50'-47
opposition	490 Jul 19 j 08:50	27°☾00'13	0°-48'-41	min. Earth dist.	496 Oct 05 j 00:35	13°♃36'59	8.15176 AU
min. Earth dist.	490 Jul 19 j 15:34	26°☾58'57	8.87000 AU	direct	496 Dec 10 j 13:21	10°♃11'48	
direct	490 Sep 26 j 19:27	23°☾41'43		evening set	497 Mar 22 j 11:36	18°♃09'16	
	490 Dec 28 j 11:06	0°♁					
evening set	491 Jan 04 j 09:27	0°♁48'36		conjunction	497 Apr 09 j 01:54	20°♃25'22	-2°-15'-11
				minimum elong	497 Apr 09 j 01:56	20°♃25'22	2°15'12
conjunction	491 Jan 21 j 03:49	2°♁49'17	0°-52'-59	max. Earth dist.	497 Apr 09 j 03:23	20°♃25'51	10.10363 AU
minimum elong	491 Jan 21 j 03:47	2°♁49'17	0°53'00	morning rise	497 Apr 26 j 20:22	22°♃42'51	
max. Earth dist.	491 Jan 20 j 20:32	2°♁47'05	10.81729 AU		497 Jul 08 j 02:16	0°♃	
morning rise	491 Feb 07 j 01:18	4°♁50'59		retrograde	497 Aug 12 j 04:29	1°♃04'57	
retrograde	491 May 22 j 07:13	12°♁17'48			497 Sep 16 j 10:10	30°♁	
opposition	491 Jul 31 j 23:48	8°♁55'13	-1°-21'-19	opposition	497 Oct 19 j 04:08	27°♃34'40	-2°-43'-37
min. Earth dist.	491 Aug 01 j 05:38	8°♁54'06	8.76034 AU	min. Earth dist.	497 Oct 19 j 01:54	27°♃35'07	8.06441 AU
direct	491 Oct 08 j 21:10	5°♁36'03		direct	497 Dec 24 j 10:33	24°♃08'12	
evening set	492 Jan 16 j 12:21	12°♁49'14			498 Mar 19 j 05:21	0°♃	
				evening set	498 Apr 06 j 04:02	2°♃13'35	
conjunction	492 Feb 02 j 08:46	14°♁51'59	-1°-18'-24				
minimum elong	492 Feb 02 j 08:43	14°♁51'58	1°18'25	conjunction	498 Apr 23 j 22:58	4°♃32'09	-2°-5'-11
max. Earth dist.	492 Feb 02 j 01:22	14°♁49'43	10.70052 AU	minimum elong	498 Apr 23 j 23:01	4°♃32'10	2°05'12
	492 Feb 03 j 11:00	15°♁		max. Earth dist.	498 Apr 24 j 02:28	4°♃33'18	10.02861 AU
morning rise	492 Feb 19 j 08:57	16°♁55'57		morning rise	498 May 11 j 21:27	6°♃51'54	
retrograde	492 Jun 03 j 11:31	24°♁32'44			498 Aug 09 j 05:18	15°♃	
opposition	492 Aug 12 j 20:34	21°♁08'38	-1°-51'-12	retrograde	498 Aug 26 j 23:10	15°♃17'12	
min. Earth dist.	492 Aug 13 j 02:00	21°♁07'36	8.63814 AU		498 Sep 13 j 15:19	15°♁	
direct	492 Oct 20 j 04:28	17°♁48'34		opposition	498 Nov 02 j 10:50	11°♃46'35	-2°-26'-22
evening set	493 Jan 28 j 00:30	25°♁09'29		min. Earth dist.	498 Nov 02 j 07:14	11°♃47'20	8.00274 AU
				direct	499 Jan 07 j 16:00	8°♃18'54	
conjunction	493 Feb 13 j 23:19	27°♁14'36	-1°-40'-50		499 Apr 09 j 04:39	15°♃	
minimum elong	493 Feb 13 j 23:17	27°♁14'35	1°40'51	evening set	499 Apr 21 j 03:59	16°♃30'34	
max. Earth dist.	493 Feb 13 j 16:01	27°♁12'20	10.57393 AU				
morning rise	493 Mar 03 j 02:38	29°♁21'06		conjunction	499 May 09 j 03:12	18°♃51'05	-1°-47'-24
	493 Mar 08 j 11:58	0°♁		minimum elong	499 May 09 j 03:16	18°♃51'06	1°47'25
retrograde	493 Jun 17 j 00:37	7°♁08'27		max. Earth dist.	499 May 09 j 08:11	18°♃52'43	9.98165 AU
opposition	493 Aug 26 j 00:02	3°♁42'51	-2°-16'-44	morning rise	499 May 27 j 05:07	21°♃12'28	
min. Earth dist.	493 Aug 26 j 04:55	3°♁41'54	8.50937 AU	retrograde	499 Sep 10 j 17:25	29°♃37'52	
direct	493 Nov 01 j 17:56	0°♁21'40		opposition	499 Nov 16 j 19:29	26°♃07'21	-1°-59'-49
evening set	494 Feb 09 j 22:46	7°♁51'20		min. Earth dist.	499 Nov 16 j 15:01	26°♃08'17	7.97067 AU
				direct	500 Jan 22 j 03:14	22°♃38'39	
conjunction	494 Feb 27 j 00:38	9°♁59'02	-1°-58'-58		500 Apr 28 j 05:30	0°♁	
minimum elong	494 Feb 27 j 00:36	9°♁59'01	1°58'58	evening set	500 May 05 j 08:44	0°♁54'28	
max. Earth dist.	494 Feb 26 j 18:35	9°♁57'08	10.44403 AU				
morning rise	494 Mar 16 j 07:22	12°♁08'16		conjunction	500 May 23 j 11:21	3°♁16'11	-1°-22'-50
retrograde	494 Jun 30 j 20:26	20°♁06'12		minimum elong	500 May 23 j 11:25	3°♁16'12	1°22'51
opposition	494 Sep 08 j 10:09	16°♁39'06	-2°-36'-13	max. Earth dist.	500 May 23 j 17:46	3°♁18'17	9.96571 AU
min. Earth dist.	494 Sep 08 j 14:00	16°♁38'20	8.38081 AU	morning rise	500 Jun 10 j 15:32	5°♁38'22	
direct	494 Nov 14 j 16:46	13°♁16'40		retrograde	500 Sep 24 j 09:01	14°♁00'49	
evening set	495 Feb 23 j 08:09	20°♁55'42		opposition	500 Nov 30 j 04:08	10°♁30'48	-1°-25'-37
				min. Earth dist.	500 Nov 29 j 22:43	10°♁31'56	7.97032 AU
conjunction	495 Mar 12 j 13:44	23°♁06'11	-2°-11'-27	direct	501 Feb 04 j 17:58	7°♁01'20	
minimum elong	495 Mar 12 j 13:42	23°♁06'10	2°11'28	evening set	501 May 20 j 15:29	15°♁18'55	
max. Earth dist.	495 Mar 12 j 10:08	23°♁05'02	10.31774 AU				
morning rise	495 Mar 30 j 00:09	25°♁18'13		conjunction	501 Jun 07 j 20:13	17°♁40'57	0°-53'-6
	495 May 10 j 14:05	0°♁		minimum elong	501 Jun 07 j 20:16	17°♁40'58	0°53'07
retrograde	495 Jul 15 j 00:11	3°♁25'57		max. Earth dist.	501 Jun 08 j 03:55	17°♁43'28	9.98184 AU
	495 Sep 21 j 14:03	30°♁		morning rise	501 Jun 26 j 01:09	20°♁02'59	
opposition	495 Sep 22 j 02:30	29°♁57'31	-2°-48'-1	retrograde	501 Oct 08 j 20:20	28°♁19'44	
min. Earth dist.	495 Sep 22 j 04:30	29°♁57'07	8.25936 AU	opposition	501 Dec 14 j 10:56	24°♁50'37	0°-46'-12
direct	495 Nov 27 j 23:40	26°♁33'44		min. Earth dist.	501 Dec 14 j 04:33	24°♁51'56	8.00174 AU
	496 Jan 30 j 05:07	0°♁		direct	502 Feb 19 j 09:31	21°♁20'41	
evening set	496 Mar 08 j 04:39	4°♁22'14		evening set	502 Jun 04 j 21:10	29°♁37'40	
					502 Jun 07 j 19:03	0°♁	
conjunction	496 Mar 25 j 14:27	6°♁35'35	-2°-17'-9				

conjunction	502 Jun 23 j 02:21	1°♄59'00	0°-20'-17	conjunction	508 Sep 12 j 21:58	21°♃41'49	2°10'50
minimum elong	502 Jun 23 j 02:22	1°♄59'01	0°20'18	minimum elong	508 Sep 12 j 21:56	21°♃41'48	2°10'50
max. Earth dist.	502 Jun 23 j 10:58	2°♄01'48	10.02883 AU	max. Earth dist.	508 Sep 13 j 01:23	21°♃42'51	10.69502 AU
morning rise	502 Jul 11 j 06:16	4°♄19'53		morning rise	508 Sep 29 j 22:12	23°♃45'09	
retrograde	502 Oct 23 j 02:08	12°♄28'52			508 Dec 04 j 20:36	0°♄	
opposition	502 Dec 28 j 14:27	9°♄00'55	0°-4'-25	retrograde	509 Jan 07 j 11:31	0°♄58'47	
min. Earth dist.	502 Dec 28 j 07:12	9°♄02'25	8.06271 AU		509 Feb 10 j 17:34	30°♃	
asc. node	503 Feb 06 j 14:22	6°♄11'32		opposition	509 Mar 16 j 14:34	27°♃39'44	2°45'38
direct	503 Mar 06 j 00:44	5°♄30'55		min. Earth dist.	509 Mar 16 j 11:29	27°♃40'19	8.75643 AU
evening set	503 Jun 19 j 22:44	13°♄45'01		direct	509 May 26 j 06:13	24°♃15'15	
					509 Aug 24 j 00:32	0°♄	
conjunction	503 Jul 08 j 02:30	16°♄04'43	0°13'24	evening set	509 Sep 08 j 07:56	1°♄45'22	
minimum elong	503 Jul 08 j 02:29	16°♄04'42	0°13'24				
behind sun begin	503 Jul 07 j 22:29	16°♄03'26		conjunction	509 Sep 25 j 08:27	3°♄47'25	2°17'28
behind sun end	503 Jul 08 j 06:29	16°♄05'59		minimum elong	509 Sep 25 j 08:26	3°♄47'25	2°17'28
max. Earth dist.	503 Jul 08 j 11:45	16°♄07'41	10.10341 AU	max. Earth dist.	509 Sep 25 j 10:46	3°♄48'07	10.81266 AU
morning rise	503 Jul 26 j 03:36	18°♄23'32		morning rise	509 Oct 12 j 04:21	5°♄48'08	
retrograde	503 Nov 06 j 00:05	26°♄23'21		retrograde	510 Jan 19 j 12:19	12°♄55'02	
opposition	504 Jan 11 j 13:19	22°♄56'50	0°36'52	opposition	510 Mar 29 j 02:08	9°♄37'01	2°49'42
min. Earth dist.	504 Jan 11 j 05:38	22°♄58'24	8.14928 AU	min. Earth dist.	510 Mar 29 j 00:48	9°♄37'16	8.86804 AU
direct	504 Mar 19 j 12:46	19°♄27'07		direct	510 Jun 08 j 00:46	6°♄13'50	
evening set	504 Jul 03 j 17:30	27°♄36'24		evening set	510 Sep 20 j 13:15	13°♄36'00	
conjunction	504 Jul 21 j 18:12	29°♄53'39	0°45'40	conjunction	510 Oct 07 j 09:57	15°♄35'45	2°18'03
minimum elong	504 Jul 21 j 18:10	29°♄53'39	0°45'40	minimum elong	510 Oct 07 j 09:58	15°♄35'45	2°18'03
max. Earth dist.	504 Jul 22 j 03:37	29°♄56'40	10.20090 AU	max. Earth dist.	510 Oct 07 j 10:19	15°♄35'52	10.91650 AU
	504 Jul 22 j 14:03	0°♄		morning rise	510 Oct 24 j 02:32	17°♄34'21	
morning rise	504 Aug 08 j 15:08	2°♄09'45		retrograde	511 Jan 31 j 08:08	24°♄35'52	
retrograde	504 Nov 18 j 13:55	9°♄59'42		opposition	511 Apr 10 j 09:23	21°♄18'38	2°46'37
opposition	505 Jan 24 j 06:40	6°♄34'46	1°15'06	min. Earth dist.	511 Apr 10 j 10:27	21°♄18'26	8.96334 AU
min. Earth dist.	505 Jan 23 j 23:33	6°♄36'12	8.25615 AU	direct	511 Jun 20 j 14:14	17°♄56'41	
direct	505 Apr 02 j 19:45	3°♄05'40		evening set	511 Oct 02 j 10:07	25°♄11'40	
evening set	505 Jul 18 j 03:23	11°♄08'33					
				conjunction	511 Oct 19 j 03:46	27°♄09'37	2°12'57
conjunction	505 Aug 04 j 23:45	13°♄22'51	1°14'44	minimum elong	511 Oct 19 j 03:47	27°♄09'38	2°12'57
minimum elong	505 Aug 04 j 23:42	13°♄22'50	1°14'44	max. Earth dist.	511 Oct 19 j 01:11	27°♄08'52	11.00190 AU
max. Earth dist.	505 Aug 05 j 08:13	13°♄25'31	10.31537 AU	morning rise	511 Nov 04 j 18:07	29°♄06'38	
	505 Aug 17 j 20:30	15°♄			511 Nov 12 j 12:46	0°♃	
morning rise	505 Aug 22 j 15:40	15°♄35'46		retrograde	512 Feb 12 j 00:49	6°♃04'18	
retrograde	505 Dec 01 j 19:42	23°♄15'45		opposition	512 Apr 21 j 12:57	2°♃47'33	2°36'54
opposition	506 Feb 06 j 17:57	19°♄52'27	1°48'12	min. Earth dist.	512 Apr 21 j 15:49	2°♃47'01	9.03805 AU
min. Earth dist.	506 Feb 06 j 12:01	19°♄53'38	8.37693 AU		512 Jun 05 j 05:16	30°♃	
direct	506 Apr 16 j 20:18	16°♄24'14		direct	512 Jul 01 j 21:06	29°♄26'44	
evening set	506 Aug 01 j 03:06	24°♄19'36			512 Jul 28 j 06:45	0°♃	
				evening set	512 Oct 13 j 00:21	6°♃35'39	
conjunction	506 Aug 18 j 18:18	26°♄30'40	1°39'10	conjunction	512 Oct 29 j 15:55	8°♃32'21	2°02'37
minimum elong	506 Aug 18 j 18:15	26°♄30'39	1°39'09	minimum elong	512 Oct 29 j 15:57	8°♃32'21	2°02'37
max. Earth dist.	506 Aug 19 j 01:00	26°♄32'45	10.44021 AU	max. Earth dist.	512 Oct 29 j 11:25	8°♃31'01	11.06526 AU
morning rise	506 Sep 05 j 04:48	28°♄40'15		morning rise	512 Nov 15 j 04:54	10°♃28'18	
	506 Sep 16 j 06:54	0°♃			512 Dec 29 j 16:46	15°♃	
retrograde	506 Dec 14 j 16:08	6°♃10'37		retrograde	513 Feb 22 j 15:33	17°♃23'43	
opposition	507 Feb 19 j 22:54	2°♃48'54	2°14'47		513 Apr 21 j 11:41	15°♃	
min. Earth dist.	507 Feb 19 j 18:15	2°♃49'49	8.50490 AU	opposition	513 May 03 j 13:47	14°♃07'11	2°21'13
	507 Apr 02 j 23:46	30°♃		min. Earth dist.	513 May 03 j 17:42	14°♃06'27	9.08934 AU
direct	507 Apr 30 j 15:08	29°♄21'48		direct	513 Jul 13 j 23:35	10°♃47'20	
	507 May 28 j 04:45	0°♃			513 Sep 28 j 00:27	15°♃	
evening set	507 Aug 14 j 15:44	7°♃08'56		evening set	513 Oct 24 j 09:37	17°♃51'28	
conjunction	507 Sep 01 j 01:37	9°♃16'45	1°58'02	conjunction	513 Nov 09 j 23:59	19°♃47'23	1°47'38
minimum elong	507 Sep 01 j 01:34	9°♃16'44	1°58'02	minimum elong	513 Nov 10 j 00:01	19°♃47'24	1°47'37
max. Earth dist.	507 Sep 01 j 06:20	9°♃18'13	10.56888 AU	max. Earth dist.	513 Nov 09 j 18:39	19°♃45'49	11.10466 AU
morning rise	507 Sep 18 j 06:47	11°♃23'06		morning rise	513 Nov 26 j 12:15	21°♃42'46	
retrograde	507 Dec 27 j 04:19	18°♃44'35		retrograde	514 Mar 06 j 08:12	28°♃37'32	
opposition	508 Mar 03 j 21:42	15°♃24'18	2°34'01	opposition	514 May 15 j 13:27	25°♃20'56	2°00'18
min. Earth dist.	508 Mar 03 j 17:44	15°♃25'05	8.63351 AU	min. Earth dist.	514 May 15 j 18:19	25°♃20'02	9.11612 AU
direct	508 May 13 j 02:58	11°♃58'29		direct	514 Jul 25 j 21:36	22°♃01'52	
evening set	508 Aug 26 j 17:02	19°♃37'03					

evening set	514 Nov 04 j 15:35	29°♄02'26		opposition	520 Jul 25 j 15:23	3°≈45'09	-1°-6'-48
	514 Nov 12 j 22:42	0°♄		min. Earth dist.	520 Jul 25 j 22:27	3°≈43'49	8.78998 AU
				direct	520 Oct 02 j 18:19	0°≈25'38	
conjunction	514 Nov 21 j 05:17	0°♄58'03	1°28'36	evening set	521 Jan 10 j 09:23	7°≈36'36	
minimum elong	514 Nov 21 j 05:20	0°♄58'04	1°28'36				
max. Earth dist.	514 Nov 20 j 22:42	0°♄56'07	11.11940 AU	conjunction	521 Jan 27 j 04:46	9°≈38'35	-1°-7'-11
morning rise	514 Dec 07 j 17:42	2°♄53'23		minimum elong	521 Jan 27 j 04:44	9°≈38'34	1°07'13
retrograde	515 Mar 17 j 23:40	9°♄49'02		max. Earth dist.	521 Jan 26 j 20:43	9°≈36'08	10.73325 AU
opposition	515 May 27 j 12:51	6°♄32'02	1°34'54	morning rise	521 Feb 13 j 03:53	11°≈41'43	
min. Earth dist.	515 May 27 j 19:20	6°♄30'51	9.11813 AU		521 Mar 14 j 16:30	15°≈	
direct	515 Aug 06 j 15:30	3°♄13'29		retrograde	521 May 28 j 19:25	19°≈14'35	
evening set	515 Nov 15 j 20:11	10°♄11'56		opposition	521 Aug 07 j 09:45	15°≈50'33	-1°-38'-11
				min. Earth dist.	521 Aug 07 j 15:53	15°≈49'22	8.67361 AU
					521 Aug 18 j 12:53	15°≈	
conjunction	515 Dec 02 j 09:42	12°♄07'40	1°06'14	direct	521 Oct 15 j 00:49	12°≈30'15	
minimum elong	515 Dec 02 j 09:44	12°♄07'40	1°06'14		521 Dec 08 j 15:39	15°≈	
max. Earth dist.	515 Dec 02 j 01:21	12°♄05'13	11.10949 AU	evening set	522 Jan 22 j 17:11	19°≈48'13	
morning rise	515 Dec 18 j 23:02	14°♄03'22					
retrograde	516 Mar 28 j 17:49	21°♄01'28		conjunction	522 Feb 08 j 14:59	21°≈52'27	-1°-31'-10
opposition	516 Jun 07 j 12:38	17°♄43'48	1°05'53	minimum elong	522 Feb 08 j 14:56	21°≈52'26	1°31'11
min. Earth dist.	516 Jun 07 j 20:13	17°♄42'24	9.09568 AU	max. Earth dist.	522 Feb 08 j 08:45	21°≈50'31	10.61213 AU
direct	516 Aug 17 j 10:21	14°♄25'29		morning rise	522 Feb 25 j 16:51	23°≈57'59	
evening set	516 Nov 26 j 00:53	21°♄23'17			522 Apr 26 j 13:24	0°♄	
				retrograde	522 Jun 11 j 05:21	1°♄41'11	
conjunction	516 Dec 12 j 14:54	23°♄19'34	0°41'15		522 Jul 27 j 19:59	30°≈	
minimum elong	516 Dec 12 j 14:55	23°♄19'35	0°41'16	opposition	522 Aug 20 j 10:21	28°≈15'37	-2°-5'-55
max. Earth dist.	516 Dec 12 j 06:05	23°♄16'59	11.07542 AU	min. Earth dist.	522 Aug 20 j 14:43	28°≈14'46	8.54968 AU
morning rise	516 Dec 29 j 05:31	25°♄16'04		direct	522 Oct 27 j 11:44	24°≈54'23	
	517 Feb 14 j 03:13	0°♄			523 Jan 15 j 12:59	0°♄	
retrograde	517 Apr 09 j 15:32	2°♄18'12		evening set	523 Feb 04 j 10:53	2°♄20'33	
	517 Jun 05 j 16:43	30°≈					
opposition	517 Jun 19 j 14:09	28°♄59'34	0°34'09	conjunction	523 Feb 21 j 11:30	4°♄27'15	-1°-51'-25
min. Earth dist.	517 Jun 19 j 21:38	28°♄58'12	9.04958 AU	minimum elong	523 Feb 21 j 11:27	4°♄27'14	1°51'26
direct	517 Aug 29 j 03:53	25°♄41'18		max. Earth dist.	523 Feb 21 j 06:49	4°♄25'47	10.48606 AU
	517 Nov 13 j 01:04	0°♄		morning rise	523 Mar 10 j 16:32	6°♄35'24	
evening set	517 Dec 07 j 07:32	2°♄40'00		retrograde	523 Jun 24 j 22:55	14°♄29'09	
				opposition	523 Sep 02 j 17:34	11°♄02'10	-2°-28'-21
conjunction	517 Dec 23 j 22:27	4°♄37'11	0°14'30	min. Earth dist.	523 Sep 02 j 20:17	11°♄01'38	8.42377 AU
minimum elong	517 Dec 23 j 22:28	4°♄37'11	0°14'30	direct	523 Nov 09 j 05:31	7°♄39'53	
behind sun begin	517 Dec 23 j 19:12	4°♄36'14		evening set	524 Feb 17 j 15:30	15°♄15'06	
behind sun end	517 Dec 24 j 01:44	4°♄38'08					
max. Earth dist.	517 Dec 23 j 14:18	4°♄34'47	11.01832 AU	conjunction	524 Mar 05 j 19:20	17°♄24'28	-2°-6'-37
morning rise	518 Jan 09 j 14:36	6°♄34'49		minimum elong	524 Mar 05 j 19:18	17°♄24'27	2°06'37
retrograde	518 Apr 21 j 18:47	13°♄42'37		max. Earth dist.	524 Mar 05 j 15:45	17°♄23'20	10.36108 AU
opposition	518 Jul 01 j 18:28	10°♄22'48	0°00'41	morning rise	524 Mar 23 j 03:58	19°♄35'22	
min. Earth dist.	518 Jul 02 j 01:23	10°♄21'31	8.98150 AU	retrograde	524 Jul 08 j 00:18	27°♄39'16	
desc. node	518 Jul 09 j 09:22	9°♄49'05		opposition	524 Sep 15 j 07:23	24°♄11'02	-2°-43'-48
direct	518 Sep 09 j 22:26	7°♄04'21		min. Earth dist.	524 Sep 15 j 08:48	24°♄10'45	8.30220 AU
evening set	518 Dec 18 j 18:07	14°♄05'32		direct	524 Nov 21 j 07:54	20°♄47'36	
				evening set	525 Mar 02 j 07:13	28°♄32'16	
conjunction	519 Jan 04 j 10:10	16°♄04'00	0°-13'-14		525 Mar 13 j 20:06	0°♄	
minimum elong	519 Jan 04 j 10:10	16°♄04'00	0°13'15	conjunction	525 Mar 19 j 14:52	0°♄44'24	-2°-15'-29
behind sun begin	519 Jan 04 j 05:58	16°♄02'46		minimum elong	525 Mar 19 j 14:51	0°♄44'24	2°15'30
behind sun end	519 Jan 04 j 14:21	16°♄05'14		max. Earth dist.	525 Mar 19 j 12:54	0°♄43'46	10.24389 AU
max. Earth dist.	519 Jan 04 j 01:42	16°♄01'29	10.94029 AU	morning rise	525 Apr 06 j 03:27	2°♄58'07	
morning rise	519 Jan 21 j 04:19	18°♄03'09		retrograde	525 Jul 22 j 09:11	11°♄11'02	
retrograde	519 May 04 j 05:08	25°♄18'01		opposition	525 Sep 29 j 03:38	7°♄41'48	-2°-50'-43
opposition	519 Jul 14 j 02:33	21°♄56'55	0°-33'-22	min. Earth dist.	525 Sep 29 j 03:50	7°♄41'45	8.19176 AU
min. Earth dist.	519 Jul 14 j 09:34	21°♄55'36	8.89393 AU	direct	525 Dec 04 j 18:26	4°♄17'10	
direct	519 Sep 21 j 18:17	18°♄38'02		evening set	526 Mar 16 j 09:46	12°♄11'03	
evening set	519 Dec 30 j 10:14	25°♄43'19					
				conjunction	526 Apr 02 j 21:51	14°♄25'59	-2°-17'-1
conjunction	520 Jan 16 j 03:43	27°♄43'23	0°-40'-48	minimum elong	526 Apr 02 j 21:52	14°♄25'59	2°17'01
minimum elong	520 Jan 16 j 03:42	27°♄43'22	0°40'50	max. Earth dist.	526 Apr 02 j 22:23	14°♄26'09	10.14127 AU
max. Earth dist.	520 Jan 15 j 18:48	27°♄40'42	10.84412 AU	morning rise	526 Apr 20 j 14:37	16°♄42'24	
morning rise	520 Feb 02 j 00:18	29°♄44'24		retrograde	526 Aug 05 j 23:44	25°♄02'24	
	520 Feb 04 j 05:23	0°≈					
retrograde	520 May 15 j 19:50	7°≈07'41					

opposition	526 Oct 13 j 05:18	21° $\Upsilon$ 32'29	-2°-48'00	morning rise	532 Jul 18 j 23:18	12° $\Theta$ 25'38	
min. Earth dist.	526 Oct 13 j 03:49	21° $\Upsilon$ 32'47	8.09895 AU	retrograde	532 Oct 30 j 07:53	20° $\Theta$ 29'39	
direct	526 Dec 18 j 13:44	18° $\Upsilon$ 06'42		opposition	533 Jan 04 j 19:17	17° $\Theta$ 03'03	0°18'52
evening set	527 Mar 30 j 22:36	26° $\Upsilon$ 08'59		min. Earth dist.	533 Jan 04 j 13:17	17° $\Theta$ 04'17	8.11685 AU
				direct	533 Mar 13 j 11:53	13° $\Theta$ 33'40	
conjunction	527 Apr 17 j 15:25	28° $\Upsilon$ 26'30	-2°-10'-35	evening set	533 Jun 27 j 14:51	21° $\Theta$ 45'23	
minimum elong	527 Apr 17 j 15:27	28° $\Upsilon$ 26'31	2°10'35				
max. Earth dist.	527 Apr 17 j 18:40	28° $\Upsilon$ 27'34	10.05948 AU	conjunction	533 Jul 15 j 16:56	24° $\Theta$ 03'45	0°31'43
	527 Apr 29 j 15:03	0° $\Upsilon$		minimum elong	533 Jul 15 j 16:54	24° $\Theta$ 03'45	0°31'42
morning rise	527 May 05 j 12:13	0° $\Upsilon$ 45'20		max. Earth dist.	533 Jul 16 j 00:16	24° $\Theta$ 06'06	10.16197 AU
retrograde	527 Aug 20 j 17:11	9° $\Upsilon$ 09'47		morning rise	533 Aug 02 j 16:01	26° $\Theta$ 21'08	
opposition	527 Oct 27 j 11:00	5° $\Upsilon$ 39'32	-2°-35'-10		533 Sep 02 j 15:39	0° $\Omega$	
min. Earth dist.	527 Oct 27 j 07:36	5° $\Upsilon$ 40'14	8.02959 AU	retrograde	533 Nov 13 j 00:50	4° $\Omega$ 15'44	
direct	528 Jan 01 j 17:02	2° $\Upsilon$ 12'42		opposition	534 Jan 18 j 15:27	0° $\Omega$ 50'34	0°58'45
evening set	528 Apr 13 j 19:52	10° $\Upsilon$ 21'54		min. Earth dist.	534 Jan 18 j 09:32	0° $\Omega$ 51'46	8.21136 AU
					534 Jan 29 j 03:01	30° $\Upsilon$	
conjunction	528 May 01 j 17:15	12° $\Upsilon$ 41'37	-1°-56'-9	direct	534 Mar 27 j 22:14	27° $\Theta$ 21'32	
minimum elong	528 May 01 j 17:19	12° $\Upsilon$ 41'38	1°56'10		534 May 23 j 07:09	0° $\Omega$	
max. Earth dist.	528 May 01 j 23:15	12° $\Upsilon$ 43'34	10.00384 AU	evening set	534 Jul 12 j 05:30	5° $\Omega$ 27'45	
morning rise	528 May 19 j 17:39	15° $\Upsilon$ 02'18					
	528 May 19 j 10:28	15° $\Upsilon$		conjunction	534 Jul 30 j 03:51	7° $\Omega$ 43'26	1°02'26
retrograde	528 Sep 03 j 12:13	23° $\Upsilon$ 28'09		minimum elong	534 Jul 30 j 03:48	7° $\Omega$ 43'25	1°02'25
opposition	528 Nov 09 j 19:25	19° $\Upsilon$ 57'57	-2°-12'-33	max. Earth dist.	534 Jul 30 j 10:35	7° $\Omega$ 45'34	10.26537 AU
min. Earth dist.	528 Nov 09 j 14:01	19° $\Upsilon$ 59'04	7.98822 AU	morning rise	534 Aug 16 j 22:16	9° $\Omega$ 57'51	
direct	529 Jan 15 j 01:36	16° $\Upsilon$ 30'10			534 Oct 01 j 11:52	15° $\Omega$	
evening set	529 Apr 28 j 23:03	24° $\Upsilon$ 44'17		retrograde	534 Nov 26 j 10:29	17° $\Omega$ 42'38	
					535 Jan 23 j 15:45	15° $\Upsilon$	
conjunction	529 May 17 j 00:23	27° $\Upsilon$ 05'31	-1°-34'-25	opposition	535 Feb 01 j 05:55	14° $\Omega$ 18'54	1°34'23
minimum elong	529 May 17 j 00:27	27° $\Upsilon$ 05'32	1°34'25	min. Earth dist.	535 Feb 01 j 00:01	14° $\Omega$ 20'05	8.32240 AU
max. Earth dist.	529 May 17 j 08:31	27° $\Upsilon$ 08'11	9.97792 AU	direct	535 Apr 11 j 02:31	10° $\Omega$ 50'31	
morning rise	529 Jun 04 j 03:32	29° $\Upsilon$ 27'21			535 Jun 22 j 23:04	15° $\Omega$	
	529 Jun 08 j 09:47	0° $\Upsilon$		evening set	535 Jul 26 j 10:15	18° $\Omega$ 49'44	
retrograde	529 Sep 18 j 06:28	7° $\Upsilon$ 51'25					
opposition	529 Nov 24 j 04:35	4° $\Upsilon$ 21'36	-1°-41'-28	conjunction	535 Aug 13 j 03:54	21° $\Omega$ 02'20	1°29'05
min. Earth dist.	529 Nov 23 j 21:57	4° $\Upsilon$ 22'59	7.97730 AU	minimum elong	535 Aug 13 j 03:50	21° $\Omega$ 02'19	1°29'04
direct	530 Jan 29 j 14:11	0° $\Upsilon$ 53'01		max. Earth dist.	535 Aug 13 j 10:18	21° $\Omega$ 04'21	10.38212 AU
evening set	530 May 14 j 05:42	9° $\Upsilon$ 09'46		morning rise	535 Aug 30 j 16:53	23° $\Omega$ 13'30	
					535 Nov 09 j 12:46	0° $\Upsilon$	
conjunction	530 Jun 01 j 09:45	11° $\Upsilon$ 31'40	-1°-6'-44	retrograde	535 Dec 09 j 12:05	0° $\Upsilon$ 48'33	
minimum elong	530 Jun 01 j 09:48	11° $\Upsilon$ 31'41	1°06'45		536 Jan 08 j 19:19	30° $\Upsilon$	
max. Earth dist.	530 Jun 01 j 18:45	11° $\Upsilon$ 34'37	9.98283 AU	opposition	536 Feb 14 j 14:07	27° $\Omega$ 26'13	2°04'01
morning rise	530 Jun 19 j 14:20	13° $\Upsilon$ 53'45		min. Earth dist.	536 Feb 14 j 08:47	27° $\Omega$ 27'17	8.44379 AU
retrograde	530 Oct 02 j 21:24	22° $\Upsilon$ 13'04		direct	536 Apr 24 j 00:11	23° $\Omega$ 58'41	
opposition	530 Dec 08 j 12:31	18° $\Upsilon$ 44'02	-1°-4'-4		536 Jul 23 j 16:07	0° $\Upsilon$	
min. Earth dist.	530 Dec 08 j 05:44	18° $\Upsilon$ 45'26	7.99669 AU	evening set	536 Aug 08 j 04:12	1° $\Upsilon$ 49'57	
direct	531 Feb 13 j 05:01	15° $\Upsilon$ 14'51					
evening set	531 May 29 j 12:31	23° $\Upsilon$ 32'00		conjunction	536 Aug 25 j 16:41	3° $\Upsilon$ 59'20	1°50'31
				minimum elong	536 Aug 25 j 16:38	3° $\Upsilon$ 59'19	1°50'30
conjunction	531 Jun 16 j 17:39	25° $\Upsilon$ 53'38	0°-35'-1	max. Earth dist.	536 Aug 25 j 22:18	4° $\Upsilon$ 01'04	10.50588 AU
minimum elong	531 Jun 16 j 17:41	25° $\Upsilon$ 53'38	0°35'02	morning rise	536 Sep 12 j 00:08	6° $\Upsilon$ 07'12	
max. Earth dist.	531 Jun 17 j 02:26	25° $\Upsilon$ 56'29	10.01700 AU	retrograde	536 Dec 21 j 04:22	13° $\Upsilon$ 33'01	
morning rise	531 Jul 04 j 22:02	28° $\Upsilon$ 15'00		opposition	537 Feb 26 j 15:53	10° $\Upsilon$ 12'01	2°26'36
	531 Jul 18 j 22:32	0° $\Theta$		min. Earth dist.	537 Feb 26 j 12:00	10° $\Upsilon$ 12'46	8.56906 AU
retrograde	531 Oct 17 j 06:56	6° $\Theta$ 27'24		direct	537 May 07 j 15:08	6° $\Upsilon$ 45'28	
opposition	531 Dec 22 j 17:54	2° $\Theta$ 59'28	0°-22'-59	evening set	537 Aug 21 j 10:58	14° $\Upsilon$ 28'18	
min. Earth dist.	531 Dec 22 j 11:30	3° $\Theta$ 00'47	8.04410 AU				
	532 Feb 04 j 12:14	30° $\Upsilon$		conjunction	537 Sep 07 j 18:14	16° $\Upsilon$ 34'32	2°06'03
direct	532 Feb 27 j 21:18	29° $\Upsilon$ 30'02		minimum elong	537 Sep 07 j 18:11	16° $\Upsilon$ 34'31	2°06'03
	532 Mar 22 j 06:58	0° $\Theta$		max. Earth dist.	537 Sep 07 j 22:09	16° $\Upsilon$ 35'44	10.63029 AU
evening set	532 Jun 12 j 16:22	7° $\Theta$ 45'27		morning rise	537 Sep 24 j 20:33	18° $\Upsilon$ 39'17	
				retrograde	538 Jan 02 j 13:55	25° $\Upsilon$ 56'42	
conjunction	532 Jun 30 j 20:47	10° $\Theta$ 05'52	0°-1'-29	opposition	538 Mar 11 j 11:37	22° $\Upsilon$ 36'53	2°41'36
minimum elong	532 Jun 30 j 20:48	10° $\Theta$ 05'52	0°01'30	min. Earth dist.	538 Mar 11 j 09:32	22° $\Upsilon$ 37'17	8.69193 AU
behind sun begin	532 Jun 30 j 13:26	10° $\Theta$ 03'31		direct	538 May 20 j 22:00	19° $\Upsilon$ 11'28	
behind sun end	532 Jul 01 j 04:10	10° $\Theta$ 08'14		evening set	538 Sep 03 j 06:40	26° $\Upsilon$ 45'46	
max. Earth dist.	532 Jul 01 j 04:57	10° $\Theta$ 08'29	10.07771 AU				
asc. node	532 Jul 17 j 06:22	12° $\Theta$ 12'38		conjunction	538 Sep 20 j 09:03	28° $\Upsilon$ 49'06	2°15'23

minimum elong	538 Sep 20 j 09:01	28° $\mathbb{M}$ 49'06	2°15'24	conjunction	544 Nov 26 j 21:12	7° $\mathbb{Z}$ 28'22	1°16'29
max. Earth dist.	538 Sep 20 j 10:35	28° $\mathbb{M}$ 49'34	10.74940 AU	minimum elong	544 Nov 26 j 21:15	7° $\mathbb{Z}$ 28'23	1°16'29
	538 Sep 30 j 03:49	0° $\mathbb{L}$		max. Earth dist.	544 Nov 26 j 15:46	7° $\mathbb{Z}$ 26'46	11.12192 AU
morning rise	538 Oct 07 j 06:55	0° $\mathbb{L}$ 51'05		morning rise	544 Dec 13 j 10:00	9° $\mathbb{Z}$ 23'44	
retrograde	539 Jan 14 j 15:50	8° $\mathbb{L}$ 01'12		retrograde	545 Mar 23 j 22:10	16° $\mathbb{Z}$ 19'57	
opposition	539 Mar 24 j 01:41	4° $\mathbb{L}$ 42'22	2°48'58	opposition	545 Jun 02 j 14:44	13° $\mathbb{Z}$ 02'32	1°19'06
min. Earth dist.	539 Mar 24 j 00:41	4° $\mathbb{L}$ 42'34	8.80676 AU	min. Earth dist.	545 Jun 02 j 19:36	13° $\mathbb{Z}$ 01'38	9.11705 AU
direct	539 Jun 02 j 21:20	1° $\mathbb{L}$ 18'08		direct	545 Aug 12 j 16:31	9° $\mathbb{Z}$ 44'10	
evening set	539 Sep 15 j 16:06	8° $\mathbb{L}$ 44'12		evening set	545 Nov 21 j 11:33	16° $\mathbb{Z}$ 41'26	
conjunction	539 Oct 02 j 14:23	10° $\mathbb{L}$ 45'03	2°18'36	conjunction	545 Dec 08 j 01:19	18° $\mathbb{Z}$ 37'16	0°52'36
minimum elong	539 Oct 02 j 14:23	10° $\mathbb{L}$ 45'03	2°18'36	minimum elong	545 Dec 08 j 01:21	18° $\mathbb{Z}$ 37'16	0°52'36
max. Earth dist.	539 Oct 02 j 14:27	10° $\mathbb{L}$ 45'04	10.85814 AU	max. Earth dist.	545 Dec 07 j 19:00	18° $\mathbb{Z}$ 35'25	11.10529 AU
morning rise	539 Oct 19 j 08:34	12° $\mathbb{L}$ 44'41		morning rise	545 Dec 24 j 15:06	20° $\mathbb{Z}$ 33'10	
retrograde	540 Jan 26 j 13:25	19° $\mathbb{L}$ 48'48		retrograde	546 Apr 04 j 17:51	27° $\mathbb{Z}$ 32'30	
opposition	540 Apr 04 j 10:40	16° $\mathbb{L}$ 30'44	2°48'57	opposition	546 Jun 14 j 14:57	24° $\mathbb{Z}$ 14'30	0°48'30
min. Earth dist.	540 Apr 04 j 10:21	16° $\mathbb{L}$ 30'48	8.90877 AU	min. Earth dist.	546 Jun 14 j 20:46	24° $\mathbb{Z}$ 13'26	9.08812 AU
direct	540 Jun 14 j 14:58	13° $\mathbb{L}$ 07'43		direct	546 Aug 24 j 07:39	20° $\mathbb{Z}$ 56'30	
evening set	540 Sep 26 j 16:24	20° $\mathbb{L}$ 26'08		evening set	546 Dec 02 j 16:38	27° $\mathbb{Z}$ 53'48	
conjunction	540 Oct 13 j 11:31	22° $\mathbb{L}$ 24'59	2°15'55	conjunction	546 Dec 19 j 06:54	29° $\mathbb{Z}$ 50'17	0°26'33
minimum elong	540 Oct 13 j 11:32	22° $\mathbb{L}$ 24'59	2°15'56	minimum elong	546 Dec 19 j 06:55	29° $\mathbb{Z}$ 50'18	0°26'34
max. Earth dist.	540 Oct 13 j 10:51	22° $\mathbb{L}$ 24'47	10.95212 AU	max. Earth dist.	546 Dec 18 j 23:16	29° $\mathbb{Z}$ 48'03	11.06500 AU
morning rise	540 Oct 30 j 02:50	24° $\mathbb{L}$ 22'45			546 Dec 20 j 15:52	0° $\mathbb{Z}$	
	540 Dec 27 j 15:40	0° $\mathbb{M}$		morning rise	547 Jan 04 j 22:17	1° $\mathbb{Z}$ 47'08	
retrograde	541 Feb 06 j 08:34	1° $\mathbb{M}$ 22'14		retrograde	547 Apr 16 j 17:04	8° $\mathbb{Z}$ 51'14	
	541 Mar 20 j 04:12	30° $\mathbb{R}$ $\mathbb{L}$		opposition	547 Jun 26 j 17:24	5° $\mathbb{Z}$ 32'23	0°15'44
opposition	541 Apr 16 j 15:36	28° $\mathbb{L}$ 04'45	2°42'03	min. Earth dist.	547 Jun 27 j 00:07	5° $\mathbb{Z}$ 31'08	9.03616 AU
min. Earth dist.	541 Apr 16 j 16:25	28° $\mathbb{L}$ 04'36	8.99393 AU	direct	547 Sep 05 j 01:33	2° $\mathbb{Z}$ 14'28	
direct	541 Jun 26 j 23:36	24° $\mathbb{L}$ 42'56		evening set	547 Dec 14 j 00:45	9° $\mathbb{Z}$ 13'23	
	541 Sep 21 j 07:12	0° $\mathbb{M}$		desc. node	547 Dec 19 j 21:22	9° $\mathbb{Z}$ 54'26	
evening set	541 Oct 08 j 09:19	1° $\mathbb{M}$ 54'38		conjunction	547 Dec 30 j 16:03	11° $\mathbb{Z}$ 10'56	0°00'-48
conjunction	541 Oct 25 j 01:56	3° $\mathbb{M}$ 51'56	2°07'49	minimum elong	547 Dec 30 j 16:03	11° $\mathbb{Z}$ 10'56	0°00'49
minimum elong	541 Oct 25 j 01:57	3° $\mathbb{M}$ 51'56	2°07'48	behind sun begin	547 Dec 30 j 09:04	11° $\mathbb{Z}$ 08'54	
max. Earth dist.	541 Oct 24 j 23:56	3° $\mathbb{M}$ 51'20	11.02771 AU	behind sun end	547 Dec 30 j 23:01	11° $\mathbb{Z}$ 12'59	
morning rise	541 Nov 10 j 15:21	5° $\mathbb{M}$ 48'22		max. Earth dist.	547 Dec 30 j 08:20	11° $\mathbb{Z}$ 08'40	11.00229 AU
retrograde	542 Feb 17 j 23:22	12° $\mathbb{M}$ 44'40		morning rise	548 Jan 16 j 09:15	13° $\mathbb{Z}$ 09'04	
opposition	542 Apr 28 j 17:27	9° $\mathbb{M}$ 27'35	2°28'53	retrograde	548 Apr 27 j 23:08	20° $\mathbb{Z}$ 19'24	
min. Earth dist.	542 Apr 28 j 20:09	9° $\mathbb{M}$ 27'05	9.05920 AU	opposition	548 Jul 07 j 22:48	16° $\mathbb{Z}$ 59'29	0°-18'-5
direct	542 Jul 09 j 02:25	6° $\mathbb{M}$ 06'51		min. Earth dist.	548 Jul 08 j 05:16	16° $\mathbb{Z}$ 58'17	8.96280 AU
evening set	542 Oct 19 j 20:24	13° $\mathbb{M}$ 12'57		direct	548 Sep 15 j 21:00	13° $\mathbb{Z}$ 41'25	
	542 Nov 04 j 03:54	15° $\mathbb{M}$		evening set	548 Dec 24 j 13:29	20° $\mathbb{Z}$ 43'31	
conjunction	542 Nov 05 j 11:12	15° $\mathbb{M}$ 09'11	1°54'47	conjunction	549 Jan 10 j 06:13	22° $\mathbb{Z}$ 42'29	0°-28'-28
minimum elong	542 Nov 05 j 11:14	15° $\mathbb{M}$ 09'12	1°54'47	minimum elong	549 Jan 10 j 06:12	22° $\mathbb{Z}$ 42'28	0°28'30
max. Earth dist.	542 Nov 05 j 07:04	15° $\mathbb{M}$ 07'58	11.08238 AU	max. Earth dist.	549 Jan 09 j 23:10	22° $\mathbb{Z}$ 40'22	10.91910 AU
morning rise	542 Nov 21 j 23:45	17° $\mathbb{M}$ 04'48		morning rise	549 Jan 27 j 01:24	24° $\mathbb{Z}$ 42'14	
retrograde	543 Mar 01 j 13:48	23° $\mathbb{M}$ 59'29			549 Mar 20 j 20:47	0° $\mathbb{M}$	
opposition	543 May 10 j 17:18	20° $\mathbb{M}$ 42'32	2°10'09	retrograde	549 May 10 j 11:09	2° $\mathbb{M}$ 00'13	
min. Earth dist.	543 May 10 j 21:23	20° $\mathbb{M}$ 41'47	9.10239 AU		549 Jul 01 j 19:08	30° $\mathbb{R}$ $\mathbb{Z}$	
direct	543 Jul 21 j 02:34	17° $\mathbb{M}$ 22'46		opposition	549 Jul 20 j 08:34	28° $\mathbb{Z}$ 39'02	0°-51'-51
evening set	543 Oct 31 j 03:07	24° $\mathbb{M}$ 24'30		min. Earth dist.	549 Jul 20 j 14:21	28° $\mathbb{Z}$ 37'57	8.87035 AU
				direct	549 Sep 27 j 18:21	25° $\mathbb{Z}$ 20'34	
conjunction	543 Nov 16 j 16:59	26° $\mathbb{M}$ 20'10	1°37'28		549 Dec 14 j 14:54	0° $\mathbb{M}$	
minimum elong	543 Nov 16 j 17:01	26° $\mathbb{M}$ 20'11	1°37'27	evening set	550 Jan 05 j 08:28	2° $\mathbb{M}$ 27'24	
max. Earth dist.	543 Nov 16 j 11:35	26° $\mathbb{M}$ 18'36	11.11420 AU	conjunction	550 Jan 22 j 02:49	4° $\mathbb{M}$ 28'04	0°-55'-27
morning rise	543 Dec 03 j 05:26	28° $\mathbb{M}$ 15'27		minimum elong	550 Jan 22 j 02:47	4° $\mathbb{M}$ 28'04	0°55'28
	543 Dec 18 j 21:01	0° $\mathbb{Z}$		max. Earth dist.	550 Jan 21 j 19:50	4° $\mathbb{M}$ 25'58	10.81808 AU
retrograde	544 Mar 12 j 04:15	5° $\mathbb{Z}$ 10'06		morning rise	550 Feb 08 j 00:23	6° $\mathbb{M}$ 29'46	
opposition	544 May 21 j 16:00	1° $\mathbb{Z}$ 53'01	1°46'37	retrograde	550 May 23 j 07:30	13° $\mathbb{M}$ 56'38	
min. Earth dist.	544 May 21 j 20:27	1° $\mathbb{Z}$ 52'13	9.12191 AU	opposition	550 Aug 01 j 23:30	10° $\mathbb{M}$ 34'03	-1°-24'-11
	544 Jun 17 j 23:36	30° $\mathbb{R}$ $\mathbb{M}$		min. Earth dist.	550 Aug 02 j 04:59	10° $\mathbb{M}$ 33'00	8.76176 AU
direct	544 Jul 31 j 22:33	28° $\mathbb{M}$ 34'04		direct	550 Oct 09 j 20:20	7° $\mathbb{M}$ 14'55	
	544 Sep 12 j 15:56	0° $\mathbb{Z}$		evening set	551 Jan 17 j 11:23	14° $\mathbb{M}$ 27'59	
evening set	544 Nov 10 j 07:34	5° $\mathbb{Z}$ 32'50			551 Jan 21 j 21:52	15° $\mathbb{M}$	

conjunction	551 Feb 03 j 07:42	16°≈30'42	-1°-20'-35	conjunction	557 Apr 24 j 22:03	6°♄09'38	-2°-4'-2
minimum elong	551 Feb 03 j 07:40	16°≈30'41	1°20'35	minimum elong	557 Apr 24 j 22:06	6°♄09'39	2°04'03
max. Earth dist.	551 Feb 03 j 00:02	16°≈28'21	10.70255 AU	max. Earth dist.	557 Apr 25 j 00:24	6°♄10'24	10.03123 AU
morning rise	551 Feb 20 j 08:04	18°≈34'40		morning rise	557 May 12 j 20:45	8°♄29'22	
retrograde	551 Jun 05 j 11:31	26°≈11'23			557 Jul 12 j 03:20	15°♄	
opposition	551 Aug 14 j 20:07	22°≈47'19	-1°-53'-38	retrograde	557 Aug 27 j 20:49	16°♄54'23	
min. Earth dist.	551 Aug 15 j 01:54	22°≈46'13	8.64074 AU		557 Oct 14 j 05:14	15°♄	
direct	551 Oct 22 j 02:50	19°≈27'16		opposition	557 Nov 03 j 09:03	13°♄23'52	-2°-24'-34
evening set	552 Jan 29 j 23:28	26°≈48'03		min. Earth dist.	557 Nov 03 j 06:19	13°♄24'26	8.00519 AU
				direct	558 Jan 08 j 14:54	9°♄56'11	
conjunction	552 Feb 15 j 22:21	28°≈53'07	-1°-42'-37		558 Mar 27 j 12:58	15°♄	
minimum elong	552 Feb 15 j 22:19	28°≈53'06	1°42'37	evening set	558 Apr 22 j 02:50	18°♄07'46	
max. Earth dist.	552 Feb 15 j 15:13	28°≈50'54	10.57690 AU				
	552 Feb 24 j 22:47	0°♄		conjunction	558 May 10 j 02:13	20°♄28'18	-1°-45'-43
morning rise	552 Mar 04 j 01:47	0°♄59'35		minimum elong	558 May 10 j 02:16	20°♄28'20	1°45'44
retrograde	552 Jun 17 j 22:21	8°♄46'50		max. Earth dist.	558 May 10 j 06:26	20°♄29'41	9.98402 AU
opposition	552 Aug 26 j 23:14	5°♄21'16	-2°-18'-36	morning rise	558 May 28 j 04:19	22°♄49'41	
min. Earth dist.	552 Aug 27 j 04:22	5°♄20'16	8.51262 AU		558 Aug 05 j 10:16	0°♄	
direct	552 Nov 02 j 17:48	2°♄00'08		retrograde	558 Sep 11 j 14:54	1°♄14'46	
evening set	553 Feb 10 j 21:42	9°♄29'40			558 Oct 19 j 01:39	30°♄	
				opposition	558 Nov 17 j 17:31	27°♄44'20	-1°-57'-24
conjunction	553 Feb 27 j 23:44	11°♄37'21	-2°00'-14	min. Earth dist.	558 Nov 17 j 13:33	27°♄45'09	7.97286 AU
minimum elong	553 Feb 27 j 23:41	11°♄37'20	2°00'15	direct	559 Jan 23 j 01:48	24°♄15'37	
max. Earth dist.	553 Feb 27 j 18:26	11°♄35'41	10.44732 AU		559 Apr 16 j 23:31	0°♄	
morning rise	553 Mar 17 j 06:26	13°♄46'31		evening set	559 May 07 j 07:38	2°♄31'22	
retrograde	553 Jul 01 j 18:52	21°♄44'20					
opposition	553 Sep 09 j 09:02	18°♄17'17	-2°-37'-25	conjunction	559 May 25 j 10:28	4°♄53'06	-1°-20'-43
min. Earth dist.	553 Sep 09 j 12:31	18°♄16'36	8.38420 AU	minimum elong	559 May 25 j 10:31	4°♄53'07	1°20'43
direct	553 Nov 15 j 16:21	14°♄54'55		max. Earth dist.	559 May 25 j 16:38	4°♄55'08	9.96780 AU
evening set	554 Feb 24 j 07:04	22°♄33'48		morning rise	559 Jun 12 j 14:43	7°♄15'16	
				retrograde	559 Sep 26 j 06:50	15°♄37'23	
conjunction	554 Mar 13 j 12:48	24°♄44'17	-2°-12'-9	opposition	559 Dec 02 j 01:56	12°♄07'26	-1°-22'-45
minimum elong	554 Mar 13 j 12:47	24°♄44'16	2°12'10	min. Earth dist.	559 Dec 01 j 20:30	12°♄08'34	7.97219 AU
max. Earth dist.	554 Mar 13 j 09:46	24°♄43'19	10.32102 AU	direct	560 Feb 06 j 16:14	8°♄37'57	
morning rise	554 Mar 30 j 23:11	26°♄56'18		evening set	560 May 21 j 14:22	16°♄55'30	
	554 Apr 25 j 19:45	0°♄					
retrograde	554 Jul 16 j 00:05	5°♄03'53		conjunction	560 Jun 08 j 19:16	19°♄17'31	0°-50'-41
opposition	554 Sep 23 j 01:13	1°♄35'29	-2°-48'-30	minimum elong	560 Jun 08 j 19:18	19°♄17'32	0°50'42
min. Earth dist.	554 Sep 23 j 02:38	1°♄35'12	8.26262 AU	max. Earth dist.	560 Jun 09 j 03:11	19°♄20'07	9.98356 AU
	554 Oct 13 j 17:53	30°♄		morning rise	560 Jun 27 j 00:07	21°♄39'31	
direct	554 Nov 28 j 21:20	28°♄11'47		retrograde	560 Oct 09 j 18:38	29°♄55'59	
	555 Jan 12 j 18:09	0°♄		opposition	560 Dec 15 j 08:41	26°♄26'53	0°-43'-5
evening set	555 Mar 10 j 03:36	6°♄00'09		min. Earth dist.	560 Dec 15 j 02:00	26°♄28'16	8.00323 AU
				direct	561 Feb 20 j 08:10	22°♄56'57	
conjunction	555 Mar 27 j 13:29	8°♄13'29	-2°-17'-14		561 May 27 j 00:36	0°♄	
minimum elong	555 Mar 27 j 13:30	8°♄13'29	2°17'15	evening set	561 Jun 05 j 19:54	1°♄13'53	
max. Earth dist.	555 Mar 27 j 12:14	8°♄13'05	10.20516 AU				
morning rise	555 Apr 14 j 03:57	10°♄28'19		conjunction	561 Jun 24 j 01:08	3°♄35'12	0°-17'-43
retrograde	555 Jul 30 j 11:46	18°♄44'08		minimum elong	561 Jun 24 j 01:09	3°♄35'12	0°17'44
opposition	555 Oct 06 j 23:23	15°♄14'41	-2°-50'-28	max. Earth dist.	561 Jun 24 j 10:11	3°♄38'08	10.03014 AU
min. Earth dist.	555 Oct 06 j 23:08	15°♄14'44	8.15477 AU	morning rise	561 Jul 12 j 04:52	5°♄56'02	
direct	555 Dec 12 j 10:51	11°♄49'35		retrograde	561 Oct 23 j 23:54	14°♄04'46	
evening set	556 Mar 23 j 10:41	19°♄47'00		opposition	561 Dec 29 j 12:11	10°♄36'50	0°-1'-13
				min. Earth dist.	561 Dec 29 j 04:54	10°♄38'20	8.06377 AU
conjunction	556 Apr 10 j 01:02	22°♄03'04	-2°-14'-39	asc. node	562 Jan 09 j 14:04	9°♄42'37	
minimum elong	556 Apr 10 j 01:04	22°♄03'05	2°14'39	direct	562 Mar 06 j 22:52	7°♄06'48	
max. Earth dist.	556 Apr 10 j 01:32	22°♄03'14	10.10652 AU	evening set	562 Jun 20 j 21:29	15°♄20'54	
morning rise	556 Apr 27 j 19:41	24°♄20'33					
	556 Jun 17 j 10:25	0°♄		conjunction	562 Jul 09 j 01:10	17°♄40'32	0°15'56
retrograde	556 Aug 13 j 03:20	2°♄42'22		minimum elong	562 Jul 09 j 01:09	17°♄40'32	0°15'56
	556 Oct 10 j 07:09	30°♄		max. Earth dist.	562 Jul 09 j 10:31	17°♄43'32	10.10425 AU
opposition	556 Oct 20 j 02:27	29°♄12'11	-2°-42'-32	morning rise	562 Jul 27 j 02:03	19°♄59'18	
min. Earth dist.	556 Oct 20 j 00:53	29°♄12'30	8.06711 AU	retrograde	562 Nov 06 j 22:10	22°♄58'55	
direct	556 Dec 25 j 09:34	25°♄45'45		opposition	563 Jan 12 j 11:02	24°♄32'25	0°39'57
	557 Mar 05 j 21:48	0°♄		min. Earth dist.	563 Jan 12 j 03:59	24°♄33'51	8.14986 AU
evening set	557 Apr 07 j 03:03	3°♄51'05		direct	563 Mar 21 j 10:16	21°♄02'38	
				evening set	563 Jul 05 j 16:14	29°♄11'56	

	563 Jul 12 j 00:54	0°♈		conjunction	569 Oct 08 j 07:38	17°♌11'18	2°17'45
				minimum elong	569 Oct 08 j 07:38	17°♌11'18	2°17'45
conjunction	563 Jul 23 j 16:41	1°♈29'08	0°48'03	max. Earth dist.	569 Oct 08 j 07:29	17°♌11'16	10.91494 AU
minimum elong	563 Jul 23 j 16:39	1°♈29'08	0°48'03	morning rise	569 Oct 25 j 00:15	19°♌09'55	
max. Earth dist.	563 Jul 24 j 01:30	1°♈31'57	10.20119 AU	retrograde	570 Feb 01 j 05:54	26°♌11'36	
morning rise	563 Aug 10 j 13:25	3°♈45'09		opposition	570 Apr 11 j 07:44	22°♌54'22	2°45'55
retrograde	563 Nov 20 j 12:15	11°♈34'58		min. Earth dist.	570 Apr 11 j 08:39	22°♌54'12	8.96208 AU
opposition	564 Jan 26 j 04:30	8°♈10'02	1°17'54	direct	570 Jun 21 j 12:15	19°♌32'28	
min. Earth dist.	564 Jan 25 j 22:15	8°♈11'18	8.25622 AU	evening set	570 Oct 03 j 07:56	26°♌47'30	
direct	564 Apr 03 j 17:18	4°♈40'51					
evening set	564 Jul 19 j 01:53	12°♈43'47		conjunction	570 Oct 20 j 01:31	28°♌45'28	2°12'08
				minimum elong	570 Oct 20 j 01:32	28°♌45'28	2°12'08
conjunction	564 Aug 05 j 21:54	14°♈58'01	1°16'50	max. Earth dist.	570 Oct 19 j 23:15	28°♌44'48	11.00106 AU
minimum elong	564 Aug 05 j 21:51	14°♈58'00	1°16'49		570 Oct 30 j 14:09	0°♌	
max. Earth dist.	564 Aug 06 j 05:19	15°♈00'21	10.31511 AU	morning rise	570 Nov 05 j 15:52	0°♌42'29	
	564 Aug 06 j 04:12	15°♈		retrograde	571 Feb 12 j 22:14	7°♌40'18	
morning rise	564 Aug 23 j 13:40	17°♈10'53		opposition	571 Apr 23 j 11:25	4°♌23'32	2°35'37
retrograde	564 Dec 02 j 16:50	24°♈50'48		min. Earth dist.	571 Apr 23 j 13:17	4°♌23'11	9.03761 AU
opposition	565 Feb 07 j 15:47	21°♈27'29	1°50'35	direct	571 Jul 03 j 20:09	1°♌02'47	
min. Earth dist.	565 Feb 07 j 10:14	21°♈28'35	8.37650 AU	evening set	571 Oct 14 j 22:02	8°♌11'38	
direct	565 Apr 17 j 19:14	17°♈59'12					
evening set	565 Aug 02 j 01:21	25°♈54'38		conjunction	571 Oct 31 j 13:41	10°♌08'20	2°01'20
				minimum elong	571 Oct 31 j 13:43	10°♌08'20	2°01'20
conjunction	565 Aug 19 j 16:18	28°♈05'38	1°40'53	max. Earth dist.	571 Oct 31 j 10:24	10°♌07'22	11.06533 AU
minimum elong	565 Aug 19 j 16:15	28°♈05'37	1°40'52	morning rise	571 Nov 17 j 02:34	12°♌04'17	
max. Earth dist.	565 Aug 19 j 22:15	28°♈07'29	10.43948 AU		571 Dec 14 j 02:11	15°♌	
	565 Sep 04 j 01:01	0°♎		retrograde	572 Feb 24 j 15:36	18°♌59'47	
morning rise	565 Sep 06 j 02:39	0°♎15'11		opposition	572 May 04 j 12:24	15°♌43'15	2°19'24
retrograde	565 Dec 15 j 12:40	7°♎45'34		min. Earth dist.	572 May 04 j 15:40	15°♌42'39	9.08976 AU
opposition	566 Feb 20 j 20:39	4°♎23'49	2°16'38		572 May 14 j 08:57	15°♌	
min. Earth dist.	566 Feb 20 j 15:38	4°♎24'49	8.50396 AU	direct	572 Jul 14 j 22:09	12°♌23'29	
direct	566 May 01 j 14:27	0°♎56'42		evening set	572 Sep 11 j 13:26	15°♌	
evening set	566 Aug 15 j 13:48	8°♎43'54			572 Oct 25 j 07:13	19°♌27'27	
conjunction	566 Sep 01 j 23:33	10°♎51'41	1°59'17	conjunction	572 Nov 10 j 21:36	21°♌23'23	1°45'56
minimum elong	566 Sep 01 j 23:30	10°♎51'40	1°59'16	minimum elong	572 Nov 10 j 21:38	21°♌23'24	1°45'56
max. Earth dist.	566 Sep 02 j 04:27	10°♎53'11	10.56768 AU	max. Earth dist.	572 Nov 10 j 16:43	21°♌21'57	11.10541 AU
morning rise	566 Sep 19 j 04:29	12°♎57'58		morning rise	572 Nov 27 j 09:54	23°♌18'48	
retrograde	566 Dec 28 j 02:51	20°♎19'34			573 Feb 18 j 15:29	0°♌	
opposition	567 Mar 05 j 19:33	16°♎59'15	2°35'16	retrograde	573 Mar 07 j 05:42	0°♌13'35	
min. Earth dist.	567 Mar 05 j 15:06	17°♎00'07	8.63205 AU		573 Mar 23 j 23:19	30°♌	
direct	567 May 15 j 00:39	13°♎33'26		opposition	573 May 16 j 12:06	26°♌57'00	1°58'00
evening set	567 Aug 28 j 15:00	21°♎12'05		min. Earth dist.	573 May 16 j 17:14	26°♌56'03	9.11709 AU
				direct	573 Jul 26 j 18:19	23°♌38'00	
conjunction	567 Sep 14 j 19:48	23°♎16'50	2°11'35	evening set	573 Oct 30 j 21:44	0°♌	
minimum elong	567 Sep 14 j 19:47	23°♎16'49	2°11'35		573 Nov 05 j 13:13	0°♌38'27	
max. Earth dist.	567 Sep 15 j 00:01	23°♎18'07	10.69338 AU				
morning rise	567 Oct 01 j 19:44	25°♎20'08		conjunction	573 Nov 22 j 02:51	2°♌34'03	1°26'34
	567 Nov 14 j 20:30	0°♏		minimum elong	573 Nov 22 j 02:53	2°♌34'04	1°26'34
retrograde	568 Jan 09 j 09:41	2°♏33'55		max. Earth dist.	573 Nov 21 j 19:46	2°♌31'59	11.12056 AU
	568 Mar 07 j 15:04	30°♌		morning rise	573 Dec 08 j 15:27	4°♌29'24	
opposition	568 Mar 17 j 12:39	29°♌14'51	2°46'14	retrograde	574 Mar 18 j 21:33	11°♌25'06	
min. Earth dist.	568 Mar 17 j 09:43	29°♌15'25	8.75467 AU	opposition	574 May 28 j 11:26	8°♌08'08	1°32'14
direct	568 May 27 j 03:06	25°♌50'23		min. Earth dist.	574 May 28 j 18:03	8°♌06'56	9.11941 AU
	568 Aug 09 j 23:09	0°♏		direct	574 Aug 07 j 14:46	4°♌49'39	
evening set	568 Sep 09 j 05:48	3°♏20'36		evening set	574 Nov 16 j 17:43	11°♌47'58	
conjunction	568 Sep 26 j 06:09	5°♏22'38	2°17'41	conjunction	574 Dec 03 j 07:19	13°♌43'43	1°03'55
minimum elong	568 Sep 26 j 06:08	5°♏22'38	2°17'41	minimum elong	574 Dec 03 j 07:21	13°♌43'43	1°03'56
max. Earth dist.	568 Sep 26 j 08:37	5°♏23'23	10.81085 AU	max. Earth dist.	574 Dec 02 j 23:21	13°♌41'23	11.11089 AU
morning rise	568 Oct 13 j 01:55	7°♏23'22		morning rise	574 Dec 19 j 20:45	15°♌39'26	
retrograde	569 Jan 20 j 10:19	14°♏30'26		retrograde	575 Mar 30 j 16:01	22°♌37'36	
opposition	569 Mar 30 j 00:23	11°♏12'26	2°49'39	opposition	575 Jun 09 j 11:18	19°♌19'56	1°02'56
min. Earth dist.	569 Mar 29 j 23:33	11°♏12'36	8.86632 AU	min. Earth dist.	575 Jun 09 j 18:07	19°♌18'41	9.09710 AU
direct	569 Jun 08 j 23:15	7°♏49'17		direct	575 Aug 19 j 08:33	16°♌01'43	
evening set	569 Sep 21 j 11:07	15°♏11'32		evening set	575 Nov 27 j 22:22	22°♌59'22	

conjunction	575 Dec 14 j 12:33	24° <del>2</del> 55'39	0°38'46	retrograde	581 Jun 12 j 03:33	3° <del>1</del> 16'37	
minimum elong	575 Dec 14 j 12:34	24° <del>2</del> 55'39	0°38'46		581 Aug 19 j 10:05	30° <del>R</del>	
max. Earth dist.	575 Dec 14 j 04:45	24° <del>2</del> 53'22	11.07687 AU	opposition	581 Aug 21 j 08:29	29° <del>≈</del> 51'01	-2°-7'-58
morning rise	575 Dec 31 j 03:10	26° <del>2</del> 52'09		min. Earth dist.	581 Aug 21 j 12:32	29° <del>≈</del> 50'13	8.55091 AU
	576 Jan 29 j 03:34	0° <del>3</del>		direct	581 Oct 28 j 09:10	26° <del>≈</del> 29'46	
retrograde	576 Apr 10 j 14:28	3° <del>3</del> 54'22			582 Jan 01 j 10:03	0° <del>1</del>	
opposition	576 Jun 20 j 12:48	0° <del>3</del> 35'44	0°31'02	evening set	582 Feb 05 j 08:47	3° <del>1</del> 55'49	
min. Earth dist.	576 Jun 20 j 19:29	0° <del>3</del> 34'31	9.05101 AU				
	576 Jun 28 j 15:58	30° <del>R</del>		conjunction	582 Feb 22 j 09:20	6° <del>1</del> 02'29	-1°-52'-52
direct	576 Aug 30 j 02:25	27° <del>2</del> 17'33		minimum elong	582 Feb 22 j 09:17	6° <del>1</del> 02'28	1°52'52
	576 Oct 28 j 00:11	0° <del>3</del>		max. Earth dist.	582 Feb 22 j 03:57	6° <del>1</del> 00'48	10.48723 AU
evening set	576 Dec 08 j 05:12	4° <del>3</del> 16'06		morning rise	582 Mar 11 j 14:31	8° <del>1</del> 10'37	
				retrograde	582 Jun 25 j 21:02	16° <del>1</del> 04'16	
conjunction	576 Dec 24 j 20:09	6° <del>3</del> 13'17	0°11'56	opposition	582 Sep 03 j 15:33	12° <del>1</del> 37'15	-2°-29'-49
minimum elong	576 Dec 24 j 20:10	6° <del>3</del> 13'18	0°11'55	min. Earth dist.	582 Sep 03 j 18:41	12° <del>1</del> 36'38	8.42493 AU
behind sun begin	576 Dec 24 j 15:15	6° <del>3</del> 11'51		direct	582 Nov 10 j 03:13	9° <del>1</del> 14'54	
behind sun end	576 Dec 25 j 01:04	6° <del>3</del> 14'44		evening set	583 Feb 18 j 13:19	16° <del>1</del> 50'02	
max. Earth dist.	576 Dec 24 j 12:00	6° <del>3</del> 10'54	11.01974 AU				
morning rise	577 Jan 10 j 12:24	8° <del>3</del> 10'56		conjunction	583 Mar 07 j 17:11	18° <del>1</del> 59'22	-2°-7'-33
retrograde	577 Apr 22 j 18:20	15° <del>3</del> 18'44		minimum elong	583 Mar 07 j 17:09	18° <del>1</del> 59'22	2°07'33
desc. node	577 Jun 05 j 04:05	13° <del>3</del> 53'46		max. Earth dist.	583 Mar 07 j 13:00	18° <del>1</del> 58'03	10.36222 AU
opposition	577 Jul 02 j 17:05	11° <del>3</del> 58'58	0°-2'-28	morning rise	583 Mar 25 j 02:01	21° <del>1</del> 10'16	
min. Earth dist.	577 Jul 03 j 00:09	11° <del>3</del> 57'39	8.98288 AU	retrograde	583 Jul 09 j 22:14	29° <del>1</del> 14'01	
direct	577 Sep 10 j 20:09	8° <del>3</del> 40'33		opposition	583 Sep 17 j 05:05	25° <del>1</del> 45'45	-2°-44'-35
evening set	577 Dec 19 j 15:53	15° <del>3</del> 41'36		min. Earth dist.	583 Sep 17 j 07:14	25° <del>1</del> 45'20	8.30327 AU
				direct	583 Nov 23 j 05:26	22° <del>1</del> 22'14	
conjunction	578 Jan 05 j 07:53	17° <del>3</del> 40'03	0°-15'-47		584 Mar 02 j 07:07	0° <del>1</del>	
minimum elong	578 Jan 05 j 07:52	17° <del>3</del> 40'02	0°15'49	evening set	584 Mar 03 j 04:58	0° <del>1</del> 06'50	
behind sun begin	578 Jan 05 j 06:13	17° <del>3</del> 39'33					
behind sun end	578 Jan 05 j 09:32	17° <del>3</del> 40'32		conjunction	584 Mar 20 j 12:48	2° <del>1</del> 18'58	-2°-15'-51
max. Earth dist.	578 Jan 04 j 22:53	17° <del>3</del> 37'22	10.94169 AU	minimum elong	584 Mar 20 j 12:48	2° <del>1</del> 18'58	2°15'51
morning rise	578 Jan 22 j 02:14	19° <del>3</del> 39'13		max. Earth dist.	584 Mar 20 j 10:54	2° <del>1</del> 18'22	10.24486 AU
retrograde	578 May 05 j 01:57	26° <del>3</del> 54'06		morning rise	584 Apr 07 j 01:31	4° <del>1</del> 32'41	
opposition	578 Jul 15 j 01:13	23° <del>3</del> 32'59	0°-36'-27	retrograde	584 Jul 23 j 06:12	12° <del>1</del> 45'24	
min. Earth dist.	578 Jul 15 j 08:38	23° <del>3</del> 31'36	8.89531 AU	opposition	584 Sep 30 j 01:01	9° <del>1</del> 16'08	-2°-50'-47
direct	578 Sep 22 j 16:00	20° <del>3</del> 14'07		min. Earth dist.	584 Sep 30 j 01:29	9° <del>1</del> 16'03	8.19259 AU
evening set	578 Dec 31 j 07:55	27° <del>3</del> 19'17		direct	584 Dec 05 j 16:44	5° <del>1</del> 51'28	
				evening set	585 Mar 17 j 07:23	13° <del>1</del> 45'16	
conjunction	579 Jan 17 j 01:29	29° <del>3</del> 19'20	0°-43'-14				
minimum elong	579 Jan 17 j 01:28	29° <del>3</del> 19'19	0°43'16	conjunction	585 Apr 03 j 19:43	16° <del>1</del> 00'13	-2°-16'-46
max. Earth dist.	579 Jan 16 j 16:56	29° <del>3</del> 16'45	10.84550 AU	minimum elong	585 Apr 03 j 19:44	16° <del>1</del> 00'14	2°16'47
	579 Jan 22 j 16:37	0° <del>≈</del>		max. Earth dist.	585 Apr 03 j 20:45	16° <del>1</del> 00'33	10.14193 AU
morning rise	579 Feb 02 j 22:09	1° <del>≈</del> 20'20		morning rise	585 Apr 21 j 12:30	18° <del>1</del> 16'38	
retrograde	579 May 17 j 18:04	8° <del>≈</del> 43'39		retrograde	585 Aug 06 j 20:00	26° <del>1</del> 36'28	
opposition	579 Jul 27 j 13:57	5° <del>≈</del> 21'05	-1°-9'-40	opposition	585 Oct 14 j 02:26	23° <del>1</del> 06'30	-2°-47'-20
min. Earth dist.	579 Jul 27 j 20:47	5° <del>≈</del> 19'47	8.79137 AU	min. Earth dist.	585 Oct 14 j 00:39	23° <del>1</del> 06'52	8.09946 AU
direct	579 Oct 04 j 17:57	2° <del>≈</del> 01'35		direct	585 Dec 19 j 12:00	19° <del>1</del> 40'42	
evening set	580 Jan 12 j 07:12	9° <del>≈</del> 12'22		evening set	586 Mar 31 j 20:08	27° <del>1</del> 42'54	
conjunction	580 Jan 29 j 02:46	11° <del>≈</del> 14'21	-1°-9'-24	conjunction	586 Apr 18 j 13:12	0° <del>8</del> 00'29	-2°-9'-45
minimum elong	580 Jan 29 j 02:43	11° <del>≈</del> 14'21	1°09'25	minimum elong	586 Apr 18 j 13:14	0° <del>8</del> 00'29	2°09'46
max. Earth dist.	580 Jan 28 j 19:38	11° <del>≈</del> 12'11	10.73457 AU		586 Apr 18 j 11:44	0° <del>8</del>	
morning rise	580 Feb 15 j 01:50	13° <del>≈</del> 17'29		max. Earth dist.	586 Apr 18 j 16:55	0° <del>8</del> 01'41	10.05984 AU
	580 Feb 29 j 18:43	15° <del>≈</del>		morning rise	586 May 06 j 10:03	2° <del>8</del> 19'18	
retrograde	580 May 29 j 18:42	20° <del>≈</del> 50'19		retrograde	586 Aug 21 j 14:11	10° <del>8</del> 43'36	
opposition	580 Aug 08 j 08:00	17° <del>≈</del> 26'14	-1°-40'-42	opposition	586 Oct 28 j 07:57	7° <del>8</del> 13'19	-2°-33'-46
min. Earth dist.	580 Aug 08 j 13:23	17° <del>≈</del> 25'12	8.67495 AU	min. Earth dist.	586 Oct 28 j 04:11	7° <del>8</del> 14'06	8.02978 AU
	580 Sep 13 j 01:23	15° <del>≈</del>		direct	587 Jan 02 j 13:14	3° <del>8</del> 46'27	
direct	580 Oct 15 j 22:32	14° <del>≈</del> 05'56		evening set	587 Apr 15 j 17:27	11° <del>8</del> 55'39	
	580 Nov 17 j 03:21	15° <del>≈</del>					
evening set	581 Jan 23 j 15:06	21° <del>≈</del> 23'47		conjunction	587 May 03 j 15:02	14° <del>8</del> 15'24	-1°-54'-47
				minimum elong	587 May 03 j 15:05	14° <del>8</del> 15'25	1°54'48
conjunction	581 Feb 09 j 12:57	23° <del>≈</del> 27'59	-1°-33'-2	max. Earth dist.	587 May 03 j 20:58	14° <del>8</del> 17'21	10.00394 AU
minimum elong	581 Feb 09 j 12:54	23° <del>≈</del> 27'58	1°33'03		587 May 09 j 07:13	15° <del>8</del>	
max. Earth dist.	581 Feb 09 j 06:49	23° <del>≈</del> 26'05	10.61336 AU	morning rise	587 May 21 j 15:31	16° <del>8</del> 36'08	
morning rise	581 Feb 26 j 14:50	25° <del>≈</del> 33'29		retrograde	587 Sep 05 j 10:33	25° <del>8</del> 01'49	
	581 Apr 08 j 05:21	0° <del>1</del>		opposition	587 Nov 11 j 16:15	21° <del>8</del> 31'37	-2°-10'-32



min. Earth dist.	587 Nov 11 j 10:58	21°♄32'43	7.98818 AU	retrograde	593 Nov 27 j 07:23	19°♃14'52	
direct	588 Jan 16 j 21:22	18°♄03'48		opposition	594 Feb 02 j 02:17	15°♃51'12	1°36'48
evening set	588 Apr 29 j 20:44	26°♄18'00		min. Earth dist.	594 Feb 01 j 20:29	15°♃52'22	8.32397 AU
					594 Feb 12 j 20:18	15°♃♂	
conjunction	588 May 17 j 22:07	28°♄39'15	-1°-32'-35	direct	594 Apr 11 j 22:55	12°♃22'51	
minimum elong	588 May 17 j 22:10	28°♄39'17	1°32'35		594 Jun 07 j 15:09	15°♃	
max. Earth dist.	588 May 18 j 05:38	28°♄41'44	9.97792 AU	evening set	594 Jul 27 j 07:16	20°♃22'05	
	588 May 28 j 04:38	0°♃					
morning rise	588 Jun 05 j 01:22	1°♃01'08		conjunction	594 Aug 14 j 00:43	22°♃34'38	1°30'51
retrograde	588 Sep 19 j 04:51	9°♃25'02		minimum elong	594 Aug 14 j 00:40	22°♃34'37	1°30'51
opposition	588 Nov 25 j 01:25	5°♃55'17	-1°-38'-56	max. Earth dist.	594 Aug 14 j 07:14	22°♃36'40	10.38315 AU
min. Earth dist.	588 Nov 24 j 19:20	5°♃56'33	7.97738 AU	morning rise	594 Aug 31 j 13:23	24°♃45'43	
direct	589 Jan 30 j 10:51	2°♃26'41			594 Oct 19 j 06:20	0°♃	
evening set	589 May 15 j 03:22	10°♃43'34		retrograde	594 Dec 10 j 08:19	2°♃20'45	
					595 Feb 02 j 07:13	30°♃♂	
conjunction	589 Jun 02 j 07:22	13°♃05'28	-1°-4'-33	opposition	595 Feb 15 j 10:38	28°♃58'31	2°05'58
minimum elong	589 Jun 02 j 07:25	13°♃05'29	1°04'34	min. Earth dist.	595 Feb 15 j 06:03	28°♃59'25	8.44433 AU
max. Earth dist.	589 Jun 02 j 15:34	13°♃08'09	9.98325 AU	direct	595 Apr 25 j 20:56	25°♃31'00	
morning rise	589 Jun 20 j 12:04	15°♃27'34			595 Jul 11 j 12:39	0°♃	
retrograde	589 Oct 03 j 18:49	23°♃46'43		evening set	595 Aug 10 j 01:16	3°♃22'22	
opposition	589 Dec 09 j 09:21	20°♃17'46	-1°-1'-10				
min. Earth dist.	589 Dec 09 j 03:09	20°♃19'03	7.99760 AU	conjunction	595 Aug 27 j 13:26	5°♃31'42	1°51'53
direct	590 Feb 14 j 03:09	16°♃48'35		minimum elong	595 Aug 27 j 13:23	5°♃31'41	1°51'52
evening set	590 May 30 j 10:08	25°♃05'47		max. Earth dist.	595 Aug 27 j 18:21	5°♃33'13	10.50583 AU
				morning rise	595 Sep 13 j 20:40	7°♃39'31	
conjunction	590 Jun 17 j 15:12	27°♃27'22	0°-32'-37	retrograde	595 Dec 23 j 01:35	15°♃05'25	
minimum elong	590 Jun 17 j 15:14	27°♃27'22	0°32'39	opposition	596 Feb 28 j 12:42	11°♃44'29	2°28'01
max. Earth dist.	590 Jun 17 j 23:19	27°♃30'00	10.01855 AU	min. Earth dist.	596 Feb 28 j 09:34	11°♃45'06	8.56857 AU
morning rise	590 Jul 05 j 19:40	29°♃48'43		direct	596 May 08 j 11:20	8°♃17'59	
	590 Jul 07 j 07:05	0°♃		evening set	596 Aug 22 j 07:55	16°♃00'56	
retrograde	590 Oct 18 j 02:17	8°♃00'50					
opposition	590 Dec 23 j 14:35	4°♃32'58	0°-19'-57	conjunction	596 Sep 08 j 14:53	18°♃07'09	2°06'57
min. Earth dist.	590 Dec 23 j 08:25	4°♃34'15	8.04624 AU	minimum elong	596 Sep 08 j 14:51	18°♃07'08	2°06'57
direct	591 Feb 28 j 19:24	1°♃03'31		max. Earth dist.	596 Sep 08 j 17:46	18°♃08'02	10.62922 AU
evening set	591 Jun 14 j 13:53	9°♃18'52		morning rise	596 Sep 25 j 17:08	20°♃11'54	
asc. node	591 Jun 21 j 17:46	10°♃13'44		retrograde	597 Jan 03 j 09:53	27°♃29'29	
				opposition	597 Mar 12 j 08:37	24°♃09'42	2°42'25
conjunction	591 Jul 02 j 18:13	11°♃39'13	0°01'01	min. Earth dist.	597 Mar 12 j 06:30	24°♃10'06	8.69042 AU
minimum elong	591 Jul 02 j 18:14	11°♃39'13	0°01'01	direct	597 May 21 j 19:19	20°♃44'18	
behind sun begin	591 Jul 02 j 10:52	11°♃36'52		evening set	597 Sep 04 j 03:40	28°♃18'46	
behind sun end	591 Jul 03 j 01:35	11°♃41'34			597 Sep 18 j 04:53	0°♃	
max. Earth dist.	591 Jul 03 j 01:56	11°♃41'41	10.08023 AU				
morning rise	591 Jul 20 j 20:39	13°♃58'54		conjunction	597 Sep 21 j 05:55	0°♃22'07	2°15'48
retrograde	591 Nov 01 j 03:33	22°♃02'36		minimum elong	597 Sep 21 j 05:53	0°♃22'07	2°15'48
opposition	592 Jan 06 j 15:44	18°♃36'03	0°21'51	max. Earth dist.	597 Sep 21 j 07:13	0°♃22'31	10.74737 AU
min. Earth dist.	592 Jan 06 j 09:31	18°♃37'19	8.11953 AU	morning rise	597 Oct 08 j 03:40	2°♃24'07	
direct	592 Mar 14 j 08:46	15°♃06'41		retrograde	598 Jan 15 j 12:42	9°♃34'29	
evening set	592 Jun 28 j 12:05	23°♃18'16		opposition	598 Mar 24 j 22:49	6°♃15'38	2°49'10
				min. Earth dist.	598 Mar 24 j 21:19	6°♃15'55	8.80422 AU
conjunction	592 Jul 16 j 14:04	25°♃36'35	0°34'02	direct	598 Jun 03 j 19:56	2°♃51'26	
minimum elong	592 Jul 16 j 14:02	25°♃36'34	0°34'02	evening set	598 Sep 16 j 13:10	10°♃17'40	
max. Earth dist.	592 Jul 16 j 21:29	25°♃38'57	10.16457 AU				
morning rise	592 Aug 03 j 12:55	27°♃53'51		conjunction	598 Oct 03 j 11:28	12°♃18'33	2°18'30
	592 Aug 20 j 18:45	0°♃		minimum elong	598 Oct 03 j 11:27	12°♃18'33	2°18'30
retrograde	592 Nov 13 j 21:43	5°♃48'15		max. Earth dist.	598 Oct 03 j 12:08	12°♃18'45	10.85516 AU
opposition	593 Jan 19 j 11:48	2°♃23'07	1°01'31	morning rise	598 Oct 20 j 05:28	14°♃18'13	
min. Earth dist.	593 Jan 19 j 05:27	2°♃24'24	8.21374 AU	retrograde	599 Jan 27 j 12:09	21°♃22'36	
	593 Feb 20 j 23:39	30°♃♂		opposition	599 Apr 06 j 08:16	18°♃04'31	2°48'32
direct	593 Mar 28 j 18:24	28°♃54'08		min. Earth dist.	599 Apr 06 j 07:50	18°♃04'36	8.90530 AU
	593 May 03 j 09:00	0°♃		direct	599 Jun 16 j 11:11	14°♃41'32	
evening set	593 Jul 13 j 02:28	7°♃00'14		evening set	599 Sep 28 j 13:34	22°♃00'06	
conjunction	593 Jul 31 j 00:43	9°♃15'52	1°04'32	conjunction	599 Oct 15 j 08:37	23°♃58'59	2°15'19
minimum elong	593 Jul 31 j 00:40	9°♃15'52	1°04'31	minimum elong	599 Oct 15 j 08:38	23°♃59'00	2°15'20
max. Earth dist.	593 Jul 31 j 07:58	9°♃18'11	10.26738 AU	max. Earth dist.	599 Oct 15 j 08:12	23°♃58'52	10.94828 AU
morning rise	593 Aug 17 j 18:48	11°♃30'12		morning rise	599 Oct 31 j 23:52	25°♃56'49	
	593 Sep 16 j 18:07	15°♃			599 Dec 09 j 10:15	0°♃	

retrograde	600 Feb 08 j 05:42	2°♄56'35	
	600 Apr 12 j 21:25	30°♄	
opposition	600 Apr 17 j 13:36	29°♄39'05	2°41'02
min. Earth dist.	600 Apr 17 j 15:01	29°♄38'49	8.98977 AU
direct	600 Jun 27 j 20:34	26°♄17'15	
	600 Sep 06 j 17:58	0°♄	
evening set	600 Oct 09 j 06:39	3°♄29'06	
conjunction	600 Oct 25 j 23:09	5°♄26'27	2°06'44
minimum elong	600 Oct 25 j 23:11	5°♄26'28	2°06'44
max. Earth dist.	600 Oct 25 j 20:28	5°♄25'40	11.02330 AU
morning rise	600 Nov 11 j 12:43	7°♄22'58	