

	12600 Feb 16 00:39	0°♄	direct	12605 May 29 00:11	12°♄53'47	
evening set	12600 Apr 14 08:06	11°♄08'55	asc. node	12605 Aug 25 23:30	24°♄11'50	
max. Earth dist.	12600 Apr 25 08:19	13°♄31'38 6.45806 AU		12605 Sep 20 11:06	0°♄	
			evening set	12605 Oct 03 11:30	3°♄07'07	
conjunction	12600 Apr 27 05:21	13°♄56'04 -0°08'11				
minimum elong	12600 Apr 27 05:20	13°♄56'03 0°08'45	conjunction	12605 Oct 16 23:58	6°♄24'09 0°03'07	
behind sun begin	12600 Apr 26 22:26	13°♄52'20	minimum elong	12605 Oct 16 23:58	6°♄24'08 0°03'36	
behind sun end	12600 Apr 27 12:15	13°♄59'47	behind sun begin	12605 Oct 16 15:40	6°♄19'07	
	12600 May 02 03:13	15°♄	behind sun end	12605 Oct 17 08:16	6°♄29'10	
morning rise	12600 May 10 00:52	16°♄42'36	max. Earth dist.	12605 Oct 18 18:59	6°♄50'17 5.91837 AU	
	12600 Jul 20 03:10	0°♄	morning rise	12605 Oct 30 14:34	9°♄42'04	
retrograde	12600 Sep 08 16:46	3°♄41'43		12605 Nov 22 01:20	15°♄	
	12600 Oct 30 07:28	30°♄		12606 Feb 26 06:00	0°♄	
opposition	12600 Nov 08 18:01	28°♄48'16 -0°25'45	retrograde	12606 Mar 10 13:59	0°♄15'20	
min. Earth dist.	12600 Nov 10 06:26	28°♄36'37 4.40065 AU		12606 Mar 22 21:39	30°♄	
direct	12601 Jan 10 00:12	23°♄47'45	min. Earth dist.	12606 May 07 11:03	25°♄24'20 3.97131 AU	
	12601 Mar 18 14:59	0°♄	opposition	12606 May 08 23:19	25°♄12'01 0°22'55	
evening set	12601 May 15 02:05	11°♄30'38	direct	12606 Jul 06 04:05	20°♄15'35	
max. Earth dist.	12601 May 25 13:54	13°♄50'52 6.32710 AU		12606 Sep 26 20:30	0°♄	
			evening set	12606 Nov 10 07:25	9°♄52'31	
conjunction	12601 May 27 21:50	14°♄22'09 -0°25'58				
minimum elong	12601 May 27 21:49	14°♄22'08 0°26'50	conjunction	12606 Nov 23 21:38	13°♄04'15 0°24'58	
morning rise	12601 Jun 09 16:35	17°♄13'29	minimum elong	12606 Nov 23 21:37	13°♄04'15 0°25'50	
	12601 Aug 13 01:48	0°♄	max. Earth dist.	12606 Nov 26 10:27	13°♄40'03 6.04476 AU	
retrograde	12601 Oct 11 19:31	5°♄06'08	morning rise	12606 Dec 07 12:49	16°♄16'10	
opposition	12601 Dec 11 10:02	0°♄12'19 -0°48'21		12607 Feb 11 12:02	0°♄	
min. Earth dist.	12601 Dec 13 02:30	29°♄59'15 4.24193 AU	retrograde	12607 Apr 14 19:04	5°♄42'52	
	12601 Dec 13 00:11	30°♄	min. Earth dist.	12607 Jun 11 23:11	0°♄52'16 4.13049 AU	
direct	12602 Feb 10 19:23	25°♄12'56	opposition	12607 Jun 13 13:40	0°♄39'17 0°48'37	
	12602 Apr 09 06:14	0°♄		12607 Jun 18 10:31	30°♄	
evening set	12602 Jun 16 11:13	13°♄46'06	direct	12607 Aug 11 18:15	25°♄40'48	
max. Earth dist.	12602 Jun 27 03:24	16°♄14'32 6.15252 AU		12607 Oct 04 09:12	0°♄	
			evening set	12607 Dec 16 04:40	14°♄21'50	
conjunction	12602 Jun 29 08:04	16°♄45'10 -0°36'49				
minimum elong	12602 Jun 29 08:04	16°♄45'10 0°37'44	conjunction	12607 Dec 29 16:51	17°♄24'43 0°36'50	
morning rise	12602 Jul 12 05:03	19°♄44'38	minimum elong	12607 Dec 29 16:51	17°♄24'43 0°37'46	
	12602 Aug 28 10:40	0°♄	max. Earth dist.	12607 Dec 31 23:20	17°♄55'29 6.22136 AU	
retrograde	12602 Nov 16 12:34	8°♄51'17	morning rise	12608 Jan 12 04:57	20°♄27'12	
opposition	12603 Jan 15 14:53	3°♄56'04 -0°57'02		12608 Feb 26 15:47	0°♄	
min. Earth dist.	12603 Jan 16 20:14	3°♄46'27 4.06446 AU	retrograde	12608 May 16 03:50	8°♄37'35	
	12603 Feb 19 10:17	30°♄	min. Earth dist.	12608 Jul 14 06:54	3°♄45'46 4.30781 AU	
direct	12603 Mar 16 15:01	28°♄58'35	opposition	12608 Jul 15 12:19	3°♄35'59 0°56'10	
	12603 Apr 10 19:41	0°♄		12608 Aug 15 00:09	30°♄	
	12603 Jul 06 11:00	15°♄	direct	12608 Sep 13 22:32	28°♄35'57	
evening set	12603 Jul 21 03:47	18°♄28'14		12608 Oct 14 05:59	0°♄	
max. Earth dist.	12603 Aug 01 23:53	21°♄18'59 5.98813 AU		12609 Jan 11 02:56	15°♄	
			evening set	12609 Jan 17 15:58	16°♄24'45	
conjunction	12603 Aug 03 04:50	21°♄36'26 -0°35'38				
minimum elong	12603 Aug 03 04:50	21°♄36'27 0°36'17	conjunction	12609 Jan 31 00:10	19°♄19'08 0°36'26	
morning rise	12603 Aug 16 07:04	24°♄45'35	minimum elong	12609 Jan 31 00:10	19°♄19'09 0°37'07	
	12603 Sep 07 14:12	0°♄	max. Earth dist.	12609 Feb 01 07:09	19°♄36'03 6.38551 AU	
retrograde	12603 Dec 24 18:20	15°♄04'49	morning rise	12609 Feb 13 07:14	22°♄12'45	
opposition	12604 Feb 22 06:12	10°♄07'09 -0°44'54		12609 Mar 23 02:24	0°♄	
min. Earth dist.	12604 Feb 22 14:12	10°♄04'29 3.92933 AU	retrograde	12609 Jun 15 15:50	9°♄23'08	
direct	12604 Apr 21 00:12	5°♄11'35	opposition	12609 Aug 15 10:11	4°♄24'35 0°46'58	
evening set	12604 Aug 26 03:57	25°♄21'45	min. Earth dist.	12609 Aug 14 23:04	4°♄28'12 4.44704 AU	
				12609 Sep 26 04:32	30°♄	
conjunction	12604 Sep 08 11:20	28°♄37'21 -0°20'37	direct	12609 Oct 16 01:26	29°♄23'47	
minimum elong	12604 Sep 08 11:21	28°♄37'21 0°20'45		12609 Nov 05 01:39	0°♄	
max. Earth dist.	12604 Sep 08 19:34	28°♄42'23 5.89630 AU	evening set	12610 Feb 18 03:01	16°♄37'40	
	12604 Sep 14 02:03	0°♄				
morning rise	12604 Sep 21 20:37	1°♄54'06	conjunction	12610 Mar 03 06:45	19°♄26'14 0°25'51	
retrograde	12605 Jan 31 19:41	22°♄49'38	minimum elong	12610 Mar 03 06:46	19°♄26'14 0°26'07	
min. Earth dist.	12605 Mar 31 06:42	17°♄54'58 3.89265 AU	max. Earth dist.	12610 Mar 03 07:57	19°♄26'52 6.49023 AU	
opposition	12605 Apr 01 00:54	17°♄48'50 -0°13'39	morning rise	12610 Mar 16 08:56	22°♄13'55	





























































































































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opposition	12610 Sep 14 06:38	3°♈55'59	0°25'54	morning rise	12615 Aug 21 12:02	0°♈03'58	
min. Earth dist.	12610 Sep 14 15:15	3°♈53'12	4.51184 AU		12615 Aug 21 05:28	0°♈	
	12610 Oct 19 15:07	30°♈		retrograde	12615 Dec 30 07:50	20°♈32'04	
direct	12610 Nov 15 15:39	28°♈54'53		opposition	12616 Feb 27 18:05	15°♈34'01	-0°41'22
	12610 Dec 12 22:21	0°♈		min. Earth dist.	12616 Feb 27 21:33	15°♈32'52	3.91612 AU
evening set	12611 Mar 20 10:01	15°♈56'57		direct	12616 Apr 26 07:12	10°♈38'42	
max. Earth dist.	12611 Apr 01 07:54	18°♈29'18	6.51072 AU		12616 Aug 28 00:20	0°♊	
				evening set	12616 Aug 31 14:13	0°♊52'16	
conjunction	12611 Apr 02 09:56	18°♈43'13	0°08'43				
minimum elong	12611 Apr 02 09:56	18°♈43'13	0°08'31	conjunction	12616 Sep 13 22:20	4°♊08'28	-0°17'32
behind sun begin	12611 Apr 02 02:57	18°♈39'30		minimum elong	12616 Sep 13 22:21	4°♊08'28	0°17'34
behind sun end	12611 Apr 02 16:55	18°♈46'56		max. Earth dist.	12616 Sep 14 11:32	4°♊16'33	5.89211 AU
morning rise	12611 Apr 15 07:49	21°♈28'38		morning rise	12616 Sep 27 08:40	7°♊25'52	
	12611 May 27 21:26	0°♈		retrograde	12617 Feb 06 06:28	28°♊21'38	
retrograde	12611 Aug 13 23:59	8°♈04'46		opposition	12617 Apr 06 12:46	23°♊20'21	-0°08'18
desc. node	12611 Sep 23 22:10	5°♈38'36		min. Earth dist.	12617 Apr 05 14:38	23°♊27'51	3.89801 AU
opposition	12611 Oct 14 03:56	3°♈10'45	-0°01'32	direct	12617 Jun 03 11:55	18°♊25'12	
min. Earth dist.	12611 Oct 15 06:22	3°♈02'18	4.48746 AU	asc. node	12617 Jul 03 02:07	19°♊53'41	
	12611 Nov 10 03:53	30°♈			12617 Sep 01 20:33	0°♋	
direct	12611 Dec 15 17:43	28°♈09'47		evening set	12617 Oct 08 22:20	8°♋34'57	
	12612 Jan 20 11:39	0°♈					
	12612 Apr 16 15:45	15°♈		conjunction	12617 Oct 22 11:24	11°♋51'32	0°06'36
evening set	12612 Apr 18 12:51	15°♈24'17		minimum elong	12617 Oct 22 11:23	11°♋51'32	0°07'09
max. Earth dist.	12612 Apr 29 09:23	17°♈45'34	6.44253 AU	behind sun begin	12617 Oct 22 03:41	11°♋46'53	
				behind sun end	12617 Oct 22 19:05	11°♋56'10	
conjunction	12612 May 01 09:40	18°♈11'52	-0°10'52	max. Earth dist.	12617 Oct 24 11:26	12°♋20'38	5.93265 AU
minimum elong	12612 May 01 09:39	18°♈11'51	0°11'31		12617 Nov 04 11:25	15°♋	
behind sun begin	12612 May 01 03:53	18°♈08'44		morning rise	12617 Nov 05 02:10	15°♋08'51	
behind sun end	12612 May 01 15:24	18°♈14'59			12618 Jan 13 21:54	0°♌	
morning rise	12612 May 14 05:03	20°♈58'55		retrograde	12618 Mar 15 18:48	5°♌33'46	
	12612 Jun 27 12:33	0°♈		min. Earth dist.	12618 May 12 15:25	0°♌42'47	3.99243 AU
retrograde	12612 Sep 13 05:06	8°♈04'25		opposition	12618 May 14 04:18	0°♌30'16	0°27'31
opposition	12612 Nov 13 03:49	3°♈11'00	-0°29'25		12618 May 17 21:37	30°♌	
min. Earth dist.	12612 Nov 14 18:39	2°♈58'33	4.37923 AU	direct	12618 Jul 11 12:24	25°♌33'35	
	12612 Dec 10 03:14	30°♈			12618 Sep 02 22:28	0°♌	
direct	12613 Jan 14 08:39	28°♈10'33		evening set	12618 Nov 15 12:20	15°♌02'18	
	12613 Feb 18 12:13	0°♈					
evening set	12613 May 19 11:39	16°♈00'25		conjunction	12618 Nov 29 02:23	18°♌12'47	0°27'22
max. Earth dist.	12613 May 29 22:09	18°♈20'44	6.30136 AU	minimum elong	12618 Nov 29 02:22	18°♌12'47	0°28'15
				max. Earth dist.	12618 Dec 01 16:08	18°♌48'54	6.07032 AU
conjunction	12613 Jun 01 07:30	18°♈52'59	-0°28'01	morning rise	12618 Dec 12 17:20	21°♌23'22	
minimum elong	12613 Jun 01 07:29	18°♈52'58	0°28'55		12619 Jan 20 17:27	0°♍	
morning rise	12613 Jun 14 02:26	21°♈45'25		retrograde	12619 Apr 19 10:40	10°♍38'19	
	12613 Jul 22 17:27	0°♈		min. Earth dist.	12619 Jun 16 17:55	5°♍47'57	4.15786 AU
retrograde	12613 Oct 16 14:43	9°♈48'34		opposition	12619 Jun 18 08:33	5°♍34'57	0°50'47
opposition	12613 Dec 16 04:21	4°♈54'38	-0°50'37	direct	12619 Aug 16 16:19	0°♍36'15	
min. Earth dist.	12613 Dec 17 19:25	4°♈42'00	4.21370 AU	evening set	12619 Dec 21 00:51	19°♍08'39	
	12614 Feb 08 11:29	30°♈					
direct	12614 Feb 15 08:01	29°♈55'29		conjunction	12620 Jan 03 12:27	22°♍10'09	0°37'29
	12614 Feb 22 05:34	0°♈		minimum elong	12620 Jan 03 12:27	22°♍10'09	0°38'22
evening set	12614 Jun 21 04:58	18°♈37'58		max. Earth dist.	12620 Jan 05 15:14	22°♍38'40	6.24821 AU
max. Earth dist.	12614 Jul 02 00:31	21°♈09'18	6.12420 AU	morning rise	12620 Jan 16 23:52	25°♍11'11	
					12620 Feb 08 02:37	0°♎	
conjunction	12614 Jul 04 02:18	21°♈38'27	-0°37'27	retrograde	12620 May 20 13:18	13°♎11'21	
minimum elong	12614 Jul 04 02:17	21°♈38'27	0°38'22	opposition	12620 Jul 19 22:40	8°♎10'13	0°55'44
morning rise	12614 Jul 16 23:52	24°♈39'25		min. Earth dist.	12620 Jul 18 20:30	8°♎18'53	4.33193 AU
	12614 Aug 09 10:32	0°♈		direct	12620 Sep 18 14:37	3°♎10'03	
retrograde	12614 Nov 21 20:45	13°♈58'21			12620 Dec 25 04:19	15°♎	
opposition	12615 Jan 20 19:38	9°♈02'53	-0°56'39	evening set	12621 Jan 22 04:02	20°♎52'26	
min. Earth dist.	12615 Jan 21 23:15	8°♈53'49	4.03851 AU				
direct	12615 Mar 21 15:58	4°♈05'45		conjunction	12621 Feb 04 11:39	23°♎45'49	0°35'28
	12615 Jun 18 04:15	15°♈		minimum elong	12621 Feb 04 11:39	23°♎45'49	0°36'06
evening set	12615 Jul 26 06:48	23°♈43'45		max. Earth dist.	12621 Feb 05 14:55	24°♎00'38	6.40519 AU
max. Earth dist.	12615 Aug 07 08:49	26°♈38'51	5.96723 AU	morning rise	12621 Feb 17 18:01	26°♎38'23	
					12621 Mar 05 13:37	0°♏	

retrograde	12621 Jun 19 18:22	13° H 42'22			12627 May 27 01:09	15° O	
opposition	12621 Aug 19 15:10	8° H 44'14	0°44'33	evening set	12627 Jul 31 11:15	29° O 02'37	
min. Earth dist.	12621 Aug 19 06:14	8° H 47'09	4.46123 AU		12627 Aug 04 10:17	0° H	
direct	12621 Oct 20 08:49	3° H 43'23					
evening set	12622 Feb 22 09:42	20° H 54'16		conjunction	12627 Aug 13 13:52	2° H 13'14	-0°32'40
				minimum elong	12627 Aug 13 13:53	2° H 13'15	0°33'12
conjunction	12622 Mar 07 12:55	23° H 42'20	0°23'43	max. Earth dist.	12627 Aug 12 18:43	2° H 01'36	5.95295 AU
minimum elong	12622 Mar 07 12:56	23° H 42'20	0°23'54	morning rise	12627 Aug 26 18:08	5° H 24'56	
max. Earth dist.	12622 Mar 07 10:12	23° H 40'53	6.49806 AU	retrograde	12628 Jan 04 19:04	25° H 58'50	
morning rise	12622 Mar 20 14:22	26° H 29'29		opposition	12628 Mar 04 05:20	21° H 00'15	-0°37'32
	12622 Apr 06 09:24	0° Y		min. Earth dist.	12628 Mar 04 04:30	21° H 00'31	3.91005 AU
retrograde	12622 Jul 19 08:20	13° Y 05'32		direct	12628 May 01 15:55	16° H 05'01	
opposition	12622 Sep 18 10:29	8° Y 10'04	0°22'16		12628 Aug 10 08:53	0° A	
min. Earth dist.	12622 Sep 18 22:16	8° Y 06'17	4.51290 AU	evening set	12628 Sep 05 22:51	6° A 18'55	
direct	12622 Nov 19 21:32	3° Y 09'00					
evening set	12623 Mar 24 15:05	20° Y 11'43		conjunction	12628 Sep 19 07:52	9° A 35'22	-0°14'24
max. Earth dist.	12623 Apr 05 07:10	22° Y 41'16	6.50483 AU	minimum elong	12628 Sep 19 07:52	9° A 35'22	0°14'20
				behind sun begin	12628 Sep 19 04:00	9° A 33'00	
conjunction	12623 Apr 06 14:23	22° Y 58'00	0°06'00	behind sun end	12628 Sep 19 11:44	9° A 37'44	
minimum elong	12623 Apr 06 14:23	22° Y 58'00	0°05'44	max. Earth dist.	12628 Sep 20 04:14	9° A 47'51	5.89501 AU
behind sun begin	12623 Apr 06 06:43	22° Y 53'55		morning rise	12628 Oct 02 18:46	12° A 52'54	
behind sun end	12623 Apr 06 22:03	23° Y 02'05			12628 Dec 24 11:40	0° M	
morning rise	12623 Apr 19 12:00	25° Y 43'31		retrograde	12629 Feb 11 15:41	3° M 45'45	
	12623 May 09 23:35	0° B			12629 Apr 02 10:33	30° R 00	
desc. node	12623 Aug 05 09:18	12° B 07'00		opposition	12629 Apr 11 21:27	28° A 44'01	-0°03'05
retrograde	12623 Aug 18 07:33	12° B 22'28		min. Earth dist.	12629 Apr 10 21:09	28° A 52'15	3.90958 AU
opposition	12623 Oct 18 10:22	7° B 28'35	-0°05'37	asc. node	12629 May 13 23:59	24° A 56'51	
min. Earth dist.	12623 Oct 19 15:25	7° B 19'18	4.47503 AU	direct	12629 Jun 08 21:45	23° A 48'43	
direct	12623 Dec 20 00:03	2° B 27'37			12629 Aug 11 05:15	0° M	
	12624 Mar 31 05:34	15° B		evening set	12629 Oct 14 05:12	13° M 52'33	
evening set	12624 Apr 22 19:48	19° B 46'28			12629 Oct 18 21:29	15° M	
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				conjunction	12629 Oct 27 18:27	17° M 08'19	0°09'52
conjunction	12624 May 05 16:32	22° B 34'40	-0°13'34	minimum elong	12629 Oct 27 18:27	17° M 08'18	0°10'30
minimum elong	12624 May 05 16:32	22° B 34'39	0°14'16	behind sun begin	12629 Oct 27 11:57	17° M 04'24	
behind sun begin	12624 May 05 12:42	22° B 32'34		behind sun end	12629 Oct 28 00:57	17° M 12'12	
behind sun end	12624 May 05 20:22	22° B 36'44		max. Earth dist.	12629 Oct 29 21:33	17° M 39'06	5.95132 AU
morning rise	12624 May 18 11:37	25° B 22'20		morning rise	12629 Nov 10 09:30	20° M 24'47	
	12624 Jun 09 05:11	0° I			12629 Dec 22 17:16	0° A	
retrograde	12624 Sep 17 17:59	12° I 35'01		retrograde	12630 Mar 20 15:52	10° A 39'47	
opposition	12624 Nov 17 16:25	7° I 41'36	-0°33'02	min. Earth dist.	12630 May 17 13:39	5° A 49'13	4.01616 AU
min. Earth dist.	12624 Nov 19 07:24	7° I 29'06	4.35656 AU	opposition	12630 May 19 04:10	5° A 36'09	0°31'40
direct	12625 Jan 18 17:35	2° I 41'20		direct	12630 Jul 16 14:12	0° A 39'11	
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				conjunction	12630 Dec 04 02:06	23° A 08'17	0°29'27
conjunction	12625 Jun 05 19:53	23° I 32'05	-0°29'58	minimum elong	12630 Dec 04 02:05	23° A 08'17	0°30'23
minimum elong	12625 Jun 05 19:53	23° I 32'04	0°30'52	max. Earth dist.	12630 Dec 06 13:49	23° A 43'00	6.09667 AU
morning rise	12625 Jun 18 15:07	26° I 25'40		morning rise	12630 Dec 17 16:40	26° A 17'28	
	12625 Jul 04 17:00	0° E			12631 Jan 03 00:51	0° B	
retrograde	12625 Oct 21 15:19	14° E 39'23		retrograde	12631 Apr 23 23:23	15° B 20'59	
opposition	12625 Dec 21 02:12	9° E 45'18	-0°52'35	min. Earth dist.	12631 Jun 21 10:21	10° B 30'02	4.18418 AU
min. Earth dist.	12625 Dec 22 16:48	9° E 32'47	4.18715 AU	opposition	12631 Jun 22 22:38	10° B 17'50	0°52'31
direct	12626 Feb 20 02:38	4° E 46'26		direct	12631 Aug 21 11:52	5° B 18'52	
evening set	12626 Jun 26 01:10	23° E 37'17		evening set	12631 Dec 25 16:13	23° B 43'20	
max. Earth dist.	12626 Jul 07 00:23	26° E 11'37	6.09921 AU				
				conjunction	12632 Jan 08 03:27	26° B 43'37	0°37'53
conjunction	12626 Jul 08 23:04	26° E 39'05	-0°37'51	minimum elong	12632 Jan 08 03:27	26° B 43'37	0°38'45
minimum elong	12626 Jul 08 23:04	26° E 39'05	0°38'44	max. Earth dist.	12632 Jan 10 04:14	27° B 10'52	6.27243 AU
morning rise	12626 Jul 21 21:13	29° E 41'24		morning rise	12632 Jan 21 14:08	29° B 43'21	
	12626 Jul 23 05:01	0° O			12632 Jan 22 20:15	0° A	
	12626 Oct 05 09:19	15° O			12632 Apr 13 12:27	15° A	
retrograde	12626 Nov 27 04:46	19° O 11'03		retrograde	12632 May 24 17:23	17° A 34'36	
	12627 Jan 20 09:47	15° R 00			12632 Jul 04 23:12	15° R 00	
opposition	12627 Jan 26 02:13	14° O 15'19	-0°55'50	min. Earth dist.	12632 Jul 23 04:41	12° A 42'02	4.35239 AU
min. Earth dist.	12627 Jan 27 02:01	14° O 07'29	4.01782 AU	opposition	12632 Jul 24 05:14	12° A 33'56	0°55'04
direct	12627 Mar 26 17:04	9° O 18'32		direct	12632 Sep 23 00:11	7° A 33'41	

	12632 Dec 06 15:01	15°♊		minimum elong	12638 Jul 13 18:39	1°♊36'42	0°38'48
evening set	12633 Jan 26 12:35	25°♊11'01		morning rise	12638 Jul 26 17:35	4°♊40'17	
					12638 Sep 11 10:05	15°♊	
conjunction	12633 Feb 08 19:30	28°♊03'32	0°34'21	retrograde	12638 Dec 02 11:13	24°♊19'34	
minimum elong	12633 Feb 08 19:31	28°♊03'33	0°34'56	opposition	12639 Jan 31 06:59	19°♊23'27	-0°54'32
max. Earth dist.	12633 Feb 09 17:19	28°♊15'21	6.42053 AU	min. Earth dist.	12639 Feb 01 03:46	19°♊16'35	3.99976 AU
	12633 Feb 17 18:39	0°♋			12639 Mar 13 12:01	15°♋♊	
morning rise	12633 Feb 22 01:16	0°♋55'16		direct	12639 Mar 31 18:04	14°♊26'55	
retrograde	12633 Jun 23 21:34	17°♋54'33			12639 Apr 18 22:58	15°♊	
opposition	12633 Aug 23 18:06	12°♋56'54	0°42'03		12639 Jul 18 14:20	0°♎	
min. Earth dist.	12633 Aug 23 13:04	12°♋58'33	4.47074 AU	evening set	12639 Aug 05 13:21	4°♎16'18	
direct	12633 Oct 24 15:32	7°♋56'02					
evening set	12634 Feb 26 14:27	25°♋05'22		conjunction	12639 Aug 18 16:56	7°♎27'56	-0°30'47
				minimum elong	12639 Aug 18 16:57	7°♎27'57	0°31'15
conjunction	12634 Mar 11 17:10	27°♋53'07	0°21'33	max. Earth dist.	12639 Aug 18 04:00	7°♎20'03	5.94035 AU
minimum elong	12634 Mar 11 17:11	27°♋53'08	0°21'40	morning rise	12639 Aug 31 21:58	10°♎40'38	
max. Earth dist.	12634 Mar 11 10:11	27°♋49'24	6.50117 AU		12639 Dec 12 12:51	0°♏	
	12634 Mar 21 14:52	0°♐		retrograde	12640 Jan 10 05:30	1°♏19'48	
morning rise	12634 Mar 24 18:06	0°♐39'59			12640 Feb 07 19:52	30°♋♎	
retrograde	12634 Jul 23 10:26	17°♐15'42		opposition	12640 Mar 09 14:01	26°♎20'50	-0°33'23
opposition	12634 Sep 22 13:14	12°♐20'31	0°18'38	min. Earth dist.	12640 Mar 09 10:30	26°♎22'01	3.90442 AU
min. Earth dist.	12634 Sep 23 03:02	12°♐16'05	4.50982 AU	direct	12640 May 06 22:23	21°♎25'45	
direct	12634 Nov 24 00:22	7°♐19'29			12640 Jul 21 18:26	0°♏	
evening set	12635 Mar 28 19:18	24°♐24'07		evening set	12640 Sep 11 05:30	11°♏40'16	
max. Earth dist.	12635 Apr 09 09:25	26°♐52'56	6.49588 AU				
				conjunction	12640 Sep 24 15:09	14°♏56'58	-0°11'08
conjunction	12635 Apr 10 18:18	27°♐10'35	0°03'19	minimum elong	12640 Sep 24 15:09	14°♏56'58	0°11'00
minimum elong	12635 Apr 10 18:18	27°♐10'35	0°02'59	behind sun begin	12640 Sep 24 08:54	14°♏53'09	
behind sun begin	12635 Apr 10 10:20	27°♐06'20		behind sun end	12640 Sep 24 21:25	15°♏00'47	
behind sun end	12635 Apr 11 02:17	27°♐14'51		max. Earth dist.	12640 Sep 25 15:28	15°♏11'51	5.89676 AU
morning rise	12635 Apr 23 15:24	29°♐56'17		morning rise	12640 Oct 08 02:58	18°♏14'48	
	12635 Apr 23 22:22	0°♑			12640 Nov 29 01:44	0°♎	
desc. node	12635 Jun 16 21:18	10°♑31'58		retrograde	12641 Feb 16 20:47	9°♎05'19	
	12635 Jul 20 09:26	15°♑		asc. node	12641 Mar 26 00:40	6°♎52'27	
retrograde	12635 Aug 22 14:19	16°♑39'01		min. Earth dist.	12641 Apr 15 23:53	4°♎12'38	3.91871 AU
	12635 Sep 24 19:50	15°♋♑		opposition	12641 Apr 17 03:33	4°♎03'15	0°02'08
opposition	12635 Oct 22 16:49	11°♑45'20	-0°09'36		12641 May 22 13:53	30°♋♏	
min. Earth dist.	12635 Oct 23 23:37	11°♑35'30	4.46082 AU	direct	12641 Jun 14 03:10	29°♏07'47	
direct	12635 Dec 24 05:43	6°♑44'32			12641 Jul 06 18:50	0°♎	
	12636 Mar 13 04:34	15°♑			12641 Oct 01 23:15	15°♎	
evening set	12636 Apr 27 02:37	24°♑08'06		evening set	12641 Oct 19 10:59	19°♎07'18	
max. Earth dist.	12636 May 07 18:49	26°♑28'15	6.40580 AU				
				conjunction	12641 Nov 02 00:30	22°♎22'27	0°13'04
conjunction	12636 May 09 22:59	26°♑56'53	-0°16'08	minimum elong	12641 Nov 02 00:29	22°♎22'27	0°13'45
minimum elong	12636 May 09 22:58	26°♑56'53	0°16'53	behind sun begin	12641 Nov 01 20:08	22°♎19'50	
morning rise	12636 May 22 18:06	29°♑45'16		behind sun end	12641 Nov 02 04:51	22°♎25'03	
	12636 May 23 21:07	0°♒		max. Earth dist.	12641 Nov 04 04:57	22°♎53'57	5.96676 AU
retrograde	12636 Sep 22 08:37	17°♒05'22		morning rise	12641 Nov 15 15:45	25°♎38'14	
opposition	12636 Nov 22 05:25	12°♒11'54	-0°36'24		12641 Dec 04 07:18	0°♓	
min. Earth dist.	12636 Nov 23 20:52	11°♒59'14	4.33468 AU	retrograde	12642 Mar 25 13:44	15°♓44'57	
direct	12637 Jan 23 04:15	7°♒11'48		min. Earth dist.	12642 May 22 13:04	10°♓54'12	4.03595 AU
evening set	12637 May 28 12:05	25°♒15'46		opposition	12642 May 24 03:17	10°♓41'14	0°35'35
max. Earth dist.	12637 Jun 08 00:23	27°♒38'40	6.25230 AU	direct	12642 Jul 21 17:10	5°♓43'57	
				evening set	12642 Nov 25 12:22	24°♓56'54	
conjunction	12637 Jun 10 08:09	28°♒10'22	-0°31'41				
minimum elong	12637 Jun 10 08:08	28°♒10'22	0°32'37	conjunction	12642 Dec 09 02:03	28°♓04'58	0°31'21
	12637 Jun 18 08:52	0°♓		minimum elong	12642 Dec 09 02:02	28°♓04'58	0°32'18
morning rise	12637 Jun 23 03:27	1°♓04'59		max. Earth dist.	12642 Dec 11 14:30	28°♓39'55	6.11899 AU
retrograde	12637 Oct 26 13:09	19°♓28'24			12642 Dec 17 09:13	0°♓	
opposition	12637 Dec 25 23:08	14°♓34'11	-0°54'09	morning rise	12642 Dec 22 16:10	1°♓12'57	
min. Earth dist.	12637 Dec 27 11:57	14°♓22'14	4.16367 AU	retrograde	12643 Apr 28 12:46	20°♓06'32	
direct	12638 Feb 24 18:53	9°♓35'38		min. Earth dist.	12643 Jun 26 01:45	15°♓15'40	4.20691 AU
evening set	12638 Jun 30 20:26	28°♓33'46		opposition	12643 Jun 27 13:30	15°♓03'42	0°53'56
	12638 Jul 06 23:02	0°♌		direct	12643 Aug 26 06:12	10°♓04'32	
max. Earth dist.	12638 Jul 11 22:17	1°♌10'27	6.07755 AU	evening set	12643 Dec 30 09:08	28°♓22'18	
					12644 Jan 06 17:16	0°♍	
conjunction	12638 Jul 13 18:39	1°♌36'42	-0°37'57				

conjunction	12644 Jan 12 19:42	1° \approx 21'27	0°38'02	morning rise	12649 Jun 27 12:57	5° \approx 36'20	
minimum elong	12644 Jan 12 19:42	1° \approx 21'27	0°38'53	retrograde	12649 Oct 31 08:01	24° \approx 07'51	
max. Earth dist.	12644 Jan 14 16:02	1° \approx 46'07	6.29373 AU	opposition	12649 Dec 30 16:32	19° \approx 13'21	-0°55'17
morning rise	12644 Jan 26 05:54	4° \approx 20'03		min. Earth dist.	12650 Jan 01 04:11	19° \approx 01'45	4.14417 AU
	12644 Mar 18 17:42	15° \approx		direct	12650 Mar 01 08:54	14° \approx 14'55	
retrograde	12644 May 29 01:19	22° \approx 03'19			12650 Jun 21 04:43	0° Ω	
opposition	12644 Jul 28 13:39	17° \approx 03'03	0°54'02	evening set	12650 Jul 05 11:19	3° Ω 19'06	
min. Earth dist.	12644 Jul 27 16:03	17° \approx 10'11	4.37087 AU	max. Earth dist.	12650 Jul 16 17:17	5° Ω 58'49	6.05849 AU
	12644 Aug 13 15:13	15° \approx					
direct	12644 Sep 27 13:01	12° \approx 02'40		conjunction	12650 Jul 18 10:12	6° Ω 23'07	-0°37'46
	12644 Nov 11 15:21	15° \approx		minimum elong	12650 Jul 18 10:12	6° Ω 23'07	0°38'34
evening set	12645 Jan 30 23:07	29° \approx 35'23		morning rise	12650 Jul 31 09:35	9° Ω 27'47	
	12645 Feb 01 20:56	0° \mathbb{X}			12650 Aug 24 08:45	15° Ω	
				retrograde	12650 Dec 07 13:31	29° Ω 15'50	
conjunction	12645 Feb 13 05:38	2° \mathbb{X} 27'09	0°33'01	opposition	12651 Feb 05 06:58	24° Ω 19'26	-0°52'52
minimum elong	12645 Feb 13 05:39	2° \mathbb{X} 27'09	0°33'31	min. Earth dist.	12651 Feb 06 02:07	24° Ω 13'06	3.98289 AU
max. Earth dist.	12645 Feb 14 01:09	2° \mathbb{X} 37'42	6.43521 AU	direct	12651 Apr 05 13:49	19° Ω 23'07	
morning rise	12645 Feb 26 10:36	5° \mathbb{X} 18'02			12651 Jul 01 02:36	0° \mathbb{P}	
retrograde	12645 Jun 28 00:26	22° \mathbb{X} 12'32		evening set	12651 Aug 10 11:20	9° \mathbb{P} 17'47	
opposition	12645 Aug 27 22:55	17° \mathbb{X} 15'16	0°39'14				
min. Earth dist.	12645 Aug 27 19:15	17° \mathbb{X} 16'28	4.48111 AU	conjunction	12651 Aug 23 15:37	12° \mathbb{P} 30'25	-0°28'46
direct	12645 Oct 28 21:52	12° \mathbb{X} 14'25		minimum elong	12651 Aug 23 15:38	12° \mathbb{P} 30'25	0°29'08
evening set	12646 Mar 02 20:57	29° \mathbb{X} 21'34		max. Earth dist.	12651 Aug 23 04:58	12° \mathbb{P} 23'55	5.92722 AU
	12646 Mar 05 21:23	0° \mathbb{Y}		morning rise	12651 Sep 05 21:47	15° \mathbb{P} 44'13	
					12651 Nov 10 06:14	0° $\underline{\mathbf{A}}$	
conjunction	12646 Mar 15 23:01	2° \mathbb{Y} 08'52	0°19'13	retrograde	12652 Jan 15 09:43	6° $\underline{\mathbf{A}}$ 29'00	
minimum elong	12646 Mar 15 23:02	2° \mathbb{Y} 08'53	0°19'16	opposition	12652 Mar 14 17:47	1° $\underline{\mathbf{A}}$ 29'39	-0°29'09
max. Earth dist.	12646 Mar 15 12:26	2° \mathbb{Y} 03'13	6.50685 AU	min. Earth dist.	12652 Mar 14 10:34	1° $\underline{\mathbf{A}}$ 32'04	3.89666 AU
morning rise	12646 Mar 28 23:23	4° \mathbb{Y} 55'19			12652 Mar 26 01:10	30° \mathbb{R} \mathbb{P}	
retrograde	12646 Jul 27 15:00	21° \mathbb{Y} 29'39		direct	12652 May 11 22:51	26° \mathbb{P} 34'35	
opposition	12646 Sep 26 17:43	16° \mathbb{Y} 34'46	0°14'50		12652 Jun 26 21:22	0° $\underline{\mathbf{A}}$	
min. Earth dist.	12646 Sep 27 10:24	16° \mathbb{Y} 29'25	4.51069 AU	evening set	12652 Sep 16 08:31	16° $\underline{\mathbf{A}}$ 51'11	
direct	12646 Nov 28 07:14	11° \mathbb{Y} 33'45					
evening set	12647 Apr 02 00:07	28° \mathbb{Y} 38'33		conjunction	12652 Sep 29 19:00	20° $\underline{\mathbf{A}}$ 08'21	-0°07'57
	12647 Apr 08 08:25	0° \mathbb{Z}		minimum elong	12652 Sep 29 19:01	20° $\underline{\mathbf{A}}$ 08'22	0°07'43
max. Earth dist.	12647 Apr 13 10:20	1° \mathbb{Z} 05'28	6.49192 AU	behind sun begin	12652 Sep 29 11:29	20° $\underline{\mathbf{A}}$ 03'47	
				behind sun end	12652 Sep 30 02:32	20° $\underline{\mathbf{A}}$ 12'57	
conjunction	12647 Apr 14 22:33	1° \mathbb{Z} 24'57	0°00'33	max. Earth dist.	12652 Sep 30 23:12	20° $\underline{\mathbf{A}}$ 25'38	5.89523 AU
minimum elong	12647 Apr 14 22:35	1° \mathbb{Z} 24'57	0°00'08	morning rise	12652 Oct 13 07:36	23° $\underline{\mathbf{A}}$ 26'37	
behind sun begin	12647 Apr 14 14:44	1° \mathbb{Z} 20'46			12652 Nov 10 01:20	0° \mathbb{L}	
behind sun end	12647 Apr 15 06:26	1° \mathbb{Z} 29'09		asc. node	12653 Feb 07 01:52	13° \mathbb{L} 54'10	
desc. node	12647 Apr 26 06:52	3° \mathbb{Z} 51'10		retrograde	12653 Feb 22 00:31	14° \mathbb{L} 16'36	
morning rise	12647 Apr 27 19:18	4° \mathbb{Z} 10'39		min. Earth dist.	12653 Apr 21 01:49	9° \mathbb{L} 24'01	3.92346 AU
	12647 Jun 22 08:13	15° \mathbb{Z}		opposition	12653 Apr 22 06:40	9° \mathbb{L} 14'13	0°07'07
retrograde	12647 Aug 26 20:01	20° \mathbb{Z} 55'24		direct	12653 Jun 19 06:58	4° \mathbb{L} 18'33	
opposition	12647 Oct 26 23:13	16° \mathbb{Z} 01'44	-0°13'30		12653 Sep 13 21:14	15° \mathbb{L}	
min. Earth dist.	12647 Oct 28 06:50	15° \mathbb{Z} 51'37	4.45233 AU	evening set	12653 Oct 24 14:34	24° \mathbb{L} 15'47	
	12647 Nov 04 01:35	15° \mathbb{R} \mathbb{Z}					
direct	12647 Dec 28 11:09	11° \mathbb{Z} 00'56		conjunction	12653 Nov 07 04:36	27° \mathbb{L} 30'39	0°16'03
	12648 Feb 19 23:03	15° \mathbb{Z}		minimum elong	12653 Nov 07 04:35	27° \mathbb{L} 30'38	0°16'47
evening set	12648 May 01 08:20	28° \mathbb{Z} 27'07		max. Earth dist.	12653 Nov 09 12:49	28° \mathbb{L} 04'17	5.97737 AU
	12648 May 08 09:58	0° \mathbb{I}			12653 Nov 17 14:38	0° \mathbb{Z}	
max. Earth dist.	12648 May 12 00:32	0° \mathbb{I} 47'37	6.39335 AU	morning rise	12653 Nov 20 20:00	0° \mathbb{Z} 45'59	
				retrograde	12654 Mar 30 11:33	20° \mathbb{Z} 46'23	
conjunction	12648 May 14 04:33	1° \mathbb{I} 16'16	-0°18'35	min. Earth dist.	12654 May 27 10:00	15° \mathbb{Z} 55'57	4.05121 AU
minimum elong	12648 May 14 04:32	1° \mathbb{I} 16'15	0°19'21	opposition	12654 May 29 01:08	15° \mathbb{Z} 42'42	0°39'07
morning rise	12648 May 26 23:17	4° \mathbb{I} 05'00		direct	12654 Jul 26 16:49	10° \mathbb{Z} 45'13	
retrograde	12648 Sep 26 19:47	21° \mathbb{I} 30'22		evening set	12654 Nov 30 12:19	29° \mathbb{Z} 53'00	
opposition	12648 Nov 26 16:17	16° \mathbb{I} 36'50	-0°39'27		12654 Dec 01 00:32	0° \mathbb{Z}	
min. Earth dist.	12648 Nov 28 08:19	16° \mathbb{I} 23'59	4.31887 AU				
direct	12649 Jan 27 13:04	11° \mathbb{I} 36'53		conjunction	12654 Dec 14 01:41	3° \mathbb{Z} 00'08	0°32'58
evening set	12649 Jun 01 21:20	29° \mathbb{I} 45'33		minimum elong	12654 Dec 14 01:40	3° \mathbb{Z} 00'08	0°33'54
	12649 Jun 02 22:52	0° \mathbb{B}		max. Earth dist.	12654 Dec 16 12:29	3° \mathbb{Z} 33'59	6.13736 AU
max. Earth dist.	12649 Jun 12 08:39	2° \mathbb{B} 08'32	6.23411 AU	morning rise	12654 Dec 27 15:40	6° \mathbb{Z} 07'10	
				retrograde	12655 May 03 02:33	24° \mathbb{Z} 52'16	
conjunction	12649 Jun 14 17:17	2° \mathbb{B} 40'52	-0°33'07	min. Earth dist.	12655 Jun 30 17:51	20° \mathbb{Z} 01'14	4.22661 AU
minimum elong	12649 Jun 14 17:16	2° \mathbb{B} 40'52	0°34'05	opposition	12655 Jul 02 04:30	19° \mathbb{Z} 49'38	0°54'56

direct	12655 Aug 31 00:58	14° ♁ 50'13	morning rise	12661 Jul 02 02:27	10° ♁ 19'12	
	12655 Dec 21 04:01	0° ♁	retrograde	12661 Nov 05 09:34	29° ♁ 01'13	
evening set	12656 Jan 04 02:31	3° ♁ 02'15	opposition	12662 Jan 04 15:10	24° ♁ 06'33	-0°56'09
			min. Earth dist.	12662 Jan 06 02:11	23° ♁ 55'08	4.11908 AU
conjunction	12656 Jan 17 12:47	6° ♁ 00'26 0°37'55	direct	12662 Mar 06 03:05	19° ♁ 08'23	
minimum elong	12656 Jan 17 12:48	6° ♁ 00'26 0°38'45		12662 Jun 03 09:25	0° ♁	
max. Earth dist.	12656 Jan 19 08:05	6° ♁ 24'25 6.31332 AU	evening set	12662 Jul 10 08:29	8° ♁ 20'40	
morning rise	12656 Jan 30 22:13	8° ♁ 57'56	max. Earth dist.	12662 Jul 21 16:39	11° ♁ 02'35	6.03508 AU
	12656 Feb 28 07:07	15° ♁				
retrograde	12656 Jun 02 09:14	26° ♁ 33'35	conjunction	12662 Jul 23 07:53	11° ♁ 25'59	-0°37'20
opposition	12656 Aug 01 22:52	21° ♁ 33'43 0°52'39	minimum elong	12662 Jul 23 07:53	11° ♁ 25'59	0°38'06
min. Earth dist.	12656 Aug 01 02:42	21° ♁ 40'21 4.38866 AU	morning rise	12662 Aug 05 08:17	14° ♁ 32'08	
direct	12656 Oct 02 01:27	16° ♁ 33'14		12662 Aug 07 07:18	15° ♁	
	12657 Jan 16 07:31	0° ♁		12662 Oct 19 04:29	0° ♁	
evening set	12657 Feb 04 10:17	4° ♁ 01'17	retrograde	12662 Dec 12 21:04	4° ♁ 30'31	
				12663 Feb 07 06:29	30° ♁	
conjunction	12657 Feb 17 16:00	6° ♁ 52'12 0°31'27	opposition	12663 Feb 10 13:51	29° ♁ 33'43	-0°50'43
minimum elong	12657 Feb 17 16:01	6° ♁ 52'12 0°31'54	min. Earth dist.	12663 Feb 11 04:59	29° ♁ 28'42	3.96352 AU
max. Earth dist.	12657 Feb 18 06:47	7° ♁ 00'10 6.44969 AU	direct	12663 Apr 10 15:38	24° ♁ 37'37	
morning rise	12657 Mar 02 20:27	9° ♁ 42'17		12663 Jun 08 16:16	0° ♁	
retrograde	12657 Jul 02 05:54	26° ♁ 32'01	evening set	12663 Aug 15 16:32	14° ♁ 38'17	
opposition	12657 Sep 01 04:37	21° ♁ 35'04 0°36'10				
min. Earth dist.	12657 Sep 01 04:13	21° ♁ 35'12 4.49116 AU	conjunction	12663 Aug 28 21:50	17° ♁ 52'00	-0°26'22
direct	12657 Nov 02 06:49	16° ♁ 34'06	minimum elong	12663 Aug 28 21:51	17° ♁ 52'01	0°26'39
	12658 Feb 17 15:01	0° ♁	max. Earth dist.	12663 Aug 28 17:12	17° ♁ 49'10	5.91403 AU
evening set	12658 Mar 07 03:41	3° ♁ 39'03	morning rise	12663 Sep 11 04:55	21° ♁ 06'53	
				12663 Oct 19 09:08	0° ♁	
conjunction	12658 Mar 20 05:18	6° ♁ 25'58 0°16'44	retrograde	12664 Jan 20 22:37	11° ♁ 56'54	
minimum elong	12658 Mar 20 05:19	6° ♁ 25'59 0°16'44	opposition	12664 Mar 20 04:53	6° ♁ 57'04	-0°24'24
max. Earth dist.	12658 Mar 19 16:05	6° ♁ 18'55 6.51150 AU	min. Earth dist.	12664 Mar 19 18:56	7° ♁ 00'25	3.89122 AU
morning rise	12658 Apr 02 04:57	9° ♁ 11'59	direct	12664 May 17 08:45	2° ♁ 02'01	
retrograde	12658 Jul 31 18:15	25° ♁ 45'21	evening set	12664 Sep 21 18:26	22° ♁ 19'14	
opposition	12658 Sep 30 22:32	20° ♁ 50'39 0°10'54				
min. Earth dist.	12658 Oct 01 16:41	20° ♁ 44'51 4.50953 AU	conjunction	12664 Oct 05 05:46	25° ♁ 36'39	-0°04'29
direct	12658 Dec 02 11:51	15° ♁ 49'38	minimum elong	12664 Oct 05 05:45	25° ♁ 36'39	0°04'09
desc. node	12659 Mar 02 18:19	25° ♁ 53'01	behind sun begin	12664 Oct 04 21:31	25° ♁ 31'38	
	12659 Mar 23 08:41	0° ♁	behind sun end	12664 Oct 05 13:59	25° ♁ 41'40	
evening set	12659 Apr 06 05:35	2° ♁ 55'25	max. Earth dist.	12664 Oct 06 15:59	25° ♁ 57'35	5.89826 AU
max. Earth dist.	12659 Apr 17 12:47	5° ♁ 20'59 6.48477 AU	morning rise	12664 Oct 18 19:00	28° ♁ 55'03	
				12664 Oct 23 06:24	0° ♁	
conjunction	12659 Apr 19 03:36	5° ♁ 41'54 -0°02'18	asc. node	12664 Dec 18 02:01	12° ♁ 15'21	
minimum elong	12659 Apr 19 03:35	5° ♁ 41'54 0°02'47		12665 Jan 03 00:29	15° ♁	
behind sun begin	12659 Apr 18 19:37	5° ♁ 37'37	retrograde	12665 Feb 27 08:25	19° ♁ 41'35	
behind sun end	12659 Apr 19 11:33	5° ♁ 46'10		12665 Apr 25 00:34	15° ♁	
morning rise	12659 May 01 23:52	8° ♁ 27'42	min. Earth dist.	12665 Apr 26 07:04	14° ♁ 49'40	3.93488 AU
	12659 Jun 02 16:07	15° ♁	opposition	12665 Apr 27 14:47	14° ♁ 38'54	0°12'20
retrograde	12659 Aug 31 05:02	25° ♁ 15'44	direct	12665 Jun 24 15:19	9° ♁ 43'05	
opposition	12659 Oct 31 07:10	20° ♁ 22'11 -0°17'28		12665 Aug 21 22:29	15° ♁	
min. Earth dist.	12659 Nov 01 17:23	20° ♁ 11'15 4.43935 AU	evening set	12665 Oct 29 23:01	29° ♁ 35'05	
direct	12660 Jan 01 18:55	15° ♁ 21'28		12665 Oct 31 17:02	0° ♁	
	12660 Apr 22 10:07	0° ♁				
evening set	12660 May 05 15:48	2° ♁ 51'51	conjunction	12665 Nov 12 13:02	2° ♁ 49'05	0°19'04
max. Earth dist.	12660 May 16 04:47	5° ♁ 11'13 6.37526 AU	minimum elong	12665 Nov 12 13:01	2° ♁ 49'04	0°19'52
			max. Earth dist.	12665 Nov 14 22:26	3° ♁ 23'16	5.99588 AU
conjunction	12660 May 18 11:44	5° ♁ 41'36 -0°21'01	morning rise	12665 Nov 26 04:38	6° ♁ 03'32	
minimum elong	12660 May 18 11:43	5° ♁ 41'35 0°21'49	retrograde	12666 Apr 04 09:13	25° ♁ 54'02	
morning rise	12660 May 31 06:33	8° ♁ 31'02	min. Earth dist.	12666 Jun 01 09:19	21° ♁ 03'46	4.07478 AU
retrograde	12660 Oct 01 10:57	26° ♁ 03'56	opposition	12666 Jun 03 01:10	20° ♁ 50'17	0°42'30
opposition	12660 Dec 01 06:25	21° ♁ 10'18 -0°42'27	direct	12666 Jul 31 20:35	15° ♁ 52'26	
min. Earth dist.	12660 Dec 02 22:14	20° ♁ 57'29 4.29667 AU		12666 Nov 13 19:18	0° ♁	
direct	12661 Jan 31 23:21	16° ♁ 10'26	evening set	12666 Dec 05 13:21	4° ♁ 51'51	
	12661 May 17 12:38	0° ♁				
evening set	12661 Jun 06 10:19	4° ♁ 26'11	conjunction	12666 Dec 19 02:30	7° ♁ 57'40	0°34'25
max. Earth dist.	12661 Jun 16 23:57	6° ♁ 51'13 6.20955 AU	minimum elong	12666 Dec 19 02:29	7° ♁ 57'39	0°35'22
			max. Earth dist.	12666 Dec 21 13:13	8° ♁ 31'16	6.16393 AU
conjunction	12661 Jun 19 06:36	7° ♁ 22'36 -0°34'28	morning rise	12667 Jan 01 15:47	11° ♁ 03'12	
minimum elong	12661 Jun 19 06:35	7° ♁ 22'36 0°35'25	retrograde	12667 May 07 16:10	29° ♁ 36'55	

min. Earth dist.	12667 Jul 05 10:21	24°  45'36	4.25353 AU			12672 Oct 26 15:52	30° 	
opposition	12667 Jul 06 19:24	24°  34'34	0°55'37	opposition		12672 Dec 05 21:44	25°  45'29	-0°45'15
direct	12667 Sep 04 20:49	19°  34'57		min. Earth dist.		12672 Dec 07 14:49	25°  32'15	4.26985 AU
	12667 Dec 03 09:38	0° 		direct		12673 Feb 05 11:30	20°  45'49	
evening set	12668 Jan 08 18:46	7° 	38'49			12673 Apr 29 11:09	0° 	
				evening set		12673 Jun 11 01:02	9°  10'25	
conjunction	12668 Jan 22 04:15	10°  35'40	0°37'38	max. Earth dist.		12673 Jun 21 14:37	11°  36'24	6.18088 AU
minimum elong	12668 Jan 22 04:16	10°  35'40	0°38'24					
max. Earth dist.	12668 Jan 23 19:37	10°  57'21	6.33831 AU	conjunction		12673 Jun 23 21:35	12°  30'10	-0°35'37
morning rise	12668 Feb 04 13:03	13°  31'51		minimum elong		12673 Jun 23 21:34	12°  30'09	0°36'33
	12668 Feb 11 07:18	15° 		morning rise		12673 Jun 06 18:04	15°  30'12	
	12668 May 12 13:53	0° 				12673 Sep 19 15:21	0° 	
retrograde	12668 Jun 06 14:17	0°  58'29		retrograde		12673 Nov 10 12:23	4°  00'30	
	12668 Jul 01 11:22	30° 				12674 Jan 02 17:06	30° 	
opposition	12668 Aug 06 06:12	25°  58'57	0°51'02	opposition		12674 Jan 09 16:32	29°  30'37	-0°56'41
min. Earth dist.	12668 Aug 05 12:34	26°  04'44	4.40999 AU	min. Earth dist.		12674 Jan 11 00:39	28°  35'07	4.09097 AU
direct	12668 Oct 06 12:31	20°  58'19		direct		12674 Mar 10 22:05	24°  30'47	
	12668 Dec 29 12:38	0° 				12674 May 12 22:10	0° 	
evening set	12669 Feb 08 19:01	8°  20'51		evening set		12674 Jul 15 08:32	13°  29'23	
						12674 Jul 21 16:23	15° 	
conjunction	12669 Feb 22 00:14	11°  10'53	0°29'46	max. Earth dist.		12674 Jul 26 22:52	16°  21'51	6.01026 AU
minimum elong	12669 Feb 22 00:14	11°  10'54	0°30'10					
max. Earth dist.	12669 Feb 22 12:02	11°  17'14	6.46588 AU	conjunction		12674 Jul 28 08:46	16°  23'12	-0°36'37
morning rise	12669 Mar 07 03:44	14°  00'01		minimum elong		12674 Jul 28 08:46	16°  23'12	0°37'20
	12669 Jun 14 06:35	0° 		morning rise		12674 Aug 10 09:58	19°  24'52	
retrograde	12669 Jul 06 07:34	0°  44'49				12674 Sep 25 00:41	0° 	
	12669 Jul 28 06:18	30° 		retrograde		12674 Dec 18 10:42	9°  25'11	
opposition	12669 Sep 05 07:55	25°  48'16	0°33'00	opposition		12675 Feb 16 00:11	4°  25'04	-0°48'07
min. Earth dist.	12669 Sep 05 09:59	25°  47'36	4.50122 AU	min. Earth dist.		12675 Feb 16 12:29	4°  25'59	3.94467 AU
direct	12669 Nov 06 12:28	20°  47'17		direct		12675 Apr 15 22:42	0° 	
	12670 Jan 31 08:24	0° 		evening set		12675 Aug 21 01:07	20°  26'33	
evening set	12670 Mar 11 08:13	7°  50'15						
				conjunction		12675 Sep 03 07:24	23°  21'17	-0°23'43
conjunction	12670 Mar 24 09:06	10°  43'48	0°14'14	minimum elong		12675 Sep 03 07:25	23°  21'17	0°23'56
minimum elong	12670 Mar 24 09:06	10°  43'48	0°14'09	max. Earth dist.		12675 Sep 03 09:04	23°  22'18	5.90322 AU
behind sun begin	12670 Mar 24 05:15	10°  43'45		morning rise		12675 Sep 16 15:32	26°  27'10	
behind sun end	12670 Mar 24 12:58	10°  43'51				12675 Sep 30 16:22	0° 	
max. Earth dist.	12670 Mar 23 14:14	10°  43'44	6.51456 AU	retrograde		12676 Jan 26 12:19	17°  23'43	
morning rise	12670 Apr 06 08:20	13°  43'23		opposition		12676 Mar 25 17:53	12°  23'27	-0°19'22
retrograde	12670 Aug 04 22:54	29°  43'54		min. Earth dist.		12676 Mar 25 03:26	12°  23'19	3.89011 AU
opposition	12670 Oct 05 02:06	25°  43'18	0°06'59	direct		12676 May 22 18:32	7°  23'28	
min. Earth dist.	12670 Oct 05 23:56	24°  43'19	4.50539 AU	evening set		12676 Sep 27 06:15	27°  23'25	
direct	12670 Dec 06 16:51	20°  43'15				12676 Oct 06 01:29	0° 	
desc. node	12671 Jan 08 20:31	21°  43'29						
	12671 Mar 06 12:46	0° 		conjunction		12676 Oct 10 18:01	1°  23'41	-0°00'54
evening set	12671 Apr 10 09:30	7°  43'02		minimum elong		12676 Oct 10 18:01	1°  23'42	0°00'30
max. Earth dist.	12671 Apr 21 13:01	9°  43'00	6.47356 AU	behind sun begin		12676 Oct 10 09:40	1°  23'37	
				behind sun end		12676 Oct 11 02:23	1°  23'46	
conjunction	12671 Apr 23 07:13	9°  43'48	-0°05'03	max. Earth dist.		12676 Oct 12 08:03	1°  23'53	5.90664 AU
minimum elong	12671 Apr 23 07:13	9°  43'47	0°05'34	morning rise		12676 Oct 24 08:00	4°  23'57	
behind sun begin	12671 Apr 22 23:32	9°  43'40		asc. node		12676 Oct 25 17:37	4°  23'16	
behind sun end	12671 Apr 23 14:53	9°  43'55				12676 Dec 09 15:28	15° 	
morning rise	12671 May 06 03:08	12°  43'54		retrograde		12677 Mar 04 14:34	25°  23'34	
	12671 May 17 00:24	15° 		opposition		12677 May 02 22:52	20°  23'32	0°17'24
retrograde	12671 Sep 04 12:25	29°  43'46		min. Earth dist.		12677 May 01 12:37	20°  23'10	3.95158 AU
opposition	12671 Nov 04 14:34	24°  43'16	-0°21'19	direct		12677 Jun 30 01:31	15°  23'26	
min. Earth dist.	12671 Nov 06 01:42	24°  43'02	4.42173 AU			12677 Oct 14 04:29	0° 	
direct	12672 Jan 05 23:07	19°  43'36		evening set		12677 Nov 04 06:37	4°  23'14	
	12672 Apr 05 11:03	0° 						
evening set	12672 May 09 23:25	7°  43'56		conjunction		12677 Nov 17 20:47	8°  23'10	0°21'54
max. Earth dist.	12672 May 20 11:50	9°  43'42	6.35237 AU	minimum elong		12677 Nov 17 20:46	8°  23'09	0°22'46
				max. Earth dist.		12677 Nov 20 08:40	8°  23'38	6.01900 AU
conjunction	12672 May 22 19:18	10°  43'32	-0°23'20	morning rise		12677 Dec 01 12:04	11°  23'19	
minimum elong	12672 May 22 19:17	10°  43'32	0°24'11			12678 Mar 15 17:38	0° 	
morning rise	12672 Jun 04 14:03	12°  43'52		retrograde		12678 Apr 09 07:06	0°  23'35	
	12672 Sep 15 16:31	0° 				12678 May 03 14:45	30° 	
retrograde	12672 Oct 06 05:32	0°  23'07		min. Earth dist.		12678 Jun 06 08:45	26°  23'05	4.10146 AU

opposition	12678 Jun 07 23:47	25° \mathbb{A} 54'54	0°45'29	morning rise	12683 May 10 08:32	17° \mathbb{C} 00'08	
direct	12678 Aug 05 23:43	20° \mathbb{A} 56'47			12683 Jul 18 09:01	0° \mathbb{H}	
	12678 Oct 25 18:00	0° \mathbb{C}		retrograde	12683 Sep 09 01:13	3° \mathbb{H} 58'48	
evening set	12678 Dec 10 12:44	9° \mathbb{C} 47'08			12683 Nov 01 21:04	30° \mathbb{R} \mathbb{C}	
				opposition	12683 Nov 09 01:00	29° \mathbb{C} 05'21	-0°25'09
conjunction	12678 Dec 24 01:22	12° \mathbb{C} 51'31	0°35'36	min. Earth dist.	12683 Nov 10 14:31	28° \mathbb{C} 53'20	4.40172 AU
minimum elong	12678 Dec 24 01:22	12° \mathbb{C} 51'31	0°36'33	direct	12684 Jan 10 08:25	24° \mathbb{C} 04'45	
max. Earth dist.	12678 Dec 26 10:23	13° \mathbb{C} 23'56	6.19159 AU		12684 Mar 16 05:04	0° \mathbb{H}	
morning rise	12679 Jan 06 14:08	15° \mathbb{C} 55'35		evening set	12684 May 14 09:32	11° \mathbb{H} 47'30	
	12679 Mar 19 04:57	0° \approx		max. Earth dist.	12684 May 24 20:41	14° \mathbb{H} 07'18	6.32820 AU
retrograde	12679 May 12 01:43	4° \approx 18'02					
	12679 Jul 05 19:52	30° \mathbb{R} \mathbb{C}		conjunction	12684 May 27 05:27	14° \mathbb{H} 39'02	-0°25'34
min. Earth dist.	12679 Jul 10 00:31	29° \mathbb{C} 26'36	4.27984 AU	minimum elong	12684 May 27 05:27	14° \mathbb{H} 39'02	0°26'27
opposition	12679 Jul 11 08:18	29° \mathbb{C} 16'01	0°55'56	morning rise	12684 Jun 09 00:19	17° \mathbb{H} 30'22	
direct	12679 Sep 09 13:20	24° \mathbb{C} 16'12			12684 Aug 10 15:30	0° \mathbb{C}	
	12679 Nov 12 10:35	0° \approx		retrograde	12684 Oct 11 00:46	5° \mathbb{C} 22'24	
evening set	12680 Jan 13 09:22	12° \approx 12'37		opposition	12684 Dec 10 16:22	0° \mathbb{C} 28'38	-0°47'50
				min. Earth dist.	12684 Dec 12 08:00	0° \mathbb{C} 15'50	4.24326 AU
conjunction	12680 Jan 26 18:17	15° \approx 08'17	0°37'06		12684 Dec 14 09:09	30° \mathbb{R} \mathbb{H}	
minimum elong	12680 Jan 26 18:18	15° \approx 08'17	0°37'49	direct	12685 Feb 10 00:49	25° \mathbb{H} 29'14	
	12680 Jan 26 03:11	15° \approx			12685 Apr 06 18:34	0° \mathbb{C}	
max. Earth dist.	12680 Jan 28 05:49	15° \approx 27'46	6.36140 AU	evening set	12685 Jun 15 18:45	14° \mathbb{C} 02'20	
morning rise	12680 Feb 09 02:14	18° \approx 03'12		max. Earth dist.	12685 Jun 26 11:39	16° \mathbb{C} 31'06	6.15420 AU
	12680 Apr 10 06:48	0° \mathbb{H}					
retrograde	12680 Jun 10 20:01	5° \mathbb{H} 21'55		conjunction	12685 Jun 28 15:39	17° \mathbb{C} 01'21	-0°36'33
opposition	12680 Aug 10 12:50	0° \mathbb{H} 22'51	0°49'08	minimum elong	12685 Jun 28 15:39	17° \mathbb{C} 01'20	0°37'28
min. Earth dist.	12680 Aug 09 22:29	0° \mathbb{H} 27'33	4.42827 AU	morning rise	12685 Jul 11 12:35	20° \mathbb{C} 00'44	
	12680 Aug 13 10:45	30° \mathbb{R} \approx			12685 Aug 26 09:36	0° \mathbb{Q}	
direct	12680 Oct 10 23:52	25° \approx 22'09		retrograde	12685 Nov 15 19:44	9° \mathbb{Q} 06'27	
	12680 Dec 07 20:08	0° \mathbb{H}		opposition	12686 Jan 14 20:50	4° \mathbb{Q} 11'20	-0°56'48
evening set	12681 Feb 13 03:08	12° \mathbb{H} 40'16		min. Earth dist.	12686 Jan 16 03:17	4° \mathbb{Q} 01'22	4.06658 AU
					12686 Feb 22 02:47	30° \mathbb{R} \mathbb{C}	
conjunction	12681 Feb 26 07:37	15° \mathbb{H} 29'36	0°27'56	direct	12686 Mar 15 22:51	29° \mathbb{C} 13'51	
minimum elong	12681 Feb 26 07:38	15° \mathbb{H} 29'36	0°28'16		12686 Apr 06 16:31	0° \mathbb{Q}	
max. Earth dist.	12681 Feb 26 13:57	15° \mathbb{H} 32'59	6.47805 AU		12686 Jul 04 16:22	15° \mathbb{Q}	
morning rise	12681 Mar 11 10:37	18° \mathbb{H} 18'03		evening set	12686 Jul 20 10:50	18° \mathbb{Q} 43'00	
	12681 May 11 20:34	0° \mathbb{Y}		max. Earth dist.	12686 Aug 01 06:32	21° \mathbb{Q} 33'26	5.99078 AU
retrograde	12681 Jul 10 10:54	4° \mathbb{Y} 59'26					
opposition	12681 Sep 09 11:51	0° \mathbb{Y} 03'10	0°29'39	conjunction	12686 Aug 02 11:50	21° \mathbb{Q} 51'05	-0°35'37
	12681 Sep 09 21:39	30° \mathbb{R} \mathbb{H}		minimum elong	12686 Aug 02 11:51	21° \mathbb{Q} 51'06	0°36'16
min. Earth dist.	12681 Sep 09 17:03	0° \mathbb{Y} 01'29	4.50679 AU	morning rise	12686 Aug 15 13:57	25° \mathbb{Q} 00'04	
direct	12681 Nov 10 18:29	25° \mathbb{H} 02'06			12686 Sep 05 20:09	0° \mathbb{H}	
	12682 Jan 10 10:49	0° \mathbb{Y}		retrograde	12686 Dec 23 22:47	15° \mathbb{H} 17'37	
evening set	12682 Mar 15 13:19	12° \mathbb{Y} 04'26		opposition	12687 Feb 21 11:13	10° \mathbb{H} 20'06	-0°45'06
				min. Earth dist.	12687 Feb 21 18:48	10° \mathbb{H} 17'34	3.93261 AU
conjunction	12682 Mar 28 13:52	14° \mathbb{Y} 50'51	0°11'38	direct	12687 Apr 21 04:59	5° \mathbb{H} 24'34	
minimum elong	12682 Mar 28 13:52	14° \mathbb{Y} 50'51	0°11'29	evening set	12687 Aug 26 09:42	25° \mathbb{H} 33'34	
behind sun begin	12682 Mar 28 08:07	14° \mathbb{Y} 47'48					
behind sun end	12682 Mar 28 19:38	14° \mathbb{Y} 53'55		conjunction	12687 Sep 08 16:40	28° \mathbb{H} 48'49	-0°20'55
max. Earth dist.	12682 Mar 27 16:18	14° \mathbb{Y} 39'20	6.51323 AU	minimum elong	12687 Sep 08 16:41	28° \mathbb{H} 48'50	0°21'02
morning rise	12682 Apr 10 12:24	17° \mathbb{Y} 36'24		max. Earth dist.	12687 Sep 08 23:31	28° \mathbb{H} 53'01	5.89981 AU
	12682 Jun 15 21:40	0° \mathbb{C}			12687 Sep 13 12:43	0° \mathbb{C}	
retrograde	12682 Aug 09 03:08	4° \mathbb{C} 10'51		morning rise	12687 Sep 22 01:48	2° \mathbb{C} 05'18	
	12682 Oct 03 14:55	30° \mathbb{R} \mathbb{Y}		retrograde	12688 Jan 31 21:57	22° \mathbb{C} 59'06	
opposition	12682 Oct 09 07:08	29° \mathbb{Y} 16'35	0°02'58	min. Earth dist.	12688 Mar 30 10:41	18° \mathbb{C} 04'29	3.89584 AU
min. Earth dist.	12682 Oct 10 06:53	29° \mathbb{Y} 08'59	4.49731 AU	opposition	12688 Mar 31 04:56	17° \mathbb{C} 58'19	-0°14'17
desc. node	12682 Nov 18 02:46	25° \mathbb{Y} 01'59		direct	12688 May 28 05:26	13° \mathbb{C} 03'15	
direct	12682 Dec 10 21:03	24° \mathbb{Y} 15'34		asc. node	12688 Sep 02 16:39	26° \mathbb{C} 13'28	
	12683 Feb 14 11:46	0° \mathbb{C}			12688 Sep 19 00:57	0° \mathbb{H}	
evening set	12683 Apr 14 15:31	11° \mathbb{C} 26'26		evening set	12688 Oct 02 15:11	3° \mathbb{H} 15'16	
max. Earth dist.	12683 Apr 25 15:14	13° \mathbb{C} 48'53	6.45915 AU				
				conjunction	12688 Oct 16 03:35	6° \mathbb{H} 32'05	0°02'36
conjunction	12683 Apr 27 12:46	14° \mathbb{C} 13'35	-0°07'48	minimum elong	12688 Oct 16 03:33	6° \mathbb{H} 32'05	0°03'05
minimum elong	12683 Apr 27 12:46	14° \mathbb{C} 13'34	0°08'23	behind sun begin	12688 Oct 15 19:14	6° \mathbb{H} 27'02	
behind sun begin	12683 Apr 27 05:45	14° \mathbb{C} 09'47		behind sun end	12688 Oct 16 11:53	6° \mathbb{H} 37'07	
behind sun end	12683 Apr 27 19:47	14° \mathbb{C} 17'22		max. Earth dist.	12688 Oct 17 23:00	6° \mathbb{H} 58'29	5.92090 AU
	12683 May 01 02:23	15° \mathbb{C}		morning rise	12688 Oct 29 17:43	9° \mathbb{H} 49'44	

	12688 Nov 20 15:23	15°♄		max. Earth dist.	12694 Mar 31 14:53	18°♃48'31	6.50799 AU
	12689 Feb 22 20:01	0°♂		morning rise	12694 Apr 14 15:44	21°♃48'23	
retrograde	12689 Mar 09 18:12	0°♂22'12			12694 May 25 09:18	0°♂	
	12689 Mar 24 13:03	30°♄♄		retrograde	12694 Aug 13 09:28	8°♂25'24	
min. Earth dist.	12689 May 06 15:44	25°♄30'51	3.97256 AU	desc. node	12694 Sep 30 12:09	5°♂09'08	
opposition	12689 May 08 02:47	25°♄18'58	0°22'06	opposition	12694 Oct 13 12:17	3°♂31'20	-0°00'59
direct	12689 Jul 05 08:37	20°♄22'36		min. Earth dist.	12694 Oct 14 14:25	3°♂22'58	4.48611 AU
	12689 Sep 25 10:14	0°♂			12694 Nov 13 03:36	30°♃♂	
evening set	12689 Nov 09 10:01	9°♂59'03		direct	12694 Dec 15 01:58	28°♃30'22	
					12695 Jan 16 04:09	0°♂	
conjunction	12689 Nov 23 00:01	13°♂10'45	0°24'27		12695 Apr 15 09:03	15°♂	
minimum elong	12689 Nov 23 00:00	13°♂10'44	0°25'20	evening set	12695 Apr 18 21:12	15°♂45'15	
max. Earth dist.	12689 Nov 25 12:36	13°♂46'24	6.04432 AU	max. Earth dist.	12695 Apr 29 19:52	18°♂07'38	6.44280 AU
morning rise	12689 Dec 06 15:09	16°♂22'39					
	12690 Feb 09 22:05	0°♂		conjunction	12695 May 01 18:21	18°♂32'56	-0°10'28
retrograde	12690 Apr 13 21:28	5°♂50'08		minimum elong	12695 May 01 18:20	18°♂32'56	0°11'07
min. Earth dist.	12690 Jun 11 02:12	0°♂59'49	4.12857 AU	behind sun begin	12695 May 01 12:23	18°♂29'42	
opposition	12690 Jun 12 17:24	0°♂46'36	0°47'59	behind sun end	12695 May 02 00:18	18°♂36'09	
	12690 Jun 18 12:21	30°♃♂		morning rise	12695 May 14 13:45	21°♂20'01	
direct	12690 Aug 10 20:22	25°♂48'15			12695 Jun 25 23:43	0°♄	
	12690 Oct 02 15:50	0°♂		retrograde	12695 Sep 13 12:05	8°♄25'09	
evening set	12690 Dec 15 07:23	14°♂29'56		opposition	12695 Nov 13 11:41	3°♄31'43	-0°28'49
				min. Earth dist.	12695 Nov 15 01:16	3°♄19'41	4.38135 AU
conjunction	12690 Dec 28 19:31	17°♂32'58	0°36'31		12695 Dec 14 03:17	30°♃♂	
minimum elong	12690 Dec 28 19:31	17°♂32'57	0°37'27	direct	12696 Jan 14 15:50	28°♂31'20	
max. Earth dist.	12690 Dec 31 00:57	18°♂03'11	6.21812 AU		12696 Feb 15 05:32	0°♄	
morning rise	12691 Jan 11 07:40	20°♂35'37		evening set	12696 May 18 20:07	16°♄20'32	
	12691 Feb 24 23:32	0°♄		max. Earth dist.	12696 May 29 07:08	18°♄41'02	6.30519 AU
retrograde	12691 May 16 10:11	8°♄47'55					
opposition	12691 Jul 15 17:27	3°♄46'21	0°55'55	conjunction	12696 May 31 15:54	19°♄12'57	-0°27'37
min. Earth dist.	12691 Jul 14 12:54	3°♄55'50	4.30358 AU	minimum elong	12696 May 31 15:53	19°♄12'56	0°28'32
	12691 Aug 17 04:21	30°♃♂		morning rise	12696 Jun 13 10:57	22°♄05'16	
direct	12691 Sep 14 03:50	28°♂46'25			12696 Jul 20 10:51	0°♄	
	12691 Oct 12 09:24	0°♄		retrograde	12696 Oct 15 22:02	10°♄06'38	
	12692 Jan 10 09:19	15°♄		opposition	12696 Dec 15 11:10	5°♄12'43	-0°50'05
evening set	12692 Jan 17 20:04	16°♄36'32		min. Earth dist.	12696 Dec 17 02:41	4°♄59'56	4.21906 AU
				direct	12697 Feb 14 16:50	0°♄13'31	
conjunction	12692 Jan 31 04:27	19°♄31'13	0°36'24	evening set	12697 Jun 20 11:55	18°♄54'06	
minimum elong	12692 Jan 31 04:27	19°♄31'13	0°37'04	max. Earth dist.	12697 Jul 01 07:32	21°♄25'14	6.13074 AU
max. Earth dist.	12692 Feb 01 12:17	19°♄48'36	6.38062 AU				
morning rise	12692 Feb 13 11:43	22°♄25'07		conjunction	12697 Jul 03 09:17	21°♄54'18	-0°37'12
	12692 Mar 21 03:51	0°♂		minimum elong	12697 Jul 03 09:17	21°♄54'18	0°38'07
retrograde	12692 Jun 14 21:28	9°♂37'35		morning rise	12697 Jul 16 06:44	24°♄54'56	
opposition	12692 Aug 14 16:31	4°♂38'59	0°47'05		12697 Aug 07 14:15	0°♄	
min. Earth dist.	12692 Aug 14 04:19	4°♂42'58	4.44207 AU	retrograde	12697 Nov 20 23:37	14°♄10'41	
	12692 Sep 29 22:30	30°♃♄		opposition	12698 Jan 19 23:51	9°♄15'17	-0°56'26
direct	12692 Oct 15 05:46	29°♄38'16		min. Earth dist.	12698 Jan 21 03:03	9°♄06'22	4.04589 AU
	12692 Oct 30 16:58	0°♂		direct	12698 Mar 20 20:38	4°♄18'06	
evening set	12693 Feb 17 08:55	16°♂53'39			12698 Jun 16 12:42	15°♄	
				evening set	12698 Jul 25 11:30	23°♄53'27	
conjunction	12693 Mar 02 12:54	19°♂42'29	0°26'02	max. Earth dist.	12698 Aug 06 11:49	26°♄47'17	5.97459 AU
minimum elong	12693 Mar 02 12:55	19°♂42'30	0°26'17				
max. Earth dist.	12693 Mar 02 15:13	19°♂43'44	6.48568 AU	conjunction	12698 Aug 07 13:07	27°♄02'35	-0°34'19
morning rise	12693 Mar 15 15:12	22°♂30'26		minimum elong	12698 Aug 07 13:07	27°♄02'35	0°34'55
	12693 Apr 21 14:22	0°♃			12698 Aug 19 19:01	0°♄	
retrograde	12693 Jul 14 13:16	9°♃10'00		morning rise	12698 Aug 20 16:11	0°♄12'43	
opposition	12693 Sep 13 14:20	4°♃14'10	0°26'17	retrograde	12698 Dec 29 08:00	20°♄37'21	
min. Earth dist.	12693 Sep 13 22:40	4°♃11'29	4.50804 AU	opposition	12699 Feb 26 19:40	15°♄39'19	-0°41'42
	12693 Oct 23 02:28	30°♃♂		min. Earth dist.	12699 Feb 26 23:49	15°♄37'56	3.92259 AU
direct	12693 Nov 14 22:54	29°♂13'11		direct	12699 Apr 26 10:41	10°♄43'53	
	12693 Dec 07 23:07	0°♃			12699 Aug 27 21:12	0°♄	
evening set	12694 Mar 19 17:29	16°♃16'18		evening set	12699 Aug 31 15:50	0°♄55'06	
conjunction	12694 Apr 01 17:27	19°♃02'44	0°09'04	conjunction	12699 Sep 13 23:48	4°♄10'55	-0°17'57
minimum elong	12694 Apr 01 17:27	19°♃02'44	0°08'50	minimum elong	12699 Sep 13 23:48	4°♄10'56	0°17'59
behind sun begin	12694 Apr 01 10:34	18°♃59'04		max. Earth dist.	12699 Sep 14 13:13	4°♄19'09	5.89711 AU
behind sun end	12694 Apr 02 00:21	19°♃06'24		morning rise	12699 Sep 27 09:36	7°♄27'52	

retrograde	12700 Feb 06 07:21	28°♄21'37		evening set	12706 Mar 24 22:54	20°♃30'58	
opposition	12700 Apr 06 12:55	23°♄20'25	-0°09'08				
min. Earth dist.	12700 Apr 05 16:30	23°♄27'19	3.90089 AU	conjunction	12706 Apr 06 22:26	23°♃17'16	0°06'23
direct	12700 Jun 03 13:23	18°♄25'15		minimum elong	12706 Apr 06 22:27	23°♃17'17	0°06'07
asc. node	12700 Jul 12 23:27	20°♄59'03		behind sun begin	12706 Apr 06 14:51	23°♃13'14	
	12700 Sep 01 21:52	0°♄		behind sun end	12706 Apr 07 06:02	23°♃21'19	
evening set	12700 Oct 08 22:07	8°♄34'04		max. Earth dist.	12706 Apr 05 18:31	23°♃02'19	6.50639 AU
				morning rise	12706 Apr 19 20:04	26°♃02'46	
conjunction	12700 Oct 22 10:53	11°♄50'30	0°05'58		12706 May 08 18:03	0°♄	
minimum elong	12700 Oct 22 10:52	11°♄50'30	0°06'32	desc. node	12706 Aug 13 23:05	12°♄38'57	
behind sun begin	12700 Oct 22 03:01	11°♄45'46		retrograde	12706 Aug 18 14:47	12°♄40'58	
behind sun end	12700 Oct 22 18:43	11°♄55'13		opposition	12706 Oct 18 18:09	7°♄47'05	-0°04'58
max. Earth dist.	12700 Oct 24 09:15	12°♄18'34	5.93291 AU	min. Earth dist.	12706 Oct 19 22:00	7°♄38'11	4.47995 AU
	12700 Nov 04 12:41	15°♄		direct	12706 Dec 20 08:22	2°♄46'15	
morning rise	12700 Nov 05 01:34	15°♄07'44			12707 Mar 31 02:51	15°♄	
	12701 Jan 13 23:30	0°♄		evening set	12707 Apr 24 03:01	20°♄03'12	
retrograde	12701 Mar 15 17:56	5°♄33'05		max. Earth dist.	12707 May 04 22:16	22°♄24'09	6.43244 AU
min. Earth dist.	12701 May 12 15:26	0°♄42'14	3.99021 AU				
opposition	12701 May 14 04:33	0°♄29'38	0°26'36	conjunction	12707 May 06 23:38	22°♄51'05	-0°13'04
	12701 May 17 20:06	30°♄		minimum elong	12707 May 06 23:38	22°♄51'05	0°13'46
direct	12701 Jul 11 11:15	25°♄33'00		behind sun begin	12707 May 06 19:21	22°♄48'46	
	12701 Sep 02 23:44	0°♄		behind sun end	12707 May 07 03:54	22°♄53'24	
evening set	12701 Nov 15 12:19	15°♄02'43		morning rise	12707 May 19 18:55	25°♄38'30	
					12707 Jun 09 06:12	0°♄	
conjunction	12701 Nov 29 02:13	18°♄13'21	0°26'49	retrograde	12707 Sep 18 22:48	12°♄48'05	
minimum elong	12701 Nov 29 02:12	18°♄13'21	0°27'44	opposition	12707 Nov 18 21:37	7°♄54'37	-0°32'15
max. Earth dist.	12701 Dec 01 13:54	18°♄48'19	6.06578 AU	min. Earth dist.	12707 Nov 20 12:06	7°♄42'17	4.36726 AU
morning rise	12701 Dec 12 17:10	21°♄24'09		direct	12708 Jan 20 00:35	2°♄54'19	
	12702 Jan 20 14:30	0°♄		evening set	12708 May 24 04:23	20°♄47'44	
retrograde	12702 Apr 19 13:58	10°♄41'38		max. Earth dist.	12708 Jun 03 16:06	23°♄09'07	6.28839 AU
min. Earth dist.	12702 Jun 16 21:27	5°♄50'51	4.15149 AU				
opposition	12702 Jun 18 10:56	5°♄38'13	0°50'11	conjunction	12708 Jun 06 00:15	23°♄40'48	-0°29'27
direct	12702 Aug 16 18:51	0°♄39'34		minimum elong	12708 Jun 06 00:15	23°♄40'47	0°30'22
evening set	12702 Dec 21 02:31	19°♄14'06		morning rise	12708 Jun 18 19:13	26°♄33'47	
					12708 Jul 04 07:25	0°♄	
conjunction	12703 Jan 03 14:22	22°♄16'00	0°37'11	retrograde	12708 Oct 21 13:53	14°♄42'28	
minimum elong	12703 Jan 03 14:21	22°♄16'00	0°38'06	opposition	12708 Dec 21 02:54	9°♄48'24	-0°51'54
max. Earth dist.	12703 Jan 05 18:41	22°♄45'26	6.24067 AU	min. Earth dist.	12708 Dec 22 17:21	9°♄35'58	4.20059 AU
morning rise	12703 Jan 17 01:52	25°♄17'26		direct	12709 Feb 20 04:43	4°♄49'28	
	12703 Feb 07 15:56	0°♄		evening set	12709 Jun 26 01:31	23°♄35'41	
retrograde	12703 May 21 17:47	13°♄20'46		max. Earth dist.	12709 Jul 06 22:24	26°♄08'15	6.11200 AU
min. Earth dist.	12703 Jul 19 23:59	8°♄28'42	4.32406 AU				
opposition	12703 Jul 21 03:28	8°♄19'36	0°55'34	conjunction	12709 Jul 08 23:02	26°♄36'48	-0°37'34
direct	12703 Sep 19 17:00	3°♄19'32		minimum elong	12709 Jul 08 23:02	26°♄36'48	0°38'27
	12703 Dec 25 10:23	15°♄		morning rise	12709 Jul 21 21:04	29°♄38'28	
evening set	12704 Jan 23 08:33	21°♄04'19			12709 Jul 23 10:00	0°♄	
					12709 Oct 06 01:18	15°♄	
conjunction	12704 Feb 05 16:16	23°♄58'04	0°35'27	retrograde	12709 Nov 26 23:49	19°♄02'54	
minimum elong	12704 Feb 05 16:17	23°♄58'05	0°36'06		12710 Jan 19 04:39	15°♄	
max. Earth dist.	12704 Feb 06 19:21	24°♄12'49	6.39773 AU	opposition	12710 Jan 25 22:09	14°♄07'12	-0°55'39
morning rise	12704 Feb 18 22:57	26°♄51'03		min. Earth dist.	12710 Jan 26 23:33	13°♄58'50	4.02827 AU
	12704 Mar 04 17:39	0°♄		direct	12710 Mar 26 15:48	9°♄10'11	
retrograde	12704 Jun 20 03:22	13°♄57'46			12710 May 27 20:21	15°♄	
opposition	12704 Aug 19 22:25	8°♄59'36	0°44'44	evening set	12710 Jul 31 07:26	28°♄51'03	
min. Earth dist.	12704 Aug 19 13:36	9°♄02'29	4.45492 AU		12710 Aug 05 01:45	0°♄	
direct	12704 Oct 20 15:50	3°♄58'51					
evening set	12705 Feb 22 16:28	21°♄11'25		conjunction	12710 Aug 13 09:57	2°♄01'15	-0°32'49
				minimum elong	12710 Aug 13 09:58	2°♄01'15	0°33'22
conjunction	12705 Mar 07 19:55	23°♄59'45	0°23'55	max. Earth dist.	12710 Aug 12 13:11	1°♄48'39	5.95994 AU
minimum elong	12705 Mar 07 19:56	23°♄59'46	0°24'07	morning rise	12710 Aug 26 13:44	5°♄12'27	
max. Earth dist.	12705 Mar 07 18:49	23°♄59'10	6.49368 AU	retrograde	12711 Jan 04 13:14	25°♄43'43	
morning rise	12705 Mar 20 21:37	26°♄47'11		opposition	12711 Mar 04 22:47	20°♄45'23	-0°38'08
	12705 Apr 05 05:51	0°♄		min. Earth dist.	12711 Mar 05 00:48	20°♄44'42	3.91254 AU
retrograde	12705 Jul 19 16:19	13°♄24'36		direct	12711 May 02 10:26	15°♄50'06	
opposition	12705 Sep 18 18:49	8°♄29'03	0°22'42		12711 Aug 12 05:34	0°♄	
min. Earth dist.	12705 Sep 19 04:42	8°♄25'52	4.51120 AU	evening set	12711 Sep 06 17:24	6°♄04'07	
direct	12705 Nov 20 04:15	3°♄28'06					

conjunction	12711 Sep 20 02:05	9°♌20'34	-0°14'59	minimum elong	12717 Mar 12 03:14	28°♏18'49	0°21'48
minimum elong	12711 Sep 20 02:05	9°♌20'34	0°14'55	max. Earth dist.	12717 Mar 11 22:01	28°♏16'02	6.50136 AU
behind sun begin	12711 Sep 19 22:56	9°♌18'38			12717 Mar 20 00:42	0°♍	
behind sun end	12711 Sep 20 05:15	9°♌22'30		morning rise	12717 Mar 25 04:19	1°♍05'42	
max. Earth dist.	12711 Sep 20 18:19	9°♌30'31	5.89257 AU	retrograde	12717 Jul 23 21:10	17°♍40'52	
morning rise	12711 Oct 03 12:58	12°♌38'11		opposition	12717 Sep 22 23:42	12°♍45'34	0°18'56
	12711 Dec 26 19:50	0°♌		min. Earth dist.	12717 Sep 23 12:56	12°♍41'19	4.51352 AU
retrograde	12712 Feb 12 10:31	3°♌33'00		direct	12717 Nov 24 12:01	7°♍44'32	
	12712 Mar 31 15:07	30°♌		evening set	12718 Mar 29 04:30	24°♍47'18	
opposition	12712 Apr 11 16:16	28°♌31'30	-0°04'09	max. Earth dist.	12718 Apr 09 19:29	27°♍16'22	6.50280 AU
min. Earth dist.	12712 Apr 10 16:37	28°♌39'30	3.90254 AU				
asc. node	12712 May 25 02:18	23°♌58'15		conjunction	12718 Apr 11 03:33	27°♍33'32	0°03'39
direct	12712 Jun 08 15:12	23°♌36'14		minimum elong	12718 Apr 11 03:32	27°♍33'32	0°03'17
	12712 Aug 12 02:04	0°♌		behind sun begin	12718 Apr 10 19:34	27°♍29'17	
evening set	12712 Oct 14 01:37	13°♌43'50		behind sun end	12718 Apr 11 11:29	27°♍37'46	
	12712 Oct 19 08:05	15°♌			12718 Apr 22 13:08	0°♎	
				morning rise	12718 Apr 24 00:45	0°♎18'59	
conjunction	12712 Oct 27 14:52	17°♌00'07	0°09'09	desc. node	12718 Jun 24 07:26	12°♎00'32	
minimum elong	12712 Oct 27 14:51	17°♌00'07	0°09'47		12718 Jul 17 08:03	15°♎	
behind sun begin	12712 Oct 27 08:03	16°♌56'01		retrograde	12718 Aug 22 20:51	16°♎59'05	
behind sun end	12712 Oct 27 21:40	17°♌04'13			12718 Sep 28 12:49	15°♎	
max. Earth dist.	12712 Oct 29 15:21	17°♌29'26	5.94057 AU	opposition	12718 Oct 23 00:51	12°♎05'14	-0°09'00
morning rise	12712 Nov 10 05:56	20°♌17'09		min. Earth dist.	12718 Oct 24 06:09	11°♎55'52	4.47050 AU
	12712 Dec 23 01:03	0°♎		direct	12718 Dec 24 14:09	7°♎04'21	
retrograde	12713 Mar 20 16:48	10°♎37'35			12719 Mar 12 19:55	15°♎	
min. Earth dist.	12713 May 17 14:29	5°♎46'39	4.00282 AU	evening set	12719 Apr 28 09:31	24°♎24'27	
opposition	12713 May 19 03:40	5°♎34'01	0°30'44	max. Earth dist.	12719 May 09 03:55	26°♎45'23	6.41759 AU
direct	12713 Jul 16 13:03	0°♎37'08					
evening set	12713 Nov 20 13:04	20°♎02'22		conjunction	12719 May 11 05:59	27°♎12'47	-0°15'40
				minimum elong	12719 May 11 05:58	27°♎12'47	0°16'25
conjunction	12713 Dec 04 03:07	23°♎12'17	0°28'55		12719 May 23 23:41	0°♏	
minimum elong	12713 Dec 04 03:06	23°♎12'16	0°29'51	morning rise	12719 May 24 00:52	0°♏00'39	
max. Earth dist.	12713 Dec 06 16:30	23°♎48'05	6.08224 AU	retrograde	12719 Sep 23 11:13	17°♏16'19	
morning rise	12713 Dec 17 17:47	26°♎22'13		opposition	12719 Nov 23 09:28	12°♏22'50	-0°35'38
	12714 Jan 02 16:13	0°♏		min. Earth dist.	12719 Nov 25 01:02	12°♏10'09	4.34774 AU
retrograde	12714 Apr 24 05:26	15°♏31'33		direct	12720 Jan 24 10:12	7°♏22'39	
min. Earth dist.	12714 Jun 21 13:46	10°♏41'01	4.17013 AU	evening set	12720 May 28 15:32	25°♏22'12	
opposition	12714 Jun 23 03:26	10°♏28'22	0°51'58	max. Earth dist.	12720 Jun 08 01:46	27°♏43'32	6.26548 AU
direct	12714 Aug 21 14:06	5°♏29'32					
evening set	12714 Dec 25 21:37	23°♏58'27		conjunction	12720 Jun 10 11:17	28°♏16'09	-0°31'11
				minimum elong	12720 Jun 10 11:17	28°♏16'09	0°32'09
conjunction	12715 Jan 08 08:54	26°♏59'20	0°37'35		12720 Jun 18 02:26	0°♐	
minimum elong	12715 Jan 08 08:54	26°♏59'20	0°38'28	morning rise	12720 Jun 23 06:36	1°♐10'11	
max. Earth dist.	12715 Jan 10 09:51	27°♏26'45	6.25987 AU	retrograde	12720 Oct 26 11:45	19°♐28'30	
morning rise	12715 Jan 21 20:01	29°♏59'44		opposition	12720 Dec 25 22:39	14°♐34'13	-0°53'31
	12715 Jan 21 20:31	0°♐		min. Earth dist.	12720 Dec 27 12:16	14°♐22'01	4.17577 AU
	12715 Apr 12 03:26	15°♐		direct	12721 Feb 24 20:43	9°♐35'24	
retrograde	12715 May 26 03:52	17°♐55'15		evening set	12721 Jun 30 19:45	28°♐29'36	
	12715 Jul 09 05:56	15°♐			12721 Jul 07 05:50	0°♑	
opposition	12715 Jul 25 14:05	12°♐54'23	0°54'50	max. Earth dist.	12721 Jul 11 20:47	1°♑05'22	6.08750 AU
min. Earth dist.	12715 Jul 24 12:57	13°♐02'42	4.34223 AU				
direct	12715 Sep 24 08:07	7°♐54'07		conjunction	12721 Jul 13 17:59	1°♑32'02	-0°37'43
	12715 Dec 05 21:17	15°♐		minimum elong	12721 Jul 13 17:59	1°♑32'02	0°38'34
evening set	12716 Jan 27 21:11	25°♐34'00		morning rise	12721 Jul 26 16:31	4°♑35'03	
					12721 Sep 11 22:35	15°♑	
conjunction	12716 Feb 10 04:28	28°♐26'55	0°34'17	retrograde	12721 Dec 02 06:59	24°♑10'14	
minimum elong	12716 Feb 10 04:29	28°♐26'55	0°34'52	opposition	12722 Jan 31 02:41	19°♑14'15	-0°54'28
max. Earth dist.	12716 Feb 11 05:53	28°♐40'42	6.41353 AU	min. Earth dist.	12722 Feb 01 01:56	19°♑06'35	4.00638 AU
	12716 Feb 17 08:05	0°♑			12722 Mar 10 21:14	15°♑	
morning rise	12716 Feb 23 10:19	1°♑18'58		direct	12722 Mar 31 15:12	14°♑17'30	
retrograde	12716 Jun 24 07:20	18°♑20'05			12722 Apr 21 08:06	15°♑	
opposition	12716 Aug 24 04:38	13°♑22'14	0°42'06		12722 Jul 19 05:38	0°♒	
min. Earth dist.	12716 Aug 23 21:06	13°♑24'42	4.46720 AU	evening set	12722 Aug 05 10:09	4°♒05'18	
direct	12716 Oct 25 00:09	8°♑21'24					
evening set	12717 Feb 27 00:30	25°♑31'03		conjunction	12722 Aug 18 13:24	7°♒16'41	-0°31'00
				minimum elong	12722 Aug 18 13:25	7°♒16'42	0°31'28
conjunction	12717 Mar 12 03:13	28°♑18'49	0°21'40	max. Earth dist.	12722 Aug 17 19:48	7°♒05'59	5.94273 AU

morning rise	12722 Aug 31 18:22	10° \mathbb{M} 29'11		minimum elong	12728 Feb 14 14:38	2° \mathbb{H} 50'22	0°33'29
	12722 Dec 14 15:40	0° \mathbb{L}		max. Earth dist.	12728 Feb 15 10:33	3° \mathbb{H} 01'08	6.43322 AU
retrograde	12723 Jan 09 23:36	1° \mathbb{L} 07'44		morning rise	12728 Feb 27 19:54	5° \mathbb{H} 41'24	
	12723 Feb 05 07:31	30° \mathbb{R} \mathbb{M}		retrograde	12728 Jun 28 11:13	22° \mathbb{H} 36'14	
opposition	12723 Mar 10 08:53	26° \mathbb{M} 08'57	-0°34'02	opposition	12728 Aug 28 09:06	17° \mathbb{H} 38'47	0°39'19
min. Earth dist.	12723 Mar 10 06:25	26° \mathbb{M} 09'47	3.90213 AU	min. Earth dist.	12728 Aug 28 05:15	17° \mathbb{H} 40'02	4.48142 AU
direct	12723 May 07 16:59	21° \mathbb{M} 13'46		direct	12728 Oct 29 08:17	12° \mathbb{H} 37'51	
	12723 Jul 23 13:06	0° \mathbb{L}		evening set	12729 Mar 03 05:44	29° \mathbb{H} 44'17	
evening set	12723 Sep 12 02:18	11° \mathbb{L} 30'23			12729 Mar 04 11:24	0° \mathbb{Y}	
conjunction	12723 Sep 25 11:53	14° \mathbb{L} 47'22	-0°11'43	conjunction	12729 Mar 16 08:01	2° \mathbb{Y} 31'34	0°19'22
minimum elong	12723 Sep 25 11:53	14° \mathbb{L} 47'23	0°11'34	minimum elong	12729 Mar 16 08:02	2° \mathbb{Y} 31'34	0°19'26
behind sun begin	12723 Sep 25 05:56	14° \mathbb{L} 43'44		max. Earth dist.	12729 Mar 15 23:36	2° \mathbb{Y} 27'05	6.50906 AU
behind sun end	12723 Sep 25 17:51	14° \mathbb{L} 51'01		morning rise	12729 Mar 29 08:22	5° \mathbb{Y} 17'55	
max. Earth dist.	12723 Sep 26 09:50	15° \mathbb{L} 00'50	5.89022 AU	retrograde	12729 Jul 27 22:28	21° \mathbb{Y} 51'25	
morning rise	12723 Oct 08 23:32	18° \mathbb{L} 05'28		opposition	12729 Sep 27 02:41	16° \mathbb{Y} 56'24	0°15'11
	12723 Nov 30 13:58	0° \mathbb{M}		min. Earth dist.	12729 Sep 27 17:49	16° \mathbb{Y} 51'33	4.51431 AU
retrograde	12724 Feb 17 20:44	8° \mathbb{M} 59'45		direct	12729 Nov 28 15:05	11° \mathbb{Y} 55'23	
asc. node	12724 Apr 04 19:44	5° \mathbb{M} 35'42		evening set	12730 Apr 02 08:09	28° \mathbb{Y} 58'48	
min. Earth dist.	12724 Apr 16 00:09	4° \mathbb{M} 06'33	3.90858 AU		12730 Apr 07 02:51	0° \mathbb{B}	
opposition	12724 Apr 17 01:49	3° \mathbb{M} 57'51	0°01'10	max. Earth dist.	12730 Apr 13 19:13	1° \mathbb{B} 26'00	6.49649 AU
	12724 May 21 07:29	30° \mathbb{R} \mathbb{L}		conjunction	12730 Apr 15 06:41	1° \mathbb{B} 45'04	0°00'53
direct	12724 Jun 14 01:28	29° \mathbb{L} 02'26		minimum elong	12730 Apr 15 06:40	1° \mathbb{B} 45'03	0°00'28
	12724 Jul 07 18:55	0° \mathbb{M}		behind sun begin	12730 Apr 14 22:41	1° \mathbb{B} 40'47	
	12724 Oct 02 01:39	15° \mathbb{M}		behind sun end	12730 Apr 15 14:39	1° \mathbb{B} 49'19	
evening set	12724 Oct 19 10:54	19° \mathbb{M} 06'38		morning rise	12730 Apr 28 03:27	4° \mathbb{B} 30'36	
conjunction	12724 Nov 02 00:39	22° \mathbb{M} 22'28	0°12'27	desc. node	12730 May 03 13:11	5° \mathbb{B} 39'33	
minimum elong	12724 Nov 02 00:39	22° \mathbb{M} 22'28	0°13'08		12730 Jun 20 17:47	15° \mathbb{B}	
behind sun begin	12724 Nov 01 19:45	22° \mathbb{M} 19'32		retrograde	12730 Aug 27 03:45	21° \mathbb{B} 13'50	
behind sun end	12724 Nov 02 05:32	22° \mathbb{M} 25'24		opposition	12730 Oct 27 06:32	16° \mathbb{B} 20'11	-0°12'56
max. Earth dist.	12724 Nov 04 06:00	22° \mathbb{M} 54'35	5.95448 AU	min. Earth dist.	12730 Oct 28 14:56	16° \mathbb{B} 09'50	4.45729 AU
morning rise	12724 Nov 15 15:55	25° \mathbb{M} 38'53			12730 Nov 06 20:16	15° \mathbb{R} \mathbb{B}	
	12724 Dec 04 05:00	0° \mathbb{X}		direct	12730 Dec 28 19:52	11° \mathbb{B} 19'21	
retrograde	12725 Mar 25 18:48	15° \mathbb{X} 51'08			12731 Feb 18 01:23	15° \mathbb{B}	
min. Earth dist.	12725 May 22 15:45	11° \mathbb{X} 00'41	4.02314 AU	evening set	12731 May 02 15:20	28° \mathbb{B} 44'03	
opposition	12725 May 24 06:35	10° \mathbb{X} 47'31	0°34'49		12731 May 08 10:13	0° \mathbb{I}	
direct	12725 Jul 21 18:02	5° \mathbb{X} 50'24		max. Earth dist.	12731 May 13 05:52	1° \mathbb{I} 03'31	6.39824 AU
evening set	12725 Nov 25 16:47	25° \mathbb{X} 08'00		conjunction	12731 May 15 11:32	1° \mathbb{I} 33'02	-0°18'10
conjunction	12725 Dec 09 06:26	28° \mathbb{X} 16'39	0°30'54	minimum elong	12731 May 15 11:32	1° \mathbb{I} 33'01	0°18'57
minimum elong	12725 Dec 09 06:25	28° \mathbb{X} 16'38	0°31'51	morning rise	12731 May 28 06:29	4° \mathbb{I} 21'38	
max. Earth dist.	12725 Dec 11 18:42	28° \mathbb{X} 51'35	6.10690 AU	retrograde	12731 Sep 28 00:51	21° \mathbb{I} 45'17	
	12725 Dec 16 16:54	0° \mathbb{Z}		opposition	12731 Nov 27 21:45	16° \mathbb{I} 51'45	-0°38'51
morning rise	12725 Dec 22 20:54	1° \mathbb{Z} 25'17		min. Earth dist.	12731 Nov 29 13:34	16° \mathbb{I} 38'57	4.32333 AU
retrograde	12726 Apr 28 21:00	20° \mathbb{Z} 23'26		direct	12732 Jan 28 18:30	11° \mathbb{I} 51'40	
min. Earth dist.	12726 Jun 26 08:33	15° \mathbb{Z} 32'44	4.19665 AU	evening set	12732 Jan 02 03:11	29° \mathbb{I} 59'14	
opposition	12726 Jun 27 21:11	15° \mathbb{Z} 20'26	0°53'28		12732 Jun 02 04:33	0° \mathbb{D}	
direct	12726 Aug 26 12:36	10° \mathbb{Z} 21'18		max. Earth dist.	12732 Jun 12 15:17	2° \mathbb{D} 22'28	6.23789 AU
evening set	12726 Dec 30 16:35	28° \mathbb{Z} 41'52		conjunction	12732 Jun 14 23:18	2° \mathbb{D} 54'25	-0°32'46
	12727 Jan 05 13:20	0° \mathbb{A}		minimum elong	12732 Jun 14 23:17	2° \mathbb{D} 54'25	0°33'43
conjunction	12727 Jan 13 03:28	1° \mathbb{A} 41'26	0°37'48	morning rise	12732 Jun 27 18:48	5° \mathbb{D} 49'42	
minimum elong	12727 Jan 13 03:28	1° \mathbb{A} 41'26	0°38'39	retrograde	12732 Oct 31 13:02	24° \mathbb{D} 19'41	
max. Earth dist.	12727 Jan 15 03:07	2° \mathbb{A} 07'58	6.28618 AU	opposition	12732 Dec 30 20:37	19° \mathbb{D} 25'18	-0°54'51
morning rise	12727 Jan 26 13:40	4° \mathbb{A} 40'22		min. Earth dist.	12733 Jan 01 09:41	19° \mathbb{D} 13'15	4.14699 AU
	12727 Mar 18 01:26	15° \mathbb{A}		direct	12733 Mar 01 13:44	14° \mathbb{D} 26'48	
retrograde	12727 May 30 11:25	22° \mathbb{A} 25'55			12733 Jun 20 13:46	0° \mathbb{O}	
opposition	12727 Jul 29 23:32	17° \mathbb{A} 25'29	0°53'51	evening set	12733 Jul 05 16:33	3° \mathbb{O} 30'29	
min. Earth dist.	12727 Jul 29 00:11	17° \mathbb{A} 33'11	4.36615 AU	max. Earth dist.	12733 Jul 16 19:44	6° \mathbb{O} 08'33	6.06006 AU
	12727 Aug 18 05:26	15° \mathbb{R} \mathbb{A}		conjunction	12733 Jul 18 15:17	6° \mathbb{O} 34'24	-0°37'37
direct	12727 Sep 28 21:36	12° \mathbb{A} 25'08		minimum elong	12733 Jul 18 15:17	6° \mathbb{O} 34'24	0°38'25
	12727 Nov 09 21:02	15° \mathbb{A}		morning rise	12733 Jul 31 14:48	9° \mathbb{O} 39'02	
evening set	12728 Feb 01 08:11	29° \mathbb{A} 58'32			12733 Aug 23 18:04	15° \mathbb{O}	
	12728 Feb 01 10:55	0° \mathbb{H}		retrograde	12733 Dec 07 15:48	29° \mathbb{O} 26'15	
conjunction	12728 Feb 14 14:37	2° \mathbb{H} 50'22	0°32'58	opposition	12734 Feb 05 10:18	24° \mathbb{O} 29'55	-0°52'51

min. Earth dist.	12734 Feb 06 05:23	24°Ω23'37	3.98306 AU	conjunction	12740 Feb 19 00:01	7°✕12'22	0°31'28
direct	12734 Apr 05 17:04	19°Ω33'30		minimum elong	12740 Feb 19 00:02	7°✕12'22	0°31'55
	12734 Jun 30 11:10	0°൬		max. Earth dist.	12740 Feb 19 16:51	7°✕21'26	6.44963 AU
evening set	12734 Aug 10 16:19	9°൬28'45		morning rise	12740 Mar 03 04:23	10°✕02'26	
				retrograde	12740 Jul 02 14:05	26°✕52'14	
conjunction	12734 Aug 23 20:36	12°൬41'24	-0°28'54	opposition	12740 Sep 01 13:26	21°✕55'11	0°36'20
minimum elong	12734 Aug 23 20:37	12°൬41'25	0°29'16	min. Earth dist.	12740 Sep 01 12:08	21°✕55'37	4.49170 AU
max. Earth dist.	12734 Aug 23 09:50	12°൬34'50	5.92612 AU	direct	12740 Nov 02 15:06	16°✕54'14	
morning rise	12734 Sep 06 02:30	15°൬55'09			12741 Feb 16 08:06	0°Υ	
	12734 Nov 09 09:43	0°Ω		evening set	12741 Mar 07 11:41	3°Υ58'42	
retrograde	12735 Jan 15 15:10	6°Ω40'24					
opposition	12735 Mar 15 22:05	1°Ω41'08	-0°29'33	conjunction	12741 Mar 20 13:13	6°Υ45'35	0°16'56
min. Earth dist.	12735 Mar 15 16:21	1°Ω43'04	3.89429 AU	minimum elong	12741 Mar 20 13:14	6°Υ45'35	0°16'56
	12735 Mar 28 17:26	30°℞൬		max. Earth dist.	12741 Mar 19 23:03	6°Υ38'02	6.51246 AU
direct	12735 May 13 04:29	26°൬46'03		morning rise	12741 Apr 02 13:08	9°Υ31'37	
	12735 Jun 26 16:35	0°Ω		retrograde	12741 Aug 01 03:57	26°Υ04'45	
evening set	12735 Sep 17 13:49	17°Ω03'51		opposition	12741 Oct 01 07:01	21°Υ09'59	0°11'18
				min. Earth dist.	12741 Oct 02 01:50	21°Υ03'56	4.51075 AU
conjunction	12735 Oct 01 00:16	20°Ω21'09	-0°08'18	direct	12741 Dec 02 21:01	16°Υ08'53	
minimum elong	12735 Oct 01 00:16	20°Ω21'10	0°08'04	desc. node	12742 Mar 10 03:18	27°Υ34'06	
behind sun begin	12735 Sep 30 16:51	20°Ω16'38			12742 Mar 22 04:02	0°♄	
behind sun end	12735 Oct 01 07:42	20°Ω25'42		evening set	12742 Apr 06 13:20	3°♄14'11	
max. Earth dist.	12735 Oct 02 04:49	20°Ω38'39	5.89195 AU	max. Earth dist.	12742 Apr 17 20:54	5°♄39'52	6.48611 AU
morning rise	12735 Oct 14 12:42	23°Ω39'31					
	12735 Nov 10 07:10	0°ℳ		conjunction	12742 Apr 19 11:36	6°♄00'42	-0°01'58
asc. node	12736 Feb 14 15:15	14°ℳ23'21		minimum elong	12742 Apr 19 11:35	6°♄00'42	0°02'27
retrograde	12736 Feb 23 06:44	14°ℳ30'52		behind sun begin	12742 Apr 19 03:36	5°♄56'25	
min. Earth dist.	12736 Apr 21 07:21	9°ℳ38'28	3.91980 AU	behind sun end	12742 Apr 19 19:35	6°♄04'59	
opposition	12736 Apr 22 12:35	9°ℳ28'33	0°06'31	morning rise	12742 May 02 07:59	8°♄46'30	
direct	12736 Jun 19 11:51	4°ℳ32'58			12742 Jun 01 10:05	15°♄	
	12736 Sep 12 22:36	15°ℳ		retrograde	12742 Aug 31 11:49	25°♄34'06	
evening set	12736 Oct 24 20:58	24°ℳ31'31		opposition	12742 Oct 31 14:43	20°♄40'30	-0°16'55
				min. Earth dist.	12742 Nov 02 00:01	20°♄29'51	4.44076 AU
conjunction	12736 Nov 07 10:44	27°ℳ46'28	0°15'38	direct	12743 Jan 02 01:05	15°♄39'43	
minimum elong	12736 Nov 07 10:43	27°ℳ46'27	0°16'23		12743 Apr 22 07:57	0°♅	
max. Earth dist.	12736 Nov 09 17:43	28°ℳ19'24	5.97353 AU	evening set	12743 May 06 23:44	3°♅09'55	
	12736 Nov 16 18:03	0°♄		max. Earth dist.	12743 May 17 13:39	5°♅29'43	6.37662 AU
morning rise	12736 Nov 21 02:13	1°♄01'59					
retrograde	12737 Mar 30 18:20	21°♄03'58		conjunction	12743 May 19 19:49	5°♅59'40	-0°20'37
min. Earth dist.	12737 May 27 17:04	16°♄13'37	4.04758 AU	minimum elong	12743 May 19 19:48	5°♅59'39	0°21'27
opposition	12737 May 29 08:39	16°♄00'12	0°38'33	morning rise	12743 Jun 01 14:39	8°♅49'05	
direct	12737 Jul 27 00:09	11°♄02'41		retrograde	12743 Oct 02 19:25	26°♅21'25	
	12737 Nov 29 23:30	0°♄		opposition	12743 Dec 02 13:28	21°♅27'53	-0°41'55
evening set	12737 Nov 30 19:20	0°♄11'21		min. Earth dist.	12743 Dec 04 06:32	21°♅14'41	4.29790 AU
				direct	12744 Feb 02 07:26	16°♅28'01	
conjunction	12737 Dec 14 08:48	3°♄18'38	0°32'37		12744 May 16 11:53	0°♆	
minimum elong	12737 Dec 14 08:47	3°♄18'37	0°33'35	evening set	12744 Jun 06 18:19	4°♆43'47	
max. Earth dist.	12737 Dec 16 21:07	3°♄53'24	6.13436 AU	max. Earth dist.	12744 Jun 17 06:14	7°♆07'50	6.21067 AU
morning rise	12737 Dec 27 22:35	6°♄25'44					
retrograde	12738 May 03 11:59	25°♄12'00		conjunction	12744 Jun 19 14:35	7°♆40'11	-0°34'09
min. Earth dist.	12738 Jul 01 02:22	20°♄20'58	4.22433 AU	minimum elong	12744 Jun 19 14:35	7°♆40'11	0°35'07
opposition	12738 Jul 02 13:19	20°♄09'16	0°54'33	morning rise	12744 Jul 02 10:37	10°♆36'47	
direct	12738 Aug 31 09:35	15°♄09'55		retrograde	12744 Nov 05 15:24	29°♆18'13	
	12738 Dec 19 22:39	0°♆		opposition	12745 Jan 04 21:44	24°♆23'38	-0°55'50
evening set	12739 Jan 04 10:06	3°♆22'05		min. Earth dist.	12745 Jan 06 08:00	24°♆12'28	4.12032 AU
				direct	12745 Mar 06 08:56	19°♆25'29	
conjunction	12739 Jan 17 20:15	6°♆20'18	0°37'45		12745 Jun 02 08:05	0°Ω	
minimum elong	12739 Jan 17 20:15	6°♆20'18	0°38'35	evening set	12745 Jul 10 16:18	8°Ω37'50	
max. Earth dist.	12739 Jan 19 15:48	6°♆44'25	6.31172 AU	max. Earth dist.	12745 Jul 22 01:37	11°Ω20'20	6.03662 AU
morning rise	12739 Jan 31 05:54	9°♆17'54					
	12739 Feb 26 23:27	15°♆		conjunction	12745 Jul 23 15:46	11°Ω43'07	-0°37'13
retrograde	12739 Jun 03 17:38	26°♆54'11		minimum elong	12745 Jul 23 15:46	11°Ω43'07	0°38'00
min. Earth dist.	12739 Aug 02 11:16	22°♆00'56	4.38783 AU	morning rise	12745 Aug 05 15:59	14°Ω49'08	
opposition	12739 Aug 03 08:00	21°♆54'06	0°52'32		12745 Aug 06 10:18	15°Ω	
direct	12739 Oct 03 09:45	16°♆53'35			12745 Oct 17 17:08	0°൬	
	12740 Jan 16 00:06	0°✕		retrograde	12745 Dec 13 04:29	4°൬46'38	
evening set	12740 Feb 05 18:04	4°✕21'24			12746 Feb 09 13:54	30°℞Ω	

opposition	12746 Feb 10 20:07	29° Ω 49'59	-0°50'46	direct	12751 Oct 07 19:27	21° \approx 14'26	
min. Earth dist.	12746 Feb 11 12:24	29° Ω 44'36	3.96544 AU		12751 Dec 29 06:22	0° \mathbb{H}	
direct	12746 Apr 10 23:40	24° Ω 53'55		evening set	12752 Feb 10 01:20	8° \mathbb{H} 38'08	
	12746 Jun 07 08:25	0° \mathbb{M}					
evening set	12746 Aug 15 23:41	14° \mathbb{M} 54'06		conjunction	12752 Feb 23 06:37	11° \mathbb{H} 28'25	0°29'52
				minimum elong	12752 Feb 23 06:37	11° \mathbb{H} 28'25	0°30'16
conjunction	12746 Aug 29 04:50	18° \mathbb{M} 07'39	-0°26'33	max. Earth dist.	12752 Feb 23 17:54	11° \mathbb{H} 34'29	6.46162 AU
minimum elong	12746 Aug 29 04:51	18° \mathbb{M} 07'40	0°26'50	morning rise	12752 Mar 07 10:29	14° \mathbb{H} 17'50	
max. Earth dist.	12746 Aug 29 00:02	18° \mathbb{M} 04'43	5.91628 AU		12752 Jun 10 04:41	0° \mathbb{Y}	
morning rise	12746 Sep 11 11:45	21° \mathbb{M} 22'21		retrograde	12752 Jul 06 16:24	1° \mathbb{Y} 04'15	
	12746 Oct 18 11:54	0° $\underline{\Omega}$			12752 Aug 02 00:58	30° \mathbb{R}	
retrograde	12747 Jan 21 03:48	12° $\underline{\Omega}$ 10'59		opposition	12752 Sep 05 16:02	26° \mathbb{H} 07'35	0°33'17
opposition	12747 Mar 21 10:25	7° $\underline{\Omega}$ 11'17	-0°24'52	min. Earth dist.	12752 Sep 05 17:48	26° \mathbb{H} 07'01	4.49728 AU
min. Earth dist.	12747 Mar 20 23:59	7° $\underline{\Omega}$ 14'48	3.89379 AU	direct	12752 Nov 06 19:32	21° \mathbb{H} 06'36	
direct	12747 May 18 13:40	2° $\underline{\Omega}$ 16'19			12753 Jan 29 20:33	0° \mathbb{Y}	
evening set	12747 Sep 23 00:11	22° $\underline{\Omega}$ 32'31		evening set	12753 Mar 11 15:51	8° \mathbb{Y} 10'38	
conjunction	12747 Oct 06 11:05	25° $\underline{\Omega}$ 49'40	-0°04'55	conjunction	12753 Mar 24 17:06	10° \mathbb{Y} 57'25	0°14'30
minimum elong	12747 Oct 06 11:05	25° $\underline{\Omega}$ 49'40	0°04'35	minimum elong	12753 Mar 24 17:07	10° \mathbb{Y} 57'25	0°14'25
behind sun begin	12747 Oct 06 02:55	25° $\underline{\Omega}$ 44'41		behind sun begin	12753 Mar 24 13:32	10° \mathbb{Y} 55'31	
behind sun end	12747 Oct 06 19:16	25° $\underline{\Omega}$ 54'38		behind sun end	12753 Mar 24 20:42	10° \mathbb{Y} 59'19	
max. Earth dist.	12747 Oct 07 19:31	26° $\underline{\Omega}$ 09'30	5.90064 AU	max. Earth dist.	12753 Mar 24 00:19	10° \mathbb{Y} 48'28	6.51142 AU
morning rise	12747 Oct 20 00:13	29° $\underline{\Omega}$ 07'51		morning rise	12753 Apr 06 16:22	13° \mathbb{Y} 43'19	
	12747 Oct 23 14:26	0° \mathbb{M}			12753 Jul 22 12:46	0° \mathbb{B}	
asc. node	12747 Dec 26 19:01	13° \mathbb{M} 48'38		retrograde	12753 Aug 05 07:17	0° \mathbb{B} 17'34	
	12748 Jan 02 22:31	15° \mathbb{M}			12753 Aug 19 01:22	30° \mathbb{R} \mathbb{Y}	
retrograde	12748 Feb 28 11:53	19° \mathbb{M} 53'25		opposition	12753 Oct 05 10:55	25° \mathbb{Y} 23'03	0°07'27
	12748 Apr 26 16:32	15° \mathbb{R} \mathbb{M}		min. Earth dist.	12753 Oct 06 07:32	25° \mathbb{Y} 16'27	4.50336 AU
opposition	12748 Apr 27 19:44	14° \mathbb{M} 50'46	0°11'35	direct	12753 Dec 07 00:05	20° \mathbb{Y} 22'03	
min. Earth dist.	12748 Apr 26 12:04	15° \mathbb{M} 01'31	3.93658 AU	desc. node	12754 Jan 16 09:53	22° \mathbb{Y} 41'06	
direct	12748 Jun 24 21:03	9° \mathbb{M} 54'57			12754 Mar 04 22:42	0° \mathbb{B}	
	12748 Aug 20 23:15	15° \mathbb{M}		evening set	12754 Apr 10 18:25	7° \mathbb{B} 30'20	
evening set	12748 Oct 30 03:15	29° \mathbb{M} 46'13		max. Earth dist.	12754 Apr 21 22:11	9° \mathbb{B} 54'29	6.47288 AU
	12748 Oct 31 02:30	0° \mathbb{Z}					
				conjunction	12754 Apr 23 16:10	10° \mathbb{B} 17'11	-0°04'40
conjunction	12748 Nov 12 17:14	3° \mathbb{Z} 00'08	0°18'34	minimum elong	12754 Apr 23 16:10	10° \mathbb{B} 17'11	0°05'13
minimum elong	12748 Nov 12 17:13	3° \mathbb{Z} 00'07	0°19'22	behind sun begin	12754 Apr 23 08:26	10° \mathbb{B} 13'01	
max. Earth dist.	12748 Nov 15 03:03	3° \mathbb{Z} 34'34	5.99663 AU	behind sun end	12754 Apr 23 23:55	10° \mathbb{B} 21'20	
morning rise	12748 Nov 26 08:30	6° \mathbb{Z} 14'27		morning rise	12754 May 06 12:24	13° \mathbb{B} 03'24	
retrograde	12749 Apr 04 15:25	26° \mathbb{Z} 05'09			12754 May 15 15:03	15° \mathbb{B}	
min. Earth dist.	12749 Jun 01 15:20	21° \mathbb{Z} 14'37	4.07424 AU	retrograde	12754 Sep 04 22:55	29° \mathbb{B} 56'16	
opposition	12749 Jun 03 06:15	21° \mathbb{Z} 01'27	0°41'49	opposition	12754 Nov 04 23:29	25° \mathbb{B} 02'45	-0°20'45
direct	12749 Aug 01 01:59	16° \mathbb{Z} 03'43		min. Earth dist.	12754 Nov 06 11:05	24° \mathbb{B} 51'22	4.42249 AU
	12749 Nov 13 02:33	0° \mathbb{Z}		direct	12755 Jan 06 08:58	20° \mathbb{B} 02'03	
evening set	12749 Dec 05 17:18	5° \mathbb{Z} 03'14			12755 Apr 04 22:26	0° \mathbb{I}	
				evening set	12755 May 11 08:34	7° \mathbb{I} 38'06	
conjunction	12749 Dec 19 06:19	8° \mathbb{Z} 09'06	0°34'03	max. Earth dist.	12755 May 21 21:16	9° \mathbb{I} 57'55	6.35465 AU
minimum elong	12749 Dec 19 06:18	8° \mathbb{Z} 09'06	0°35'00				
max. Earth dist.	12749 Dec 21 16:50	8° \mathbb{Z} 42'36	6.16196 AU	conjunction	12755 May 24 04:38	10° \mathbb{I} 28'41	-0°22'56
morning rise	12750 Jan 01 19:42	11° \mathbb{Z} 14'46		minimum elong	12755 May 24 04:38	10° \mathbb{I} 28'40	0°23'49
retrograde	12750 May 07 20:38	29° \mathbb{Z} 49'49		morning rise	12755 Jun 05 23:30	13° \mathbb{I} 18'58	
min. Earth dist.	12750 Jul 05 15:28	24° \mathbb{Z} 58'40	4.25051 AU		12755 Sep 12 01:14	0° \mathbb{B}	
opposition	12750 Jul 07 01:08	24° \mathbb{Z} 47'25	0°55'15	retrograde	12755 Oct 07 12:04	0° \mathbb{B} 59'58	
direct	12750 Sep 05 00:48	19° \mathbb{Z} 47'54			12755 Nov 01 23:38	30° \mathbb{R} \mathbb{I}	
	12750 Dec 02 10:54	0° \approx		opposition	12755 Dec 07 05:40	26° \mathbb{I} 06'17	-0°44'42
evening set	12751 Jan 08 23:29	7° \approx 52'41		min. Earth dist.	12755 Dec 08 21:21	25° \mathbb{I} 53'30	4.27375 AU
				direct	12756 Feb 06 18:48	21° \mathbb{I} 06'37	
conjunction	12751 Jan 22 09:08	10° \approx 49'44	0°37'29		12756 Apr 28 02:05	0° \mathbb{B}	
minimum elong	12751 Jan 22 09:08	10° \approx 49'44	0°38'16	evening set	12756 Jun 11 09:30	9° \mathbb{B} 29'52	
max. Earth dist.	12751 Jan 24 00:45	11° \approx 11'35	6.33460 AU	max. Earth dist.	12756 Jun 22 00:20	11° \mathbb{B} 56'22	6.18618 AU
morning rise	12751 Feb 04 17:58	13° \approx 46'07					
	12751 Feb 10 09:48	15° \approx		conjunction	12756 Jun 24 06:02	12° \mathbb{B} 27'23	-0°35'18
	12751 May 10 13:49	0° \mathbb{H}		minimum elong	12756 Jun 24 06:02	12° \mathbb{B} 27'23	0°36'15
retrograde	12751 Jun 07 22:22	1° \mathbb{H} 14'32		morning rise	12756 Jul 07 02:24	15° \mathbb{B} 25'10	
	12751 Jul 06 01:48	30° \mathbb{R} \approx			12756 Sep 17 23:34	0° Ω	
opposition	12751 Aug 07 13:14	26° \approx 14'59	0°51'01	retrograde	12756 Nov 10 19:09	4° Ω 16'55	
min. Earth dist.	12751 Aug 06 19:51	26° \approx 20'41	4.40586 AU		12757 Jan 05 02:17	30° \mathbb{R} \mathbb{B}	

opposition	12757 Jan 09 22:50	29° \mathfrak{D} 22'04	-0°56'20	direct	12762 Sep 09 18:09	24° \mathfrak{Z} 25'56	
min. Earth dist.	12757 Jan 11 07:56	29° \mathfrak{D} 11'16	4.09727 AU		12762 Nov 11 12:36	0° \approx	
direct	12757 Mar 11 06:49	24° \mathfrak{D} 24'10		evening set	12763 Jan 13 13:47	12° \approx 24'39	
	12757 May 11 16:12	0° Ω			12763 Jan 25 09:12	15° \approx	
evening set	12757 Jul 15 15:05	13° Ω 43'27					
	12757 Jul 20 23:34	15° Ω		conjunction	12763 Jan 26 22:55	15° \approx 20'43	0°36'59
max. Earth dist.	12757 Jul 27 04:23	16° Ω 29'04	6.01701 AU	minimum elong	12763 Jan 26 22:56	15° \approx 20'43	0°37'44
				max. Earth dist.	12763 Jan 28 11:40	15° \approx 40'53	6.35391 AU
conjunction	12757 Jul 28 15:11	16° Ω 49'54	-0°36'32	morning rise	12763 Feb 09 07:08	18° \approx 16'04	
minimum elong	12757 Jul 28 15:12	16° Ω 49'54	0°37'15		12763 Apr 10 00:09	0° \mathfrak{H}	
morning rise	12757 Aug 10 16:14	19° Ω 57'10		retrograde	12763 Jun 12 02:46	5° \mathfrak{H} 37'43	
	12757 Sep 24 06:54	0° \mathfrak{P}		opposition	12763 Aug 11 20:01	0° \mathfrak{H} 38'35	0°49'11
retrograde	12757 Dec 18 13:01	10° \mathfrak{P} 03'06		min. Earth dist.	12763 Aug 11 04:16	0° \mathfrak{H} 43'45	4.42128 AU
opposition	12758 Feb 16 03:45	5° \mathfrak{P} 06'02	-0°48'14		12763 Aug 16 18:15	30° \mathfrak{R} \approx	
min. Earth dist.	12758 Feb 16 15:53	5° \mathfrak{P} 02'01	3.95135 AU	direct	12763 Oct 12 04:39	25° \approx 38'01	
direct	12758 Apr 16 02:33	0° \mathfrak{P} 10'10			12763 Dec 07 04:58	0° \mathfrak{H}	
evening set	12758 Aug 21 05:08	20° \mathfrak{P} 14'04		evening set	12764 Feb 14 10:10	12° \mathfrak{H} 58'15	
conjunction	12758 Sep 03 11:00	23° \mathfrak{P} 28'20	-0°23'59	conjunction	12764 Feb 27 14:54	15° \mathfrak{H} 47'54	0°28'03
minimum elong	12758 Sep 03 11:01	23° \mathfrak{P} 28'21	0°24'12	minimum elong	12764 Feb 27 14:55	15° \mathfrak{H} 47'55	0°28'23
max. Earth dist.	12758 Sep 03 10:44	23° \mathfrak{P} 28'10	5.90902 AU	max. Earth dist.	12764 Feb 27 22:50	15° \mathfrak{H} 52'09	6.47238 AU
morning rise	12758 Sep 16 18:54	26° \mathfrak{P} 43'48		morning rise	12764 Mar 11 18:01	18° \mathfrak{H} 36'40	
	12758 Sep 30 08:53	0° \mathfrak{Q}			12764 May 10 01:35	0° \mathfrak{Y}	
retrograde	12759 Jan 26 12:26	17° \mathfrak{Q} 34'48		retrograde	12764 Jul 10 20:35	5° \mathfrak{Y} 20'00	
opposition	12759 Mar 26 19:37	12° \mathfrak{Q} 34'34	-0°20'01	opposition	12764 Sep 09 20:46	0° \mathfrak{Y} 23'47	0°29'58
min. Earth dist.	12759 Mar 26 05:56	12° \mathfrak{Q} 39'11	3.89420 AU	min. Earth dist.	12764 Sep 10 01:14	0° \mathfrak{Y} 22'20	4.50307 AU
direct	12759 May 23 21:59	7° \mathfrak{Q} 39'31			12764 Sep 12 22:33	30° \mathfrak{R} \mathfrak{H}	
evening set	12759 Sep 28 07:44	27° \mathfrak{Q} 54'04		direct	12764 Nov 11 02:51	25° \mathfrak{H} 22'55	
	12759 Oct 06 22:48	0° \mathfrak{L}			12765 Jan 08 09:44	0° \mathfrak{Y}	
				evening set	12765 Mar 15 22:03	12° \mathfrak{Y} 26'12	
conjunction	12759 Oct 11 19:24	1° \mathfrak{L} 11'08	-0°01'28				
minimum elong	12759 Oct 11 19:25	1° \mathfrak{L} 11'08	0°01'03	conjunction	12765 Mar 28 22:37	15° \mathfrak{Y} 12'43	0°11'56
behind sun begin	12759 Oct 11 11:03	1° \mathfrak{L} 06'04		minimum elong	12765 Mar 28 22:38	15° \mathfrak{Y} 12'44	0°11'46
behind sun end	12759 Oct 12 03:47	1° \mathfrak{L} 16'13		behind sun begin	12765 Mar 28 17:01	15° \mathfrak{Y} 09'45	
max. Earth dist.	12759 Oct 13 09:24	1° \mathfrak{L} 34'18	5.90873 AU	behind sun end	12765 Mar 29 04:14	15° \mathfrak{Y} 15'42	
morning rise	12759 Oct 25 08:56	4° \mathfrak{L} 29'08		max. Earth dist.	12765 Mar 28 01:28	15° \mathfrak{Y} 01'26	6.51209 AU
asc. node	12759 Nov 05 03:06	7° \mathfrak{L} 03'55		morning rise	12765 Apr 10 21:30	17° \mathfrak{Y} 58'26	
	12759 Dec 10 12:36	15° \mathfrak{L}			12765 Jun 13 17:40	0° \mathfrak{B}	
retrograde	12760 Mar 04 16:57	25° \mathfrak{L} 09'22		retrograde	12765 Aug 09 13:09	4° \mathfrak{B} 33'08	
min. Earth dist.	12760 May 01 15:33	20° \mathfrak{L} 17'34	3.95133 AU		12765 Oct 06 22:20	30° \mathfrak{R} \mathfrak{Y}	
opposition	12760 May 03 00:21	20° \mathfrak{L} 06'26	0°16'31	opposition	12765 Oct 09 16:25	29° \mathfrak{Y} 38'51	0°03'29
direct	12760 Jun 30 03:43	15° \mathfrak{L} 10'23		min. Earth dist.	12765 Oct 10 15:09	29° \mathfrak{Y} 31'34	4.49924 AU
	12760 Oct 14 01:50	0° \mathfrak{X}		desc. node	12765 Nov 25 22:14	24° \mathfrak{Y} 59'12	
evening set	12760 Nov 04 07:40	4° \mathfrak{X} 55'28		direct	12765 Dec 11 06:15	24° \mathfrak{Y} 37'56	
					12766 Feb 12 11:56	0° \mathfrak{B}	
conjunction	12760 Nov 17 21:38	8° \mathfrak{X} 08'28	0°21'21	evening set	12766 Apr 15 00:10	11° \mathfrak{B} 47'56	
minimum elong	12760 Nov 17 21:38	8° \mathfrak{X} 08'27	0°22'12	max. Earth dist.	12766 Apr 26 03:01	14° \mathfrak{B} 11'52	6.46439 AU
max. Earth dist.	12760 Nov 20 08:31	8° \mathfrak{X} 43'21	6.01628 AU				
morning rise	12760 Dec 01 12:58	11° \mathfrak{X} 21'49		conjunction	12766 Apr 27 21:41	14° \mathfrak{B} 34'58	-0°07'22
	12761 Mar 14 23:40	0° \mathfrak{Z}		minimum elong	12766 Apr 27 21:41	14° \mathfrak{B} 34'58	0°07'58
retrograde	12761 Apr 09 08:40	1° \mathfrak{Z} 02'44		behind sun begin	12766 Apr 27 14:32	14° \mathfrak{B} 31'07	
	12761 May 04 14:38	30° \mathfrak{R} \mathfrak{X}		behind sun end	12766 Apr 28 04:49	14° \mathfrak{B} 38'49	
min. Earth dist.	12761 Jun 06 10:47	26° \mathfrak{X} 12'28	4.09677 AU		12766 Apr 29 19:54	15° \mathfrak{B}	
opposition	12761 Jun 08 02:21	25° \mathfrak{X} 59'05	0°44'47	morning rise	12766 May 10 17:23	17° \mathfrak{B} 21'21	
direct	12761 Aug 06 00:33	21° \mathfrak{X} 01'04			12766 Jul 16 09:54	0° \mathfrak{I}	
	12761 Oct 25 09:34	0° \mathfrak{Z}		retrograde	12766 Sep 09 07:08	4° \mathfrak{I} 17'55	
evening set	12761 Dec 10 14:58	9° \mathfrak{Z} 53'13			12766 Nov 04 17:03	30° \mathfrak{R} \mathfrak{B}	
				opposition	12766 Nov 09 08:23	29° \mathfrak{B} 24'29	-0°24'28
conjunction	12761 Dec 24 03:37	12° \mathfrak{Z} 57'53	0°35'14	min. Earth dist.	12766 Nov 10 20:08	29° \mathfrak{B} 13'02	4.41022 AU
minimum elong	12761 Dec 24 03:36	12° \mathfrak{Z} 57'52	0°36'12	direct	12767 Jan 10 15:44	24° \mathfrak{B} 23'59	
max. Earth dist.	12761 Dec 26 11:34	13° \mathfrak{Z} 29'45	6.18537 AU		12767 Mar 15 15:26	0° \mathfrak{I}	
morning rise	12762 Jan 06 16:27	16° \mathfrak{Z} 02'16		evening set	12767 May 15 16:31	12° \mathfrak{I} 03'46	
	12762 Mar 18 09:09	0° \approx		max. Earth dist.	12767 May 26 04:24	14° \mathfrak{I} 23'40	6.33935 AU
retrograde	12762 May 12 08:23	4° \approx 27'40					
	12762 Jul 07 06:03	30° \mathfrak{R} \mathfrak{Z}		conjunction	12767 May 28 12:15	14° \mathfrak{I} 54'50	-0°25'05
min. Earth dist.	12762 Jul 10 06:23	29° \mathfrak{Z} 35'58	4.27269 AU	minimum elong	12767 May 28 12:15	14° \mathfrak{I} 54'49	0°25'59
opposition	12762 Jul 11 13:22	29° \mathfrak{Z} 25'38	0°55'37	morning rise	12767 Jun 10 07:06	17° \mathfrak{I} 45'42	

	12767 Aug 10 13:39	0°☾		12773 Feb 09 14:15	0°☾	
retrograde	12767 Oct 12 04:18	5°☾33'19		retrograde	12773 Apr 14 02:26	5°☾56'09
opposition	12767 Dec 11 20:10	0°☾39'33 -0°47'08		min. Earth dist.	12773 Jun 11 06:02	1°☾05'32 4.11407 AU
min. Earth dist.	12767 Dec 13 12:24	0°☾26'34 4.25619 AU		opposition	12773 Jun 12 20:28	0°☾52'34 0°47'20
	12767 Dec 16 23:02	30°☾II			12773 Jun 19 09:02	30°☾☿
direct	12768 Feb 11 07:30	25°II40'04		direct	12773 Aug 10 22:38	25°☿54'15
	12768 Apr 05 21:02	0°☾			12773 Oct 01 22:20	0°☾
evening set	12768 Jun 15 21:49	14°☾08'37		evening set	12773 Dec 15 11:07	14°☾40'53
max. Earth dist.	12768 Jun 26 13:52	16°☾36'26 6.16776 AU				
				conjunction	12773 Dec 28 23:36	17°☾44'39 0°36'10
conjunction	12768 Jun 28 18:37	17°☾06'59 -0°36'11		minimum elong	12773 Dec 28 23:36	17°☾44'39 0°37'06
minimum elong	12768 Jun 28 18:36	17°☾06'59 0°37'07		max. Earth dist.	12773 Dec 31 07:29	18°☾16'20 6.20399 AU
morning rise	12768 Jul 11 15:17	20°☾05'42		morning rise	12774 Jan 11 11:58	20°☾48'01
	12768 Aug 26 06:15	0°☾			12774 Feb 23 22:11	0°☾
retrograde	12768 Nov 15 15:57	9°☾05'41		retrograde	12774 May 16 17:52	9°☾05'22
opposition	12769 Jan 14 19:30	4°☾10'37 -0°56'25		min. Earth dist.	12774 Jul 14 18:28	4°☾13'49 4.29104 AU
min. Earth dist.	12769 Jan 16 02:13	4°☾00'35 4.07947 AU		opposition	12774 Jul 16 01:06	4°☾03'38 0°55'37
	12769 Feb 21 22:16	30°☾☾			12774 Aug 21 01:21	30°☾☾
direct	12769 Mar 15 22:53	29°☾12'59		direct	12774 Sep 14 08:47	29°☾03'46
	12769 Apr 06 23:28	0°☾			12774 Oct 08 23:05	0°☾
	12769 Jul 04 23:02	15°☾			12775 Jan 09 02:47	15°☾
evening set	12769 Jul 20 09:28	18°☾37'46		evening set	12775 Jan 18 04:02	16°☾57'22
max. Earth dist.	12769 Aug 01 02:06	21°☾25'58 6.00138 AU				
				conjunction	12775 Jan 31 12:31	19°☾52'30 0°36'15
conjunction	12769 Aug 02 10:05	21°☾45'11 -0°35'36		minimum elong	12775 Jan 31 12:32	19°☾52'30 0°36'57
minimum elong	12769 Aug 02 10:05	21°☾45'11 0°36'16		max. Earth dist.	12775 Feb 01 21:17	20°☾10'26 6.37066 AU
morning rise	12769 Aug 15 11:55	24°☾53'32		morning rise	12775 Feb 13 20:09	22°☾46'55
	12769 Sep 06 06:40	0°☾			12775 Mar 20 13:22	0°☾
retrograde	12769 Dec 23 16:40	15°☾06'47		retrograde	12775 Jun 16 09:41	10°☾02'20
opposition	12770 Feb 21 05:55	10°☾09'21 -0°45'26		opposition	12775 Aug 16 03:12	5°☾03'33 0°47'03
min. Earth dist.	12770 Feb 21 15:44	10°☾06'04 3.93933 AU		min. Earth dist.	12775 Aug 15 14:27	5°☾07'43 4.43516 AU
direct	12770 Apr 21 02:10	5°☾13'36		direct	12775 Oct 16 16:25	0°☾02'49
evening set	12770 Aug 26 05:00	25°☾20'54		evening set	12776 Feb 18 19:09	17°☾19'34
conjunction	12770 Sep 08 11:53	28°☾35'58 -0°21'22		conjunction	12776 Mar 02 23:20	20°☾08'36 0°26'04
minimum elong	12770 Sep 08 11:54	28°☾35'59 0°21'30		minimum elong	12776 Mar 02 23:21	20°☾08'37 0°26'20
max. Earth dist.	12770 Sep 08 17:00	28°☾39'06 5.90198 AU		max. Earth dist.	12776 Mar 03 04:05	20°☾11'09 6.48227 AU
	12770 Sep 14 04:57	0°☾		morning rise	12776 Mar 16 01:50	22°☾56'44
morning rise	12770 Sep 21 20:32	1°☾52'09			12776 Apr 19 16:53	0°☾
retrograde	12771 Jan 31 17:57	22°☾45'44		retrograde	12776 Jul 14 23:36	9°☾36'53
opposition	12771 Mar 31 23:17	17°☾45'12 -0°15'14		opposition	12776 Sep 14 01:40	4°☾40'50 0°26'29
min. Earth dist.	12771 Mar 31 07:41	17°☾50'28 3.89307 AU		min. Earth dist.	12776 Sep 14 07:48	4°☾38'52 4.50826 AU
direct	12771 May 29 00:17	12°☾50'08			12776 Oct 31 11:54	30°☾☾
asc. node	12771 Sep 15 05:52	28°☾43'32		direct	12776 Nov 15 09:08	29°☾39'51
	12771 Sep 20 15:40	0°☾			12776 Nov 30 09:46	0°☾
evening set	12771 Oct 03 10:45	3°☾04'13		evening set	12777 Mar 20 03:54	16°☾42'09
				max. Earth dist.	12777 Apr 01 04:47	19°☾16'03 6.51194 AU
conjunction	12771 Oct 16 22:54	6°☾21'19 0°01'54				
minimum elong	12771 Oct 16 22:55	6°☾21'20 0°02'23		conjunction	12777 Apr 02 04:02	19°☾28'28 0°09'17
behind sun begin	12771 Oct 16 14:33	6°☾16'16		minimum elong	12777 Apr 02 04:02	19°☾28'28 0°09'03
behind sun end	12771 Oct 17 07:17	6°☾26'24		behind sun begin	12777 Apr 01 21:13	19°☾24'51
max. Earth dist.	12771 Oct 18 15:16	6°☾45'53 5.91346 AU		behind sun end	12777 Apr 02 10:51	19°☾32'06
morning rise	12771 Oct 30 13:11	9°☾39'23		morning rise	12777 Apr 15 02:14	22°☾13'57
	12771 Nov 22 03:43	15°☾			12777 May 23 13:44	0°☾
	12772 Feb 26 01:43	0°☾		retrograde	12777 Aug 13 18:21	8°☾49'15
retrograde	12772 Mar 09 16:00	0°☾15'56		desc. node	12777 Oct 06 17:18	4°☾50'03
	12772 Mar 22 05:34	30°☾☾		opposition	12777 Oct 13 22:17	3°☾55'06 -0°00'33
min. Earth dist.	12772 May 06 13:23	25°☾24'42 3.96148 AU		min. Earth dist.	12777 Oct 14 23:18	3°☾47'06 4.49341 AU
opposition	12772 May 08 00:24	25°☾12'49 0°21'06			12777 Nov 18 06:58	30°☾☾
direct	12772 Jul 05 03:41	20°☾16'31		direct	12777 Dec 15 13:05	28°☾54'11
	12772 Sep 25 15:45	0°☾			12778 Jan 11 22:09	0°☾
evening set	12772 Nov 09 09:04	9°☾57'45			12778 Apr 14 02:29	15°☾
				evening set	12778 Apr 19 06:07	16°☾06'14
conjunction	12772 Nov 22 23:12	13°☾10'08 0°23'52		max. Earth dist.	12778 Apr 30 04:33	18°☾28'14 6.45291 AU
minimum elong	12772 Nov 22 23:11	13°☾10'07 0°24'44				
max. Earth dist.	12772 Nov 25 10:06	13°☾44'55 6.03087 AU		conjunction	12778 May 02 03:06	18°☾53'30 -0°10'04
morning rise	12772 Dec 06 14:30	16°☾22'45		minimum elong	12778 May 02 03:05	18°☾53'30 0°10'44

behind sun begin	12778 May 01 20:57	18°♄50'11	retrograde	12784 Mar 14 20:50	5°♄34'38	
behind sun end	12778 May 02 09:14	18°♄56'48	min. Earth dist.	12784 May 11 17:54	0°♄43'30	3.97759 AU
morning rise	12778 May 14 22:39	21°♄40'13	opposition	12784 May 13 05:47	0°♄31'18	0°25'45
	12778 Jun 24 15:50	0°♄		12784 May 17 02:07	30°♄	
retrograde	12778 Sep 13 18:07	8°♄41'36	direct	12784 Jul 10 11:51	25°♄34'47	
opposition	12778 Nov 13 18:22	3°♄48'06 -0°28'08		12784 Sep 01 16:41	0°♄	
min. Earth dist.	12778 Nov 15 07:42	3°♄36'08 4.39352 AU	evening set	12784 Nov 14 14:42	15°♄09'34	
	12778 Dec 17 14:24	30°♄				
direct	12779 Jan 15 00:32	28°♄47'36	conjunction	12784 Nov 28 04:53	18°♄20'56	0°26'19
	12779 Feb 12 11:34	0°♄	minimum elong	12784 Nov 28 04:52	18°♄20'56	0°27'14
evening set	12779 May 20 01:43	16°♄32'39	max. Earth dist.	12784 Nov 30 18:29	18°♄57'07	6.05261 AU
max. Earth dist.	12779 May 30 13:31	18°♄53'07 6.31856 AU	morning rise	12784 Dec 11 19:54	21°♄32'25	
				12785 Jan 18 21:57	0°♄	
conjunction	12779 Jun 01 21:34	19°♄24'31 -0°27'09	retrograde	12785 Apr 18 20:58	10°♄55'15	
minimum elong	12779 Jun 01 21:33	19°♄24'30 0°28'04	min. Earth dist.	12785 Jun 16 01:57	6°♄04'59	4.13926 AU
morning rise	12779 Jun 14 16:20	22°♄16'13	opposition	12785 Jun 17 17:00	5°♄51'50	0°49'39
	12779 Jul 20 21:16	0°♄	direct	12785 Aug 15 22:25	0°♄53'21	
retrograde	12779 Oct 16 21:54	10°♄12'26	evening set	12785 Dec 20 09:05	19°♄31'42	
opposition	12779 Dec 16 13:11	5°♄18'32 -0°49'24				
min. Earth dist.	12779 Dec 18 04:40	5°♄05'47 4.23266 AU	conjunction	12786 Jan 02 20:54	22°♄34'04	0°36'54
direct	12780 Feb 15 20:09	0°♄19'16	minimum elong	12786 Jan 02 20:53	22°♄34'04	0°37'49
evening set	12780 Jun 20 13:31	18°♄55'17	max. Earth dist.	12786 Jan 05 01:32	23°♄03'45	6.23038 AU
max. Earth dist.	12780 Jul 01 06:51	21°♄24'42 6.14327 AU	morning rise	12786 Jan 16 08:44	25°♄36'02	
				12786 Feb 05 10:34	0°♄	
conjunction	12780 Jul 03 10:32	21°♄54'49 -0°36'52	retrograde	12786 May 21 04:24	13°♄42'52	
minimum elong	12780 Jul 03 10:31	21°♄54'49 0°37'48	min. Earth dist.	12786 Jul 19 08:54	8°♄50'47	4.31637 AU
morning rise	12780 Jul 16 07:50	24°♄54'49	opposition	12786 Jul 20 12:58	8°♄41'28	0°55'19
	12780 Aug 07 17:02	0°♄	direct	12786 Sep 19 02:04	3°♄41'24	
retrograde	12780 Nov 20 20:33	14°♄05'39		12786 Dec 22 20:51	15°♄	
opposition	12781 Jan 19 21:24	9°♄10'17 -0°56'10	evening set	12787 Jan 22 17:13	21°♄27'50	
min. Earth dist.	12781 Jan 21 02:18	9°♄00'48 4.05592 AU				
direct	12781 Mar 20 20:57	4°♄12'52	conjunction	12787 Feb 05 01:13	24°♄21'51	0°35'21
	12781 Jun 17 00:27	15°♄	minimum elong	12787 Feb 05 01:14	24°♄21'51	0°36'00
evening set	12781 Jul 25 09:16	23°♄45'11	max. Earth dist.	12787 Feb 06 07:48	24°♄38'30	6.39304 AU
max. Earth dist.	12781 Aug 06 07:44	26°♄37'35 5.98116 AU	morning rise	12787 Feb 18 07:56	27°♄15'02	
				12787 Mar 03 04:48	0°♄	
conjunction	12781 Aug 07 10:49	26°♄53'56 -0°34'23	retrograde	12787 Jun 20 12:39	14°♄22'54	
minimum elong	12781 Aug 07 10:50	26°♄53'56 0°34'59	opposition	12787 Aug 20 08:49	9°♄24'32	0°44'44
morning rise	12781 Aug 20 13:27	0°♄03'36	min. Earth dist.	12787 Aug 19 21:48	9°♄28'07	4.45307 AU
	12781 Aug 20 07:26	0°♄	direct	12787 Oct 21 00:43	4°♄23'46	
retrograde	12781 Dec 29 03:46	20°♄25'46	evening set	12788 Feb 23 01:57	21°♄36'08	
opposition	12782 Feb 26 14:41	15°♄27'58 -0°42'08				
min. Earth dist.	12782 Feb 26 21:28	15°♄25'43 3.92479 AU	conjunction	12788 Mar 07 05:22	24°♄24'25	0°24'01
direct	12782 Apr 26 06:20	10°♄32'28	minimum elong	12788 Mar 07 05:23	24°♄24'26	0°24'12
	12782 Aug 28 11:58	0°♄	max. Earth dist.	12788 Mar 07 05:10	24°♄24'19	6.49439 AU
evening set	12782 Aug 31 12:15	0°♄43'59	morning rise	12788 Mar 20 07:13	27°♄11'51	
				12788 Apr 02 15:43	0°♄	
conjunction	12782 Sep 13 19:52	3°♄59'49 -0°18'26	retrograde	12788 Jul 19 02:32	13°♄48'43	
minimum elong	12782 Sep 13 19:53	3°♄59'50 0°18'27	opposition	12788 Sep 18 04:45	8°♄53'02	0°22'57
max. Earth dist.	12782 Sep 14 04:51	4°♄05'20 5.89453 AU	min. Earth dist.	12788 Sep 18 14:46	8°♄49'49	4.51383 AU
morning rise	12782 Sep 27 05:40	7°♄16'52	direct	12788 Nov 19 15:29	3°♄52'00	
retrograde	12783 Feb 06 03:42	28°♄12'35	evening set	12789 Mar 24 07:38	20°♄53'33	
opposition	12783 Apr 06 09:22	23°♄11'38 -0°10'03	max. Earth dist.	12789 Apr 05 03:15	23°♄24'47	6.51037 AU
min. Earth dist.	12783 Apr 05 13:38	23°♄18'18 3.89385 AU				
direct	12783 Jun 03 08:39	18°♄16'31	conjunction	12789 Apr 06 07:14	23°♄39'44	0°06'39
asc. node	12783 Jul 23 07:30	22°♄17'11	minimum elong	12789 Apr 06 07:14	23°♄39'44	0°06'23
	12783 Sep 02 07:27	0°♄	behind sun begin	12789 Apr 05 23:41	23°♄35'43	
evening set	12783 Oct 08 20:18	8°♄29'10	behind sun end	12789 Apr 06 14:46	23°♄43'44	
			morning rise	12789 Apr 19 05:00	26°♄25'06	
conjunction	12783 Oct 22 09:05	11°♄46'08 0°05'20		12789 May 06 07:47	0°♄	
minimum elong	12783 Oct 22 09:04	11°♄46'07 0°05'55	retrograde	12789 Aug 17 21:55	13°♄01'52	
behind sun begin	12783 Oct 22 01:06	11°♄41'18	desc. node	12789 Aug 19 09:26	13°♄01'39	
behind sun end	12783 Oct 22 17:03	11°♄50'57	opposition	12789 Oct 18 02:24	8°♄07'50	-0°04'29
max. Earth dist.	12783 Oct 24 05:31	12°♄13'07 5.92245 AU	min. Earth dist.	12789 Oct 19 05:24	7°♄59'12	4.48483 AU
morning rise	12783 Nov 04 23:45	15°♄03'54	direct	12789 Dec 19 16:27	3°♄06'53	
	12783 Nov 04 17:15	15°♄		12790 Mar 28 20:00	15°♄	
	12784 Jan 14 00:04	0°♄	evening set	12790 Apr 23 10:33	20°♄22'10	

max. Earth dist.	12790 May 04 07:22	22°♄43'44	6.43776 AU	conjunction	12795 Oct 27 21:02	17°♄14'58	0°08'44
				minimum elong	12795 Oct 27 21:02	17°♄14'58	0°09'23
conjunction	12790 May 06 07:24	23°♄09'54	-0°12'41	behind sun begin	12795 Oct 27 14:03	17°♄10'46	
minimum elong	12790 May 06 07:23	23°♄09'54	0°13'24	behind sun end	12795 Oct 28 04:01	17°♄19'10	
behind sun begin	12790 May 06 02:48	23°♄07'25		max. Earth dist.	12795 Oct 29 22:53	17°♄45'07	5.93630 AU
behind sun end	12790 May 06 11:57	23°♄12'23		morning rise	12795 Nov 10 12:00	20°♄32'10	
morning rise	12790 May 19 02:35	25°♄57'06			12795 Dec 22 01:12	0°♄	
	12790 Jun 07 02:43	0°♄		retrograde	12796 Mar 20 00:41	10°♄54'22	
retrograde	12790 Sep 18 04:23	13°♄04'45		min. Earth dist.	12796 May 16 21:10	6°♄03'42	3.99870 AU
opposition	12790 Nov 18 03:51	8°♄11'17	-0°31'39	opposition	12796 May 18 11:06	5°♄50'50	0°30'09
min. Earth dist.	12790 Nov 19 18:47	7°♄58'50	4.37254 AU	direct	12796 Jul 15 19:13	0°♄54'00	
direct	12791 Jan 19 07:45	3°♄10'55		evening set	12796 Nov 19 20:28	20°♄20'28	
evening set	12791 May 24 10:55	21°♄02'47					
max. Earth dist.	12791 Jun 03 20:39	23°♄22'57	6.29311 AU	conjunction	12796 Dec 03 10:19	23°♄30'30	0°28'33
				minimum elong	12796 Dec 03 10:18	23°♄30'30	0°29'30
conjunction	12791 Jun 06 06:40	23°♄55'39	-0°29'04	max. Earth dist.	12796 Dec 05 22:51	24°♄05'50	6.07849 AU
minimum elong	12791 Jun 06 06:39	23°♄55'38	0°30'00	morning rise	12796 Dec 17 01:09	26°♄40'38	
morning rise	12791 Jun 19 01:48	26°♄48'29			12796 Dec 31 14:17	0°♄	
	12791 Jul 03 11:21	0°♄		retrograde	12797 Apr 23 14:03	15°♄51'28	
retrograde	12791 Oct 21 18:42	14°♄55'18		min. Earth dist.	12797 Jun 20 22:28	11°♄00'55	4.16703 AU
opposition	12791 Dec 21 07:27	10°♄01'14	-0°51'24	opposition	12797 Jun 22 12:22	10°♄48'10	0°51'33
min. Earth dist.	12791 Dec 22 22:32	9°♄48'34	4.20432 AU	direct	12797 Aug 20 22:53	5°♄49'20	
direct	12792 Feb 20 10:30	5°♄02'06		evening set	12797 Dec 25 05:30	24°♄18'46	
evening set	12792 Jun 25 06:50	23°♄47'27					
max. Earth dist.	12792 Jul 06 03:56	26°♄19'58	6.11457 AU	conjunction	12798 Jan 07 16:58	27°♄19'47	0°37'22
				minimum elong	12798 Jan 07 16:58	27°♄19'47	0°38'15
conjunction	12792 Jul 08 04:33	26°♄48'28	-0°37'20	max. Earth dist.	12798 Jan 09 20:08	27°♄48'28	6.25774 AU
minimum elong	12792 Jul 08 04:33	26°♄48'28	0°38'14		12798 Jan 19 15:31	0°♄	
morning rise	12792 Jul 21 02:22	29°♄49'58		morning rise	12798 Jan 21 03:57	0°♄20'15	
	12792 Jul 21 19:34	0°♄			12798 Apr 08 18:01	15°♄	
	12792 Oct 04 01:02	15°♄		retrograde	12798 May 25 13:20	18°♄16'37	
retrograde	12792 Nov 26 03:57	19°♄13'09			12798 Jul 11 13:32	15°♄	
	12793 Jan 19 16:00	15°♄		opposition	12798 Jul 24 23:42	13°♄15'39	0°54'39
opposition	12793 Jan 25 01:43	14°♄17'33	-0°55'31	min. Earth dist.	12798 Jul 23 21:32	13°♄24'18	4.34105 AU
min. Earth dist.	12793 Jan 26 04:22	14°♄08'47	4.02952 AU	direct	12798 Sep 23 16:52	8°♄15'28	
direct	12793 Mar 25 19:31	9°♄20'27			12798 Dec 03 04:18	15°♄	
	12793 May 26 00:59	15°♄		evening set	12799 Jan 27 05:34	25°♄55'13	
evening set	12793 Jul 30 12:30	29°♄01'26					
	12793 Aug 03 13:37	0°♄		conjunction	12799 Feb 09 12:44	28°♄48'07	0°34'14
				minimum elong	12799 Feb 09 12:45	28°♄48'08	0°34'49
conjunction	12793 Aug 12 14:48	2°♄11'34	-0°32'52	max. Earth dist.	12799 Feb 10 13:35	29°♄01'36	6.41320 AU
minimum elong	12793 Aug 12 14:49	2°♄11'35	0°33'25		12799 Feb 15 01:15	0°♄	
max. Earth dist.	12793 Aug 11 15:15	1°♄57'17	5.95963 AU	morning rise	12799 Feb 22 18:52	1°♄40'15	
morning rise	12793 Aug 25 18:40	5°♄22'47		retrograde	12799 Jun 24 17:30	18°♄41'36	
retrograde	12794 Jan 03 16:01	25°♄54'01		opposition	12799 Aug 24 14:10	13°♄43'38	0°42'10
opposition	12794 Mar 04 02:31	20°♄55'46	-0°38'26	min. Earth dist.	12799 Aug 24 06:57	13°♄45'59	4.46761 AU
min. Earth dist.	12794 Mar 04 04:24	20°♄55'08	3.91071 AU	direct	12799 Oct 25 09:51	8°♄42'46	
direct	12794 May 01 14:10	16°♄00'25		evening set	12800 Feb 27 08:44	25°♄51'59	
	12794 Aug 10 15:17	0°♄					
evening set	12794 Sep 05 22:40	6°♄15'38		conjunction	12800 Mar 11 11:44	28°♄39'46	0°21'49
				minimum elong	12800 Mar 11 11:45	28°♄39'47	0°21'56
conjunction	12794 Sep 19 07:19	9°♄32'11	-0°15'17	max. Earth dist.	12800 Mar 11 08:12	28°♄37'53	6.50240 AU
minimum elong	12794 Sep 19 07:19	9°♄32'11	0°15'14		12800 Mar 17 17:57	0°♄	
behind sun begin	12794 Sep 19 04:36	9°♄30'32		morning rise	12800 Mar 24 12:50	1°♄26'39	
behind sun end	12794 Sep 19 10:02	9°♄33'51		retrograde	12800 Jul 23 04:50	18°♄01'36	
max. Earth dist.	12794 Sep 19 23:18	9°♄42'00	5.88960 AU	opposition	12800 Sep 22 08:34	13°♄06'14	0°19'16
morning rise	12794 Oct 02 17:56	12°♄49'51		min. Earth dist.	12800 Sep 22 20:31	13°♄02'24	4.51504 AU
	12794 Dec 24 13:09	0°♄		direct	12800 Nov 23 19:31	8°♄05'13	
retrograde	12795 Feb 11 17:01	3°♄46'03		evening set	12801 Mar 28 12:38	25°♄07'24	
	12795 Apr 02 12:42	30°♄		max. Earth dist.	12801 Apr 09 04:08	27°♄36'39	6.50465 AU
opposition	12795 Apr 11 21:50	28°♄44'36	-0°04'43				
min. Earth dist.	12795 Apr 10 23:25	28°♄52'11	3.89864 AU	conjunction	12801 Apr 10 11:44	27°♄53'35	0°03'57
asc. node	12795 May 31 13:36	23°♄56'34		minimum elong	12801 Apr 10 11:44	27°♄53'35	0°03'35
direct	12795 Jun 08 21:38	23°♄49'20		behind sun begin	12801 Apr 10 03:48	27°♄49'22	
	12795 Aug 11 01:30	0°♄		behind sun end	12801 Apr 10 19:40	27°♄57'49	
evening set	12795 Oct 14 07:46	13°♄58'28			12801 Apr 20 07:50	0°♄	
	12795 Oct 18 13:49	15°♄		morning rise	12801 Apr 23 09:05	0°♄39'02	

desc. node	12801 Jun 30 03:50	13°♄17'33	morning rise	12806 Oct 08 06:01	18°♄21'37	
	12801 Jul 13 15:33	15°♄		12806 Nov 28 12:42	0°♄	
retrograde	12801 Aug 22 05:49	17°♄18'38	retrograde	12807 Feb 17 02:03	9°♄14'57	
	12801 Sep 30 23:56	15°♄	asc. node	12807 Apr 11 18:28	4°♄58'09	
opposition	12801 Oct 22 09:01	12°♄24'49	-0°08'30	min. Earth dist.	12807 Apr 16 05:41	4°♄21'59 3.91018 AU
min. Earth dist.	12801 Oct 23 15:08	12°♄15'12	4.47242 AU	opposition	12807 Apr 17 07:52	4°♄13'07 0°00'32
direct	12801 Dec 23 23:17	7°♄23'55			12807 May 25 01:12	30°♄♄
	12802 Mar 10 08:10	15°♄	direct	12807 Jun 14 06:48	29°♄17'45	
evening set	12802 Apr 27 17:29	24°♄43'34		12807 Jul 04 14:50	0°♄	
max. Earth dist.	12802 May 08 10:25	27°♄03'39	6.41936 AU		12807 Oct 01 06:13	15°♄
			evening set	12807 Oct 19 16:37	19°♄21'07	
conjunction	12802 May 10 14:01	27°♄31'53	-0°15'17			
minimum elong	12802 May 10 14:01	27°♄31'53	0°16'03	conjunction	12807 Nov 02 05:59	22°♄36'45 0°11'58
behind sun begin	12802 May 10 13:19	27°♄31'30		minimum elong	12807 Nov 02 05:58	22°♄36'45 0°12'40
behind sun end	12802 May 10 14:43	27°♄32'16		behind sun begin	12807 Nov 02 00:44	22°♄33'37
	12802 May 21 20:55	0°♄	behind sun end	12807 Nov 02 11:12	22°♄39'53	
morning rise	12802 May 23 09:12	0°♄19'46		max. Earth dist.	12807 Nov 04 09:33	23°♄07'48 5.95556 AU
retrograde	12802 Sep 22 18:24	17°♄34'52		morning rise	12807 Nov 15 21:12	25°♄53'04
opposition	12802 Nov 22 16:39	12°♄41'23	-0°35'05		12807 Dec 03 09:36	0°♄
min. Earth dist.	12802 Nov 24 07:53	12°♄28'48	4.34926 AU	retrograde	12808 Mar 24 23:36	16°♄05'06
direct	12803 Jan 23 16:56	7°♄41'08		min. Earth dist.	12808 May 21 21:50	11°♄14'31 4.02334 AU
evening set	12803 May 28 23:26	25°♄40'37		opposition	12808 May 23 12:29	11°♄01'25 0°34'07
max. Earth dist.	12803 Jun 08 10:51	28°♄02'32	6.26674 AU	direct	12808 Jul 21 00:36	6°♄04'16
			evening set	12808 Nov 24 21:41	25°♄21'36	
conjunction	12803 Jun 10 19:27	28°♄34'37	-0°30'51			
minimum elong	12803 Jun 10 19:26	28°♄34'37	0°31'49	conjunction	12808 Dec 08 11:23	28°♄30'16 0°30'29
	12803 Jun 17 01:58	0°♄		minimum elong	12808 Dec 08 11:23	28°♄30'16 0°31'27
morning rise	12803 Jun 23 14:40	1°♄28'36		max. Earth dist.	12808 Dec 11 00:21	29°♄05'38 6.10612 AU
retrograde	12803 Oct 26 19:42	19°♄46'22			12808 Dec 14 22:10	0°♄
opposition	12803 Dec 26 05:27	14°♄52'16	-0°53'07	morning rise	12808 Dec 22 01:36	1°♄38'52
min. Earth dist.	12803 Dec 27 19:59	14°♄39'46	4.17681 AU	retrograde	12809 Apr 28 04:16	20°♄37'47
direct	12804 Feb 25 03:49	9°♄53'29		min. Earth dist.	12809 Jun 25 15:17	15°♄46'57 4.19485 AU
evening set	12804 Jun 30 03:43	28°♄47'49		opposition	12809 Jun 27 03:35	15°♄34'47 0°53'00
	12804 Jul 05 06:47	0°♄		direct	12809 Aug 25 18:42	10°♄35'44
max. Earth dist.	12804 Jul 11 02:50	1°♄22'30	6.08835 AU	evening set	12809 Dec 29 21:54	28°♄56'42
					12810 Jan 03 15:51	0°♄
conjunction	12804 Jul 13 01:50	1°♄50'13	-0°37'32			
minimum elong	12804 Jul 13 01:50	1°♄50'13	0°38'24	conjunction	12810 Jan 12 08:40	1°♄56'21 0°37'35
morning rise	12804 Jul 26 00:32	4°♄53'14		minimum elong	12810 Jan 12 08:40	1°♄56'21 0°38'27
	12804 Sep 09 18:00	15°♄		max. Earth dist.	12810 Jan 14 07:39	2°♄22'32 6.28336 AU
retrograde	12804 Dec 01 12:43	24°♄27'56		morning rise	12810 Jan 25 19:06	4°♄55'29
opposition	12805 Jan 30 09:12	19°♄32'02	-0°54'23		12810 Mar 15 20:20	15°♄
min. Earth dist.	12805 Jan 31 07:47	19°♄24'35	4.00728 AU	retrograde	12810 May 29 18:22	22°♄42'28
	12805 Mar 15 04:21	15°♄♄		min. Earth dist.	12810 Jul 28 07:21	17°♄49'40 4.36274 AU
direct	12805 Mar 30 21:19	14°♄35'19		opposition	12810 Jul 29 06:48	17°♄41'55 0°53'43
	12805 Apr 15 15:32	15°♄			12810 Aug 19 23:19	15°♄
	12805 Jul 17 06:39	0°♄		direct	12810 Sep 28 03:34	12°♄41'34
evening set	12805 Aug 04 17:55	4°♄23'12			12810 Nov 06 16:54	15°♄
					12811 Jan 30 08:55	0°♄
conjunction	12805 Aug 17 21:10	7°♄34'32	-0°31'05	evening set	12811 Jan 31 14:29	0°♄15'52
minimum elong	12805 Aug 17 21:11	7°♄34'32	0°31'32			
max. Earth dist.	12805 Aug 17 04:40	7°♄24'29	5.94392 AU	conjunction	12811 Feb 13 21:13	3°♄07'56 0°32'59
morning rise	12805 Aug 31 01:51	10°♄46'53		minimum elong	12811 Feb 13 21:14	3°♄07'56 0°33'30
	12805 Dec 10 17:13	0°♄		max. Earth dist.	12811 Feb 14 18:48	3°♄19'36 6.42959 AU
retrograde	12806 Jan 09 07:03	1°♄24'39		morning rise	12811 Feb 27 02:30	5°♄59'08
	12806 Feb 07 18:59	30°♄		retrograde	12811 Jun 28 19:33	22°♄55'24
opposition	12806 Mar 09 15:18	26°♄25'58	-0°34'22	opposition	12811 Aug 28 17:19	17°♄57'54 0°39'29
min. Earth dist.	12806 Mar 09 13:53	26°♄26'26	3.90358 AU	min. Earth dist.	12811 Aug 28 12:42	17°♄59'24 4.47787 AU
direct	12806 May 07 01:08	21°♄30'48		direct	12811 Oct 29 15:22	12°♄57'01
	12806 Jul 21 10:29	0°♄		evening set	12812 Mar 02 13:40	0°♄04'24
evening set	12806 Sep 11 09:11	11°♄46'53			12812 Mar 02 05:22	0°♄
conjunction	12806 Sep 24 18:36	15°♄03'42	-0°12'03	conjunction	12812 Mar 15 15:57	2°♄51'49 0°19'34
minimum elong	12806 Sep 24 18:37	15°♄03'42	0°11'54	minimum elong	12812 Mar 15 15:57	2°♄51'50 0°19'38
behind sun begin	12806 Sep 24 12:51	15°♄00'11		max. Earth dist.	12812 Mar 15 06:39	2°♄46'52 6.50585 AU
behind sun end	12806 Sep 25 00:23	15°♄07'14		morning rise	12812 Mar 28 16:39	5°♄38'24
max. Earth dist.	12806 Sep 25 16:49	15°♄17'19	5.89180 AU	retrograde	12812 Jul 27 09:19	22°♄12'58

opposition	12812 Sep 26 11:49	17° Υ 17'52	0°15'35			12818 Jun 24 22:38	0° $\underline{\Omega}$	
min. Earth dist.	12812 Sep 27 03:21	17° Υ 12'53	4.51176 AU	evening set		12818 Sep 16 17:03	17° $\underline{\Omega}$ 10'00	
direct	12812 Nov 28 00:18	12° Υ 16'49						
evening set	12813 Apr 01 17:03	29° Υ 20'53		conjunction		12818 Sep 30 03:04	20° $\underline{\Omega}$ 26'58	-0°08'45
	12813 Apr 04 18:24	0° \mathcal{B}		minimum elong		12818 Sep 30 03:04	20° $\underline{\Omega}$ 26'58	0°08'30
max. Earth dist.	12813 Apr 13 05:19	1° \mathcal{B} 48'45	6.49492 AU	behind sun begin		12818 Sep 29 19:47	20° $\underline{\Omega}$ 22'32	
				behind sun end		12818 Sep 30 10:20	20° $\underline{\Omega}$ 31'25	
conjunction	12813 Apr 14 15:52	2° \mathcal{B} 07'18	0°01'13	max. Earth dist.		12818 Oct 01 04:58	20° $\underline{\Omega}$ 42'51	5.89535 AU
minimum elong	12813 Apr 14 15:52	2° \mathcal{B} 07'18	0°00'47	morning rise		12818 Oct 13 15:17	23° $\underline{\Omega}$ 45'02	
behind sun begin	12813 Apr 14 07:52	2° \mathcal{B} 03'01				12818 Nov 09 00:25	0° \mathcal{M}	
behind sun end	12813 Apr 14 23:52	2° \mathcal{B} 11'34		asc. node		12819 Feb 21 20:47	14° \mathcal{M} 35'16	
morning rise	12813 Apr 27 12:47	4° \mathcal{B} 52'58		retrograde		12819 Feb 22 07:33	14° \mathcal{M} 35'17	
desc. node	12813 May 09 22:17	7° \mathcal{B} 30'08		min. Earth dist.		12819 Apr 21 10:14	9° \mathcal{M} 42'43	3.92107 AU
	12813 Jun 17 21:40	15° \mathcal{B}		opposition		12819 Apr 22 14:43	9° \mathcal{M} 33'03	0°05'42
retrograde	12813 Aug 26 12:25	21° \mathcal{B} 36'32		direct		12819 Jun 19 14:55	4° \mathcal{M} 37'29	
opposition	12813 Oct 26 15:45	16° \mathcal{B} 42'48	-0°12'25			12819 Sep 12 16:32	15° \mathcal{M}	
min. Earth dist.	12813 Oct 27 22:41	16° \mathcal{B} 32'55	4.45703 AU	evening set		12819 Oct 24 22:45	24° \mathcal{M} 35'48	
	12813 Nov 09 08:00	15° \mathcal{B}						
direct	12813 Dec 28 03:19	11° \mathcal{B} 41'58		conjunction		12819 Nov 07 12:32	27° \mathcal{M} 50'45	0°15'05
	12814 Feb 14 13:41	15° \mathcal{B}		minimum elong		12819 Nov 07 12:31	27° \mathcal{M} 50'45	0°15'50
evening set	12814 May 02 00:56	29° \mathcal{B} 06'44		behind sun begin		12819 Nov 07 11:39	27° \mathcal{M} 50'14	
	12814 May 06 02:31	0° \mathcal{I}		behind sun end		12819 Nov 07 13:23	27° \mathcal{M} 51'16	
max. Earth dist.	12814 May 12 17:15	1° \mathcal{I} 27'06	6.39941 AU	max. Earth dist.		12819 Nov 09 19:31	28° \mathcal{M} 23'43	5.97271 AU
						12819 Nov 16 12:27	0° \mathcal{J}	
conjunction	12814 May 14 21:17	1° \mathcal{I} 55'43	-0°17'47	morning rise		12819 Nov 21 03:41	1° \mathcal{J} 06'14	
minimum elong	12814 May 14 21:17	1° \mathcal{I} 55'43	0°18'35	retrograde		12820 Mar 29 22:43	21° \mathcal{J} 09'16	
morning rise	12814 May 27 16:18	4° \mathcal{I} 44'19		min. Earth dist.		12820 May 26 21:06	16° \mathcal{J} 18'38	4.04468 AU
retrograde	12814 Sep 27 10:43	22° \mathcal{I} 07'12		opposition		12820 May 28 11:34	16° \mathcal{J} 05'37	0°37'48
opposition	12814 Nov 27 06:31	17° \mathcal{I} 13'43	-0°38'17	direct		12820 Jul 26 03:07	11° \mathcal{J} 08'13	
min. Earth dist.	12814 Nov 28 22:57	17° \mathcal{I} 00'44	4.32595 AU			12820 Nov 28 14:13	0° \mathcal{Z}	
direct	12815 Jan 28 04:27	12° \mathcal{I} 13'38		evening set		12820 Nov 29 21:49	0° \mathcal{Z} 18'08	
	12815 Jun 01 00:29	0° \mathcal{E}						
evening set	12815 Jun 02 12:34	0° \mathcal{E} 20'22		conjunction		12820 Dec 13 11:11	3° \mathcal{Z} 25'37	0°32'12
max. Earth dist.	12815 Jun 12 23:39	2° \mathcal{E} 42'56	6.24180 AU	minimum elong		12820 Dec 13 11:10	3° \mathcal{Z} 25'36	0°33'10
				max. Earth dist.		12820 Dec 15 22:51	4° \mathcal{Z} 00'02	6.12950 AU
conjunction	12815 Jun 15 08:38	3° \mathcal{E} 15'24	-0°32'25	morning rise		12820 Dec 27 01:08	6° \mathcal{Z} 33'00	
minimum elong	12815 Jun 15 08:38	3° \mathcal{E} 15'24	0°33'24	retrograde		12821 May 02 15:55	25° \mathcal{Z} 21'46	
morning rise	12815 Jun 28 04:16	6° \mathcal{E} 10'33		min. Earth dist.		12821 Jun 30 06:30	20° \mathcal{Z} 30'56	4.21817 AU
retrograde	12815 Oct 31 18:58	24° \mathcal{E} 38'34		opposition		12821 Jul 01 18:00	20° \mathcal{Z} 19'02	0°54'08
opposition	12815 Dec 31 03:55	19° \mathcal{E} 44'11	-0°54'26	direct		12821 Aug 30 12:14	15° \mathcal{Z} 19'47	
min. Earth dist.	12816 Jan 01 15:56	19° \mathcal{E} 32'28	4.15213 AU			12821 Dec 18 05:09	0° \approx	
direct	12816 Feb 29 21:05	14° \mathcal{E} 45'39		evening set		12822 Jan 03 14:18	3° \approx 34'04	
	12816 Jun 18 15:06	0° \mathcal{O}						
evening set	12816 Jul 05 00:27	3° \mathcal{O} 47'37		conjunction		12822 Jan 17 00:38	6° \approx 32'39	0°37'34
max. Earth dist.	12816 Jul 16 04:57	6° \mathcal{O} 26'12	6.06608 AU	minimum elong		12822 Jan 17 00:38	6° \approx 32'39	0°38'24
				max. Earth dist.		12822 Jan 18 20:31	6° \approx 57'00	6.30488 AU
conjunction	12816 Jul 17 23:10	6° \mathcal{O} 51'14	-0°37'26	morning rise		12822 Jan 30 10:20	9° \approx 30'36	
minimum elong	12816 Jul 17 23:10	6° \mathcal{O} 51'14	0°38'16			12822 Feb 25 02:03	15° \approx	
morning rise	12816 Jul 30 22:24	9° \mathcal{O} 55'30		retrograde		12822 Jun 03 02:12	27° \approx 09'47	
	12816 Aug 21 21:07	15° \mathcal{O}		opposition		12822 Aug 02 15:04	22° \approx 09'43	0°52'28
retrograde	12816 Dec 06 21:33	29° \mathcal{O} 39'48		min. Earth dist.		12822 Aug 01 18:24	22° \approx 16'31	4.38087 AU
opposition	12817 Feb 04 15:32	24° \mathcal{O} 43'34	-0°52'47	direct		12822 Oct 02 16:07	17° \approx 09'22	
min. Earth dist.	12817 Feb 05 11:58	24° \mathcal{O} 36'48	3.98939 AU			12823 Jan 13 20:25	0° \mathcal{H}	
direct	12817 Apr 05 00:42	19° \mathcal{O} 47'05		evening set		12823 Feb 05 00:46	4° \mathcal{H} 39'19	
	12817 Jun 28 17:36	0° \mathcal{P}						
evening set	12817 Aug 09 21:55	9° \mathcal{P} 40'05		conjunction		12823 Feb 18 06:49	7° \mathcal{H} 30'37	0°31'31
				minimum elong		12823 Feb 18 06:50	7° \mathcal{H} 30'38	0°31'58
conjunction	12817 Aug 23 01:59	12° \mathcal{P} 52'21	-0°29'02	max. Earth dist.		12823 Feb 18 23:40	7° \mathcal{H} 39'42	6.44313 AU
minimum elong	12817 Aug 23 02:00	12° \mathcal{P} 52'22	0°29'24	morning rise		12823 Mar 03 11:35	10° \mathcal{H} 21'05	
max. Earth dist.	12817 Aug 22 14:01	12° \mathcal{P} 45'04	5.93207 AU	retrograde		12823 Jul 02 23:52	27° \mathcal{H} 13'14	
morning rise	12817 Sep 05 07:40	16° \mathcal{P} 05'43		opposition		12823 Sep 01 22:16	22° \mathcal{H} 16'09	0°36'32
	12817 Nov 07 18:01	0° $\underline{\Omega}$		min. Earth dist.		12823 Sep 01 20:13	22° \mathcal{H} 16'49	4.48641 AU
retrograde	12818 Jan 14 17:11	6° $\underline{\Omega}$ 48'04		direct		12823 Nov 02 22:25	17° \mathcal{H} 15'18	
opposition	12818 Mar 15 01:02	1° $\underline{\Omega}$ 48'57	-0°30'01			12824 Feb 14 20:31	0° Υ	
min. Earth dist.	12818 Mar 14 19:18	1° $\underline{\Omega}$ 50'52	3.89929 AU	evening set		12824 Mar 06 20:20	4° Υ 21'19	
	12818 Mar 28 21:52	30° \mathcal{R} \mathcal{P}						
direct	12818 May 12 07:25	26° \mathcal{P} 53'52		conjunction		12824 Mar 19 22:15	7° Υ 08'27	0°17'10

minimum elong	12824 Mar 19 22:15	7°♈08'27	0°17'08	opposition	12830 Mar 20 04:45	6°♊58'15	-0°25'39
max. Earth dist.	12824 Mar 19 10:55	7°♈02'24	6.50918 AU	min. Earth dist.	12830 Mar 19 20:38	7°♊00'59	3.89558 AU
morning rise	12824 Apr 01 22:11	9°♈54'41		direct	12830 May 17 09:43	2°♊03'08	
retrograde	12824 Jul 31 13:23	26°♈28'49		evening set	12830 Sep 21 19:14	22°♊19'35	
opposition	12824 Sep 30 16:49	21°♈34'04	0°11'43				
min. Earth dist.	12824 Oct 01 09:49	21°♈28'37	4.51008 AU	conjunction	12830 Oct 05 06:07	25°♊36'49	-0°05'33
direct	12824 Dec 02 05:10	16°♈33'10		minimum elong	12830 Oct 05 06:07	25°♊36'48	0°05'13
desc. node	12825 Mar 16 20:15	29°♈26'18		behind sun begin	12830 Oct 04 22:02	25°♊31'53	
	12825 Mar 19 14:15	0°♈		behind sun end	12830 Oct 05 14:12	25°♊41'44	
evening set	12825 Apr 05 22:57	3°♈38'26		max. Earth dist.	12830 Oct 06 13:05	25°♊55'46	5.89754 AU
max. Earth dist.	12825 Apr 17 07:37	6°♈04'41	6.48851 AU	morning rise	12830 Oct 18 18:52	28°♊55'02	
					12830 Oct 23 06:15	0°♋	
conjunction	12825 Apr 18 21:08	6°♈24'53	-0°01'36		12831 Jan 02 22:24	15°♋	
minimum elong	12825 Apr 18 21:09	6°♈24'53	0°02'06	asc. node	12831 Jan 05 13:05	15°♋24'13	
behind sun begin	12825 Apr 18 13:09	6°♈20'36		retrograde	12831 Feb 27 10:06	19°♋42'57	
behind sun end	12825 Apr 19 05:09	6°♈29'10			12831 Apr 25 06:22	15°♋	
morning rise	12825 May 01 17:47	9°♈10'41		min. Earth dist.	12831 Apr 26 10:19	14°♋50'32	3.92897 AU
	12825 May 29 19:20	15°♈		opposition	12831 Apr 27 15:58	14°♋40'28	0°10'34
retrograde	12825 Aug 30 22:05	25°♈57'14		direct	12831 Jun 24 16:52	9°♋44'43	
opposition	12825 Oct 30 23:55	21°♈03'39	-0°16'20		12831 Aug 21 18:16	15°♋	
min. Earth dist.	12825 Nov 01 08:58	20°♈53'05	4.44637 AU	evening set	12831 Oct 30 00:26	29°♋39'35	
direct	12826 Jan 01 11:29	16°♈02'56			12831 Oct 31 10:45	0°♌	
	12826 Apr 19 23:52	0°♐					
evening set	12826 May 06 08:18	3°♐31'02		conjunction	12831 Nov 12 14:23	2°♌54'03	0°17'55
max. Earth dist.	12826 May 16 23:16	5°♐51'08	6.38529 AU	minimum elong	12831 Nov 12 14:22	2°♌54'02	0°18'45
				max. Earth dist.	12831 Nov 14 22:23	3°♌27'29	5.98529 AU
conjunction	12826 May 19 04:28	6°♐20'29	-0°20'11	morning rise	12831 Nov 26 05:53	6°♌09'00	
minimum elong	12826 May 19 04:27	6°♐20'28	0°21'02	retrograde	12832 Apr 03 16:05	26°♌05'06	
morning rise	12826 May 31 23:17	9°♐09'33		min. Earth dist.	12832 May 31 15:27	21°♌14'47	4.06067 AU
retrograde	12826 Oct 01 23:28	26°♐38'21		opposition	12832 Jun 02 06:56	21°♌01'25	0°41'04
opposition	12826 Dec 01 19:33	21°♐44'47	-0°41'15	direct	12832 Jul 30 23:53	16°♌03'44	
min. Earth dist.	12826 Dec 03 10:56	21°♐32'07	4.30932 AU		12832 Nov 11 20:53	0°♍	
direct	12827 Feb 01 13:44	16°♐44'53		evening set	12832 Dec 04 19:02	5°♍08'20	
	12827 May 15 16:07	0°♍					
evening set	12827 Jun 06 23:57	4°♍56'36		conjunction	12832 Dec 18 08:14	8°♍14'56	0°33'38
max. Earth dist.	12827 Jun 17 12:59	7°♍20'50	6.22390 AU	minimum elong	12832 Dec 18 08:14	8°♍14'55	0°34'36
				max. Earth dist.	12832 Dec 20 18:29	8°♍48'24	6.14753 AU
conjunction	12827 Jun 19 20:04	7°♍52'23	-0°33'46	morning rise	12832 Dec 31 21:49	11°♍21'20	
minimum elong	12827 Jun 19 20:04	7°♍52'22	0°34'44		12833 May 02 15:41	0°♎	
morning rise	12827 Jul 02 15:49	10°♍48'19		retrograde	12833 May 07 04:50	0°♎02'02	
retrograde	12827 Nov 05 16:35	29°♍24'14			12833 May 11 17:38	30°♎	
opposition	12828 Jan 04 23:27	24°♍29'39	-0°55'20	min. Earth dist.	12833 Jul 04 21:36	25°♎10'45	4.23649 AU
min. Earth dist.	12828 Jan 06 11:07	24°♍18'02	4.13411 AU	opposition	12833 Jul 06 07:06	24°♎59'33	0°54'53
direct	12828 Mar 05 14:02	19°♍31'21		direct	12833 Sep 04 05:49	20°♎00'05	
	12828 Jun 01 04:18	0°♏			12833 Nov 30 10:26	0°♎	
evening set	12828 Jul 09 17:17	8°♏38'39		evening set	12834 Jan 08 05:42	8°♎09'07	
max. Earth dist.	12828 Jul 21 00:03	11°♏19'11	6.04948 AU				
				conjunction	12834 Jan 21 15:37	11°♎06'48	0°37'18
conjunction	12828 Jul 22 16:28	11°♏43'13	-0°37'05	minimum elong	12834 Jan 21 15:37	11°♎06'48	0°38'06
minimum elong	12828 Jul 22 16:28	11°♏43'13	0°37'53	max. Earth dist.	12834 Jan 23 09:39	11°♎30'02	6.32212 AU
morning rise	12828 Aug 04 16:24	14°♏48'31		morning rise	12834 Feb 04 00:46	14°♎03'49	
	12828 Aug 05 11:49	15°♏			12834 Feb 08 07:39	15°♎	
	12828 Oct 17 03:03	0°♐			12834 May 06 00:46	0°♐	
retrograde	12828 Dec 11 23:12	4°♐40'26		retrograde	12834 Jun 07 07:31	1°♐36'17	
	12829 Feb 07 15:54	30°♐			12834 Jul 09 11:44	30°♐	
opposition	12829 Feb 09 16:45	29°♐43'51	-0°50'51	opposition	12834 Aug 06 22:49	26°♐36'32	0°50'55
min. Earth dist.	12829 Feb 10 09:51	29°♐38'11	3.97590 AU	min. Earth dist.	12834 Aug 06 03:15	26°♐42'58	4.39589 AU
direct	12829 Apr 09 21:25	24°♐47'34		direct	12834 Oct 07 02:29	21°♐36'01	
	12829 Jun 07 00:16	0°♐			12834 Dec 26 13:06	0°♐	
evening set	12829 Aug 14 20:33	14°♐44'20		evening set	12835 Feb 09 10:51	9°♐02'13	
conjunction	12829 Aug 28 01:16	17°♐57'23	-0°26'51	conjunction	12835 Feb 22 16:22	11°♐52'50	0°29'51
minimum elong	12829 Aug 28 01:17	17°♐57'23	0°27'09	minimum elong	12835 Feb 22 16:23	11°♐52'50	0°30'16
max. Earth dist.	12829 Aug 27 17:00	17°♐52'20	5.92296 AU	max. Earth dist.	12835 Feb 23 06:14	12°♐00'18	6.45493 AU
morning rise	12829 Sep 10 07:52	21°♐11'35		morning rise	12835 Mar 07 20:24	14°♐42'35	
	12829 Oct 18 05:04	0°♑			12835 Jun 05 13:01	0°♑	
retrograde	12830 Jan 19 21:14	11°♑57'50		retrograde	12835 Jul 07 04:18	1°♑30'46	

	12835 Aug 07 16:19	30° RH		conjunction	12840 Jul 27 14:09	16° $\text{Q}\text{A5}'15$	-0°36'28
opposition	12835 Sep 06 03:31	26° $\text{H}\text{33}'58$	0°33'23	minimum elong	12840 Jul 27 14:10	16° $\text{Q}\text{A5}'15$	0°37'12
min. Earth dist.	12835 Sep 06 04:04	26° $\text{H}\text{33}'48$	4.49408 AU	morning rise	12840 Aug 09 14:56	19° $\text{Q}\text{A5}'15$	
direct	12835 Nov 07 06:49	21° $\text{H}\text{33}'04$			12840 Sep 23 18:29	0° H	
	12836 Jan 27 20:29	0° Y		retrograde	12840 Dec 17 08:16	9° $\text{H}\text{53}'50$	
evening set	12836 Mar 11 02:46	8° $\text{Y}\text{37}'24$		opposition	12841 Feb 14 23:20	4° $\text{H}\text{56}'54$	-0°48'27
				min. Earth dist.	12841 Feb 15 13:51	4° $\text{H}\text{52}'05$	3.95782 AU
conjunction	12836 Mar 24 04:00	11° $\text{Y}\text{24}'11$	0°14'39	direct	12841 Apr 15 00:49	0° $\text{H}\text{00}'51$	
minimum elong	12836 Mar 24 04:00	11° $\text{Y}\text{24}'12$	0°14'33	evening set	12841 Aug 20 01:23	20° $\text{H}\text{03}'15$	
behind sun begin	12836 Mar 24 00:35	11° $\text{Y}\text{22}'23$					
behind sun end	12836 Mar 24 07:25	11° $\text{Y}\text{26}'00$		conjunction	12841 Sep 02 07:12	23° $\text{H}\text{17}'22$	-0°24'21
max. Earth dist.	12836 Mar 23 12:11	11° $\text{Y}\text{15}'45$	6.51187 AU	minimum elong	12841 Sep 02 07:13	23° $\text{H}\text{17}'22$	0°24'35
morning rise	12836 Apr 06 03:32	14° $\text{Y}\text{10}'08$		max. Earth dist.	12841 Sep 02 05:01	23° $\text{H}\text{16}'02$	5.91101 AU
	12836 Jul 13 21:09	0° B		morning rise	12841 Sep 15 14:42	26° $\text{H}\text{32}'35$	
retrograde	12836 Aug 04 18:29	0° $\text{B}\text{43}'50$			12841 Sep 29 23:43	0° A	
	12836 Aug 26 13:24	30° RY		retrograde	12842 Jan 25 09:03	17° $\text{A}\text{23}'26$	
opposition	12836 Oct 04 22:04	25° $\text{Y}\text{49}'12$	0°07'47	opposition	12842 Mar 25 14:49	12° $\text{A}\text{23}'30$	-0°20'50
min. Earth dist.	12836 Oct 05 17:29	25° $\text{Y}\text{42}'58$	4.50741 AU	min. Earth dist.	12842 Mar 25 03:37	12° $\text{A}\text{27}'16$	3.89136 AU
direct	12836 Dec 06 11:31	20° $\text{Y}\text{48}'14$		direct	12842 May 22 17:14	7° $\text{A}\text{28}'29$	
desc. node	12837 Jan 21 12:37	23° $\text{Y}\text{46}'27$		evening set	12842 Sep 27 04:21	27° $\text{A}\text{45}'17$	
	12837 Mar 02 03:14	0° B			12842 Oct 06 09:18	0° M	
evening set	12837 Apr 10 04:24	7° $\text{B}\text{54}'42$					
max. Earth dist.	12837 Apr 21 11:23	10° $\text{B}\text{20}'17$	6.48035 AU	conjunction	12842 Oct 10 15:48	1° $\text{M}\text{02}'39$	-0°02'06
				minimum elong	12842 Oct 10 15:48	1° $\text{M}\text{02}'39$	0°01'41
conjunction	12837 Apr 23 02:23	10° $\text{B}\text{41}'19$	-0°04'22	behind sun begin	12842 Oct 10 07:26	0° $\text{M}\text{57}'33$	
minimum elong	12837 Apr 23 02:22	10° $\text{B}\text{41}'18$	0°04'54	behind sun end	12842 Oct 11 00:11	1° $\text{M}\text{07}'45$	
behind sun begin	12837 Apr 22 18:35	10° $\text{B}\text{37}'08$		max. Earth dist.	12842 Oct 12 02:23	1° $\text{M}\text{23}'46$	5.90134 AU
behind sun end	12837 Apr 23 10:08	10° $\text{B}\text{45}'29$		morning rise	12842 Oct 24 05:26	4° $\text{M}\text{21}'02$	
morning rise	12837 May 05 22:26	13° $\text{B}\text{27}'13$		asc. node	12842 Nov 14 16:14	9° $\text{M}\text{26}'56$	
	12837 May 13 04:29	15° B			12842 Dec 09 21:56	15° M	
	12837 Aug 21 13:53	0° II		retrograde	12843 Mar 04 15:52	25° $\text{M}\text{05}'26$	
retrograde	12837 Sep 04 05:36	0° $\text{II}\text{17}'16$		opposition	12843 May 02 22:56	20° $\text{M}\text{02}'42$	0°15'36
	12837 Sep 17 21:06	30° RB		min. Earth dist.	12843 May 01 14:08	20° $\text{M}\text{13}'50$	3.94051 AU
opposition	12837 Nov 04 08:02	25° $\text{B}\text{23}'43$	-0°20'11	direct	12843 Jun 30 00:02	15° $\text{M}\text{06}'45$	
min. Earth dist.	12837 Nov 05 17:57	25° $\text{B}\text{12}'53$	4.43295 AU		12843 Oct 14 01:31	0° A	
direct	12838 Jan 05 17:45	20° $\text{B}\text{23}'06$		evening set	12843 Nov 04 07:44	4° $\text{A}\text{56}'40$	
	12838 Apr 02 15:09	0° II					
evening set	12838 May 10 16:12	7° $\text{II}\text{55}'30$		conjunction	12843 Nov 17 21:51	8° $\text{A}\text{10}'20$	0°20'47
max. Earth dist.	12838 May 21 05:15	10° $\text{II}\text{15}'10$	6.36727 AU	minimum elong	12843 Nov 17 21:50	8° $\text{A}\text{10}'20$	0°21'39
				max. Earth dist.	12843 Nov 20 07:33	8° $\text{A}\text{44}'39$	6.00351 AU
conjunction	12838 May 23 12:03	10° $\text{II}\text{45}'32$	-0°22'31	morning rise	12843 Dec 01 13:17	11° $\text{A}\text{24}'22$	
minimum elong	12838 May 23 12:03	10° $\text{II}\text{45}'32$	0°23'24		12844 Mar 12 13:20	0° B	
morning rise	12838 Jun 05 06:54	13° $\text{II}\text{35}'18$		retrograde	12844 Apr 08 14:20	1° $\text{B}\text{11}'03$	
	12838 Sep 08 17:34	0° B			12844 May 05 11:04	30° RA	
retrograde	12838 Oct 06 16:18	1° $\text{B}\text{11}'37$		min. Earth dist.	12844 Jun 05 15:14	26° $\text{A}\text{20}'34$	4.08348 AU
	12838 Nov 03 13:54	30° RII		opposition	12844 Jun 07 06:12	26° $\text{A}\text{07}'23$	0°44'10
opposition	12838 Dec 06 10:08	26° $\text{II}\text{17}'58$	-0°44'02	direct	12844 Aug 05 03:33	21° $\text{A}\text{09}'28$	
min. Earth dist.	12838 Dec 08 02:40	26° $\text{II}\text{04}'55$	4.28753 AU		12844 Oct 23 15:00	0° B	
direct	12839 Feb 06 02:07	21° $\text{II}\text{18}'13$		evening set	12844 Dec 09 19:29	10° $\text{B}\text{06}'11$	
	12839 Apr 27 11:08	0° B					
evening set	12839 Jun 11 13:03	9° $\text{B}\text{36}'49$		conjunction	12844 Dec 23 08:25	13° $\text{B}\text{11}'31$	0°34'54
max. Earth dist.	12839 Jun 22 02:41	12° $\text{B}\text{02}'11$	6.20001 AU	minimum elong	12844 Dec 23 08:25	13° $\text{B}\text{11}'30$	0°35'52
				max. Earth dist.	12844 Dec 25 19:00	13° $\text{B}\text{44}'57$	6.17301 AU
conjunction	12839 Jun 24 09:28	12° $\text{B}\text{33}'42$	-0°34'56	morning rise	12845 Jan 05 21:26	16° $\text{B}\text{16}'32$	
minimum elong	12839 Jun 24 09:28	12° $\text{B}\text{33}'42$	0°35'53		12845 Mar 15 18:02	0° A	
morning rise	12839 Jul 07 05:35	15° $\text{B}\text{30}'48$		retrograde	12845 May 11 16:03	4° $\text{A}\text{46}'20$	
	12839 Sep 17 20:00	0° Q			12845 Jul 08 21:47	30° RB	
retrograde	12839 Nov 10 16:02	4° $\text{Q}\text{17}'04$		opposition	12845 Jul 10 21:20	29° $\text{B}\text{44}'09$	0°55'19
	12840 Jan 05 02:14	30° RB		min. Earth dist.	12845 Jul 09 12:07	29° $\text{B}\text{55}'13$	4.26239 AU
opposition	12840 Jan 09 22:12	29° $\text{B}\text{22}'17$	-0°55'55	direct	12845 Sep 08 23:46	24° $\text{B}\text{44}'32$	
min. Earth dist.	12840 Jan 11 07:33	29° $\text{B}\text{11}'25$	4.11001 AU		12845 Nov 08 18:32	0° A	
direct	12840 Mar 10 07:20	24° $\text{B}\text{24}'17$		evening set	12846 Jan 12 21:36	12° $\text{A}\text{45}'52$	
	12840 May 10 19:30	0° Q			12846 Jan 23 01:58	15° A	
evening set	12840 Jul 14 14:24	13° $\text{Q}\text{39}'24$					
	12840 Jul 20 05:59	15° Q		conjunction	12846 Jan 26 06:47	15° $\text{A}\text{42}'16$	0°36'51
max. Earth dist.	12840 Jul 26 01:00	16° $\text{Q}\text{23}'03$	6.02734 AU	minimum elong	12846 Jan 26 06:48	15° $\text{A}\text{42}'16$	0°37'36
				max. Earth dist.	12846 Jan 27 20:30	16° $\text{A}\text{03}'01$	6.34639 AU

morning rise	12846 Feb 08 15:15	18° \approx 37'59		max. Earth dist.	12851 Jun 26 17:42	16° \approx 46'34	6.17161 AU
	12846 Apr 07 00:10	0° \mathbb{H}					
retrograde	12846 Jun 11 14:02	6° \mathbb{H} 01'48		conjunction	12851 Jun 28 23:55	17° \approx 17'59	-0°35'54
opposition	12846 Aug 11 06:14	1° \mathbb{H} 02'26	0°49'08	minimum elong	12851 Jun 28 23:55	17° \approx 17'58	0°36'51
min. Earth dist.	12846 Aug 10 14:01	1° \mathbb{H} 07'45	4.41670 AU	morning rise	12851 Jul 11 20:39	20° \approx 16'31	
	12846 Aug 19 06:08	30° \mathbb{R} \approx			12851 Aug 25 14:30	0° \mathbb{Q}	
direct	12846 Oct 11 15:16	26° \approx 01'48		retrograde	12851 Nov 15 20:04	9° \mathbb{Q} 14'55	
	12846 Dec 03 18:07	0° \mathbb{H}		opposition	12852 Jan 14 22:55	4° \mathbb{Q} 19'52	-0°56'10
evening set	12847 Feb 13 19:20	13° \mathbb{H} 22'32		min. Earth dist.	12852 Jan 16 06:52	4° \mathbb{Q} 09'25	4.08181 AU
					12852 Feb 24 08:59	30° \mathbb{R} \approx	
conjunction	12847 Feb 27 00:14	16° \mathbb{H} 12'17	0°28'06	direct	12852 Mar 15 03:55	29° \approx 22'04	
minimum elong	12847 Feb 27 00:15	16° \mathbb{H} 12'17	0°28'26		12852 Apr 03 21:00	0° \mathbb{Q}	
max. Earth dist.	12847 Feb 27 10:19	16° \mathbb{H} 17'41	6.47071 AU		12852 Jul 03 12:19	15° \mathbb{Q}	
morning rise	12847 Mar 12 03:31	19° \mathbb{H} 01'08		evening set	12852 Jul 19 13:56	18° \mathbb{Q} 46'32	
	12847 May 07 21:31	0° \mathbb{Y}		max. Earth dist.	12852 Jul 31 06:10	21° \mathbb{Q} 34'24	6.00213 AU
retrograde	12847 Jul 11 05:17	5° \mathbb{Y} 44'32					
opposition	12847 Sep 10 06:49	0° \mathbb{Y} 48'02	0°30'10	conjunction	12852 Aug 01 14:40	21° \mathbb{Q} 53'56	-0°35'35
min. Earth dist.	12847 Sep 10 09:34	0° \mathbb{Y} 47'09	4.50398 AU	minimum elong	12852 Aug 01 14:41	21° \mathbb{Q} 53'56	0°36'15
	12847 Sep 16 12:16	30° \mathbb{R} \mathbb{H}		morning rise	12852 Aug 14 16:19	25° \mathbb{Q} 02'11	
direct	12847 Nov 11 12:05	25° \mathbb{H} 47'03			12852 Sep 04 20:03	0° \mathbb{M}	
	12848 Jan 06 00:18	0° \mathbb{Y}		retrograde	12852 Dec 22 20:43	15° \mathbb{M} 14'59	
evening set	12848 Mar 15 07:04	12° \mathbb{Y} 49'21		opposition	12853 Feb 20 09:04	10° \mathbb{M} 17'41	-0°45'38
				min. Earth dist.	12853 Feb 20 20:05	10° \mathbb{M} 14'02	3.93849 AU
conjunction	12848 Mar 28 07:48	15° \mathbb{Y} 35'47	0°12'10	direct	12853 Apr 20 05:01	5° \mathbb{M} 21'55	
minimum elong	12848 Mar 28 07:48	15° \mathbb{Y} 35'47	0°11'59	evening set	12853 Aug 25 09:47	25° \mathbb{M} 30'11	
behind sun begin	12848 Mar 28 02:19	15° \mathbb{Y} 32'52					
behind sun end	12848 Mar 28 13:17	15° \mathbb{Y} 38'41		conjunction	12853 Sep 07 16:24	28° \mathbb{M} 45'17	-0°21'38
max. Earth dist.	12848 Mar 27 12:52	15° \mathbb{Y} 25'41	6.51515 AU	minimum elong	12853 Sep 07 16:25	28° \mathbb{M} 45'17	0°21'45
morning rise	12848 Apr 10 06:38	18° \mathbb{Y} 21'21		max. Earth dist.	12853 Sep 07 18:50	28° \mathbb{M} 46'46	5.89950 AU
	12848 Jun 10 15:42	0° \mathbb{B}			12853 Sep 12 18:13	0° \mathbb{L}	
retrograde	12848 Aug 08 21:07	4° \mathbb{B} 54'45		morning rise	12853 Sep 21 01:06	2° \mathbb{L} 01'35	
opposition	12848 Oct 09 01:15	0° \mathbb{B} 00'19	0°03'55	retrograde	12854 Jan 30 21:34	22° \mathbb{L} 56'15	
	12848 Oct 09 02:15	30° \mathbb{R} \mathbb{Y}		min. Earth dist.	12854 Mar 30 11:40	18° \mathbb{L} 01'12	3.88931 AU
min. Earth dist.	12848 Oct 09 23:38	29° \mathbb{Y} 53'10	4.50379 AU	opposition	12854 Mar 31 03:37	17° \mathbb{L} 55'48	-0°15'46
desc. node	12848 Dec 01 12:12	25° \mathbb{Y} 06'52		direct	12854 May 28 04:03	13° \mathbb{L} 00'45	
direct	12848 Dec 10 16:11	24° \mathbb{Y} 59'20			12854 Sep 19 00:36	0° \mathbb{M}	
	12849 Feb 09 13:55	0° \mathbb{B}		asc. node	12854 Sep 21 08:41	0° \mathbb{M} 33'20	
evening set	12849 Apr 14 08:06	12° \mathbb{B} 07'32		evening set	12854 Oct 02 16:17	3° \mathbb{M} 16'41	
max. Earth dist.	12849 Apr 25 09:45	14° \mathbb{B} 30'40	6.46978 AU				
				conjunction	12854 Oct 16 04:27	6° \mathbb{M} 34'00	0°01'29
conjunction	12849 Apr 27 05:33	14° \mathbb{B} 54'21	-0°07'01	minimum elong	12854 Oct 16 04:26	6° \mathbb{M} 33'59	0°01'59
minimum elong	12849 Apr 27 05:32	14° \mathbb{B} 54'20	0°07'38	behind sun begin	12854 Oct 15 20:03	6° \mathbb{M} 28'54	
behind sun begin	12849 Apr 26 22:18	14° \mathbb{B} 50'27		behind sun end	12854 Oct 16 12:48	6° \mathbb{M} 39'04	
behind sun end	12849 Apr 27 12:46	14° \mathbb{B} 58'14		max. Earth dist.	12854 Oct 17 20:35	6° \mathbb{M} 58'28	5.90900 AU
	12849 Apr 27 16:02	15° \mathbb{B}		morning rise	12854 Oct 29 18:30	9° \mathbb{M} 52'11	
morning rise	12849 May 10 01:29	17° \mathbb{B} 40'34			12854 Nov 20 10:03	15° \mathbb{M}	
	12849 Jul 13 16:42	0° \mathbb{I}			12855 Feb 20 09:29	0° \mathbb{X}	
retrograde	12849 Sep 08 14:00	4° \mathbb{I} 35'12		retrograde	12855 Mar 09 23:35	0° \mathbb{X} 30'53	
	12849 Nov 06 05:52	30° \mathbb{R} \mathbb{B}			12855 Mar 27 10:50	30° \mathbb{R} \mathbb{M}	
opposition	12849 Nov 08 15:16	29° \mathbb{B} 41'38	-0°23'53	min. Earth dist.	12855 May 06 20:59	25° \mathbb{M} 39'23	3.95669 AU
min. Earth dist.	12849 Nov 10 03:22	29° \mathbb{B} 30'04	4.41588 AU	opposition	12855 May 08 07:08	25° \mathbb{M} 27'46	0°20'30
direct	12850 Jan 09 23:54	24° \mathbb{B} 40'57		direct	12855 Jul 05 10:57	20° \mathbb{M} 31'33	
	12850 Mar 13 04:55	0° \mathbb{I}			12855 Sep 24 14:59	0° \mathbb{X}	
evening set	12850 May 14 23:03	12° \mathbb{I} 18'57		evening set	12855 Nov 09 15:50	10° \mathbb{X} 14'27	
max. Earth dist.	12850 May 25 11:17	14° \mathbb{I} 38'48	6.34482 AU				
				conjunction	12855 Nov 23 06:02	13° \mathbb{X} 27'03	0°23'28
conjunction	12850 May 27 19:01	15° \mathbb{I} 09'50	-0°24'41	minimum elong	12855 Nov 23 06:01	13° \mathbb{X} 27'03	0°24'22
minimum elong	12850 May 27 19:00	15° \mathbb{I} 09'50	0°25'36	max. Earth dist.	12855 Nov 25 18:48	14° \mathbb{X} 02'58	6.02629 AU
morning rise	12850 Jun 09 13:46	18° \mathbb{I} 00'29		morning rise	12855 Dec 06 21:16	16° \mathbb{X} 39'54	
	12850 Aug 08 10:37	0° \mathbb{L}			12856 Feb 08 02:40	0° \mathbb{Z}	
retrograde	12850 Oct 11 07:46	5° \mathbb{L} 45'55		retrograde	12856 Apr 13 10:45	6° \mathbb{Z} 15'09	
opposition	12850 Dec 11 00:47	0° \mathbb{L} 52'09	-0°46'35	min. Earth dist.	12856 Jun 10 13:13	1° \mathbb{Z} 24'57	4.11017 AU
min. Earth dist.	12850 Dec 12 17:04	0° \mathbb{L} 39'10	4.26111 AU	opposition	12856 Jun 12 04:55	1° \mathbb{Z} 11'34	0°46'52
	12850 Dec 17 19:22	30° \mathbb{R} \mathbb{I}			12856 Jun 21 03:22	30° \mathbb{R} \mathbb{X}	
direct	12851 Feb 10 12:19	25° \mathbb{I} 52'34		direct	12856 Aug 10 05:27	26° \mathbb{X} 13'22	
	12851 Apr 04 17:19	0° \mathbb{L}			12856 Sep 29 00:27	0° \mathbb{Z}	
evening set	12851 Jun 16 03:17	14° \mathbb{L} 19'48		evening set	12856 Dec 14 19:06	15° \mathbb{Z} 01'00	

conjunction	12856 Dec 28 07:25	18° S 04'51	0°35'54	max. Earth dist.	12862 May 29 19:30	19° II 10'28	6.32040 AU
minimum elong	12856 Dec 28 07:24	18° S 04'51	0°36'51				
max. Earth dist.	12856 Dec 30 14:42	18° S 36'13	6.20093 AU	conjunction	12862 Jun 01 05:15	19° II 42'49	-0°26'47
morning rise	12857 Jan 10 19:56	21° S 08'23		minimum elong	12862 Jun 01 05:14	19° II 42'48	0°27'43
	12857 Feb 21 11:08	0° \approx		morning rise	12862 Jun 14 00:17	22° II 34'31	
retrograde	12857 May 16 03:55	9° \approx 26'59			12862 Jul 18 16:55	0° S	
min. Earth dist.	12857 Jul 14 04:12	4° \approx 35'18	4.28897 AU	retrograde	12862 Oct 16 04:56	10° S 30'00	
opposition	12857 Jul 15 10:43	4° \approx 25'09	0°55'22	opposition	12862 Dec 15 19:34	5° S 36'08	-0°48'56
	12857 Aug 25 17:23	30° R S		min. Earth dist.	12862 Dec 17 11:33	5° S 23'13	4.23391 AU
direct	12857 Sep 13 18:44	29° S 25'18		direct	12863 Feb 15 03:28	0° S 36'46	
	12857 Oct 02 22:52	0° \approx		evening set	12863 Jun 20 20:59	19° S 12'51	
	12858 Jan 06 18:39	15° \approx		max. Earth dist.	12863 Jul 01 14:58	21° S 42'34	6.14405 AU
evening set	12858 Jan 17 12:17	17° \approx 19'05					
				conjunction	12863 Jul 03 18:13	22° S 12'25	-0°36'38
conjunction	12858 Jan 30 20:59	20° \approx 14'19	0°36'10	minimum elong	12863 Jul 03 18:13	22° S 12'25	0°37'34
minimum elong	12858 Jan 30 21:00	20° \approx 14'19	0°36'52	morning rise	12863 Jul 16 15:22	25° S 12'22	
max. Earth dist.	12858 Feb 01 08:13	20° \approx 33'36	6.36970 AU		12863 Aug 06 16:59	0° S	
morning rise	12858 Feb 13 04:33	23° \approx 08'46		retrograde	12863 Nov 21 03:24	14° S 22'39	
	12858 Mar 18 00:54	0° H		opposition	12864 Jan 20 03:30	9° S 27'26	-0°55'58
retrograde	12858 Jun 15 18:08	10° H 24'38		min. Earth dist.	12864 Jan 21 09:03	9° S 17'45	4.05645 AU
opposition	12858 Aug 15 12:48	5° H 25'45	0°47'03	direct	12864 Mar 20 02:52	4° S 30'03	
min. Earth dist.	12858 Aug 14 22:32	5° H 30'25	4.43523 AU		12864 Jun 14 22:44	15° S	
direct	12858 Oct 16 00:39	0° H 25'05		evening set	12864 Jul 24 16:56	24° S 02'39	
evening set	12859 Feb 18 03:40	17° H 41'28					
				conjunction	12864 Aug 06 18:16	27° S 11'20	-0°34'23
conjunction	12859 Mar 03 07:49	20° H 30'28	0°26'10	minimum elong	12864 Aug 06 18:17	27° S 11'21	0°34'59
minimum elong	12859 Mar 03 07:50	20° H 30'29	0°26'25	max. Earth dist.	12864 Aug 05 13:24	26° S 53'54	5.98152 AU
max. Earth dist.	12859 Mar 03 12:32	20° H 33'00	6.48326 AU		12864 Aug 18 10:02	0° H	
morning rise	12859 Mar 16 10:30	23° H 18'37		morning rise	12864 Aug 19 21:01	0° H 21'00	
	12859 Apr 18 04:06	0° Y		retrograde	12864 Dec 28 08:31	20° H 42'40	
retrograde	12859 Jul 15 09:30	9° Y 58'34		opposition	12865 Feb 25 20:46	15° H 44'57	-0°42'21
opposition	12859 Sep 14 10:54	5° Y 02'30	0°26'44	min. Earth dist.	12865 Feb 26 02:55	15° H 42'54	3.92518 AU
min. Earth dist.	12859 Sep 14 17:37	5° Y 00'20	4.50988 AU	direct	12865 Apr 25 12:45	10° H 49'24	
direct	12859 Nov 15 19:26	0° Y 01'31			12865 Aug 26 15:11	0° S	
evening set	12860 Mar 19 12:08	17° Y 03'09		evening set	12865 Aug 30 19:32	1° S 01'00	
conjunction	12860 Apr 01 12:22	19° Y 49'26	0°09'33	conjunction	12865 Sep 13 03:07	4° S 16'45	-0°18'42
minimum elong	12860 Apr 01 12:22	19° Y 49'26	0°09'19	minimum elong	12865 Sep 13 03:07	4° S 16'46	0°18'43
behind sun begin	12860 Apr 01 05:38	19° Y 45'52		max. Earth dist.	12865 Sep 13 12:51	4° S 22'44	5.89519 AU
behind sun end	12860 Apr 01 19:05	19° Y 53'00		morning rise	12865 Sep 26 12:34	7° S 33'38	
max. Earth dist.	12860 Mar 31 12:48	19° Y 36'52	6.51395 AU	retrograde	12866 Feb 05 10:43	28° S 28'45	
morning rise	12860 Apr 14 10:45	22° Y 34'54		opposition	12866 Apr 05 15:46	23° S 27'50	-0°10'36
	12860 May 21 01:48	0° S		min. Earth dist.	12866 Apr 04 21:03	23° S 34'10	3.89462 AU
retrograde	12860 Aug 13 01:50	9° S 09'39		direct	12866 Jun 02 16:39	18° S 32'43	
desc. node	12860 Oct 12 06:28	4° S 23'07		asc. node	12866 Jul 29 13:40	23° S 39'14	
opposition	12860 Oct 13 06:30	4° S 15'26	-0°00'04		12866 Aug 31 08:58	0° H	
min. Earth dist.	12860 Oct 14 06:49	4° S 07'39	4.49568 AU	evening set	12866 Oct 08 02:39	8° H 44'48	
	12860 Nov 22 07:24	30° R Y					
direct	12860 Dec 14 20:42	29° Y 14'27		conjunction	12866 Oct 21 15:16	12° H .01'38	0°04'54
	12861 Jan 06 13:45	0° S		minimum elong	12866 Oct 21 15:16	12° H .01'38	0°05'29
	12861 Apr 11 21:19	15° S		behind sun begin	12866 Oct 21 07:13	11° H .56'46	
evening set	12861 Apr 18 13:56	16° S 25'51		behind sun end	12866 Oct 21 23:19	12° H .06'30	
max. Earth dist.	12861 Apr 29 13:53	18° S 48'31	6.45528 AU	max. Earth dist.	12866 Oct 23 12:41	12° H .29'12	5.92317 AU
					12866 Nov 02 21:44	15° H .	
conjunction	12861 May 01 11:10	19° S 13'06	-0°09'42	morning rise	12866 Nov 04 05:43	15° H .19'16	
minimum elong	12861 May 01 11:10	19° S 13'06	0°10'23		12867 Jan 11 18:02	0° S	
behind sun begin	12861 May 01 04:52	19° S 09'42		retrograde	12867 Mar 15 02:38	5° S 49'33	
behind sun end	12861 May 01 17:27	19° S 16'30		min. Earth dist.	12867 May 11 23:40	0° S 58'35	3.97808 AU
morning rise	12861 May 14 06:41	21° S 59'45		opposition	12867 May 13 12:07	0° S 46'13	0°25'04
	12861 Jun 22 07:00	0° II			12867 May 19 04:59	30° R . H .	
retrograde	12861 Sep 13 00:59	9° II 00'20		direct	12867 Jul 10 17:34	25° H .49'43	
opposition	12861 Nov 13 01:31	4° II 06'53	-0°27'35		12867 Aug 31 08:06	0° S	
min. Earth dist.	12861 Nov 14 15:13	3° II 54'49	4.39575 AU	evening set	12867 Nov 14 20:26	15° S 24'00	
	12861 Dec 20 23:04	30° R S					
direct	12862 Jan 14 08:09	29° S 06'22		conjunction	12867 Nov 28 10:18	18° S 35'15	0°25'53
	12862 Feb 07 17:56	0° II		minimum elong	12867 Nov 28 10:17	18° S 35'15	0°26'49
evening set	12862 May 19 09:27	16° II 51'00		max. Earth dist.	12867 Nov 30 22:11	19° S 30'25	6.05241 AU

morning rise	12867 Dec 12 01:23	21° ♄ 46'43	direct	12874 Jan 18 16:10	3° ♄ 33'03	
	12868 Jan 17 23:40	0° ♄	evening set	12874 May 23 20:25	21° ♄ 24'36	
retrograde	12868 Apr 18 03:02	11° ♄ 09'53	max. Earth dist.	12874 Jun 03 08:13	23° ♄ 45'48	6.29589 AU
min. Earth dist.	12868 Jun 15 09:00	6° ♄ 19'23	4.13821 AU			
opposition	12868 Jun 16 23:33	6° ♄ 06'23	0°49'06	conjunction	12874 Jun 05 16:23	24° ♄ 17'25 -0°28'42
direct	12868 Aug 15 05:25	1° ♄ 07'52		minimum elong	12874 Jun 05 16:22	24° ♄ 17'25 0°29'40
evening set	12868 Dec 19 14:33	19° ♄ 46'20		morning rise	12874 Jun 18 11:24	27° ♄ 10'08
					12874 Jul 01 05:41	0° ♄
conjunction	12869 Jan 02 02:32	22° ♄ 48'48	0°36'37	retrograde	12874 Oct 21 03:06	15° ♄ 15'34
minimum elong	12869 Jan 02 02:31	22° ♄ 48'48	0°37'33	opposition	12874 Dec 20 15:26	10° ♄ 21'37 -0°50'56
max. Earth dist.	12869 Jan 04 08:23	23° ♄ 19'11	6.22855 AU	min. Earth dist.	12874 Dec 22 06:52	10° ♄ 08'52 4.20842 AU
morning rise	12869 Jan 15 14:12	25° ♄ 50'49		direct	12875 Feb 19 19:13	5° ♄ 22'32
	12869 Feb 03 12:16	0° ♄		evening set	12875 Jun 25 15:34	24° ♄ 06'37
retrograde	12869 May 20 11:49	13° ♄ 58'41		max. Earth dist.	12875 Jul 06 11:09	26° ♄ 38'09 6.11963 AU
opposition	12869 Jul 19 20:15	8° ♄ 57'15	0°55'05			
min. Earth dist.	12869 Jul 18 15:42	9° ♄ 06'43	4.31390 AU	conjunction	12875 Jul 08 13:03	27° ♄ 07'23 -0°37'06
direct	12869 Sep 18 08:17	3° ♄ 57'16		minimum elong	12875 Jul 08 13:03	27° ♄ 07'23 0°38'01
	12869 Dec 20 18:36	15° ♄			12875 Jul 20 20:04	0° ♄
evening set	12870 Jan 21 23:31	21° ♄ 44'15		morning rise	12875 Jul 21 10:57	0° ♄ 08'40
					12875 Oct 02 10:59	15° ♄
conjunction	12870 Feb 04 07:26	24° ♄ 38'23	0°35'18	retrograde	12875 Nov 26 08:57	19° ♄ 29'28
minimum elong	12870 Feb 04 07:27	24° ♄ 38'23	0°35'57		12876 Jan 22 00:27	15° ♄
max. Earth dist.	12870 Feb 05 12:51	24° ♄ 54'25	6.39003 AU	opposition	12876 Jan 25 07:55	14° ♄ 33'54 -0°55'19
morning rise	12870 Feb 17 14:28	27° ♄ 31'47		min. Earth dist.	12876 Jan 26 09:57	14° ♄ 25'21 4.03522 AU
	12870 Mar 01 03:20	0° ♄		direct	12876 Mar 25 02:10	9° ♄ 36'47
retrograde	12870 Jun 19 21:53	14° ♄ 41'00			12876 May 23 18:28	15° ♄
opposition	12870 Aug 19 17:01	9° ♄ 42'32	0°44'48	evening set	12876 Jul 29 19:06	29° ♄ 15'50
min. Earth dist.	12870 Aug 19 06:33	9° ♄ 45'57	4.44987 AU		12876 Aug 01 20:32	0° ♄
direct	12870 Oct 20 08:36	4° ♄ 41'44				
evening set	12871 Feb 22 09:21	21° ♄ 54'57		conjunction	12876 Aug 11 21:21	2° ♄ 25'39 -0°32'54
				minimum elong	12876 Aug 11 21:22	2° ♄ 25'39 0°33'27
conjunction	12871 Mar 07 13:06	24° ♄ 43'28	0°24'10	max. Earth dist.	12876 Aug 10 22:48	2° ♄ 11'59 5.96553 AU
minimum elong	12871 Mar 07 13:07	24° ♄ 43'28	0°24'20	morning rise	12876 Aug 25 00:50	5° ♄ 36'26
max. Earth dist.	12871 Mar 07 14:32	24° ♄ 44'14	6.49130 AU	retrograde	12877 Jan 02 20:49	26° ♄ 04'57
morning rise	12871 Mar 20 15:01	27° ♄ 31'04		opposition	12877 Mar 03 06:43	21° ♄ 06'49 -0°38'43
	12871 Apr 01 10:21	0° ♄		min. Earth dist.	12877 Mar 03 10:09	21° ♄ 05'40 3.91612 AU
retrograde	12871 Jul 19 10:38	14° ♄ 09'03		direct	12877 Apr 30 20:28	16° ♄ 11'28
opposition	12871 Sep 18 13:29	9° ♄ 13'18	0°23'17		12877 Aug 09 02:55	0° ♄
min. Earth dist.	12871 Sep 18 22:09	9° ♄ 10'30	4.51120 AU	evening set	12877 Sep 05 02:56	6° ♄ 24'48
direct	12871 Nov 19 22:20	4° ♄ 12'19				
evening set	12872 Mar 23 16:22	21° ♄ 14'37		conjunction	12877 Sep 18 11:17	9° ♄ 41'00 -0°15'38
				minimum elong	12877 Sep 18 11:18	9° ♄ 41'00 0°15'34
conjunction	12872 Apr 05 16:03	24° ♄ 00'55	0°06'57	behind sun begin	12877 Sep 18 09:12	9° ♄ 39'44
minimum elong	12872 Apr 05 16:04	24° ♄ 00'55	0°06'39	behind sun end	12877 Sep 18 13:24	9° ♄ 42'17
behind sun begin	12872 Apr 05 08:35	23° ♄ 56'56		max. Earth dist.	12877 Sep 19 02:13	9° ♄ 50'09 5.89382 AU
behind sun end	12872 Apr 05 23:33	24° ♄ 04'54		morning rise	12877 Oct 01 21:39	12° ♄ 58'21
max. Earth dist.	12872 Apr 04 12:42	23° ♄ 46'17	6.50850 AU		12877 Dec 22 20:12	0° ♄
morning rise	12872 Apr 18 14:01	26° ♄ 46'26		retrograde	12878 Feb 10 18:57	3° ♄ 52'46
	12872 May 03 23:08	0° ♄			12878 Apr 02 12:10	30° ♄
retrograde	12872 Aug 17 08:29	13° ♄ 23'47		min. Earth dist.	12878 Apr 10 02:04	28° ♄ 59'04 3.90134 AU
desc. node	12872 Aug 25 00:24	13° ♄ 18'19		opposition	12878 Apr 11 00:31	28° ♄ 51'28 -0°05'25
opposition	12872 Oct 17 11:45	8° ♄ 29'47	-0°04'00	direct	12878 Jun 07 23:38	23° ♄ 56'18
min. Earth dist.	12872 Oct 18 15:09	8° ♄ 21'01	4.48390 AU	asc. node	12878 Jun 07 16:29	23° ♄ 56'18
direct	12872 Dec 19 02:20	3° ♄ 28'51			12878 Aug 09 13:30	0° ♄
	12873 Mar 26 08:54	15° ♄		evening set	12878 Oct 13 10:17	14° ♄ 04'38
evening set	12873 Apr 22 19:57	20° ♄ 44'25			12878 Oct 17 06:09	15° ♄
max. Earth dist.	12873 May 03 16:13	23° ♄ 05'43	6.43793 AU			
				conjunction	12878 Oct 26 23:09	17° ♄ 20'57 0°08'13
conjunction	12873 May 05 16:53	23° ♄ 32'13	-0°12'19	minimum elong	12878 Oct 26 23:09	17° ♄ 20'57 0°08'52
minimum elong	12873 May 05 16:53	23° ♄ 32'13	0°13'03	behind sun begin	12878 Oct 26 15:59	17° ♄ 16'37
behind sun begin	12873 May 05 12:03	23° ♄ 29'36		behind sun end	12878 Oct 27 06:19	17° ♄ 25'16
behind sun end	12873 May 05 21:43	23° ♄ 34'50		max. Earth dist.	12878 Oct 28 22:24	17° ♄ 49'32 5.93700 AU
morning rise	12873 May 18 12:21	26° ♄ 19'30		morning rise	12878 Nov 09 14:01	20° ♄ 38'03
	12873 Jun 04 17:34	0° ♄			12878 Dec 20 15:49	0° ♄
retrograde	12873 Sep 17 13:23	13° ♄ 26'56		retrograde	12879 Mar 20 02:46	11° ♄ 00'36
opposition	12873 Nov 17 12:52	8° ♄ 33'27	-0°31'06	min. Earth dist.	12879 May 17 00:45	6° ♄ 09'45 3.99732 AU
min. Earth dist.	12873 Nov 19 02:48	8° ♄ 21'18	4.37399 AU	opposition	12879 May 18 13:59	5° ♄ 57'07 0°29'22

direct	12879 Jul 15 22:37	1°♏00'21		conjunction	12885 May 09 23:35	27°♏55'00	-0°14'54
evening set	12879 Nov 19 22:41	20°♏27'28		minimum elong	12885 May 09 23:34	27°♏54'59	0°15'40
				behind sun begin	12885 May 09 21:40	27°♏53'57	
conjunction	12879 Dec 03 12:37	23°♏37'39	0°28'05	behind sun end	12885 May 10 01:28	27°♏56'01	
minimum elong	12879 Dec 03 12:36	23°♏37'39	0°29'02		12885 May 19 12:22	0°♐	
max. Earth dist.	12879 Dec 06 01:40	24°♏13'20	6.07525 AU	morning rise	12885 May 22 18:44	0°♐42'39	
morning rise	12879 Dec 17 03:15	26°♏47'54		retrograde	12885 Sep 22 02:39	17°♐55'16	
	12879 Dec 31 03:16	0°♑		opposition	12885 Nov 22 00:39	13°♐01'49	-0°34'28
retrograde	12880 Apr 22 19:54	16°♑00'43		min. Earth dist.	12885 Nov 23 15:49	12°♐49'15	4.35826 AU
min. Earth dist.	12880 Jun 20 03:16	11°♑10'04	4.16223 AU	direct	12886 Jan 23 02:41	8°♐01'35	
opposition	12880 Jun 21 16:44	10°♑57'29	0°51'01	evening set	12886 May 28 06:53	25°♐57'45	
direct	12880 Aug 20 02:29	5°♑58'46		max. Earth dist.	12886 Jun 07 17:43	28°♐19'01	6.27827 AU
evening set	12880 Dec 24 09:11	24°♑29'51					
				conjunction	12886 Jun 10 02:44	28°♐51'14	-0°30'27
conjunction	12881 Jan 06 20:35	27°♑31'08	0°37'06	minimum elong	12886 Jun 10 02:43	28°♐51'14	0°31'26
minimum elong	12881 Jan 06 20:34	27°♑31'07	0°38'00		12886 Jun 15 04:19	0°♒	
max. Earth dist.	12881 Jan 08 22:59	27°♑59'25	6.25164 AU	morning rise	12886 Jun 22 21:58	1°♒44'43	
	12881 Jan 17 22:29	0°♓		retrograde	12886 Oct 25 21:17	19°♒57'38	
morning rise	12881 Jan 20 07:51	0°♓31'57		opposition	12886 Dec 25 09:23	15°♒03'26	-0°52'34
	12881 Apr 06 06:18	15°♓		min. Earth dist.	12886 Dec 26 22:54	14°♒51'17	4.19012 AU
retrograde	12881 May 24 19:45	18°♓31'02		direct	12887 Feb 24 09:01	10°♒04'32	
	12881 Jul 12 17:58	15°♒♓		evening set	12887 Jun 30 07:02	28°♒53'59	
min. Earth dist.	12881 Jul 23 03:40	13°♓38'43	4.33435 AU		12887 Jul 05 00:03	0°♓	
opposition	12881 Jul 24 06:02	13°♓29'59	0°54'29	max. Earth dist.	12887 Jul 11 06:50	1°♓28'31	6.10222 AU
direct	12881 Sep 22 21:25	8°♓29'52					
	12881 Nov 30 21:36	15°♓		conjunction	12887 Jul 13 04:58	1°♓55'39	-0°37'19
evening set	12882 Jan 26 11:16	26°♓11'39		minimum elong	12887 Jul 13 04:58	1°♓55'39	0°38'11
				morning rise	12887 Jul 26 03:13	4°♓57'52	
conjunction	12882 Feb 08 18:47	29°♓04'56	0°34'13		12887 Sep 09 15:32	15°♓	
minimum elong	12882 Feb 08 18:48	29°♓04'56	0°34'48	retrograde	12887 Dec 01 11:13	24°♓26'33	
max. Earth dist.	12882 Feb 09 21:33	29°♓19'29	6.40658 AU	opposition	12888 Jan 30 08:12	19°♓30'41	-0°54'16
	12882 Feb 13 00:06	0°♔		min. Earth dist.	12888 Jan 31 08:53	19°♓22'33	4.02015 AU
morning rise	12882 Feb 22 00:58	1°♔57'24			12888 Mar 13 16:48	15°♒♓	
retrograde	12882 Jun 24 02:23	19°♔01'13		direct	12888 Mar 29 23:50	14°♓33'47	
opposition	12882 Aug 23 22:28	14°♔03'14	0°42'17		12888 Apr 15 05:23	15°♓	
min. Earth dist.	12882 Aug 23 14:12	14°♔05'55	4.46161 AU		12888 Jul 16 14:39	0°♕	
direct	12882 Oct 24 16:28	9°♔02'30		evening set	12888 Aug 03 16:27	4°♕17'00	
evening set	12883 Feb 26 16:53	26°♔13'24					
				conjunction	12888 Aug 16 19:20	7°♕27'40	-0°31'15
conjunction	12883 Mar 11 19:54	29°♔01'27	0°21'58	minimum elong	12888 Aug 16 19:21	7°♕27'40	0°31'42
minimum elong	12883 Mar 11 19:55	29°♔01'27	0°22'06	max. Earth dist.	12888 Aug 15 23:40	7°♕15'44	5.95421 AU
max. Earth dist.	12883 Mar 11 16:06	28°♔59'25	6.49761 AU	morning rise	12888 Aug 29 23:43	10°♕39'22	
	12883 Mar 16 09:26	0°♖			12888 Dec 11 15:41	0°♎	
morning rise	12883 Mar 24 21:24	1°♖48'38		retrograde	12889 Jan 08 00:28	1°♎12'46	
retrograde	12883 Jul 23 16:29	18°♖25'09			12889 Feb 04 08:15	30°♒♕	
opposition	12883 Sep 22 18:20	13°♖29'45	0°19'36	opposition	12889 Mar 08 10:10	26°♕14'14	-0°34'56
min. Earth dist.	12883 Sep 23 06:08	13°♖25'58	4.51208 AU	min. Earth dist.	12889 Mar 08 09:54	26°♕14'19	3.90998 AU
direct	12883 Nov 24 05:00	8°♖28'49		direct	12889 May 05 20:27	21°♕18'56	
evening set	12884 Mar 27 22:05	25°♖31'41			12889 Jul 21 08:03	0°♎	
				evening set	12889 Sep 10 04:37	11°♎33'23	
conjunction	12884 Apr 09 21:26	28°♖17'59	0°04'15				
minimum elong	12884 Apr 09 21:27	28°♖17'59	0°03'52	conjunction	12889 Sep 23 13:37	14°♎49'57	-0°12'37
behind sun begin	12884 Apr 09 13:32	28°♖13'46		minimum elong	12889 Sep 23 13:38	14°♎49'57	0°12'28
behind sun end	12884 Apr 10 05:22	28°♖22'13		behind sun begin	12889 Sep 23 08:13	14°♎46'39	
max. Earth dist.	12884 Apr 08 15:55	28°♖02'10	6.50420 AU	behind sun end	12889 Sep 23 19:02	14°♎53'15	
	12884 Apr 17 19:54	0°♏		max. Earth dist.	12889 Sep 24 07:39	15°♎01'00	5.89348 AU
morning rise	12884 Apr 22 18:54	1°♏03'30		morning rise	12889 Oct 07 00:48	18°♎07'39	
desc. node	12884 Jul 05 23:46	14°♏33'38			12889 Nov 28 11:16	0°♏	
	12884 Jul 09 13:04	15°♏		retrograde	12890 Feb 15 20:30	9°♏01'14	
retrograde	12884 Aug 21 14:42	17°♏43'01		min. Earth dist.	12890 Apr 15 02:33	4°♏07'45	3.90677 AU
	12884 Oct 04 01:41	15°♒♏		opposition	12890 Apr 16 02:44	3°♏59'33	-0°00'29
opposition	12884 Oct 21 18:47	12°♏49'10	-0°08'00	asc. node	12890 Apr 21 03:14	3°♏18'51	
min. Earth dist.	12884 Oct 22 22:39	12°♏40'15	4.47501 AU		12890 May 20 17:43	30°♒♎	
direct	12884 Dec 23 07:23	7°♏48'22		direct	12890 Jun 13 02:27	29°♎04'10	
	12885 Mar 07 10:51	15°♏			12890 Jul 06 11:35	0°♏	
evening set	12885 Apr 27 02:59	25°♏06'52			12890 Sep 30 22:16	15°♏	
max. Earth dist.	12885 May 07 22:37	27°♏28'13	6.42524 AU	evening set	12890 Oct 18 12:08	19°♏09'45	

conjunction	12890 Nov 01 01:37	22° \mathbb{M} 25'46	0°11'18	desc. node	12896 May 14 20:43	9° \mathcal{B} 04'06	
minimum elong	12890 Nov 01 01:37	22° \mathbb{M} 25'46	0°12'00		12896 Jun 14 21:25	15° \mathcal{B}	
behind sun begin	12890 Oct 31 19:56	22° \mathbb{M} 22'21		retrograde	12896 Aug 25 22:55	22° \mathcal{B} 00'45	
behind sun end	12890 Nov 01 07:18	22° \mathbb{M} 29'11		opposition	12896 Oct 26 01:37	17° \mathcal{B} 07'00	-0°11'57
max. Earth dist.	12890 Nov 03 04:23	22° \mathbb{M} 56'23	5.94775 AU	min. Earth dist.	12896 Oct 27 08:15	16° \mathcal{B} 57'12	4.46474 AU
morning rise	12890 Nov 14 16:39	25° \mathbb{M} 42'26			12896 Nov 12 03:52	15° \mathcal{R} \mathcal{B}	
	12890 Dec 02 22:39	0° \mathcal{A}		direct	12896 Dec 27 14:35	12° \mathcal{B} 06'12	
retrograde	12891 Mar 25 00:27	15° \mathcal{A} 58'50			12897 Feb 10 19:12	15° \mathcal{B}	
min. Earth dist.	12891 May 21 21:36	11° \mathcal{A} 07'59	4.01210 AU	evening set	12897 May 01 09:36	29° \mathcal{B} 28'08	
opposition	12891 May 23 10:59	10° \mathcal{A} 55'19	0°33'15		12897 May 03 20:10	0° \mathbb{I}	
direct	12891 Jul 20 21:56	5° \mathcal{A} 58'17		max. Earth dist.	12897 May 12 02:57	1° \mathbb{I} 48'44	6.41001 AU
evening set	12891 Nov 24 21:03	25° \mathcal{A} 20'14					
				conjunction	12897 May 14 06:02	2° \mathbb{I} 16'45	-0°17'25
conjunction	12891 Dec 08 10:49	28° \mathcal{A} 29'35	0°30'00	minimum elong	12897 May 14 06:01	2° \mathbb{I} 16'45	0°18'13
minimum elong	12891 Dec 08 10:48	28° \mathcal{A} 29'34	0°30'59	morning rise	12897 May 27 01:00	5° \mathbb{I} 04'55	
max. Earth dist.	12891 Dec 10 22:59	29° \mathcal{A} 04'35	6.09253 AU	retrograde	12897 Sep 26 14:53	22° \mathbb{I} 23'50	
	12891 Dec 14 22:22	0° \mathcal{B}		opposition	12897 Nov 26 12:40	17° \mathbb{I} 30'19	-0°37'40
morning rise	12891 Dec 22 01:24	1° \mathcal{B} 38'57		min. Earth dist.	12897 Nov 28 03:34	17° \mathbb{I} 17'50	4.33883 AU
retrograde	12892 Apr 27 07:46	20° \mathcal{B} 43'39		direct	12898 Jan 27 10:49	12° \mathbb{I} 30'13	
min. Earth dist.	12892 Jun 24 17:45	15° \mathcal{B} 53'04	4.18049 AU		12898 May 30 07:56	0° \mathcal{E}	
opposition	12892 Jun 26 06:53	15° \mathcal{B} 40'35	0°52'33	evening set	12898 Jun 01 17:56	0° \mathcal{E} 32'35	
direct	12892 Aug 24 19:11	10° \mathcal{B} 41'37		max. Earth dist.	12898 Jun 12 05:51	2° \mathcal{E} 55'09	6.25593 AU
evening set	12892 Dec 29 01:55	29° \mathcal{B} 07'29					
	12893 Jan 02 00:16	0° \mathcal{A}		conjunction	12898 Jun 14 13:52	3° \mathcal{E} 26'59	-0°32'02
				minimum elong	12898 Jun 14 13:51	3° \mathcal{E} 26'59	0°33'02
conjunction	12893 Jan 11 13:01	2° \mathcal{A} 07'50	0°37'21	morning rise	12898 Jun 27 09:14	6° \mathcal{E} 21'27	
minimum elong	12893 Jan 11 13:01	2° \mathcal{A} 07'50	0°38'14	retrograde	12898 Oct 30 20:05	24° \mathcal{E} 43'57	
max. Earth dist.	12893 Jan 13 13:15	2° \mathcal{A} 34'49	6.26957 AU	opposition	12898 Dec 30 05:19	19° \mathcal{E} 49'38	-0°53'55
morning rise	12893 Jan 24 23:38	5° \mathcal{A} 07'39		min. Earth dist.	12898 Dec 31 18:57	19° \mathcal{E} 37'25	4.16628 AU
	12893 Mar 13 17:54	15° \mathcal{A}		direct	12899 Mar 01 01:33	14° \mathcal{E} 51'00	
retrograde	12893 May 29 04:17	22° \mathcal{A} 59'35			12899 Jun 18 13:48	0° \mathcal{Q}	
opposition	12893 Jul 28 14:44	17° \mathcal{A} 58'56	0°53'35	evening set	12899 Jul 05 01:18	3° \mathcal{Q} 48'07	
min. Earth dist.	12893 Jul 27 14:36	18° \mathcal{A} 06'54	4.35053 AU	max. Earth dist.	12899 Jul 16 02:54	6° \mathcal{Q} 24'33	6.07893 AU
	12893 Aug 21 21:59	15° \mathcal{R} \mathcal{A}					
direct	12893 Sep 27 10:09	12° \mathcal{A} 58'42		conjunction	12899 Jul 17 23:44	6° \mathcal{Q} 51'03	-0°37'16
	12893 Nov 03 06:20	15° \mathcal{A}		minimum elong	12899 Jul 17 23:45	6° \mathcal{Q} 51'03	0°38'07
	12894 Jan 28 02:41	0° \mathcal{H}		morning rise	12899 Jul 30 22:45	9° \mathcal{Q} 54'38	
evening set	12894 Jan 30 22:27	0° \mathcal{H} 36'26			12899 Aug 22 00:37	15° \mathcal{Q}	
				retrograde	12899 Dec 06 16:00	29° \mathcal{Q} 33'38	
conjunction	12894 Feb 13 05:21	3° \mathcal{H} 28'58	0°32'57	opposition	12900 Feb 04 12:05	24° \mathcal{Q} 37'29	-0°52'47
minimum elong	12894 Feb 13 05:21	3° \mathcal{H} 28'59	0°33'28	min. Earth dist.	12900 Feb 05 09:17	24° \mathcal{Q} 30'29	3.99968 AU
max. Earth dist.	12894 Feb 14 04:13	3° \mathcal{H} 41'22	6.41980 AU	direct	12900 Apr 04 22:17	19° \mathcal{Q} 40'51	
morning rise	12894 Feb 26 11:03	6° \mathcal{H} 20'42			12900 Jun 29 06:26	0° \mathcal{N}	
retrograde	12894 Jun 28 06:49	23° \mathcal{H} 19'58		evening set	12900 Aug 09 18:47	9° \mathcal{N} 30'39	
opposition	12894 Aug 28 03:53	18° \mathcal{H} 22'17	0°39'34				
min. Earth dist.	12894 Aug 27 21:45	18° \mathcal{H} 24'16	4.47116 AU	conjunction	12900 Aug 22 22:29	12° \mathcal{N} 42'27	-0°29'17
direct	12894 Oct 29 00:16	13° \mathcal{H} 21'27		minimum elong	12900 Aug 22 22:30	12° \mathcal{N} 42'28	0°29'39
	12895 Feb 28 14:33	0° \mathcal{Y}		max. Earth dist.	12900 Aug 22 07:27	12° \mathcal{N} 33'19	5.93862 AU
evening set	12895 Mar 02 23:52	0° \mathcal{Y} 30'20		morning rise	12900 Sep 05 03:52	15° \mathcal{N} 55'22	
					12900 Nov 08 15:45	0° \mathcal{L}	
conjunction	12895 Mar 16 02:30	3° \mathcal{Y} 17'59	0°19'41	retrograde	12901 Jan 14 11:20	6° \mathcal{L} 35'28	
minimum elong	12895 Mar 16 02:31	3° \mathcal{Y} 17'59	0°19'44	opposition	12901 Mar 14 19:22	1° \mathcal{L} 36'29	-0°30'42
max. Earth dist.	12895 Mar 15 20:51	3° \mathcal{Y} 14'58	6.50278 AU	min. Earth dist.	12901 Mar 14 16:13	1° \mathcal{L} 37'33	3.90101 AU
morning rise	12895 Mar 29 03:13	6° \mathcal{Y} 04'43			12901 Mar 27 00:30	30° \mathcal{R} \mathcal{N}	
retrograde	12895 Jul 27 19:46	22° \mathcal{Y} 39'51		direct	12901 May 12 03:29	26° \mathcal{N} 41'17	
opposition	12895 Sep 26 22:55	17° \mathcal{Y} 44'42	0°15'50		12901 Jun 26 06:41	0° \mathcal{L}	
min. Earth dist.	12895 Sep 27 12:22	17° \mathcal{Y} 40'23	4.51241 AU	evening set	12901 Sep 16 12:19	16° \mathcal{L} 57'49	
direct	12895 Nov 28 10:10	12° \mathcal{Y} 43'46					
evening set	12896 Apr 01 03:40	29° \mathcal{Y} 47'07		conjunction	12901 Sep 29 22:18	20° \mathcal{L} 14'53	-0°09'20
	12896 Apr 02 03:52	0° \mathcal{B}		minimum elong	12901 Sep 29 22:19	20° \mathcal{L} 14'54	0°09'06
max. Earth dist.	12896 Apr 12 17:04	2° \mathcal{B} 15'30	6.49926 AU	behind sun begin	12901 Sep 29 15:15	20° \mathcal{L} 10'34	
				behind sun end	12901 Sep 30 05:24	20° \mathcal{L} 19'13	
conjunction	12896 Apr 14 02:25	2° \mathcal{B} 33'24	0°01'29	max. Earth dist.	12901 Sep 30 22:47	20° \mathcal{L} 29'53	5.89222 AU
minimum elong	12896 Apr 14 02:23	2° \mathcal{B} 33'23	0°01'02	morning rise	12901 Oct 13 10:12	23° \mathcal{L} 33'00	
behind sun begin	12896 Apr 13 18:23	2° \mathcal{B} 29'07			12901 Nov 09 15:40	0° \mathbb{M}	
behind sun end	12896 Apr 14 10:23	2° \mathcal{B} 37'39		retrograde	12902 Feb 22 05:48	14° \mathbb{M} 25'34	
morning rise	12896 Apr 26 23:30	5° \mathcal{B} 18'56		asc. node	12902 Mar 03 21:16	14° \mathbb{M} 16'07	

min. Earth dist.	12902 Apr 21 08:18	9° \mathbb{M} 32'35	3.91353 AU	conjunction	12908 Apr 19 05:14	6° \mathcal{B} 43'52	-0°01'15
opposition	12902 Apr 22 10:54	9° \mathbb{M} 23'34	0°04'43	minimum elong	12908 Apr 19 05:13	6° \mathcal{B} 43'51	0°01'46
direct	12902 Jun 19 10:29	4° \mathbb{M} 28'06		behind sun begin	12908 Apr 18 21:13	6° \mathcal{B} 39'35	
	12902 Sep 13 03:38	15° \mathbb{M}		behind sun end	12908 Apr 19 13:13	6° \mathcal{B} 48'08	
evening set	12902 Oct 24 20:14	24° \mathbb{M} 30'09		morning rise	12908 May 02 01:45	9° \mathcal{B} 29'26	
					12908 May 28 14:27	15° \mathcal{B}	
conjunction	12902 Nov 07 09:54	27° \mathbb{M} 45'38	0°14'27	retrograde	12908 Aug 31 03:31	26° \mathcal{B} 14'08	
minimum elong	12902 Nov 07 09:53	27° \mathbb{M} 45'38	0°15'13	opposition	12908 Oct 31 06:53	21° \mathcal{B} 20'26	-0°15'46
behind sun begin	12902 Nov 07 07:21	27° \mathbb{M} 44'06		min. Earth dist.	12908 Nov 01 15:00	21° \mathcal{B} 10'10	4.45224 AU
behind sun end	12902 Nov 07 12:26	27° \mathbb{M} 47'09		direct	12909 Jan 01 18:24	16° \mathcal{B} 19'40	
max. Earth dist.	12902 Nov 09 14:50	28° \mathbb{M} 17'26	5.96165 AU		12909 Apr 19 01:40	0° \mathbb{I}	
	12902 Nov 16 17:53	0° \mathcal{A}		evening set	12909 May 06 14:54	3° \mathbb{I} 45'47	
morning rise	12902 Nov 21 01:19	1° \mathcal{A} 01'44		max. Earth dist.	12909 May 17 05:18	6° \mathbb{I} 05'24	6.39148 AU
retrograde	12903 Mar 30 23:30	21° \mathcal{A} 10'07					
min. Earth dist.	12903 May 27 21:10	16° \mathcal{A} 19'47	4.03173 AU	conjunction	12909 May 19 10:59	6° \mathbb{I} 34'59	-0°19'47
opposition	12903 May 29 12:19	16° \mathcal{A} 06'30	0°37'03	minimum elong	12909 May 19 10:59	6° \mathbb{I} 34'59	0°20'38
direct	12903 Jul 27 01:05	11° \mathcal{A} 09'13		morning rise	12909 Jun 01 05:56	9° \mathbb{I} 23'51	
	12903 Nov 29 05:52	0° \mathcal{B}		retrograde	12909 Oct 02 04:57	26° \mathbb{I} 50'22	
evening set	12903 Nov 30 23:38	0° \mathcal{B} 24'01		opposition	12909 Dec 02 00:18	21° \mathbb{I} 56'47	-0°40'39
				min. Earth dist.	12909 Dec 03 17:00	21° \mathbb{I} 43'42	4.31514 AU
conjunction	12903 Dec 14 13:13	3° \mathcal{B} 32'11	0°31'47	direct	12910 Feb 01 20:25	16° \mathbb{I} 56'45	
minimum elong	12903 Dec 14 13:12	3° \mathcal{B} 32'11	0°32'45		12910 May 15 01:14	0° \mathcal{C}	
max. Earth dist.	12903 Dec 17 01:04	4° \mathcal{B} 06'50	6.11624 AU	evening set	12910 Jun 07 04:57	5° \mathcal{C} 06'49	
morning rise	12903 Dec 28 03:21	6° \mathcal{B} 40'16		max. Earth dist.	12910 Jun 17 16:35	7° \mathcal{C} 30'04	6.22887 AU
retrograde	12904 May 02 23:39	25° \mathcal{B} 34'14					
opposition	12904 Jul 01 23:46	20° \mathcal{B} 31'23	0°53'46	conjunction	12910 Jun 20 01:10	8° \mathcal{C} 02'25	-0°33'26
min. Earth dist.	12904 Jun 30 12:15	20° \mathcal{B} 43'17	4.20588 AU	minimum elong	12910 Jun 20 01:09	8° \mathcal{C} 02'25	0°34'24
direct	12904 Aug 30 17:14	15° \mathcal{B} 32'12		morning rise	12910 Jul 02 20:53	10° \mathcal{C} 58'09	
	12904 Dec 17 06:04	0° \approx		retrograde	12910 Nov 05 18:02	29° \mathcal{C} 32'01	
evening set	12905 Jan 03 20:08	3° \approx 50'02		opposition	12911 Jan 05 02:07	24° \mathcal{C} 37'30	-0°54'58
				min. Earth dist.	12911 Jan 06 13:47	24° \mathcal{C} 25'54	4.13788 AU
conjunction	12905 Jan 17 06:41	6° \approx 49'07	0°37'23	direct	12911 Mar 06 16:31	19° \mathcal{C} 39'06	
minimum elong	12905 Jan 17 06:41	6° \approx 49'07	0°38'14		12911 Jun 01 17:54	0° \mathcal{Q}	
max. Earth dist.	12905 Jan 19 05:10	7° \approx 14'57	6.29462 AU	evening set	12911 Jul 10 21:12	8° \mathcal{Q} 45'41	
morning rise	12905 Jan 30 16:39	9° \approx 47'36		max. Earth dist.	12911 Jul 22 02:36	11° \mathcal{Q} 25'20	6.05169 AU
	12905 Feb 23 22:13	15° \approx					
retrograde	12905 Jun 03 10:00	27° \approx 29'58		conjunction	12911 Jul 23 20:15	11° \mathcal{Q} 50'06	-0°36'59
opposition	12905 Aug 02 23:48	22° \approx 29'38	0°52'23	minimum elong	12911 Jul 23 20:16	11° \mathcal{Q} 50'07	0°37'47
min. Earth dist.	12905 Aug 02 00:54	22° \approx 37'11	4.37336 AU	morning rise	12911 Aug 05 20:07	14° \mathcal{Q} 55'16	
direct	12905 Oct 02 22:51	17° \approx 29'16			12911 Aug 06 04:07	15° \mathcal{Q}	
	12906 Jan 12 11:06	0° \mathcal{H}			12911 Oct 17 14:17	0° \mathbb{P}	
evening set	12906 Feb 05 08:57	5° \mathcal{H} 00'41		retrograde	12911 Dec 13 02:02	4° \mathbb{P} 46'20	
					12912 Feb 09 12:11	30° \mathcal{R} \mathcal{Q}	
conjunction	12906 Feb 18 15:12	7° \mathcal{H} 52'12	0°31'32	opposition	12912 Feb 10 18:51	29° \mathcal{Q} 49'51	-0°50'56
minimum elong	12906 Feb 18 15:12	7° \mathcal{H} 52'13	0°31'59	min. Earth dist.	12912 Feb 11 13:30	29° \mathcal{Q} 43'40	3.97615 AU
max. Earth dist.	12906 Feb 19 10:22	8° \mathcal{H} 02'33	6.43884 AU	direct	12912 Apr 10 01:13	24° \mathcal{Q} 53'29	
morning rise	12906 Mar 03 20:03	10° \mathcal{H} 42'52			12912 Jun 06 12:44	0° \mathbb{P}	
retrograde	12906 Jul 03 09:39	27° \mathcal{H} 35'55		evening set	12912 Aug 15 00:04	14° \mathbb{P} 50'53	
opposition	12906 Sep 02 08:03	22° \mathcal{H} 38'36	0°36'42				
min. Earth dist.	12906 Sep 02 05:05	22° \mathcal{H} 39'33	4.48508 AU	conjunction	12912 Aug 28 04:52	18° \mathbb{P} 04'00	-0°27'04
direct	12906 Nov 03 08:33	17° \mathcal{H} 37'42		minimum elong	12912 Aug 28 04:53	18° \mathbb{P} 04'01	0°27'21
	12907 Feb 13 09:18	0° \mathcal{Y}		max. Earth dist.	12912 Aug 27 20:07	17° \mathbb{P} 58'40	5.92140 AU
evening set	12907 Mar 08 05:08	4° \mathcal{Y} 43'15		morning rise	12912 Sep 10 11:14	21° \mathbb{P} 18'13	
					12912 Oct 17 19:40	0° \mathcal{L}	
conjunction	12907 Mar 21 07:02	7° \mathcal{Y} 30'21	0°17'21	retrograde	12913 Jan 20 01:16	12° \mathcal{L} 05'11	
minimum elong	12907 Mar 21 07:03	7° \mathcal{Y} 30'21	0°17'20	opposition	12913 Mar 20 07:36	7° \mathcal{L} 05'48	-0°26'09
max. Earth dist.	12907 Mar 20 20:01	7° \mathcal{Y} 24'29	6.51048 AU	min. Earth dist.	12913 Mar 20 00:32	7° \mathcal{L} 08'11	3.89244 AU
morning rise	12907 Apr 03 07:16	10° \mathcal{Y} 16'35		direct	12913 May 17 12:06	2° \mathcal{L} 10'46	
retrograde	12907 Aug 01 22:08	26° \mathcal{Y} 49'51		evening set	12913 Sep 21 23:40	22° \mathcal{L} 29'02	
opposition	12907 Oct 02 01:46	21° \mathcal{Y} 54'52	0°12'07				
min. Earth dist.	12907 Oct 02 18:11	21° \mathcal{Y} 49'36	4.51345 AU	conjunction	12913 Oct 05 10:17	25° \mathcal{L} 46'25	-0°05'57
direct	12907 Dec 03 14:36	16° \mathcal{Y} 53'51		minimum elong	12913 Oct 05 10:17	25° \mathcal{L} 46'25	0°05'37
	12908 Mar 18 08:13	0° \mathcal{B}		behind sun begin	12913 Oct 05 02:16	25° \mathcal{L} 41'31	
desc. node	12908 Mar 24 07:23	1° \mathcal{B} 13'37		behind sun end	12913 Oct 05 18:18	25° \mathcal{L} 51'18	
evening set	12908 Apr 06 06:46	3° \mathcal{B} 57'32		max. Earth dist.	12913 Oct 06 15:14	26° \mathcal{L} 04'09	5.89305 AU
max. Earth dist.	12908 Apr 17 17:37	6° \mathcal{B} 24'43	6.49342 AU	morning rise	12913 Oct 18 23:07	29° \mathcal{L} 04'52	
					12913 Oct 22 18:03	0° \mathbb{M}	

	12914 Jan 01 22:25	15°♄	morning rise	12919 Apr 07 11:37	14°♃30'48	
asc. node	12914 Jan 12 15:48	16°♄35'28		12919 Jul 10 14:02	0°♄	
retrograde	12914 Feb 27 14:37	19°♄54'54	retrograde	12919 Aug 06 02:07	1°♄03'47	
	12914 Apr 26 22:55	15°♄		12919 Sep 01 12:08	30°♄	
opposition	12914 Apr 27 21:00	14°♄52'30 0°09'55	opposition	12919 Oct 06 06:05	26°♃09'06 0°08'13	
min. Earth dist.	12914 Apr 26 14:37	15°♄02'49 3.92376 AU	min. Earth dist.	12919 Oct 07 01:34	26°♃02'52 4.51011 AU	
direct	12914 Jun 24 20:53	9°♄56'49	direct	12919 Dec 07 20:31	21°♃08'07	
	12914 Aug 20 16:35	15°♄	desc. node	12920 Jan 29 22:56	25°♃01'13	
evening set	12914 Oct 30 06:08	29°♄53'50		12920 Feb 29 16:53	0°♄	
	12914 Oct 30 16:30	0°♄	evening set	12920 Apr 10 11:57	8°♄13'39	
			max. Earth dist.	12920 Apr 21 17:25	10°♄38'23 6.48322 AU	
conjunction	12914 Nov 12 20:04	3°♄08'32 0°17'30				
minimum elong	12914 Nov 12 20:03	3°♄08'32 0°18'20	conjunction	12920 Apr 23 09:51	11°♄00'10 -0°04'00	
max. Earth dist.	12914 Nov 15 04:00	3°♄42'00 5.98004 AU	minimum elong	12920 Apr 23 09:51	11°♄00'09 0°04'33	
morning rise	12914 Nov 26 11:27	6°♄23'43	behind sun begin	12920 Apr 23 02:01	10°♄55'58	
retrograde	12915 Apr 05 00:26	26°♄22'13	behind sun end	12920 Apr 23 17:41	11°♄04'21	
min. Earth dist.	12915 Jun 01 23:29	21°♄31'43 4.05575 AU	morning rise	12920 May 06 06:12	13°♄46'01	
opposition	12915 Jun 03 14:28	21°♄18'30 0°40'32		12920 May 12 00:52	15°♄	
direct	12915 Aug 01 07:38	16°♄20'55		12920 Aug 15 23:53	0°♄	
	12915 Nov 11 18:20	0°♄	retrograde	12920 Sep 04 12:54	0°♄35'07	
evening set	12915 Dec 06 02:09	5°♄26'58		12920 Sep 24 00:16	30°♄	
			opposition	12920 Nov 04 14:59	25°♄41'29 -0°19'37	
conjunction	12915 Dec 19 15:26	8°♄33'46 0°33'19	min. Earth dist.	12920 Nov 06 01:19	25°♄30'29 4.43574 AU	
minimum elong	12915 Dec 19 15:25	8°♄33'46 0°34'18	direct	12921 Jan 06 01:31	20°♄40'43	
max. Earth dist.	12915 Dec 22 03:43	9°♄08'26 6.14336 AU		12921 Apr 01 10:05	0°♄	
morning rise	12916 Jan 02 05:00	11°♄40'23	evening set	12921 May 10 23:03	8°♄12'21	
	12916 Apr 22 06:48	0°♄	max. Earth dist.	12921 May 21 12:41	10°♄32'10 6.36977 AU	
retrograde	12916 May 07 12:32	0°♄22'39				
	12916 May 22 17:38	30°♄	conjunction	12921 May 23 19:13	11°♄02'22 -0°22'07	
min. Earth dist.	12916 Jul 05 04:43	25°♄31'51 4.23342 AU	minimum elong	12921 May 23 19:12	11°♄02'21 0°23'01	
opposition	12916 Jul 06 15:53	25°♄20'06 0°54'34	morning rise	12921 Jun 05 14:01	13°♄52'03	
direct	12916 Sep 04 13:06	20°♄20'44		12921 Sep 05 23:42	0°♄	
	12916 Nov 28 23:12	0°♄	retrograde	12921 Oct 06 21:04	1°♄27'18	
evening set	12917 Jan 08 13:44	8°♄30'19		12921 Nov 06 20:16	30°♄	
			opposition	12921 Dec 06 15:49	26°♄33'40 -0°43'30	
conjunction	12917 Jan 21 23:33	11°♄28'03 0°37'10	min. Earth dist.	12921 Dec 08 08:14	26°♄20'39 4.28960 AU	
minimum elong	12917 Jan 21 23:33	11°♄28'04 0°37'58	direct	12922 Feb 06 07:34	21°♄33'50	
max. Earth dist.	12917 Jan 23 17:26	11°♄51'13 6.32028 AU		12922 Apr 26 09:06	0°♄	
morning rise	12917 Feb 04 08:48	14°♄25'10	evening set	12922 Jun 11 19:53	9°♄52'08	
	12917 Feb 07 00:30	15°♄	max. Earth dist.	12922 Jun 22 08:21	12°♄16'49 6.20140 AU	
	12917 May 02 18:16	0°♄				
retrograde	12917 Jun 07 17:43	1°♄58'22	conjunction	12922 Jun 24 16:13	12°♄48'57 -0°34'38	
	12917 Jul 13 13:41	30°♄	minimum elong	12922 Jun 24 16:13	12°♄48'57 0°35'37	
opposition	12917 Aug 07 08:19	26°♄58'30 0°50'52	morning rise	12922 Jul 07 12:27	15°♄46'01	
min. Earth dist.	12917 Aug 06 13:00	27°♄04'51 4.39523 AU		12922 Sep 16 10:56	0°♄	
direct	12917 Oct 07 12:48	21°♄58'01	retrograde	12922 Nov 10 22:23	4°♄31'34	
	12917 Dec 24 20:48	0°♄		12923 Jan 07 04:26	30°♄	
evening set	12918 Feb 09 18:52	9°♄23'54	opposition	12923 Jan 10 03:28	29°♄36'51 -0°55'38	
			min. Earth dist.	12923 Jan 11 13:50	29°♄25'38 4.11058 AU	
conjunction	12918 Feb 23 00:31	12°♄14'33 0°29'55	direct	12923 Mar 11 14:05	24°♄38'43	
minimum elong	12918 Feb 23 00:32	12°♄14'33 0°30'19		12923 May 10 14:44	0°♄	
max. Earth dist.	12918 Feb 23 15:44	12°♄22'44 6.45535 AU	evening set	12923 Jul 15 21:02	13°♄54'08	
morning rise	12918 Mar 08 04:39	15°♄04'19		12923 Jul 20 11:54	15°♄	
	12918 Jun 02 04:28	0°♄	max. Earth dist.	12923 Jul 27 07:46	16°♄37'47 6.02733 AU	
retrograde	12918 Jul 07 11:53	1°♄52'26				
	12918 Aug 11 18:56	30°♄	conjunction	12923 Jul 28 20:55	17°♄00'00 -0°36'24	
opposition	12918 Sep 06 12:27	26°♄55'29 0°33'36	minimum elong	12923 Jul 28 20:56	17°♄00'00 0°37'08	
min. Earth dist.	12918 Sep 06 11:47	26°♄55'42 4.49546 AU	morning rise	12923 Aug 10 21:33	20°♄06'38	
direct	12918 Nov 07 14:49	21°♄54'34		12923 Sep 23 20:20	0°♄	
	12919 Jan 26 05:25	0°♄	retrograde	12923 Dec 18 14:14	10°♄08'12	
evening set	12919 Mar 12 10:43	8°♄58'11	opposition	12924 Feb 16 04:44	5°♄11'24 -0°48'33	
			min. Earth dist.	12924 Feb 16 19:40	5°♄06'27 3.95760 AU	
conjunction	12919 Mar 25 12:05	11°♄44'55 0°14'54	direct	12924 Apr 15 05:37	0°♄15'22	
minimum elong	12919 Mar 25 12:06	11°♄44'56 0°14'47	evening set	12924 Aug 20 08:16	20°♄18'12	
behind sun begin	12919 Mar 25 08:58	11°♄43'16				
behind sun end	12919 Mar 25 15:14	11°♄46'35	conjunction	12924 Sep 02 13:47	23°♄32'14 -0°24'34	
max. Earth dist.	12919 Mar 24 21:44	11°♄37'16 6.51407 AU	minimum elong	12924 Sep 02 13:48	23°♄32'14 0°24'47	

max. Earth dist.	12924 Sep 02 09:47	23° \mathbb{M} 29'47	5.91067 AU	max. Earth dist.	12930 Feb 27 16:38	16° \mathbb{H} 34'52	6.46807 AU
morning rise	12924 Sep 15 21:19	26° \mathbb{M} 47'27		morning rise	12930 Mar 12 10:35	19° \mathbb{H} 18'46	
	12924 Sep 29 05:08	0° \mathbb{L}			12930 May 06 08:15	0° \mathbb{Y}	
retrograde	12925 Jan 25 13:37	17° \mathbb{L} 38'04		retrograde	12930 Jul 11 14:57	6° \mathbb{Y} 03'20	
opposition	12925 Mar 25 20:34	12° \mathbb{L} 38'10	-0°21'20	opposition	12930 Sep 10 15:11	1° \mathbb{Y} 06'50	0°30'25
min. Earth dist.	12925 Mar 25 08:43	12° \mathbb{L} 42'10	3.89109 AU	min. Earth dist.	12930 Sep 10 18:34	1° \mathbb{Y} 05'44	4.50148 AU
direct	12925 May 22 23:13	7° \mathbb{L} 43'07			12930 Sep 19 07:48	30° \mathbb{R} \mathbb{H}	
evening set	12925 Sep 27 10:44	27° \mathbb{L} 59'59		direct	12930 Nov 11 20:54	26° \mathbb{H} 05'53	
	12925 Oct 05 15:41	0° \mathbb{M}			12931 Jan 04 00:45	0° \mathbb{Y}	
				evening set	12931 Mar 16 14:56	13° \mathbb{Y} 08'55	
conjunction	12925 Oct 10 22:03	1° \mathbb{M} 17'15	-0°02'31				
minimum elong	12925 Oct 10 22:05	1° \mathbb{M} 17'16	0°02'06	conjunction	12931 Mar 29 15:51	15° \mathbb{Y} 55'32	0°12'25
behind sun begin	12925 Oct 10 13:43	1° \mathbb{M} 12'11		minimum elong	12931 Mar 29 15:52	15° \mathbb{Y} 55'32	0°12'14
behind sun end	12925 Oct 11 06:26	1° \mathbb{M} 22'21		behind sun begin	12931 Mar 29 10:32	15° \mathbb{Y} 52'42	
max. Earth dist.	12925 Oct 12 09:13	1° \mathbb{M} 38'44	5.90132 AU	behind sun end	12931 Mar 29 21:12	15° \mathbb{Y} 58'22	
morning rise	12925 Oct 24 11:21	4° \mathbb{M} 35'31		max. Earth dist.	12931 Mar 28 20:54	15° \mathbb{Y} 45'25	6.51304 AU
asc. node	12925 Nov 22 01:27	11° \mathbb{M} 19'22		morning rise	12931 Apr 11 14:57	18° \mathbb{Y} 41'17	
	12925 Dec 08 23:48	15° \mathbb{M}			12931 Jun 09 19:18	0° \mathbb{B}	
retrograde	12926 Mar 04 22:29	25° \mathbb{M} 19'48		retrograde	12931 Aug 10 05:37	5° \mathbb{B} 15'30	
min. Earth dist.	12926 May 01 21:23	20° \mathbb{M} 27'50	3.94048 AU	opposition	12931 Oct 10 10:00	0° \mathbb{B} 21'02	0°04'22
opposition	12926 May 03 05:15	20° \mathbb{M} 17'01	0°14'55	min. Earth dist.	12931 Oct 11 07:21	0° \mathbb{B} 14'12	4.50235 AU
direct	12926 Jun 30 07:39	15° \mathbb{M} 21'05			12931 Oct 13 03:44	30° \mathbb{R} \mathbb{Y}	
	12926 Oct 13 06:36	0° \mathbb{X}		desc. node	12931 Dec 09 08:03	25° \mathbb{Y} 20'43	
evening set	12926 Nov 04 13:23	5° \mathbb{X} 10'35		direct	12931 Dec 11 23:36	25° \mathbb{Y} 20'05	
					12932 Feb 08 13:56	0° \mathbb{B}	
conjunction	12926 Nov 18 03:24	8° \mathbb{X} 24'12	0°20'20	evening set	12932 Apr 14 16:47	12° \mathbb{B} 28'47	
minimum elong	12926 Nov 18 03:23	8° \mathbb{X} 24'11	0°21'12	max. Earth dist.	12932 Apr 25 20:36	14° \mathbb{B} 53'03	6.46933 AU
max. Earth dist.	12926 Nov 20 14:22	8° \mathbb{X} 59'15	6.00329 AU		12932 Apr 26 09:27	15° \mathbb{B}	
morning rise	12926 Dec 01 18:40	11° \mathbb{X} 38'10					
	12927 Mar 11 04:29	0° \mathbb{B}		conjunction	12932 Apr 27 14:30	15° \mathbb{B} 15'42	-0°06'40
retrograde	12927 Apr 09 20:04	1° \mathbb{B} 25'00		minimum elong	12932 Apr 27 14:30	15° \mathbb{B} 15'42	0°07'17
	12927 May 09 07:50	30° \mathbb{R} \mathbb{X}		behind sun begin	12932 Apr 27 07:10	15° \mathbb{B} 11'46	
min. Earth dist.	12927 Jun 06 20:48	26° \mathbb{X} 34'46	4.08293 AU	behind sun end	12932 Apr 27 21:49	15° \mathbb{B} 19'39	
opposition	12927 Jun 08 12:37	26° \mathbb{X} 21'19	0°43'33	morning rise	12932 May 10 10:27	18° \mathbb{B} 02'00	
direct	12927 Aug 06 08:48	21° \mathbb{X} 23'26			12932 Jul 11 16:53	0° \mathbb{I}	
	12927 Oct 23 15:55	0° \mathbb{B}		retrograde	12932 Sep 08 22:39	4° \mathbb{I} 56'44	
evening set	12927 Dec 11 00:57	10° \mathbb{B} 20'02		opposition	12932 Nov 09 00:01	0° \mathbb{I} 03'15	-0°23'21
					12932 Nov 09 10:09	30° \mathbb{R} \mathbb{B}	
conjunction	12927 Dec 24 13:40	13° \mathbb{B} 25'21	0°34'34	min. Earth dist.	12932 Nov 10 11:50	29° \mathbb{B} 51'47	4.41658 AU
minimum elong	12927 Dec 24 13:40	13° \mathbb{B} 25'20	0°35'33	direct	12933 Jan 10 08:40	25° \mathbb{B} 02'40	
max. Earth dist.	12927 Dec 26 22:42	13° \mathbb{B} 57'55	6.17182 AU		12933 Mar 11 05:33	0° \mathbb{I}	
morning rise	12928 Jan 07 02:47	16° \mathbb{B} 30'26		evening set	12933 May 15 08:14	12° \mathbb{I} 40'33	
	12928 Mar 14 10:45	0° \mathbb{A}		max. Earth dist.	12933 May 25 19:43	15° \mathbb{I} 00'00	6.34667 AU
retrograde	12928 May 11 23:27	5° \mathbb{A} 01'06					
min. Earth dist.	12928 Jul 09 19:53	0° \mathbb{A} 09'40	4.26053 AU	conjunction	12933 May 28 04:09	15° \mathbb{I} 31'25	-0°24'19
opposition	12928 Jul 11 04:20	29° \mathbb{B} 58'51	0°54'59	minimum elong	12933 May 28 04:08	15° \mathbb{I} 31'25	0°25'14
	12928 Jul 11 00:52	30° \mathbb{R} \mathbb{B}		morning rise	12933 Jun 09 23:10	18° \mathbb{I} 22'04	
direct	12928 Sep 09 07:11	24° \mathbb{B} 59'14			12933 Aug 06 16:54	0° \mathbb{B}	
	12928 Nov 07 10:38	0° \mathbb{A}		retrograde	12933 Oct 11 16:14	6° \mathbb{B} 06'40	
evening set	12929 Jan 13 03:15	13° \mathbb{A} 00'57		opposition	12933 Dec 11 08:47	1° \mathbb{B} 12'57	-0°46'04
	12929 Jan 22 04:10	15° \mathbb{A}		min. Earth dist.	12933 Dec 13 00:55	1° \mathbb{B} 00'00	4.26408 AU
					12933 Dec 20 21:05	30° \mathbb{R} \mathbb{I}	
conjunction	12929 Jan 26 12:39	15° \mathbb{A} 57'30	0°36'44	direct	12934 Feb 10 21:20	26° \mathbb{I} 13'20	
minimum elong	12929 Jan 26 12:40	15° \mathbb{A} 57'30	0°37'28		12934 Apr 02 15:49	0° \mathbb{B}	
max. Earth dist.	12929 Jan 28 04:01	16° \mathbb{A} 19'09	6.34403 AU	evening set	12934 Jun 16 11:51	14° \mathbb{B} 39'46	
morning rise	12929 Feb 08 21:04	18° \mathbb{A} 53'20		max. Earth dist.	12934 Jun 27 03:37	17° \mathbb{B} 07'09	6.17566 AU
	12929 Apr 05 16:11	0° \mathbb{H}					
retrograde	12929 Jun 11 20:51	6° \mathbb{H} 18'21		conjunction	12934 Jun 29 08:40	17° \mathbb{B} 37'50	-0°35'37
opposition	12929 Aug 11 13:50	1° \mathbb{H} 18'57	0°49'07	minimum elong	12934 Jun 29 08:40	17° \mathbb{B} 37'50	0°36'35
min. Earth dist.	12929 Aug 10 20:30	1° \mathbb{H} 24'38	4.41408 AU	morning rise	12934 Jul 12 05:13	20° \mathbb{B} 36'10	
	12929 Aug 21 17:53	30° \mathbb{R} \mathbb{A}			12934 Aug 24 08:29	0° \mathbb{Q}	
direct	12929 Oct 11 21:06	26° \mathbb{A} 18'25		retrograde	12934 Nov 16 02:36	9° \mathbb{Q} 32'35	
	12929 Dec 01 23:40	0° \mathbb{H}		opposition	12935 Jan 15 05:28	4° \mathbb{Q} 37'41	-0°55'52
evening set	12930 Feb 14 02:06	13° \mathbb{H} 39'50		min. Earth dist.	12935 Jan 16 13:32	4° \mathbb{Q} 27'12	4.08682 AU
					12935 Mar 02 02:21	30° \mathbb{R} \mathbb{B}	
conjunction	12930 Feb 27 07:02	16° \mathbb{H} 29'43	0°28'11	direct	12935 Mar 16 10:51	29° \mathbb{B} 39'55	
minimum elong	12930 Feb 27 07:03	16° \mathbb{H} 29'44	0°28'31		12935 Mar 30 19:08	0° \mathbb{Q}	

	12935 Jul 03 14:45	15°♏			12941 Jan 05 22:27	15°♏	
evening set	12935 Jul 20 21:07	19°♏02'44		evening set	12941 Jan 17 17:05	17°♏32'35	
max. Earth dist.	12935 Aug 01 11:35	21°♏49'24	6.00759 AU				
				conjunction	12941 Jan 31 01:45	20°♏28'05	0°36'05
conjunction	12935 Aug 02 21:32	22°♏09'47	-0°35'31	minimum elong	12941 Jan 31 01:46	20°♏28'05	0°36'47
minimum elong	12935 Aug 02 21:33	22°♏09'47	0°36'11	max. Earth dist.	12941 Feb 01 11:55	20°♏46'49	6.36333 AU
morning rise	12935 Aug 15 23:09	25°♏17'44		morning rise	12941 Feb 13 09:41	23°♏22'55	
	12935 Sep 05 00:13	0°♐			12941 Mar 17 00:12	0°♐	
retrograde	12935 Dec 23 23:29	15°♐27'58		retrograde	12941 Jun 16 02:51	10°♐41'15	
opposition	12936 Feb 21 13:41	10°♐30'43	-0°45'45	opposition	12941 Aug 15 20:11	5°♐42'16	0°47'06
min. Earth dist.	12936 Feb 22 00:20	10°♐27'10	3.94385 AU	min. Earth dist.	12941 Aug 15 06:15	5°♐46'49	4.42893 AU
direct	12936 Apr 20 10:33	5°♐34'54		direct	12941 Oct 16 07:10	0°♐41'36	
evening set	12936 Aug 25 14:41	25°♐41'18		evening set	12942 Feb 18 10:23	17°♐59'44	
conjunction	12936 Sep 07 21:10	28°♐56'05	-0°21'53	conjunction	12942 Mar 03 14:56	20°♐49'05	0°26'17
minimum elong	12936 Sep 07 21:11	28°♐56'05	0°21'59	minimum elong	12942 Mar 03 14:57	20°♐49'05	0°26'32
max. Earth dist.	12936 Sep 07 23:59	28°♐57'48	5.90434 AU	max. Earth dist.	12942 Mar 03 21:51	20°♐52'47	6.47761 AU
	12936 Sep 12 05:27	0°♑		morning rise	12942 Mar 16 17:44	23°♐37'31	
morning rise	12936 Sep 21 05:26	2°♑11'58			12942 Apr 16 19:16	0°♑	
retrograde	12937 Jan 31 01:15	23°♑04'30		retrograde	12942 Jul 15 17:51	10°♑19'22	
opposition	12937 Mar 31 06:41	18°♑04'11	-0°16'22	opposition	12942 Sep 14 19:38	5°♑23'14	0°27'01
min. Earth dist.	12937 Mar 30 16:23	18°♑09'00	3.89294 AU	min. Earth dist.	12942 Sep 15 00:36	5°♑21'38	4.50551 AU
direct	12937 May 28 09:09	13°♑09'08		direct	12942 Nov 16 01:52	0°♑22'20	
	12937 Sep 18 15:22	0°♒		evening set	12943 Mar 20 20:55	17°♑25'08	
asc. node	12937 Sep 29 21:31	2°♒41'39					
evening set	12937 Oct 02 19:10	3°♒23'47		conjunction	12943 Apr 02 21:14	20°♑11'35	0°09'48
				minimum elong	12943 Apr 02 21:15	20°♑11'35	0°09'34
conjunction	12937 Oct 16 07:04	6°♒40'53	0°00'59	behind sun begin	12943 Apr 02 14:37	20°♑08'04	
minimum elong	12937 Oct 16 07:03	6°♒40'52	0°01'29	behind sun end	12943 Apr 03 03:53	20°♑15'07	
behind sun begin	12937 Oct 15 22:41	6°♒35'47		max. Earth dist.	12943 Apr 01 22:55	19°♑59'39	6.51148 AU
behind sun end	12937 Oct 16 15:26	6°♒45'57		morning rise	12943 Apr 15 19:51	22°♑57'14	
max. Earth dist.	12937 Oct 17 22:44	7°♒05'03	5.91094 AU		12943 May 20 11:17	0°♒	
morning rise	12937 Oct 29 20:53	9°♒58'52		retrograde	12943 Aug 14 12:40	9°♒32'38	
	12937 Nov 20 01:02	15°♒		opposition	12943 Oct 14 16:07	4°♒38'26	0°00'22
	12938 Feb 18 18:21	0°♓		min. Earth dist.	12943 Oct 15 16:12	4°♒30'44	4.49562 AU
retrograde	12938 Mar 10 01:29	0°♓37'03		desc. node	12943 Oct 19 16:44	3°♒59'56	
	12938 Mar 29 06:20	30°♒♒			12943 Nov 30 11:15	30°♒♑	
min. Earth dist.	12938 May 06 23:29	25°♒45'41	3.95688 AU	direct	12943 Dec 16 06:47	29°♑37'34	
opposition	12938 May 08 09:47	25°♒34'03	0°19'42		12944 Jan 01 02:26	0°♒	
direct	12938 Jul 05 12:41	20°♒37'54			12944 Apr 10 11:32	15°♒	
	12938 Sep 24 04:56	0°♓		evening set	12944 Apr 18 23:22	16°♒48'44	
evening set	12938 Nov 09 17:58	10°♓20'48		max. Earth dist.	12944 Apr 29 23:56	19°♒11'41	6.45808 AU
conjunction	12938 Nov 23 07:52	13°♓33'23	0°22'58	conjunction	12944 May 01 20:40	19°♒35'55	-0°09'21
minimum elong	12938 Nov 23 07:51	13°♓33'23	0°23'53	minimum elong	12944 May 01 20:40	19°♒35'55	0°10'02
max. Earth dist.	12938 Nov 25 18:21	14°♓07'59	6.02454 AU	behind sun begin	12944 May 01 14:13	19°♒32'27	
morning rise	12938 Dec 06 23:09	16°♓46'18		behind sun end	12944 May 02 03:06	19°♒39'24	
	12939 Feb 07 12:33	0°♔		morning rise	12944 May 14 16:25	22°♒22'33	
retrograde	12939 Apr 14 14:20	6°♔22'56			12944 Jun 20 17:21	0°♔	
min. Earth dist.	12939 Jun 11 17:41	1°♔32'27	4.10666 AU	retrograde	12944 Sep 13 09:07	9°♔21'50	
opposition	12939 Jun 13 08:35	1°♔19'19	0°46'15	opposition	12944 Nov 13 10:13	4°♔28'20	-0°27'01
	12939 Jun 23 06:40	30°♒♓		min. Earth dist.	12944 Nov 14 22:10	4°♔16'49	4.40174 AU
direct	12939 Aug 11 09:33	26°♓21'07			12944 Dec 26 22:16	30°♒♒	
	12939 Sep 29 04:38	0°♔		direct	12945 Jan 14 16:35	29°♒27'51	
evening set	12939 Dec 15 21:57	15°♔09'56			12945 Feb 02 13:08	0°♔	
				evening set	12945 May 19 17:43	17°♔10'15	
conjunction	12939 Dec 29 10:28	18°♔14'03	0°35'34	max. Earth dist.	12945 May 30 06:44	19°♔31'03	6.32945 AU
minimum elong	12939 Dec 29 10:28	18°♔14'03	0°36'33				
max. Earth dist.	12939 Dec 31 18:50	18°♔46'05	6.19604 AU	conjunction	12945 Jun 01 13:39	20°♔01'45	-0°26'24
morning rise	12940 Jan 11 22:53	21°♔17'49		minimum elong	12945 Jun 01 13:39	20°♔01'44	0°27'21
	12940 Feb 21 17:35	0°♕		morning rise	12945 Jun 14 08:29	22°♔53'02	
retrograde	12940 May 16 09:57	9°♕38'41			12945 Jul 17 14:16	0°♕	
min. Earth dist.	12940 Jul 14 09:07	4°♕47'06	4.28316 AU	retrograde	12945 Oct 16 09:51	10°♕44'42	
opposition	12940 Jul 15 16:03	4°♕36'49	0°55'06	opposition	12945 Dec 16 01:16	5°♕50'53	-0°48'22
	12940 Aug 29 11:34	30°♒♔		min. Earth dist.	12945 Dec 17 17:07	5°♕38'02	4.24564 AU
direct	12940 Sep 13 22:33	29°♔37'03		direct	12946 Feb 15 10:48	0°♕51'31	
	12940 Sep 29 12:15	0°♕		evening set	12946 Jun 21 02:15	19°♕23'19	

max. Earth dist.	12946 Jul 01 18:45	21°☾51'47	6.15741 AU	morning rise	12952 Jan 16 16:03	25°☾56'40	
					12952 Feb 04 01:40	0°☾	
conjunction	12946 Jul 03 23:07	22°☾22'12	-0°36'21	retrograde	12952 May 20 18:01	14°☾10'00	
minimum elong	12946 Jul 03 23:07	22°☾22'12	0°37'19	min. Earth dist.	12952 Jul 18 20:16	9°☾18'11	4.30025 AU
morning rise	12946 Jul 16 20:13	25°☾21'30		opposition	12952 Jul 20 01:31	9°☾08'28	0°54'54
	12946 Aug 06 06:51	0°♈		direct	12952 Sep 18 11:01	4°☾08'33	
retrograde	12946 Nov 21 02:06	14°♈26'02			12952 Dec 19 19:10	15°☾	
opposition	12947 Jan 20 04:25	9°♈30'47	-0°55'43	evening set	12953 Jan 22 05:01	21°☾59'44	
min. Earth dist.	12947 Jan 21 09:48	9°♈21'09	4.07021 AU				
direct	12947 Mar 21 05:48	4°♈33'13		conjunction	12953 Feb 04 13:23	24°☾54'30	0°35'14
	12947 Jun 15 23:23	15°♈		minimum elong	12953 Feb 04 13:23	24°☾54'30	0°35'53
evening set	12947 Jul 25 17:15	24°♈00'48		max. Earth dist.	12953 Feb 05 21:42	25°☾12'10	6.37808 AU
				morning rise	12953 Feb 17 20:32	27°☾48'28	
conjunction	12947 Aug 07 18:23	27°♈08'45	-0°34'26		12953 Feb 28 01:23	0°♉	
minimum elong	12947 Aug 07 18:24	27°♈08'46	0°35'03	retrograde	12953 Jun 20 07:40	15°♉01'36	
max. Earth dist.	12947 Aug 06 13:34	26°♈51'24	5.99428 AU	opposition	12953 Aug 20 01:49	10°♉03'02	0°44'52
	12947 Aug 19 15:09	0°♊		min. Earth dist.	12953 Aug 19 13:36	10°♉07'01	4.44037 AU
morning rise	12947 Aug 20 20:34	0°♊17'36		direct	12953 Oct 20 15:16	5°♉02'23	
retrograde	12947 Dec 29 04:46	20°♊33'49		evening set	12954 Feb 22 18:12	22°♉18'01	
opposition	12948 Feb 26 17:00	15°♊36'13	-0°42'43				
min. Earth dist.	12948 Feb 27 01:47	15°♊33'17	3.93527 AU	conjunction	12954 Mar 07 22:01	25°♉06'51	0°24'16
direct	12948 Apr 25 11:45	10°♊40'33		minimum elong	12954 Mar 07 22:02	25°♉06'51	0°24'26
	12948 Aug 27 07:13	0°♊		max. Earth dist.	12954 Mar 08 00:10	25°♉08'00	6.48491 AU
evening set	12948 Aug 30 15:34	0°♊48'49		morning rise	12954 Mar 21 00:22	27°♉54'49	
					12954 Mar 30 21:41	0°♊	
conjunction	12948 Sep 12 22:45	4°♊04'06	-0°19'10	retrograde	12954 Jul 19 22:52	14°♊34'30	
minimum elong	12948 Sep 12 22:46	4°♊04'06	0°19'11	opposition	12954 Sep 18 23:59	9°♊38'39	0°23'30
max. Earth dist.	12948 Sep 13 05:05	4°♊07'58	5.90128 AU	min. Earth dist.	12954 Sep 19 07:55	9°♊36'05	4.50822 AU
morning rise	12948 Sep 26 07:57	7°♊20'33		direct	12954 Nov 20 08:31	4°♊37'41	
retrograde	12949 Feb 05 04:08	28°♊13'39		evening set	12955 Mar 25 02:23	21°♊40'23	
opposition	12949 Apr 05 09:47	23°♊12'59	-0°11'33	max. Earth dist.	12955 Apr 06 01:43	24°♊13'33	6.50923 AU
min. Earth dist.	12949 Apr 04 16:10	23°♊18'55	3.89597 AU				
direct	12949 Jun 02 10:04	18°♊17'52		conjunction	12955 Apr 07 02:22	24°♊26'44	0°07'10
asc. node	12949 Aug 09 21:08	25°♊26'23		minimum elong	12955 Apr 07 02:22	24°♊26'44	0°06'52
	12949 Sep 01 06:40	0°♋		behind sun begin	12955 Apr 06 18:55	24°♊22'47	
evening set	12949 Oct 07 21:15	8°♋30'27		behind sun end	12955 Apr 07 09:49	24°♊30'42	
				morning rise	12955 Apr 20 00:23	27°♊12'16	
conjunction	12949 Oct 21 09:34	11°♋47'21	0°04'13		12955 May 03 07:42	0°♋	
minimum elong	12949 Oct 21 09:33	11°♋47'20	0°04'48	retrograde	12955 Aug 18 17:13	13°♋48'55	
behind sun begin	12949 Oct 21 01:24	11°♋42'24		desc. node	12955 Aug 31 14:41	13°♋33'30	
behind sun end	12949 Oct 21 17:43	11°♋52'17		opposition	12955 Oct 18 21:43	8°♋54'49	-0°03'36
max. Earth dist.	12949 Oct 23 02:48	12°♋12'25	5.91963 AU	min. Earth dist.	12955 Oct 19 22:42	8°♋46'50	4.48833 AU
morning rise	12949 Nov 03 23:55	15°♋05'07		direct	12955 Dec 20 10:54	3°♋53'58	
	12949 Nov 03 15:26	15°♋			12956 Mar 24 18:07	15°♋	
	12950 Jan 12 18:28	0°♌		evening set	12956 Apr 23 05:15	21°♋07'41	
retrograde	12950 Mar 14 22:58	5°♌38'11		max. Earth dist.	12956 May 04 04:06	23°♋30'06	6.44584 AU
min. Earth dist.	12950 May 11 21:21	0°♌46'51	3.97011 AU				
opposition	12950 May 13 08:13	0°♌35'01	0°24'06	conjunction	12956 May 06 02:12	23°♋55'11	-0°11'59
	12950 May 17 15:35	30°♋♌		minimum elong	12956 May 06 02:11	23°♋55'11	0°12'43
direct	12950 Jul 10 13:22	25°♋38'36		behind sun begin	12956 May 05 21:08	23°♋52'27	
	12950 Sep 01 07:09	0°♍		behind sun end	12956 May 06 07:14	23°♋57'54	
evening set	12950 Nov 14 17:05	15°♍16'37		morning rise	12956 May 18 21:37	26°♋42'09	
					12956 Jun 03 08:21	0°♎	
conjunction	12950 Nov 28 07:14	18°♍28'29	0°25'19	retrograde	12956 Sep 17 20:50	13°♎46'29	
minimum elong	12950 Nov 28 07:13	18°♍28'29	0°26'15	opposition	12956 Nov 17 20:24	8°♎53'01	-0°30'32
max. Earth dist.	12950 Nov 30 19:19	19°♍03'53	6.04117 AU	min. Earth dist.	12956 Nov 19 10:20	8°♎40'52	4.38487 AU
morning rise	12950 Dec 11 22:16	21°♍40'32		direct	12957 Jan 19 01:37	3°♎52'37	
	12951 Jan 18 05:41	0°♏		evening set	12957 May 24 03:01	21°♎40'17	
retrograde	12951 Apr 19 06:12	11°♏09'07		max. Earth dist.	12957 Jun 03 13:56	24°♎00'37	6.30890 AU
min. Earth dist.	12951 Jun 16 09:54	6°♏18'36	4.12495 AU				
opposition	12951 Jun 18 00:07	6°♏05'43	0°48'32	conjunction	12957 Jun 05 22:49	24°♎32'33	-0°28'20
direct	12951 Aug 16 04:04	1°♏07'21		minimum elong	12957 Jun 05 22:48	24°♎32'32	0°29'18
evening set	12951 Dec 20 15:50	19°♏50'41		morning rise	12957 Jun 18 17:51	27°♎24'42	
					12957 Jun 30 10:19	0°♐	
conjunction	12952 Jan 03 03:54	22°♏53'52	0°36'20	retrograde	12957 Oct 21 03:56	15°♐24'58	
minimum elong	12952 Jan 03 03:54	22°♏53'52	0°37'16	opposition	12957 Dec 20 18:17	10°♐30'58	-0°50'23
max. Earth dist.	12952 Jan 05 09:23	23°♏24'07	6.21442 AU	min. Earth dist.	12957 Dec 22 08:57	10°♐18'28	4.22266 AU

direct	12958 Feb 19 23:21	5°♄31'45		conjunction	12964 Jan 08 00:04	27°♄40'27	0°36'53
evening set	12958 Jun 25 17:52	24°♄10'54		minimum elong	12964 Jan 08 00:04	27°♄40'27	0°37'48
max. Earth dist.	12958 Jul 06 13:52	26°♄42'07	6.13390 AU	max. Earth dist.	12964 Jan 10 04:08	28°♄09'46	6.23950 AU
					12964 Jan 18 08:29	0°♄	
conjunction	12958 Jul 08 15:14	27°♄10'58	-0°36'52	morning rise	12964 Jan 21 11:27	0°♄41'52	
minimum elong	12958 Jul 08 15:14	27°♄10'58	0°37'47		12964 Apr 04 21:30	15°♄	
	12958 Jul 20 16:58	0°♄		retrograde	12964 May 25 04:01	18°♄45'09	
morning rise	12958 Jul 21 12:41	0°♄11'28			12964 Jul 14 20:39	15°♄	
	12958 Oct 02 14:12	15°♄		min. Earth dist.	12964 Jul 23 09:32	13°♄52'58	4.32432 AU
retrograde	12958 Nov 26 06:23	19°♄26'18		opposition	12964 Jul 24 12:44	13°♄43'58	0°54'22
	12959 Jan 21 12:40	15°♄♄		direct	12964 Sep 23 03:13	8°♄43'54	
opposition	12959 Jan 25 05:48	14°♄30'49	-0°55'09		12964 Nov 29 15:28	15°♄	
min. Earth dist.	12959 Jan 26 10:03	14°♄21'32	4.04812 AU	evening set	12965 Jan 26 17:42	26°♄28'11	
direct	12959 Mar 26 03:19	9°♄33'31					
	12959 May 25 04:41	15°♄		conjunction	12965 Feb 09 01:17	29°♄21'48	0°34'13
evening set	12959 Jul 30 16:44	29°♄08'06		minimum elong	12965 Feb 09 01:18	29°♄21'49	0°34'48
	12959 Aug 03 07:08	0°♄		max. Earth dist.	12965 Feb 10 05:33	29°♄37'11	6.39931 AU
					12965 Feb 11 23:29	0°♄	
conjunction	12959 Aug 12 18:35	2°♄17'16	-0°33'02	morning rise	12965 Feb 22 07:49	2°♄14'39	
minimum elong	12959 Aug 12 18:36	2°♄17'17	0°33'35	retrograde	12965 Jun 24 10:54	19°♄20'29	
max. Earth dist.	12959 Aug 11 16:31	2°♄01'31	5.97567 AU	opposition	12965 Aug 24 07:01	14°♄22'13	0°42'26
morning rise	12959 Aug 25 21:49	5°♄27'26		min. Earth dist.	12965 Aug 23 21:16	14°♄25'24	4.45744 AU
retrograde	12960 Jan 03 13:14	25°♄51'44		direct	12965 Oct 24 23:54	9°♄21'26	
opposition	12960 Mar 03 00:39	20°♄53'44	-0°39'14	evening set	12966 Feb 27 00:30	26°♄32'48	
min. Earth dist.	12960 Mar 03 05:10	20°♄52'13	3.92232 AU				
direct	12960 Apr 30 15:00	15°♄58'13		conjunction	12966 Mar 12 03:50	29°♄20'57	0°22'09
	12960 Aug 09 23:05	0°♄		minimum elong	12966 Mar 12 03:51	29°♄20'57	0°22'17
evening set	12960 Sep 04 21:39	6°♄10'04		max. Earth dist.	12966 Mar 12 03:20	29°♄20'41	6.49666 AU
					12966 Mar 15 04:51	0°♄	
conjunction	12960 Sep 18 05:40	9°♄26'02	-0°16'10	morning rise	12966 Mar 25 05:19	2°♄08'11	
minimum elong	12960 Sep 18 05:40	9°♄26'02	0°16'07	retrograde	12966 Jul 23 23:47	18°♄44'33	
max. Earth dist.	12960 Sep 18 16:48	9°♄32'51	5.89537 AU	opposition	12966 Sep 23 02:40	13°♄48'59	0°19'59
morning rise	12960 Oct 01 15:45	12°♄43'10		min. Earth dist.	12966 Sep 23 12:52	13°♄45'42	4.51389 AU
	12960 Dec 24 08:24	0°♄		direct	12966 Nov 24 12:38	8°♄48'01	
retrograde	12961 Feb 10 12:35	3°♄37'46		evening set	12967 Mar 29 05:38	25°♄49'45	
	12961 Mar 31 08:39	30°♄♄		max. Earth dist.	12967 Apr 09 23:31	28°♄20'10	6.50820 AU
opposition	12961 Apr 10 18:24	28°♄36'37	-0°06'25				
min. Earth dist.	12961 Apr 09 22:15	28°♄43'26	3.89781 AU	conjunction	12967 Apr 11 04:55	28°♄35'54	0°04'35
direct	12961 Jun 07 18:34	23°♄41'23		minimum elong	12967 Apr 11 04:54	28°♄35'54	0°04'12
asc. node	12961 Jun 18 11:12	23°♄53'18		behind sun begin	12967 Apr 10 21:01	28°♄31'42	
	12961 Aug 10 16:21	0°♄		behind sun end	12967 Apr 11 12:47	28°♄40'06	
evening set	12961 Oct 13 05:16	13°♄52'05			12967 Apr 17 18:04	0°♄	
	12961 Oct 17 21:45	15°♄		morning rise	12967 Apr 24 02:33	1°♄21'18	
					12967 Jul 08 13:48	15°♄	
conjunction	12961 Oct 26 18:15	17°♄08'46	0°07'32	desc. node	12967 Jul 14 13:48	15°♄42'23	
minimum elong	12961 Oct 26 18:15	17°♄08'46	0°08'12	retrograde	12967 Aug 22 22:13	17°♄59'13	
behind sun begin	12961 Oct 26 10:51	17°♄04'18			12967 Oct 07 16:05	15°♄♄	
behind sun end	12961 Oct 27 01:39	17°♄13'14		opposition	12967 Oct 23 01:38	13°♄05'16	-0°07'25
max. Earth dist.	12961 Oct 28 16:43	17°♄36'56	5.92913 AU	min. Earth dist.	12967 Oct 24 06:01	12°♄56'12	4.48049 AU
morning rise	12961 Nov 09 08:54	20°♄26'13		direct	12967 Dec 24 15:40	8°♄04'22	
	12961 Dec 21 06:50	0°♄♄			12968 Mar 06 05:49	15°♄	
retrograde	12962 Mar 20 02:43	10°♄♄53'05		evening set	12968 Apr 27 09:00	25°♄20'57	
min. Earth dist.	12962 May 16 23:29	6°♄♄02'01	3.98621 AU	max. Earth dist.	12968 May 08 04:41	27°♄42'07	6.43155 AU
opposition	12962 May 18 11:39	5°♄♄49'45	0°28'29				
direct	12962 Jul 15 19:00	0°♄♄53'07		conjunction	12968 May 10 05:44	28°♄08'53	-0°14'28
evening set	12962 Nov 19 21:22	20°♄♄24'48		minimum elong	12968 May 10 05:43	28°♄08'52	0°15'15
				behind sun begin	12968 May 10 03:04	28°♄07'26	
conjunction	12962 Dec 03 11:19	23°♄♄35'39	0°27'35	behind sun end	12968 May 10 08:22	28°♄10'19	
minimum elong	12962 Dec 03 11:18	23°♄♄35'38	0°28'34		12968 May 18 17:24	0°♄	
max. Earth dist.	12962 Dec 05 23:35	24°♄♄10'57	6.06218 AU	morning rise	12968 May 23 00:54	0°♄56'18	
morning rise	12962 Dec 17 02:19	26°♄♄46'38		retrograde	12968 Sep 22 05:43	18°♄06'37	
	12962 Dec 31 03:25	0°♄		opposition	12968 Nov 22 04:58	13°♄13'07	-0°33'50
retrograde	12963 Apr 23 22:23	16°♄05'01		min. Earth dist.	12968 Nov 23 19:20	13°♄00'49	4.36486 AU
min. Earth dist.	12963 Jun 21 04:49	11°♄14'40	4.14890 AU	direct	12969 Jan 23 06:36	8°♄12'48	
opposition	12963 Jun 22 19:18	11°♄01'42	0°50'33	evening set	12969 May 28 11:18	26°♄07'04	
direct	12963 Aug 21 02:31	6°♄03'04		max. Earth dist.	12969 Jun 07 22:22	28°♄28'13	6.28449 AU
evening set	12963 Dec 25 12:23	24°♄38'34					

conjunction	12969 Jun 10 07:11	29° Π 00'18	-0°30'04	conjunction	12974 Dec 08 16:28	28° $\cancel{\chi}$ 45'15	0°29'38
minimum elong	12969 Jun 10 07:10	29° Π 00'18	0°31'03	minimum elong	12974 Dec 08 16:27	28° $\cancel{\chi}$ 45'15	0°30'37
	12969 Jun 14 16:50	0° \mathfrak{E}		max. Earth dist.	12974 Dec 11 05:11	29° $\cancel{\chi}$ 20'38	6.08730 AU
morning rise	12969 Jun 23 02:20	1° \mathfrak{E} 53'31			12974 Dec 14 00:49	0° \mathfrak{Z}	
retrograde	12969 Oct 26 00:23	20° \mathfrak{E} 04'04		morning rise	12974 Dec 22 07:00	1° \mathfrak{Z} 54'51	
opposition	12969 Dec 25 11:30	15° \mathfrak{E} 09'58	-0°52'06	retrograde	12975 Apr 28 16:26	21° \mathfrak{Z} 01'39	
min. Earth dist.	12969 Dec 27 02:52	14° \mathfrak{E} 57'13	4.19529 AU	min. Earth dist.	12975 Jun 26 01:37	16° \mathfrak{Z} 10'56	4.17620 AU
direct	12970 Feb 24 12:51	10° \mathfrak{E} 10'59		opposition	12975 Jun 27 14:36	15° \mathfrak{Z} 58'30	0°52'09
evening set	12970 Jun 30 09:58	28° \mathfrak{E} 59'10		direct	12975 Aug 26 02:59	10° \mathfrak{Z} 59'36	
	12970 Jul 04 18:09	0° Ω		evening set	12975 Dec 30 08:47	29° \mathfrak{Z} 26'21	
max. Earth dist.	12970 Jul 11 07:04	1° Ω 32'01	6.10586 AU		12976 Jan 01 21:13	0° \approx	
conjunction	12970 Jul 13 07:50	2° Ω 00'41	-0°37'08	conjunction	12976 Jan 12 19:55	2° \approx 26'51	0°37'10
minimum elong	12970 Jul 13 07:50	2° Ω 00'41	0°38'01	minimum elong	12976 Jan 12 19:55	2° \approx 26'51	0°38'03
morning rise	12970 Jul 26 06:05	5° Ω 02'44		max. Earth dist.	12976 Jan 14 21:57	2° \approx 54'50	6.26647 AU
	12970 Sep 09 09:31	15° Ω		morning rise	12976 Jan 26 06:39	5° \approx 26'50	
retrograde	12970 Dec 01 10:35	24° Ω 29'53			12976 Mar 12 06:42	15° \approx	
opposition	12971 Jan 30 08:49	19° Ω 34'08	-0°54'13	retrograde	12976 May 29 11:13	23° \approx 19'47	
min. Earth dist.	12971 Jan 31 09:40	19° Ω 25'58	4.02195 AU	opposition	12976 Jul 28 23:16	18° \approx 18'58	0°53'28
	12971 Mar 15 20:53	15° \mathfrak{R} Ω		min. Earth dist.	12976 Jul 27 21:29	18° \approx 27'29	4.34880 AU
direct	12971 Mar 31 00:10	14° Ω 37'11			12976 Aug 25 13:44	15° \mathfrak{R} \approx	
	12971 Apr 15 04:33	15° Ω		direct	12976 Sep 27 17:25	13° \approx 18'46	
	12971 Jul 17 10:49	0° \mathfrak{M}			12976 Oct 31 06:25	15° \approx	
evening set	12971 Aug 04 18:39	4° \mathfrak{M} 20'32		evening set	12977 Jan 26 20:38	0° \mathfrak{H}	
					12977 Jan 31 05:42	0° \mathfrak{H} 56'24	
conjunction	12971 Aug 17 21:24	7° \mathfrak{M} 31'09	-0°31'23	conjunction	12977 Feb 13 12:40	3° \mathfrak{H} 48'57	0°32'58
minimum elong	12971 Aug 17 21:25	7° \mathfrak{M} 31'09	0°31'51	minimum elong	12977 Feb 13 12:41	3° \mathfrak{H} 48'58	0°33'29
max. Earth dist.	12971 Aug 17 00:25	7° \mathfrak{M} 18'24	5.95405 AU	max. Earth dist.	12977 Feb 14 12:47	4° \mathfrak{H} 02'02	6.41956 AU
morning rise	12971 Aug 31 01:39	10° \mathfrak{M} 42'48		morning rise	12977 Feb 26 18:23	6° \mathfrak{H} 40'42	
	12971 Dec 12 00:23	0° \mathfrak{L}		retrograde	12977 Jun 28 15:13	23° \mathfrak{H} 40'02	
retrograde	12972 Jan 09 02:30	1° \mathfrak{L} 16'29		opposition	12977 Aug 28 12:26	18° \mathfrak{H} 42'13	0°39'44
	12972 Feb 06 02:45	30° \mathfrak{R} \mathfrak{M}		min. Earth dist.	12977 Aug 28 06:03	18° \mathfrak{H} 44'17	4.47216 AU
opposition	12972 Mar 08 11:13	26° \mathfrak{M} 18'04	-0°35'24	direct	12977 Oct 29 09:26	13° \mathfrak{H} 41'24	
min. Earth dist.	12972 Mar 08 12:35	26° \mathfrak{M} 17'37	3.90767 AU		12978 Feb 27 09:32	0° \mathfrak{Y}	
direct	12972 May 05 22:49	21° \mathfrak{M} 22'45		evening set	12978 Mar 03 07:07	0° \mathfrak{Y} 49'26	
	12972 Jul 21 01:08	0° \mathfrak{L}					
evening set	12972 Sep 10 07:07	11° \mathfrak{L} 38'48		conjunction	12978 Mar 16 09:43	3° \mathfrak{Y} 37'01	0°19'54
conjunction	12972 Sep 23 16:12	14° \mathfrak{L} 55'33	-0°13'01	minimum elong	12978 Mar 16 09:44	3° \mathfrak{Y} 37'01	0°19'56
minimum elong	12972 Sep 23 16:13	14° \mathfrak{L} 55'34	0°12'52	max. Earth dist.	12978 Mar 16 03:41	3° \mathfrak{Y} 33'48	6.50478 AU
behind sun begin	12972 Sep 23 11:04	14° \mathfrak{L} 52'26		morning rise	12978 Mar 29 10:42	6° \mathfrak{Y} 23'44	
behind sun end	12972 Sep 23 21:21	14° \mathfrak{L} 58'42		retrograde	12978 Jul 28 03:14	22° \mathfrak{Y} 58'12	
max. Earth dist.	12972 Sep 24 10:31	15° \mathfrak{L} 06'48	5.88945 AU	opposition	12978 Sep 27 06:31	18° \mathfrak{Y} 02'52	0°16'15
morning rise	12972 Oct 07 03:09	18° \mathfrak{L} 13'24		min. Earth dist.	12978 Sep 27 19:47	17° \mathfrak{Y} 58'36	4.51518 AU
	12972 Nov 28 00:23	0° \mathfrak{M}		direct	12978 Nov 28 18:04	13° \mathfrak{Y} 01'50	
retrograde	12973 Feb 16 01:04	9° \mathfrak{M} 08'54		evening set	12979 Apr 02 10:19	0° \mathfrak{B} 04'05	
min. Earth dist.	12973 Apr 15 06:12	4° \mathfrak{M} 15'23	3.90154 AU		12979 Apr 02 02:39	0° \mathfrak{B}	
opposition	12973 Apr 16 05:47	4° \mathfrak{M} 07'24	-0°01'11	max. Earth dist.	12979 Apr 14 01:33	2° \mathfrak{B} 33'15	6.50258 AU
asc. node	12973 Apr 28 15:21	2° \mathfrak{M} 28'39					
	12973 May 22 14:48	30° \mathfrak{R} \mathfrak{L}		conjunction	12979 Apr 15 09:20	2° \mathfrak{B} 50'17	0°01'51
direct	12973 Jun 13 04:45	29° \mathfrak{L} 12'08		minimum elong	12979 Apr 15 09:20	2° \mathfrak{B} 50'17	0°01'24
	12973 Jul 04 19:49	0° \mathfrak{M}		behind sun begin	12979 Apr 15 01:19	2° \mathfrak{B} 46'00	
	12973 Sep 30 09:15	15° \mathfrak{M}		behind sun end	12979 Apr 15 17:20	2° \mathfrak{B} 54'33	
evening set	12973 Oct 18 16:10	19° \mathfrak{M} 19'59		morning rise	12979 Apr 28 06:22	5° \mathfrak{B} 35'42	
				desc. node	12979 May 23 22:45	10° \mathfrak{B} 55'14	
conjunction	12973 Nov 01 05:26	22° \mathfrak{M} 36'15	0°10'50		12979 Jun 14 15:07	15° \mathfrak{B}	
minimum elong	12973 Nov 01 05:25	22° \mathfrak{M} 36'14	0°11'33	retrograde	12979 Aug 27 03:59	22° \mathfrak{B} 16'21	
behind sun begin	12973 Oct 31 23:27	22° \mathfrak{M} 32'39		opposition	12979 Oct 27 07:53	17° \mathfrak{B} 22'30	-0°11'22
behind sun end	12973 Nov 01 11:22	22° \mathfrak{M} 39'49		min. Earth dist.	12979 Oct 28 13:48	17° \mathfrak{B} 12'57	4.46832 AU
max. Earth dist.	12973 Nov 03 07:02	23° \mathfrak{M} 06'12	5.94178 AU		12979 Nov 15 16:40	15° \mathfrak{R} \mathfrak{B}	
morning rise	12973 Nov 14 20:34	25° \mathfrak{M} 53'13		direct	12979 Dec 28 20:37	12° \mathfrak{B} 21'39	
	12973 Dec 02 07:08	0° $\cancel{\chi}$			12980 Feb 09 22:28	15° \mathfrak{B}	
retrograde	12974 Mar 25 05:21	16° $\cancel{\chi}$ 12'16		evening set	12980 May 01 15:41	29° \mathfrak{B} 42'25	
min. Earth dist.	12974 May 22 02:04	11° $\cancel{\chi}$ 21'48	4.00617 AU		12980 May 03 00:03	0° \mathfrak{H}	
opposition	12974 May 23 16:34	11° $\cancel{\chi}$ 08'43	0°32'38	max. Earth dist.	12980 May 12 08:19	2° \mathfrak{H} 02'32	6.41348 AU
direct	12974 Jul 21 01:54	6° $\cancel{\chi}$ 11'47					
evening set	12974 Nov 25 02:39	25° $\cancel{\chi}$ 35'39		conjunction	12980 May 14 12:04	2° \mathfrak{H} 30'54	-0°16'59

minimum elong	12980 May 14 12:03	2° Π 30'54	0°17'49	retrograde	12986 Mar 30 05:59	21° Σ 23'08	
morning rise	12980 May 27 07:13	5° Π 18'59		min. Earth dist.	12986 May 27 04:03	16° Σ 32'28	4.03093 AU
retrograde	12980 Sep 26 20:51	22° Π 36'37		opposition	12986 May 28 18:25	16° Σ 19'28	0°36'24
opposition	12980 Nov 26 17:44	17° Π 43'04	-0°37'04	direct	12986 Jul 26 08:05	11° Σ 22'13	
min. Earth dist.	12980 Nov 28 09:52	17° Π 30'10	4.34179 AU		12986 Nov 27 12:24	0° Σ	
direct	12981 Jan 27 17:28	12° Π 42'49		evening set	12986 Nov 30 04:33	0° Σ 36'54	
	12981 May 29 16:11	0° Σ					
evening set	12981 Jun 01 23:23	0° Σ 44'27		conjunction	12986 Dec 13 18:07	3° Σ 45'06	0°31'24
max. Earth dist.	12981 Jun 12 10:07	3° Σ 06'15	6.25815 AU	minimum elong	12986 Dec 13 18:06	3° Σ 45'06	0°32'23
				max. Earth dist.	12986 Dec 16 07:12	4° Σ 20'27	6.11519 AU
conjunction	12981 Jun 14 19:28	3° Σ 38'48	-0°31'41	morning rise	12986 Dec 27 08:12	6° Σ 53'13	
minimum elong	12981 Jun 14 19:27	3° Σ 38'48	0°32'41	retrograde	12987 May 03 04:44	25° Σ 47'53	
morning rise	12981 Jun 27 14:54	6° Σ 33'12		min. Earth dist.	12987 Jun 30 17:28	20° Σ 57'16	4.20452 AU
retrograde	12981 Oct 30 22:53	24° Σ 54'38		opposition	12987 Jul 02 06:06	20° Σ 44'59	0°53'20
opposition	12981 Dec 30 09:07	20° Σ 00'20	-0°53'32	direct	12987 Aug 30 22:02	15° Σ 45'54	
min. Earth dist.	12981 Dec 31 22:28	19° Σ 48'13	4.16767 AU		12987 Dec 16 09:25	0° \approx	
direct	12982 Mar 01 04:51	15° Σ 01'36		evening set	12988 Jan 04 01:22	4° \approx 03'58	
	12982 Jun 18 00:09	0° Ω					
evening set	12982 Jul 05 06:38	3° Ω 58'48		conjunction	12988 Jan 17 11:50	7° \approx 03'06	0°37'12
max. Earth dist.	12982 Jul 16 07:38	6° Ω 34'52	6.07939 AU	minimum elong	12988 Jan 17 11:50	7° \approx 03'06	0°38'03
				max. Earth dist.	12988 Jan 19 09:17	7° \approx 28'24	6.29286 AU
conjunction	12982 Jul 18 05:02	7° Ω 01'42	-0°37'08	morning rise	12988 Jan 30 21:54	10° \approx 01'41	
minimum elong	12982 Jul 18 05:02	7° Ω 01'42	0°37'59		12988 Feb 23 00:02	15° \approx	
morning rise	12982 Jul 31 04:00	10° Ω 05'14		retrograde	12988 Jun 02 18:00	27° \approx 45'09	
	12982 Aug 21 10:54	15° Ω		min. Earth dist.	12988 Aug 01 08:43	22° \approx 52'05	4.37127 AU
retrograde	12982 Dec 06 21:04	29° Ω 43'56		opposition	12988 Aug 02 06:51	22° \approx 44'48	0°52'18
opposition	12983 Feb 04 16:03	24° Ω 47'52	-0°52'48	direct	12988 Oct 02 06:24	17° \approx 44'29	
min. Earth dist.	12983 Feb 05 14:27	24° Ω 40'29	3.99920 AU		12989 Jan 10 10:01	0° \mathcal{H}	
direct	12983 Apr 05 03:45	19° Ω 51'11		evening set	12989 Feb 04 14:41	5° \mathcal{H} 16'24	
	12983 Jun 28 15:06	0° \mathcal{H}					
evening set	12983 Aug 10 00:05	9° \mathcal{H} 41'40		conjunction	12989 Feb 17 21:05	8° \mathcal{H} 08'04	0°31'34
				minimum elong	12989 Feb 17 21:06	8° \mathcal{H} 08'05	0°32'02
conjunction	12983 Aug 23 03:51	12° \mathcal{H} 53'31	-0°29'26	max. Earth dist.	12989 Feb 18 17:09	8° \mathcal{H} 18'54	6.43652 AU
minimum elong	12983 Aug 23 03:52	12° \mathcal{H} 53'31	0°29'48	morning rise	12989 Mar 03 02:06	10° \mathcal{H} 58'54	
max. Earth dist.	12983 Aug 22 12:55	12° \mathcal{H} 44'25	5.93757 AU	retrograde	12989 Jul 02 16:14	27° \mathcal{H} 53'06	
morning rise	12983 Sep 05 09:04	16° \mathcal{H} 06'25		opposition	12989 Sep 01 15:26	22° \mathcal{H} 55'43	0°36'54
	12983 Nov 07 19:38	0° $\underline{\mathcal{A}}$		min. Earth dist.	12989 Sep 01 11:29	22° \mathcal{H} 57'00	4.48284 AU
retrograde	12984 Jan 14 16:33	6° $\underline{\mathcal{A}}$ 46'44		direct	12989 Nov 02 14:16	17° \mathcal{H} 54'52	
opposition	12984 Mar 13 23:58	1° $\underline{\mathcal{A}}$ 47'53	-0°31'08		12990 Feb 11 04:34	0° \mathcal{Y}	
min. Earth dist.	12984 Mar 13 21:03	1° $\underline{\mathcal{A}}$ 48'52	3.89984 AU	evening set	12990 Mar 07 11:50	5° \mathcal{Y} 01'05	
	12984 Mar 27 17:29	30° $\mathcal{R}\mathcal{H}$					
direct	12984 May 11 07:33	26° \mathcal{H} 52'45		conjunction	12990 Mar 20 13:58	7° \mathcal{Y} 48'20	0°17'35
	12984 Jun 24 02:20	0° $\underline{\mathcal{A}}$		minimum elong	12990 Mar 20 13:59	7° \mathcal{Y} 48'20	0°17'33
evening set	12984 Sep 15 18:02	17° $\underline{\mathcal{A}}$ 09'57		max. Earth dist.	12990 Mar 20 04:14	7° \mathcal{Y} 43'09	6.50859 AU
				morning rise	12990 Apr 02 14:18	10° \mathcal{Y} 34'42	
conjunction	12984 Sep 29 03:42	20° $\underline{\mathcal{A}}$ 26'58	-0°09'44	retrograde	12990 Aug 01 06:21	27° \mathcal{Y} 08'48	
minimum elong	12984 Sep 29 03:42	20° $\underline{\mathcal{A}}$ 26'58	0°09'28	opposition	12990 Oct 01 09:35	22° \mathcal{Y} 13'51	0°12'32
behind sun begin	12984 Sep 28 20:45	20° $\underline{\mathcal{A}}$ 22'44		min. Earth dist.	12990 Oct 02 02:00	22° \mathcal{Y} 08'35	4.51203 AU
behind sun end	12984 Sep 29 10:38	20° $\underline{\mathcal{A}}$ 31'12		direct	12990 Dec 02 22:40	17° \mathcal{Y} 12'54	
max. Earth dist.	12984 Sep 30 02:38	20° $\underline{\mathcal{A}}$ 41'02	5.89101 AU		12991 Mar 17 01:27	0° \mathcal{B}	
morning rise	12984 Oct 12 15:35	23° $\underline{\mathcal{A}}$ 45'06		desc. node	12991 Mar 31 23:05	3° \mathcal{B} 05'16	
	12984 Nov 07 23:35	0° \mathcal{M}		evening set	12991 Apr 06 14:30	4° \mathcal{B} 17'05	
retrograde	12985 Feb 21 09:50	14° \mathcal{M} 37'58		max. Earth dist.	12991 Apr 18 00:22	6° \mathcal{B} 43'49	6.49262 AU
asc. node	12985 Mar 10 01:31	14° \mathcal{M} 10'06					
opposition	12985 Apr 21 16:11	9° \mathcal{M} 36'00	0°04'03	conjunction	12991 Apr 19 12:58	7° \mathcal{B} 03'29	-0°00'54
min. Earth dist.	12985 Apr 20 12:47	9° \mathcal{M} 45'17	3.91248 AU	minimum elong	12991 Apr 19 12:58	7° \mathcal{B} 03'29	0°01'25
direct	12985 Jun 18 15:40	4° \mathcal{M} 40'32		behind sun begin	12991 Apr 19 04:58	6° \mathcal{B} 59'12	
	12985 Sep 11 09:13	15° \mathcal{M}		behind sun end	12991 Apr 19 20:59	7° \mathcal{B} 07'46	
evening set	12985 Oct 24 01:33	24° \mathcal{M} 42'48		morning rise	12991 May 02 09:51	9° \mathcal{B} 49'12	
					12991 May 27 06:54	15° \mathcal{B}	
conjunction	12985 Nov 06 15:07	27° \mathcal{M} 58'15	0°13'59	retrograde	12991 Aug 31 12:21	26° \mathcal{B} 34'12	
minimum elong	12985 Nov 06 15:06	27° \mathcal{M} 58'15	0°14'46	opposition	12991 Oct 31 14:48	21° \mathcal{B} 40'29	-0°15'13
behind sun begin	12985 Nov 06 11:52	27° \mathcal{M} 56'18		min. Earth dist.	12991 Nov 01 22:52	21° \mathcal{B} 30'13	4.45226 AU
behind sun end	12985 Nov 06 18:21	28° \mathcal{M} 00'11		direct	12992 Jan 02 02:29	16° \mathcal{B} 39'42	
max. Earth dist.	12985 Nov 08 20:19	28° \mathcal{M} 30'14	5.96087 AU		12992 Apr 16 19:05	0° Π	
	12985 Nov 15 01:52	0° Σ		evening set	12992 May 05 22:55	4° Π 05'56	
morning rise	12985 Nov 20 06:15	1° Σ 14'17		max. Earth dist.	12992 May 16 14:54	6° Π 26'19	6.39251 AU

conjunction	12992 May 18 19:20	6° Π 55'12	-0°19'23	morning rise	12997 Nov 25 12:50	6° X 28'16	
minimum elong	12992 May 18 19:19	6° Π 55'11	0°20'15	retrograde	12998 Apr 04 02:31	26° X 27'24	
morning rise	12992 May 31 14:16	9° Π 44'03		min. Earth dist.	12998 Jun 01 01:40	21° X 37'05	4.05362 AU
retrograde	12992 Oct 01 11:21	27° Π 10'00		opposition	12998 Jun 02 17:08	21° X 23'43	0°39'50
opposition	12992 Dec 01 07:36	22° Π 16'28	-0°40'06	direct	12998 Jul 31 08:55	16° X 26'12	
min. Earth dist.	12992 Dec 02 23:24	22° Π 03'40	4.31737 AU		12998 Nov 10 09:56	0° Z	
direct	12993 Feb 01 03:07	17° Π 16'28		evening set	12998 Dec 05 04:12	5° Z 32'56	
	12993 May 12 20:50	0° E					
evening set	12993 Jun 06 13:03	5° E 25'59		conjunction	12998 Dec 18 17:20	8° Z 39'51	0°32'56
max. Earth dist.	12993 Jun 17 00:38	7° E 49'09	6.23214 AU	minimum elong	12998 Dec 18 17:19	8° Z 39'51	0°33'55
				max. Earth dist.	12998 Dec 21 03:41	9° Z 13'26	6.13969 AU
conjunction	12993 Jun 19 09:12	8° E 21'28	-0°33'06	morning rise	12999 Jan 01 07:03	11° Z 46'39	
minimum elong	12993 Jun 19 09:11	8° E 21'27	0°34'05		12999 Apr 19 21:41	0° \approx	
morning rise	12993 Jul 02 05:02	11° E 17'05		retrograde	12999 May 07 17:31	0° \approx 30'51	
retrograde	12993 Nov 05 00:53	29° E 49'22			12999 May 25 10:40	30° R Z	
opposition	12994 Jan 04 08:23	24° E 54'55	-0°54'35	min. Earth dist.	12999 Jul 05 09:51	25° Z 39'40	4.22851 AU
min. Earth dist.	12994 Jan 05 20:35	24° E 43'08	4.14197 AU	opposition	12999 Jul 06 20:02	25° Z 28'13	0°54'11
direct	12994 Mar 06 00:45	19° E 56'27		direct	12999 Sep 04 17:27	20° Z 28'50	
	12994 May 30 16:29	0° Ω			12999 Nov 28 08:07	0° \approx	
evening set	12994 Jul 10 04:06	9° Ω 01'44		evening set	13000 Jan 08 17:05	8° \approx 39'55	
max. Earth dist.	12994 Jul 21 09:53	11° Ω 41'24	6.05641 AU				
				conjunction	13000 Jan 22 03:11	11° \approx 37'58	0°37'01
conjunction	12994 Jul 23 03:13	12° Ω 05'56	-0°36'51	minimum elong	13000 Jan 22 03:11	11° \approx 37'59	0°37'49
minimum elong	12994 Jul 23 03:13	12° Ω 05'57	0°37'39	max. Earth dist.	13000 Jan 23 22:37	12° \approx 02'01	6.31457 AU
	12994 Aug 04 08:32	15° Ω		morning rise	13000 Feb 04 12:28	14° \approx 35'22	
morning rise	12994 Aug 05 02:51	15° Ω 10'49			13000 Feb 06 09:26	15° \approx	
	12994 Oct 15 08:42	0° P			13000 May 01 02:16	0° H	
retrograde	12994 Dec 12 06:16	4° P 59'25		retrograde	13000 Jun 07 23:16	2° H 10'52	
opposition	12995 Feb 09 23:24	0° P 03'03	-0°50'55		13000 Jul 15 19:00	30° R \approx	
	12995 Feb 10 08:36	30° R Ω		opposition	13000 Aug 07 14:12	27° \approx 10'56	0°50'50
min. Earth dist.	12995 Feb 10 18:11	29° Ω 56'50	3.98128 AU	min. Earth dist.	13000 Aug 06 17:43	27° \approx 17'40	4.38922 AU
direct	12995 Apr 10 05:50	25° Ω 06'40		direct	13000 Oct 07 16:29	22° \approx 10'31	
	12995 Jun 05 11:02	0° P			13000 Dec 23 20:04	0° H	
evening set	12995 Aug 15 05:15	15° P 02'16		evening set	13001 Feb 10 00:18	9° H 38'06	
conjunction	12995 Aug 28 09:40	18° P 15'00	-0°27'13	conjunction	13001 Feb 23 06:01	12° H 29'02	0°29'59
minimum elong	12995 Aug 28 09:41	18° P 15'01	0°27'31	minimum elong	13001 Feb 23 06:02	12° H 29'02	0°30'23
max. Earth dist.	12995 Aug 27 22:54	18° P 08'26	5.92632 AU	max. Earth dist.	13001 Feb 23 20:54	12° H 37'03	6.44953 AU
morning rise	12995 Sep 10 15:57	21° P 28'53		morning rise	13001 Mar 08 10:28	15° H 19'08	
	12995 Oct 17 05:48	0° $\underline{\Delta}$			13001 May 30 20:46	0° Y	
retrograde	12996 Jan 20 02:19	12° $\underline{\Delta}$ 13'27		retrograde	13001 Jul 07 21:11	2° Y 09'20	
opposition	12996 Mar 19 10:24	7° $\underline{\Delta}$ 14'07	-0°26'38		13001 Aug 14 20:23	30° R H	
min. Earth dist.	12996 Mar 19 03:17	7° $\underline{\Delta}$ 16'31	3.89653 AU	opposition	13001 Sep 06 20:07	27° H 12'22	0°33'50
direct	12996 May 16 16:03	2° $\underline{\Delta}$ 19'00		min. Earth dist.	13001 Sep 06 19:49	27° H 12'27	4.49029 AU
evening set	12996 Sep 21 02:39	22° $\underline{\Delta}$ 35'49		direct	13001 Nov 07 22:30	22° H 11'29	
					13002 Jan 24 20:20	0° Y	
conjunction	12996 Oct 04 13:08	25° $\underline{\Delta}$ 52'56	-0°06'24	evening set	13002 Mar 12 18:04	9° Y 16'33	
minimum elong	12996 Oct 04 13:08	25° $\underline{\Delta}$ 52'56	0°06'03				
behind sun begin	12996 Oct 04 05:13	25° $\underline{\Delta}$ 48'06		conjunction	13002 Mar 25 19:42	12° Y 03'33	0°15'08
behind sun end	12996 Oct 04 21:04	25° $\underline{\Delta}$ 57'46		minimum elong	13002 Mar 25 19:43	12° Y 03'34	0°15'00
max. Earth dist.	12996 Oct 05 18:00	26° $\underline{\Delta}$ 10'36	5.89601 AU	behind sun begin	13002 Mar 25 16:53	12° Y 02'03	
morning rise	12996 Oct 18 01:32	29° $\underline{\Delta}$ 11'04		behind sun end	13002 Mar 25 22:33	12° Y 05'04	
	12996 Oct 21 10:18	0° M		max. Earth dist.	13002 Mar 25 06:03	11° Y 56'17	6.51007 AU
	12996 Dec 31 10:53	15° M		morning rise	13002 Apr 07 19:31	14° Y 49'42	
asc. node	12997 Jan 19 16:46	17° M 41'12			13002 Jul 06 23:00	0° B	
retrograde	12997 Feb 26 17:26	20° M 00'01		retrograde	13002 Aug 06 10:30	1° B 23'57	
opposition	12997 Apr 26 23:15	14° M 57'41	0°09'09		13002 Sep 05 21:49	30° R Y	
min. Earth dist.	12997 Apr 25 18:29	15° M 07'26	3.92506 AU	opposition	13002 Oct 06 14:38	26° Y 29'14	0°08'38
	12997 Apr 26 16:24	15° R M		min. Earth dist.	13002 Oct 07 08:33	26° Y 23'30	4.50790 AU
direct	12997 Jun 24 00:31	10° M 02'00		direct	13002 Dec 08 03:23	21° Y 28'21	
	12997 Aug 19 06:42	15° M		desc. node	13003 Feb 06 02:08	26° Y 19'47	
evening set	12997 Oct 29 07:49	29° M 58'29			13003 Feb 28 04:08	0° B	
	12997 Oct 29 10:21	0° X		evening set	13003 Apr 11 20:39	8° B 34'30	
				max. Earth dist.	13003 Apr 23 05:06	11° B 00'47	6.48345 AU
conjunction	12997 Nov 11 21:36	3° X 13'08	0°16'58				
minimum elong	12997 Nov 11 21:35	3° X 13'08	0°17'49	conjunction	13003 Apr 24 18:49	11° B 21'06	-0°03'40
max. Earth dist.	12997 Nov 14 05:39	3° X 46'40	5.97953 AU	minimum elong	13003 Apr 24 18:49	11° B 21'06	0°04'14

behind sun begin	13003 Apr 24 10:57	11° ♁ 16'53	max. Earth dist.	13008 Oct 12 00:02	1° ♁ 21'22	5.90225 AU
behind sun end	13003 Apr 25 02:41	11° ♁ 25'19	morning rise	13008 Oct 24 04:54	4° ♁ 19'49	
morning rise	13003 May 07 15:11	14° ♁ 07'01	asc. node	13008 Dec 03 09:31	13° ♁ 37'06	
	13003 May 11 18:26	15° ♁		13008 Dec 09 23:22	15° ♁	
	13003 Aug 12 03:52	0° ♁	retrograde	13009 Mar 04 16:17	25° ♁ 04'45	
retrograde	13003 Sep 05 21:14	0° ♁ 55'49	opposition	13009 May 02 23:19	20° ♁ 02'13	0°13'52
	13003 Sep 30 13:53	30° ♁	min. Earth dist.	13009 May 01 16:14	20° ♁ 12'46	3.93674 AU
opposition	13003 Nov 05 23:35	26° ♁ 02'16	direct	13009 Jun 30 00:12	15° ♁ 06'24	
min. Earth dist.	13003 Nov 07 08:55	25° ♁ 51'37		13009 Oct 14 00:06	0° ♁	
direct	13004 Jan 07 10:16	21° ♁ 01'40	evening set	13009 Nov 04 08:01	4° ♁ 58'14	
	13004 Mar 30 23:18	0° ♁				
evening set	13004 May 11 07:38	8° ♁ 32'09	conjunction	13009 Nov 17 21:51	8° ♁ 12'11	0°19'41
max. Earth dist.	13004 May 21 21:30	10° ♁ 52'00	minimum elong	13009 Nov 17 21:50	8° ♁ 12'10	0°20'34
			max. Earth dist.	13009 Nov 20 05:31	8° ♁ 45'21	5.99531 AU
conjunction	13004 May 24 03:40	11° ♁ 21'57	morning rise	13009 Dec 01 13:14	11° ♁ 26'35	
minimum elong	13004 May 24 03:40	11° ♁ 21'56		13010 Mar 12 11:08	0° ♁	
morning rise	13004 Jun 05 22:41	14° ♁ 11'27	retrograde	13010 Apr 09 18:45	1° ♁ 17'53	
	13004 Sep 03 06:41	0° ♁		13010 May 07 22:56	30° ♁	
retrograde	13004 Oct 07 03:38	1° ♁ 44'12	min. Earth dist.	13010 Jun 06 19:47	26° ♁ 27'19	4.07175 AU
	13004 Nov 10 02:50	30° ♁	opposition	13010 Jun 08 10:19	26° ♁ 14'16	0°42'50
opposition	13004 Dec 06 22:31	26° ♁ 50'34	direct	13010 Aug 06 06:00	21° ♁ 16'29	
min. Earth dist.	13004 Dec 08 14:09	26° ♁ 37'49		13010 Oct 23 23:25	0° ♁	
direct	13005 Feb 06 15:55	21° ♁ 50'46	evening set	13010 Dec 10 23:00	10° ♁ 17'29	
	13005 Apr 25 06:54	0° ♁				
evening set	13005 Jun 12 02:10	10° ♁ 05'51	conjunction	13010 Dec 24 12:07	13° ♁ 23'30	0°34'12
max. Earth dist.	13005 Jun 22 16:27	12° ♁ 31'09	minimum elong	13010 Dec 24 12:06	13° ♁ 23'30	0°35'11
			max. Earth dist.	13010 Dec 26 22:23	13° ♁ 56'54	6.15874 AU
conjunction	13005 Jun 24 22:34	13° ♁ 02'11	morning rise	13011 Jan 07 01:19	16° ♁ 29'16	
minimum elong	13005 Jun 24 22:34	13° ♁ 02'11		13011 Mar 15 05:05	0° ♁	
morning rise	13005 Jul 07 18:30	15° ♁ 58'41	retrograde	13011 May 13 03:30	5° ♁ 05'24	
	13005 Sep 15 14:49	0° ♁	min. Earth dist.	13011 Jul 10 21:28	0° ♁ 14'13	4.24684 AU
retrograde	13005 Nov 10 23:30	4° ♁ 39'12	opposition	13011 Jul 12 06:38	0° ♁ 03'09	0°54'44
	13006 Jan 08 06:35	30° ♁		13011 Jul 12 16:05	30° ♁	
opposition	13006 Jan 10 05:59	29° ♁ 44'35	direct	13011 Sep 10 06:55	25° ♁ 03'40	
min. Earth dist.	13006 Jan 11 16:17	29° ♁ 33'25		13011 Nov 07 21:02	0° ♁	
direct	13006 Mar 11 18:06	24° ♁ 46'27	evening set	13012 Jan 14 06:05	13° ♁ 09'51	
	13006 May 10 02:43	0° ♁		13012 Jan 22 14:09	15° ♁	
evening set	13006 Jul 15 23:14	13° ♁ 57'01				
	13006 Jul 20 09:33	15° ♁	conjunction	13012 Jan 27 15:33	16° ♁ 07'01	0°36'38
max. Earth dist.	13006 Jul 27 07:43	16° ♁ 38'53	minimum elong	13012 Jan 27 15:34	16° ♁ 07'01	0°37'24
			max. Earth dist.	13012 Jan 29 06:38	16° ♁ 28'35	6.33080 AU
conjunction	13006 Jul 28 22:39	17° ♁ 02'06	morning rise	13012 Feb 10 00:28	19° ♁ 03'34	
minimum elong	13006 Jul 28 22:39	17° ♁ 02'06		13012 Apr 04 14:39	0° ♁	
morning rise	13006 Aug 10 23:03	20° ♁ 07'59	retrograde	13012 Jun 12 05:10	6° ♁ 33'11	
	13006 Sep 23 22:48	0° ♁	opposition	13012 Aug 11 20:17	1° ♁ 33'37	0°49'11
retrograde	13006 Dec 18 09:35	10° ♁ 03'37	min. Earth dist.	13012 Aug 11 02:38	1° ♁ 39'25	4.40238 AU
opposition	13007 Feb 16 02:15	5° ♁ 06'52		13012 Aug 23 22:42	30° ♁	
min. Earth dist.	13007 Feb 16 17:45	5° ♁ 01'43	direct	13012 Oct 12 02:05	26° ♁ 33'06	
direct	13007 Apr 16 05:21	0° ♁		13012 Nov 30 06:15	0° ♁	
evening set	13007 Aug 21 05:16	20° ♁ 09'07	evening set	13013 Feb 14 08:29	13° ♁ 57'43	
conjunction	13007 Sep 03 10:35	23° ♁ 22'32	conjunction	13013 Feb 27 13:51	16° ♁ 48'07	0°28'17
minimum elong	13007 Sep 03 10:36	23° ♁ 22'33	minimum elong	13013 Feb 27 13:52	16° ♁ 48'07	0°28'37
max. Earth dist.	13007 Sep 03 05:39	23° ♁ 19'32	max. Earth dist.	13013 Feb 28 02:49	16° ♁ 55'05	6.45885 AU
morning rise	13007 Sep 16 17:30	26° ♁ 37'03	morning rise	13013 Mar 12 17:33	19° ♁ 37'36	
	13007 Sep 30 19:37	0° ♁		13013 May 04 14:59	0° ♁	
retrograde	13008 Jan 26 08:09	17° ♁ 23'54	retrograde	13013 Jul 11 23:24	6° ♁ 24'50	
opposition	13008 Mar 25 14:38	12° ♁ 24'12	opposition	13013 Sep 10 23:59	1° ♁ 28'11	0°30'40
min. Earth dist.	13008 Mar 25 05:37	12° ♁ 27'14	min. Earth dist.	13013 Sep 11 00:55	1° ♁ 27'53	4.49533 AU
direct	13008 May 22 19:26	7° ♁ 29'08		13013 Sep 22 13:11	30° ♁	
evening set	13008 Sep 27 04:49	27° ♁ 44'36	direct	13013 Nov 12 03:13	26° ♁ 27'18	
	13008 Oct 06 10:52	0° ♁		13014 Jan 01 15:40	0° ♁	
			evening set	13014 Mar 16 23:42	13° ♁ 31'38	
conjunction	13008 Oct 10 15:50	1° ♁ 01'42	max. Earth dist.	13014 Mar 29 07:41	16° ♁ 09'18	6.51043 AU
minimum elong	13008 Oct 10 15:50	1° ♁ 01'42				
behind sun begin	13008 Oct 10 07:30	0° ♁ 56'38	conjunction	13014 Mar 30 00:43	16° ♁ 18'24	0°12'38
behind sun end	13008 Oct 11 00:10	1° ♁ 06'46	minimum elong	13014 Mar 30 00:44	16° ♁ 18'24	0°12'27

behind sun begin	13014 Mar 29 19:32	16° Υ 15'39		conjunction	13019 Sep 08 15:19	28° η 39'42	-0°22'20
behind sun end	13014 Mar 30 05:56	16° Υ 21'10		minimum elong	13019 Sep 08 15:20	28° η 39'43	0°22'27
morning rise	13014 Apr 12 00:03	19° Υ 04'20		max. Earth dist.	13019 Sep 08 14:17	28° η 39'04	5.91016 AU
	13014 Jun 07 17:38	0° \mathcal{B}			13019 Sep 14 02:32	0° \mathcal{A}	
retrograde	13014 Aug 10 16:03	5° \mathcal{B} 38'52		morning rise	13019 Sep 21 23:20	1° \mathcal{A} 55'10	
opposition	13014 Oct 10 19:29	0° \mathcal{B} 44'21	0°04'45	retrograde	13020 Jan 31 16:40	22° \mathcal{A} 45'41	
min. Earth dist.	13014 Oct 11 16:15	0° \mathcal{B} 37'42	4.50334 AU	opposition	13020 Mar 30 23:01	17° \mathcal{A} 45'34	-0°17'19
	13014 Oct 16 14:23	30° $\mathcal{R}\Upsilon$		min. Earth dist.	13020 Mar 30 09:47	17° \mathcal{A} 50'02	3.89399 AU
direct	13014 Dec 12 09:50	25° Υ 43'25		direct	13020 May 28 01:03	12° \mathcal{A} 50'28	
desc. node	13014 Dec 15 13:24	25° Υ 44'19			13020 Sep 19 15:19	0° \mathcal{M}	
	13015 Feb 06 06:45	0° \mathcal{B}		evening set	13020 Oct 02 12:28	3° \mathcal{M} 05'46	
evening set	13015 Apr 16 01:46	12° \mathcal{B} 51'14		asc. node	13020 Oct 11 19:41	5° \mathcal{M} 21'38	
	13015 Apr 26 01:05	15° \mathcal{B}					
max. Earth dist.	13015 Apr 27 06:32	15° \mathcal{B} 15'54	6.47390 AU	conjunction	13020 Oct 16 00:04	6° \mathcal{M} 22'55	0°00'16
				minimum elong	13020 Oct 16 00:04	6° \mathcal{M} 22'55	0°00'46
conjunction	13015 Apr 28 23:30	15° \mathcal{B} 38'01	-0°06'21	behind sun begin	13020 Oct 15 15:43	6° \mathcal{M} 17'50	
minimum elong	13015 Apr 28 23:30	15° \mathcal{B} 38'01	0°06'59	behind sun end	13020 Oct 16 08:26	6° \mathcal{M} 28'00	
behind sun begin	13015 Apr 28 16:06	15° \mathcal{B} 34'03		max. Earth dist.	13020 Oct 17 11:45	6° \mathcal{M} 44'42	5.90715 AU
behind sun end	13015 Apr 29 06:54	15° \mathcal{B} 42'00		morning rise	13020 Oct 29 13:46	9° \mathcal{M} 41'02	
morning rise	13015 May 11 19:37	18° \mathcal{B} 24'10			13020 Nov 21 00:05	15° \mathcal{M}	
	13015 Jul 10 19:24	0° \mathcal{I}			13021 Feb 23 01:46	0° \mathcal{A}	
retrograde	13015 Sep 10 05:31	5° \mathcal{I} 16'53		retrograde	13021 Mar 09 20:33	0° \mathcal{A} 22'00	
opposition	13015 Nov 10 07:53	0° \mathcal{I} 23'16	-0°22'49		13021 Mar 24 14:38	30° $\mathcal{R}\mathcal{M}$	
min. Earth dist.	13015 Nov 11 17:56	0° \mathcal{I} 12'22	4.42457 AU	min. Earth dist.	13021 May 06 19:49	25° \mathcal{M} 30'13	3.94868 AU
	13015 Nov 13 08:38	30° $\mathcal{R}\mathcal{B}$		opposition	13021 May 08 04:23	25° \mathcal{M} 19'09	0°18'41
direct	13016 Jan 11 16:38	25° \mathcal{B} 22'40		direct	13021 Jul 05 07:14	20° \mathcal{M} 23'05	
	13016 Mar 09 10:20	0° \mathcal{I}			13021 Sep 25 01:32	0° \mathcal{A}	
evening set	13016 May 15 15:19	12° \mathcal{I} 57'33		evening set	13021 Nov 09 13:17	10° \mathcal{A} 09'48	
max. Earth dist.	13016 May 26 05:36	15° \mathcal{I} 18'09	6.35763 AU				
				conjunction	13021 Nov 23 03:26	13° \mathcal{A} 23'00	0°22'22
conjunction	13016 May 28 11:20	15° \mathcal{I} 47'59	-0°23'57	minimum elong	13021 Nov 23 03:25	13° \mathcal{A} 22'59	0°23'17
minimum elong	13016 May 28 11:19	15° \mathcal{I} 47'58	0°24'53	max. Earth dist.	13021 Nov 25 14:23	13° \mathcal{A} 57'58	6.01321 AU
morning rise	13016 Jun 10 06:06	18° \mathcal{I} 38'08		morning rise	13021 Dec 06 18:38	16° \mathcal{A} 36'29	
	13016 Aug 05 14:27	0° \mathcal{B}			13022 Feb 08 00:43	0° \mathcal{B}	
retrograde	13016 Oct 11 19:16	6° \mathcal{B} 18'17		retrograde	13022 Apr 14 15:54	6° \mathcal{B} 18'34	
opposition	13016 Dec 11 12:58	1° \mathcal{B} 24'34	-0°45'31	min. Earth dist.	13022 Jun 11 16:58	1° \mathcal{B} 28'11	4.09372 AU
min. Earth dist.	13016 Dec 13 05:05	1° \mathcal{B} 11'39	4.27731 AU	opposition	13022 Jun 13 07:53	1° \mathcal{B} 15'03	0°45'37
	13016 Dec 22 14:55	30° $\mathcal{R}\mathcal{I}$			13022 Jun 22 16:42	30° $\mathcal{R}\mathcal{A}$	
direct	13017 Feb 11 03:20	26° \mathcal{I} 24'55		direct	13022 Aug 11 06:48	26° \mathcal{A} 17'03	
	13017 Apr 01 14:08	0° \mathcal{B}			13022 Sep 29 11:53	0° \mathcal{B}	
evening set	13017 Jun 16 15:25	14° \mathcal{B} 46'38		evening set	13022 Dec 15 21:54	15° \mathcal{B} 10'33	
max. Earth dist.	13017 Jun 27 05:24	17° \mathcal{B} 12'33	6.18999 AU				
				conjunction	13022 Dec 29 10:28	18° \mathcal{B} 15'20	0°35'16
conjunction	13017 Jun 29 11:54	17° \mathcal{B} 43'59	-0°35'19	minimum elong	13022 Dec 29 10:27	18° \mathcal{B} 15'20	0°36'15
minimum elong	13017 Jun 29 11:53	17° \mathcal{B} 43'58	0°36'18	max. Earth dist.	13022 Dec 31 18:46	18° \mathcal{B} 47'25	6.18282 AU
morning rise	13017 Jul 12 08:23	20° \mathcal{B} 41'38		morning rise	13023 Jan 11 23:19	21° \mathcal{B} 19'49	
	13017 Aug 24 04:26	0° \mathcal{Q}			13023 Feb 21 10:28	0° \mathcal{A}	
retrograde	13017 Nov 15 23:38	9° \mathcal{Q} 32'05		retrograde	13023 May 17 14:17	9° \mathcal{A} 45'47	
opposition	13018 Jan 15 04:32	4° \mathcal{Q} 37'09	-0°55'34	min. Earth dist.	13023 Jul 15 11:56	4° \mathcal{A} 54'25	4.27110 AU
min. Earth dist.	13018 Jan 16 12:48	4° \mathcal{Q} 26'36	4.10098 AU	opposition	13023 Jul 16 19:49	4° \mathcal{A} 43'48	0°54'55
	13018 Mar 01 21:53	30° $\mathcal{R}\mathcal{B}$			13023 Sep 02 05:00	30° $\mathcal{R}\mathcal{B}$	
direct	13018 Mar 16 12:09	29° \mathcal{B} 39'11		direct	13023 Sep 15 00:14	29° \mathcal{B} 44'07	
	13018 Mar 31 02:41	0° \mathcal{Q}			13023 Sep 27 21:42	0° \mathcal{A}	
	13018 Jul 03 22:14	15° \mathcal{Q}			13024 Jan 06 07:09	15° \mathcal{A}	
evening set	13018 Jul 20 19:45	18° \mathcal{Q} 56'59		evening set	13024 Jan 18 20:52	17° \mathcal{A} 43'11	
max. Earth dist.	13018 Aug 01 09:47	21° \mathcal{Q} 42'51	6.02032 AU				
				conjunction	13024 Feb 01 05:54	20° \mathcal{A} 39'12	0°36'03
conjunction	13018 Aug 02 19:59	22° \mathcal{Q} 03'19	-0°35'32	minimum elong	13024 Feb 01 05:55	20° \mathcal{A} 39'12	0°36'46
minimum elong	13018 Aug 02 20:00	22° \mathcal{Q} 03'20	0°36'13	max. Earth dist.	13024 Feb 02 19:16	20° \mathcal{A} 59'44	6.35360 AU
morning rise	13018 Aug 15 21:02	25° \mathcal{Q} 10'28		morning rise	13024 Feb 14 13:53	23° \mathcal{A} 34'28	
	13018 Sep 05 12:17	0° \mathcal{M}			13024 Mar 16 03:32	0° \mathcal{H}	
retrograde	13018 Dec 23 17:55	15° \mathcal{M} 15'18		retrograde	13024 Jun 16 10:02	10° \mathcal{H} 55'54	
opposition	13019 Feb 21 08:10	10° \mathcal{M} 18'10	-0°46'05	min. Earth dist.	13024 Aug 15 11:03	6° \mathcal{H} 01'56	4.42207 AU
min. Earth dist.	13019 Feb 21 21:29	10° \mathcal{M} 13'45	3.95371 AU	opposition	13024 Aug 16 02:52	5° \mathcal{H} 56'46	0°47'14
direct	13019 Apr 21 07:47	5° \mathcal{M} 22'12		direct	13024 Oct 16 12:11	0° \mathcal{H} 56'12	
evening set	13019 Aug 26 09:14	25° \mathcal{M} 25'24		evening set	13025 Feb 18 16:29	18° \mathcal{H} 15'43	

conjunction	13025 Mar 03 21:01	21° X 05'14	0°26'28	conjunction	13030 Aug 07 18:48	27° Ω 08'31	-0°34'29
minimum elong	13025 Mar 03 21:02	21° X 05'15	0°26'42	minimum elong	13030 Aug 07 18:49	27° Ω 08'31	0°35'07
max. Earth dist.	13025 Mar 04 04:41	21° X 09'21	6.47395 AU		13030 Aug 19 16:08	0° P	
morning rise	13025 Mar 17 00:10	23° X 53'54		morning rise	13030 Aug 20 20:59	0° P 17'16	
	13025 Apr 15 15:38	0° Y		retrograde	13030 Dec 29 02:56	20° P 32'53	
retrograde	13025 Jul 16 02:28	10° Y 36'36		opposition	13031 Feb 26 15:49	15° P 35'25	-0°43'06
opposition	13025 Sep 15 03:08	5° Y 40'16	0°27'24	min. Earth dist.	13031 Feb 27 00:47	15° P 32'26	3.93435 AU
min. Earth dist.	13025 Sep 15 07:30	5° Y 38'51	4.50494 AU	direct	13031 Apr 26 10:10	10° P 39'41	
direct	13025 Nov 16 09:30	0° Y 39'19			13031 Aug 28 07:18	0° $\underline{\Omega}$	
evening set	13026 Mar 21 03:17	17° Y 41'38		evening set	13031 Aug 31 16:04	0° $\underline{\Omega}$ 49'05	
max. Earth dist.	13026 Apr 02 07:50	20° Y 17'21	6.51376 AU				
conjunction	13026 Apr 03 03:53	20° Y 28'04	0°10'09	conjunction	13031 Sep 13 23:08	4° $\underline{\Omega}$ 04'27	-0°19'34
minimum elong	13026 Apr 03 03:53	20° Y 28'03	0°09'54	minimum elong	13031 Sep 13 23:09	4° $\underline{\Omega}$ 04'27	0°19'35
behind sun begin	13026 Apr 02 21:23	20° Y 24'36		max. Earth dist.	13031 Sep 14 03:57	4° $\underline{\Omega}$ 07'24	5.89824 AU
behind sun end	13026 Apr 03 10:23	20° Y 31'31		morning rise	13031 Sep 27 08:10	7° $\underline{\Omega}$ 20'59	
morning rise	13026 Apr 16 02:31	23° Y 13'38		retrograde	13032 Feb 06 04:58	28° $\underline{\Omega}$ 15'42	
	13026 May 19 08:12	0° Z		opposition	13032 Apr 05 10:18	23° $\underline{\Omega}$ 15'06	-0°12'18
retrograde	13026 Aug 14 17:20	9° Z 47'56		min. Earth dist.	13032 Apr 04 18:00	23° $\underline{\Omega}$ 20'37	3.89098 AU
opposition	13026 Oct 14 22:14	4° Z 53'35	0°00'57	direct	13032 Jun 02 11:15	18° $\underline{\Omega}$ 19'58	
min. Earth dist.	13026 Oct 15 20:34	4° Z 46'26	4.50021 AU	asc. node	13032 Aug 18 20:58	27° $\underline{\Omega}$ 13'40	
desc. node	13026 Oct 27 23:03	3° Z 15'23			13032 Sep 01 01:47	0° M	
	13026 Dec 07 12:04	30° K Y		evening set	13032 Oct 07 22:58	8° M 34'55	
direct	13026 Dec 16 11:48	29° Y 52'40		conjunction	13032 Oct 21 11:23	11° M 52'07	0°03'42
	13026 Dec 25 13:06	0° Z		minimum elong	13032 Oct 21 11:22	11° M 52'07	0°04'17
	13027 Apr 10 15:18	15° Z		behind sun begin	13032 Oct 21 03:09	11° M 47'08	
evening set	13027 Apr 20 04:50	17° Z 02'05		behind sun end	13032 Oct 21 19:36	11° M 57'06	
max. Earth dist.	13027 May 01 06:43	19° Z 25'31	6.46429 AU	max. Earth dist.	13032 Oct 23 05:36	12° M 17'49	5.91342 AU
conjunction	13027 May 03 02:10	19° Z 49'03	-0°08'54		13032 Nov 03 08:44	15° M	
minimum elong	13027 May 03 02:09	19° Z 49'03	0°09'36	morning rise	13032 Nov 04 01:32	15° M 10'08	
behind sun begin	13027 May 02 19:33	19° Z 45'29			13033 Jan 12 04:35	0° Z	
behind sun end	13027 May 03 08:45	19° Z 52'36		retrograde	13033 Mar 15 03:52	5° Z 45'59	
morning rise	13027 May 15 21:54	22° Z 35'26		min. Earth dist.	13033 May 12 00:43	0° Z 54'42	3.96347 AU
	13027 Jun 20 21:27	0° II		opposition	13033 May 13 11:36	0° Z 42'53	0°23'22
retrograde	13027 Sep 14 13:24	9° II 32'26			13033 May 18 18:24	30° R M	
opposition	13027 Nov 14 14:17	4° II 38'56	-0°26'20	direct	13033 Jul 10 16:00	25° M 46'34	
min. Earth dist.	13027 Nov 16 03:04	4° II 27'10	4.40878 AU		13033 Aug 31 11:59	0° Z	
	13027 Dec 31 12:09	30° R Z		evening set	13033 Nov 14 20:51	15° Z 26'52	
direct	13028 Jan 15 22:16	29° Z 38'23		conjunction	13033 Nov 28 10:49	18° Z 39'01	0°24'53
	13028 Jan 31 08:10	0° II		minimum elong	13033 Nov 28 10:48	18° Z 39'00	0°25'50
evening set	13028 May 19 21:19	17° II 18'31		max. Earth dist.	13033 Nov 30 22:40	19° Z 14'19	6.03461 AU
max. Earth dist.	13028 May 30 08:29	19° II 38'06	6.33655 AU	morning rise	13033 Dec 12 02:04	21° Z 51'25	
conjunction	13028 Jun 01 17:12	20° II 09'44	-0°25'57		13034 Jan 17 11:04	0° Z	
minimum elong	13028 Jun 01 17:12	20° II 09'44	0°26'55	retrograde	13034 Apr 19 10:59	11° Z 22'37	
morning rise	13028 Jun 14 12:11	23° II 00'46		min. Earth dist.	13034 Jun 16 14:38	6° Z 32'22	4.11920 AU
	13028 Jul 17 03:59	0° E		opposition	13034 Jun 18 06:01	6° Z 19'04	0°48'03
retrograde	13028 Oct 16 10:22	10° E 49'47		direct	13034 Aug 16 08:32	1° Z 20'43	
opposition	13028 Dec 16 02:32	5° E 55'57	-0°47'47	evening set	13034 Dec 20 21:10	20° Z 05'31	
min. Earth dist.	13028 Dec 17 18:14	5° E 43'08	4.25214 AU	conjunction	13035 Jan 03 09:24	23° Z 08'54	0°36'05
direct	13029 Feb 15 12:25	0° E 56'25		minimum elong	13035 Jan 03 09:24	23° Z 08'54	0°37'02
evening set	13029 Jun 21 04:02	19° E 26'28		max. Earth dist.	13035 Jan 05 16:26	23° Z 40'05	6.21001 AU
max. Earth dist.	13029 Jul 01 20:41	21° E 54'46	6.16272 AU	morning rise	13035 Jan 16 21:30	26° Z 11'53	
conjunction	13029 Jul 04 01:00	22° E 25'08	-0°36'05		13035 Feb 03 02:34	0° \approx	
minimum elong	13029 Jul 04 01:00	22° E 25'08	0°37'03	retrograde	13035 May 22 02:09	14° \approx 26'44	
morning rise	13029 Jul 16 21:51	25° E 24'08		min. Earth dist.	13035 Jul 20 03:18	9° \approx 34'56	4.29729 AU
	13029 Aug 06 04:20	0° Ω		opposition	13035 Jul 21 09:01	9° \approx 25'04	0°54'43
retrograde	13029 Nov 21 02:21	14° Ω 26'28		direct	13035 Sep 19 18:27	4° \approx 25'12	
opposition	13030 Jan 20 03:42	9° Ω 31'22	-0°55'32		13035 Dec 19 15:29	15° \approx	
min. Earth dist.	13030 Jan 21 11:12	9° Ω 21'03	4.07375 AU	evening set	13036 Jan 23 11:19	22° \approx 16'37	
direct	13030 Mar 21 06:33	4° Ω 33'43		conjunction	13036 Feb 05 19:36	25° \approx 11'26	0°35'13
	13030 Jun 15 23:44	15° Ω		minimum elong	13036 Feb 05 19:37	25° \approx 11'26	0°35'52
evening set	13030 Jul 25 17:51	24° Ω 00'40		max. Earth dist.	13036 Feb 07 04:37	25° \approx 29'28	6.37660 AU
max. Earth dist.	13030 Aug 06 10:51	26° Ω 49'17	5.99565 AU	morning rise	13036 Feb 19 03:00	28° \approx 05'30	
					13036 Feb 27 23:45	0° X	

retrograde	13036 Jun 20 14:37	15° H 19'02			13042 May 24 17:07	15° Q
opposition	13036 Aug 20 09:30	10° H 20'15 0°44'59	evening set		13042 Jul 30 20:21	29° Q 14'38
min. Earth dist.	13036 Aug 19 20:22	10° H 24'32 4.44042 AU			13042 Aug 02 23:54	0° H
direct	13036 Oct 20 22:22	5° H 19'32				
evening set	13037 Feb 23 00:22	22° H 34'33	conjunction		13042 Aug 12 22:09	2° H 23'50 -0°33'07
			minimum elong		13042 Aug 12 22:10	2° H 23'51 0°33'40
conjunction	13037 Mar 08 04:26	25° H 23'21 0°24'27	max. Earth dist.		13042 Aug 11 19:40	2° H 07'49 5.97473 AU
minimum elong	13037 Mar 08 04:26	25° H 23'22 0°24'37	morning rise		13042 Aug 26 01:14	5° H 34'00
max. Earth dist.	13037 Mar 08 08:59	25° H 25'47 6.48648 AU	retrograde		13043 Jan 03 17:04	25° H 58'44
morning rise	13037 Mar 21 06:43	28° H 11'16	opposition		13043 Mar 04 03:22	21° H 00'53 -0°39'36
	13037 Mar 29 20:50	0° Y	min. Earth dist.		13043 Mar 04 09:07	20° H 58'57 3.92047 AU
retrograde	13037 Jul 20 04:40	14° Y 50'23	direct		13043 May 01 19:08	16° H 05'24
opposition	13037 Sep 19 06:52	9° Y 54'23 0°23'54			13043 Aug 10 12:55	0° Q
min. Earth dist.	13037 Sep 19 13:46	9° Y 52'10 4.51099 AU	evening set		13043 Sep 06 01:40	6° Q 18'25
direct	13037 Nov 20 14:54	4° Y 53'25				
evening set	13038 Mar 25 08:15	21° Y 54'53	conjunction		13043 Sep 19 09:43	9° Q 34'30 -0°16'32
max. Earth dist.	13038 Apr 06 06:58	24° Y 27'38 6.51288 AU	minimum elong		13043 Sep 19 09:44	9° Q 34'30 0°16'28
			max. Earth dist.		13043 Sep 19 21:36	9° Q 41'47 5.89313 AU
conjunction	13038 Apr 07 08:11	24° Y 41'06 0°07'32	morning rise		13043 Oct 02 19:36	12° Q 51'41
minimum elong	13038 Apr 07 08:10	24° Y 41'06 0°07'13			13043 Dec 24 10:20	0° H
behind sun begin	13038 Apr 07 00:49	24° Y 37'12	retrograde		13044 Feb 11 17:18	3° H 47'06
behind sun end	13038 Apr 07 15:32	24° Y 45'01			13044 Apr 01 17:24	30° R 1
morning rise	13038 Apr 20 06:27	27° Y 26'33	opposition		13044 Apr 10 22:15	28° Q 46'07 -0°07'06
	13038 May 02 10:26	0° B	min. Earth dist.		13044 Apr 10 02:08	28° Q 52'54 3.89565 AU
retrograde	13038 Aug 18 23:40	14° B 01'59	direct		13044 Jun 07 21:44	23° Q 51'00
desc. node	13038 Sep 08 19:30	13° B 21'54	asc. node		13044 Jun 26 11:36	24° Q 26'26
opposition	13038 Oct 19 03:20	9° B 07'48 -0°02'59			13044 Aug 09 22:27	0° H
min. Earth dist.	13038 Oct 20 05:08	8° B 59'33 4.49243 AU	evening set		13044 Oct 13 09:48	14° H 02'33
direct	13038 Dec 20 17:47	4° B 06'51			13044 Oct 17 08:51	15° H
	13039 Mar 24 22:48	15° B				
evening set	13039 Apr 24 10:08	21° B 19'11	conjunction		13044 Oct 26 22:27	17° H 19'15 0°07'03
max. Earth dist.	13039 May 05 08:55	23° B 41'24 6.45007 AU	minimum elong		13044 Oct 26 22:27	17° H 19'15 0°07'43
			behind sun begin		13044 Oct 26 14:54	17° H 14'41
conjunction	13039 May 07 07:16	24° B 06'35 -0°11'31	behind sun end		13044 Oct 27 05:59	17° H 23'48
minimum elong	13039 May 07 07:15	24° B 06'34 0°12'16	max. Earth dist.		13044 Oct 28 19:47	17° H 46'44 5.92710 AU
behind sun begin	13039 May 07 01:55	24° B 03'41	morning rise		13044 Nov 09 13:08	20° H 36'46
behind sun end	13039 May 07 12:36	24° B 09'27			13044 Dec 20 14:15	0° H
morning rise	13039 May 20 02:45	26° B 53'24	retrograde		13045 Mar 20 06:30	11° H 04'26
	13039 Jun 03 16:28	0° H	min. Earth dist.		13045 May 17 03:25	6° H 13'42 3.98448 AU
retrograde	13039 Sep 18 23:38	13° H 56'15	opposition		13045 May 18 16:34	6° H 01'05 0°27'46
opposition	13039 Nov 19 00:15	9° H 02'43 -0°29'52	direct		13045 Jul 15 23:18	1° H 04'29
min. Earth dist.	13039 Nov 20 13:26	8° H 50'48 4.38894 AU	evening set		13045 Nov 20 01:39	20° H 36'28
direct	13040 Jan 20 04:48	4° H 02'13				
evening set	13040 May 24 07:08	21° H 48'48	conjunction		13045 Dec 03 15:34	23° H 47'20 0°27'08
max. Earth dist.	13040 Jun 03 18:24	24° H 09'10 6.31244 AU	minimum elong		13045 Dec 03 15:33	23° H 47'19 0°28'08
			max. Earth dist.		13045 Dec 06 04:13	24° H 22'54 6.06077 AU
conjunction	13040 Jun 06 03:02	24° H 40'57 -0°27'55	morning rise		13045 Dec 17 06:21	26° H 58'19
minimum elong	13040 Jun 06 03:01	24° H 40'56 0°28'53			13045 Dec 30 10:44	0° B
morning rise	13040 Jun 18 22:04	27° H 32'58	retrograde		13046 Apr 24 04:47	16° B 17'32
	13040 Jun 29 23:46	0° B	min. Earth dist.		13046 Jun 21 11:04	11° B 26'56 4.14752 AU
retrograde	13040 Oct 21 07:39	15° B 31'51	opposition		13046 Jun 23 01:02	11° B 14'09 0°50'02
opposition	13040 Dec 20 20:49	10° B 37'56 -0°49'52	direct		13046 Aug 21 08:33	6° B 15'35
min. Earth dist.	13040 Dec 22 13:11	10° B 24'53 4.22525 AU	evening set		13046 Dec 25 16:48	24° B 51'10
direct	13041 Feb 20 03:15	5° B 38'37				
evening set	13041 Jun 25 21:28	24° B 17'25	conjunction		13047 Jan 08 04:28	27° B 53'08 0°36'38
max. Earth dist.	13041 Jul 06 15:01	26° B 47'11 6.13527 AU	minimum elong		13047 Jan 08 04:28	27° B 53'08 0°37'33
			max. Earth dist.		13047 Jan 10 09:22	28° B 22'54 6.23791 AU
conjunction	13041 Jul 08 18:50	27° B 17'26 -0°36'38			13047 Jan 17 14:14	0° B
minimum elong	13041 Jul 08 18:50	27° B 17'26 0°37'34	morning rise		13047 Jan 21 15:56	0° B 54'38
	13041 Jul 20 09:36	0° Q			13047 Apr 04 12:42	15° B
morning rise	13041 Jul 21 16:24	0° Q 17'54	retrograde		13047 May 26 08:35	18° B 58'49
	13041 Oct 02 01:33	15° Q			13047 Jul 17 20:59	15° R
retrograde	13041 Nov 26 07:12	19° Q 32'02	opposition		13047 Jul 25 18:40	13° B 57'32 0°54'10
	13042 Jan 22 08:30	15° R 1	min. Earth dist.		13047 Jul 24 14:28	14° B 06'53 4.32259 AU
opposition	13042 Jan 25 07:38	14° Q 36'41 -0°55'02	direct		13047 Sep 24 07:44	8° B 57'32
min. Earth dist.	13042 Jan 26 11:40	14° Q 27'29 4.04825 AU			13047 Nov 29 11:08	15° B
direct	13042 Mar 26 04:32	9° Q 39'21	evening set		13048 Jan 27 22:35	26° B 42'09

conjunction	13048 Feb 10 06:16	29° \approx 35'52	0°34'12	morning rise	13053 Jul 26 12:22	5° Ω 16'34	
minimum elong	13048 Feb 10 06:16	29° \approx 35'53	0°34'47		13053 Sep 08 13:19	15° Ω	
max. Earth dist.	13048 Feb 11 10:52	29° \approx 51'27	6.39754 AU	retrograde	13053 Dec 01 15:21	24° Ω 41'34	
	13048 Feb 12 02:35	0° \mathbb{X}		opposition	13054 Jan 30 12:53	19° Ω 45'53	-0°54'06
morning rise	13048 Feb 23 12:49	2° \mathbb{X} 28'49		min. Earth dist.	13054 Jan 31 14:43	19° Ω 37'23	4.02645 AU
retrograde	13048 Jun 24 17:57	19° \mathbb{X} 35'36			13054 Mar 20 15:45	15° \mathbb{R} Ω	
opposition	13048 Aug 24 13:36	14° \mathbb{X} 37'18	0°42'34	direct	13054 Mar 31 06:33	14° Ω 48'49	
min. Earth dist.	13048 Aug 24 04:02	14° \mathbb{X} 40'25	4.45567 AU		13054 Apr 10 20:10	15° Ω	
direct	13048 Oct 25 06:33	9° \mathbb{X} 36'35			13054 Jul 16 21:41	0° \mathbb{P}	
evening set	13049 Feb 27 06:04	26° \mathbb{X} 48'20		evening set	13054 Aug 04 23:27	4° \mathbb{P} 30'37	
				max. Earth dist.	13054 Aug 17 04:58	7° \mathbb{P} 28'08	5.95860 AU
conjunction	13049 Mar 12 09:27	29° \mathbb{X} 36'35	0°22'21				
minimum elong	13049 Mar 12 09:28	29° \mathbb{X} 36'36	0°22'28	conjunction	13054 Aug 18 02:07	7° \mathbb{P} 40'57	-0°31'28
max. Earth dist.	13049 Mar 12 08:19	29° \mathbb{X} 35'59	6.49494 AU	minimum elong	13054 Aug 18 02:08	7° \mathbb{P} 40'58	0°31'56
	13049 Mar 14 05:15	0° \mathbb{Y}		morning rise	13054 Aug 31 06:05	10° \mathbb{P} 52'17	
morning rise	13049 Mar 25 11:16	2° \mathbb{Y} 24'00			13054 Dec 10 18:50	0° $\underline{\Omega}$	
retrograde	13049 Jul 24 07:03	19° \mathbb{Y} 01'09		retrograde	13055 Jan 09 04:32	1° $\underline{\Omega}$ 23'31	
opposition	13049 Sep 23 09:28	14° \mathbb{Y} 05'29	0°20'22		13055 Feb 07 12:28	30° \mathbb{R} \mathbb{P}	
min. Earth dist.	13049 Sep 23 19:31	14° \mathbb{Y} 02'15	4.51248 AU	opposition	13055 Mar 09 13:43	26° \mathbb{P} 25'13	-0°35'45
direct	13049 Nov 24 18:52	9° \mathbb{Y} 04'30		min. Earth dist.	13055 Mar 09 15:21	26° \mathbb{P} 24'40	3.91199 AU
evening set	13050 Mar 29 11:59	26° \mathbb{Y} 06'38		direct	13055 May 07 01:18	21° \mathbb{P} 29'52	
max. Earth dist.	13050 Apr 10 07:58	28° \mathbb{Y} 38'07	6.50733 AU		13055 Jul 21 15:41	0° $\underline{\Omega}$	
				evening set	13055 Sep 11 10:04	11° $\underline{\Omega}$ 44'21	
conjunction	13050 Apr 11 11:38	28° \mathbb{Y} 52'55	0°04'55				
minimum elong	13050 Apr 11 11:38	28° \mathbb{Y} 52'55	0°04'31	conjunction	13055 Sep 24 18:42	15° $\underline{\Omega}$ 00'46	-0°13'24
behind sun begin	13050 Apr 11 03:47	28° \mathbb{Y} 48'44		minimum elong	13055 Sep 24 18:43	15° $\underline{\Omega}$ 00'47	0°13'15
behind sun end	13050 Apr 11 19:29	28° \mathbb{Y} 57'06		behind sun begin	13055 Sep 24 13:53	14° $\underline{\Omega}$ 57'49	
	13050 Apr 16 16:56	0° \mathbb{Z}		behind sun end	13055 Sep 24 23:34	15° $\underline{\Omega}$ 03'44	
morning rise	13050 Apr 24 09:18	1° \mathbb{Z} 38'24		max. Earth dist.	13055 Sep 25 10:39	15° $\underline{\Omega}$ 10'33	5.89287 AU
	13050 Jul 06 14:27	15° \mathbb{Z}		morning rise	13055 Oct 08 05:33	18° $\underline{\Omega}$ 18'21	
desc. node	13050 Jul 22 02:47	16° \mathbb{Z} 44'06			13055 Nov 28 17:55	0° \mathbb{L}	
retrograde	13050 Aug 23 04:27	18° \mathbb{Z} 16'35		retrograde	13056 Feb 17 00:55	9° \mathbb{L} 12'19	
	13050 Oct 10 09:32	15° \mathbb{R} \mathbb{Z}		min. Earth dist.	13056 Apr 15 07:40	4° \mathbb{L} 18'48	3.90364 AU
opposition	13050 Oct 23 08:20	13° \mathbb{Z} 22'36	-0°06'52	opposition	13056 Apr 16 07:12	4° \mathbb{L} 10'50	-0°01'55
min. Earth dist.	13050 Oct 24 11:44	13° \mathbb{Z} 13'50	4.48034 AU	asc. node	13056 May 06 17:48	1° \mathbb{L} 33'51	
direct	13050 Dec 24 21:31	8° \mathbb{Z} 21'45			13056 May 23 12:09	30° \mathbb{R} $\underline{\Omega}$	
	13051 Mar 05 19:30	15° \mathbb{Z}		direct	13056 Jun 13 06:52	29° $\underline{\Omega}$ 15'32	
evening set	13051 Apr 28 16:07	25° \mathbb{Z} 38'26			13056 Jul 04 02:55	0° \mathbb{L}	
max. Earth dist.	13051 May 09 11:40	27° \mathbb{Z} 59'32	6.43220 AU		13056 Sep 30 06:00	15° \mathbb{L}	
				evening set	13056 Oct 18 17:27	19° \mathbb{L} 22'40	
conjunction	13051 May 11 12:51	28° \mathbb{Z} 26'22	-0°14'04				
minimum elong	13051 May 11 12:50	28° \mathbb{Z} 26'22	0°14'51	conjunction	13056 Nov 01 06:35	22° \mathbb{L} 38'48	0°10'17
behind sun begin	13051 May 11 09:40	28° \mathbb{Z} 24'39		minimum elong	13056 Nov 01 06:34	22° \mathbb{L} 38'47	0°11'01
behind sun end	13051 May 11 16:01	28° \mathbb{Z} 28'06		behind sun begin	13056 Nov 01 00:20	22° \mathbb{L} 35'02	
	13051 May 18 16:28	0° \mathbb{I}		behind sun end	13056 Nov 01 12:49	22° \mathbb{L} 42'32	
morning rise	13051 May 24 08:16	1° \mathbb{I} 13'50		max. Earth dist.	13056 Nov 03 07:51	23° \mathbb{L} 08'33	5.94244 AU
retrograde	13051 Sep 23 13:32	18° \mathbb{I} 23'47		morning rise	13056 Nov 14 21:21	25° \mathbb{L} 55'36	
opposition	13051 Nov 23 11:32	13° \mathbb{I} 30'16	-0°33'15		13056 Dec 02 03:49	0° \mathbb{J}	
min. Earth dist.	13051 Nov 25 02:32	13° \mathbb{I} 17'45	4.36637 AU	retrograde	13057 Mar 25 07:41	16° \mathbb{J} 14'50	
direct	13052 Jan 24 14:17	8° \mathbb{I} 29'54		min. Earth dist.	13057 May 22 05:15	11° \mathbb{J} 23'55	4.00517 AU
evening set	13052 May 28 18:17	26° \mathbb{I} 23'46		opposition	13057 May 23 18:22	11° \mathbb{J} 11'19	0°31'52
max. Earth dist.	13052 Jun 08 05:15	28° \mathbb{I} 44'46	6.28690 AU	direct	13057 Jul 21 04:39	6° \mathbb{J} 14'25	
				evening set	13057 Nov 25 03:37	25° \mathbb{J} 38'35	
conjunction	13052 Jun 10 14:21	29° \mathbb{I} 16'58	-0°29'42				
minimum elong	13052 Jun 10 14:20	29° \mathbb{I} 16'58	0°30'42	conjunction	13057 Dec 08 17:22	28° \mathbb{J} 48'15	0°29'11
	13052 Jun 13 18:35	0° \mathbb{E}		minimum elong	13057 Dec 08 17:22	28° \mathbb{J} 48'15	0°30'10
morning rise	13052 Jun 23 09:35	2° \mathbb{E} 10'08		max. Earth dist.	13057 Dec 11 06:30	29° \mathbb{J} 23'53	6.08471 AU
retrograde	13052 Oct 26 04:30	20° \mathbb{E} 19'21			13057 Dec 13 20:31	0° \mathbb{Z}	
opposition	13052 Dec 25 16:54	15° \mathbb{E} 25'16	-0°51'38	morning rise	13057 Dec 22 07:53	1° \mathbb{Z} 57'58	
min. Earth dist.	13052 Dec 27 07:12	15° \mathbb{E} 12'51	4.19869 AU	retrograde	13058 Apr 28 18:20	21° \mathbb{Z} 06'17	
direct	13053 Feb 24 17:51	10° \mathbb{E} 26'13		min. Earth dist.	13058 Jun 26 03:34	16° \mathbb{Z} 15'49	4.17239 AU
evening set	13053 Jun 30 16:26	29° \mathbb{E} 13'26		opposition	13058 Jun 27 17:23	16° \mathbb{Z} 03'07	0°51'40
	13053 Jul 04 00:20	0° Ω		direct	13058 Aug 26 03:55	11° \mathbb{Z} 04'18	
max. Earth dist.	13053 Jul 11 13:58	1° Ω 46'25	6.10998 AU	evening set	13058 Dec 30 10:52	29° \mathbb{Z} 32'14	
					13059 Jan 01 12:41	0° \approx	
conjunction	13053 Jul 13 14:13	2° Ω 14'44	-0°36'56				
minimum elong	13053 Jul 13 14:13	2° Ω 14'44	0°37'49	conjunction	13059 Jan 12 21:58	2° \approx 32'58	0°36'56

minimum elong	13059 Jan 12 21:58	2° \approx 32'58	0°37'50	retrograde	13064 Oct 31 02:32	25° \approx 05'47	
max. Earth dist.	13059 Jan 14 22:47	3° \approx 00'18	6.26167 AU	opposition	13064 Dec 30 12:58	20° \approx 11'33	-0°53'06
morning rise	13059 Jan 26 08:52	5° \approx 33'12		min. Earth dist.	13065 Jan 01 02:29	19° \approx 59'23	4.17908 AU
	13059 Mar 12 17:43	15° \approx		direct	13065 Mar 01 11:33	15° \approx 12'48	
retrograde	13059 May 30 17:09	23° \approx 28'22			13065 Jun 17 13:50	0° Ω	
min. Earth dist.	13059 Jul 29 02:55	18° \approx 35'44	4.34335 AU	evening set	13065 Jul 05 10:05	4° Ω 05'51	
opposition	13059 Jul 30 03:49	18° \approx 27'30	0°53'21	max. Earth dist.	13065 Jul 16 11:18	6° Ω 41'34	6.09228 AU
	13059 Aug 28 05:43	15° \approx					
direct	13059 Sep 28 22:04	13° \approx 27'20		conjunction	13065 Jul 18 08:22	7° Ω 08'07	-0°37'00
	13059 Oct 30 21:14	15° \approx		minimum elong	13065 Jul 18 08:22	7° Ω 08'07	0°37'51
	13060 Jan 27 05:31	0° \approx		morning rise	13065 Jul 31 06:58	10° Ω 10'57	
evening set	13060 Feb 01 09:25	1° \approx 06'34			13065 Aug 21 05:18	15° Ω	
				retrograde	13065 Dec 06 18:33	29° Ω 43'50	
conjunction	13060 Feb 14 16:36	3° \approx 59'27	0°32'59	opposition	13066 Feb 04 15:07	24° Ω 47'53	-0°52'48
minimum elong	13060 Feb 14 16:37	3° \approx 59'27	0°33'31	min. Earth dist.	13066 Feb 05 13:44	24° Ω 40'26	4.01246 AU
max. Earth dist.	13060 Feb 15 17:43	4° \approx 13'04	6.41382 AU	direct	13066 Apr 05 04:11	19° Ω 51'09	
morning rise	13060 Feb 27 22:31	6° \approx 51'30			13066 Jun 28 19:52	0° \approx	
retrograde	13060 Jun 28 20:45	23° \approx 53'04		evening set	13066 Aug 09 22:45	9° \approx 36'43	
opposition	13060 Aug 28 18:27	18° \approx 55'10	0°39'55	max. Earth dist.	13066 Aug 22 08:15	12° \approx 37'01	5.94958 AU
min. Earth dist.	13060 Aug 28 10:55	18° \approx 57'37	4.46668 AU				
direct	13060 Oct 29 13:16	13° \approx 54'25		conjunction	13066 Aug 23 01:56	12° \approx 47'46	-0°29'40
	13061 Feb 26 11:27	0° \approx		minimum elong	13066 Aug 23 01:57	12° \approx 47'46	0°30'03
evening set	13061 Mar 03 12:46	1° \approx 04'04		morning rise	13066 Sep 05 06:50	15° \approx 59'55	
					13066 Nov 08 13:16	0° \approx	
conjunction	13061 Mar 16 15:39	3° \approx 51'56	0°20'06	retrograde	13067 Jan 14 08:40	6° \approx 35'07	
minimum elong	13061 Mar 16 15:40	3° \approx 51'56	0°20'09	opposition	13067 Mar 14 18:36	1° \approx 36'23	-0°31'49
max. Earth dist.	13061 Mar 16 11:09	3° \approx 49'32	6.50012 AU	min. Earth dist.	13067 Mar 14 16:48	1° \approx 36'59	3.90896 AU
morning rise	13061 Mar 29 16:47	6° \approx 38'55			13067 Mar 26 23:55	30° \approx	
retrograde	13061 Jul 28 11:19	23° \approx 15'01		direct	13067 May 12 04:17	26° \approx 41'07	
opposition	13061 Sep 27 13:49	18° \approx 19'44	0°16'40		13067 Jun 26 09:43	0° \approx	
min. Earth dist.	13061 Sep 28 02:43	18° \approx 15'36	4.51172 AU	evening set	13067 Sep 16 12:20	16° \approx 55'20	
direct	13061 Nov 29 01:11	13° \approx 18'51					
	13062 Mar 31 23:58	0° \approx		conjunction	13067 Sep 29 21:46	20° \approx 11'55	-0°10'21
evening set	13062 Apr 02 17:43	0° \approx 22'10		minimum elong	13067 Sep 29 21:47	20° \approx 11'56	0°10'06
max. Earth dist.	13062 Apr 14 08:42	2° \approx 51'19	6.50079 AU	behind sun begin	13067 Sep 29 15:07	20° \approx 07'52	
				behind sun end	13067 Sep 30 04:27	20° \approx 16'00	
conjunction	13062 Apr 15 16:47	3° \approx 08'31	0°02'12	max. Earth dist.	13067 Sep 30 19:07	20° \approx 25'00	5.89628 AU
minimum elong	13062 Apr 15 16:47	3° \approx 08'31	0°01'44	morning rise	13067 Oct 13 09:05	23° \approx 29'36	
behind sun begin	13062 Apr 15 08:46	3° \approx 04'15			13067 Nov 09 20:51	0° \approx	
behind sun end	13062 Apr 16 00:48	3° \approx 12'48		retrograde	13068 Feb 22 04:05	14° \approx 21'03	
morning rise	13062 Apr 28 14:13	5° \approx 54'09		asc. node	13068 Mar 21 00:24	13° \approx 04'10	
desc. node	13062 May 31 10:55	12° \approx 38'15		min. Earth dist.	13068 Apr 20 08:40	9° \approx 27'38	3.91311 AU
	13062 Jun 13 04:37	15° \approx		opposition	13068 Apr 21 09:17	9° \approx 19'17	0°02'58
retrograde	13062 Aug 27 12:51	22° \approx 35'21		direct	13068 Jun 18 10:13	4° \approx 23'51	
opposition	13062 Oct 27 15:44	17° \approx 41'33	-0°10'50		13068 Sep 12 10:05	15° \approx	
min. Earth dist.	13062 Oct 28 20:56	17° \approx 32'13	4.46872 AU	evening set	13068 Oct 23 18:40	24° \approx 26'39	
	13062 Nov 18 22:10	15° \approx					
direct	13062 Dec 29 04:19	12° \approx 40'49		conjunction	13068 Nov 06 08:03	27° \approx 42'13	0°13'17
	13063 Feb 07 10:01	15° \approx		minimum elong	13068 Nov 06 08:02	27° \approx 42'12	0°14'04
evening set	13063 May 02 23:31	0° \approx 01'28		behind sun begin	13068 Nov 06 03:59	27° \approx 39'46	
	13063 May 02 20:49	0° \approx		behind sun end	13068 Nov 06 12:06	27° \approx 44'38	
max. Earth dist.	13063 May 13 18:48	2° \approx 22'54	6.41659 AU	max. Earth dist.	13068 Nov 08 11:25	28° \approx 13'07	5.95681 AU
					13068 Nov 15 21:24	0° \approx	
conjunction	13063 May 15 20:11	2° \approx 49'56	-0°16'36	morning rise	13068 Nov 19 23:06	0° \approx 58'25	
minimum elong	13063 May 15 20:10	2° \approx 49'56	0°17'26	retrograde	13069 Mar 30 01:04	21° \approx 10'04	
morning rise	13063 May 28 15:16	5° \approx 37'56		min. Earth dist.	13069 May 26 23:17	16° \approx 19'30	4.02301 AU
retrograde	13063 Sep 28 02:22	22° \approx 54'12		opposition	13069 May 28 13:31	16° \approx 06'33	0°35'31
opposition	13063 Nov 28 00:31	18° \approx 00'44	-0°36'31	direct	13069 Jul 26 00:53	11° \approx 09'25	
min. Earth dist.	13063 Nov 29 14:58	17° \approx 48'24	4.34798 AU		13069 Nov 28 00:15	0° \approx	
direct	13064 Jan 28 23:46	13° \approx 00'40		evening set	13069 Nov 29 23:57	0° \approx 27'30	
	13064 May 28 18:40	0° \approx					
evening set	13064 Jun 02 06:15	1° \approx 00'10		conjunction	13069 Dec 13 13:29	3° \approx 36'12	0°30'56
max. Earth dist.	13064 Jun 12 17:53	3° \approx 22'14	6.26720 AU	minimum elong	13069 Dec 13 13:28	3° \approx 36'12	0°31'56
				max. Earth dist.	13069 Dec 16 00:16	4° \approx 10'19	6.10426 AU
conjunction	13064 Jun 15 02:10	3° \approx 54'09	-0°31'21	morning rise	13069 Dec 27 03:48	6° \approx 44'55	
minimum elong	13064 Jun 15 02:10	3° \approx 54'09	0°32'21	retrograde	13070 May 03 05:53	25° \approx 44'40	
morning rise	13064 Jun 27 21:37	6° \approx 48'10		min. Earth dist.	13070 Jun 30 17:52	20° \approx 53'41	4.19180 AU

opposition	13070 Jul 02 05:30	20°♄41'44	0°52'57	minimum elong	13076 Jun 19 13:24	8°♄29'28	0°33'46
direct	13070 Aug 30 20:48	15°♄42'40		morning rise	13076 Jul 02 08:57	11°♄24'27	
	13070 Dec 16 08:16	0°♄		retrograde	13076 Nov 04 23:26	29°♄51'17	
evening set	13071 Jan 04 00:53	4°♄05'04		opposition	13077 Jan 04 08:41	24°♄56'52	-0°54'11
				min. Earth dist.	13077 Jan 05 20:56	24°♄45'06	4.15627 AU
conjunction	13071 Jan 17 11:45	7°♄04'54	0°37'03	direct	13077 Mar 06 02:35	19°♄58'21	
minimum elong	13071 Jan 17 11:45	7°♄04'54	0°37'55		13077 May 30 18:54	0°♄	
max. Earth dist.	13071 Jan 19 11:13	7°♄31'23	6.27956 AU	evening set	13077 Jul 10 04:03	8°♄58'35	
morning rise	13071 Jan 30 22:00	10°♄04'09		max. Earth dist.	13077 Jul 21 07:26	11°♄36'23	6.07046 AU
	13071 Feb 22 17:47	15°♄					
retrograde	13071 Jun 03 21:55	27°♄52'29		conjunction	13077 Jul 23 02:41	12°♄02'00	-0°36'46
min. Earth dist.	13071 Aug 02 10:33	22°♄59'50	4.35858 AU	minimum elong	13077 Jul 23 02:42	12°♄02'00	0°37'36
opposition	13071 Aug 03 10:17	22°♄52'01	0°52'19		13077 Aug 04 15:44	15°♄	
direct	13071 Oct 03 06:53	17°♄51'46		morning rise	13077 Aug 05 02:07	15°♄06'07	
	13072 Jan 10 17:42	0°♄			13077 Oct 16 03:52	0°♄	
evening set	13072 Feb 05 18:31	5°♄27'23		retrograde	13077 Dec 11 23:41	4°♄48'46	
					13078 Feb 08 19:43	30°♄	
conjunction	13072 Feb 19 01:04	8°♄19'34	0°31'39	opposition	13078 Feb 09 18:35	29°♄52'27	-0°51'04
minimum elong	13072 Feb 19 01:05	8°♄19'34	0°32'07	min. Earth dist.	13078 Feb 10 14:21	29°♄45'54	3.99360 AU
max. Earth dist.	13072 Feb 19 21:41	8°♄30'44	6.42543 AU	direct	13078 Apr 10 03:35	24°♄55'54	
morning rise	13072 Mar 03 06:28	11°♄10'57			13078 Jun 06 13:00	0°♄	
retrograde	13072 Jul 03 00:58	28°♄08'36		evening set	13078 Aug 15 00:12	14°♄47'17	
opposition	13072 Sep 01 22:18	23°♄11'05	0°37'09				
min. Earth dist.	13072 Sep 01 18:00	23°♄12'28	4.47409 AU	conjunction	13078 Aug 28 04:24	17°♄59'26	-0°27'35
direct	13072 Nov 02 20:47	18°♄10'15		minimum elong	13078 Aug 28 04:25	17°♄59'26	0°27'54
	13073 Feb 10 00:45	0°♄		max. Earth dist.	13078 Aug 27 16:42	17°♄52'18	5.93575 AU
evening set	13073 Mar 07 18:27	5°♄18'33		morning rise	13078 Sep 10 10:05	21°♄12'38	
					13078 Oct 18 07:47	0°♄	
conjunction	13073 Mar 20 20:52	8°♄06'08	0°17'49	retrograde	13079 Jan 19 18:47	11°♄53'32	
minimum elong	13073 Mar 20 20:53	8°♄06'08	0°17'46	opposition	13079 Mar 20 02:21	6°♄54'25	-0°27'29
max. Earth dist.	13073 Mar 20 13:06	8°♄01'59	6.50279 AU	min. Earth dist.	13079 Mar 19 22:02	6°♄55'51	3.90185 AU
morning rise	13073 Apr 02 21:30	10°♄52'49		direct	13079 May 17 09:44	1°♄59'15	
retrograde	13073 Aug 01 13:57	27°♄28'21		evening set	13079 Sep 21 18:50	22°♄14'52	
opposition	13073 Oct 01 17:42	22°♄33'12	0°12'56				
min. Earth dist.	13073 Oct 02 07:55	22°♄28'39	4.50961 AU	conjunction	13079 Oct 05 04:59	25°♄31'49	-0°07'06
direct	13073 Dec 03 05:09	17°♄32'16		minimum elong	13079 Oct 05 04:58	25°♄31'49	0°06'45
	13074 Mar 15 18:34	0°♄		behind sun begin	13079 Oct 04 21:12	25°♄27'05	
evening set	13074 Apr 06 22:26	4°♄36'39		behind sun end	13079 Oct 05 12:45	25°♄36'34	
desc. node	13074 Apr 08 08:48	4°♄54'57		max. Earth dist.	13079 Oct 06 06:19	25°♄47'20	5.89652 AU
max. Earth dist.	13074 Apr 18 11:48	7°♄05'09	6.49387 AU	morning rise	13079 Oct 18 17:12	28°♄49'51	
					13079 Oct 23 13:01	0°♄	
conjunction	13074 Apr 19 21:07	7°♄23'04	-0°00'34		13080 Jan 03 06:59	15°♄	
minimum elong	13074 Apr 19 21:09	7°♄23'05	0°01'06	asc. node	13080 Feb 01 07:43	18°♄32'39	
behind sun begin	13074 Apr 19 13:09	7°♄18'48		retrograde	13080 Feb 27 09:16	19°♄39'35	
behind sun end	13074 Apr 20 05:09	7°♄27'21			13080 Apr 23 20:57	15°♄	
morning rise	13074 May 02 18:01	10°♄08'46		min. Earth dist.	13080 Apr 25 11:19	14°♄47'00	3.92086 AU
	13074 May 26 00:28	15°♄		opposition	13080 Apr 26 15:21	14°♄37'30	0°08'01
retrograde	13074 Aug 31 19:11	26°♄52'47		direct	13080 Jun 23 15:09	9°♄41'56	
opposition	13074 Oct 31 22:23	21°♄59'02	-0°14'42		13080 Aug 20 22:30	15°♄	
min. Earth dist.	13074 Nov 02 05:16	21°♄49'10	4.45713 AU	evening set	13080 Oct 29 00:43	29°♄41'01	
direct	13075 Jan 02 10:40	16°♄58'19			13080 Oct 30 08:32	0°♄	
	13075 Apr 16 17:22	0°♄					
evening set	13075 May 07 06:09	4°♄22'33		conjunction	13080 Nov 11 14:20	2°♄56'01	0°16'17
max. Earth dist.	13075 May 17 22:22	6°♄42'52	6.40068 AU	minimum elong	13080 Nov 11 14:19	2°♄56'00	0°17'08
				max. Earth dist.	13080 Nov 13 19:15	3°♄27'45	5.97117 AU
conjunction	13075 May 20 02:24	7°♄11'28	-0°19'01	morning rise	13080 Nov 25 05:37	6°♄11'35	
minimum elong	13075 May 20 02:24	7°♄11'28	0°19'54	retrograde	13081 Apr 03 23:35	26°♄15'25	
morning rise	13075 Jun 01 21:31	10°♄00'02		min. Earth dist.	13081 May 31 22:55	21°♄24'47	4.04224 AU
retrograde	13075 Oct 02 15:54	27°♄22'39		opposition	13081 Jun 02 13:07	21°♄11'50	0°39'02
opposition	13075 Dec 02 12:36	22°♄29'03	-0°39'32	direct	13081 Jul 31 04:16	16°♄14'29	
min. Earth dist.	13075 Dec 04 03:47	22°♄16'27	4.32838 AU		13081 Nov 10 21:25	0°♄	
direct	13076 Feb 02 10:07	17°♄28'59		evening set	13081 Dec 05 00:35	5°♄25'44	
	13076 May 12 06:54	0°♄					
evening set	13076 Jun 06 17:13	5°♄34'32		conjunction	13081 Dec 18 14:04	8°♄33'23	0°32'32
max. Earth dist.	13076 Jun 17 06:19	7°♄58'06	6.24523 AU	minimum elong	13081 Dec 18 14:03	8°♄33'23	0°33'31
				max. Earth dist.	13081 Dec 21 02:07	9°♄08'02	6.12682 AU
conjunction	13076 Jun 19 13:25	8°♄29'28	-0°32'46	morning rise	13082 Jan 01 03:52	11°♄40'52	

	13082 Apr 20 01:46	0°♊		max. Earth dist.	13087 May 22 01:50	10°♊59'25	6.38360 AU
retrograde	13082 May 07 19:46	0°♊30'33					
	13082 May 25 10:42	30°♋♂		conjunction	13087 May 24 06:33	11°♊28'30	-0°21'14
min. Earth dist.	13082 Jul 05 09:26	25°♂39'46	4.21568 AU	minimum elong	13087 May 24 06:32	11°♊28'30	0°22'10
opposition	13082 Jul 06 20:45	25°♂27'57	0°53'54	morning rise	13087 Jun 06 01:24	14°♊17'40	
direct	13082 Sep 04 15:34	20°♂28'46			13087 Sep 02 16:59	0°♌	
	13082 Nov 28 03:37	0°♊		retrograde	13087 Oct 07 03:31	1°♌47'28	
evening set	13083 Jan 08 18:02	8°♊43'59			13087 Nov 10 16:47	30°♋♂	
				opposition	13087 Dec 06 23:08	26°♊53'51	-0°42'15
conjunction	13083 Jan 22 04:12	11°♊42'35	0°36'56	min. Earth dist.	13087 Dec 08 15:30	26°♊40'52	4.30641 AU
minimum elong	13083 Jan 22 04:12	11°♊42'36	0°37'44	direct	13088 Feb 06 17:45	21°♊53'55	
max. Earth dist.	13083 Jan 23 23:50	12°♊06'49	6.30297 AU		13088 Apr 24 03:36	0°♌	
morning rise	13083 Feb 04 13:57	14°♊40'38		evening set	13088 Jun 11 02:56	10°♌06'35	
	13083 Feb 06 01:12	15°♊		max. Earth dist.	13088 Jun 21 14:37	12°♌30'12	6.21987 AU
	13083 Apr 29 23:07	0°♋					
retrograde	13083 Jun 08 05:08	2°♋20'12		conjunction	13088 Jun 23 23:10	13°♌02'36	-0°33'58
	13083 Jul 17 09:20	30°♋♂		minimum elong	13088 Jun 23 23:10	13°♌02'35	0°34'57
opposition	13083 Aug 07 18:36	27°♊20'07	0°50'57	morning rise	13088 Jul 06 19:14	15°♌58'49	
min. Earth dist.	13083 Aug 06 21:32	27°♊27'03	4.37985 AU		13088 Sep 14 18:59	0°♍	
direct	13083 Oct 07 19:49	22°♊19'45		retrograde	13088 Nov 09 21:00	4°♍36'32	
	13083 Dec 22 23:53	0°♋			13089 Jan 06 20:18	30°♋♂	
evening set	13084 Feb 10 04:05	9°♋49'40		opposition	13089 Jan 09 03:53	29°♌41'54	-0°54'56
				min. Earth dist.	13089 Jan 10 14:55	29°♌30'28	4.12922 AU
conjunction	13084 Feb 23 10:10	12°♋40'57	0°30'09	direct	13089 Mar 10 17:13	24°♌43'32	
minimum elong	13084 Feb 23 10:11	12°♋40'57	0°30'33		13089 May 09 09:57	0°♍	
max. Earth dist.	13084 Feb 24 04:44	12°♋50'58	6.44316 AU	evening set	13089 Jul 14 22:11	13°♍52'48	
morning rise	13084 Mar 07 14:42	15°♋31'21			13089 Jul 19 15:44	15°♍	
	13084 May 28 00:37	0°♎		max. Earth dist.	13089 Jul 26 06:16	16°♍34'15	6.04426 AU
retrograde	13084 Jul 07 02:12	2°♎23'21					
	13084 Aug 16 06:00	30°♋♋		conjunction	13089 Jul 27 21:40	16°♍57'43	-0°36'19
opposition	13084 Sep 06 02:02	27°♋26'12	0°34'13	minimum elong	13089 Jul 27 21:41	16°♍57'43	0°37'04
min. Earth dist.	13084 Sep 05 23:14	27°♋27'06	4.48718 AU	morning rise	13089 Aug 09 21:46	20°♍03'21	
direct	13084 Nov 07 02:22	22°♋25'22			13089 Sep 23 07:29	0°♎	
	13085 Jan 22 17:16	0°♎		retrograde	13089 Dec 17 07:21	9°♎57'32	
evening set	13085 Mar 11 23:10	9°♎30'38		opposition	13090 Feb 14 23:07	5°♎00'55	-0°48'59
				min. Earth dist.	13090 Feb 15 16:48	4°♎55'03	3.97082 AU
conjunction	13085 Mar 25 00:51	12°♎17'40	0°15'29	direct	13090 Apr 15 03:24	0°♎04'38	
minimum elong	13085 Mar 25 00:52	12°♎17'40	0°15'21	evening set	13090 Aug 20 03:40	20°♎03'28	
behind sun begin	13085 Mar 24 22:36	12°♎16'28					
behind sun end	13085 Mar 25 03:07	12°♎18'52		conjunction	13090 Sep 02 08:44	23°♎16'53	-0°25'17
max. Earth dist.	13085 Mar 24 12:46	12°♎11'13	6.51029 AU	minimum elong	13090 Sep 02 08:45	23°♎16'53	0°25'30
morning rise	13085 Apr 07 00:52	15°♎03'50		max. Earth dist.	13090 Sep 02 00:49	23°♎12'03	5.91865 AU
	13085 Jul 03 16:46	0°♏		morning rise	13090 Sep 15 15:40	26°♎31'26	
retrograde	13085 Aug 05 16:38	1°♏37'38			13090 Sep 30 02:58	0°♏	
	13085 Sep 07 15:01	30°♋♎		retrograde	13091 Jan 25 05:31	17°♏19'09	
opposition	13085 Oct 05 20:09	26°♎42'47	0°09'15	opposition	13091 Mar 25 12:23	12°♏19'35	-0°22'56
min. Earth dist.	13085 Oct 06 13:51	26°♎37'06	4.51097 AU	min. Earth dist.	13091 Mar 25 03:20	12°♏22'37	3.89267 AU
direct	13085 Dec 07 10:03	21°♎41'49		direct	13091 May 22 16:14	7°♏24'28	
desc. node	13086 Feb 15 04:39	28°♎06'05		evening set	13091 Sep 27 04:15	27°♏42'10	
	13086 Feb 26 04:36	0°♏			13091 Oct 06 13:59	0°♏	
evening set	13086 Apr 11 01:08	8°♏46'28					
max. Earth dist.	13086 Apr 22 09:47	11°♏12'40	6.48877 AU	conjunction	13091 Oct 10 15:09	0°♏59'30	-0°03'46
				minimum elong	13091 Oct 10 15:10	0°♏59'31	0°03'21
conjunction	13086 Apr 23 23:22	11°♏32'53	-0°03'11	behind sun begin	13091 Oct 10 06:52	0°♏54'27	
minimum elong	13086 Apr 23 23:22	11°♏32'53	0°03'46	behind sun end	13091 Oct 10 23:27	1°♏04'34	
behind sun begin	13086 Apr 23 15:27	11°♏28'39		max. Earth dist.	13091 Oct 11 21:38	1°♏18'10	5.89628 AU
behind sun end	13086 Apr 24 07:17	11°♏37'07		morning rise	13091 Oct 24 04:08	4°♏17'52	
morning rise	13086 May 06 19:55	14°♏18'38			13091 Dec 10 00:13	15°♏	
	13086 May 10 01:25	15°♏		asc. node	13091 Dec 13 03:22	15°♏38'22	
	13086 Aug 09 04:39	0°♐		retrograde	13092 Mar 03 17:21	25°♏05'39	
retrograde	13086 Sep 04 23:39	1°♐05'20		opposition	13092 May 01 23:57	20°♏03'08	0°13'01
	13086 Oct 01 18:50	30°♋♏		min. Earth dist.	13092 Apr 30 17:42	20°♏13'25	3.92949 AU
opposition	13086 Nov 05 03:00	26°♏11'38	-0°18'21	direct	13092 Jun 29 01:12	15°♏07'19	
min. Earth dist.	13086 Nov 06 11:22	26°♏01'16	4.44572 AU		13092 Oct 12 19:58	0°♑	
direct	13087 Jan 06 13:49	21°♏10'54		evening set	13092 Nov 03 09:26	5°♑01'58	
	13087 Mar 30 09:21	0°♐					
evening set	13087 May 11 10:20	8°♐38'59		conjunction	13092 Nov 16 23:25	8°♑16'18	0°19'10

minimum elong	13092 Nov 16 23:24	8°♏16'18	0°20'04			13098 Apr 24 11:55	15°♏	
max. Earth dist.	13092 Nov 19 08:53	8°♏50'36	5.98774 AU	max. Earth dist.		13098 Apr 26 11:23	15°♏25'37	6.47896 AU
morning rise	13092 Nov 30 14:39	11°♏31'02						
	13093 Mar 10 06:18	0°♏		conjunction		13098 Apr 28 03:42	15°♏47'22	-0°05'52
retrograde	13093 Apr 08 23:49	1°♏25'28		minimum elong		13098 Apr 28 03:41	15°♏47'21	0°06'30
	13093 May 08 12:15	30°♏♏		behind sun begin		13098 Apr 27 20:11	15°♏43'20	
min. Earth dist.	13093 Jun 05 22:52	26°♏35'07	4.06467 AU	behind sun end		13098 Apr 28 11:11	15°♏51'23	
opposition	13093 Jun 07 14:10	26°♏21'50	0°42'13	morning rise		13098 May 10 23:51	18°♏33'20	
direct	13093 Aug 05 08:37	21°♏24'08				13098 Jul 09 02:42	0°♏	
	13093 Oct 22 08:47	0°♏		retrograde		13098 Sep 09 09:00	5°♏24'20	
evening set	13093 Dec 10 02:40	10°♏27'11		opposition		13098 Nov 09 10:53	0°♏30'46	-0°22'05
				min. Earth dist.		13098 Nov 10 22:02	0°♏19'31	4.42970 AU
conjunction	13093 Dec 23 15:38	13°♏33'27	0°33'52			13098 Nov 13 11:11	30°♏♏	
minimum elong	13093 Dec 23 15:37	13°♏33'27	0°34'53	direct		13099 Jan 10 21:07	25°♏30'05	
max. Earth dist.	13093 Dec 26 02:04	14°♏06'59	6.15260 AU			13099 Mar 08 18:26	0°♏	
morning rise	13094 Jan 06 05:06	16°♏39'33		evening set		13099 May 15 18:16	13°♏03'32	
	13094 Mar 13 04:05	0°♏		max. Earth dist.		13099 May 26 06:35	15°♏22'54	6.36236 AU
retrograde	13094 May 12 08:54	5°♏17'56						
min. Earth dist.	13094 Jul 10 02:33	0°♏26'51	4.24216 AU	conjunction		13099 May 28 14:17	15°♏53'48	-0°23'27
opposition	13094 Jul 11 12:34	0°♏15'29	0°54'27	minimum elong		13099 May 28 14:17	15°♏53'48	0°24'24
	13094 Jul 13 10:54	30°♏♏		morning rise		13099 Jun 10 09:16	18°♏43'49	
direct	13094 Sep 09 11:59	25°♏15'59				13099 Aug 05 06:06	0°♏	
	13094 Nov 05 17:05	0°♏		retrograde		13099 Oct 11 20:02	6°♏22'15	
evening set	13095 Jan 13 11:03	13°♏23'04		opposition		13099 Dec 11 14:03	1°♏28'32	-0°44'53
	13095 Jan 20 19:09	15°♏		min. Earth dist.		13099 Dec 13 06:05	1°♏15'38	4.28126 AU
						13099 Dec 23 04:55	30°♏♏	
conjunction	13095 Jan 26 20:46	16°♏20'24	0°36'33	direct		13100 Feb 11 04:29	26°♏28'44	
minimum elong	13095 Jan 26 20:46	16°♏20'24	0°37'19			13100 Apr 01 05:08	0°♏	
max. Earth dist.	13095 Jan 28 14:31	16°♏43'28	6.32795 AU	evening set		13100 Jun 16 17:19	14°♏49'41	
morning rise	13095 Feb 09 05:34	19°♏17'03		max. Earth dist.		13100 Jun 27 07:38	17°♏15'38	6.19280 AU
	13095 Apr 03 11:34	0°♏						
retrograde	13095 Jun 12 11:34	6°♏47'31		conjunction		13100 Jun 29 13:59	17°♏46'58	-0°35'01
min. Earth dist.	13095 Aug 11 07:56	1°♏54'04	4.40132 AU	minimum elong		13100 Jun 29 13:59	17°♏46'57	0°36'00
opposition	13095 Aug 12 02:56	1°♏47'50	0°49'14	morning rise		13100 Jul 12 10:19	20°♏44'28	
	13095 Aug 26 03:30	30°♏♏				13100 Aug 24 01:24	0°♏	
direct	13095 Oct 12 07:56	26°♏47'23		retrograde		13100 Nov 16 00:56	9°♏33'45	
	13095 Nov 28 16:02	0°♏		opposition		13101 Jan 15 04:29	4°♏38'58	-0°55'19
evening set	13096 Feb 14 13:58	14°♏11'42		min. Earth dist.		13101 Jan 16 14:37	4°♏27'49	4.10233 AU
						13101 Mar 02 12:48	30°♏♏	
conjunction	13096 Feb 27 19:13	17°♏02'03	0°28'26	direct		13101 Mar 16 12:55	29°♏40'57	
minimum elong	13096 Feb 27 19:14	17°♏02'03	0°28'46			13101 Mar 30 12:36	0°♏	
max. Earth dist.	13096 Feb 28 08:01	17°♏08'56	6.45949 AU			13101 Jul 03 20:12	15°♏	
morning rise	13096 Mar 11 23:11	19°♏51'34		evening set		13101 Jul 20 21:26	18°♏59'05	
	13096 May 02 12:02	0°♏		max. Earth dist.		13101 Aug 01 08:27	21°♏43'13	6.02003 AU
retrograde	13096 Jul 11 06:27	6°♏38'32						
opposition	13096 Sep 10 06:18	1°♏41'44	0°31'02	conjunction		13101 Aug 02 21:32	22°♏05'25	-0°35'33
min. Earth dist.	13096 Sep 10 07:15	1°♏41'26	4.49752 AU	minimum elong		13101 Aug 02 21:33	22°♏05'25	0°36'14
	13096 Sep 23 15:34	30°♏♏		morning rise		13101 Aug 15 22:41	25°♏12'35	
direct	13096 Nov 11 09:59	26°♏40'49				13101 Sep 05 10:04	0°♏	
	13096 Dec 30 03:54	0°♏		retrograde		13101 Dec 23 17:19	15°♏17'27	
evening set	13097 Mar 16 04:32	13°♏44'03						
conjunction	13097 Mar 29 05:49	16°♏30'45	0°12'59					
minimum elong	13097 Mar 29 05:49	16°♏30'45	0°12'48					
behind sun begin	13097 Mar 29 00:52	16°♏28'07						
behind sun end	13097 Mar 29 10:47	16°♏33'23						
max. Earth dist.	13097 Mar 28 14:26	16°♏22'33	6.51391 AU					
morning rise	13097 Apr 11 05:09	19°♏16'34						
	13097 Jun 05 17:55	0°♏						
retrograde	13097 Aug 09 19:23	5°♏49'58						
opposition	13097 Oct 10 00:13	0°♏55'20	0°05'22					
min. Earth dist.	13097 Oct 10 19:41	0°♏49'06	4.50782 AU					
	13097 Oct 17 06:00	30°♏♏						
direct	13097 Dec 11 13:27	25°♏54'23						
desc. node	13097 Dec 24 02:20	26°♏08'23						
	13098 Feb 04 05:02	0°♏						
evening set	13098 Apr 15 05:54	13°♏00'45						