

opposition	12600 Feb 06 21:50	26°♏09'36	-1°54'20	conjunction	12605 Oct 14 05:19	3°♎40'46	0°18'12
min. Earth dist.	12600 Feb 06 12:20	26°♏11'25	8.70373 AU	minimum elong	12605 Oct 14 05:18	3°♎40'45	0°18'38
direct	12600 Apr 17 00:19	22°♏49'06		max. Earth dist.	12605 Oct 14 13:55	3°♎43'23	10.62775 AU
	12600 Jul 25 20:58	0°♎		morning rise	12605 Oct 31 17:41	5°♎48'22	
evening set	12600 Jul 27 02:55	0°♎08'56		retrograde	12606 Feb 13 07:10	13°♎25'22	
				opposition	12606 Apr 23 17:22	10°♎00'47	0°36'59
conjunction	12600 Aug 13 00:48	2°♎12'02	-1°26'12	min. Earth dist.	12606 Apr 23 11:05	10°♎02'01	8.61162 AU
minimum elong	12600 Aug 13 00:50	2°♎12'03	1°26'43	direct	12606 Jun 30 17:41	6°♎39'17	
max. Earth dist.	12600 Aug 13 12:14	2°♎15'32	10.70447 AU	evening set	12606 Oct 09 18:34	14°♎03'27	
morning rise	12600 Aug 30 00:55	4°♎15'46			12606 Oct 17 13:37	15°♎	
retrograde	12600 Dec 11 16:07	11°♎45'32					
opposition	12601 Feb 19 17:55	8°♎22'47	-1°36'32	conjunction	12606 Oct 27 05:57	16°♎11'05	0°41'03
min. Earth dist.	12601 Feb 19 07:45	8°♎24'43	8.70509 AU	minimum elong	12606 Oct 27 05:55	16°♎11'04	0°41'40
direct	12601 Apr 29 15:31	5°♎02'29		max. Earth dist.	12606 Oct 27 12:51	16°♎13'12	10.59424 AU
evening set	12601 Aug 08 11:38	12°♎21'09		morning rise	12606 Nov 13 20:04	18°♎19'34	
				retrograde	12607 Feb 26 09:29	25°♎58'35	
conjunction	12601 Aug 25 11:35	14°♎24'44	-1°09'56	opposition	12607 May 06 13:45	22°♎33'42	1°04'17
minimum elong	12601 Aug 25 11:38	14°♎24'45	1°10'16	min. Earth dist.	12607 May 06 08:48	22°♎34'40	8.57639 AU
max. Earth dist.	12601 Aug 26 00:10	14°♎28'35	10.70254 AU	direct	12607 Jul 13 12:12	19°♎11'32	
morning rise	12601 Sep 11 14:04	16°♎29'02		evening set	12607 Oct 22 21:13	26°♎39'07	
retrograde	12601 Dec 24 11:58	23°♎59'51					
opposition	12602 Mar 04 13:16	20°♎36'43	-1°14'22	conjunction	12607 Nov 09 10:25	28°♎47'40	1°02'07
min. Earth dist.	12602 Mar 04 02:19	20°♎38'49	8.69936 AU	minimum elong	12607 Nov 09 10:23	28°♎47'40	1°02'53
direct	12602 May 12 07:12	17°♎16'31		max. Earth dist.	12607 Nov 09 15:19	28°♎49'11	10.55756 AU
evening set	12602 Aug 20 21:45	24°♎34'41			12607 Nov 19 06:04	0°♎	
				morning rise	12607 Nov 27 01:53	0°♎56'58	
conjunction	12602 Sep 07 00:01	26°♎38'54	-0°50'28	retrograde	12608 Mar 10 14:40	8°♎37'56	
minimum elong	12602 Sep 07 00:03	26°♎38'55	0°50'37	opposition	12608 May 18 11:24	5°♎12'51	1°28'42
max. Earth dist.	12602 Sep 07 13:32	26°♎43'02	10.69358 AU	min. Earth dist.	12608 May 18 08:15	5°♎13'28	8.53931 AU
morning rise	12602 Sep 24 04:57	28°♎43'56		direct	12608 Jul 25 08:03	1°♎49'55	
	12602 Oct 05 00:39	0°♎		evening set	12608 Nov 04 04:13	9°♎21'20	
retrograde	12603 Jan 06 09:48	6°♎16'00					
opposition	12603 Mar 17 08:12	2°♎52'29	-0°48'46	conjunction	12608 Nov 21 18:47	11°♎30'46	1°20'19
min. Earth dist.	12603 Mar 16 20:57	2°♎54'39	8.68679 AU	minimum elong	12608 Nov 21 18:45	11°♎30'45	1°21'11
	12603 May 01 12:54	30°♎		max. Earth dist.	12608 Nov 21 20:45	11°♎31'22	10.52018 AU
direct	12603 May 24 20:13	29°♎32'15		morning rise	12608 Dec 09 11:10	13°♎40'47	
	12603 Jun 16 22:01	0°♎		retrograde	12609 Mar 23 21:37	21°♎23'26	
evening set	12603 Sep 02 10:11	6°♎50'41		opposition	12609 May 31 10:26	17°♎58'14	1°49'00
				min. Earth dist.	12609 May 31 09:44	17°♎58'22	8.50271 AU
conjunction	12603 Sep 19 14:47	8°♎55'38	-0°28'39	direct	12609 Aug 07 05:53	14°♎34'27	
minimum elong	12603 Sep 19 14:49	8°♎55'39	0°28'37	evening set	12609 Nov 17 15:03	22°♎09'59	
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morning rise	12603 Oct 06 22:22	11°♎01'30		conjunction	12609 Dec 05 06:37	24°♎20'10	1°34'40
retrograde	12604 Jan 19 07:49	18°♎35'01		minimum elong	12609 Dec 05 06:35	24°♎20'10	1°35'36
opposition	12604 Mar 29 02:59	15°♎11'07	-0°20'51	max. Earth dist.	12609 Dec 05 05:07	24°♎19'43	10.48438 AU
min. Earth dist.	12604 Mar 28 16:53	15°♎13'04	8.66781 AU	morning rise	12609 Dec 22 23:37	26°♎30'49	
direct	12604 Jun 05 09:44	11°♎50'37			12610 Jan 22 15:35	0°♎	
evening set	12604 Sep 14 01:27	19°♎10'09		retrograde	12610 Apr 06 04:24	4°♎14'47	
				opposition	12610 Jun 13 11:12	0°♎49'34	2°04'01
conjunction	12604 Oct 01 08:24	21°♎15'57	-0°05'29	min. Earth dist.	12610 Jun 13 13:13	0°♎49'10	8.46869 AU
minimum elong	12604 Oct 01 08:24	21°♎15'57	0°05'14		12610 Jun 23 22:54	30°♎	
behind sun begin	12604 Oct 01 01:29	21°♎13'52		direct	12610 Aug 20 08:13	27°♎24'58	
behind sun end	12604 Oct 01 15:19	21°♎18'02			12610 Oct 14 23:29	0°♎	
max. Earth dist.	12604 Oct 01 19:16	21°♎19'15	10.65595 AU	evening set	12610 Dec 01 05:03	5°♎04'31	
morning rise	12604 Oct 18 18:35	23°♎22'40					
asc. node	12604 Dec 27 23:33	29°♎59'22		conjunction	12610 Dec 18 21:26	7°♎15'23	1°44'21
	12604 Dec 28 04:11	0°♎		minimum elong	12610 Dec 18 21:25	7°♎15'23	1°45'18
retrograde	12605 Jan 31 06:38	0°♎57'50		max. Earth dist.	12610 Dec 18 17:03	7°♎14'01	10.45206 AU
	12605 Mar 06 16:56	30°♎		morning rise	12611 Jan 05 14:42	9°♎26'32	
opposition	12605 Apr 10 21:57	27°♎33'35	0°08'10	retrograde	12611 Apr 19 12:08	17°♎11'21	
min. Earth dist.	12605 Apr 10 13:45	27°♎35'10	8.64263 AU	opposition	12611 Jun 26 13:29	13°♎46'12	2°12'53
direct	12605 Jun 18 01:18	24°♎12'38		min. Earth dist.	12611 Jun 26 17:33	13°♎45'23	8.43887 AU
	12605 Sep 13 10:20	0°♎		direct	12611 Sep 02 13:19	10°♎20'49	
evening set	12605 Sep 26 20:06	1°♎34'04		evening set	12611 Dec 14 21:52	18°♎04'06	


























































































































conjunction	12612 Jan 01 14:54	20° S 15'34	1°48'47	conjunction	12618 Mar 23 00:01	8° Y 47'58	0°29'03
minimum elong	12612 Jan 01 14:54	20° S 15'33	1°49'42	minimum elong	12618 Mar 23 00:02	8° Y 47'58	0°29'00
max. Earth dist.	12612 Jan 01 08:21	20° S 13'31	10.42472 AU	max. Earth dist.	12618 Mar 22 12:17	8° Y 44'18	10.41539 AU
morning rise	12612 Jan 19 08:01	22° S 27'04		morning rise	12618 Apr 09 10:25	10° Y 58'17	
	12612 Apr 16 20:34	0° \approx		retrograde	12618 Jul 19 21:59	18° Y 35'23	
retrograde	12612 May 01 21:45	0° \approx 12'10		opposition	12618 Sep 25 14:21	15° Y 12'55	0°21'09
	12612 May 16 24:00	30° R S		min. Earth dist.	12618 Sep 25 22:40	15° Y 11'17	8.42713 AU
opposition	12612 Jul 08 17:08	26° S 47'10	2°15'01	direct	12618 Dec 03 22:30	11° Y 46'27	
min. Earth dist.	12612 Jul 08 22:42	26° S 46'04	8.41458 AU	evening set	12619 Mar 18 22:58	19° Y 35'57	
direct	12612 Sep 14 19:46	23° S 21'06					
	12612 Dec 18 07:56	0° \approx		conjunction	12619 Apr 05 10:18	21° Y 46'19	0°04'46
evening set	12612 Dec 27 16:32	1° \approx 07'39		minimum elong	12619 Apr 05 10:18	21° Y 46'19	0°04'30
				behind sun begin	12619 Apr 05 03:16	21° Y 44'08	
conjunction	12613 Jan 14 09:55	3° \approx 19'32	1°47'39	behind sun end	12619 Apr 05 17:20	21° Y 48'29	
minimum elong	12613 Jan 14 09:56	3° \approx 19'33	1°48'29	max. Earth dist.	12619 Apr 05 00:20	21° Y 43'13	10.44030 AU
max. Earth dist.	12613 Jan 14 01:41	3° \approx 16'58	10.40363 AU	morning rise	12619 Apr 22 18:23	23° Y 55'46	
morning rise	12613 Feb 01 02:33	5° \approx 31'16		desc. node	12619 Jun 17 12:10	29° Y 43'10	
retrograde	12613 May 15 07:23	13° \approx 16'04			12619 Jun 21 08:52	0° S	
opposition	12613 Jul 21 22:24	9° \approx 51'20	2°10'10	retrograde	12619 Aug 02 03:54	1° S 30'58	
min. Earth dist.	12613 Jul 22 05:09	9° \approx 49'59	8.39696 AU		12619 Sep 13 22:02	30° R Y	
direct	12613 Sep 28 05:06	6° \approx 24'44		opposition	12619 Oct 08 23:10	28° Y 08'59	-0°09'16
evening set	12614 Jan 10 11:56	14° \approx 13'47		min. Earth dist.	12619 Oct 09 06:25	28° Y 07'34	8.45480 AU
	12614 Jan 16 17:52	15° \approx		direct	12619 Dec 17 09:46	24° Y 43'07	
					12620 Mar 09 23:47	0° S	
conjunction	12614 Jan 28 05:21	16° \approx 25'57	1°40'56	evening set	12620 Mar 31 08:12	2° S 30'28	
minimum elong	12614 Jan 28 05:23	16° \approx 25'58	1°41'38				
max. Earth dist.	12614 Jan 27 19:34	16° \approx 22'54	10.38982 AU	conjunction	12620 Apr 17 16:55	4° S 39'49	-0°19'47
morning rise	12614 Feb 14 21:17	18° \approx 37'46		minimum elong	12620 Apr 17 16:54	4° S 39'49	0°20'14
retrograde	12614 May 28 16:51	26° \approx 21'43		max. Earth dist.	12620 Apr 17 08:35	4° S 37'14	10.47050 AU
opposition	12614 Aug 04 04:58	22° \approx 57'20	1°58'33	morning rise	12620 May 04 22:30	6° S 48'18	
min. Earth dist.	12614 Aug 04 13:12	22° \approx 55'41	8.38691 AU	retrograde	12620 Aug 14 06:08	14° S 21'43	
direct	12614 Oct 11 16:06	19° \approx 30'20		opposition	12620 Oct 21 07:37	11° S 00'11	-0°39'01
evening set	12615 Jan 24 07:36	27° \approx 21'09		min. Earth dist.	12620 Oct 21 13:46	10° S 58'59	8.48724 AU
				direct	12620 Dec 29 21:52	7° S 34'59	
conjunction	12615 Feb 11 00:37	29° \approx 33'24	1°28'57		12621 Apr 10 21:14	15° S	
minimum elong	12615 Feb 11 00:40	29° \approx 33'25	1°29'30	evening set	12621 Apr 13 14:01	15° S 19'41	
max. Earth dist.	12615 Feb 10 12:57	29° \approx 29'45	10.38399 AU				
	12615 Feb 14 13:30	0° X		conjunction	12621 Apr 30 19:52	17° S 27'53	-0°43'05
morning rise	12615 Feb 28 15:42	1° X 45'08		minimum elong	12621 Apr 30 19:51	17° S 27'53	0°43'42
retrograde	12615 Jun 11 02:16	9° X 27'43		max. Earth dist.	12621 Apr 30 13:05	17° S 25'46	10.50464 AU
opposition	12615 Aug 17 12:26	6° X 03'46	1°40'44	morning rise	12621 May 17 23:02	19° S 35'18	
min. Earth dist.	12615 Aug 17 22:06	6° X 01'50	8.38496 AU	retrograde	12621 Aug 27 06:57	27° S 07'09	
direct	12615 Oct 25 03:57	2° X 36'34		opposition	12621 Nov 03 15:10	23° S 45'57	-1°06'36
evening set	12616 Feb 07 02:29	10° X 28'18		min. Earth dist.	12621 Nov 03 19:52	23° S 45'03	8.52295 AU
				direct	12622 Jan 12 08:28	20° S 21'28	
conjunction	12616 Feb 24 18:42	12° X 40'26	1°12'21	evening set	12622 Apr 26 16:09	28° S 03'07	
minimum elong	12616 Feb 24 18:45	12° X 40'26	1°12'42		12622 May 12 10:40	0° II	
max. Earth dist.	12616 Feb 24 05:44	12° X 36'22	10.38645 AU				
morning rise	12616 Mar 13 08:37	14° X 51'53		conjunction	12622 May 13 19:12	0° II 10'07	-1°04'07
retrograde	12616 Jun 23 10:02	22° X 32'46		minimum elong	12622 May 13 19:10	0° II 10'07	1°04'53
opposition	12616 Aug 29 20:48	19° X 09'18	1°17'42	max. Earth dist.	12622 May 13 14:28	0° II 08'39	10.54105 AU
min. Earth dist.	12616 Aug 30 06:57	19° X 07'17	8.39127 AU	morning rise	12622 May 30 20:02	2° II 16'28	
direct	12616 Nov 06 18:01	15° X 42'07		retrograde	12622 Sep 09 06:52	9° II 46'57	
evening set	12617 Feb 19 19:37	23° X 33'54		opposition	12622 Nov 16 21:40	6° II 25'58	-1°30'43
				min. Earth dist.	12622 Nov 16 23:56	6° II 25'32	8.56002 AU
conjunction	12617 Mar 09 10:37	25° X 45'40	0°52'00	direct	12623 Jan 25 16:30	3° II 02'15	
minimum elong	12617 Mar 09 10:39	25° X 45'40	0°52'10	evening set	12623 May 09 14:36	10° II 40'32	
max. Earth dist.	12617 Mar 08 21:37	25° X 41'35	10.39710 AU				
morning rise	12617 Mar 26 22:59	27° X 56'39		conjunction	12623 May 26 15:05	12° II 46'23	-1°21'55
	12617 Apr 13 04:52	0° Y		minimum elong	12623 May 26 15:03	12° II 46'22	1°22'47
retrograde	12617 Jul 06 15:46	5° Y 35'41		max. Earth dist.	12623 May 26 13:30	12° II 45'53	10.57780 AU
opposition	12617 Sep 12 05:34	2° Y 12'43	0°50'40	morning rise	12623 Jun 12 13:43	14° II 51'41	
min. Earth dist.	12617 Sep 12 15:06	2° Y 10'50	8.40557 AU	retrograde	12623 Sep 22 04:58	22° II 21'05	
direct	12617 Oct 12 15:29	30° R X		opposition	12623 Nov 30 02:50	19° II 00'12	-1°50'16
	12617 Nov 20 09:08	28° X 45'48		min. Earth dist.	12623 Nov 30 02:23	19° II 00'18	8.59650 AU
evening set	12617 Dec 28 14:04	0° Y		direct	12624 Feb 07 22:11	15° II 37'15	
	12618 Mar 05 10:36	6° Y 36'48		evening set	12624 May 21 09:28	23° II 12'01	



























































































































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minimum elong	12624 Jun 07 07:47	25° Π 16'47	1°36'37	minimum elong	12630 Aug 20 02:14	9° Π 00'33	1°18'15
max. Earth dist.	12624 Jun 07 09:24	25° Π 17'17	10.61297 AU	max. Earth dist.	12630 Aug 20 13:15	9° Π 03'55	10.69697 AU
morning rise	12624 Jun 24 04:41	27° Π 21'11		morning rise	12630 Sep 06 03:27	11° Π 04'38	
	12624 Jul 17 01:43	0° \mathfrak{C}		retrograde	12630 Dec 18 23:45	18° Π 35'20	
retrograde	12624 Oct 04 02:47	4° \mathfrak{C} 49'47		opposition	12631 Feb 26 23:48	15° Π 12'13	-1°25'03
opposition	12624 Dec 12 06:34	1° \mathfrak{C} 28'53	-2°04'26	min. Earth dist.	12631 Feb 26 14:17	15° Π 14'03	8.69280 AU
min. Earth dist.	12624 Dec 12 03:52	1° \mathfrak{C} 29'24	8.63034 AU	direct	12631 May 06 19:00	11° Π 51'45	
	12625 Jan 01 09:07	30° \mathfrak{R} Π		evening set	12631 Aug 15 12:51	19° Π 10'33	
direct	12625 Feb 20 01:05	28° Π 06'36					
	12625 Apr 09 02:05	0° \mathfrak{C}		conjunction	12631 Sep 01 13:55	21° Π 14'36	-0°59'45
evening set	12625 Jun 03 01:01	5° \mathfrak{C} 37'53		minimum elong	12631 Sep 01 13:57	21° Π 14'36	0°59'59
				max. Earth dist.	12631 Sep 02 00:54	21° Π 17'57	10.68592 AU
conjunction	12625 Jun 19 21:41	7° \mathfrak{C} 41'47	-1°44'53	morning rise	12631 Sep 18 17:50	23° Π 19'26	
minimum elong	12625 Jun 19 21:41	7° \mathfrak{C} 41'47	1°45'50		12631 Nov 29 14:55	0° \mathfrak{A}	
max. Earth dist.	12625 Jun 20 01:29	7° \mathfrak{C} 42'58	10.64437 AU	retrograde	12631 Dec 31 19:36	0° \mathfrak{A} 51'26	
morning rise	12625 Jul 06 17:35	9° \mathfrak{C} 45'29			12632 Feb 02 09:04	30° \mathfrak{R} Π	
retrograde	12625 Oct 16 23:25	17° \mathfrak{C} 13'34		opposition	12632 Mar 10 19:22	27° Π 27'45	-1°00'55
opposition	12625 Dec 25 08:42	13° \mathfrak{C} 52'32	-2°12'42	min. Earth dist.	12632 Mar 10 10:08	27° Π 29'31	8.67822 AU
min. Earth dist.	12625 Dec 25 04:51	13° \mathfrak{C} 53'17	8.65914 AU	direct	12632 May 18 09:24	24° Π 07'04	
direct	12626 Mar 05 00:24	10° \mathfrak{C} 30'52			12632 Aug 14 18:40	0° \mathfrak{A}	
evening set	12626 Jun 15 13:53	17° \mathfrak{C} 58'55		evening set	12632 Aug 27 00:21	1° \mathfrak{A} 25'57	
conjunction	12626 Jul 02 09:28	20° \mathfrak{C} 02'10	-1°49'09	conjunction	12632 Sep 13 03:53	3° \mathfrak{A} 30'45	-0°38'54
minimum elong	12626 Jul 02 09:28	20° \mathfrak{C} 02'10	1°50'04	minimum elong	12632 Sep 13 03:55	3° \mathfrak{A} 30'45	0°38'57
max. Earth dist.	12626 Jul 02 14:16	20° \mathfrak{C} 03'39	10.66968 AU	max. Earth dist.	12632 Sep 13 15:00	3° \mathfrak{A} 34'08	10.66842 AU
morning rise	12626 Jul 19 05:08	22° \mathfrak{C} 05'26		morning rise	12632 Sep 30 10:28	5° \mathfrak{A} 36'26	
retrograde	12626 Oct 29 17:41	29° \mathfrak{C} 33'25		retrograde	12633 Jan 12 16:02	13° \mathfrak{A} 09'57	
opposition	12627 Jan 07 09:18	26° \mathfrak{C} 12'11	-2°14'48	opposition	12633 Mar 23 14:22	9° \mathfrak{A} 45'43	-0°33'54
min. Earth dist.	12627 Jan 07 04:20	26° \mathfrak{C} 13'08	8.68090 AU	min. Earth dist.	12633 Mar 23 05:10	9° \mathfrak{A} 47'29	8.65753 AU
direct	12627 Mar 17 22:01	22° \mathfrak{C} 51'01		direct	12633 May 31 00:51	6° \mathfrak{A} 24'45	
	12627 Jun 25 18:10	0° \mathfrak{Q}		evening set	12633 Sep 08 14:26	13° \mathfrak{A} 44'30	
evening set	12627 Jun 28 00:34	0° \mathfrak{Q} 16'16					
				conjunction	12633 Sep 25 20:30	15° \mathfrak{A} 50'10	-0°16'12
conjunction	12627 Jul 14 19:57	2° \mathfrak{Q} 19'11	-1°48'24	minimum elong	12633 Sep 25 20:31	15° \mathfrak{A} 50'11	0°16'03
minimum elong	12627 Jul 14 19:58	2° \mathfrak{Q} 19'11	1°49'15	max. Earth dist.	12633 Sep 26 07:46	15° \mathfrak{A} 53'36	10.64504 AU
max. Earth dist.	12627 Jul 15 02:23	2° \mathfrak{Q} 21'09	10.68766 AU	morning rise	12633 Oct 13 05:33	17° \mathfrak{A} 56'44	
morning rise	12627 Jul 31 16:07	4° \mathfrak{Q} 22'16		retrograde	12634 Jan 25 15:51	25° \mathfrak{A} 32'01	
retrograde	12627 Nov 11 12:38	11° \mathfrak{Q} 50'34		opposition	12634 Apr 05 09:32	22° \mathfrak{A} 07'18	-0°05'11
opposition	12628 Jan 20 08:41	8° \mathfrak{Q} 29'00	-2°10'44	min. Earth dist.	12634 Apr 05 00:32	22° \mathfrak{A} 09'02	8.63144 AU
min. Earth dist.	12628 Jan 20 02:01	8° \mathfrak{Q} 30'16	8.69505 AU	asc. node	12634 Jun 10 12:52	18° \mathfrak{A} 46'10	
direct	12628 Mar 29 18:58	5° \mathfrak{Q} 08'14		direct	12634 Jun 12 15:52	18° \mathfrak{A} 45'56	
evening set	12628 Jul 09 09:42	12° \mathfrak{Q} 31'03		evening set	12634 Sep 21 07:39	26° \mathfrak{A} 07'19	
conjunction	12628 Jul 26 05:45	14° \mathfrak{Q} 33'54	-1°42'42	conjunction	12634 Oct 08 16:04	28° \mathfrak{A} 13'55	0°07'28
minimum elong	12628 Jul 26 05:47	14° \mathfrak{Q} 33'55	1°43'26	minimum elong	12634 Oct 08 16:04	28° \mathfrak{A} 13'55	0°07'49
max. Earth dist.	12628 Jul 26 14:31	14° \mathfrak{Q} 36'35	10.69813 AU	behind sun begin	12634 Oct 08 09:37	28° \mathfrak{A} 11'58	
	12628 Jul 29 18:58	15° \mathfrak{Q}		behind sun end	12634 Oct 08 22:30	28° \mathfrak{A} 15'52	
morning rise	12628 Aug 12 03:01	16° \mathfrak{Q} 37'06		max. Earth dist.	12634 Oct 09 02:23	28° \mathfrak{A} 17'03	10.61670 AU
retrograde	12628 Nov 23 08:18	24° \mathfrak{Q} 05'59			12634 Oct 23 04:11	0° \mathfrak{M}	
opposition	12629 Feb 01 06:44	20° \mathfrak{Q} 43'57	-2°00'44	morning rise	12634 Oct 26 03:25	0° \mathfrak{M} 21'25	
min. Earth dist.	12629 Jan 31 22:11	20° \mathfrak{Q} 45'35	8.70161 AU	retrograde	12635 Feb 07 17:26	7° \mathfrak{M} 58'36	
direct	12629 Apr 11 12:16	17° \mathfrak{Q} 23'27		opposition	12635 Apr 18 05:14	4° \mathfrak{M} 33'28	0°23'58
evening set	12629 Jul 21 18:21	24° \mathfrak{Q} 44'18		min. Earth dist.	12635 Apr 17 21:21	4° \mathfrak{M} 35'01	8.60111 AU
				direct	12635 Jun 25 06:13	1° \mathfrak{M} 11'35	
conjunction	12629 Aug 07 15:41	26° \mathfrak{Q} 47'20	-1°32'22	evening set	12635 Oct 04 04:48	8° \mathfrak{M} 35'26	
minimum elong	12629 Aug 07 15:43	26° \mathfrak{Q} 47'21	1°32'57				
max. Earth dist.	12629 Aug 08 02:16	26° \mathfrak{Q} 50'35	10.70116 AU	conjunction	12635 Oct 21 15:18	10° \mathfrak{M} 42'56	0°30'48
morning rise	12629 Aug 24 14:39	28° \mathfrak{Q} 50'54		minimum elong	12635 Oct 21 15:17	10° \mathfrak{M} 42'56	0°31'20
	12629 Sep 03 09:30	0° \mathfrak{M}		max. Earth dist.	12635 Oct 21 23:19	10° \mathfrak{M} 45'24	10.58469 AU
retrograde	12629 Dec 06 03:34	6° \mathfrak{M} 20'34		morning rise	12635 Nov 08 04:45	12° \mathfrak{M} 51'21	
opposition	12630 Feb 14 03:36	2° \mathfrak{M} 58'00	-1°45'17		12635 Nov 26 15:51	15° \mathfrak{M}	
min. Earth dist.	12630 Feb 13 18:08	2° \mathfrak{M} 59'48	8.70074 AU	retrograde	12636 Feb 20 18:57	20° \mathfrak{M} 30'29	
	12630 Apr 03 03:22	30° \mathfrak{R} \mathfrak{Q}		opposition	12636 Apr 30 01:39	17° \mathfrak{M} 05'04	0°52'11
direct	12630 Apr 24 03:59	29° \mathfrak{Q} 37'35		min. Earth dist.	12636 Apr 29 19:55	17° \mathfrak{M} 06'12	8.56793 AU
	12630 May 15 00:07	0° \mathfrak{M}			12636 May 28 17:42	15° \mathfrak{R} \mathfrak{M}	
evening set	12630 Aug 03 03:13	6° \mathfrak{M} 57'05		direct	12636 Jul 07 00:18	13° \mathfrak{M} 42'33	

	12636 Aug 14 15:59	15°♍		conjunction	12643 Jan 22 11:08	10°♊54'04	1°44'24
evening set	12636 Oct 16 06:03	21°♍09'33		minimum elong	12643 Jan 22 11:10	10°♊54'05	1°45'11
				max. Earth dist.	12643 Jan 22 02:03	10°♊51'13	10.39373 AU
conjunction	12636 Nov 02 18:24	23°♍17'59	0°52'51	morning rise	12643 Feb 09 03:38	13°♊05'59	
minimum elong	12636 Nov 02 18:22	23°♍17'58	0°53'33		12643 Feb 25 01:51	15°♊	
max. Earth dist.	12636 Nov 02 23:46	23°♍19'37	10.55049 AU	retrograde	12643 May 23 04:01	20°♊50'56	
morning rise	12636 Nov 20 09:32	25°♍27'13		opposition	12643 Jul 29 17:19	17°♊26'44	2°04'16
	12637 Jan 01 04:18	0°♊		min. Earth dist.	12643 Jul 30 00:45	17°♊25'15	8.39119 AU
retrograde	12637 Mar 04 22:46	3°♊08'18			12643 Sep 01 21:09	15°♊	
	12637 May 09 07:24	30°♊		direct	12643 Oct 06 01:57	14°♊00'16	
opposition	12637 May 12 23:15	29°♊42'42	1°18'07		12643 Nov 08 23:22	15°♊	
min. Earth dist.	12637 May 12 19:35	29°♊43'26	8.53344 AU	evening set	12644 Jan 18 14:23	21°♊50'52	
direct	12637 Jul 19 20:23	26°♊19'32					
	12637 Sep 25 03:26	0°♊		conjunction	12644 Feb 05 07:36	24°♊03'09	1°34'40
evening set	12637 Oct 29 11:23	3°♊50'08		minimum elong	12644 Feb 05 07:38	24°♊03'10	1°35'17
				max. Earth dist.	12644 Feb 04 21:12	23°♊59'53	10.38816 AU
conjunction	12637 Nov 16 01:21	5°♊59'27	1°12'30	morning rise	12644 Feb 22 23:13	26°♊14'59	
minimum elong	12637 Nov 16 01:19	5°♊59'26	1°13'19		12644 Mar 26 18:26	0°♋	
max. Earth dist.	12637 Nov 16 04:44	6°♊00'29	10.51571 AU	retrograde	12644 Jun 04 14:09	3°♋58'35	
morning rise	12637 Dec 03 17:34	8°♊09'26		opposition	12644 Aug 11 01:00	0°♋34'50	1°49'02
retrograde	12638 Mar 18 05:02	15°♊52'20		min. Earth dist.	12644 Aug 11 09:11	0°♋33'12	8.38882 AU
opposition	12638 May 25 22:14	12°♊26'40	1°40'27		12644 Aug 18 08:37	30°♋	
min. Earth dist.	12638 May 25 20:06	12°♊27'05	8.49935 AU	direct	12644 Oct 18 14:27	27°♋08'09	
direct	12638 Aug 01 18:14	9°♊02'49			12644 Dec 16 17:46	0°♋	
evening set	12638 Nov 11 20:54	16°♊37'23		evening set	12645 Jan 31 10:20	4°♋59'48	
conjunction	12638 Nov 29 12:12	18°♊47'29	1°28'42	conjunction	12645 Feb 18 03:04	7°♋12'02	1°19'58
minimum elong	12638 Nov 29 12:10	18°♊47'29	1°29'36	minimum elong	12645 Feb 18 03:06	7°♋12'03	1°20'24
max. Earth dist.	12638 Nov 29 13:44	18°♊47'58	10.48224 AU	max. Earth dist.	12645 Feb 17 15:45	7°♋08'29	10.38926 AU
morning rise	12638 Dec 17 05:03	20°♊58'07		morning rise	12645 Mar 07 17:28	9°♋23'38	
retrograde	12639 Mar 31 12:18	28°♊42'31		retrograde	12645 Jun 18 00:05	17°♋05'34	
opposition	12639 Jun 07 22:44	25°♊16'55	1°57'58	opposition	12645 Aug 24 09:35	13°♋42'16	1°28'07
min. Earth dist.	12639 Jun 07 22:06	25°♊17'02	8.46748 AU	min. Earth dist.	12645 Aug 24 18:41	13°♋40'28	8.39261 AU
direct	12639 Aug 14 19:25	21°♊52'26		direct	12645 Nov 01 03:30	10°♋15'32	
evening set	12639 Nov 25 10:15	29°♊31'02		evening set	12646 Feb 14 04:51	18°♋07'33	
	12639 Nov 29 09:09	0°♋					
				conjunction	12646 Mar 03 20:36	20°♋19'32	1°01'06
conjunction	12639 Dec 13 02:33	1°♋41'52	1°40'33	minimum elong	12646 Mar 03 20:39	20°♋19'32	1°01'21
minimum elong	12639 Dec 13 02:31	1°♋41'51	1°41'31	max. Earth dist.	12646 Mar 03 08:18	20°♋15'40	10.39611 AU
max. Earth dist.	12639 Dec 13 01:45	1°♋41'37	10.45185 AU	morning rise	12646 Mar 21 09:36	22°♋30'46	
morning rise	12639 Dec 30 19:41	3°♋53'01			12646 Jun 17 03:18	0°♌	
retrograde	12640 Apr 12 21:56	11°♋38'27		retrograde	12646 Jul 01 08:08	0°♌10'56	
opposition	12640 Jun 20 01:01	8°♋13'04	2°09'39		12646 Jul 15 13:39	30°♌	
min. Earth dist.	12640 Jun 20 02:26	8°♋12'47	8.43943 AU	opposition	12646 Sep 06 18:47	26°♌48'09	1°02'38
direct	12640 Aug 26 22:25	4°♋47'59		min. Earth dist.	12646 Sep 07 04:47	26°♌46'10	8.40194 AU
evening set	12640 Dec 08 02:49	12°♋30'27		direct	12646 Nov 14 18:00	23°♌21'30	
					12647 Feb 17 19:04	0°♌	
conjunction	12640 Dec 25 19:39	14°♋41'52	1°47'22	evening set	12647 Feb 27 21:45	1°♌13'17	
minimum elong	12640 Dec 25 19:39	14°♋41'52	1°48'19				
max. Earth dist.	12640 Dec 25 15:46	14°♋40'39	10.42611 AU	conjunction	12647 Mar 17 11:58	3°♌24'48	0°39'07
morning rise	12641 Jan 12 12:49	16°♋53'25		minimum elong	12647 Mar 17 12:00	3°♌24'48	0°39'09
retrograde	12641 Apr 26 08:50	24°♋39'20		max. Earth dist.	12647 Mar 16 22:57	3°♌20'43	10.40856 AU
opposition	12641 Jul 03 04:59	21°♋14'18	2°14'47	morning rise	12647 Apr 03 23:15	5°♌35'29	
min. Earth dist.	12641 Jul 03 08:54	21°♋13'30	8.41668 AU	retrograde	12647 Jul 14 15:15	13°♌13'52	
direct	12641 Sep 09 03:50	17°♋48'39		opposition	12647 Sep 20 04:20	9°♌51'33	0°33'58
evening set	12641 Dec 21 21:40	25°♋34'34		min. Earth dist.	12647 Sep 20 14:42	9°♌49'31	8.41717 AU
				direct	12647 Nov 28 08:25	6°♌25'10	
conjunction	12642 Jan 08 14:50	27°♋46'25	1°48'42	evening set	12648 Mar 12 12:15	14°♌15'57	
minimum elong	12642 Jan 08 14:51	27°♋46'26	1°49'35	max. Earth dist.	12648 Mar 29 11:37	16°♌22'47	10.42701 AU
max. Earth dist.	12642 Jan 08 08:00	27°♋44'17	10.40644 AU				
morning rise	12642 Jan 26 07:48	29°♋58'15		conjunction	12648 Mar 30 00:26	16°♌26'48	0°15'11
	12642 Jan 26 13:32	0°♌		minimum elong	12648 Mar 30 00:27	16°♌26'48	0°15'01
retrograde	12642 May 09 18:40	7°♌43'59		behind sun begin	12648 Mar 29 21:53	16°♌26'00	
opposition	12642 Jul 16 10:32	4°♌19'21	2°12'59	behind sun end	12648 Mar 30 03:00	16°♌27'35	
min. Earth dist.	12642 Jul 16 16:34	4°♌18'09	8.40043 AU	morning rise	12648 Apr 16 09:42	18°♌36'46	
direct	12642 Sep 22 13:53	0°♌53'14		retrograde	12648 Jul 26 20:46	26°♌13'21	
evening set	12643 Jan 04 17:48	8°♌41'55		opposition	12648 Oct 02 14:05	22°♌51'25	0°03'41

min. Earth dist.	12648 Oct 02 23:27	22° Υ 49'35	8.43846 AU	retrograde	12654 Oct 11 21:29	12° \mathfrak{D} 18'06	
desc. node	12648 Nov 16 10:03	19° Υ 55'57		opposition	12654 Dec 20 05:28	8° \mathfrak{D} 56'35	-2°10'09
direct	12648 Dec 10 22:50	19° Υ 25'26		min. Earth dist.	12654 Dec 20 02:02	8° \mathfrak{D} 57'14	8.62873 AU
evening set	12649 Mar 25 23:33	27° Υ 14'27		direct	12655 Feb 27 23:19	5° \mathfrak{D} 34'04	
				evening set	12655 Jun 10 16:34	13° \mathfrak{D} 04'10	
conjunction	12649 Apr 12 09:25	29° Υ 24'23	-0°09'29				
minimum elong	12649 Apr 12 09:24	29° Υ 24'23	0°09'52	conjunction	12655 Jun 27 12:42	15° \mathfrak{D} 07'52	-1°48'04
behind sun begin	12649 Apr 12 03:35	29° Υ 22'35		minimum elong	12655 Jun 27 12:42	15° \mathfrak{D} 07'52	1°49'00
behind sun end	12649 Apr 12 15:14	29° Υ 26'12		max. Earth dist.	12655 Jun 27 18:03	15° \mathfrak{D} 09'31	10.64174 AU
max. Earth dist.	12649 Apr 11 22:27	29° Υ 20'58	10.45118 AU	morning rise	12655 Jul 14 08:26	17° \mathfrak{D} 11'28	
	12649 Apr 17 03:05	0° \mathfrak{C}		retrograde	12655 Oct 24 17:06	24° \mathfrak{D} 40'02	
morning rise	12649 Apr 29 16:20	1° \mathfrak{C} 33'29		opposition	12656 Jan 02 06:53	21° \mathfrak{D} 18'20	-2°14'50
retrograde	12649 Aug 09 00:06	9° \mathfrak{C} 08'21		min. Earth dist.	12656 Jan 02 00:46	21° \mathfrak{D} 19'30	8.65605 AU
opposition	12649 Oct 15 23:25	5° \mathfrak{C} 46'41	-0°26'37	direct	12656 Mar 11 22:09	17° \mathfrak{D} 56'27	
min. Earth dist.	12649 Oct 16 06:51	5° \mathfrak{C} 45'14	8.46514 AU	evening set	12656 Jun 22 04:05	25° \mathfrak{D} 23'19	
direct	12649 Dec 24 13:10	2° \mathfrak{C} 21'11					
evening set	12650 Apr 08 07:37	10° \mathfrak{C} 07'48		conjunction	12656 Jul 08 23:42	27° \mathfrak{D} 26'29	-1°49'24
				minimum elong	12656 Jul 08 23:42	27° \mathfrak{D} 26'29	1°50'17
conjunction	12650 Apr 25 14:54	12° \mathfrak{C} 16'42	-0°33'27	max. Earth dist.	12656 Jul 09 07:40	27° \mathfrak{D} 28'56	10.66655 AU
minimum elong	12650 Apr 25 14:53	12° \mathfrak{C} 16'41	0°34'00	morning rise	12656 Jul 25 19:30	29° \mathfrak{D} 29'45	
max. Earth dist.	12650 Apr 25 06:36	12° \mathfrak{C} 14'06	10.48004 AU		12656 Jul 30 00:43	0° \mathfrak{Q}	
morning rise	12650 May 12 19:15	14° \mathfrak{C} 24'46		retrograde	12656 Nov 05 12:52	6° \mathfrak{Q} 58'12	
	12650 May 17 15:12	15° \mathfrak{C}		opposition	12657 Jan 14 06:39	3° \mathfrak{Q} 36'16	-2°13'17
retrograde	12650 Aug 22 03:27	21° \mathfrak{C} 58'00		min. Earth dist.	12657 Jan 13 22:58	3° \mathfrak{Q} 37'44	8.67818 AU
opposition	12650 Oct 29 07:53	18° \mathfrak{C} 36'32	-0°55'22	direct	12657 Mar 24 18:28	0° \mathfrak{Q} 14'55	
min. Earth dist.	12650 Oct 29 13:10	18° \mathfrak{C} 35'31	8.49593 AU	evening set	12657 Jul 04 13:46	7° \mathfrak{Q} 38'54	
direct	12651 Jan 07 00:27	15° \mathfrak{C} 11'34					
evening set	12651 Apr 21 12:02	22° \mathfrak{C} 55'18		conjunction	12657 Jul 21 09:30	9° \mathfrak{Q} 41'50	-1°45'44
				minimum elong	12657 Jul 21 09:31	9° \mathfrak{Q} 41'50	1°46'31
conjunction	12651 May 08 16:34	25° \mathfrak{C} 03'03	-0°55'38	max. Earth dist.	12657 Jul 21 18:52	9° \mathfrak{Q} 44'42	10.68573 AU
minimum elong	12651 May 08 16:32	25° \mathfrak{C} 03'02	0°56'20	morning rise	12657 Aug 07 06:14	11° \mathfrak{Q} 45'01	
max. Earth dist.	12651 May 08 11:07	25° \mathfrak{C} 01'21	10.51214 AU		12657 Sep 05 02:10	15° \mathfrak{Q}	
morning rise	12651 May 25 18:21	27° \mathfrak{C} 10'02		retrograde	12657 Nov 18 07:44	19° \mathfrak{Q} 13'35	
	12651 Jun 19 02:55	0° \mathfrak{I}		opposition	12658 Jan 27 05:01	15° \mathfrak{Q} 51'24	-2°05'41
retrograde	12651 Sep 04 05:07	4° \mathfrak{I} 41'48		min. Earth dist.	12658 Jan 26 20:23	15° \mathfrak{Q} 53'03	8.69407 AU
opposition	12651 Nov 11 15:32	1° \mathfrak{I} 20'27	-1°21'10		12658 Feb 07 13:52	15° \mathfrak{R} \mathfrak{Q}	
min. Earth dist.	12651 Nov 11 18:56	1° \mathfrak{I} 19'47	8.52932 AU	direct	12658 Apr 06 11:41	12° \mathfrak{Q} 30'29	
	12651 Nov 29 11:53	30° \mathfrak{R} \mathfrak{C}			12658 May 31 19:58	15° \mathfrak{Q}	
direct	12652 Jan 20 09:01	27° \mathfrak{C} 56'04		evening set	12658 Jul 16 22:15	19° \mathfrak{Q} 52'03	
	12652 Mar 10 16:47	0° \mathfrak{I}					
evening set	12652 May 03 12:31	5° \mathfrak{I} 36'32		conjunction	12658 Aug 02 18:47	21° \mathfrak{Q} 54'58	-1°37'16
				minimum elong	12658 Aug 02 18:49	21° \mathfrak{Q} 54'58	1°37'55
conjunction	12652 May 20 14:14	7° \mathfrak{I} 43'05	-1°14'57	max. Earth dist.	12658 Aug 03 05:14	21° \mathfrak{Q} 58'09	10.69842 AU
minimum elong	12652 May 20 14:12	7° \mathfrak{I} 43'05	1°15'47	morning rise	12658 Aug 19 17:04	23° \mathfrak{Q} 58'19	
max. Earth dist.	12652 May 20 11:06	7° \mathfrak{I} 42'07	10.54596 AU		12658 Oct 19 21:02	0° \mathfrak{I}	
morning rise	12652 Jun 06 13:47	9° \mathfrak{I} 49'02		retrograde	12658 Dec 01 00:59	1° \mathfrak{I} 27'19	
retrograde	12652 Sep 16 03:38	17° \mathfrak{I} 19'36			12659 Jan 13 06:17	30° \mathfrak{R} \mathfrak{Q}	
opposition	12652 Nov 23 21:52	13° \mathfrak{I} 58'15	-1°42'48	opposition	12659 Feb 09 02:04	28° \mathfrak{Q} 04'49	-1°52'24
min. Earth dist.	12652 Nov 23 23:30	13° \mathfrak{I} 57'56	8.56372 AU	min. Earth dist.	12659 Feb 08 16:26	28° \mathfrak{Q} 06'40	8.70311 AU
direct	12653 Feb 01 16:05	10° \mathfrak{I} 34'29		direct	12659 Apr 19 04:57	24° \mathfrak{Q} 44'15	
evening set	12653 May 16 09:19	18° \mathfrak{I} 11'30			12659 Jul 11 09:39	0° \mathfrak{I}	
				evening set	12659 Jul 29 06:23	2° \mathfrak{I} 03'57	
conjunction	12653 Jun 02 08:31	20° \mathfrak{I} 16'56	-1°30'31				
minimum elong	12653 Jun 02 08:30	20° \mathfrak{I} 16'56	1°31'26	conjunction	12659 Aug 15 04:32	4° \mathfrak{I} 07'06	-1°24'25
max. Earth dist.	12653 Jun 02 07:36	20° \mathfrak{I} 16'39	10.57994 AU	minimum elong	12659 Aug 15 04:34	4° \mathfrak{I} 07'07	1°24'55
morning rise	12653 Jun 19 06:19	22° \mathfrak{I} 21'56		max. Earth dist.	12659 Aug 15 16:41	4° \mathfrak{I} 10'49	10.70418 AU
retrograde	12653 Sep 29 00:43	29° \mathfrak{I} 51'32		morning rise	12659 Sep 01 04:47	6° \mathfrak{I} 10'51	
opposition	12653 Dec 07 02:26	26° \mathfrak{I} 30'08	-1°59'21	retrograde	12659 Dec 13 20:03	13° \mathfrak{I} 40'35	
min. Earth dist.	12653 Dec 07 01:50	26° \mathfrak{I} 30'15	8.59744 AU	opposition	12660 Feb 21 22:02	10° \mathfrak{I} 17'42	-1°34'04
direct	12654 Feb 14 21:47	23° \mathfrak{I} 06'58		min. Earth dist.	12660 Feb 21 11:03	10° \mathfrak{I} 19'48	8.70507 AU
	12654 May 23 11:28	0° \mathfrak{D}		direct	12660 Apr 30 20:55	6° \mathfrak{I} 57'22	
evening set	12654 May 29 02:33	0° \mathfrak{D} 40'31		evening set	12660 Aug 09 15:02	14° \mathfrak{I} 15'49	
conjunction	12654 Jun 14 23:53	2° \mathfrak{D} 44'59	-1°41'42	conjunction	12660 Aug 26 15:15	16° \mathfrak{I} 19'26	-1°07'45
minimum elong	12654 Jun 14 23:52	2° \mathfrak{D} 44'59	1°42'39	minimum elong	12660 Aug 26 15:17	16° \mathfrak{I} 19'27	1°08'04
max. Earth dist.	12654 Jun 15 01:46	2° \mathfrak{D} 45'34	10.61242 AU	max. Earth dist.	12660 Aug 27 04:45	16° \mathfrak{I} 23'33	10.70281 AU
morning rise	12654 Jul 01 20:23	4° \mathfrak{D} 49'11		morning rise	12660 Sep 12 17:50	18° \mathfrak{I} 23'46	

retrograde	12660 Dec 25 17:02	25° \mathring{M} 54'26		conjunction	12666 Nov 10 13:28	0° \mathring{A} 39'26	1°04'12
opposition	12661 Mar 05 17:10	22° \mathring{M} 31'13	-1°11'29	minimum elong	12666 Nov 10 13:26	0° \mathring{A} 39'25	1°04'59
min. Earth dist.	12661 Mar 05 05:35	22° \mathring{M} 33'26	8.69989 AU	max. Earth dist.	12666 Nov 10 17:52	0° \mathring{A} 40'47	10.56201 AU
direct	12661 May 13 09:50	19° \mathring{M} 10'58		morning rise	12666 Nov 28 04:54	2° \mathring{A} 48'39	
evening set	12661 Aug 22 01:15	26° \mathring{M} 28'56		retrograde	12667 Mar 12 18:08	10° \mathring{A} 29'17	
				opposition	12667 May 20 13:41	7° \mathring{A} 04'17	1°31'02
conjunction	12661 Sep 08 03:39	28° \mathring{M} 33'09	-0°48'00	min. Earth dist.	12667 May 20 11:06	7° \mathring{A} 04'48	8.54376 AU
minimum elong	12661 Sep 08 03:41	28° \mathring{M} 33'10	0°48'07	direct	12667 Jul 27 09:24	3° \mathring{A} 41'23	
max. Earth dist.	12661 Sep 08 17:10	28° \mathring{M} 37'16	10.69439 AU	evening set	12667 Nov 06 07:12	11° \mathring{A} 12'43	
	12661 Sep 20 01:28	0° \mathring{A}					
morning rise	12661 Sep 25 08:48	0° \mathring{A} 38'12		conjunction	12667 Nov 23 21:39	13° \mathring{A} 22'03	1°21'59
retrograde	12662 Jan 07 13:09	8° \mathring{A} 10'04		minimum elong	12667 Nov 23 21:37	13° \mathring{A} 22'02	1°22'52
opposition	12662 Mar 18 11:48	4° \mathring{A} 46'30	-0°45'36	max. Earth dist.	12667 Nov 23 22:33	13° \mathring{A} 22'20	10.52451 AU
min. Earth dist.	12662 Mar 18 00:46	4° \mathring{A} 48'37	8.68786 AU	morning rise	12667 Dec 11 14:06	15° \mathring{A} 32'01	
direct	12662 May 25 23:27	1° \mathring{A} 26'12		retrograde	12668 Mar 24 22:55	23° \mathring{A} 14'21	
evening set	12662 Sep 03 13:39	8° \mathring{A} 44'29		opposition	12668 Jun 01 12:29	19° \mathring{A} 49'16	1°50'45
				min. Earth dist.	12668 Jun 01 12:39	19° \mathring{A} 49'14	8.50686 AU
conjunction	12662 Sep 20 18:20	10° \mathring{A} 49'26	-0°26'01	direct	12668 Aug 08 09:05	16° \mathring{A} 25'32	
minimum elong	12662 Sep 20 18:21	10° \mathring{A} 49'26	0°25'56	evening set	12668 Nov 18 17:54	24° \mathring{A} 01'01	
max. Earth dist.	12662 Sep 21 06:30	10° \mathring{A} 53'08	10.67935 AU				
morning rise	12662 Oct 08 02:11	12° \mathring{A} 55'18		conjunction	12668 Dec 06 09:26	26° \mathring{A} 11'09	1°35'50
retrograde	12663 Jan 20 10:50	20° \mathring{A} 28'36		minimum elong	12668 Dec 06 09:25	26° \mathring{A} 11'09	1°36'46
opposition	12663 Mar 31 06:26	17° \mathring{A} 04'41	-0°17'33	max. Earth dist.	12668 Dec 06 07:15	26° \mathring{A} 10'29	10.48824 AU
min. Earth dist.	12663 Mar 30 20:48	17° \mathring{A} 06'33	8.66955 AU	morning rise	12668 Dec 24 02:27	28° \mathring{A} 21'44	
direct	12663 Jun 07 13:38	13° \mathring{A} 44'09			12669 Jan 06 22:20	0° \mathring{B}	
evening set	12663 Sep 16 04:45	21° \mathring{A} 03'30		retrograde	12669 Apr 07 05:55	6° \mathring{B} 05'27	
				opposition	12669 Jun 14 13:01	2° \mathring{B} 40'21	2°05'07
conjunction	12663 Oct 03 11:51	23° \mathring{A} 09'18	-0°02'47	min. Earth dist.	12669 Jun 14 15:25	2° \mathring{B} 39'53	8.47222 AU
minimum elong	12663 Oct 03 11:51	23° \mathring{A} 09'18	0°02'31		12669 Jul 23 07:11	30° \mathring{R} \mathring{A}	
behind sun begin	12663 Oct 03 04:43	23° \mathring{A} 07'08		direct	12669 Aug 21 10:52	29° \mathring{A} 15'48	
behind sun end	12663 Oct 03 18:59	23° \mathring{A} 11'27			12669 Sep 19 09:21	0° \mathring{B}	
max. Earth dist.	12663 Oct 03 22:44	23° \mathring{A} 12'36	10.65814 AU	evening set	12669 Dec 02 07:46	6° \mathring{B} 55'20	
morning rise	12663 Oct 20 22:11	25° \mathring{A} 16'01					
asc. node	12663 Nov 16 23:04	28° \mathring{A} 19'15		conjunction	12669 Dec 20 00:12	9° \mathring{B} 06'10	1°44'58
	12663 Dec 04 07:28	0° \mathring{M}		minimum elong	12669 Dec 20 00:11	9° \mathring{B} 06'10	1°45'55
retrograde	12664 Feb 02 09:33	2° \mathring{M} 50'56		max. Earth dist.	12669 Dec 19 19:55	9° \mathring{B} 04'50	10.45520 AU
	12664 Apr 04 20:29	30° \mathring{R} \mathring{A}		morning rise	12670 Jan 06 17:19	11° \mathring{B} 17'15	
opposition	12664 Apr 12 01:08	29° \mathring{A} 26'41	0°11'27	retrograde	12670 Apr 20 14:40	19° \mathring{B} 01'54	
min. Earth dist.	12664 Apr 11 16:48	29° \mathring{A} 28'18	8.64531 AU	opposition	12670 Jun 27 15:12	15° \mathring{B} 36'51	2°13'17
direct	12664 Jun 19 04:31	26° \mathring{A} 05'44		min. Earth dist.	12670 Jun 27 19:02	15° \mathring{B} 36'05	8.44163 AU
	12664 Aug 28 02:12	0° \mathring{M}		direct	12670 Sep 03 14:54	12° \mathring{B} 11'33	
evening set	12664 Sep 27 23:24	3° \mathring{M} 27'00		evening set	12670 Dec 16 00:28	19° \mathring{B} 54'50	
conjunction	12664 Oct 15 08:50	5° \mathring{M} 33'40	0°20'48	conjunction	12671 Jan 02 17:33	22° \mathring{B} 06'16	1°48'49
minimum elong	12664 Oct 15 08:49	5° \mathring{M} 33'40	0°21'16	minimum elong	12671 Jan 02 17:33	22° \mathring{B} 06'16	1°49'44
max. Earth dist.	12664 Oct 15 18:16	5° \mathring{M} 36'33	10.63097 AU	max. Earth dist.	12671 Jan 02 11:19	22° \mathring{B} 04'20	10.42709 AU
morning rise	12664 Nov 01 21:13	7° \mathring{M} 41'14		morning rise	12671 Jan 20 10:29	24° \mathring{B} 17'44	
	12665 Jan 26 15:56	15° \mathring{M}			12671 Mar 15 21:15	0° $\mathring{\approx}$	
retrograde	12665 Feb 14 09:30	15° \mathring{M} 17'56		retrograde	12671 May 03 23:54	2° $\mathring{\approx}$ 02'41	
	12665 Mar 05 06:07	15° \mathring{R} \mathring{M}			12671 Jun 23 03:12	30° \mathring{R} \mathring{B}	
opposition	12665 Apr 24 20:08	11° \mathring{M} 53'22	0°40'06	opposition	12671 Jul 10 18:52	28° \mathring{B} 37'48	2°14'41
min. Earth dist.	12665 Apr 24 13:11	11° \mathring{M} 54'43	8.61539 AU	min. Earth dist.	12671 Jul 11 00:21	28° \mathring{B} 36'43	8.41656 AU
direct	12665 Jul 01 21:29	8° \mathring{M} 31'53		direct	12671 Sep 16 21:50	25° \mathring{B} 11'49	
	12665 Oct 03 01:14	15° \mathring{M}			12671 Dec 04 05:15	0° $\mathring{\approx}$	
evening set	12665 Oct 10 21:52	15° \mathring{M} 55'52		evening set	12671 Dec 29 19:07	2° $\mathring{\approx}$ 58'23	
conjunction	12665 Oct 28 09:20	18° \mathring{M} 03'27	0°43'28	conjunction	12672 Jan 16 12:30	5° $\mathring{\approx}$ 10'16	1°47'06
minimum elong	12665 Oct 28 09:18	18° \mathring{M} 03'26	0°44'06	minimum elong	12672 Jan 16 12:31	5° $\mathring{\approx}$ 10'17	1°47'55
max. Earth dist.	12665 Oct 28 16:48	18° \mathring{M} 05'44	10.59836 AU	max. Earth dist.	12672 Jan 16 03:57	5° $\mathring{\approx}$ 07'36	10.40524 AU
morning rise	12665 Nov 14 23:22	20° \mathring{M} 11'50		morning rise	12672 Feb 03 05:02	7° $\mathring{\approx}$ 21'59	
retrograde	12666 Feb 27 12:55	27° \mathring{M} 50'31			12672 May 05 07:37	15° $\mathring{\approx}$	
opposition	12666 May 07 16:14	24° \mathring{M} 25'42	1°07'04	retrograde	12672 May 16 09:47	15° $\mathring{\approx}$ 06'39	
min. Earth dist.	12666 May 07 11:02	24° \mathring{M} 26'43	8.58078 AU		12672 May 27 12:07	15° \mathring{R} $\mathring{\approx}$	
direct	12666 Jul 14 14:24	21° \mathring{M} 03'33		opposition	12672 Jul 23 00:12	11° $\mathring{\approx}$ 42'02	2°09'08
evening set	12666 Oct 24 00:21	28° \mathring{M} 30'56		min. Earth dist.	12672 Jul 23 07:34	11° $\mathring{\approx}$ 40'34	8.39817 AU
	12666 Nov 05 05:05	0° \mathring{A}		direct	12672 Sep 29 06:31	8° $\mathring{\approx}$ 15'28	
					12673 Jan 02 16:36	15° $\mathring{\approx}$	

evening set	12673 Jan 11 14:35	16°  04'36		evening set	12679 Feb 22 07:44	0° 	
					12679 Apr 02 10:33	4°  21'33	
conjunction	12673 Jan 29 07:52	18°  16'46	1°39'49	conjunction	12679 Apr 19 19:01	6°  30'52	-0°22'19
minimum elong	12673 Jan 29 07:54	18°  16'47	1°40'31	minimum elong	12679 Apr 19 19:00	6°  30'52	0°22'48
max. Earth dist.	12673 Jan 28 21:00	18°  13'22	10.39067 AU	max. Earth dist.	12679 Apr 19 09:58	6°  28'03	10.46803 AU
morning rise	12673 Feb 15 23:48	20°  28'34		morning rise	12679 May 07 00:36	8°  39'22	
retrograde	12673 May 29 19:29	28°  12'25			12679 Jul 09 23:36	15° 	
opposition	12673 Aug 05 06:50	24°  48'08	1°56'51	retrograde	12679 Aug 16 08:08	16°  12'56	
min. Earth dist.	12673 Aug 05 16:01	24°  46'18	8.38739 AU		12679 Sep 23 12:10	15°  18	
direct	12673 Oct 12 17:29	21°  21'09		opposition	12679 Oct 23 10:15	12°  51'19	-0°42'04
evening set	12674 Jan 25 10:06	29°  12'03		min. Earth dist.	12679 Oct 23 16:44	12°  50'04	8.48469 AU
	12674 Jan 31 21:21	0° 		direct	12680 Jan 01 01:05	9°  26'03	
					12680 Mar 27 05:01	15° 	
conjunction	12674 Feb 12 03:00	1°  24'18	1°27'20	evening set	12680 Apr 14 16:21	17°  10'50	
minimum elong	12674 Feb 12 03:03	1°  24'19	1°27'52				
max. Earth dist.	12674 Feb 11 14:18	1°  20'19	10.38416 AU	conjunction	12680 May 01 22:01	19°  19'01	-0°45'26
morning rise	12674 Mar 01 18:08	3°  36'03		minimum elong	12680 May 01 22:00	19°  19'01	0°46'05
retrograde	12674 Jun 12 03:42	11°  18'34		max. Earth dist.	12680 May 01 14:59	19°  16'50	10.50198 AU
opposition	12674 Aug 18 14:25	7°  54'40	1°38'28	morning rise	12680 May 19 01:08	21°  26'27	
min. Earth dist.	12674 Aug 19 00:28	7°  52'40	8.38479 AU	retrograde	12680 Aug 28 09:23	28°  58'29	
direct	12674 Oct 26 06:53	4°  27'28		opposition	12680 Nov 04 18:02	25°  37'12	-1°09'21
evening set	12675 Feb 08 04:49	12°  19'17		min. Earth dist.	12680 Nov 04 22:14	25°  36'23	8.52026 AU
				direct	12681 Jan 13 11:18	22°  12'41	
conjunction	12675 Feb 25 21:01	14°  31'24	1°10'19	evening set	12681 Apr 27 18:22	29°  54'23	
minimum elong	12675 Feb 25 21:04	14°  31'25	1°10'39		12681 Apr 28 12:49	0° 	
max. Earth dist.	12675 Feb 25 07:52	14°  27'16	10.38598 AU				
morning rise	12675 Mar 15 10:57	16°  42'53		conjunction	12681 May 14 21:21	2°  11'23	-1°06'10
retrograde	12675 Jun 25 10:40	24°  23'46		minimum elong	12681 May 14 21:19	2°  11'23	1°06'57
opposition	12675 Aug 31 22:47	21°  00'17	1°14'58	max. Earth dist.	12681 May 14 17:24	2°  11'23	10.53833 AU
min. Earth dist.	12675 Sep 01 08:41	20°  58'19	8.39044 AU	morning rise	12681 May 31 22:02	4°  11'23	
direct	12675 Nov 08 21:42	17°  33'07		retrograde	12681 Sep 10 09:14	11°  11'23	
evening set	12676 Feb 21 21:57	25°  24'56		opposition	12681 Nov 18 00:41	8°  11'23	-1°33'01
				min. Earth dist.	12681 Nov 18 02:04	8°  11'23	8.55734 AU
conjunction	12676 Mar 10 13:00	27°  36'42	0°49'40	direct	12682 Jan 26 19:42	4°  11'23	
minimum elong	12676 Mar 10 13:02	27°  36'43	0°49'47	evening set	12682 May 10 16:54	12°  11'23	
max. Earth dist.	12676 Mar 10 00:29	27°  32'47	10.39594 AU				
morning rise	12676 Mar 28 01:14	29°  47'41		conjunction	12682 May 27 17:22	14°  11'23	-1°23'33
	12676 Mar 29 17:25	0° 		minimum elong	12682 May 27 17:20	14°  11'23	1°24'26
retrograde	12676 Jul 07 18:41	7°  26'46		max. Earth dist.	12682 May 27 16:45	14°  11'23	10.57520 AU
opposition	12676 Sep 13 07:40	4°  03'45	0°47'38	morning rise	12682 Jun 13 15:50	16°  11'23	
min. Earth dist.	12676 Sep 13 16:48	4°  01'56	8.40407 AU	retrograde	12682 Sep 23 08:46	24°  11'23	
direct	12676 Nov 21 10:47	0°  36'49		opposition	12682 Dec 01 05:58	20°  11'23	-1°52'01
evening set	12677 Mar 06 12:57	8°  27'50		min. Earth dist.	12682 Dec 01 05:09	20°  11'23	8.59408 AU
				direct	12683 Feb 09 00:56	17°  11'23	
conjunction	12677 Mar 24 02:19	10°  39'01	0°26'31	evening set	12683 May 23 11:56	25°  11'23	
minimum elong	12677 Mar 24 02:20	10°  39'02	0°26'26				
max. Earth dist.	12677 Mar 23 15:04	10°  35'30	10.41363 AU	conjunction	12683 Jun 09 10:10	27°  11'23	-1°36'51
morning rise	12677 Apr 10 12:31	12°  49'19		minimum elong	12683 Jun 09 10:08	27°  11'23	1°37'47
retrograde	12677 Jul 21 01:14	20°  26'30		max. Earth dist.	12683 Jun 09 12:01	27°  11'23	10.61080 AU
opposition	12677 Sep 26 16:45	17°  03'58	0°17'57	morning rise	12683 Jun 26 07:00	29°  11'23	
min. Earth dist.	12677 Sep 27 01:10	17°  02'18	8.42514 AU		12683 Jul 02 19:49	0° 	
direct	12677 Dec 04 23:42	13°  37'27		retrograde	12683 Oct 06 06:28	6°  11'23	
evening set	12678 Mar 20 01:14	21°  26'59		opposition	12683 Dec 14 09:58	3°  11'23	-2°05'33
				min. Earth dist.	12683 Dec 14 07:25	3°  11'23	8.62859 AU
conjunction	12678 Apr 06 12:24	23°  37'20	0°02'09	direct	12684 Feb 16 23:44	30°  11'23	
minimum elong	12678 Apr 06 12:24	23°  37'20	0°01'51		12684 Feb 22 02:42	29°  11'23	
behind sun begin	12678 Apr 06 05:14	23°  35'07		evening set	12684 Jun 04 03:32	7°  11'23	
behind sun end	12678 Apr 06 19:35	23°  39'34					
max. Earth dist.	12678 Apr 06 02:13	23°  34'10	10.43810 AU	conjunction	12684 Jun 21 00:03	9°  11'23	-1°45'30
morning rise	12678 Apr 23 20:23	25°  46'49		minimum elong	12684 Jun 21 00:02	9°  11'23	1°46'27
desc. node	12678 May 09 07:12	27°  37'31		max. Earth dist.	12684 Jun 21 03:40	9°  11'23	10.64319 AU
	12678 May 31 11:23	0° 		morning rise	12684 Jul 07 20:02	11°  11'23	
retrograde	12678 Aug 03 05:26	3°  22'06		retrograde	12684 Oct 18 01:26	19°  11'23	
opposition	12678 Oct 10 01:44	0°  00'04	-0°12'29	opposition	12684 Dec 26 12:16	15°  11'23	-2°13'08
min. Earth dist.	12678 Oct 10 09:32	29°  58'32	8.45247 AU	min. Earth dist.	12684 Dec 26 08:18	15°  11'23	8.65871 AU
	12678 Oct 10 02:05	30°  08					
direct	12678 Dec 18 12:50	26°  34'07					

direct	12685 Mar 06 03:56	12°  23'12	direct	12691 May 20 12:59	25°  58'23
evening set	12685 Jun 16 16:22	19°  51'12		12691 Jul 30 19:04	0° 
			evening set	12691 Aug 29 02:21	3°  16'59
conjunction	12685 Jul 03 11:58	21°  54'27 -1°49'13	conjunction	12691 Sep 15 06:07	5°  21'46 -0°36'26
minimum elong	12685 Jul 03 11:58	21°  54'27 1°50'08	minimum elong	12691 Sep 15 06:09	5°  21'46 0°36'27
max. Earth dist.	12685 Jul 03 17:17	21°  56'05 10.67011 AU	max. Earth dist.	12691 Sep 15 18:06	5°  25'25 10.67332 AU
morning rise	12685 Jul 20 07:45	23°  57'43	morning rise	12691 Oct 02 12:44	7°  27'24
	12685 Sep 19 07:55	0° 	retrograde	12692 Jan 14 19:10	15°  20'39
retrograde	12685 Oct 30 20:36	1°  25'47	opposition	12692 Mar 24 16:26	11°  23'629 -0°30'46
	12685 Dec 12 12:55	30°  04'32	min. Earth dist.	12692 Mar 24 06:34	11°  23'823 8.66251 AU
opposition	12686 Jan 08 12:42	28°  05'38 8.68214 AU	direct	12692 Jun 01 02:51	8°  15'36
min. Earth dist.	12686 Jan 08 06:56	28°  05'38	evening set	12692 Sep 09 16:21	15°  35'03
direct	12686 Mar 19 02:28	24°  43'25			
	12686 Jun 10 15:55	0° 	conjunction	12692 Sep 26 22:33	17°  40'40 -0°13'38
evening set	12686 Jun 29 02:59	2°  08'30	minimum elong	12692 Sep 26 22:34	17°  40'41 0°13'27
			behind sun begin	12692 Sep 26 18:33	17°  39'28
conjunction	12686 Jul 15 22:32	4°  11'24 -1°47'54	behind sun end	12692 Sep 27 02:34	17°  41'53
minimum elong	12686 Jul 15 22:33	4°  11'25 1°48'44	max. Earth dist.	12692 Sep 27 09:57	17°  44'09 10.65008 AU
max. Earth dist.	12686 Jul 16 06:09	4°  13'45 10.68961 AU	morning rise	12692 Oct 14 07:41	19°  47'13
morning rise	12686 Aug 01 18:42	6°  14'30	retrograde	12693 Jan 26 18:42	27°  22'09
retrograde	12686 Nov 12 16:28	13°  24'46	opposition	12693 Apr 06 11:18	23°  25'729 -0°02'00
opposition	12687 Jan 21 11:54	10°  21'12 -2°09'46	min. Earth dist.	12693 Apr 06 02:23	23°  25'913 8.63653 AU
min. Earth dist.	12687 Jan 21 04:14	10°  22'39 8.69756 AU	asc. node	12693 May 01 23:51	22°  25'31
direct	12687 Mar 31 21:13	7°  00'32	direct	12693 Jun 13 16:07	20°  26'10
evening set	12687 Jul 11 12:05	14°  23'07	evening set	12693 Sep 22 09:34	27°  25'718
	12687 Jul 16 14:29	15° 			
conjunction	12687 Jul 28 08:16	16°  25'58 -1°41'40	conjunction	12693 Oct 09 17:58	0°  03'49 0°10'00
minimum elong	12687 Jul 28 08:17	16°  25'58 1°42'23	minimum elong	12693 Oct 09 17:58	0°  03'49 0°10'23
max. Earth dist.	12687 Jul 28 17:55	16°  28'55 10.70112 AU	behind sun begin	12693 Oct 09 12:20	0°  02'07
morning rise	12687 Aug 14 05:33	18°  29'09	behind sun end	12693 Oct 09 23:35	0°  05'31
retrograde	12687 Nov 25 11:23	25°  25'58		12693 Oct 09 05:27	0° 
opposition	12688 Feb 03 09:53	22°  35'59 -1°59'08	max. Earth dist.	12693 Oct 10 03:29	0°  06'43 10.62180 AU
min. Earth dist.	12688 Feb 03 00:55	22°  37'41 8.70499 AU	morning rise	12693 Oct 27 05:28	2°  11'15
direct	12688 Apr 12 14:49	19°  15'35	retrograde	12694 Feb 08 17:58	9°  48'03
evening set	12688 Jul 22 20:42	26°  36'12	opposition	12694 Apr 19 06:38	6°  22'59 0°27'02
			min. Earth dist.	12694 Apr 18 23:28	6°  24'23 8.60620 AU
conjunction	12688 Aug 08 18:03	28°  39'14 -1°30'50	direct	12694 Jun 26 08:31	3°  01'07
minimum elong	12688 Aug 08 18:06	28°  39'14 1°31'24	evening set	12694 Oct 05 06:30	10°  12'42
max. Earth dist.	12688 Aug 09 04:32	28°  42'26 10.70492 AU			
	12688 Aug 19 19:09	0° 	conjunction	12694 Oct 22 16:59	12°  32'08 0°33'12
morning rise	12688 Aug 25 17:15	0°  42'46	minimum elong	12694 Oct 22 16:58	12°  32'08 0°33'46
retrograde	12688 Dec 07 06:58	8°  12'18	max. Earth dist.	12694 Oct 23 00:17	12°  34'22 10.58975 AU
opposition	12689 Feb 15 06:36	4°  49'50 -1°43'07	morning rise	12694 Nov 09 06:32	14°  40'27
min. Earth dist.	12689 Feb 14 21:29	4°  51'34 8.70480 AU		12694 Nov 11 23:57	15° 
direct	12689 Apr 25 06:31	1°  29'31	retrograde	12695 Feb 21 19:50	22°  19'12
evening set	12689 Aug 04 05:28	8°  48'46	opposition	12695 May 02 02:45	18°  53'50 0°55'00
			min. Earth dist.	12695 May 01 21:29	18°  54'52 8.57293 AU
conjunction	12689 Aug 21 04:33	10°  49'52 -1°15'54	direct	12695 Jul 09 02:02	15°  31'18
minimum elong	12689 Aug 21 04:35	10°  49'52 1°16'18	evening set	12695 Oct 18 07:26	22°  31'58
max. Earth dist.	12689 Aug 21 15:09	10°  55'26 10.70132 AU			
morning rise	12689 Sep 07 06:06	12°  56'19	conjunction	12695 Nov 04 19:53	25°  06'21 0°55'00
retrograde	12689 Dec 20 02:00	20°  26'48	minimum elong	12695 Nov 04 19:51	25°  06'21 0°55'43
opposition	12690 Feb 28 02:29	17°  49'34 -1°22'26	max. Earth dist.	12695 Nov 05 01:23	25°  08'03 10.55533 AU
min. Earth dist.	12690 Feb 27 17:15	17°  49'33 8.69732 AU	morning rise	12695 Nov 22 10:58	27°  15'31
direct	12690 May 07 20:52	13°  43'24		12695 Dec 16 07:27	0° 
evening set	12690 Aug 16 14:58	21°  49'01'57	retrograde	12696 Mar 05 23:29	4°  27'56'11
			opposition	12696 May 13 23:55	1°  27'30'35 1°20'33
conjunction	12690 Sep 02 16:15	23°  49'05'58 -0°57'30	min. Earth dist.	12696 May 13 20:04	1°  27'31'21 8.53812 AU
minimum elong	12690 Sep 02 16:17	23°  49'05'59 0°57'42		12696 Jun 02 20:23	30°  04'11
max. Earth dist.	12690 Sep 03 03:32	23°  49'09'25 10.69061 AU	direct	12696 Jul 20 21:32	28°  11'07'24
morning rise	12690 Sep 19 20:19	25°  49'10'48		12696 Sep 05 19:51	0° 
	12690 Nov 04 07:53	0° 	evening set	12696 Oct 30 12:39	5°  27'37'45
retrograde	12691 Jan 01 20:53	2°  42'34			
	12691 Mar 03 22:24	30°  04'11	conjunction	12696 Nov 17 02:42	7°  27'46'58 1°14'16
opposition	12691 Mar 12 21:42	29°  49'18'57 -0°57'58	minimum elong	12696 Nov 17 02:40	7°  27'46'57 1°15'08
min. Earth dist.	12691 Mar 12 12:03	29°  49'20'48 8.68302 AU	max. Earth dist.	12696 Nov 17 06:28	7°  27'48'07 10.52009 AU

morning rise	12696 Dec 04 18:46	9°♊56'51		retrograde	12703 Jun 07 14:15	5°♋42'37	
retrograde	12697 Mar 19 04:48	17°♊39'19		opposition	12703 Aug 14 00:25	2°♋18'53	1°47'11
opposition	12697 May 26 22:25	14°♊13'38	1°42'23	min. Earth dist.	12703 Aug 14 08:36	2°♋17'16	8.38813 AU
min. Earth dist.	12697 May 26 20:04	14°♊14'06	8.50344 AU		12703 Sep 14 22:41	30°♋	
direct	12697 Aug 02 19:36	10°♊49'46		direct	12703 Oct 21 13:35	28°♋52'13	
evening set	12697 Nov 12 21:58	18°♊24'05			12703 Nov 26 20:45	0°♋	
				evening set	12704 Feb 03 10:17	6°♋44'00	
conjunction	12697 Nov 30 13:14	20°♊34'07	1°30'02				
minimum elong	12697 Nov 30 13:12	20°♊34'06	1°30'58	conjunction	12704 Feb 21 02:59	8°♋56'14	1°18'16
max. Earth dist.	12697 Nov 30 14:30	20°♊34'31	10.48592 AU	minimum elong	12704 Feb 21 03:02	8°♋56'15	1°18'41
morning rise	12697 Dec 18 05:55	22°♊44'38		max. Earth dist.	12704 Feb 20 15:32	8°♋52'38	10.38865 AU
	12698 Mar 09 02:52	0°♋		morning rise	12704 Mar 09 17:20	11°♋07'51	
retrograde	12698 Apr 01 13:15	0°♋28'37		retrograde	12704 Jun 19 23:28	18°♋49'46	
	12698 Apr 24 23:58	30°♋		opposition	12704 Aug 26 09:12	15°♋26'31	1°25'47
opposition	12698 Jun 08 22:42	27°♊03'01	1°59'18	min. Earth dist.	12704 Aug 26 18:48	15°♋24'37	8.39216 AU
min. Earth dist.	12698 Jun 08 22:25	27°♊03'04	8.47079 AU	direct	12704 Nov 03 03:23	11°♋59'47	
direct	12698 Aug 15 18:52	23°♊38'28		evening set	12705 Feb 16 04:46	19°♋51'51	
	12698 Nov 15 17:32	0°♋					
evening set	12698 Nov 26 10:57	1°♋16'51		conjunction	12705 Mar 05 20:21	22°♋03'49	0°59'05
				minimum elong	12705 Mar 05 20:24	22°♋03'50	0°59'18
conjunction	12698 Dec 14 03:05	3°♋27'36	1°41'24	max. Earth dist.	12705 Mar 05 07:23	21°♋59'45	10.39590 AU
minimum elong	12698 Dec 14 03:04	3°♋27'35	1°42'21	morning rise	12705 Mar 23 09:21	24°♋15'03	
max. Earth dist.	12698 Dec 14 01:12	3°♋27'00	10.45473 AU		12705 May 17 04:42	0°♌	
morning rise	12698 Dec 31 20:13	5°♋38'40		retrograde	12705 Jul 03 08:03	1°♌55'12	
retrograde	12699 Apr 14 22:18	13°♋23'43			12705 Aug 20 16:34	30°♋	
opposition	12699 Jun 22 00:46	9°♋58'20	2°10'21	opposition	12705 Sep 08 18:29	28°♋32'26	0°59'57
min. Earth dist.	12699 Jun 22 03:09	9°♋57'52	8.44188 AU	min. Earth dist.	12705 Sep 09 05:01	28°♋30'21	8.40186 AU
direct	12699 Aug 28 22:00	6°♋33'09		direct	12705 Nov 16 17:21	25°♋05'48	
evening set	12699 Dec 10 03:15	14°♋15'29			12706 Feb 04 13:14	0°♌	
				evening set	12706 Mar 01 21:27	2°♌57'34	
conjunction	12699 Dec 27 20:00	16°♋26'50	1°47'40				
minimum elong	12699 Dec 27 20:00	16°♋26'50	1°48'37	conjunction	12706 Mar 19 11:32	5°♌09'05	0°36'52
max. Earth dist.	12699 Dec 27 14:52	16°♋25'14	10.42811 AU	minimum elong	12706 Mar 19 11:33	5°♌09'05	0°36'52
morning rise	12700 Jan 14 13:12	18°♋38'20		max. Earth dist.	12706 Mar 18 21:55	5°♌04'48	10.40845 AU
retrograde	12700 Apr 28 07:13	26°♋23'54		morning rise	12706 Apr 05 22:50	7°♌19'46	
opposition	12700 Jul 05 04:26	22°♋58'52	2°14'49	retrograde	12706 Jul 16 14:08	14°♌58'10	
min. Earth dist.	12700 Jul 05 09:07	22°♋57'56	8.41820 AU	opposition	12706 Sep 22 04:00	11°♌35'52	0°31'05
direct	12700 Sep 11 05:03	19°♋33'09		min. Earth dist.	12706 Sep 22 14:25	11°♌33'49	8.41684 AU
evening set	12700 Dec 23 21:51	27°♋19'00		direct	12706 Nov 30 08:46	8°♌09'31	
				evening set	12707 Mar 15 11:50	16°♌00'21	
conjunction	12701 Jan 10 15:02	29°♋30'49	1°48'27				
minimum elong	12701 Jan 10 15:03	29°♋30'49	1°49'20	conjunction	12707 Apr 01 24:00	18°♌11'11	0°12'50
max. Earth dist.	12701 Jan 10 07:42	29°♋28'32	10.40747 AU	minimum elong	12707 Apr 02 00:00	18°♌11'12	0°12'38
	12701 Jan 14 12:29	0°♌		behind sun begin	12707 Apr 01 19:27	18°♌09'47	
morning rise	12701 Jan 28 07:59	1°♌42'36		behind sun end	12707 Apr 02 04:34	18°♌12'36	
retrograde	12701 May 11 17:02	9°♌28'07		max. Earth dist.	12707 Apr 01 11:16	18°♌07'13	10.42632 AU
opposition	12701 Jul 18 09:50	6°♌03'29	2°12'21	morning rise	12707 Apr 19 09:11	20°♌21'10	
min. Earth dist.	12701 Jul 18 15:55	6°♌02'17	8.40095 AU	retrograde	12707 Jul 29 19:35	27°♌57'54	
direct	12701 Sep 24 14:13	2°♌37'21		opposition	12707 Oct 05 13:48	24°♌36'00	0°00'44
evening set	12702 Jan 06 17:43	10°♌25'59		min. Earth dist.	12707 Oct 05 22:43	24°♌34'15	8.43729 AU
				desc. node	12707 Oct 14 13:57	23°♌53'56	
conjunction	12702 Jan 24 11:08	12°♌38'09	1°43'37	direct	12707 Dec 13 23:42	21°♌10'04	
minimum elong	12702 Jan 24 11:10	12°♌38'10	1°44'23	evening set	12708 Mar 27 23:15	28°♌59'14	
max. Earth dist.	12702 Jan 24 02:22	12°♌35'24	10.39383 AU		12708 Apr 05 03:54	0°♍	
morning rise	12702 Feb 11 03:31	14°♌50'03					
	12702 Feb 12 12:05	15°♌		conjunction	12708 Apr 14 09:05	1°♍09'11	-0°11'50
retrograde	12702 May 25 04:10	22°♌34'55		minimum elong	12708 Apr 14 09:05	1°♍09'11	0°12'14
opposition	12702 Jul 31 16:38	19°♌10'42	2°02'59	behind sun begin	12708 Apr 14 04:18	1°♍07'42	
min. Earth dist.	12702 Jul 31 23:40	19°♌09'18	8.39088 AU	behind sun end	12708 Apr 14 13:51	1°♍10'40	
direct	12702 Oct 08 00:53	15°♌44'15		max. Earth dist.	12708 Apr 13 22:42	1°♍05'57	10.44946 AU
evening set	12703 Jan 20 14:14	23°♌34'53		morning rise	12708 May 01 15:48	3°♍18'16	
				retrograde	12708 Aug 11 01:16	10°♍53'26	
conjunction	12703 Feb 07 07:33	25°♌47'12	1°33'23	opposition	12708 Oct 17 23:26	7°♍31'48	-0°29'29
minimum elong	12703 Feb 07 07:35	25°♌47'12	1°33'59	min. Earth dist.	12708 Oct 18 06:37	7°♍30'24	8.46288 AU
max. Earth dist.	12703 Feb 06 21:36	25°♌44'05	10.38763 AU	direct	12708 Dec 26 12:22	4°♍06'22	
morning rise	12703 Feb 24 23:02	27°♌59'02		evening set	12709 Apr 10 07:29	11°♍53'13	
	12703 Mar 13 20:54	0°♋					

conjunction	12709 Apr 27 14:40	14° ♁ 02'09	-0°35'41	conjunction	12715 Jul 12 01:30	29° ♁ 17'24	-1°49'08
minimum elong	12709 Apr 27 14:39	14° ♁ 02'08	0°36'16	minimum elong	12715 Jul 12 01:31	29° ♁ 17'24	1°50'01
max. Earth dist.	12709 Apr 27 06:37	13° ♁ 59'38	10.47724 AU	max. Earth dist.	12715 Jul 12 09:09	29° ♁ 19'45	10.66149 AU
	12709 May 05 07:47	15° ♁			12715 Jul 17 20:10	0° ♁	
morning rise	12709 May 14 18:49	16° ♁ 10'14		morning rise	12715 Jul 28 21:29	1° ♁ 20'46	
retrograde	12709 Aug 24 04:51	23° ♁ 43'50		retrograde	12715 Nov 08 15:59	8° ♁ 49'33	
opposition	12709 Oct 31 08:21	20° ♁ 22'25	-0°58'01	opposition	12716 Jan 17 09:34	5° ♁ 27'33	-2°12'38
min. Earth dist.	12709 Oct 31 14:00	20° ♁ 21'20	8.49270 AU	min. Earth dist.	12716 Jan 17 02:10	5° ♁ 28'57	8.67337 AU
direct	12710 Jan 08 22:50	16° ♁ 57'31		direct	12716 Mar 26 19:53	2° ♁ 06'08	
evening set	12710 Apr 23 12:11	24° ♁ 41'34		evening set	12716 Jul 06 15:44	9° ♁ 30'16	
conjunction	12710 May 10 16:31	26° ♁ 49'21	-0°57'39	conjunction	12716 Jul 23 11:32	11° ♁ 33'16	-1°44'55
minimum elong	12710 May 10 16:29	26° ♁ 49'20	0°58'23	minimum elong	12716 Jul 23 11:33	11° ♁ 33'16	1°45'41
max. Earth dist.	12710 May 10 10:30	26° ♁ 47'28	10.50843 AU	max. Earth dist.	12716 Jul 23 20:47	11° ♁ 36'06	10.68126 AU
morning rise	12710 May 27 18:16	28° ♁ 56'24		morning rise	12716 Aug 09 08:31	13° ♁ 36'34	
	12710 Jun 05 13:22	0° ♁			12716 Aug 21 04:10	15° ♁	
retrograde	12710 Sep 06 05:03	6° ♁ 28'37		retrograde	12716 Nov 20 09:10	21° ♁ 05'26	
opposition	12710 Nov 13 16:24	3° ♁ 07'18	-1°23'28	opposition	12717 Jan 29 08:07	17° ♁ 43'08	-2°04'22
min. Earth dist.	12710 Nov 13 20:28	3° ♁ 06'30	8.52526 AU	min. Earth dist.	12717 Jan 28 23:15	17° ♁ 44'49	8.68994 AU
	12711 Jan 04 01:10	30° ♁			12717 Mar 12 00:55	15° ♁	
direct	12711 Jan 22 09:45	29° ♁ 42'56		direct	12717 Apr 08 15:15	14° ♁ 22'08	
	12711 Feb 09 16:22	0° ♁			12717 May 05 20:20	15° ♁	
evening set	12711 May 06 13:03	7° ♁ 23'48		evening set	12717 Jul 19 00:26	21° ♁ 43'48	
conjunction	12711 May 23 14:34	9° ♁ 30'24	-1°16'38	conjunction	12717 Aug 04 21:14	23° ♁ 46'48	-1°35'57
minimum elong	12711 May 23 14:32	9° ♁ 30'23	1°17'29	minimum elong	12717 Aug 04 21:16	23° ♁ 46'49	1°36'34
max. Earth dist.	12711 May 23 10:42	9° ♁ 29'12	10.54150 AU	max. Earth dist.	12717 Aug 05 08:27	23° ♁ 50'14	10.69468 AU
morning rise	12711 Jun 09 14:10	11° ♁ 36'25		morning rise	12717 Aug 21 19:41	25° ♁ 50'14	
retrograde	12711 Sep 19 04:21	19° ♁ 07'29			12717 Sep 28 23:18	0° ♁	
opposition	12711 Nov 26 23:07	15° ♁ 46'09	-1°44'40	retrograde	12717 Dec 03 04:19	3° ♁ 19'28	
min. Earth dist.	12711 Nov 27 00:49	15° ♁ 45'49	8.55898 AU		12718 Feb 10 12:29	30° ♁	
direct	12712 Feb 04 18:07	12° ♁ 22'24		opposition	12718 Feb 11 05:06	29° ♁ 56'50	-1°50'29
evening set	12712 May 18 10:07	19° ♁ 59'47		min. Earth dist.	12718 Feb 10 18:34	29° ♁ 58'50	8.69974 AU
				direct	12718 Apr 21 08:32	26° ♁ 36'12	
conjunction	12712 Jun 04 09:18	22° ♁ 05'17	-1°31'48		12718 Jun 25 12:35	0° ♁	
minimum elong	12712 Jun 04 09:16	22° ♁ 05'17	1°32'44	evening set	12718 Jul 31 08:47	3° ♁ 55'55	
max. Earth dist.	12712 Jun 04 08:35	22° ♁ 05'04	10.57493 AU				
morning rise	12712 Jun 21 07:04	24° ♁ 10'22		conjunction	12718 Aug 17 07:12	5° ♁ 59'09	-1°22'38
	12712 Aug 17 11:54	0° ♁		minimum elong	12718 Aug 17 07:14	5° ♁ 59'10	1°23'06
retrograde	12712 Oct 01 02:58	1° ♁ 40'29		max. Earth dist.	12718 Aug 17 20:24	6° ♁ 03'11	10.70123 AU
	12712 Nov 16 04:14	30° ♁		morning rise	12718 Sep 03 07:34	8° ♁ 02'59	
opposition	12712 Dec 09 04:12	28° ♁ 19'03	-2°00'40	retrograde	12718 Dec 16 00:13	15° ♁ 32'49	
min. Earth dist.	12712 Dec 09 02:54	28° ♁ 19'18	8.59226 AU	opposition	12719 Feb 24 01:08	12° ♁ 09'50	-1°31'39
direct	12713 Feb 16 22:37	24° ♁ 55'55		min. Earth dist.	12719 Feb 23 13:26	12° ♁ 12'04	8.70251 AU
	12713 May 09 15:57	0° ♁		direct	12719 May 03 22:45	8° ♁ 49'27	
evening set	12713 May 31 03:35	2° ♁ 29'45		evening set	12719 Aug 12 17:36	16° ♁ 07'53	
conjunction	12713 Jun 17 01:01	4° ♁ 34'18	-1°42'30	conjunction	12719 Aug 29 17:56	18° ♁ 11'33	-1°05'36
minimum elong	12713 Jun 17 00:59	4° ♁ 34'18	1°43'28	minimum elong	12719 Aug 29 17:59	18° ♁ 11'33	1°05'53
max. Earth dist.	12713 Jun 17 03:52	4° ♁ 35'11	10.60710 AU	max. Earth dist.	12719 Aug 30 07:40	18° ♁ 15'44	10.70074 AU
morning rise	12713 Jul 03 21:26	6° ♁ 38'35		morning rise	12719 Sep 15 20:44	20° ♁ 15'57	
retrograde	12713 Oct 13 23:36	14° ♁ 08'02		retrograde	12719 Dec 28 19:46	27° ♁ 46'40	
opposition	12713 Dec 22 07:37	10° ♁ 46'25	-2°10'50	opposition	12720 Mar 07 20:18	24° ♁ 23'21	-1°08'39
min. Earth dist.	12713 Dec 22 03:30	10° ♁ 47'13	8.62337 AU	min. Earth dist.	12720 Mar 07 08:45	24° ♁ 25'34	8.69829 AU
direct	12714 Mar 02 01:01	7° ♁ 23'54		direct	12720 May 15 12:36	21° ♁ 03'02	
evening set	12714 Jun 12 18:02	14° ♁ 54'17		evening set	12720 Aug 24 03:55	28° ♁ 20'58	
					12720 Sep 06 19:38	0° ♁	
conjunction	12714 Jun 29 14:13	16° ♁ 58'04	-1°48'20	conjunction	12720 Sep 10 06:26	0° ♁ 25'14	-0°45'35
minimum elong	12714 Jun 29 14:13	16° ♁ 58'04	1°49'17	minimum elong	12720 Sep 10 06:28	0° ♁ 25'15	0°45'40
max. Earth dist.	12714 Jun 29 20:07	16° ♁ 59'53	10.63638 AU	max. Earth dist.	12720 Sep 10 19:30	0° ♁ 29'13	10.69337 AU
morning rise	12714 Jul 16 09:58	19° ♁ 01'45		morning rise	12720 Sep 27 11:55	2° ♁ 30'20	
retrograde	12714 Oct 26 20:20	26° ♁ 30'45		retrograde	12721 Jan 09 16:14	10° ♁ 02'10	
opposition	12715 Jan 04 09:23	23° ♁ 08'58	-2°14'51	opposition	12721 Mar 20 14:46	6° ♁ 38'32	-0°42'30
min. Earth dist.	12715 Jan 04 03:18	23° ♁ 10'08	8.65081 AU	min. Earth dist.	12721 Mar 20 04:07	6° ♁ 40'35	8.68735 AU
direct	12715 Mar 15 00:02	19° ♁ 47'03		direct	12721 May 28 02:10	3° ♁ 18'10	
evening set	12715 Jun 25 05:56	27° ♁ 14'08		evening set	12721 Sep 05 16:21	10° ♁ 36'24	

conjunction	12721 Sep 22 21:14	12° <u>♏</u> 41'23	-0°23'26	direct	12727 Aug 11 10:35	18° <u>♏</u> 14'46	
minimum elong	12721 Sep 22 21:15	12° <u>♏</u> 41'23	0°23'19	evening set	12727 Nov 21 19:38	25° <u>♏</u> 49'58	
max. Earth dist.	12721 Sep 23 09:28	12° <u>♏</u> 45'06	10.67943 AU				
morning rise	12721 Oct 10 05:18	14° <u>♏</u> 47'16		conjunction	12727 Dec 09 11:14	28° <u>♏</u> 00'00	1°36'54
retrograde	12722 Jan 22 13:03	22° <u>♏</u> 20'28		minimum elong	12727 Dec 09 11:12	28° <u>♏</u> 00'00	1°37'51
opposition	12722 Apr 02 09:08	18° <u>♏</u> 56'32	-0°14'19	max. Earth dist.	12727 Dec 09 09:26	27° <u>♏</u> 59'27	10.49447 AU
min. Earth dist.	12722 Apr 01 23:17	18° <u>♏</u> 58'26	8.67018 AU		12727 Dec 25 17:32	0° <u>♏</u>	
direct	12722 Jun 09 16:31	15° <u>♏</u> 35'57		morning rise	12727 Dec 27 04:05	0° <u>♏</u> 10'28	
evening set	12722 Sep 18 07:24	22° <u>♏</u> 55'15		retrograde	12728 Apr 09 07:04	7° <u>♏</u> 53'46	
				opposition	12728 Jun 16 13:46	4° <u>♏</u> 28'46	2°06'05
conjunction	12722 Oct 05 14:43	25° <u>♏</u> 01'03	-0°00'06	min. Earth dist.	12728 Jun 16 15:48	4° <u>♏</u> 28'22	8.47830 AU
minimum elong	12722 Oct 05 14:43	25° <u>♏</u> 01'03	0°00'13	direct	12728 Aug 23 12:00	1° <u>♏</u> 04'18	
behind sun begin	12722 Oct 05 07:39	24° <u>♏</u> 58'55		evening set	12728 Dec 04 09:20	8° <u>♏</u> 43'35	
behind sun end	12722 Oct 05 21:48	25° <u>♏</u> 03'11					
max. Earth dist.	12722 Oct 06 02:33	25° <u>♏</u> 04'38	10.65939 AU	conjunction	12728 Dec 22 01:46	10° <u>♏</u> 54'20	1°45'29
asc. node	12722 Oct 07 07:02	25° <u>♏</u> 13'21		minimum elong	12728 Dec 22 01:45	10° <u>♏</u> 54'19	1°46'27
morning rise	12722 Oct 23 01:05	27° <u>♏</u> 07'45		max. Earth dist.	12728 Dec 21 21:46	10° <u>♏</u> 53'05	10.46097 AU
	12722 Nov 17 08:18	0° <u>♏</u>		morning rise	12729 Jan 08 18:40	13° <u>♏</u> 05'17	
retrograde	12723 Feb 04 11:27	4° <u>♏</u> 42'33		retrograde	12729 Apr 22 15:06	20° <u>♏</u> 49'31	
opposition	12723 Apr 15 03:35	1° <u>♏</u> 18'17	0°14'39	opposition	12729 Jun 29 15:38	17° <u>♏</u> 24'36	2°13'34
min. Earth dist.	12723 Apr 14 18:26	1° <u>♏</u> 20'04	8.64726 AU	min. Earth dist.	12729 Jun 29 19:27	17° <u>♏</u> 23'50	8.44709 AU
	12723 May 02 10:24	30° <u>♏</u>		direct	12729 Sep 05 16:02	13° <u>♏</u> 59'22	
direct	12723 Jun 22 08:06	27° <u>♏</u> 57'22		evening set	12729 Dec 18 01:46	21° <u>♏</u> 42'27	
	12723 Aug 10 14:54	0° <u>♏</u>					
evening set	12723 Oct 01 02:04	5° <u>♏</u> 18'30		conjunction	12730 Jan 04 18:44	23° <u>♏</u> 53'47	1°48'47
				minimum elong	12730 Jan 04 18:44	23° <u>♏</u> 53'47	1°49'42
conjunction	12723 Oct 18 11:37	7° <u>♏</u> 25'10	0°23'20	max. Earth dist.	12730 Jan 04 11:58	23° <u>♏</u> 51'41	10.43217 AU
minimum elong	12723 Oct 18 11:36	7° <u>♏</u> 25'10	0°23'50	morning rise	12730 Jan 22 11:32	26° <u>♏</u> 05'09	
max. Earth dist.	12723 Oct 18 21:58	7° <u>♏</u> 28'19	10.63369 AU		12730 Feb 26 02:55	0° <u>♏</u>	
morning rise	12723 Nov 04 23:59	9° <u>♏</u> 32'41		retrograde	12730 May 06 00:39	3° <u>♏</u> 49'44	
	12723 Dec 27 21:14	15° <u>♏</u>		opposition	12730 Jul 12 19:12	0° <u>♏</u> 24'58	2°14'17
retrograde	12724 Feb 17 13:25	17° <u>♏</u> 09'10		min. Earth dist.	12730 Jul 13 01:21	0° <u>♏</u> 23'45	8.42126 AU
	12724 Apr 10 10:06	15° <u>♏</u>			12730 Jul 18 00:29	30° <u>♏</u>	
opposition	12724 Apr 26 22:21	13° <u>♏</u> 44'38	0°43'07	direct	12730 Sep 18 21:45	26° <u>♏</u> 59'02	
min. Earth dist.	12724 Apr 26 14:50	13° <u>♏</u> 46'06	8.61900 AU		12730 Nov 18 12:28	0° <u>♏</u>	
direct	12724 Jul 03 22:39	10° <u>♏</u> 23'10		evening set	12730 Dec 31 20:05	4° <u>♏</u> 45'24	
	12724 Sep 18 15:13	15° <u>♏</u>					
evening set	12724 Oct 13 00:31	17° <u>♏</u> 46'58		conjunction	12731 Jan 18 13:18	6° <u>♏</u> 57'13	1°46'31
				minimum elong	12731 Jan 18 13:20	6° <u>♏</u> 57'13	1°47'20
conjunction	12724 Oct 30 11:57	19° <u>♏</u> 54'29	0°45'47	max. Earth dist.	12731 Jan 18 03:36	6° <u>♏</u> 54'11	10.40952 AU
minimum elong	12724 Oct 30 11:56	19° <u>♏</u> 54'28	0°46'27	morning rise	12731 Feb 05 05:51	9° <u>♏</u> 08'51	
max. Earth dist.	12724 Oct 30 19:19	19° <u>♏</u> 56'44	10.60277 AU		12731 Apr 02 11:27	15° <u>♏</u>	
morning rise	12724 Nov 17 02:03	22° <u>♏</u> 02'49		retrograde	12731 May 19 10:41	16° <u>♏</u> 53'11	
retrograde	12725 Mar 01 15:25	29° <u>♏</u> 41'06			12731 Jul 06 05:55	15° <u>♏</u>	
opposition	12725 May 09 18:08	26° <u>♏</u> 16'21	1°09'44	opposition	12731 Jul 26 00:23	13° <u>♏</u> 28'41	2°08'04
min. Earth dist.	12725 May 09 13:16	26° <u>♏</u> 17'18	8.58594 AU	min. Earth dist.	12731 Jul 26 08:40	13° <u>♏</u> 27'02	8.40197 AU
direct	12725 Jul 16 15:48	22° <u>♏</u> 54'14		direct	12731 Oct 02 06:39	10° <u>♏</u> 02'09	
	12725 Oct 23 03:13	0° <u>♏</u>			12731 Dec 21 05:19	15° <u>♏</u>	
evening set	12725 Oct 26 02:49	0° <u>♏</u> 21'25		evening set	12732 Jan 14 15:24	17° <u>♏</u> 51'09	
conjunction	12725 Nov 12 15:49	2° <u>♏</u> 29'47	1°06'12	conjunction	12732 Feb 01 08:35	20° <u>♏</u> 03'15	1°38'43
minimum elong	12725 Nov 12 15:47	2° <u>♏</u> 29'47	1°07'00	minimum elong	12732 Feb 01 08:37	20° <u>♏</u> 03'16	1°39'24
max. Earth dist.	12725 Nov 12 19:26	2° <u>♏</u> 30'54	10.56768 AU	max. Earth dist.	12732 Jan 31 20:37	19° <u>♏</u> 59'31	10.39399 AU
morning rise	12725 Nov 30 07:17	4° <u>♏</u> 38'55		morning rise	12732 Feb 19 00:34	22° <u>♏</u> 15'01	
retrograde	12726 Mar 14 18:27	12° <u>♏</u> 19'06		retrograde	12732 May 31 18:19	29° <u>♏</u> 58'34	
opposition	12726 May 22 15:13	8° <u>♏</u> 54'13	1°33'14	opposition	12732 Aug 07 06:49	26° <u>♏</u> 34'22	1°55'12
min. Earth dist.	12726 May 22 13:15	8° <u>♏</u> 54'36	8.54981 AU	min. Earth dist.	12732 Aug 07 16:29	26° <u>♏</u> 32'26	8.39013 AU
direct	12726 Jul 29 12:21	5° <u>♏</u> 31'21		direct	12732 Oct 14 19:12	23° <u>♏</u> 07'25	
evening set	12726 Nov 08 09:17	13° <u>♏</u> 02'25			12733 Jan 19 10:26	0° <u>♏</u>	
				evening set	12733 Jan 27 10:41	0° <u>♏</u> 58'13	
conjunction	12726 Nov 25 23:41	15° <u>♏</u> 11'39	1°23'33	conjunction	12733 Feb 14 03:35	3° <u>♏</u> 10'25	1°25'47
minimum elong	12726 Nov 25 23:39	15° <u>♏</u> 11'39	1°24'27	minimum elong	12733 Feb 14 03:38	3° <u>♏</u> 10'26	1°26'18
max. Earth dist.	12726 Nov 26 00:19	15° <u>♏</u> 11'51	10.53074 AU	max. Earth dist.	12733 Feb 13 14:38	3° <u>♏</u> 06'22	10.38636 AU
morning rise	12726 Dec 13 16:05	17° <u>♏</u> 21'30		morning rise	12733 Mar 03 18:39	5° <u>♏</u> 22'07	
retrograde	12727 Mar 28 00:02	25° <u>♏</u> 03'24		retrograde	12733 Jun 14 02:40	13° <u>♏</u> 40'28	
opposition	12727 Jun 04 13:39	21° <u>♏</u> 38'26	1°52'22	opposition	12733 Aug 20 14:23	9° <u>♏</u> 40'36	1°36'18
min. Earth dist.	12727 Jun 04 13:55	21° <u>♏</u> 38'23	8.51319 AU				

min. Earth dist.	12733 Aug 21 00:14	9° X 38'38	8.38635 AU	morning rise	12739 May 22 01:18	23° C 12'41	
direct	12733 Oct 28 08:15	6° X 13'26			12739 Aug 02 03:13	0° II	
evening set	12734 Feb 10 05:07	14° X 05'08		retrograde	12739 Aug 31 09:55	0° II 45'05	
					12739 Sep 30 04:37	30° R C	
conjunction	12734 Feb 27 21:24	16° X 17'15	1°08'23	opposition	12739 Nov 07 18:53	27° C 23'42	-1°11'53
minimum elong	12734 Feb 27 21:26	16° X 17'16	1°08'42	min. Earth dist.	12739 Nov 07 22:27	27° C 23'00	8.51573 AU
max. Earth dist.	12734 Feb 27 08:38	16° X 13'15	10.38695 AU	direct	12740 Jan 16 12:40	23° C 59'09	
morning rise	12734 Mar 17 11:10	18° X 28'41			12740 Apr 15 14:56	0° II	
retrograde	12734 Jun 27 11:50	26° X 09'29		evening set	12740 Apr 29 18:51	1° II 41'05	
opposition	12734 Sep 02 22:48	22° X 46'00	1°12'23				
min. Earth dist.	12734 Sep 03 08:31	22° X 44'04	8.39074 AU	conjunction	12740 May 16 21:47	3° II 48'08	-1°08'02
direct	12734 Nov 10 20:49	19° X 18'50		minimum elong	12740 May 16 21:45	3° II 48'07	1°08'51
evening set	12735 Feb 23 22:16	27° X 10'36		max. Earth dist.	12740 May 16 18:36	3° II 47'09	10.53355 AU
				morning rise	12740 Jun 02 22:16	5° II 54'31	
conjunction	12735 Mar 13 13:19	29° X 22'23	0°47'27	retrograde	12740 Sep 12 11:26	13° II 25'41	
minimum elong	12735 Mar 13 13:21	29° X 22'23	0°47'33	opposition	12740 Nov 20 01:56	10° II 04'32	-1°35'08
max. Earth dist.	12735 Mar 13 00:54	29° X 18'29	10.39565 AU	min. Earth dist.	12740 Nov 20 03:10	10° II 04'18	8.55242 AU
	12735 Mar 18 13:13	0° Y		direct	12741 Jan 28 19:58	6° II 40'48	
morning rise	12735 Mar 31 01:24	1° Y 33'21		evening set	12741 May 12 17:36	14° II 19'23	
retrograde	12735 Jul 10 19:15	9° Y 12'22					
opposition	12735 Sep 16 07:45	5° Y 49'20	0°44'46	conjunction	12741 May 29 17:56	16° II 25'18	-1°25'03
min. Earth dist.	12735 Sep 16 17:19	5° Y 47'27	8.40315 AU	minimum elong	12741 May 29 17:54	16° II 25'17	1°25'57
direct	12735 Nov 24 10:24	2° Y 22'22		max. Earth dist.	12741 May 29 17:23	16° II 25'08	10.57021 AU
evening set	12736 Mar 08 13:19	10° Y 13'26		morning rise	12741 Jun 15 16:22	18° II 30'40	
				retrograde	12741 Sep 25 10:42	26° II 00'46	
conjunction	12736 Mar 26 02:33	12° Y 24'36	0°24'09	opposition	12741 Dec 03 07:33	22° II 39'47	-1°53'36
minimum elong	12736 Mar 26 02:34	12° Y 24'37	0°24'02	min. Earth dist.	12741 Dec 03 07:05	22° II 39'52	8.58916 AU
max. Earth dist.	12736 Mar 25 14:38	12° Y 20'53	10.41211 AU	direct	12742 Feb 11 00:44	19° II 16'48	
morning rise	12736 Apr 12 12:39	14° Y 34'55		evening set	12742 May 25 12:53	26° II 51'56	
retrograde	12736 Jul 23 00:50	22° Y 12'08					
opposition	12736 Sep 28 17:06	18° Y 49'35	0°14'57	conjunction	12742 Jun 11 10:58	28° II 56'47	-1°37'53
min. Earth dist.	12736 Sep 29 02:22	18° Y 47'45	8.42307 AU	minimum elong	12742 Jun 11 10:56	28° II 56'46	1°38'50
direct	12736 Dec 07 00:32	15° Y 23'00		max. Earth dist.	12742 Jun 11 12:24	28° II 57'13	10.60601 AU
evening set	12737 Mar 22 01:30	23° Y 12'37			12742 Jun 19 23:31	0° C	
desc. node	12737 Apr 03 07:20	24° Y 43'46		morning rise	12742 Jun 28 07:55	1° C 01'17	
				retrograde	12742 Oct 08 06:59	8° C 30'33	
conjunction	12737 Apr 08 12:27	25° Y 22'58	-0°00'21	opposition	12742 Dec 16 11:48	5° C 09'35	-2°06'32
minimum elong	12737 Apr 08 12:27	25° Y 22'58	0°00'40	min. Earth dist.	12742 Dec 16 09:24	5° C 10'03	8.62408 AU
behind sun begin	12737 Apr 08 05:17	25° Y 20'45		direct	12743 Feb 24 04:57	1° C 47'19	
behind sun end	12737 Apr 08 19:36	25° Y 25'11		evening set	12743 Jun 07 04:42	9° C 18'56	
max. Earth dist.	12737 Apr 08 01:15	25° Y 19'29	10.43551 AU				
morning rise	12737 Apr 25 20:25	27° Y 32'27		conjunction	12743 Jun 24 01:11	11° C 22'54	-1°46'02
	12737 May 16 16:36	0° C		minimum elong	12743 Jun 24 01:10	11° C 22'54	1°47'00
retrograde	12737 Aug 05 05:20	5° C 07'55		max. Earth dist.	12743 Jun 24 05:02	11° C 24'05	10.63907 AU
opposition	12737 Oct 12 02:15	1° C 45'49	-0°15'28	morning rise	12743 Jul 10 21:14	13° C 26'41	
min. Earth dist.	12737 Oct 12 10:26	1° C 44'12	8.44945 AU	retrograde	12743 Oct 21 03:41	20° C 55'23	
	12737 Nov 04 18:30	30° R Y		opposition	12743 Dec 29 14:22	17° C 34'19	-2°13'28
direct	12737 Dec 20 13:42	28° Y 19'48		min. Earth dist.	12743 Dec 29 09:37	17° C 35'14	8.65518 AU
	12738 Feb 03 10:45	0° C		direct	12744 Mar 08 06:14	14° C 12'43	
evening set	12738 Apr 04 10:46	6° C 07'21		evening set	12744 Jun 18 17:40	21° C 40'53	
conjunction	12738 Apr 21 19:08	8° C 16'42	-0°24'40	conjunction	12744 Jul 05 13:24	23° C 44'13	-1°49'12
minimum elong	12738 Apr 21 19:07	8° C 16'42	0°25'10	minimum elong	12744 Jul 05 13:24	23° C 44'13	1°50'07
max. Earth dist.	12738 Apr 21 09:44	8° C 13'46	10.46457 AU	max. Earth dist.	12744 Jul 05 20:05	23° C 46'16	10.66735 AU
morning rise	12738 May 09 00:42	10° C 25'14		morning rise	12744 Jul 22 09:10	25° C 47'32	
	12738 Jun 19 12:39	15° C			12744 Aug 29 19:00	0° C	
retrograde	12738 Aug 18 08:10	17° C 59'03		retrograde	12744 Nov 01 23:28	3° C 15'55	
	12738 Oct 20 14:09	15° R C			12745 Jan 09 10:40	30° R C	
opposition	12738 Oct 25 10:51	14° C 37'20	-0°44'54	opposition	12745 Jan 10 15:00	29° C 54'37	-2°14'11
min. Earth dist.	12738 Oct 25 16:59	14° C 36'09	8.48085 AU	min. Earth dist.	12745 Jan 10 08:01	29° C 55'57	8.68027 AU
direct	12739 Jan 03 01:50	11° C 12'01		direct	12745 Mar 21 03:42	26° C 33'34	
	12739 Mar 13 15:57	15° C			12745 May 26 01:41	0° C	
evening set	12739 Apr 17 16:40	18° C 57'00		evening set	12745 Jul 01 04:25	3° C 58'40	
conjunction	12739 May 04 22:20	21° C 05'13	-0°47'36	conjunction	12745 Jul 18 00:06	6° C 01'37	-1°47'21
minimum elong	12739 May 04 22:18	21° C 05'13	0°48'16	minimum elong	12745 Jul 18 00:07	6° C 01'37	1°48'10
max. Earth dist.	12739 May 04 15:49	21° C 03'12	10.49778 AU	max. Earth dist.	12745 Jul 18 08:55	6° C 04'19	10.68866 AU

morning rise	12745 Aug 03 20:20	8°♊04'45		behind sun end	12751 Sep 30 05:22	19°♊31'20	
	12745 Oct 20 02:49	15°♊		max. Earth dist.	12751 Sep 30 10:46	19°♊32'59	10.65543 AU
retrograde	12745 Nov 14 18:41	15°♊33'10		morning rise	12751 Oct 17 09:17	21°♊36'11	
	12745 Dec 10 17:49	15°♊♊		retrograde	12752 Jan 29 19:02	29°♊10'44	
opposition	12746 Jan 23 14:14	12°♊11'35	-2°08'45	asc. node	12752 Mar 25 20:33	26°♊48'43	
min. Earth dist.	12746 Jan 23 06:01	12°♊13'09	8.69747 AU	opposition	12752 Apr 08 12:37	25°♊46'08	0°01'05
direct	12746 Apr 02 23:05	8°♊50'58		min. Earth dist.	12752 Apr 08 04:14	25°♊47'46	8.64213 AU
	12746 Jul 03 04:03	15°♊		direct	12752 Jun 15 18:07	22°♊24'51	
evening set	12746 Jul 13 13:41	16°♊13'30		evening set	12752 Sep 24 10:50	29°♊45'38	
					12752 Sep 26 10:45	0°♊	
conjunction	12746 Jul 30 09:53	18°♊16'22	-1°40'36	conjunction	12752 Oct 11 19:16	1°♊52'05	0°12'27
minimum elong	12746 Jul 30 09:55	18°♊16'22	1°41'18	minimum elong	12752 Oct 11 19:16	1°♊52'04	0°12'52
max. Earth dist.	12746 Jul 30 19:40	18°♊19'21	10.70181 AU	behind sun begin	12752 Oct 11 14:53	1°♊50'45	
morning rise	12746 Aug 16 07:23	20°♊19'35		behind sun end	12752 Oct 11 23:39	1°♊53'24	
retrograde	12746 Nov 27 14:29	27°♊48'24		max. Earth dist.	12752 Oct 12 04:17	1°♊54'49	10.62764 AU
opposition	12747 Feb 05 12:12	24°♊26'28	-1°57'30	morning rise	12752 Oct 29 06:56	3°♊59'26	
min. Earth dist.	12747 Feb 05 03:26	24°♊28'08	8.70637 AU	retrograde	12753 Feb 10 18:48	11°♊35'46	
direct	12747 Apr 15 16:02	21°♊06'07		opposition	12753 Apr 21 07:25	8°♊10'46	0°29'59
evening set	12747 Jul 25 22:18	28°♊26'37		min. Earth dist.	12753 Apr 21 00:37	8°♊12'06	8.61219 AU
	12747 Aug 07 18:42	0°♊		direct	12753 Jun 28 09:37	4°♊48'54	
conjunction	12747 Aug 11 19:43	0°♊29'39	-1°29'18	evening set	12753 Oct 07 07:32	12°♊12'08	
minimum elong	12747 Aug 11 19:46	0°♊29'39	1°29'51	conjunction	12753 Oct 24 18:08	14°♊19'29	0°35'30
max. Earth dist.	12747 Aug 12 05:55	0°♊32'46	10.70697 AU	minimum elong	12753 Oct 24 18:07	14°♊19'29	0°36'06
morning rise	12747 Aug 28 19:10	2°♊33'13		max. Earth dist.	12753 Oct 25 01:42	14°♊21'48	10.59580 AU
retrograde	12747 Dec 10 08:30	10°♊02'41			12753 Oct 30 06:23	15°♊	
opposition	12748 Feb 18 08:55	6°♊40'16	-1°40'58	morning rise	12753 Nov 11 07:38	16°♊27'42	
min. Earth dist.	12748 Feb 17 23:49	6°♊42'00	8.70743 AU	retrograde	12754 Feb 23 19:39	24°♊05'58	
direct	12748 Apr 27 08:07	3°♊20'01		opposition	12754 May 04 03:04	20°♊40'37	0°57'41
evening set	12748 Aug 06 06:56	10°♊39'05		min. Earth dist.	12754 May 03 21:29	20°♊41'43	8.57901 AU
conjunction	12748 Aug 23 06:14	12°♊42'31	-1°13'58	direct	12754 Jul 11 03:11	17°♊18'07	
minimum elong	12748 Aug 23 06:17	12°♊42'32	1°14'20	evening set	12754 Oct 20 08:07	24°♊44'27	
max. Earth dist.	12748 Aug 23 17:25	12°♊45'56	10.70449 AU	conjunction	12754 Nov 06 20:38	26°♊52'42	0°57'02
morning rise	12748 Sep 09 07:59	14°♊46'38		minimum elong	12754 Nov 06 20:36	26°♊52'41	0°57'47
retrograde	12748 Dec 22 02:49	22°♊17'01		max. Earth dist.	12754 Nov 07 02:46	26°♊54'35	10.56131 AU
opposition	12749 Mar 02 04:34	18°♊54'02	-1°19'51	morning rise	12754 Nov 24 11:33	29°♊01'43	
min. Earth dist.	12749 Mar 01 18:40	18°♊55'55	8.70094 AU		12754 Dec 02 15:56	0°♊	
direct	12749 May 10 00:19	15°♊33'44		retrograde	12755 Mar 08 23:08	6°♊41'55	
evening set	12749 Aug 18 16:30	22°♊52'02		opposition	12755 May 16 23:48	3°♊16'20	1°22'50
conjunction	12749 Sep 04 18:03	24°♊56'04	-0°55'16	min. Earth dist.	12755 May 16 19:35	3°♊17'10	8.54401 AU
minimum elong	12749 Sep 04 18:05	24°♊56'04	0°55'27	direct	12755 Jul 12 13:23	30°♊♊	
max. Earth dist.	12749 Sep 05 06:18	24°♊59'48	10.69464 AU		12755 Jul 23 22:16	29°♊53'09	
morning rise	12749 Sep 21 22:11	27°♊00'51		evening set	12755 Aug 04 05:25	0°♊	
	12749 Oct 18 08:20	0°♊			12755 Nov 02 13:06	7°♊23'07	
retrograde	12750 Jan 04 00:15	4°♊32'24		conjunction	12755 Nov 20 03:07	9°♊32'15	1°15'57
opposition	12750 Mar 14 23:26	1°♊08'50	-0°55'04	minimum elong	12755 Nov 20 03:05	9°♊32'14	1°16'49
min. Earth dist.	12750 Mar 14 13:02	1°♊10'50	8.68739 AU	max. Earth dist.	12755 Nov 20 06:37	9°♊33'19	10.52576 AU
	12750 Mar 30 05:32	30°♊♊		morning rise	12755 Dec 07 19:05	11°♊42'00	
direct	12750 May 22 14:12	27°♊48'22		retrograde	12756 Mar 21 05:21	19°♊23'57	
	12750 Jul 12 22:54	0°♊		opposition	12756 May 28 21:53	15°♊58'19	1°44'10
evening set	12750 Aug 31 03:53	5°♊06'39		min. Earth dist.	12756 May 28 19:58	15°♊58'42	8.50888 AU
conjunction	12750 Sep 17 07:47	7°♊11'24	-0°34'00	direct	12756 Aug 04 18:22	12°♊34'24	
minimum elong	12750 Sep 17 07:48	7°♊11'25	0°34'00	evening set	12756 Nov 14 22:08	20°♊08'24	
max. Earth dist.	12750 Sep 17 20:06	7°♊15'09	10.67804 AU	conjunction	12756 Dec 02 13:15	22°♊18'19	1°31'16
morning rise	12750 Oct 04 14:29	9°♊17'00		minimum elong	12756 Dec 02 13:13	22°♊18'18	1°32'13
retrograde	12751 Jan 16 21:18	16°♊49'57		max. Earth dist.	12756 Dec 02 13:24	22°♊18'22	10.49100 AU
opposition	12751 Mar 27 18:02	13°♊25'50	-0°27'42	morning rise	12756 Dec 20 05:56	24°♊28'44	
min. Earth dist.	12751 Mar 27 08:04	13°♊27'46	8.66753 AU		12757 Feb 10 22:09	0°♊	
direct	12751 Jun 04 03:16	10°♊05'01		retrograde	12757 Apr 03 12:27	2°♊12'11	
evening set	12751 Sep 12 17:45	17°♊24'09			12757 May 26 04:01	30°♊♊	
conjunction	12751 Sep 29 23:57	19°♊29'42	-0°11'08	opposition	12757 Jun 10 21:48	28°♊46'38	2°00'31
minimum elong	12751 Sep 29 23:58	19°♊29'42	0°10'55	min. Earth dist.	12757 Jun 10 22:30	28°♊46'30	8.47548 AU
behind sun begin	12751 Sep 29 18:33	19°♊28'04		direct	12757 Aug 17 18:30	25°♊22'01	

	12757 Nov 02 09:35	0°♄		minimum elong	12764 Mar 06 19:01	23°♄45'33	0°57'18
evening set	12757 Nov 28 10:39	3°♄00'09		max. Earth dist.	12764 Mar 06 05:36	23°♄41'21	10.39504 AU
				morning rise	12764 Mar 24 07:59	25°♄56'48	
conjunction	12757 Dec 16 02:39	5°♄10'46	1°42'08		12764 Apr 29 02:37	0°♄	
minimum elong	12757 Dec 16 02:38	5°♄10'46	1°43'06	retrograde	12764 Jul 04 05:14	3°♄36'59	
max. Earth dist.	12757 Dec 15 23:40	5°♄09'51	10.45894 AU	opposition	12764 Sep 09 16:56	0°♄14'14	0°57'22
morning rise	12758 Jan 02 19:46	7°♄21'45		min. Earth dist.	12764 Sep 10 03:16	0°♄12'11	8.40116 AU
retrograde	12758 Apr 16 19:39	15°♄06'22			12764 Sep 12 16:54	30°♄	
opposition	12758 Jun 23 23:31	11°♄41'01	2°10'57	direct	12764 Nov 17 17:18	26°♄47'37	
min. Earth dist.	12758 Jun 24 02:34	11°♄40'24	8.44560 AU		12765 Jan 19 19:39	0°♄	
direct	12758 Aug 30 22:27	8°♄15'46		evening set	12765 Mar 02 20:04	4°♄39'27	
evening set	12758 Dec 12 02:29	15°♄57'52					
				conjunction	12765 Mar 20 10:08	6°♄50'57	0°34'41
conjunction	12758 Dec 29 19:14	18°♄09'09	1°47'54	minimum elong	12765 Mar 20 10:09	6°♄50'57	0°34'40
minimum elong	12758 Dec 29 19:13	18°♄09'09	1°48'50	max. Earth dist.	12765 Mar 19 20:56	6°♄46'49	10.40787 AU
max. Earth dist.	12758 Dec 29 13:49	18°♄07'28	10.43129 AU	morning rise	12765 Apr 06 21:19	9°♄01'38	
morning rise	12759 Jan 16 12:22	20°♄20'33		retrograde	12765 Jul 17 12:09	16°♄40'06	
retrograde	12759 Apr 30 05:08	28°♄05'48		opposition	12765 Sep 23 02:33	13°♄17'47	0°28'19
opposition	12759 Jul 07 02:49	24°♄40'46	2°14'46	min. Earth dist.	12765 Sep 23 12:20	13°♄15'52	8.41621 AU
min. Earth dist.	12759 Jul 07 07:28	24°♄39'50	8.42079 AU	direct	12765 Dec 01 08:04	9°♄51'28	
direct	12759 Sep 13 04:12	21°♄15'00		evening set	12766 Mar 16 10:20	17°♄42'19	
evening set	12759 Dec 25 20:46	29°♄00'41					
	12760 Jan 02 21:26	0°♄		conjunction	12766 Apr 02 22:30	19°♄53'10	0°10'35
				minimum elong	12766 Apr 02 22:31	19°♄53'10	0°10'21
conjunction	12760 Jan 12 14:03	1°♄12'28	1°48'09	behind sun begin	12766 Apr 02 16:51	19°♄51'25	
minimum elong	12760 Jan 12 14:03	1°♄12'29	1°49'01	behind sun end	12766 Apr 03 04:10	19°♄54'55	
max. Earth dist.	12760 Jan 12 06:58	1°♄10'16	10.40944 AU	max. Earth dist.	12766 Apr 02 10:31	19°♄49'25	10.42549 AU
morning rise	12760 Jan 30 06:51	3°♄24'12		morning rise	12766 Apr 20 07:30	22°♄03'07	
retrograde	12760 May 12 16:05	11°♄09'29		retrograde	12766 Jul 30 19:30	29°♄39'59	
opposition	12760 Jul 19 07:59	7°♄44'51	2°11'39	desc. node	12766 Sep 11 10:12	28°♄09'25	
min. Earth dist.	12760 Jul 19 13:54	7°♄43'40	8.40225 AU	opposition	12766 Oct 06 12:28	26°♄18'04	-0°02'04
direct	12760 Sep 25 12:13	4°♄18'41		min. Earth dist.	12766 Oct 06 21:12	26°♄16'22	8.43612 AU
evening set	12761 Jan 07 16:28	12°♄07'16		direct	12766 Dec 14 21:12	22°♄52'10	
					12767 Mar 24 05:38	0°♄	
conjunction	12761 Jan 25 09:54	14°♄19'25	1°42'49	evening set	12767 Mar 29 21:55	0°♄41'25	
minimum elong	12761 Jan 25 09:56	14°♄19'26	1°43'34				
max. Earth dist.	12761 Jan 25 01:12	14°♄16'42	10.39452 AU	conjunction	12767 Apr 16 07:39	2°♄51'24	-0°14'04
	12761 Jan 30 19:35	15°♄		minimum elong	12767 Apr 16 07:38	2°♄51'24	0°14'30
morning rise	12761 Feb 12 02:07	16°♄31'17		behind sun begin	12767 Apr 16 04:29	2°♄50'25	
retrograde	12761 May 26 02:25	24°♄16'02		behind sun end	12767 Apr 16 10:48	2°♄52'23	
opposition	12761 Aug 01 14:47	20°♄51'52	2°01'42	max. Earth dist.	12767 Apr 15 21:19	2°♄48'11	10.44786 AU
min. Earth dist.	12761 Aug 01 22:05	20°♄50'24	8.39097 AU	morning rise	12767 May 03 14:11	5°♄00'30	
direct	12761 Oct 08 23:13	17°♄25'24		retrograde	12767 Aug 13 00:43	12°♄35'50	
evening set	12762 Jan 21 12:52	25°♄16'05		opposition	12767 Oct 19 22:20	9°♄14'14	-0°32'12
				min. Earth dist.	12767 Oct 20 06:03	9°♄12'44	8.46086 AU
conjunction	12762 Feb 08 06:05	27°♄28'24	1°32'07	direct	12767 Dec 28 09:55	5°♄48'50	
minimum elong	12762 Feb 08 06:08	27°♄28'25	1°32'42	evening set	12768 Apr 11 06:20	13°♄35'53	
max. Earth dist.	12762 Feb 07 19:35	27°♄25'06	10.38726 AU		12768 Apr 22 13:57	15°♄	
morning rise	12762 Feb 25 21:32	29°♄40'15					
	12762 Feb 28 14:09	0°♄		conjunction	12768 Apr 28 13:18	15°♄44'49	-0°37'48
retrograde	12762 Jun 08 12:51	7°♄23'50		minimum elong	12768 Apr 28 13:16	15°♄44'49	0°38'25
opposition	12762 Aug 14 22:41	4°♄00'09	1°45'22	max. Earth dist.	12768 Apr 28 04:31	15°♄42'04	10.47474 AU
min. Earth dist.	12762 Aug 15 07:39	3°♄58'22	8.38739 AU	morning rise	12768 May 15 17:24	17°♄52'57	
direct	12762 Oct 22 11:27	0°♄33'30		retrograde	12768 Aug 25 03:01	25°♄26'52	
evening set	12763 Feb 04 08:53	8°♄25'23		opposition	12768 Nov 01 07:41	22°♄05'28	-1°00'31
				min. Earth dist.	12768 Nov 01 13:57	22°♄04'15	8.48982 AU
conjunction	12763 Feb 22 01:28	10°♄37'39	1°16'36	direct	12769 Jan 09 22:49	18°♄40'35	
minimum elong	12763 Feb 22 01:31	10°♄37'40	1°17'00	evening set	12769 Apr 24 11:07	26°♄24'53	
max. Earth dist.	12763 Feb 21 13:02	10°♄33'45	10.38772 AU				
morning rise	12763 Mar 11 15:54	12°♄49'18		conjunction	12769 May 11 15:15	28°♄32'42	-0°59'31
retrograde	12763 Jun 21 22:09	20°♄31'16		minimum elong	12769 May 11 15:13	28°♄32'41	1°00'17
opposition	12763 Aug 28 07:34	17°♄08'04	1°23'31	max. Earth dist.	12769 May 11 08:33	28°♄30'36	10.50511 AU
min. Earth dist.	12763 Aug 28 17:42	17°♄06'03	8.39117 AU		12769 May 23 07:40	0°♄	
direct	12763 Nov 05 01:27	13°♄41'21		morning rise	12769 May 28 17:02	0°♄39'48	
evening set	12764 Feb 18 03:29	21°♄33'34		retrograde	12769 Sep 07 04:40	8°♄12'25	
				opposition	12769 Nov 14 16:01	4°♄51'06	-1°25'38
conjunction	12764 Mar 06 18:59	23°♄45'33	0°57'06	min. Earth dist.	12769 Nov 14 20:08	4°♄50'19	8.52159 AU

direct	12770 Jan 23 09:26	1° Π 26'47	conjunction	12776 Aug 05 22:30	25° Ω 35'25	-1°34'37
evening set	12770 May 07 12:16	9° Π 07'55	minimum elong	12776 Aug 05 22:32	25° Ω 35'26	1°35'14
			max. Earth dist.	12776 Aug 06 10:45	25° Ω 39'10	10.69034 AU
conjunction	12770 May 24 13:45	11° Π 14'35	-1°18'11	morning rise	12776 Aug 22 21:03	27° Ω 38'58
minimum elong	12770 May 24 13:43	11° Π 14'34	1°19'04		12776 Sep 12 06:55	0° Π
max. Earth dist.	12770 May 24 09:59	11° Π 13'25	10.53744 AU	retrograde	12776 Dec 04 06:50	5° Π 08'27
morning rise	12770 Jun 10 13:17	13° Π 20'39		opposition	12777 Feb 12 06:53	1° Π 45'43
retrograde	12770 Sep 20 04:32	20° Π 52'10		min. Earth dist.	12777 Feb 11 19:42	1° Π 47'51
opposition	12770 Nov 27 23:01	17° Π 30'48	-1°46'22		12777 Mar 08 14:43	30° κ Ω
min. Earth dist.	12770 Nov 28 00:06	17° Π 30'36	8.55460 AU	direct	12777 Apr 22 09:02	28° Ω 25'02
direct	12771 Feb 05 17:27	14° Π 07'05			12777 Jun 04 21:05	0° Π
evening set	12771 May 20 09:40	21° Π 44'47		evening set	12777 Aug 01 10:05	5° Π 44'53
conjunction	12771 Jun 06 08:54	23° Π 50'21	-1°32'57	conjunction	12777 Aug 18 08:40	7° Π 48'12
minimum elong	12771 Jun 06 08:52	23° Π 50'21	1°33'54	minimum elong	12777 Aug 18 08:42	7° Π 48'13
max. Earth dist.	12771 Jun 06 09:00	23° Π 50'23	10.57024 AU	max. Earth dist.	12777 Aug 18 22:02	7° Π 52'17
morning rise	12771 Jun 23 06:32	25° Π 55'30		morning rise	12777 Sep 04 09:16	9° Π 52'08
	12771 Jul 29 20:41	0° Φ		retrograde	12777 Dec 17 02:06	17° Π 22'09
retrograde	12771 Oct 03 03:13	3° Φ 26'06		opposition	12778 Feb 25 03:01	13° Π 59'06
opposition	12771 Dec 11 04:38	0° Φ 04'36	-2°01'50	min. Earth dist.	12778 Feb 24 15:30	14° Π 01'18
min. Earth dist.	12771 Dec 11 02:48	0° Φ 04'57	8.58732 AU	direct	12778 May 05 00:11	10° Π 38'38
	12771 Dec 12 04:39	30° κ Π		evening set	12778 Aug 13 19:06	17° Π 57'11
direct	12772 Feb 18 22:54	26° Π 41'29				
	12772 Apr 23 12:15	0° Φ		conjunction	12778 Aug 30 19:32	20° Π 00'56
evening set	12772 Jun 01 03:27	4° Φ 15'37		minimum elong	12778 Aug 30 19:35	20° Π 00'57
				max. Earth dist.	12778 Aug 31 08:45	20° Π 04'58
conjunction	12772 Jun 18 00:52	6° Φ 20'15	-1°43'11	morning rise	12778 Sep 16 22:39	22° Π 05'25
minimum elong	12772 Jun 18 00:51	6° Φ 20'14	1°44'10	retrograde	12778 Dec 29 22:11	29° Π 36'17
max. Earth dist.	12772 Jun 18 04:10	6° Φ 21'16	10.60198 AU	opposition	12779 Mar 09 22:17	26° Π 12'54
morning rise	12772 Jul 04 21:15	8° Φ 24'36		min. Earth dist.	12779 Mar 09 11:07	26° Π 15'02
retrograde	12772 Oct 15 01:44	15° Φ 54'30		direct	12779 May 17 14:03	22° Π 52'31
opposition	12772 Dec 23 08:32	12° Φ 32'51	-2°11'24		12779 Aug 24 18:05	0° Ω
min. Earth dist.	12772 Dec 23 04:33	12° Φ 33'37	8.61816 AU	evening set	12779 Aug 26 05:30	0° Ω 10'32
direct	12773 Mar 03 00:41	9° Φ 10'19				
evening set	12773 Jun 13 18:18	16° Φ 40'57		conjunction	12779 Sep 12 08:13	2° Ω 14'52
				minimum elong	12779 Sep 12 08:14	2° Ω 14'53
conjunction	12773 Jun 30 14:26	18° Φ 44'49	-1°48'31	max. Earth dist.	12779 Sep 12 21:19	2° Ω 18'52
minimum elong	12773 Jun 30 14:26	18° Φ 44'49	1°49'28	morning rise	12779 Sep 29 13:56	4° Ω 20'03
max. Earth dist.	12773 Jun 30 19:54	18° Φ 46'30	10.63115 AU	retrograde	12780 Jan 11 17:13	11° Ω 51'58
morning rise	12773 Jul 17 10:21	20° Φ 48'37		opposition	12780 Mar 21 16:43	8° Ω 28'17
retrograde	12773 Oct 27 21:23	28° Φ 18'00		min. Earth dist.	12780 Mar 21 05:52	8° Ω 30'22
opposition	12774 Jan 05 10:34	24° Φ 56'09	-2°14'47	direct	12780 May 29 04:16	5° Ω 07'51
min. Earth dist.	12774 Jan 05 05:00	24° Φ 57'13	8.64562 AU	evening set	12780 Sep 06 18:00	12° Ω 26'09
direct	12774 Mar 15 23:53	21° Φ 34'10				
evening set	12774 Jun 26 06:29	29° Φ 01'31		conjunction	12780 Sep 23 23:11	14° Ω 31'12
	12774 Jul 04 06:59	0° Ω		minimum elong	12780 Sep 23 23:12	14° Ω 31'12
				max. Earth dist.	12780 Sep 24 12:19	14° Ω 35'12
conjunction	12774 Jul 13 02:06	1° Ω 04'52	-1°48'48	morning rise	12780 Oct 11 07:21	16° Ω 37'08
minimum elong	12774 Jul 13 02:06	1° Ω 04'52	1°49'40	retrograde	12781 Jan 23 14:47	24° Ω 10'23
max. Earth dist.	12774 Jul 13 09:25	1° Ω 07'07	10.65639 AU	opposition	12781 Apr 03 10:55	20° Ω 46'23
morning rise	12774 Jul 29 22:18	3° Ω 08'20		min. Earth dist.	12781 Apr 03 00:16	20° Ω 48'26
retrograde	12774 Nov 09 15:53	10° Ω 37'30		direct	12781 Jun 10 19:06	17° Ω 25'47
opposition	12775 Jan 18 11:01	7° Ω 15'24	-2°11'55	asc. node	12781 Aug 27 18:38	22° Ω 10'15
min. Earth dist.	12775 Jan 18 03:29	7° Ω 16'50	8.66838 AU	evening set	12781 Sep 19 09:16	24° Ω 45'07
direct	12775 Mar 28 21:57	3° Ω 53'55				
evening set	12775 Jul 08 16:29	11° Ω 18'16		conjunction	12781 Oct 06 16:45	26° Ω 50'58
				minimum elong	12781 Oct 06 16:46	26° Ω 50'58
conjunction	12775 Jul 25 12:28	13° Ω 21'22	-1°44'04	behind sun begin	12781 Oct 06 09:38	26° Ω 48'49
minimum elong	12775 Jul 25 12:30	13° Ω 21'22	1°44'50	behind sun end	12781 Oct 06 23:53	26° Ω 53'07
max. Earth dist.	12775 Jul 25 22:24	13° Ω 24'25	10.67645 AU	max. Earth dist.	12781 Oct 07 05:19	26° Ω 54'47
	12775 Aug 07 23:24	15° Ω		morning rise	12781 Oct 24 03:10	28° Ω 57'42
morning rise	12775 Aug 11 09:34	15° Ω 24'45			12781 Nov 01 22:59	0° Π
retrograde	12775 Nov 22 11:36	22° Ω 53'58		retrograde	12782 Feb 05 14:54	6° Π 32'28
opposition	12776 Jan 31 09:47	19° Ω 31'33	-2°03'02	opposition	12782 Apr 16 05:15	3° Π 08'12
min. Earth dist.	12776 Jan 31 00:05	19° Ω 33'24	8.68532 AU	min. Earth dist.	12782 Apr 15 19:37	3° Π 10'04
direct	12776 Apr 09 17:11	16° Ω 10'31			12782 Jun 07 18:07	30° κ Ω
evening set	12776 Jul 20 01:26	23° Ω 32'19		direct	12782 Jun 23 08:32	29° Ω 47'16

	12782 Jul 08 21:32	0°♄		direct	12788 Sep 06 15:32	15°♄46'13	
evening set	12782 Oct 02 04:01	7°♄08'26		evening set	12788 Dec 19 02:42	23°♄29'03	
conjunction	12782 Oct 19 13:34	9°♄15'05	0°25'46	conjunction	12789 Jan 05 19:30	25°♄40'17	1°48'41
minimum elong	12782 Oct 19 13:33	9°♄15'05	0°26'18	minimum elong	12789 Jan 05 19:30	25°♄40'17	1°49'36
max. Earth dist.	12782 Oct 19 23:50	9°♄18'13	10.63437 AU	max. Earth dist.	12789 Jan 05 11:33	25°♄37'49	10.43747 AU
morning rise	12782 Nov 06 02:02	11°♄22'38		morning rise	12789 Jan 23 12:18	27°♄51'34	
	12782 Dec 08 15:09	15°♄			12789 Feb 10 15:35	0°♄	
retrograde	12783 Feb 18 15:13	18°♄59'00		retrograde	12789 May 07 00:51	5°♄35'41	
opposition	12783 Apr 29 00:01	15°♄34'29	0°46'00	opposition	12789 Jul 13 19:11	2°♄11'03	2°13'48
min. Earth dist.	12783 Apr 28 16:40	15°♄35'55	8.62050 AU	min. Earth dist.	12789 Jul 14 02:08	2°♄09'39	8.42636 AU
	12783 May 06 09:49	15°♄			12789 Aug 12 12:30	30°♄	
direct	12783 Jul 05 23:48	12°♄13'02		direct	12789 Sep 19 22:05	28°♄45'09	
	12783 Sep 02 02:12	15°♄			12789 Oct 27 23:42	0°♄	
evening set	12783 Oct 15 02:27	19°♄36'48		evening set	12790 Jan 01 20:33	6°♄31'16	
conjunction	12783 Nov 01 13:51	21°♄44'17	0°48'01	conjunction	12790 Jan 19 13:41	8°♄42'59	1°45'53
minimum elong	12783 Nov 01 13:49	21°♄44'16	0°48'43	minimum elong	12790 Jan 19 13:42	8°♄42'59	1°46'41
max. Earth dist.	12783 Nov 01 20:48	21°♄46'24	10.60516 AU	max. Earth dist.	12790 Jan 19 03:15	8°♄39'43	10.41441 AU
morning rise	12783 Nov 19 04:04	23°♄52'35		morning rise	12790 Feb 06 06:14	10°♄54'33	
	12784 Jan 19 21:56	0°♄			12790 Mar 14 14:02	15°♄	
retrograde	12784 Mar 02 16:03	1°♄30'38		retrograde	12790 May 20 08:36	18°♄38'29	
	12784 Apr 15 00:42	30°♄		opposition	12790 Jul 27 00:07	15°♄14'04	2°06'57
opposition	12784 May 10 19:34	28°♄05'57	1°12'18	min. Earth dist.	12790 Jul 27 08:39	15°♄12'22	8.40656 AU
min. Earth dist.	12784 May 10 15:04	28°♄06'50	8.58924 AU		12790 Jul 29 22:37	15°♄	
direct	12784 Jul 17 18:15	24°♄43'49		direct	12790 Oct 03 08:27	11°♄47'35	
	12784 Oct 08 09:39	0°♄			12790 Dec 05 01:24	15°♄	
evening set	12784 Oct 27 04:42	2°♄10'52		evening set	12791 Jan 15 15:33	19°♄36'20	
conjunction	12784 Nov 13 17:43	4°♄19'11	1°08'06	conjunction	12791 Feb 02 08:47	21°♄48'22	1°37'35
minimum elong	12784 Nov 13 17:41	4°♄19'10	1°08'56	minimum elong	12791 Feb 02 08:49	21°♄48'23	1°38'15
max. Earth dist.	12784 Nov 13 21:26	4°♄20'19	10.57171 AU	max. Earth dist.	12791 Feb 01 20:51	21°♄44'38	10.39828 AU
morning rise	12784 Dec 01 09:10	6°♄28'13		morning rise	12791 Feb 20 00:42	24°♄00'03	
retrograde	12785 Mar 15 19:31	14°♄08'03			12791 Apr 19 03:49	0°♄	
opposition	12785 May 23 16:12	10°♄43'14	1°35'19	retrograde	12791 Jun 02 17:39	1°♄43'16	
min. Earth dist.	12785 May 23 14:06	10°♄43'38	8.55448 AU		12791 Jul 18 05:01	30°♄	
direct	12785 Jul 30 13:48	7°♄20'23		opposition	12791 Aug 09 06:18	28°♄19'08	1°53'30
evening set	12785 Nov 09 10:56	14°♄51'15		min. Earth dist.	12791 Aug 09 15:39	28°♄17'16	8.39399 AU
				direct	12791 Oct 16 19:08	24°♄52'15	
conjunction	12785 Nov 27 01:24	17°♄00'24	1°25'01		12792 Jan 06 07:36	0°♄	
minimum elong	12785 Nov 27 01:22	17°♄00'23	1°25'57	evening set	12792 Jan 29 10:38	2°♄42'48	
max. Earth dist.	12785 Nov 27 02:40	17°♄00'47	10.53577 AU				
morning rise	12785 Dec 14 17:37	19°♄10'08		conjunction	12792 Feb 16 03:37	4°♄54'58	1°24'13
retrograde	12786 Mar 29 00:51	26°♄51'39		minimum elong	12792 Feb 16 03:39	4°♄54'59	1°24'42
opposition	12786 Jun 05 14:20	23°♄26'44	1°53'53	max. Earth dist.	12792 Feb 15 15:07	4°♄51'03	10.38981 AU
min. Earth dist.	12786 Jun 05 14:05	23°♄26'47	8.51854 AU	morning rise	12792 Mar 04 18:31	7°♄06'35	
direct	12786 Aug 12 11:53	20°♄03'08		retrograde	12792 Jun 15 03:05	14°♄48'39	
evening set	12786 Nov 22 20:58	27°♄38'04		opposition	12792 Aug 21 13:49	11°♄24'50	1°34'07
				min. Earth dist.	12792 Aug 21 23:31	11°♄22'55	8.38926 AU
conjunction	12786 Dec 10 12:34	29°♄48'01	1°37'53	direct	12792 Oct 29 07:02	7°♄57'44	
minimum elong	12786 Dec 10 12:32	29°♄48'00	1°38'52	evening set	12793 Feb 11 04:50	15°♄49'13	
max. Earth dist.	12786 Dec 10 11:12	29°♄47'36	10.49993 AU				
	12786 Dec 12 03:21	0°♄		conjunction	12793 Feb 28 21:04	18°♄01'17	1°06'28
morning rise	12786 Dec 28 05:14	1°♄58'21		minimum elong	12793 Feb 28 21:06	18°♄01'18	1°06'45
retrograde	12787 Apr 11 07:31	9°♄41'14		max. Earth dist.	12793 Feb 28 08:20	17°♄57'17	10.38939 AU
opposition	12787 Jun 18 14:11	6°♄16'20	2°06'58	morning rise	12793 Mar 18 10:41	20°♄12'40	
min. Earth dist.	12787 Jun 18 16:04	6°♄15'58	8.48385 AU	retrograde	12793 Jun 28 11:17	27°♄53'16	
direct	12787 Aug 25 12:47	2°♄51'55		opposition	12793 Sep 03 22:17	24°♄29'50	1°09'50
evening set	12787 Dec 06 10:32	10°♄30'56		min. Earth dist.	12793 Sep 04 08:29	24°♄27'48	8.39263 AU
				direct	12793 Nov 11 20:22	21°♄02'41	
conjunction	12787 Dec 24 02:52	12°♄41'36	1°45'57	evening set	12794 Feb 24 21:50	28°♄54'18	
minimum elong	12787 Dec 24 02:51	12°♄41'35	1°46'55		12794 Mar 05 17:55	0°♄	
max. Earth dist.	12787 Dec 23 22:21	12°♄40'11	10.46649 AU				
morning rise	12788 Jan 10 19:41	14°♄52'27		conjunction	12794 Mar 14 12:43	1°♄06'01	0°45'17
retrograde	12788 Apr 23 16:15	22°♄36'13		minimum elong	12794 Mar 14 12:45	1°♄06'02	0°45'22
opposition	12788 Jun 30 15:46	19°♄11'25	2°13'46	max. Earth dist.	12794 Mar 13 23:34	1°♄01'54	10.39703 AU
min. Earth dist.	12788 Jun 30 20:14	19°♄10'31	8.45253 AU	morning rise	12794 Apr 01 00:46	3°♄16'58	

retrograde	12794 Jul 11 18:09	10°♊55'52		minimum elong	12800 May 30 17:19	18°♊10'02	1°27'21
opposition	12794 Sep 17 07:11	7°♊32'52	0°41'59	max. Earth dist.	12800 May 30 16:00	18°♊09'37	10.56511 AU
min. Earth dist.	12794 Sep 17 17:37	7°♊30'48	8.40397 AU	morning rise	12800 Jun 16 15:49	20°♊15'29	
direct	12794 Nov 25 10:14	4°♊05'52		retrograde	12800 Sep 26 09:38	27°♊46'02	
evening set	12795 Mar 10 12:45	11°♊56'51		opposition	12800 Dec 04 07:55	24°♊24'59	-1°55'03
				min. Earth dist.	12800 Dec 04 07:45	24°♊25'01	8.58384 AU
conjunction	12795 Mar 28 01:48	14°♊08'00	0°21'51	direct	12801 Feb 12 01:45	21°♊01'58	
minimum elong	12795 Mar 28 01:49	14°♊08'00	0°21'42	evening set	12801 May 26 12:35	28°♊37'27	
max. Earth dist.	12795 Mar 27 12:51	14°♊03'57	10.41235 AU		12801 Jun 06 17:53	0°♊	
morning rise	12795 Apr 14 11:56	16°♊18'17					
retrograde	12795 Jul 24 23:55	23°♊55'28		conjunction	12801 Jun 12 10:38	0°♊42'21	-1°38'48
opposition	12795 Sep 30 16:30	20°♊32'54	0°12'04	minimum elong	12801 Jun 12 10:36	0°♊42'21	1°39'47
min. Earth dist.	12795 Oct 01 02:15	20°♊30'59	8.42272 AU	max. Earth dist.	12801 Jun 12 12:00	0°♊42'47	10.60045 AU
direct	12795 Dec 09 00:10	17°♊06'18		morning rise	12801 Jun 29 07:39	2°♊46'56	
desc. node	12796 Feb 27 14:02	22°♊04'28		retrograde	12801 Oct 09 08:07	10°♊16'43	
evening set	12796 Mar 23 00:51	24°♊55'54		opposition	12801 Dec 17 12:23	6°♊55'41	-2°07'24
				min. Earth dist.	12801 Dec 17 09:28	6°♊56'14	8.61841 AU
conjunction	12796 Apr 09 11:39	27°♊06'15	-0°02'44	direct	12802 Feb 25 05:29	3°♊33'24	
minimum elong	12796 Apr 09 11:39	27°♊06'14	0°03'04	evening set	12802 Jun 08 04:41	11°♊05'21	
behind sun begin	12796 Apr 09 04:31	27°♊04'02					
behind sun end	12796 Apr 09 18:47	27°♊08'27		conjunction	12802 Jun 25 01:17	13°♊09'25	-1°46'27
max. Earth dist.	12796 Apr 09 00:05	27°♊02'38	10.43454 AU	minimum elong	12802 Jun 25 01:17	13°♊09'25	1°47'26
morning rise	12796 Apr 26 19:33	29°♊15'43		max. Earth dist.	12802 Jun 25 05:59	13°♊10'52	10.63337 AU
	12796 May 02 21:08	0°♊		morning rise	12802 Jul 11 21:19	15°♊13'18	
retrograde	12796 Aug 06 03:52	6°♊51'16		retrograde	12802 Oct 22 04:49	22°♊42'30	
opposition	12796 Oct 13 01:42	3°♊29'07	-0°18'19	opposition	12802 Dec 30 15:14	19°♊21'22	-2°13'42
min. Earth dist.	12796 Oct 13 09:36	3°♊27'34	8.44789 AU	min. Earth dist.	12802 Dec 30 09:36	19°♊22'27	8.64961 AU
direct	12796 Dec 21 13:59	0°♊03'05		direct	12803 Mar 10 06:07	15°♊59'47	
evening set	12797 Apr 05 10:00	7°♊50'41		evening set	12803 Jun 20 18:01	23°♊28'16	
conjunction	12797 Apr 22 18:19	10°♊00'02	-0°26'54	conjunction	12803 Jul 07 13:51	25°♊31'41	-1°49'07
minimum elong	12797 Apr 22 18:18	10°♊00'02	0°27'26	minimum elong	12803 Jul 07 13:51	25°♊31'41	1°50'02
max. Earth dist.	12797 Apr 22 09:26	9°♊57'16	10.46242 AU	max. Earth dist.	12803 Jul 07 21:29	25°♊34'02	10.66212 AU
morning rise	12797 May 09 23:41	12°♊08'34		morning rise	12803 Jul 24 09:37	27°♊35'06	
	12797 Jun 03 11:16	15°♊			12803 Aug 14 06:31	0°♊	
retrograde	12797 Aug 19 07:25	19°♊42'36		retrograde	12803 Nov 04 01:04	5°♊03'57	
opposition	12797 Oct 26 10:24	16°♊20'49	-0°47'34	opposition	12804 Jan 12 16:23	1°♊42'36	-2°13'45
min. Earth dist.	12797 Oct 26 16:05	16°♊19'43	8.47815 AU	min. Earth dist.	12804 Jan 12 08:55	1°♊44'02	8.67558 AU
	12797 Nov 13 05:25	15°♊			12804 Feb 05 07:07	30°♊	
direct	12798 Jan 04 02:03	12°♊55'29		direct	12804 Mar 22 04:32	28°♊21'34	
	12798 Feb 23 09:20	15°♊			12804 May 05 16:47	0°♊	
evening set	12798 Apr 18 15:56	20°♊40'35		evening set	12804 Jul 02 05:01	5°♊46'53	
conjunction	12798 May 05 21:33	22°♊48'50	-0°49'38	conjunction	12804 Jul 19 00:44	7°♊49'55	-1°46'44
minimum elong	12798 May 05 21:31	22°♊48'50	0°50'20	minimum elong	12804 Jul 19 00:45	7°♊49'55	1°47'33
max. Earth dist.	12798 May 05 15:31	22°♊46'57	10.49451 AU	max. Earth dist.	12804 Jul 19 09:45	7°♊52'41	10.68470 AU
morning rise	12798 May 23 00:19	24°♊56'18		morning rise	12804 Aug 04 21:09	9°♊53'08	
	12798 Jul 09 00:41	0°♊			12804 Sep 22 15:33	15°♊	
retrograde	12798 Sep 01 11:05	2°♊28'59		retrograde	12804 Nov 15 21:18	17°♊21'53	
	12798 Oct 28 08:36	30°♊			12805 Jan 11 08:46	15°♊	
opposition	12798 Nov 08 18:37	29°♊07'33	-1°14'15	opposition	12805 Jan 24 15:53	14°♊00'16	-2°07'42
min. Earth dist.	12798 Nov 08 22:18	29°♊06'50	8.51195 AU	min. Earth dist.	12805 Jan 24 07:47	14°♊01'48	8.69429 AU
direct	12799 Jan 17 10:43	25°♊42'58		direct	12805 Apr 03 23:38	10°♊39'38	
	12799 Apr 01 20:41	0°♊			12805 Jun 17 18:39	15°♊	
evening set	12799 May 01 18:19	3°♊25'07		evening set	12805 Jul 14 14:35	18°♊02'17	
conjunction	12799 May 18 21:05	5°♊32'13	-1°09'47	conjunction	12805 Jul 31 10:51	20°♊05'12	-1°39'29
minimum elong	12799 May 18 21:03	5°♊32'12	1°10'37	minimum elong	12805 Jul 31 10:53	20°♊05'13	1°40'10
max. Earth dist.	12799 May 18 17:37	5°♊31'08	10.52924 AU	max. Earth dist.	12805 Jul 31 20:27	20°♊08'08	10.69940 AU
morning rise	12799 Jun 04 21:28	7°♊38'39		morning rise	12805 Aug 17 08:37	22°♊08'31	
retrograde	12799 Sep 14 11:09	15°♊10'10		retrograde	12805 Nov 28 14:58	29°♊37'31	
opposition	12799 Nov 22 01:57	11°♊48'59	-1°37'05	opposition	12806 Feb 06 13:52	26°♊15'33	-1°55'51
min. Earth dist.	12799 Nov 22 03:51	11°♊48'37	8.54772 AU	min. Earth dist.	12806 Feb 06 05:07	26°♊17'13	8.70462 AU
direct	12800 Jan 30 18:56	8°♊25'11		direct	12806 Apr 16 17:04	22°♊55'13	
evening set	12800 May 13 17:13	16°♊04'06			12806 Jul 24 18:22	0°♊	
				evening set	12806 Jul 26 23:21	0°♊	
conjunction	12800 May 30 17:21	18°♊10'02	-1°26'25				

conjunction	12806 Aug 12 20:59	2° \mathbb{M} 18'52	-1°27'44	min. Earth dist.	12812 Apr 22 01:18	10° \mathbb{M} 00'50	8.61671 AU
minimum elong	12806 Aug 12 21:01	2° \mathbb{M} 18'53	1°28'15	direct	12812 Jun 29 11:40	6° \mathbb{M} 37'35	
max. Earth dist.	12806 Aug 13 07:42	2° \mathbb{M} 22'09	10.70585 AU	evening set	12812 Oct 08 09:05	14° \mathbb{M} 00'34	
morning rise	12806 Aug 29 20:36	4° \mathbb{M} 22'30			12812 Oct 16 13:49	15° \mathbb{M}	
retrograde	12806 Dec 11 09:35	11° \mathbb{M} 52'07					
opposition	12807 Feb 19 10:41	8° \mathbb{M} 29'40	-1°38'46	conjunction	12812 Oct 25 19:51	16° \mathbb{M} 07'52	0°37'48
min. Earth dist.	12807 Feb 19 00:50	8° \mathbb{M} 31'33	8.70684 AU	minimum elong	12812 Oct 25 19:50	16° \mathbb{M} 07'51	0°38'26
direct	12807 Apr 29 10:54	5° \mathbb{M} 09'28		max. Earth dist.	12812 Oct 26 04:11	16° \mathbb{M} 10'25	10.60070 AU
evening set	12807 Aug 08 08:06	12° \mathbb{M} 28'31		morning rise	12812 Nov 12 09:17	18° \mathbb{M} 15'59	
				retrograde	12813 Feb 24 21:04	25° \mathbb{M} 53'52	
conjunction	12807 Aug 25 07:41	14° \mathbb{M} 32'01	-1°12'01	opposition	12813 May 05 03:57	22° \mathbb{M} 28'34	1°00'22
minimum elong	12807 Aug 25 07:44	14° \mathbb{M} 32'01	1°12'22	min. Earth dist.	12813 May 04 21:52	22° \mathbb{M} 29'45	8.58428 AU
max. Earth dist.	12807 Aug 25 20:02	14° \mathbb{M} 35'47	10.70445 AU	direct	12813 Jul 12 04:24	19° \mathbb{M} 06'06	
morning rise	12807 Sep 11 09:31	16° \mathbb{M} 36'10		evening set	12813 Oct 21 09:32	26° \mathbb{M} 32'08	
retrograde	12807 Dec 24 06:06	24° \mathbb{M} 06'37					
opposition	12808 Mar 03 06:22	20° \mathbb{M} 43'37	-1°17'14	conjunction	12813 Nov 07 22:01	28° \mathbb{M} 40'18	0°59'03
min. Earth dist.	12808 Mar 02 19:33	20° \mathbb{M} 45'41	8.70139 AU	minimum elong	12813 Nov 07 21:59	28° \mathbb{M} 40'17	0°59'50
direct	12808 May 11 01:31	17° \mathbb{M} 23'24		max. Earth dist.	12813 Nov 08 04:08	28° \mathbb{M} 42'11	10.56686 AU
evening set	12808 Aug 19 17:58	24° \mathbb{M} 41'37			12813 Nov 18 18:15	0° \mathbb{M}	
				morning rise	12813 Nov 25 12:53	0° \mathbb{M} 49'13	
conjunction	12808 Sep 05 19:43	26° \mathbb{M} 45'41	-0°53'01	retrograde	12814 Mar 10 00:58	8° \mathbb{M} 28'57	
minimum elong	12808 Sep 05 19:45	26° \mathbb{M} 45'41	0°53'10	opposition	12814 May 18 00:23	5° \mathbb{M} 03'27	1°25'07
max. Earth dist.	12808 Sep 06 08:25	26° \mathbb{M} 49'33	10.69563 AU	min. Earth dist.	12814 May 17 20:21	5° \mathbb{M} 04'14	8.54986 AU
morning rise	12808 Sep 23 00:01	28° \mathbb{M} 50'31		direct	12814 Jul 24 21:57	1° \mathbb{M} 40'16	
	12808 Oct 02 20:50	0° \mathbb{M}		evening set	12814 Nov 03 14:12	9° \mathbb{M} 09'55	
retrograde	12809 Jan 05 02:17	6° \mathbb{M} 22'00					
opposition	12809 Mar 16 01:10	2° \mathbb{M} 58'28	-0°52'10	conjunction	12814 Nov 21 04:03	11° \mathbb{M} 18'55	1°17'36
min. Earth dist.	12809 Mar 15 14:37	3° \mathbb{M} 00'29	8.68887 AU	minimum elong	12814 Nov 21 04:01	11° \mathbb{M} 18'54	1°18'29
	12809 May 02 22:31	30° \mathbb{R} \mathbb{M}		max. Earth dist.	12814 Nov 21 06:45	11° \mathbb{M} 19'45	10.53182 AU
direct	12809 May 23 14:33	29° \mathbb{M} 38'01		morning rise	12814 Dec 08 20:03	13° \mathbb{M} 28'34	
	12809 Jun 13 04:00	0° \mathbb{M}		retrograde	12815 Mar 23 05:13	21° \mathbb{M} 10'00	
evening set	12809 Sep 01 05:34	6° \mathbb{M} 56'14		opposition	12815 May 30 22:05	17° \mathbb{M} 44'26	1°45'55
				min. Earth dist.	12815 May 30 20:55	17° \mathbb{M} 44'40	8.51511 AU
conjunction	12809 Sep 18 09:32	9° \mathbb{M} 00'59	-0°31'34	direct	12815 Aug 06 19:12	14° \mathbb{M} 20'31	
minimum elong	12809 Sep 18 09:33	9° \mathbb{M} 01'00	0°31'31	evening set	12815 Nov 16 22:48	21° \mathbb{M} 54'11	
max. Earth dist.	12809 Sep 18 21:22	9° \mathbb{M} 04'35	10.68006 AU				
morning rise	12809 Oct 05 16:29	11° \mathbb{M} 06'36		conjunction	12815 Dec 04 13:49	24° \mathbb{M} 03'58	1°32'28
retrograde	12810 Jan 17 22:44	18° \mathbb{M} 39'23		minimum elong	12815 Dec 04 13:47	24° \mathbb{M} 03'57	1°33'25
opposition	12810 Mar 28 19:44	15° \mathbb{M} 15'20	-0°24'37	max. Earth dist.	12815 Dec 04 13:17	24° \mathbb{M} 03'48	10.49728 AU
min. Earth dist.	12810 Mar 28 10:13	15° \mathbb{M} 17'10	8.67003 AU	morning rise	12815 Dec 22 06:32	26° \mathbb{M} 14'16	
direct	12810 Jun 05 05:13	11° \mathbb{M} 54'32			12816 Jan 24 17:02	0° \mathbb{M}	
evening set	12810 Sep 13 19:24	19° \mathbb{M} 13'31		retrograde	12816 Apr 04 10:43	3° \mathbb{M} 57'11	
				opposition	12816 Jun 11 21:28	0° \mathbb{M} 31'41	2°01'41
conjunction	12810 Oct 01 01:42	21° \mathbb{M} 19'04	-0°08'38	min. Earth dist.	12816 Jun 11 22:37	0° \mathbb{M} 31'27	8.48174 AU
minimum elong	12810 Oct 01 01:42	21° \mathbb{M} 19'04	0°08'23		12816 Jun 18 13:24	30° \mathbb{R} \mathbb{M}	
behind sun begin	12810 Sep 30 19:26	21° \mathbb{M} 17'11		direct	12816 Aug 18 19:43	27° \mathbb{M} 07'03	
behind sun end	12810 Oct 01 07:59	21° \mathbb{M} 20'58			12816 Oct 16 19:24	0° \mathbb{M}	
max. Earth dist.	12810 Oct 01 12:14	21° \mathbb{M} 22'16	10.65849 AU	evening set	12816 Nov 29 10:50	4° \mathbb{M} 44'48	
morning rise	12810 Oct 18 11:14	23° \mathbb{M} 25'32					
	12810 Dec 27 03:23	0° \mathbb{M}		conjunction	12816 Dec 17 02:50	6° \mathbb{M} 55'20	1°42'50
retrograde	12811 Jan 30 20:35	0° \mathbb{M} 59'51		minimum elong	12816 Dec 17 02:48	6° \mathbb{M} 55'19	1°43'49
asc. node	12811 Feb 16 12:01	0° \mathbb{M} 45'56		max. Earth dist.	12816 Dec 16 23:51	6° \mathbb{M} 54'24	10.46501 AU
	12811 Mar 06 22:22	30° \mathbb{R} \mathbb{M}		morning rise	12817 Jan 03 19:48	9° \mathbb{M} 06'10	
opposition	12811 Apr 10 14:10	27° \mathbb{M} 35'18	0°04'10	retrograde	12817 Apr 17 18:54	16° \mathbb{M} 50'15	
min. Earth dist.	12811 Apr 10 05:55	27° \mathbb{M} 36'54	8.64568 AU	opposition	12817 Jun 24 22:36	13° \mathbb{M} 24'55	2°11'28
direct	12811 Jun 17 19:48	24° \mathbb{M} 14'02		min. Earth dist.	12817 Jun 25 01:28	13° \mathbb{M} 24'21	8.45147 AU
	12811 Sep 13 00:29	0° \mathbb{M}		direct	12817 Aug 31 21:58	9° \mathbb{M} 59'41	
evening set	12811 Sep 26 12:26	1° \mathbb{M} 34'38		evening set	12817 Dec 13 02:06	17° \mathbb{M} 41'24	
conjunction	12811 Oct 13 21:05	3° \mathbb{M} 41'02	0°14'55	conjunction	12817 Dec 30 18:53	19° \mathbb{M} 52'34	1°48'04
minimum elong	12811 Oct 13 21:05	3° \mathbb{M} 41'02	0°15'22	minimum elong	12817 Dec 30 18:52	19° \mathbb{M} 52'33	1°49'01
behind sun begin	12811 Oct 13 19:03	3° \mathbb{M} 40'25		max. Earth dist.	12817 Dec 30 13:57	19° \mathbb{M} 51'01	10.43681 AU
behind sun end	12811 Oct 13 23:06	3° \mathbb{M} 41'39		morning rise	12818 Jan 17 11:48	22° \mathbb{M} 03'51	
max. Earth dist.	12811 Oct 14 06:43	3° \mathbb{M} 43'58	10.63170 AU	retrograde	12818 May 01 03:59	29° \mathbb{M} 48'35	
morning rise	12811 Oct 31 08:47	5° \mathbb{M} 48'21		opposition	12818 Jul 08 01:30	26° \mathbb{M} 23'34	2°14'38
retrograde	12812 Feb 12 19:26	13° \mathbb{M} 24'23		min. Earth dist.	12818 Jul 08 05:51	26° \mathbb{M} 22'42	8.42596 AU
opposition	12812 Apr 22 08:38	9° \mathbb{M} 59'24	0°32'56	direct	12818 Sep 14 03:18	22° \mathbb{M} 57'49	

	12818 Dec 20 21:25	0°♊	conjunction	12825 Apr 03 19:57	21°♊32'51	0°08'24
evening set	12818 Dec 26 19:52	0°♊43'07	minimum elong	12825 Apr 03 19:58	21°♊32'52	0°08'09
			behind sun begin	12825 Apr 03 13:36	21°♊30'53	
conjunction	12819 Jan 13 13:07	2°♊54'49 1°47'48	behind sun end	12825 Apr 04 02:20	21°♊34'50	
minimum elong	12819 Jan 13 13:08	2°♊54'49 1°48'40	max. Earth dist.	12825 Apr 03 08:01	21°♊29'07	10.42614 AU
max. Earth dist.	12819 Jan 13 05:59	2°♊52'35 10.41418 AU	morning rise	12825 Apr 21 04:49	23°♊42'47	
morning rise	12819 Jan 31 05:46	5°♊06'25		12825 Jun 22 18:14	0°♊	
retrograde	12819 May 14 14:04	12°♊51'17	retrograde	12825 Jul 31 16:57	1°♊19'36	
opposition	12819 Jul 21 06:18	9°♊26'40 2°10'54	desc. node	12825 Aug 10 14:26	1°♊14'21	
min. Earth dist.	12819 Jul 21 12:37	9°♊25'25 8.40650 AU		12825 Sep 09 11:09	30°♊♊	
direct	12819 Sep 27 11:06	6°♊00'30	opposition	12825 Oct 07 10:18	27°♊57'41	-0°04'46
evening set	12820 Jan 09 15:16	13°♊48'48	min. Earth dist.	12825 Oct 07 19:39	27°♊55'51	8.43638 AU
	12820 Jan 19 05:42	15°♊	direct	12825 Dec 15 18:46	24°♊31'47	
				12826 Mar 10 22:16	0°♊	
conjunction	12820 Jan 27 08:34	16°♊00'52 1°41'58	evening set	12826 Mar 30 19:29	2°♊21'00	
minimum elong	12820 Jan 27 08:36	16°♊00'52 1°42'43				
max. Earth dist.	12820 Jan 26 22:55	15°♊57'51 10.39825 AU	conjunction	12826 Apr 17 05:01	4°♊30'56	-0°16'12
morning rise	12820 Feb 14 00:44	18°♊12'39	minimum elong	12826 Apr 17 05:00	4°♊30'56	0°16'40
retrograde	12820 May 27 01:00	25°♊57'01	max. Earth dist.	12826 Apr 16 17:44	4°♊27'25	10.44757 AU
opposition	12820 Aug 02 12:46	22°♊32'54 2°00'21	morning rise	12826 May 04 11:32	6°♊40'02	
min. Earth dist.	12820 Aug 02 21:01	22°♊31'15 8.39413 AU	retrograde	12826 Aug 13 21:21	14°♊15'26	
direct	12820 Oct 09 20:38	19°♊06'25	opposition	12826 Oct 20 20:11	10°♊53'51	-0°34'47
evening set	12821 Jan 22 11:16	26°♊56'54	min. Earth dist.	12826 Oct 21 04:42	10°♊52'12	8.45997 AU
			direct	12826 Dec 29 08:38	7°♊28'26	
conjunction	12821 Feb 09 04:19	29°♊09'10 1°30'50		12827 Apr 11 00:55	15°♊	
minimum elong	12821 Feb 09 04:22	29°♊09'11 1°31'24	evening set	12827 Apr 13 03:58	15°♊15'35	
max. Earth dist.	12821 Feb 08 16:36	29°♊05'29 10.38991 AU				
	12821 Feb 15 22:43	0°♊	conjunction	12827 Apr 30 10:44	17°♊24'31	-0°39'48
morning rise	12821 Feb 26 19:48	1°♊20'58	minimum elong	12827 Apr 30 10:43	17°♊24'30	0°40'26
retrograde	12821 Jun 09 10:25	9°♊04'17	max. Earth dist.	12827 Apr 30 01:05	17°♊21'29	10.47311 AU
opposition	12821 Aug 15 20:33	5°♊40'40 1°43'31	morning rise	12827 May 17 14:50	19°♊32'39	
min. Earth dist.	12821 Aug 16 06:10	5°♊38'45 8.38952 AU	retrograde	12827 Aug 27 01:04	27°♊06'48	
direct	12821 Oct 23 09:55	2°♊14'00	opposition	12827 Nov 03 05:47	23°♊45'24	-1°02'51
evening set	12822 Feb 05 06:52	10°♊05'47	min. Earth dist.	12827 Nov 03 12:09	23°♊44'10	8.48748 AU
			direct	12828 Jan 11 20:51	20°♊20'32	
conjunction	12822 Feb 22 23:23	12°♊18'00 1°14'57	evening set	12828 Apr 25 08:51	28°♊05'01	
minimum elong	12822 Feb 22 23:26	12°♊18'01 1°15'19		12828 May 10 19:46	0°♊	
max. Earth dist.	12822 Feb 22 10:27	12°♊13'57 10.38943 AU				
morning rise	12822 Mar 12 13:51	14°♊29'38	conjunction	12828 May 12 12:54	0°♊12'52	-1°01'17
retrograde	12822 Jun 22 18:25	22°♊11'29	minimum elong	12828 May 12 12:52	0°♊12'51	1°02'04
opposition	12822 Aug 29 05:16	18°♊48'19 1°21'17	max. Earth dist.	12828 May 12 06:15	0°♊10'47	10.50201 AU
min. Earth dist.	12822 Aug 29 15:16	18°♊46'20 8.39249 AU	morning rise	12828 May 29 14:35	2°♊20'00	
direct	12822 Nov 06 00:55	15°♊21'38	retrograde	12828 Sep 08 02:44	9°♊53'01	
evening set	12823 Feb 19 01:20	23°♊13'46	opposition	12828 Nov 15 14:28	6°♊31'40	-1°27'37
			min. Earth dist.	12828 Nov 15 18:02	6°♊30'59	8.51782 AU
conjunction	12823 Mar 08 16:53	25°♊25'44 0°55'10	direct	12829 Jan 24 07:44	3°♊07'23	
minimum elong	12823 Mar 08 16:55	25°♊25'44 0°55'20	evening set	12829 May 08 10:16	10°♊48'49	
max. Earth dist.	12823 Mar 08 03:57	25°♊21'40 10.39617 AU				
morning rise	12823 Mar 26 05:48	27°♊36'57	conjunction	12829 May 25 11:47	12°♊55'32	-1°19'37
	12823 Apr 15 08:42	0°♊	minimum elong	12829 May 25 11:45	12°♊55'31	1°20'31
retrograde	12823 Jul 06 02:37	5°♊17'04	max. Earth dist.	12829 May 25 08:42	12°♊54'34	10.53300 AU
opposition	12823 Sep 11 14:33	1°♊54'20 0°54'50	morning rise	12829 Jun 11 11:10	15°♊01'40	
min. Earth dist.	12823 Sep 12 00:20	1°♊52'24 8.40215 AU	retrograde	12829 Sep 21 03:40	22°♊33'40	
	12823 Oct 07 03:52	30°♊♊	opposition	12829 Nov 28 21:50	19°♊12'17	-1°47'55
direct	12823 Nov 19 15:25	28°♊27'46	min. Earth dist.	12829 Nov 28 22:37	19°♊12'08	8.54955 AU
	12824 Jan 01 09:26	0°♊	direct	12830 Feb 06 16:02	15°♊48'35	
evening set	12824 Mar 03 17:51	6°♊19'28	evening set	12830 May 21 08:09	23°♊26'40	
conjunction	12824 Mar 21 07:55	8°♊30'57 0°32'34	conjunction	12830 Jun 07 07:21	25°♊32'19	-1°34'00
minimum elong	12824 Mar 21 07:56	8°♊30'58 0°32'32	minimum elong	12830 Jun 07 07:20	25°♊32'19	1°34'57
max. Earth dist.	12824 Mar 20 19:26	8°♊27'02 10.40887 AU	max. Earth dist.	12830 Jun 07 07:34	25°♊32'23	10.56462 AU
morning rise	12824 Apr 07 18:55	10°♊41'35	morning rise	12830 Jun 24 04:55	27°♊37'32	
retrograde	12824 Jul 18 11:19	18°♊19'58		12830 Jul 14 11:40	0°♊	
opposition	12824 Sep 24 00:19	14°♊57'39 0°25'38	retrograde	12830 Oct 04 03:51	5°♊08'41	
min. Earth dist.	12824 Sep 24 09:54	14°♊55'46 8.41709 AU	opposition	12830 Dec 12 03:58	1°♊47'11	-2°02'52
direct	12824 Dec 02 04:22	11°♊31'21	min. Earth dist.	12830 Dec 12 02:34	1°♊47'27	8.58122 AU
evening set	12825 Mar 17 07:54	19°♊22'02		12831 Jan 05 17:20	30°♊♊	

direct	12831 Feb 19 20:51	28° Π 24'04	evening set	12837 Aug 14 20:25	19° Π 46'23
	12831 Apr 04 20:20	0° \mathfrak{D}			
evening set	12831 Jun 03 02:25	5° \mathfrak{D} 58'37	conjunction	12837 Aug 31 21:04	21° Π 50'14 -1°01'23
			minimum elong	12837 Aug 31 21:06	21° Π 50'15 1°01'37
conjunction	12831 Jun 19 23:42	8° \mathfrak{D} 03'21 -1°43'47	max. Earth dist.	12837 Sep 01 10:20	21° Π 54'17 10.69262 AU
minimum elong	12831 Jun 19 23:41	8° \mathfrak{D} 03'20 1°44'46	morning rise	12837 Sep 18 00:27	23° Π 54'51
max. Earth dist.	12831 Jun 20 02:23	8° \mathfrak{D} 04'11 10.59547 AU		12837 Nov 19 01:07	0° \mathfrak{A}
morning rise	12831 Jul 06 20:11	10° \mathfrak{D} 07'49	retrograde	12837 Dec 30 22:51	1° \mathfrak{A} 25'59
retrograde	12831 Oct 17 01:08	17° \mathfrak{D} 38'17		12838 Feb 11 17:47	30° \mathfrak{R} Π
opposition	12831 Dec 25 08:26	14° \mathfrak{D} 16'37 -2°11'52	opposition	12838 Mar 11 00:02	28° Π 02'31 -1°03'06
min. Earth dist.	12831 Dec 25 05:01	14° \mathfrak{D} 17'16 8.61137 AU	min. Earth dist.	12838 Mar 10 12:35	28° Π 04'43 8.69097 AU
direct	12832 Mar 03 23:21	10° \mathfrak{D} 54'03	direct	12838 May 18 15:58	24° Π 42'04
evening set	12832 Jun 14 17:39	18° \mathfrak{D} 25'08		12838 Aug 09 22:49	0° \mathfrak{A}
			evening set	12838 Aug 27 07:01	2° \mathfrak{A} 00'19
conjunction	12832 Jul 01 13:45	20° \mathfrak{D} 29'07 -1°48'38			
minimum elong	12832 Jul 01 13:45	20° \mathfrak{D} 29'07 1°49'35	conjunction	12838 Sep 13 10:02	4° \mathfrak{A} 04'45 -0°40'51
max. Earth dist.	12832 Jul 01 18:49	20° \mathfrak{D} 30'41 10.62417 AU	minimum elong	12838 Sep 13 10:04	4° \mathfrak{A} 04'46 0°40'54
morning rise	12832 Jul 18 09:51	22° \mathfrak{D} 33'03	max. Earth dist.	12838 Sep 14 00:02	4° \mathfrak{A} 09'01 10.68700 AU
	12832 Oct 21 04:53	0° \mathfrak{Q}	morning rise	12838 Sep 30 15:52	6° \mathfrak{A} 10'01
retrograde	12832 Oct 28 20:59	0° \mathfrak{Q} 03'02	retrograde	12839 Jan 12 19:28	13° \mathfrak{A} 42'10
	12832 Nov 05 14:32	30° \mathfrak{R} \mathfrak{D}	opposition	12839 Mar 23 18:34	10° \mathfrak{A} 18'22 -0°36'28
opposition	12833 Jan 06 10:54	26° \mathfrak{D} 41'07 -2°14'37	min. Earth dist.	12839 Mar 23 06:51	10° \mathfrak{A} 20'37 8.68192 AU
min. Earth dist.	12833 Jan 06 05:16	26° \mathfrak{D} 42'12 8.63852 AU	direct	12839 May 31 06:54	6° \mathfrak{A} 57'53
direct	12833 Mar 17 00:49	23° \mathfrak{D} 19'05	evening set	12839 Sep 08 19:43	14° \mathfrak{A} 16'18
	12833 Jun 20 17:03	0° \mathfrak{Q}			
evening set	12833 Jun 27 06:12	0° \mathfrak{Q} 46'53	conjunction	12839 Sep 26 01:08	16° \mathfrak{A} 21'27 -0°18'26
			minimum elong	12839 Sep 26 01:09	16° \mathfrak{A} 21'28 0°18'16
conjunction	12833 Jul 14 02:00	2° \mathfrak{Q} 50'22 -1°48'24	max. Earth dist.	12839 Sep 26 15:06	16° \mathfrak{A} 25'42 10.67498 AU
minimum elong	12833 Jul 14 02:01	2° \mathfrak{Q} 50'22 1°49'16	morning rise	12839 Oct 13 09:25	18° \mathfrak{A} 27'28
max. Earth dist.	12833 Jul 14 09:52	2° \mathfrak{Q} 52'47 10.64924 AU	retrograde	12840 Jan 25 18:22	26° \mathfrak{A} 00'50
morning rise	12833 Jul 30 22:18	4° \mathfrak{Q} 53'58	opposition	12840 Apr 04 12:46	22° \mathfrak{A} 36'45 -0°08'05
retrograde	12833 Nov 10 17:28	12° \mathfrak{Q} 23'43	min. Earth dist.	12840 Apr 04 01:36	22° \mathfrak{A} 38'55 8.66677 AU
opposition	12834 Jan 19 11:41	9° \mathfrak{Q} 01'30 -2°11'08	direct	12840 Jun 11 19:27	19° \mathfrak{A} 16'06
min. Earth dist.	12834 Jan 19 03:23	9° \mathfrak{Q} 03'05 8.66122 AU	asc. node	12840 Jul 18 09:21	20° \mathfrak{A} 24'53
direct	12834 Mar 29 22:24	5° \mathfrak{Q} 40'00	evening set	12840 Sep 20 11:19	26° \mathfrak{A} 35'32
evening set	12834 Jul 09 16:41	13° \mathfrak{Q} 04'45			
	12834 Jul 25 10:54	15° \mathfrak{Q}	conjunction	12840 Oct 07 18:53	28° \mathfrak{A} 41'25 0°05'01
conjunction	12834 Jul 26 12:53	15° \mathfrak{Q} 07'59 -1°43'10	minimum elong	12840 Oct 07 18:53	28° \mathfrak{A} 41'25 0°05'23
minimum elong	12834 Jul 26 12:55	15° \mathfrak{Q} 07'59 1°43'55	behind sun begin	12840 Oct 07 11:59	28° \mathfrak{A} 39'20
max. Earth dist.	12834 Jul 26 23:47	15° \mathfrak{Q} 11'20 10.66937 AU	behind sun end	12840 Oct 08 01:47	28° \mathfrak{A} 43'30
morning rise	12834 Aug 12 10:02	17° \mathfrak{Q} 11'31	max. Earth dist.	12840 Oct 08 07:16	28° \mathfrak{A} 45'11 10.65707 AU
retrograde	12834 Nov 23 13:16	24° \mathfrak{Q} 41'15		12840 Oct 18 13:08	0° \mathfrak{M}
opposition	12835 Feb 01 10:51	21° \mathfrak{Q} 18'44 -2°01'38	morning rise	12840 Oct 25 05:28	0° \mathfrak{M} 48'12
min. Earth dist.	12835 Feb 01 00:35	21° \mathfrak{Q} 20'42 8.67839 AU	retrograde	12841 Feb 06 16:41	8° \mathfrak{M} 22'57
direct	12835 Apr 11 16:50	17° \mathfrak{Q} 57'41	opposition	12841 Apr 17 07:01	4° \mathfrak{M} 58'39 0°20'48
evening set	12835 Jul 22 02:05	25° \mathfrak{Q} 19'51	min. Earth dist.	12841 Apr 16 21:40	5° \mathfrak{M} 00'28 8.64620 AU
			direct	12841 Jun 24 09:55	1° \mathfrak{M} 37'40
conjunction	12835 Aug 07 23:17	27° \mathfrak{Q} 23'04 -1°33'15	evening set	12841 Oct 03 06:11	8° \mathfrak{M} 58'56
minimum elong	12835 Aug 07 23:19	27° \mathfrak{Q} 23'05 1°33'51			
max. Earth dist.	12835 Aug 08 11:47	27° \mathfrak{Q} 26'54 10.68368 AU	conjunction	12841 Oct 20 15:45	11° \mathfrak{M} 05'35 0°28'11
morning rise	12835 Aug 24 22:01	29° \mathfrak{Q} 26'46	minimum elong	12841 Oct 20 15:44	11° \mathfrak{M} 05'35 0°28'45
	12835 Aug 29 13:45	0° \mathfrak{M}	max. Earth dist.	12841 Oct 21 01:31	11° \mathfrak{M} 08'34 10.63406 AU
retrograde	12835 Dec 06 08:56	6° \mathfrak{M} 56'43	morning rise	12841 Nov 07 04:23	13° \mathfrak{M} 13'08
opposition	12836 Feb 14 08:24	3° \mathfrak{M} 33'53 -1°46'39		12841 Nov 22 11:38	15° \mathfrak{M}
min. Earth dist.	12836 Feb 13 21:20	3° \mathfrak{M} 36'00 8.68932 AU	retrograde	12842 Feb 19 16:14	20° \mathfrak{M} 49'25
direct	12836 Apr 23 09:53	0° \mathfrak{M} 13'09	opposition	12842 Apr 30 01:46	17° \mathfrak{M} 24'55 0°48'52
evening set	12836 Aug 02 11:04	7° \mathfrak{M} 33'18	min. Earth dist.	12842 Apr 29 18:41	17° \mathfrak{M} 26'18 8.62102 AU
				12842 Jun 03 16:49	15° \mathfrak{R} \mathfrak{M}
conjunction	12836 Aug 19 09:46	9° \mathfrak{M} 36'46 -1°19'06	direct	12842 Jul 07 02:28	14° \mathfrak{M} 03'25
minimum elong	12836 Aug 19 09:48	9° \mathfrak{M} 36'47 1°19'32		12842 Aug 09 01:44	15° \mathfrak{M}
max. Earth dist.	12836 Aug 19 22:40	9° \mathfrak{M} 40'42 10.69154 AU	evening set	12842 Oct 16 04:32	21° \mathfrak{M} 27'10
morning rise	12836 Sep 05 10:43	11° \mathfrak{M} 40'50			
retrograde	12836 Dec 18 04:15	19° \mathfrak{M} 11'13	conjunction	12842 Nov 02 16:01	23° \mathfrak{M} 34'38 0°50'12
opposition	12837 Feb 26 04:44	15° \mathfrak{M} 48'05 -1°26'50	minimum elong	12842 Nov 02 15:59	23° \mathfrak{M} 34'38 0°50'56
min. Earth dist.	12837 Feb 25 17:36	15° \mathfrak{M} 50'13 8.69353 AU	max. Earth dist.	12842 Nov 02 23:18	23° \mathfrak{M} 36'52 10.60658 AU
direct	12837 May 06 00:53	12° \mathfrak{M} 27'33	morning rise	12842 Nov 20 06:17	25° \mathfrak{M} 42'55
				12842 Dec 29 12:19	0° \mathfrak{J}

retrograde	12843 Mar 04 17:57	3°♊20'47		min. Earth dist.	12849 Jul 28 08:07	16°♊57'46	8.41122 AU
opposition	12843 May 12 21:08	29°♊56'06	1°14'48		12849 Aug 23 14:53	15°♊	
	12843 May 12 01:12	30°♊		direct	12849 Oct 04 08:17	13°♊33'00	
min. Earth dist.	12843 May 12 16:15	29°♊57'03	8.59166 AU		12849 Nov 14 12:58	15°♊	
direct	12843 Jul 19 19:49	26°♊33'57		evening set	12850 Jan 16 15:47	21°♊21'28	
	12843 Sep 22 21:01	0°♊					
evening set	12843 Oct 29 06:49	4°♊00'52		conjunction	12850 Feb 03 09:04	23°♊33'26	1°36'24
				minimum elong	12850 Feb 03 09:07	23°♊33'27	1°37'02
conjunction	12843 Nov 15 19:58	6°♊09'08	1°09'57	max. Earth dist.	12850 Feb 02 21:35	23°♊29'51	10.40259 AU
minimum elong	12843 Nov 15 19:55	6°♊09'07	1°10'48	morning rise	12850 Feb 21 00:49	25°♊45'02	
max. Earth dist.	12843 Nov 16 00:42	6°♊10'35	10.57505 AU		12850 Mar 30 21:48	0°♋	
morning rise	12843 Dec 03 11:19	8°♊18'06		retrograde	12850 Jun 03 18:10	3°♋27'57	
retrograde	12844 Mar 16 20:30	15°♊57'34		opposition	12850 Aug 10 05:58	0°♋03'53	1°51'44
opposition	12844 May 24 17:23	12°♊32'45	1°37'21	min. Earth dist.	12850 Aug 10 15:13	0°♋02'02	8.39786 AU
min. Earth dist.	12844 May 24 14:32	12°♊33'19	8.55868 AU		12850 Aug 11 01:27	30°♋	
direct	12844 Jul 31 15:49	9°♊09'54		direct	12850 Oct 17 18:29	26°♋37'04	
evening set	12844 Nov 10 12:55	16°♊40'32			12850 Dec 21 11:36	0°♋	
				evening set	12851 Jan 30 10:42	4°♋27'25	
conjunction	12844 Nov 28 03:24	18°♊49'36	1°26'27				
minimum elong	12844 Nov 28 03:22	18°♊49'36	1°27'23	conjunction	12851 Feb 17 03:39	6°♋39'32	1°22'36
max. Earth dist.	12844 Nov 28 05:11	18°♊50'09	10.54054 AU	minimum elong	12851 Feb 17 03:42	6°♋39'33	1°23'04
morning rise	12844 Dec 15 19:28	20°♊59'13		max. Earth dist.	12851 Feb 16 14:59	6°♋35'34	10.39326 AU
retrograde	12845 Mar 30 01:49	28°♊40'17		morning rise	12851 Mar 06 18:27	8°♋51'05	
opposition	12845 Jun 06 15:16	25°♊15'26	1°55'20	retrograde	12851 Jun 17 02:39	16°♋32'54	
min. Earth dist.	12845 Jun 06 14:49	25°♊15'31	8.52377 AU	opposition	12851 Aug 23 13:26	13°♋09'12	1°31'53
direct	12845 Aug 13 13:15	21°♊51'50		min. Earth dist.	12851 Aug 23 23:46	13°♋07'08	8.39219 AU
evening set	12845 Nov 23 22:38	29°♊26'28		direct	12851 Oct 31 06:51	9°♋42'08	
	12845 Nov 28 13:00	0°♋		evening set	12852 Feb 13 04:49	17°♋33'29	
conjunction	12845 Dec 11 14:05	1°♋36'19	1°38'49	conjunction	12852 Mar 01 20:53	19°♋45'31	1°04'31
minimum elong	12845 Dec 11 14:04	1°♋36'18	1°39'47	minimum elong	12852 Mar 01 20:55	19°♋45'31	1°04'47
max. Earth dist.	12845 Dec 11 12:15	1°♋35'45	10.50542 AU	max. Earth dist.	12852 Mar 01 07:08	19°♋41'12	10.39184 AU
morning rise	12845 Dec 29 06:41	3°♋46'32		morning rise	12852 Mar 19 10:27	21°♋56'51	
retrograde	12846 Apr 12 09:22	11°♋28'56		retrograde	12852 Jun 29 10:41	29°♋37'16	
opposition	12846 Jun 19 14:52	8°♋04'07	2°07'46	opposition	12852 Sep 04 21:52	26°♋13'56	1°07'14
min. Earth dist.	12846 Jun 19 17:19	8°♋03'37	8.48952 AU	min. Earth dist.	12852 Sep 05 08:59	26°♋11'43	8.39454 AU
direct	12846 Aug 26 12:35	4°♋39'42		direct	12852 Nov 12 20:04	22°♋46'49	
evening set	12846 Dec 07 11:50	12°♋18'25			12853 Feb 20 15:34	0°♌	
				evening set	12853 Feb 25 21:33	0°♌38'21	
conjunction	12846 Dec 25 04:02	14°♋28'58	1°46'20				
minimum elong	12846 Dec 25 04:01	14°♋28'57	1°47'18	conjunction	12853 Mar 15 12:16	2°♌50'02	0°43'06
max. Earth dist.	12846 Dec 24 22:30	14°♋27'15	10.47222 AU	minimum elong	12853 Mar 15 12:18	2°♌50'03	0°43'09
morning rise	12847 Jan 11 20:53	16°♋39'43		max. Earth dist.	12853 Mar 14 22:08	2°♌45'36	10.39842 AU
retrograde	12847 Apr 25 16:03	24°♋22'59		morning rise	12853 Apr 02 00:19	5°♌00'57	
opposition	12847 Jul 02 16:07	20°♋58'17	2°13'53	retrograde	12853 Jul 12 17:24	12°♌39'47	
min. Earth dist.	12847 Jul 02 21:22	20°♋57'14	8.45822 AU	opposition	12853 Sep 18 06:45	9°♌16'49	0°39'10
direct	12847 Sep 08 17:00	17°♋33'06		min. Earth dist.	12853 Sep 18 17:33	9°♌14'41	8.40481 AU
evening set	12847 Dec 21 03:40	25°♋15'39		direct	12853 Nov 26 09:59	5°♌49'52	
				evening set	12854 Mar 11 12:15	13°♌40'49	
conjunction	12848 Jan 07 20:25	27°♋26'48	1°48'31				
minimum elong	12848 Jan 07 20:26	27°♋26'48	1°49'25	conjunction	12854 Mar 29 01:13	15°♌51'56	0°19'32
max. Earth dist.	12848 Jan 07 11:53	27°♋24'08	10.44302 AU	minimum elong	12854 Mar 29 01:14	15°♌51'56	0°19'22
morning rise	12848 Jan 25 13:13	29°♋37'58		max. Earth dist.	12854 Mar 28 12:02	15°♌47'48	10.41261 AU
	12848 Jan 28 13:54	0°♌		morning rise	12854 Apr 15 11:19	18°♌02'14	
retrograde	12848 May 07 23:28	7°♌21'38		retrograde	12854 Jul 25 22:16	25°♌39'26	
opposition	12848 Jul 14 19:12	3°♌57'06	2°13'15	opposition	12854 Oct 01 16:02	22°♌16'52	0°09'10
min. Earth dist.	12848 Jul 15 02:21	3°♌55'40	8.43167 AU	min. Earth dist.	12854 Oct 02 01:28	22°♌15'00	8.42238 AU
direct	12848 Sep 20 23:58	0°♌31'14		direct	12854 Dec 10 01:03	18°♌50'17	
evening set	12849 Jan 02 21:07	8°♌17'05		desc. node	12855 Jan 22 21:05	20°♌26'37	
				evening set	12855 Mar 25 00:19	26°♌39'55	
conjunction	12849 Jan 20 14:16	10°♌28'43	1°45'10				
minimum elong	12849 Jan 20 14:18	10°♌28'43	1°45'58	conjunction	12855 Apr 11 11:07	28°♌50'14	-0°05'03
max. Earth dist.	12849 Jan 20 04:03	10°♌25'31	10.41943 AU	minimum elong	12855 Apr 11 11:06	28°♌50'14	0°05'26
morning rise	12849 Feb 07 06:42	12°♌40'10		behind sun begin	12855 Apr 11 04:12	28°♌48'06	
	12849 Feb 27 01:06	15°♌		behind sun end	12855 Apr 11 18:01	28°♌52'23	
retrograde	12849 May 21 08:34	20°♌23'45		max. Earth dist.	12855 Apr 11 00:02	28°♌46'47	10.43359 AU
opposition	12849 Jul 27 23:54	16°♌59'24	2°05'46		12855 Apr 20 17:54	0°♍	

morning rise	12855 Apr 28 18:49	0°♄59'42	morning rise	12861 Jul 12 21:26	17°♄00'10
retrograde	12855 Aug 08 03:48	8°♄35'23	retrograde	12861 Oct 23 06:31	24°♄29'48
opposition	12855 Oct 15 01:19	5°♄13'12 -0°21'09	opposition	12861 Dec 31 16:16	21°♄08'35 -2°13'50
min. Earth dist.	12855 Oct 15 08:50	5°♄11'44 8.44636 AU	min. Earth dist.	12861 Dec 31 10:25	21°♄09'42 8.64425 AU
direct	12855 Dec 23 13:39	1°♄47'11	direct	12862 Mar 11 06:48	17°♄46'58
evening set	12856 Apr 06 09:28	9°♄34'51	evening set	12862 Jun 21 18:28	25°♄15'43
conjunction	12856 Apr 23 17:42	11°♄44'13 -0°29'08	conjunction	12862 Jul 08 14:17	27°♄19'13 -1°48'57
minimum elong	12856 Apr 23 17:41	11°♄44'12 0°29'41	minimum elong	12862 Jul 08 14:17	27°♄19'13 1°49'52
max. Earth dist.	12856 Apr 23 09:13	11°♄41'34 10.46031 AU	max. Earth dist.	12862 Jul 08 21:52	27°♄21'33 10.65697 AU
morning rise	12856 May 10 22:51	13°♄52'43	morning rise	12862 Jul 25 10:11	29°♄22'44
	12856 May 20 05:37	15°♄		12862 Jul 30 14:51	0°♄
retrograde	12856 Aug 20 08:28	21°♄26'58	retrograde	12862 Nov 05 03:11	6°♄51'57
opposition	12856 Oct 27 10:17	18°♄05'09 -0°50'13	opposition	12863 Jan 13 17:48	3°♄30'34 -2°13'15
min. Earth dist.	12856 Oct 27 16:11	18°♄04'00 8.47556 AU	min. Earth dist.	12863 Jan 13 10:37	3°♄31'56 8.67080 AU
	12856 Dec 16 01:42	15°♄	direct	12863 Mar 24 04:22	0°♄09'29
direct	12857 Jan 05 00:13	14°♄39'48	evening set	12863 Jul 04 05:41	7°♄35'00
	12857 Jan 24 21:32	15°♄			
evening set	12857 Apr 19 15:22	22°♄25'01	conjunction	12863 Jul 21 01:24	9°♄38'06 -1°46'03
conjunction	12857 May 06 20:48	24°♄33'17 -0°51'39	minimum elong	12863 Jul 21 01:25	9°♄38'07 1°46'51
minimum elong	12857 May 06 20:46	24°♄33'16 0°52'23	max. Earth dist.	12863 Jul 21 10:13	9°♄40'49 10.68052 AU
max. Earth dist.	12857 May 06 14:24	24°♄31'17 10.49141 AU	morning rise	12863 Aug 06 22:03	11°♄41'27
morning rise	12857 May 23 23:30	26°♄40'47		12863 Sep 05 06:46	15°♄
	12857 Jun 21 20:12	0°♄	retrograde	12863 Nov 17 21:33	19°♄10'29
retrograde	12857 Sep 02 10:18	4°♄13'44	opposition	12864 Jan 26 17:32	15°♄48'48 -2°06'33
opposition	12857 Nov 09 18:42	0°♄52'15 -1°16'35	min. Earth dist.	12864 Jan 26 09:17	15°♄50'22 8.69080 AU
min. Earth dist.	12857 Nov 09 23:01	0°♄51'25 8.50846 AU		12864 Feb 06 12:38	15°♄
	12857 Nov 21 03:32	30°♄	direct	12864 Apr 05 00:47	12°♄28'09
direct	12858 Jan 18 10:30	27°♄27'37		12864 May 30 20:25	15°♄
	12858 Mar 15 12:08	0°♄	evening set	12864 Jul 15 15:25	19°♄50'54
evening set	12858 May 02 17:56	5°♄09'59			
conjunction	12858 May 19 20:30	7°♄17'05 -1°11'30	conjunction	12864 Aug 01 11:53	21°♄53'53 -1°38'19
minimum elong	12858 May 19 20:27	7°♄17'05 1°12'21	minimum elong	12864 Aug 01 11:55	21°♄53'54 1°38'59
max. Earth dist.	12858 May 19 16:13	7°♄15'45 10.52529 AU	max. Earth dist.	12864 Aug 01 22:09	21°♄57'02 10.69670 AU
morning rise	12858 Jun 05 20:54	9°♄23'34	morning rise	12864 Aug 18 09:50	23°♄57'17
retrograde	12858 Sep 15 10:32	16°♄55'26		12864 Oct 18 18:13	0°♄
opposition	12858 Nov 23 02:10	13°♄34'11 -1°38'59	retrograde	12864 Nov 29 16:08	1°♄26'28
min. Earth dist.	12858 Nov 23 04:25	13°♄33'45 8.54343 AU		12865 Jan 11 16:00	30°♄
direct	12859 Jan 31 19:59	10°♄10'20	opposition	12865 Feb 07 15:29	28°♄04'26 -1°54'07
evening set	12859 May 15 16:56	17°♄49'29	min. Earth dist.	12865 Feb 07 05:57	28°♄06'14 8.70259 AU
			direct	12865 Apr 17 20:01	24°♄44'05
conjunction	12859 Jun 01 16:58	19°♄55'28 -1°27'44		12865 Jul 10 01:26	0°♄
minimum elong	12859 Jun 01 16:56	19°♄55'28 1°28'41	evening set	12865 Jul 28 00:23	2°♄04'40
max. Earth dist.	12859 Jun 01 15:27	19°♄55'00 10.56045 AU	conjunction	12865 Aug 13 22:18	4°♄07'50 -1°26'07
morning rise	12859 Jun 18 15:26	22°♄00'58	minimum elong	12865 Aug 13 22:20	4°♄07'50 1°26'37
retrograde	12859 Sep 28 10:23	29°♄31'56	max. Earth dist.	12865 Aug 14 10:11	4°♄11'28 10.70441 AU
opposition	12859 Dec 06 08:27	26°♄10'47 -1°56'25	morning rise	12865 Aug 30 22:00	6°♄11'31
min. Earth dist.	12859 Dec 06 07:45	26°♄10'55 8.57890 AU	retrograde	12865 Dec 12 12:36	13°♄41'14
direct	12860 Feb 14 02:06	22°♄47'44	opposition	12866 Feb 20 12:19	10°♄18'45 -1°36'32
	12860 May 24 06:43	0°♄	min. Earth dist.	12866 Feb 20 01:36	10°♄20'48 8.70588 AU
evening set	12860 May 27 12:22	0°♄23'26	direct	12866 Apr 30 11:31	6°♄58'35
			evening set	12866 Aug 09 09:23	14°♄17'36
conjunction	12860 Jun 13 10:28	2°♄28'25 -1°39'40			
minimum elong	12860 Jun 13 10:26	2°♄28'25 1°40'39	conjunction	12866 Aug 26 09:07	16°♄21'09 -1°10'01
max. Earth dist.	12860 Jun 13 12:39	2°♄29'06 10.59526 AU	minimum elong	12866 Aug 26 09:10	16°♄21'10 1°10'21
morning rise	12860 Jun 30 07:23	4°♄33'04	max. Earth dist.	12866 Aug 26 21:59	16°♄25'04 10.70397 AU
retrograde	12860 Oct 10 08:43	12°♄03'18	morning rise	12866 Sep 12 11:05	18°♄25'22
opposition	12860 Dec 18 13:11	8°♄42'09 -2°08'11	retrograde	12866 Dec 25 08:07	25°♄55'51
min. Earth dist.	12860 Dec 18 09:30	8°♄42'52 8.61307 AU	opposition	12867 Mar 05 08:10	22°♄32'52 -1°14'36
direct	12861 Feb 26 05:33	5°♄19'52	min. Earth dist.	12867 Mar 04 21:11	22°♄34'58 8.70134 AU
evening set	12861 Jun 09 04:47	12°♄52'03	direct	12867 May 13 02:10	19°♄12'40
			evening set	12867 Aug 21 19:28	26°♄30'53
conjunction	12861 Jun 26 01:27	14°♄56'12 -1°46'49			
minimum elong	12861 Jun 26 01:27	14°♄56'11 1°47'48	conjunction	12867 Sep 07 21:17	28°♄34'58 -0°50'45
max. Earth dist.	12861 Jun 26 06:53	14°♄57'52 10.62796 AU	minimum elong	12867 Sep 07 21:19	28°♄34'59 0°50'53
			max. Earth dist.	12867 Sep 08 09:36	28°♄38'44 10.69606 AU

	12867 Sep 19 13:04	0°♄	conjunction	12873 Nov 22 05:38	13°♄07'07	1°19'12
morning rise	12867 Sep 25 01:53	0°♄39'51	minimum elong	12873 Nov 22 05:35	13°♄07'06	1°20'07
retrograde	12868 Jan 07 04:03	8°♄11'20	max. Earth dist.	12873 Nov 22 07:47	13°♄07'47	10.53643 AU
opposition	12868 Mar 17 03:01	4°♄47'50 -0°49'14	morning rise	12873 Dec 09 21:38	15°♄16'40	
min. Earth dist.	12868 Mar 16 16:53	4°♄49'46 8.68971 AU	retrograde	12874 Mar 24 05:11	22°♄57'44	
direct	12868 May 24 16:31	1°♄27'25	opposition	12874 May 31 22:46	19°♄32'15	1°47'38
evening set	12868 Sep 02 07:11	8°♄45'36	min. Earth dist.	12874 May 31 21:52	19°♄32'26	8.51996 AU
			direct	12874 Aug 07 21:03	16°♄08'21	
conjunction	12868 Sep 19 11:18	10°♄50'23 -0°29'07	evening set	12874 Nov 18 00:03	23°♄41'47	
minimum elong	12868 Sep 19 11:19	10°♄50'23 0°29'03				
max. Earth dist.	12868 Sep 19 22:49	10°♄53'53 10.68134 AU	conjunction	12874 Dec 05 15:08	25°♄51'29	1°33'37
morning rise	12868 Oct 06 18:31	12°♄56'02	minimum elong	12874 Dec 05 15:06	25°♄51'29	1°34'35
retrograde	12869 Jan 19 00:29	20°♄28'44	max. Earth dist.	12874 Dec 05 14:54	25°♄51'25	10.50223 AU
opposition	12869 Mar 29 21:27	17°♄04'43 -0°21'33	morning rise	12874 Dec 23 07:45	28°♄01'41	
min. Earth dist.	12869 Mar 29 12:07	17°♄06'31 8.67167 AU		12875 Jan 09 02:41	0°♄	
direct	12869 Jun 06 06:35	13°♄43'57	retrograde	12875 Apr 06 11:29	5°♄44'11	
evening set	12869 Sep 14 21:07	21°♄02'54	opposition	12875 Jun 13 21:44	2°♄18'44	2°02'47
			min. Earth dist.	12875 Jun 13 22:34	2°♄18'34	8.48678 AU
conjunction	12869 Oct 02 03:39	23°♄08'28 -0°06'08		12875 Jul 15 22:43	30°♄	
minimum elong	12869 Oct 02 03:38	23°♄08'27 0°05'51	direct	12875 Aug 20 20:13	28°♄54'07	
behind sun begin	12869 Oct 01 20:49	23°♄06'24		12875 Sep 25 09:08	0°♄	
behind sun end	12869 Oct 02 10:27	23°♄10'31	evening set	12875 Dec 01 11:53	6°♄31'36	
max. Earth dist.	12869 Oct 02 14:44	23°♄11'50 10.66049 AU				
morning rise	12869 Oct 19 13:13	25°♄14'55	conjunction	12875 Dec 19 03:56	8°♄42'02	1°43'28
	12869 Dec 03 04:13	0°♄	minimum elong	12875 Dec 19 03:55	8°♄42'02	1°44'27
asc. node	12870 Jan 08 21:13	2°♄22'21	max. Earth dist.	12875 Dec 19 01:24	8°♄41'15	10.47001 AU
retrograde	12870 Jan 31 21:35	2°♄49'08	morning rise	12876 Jan 05 20:43	10°♄52'46	
	12870 Apr 04 00:18	30°♄	retrograde	12876 Apr 18 18:38	18°♄36'22	
opposition	12870 Apr 11 15:44	29°♄24'37 0°07'15	opposition	12876 Jun 25 22:24	15°♄11'05	2°11'54
min. Earth dist.	12870 Apr 11 06:53	29°♄26'20 8.64805 AU	min. Earth dist.	12876 Jun 26 01:02	15°♄10'33	8.45640 AU
direct	12870 Jun 18 22:11	26°♄03'25	direct	12876 Sep 01 22:41	11°♄45'50	
	12870 Aug 28 04:38	0°♄	evening set	12876 Dec 14 02:46	19°♄27'15	
evening set	12870 Sep 27 14:13	3°♄23'56				
conjunction	12870 Oct 14 23:02	5°♄30'20 0°17'22	conjunction	12876 Dec 31 19:28	21°♄38'19	1°48'10
minimum elong	12870 Oct 14 23:01	5°♄30'20 0°17'51	minimum elong	12876 Dec 31 19:28	21°♄38'19	1°49'07
max. Earth dist.	12870 Oct 15 09:31	5°♄33'31 10.63440 AU	max. Earth dist.	12876 Dec 31 14:23	21°♄36'45	10.44159 AU
morning rise	12870 Nov 01 10:42	7°♄37'36	morning rise	12877 Jan 18 12:14	23°♄49'29	
	12871 Jan 28 15:44	15°♄		12877 Mar 20 10:26	0°♄	
retrograde	12871 Feb 13 21:41	15°♄13'29	retrograde	12877 May 02 03:49	1°♄33'45	
	12871 Mar 02 04:46	15°♄		12877 Jun 14 10:46	30°♄	
opposition	12871 Apr 24 10:05	11°♄48'34 0°35'53	opposition	12877 Jul 09 01:03	28°♄08'46	2°14'25
min. Earth dist.	12871 Apr 24 02:10	11°♄50'06 8.61981 AU	min. Earth dist.	12877 Jul 09 05:46	28°♄07'49	8.43056 AU
direct	12871 Jul 01 13:07	8°♄26'48	direct	12877 Sep 15 02:54	24°♄42'59	
	12871 Oct 03 11:17	15°♄		12877 Dec 06 19:44	0°♄	
evening set	12871 Oct 10 10:55	15°♄49'39	evening set	12877 Dec 27 19:57	2°♄27'57	
conjunction	12871 Oct 27 21:42	17°♄56'55 0°40'05	conjunction	12878 Jan 14 13:03	4°♄39'34	1°47'23
minimum elong	12871 Oct 27 21:41	17°♄56'55 0°40'45	minimum elong	12878 Jan 14 13:04	4°♄39'34	1°48'14
max. Earth dist.	12871 Oct 28 06:02	17°♄59'28 10.60412 AU	max. Earth dist.	12878 Jan 14 04:57	4°♄37'02	10.41857 AU
morning rise	12871 Nov 14 11:11	20°♄05'01	morning rise	12878 Feb 01 05:42	6°♄51'05	
retrograde	12872 Feb 26 23:45	27°♄42'38	retrograde	12878 May 15 13:49	14°♄35'27	
opposition	12872 May 06 05:11	24°♄17'25 1°03'01	opposition	12878 Jul 22 05:31	11°♄10'52	2°10'02
min. Earth dist.	12872 May 05 23:19	24°♄18'34 8.58806 AU	min. Earth dist.	12878 Jul 22 12:41	11°♄09'27	8.41062 AU
direct	12872 Jul 13 04:16	20°♄54'59	direct	12878 Sep 28 09:58	7°♄44'39	
evening set	12872 Oct 22 11:25	28°♄20'54		12879 Jan 06 03:23	15°♄	
	12872 Nov 05 01:15	0°♄	evening set	12879 Jan 10 14:53	15°♄32'39	
conjunction	12872 Nov 08 23:47	0°♄29'00 1°01'03	conjunction	12879 Jan 28 08:05	17°♄44'38	1°41'03
minimum elong	12872 Nov 08 23:45	0°♄28'59 1°01'51	minimum elong	12879 Jan 28 08:07	17°♄44'38	1°41'46
max. Earth dist.	12872 Nov 09 05:04	0°♄30'37 10.57093 AU	max. Earth dist.	12879 Jan 27 21:20	17°♄41'16	10.40209 AU
morning rise	12872 Nov 26 14:43	2°♄37'51	morning rise	12879 Feb 15 00:18	19°♄56'21	
retrograde	12873 Mar 11 01:16	10°♄17'15	retrograde	12879 May 28 22:58	27°♄40'16	
opposition	12873 May 19 01:21	6°♄51'50 1°27'20	opposition	12879 Aug 04 11:34	24°♄16'10	1°58'54
min. Earth dist.	12873 May 18 22:03	6°♄52'30 8.55423 AU	min. Earth dist.	12879 Aug 04 20:23	24°♄14'25	8.39760 AU
direct	12873 Jul 25 23:49	3°♄28'41	direct	12879 Oct 11 20:56	20°♄49'40	
evening set	12873 Nov 04 15:50	10°♄58'12	evening set	12880 Jan 24 10:26	28°♄39'54	
				12880 Feb 04 05:05	0°♄	

conjunction	12880 Feb 11 03:29	0° X 52'05	1°29'28		12886 Mar 28 20:46	15° B
minimum elong	12880 Feb 11 03:31	0° X 52'05	1°30'01	evening set	12886 Apr 14 01:48	16° B 55'46
max. Earth dist.	12880 Feb 10 15:20	0° X 48'17	10.39302 AU			
morning rise	12880 Feb 28 18:57	3° X 03'49		conjunction	12886 May 01 08:30	19° B 04'39 -0°41'47
retrograde	12880 Jun 10 07:25	10° X 46'49		minimum elong	12886 May 01 08:29	19° B 04'39 0°42'26
opposition	12880 Aug 16 19:07	7° X 23'12	1°41'34	max. Earth dist.	12886 Apr 30 23:01	19° B 01'41 10.47361 AU
min. Earth dist.	12880 Aug 17 04:34	7° X 21'19	8.39217 AU	morning rise	12886 May 18 12:29	21° B 12'46
direct	12880 Oct 24 10:08	3° X 56'33		retrograde	12886 Aug 27 22:33	28° B 46'59
evening set	12881 Feb 06 05:34	11° X 48'05		opposition	12886 Nov 04 03:58	25° B 25'34 -1°05'10
				min. Earth dist.	12886 Nov 04 09:56	25° B 24'25 8.48728 AU
conjunction	12881 Feb 23 22:09	14° X 00'16	1°13'12	direct	12887 Jan 12 19:37	22° B 00'45
minimum elong	12881 Feb 23 22:11	14° X 00'16	1°13'34	evening set	12887 Apr 27 06:43	29° B 45'16
max. Earth dist.	12881 Feb 23 09:41	13° X 56'21	10.39173 AU		12887 Apr 29 06:50	0° II
morning rise	12881 Mar 13 12:29	16° X 11'49				
retrograde	12881 Jun 23 17:15	23° X 53'28		conjunction	12887 May 14 10:45	1° II 53'05 -1°03'00
opposition	12881 Aug 30 03:43	20° X 30'18	1°18'56	minimum elong	12887 May 14 10:43	1° II 53'05 1°03'49
min. Earth dist.	12881 Aug 30 13:12	20° X 28'25	8.39442 AU	max. Earth dist.	12887 May 14 04:36	1° II 51'10 10.50103 AU
direct	12881 Nov 06 23:05	17° X 03'39		morning rise	12887 May 31 12:12	4° II 00'12
evening set	12882 Feb 19 23:51	24° X 55'35		retrograde	12887 Sep 10 01:53	11° II 33'28
				opposition	12887 Nov 17 12:54	8° II 12'08 -1°29'34
conjunction	12882 Mar 09 15:27	27° X 07'32	0°53'09	min. Earth dist.	12887 Nov 17 16:21	8° II 11'28 8.51608 AU
minimum elong	12882 Mar 09 15:29	27° X 07'33	0°53'18	direct	12888 Jan 26 05:53	4° II 47'54
max. Earth dist.	12882 Mar 09 03:07	27° X 03'40	10.39791 AU	evening set	12888 May 09 08:19	12° II 29'28
morning rise	12882 Mar 27 04:13	29° X 18'42				
	12882 Apr 01 19:48	0° Y		conjunction	12888 May 26 09:44	14° II 36'13 -1°21'00
retrograde	12882 Jul 07 02:06	6° Y 58'40		minimum elong	12888 May 26 09:42	14° II 36'12 1°21'55
opposition	12882 Sep 12 12:58	3° Y 35'56	0°52'13	max. Earth dist.	12888 May 26 06:40	14° II 35'16 10.53047 AU
min. Earth dist.	12882 Sep 12 22:42	3° Y 34'00	8.40377 AU	morning rise	12888 Jun 12 08:59	16° II 42'22
direct	12882 Nov 20 12:41	0° Y 09'23		retrograde	12888 Sep 22 03:29	24° II 14'44
evening set	12883 Mar 05 16:20	8° Y 00'56		opposition	12888 Nov 29 20:39	20° II 53'23 -1°49'24
				min. Earth dist.	12888 Nov 29 22:00	20° II 53'07 8.54632 AU
conjunction	12883 Mar 23 06:18	10° Y 12'23	0°30'24	direct	12889 Feb 07 12:59	17° II 29'43
minimum elong	12883 Mar 23 06:19	10° Y 12'23	0°30'20	evening set	12889 May 22 06:27	25° II 08'04
max. Earth dist.	12883 Mar 22 17:46	10° Y 08'27	10.41056 AU			
morning rise	12883 Apr 09 17:11	12° Y 22'59		conjunction	12889 Jun 08 05:31	27° II 13'47 -1°34'58
retrograde	12883 Jul 20 08:51	20° Y 01'11		minimum elong	12889 Jun 08 05:29	27° II 13'46 1°35'57
opposition	12883 Sep 25 22:46	16° Y 38'52	0°22'53	max. Earth dist.	12889 Jun 08 04:52	27° II 13'35 10.56063 AU
min. Earth dist.	12883 Sep 26 08:50	16° Y 36'53	8.41889 AU	morning rise	12889 Jun 25 03:10	29° II 19'05
direct	12883 Dec 04 03:30	13° Y 12'34			12889 Jun 30 18:43	0° B
evening set	12884 Mar 18 06:12	21° Y 03'04		retrograde	12889 Oct 05 02:18	6° B 50'41
				opposition	12889 Dec 13 03:10	3° B 29'12 -2°03'49
conjunction	12884 Apr 04 18:01	23° Y 13'48	0°06'12	min. Earth dist.	12889 Dec 13 02:31	3° B 29'20 8.57657 AU
minimum elong	12884 Apr 04 18:01	23° Y 13'48	0°05'55	direct	12890 Feb 20 19:18	0° B 06'06
behind sun begin	12884 Apr 04 11:10	23° Y 11'40		evening set	12890 Jun 04 01:07	7° B 41'04
behind sun end	12884 Apr 05 00:52	23° Y 15'55				
max. Earth dist.	12884 Apr 04 05:25	23° Y 09'51	10.42802 AU	conjunction	12890 Jun 20 22:20	9° B 45'51 -1°44'18
morning rise	12884 Apr 22 02:50	25° Y 23'40		minimum elong	12890 Jun 20 22:19	9° B 45'51 1°45'18
	12884 Jun 02 17:16	0° B		max. Earth dist.	12890 Jun 21 00:20	9° B 46'28 10.59014 AU
desc. node	12884 Jul 08 23:14	2° B 30'24		morning rise	12890 Jul 07 18:56	11° B 50'26
retrograde	12884 Aug 01 14:33	3° B 00'20		retrograde	12890 Oct 18 00:09	19° B 21'29
	12884 Oct 03 18:15	30° R Y		opposition	12890 Dec 26 08:02	15° B 59'47 -2°12'13
opposition	12884 Oct 08 08:41	29° Y 38'24	-0°07'30	min. Earth dist.	12890 Dec 26 04:41	16° B 00'25 8.60542 AU
min. Earth dist.	12884 Oct 08 18:33	29° Y 36'28	8.43820 AU	direct	12891 Mar 05 23:47	12° B 37'14
direct	12884 Dec 16 17:42	26° Y 12'29		evening set	12891 Jun 16 16:40	20° B 08'45
	12885 Feb 24 02:53	0° B				
evening set	12885 Mar 31 17:29	4° B 01'29		conjunction	12891 Jul 03 12:54	22° B 12'51 -1°48'40
				minimum elong	12891 Jul 03 12:54	22° B 12'51 1°49'37
conjunction	12885 Apr 18 02:49	6° B 11'22	-0°18'22	max. Earth dist.	12891 Jul 03 18:16	22° B 14'31 10.61766 AU
minimum elong	12885 Apr 18 02:48	6° B 11'22	0°18'50	morning rise	12891 Jul 20 09:02	24° B 16'54
max. Earth dist.	12885 Apr 17 14:59	6° B 07'40	10.44912 AU		12891 Sep 14 08:43	0° B
morning rise	12885 May 05 09:20	8° B 20'24		retrograde	12891 Oct 30 22:04	1° B 47'32
	12885 Jul 13 07:24	15° B			12891 Dec 18 00:14	30° R B
retrograde	12885 Aug 14 19:07	15° B 55'45		opposition	12892 Jan 08 11:02	28° B 25'33 -2°14'22
	12885 Sep 16 20:30	15° R B		min. Earth dist.	12892 Jan 08 04:45	28° B 26'45 8.63153 AU
opposition	12885 Oct 21 18:24	12° B 34'08	-0°37'21	direct	12892 Mar 17 23:56	25° B 03'32
min. Earth dist.	12885 Oct 22 02:52	12° B 32'29	8.46109 AU		12892 Jun 06 08:29	0° B
direct	12885 Dec 30 07:04	9° B 08'43		evening set	12892 Jun 28 05:37	2° B 31'45

conjunction	12892 Jul 15 01:37	4°♊35'23	-1°47'56	behind sun begin	12898 Sep 27 02:02	18°♊12'35	
minimum elong	12892 Jul 15 01:38	4°♊35'23	1°48'47	behind sun end	12898 Sep 27 05:05	18°♊13'30	
max. Earth dist.	12892 Jul 15 10:19	4°♊38'04	10.64184 AU	max. Earth dist.	12898 Sep 27 17:22	18°♊17'14	10.66899 AU
morning rise	12892 Jul 31 21:58	6°♊39'08		morning rise	12898 Oct 14 12:03	20°♊19'10	
retrograde	12892 Nov 11 18:29	14°♊09'32		retrograde	12899 Jan 26 20:36	27°♊52'49	
opposition	12893 Jan 20 12:15	10°♊47'15	-2°10'16	opposition	12899 Apr 06 15:18	24°♊28'38	-0°04'54
min. Earth dist.	12893 Jan 20 03:32	10°♊48'55	8.65350 AU	min. Earth dist.	12899 Apr 06 04:23	24°♊30'45	8.66134 AU
direct	12893 Mar 30 21:49	7°♊25'44		asc. node	12899 Jun 08 21:13	21°♊09'12	
evening set	12893 Jul 10 16:42	14°♊50'57		direct	12899 Jun 13 21:41	21°♊07'52	
	12893 Jul 11 22:45	15°♊		evening set	12899 Sep 22 14:01	28°♊27'36	
					12899 Oct 05 07:38	0°♊	
conjunction	12893 Jul 27 13:02	16°♊54'20	-1°42'12				
minimum elong	12893 Jul 27 13:03	16°♊54'21	1°42'56	conjunction	12899 Oct 09 21:41	0°♊33'35	0°07'34
max. Earth dist.	12893 Jul 27 23:56	16°♊57'41	10.66142 AU	minimum elong	12899 Oct 09 21:41	0°♊33'35	0°07'58
morning rise	12893 Aug 13 10:21	18°♊58'01		behind sun begin	12899 Oct 09 15:17	0°♊31'39	
retrograde	12893 Nov 24 14:56	26°♊28'23		behind sun end	12899 Oct 10 04:05	0°♊35'31	
opposition	12894 Feb 02 11:50	23°♊05'48	-2°00'11	max. Earth dist.	12899 Oct 10 09:31	0°♊37'11	10.65231 AU
min. Earth dist.	12894 Feb 02 01:53	23°♊07'42	8.67029 AU	morning rise	12899 Oct 27 08:32	2°♊40'28	
direct	12894 Apr 12 17:14	19°♊44'41		retrograde	12900 Feb 08 19:06	10°♊15'23	
evening set	12894 Jul 23 02:38	27°♊07'19		opposition	12900 Apr 19 09:37	6°♊51'01	0°23'55
				min. Earth dist.	12900 Apr 19 00:37	6°♊52'46	8.64213 AU
conjunction	12894 Aug 08 23:54	29°♊10'43	-1°31'49	direct	12900 Jun 26 12:59	3°♊29'53	
minimum elong	12894 Aug 08 23:56	29°♊10'43	1°32'24	evening set	12900 Oct 05 09:09	10°♊51'24	
max. Earth dist.	12894 Aug 09 11:48	29°♊14'22	10.67556 AU				
	12894 Aug 15 16:54	0°♊		conjunction	12900 Oct 22 18:54	12°♊58'08	0°30'38
morning rise	12894 Aug 25 22:57	1°♊14'35		minimum elong	12900 Oct 22 18:53	12°♊58'08	0°31'14
retrograde	12894 Dec 07 10:59	8°♊45'06		max. Earth dist.	12900 Oct 23 04:57	13°♊01'12	10.63075 AU
opposition	12895 Feb 15 09:54	5°♊22'11	-1°44'38		12900 Nov 08 12:26	15°♊	
min. Earth dist.	12895 Feb 14 23:14	5°♊24'14	8.68123 AU	morning rise	12900 Nov 09 07:39	15°♊05'45	
direct	12895 Apr 25 09:49	2°♊01'22		retrograde	12901 Feb 21 19:12	22°♊42'06	
evening set	12895 Aug 04 11:57	9°♊21'59		opposition	12901 May 02 04:22	19°♊17'32	0°51'46
				min. Earth dist.	12901 May 01 20:53	19°♊19'00	8.61855 AU
conjunction	12895 Aug 21 10:51	11°♊25'35	-1°17'16	direct	12901 Jul 09 05:00	15°♊55'58	
minimum elong	12895 Aug 21 10:53	11°♊25'36	1°17'40	evening set	12901 Oct 18 07:40	23°♊19'54	
max. Earth dist.	12895 Aug 21 23:42	11°♊29'31	10.68361 AU				
morning rise	12895 Sep 07 12:05	13°♊29'50		conjunction	12901 Nov 04 19:19	25°♊27'23	0°52'25
retrograde	12895 Dec 20 04:56	21°♊00'46		minimum elong	12901 Nov 04 19:17	25°♊27'23	0°53'10
opposition	12896 Feb 28 06:31	17°♊37'31	-1°24'22	max. Earth dist.	12901 Nov 05 03:41	25°♊29'57	10.60502 AU
min. Earth dist.	12896 Feb 27 19:08	17°♊39'42	8.68578 AU	morning rise	12901 Nov 22 09:32	27°♊35'41	
direct	12896 May 07 02:59	14°♊16'53			12901 Dec 13 06:32	0°♊	
evening set	12896 Aug 15 21:48	21°♊36'09		retrograde	12902 Mar 06 20:11	5°♊13'32	
				opposition	12902 May 14 23:43	1°♊48'48	1°17'20
conjunction	12896 Sep 01 22:48	23°♊40'10	-0°59'12	min. Earth dist.	12902 May 14 17:55	1°♊49'56	8.59120 AU
minimum elong	12896 Sep 01 22:50	23°♊40'11	0°59'25		12902 Jun 08 10:35	30°♊	
max. Earth dist.	12896 Sep 02 12:54	23°♊44'29	10.68512 AU	direct	12902 Jul 21 23:19	28°♊26'38	
morning rise	12896 Sep 19 02:20	25°♊44'56			12902 Sep 02 14:54	0°♊	
	12896 Oct 28 05:38	0°♊		evening set	12902 Oct 31 10:07	5°♊53'35	
retrograde	12897 Jan 01 01:21	3°♊16'32					
	12897 Mar 10 13:08	30°♊		conjunction	12902 Nov 17 23:19	8°♊01'51	1°11'49
opposition	12897 Mar 12 01:56	29°♊52'56	-1°00'16	minimum elong	12902 Nov 17 23:17	8°♊01'50	1°12'42
min. Earth dist.	12897 Mar 11 13:42	29°♊55'17	8.68374 AU	max. Earth dist.	12902 Nov 18 04:58	8°♊03'35	10.57572 AU
direct	12897 May 19 18:29	26°♊32'24		morning rise	12902 Dec 05 14:36	10°♊10'47	
	12897 Jul 24 08:26	0°♊		retrograde	12903 Mar 20 00:00	17°♊50'04	
evening set	12897 Aug 28 08:56	3°♊51'00		opposition	12903 May 27 19:54	14°♊25'14	1°39'23
				min. Earth dist.	12903 May 27 16:35	14°♊25'54	8.56058 AU
conjunction	12897 Sep 14 12:12	5°♊55'36	-0°38'26	direct	12903 Aug 03 18:00	11°♊02'21	
minimum elong	12897 Sep 14 12:13	5°♊55'36	0°38'27	evening set	12903 Nov 13 16:16	18°♊32'53	
max. Earth dist.	12897 Sep 15 02:55	6°♊00'05	10.68011 AU				
morning rise	12897 Oct 01 18:10	8°♊01'01		conjunction	12903 Dec 01 06:40	20°♊41'54	1°27'52
retrograde	12898 Jan 13 23:37	15°♊33'32		minimum elong	12903 Dec 01 06:38	20°♊41'53	1°28'50
opposition	12898 Mar 24 20:48	12°♊09'37	-0°33'23	max. Earth dist.	12903 Dec 01 08:17	20°♊42'23	10.54350 AU
min. Earth dist.	12898 Mar 24 08:37	12°♊11'57	8.67543 AU	morning rise	12903 Dec 18 22:44	22°♊51'27	
direct	12898 Jun 01 07:14	8°♊49'03			12904 Mar 07 06:17	0°♊	
evening set	12898 Sep 09 22:02	16°♊07'47		retrograde	12904 Apr 01 05:09	0°♊32'07	
					12904 Apr 26 04:07	30°♊	
conjunction	12898 Sep 27 03:33	18°♊13'02	-0°15'53	opposition	12904 Jun 08 17:35	27°♊07'18	1°56'46
minimum elong	12898 Sep 27 03:34	18°♊13'02	0°15'41	min. Earth dist.	12904 Jun 08 17:33	27°♊07'18	8.52767 AU

direct	12904 Aug 15 14:59	23° X 43'40		evening set	12911 Feb 15 05:44	19° X 20'20	
	12904 Nov 15 02:23	0° Z					
evening set	12904 Nov 26 01:48	1° Z 18'08		conjunction	12911 Mar 04 21:39	21° X 32'17	1°02'28
				minimum elong	12911 Mar 04 21:41	21° X 32'17	1°02'42
conjunction	12904 Dec 13 17:06	3° Z 27'52	1°39'43	max. Earth dist.	12911 Mar 04 06:56	21° X 27'40	10.39675 AU
minimum elong	12904 Dec 13 17:05	3° Z 27'51	1°40'42	morning rise	12911 Mar 22 11:15	23° X 43'32	
max. Earth dist.	12904 Dec 13 14:36	3° Z 27'05	10.51002 AU		12911 May 23 13:37	0° Y	
morning rise	12904 Dec 31 09:42	5° Z 38'00		retrograde	12911 Jul 02 10:13	1° Y 23'37	
retrograde	12905 Apr 14 10:23	13° Z 19'55			12911 Aug 12 00:36	30° X	
opposition	12905 Jun 21 16:56	9° Z 55'11	2°08'31	opposition	12911 Sep 07 22:12	28° X 00'23	1°04'32
min. Earth dist.	12905 Jun 21 19:52	9° Z 54'36	8.49473 AU	min. Earth dist.	12911 Sep 08 09:37	27° X 58'07	8.39897 AU
direct	12905 Aug 28 16:10	6° Z 30'46		direct	12911 Nov 15 21:27	24° X 33'21	
evening set	12905 Dec 09 14:36	14° Z 09'15			12912 Feb 08 12:29	0° Y	
				evening set	12912 Feb 28 22:04	2° Y 24'40	
conjunction	12905 Dec 27 06:44	16° Z 19'40	1°46'40				
minimum elong	12905 Dec 27 06:44	16° Z 19'40	1°47'38	conjunction	12912 Mar 17 12:44	4° Y 36'16	0°40'50
max. Earth dist.	12905 Dec 27 01:03	16° Z 17'54	10.47786 AU	minimum elong	12912 Mar 17 12:45	4° Y 36'17	0°40'51
morning rise	12906 Jan 13 23:33	18° Z 30'19		max. Earth dist.	12912 Mar 16 22:27	4° Y 31'47	10.40234 AU
retrograde	12906 Apr 27 16:54	26° Z 13'06		morning rise	12912 Apr 04 00:41	6° Y 47'07	
opposition	12906 Jul 04 17:50	22° Z 48'29	2°13'56	retrograde	12912 Jul 14 16:16	14° Y 25'44	
min. Earth dist.	12906 Jul 04 23:01	22° Z 47'27	8.46419 AU	opposition	12912 Sep 20 06:57	11° Y 02'50	0°36'16
direct	12906 Sep 10 19:49	19° Z 23'21		min. Earth dist.	12912 Sep 20 17:26	11° Y 00'45	8.40812 AU
evening set	12906 Dec 23 06:02	27° Z 05'34		direct	12912 Nov 28 11:53	7° Y 35'57	
				evening set	12913 Mar 13 12:20	15° Y 26'40	
conjunction	12907 Jan 09 22:51	29° Z 16'38	1°48'17				
minimum elong	12907 Jan 09 22:52	29° Z 16'38	1°49'11	conjunction	12913 Mar 31 01:18	17° Y 37'44	0°17'09
max. Earth dist.	12907 Jan 09 14:50	29° Z 14'08	10.44919 AU	minimum elong	12913 Mar 31 01:18	17° Y 37'44	0°16'58
	12907 Jan 15 18:29	0° \approx		max. Earth dist.	12913 Mar 30 12:35	17° Y 33'45	10.41530 AU
morning rise	12907 Jan 27 15:31	1° \approx 27'40		morning rise	12913 Apr 17 11:12	19° Y 47'57	
retrograde	12907 May 11 01:22	9° \approx 10'51		retrograde	12913 Jul 27 23:23	27° Y 25'03	
opposition	12907 Jul 17 20:33	5° \approx 46'24	2°12'35	opposition	12913 Oct 03 16:08	24° Y 02'30	0°06'13
min. Earth dist.	12907 Jul 18 03:13	5° \approx 45'05	8.43791 AU	min. Earth dist.	12913 Oct 04 01:21	24° Y 00'41	8.42437 AU
direct	12907 Sep 24 01:24	2° \approx 20'38		direct	12913 Dec 12 00:27	20° Y 35'58	
evening set	12908 Jan 05 23:14	10° \approx 06'08		desc. node	12913 Dec 19 00:44	20° Y 38'30	
				evening set	12914 Mar 27 00:17	28° Y 25'25	
conjunction	12908 Jan 23 16:25	12° \approx 17'40	1°44'23		12914 Apr 08 17:03	0° Z	
minimum elong	12908 Jan 23 16:26	12° \approx 17'41	1°45'10				
max. Earth dist.	12908 Jan 23 06:38	12° \approx 14'38	10.42566 AU	conjunction	12914 Apr 13 11:00	0° Z 35'43	-0°07'24
morning rise	12908 Feb 10 08:37	14° \approx 29'01		minimum elong	12914 Apr 13 11:00	0° Z 35'43	0°07'48
	12908 Feb 14 14:50	15° \approx		behind sun begin	12914 Apr 13 04:33	0° Z 33'43	
retrograde	12908 May 23 10:06	22° \approx 12'05		behind sun end	12914 Apr 13 17:26	0° Z 37'43	
opposition	12908 Jul 30 00:59	18° \approx 47'52	2°04'26	max. Earth dist.	12914 Apr 13 00:05	0° Z 32'19	10.43487 AU
min. Earth dist.	12908 Jul 30 09:07	18° \approx 46'15	8.41736 AU	morning rise	12914 Apr 30 18:30	2° Z 45'07	
direct	12908 Oct 06 09:33	15° \approx 21'34		retrograde	12914 Aug 10 04:35	10° Z 20'45	
evening set	12909 Jan 18 17:30	23° \approx 09'42		opposition	12914 Oct 17 01:22	6° Z 58'34	-0°24'01
				min. Earth dist.	12914 Oct 17 09:21	6° Z 57'01	8.44691 AU
conjunction	12909 Feb 05 10:41	25° \approx 21'35	1°35'06	direct	12914 Dec 25 12:29	3° Z 32'33	
minimum elong	12909 Feb 05 10:43	25° \approx 21'35	1°35'44	evening set	12915 Apr 09 09:21	11° Z 20'09	
max. Earth dist.	12909 Feb 04 22:53	25° \approx 17'54	10.40862 AU				
morning rise	12909 Feb 23 02:17	27° \approx 33'04		conjunction	12915 Apr 26 17:23	13° Z 29'29	-0°31'21
	12909 Mar 15 21:10	0° X		minimum elong	12915 Apr 26 17:22	13° Z 29'28	0°31'57
retrograde	12909 Jun 05 18:52	5° X 15'32		max. Earth dist.	12915 Apr 26 08:13	13° Z 26'37	10.46011 AU
opposition	12909 Aug 12 06:52	1° X 51'37	1°49'50		12915 May 08 19:21	15° Z	
min. Earth dist.	12909 Aug 12 16:43	1° X 49'39	8.40370 AU	morning rise	12915 May 13 22:26	15° Z 37'58	
	12909 Sep 05 23:13	30° X		retrograde	12915 Aug 23 07:30	23° Z 12'15	
direct	12909 Oct 19 19:31	28° \approx 24'53		opposition	12915 Oct 30 10:29	19° Z 50'26	-0°52'51
	12909 Dec 02 02:15	0° X		min. Earth dist.	12915 Oct 30 17:13	19° Z 49'07	8.47467 AU
evening set	12910 Feb 01 11:56	6° X 14'54		direct	12916 Jan 08 00:46	16° Z 25'02	
				evening set	12916 Apr 21 15:05	24° Z 10'15	
conjunction	12910 Feb 19 04:44	8° X 26'56	1°20'53				
minimum elong	12910 Feb 19 04:47	8° X 26'56	1°21'20	conjunction	12916 May 08 20:16	26° Z 18'29	-0°53'39
max. Earth dist.	12910 Feb 18 15:04	8° X 22'39	10.39888 AU	minimum elong	12916 May 08 20:14	26° Z 18'29	0°54'24
morning rise	12910 Mar 08 19:31	10° X 38'24		max. Earth dist.	12916 May 08 12:54	26° Z 16'11	10.48977 AU
retrograde	12910 Jun 19 03:34	18° X 19'49		morning rise	12916 May 25 22:57	28° Z 26'00	
opposition	12910 Aug 25 14:04	14° X 56'14	1°29'31		12916 Jun 08 01:01	0° II	
min. Earth dist.	12910 Aug 26 01:13	14° X 54'01	8.39748 AU	retrograde	12916 Sep 04 09:36	5° II 59'08	
direct	12910 Nov 02 07:21	11° X 29'15		opposition	12916 Nov 11 18:58	2° II 37'35	-1°18'52

min. Earth dist.	12916 Nov 11 23:38	2° Π 36'41	8.50617 AU	min. Earth dist.	12923 Jan 28 10:28	17° Ω 39'42	8.68478 AU
	12916 Dec 20 14:31	30° κ 8			12923 Mar 09 17:20	15° κ 8	
direct	12917 Jan 20 11:42	29° γ 12'54		direct	12923 Apr 08 03:29	14° Ω 17'18	
	12917 Feb 19 23:21	0° Π			12923 May 07 01:24	15° Ω	
evening set	12917 May 04 17:35	6° Π 55'20		evening set	12923 Jul 18 16:41	21° Ω 40'18	
conjunction	12917 May 21 20:03	9° Π 02'27	-1°13'10	conjunction	12923 Aug 04 13:25	23° Ω 43'26	-1°37'03
minimum elong	12917 May 21 20:01	9° Π 02'26	1°14'03	minimum elong	12923 Aug 04 13:27	23° Ω 43'26	1°37'42
max. Earth dist.	12917 May 21 15:28	9° Π 01'02	10.52228 AU	max. Earth dist.	12923 Aug 05 01:00	23° Ω 46'59	10.69128 AU
morning rise	12917 Jun 07 20:26	11° Π 08'57		morning rise	12923 Aug 21 11:27	25° Ω 46'56	
retrograde	12917 Sep 17 10:49	18° Π 41'05			12923 Sep 29 03:51	0° η	
opposition	12917 Nov 25 02:26	15° Π 19'44	-1°40'49	retrograde	12923 Dec 02 19:49	3° η 16'32	
min. Earth dist.	12917 Nov 25 04:19	15° Π 19'22	8.53977 AU		12924 Feb 09 12:18	30° κ 8	
direct	12918 Feb 02 19:46	11° Π 55'49		opposition	12924 Feb 10 17:48	29° Ω 54'23	-1°52'18
evening set	12918 May 17 16:39	19° Π 35'07		min. Earth dist.	12924 Feb 10 07:16	29° Ω 56'23	8.69782 AU
				direct	12924 Apr 19 21:05	26° Ω 34'02	
conjunction	12918 Jun 03 16:43	21° Π 41'10	-1°29'00		12924 Jun 24 11:40	0° η	
minimum elong	12918 Jun 03 16:41	21° Π 41'09	1°29'58	evening set	12924 Jul 30 02:04	3° η 54'48	
max. Earth dist.	12918 Jun 03 15:46	21° Π 40'52	10.55611 AU				
morning rise	12918 Jun 20 15:03	23° Π 46'42		conjunction	12924 Aug 16 00:10	5° η 58'04	-1°24'24
	12918 Aug 22 08:52	0° ϕ		minimum elong	12924 Aug 16 00:13	5° η 58'04	1°24'54
retrograde	12918 Sep 30 10:32	1° ϕ 18'02		max. Earth dist.	12924 Aug 16 12:47	6° η 01'55	10.70030 AU
	12918 Nov 09 12:52	30° κ 8		morning rise	12924 Sep 02 00:04	8° η 01'52	
opposition	12918 Dec 08 08:57	27° Π 56'46	-1°57'44	retrograde	12924 Dec 14 15:16	15° η 31'52	
min. Earth dist.	12918 Dec 08 07:43	27° Π 57'00	8.57392 AU	opposition	12925 Feb 22 14:50	12° η 09'20	-1°34'12
direct	12919 Feb 16 02:31	24° Π 33'40		min. Earth dist.	12925 Feb 22 03:53	12° η 11'26	8.70235 AU
	12919 May 12 02:33	0° ϕ		direct	12925 May 02 13:02	8° η 49'09	
evening set	12919 May 30 12:16	2° ϕ 09'35		evening set	12925 Aug 11 11:28	16° η 08'23	
conjunction	12919 Jun 16 10:22	4° ϕ 14'38	-1°40'28	conjunction	12925 Aug 28 11:18	18° η 12'01	-1°07'56
minimum elong	12919 Jun 16 10:21	4° ϕ 14'37	1°41'28	minimum elong	12925 Aug 28 11:20	18° η 12'01	1°08'14
max. Earth dist.	12919 Jun 16 13:04	4° ϕ 15'28	10.58971 AU	max. Earth dist.	12925 Aug 28 23:51	18° η 15'50	10.70100 AU
morning rise	12919 Jul 03 07:12	6° ϕ 19'20		morning rise	12925 Sep 14 13:33	20° η 16'19	
retrograde	12919 Oct 13 10:05	13° ϕ 50'01		retrograde	12925 Dec 27 11:10	27° η 47'03	
opposition	12919 Dec 21 14:06	10° ϕ 28'46	-2°08'53	opposition	12926 Mar 07 10:52	24° η 24'04	-1°11'50
min. Earth dist.	12919 Dec 21 10:29	10° ϕ 29'28	8.60707 AU	min. Earth dist.	12926 Mar 07 00:17	24° η 26'06	8.69889 AU
direct	12920 Feb 29 06:07	7° ϕ 06'24		direct	12926 May 15 04:16	21° η 03'53	
evening set	12920 Jun 11 04:59	14° ϕ 38'52		evening set	12926 Aug 23 21:50	28° η 22'16	
					12926 Sep 06 09:08	0° α	
conjunction	12920 Jun 28 01:36	16° ϕ 43'06	-1°47'07	conjunction	12926 Sep 09 23:47	0° α 26'26	-0°48'22
minimum elong	12920 Jun 28 01:36	16° ϕ 43'05	1°48'05	minimum elong	12926 Sep 09 23:49	0° α 26'27	0°48'29
max. Earth dist.	12920 Jun 28 06:45	16° ϕ 44'41	10.62161 AU	max. Earth dist.	12926 Sep 10 11:55	0° α 30'08	10.69417 AU
morning rise	12920 Jul 14 21:43	18° ϕ 47'10		morning rise	12926 Sep 27 04:39	2° α 31'25	
retrograde	12920 Oct 25 08:27	26° ϕ 17'16		retrograde	12927 Jan 09 06:49	10° α 03'04	
opposition	12921 Jan 02 17:32	22° ϕ 55'58	-2°13'54	opposition	12927 Mar 20 05:54	6° α 39'36	-0°46'11
min. Earth dist.	12921 Jan 02 12:12	22° ϕ 56'59	8.63767 AU	min. Earth dist.	12927 Mar 19 19:43	6° α 41'33	8.68834 AU
direct	12921 Mar 13 06:14	19° ϕ 34'15		direct	12927 May 27 18:48	3° α 19'13	
evening set	12921 Jun 23 19:01	27° ϕ 03'20		evening set	12927 Sep 05 09:44	10° α 37'32	
conjunction	12921 Jul 10 14:50	29° ϕ 06'57	-1°48'43	conjunction	12927 Sep 22 14:07	12° α 42'23	-0°26'34
minimum elong	12921 Jul 10 14:50	29° ϕ 06'57	1°49'38	minimum elong	12927 Sep 22 14:08	12° α 42'23	0°26'28
max. Earth dist.	12921 Jul 10 21:54	29° ϕ 09'07	10.65028 AU	max. Earth dist.	12927 Sep 23 02:22	12° α 46'07	10.68050 AU
	12921 Jul 17 19:12	0° Ω		morning rise	12927 Oct 09 21:29	14° α 48'06	
morning rise	12921 Jul 27 10:58	1° Ω 10'36		retrograde	12928 Jan 22 02:47	22° α 20'57	
retrograde	12921 Nov 07 03:28	8° Ω 40'18		opposition	12928 Apr 01 00:18	18° α 56'57	-0°18'21
opposition	12922 Jan 15 19:25	5° Ω 18'49	-2°12'39	min. Earth dist.	12928 Mar 31 14:15	18° α 58'54	8.67135 AU
min. Earth dist.	12922 Jan 15 12:21	5° Ω 20'09	8.66414 AU	direct	12928 Jun 08 10:21	15° α 36'15	
direct	12922 Mar 26 05:59	1° Ω 57'40		evening set	12928 Sep 17 00:03	22° α 55'18	
evening set	12922 Jul 06 06:36	9° Ω 23'33					
conjunction	12922 Jul 23 02:28	11° Ω 26'46	-1°45'18	conjunction	12928 Oct 04 06:48	25° α 00'55	-0°03'32
minimum elong	12922 Jul 23 02:29	11° Ω 26'47	1°46'05	minimum elong	12928 Oct 04 06:47	25° α 00'55	0°03'13
max. Earth dist.	12922 Jul 23 11:43	11° Ω 29'37	10.67410 AU	behind sun begin	12928 Oct 03 23:41	24° α 58'47	
morning rise	12922 Aug 08 23:16	13° Ω 30'14		behind sun end	12928 Oct 04 13:54	25° α 03'04	
	12922 Aug 21 16:27	15° Ω		max. Earth dist.	12928 Oct 04 18:47	25° α 04'34	10.66065 AU
retrograde	12922 Nov 19 23:22	20° Ω 59'46		morning rise	12928 Oct 21 16:24	27° α 07'24	
opposition	12923 Jan 28 19:32	17° Ω 37'59	-2°05'19		12928 Nov 16 01:01	0° η	

asc. node	12928 Nov 30 02:45	1° ℓ 24'13	morning rise	12935 Jan 07 23:03	12° ℔ 43'12	
retrograde	12929 Feb 03 02:00	4° ℓ 41'40	retrograde	12935 Apr 21 20:37	20° ℔ 26'17	
opposition	12929 Apr 13 18:30	1° ℓ 17'13 0°10'27	opposition	12935 Jun 28 23:43	17° ℔ 01'02	2°12'17
min. Earth dist.	12929 Apr 13 09:00	1° ℓ 19'03 8.64875 AU	min. Earth dist.	12935 Jun 29 02:46	17° ℔ 00'26	8.46176 AU
	12929 Apr 30 19:23	30° ℔ 9'2	direct	12935 Sep 04 23:32	13° ℔ 35'46	
direct	12929 Jun 21 00:13	27° ♊ 56'04	evening set	12935 Dec 17 04:53	21° ℔ 16'50	
	12929 Aug 09 14:46	0° ℓ				
evening set	12929 Sep 29 17:24	5° ℓ 16'38	conjunction	12936 Jan 03 21:27	23° ℔ 27'47	1°48'13
			minimum elong	12936 Jan 03 21:27	23° ℔ 27'47	1°49'09
conjunction	12929 Oct 17 02:15	7° ℓ 23'03 0°19'54	max. Earth dist.	12936 Jan 03 15:20	23° ℔ 25'53	10.44691 AU
minimum elong	12929 Oct 17 02:15	7° ℓ 23'02 0°20'25	morning rise	12936 Jan 21 14:12	25° ℔ 38'51	
max. Earth dist.	12929 Oct 17 12:48	7° ℓ 26'15 10.63562 AU		12936 Feb 29 18:57	0° ♊	
morning rise	12929 Nov 03 13:59	9° ℓ 30'20	retrograde	12936 May 04 05:10	3° ♊ 22'30	
	12929 Dec 27 00:27	15° ℓ		12936 Jul 10 13:46	30° ℔ 9'3	
retrograde	12930 Feb 16 01:43	17° ℓ 06'09	opposition	12936 Jul 11 01:59	29° ℔ 57'34	2°14'06
	12930 Apr 09 06:11	15° ℔ ℓ	min. Earth dist.	12936 Jul 11 07:36	29° ℔ 56'26	8.43577 AU
opposition	12930 Apr 26 12:56	13° ℓ 41'18 0°38'55	direct	12936 Sep 17 04:05	26° ℔ 31'43	
min. Earth dist.	12930 Apr 26 05:05	13° ℓ 42'50 8.62161 AU		12936 Nov 21 14:34	0° ♊	
direct	12930 Jul 03 14:38	10° ℓ 19'35	evening set	12936 Dec 29 21:29	4° ♊ 16'19	
	12930 Sep 18 21:14	15° ℓ				
evening set	12930 Oct 12 14:09	17° ℓ 42'28	conjunction	12937 Jan 16 14:27	6° ♊ 27'48	1°46'52
			minimum elong	12937 Jan 16 14:28	6° ♊ 27'48	1°47'42
conjunction	12930 Oct 30 00:53	19° ℓ 49'41 0°42'26	max. Earth dist.	12937 Jan 16 05:23	6° ♊ 24'58	10.42361 AU
minimum elong	12930 Oct 30 00:52	19° ℓ 49'41 0°43'08	morning rise	12937 Feb 03 07:05	8° ♊ 39'12	
max. Earth dist.	12930 Oct 30 08:37	19° ℓ 52'03 10.60649 AU		12937 Apr 07 13:55	15° ♊	
morning rise	12930 Nov 16 14:29	21° ℓ 57'46	retrograde	12937 May 17 12:52	16° ♊ 23'01	
retrograde	12931 Mar 01 01:39	29° ℓ 35'13		12937 Jun 27 00:38	15° ℔ ℓ	
opposition	12931 May 09 07:57	26° ℓ 10'05 1°05'44	opposition	12937 Jul 24 06:03	12° ♊ 58'27	2°09'04
min. Earth dist.	12931 May 09 02:34	26° ℓ 11'08 8.59100 AU	min. Earth dist.	12937 Jul 24 13:40	12° ♊ 56'56	8.41541 AU
direct	12931 Jul 16 07:56	22° ℓ 47'41	direct	12937 Sep 30 12:32	9° ♊ 32'10	
	12931 Oct 23 17:23	0° ♊		12937 Dec 23 21:54	15° ♊	
evening set	12931 Oct 25 14:41	0° ♊ 13'33	evening set	12938 Jan 12 15:48	17° ♊ 19'47	
conjunction	12931 Nov 12 03:04	2° ♊ 21'36 1°03'05	conjunction	12938 Jan 30 09:01	19° ♊ 31'39	1°40'01
minimum elong	12931 Nov 12 03:02	2° ♊ 21'36 1°03'55	minimum elong	12938 Jan 30 09:03	19° ♊ 31'40	1°40'44
max. Earth dist.	12931 Nov 12 08:01	2° ♊ 23'07 10.57439 AU	max. Earth dist.	12938 Jan 29 22:06	19° ♊ 28'15	10.40660 AU
morning rise	12931 Nov 29 18:04	4° ♊ 30'25	morning rise	12938 Feb 17 01:12	21° ♊ 43'16	
retrograde	12932 Mar 13 03:50	12° ♊ 09'31	retrograde	12938 May 30 21:35	29° ♊ 26'42	
opposition	12932 May 21 03:44	8° ♊ 44'12 1°29'37	opposition	12938 Aug 06 11:38	26° ♊ 02'35	1°57'20
min. Earth dist.	12932 May 21 00:36	8° ♊ 44'49 8.55818 AU	min. Earth dist.	12938 Aug 06 20:17	26° ♊ 00'51	8.40170 AU
direct	12932 Jul 28 02:37	5° ♊ 21'03	direct	12938 Oct 13 22:41	22° ♊ 36'02	
evening set	12932 Nov 06 18:57	12° ♊ 50'26		12939 Jan 22 21:56	0° ♋	
			evening set	12939 Jan 26 10:55	0° ♋ 25'53	
conjunction	12932 Nov 24 08:49	14° ♊ 59'17 1°20'50	conjunction	12939 Feb 13 04:03	2° ♋ 38'01	1°27'59
minimum elong	12932 Nov 24 08:47	14° ♊ 59'17 1°21'46	minimum elong	12939 Feb 13 04:05	2° ♋ 38'02	1°28'31
max. Earth dist.	12932 Nov 24 11:27	15° ♊ 00'06 10.54075 AU	max. Earth dist.	12939 Feb 12 16:15	2° ♋ 34'19	10.39672 AU
morning rise	12932 Dec 12 00:42	17° ♊ 08'46	morning rise	12939 Mar 02 19:23	4° ♋ 49'39	
retrograde	12933 Mar 26 07:31	24° ♊ 49'27	retrograde	12939 Jun 13 08:09	12° ♋ 32'14	
opposition	12933 Jun 03 00:50	21° ♊ 24'01 1°49'20	opposition	12939 Aug 19 18:54	9° ♋ 08'36	1°39'29
min. Earth dist.	12933 Jun 02 23:26	21° ♊ 24'18 8.52466 AU	min. Earth dist.	12939 Aug 20 04:08	9° ♋ 06'46	8.39534 AU
direct	12933 Aug 09 23:31	18° ♊ 00'09	direct	12939 Oct 27 09:25	5° ♋ 41'56	
evening set	12933 Nov 20 02:50	25° ♊ 33'21	evening set	12940 Feb 09 05:44	13° ♋ 33'10	
conjunction	12933 Dec 07 17:57	27° ♊ 42'58 1°34'46	conjunction	12940 Feb 26 22:18	15° ♋ 45'18	1°11'22
minimum elong	12933 Dec 07 17:55	27° ♊ 42'57 1°35'44	minimum elong	12940 Feb 26 22:21	15° ♋ 45'18	1°11'42
max. Earth dist.	12933 Dec 07 18:23	27° ♊ 43'06 10.50718 AU	max. Earth dist.	12940 Feb 26 10:03	15° ♋ 41'27	10.39444 AU
morning rise	12933 Dec 25 10:22	29° ♊ 53'03	morning rise	12940 Mar 15 12:27	17° ♋ 56'47	
	12933 Dec 26 09:26	0° ♋	retrograde	12940 Jun 25 17:16	25° ♋ 38'07	
retrograde	12934 Apr 08 12:54	7° ♋ 35'07	opposition	12940 Sep 01 03:24	22° ♋ 14'58	1°16'27
opposition	12934 Jun 15 23:27	4° ♋ 09'42 2°03'51	min. Earth dist.	12940 Sep 01 13:08	22° ♋ 13'02	8.39665 AU
min. Earth dist.	12934 Jun 15 23:56	4° ♋ 09'36 8.49196 AU	direct	12940 Nov 08 22:37	18° ♋ 48'18	
direct	12934 Aug 22 22:53	0° ♋ 45'06	evening set	12941 Feb 21 23:44	26° ♋ 40'03	
evening set	12934 Dec 03 14:24	8° ♋ 22'17				
conjunction	12934 Dec 21 06:23	10° ♋ 32'36 1°44'05	conjunction	12941 Mar 11 15:11	28° ♋ 51'55	0°51'02
minimum elong	12934 Dec 21 06:22	10° ♋ 32'36 1°45'03	minimum elong	12941 Mar 11 15:13	28° ♋ 51'56	0°51'10
max. Earth dist.	12934 Dec 21 03:40	10° ♋ 31'46 10.47530 AU	max. Earth dist.	12941 Mar 11 02:26	28° ♋ 47'55	10.39978 AU

	12941 Mar 20 16:27	0°♄	direct	12947 Jan 28 03:41	6°♄31'18	
morning rise	12941 Mar 29 03:53	1°♄03'03	evening set	12947 May 12 07:33	14°♄13'00	
retrograde	12941 Jul 09 01:05	8°♄42'49				
opposition	12941 Sep 14 12:37	5°♄20'08 0°49'29	conjunction	12947 May 29 08:44	16°♄19'45 -1°22'24	
min. Earth dist.	12941 Sep 14 23:04	5°♄18'04 8.40537 AU	minimum elong	12947 May 29 08:42	16°♄19'45 1°23'20	
direct	12941 Nov 22 12:54	1°♄53'35	max. Earth dist.	12947 May 29 04:48	16°♄18'32 10.52883 AU	
evening set	12942 Mar 07 16:01	9°♄45'01	morning rise	12947 Jun 15 08:00	18°♄25'57	
			retrograde	12947 Sep 25 02:18	25°♄58'38	
conjunction	12942 Mar 25 05:47	11°♄56'24 0°28'07	opposition	12947 Dec 02 20:37	22°♄37'19 -1°50'52	
minimum elong	12942 Mar 25 05:49	11°♄56'24 0°28'02	min. Earth dist.	12947 Dec 02 22:37	22°♄36'56 8.54407 AU	
max. Earth dist.	12942 Mar 24 16:26	11°♄52'13 10.41202 AU	direct	12948 Feb 10 13:06	19°♄13'42	
morning rise	12942 Apr 11 16:43	14°♄06'58	evening set	12948 May 24 05:44	26°♄52'18	
retrograde	12942 Jul 22 08:01	21°♄45'02				
opposition	12942 Sep 27 22:20	18°♄22'46 0°20'01	conjunction	12948 Jun 10 04:41	28°♄58'03 -1°35'55	
min. Earth dist.	12942 Sep 28 08:48	18°♄20'42 8.42037 AU	minimum elong	12948 Jun 10 04:39	28°♄58'02 1°36'55	
direct	12942 Dec 06 03:17	14°♄56'28	max. Earth dist.	12948 Jun 10 03:24	28°♄57'39 10.55769 AU	
evening set	12943 Mar 21 05:45	22°♄46'50		12948 Jun 18 12:05	0°♄	
			morning rise	12948 Jun 27 02:24	1°♄03'24	
conjunction	12943 Apr 07 17:23	24°♄57'31 0°03'53	retrograde	12948 Oct 07 02:16	8°♄35'28	
minimum elong	12943 Apr 07 17:24	24°♄57'31 0°03'34	opposition	12948 Dec 15 03:22	5°♄14'00 -2°04'43	
behind sun begin	12943 Apr 07 10:17	24°♄55'18	min. Earth dist.	12948 Dec 15 02:42	5°♄14'08 8.57300 AU	
behind sun end	12943 Apr 08 00:31	24°♄59'43	direct	12949 Feb 22 19:58	1°♄50'57	
max. Earth dist.	12943 Apr 07 04:30	24°♄53'29 10.42958 AU	evening set	12949 Jun 06 00:40	9°♄26'13	
morning rise	12943 Apr 25 02:10	27°♄07'21				
	12943 May 19 16:35	0°♄	conjunction	12949 Jun 22 21:59	11°♄31'06 -1°44'47	
desc. node	12943 Jun 06 09:30	1°♄47'34	minimum elong	12949 Jun 22 21:58	11°♄31'06 1°45'46	
retrograde	12943 Aug 04 13:10	4°♄43'53	max. Earth dist.	12949 Jun 23 00:14	11°♄31'48 10.58591 AU	
opposition	12943 Oct 11 08:10	1°♄21'57 -0°10'21	morning rise	12949 Jul 09 18:34	13°♄35'46	
min. Earth dist.	12943 Oct 11 17:44	1°♄20'05 8.43984 AU	retrograde	12949 Oct 20 01:30	21°♄07'18	
	12943 Oct 29 06:33	30°♄	opposition	12949 Dec 28 08:28	17°♄45'36 -2°12'31	
direct	12943 Dec 19 17:52	27°♄56'03	min. Earth dist.	12949 Dec 28 04:34	17°♄46'20 8.60058 AU	
	12944 Feb 07 20:20	0°♄	direct	12950 Mar 07 23:18	14°♄23'06	
evening set	12944 Apr 02 16:44	5°♄44'53	evening set	12950 Jun 18 16:35	21°♄54'58	
conjunction	12944 Apr 20 02:00	7°♄54'42 -0°20'36	conjunction	12950 Jul 05 12:57	23°♄59'10 -1°48'38	
minimum elong	12944 Apr 20 01:59	7°♄54'42 0°21'06	minimum elong	12950 Jul 05 12:57	23°♄59'10 1°49'35	
max. Earth dist.	12944 Apr 19 14:39	7°♄51'09 10.45068 AU	max. Earth dist.	12950 Jul 05 18:58	24°♄01'02 10.61225 AU	
morning rise	12944 May 07 08:20	10°♄03'41	morning rise	12950 Jul 22 09:04	26°♄03'20	
	12944 Jun 21 16:40	15°♄		12950 Aug 26 19:02	0°♄	
retrograde	12944 Aug 16 17:48	17°♄38'59	retrograde	12950 Nov 01 23:11	3°♄34'31	
	12944 Oct 14 13:23	15°♄	opposition	12951 Jan 10 11:59	0°♄12'30 -2°14'02	
opposition	12944 Oct 23 17:50	14°♄17'21 -0°40'02	min. Earth dist.	12951 Jan 10 05:23	0°♄13'46 8.62559 AU	
min. Earth dist.	12944 Oct 24 01:39	14°♄15'49 8.46242 AU		12951 Jan 13 05:28	30°♄	
direct	12945 Jan 01 07:21	10°♄51'59	direct	12951 Mar 21 00:07	26°♄50'31	
	12945 Mar 15 02:04	15°♄		12951 May 22 19:00	0°♄	
evening set	12945 Apr 16 00:49	18°♄38'53	evening set	12951 Jul 01 05:55	4°♄19'06	
conjunction	12945 May 03 07:29	20°♄47'44 -0°43'50	conjunction	12951 Jul 18 01:59	6°♄22'52 -1°47'23	
minimum elong	12945 May 03 07:27	20°♄47'44 0°44'31	minimum elong	12951 Jul 18 02:00	6°♄22'52 1°48'14	
max. Earth dist.	12945 May 02 22:42	20°♄44'59 10.47450 AU	max. Earth dist.	12951 Jul 18 10:43	6°♄25'33 10.63550 AU	
morning rise	12945 May 20 11:15	22°♄55'48	morning rise	12951 Aug 03 22:28	8°♄26'45	
	12945 Aug 06 02:34	0°♄		12951 Oct 11 23:09	15°♄	
retrograde	12945 Aug 29 22:43	0°♄30'05	retrograde	12951 Nov 14 21:00	15°♄57'42	
	12945 Sep 23 00:54	30°♄		12951 Dec 19 08:11	15°♄	
opposition	12945 Nov 06 03:25	27°♄08'41 -1°07'32	opposition	12952 Jan 23 13:42	12°♄35'23 -2°09'17	
min. Earth dist.	12945 Nov 06 09:18	27°♄07'32 8.48765 AU	min. Earth dist.	12952 Jan 23 05:23	12°♄36'58 8.64680 AU	
direct	12946 Jan 14 18:29	23°♄43'54	direct	12952 Apr 01 22:11	9°♄13'50	
	12946 Apr 16 22:41	0°♄		12952 Jun 28 14:54	15°♄	
evening set	12946 Apr 29 05:50	1°♄28'25	evening set	12952 Jul 12 17:29	16°♄39'25	
conjunction	12946 May 16 09:42	3°♄36'14 -1°04'46	conjunction	12952 Jul 29 13:53	18°♄42'57 -1°41'09	
minimum elong	12946 May 16 09:40	3°♄36'13 1°05'36	minimum elong	12952 Jul 29 13:55	18°♄42'58 1°41'52	
max. Earth dist.	12946 May 16 03:27	3°♄34'16 10.50073 AU	max. Earth dist.	12952 Jul 30 00:04	18°♄46'05 10.65449 AU	
morning rise	12946 Jun 02 11:00	5°♄43'20	morning rise	12952 Aug 15 11:31	20°♄46'49	
retrograde	12946 Sep 12 02:10	13°♄16'46	retrograde	12952 Nov 26 16:59	28°♄17'40	
opposition	12946 Nov 19 12:31	9°♄55'28 -1°31'32	opposition	12953 Feb 04 13:36	24°♄55'01 -1°58'36	
min. Earth dist.	12946 Nov 19 16:35	9°♄54'41 8.51516 AU	min. Earth dist.	12953 Feb 04 04:12	24°♄56'49 8.66314 AU	

direct	12953 Apr 14 17:35	21° Ω 33'50	retrograde	12959 Feb 10 22:27	12° \mathbb{M} 09'27
evening set	12953 Jul 25 03:49	28° Ω 56'53	opposition	12959 Apr 21 12:59	8° \mathbb{M} 44'56 0°27'04
	12953 Aug 02 20:05	0° \mathbb{M}	min. Earth dist.	12959 Apr 21 03:39	8° \mathbb{M} 46'45 8.63694 AU
conjunction	12953 Aug 11 01:16	1° \mathbb{M} 00'25 -1°30'18	direct	12959 Jun 28 16:18	5° \mathbb{M} 23'41
minimum elong	12953 Aug 11 01:19	1° \mathbb{M} 00'26 1°30'51	evening set	12959 Oct 07 12:47	12° \mathbb{M} 45'30
max. Earth dist.	12953 Aug 11 13:00	1° \mathbb{M} 04'01 10.66832 AU	conjunction	12959 Oct 24 22:47	14° \mathbb{M} 52'19 0°33'07
morning rise	12953 Aug 28 00:37	3° \mathbb{M} 04'27	minimum elong	12959 Oct 24 22:46	14° \mathbb{M} 52'19 0°33'44
retrograde	12953 Dec 09 11:38	10° \mathbb{M} 35'29	max. Earth dist.	12959 Oct 25 09:47	14° \mathbb{M} 55'40 10.62603 AU
opposition	12954 Feb 17 12:01	7° \mathbb{M} 12'28 -1°42'31		12959 Oct 25 23:56	15° \mathbb{M}
min. Earth dist.	12954 Feb 17 01:11	7° \mathbb{M} 14'32 8.67386 AU	morning rise	12959 Nov 11 11:34	17° \mathbb{M} 00'00
direct	12954 Apr 27 12:29	3° \mathbb{M} 51'34	retrograde	12960 Feb 23 22:27	24° \mathbb{M} 36'33
evening set	12954 Aug 06 13:32	11° \mathbb{M} 12'33	opposition	12960 May 03 07:45	21° \mathbb{M} 11'53 0°54'41
			min. Earth dist.	12960 May 02 23:31	21° \mathbb{M} 13'29 8.61443 AU
conjunction	12954 Aug 23 12:44	13° \mathbb{M} 16'19 -1°15'20	direct	12960 Jul 10 09:04	17° \mathbb{M} 50'13
minimum elong	12954 Aug 23 12:47	13° \mathbb{M} 16'20 1°15'43	evening set	12960 Oct 19 11:44	25° \mathbb{M} 14'25
max. Earth dist.	12954 Aug 24 02:21	13° \mathbb{M} 20'29 10.67624 AU			
morning rise	12954 Sep 09 14:08	15° \mathbb{M} 20'43	conjunction	12960 Nov 05 23:28	27° \mathbb{M} 21'59 0°54'39
retrograde	12954 Dec 22 08:32	22° \mathbb{M} 52'09	minimum elong	12960 Nov 05 23:27	27° \mathbb{M} 21'58 0°55'26
opposition	12955 Mar 02 09:00	19° \mathbb{M} 28'45 -1°21'47	max. Earth dist.	12960 Nov 06 08:25	27° \mathbb{M} 24'43 10.60152 AU
min. Earth dist.	12955 Mar 01 20:51	19° \mathbb{M} 31'05 8.67840 AU	morning rise	12960 Nov 23 13:39	29° \mathbb{M} 30'19
direct	12955 May 10 05:31	16° \mathbb{M} 08'03		12960 Nov 27 17:26	0° \mathbb{X}
evening set	12955 Aug 18 23:53	23° \mathbb{M} 27'37	retrograde	12961 Mar 08 01:12	7° \mathbb{X} 08'17
			opposition	12961 May 16 03:14	3° \mathbb{X} 43'30 1°19'53
conjunction	12955 Sep 05 01:10	25° \mathbb{M} 31'49 -0°56'57	min. Earth dist.	12961 May 15 21:05	3° \mathbb{X} 44'42 8.58852 AU
minimum elong	12955 Sep 05 01:12	25° \mathbb{M} 31'50 0°57'08	direct	12961 Jul 23 01:53	0° \mathbb{X} 21'16
max. Earth dist.	12955 Sep 05 16:00	25° \mathbb{M} 36'21 10.67786 AU	evening set	12961 Nov 01 14:27	7° \mathbb{X} 48'27
morning rise	12955 Sep 22 04:53	27° \mathbb{M} 36'44			
	12955 Oct 12 23:39	0° \mathbb{L}	conjunction	12961 Nov 19 03:35	9° \mathbb{X} 56'44 1°13'41
retrograde	12956 Jan 04 05:34	5° \mathbb{L} 08'45	minimum elong	12961 Nov 19 03:33	9° \mathbb{X} 56'43 1°14'35
opposition	12956 Mar 14 04:41	1° \mathbb{L} 45'01 -0°57'20	max. Earth dist.	12961 Nov 19 09:04	9° \mathbb{X} 58'25 10.57396 AU
min. Earth dist.	12956 Mar 13 16:05	1° \mathbb{L} 47'26 8.67660 AU	morning rise	12961 Dec 06 18:54	12° \mathbb{X} 05'42
	12956 Apr 07 04:20	30° \mathbb{R} \mathbb{M}	retrograde	12962 Mar 21 04:27	19° \mathbb{X} 44'57
direct	12956 May 21 19:31	28° \mathbb{M} 24'22	opposition	12962 May 28 23:35	16° \mathbb{X} 20'08 1°41'25
	12956 Jul 04 06:50	0° \mathbb{L}	min. Earth dist.	12962 May 28 20:30	16° \mathbb{X} 20'45 8.55993 AU
evening set	12956 Aug 30 11:33	5° \mathbb{L} 43'19	direct	12962 Aug 04 21:06	12° \mathbb{X} 57'12
			evening set	12962 Nov 14 20:42	20° \mathbb{X} 27'51
conjunction	12956 Sep 16 14:58	7° \mathbb{L} 48'03 -0°35'57			
minimum elong	12956 Sep 16 15:00	7° \mathbb{L} 48'03 0°35'56	conjunction	12962 Dec 02 11:01	22° \mathbb{X} 36'50 1°29'17
max. Earth dist.	12956 Sep 17 05:25	7° \mathbb{L} 52'27 10.67316 AU	minimum elong	12962 Dec 02 10:59	22° \mathbb{X} 36'50 1°30'15
morning rise	12956 Oct 03 21:13	9° \mathbb{L} 53'36	max. Earth dist.	12962 Dec 02 12:13	22° \mathbb{X} 37'13 10.54395 AU
retrograde	12957 Jan 16 02:15	17° \mathbb{L} 26'28	morning rise	12962 Dec 20 03:10	24° \mathbb{X} 46'23
opposition	12957 Mar 26 23:48	14° \mathbb{L} 02'25 -0°30'14		12963 Feb 07 14:45	0° \mathbb{Z}
min. Earth dist.	12957 Mar 26 12:02	14° \mathbb{L} 04'41 8.66870 AU	retrograde	12963 Apr 03 07:48	2° \mathbb{Z} 26'53
direct	12957 Jun 03 09:58	10° \mathbb{L} 41'42		12963 May 29 11:55	30° \mathbb{R} \mathbb{X}
evening set	12957 Sep 12 01:02	18° \mathbb{L} 00'48	opposition	12963 Jun 10 21:11	29° \mathbb{X} 02'05 1°58'10
			min. Earth dist.	12963 Jun 10 21:27	29° \mathbb{X} 02'02 8.52918 AU
conjunction	12957 Sep 29 06:40	20° \mathbb{L} 06'10 -0°13'17	direct	12963 Aug 17 19:53	25° \mathbb{X} 38'24
minimum elong	12957 Sep 29 06:40	20° \mathbb{L} 06'10 0°13'03		12963 Oct 31 00:59	0° \mathbb{Z}
behind sun begin	12957 Sep 29 02:23	20° \mathbb{L} 04'53	evening set	12963 Nov 28 06:15	3° \mathbb{Z} 12'53
behind sun end	12957 Sep 29 10:57	20° \mathbb{L} 07'28			
max. Earth dist.	12957 Sep 29 19:54	20° \mathbb{L} 10'12 10.66257 AU	conjunction	12963 Dec 15 21:33	5° \mathbb{Z} 22'35 1°40'35
morning rise	12957 Oct 16 15:26	22° \mathbb{L} 12'26	minimum elong	12963 Dec 15 21:32	5° \mathbb{Z} 22'34 1°41'34
retrograde	12958 Jan 29 00:07	29° \mathbb{L} 46'22	max. Earth dist.	12963 Dec 15 19:10	5° \mathbb{Z} 21'50 10.51236 AU
opposition	12958 Apr 08 18:32	26° \mathbb{L} 22'04 -0°01'40	morning rise	12964 Jan 02 14:06	7° \mathbb{Z} 32'39
min. Earth dist.	12958 Apr 08 08:00	26° \mathbb{L} 24'07 8.65526 AU	retrograde	12964 Apr 15 13:15	15° \mathbb{Z} 14'18
asc. node	12958 Apr 30 04:37	24° \mathbb{L} 46'39	opposition	12964 Jun 22 20:14	11° \mathbb{Z} 49'36 2°09'13
direct	12958 Jun 16 00:55	23° \mathbb{L} 01'09	min. Earth dist.	12964 Jun 22 22:56	11° \mathbb{Z} 49'04 8.49777 AU
	12958 Sep 21 18:00	0° \mathbb{M}	direct	12964 Aug 29 20:23	8° \mathbb{Z} 25'13
evening set	12958 Sep 24 17:19	0° \mathbb{M} 21'12	evening set	12964 Dec 10 18:50	16° \mathbb{Z} 03'35
conjunction	12958 Oct 12 01:12	2° \mathbb{M} 27'17 0°10'09	conjunction	12964 Dec 28 11:01	18° \mathbb{Z} 13'58 1°46'56
minimum elong	12958 Oct 12 01:11	2° \mathbb{M} 27'17 0°10'35	minimum elong	12964 Dec 28 11:01	18° \mathbb{Z} 13'58 1°47'54
behind sun begin	12958 Oct 11 19:39	2° \mathbb{M} 25'37	max. Earth dist.	12964 Dec 28 05:59	18° \mathbb{Z} 12'24 10.48140 AU
behind sun end	12958 Oct 12 06:44	2° \mathbb{M} 28'57	morning rise	12965 Jan 15 03:39	20° \mathbb{Z} 24'32
max. Earth dist.	12958 Oct 12 13:14	2° \mathbb{M} 30'57 10.64664 AU	retrograde	12965 Apr 28 20:49	28° \mathbb{Z} 07'00
morning rise	12958 Oct 29 12:12	4° \mathbb{M} 34'16	opposition	12965 Jul 05 20:58	24° \mathbb{Z} 42'27 2°13'53

min. Earth dist.	12965 Jul 06 01:35	24° ♁ 41'32	8.46818 AU	direct	12971 Nov 30 13:11	9° ♁ 26'52	
direct	12965 Sep 11 23:00	21° ♁ 17'22		evening set	12972 Mar 14 14:26	17° ♁ 17'17	
evening set	12965 Dec 24 09:57	28° ♁ 59'27					
	12966 Jan 01 15:34	0° ♁		conjunction	12972 Apr 01 03:17	19° ♁ 28'17	0°14'38
				minimum elong	12972 Apr 01 03:17	19° ♁ 28'17	0°14'24
conjunction	12966 Jan 11 02:48	1° ♁ 10'26	1°47'57	behind sun begin	12972 Apr 01 00:04	19° ♁ 27'17	
minimum elong	12966 Jan 11 02:48	1° ♁ 10'26	1°48'51	behind sun end	12972 Apr 01 06:30	19° ♁ 29'17	
max. Earth dist.	12966 Jan 10 19:18	1° ♁ 08'06	10.45349 AU	max. Earth dist.	12972 Mar 31 14:44	19° ♁ 24'21	10.41876 AU
morning rise	12966 Jan 28 19:17	3° ♁ 21'24		morning rise	12972 Apr 18 12:57	21° ♁ 38'24	
retrograde	12966 May 12 04:30	11° ♁ 04'14		retrograde	12972 Jul 29 01:35	29° ♁ 15'17	
opposition	12966 Jul 18 23:31	7° ♁ 39'53	2°11'48	opposition	12972 Oct 04 18:09	25° ♁ 52'47	0°03'05
min. Earth dist.	12966 Jul 19 06:03	7° ♁ 38'35	8.44245 AU	min. Earth dist.	12972 Oct 05 03:49	25° ♁ 50'53	8.42740 AU
direct	12966 Sep 25 04:45	4° ♁ 14'11		desc. node	12972 Nov 11 09:45	23° ♁ 16'36	
evening set	12967 Jan 07 03:01	11° ♁ 59'31		direct	12972 Dec 13 01:46	22° ♁ 26'17	
					12973 Mar 25 23:26	0° ♁	
conjunction	12967 Jan 24 20:07	14° ♁ 10'59	1°43'28	evening set	12973 Mar 28 02:07	0° ♁ 15'29	
minimum elong	12967 Jan 24 20:09	14° ♁ 10'59	1°44'15				
max. Earth dist.	12967 Jan 24 09:58	14° ♁ 07'49	10.43040 AU	conjunction	12973 Apr 14 12:36	2° ♁ 25'41	-0°09'53
	12967 Jan 31 09:34	15° ♁		minimum elong	12973 Apr 14 12:36	2° ♁ 25'41	0°10'19
morning rise	12967 Feb 11 12:14	16° ♁ 22'14		behind sun begin	12973 Apr 14 06:56	2° ♁ 23'56	
retrograde	12967 May 25 13:11	24° ♁ 04'55		behind sun end	12973 Apr 14 18:16	2° ♁ 27'26	
opposition	12967 Aug 01 03:44	20° ♁ 40'51	2°02'58	max. Earth dist.	12973 Apr 14 01:03	2° ♁ 22'05	10.43743 AU
min. Earth dist.	12967 Aug 01 12:29	20° ♁ 39'06	8.42222 AU	morning rise	12973 May 01 20:00	4° ♁ 35'02	
direct	12967 Oct 08 12:16	17° ♁ 14'37		retrograde	12973 Aug 11 05:11	12° ♁ 10'29	
evening set	12968 Jan 20 21:00	25° ♁ 02'33		opposition	12973 Oct 18 03:14	8° ♁ 48'19	-0°27'02
				min. Earth dist.	12973 Oct 18 12:00	8° ♁ 46'36	8.44901 AU
conjunction	12968 Feb 07 14:02	27° ♁ 14'21	1°33'40	direct	12973 Dec 26 15:20	5° ♁ 22'16	
minimum elong	12968 Feb 07 14:04	27° ♁ 14'22	1°34'17	evening set	12974 Apr 10 10:57	13° ♁ 09'41	
max. Earth dist.	12968 Feb 07 01:15	27° ♁ 10'21	10.41358 AU		12974 Apr 25 06:14	15° ♁	
morning rise	12968 Feb 25 05:37	29° ♁ 25'45					
	12968 Feb 29 22:22	0° ♁		conjunction	12974 Apr 27 18:43	15° ♁ 18'56	-0°33'42
retrograde	12968 Jun 06 21:58	7° ♁ 07'50		minimum elong	12974 Apr 27 18:42	15° ♁ 18'55	0°34'19
opposition	12968 Aug 13 09:31	3° ♁ 44'03	1°47'46	max. Earth dist.	12974 Apr 27 08:36	15° ♁ 15'46	10.46163 AU
min. Earth dist.	12968 Aug 13 20:01	3° ♁ 41'58	8.40866 AU	morning rise	12974 May 14 23:43	17° ♁ 27'22	
direct	12968 Oct 20 22:01	0° ♁ 17'25		retrograde	12974 Aug 24 08:34	25° ♁ 01'34	
evening set	12969 Feb 02 14:58	8° ♁ 07'12		opposition	12974 Oct 31 12:12	21° ♁ 39'42	-0°55'36
				min. Earth dist.	12974 Oct 31 19:16	21° ♁ 38'19	8.47564 AU
conjunction	12969 Feb 20 07:39	10° ♁ 19'08	1°19'00	direct	12975 Jan 09 03:12	18° ♁ 14'16	
minimum elong	12969 Feb 20 07:41	10° ♁ 19'09	1°19'25	evening set	12975 Apr 23 16:23	25° ♁ 59'20	
max. Earth dist.	12969 Feb 19 17:21	10° ♁ 14'40	10.40386 AU				
morning rise	12969 Mar 09 22:26	12° ♁ 30'33		conjunction	12975 May 10 21:24	28° ♁ 07'31	-0°55'43
retrograde	12969 Jun 20 04:33	20° ♁ 11'36		minimum elong	12975 May 10 21:22	28° ♁ 07'30	0°56'30
opposition	12969 Aug 26 16:30	16° ♁ 48'09	1°26'57	max. Earth dist.	12975 May 10 13:52	28° ♁ 05'09	10.49009 AU
min. Earth dist.	12969 Aug 27 03:44	16° ♁ 45'55	8.40235 AU		12975 May 25 23:11	0° ♁	
direct	12969 Nov 03 11:30	13° ♁ 21'16		morning rise	12975 May 27 23:58	0° ♁ 14'58	
evening set	12970 Feb 16 08:26	21° ♁ 12'05		retrograde	12975 Sep 06 10:51	7° ♁ 48'07	
max. Earth dist.	12970 Mar 05 09:45	23° ♁ 19'22	10.40152 AU	opposition	12975 Nov 13 20:37	4° ♁ 26'28	-1°21'14
				min. Earth dist.	12975 Nov 14 00:54	4° ♁ 25'39	8.50590 AU
conjunction	12970 Mar 06 00:21	23° ♁ 23'56	1°00'15	direct	12976 Jan 22 13:25	1° ♁ 01'46	
minimum elong	12970 Mar 06 00:23	23° ♁ 23'57	1°00'27	evening set	12976 May 05 18:39	8° ♁ 44'04	
morning rise	12970 Mar 23 13:51	25° ♁ 35'07					
	12970 May 02 02:46	0° ♁		conjunction	12976 May 22 21:04	10° ♁ 51'09	-1°14'52
retrograde	12970 Jul 03 11:39	3° ♁ 14'54		minimum elong	12976 May 22 21:02	10° ♁ 51'09	1°15'46
	12970 Sep 07 06:44	30° ♁		max. Earth dist.	12976 May 22 17:06	10° ♁ 49'55	10.52135 AU
opposition	12970 Sep 09 00:20	29° ♁ 51'45	1°01'38	morning rise	12976 Jun 08 21:16	12° ♁ 57'38	
min. Earth dist.	12970 Sep 09 11:19	29° ♁ 49'35	8.40347 AU	retrograde	12976 Sep 18 11:49	20° ♁ 29'52	
direct	12970 Nov 17 00:45	26° ♁ 24'50		opposition	12976 Nov 26 04:04	17° ♁ 08'24	-1°42'41
	12971 Jan 23 01:27	0° ♁		min. Earth dist.	12976 Nov 26 05:32	17° ♁ 08'07	8.53821 AU
evening set	12971 Mar 02 00:31	4° ♁ 15'51		direct	12977 Feb 03 21:59	13° ♁ 44'27	
				evening set	12977 May 18 17:40	21° ♁ 23'43	
conjunction	12971 Mar 19 15:10	6° ♁ 27'24	0°38'24				
minimum elong	12971 Mar 19 15:12	6° ♁ 27'24	0°38'23	conjunction	12977 Jun 04 17:42	23° ♁ 29'45	-1°30'16
max. Earth dist.	12971 Mar 19 01:29	6° ♁ 23'06	10.40658 AU	minimum elong	12977 Jun 04 17:41	23° ♁ 29'44	1°31'15
morning rise	12971 Apr 06 02:55	8° ♁ 38'08		max. Earth dist.	12977 Jun 04 17:07	23° ♁ 29'34	10.55386 AU
retrograde	12971 Jul 16 19:20	16° ♁ 16'29		morning rise	12977 Jun 21 15:54	25° ♁ 35'17	
opposition	12971 Sep 22 09:03	12° ♁ 53'39	0°33'10		12977 Jul 31 16:50	0° ♁	
min. Earth dist.	12971 Sep 22 19:18	12° ♁ 51'37	8.41196 AU	retrograde	12977 Oct 01 13:08	3° ♁ 06'48	

	12977 Dec 06 06:48	30° κ II	opposition	12984 Feb 24 18:17	14° η 02'08	-1°31'44
opposition	12977 Dec 09 10:40	29° Π 45'27	min. Earth dist.	12984 Feb 24 07:40	14° η 04'09	8.69753 AU
min. Earth dist.	12977 Dec 09 09:42	29° Π 45'38	direct	12984 May 03 15:30	10° η 41'56	
direct	12978 Feb 17 03:28	26° Π 22'16	evening set	12984 Aug 12 14:21	18° η 01'26	
	12978 Apr 26 00:31	0° ϕ				
evening set	12978 May 31 13:25	3° ϕ 58'14	conjunction	12984 Aug 29 14:21	20° η 05'11	-1°05'45
			minimum elong	12984 Aug 29 14:24	20° η 05'12	1°06'01
conjunction	12978 Jun 17 11:23	6° ϕ 03'19	max. Earth dist.	12984 Aug 30 02:38	20° η 08'56	10.69656 AU
minimum elong	12978 Jun 17 11:22	6° ϕ 03'19	morning rise	12984 Sep 15 16:56	22° η 09'39	
max. Earth dist.	12978 Jun 17 13:33	6° ϕ 03'59	retrograde	12984 Dec 28 14:17	29° η 40'43	
morning rise	12978 Jul 04 08:14	8° ϕ 08'04	opposition	12985 Mar 08 14:26	26° η 17'44	-1°08'57
retrograde	12978 Oct 14 12:05	15° ϕ 39'00	min. Earth dist.	12985 Mar 08 03:54	26° η 19'45	8.69474 AU
opposition	12978 Dec 22 16:03	12° ϕ 17'39	direct	12985 May 16 07:15	22° η 57'32	
min. Earth dist.	12978 Dec 22 13:10	12° ϕ 18'13		12985 Aug 22 18:25	0° α	
direct	12979 Mar 02 06:44	8° ϕ 55'13	evening set	12985 Aug 25 01:04	0° α 16'15	
evening set	12979 Jun 13 06:13	16° ϕ 27'50				
			conjunction	12985 Sep 11 03:20	2° α 20'32	-0°45'54
conjunction	12979 Jun 30 02:45	18° ϕ 32'06	minimum elong	12985 Sep 11 03:21	2° α 20'33	0°45'58
minimum elong	12979 Jun 30 02:44	18° ϕ 32'06	max. Earth dist.	12985 Sep 11 16:03	2° α 24'25	10.69030 AU
max. Earth dist.	12979 Jun 30 07:08	18° ϕ 33'27	morning rise	12985 Sep 28 08:21	4° α 25'38	
morning rise	12979 Jul 16 23:00	20° ϕ 36'16	retrograde	12986 Jan 10 10:17	11° α 57'40	
retrograde	12979 Oct 27 08:53	28° ϕ 06'43	opposition	12986 Mar 21 09:44	8° α 34'11	-0°43'00
opposition	12980 Jan 04 19:44	24° ϕ 45'18	min. Earth dist.	12986 Mar 20 22:52	8° α 36'16	8.68473 AU
min. Earth dist.	12980 Jan 04 14:39	24° ϕ 46'17	direct	12986 May 28 23:18	5° α 13'51	
direct	12980 Mar 14 08:48	21° ϕ 23'31	evening set	12986 Sep 06 13:23	12° α 32'28	
evening set	12980 Jun 24 20:19	28° ϕ 52'51				
	12980 Jul 04 00:45	0° Ω	conjunction	12986 Sep 23 18:03	14° α 37'26	-0°23'56
			minimum elong	12986 Sep 23 18:04	14° α 37'26	0°23'47
conjunction	12980 Jul 11 16:16	0° Ω 56'32	max. Earth dist.	12986 Sep 24 07:12	14° α 41'26	10.67718 AU
minimum elong	12980 Jul 11 16:17	0° Ω 56'32	morning rise	12986 Oct 11 01:31	16° α 43'15	
max. Earth dist.	12980 Jul 11 23:27	0° Ω 58'45	retrograde	12987 Jan 23 08:56	24° α 16'26	
morning rise	12980 Jul 28 12:34	3° Ω 00'18	opposition	12987 Apr 03 04:24	20° α 52'28	-0°15'02
retrograde	12980 Nov 08 06:15	10° Ω 30'27	min. Earth dist.	12987 Apr 02 17:42	20° α 54'31	8.66834 AU
opposition	12981 Jan 16 21:48	7° Ω 08'51	direct	12987 Jun 10 13:19	17° α 31'49	
min. Earth dist.	12981 Jan 16 14:13	7° Ω 10'18	evening set	12987 Sep 19 04:17	24° α 51'08	
direct	12981 Mar 27 08:39	3° Ω 47'40				
evening set	12981 Jul 07 08:15	11° Ω 13'49	conjunction	12987 Oct 06 11:10	26° α 56'50	-0°00'47
			minimum elong	12987 Oct 06 11:10	26° α 56'50	0°00'25
conjunction	12981 Jul 24 04:21	13° Ω 17'11	behind sun begin	12987 Oct 06 04:02	26° α 54'42	
minimum elong	12981 Jul 24 04:23	13° Ω 17'11	behind sun end	12987 Oct 06 18:17	26° α 58'59	
max. Earth dist.	12981 Jul 24 14:31	13° Ω 20'18	max. Earth dist.	12987 Oct 06 23:13	27° α 00'30	10.65801 AU
	12981 Aug 07 04:26	15° Ω	asc. node	12987 Oct 19 01:22	28° α 28'44	
morning rise	12981 Aug 10 01:14	15° Ω 20'45	morning rise	12987 Oct 23 20:57	29° α 03'26	
retrograde	12981 Nov 21 02:58	22° Ω 50'46		12987 Oct 31 20:56	0° \mathbb{L}	
opposition	12982 Jan 29 22:11	19° Ω 28'54	retrograde	12988 Feb 05 07:12	6° \mathbb{L} 37'54	
min. Earth dist.	12982 Jan 29 12:21	19° Ω 30'46	opposition	12988 Apr 14 22:44	3° \mathbb{L} 13'30	0°13'46
direct	12982 Apr 09 04:52	16° Ω 08'12	min. Earth dist.	12988 Apr 14 13:22	3° \mathbb{L} 15'19	8.64651 AU
evening set	12982 Jul 19 18:45	23° Ω 31'32		12988 Jun 10 02:38	30° \mathbb{R} α	
			direct	12988 Jun 22 03:00	29° α 52'23	
conjunction	12982 Aug 05 15:39	25° Ω 34'47		12988 Jul 04 03:58	0° \mathbb{L}	
minimum elong	12982 Aug 05 15:42	25° Ω 34'47	evening set	12988 Sep 30 22:04	7° \mathbb{L} 13'15	
max. Earth dist.	12982 Aug 06 03:49	25° Ω 38'30				
morning rise	12982 Aug 22 13:52	27° Ω 38'25	conjunction	12988 Oct 18 06:58	9° \mathbb{L} 19'43	0°22'32
	12982 Sep 12 00:53	0° η	minimum elong	12988 Oct 18 06:57	9° \mathbb{L} 19'43	0°23'05
retrograde	12982 Dec 03 23:03	5° η 08'29	max. Earth dist.	12988 Oct 18 16:49	9° \mathbb{L} 22'43	10.63384 AU
opposition	12983 Feb 11 20:56	1° η 46'16	morning rise	12988 Nov 04 18:54	11° \mathbb{L} 27'05	
min. Earth dist.	12983 Feb 11 10:14	1° η 48'19		12988 Dec 06 14:19	15° \mathbb{L}	
	12983 Mar 08 09:25	30° \mathbb{R} Ω	retrograde	12989 Feb 17 05:44	19° \mathbb{L} 03'01	
direct	12983 Apr 21 23:11	28° Ω 25'54	opposition	12989 Apr 27 17:22	15° \mathbb{L} 38'15	0°42'03
	12983 Jun 04 06:52	0° η	min. Earth dist.	12989 Apr 27 10:03	15° \mathbb{L} 39'40	8.62032 AU
evening set	12983 Aug 01 04:30	5° η 46'57		12989 May 05 22:40	15° \mathbb{R} \mathbb{L}	
			direct	12989 Jul 04 19:31	12° \mathbb{L} 16'32	
conjunction	12983 Aug 18 02:42	7° η 50'21		12989 Aug 31 05:24	15° \mathbb{L}	
minimum elong	12983 Aug 18 02:45	7° η 50'22	evening set	12989 Oct 13 19:00	19° \mathbb{L} 39'38	
max. Earth dist.	12983 Aug 18 15:06	7° η 54'08				
morning rise	12983 Sep 04 02:56	9° η 54'18	conjunction	12989 Oct 31 05:48	21° \mathbb{L} 46'54	0°44'52
retrograde	12983 Dec 16 19:32	17° η 24'42	minimum elong	12989 Oct 31 05:46	21° \mathbb{L} 46'54	0°45'35

max. Earth dist.	12989 Oct 31 13:22	21° \mathbb{M} 49'13	10.60574 AU	max. Earth dist.	12996 Jan 18 09:42	8° \approx 19'36	10.42840 AU
morning rise	12989 Nov 17 19:31	23° \mathbb{M} 55'01		morning rise	12996 Feb 05 11:10	10° \approx 33'40	
	12990 Jan 18 00:47	0° \mathbb{A}			12996 Mar 16 11:03	15° \approx	
retrograde	12990 Mar 02 06:25	1° \mathbb{A} 32'32		retrograde	12996 May 18 15:21	18° \approx 16'55	
	12990 Apr 15 03:11	30° \mathbb{R} \mathbb{M}			12996 Jul 23 18:41	15° \mathbb{R} \approx	
opposition	12990 May 10 12:25	28° \mathbb{M} 07'27	1°08'33	opposition	12996 Jul 25 09:07	14° \approx 52'20	2°07'55
min. Earth dist.	12990 May 10 07:02	28° \mathbb{M} 08'30	8.59083 AU	min. Earth dist.	12996 Jul 25 16:21	14° \approx 50'54	8.42031 AU
direct	12990 Jul 17 12:35	24° \mathbb{M} 45'03		direct	12996 Oct 01 16:37	11° \approx 26'02	
	12990 Oct 07 23:36	0° \mathbb{A}			12996 Dec 07 03:42	15° \approx	
evening set	12990 Oct 26 19:43	2° \mathbb{A} 11'03		evening set	12997 Jan 13 19:25	19° \approx 13'10	
conjunction	12990 Nov 13 08:17	4° \mathbb{A} 19'07	1°05'11	conjunction	12997 Jan 31 12:40	21° \approx 24'58	1°38'51
minimum elong	12990 Nov 13 08:15	4° \mathbb{A} 19'07	1°06'03	minimum elong	12997 Jan 31 12:42	21° \approx 24'59	1°39'32
max. Earth dist.	12990 Nov 13 13:53	4° \mathbb{A} 20'51	10.57477 AU	max. Earth dist.	12997 Jan 31 02:25	21° \approx 21'46	10.41157 AU
morning rise	12990 Nov 30 23:15	6° \mathbb{A} 27'56		morning rise	12997 Feb 18 04:39	23° \approx 36'27	
retrograde	12991 Mar 15 08:28	14° \mathbb{A} 06'59			12997 Apr 23 02:39	0° \mathbb{H}	
opposition	12991 May 23 08:05	10° \mathbb{A} 41'41	1°31'57	retrograde	12997 Jun 01 00:54	1° \mathbb{H} 19'19	
min. Earth dist.	12991 May 23 04:23	10° \mathbb{A} 42'24	8.55917 AU		12997 Jul 10 11:21	30° \mathbb{R} \approx	
direct	12991 Jul 30 07:20	7° \mathbb{A} 18'33		opposition	12997 Aug 07 14:19	27° \approx 55'10	1°55'34
evening set	12991 Nov 09 00:09	14° \mathbb{A} 47'59		min. Earth dist.	12997 Aug 07 22:35	27° \approx 53'31	8.40664 AU
				direct	12997 Oct 15 01:11	24° \approx 28'36	
conjunction	12991 Nov 26 14:07	16° \mathbb{A} 56'49	1°22'31		12998 Jan 08 02:58	0° \mathbb{H}	
minimum elong	12991 Nov 26 14:05	16° \mathbb{A} 56'49	1°23'27	evening set	12998 Jan 27 13:59	2° \mathbb{H} 17'59	
max. Earth dist.	12991 Nov 26 17:29	16° \mathbb{A} 57'51	10.54225 AU				
morning rise	12991 Dec 14 05:53	19° \mathbb{A} 06'15		conjunction	12998 Feb 14 07:05	4° \mathbb{H} 30'00	1°26'20
retrograde	12992 Mar 27 11:58	26° \mathbb{A} 46'46		minimum elong	12998 Feb 14 07:08	4° \mathbb{H} 30'01	1°26'51
opposition	12992 Jun 04 05:04	23° \mathbb{A} 21'22	1°51'05	max. Earth dist.	12998 Feb 13 19:29	4° \mathbb{H} 26'23	10.40161 AU
min. Earth dist.	12992 Jun 04 03:14	23° \mathbb{A} 21'43	8.52672 AU	morning rise	12998 Mar 03 22:16	6° \mathbb{H} 41'32	
direct	12992 Aug 11 04:18	19° \mathbb{A} 57'29		retrograde	12998 Jun 14 10:10	14° \mathbb{H} 23'34	
evening set	12992 Nov 21 08:02	27° \mathbb{A} 30'38		opposition	12998 Aug 20 21:13	10° \mathbb{H} 59'57	1°37'11
				min. Earth dist.	12998 Aug 21 06:44	10° \mathbb{H} 58'03	8.40007 AU
conjunction	12992 Dec 08 23:04	29° \mathbb{A} 40'12	1°35'55	direct	12998 Oct 28 12:21	7° \mathbb{H} 33'15	
minimum elong	12992 Dec 08 23:03	29° \mathbb{A} 40'12	1°36'54	evening set	12999 Feb 10 08:26	15° \mathbb{H} 24'05	
max. Earth dist.	12992 Dec 08 23:27	29° \mathbb{A} 40'20	10.50973 AU	max. Earth dist.	12999 Feb 27 11:57	17° \mathbb{H} 32'03	10.39901 AU
	12992 Dec 11 15:15	0° \mathbb{B}					
morning rise	12992 Dec 26 15:24	1° \mathbb{B} 50'13		conjunction	12999 Feb 28 00:51	17° \mathbb{H} 36'06	1°09'20
retrograde	12993 Apr 09 18:05	9° \mathbb{B} 31'58		minimum elong	12999 Feb 28 00:53	17° \mathbb{H} 36'07	1°09'38
opposition	12993 Jun 17 03:35	6° \mathbb{B} 06'35	2°04'55	morning rise	12999 Mar 17 14:54	19° \mathbb{H} 47'29	
min. Earth dist.	12993 Jun 17 04:21	6° \mathbb{B} 06'26	8.49504 AU	retrograde	12999 Jun 27 18:47	27° \mathbb{H} 28'20	
direct	12993 Aug 24 02:27	2° \mathbb{B} 41'58		opposition	12999 Sep 03 05:24	24° \mathbb{H} 05'14	1°13'44
evening set	12993 Dec 04 19:23	10° \mathbb{B} 18'58		min. Earth dist.	12999 Sep 03 15:56	24° \mathbb{H} 03'08	8.40099 AU
				direct	12999 Nov 11 01:02	20° \mathbb{H} 38'33	
conjunction	12993 Dec 22 11:13	12° \mathbb{B} 29'13	1°44'39	evening set	13000 Feb 24 01:57	28° \mathbb{H} 29'57	
minimum elong	12993 Dec 22 11:12	12° \mathbb{B} 29'13	1°45'38		13000 Mar 08 04:02	0° \mathbb{Y}	
max. Earth dist.	12993 Dec 22 07:47	12° \mathbb{B} 28'09	10.47886 AU				
morning rise	12994 Jan 09 03:54	14° \mathbb{B} 39'45		conjunction	13000 Mar 13 17:11	0° \mathbb{Y} 41'44	0°48'44
retrograde	12994 Apr 23 00:53	22° \mathbb{B} 22'23		minimum elong	13000 Mar 13 17:13	0° \mathbb{Y} 41'45	0°48'50
opposition	12994 Jun 30 03:37	18° \mathbb{B} 57'10	2°12'37	max. Earth dist.	13000 Mar 13 03:26	0° \mathbb{Y} 37'26	10.40393 AU
min. Earth dist.	12994 Jun 30 07:18	18° \mathbb{B} 56'26	8.46576 AU	morning rise	13000 Mar 31 05:50	2° \mathbb{Y} 52'47	
direct	12994 Sep 06 03:50	15° \mathbb{B} 31'49		retrograde	13000 Jul 11 02:23	10° \mathbb{Y} 32'11	
evening set	12994 Dec 18 09:32	23° \mathbb{B} 12'39		opposition	13000 Sep 16 14:23	7° \mathbb{Y} 09'32	0°46'30
				min. Earth dist.	13000 Sep 17 01:16	7° \mathbb{Y} 07'23	8.40932 AU
conjunction	12995 Jan 05 02:01	25° \mathbb{B} 23'30	1°48'11	direct	13000 Nov 24 15:03	3° \mathbb{Y} 43'01	
minimum elong	12995 Jan 05 02:01	25° \mathbb{B} 23'30	1°49'07	evening set	13001 Mar 09 17:44	11° \mathbb{Y} 34'09	
max. Earth dist.	12995 Jan 04 19:18	25° \mathbb{B} 21'25	10.45126 AU				
morning rise	12995 Jan 22 18:47	27° \mathbb{B} 34'28		conjunction	13001 Mar 27 07:22	13° \mathbb{Y} 45'27	0°25'40
	12995 Feb 12 12:01	0° \approx		minimum elong	13001 Mar 27 07:23	13° \mathbb{Y} 45'28	0°25'32
retrograde	12995 May 06 06:55	5° \approx 17'36		max. Earth dist.	13001 Mar 26 17:44	13° \mathbb{Y} 41'11	10.41585 AU
opposition	12995 Jul 13 05:29	1° \approx 52'39	2°13'41	morning rise	13001 Apr 13 18:14	15° \mathbb{Y} 55'57	
min. Earth dist.	12995 Jul 13 11:24	1° \approx 51'29	8.44039 AU	retrograde	13001 Jul 24 08:25	23° \mathbb{Y} 33'46	
	12995 Aug 07 03:46	30° \mathbb{R} \mathbb{B}		opposition	13001 Sep 29 23:52	20° \mathbb{Y} 11'32	0°16'57
direct	12995 Sep 19 09:44	28° \mathbb{B} 26'45		min. Earth dist.	13001 Sep 30 09:58	20° \mathbb{Y} 09'33	8.42413 AU
	12995 Nov 01 00:27	0° \approx		direct	13001 Dec 08 06:01	16° \mathbb{Y} 45'18	
evening set	12996 Jan 01 01:41	6° \approx 11'00		evening set	13002 Mar 23 07:12	24° \mathbb{Y} 35'25	
conjunction	12996 Jan 18 18:39	8° \approx 22'23	1°46'15	conjunction	13002 Apr 09 18:47	26° \mathbb{Y} 46'00	0°01'23
minimum elong	12996 Jan 18 18:40	8° \approx 22'24	1°47'05	minimum elong	13002 Apr 09 18:47	26° \mathbb{Y} 46'00	0°01'02

behind sun begin	13002 Apr 09 11:37	26° Υ 43'47		min. Earth dist.	13007 Dec 18 03:14	7° Θ 01'29	8.57149 AU
behind sun end	13002 Apr 10 01:57	26° Υ 48'14		direct	13008 Feb 25 20:14	3° Θ 38'18	
max. Earth dist.	13002 Apr 09 06:32	26° Υ 42'11	10.43341 AU	evening set	13008 Jun 08 01:01	11° Θ 13'41	
morning rise	13002 Apr 27 03:22	28° Υ 55'45					
desc. node	13002 Apr 30 22:58	29° Υ 23'43		conjunction	13008 Jun 24 22:25	13° Θ 18'37	-1°45'13
	13002 May 05 23:34	0° \mathcal{B}		minimum elong	13008 Jun 24 22:24	13° Θ 18'37	1°46'12
retrograde	13002 Aug 06 13:52	6° \mathcal{B} 32'04		max. Earth dist.	13008 Jun 25 01:11	13° Θ 19'29	10.58348 AU
opposition	13002 Oct 13 09:28	3° \mathcal{B} 10'10	-0°13'22	morning rise	13008 Jul 11 18:56	15° Θ 23'20	
min. Earth dist.	13002 Oct 13 18:20	3° \mathcal{B} 08'26	8.44377 AU	retrograde	13008 Oct 22 02:44	22° Θ 55'16	
	13002 Dec 04 07:26	30° $\mathcal{R}\Upsilon$		opposition	13008 Dec 30 09:42	19° Θ 33'34	-2°12'44
direct	13002 Dec 21 20:10	29° Υ 44'21		min. Earth dist.	13008 Dec 30 05:46	19° Θ 34'19	8.59723 AU
	13003 Jan 08 05:19	0° \mathcal{B}		direct	13009 Mar 10 00:06	16° Θ 11'06	
evening set	13003 Apr 05 17:54	7° \mathcal{B} 32'52		evening set	13009 Jun 20 17:16	23° Θ 43'13	
conjunction	13003 Apr 23 03:04	9° \mathcal{B} 42'36	-0°22'57	conjunction	13009 Jul 07 13:40	25° Θ 47'31	-1°48'32
minimum elong	13003 Apr 23 03:03	9° \mathcal{B} 42'35	0°23'30	minimum elong	13009 Jul 07 13:40	25° Θ 47'31	1°49'28
max. Earth dist.	13003 Apr 22 16:31	9° \mathcal{B} 39'18	10.45472 AU	max. Earth dist.	13009 Jul 07 19:23	25° Θ 49'17	10.60803 AU
morning rise	13003 May 10 09:07	11° \mathcal{B} 51'27		morning rise	13009 Jul 24 09:52	27° Θ 51'46	
	13003 Jun 06 11:17	15° \mathcal{B}			13009 Aug 11 15:51	0° \mathcal{Q}	
retrograde	13003 Aug 19 20:01	19° \mathcal{B} 26'32		retrograde	13009 Nov 04 02:06	5° \mathcal{Q} 23'23	
opposition	13003 Oct 26 19:04	16° \mathcal{B} 04'56	-0°42'50	opposition	13010 Jan 12 13:38	2° \mathcal{Q} 01'23	-2°13'35
min. Earth dist.	13003 Oct 27 02:42	16° \mathcal{B} 03'27	8.46641 AU	min. Earth dist.	13010 Jan 12 07:41	2° \mathcal{Q} 02'31	8.62053 AU
	13003 Nov 09 22:18	15° $\mathcal{R}\mathcal{B}$			13010 Feb 09 23:37	30° $\mathcal{R}\Theta$	
direct	13004 Jan 04 07:27	12° \mathcal{B} 39'38		direct	13010 Mar 23 00:45	28° Θ 39'24	
	13004 Feb 26 21:55	15° \mathcal{B}			13010 May 02 02:25	0° \mathcal{Q}	
evening set	13004 Apr 18 01:33	20° \mathcal{B} 26'11		evening set	13010 Jul 03 06:59	6° \mathcal{Q} 08'17	
conjunction	13004 May 05 08:00	22° \mathcal{B} 34'57	-0°45'58	conjunction	13010 Jul 20 03:02	8° \mathcal{Q} 12'10	-1°46'45
minimum elong	13004 May 05 07:59	22° \mathcal{B} 34'57	0°46'41	minimum elong	13010 Jul 20 03:03	8° \mathcal{Q} 12'10	1°47'35
max. Earth dist.	13004 May 04 23:13	22° \mathcal{B} 32'13	10.47823 AU	max. Earth dist.	13010 Jul 20 10:54	8° \mathcal{Q} 14'35	10.62972 AU
morning rise	13004 May 22 11:35	24° \mathcal{B} 42'55		morning rise	13010 Aug 05 23:46	10° \mathcal{Q} 16'11	
	13004 Jul 10 23:45	0° \mathcal{I}			13010 Sep 18 22:19	15° \mathcal{Q}	
retrograde	13004 Aug 31 23:37	2° \mathcal{I} 17'03		retrograde	13010 Nov 16 22:51	17° \mathcal{Q} 47'38	
	13004 Oct 25 02:50	30° $\mathcal{R}\mathcal{B}$			13011 Jan 18 01:07	15° $\mathcal{R}\mathcal{Q}$	
opposition	13004 Nov 08 04:29	28° \mathcal{B} 55'42	-1°10'00	opposition	13011 Jan 25 15:50	14° \mathcal{Q} 25'16	-2°08'12
min. Earth dist.	13004 Nov 08 10:59	28° \mathcal{B} 54'26	8.49098 AU	min. Earth dist.	13011 Jan 25 08:10	14° \mathcal{Q} 26'44	8.64035 AU
direct	13005 Jan 16 18:38	25° \mathcal{B} 30'58		direct	13011 Apr 04 22:55	11° \mathcal{Q} 03'40	
	13005 Apr 03 00:27	0° \mathcal{I}			13011 Jun 14 16:44	15° \mathcal{Q}	
evening set	13005 May 01 06:20	3° \mathcal{I} 15'17		evening set	13011 Jul 15 18:55	18° \mathcal{Q} 29'39	
conjunction	13005 May 18 09:57	5° \mathcal{I} 23'00	-1°06'34	conjunction	13011 Aug 01 15:28	20° \mathcal{Q} 33'19	-1°40'01
minimum elong	13005 May 18 09:55	5° \mathcal{I} 22'59	1°07'26	minimum elong	13011 Aug 01 15:30	20° \mathcal{Q} 33'20	1°40'42
max. Earth dist.	13005 May 18 02:45	5° \mathcal{I} 20'45	10.50343 AU	max. Earth dist.	13011 Aug 02 01:18	20° \mathcal{Q} 36'21	10.64751 AU
morning rise	13005 Jun 04 11:13	7° \mathcal{I} 30'03		morning rise	13011 Aug 18 13:22	22° \mathcal{Q} 37'20	
retrograde	13005 Sep 14 01:24	15° \mathcal{I} 03'27			13011 Nov 16 16:30	0° \mathcal{M}	
opposition	13005 Nov 21 13:22	11° \mathcal{I} 42'13	-1°33'31	retrograde	13011 Nov 29 18:23	0° \mathcal{M} 08'45	
min. Earth dist.	13005 Nov 21 18:08	11° \mathcal{I} 41'18	8.51719 AU		13011 Dec 12 23:46	30° $\mathcal{R}\mathcal{Q}$	
direct	13006 Jan 30 05:28	8° \mathcal{I} 18'06		opposition	13012 Feb 07 16:04	26° \mathcal{Q} 46'00	-1°56'54
evening set	13006 May 14 07:52	15° \mathcal{I} 59'45		min. Earth dist.	13012 Feb 07 06:38	26° \mathcal{Q} 47'48	8.65564 AU
				direct	13012 Apr 16 20:39	23° \mathcal{Q} 24'45	
conjunction	13006 May 31 08:53	18° \mathcal{I} 06'27	-1°23'48		13012 Jul 20 11:34	0° \mathcal{M}	
minimum elong	13006 May 31 08:51	18° \mathcal{I} 06'26	1°24'45	evening set	13012 Jul 27 05:41	0° \mathcal{M} 48'13	
max. Earth dist.	13006 May 31 04:14	18° \mathcal{I} 05'00	10.53001 AU				
morning rise	13006 Jun 17 08:08	20° \mathcal{I} 12'36		conjunction	13012 Aug 13 03:29	2° \mathcal{M} 51'55	-1°28'41
retrograde	13006 Sep 27 03:17	27° \mathcal{I} 45'26		minimum elong	13012 Aug 13 03:32	2° \mathcal{M} 51'56	1°29'13
opposition	13006 Dec 04 21:31	24° \mathcal{I} 24'10	-1°52'19	max. Earth dist.	13012 Aug 13 15:46	2° \mathcal{M} 55'41	10.66040 AU
min. Earth dist.	13006 Dec 04 23:33	24° \mathcal{I} 23'46	8.54440 AU	morning rise	13012 Aug 30 03:00	4° \mathcal{M} 56'07	
direct	13007 Feb 12 14:07	21° \mathcal{I} 00'38		retrograde	13012 Dec 11 15:39	12° \mathcal{M} 27'42	
evening set	13007 May 27 05:56	28° \mathcal{I} 39'14		opposition	13013 Feb 19 14:49	9° \mathcal{M} 04'33	-1°40'16
	13007 Jun 07 04:15	0° Θ		min. Earth dist.	13013 Feb 19 03:26	9° \mathcal{M} 06'44	8.66554 AU
				direct	13013 Apr 29 15:28	5° \mathcal{M} 43'35	
conjunction	13007 Jun 13 04:51	0° Θ 45'00	-1°36'52	evening set	13013 Aug 08 16:01	13° \mathcal{M} 04'59	
minimum elong	13007 Jun 13 04:50	0° Θ 44'59	1°37'52				
max. Earth dist.	13007 Jun 13 03:46	0° Θ 44'40	10.55709 AU	conjunction	13013 Aug 25 15:30	15° \mathcal{M} 08'57	-1°13'18
morning rise	13007 Jun 30 02:29	2° Θ 50'22		minimum elong	13013 Aug 25 15:33	15° \mathcal{M} 08'57	1°13'39
retrograde	13007 Oct 10 03:28	10° Θ 22'43		max. Earth dist.	13013 Aug 26 05:40	15° \mathcal{M} 13'17	10.66765 AU
opposition	13007 Dec 18 04:24	7° Θ 01'16	-2°05'34	morning rise	13013 Sep 11 17:03	17° \mathcal{M} 13'31	

retrograde	13013 Dec 24 13:01	24° \mathbb{M} 45'30		minimum elong	13019 Nov 09 05:14	29° \mathbb{M} 20'26	0°57'46
opposition	13014 Mar 04 12:16	21° \mathbb{M} 21'58	-1°19'04	max. Earth dist.	13019 Nov 09 13:51	29° \mathbb{M} 23'04	10.59594 AU
min. Earth dist.	13014 Mar 03 23:52	21° \mathbb{M} 24'20	8.66961 AU		13019 Nov 14 14:29	0° \mathbb{A}	
direct	13014 May 12 06:54	18° \mathbb{M} 01'09		morning rise	13019 Nov 26 19:34	1° \mathbb{A} 28'53	
evening set	13014 Aug 21 02:58	25° \mathbb{M} 21'11		retrograde	13020 Mar 10 07:15	9° \mathbb{A} 07'05	
				opposition	13020 May 18 08:28	5° \mathbb{A} 42'16	1°22'31
conjunction	13014 Sep 07 04:25	27° \mathbb{M} 25'33	-0°54'35	min. Earth dist.	13020 May 18 02:40	5° \mathbb{A} 43'25	8.58377 AU
minimum elong	13014 Sep 07 04:27	27° \mathbb{M} 25'33	0°54'44	direct	13020 Jul 25 06:30	2° \mathbb{A} 19'56	
max. Earth dist.	13014 Sep 07 18:59	27° \mathbb{M} 30'00	10.66900 AU	evening set	13020 Nov 03 20:33	9° \mathbb{A} 47'33	
morning rise	13014 Sep 24 08:25	29° \mathbb{M} 30'39					
	13014 Sep 28 11:08	0° \mathbb{A}		conjunction	13020 Nov 21 09:40	11° \mathbb{A} 55'54	1°15'36
retrograde	13015 Jan 06 09:24	7° \mathbb{A} 03'12		minimum elong	13020 Nov 21 09:38	11° \mathbb{A} 55'53	1°16'32
opposition	13015 Mar 17 08:29	3° \mathbb{A} 39'19	-0°54'15	max. Earth dist.	13020 Nov 21 14:45	11° \mathbb{A} 57'27	10.57014 AU
min. Earth dist.	13015 Mar 16 20:20	3° \mathbb{A} 41'40	8.66775 AU	morning rise	13020 Dec 09 01:06	14° \mathbb{A} 04'55	
direct	13015 May 24 22:46	0° \mathbb{A} 18'32		retrograde	13021 Mar 23 09:12	21° \mathbb{A} 44'21	
evening set	13015 Sep 02 15:10	7° \mathbb{A} 37'58		opposition	13021 May 31 05:01	18° \mathbb{A} 19'32	1°43'30
				min. Earth dist.	13021 May 31 02:06	18° \mathbb{A} 20'06	8.55723 AU
conjunction	13015 Sep 19 18:46	9° \mathbb{A} 42'52	-0°33'21	direct	13021 Aug 07 03:28	14° \mathbb{A} 56'32	
minimum elong	13015 Sep 19 18:47	9° \mathbb{A} 42'52	0°33'18	evening set	13021 Nov 17 02:53	22° \mathbb{A} 27'28	
max. Earth dist.	13015 Sep 20 08:32	9° \mathbb{A} 47'04	10.66444 AU				
morning rise	13015 Oct 07 01:23	11° \mathbb{A} 48'36		conjunction	13021 Dec 04 17:16	24° \mathbb{A} 36'30	1°30'42
retrograde	13016 Jan 19 06:44	19° \mathbb{A} 21'57		minimum elong	13021 Dec 04 17:14	24° \mathbb{A} 36'30	1°31'41
opposition	13016 Mar 29 03:58	15° \mathbb{A} 57'46	-0°26'56	max. Earth dist.	13021 Dec 04 18:57	24° \mathbb{A} 37'01	10.54242 AU
min. Earth dist.	13016 Mar 28 16:39	15° \mathbb{A} 59'57	8.66011 AU	morning rise	13021 Dec 22 09:25	26° \mathbb{A} 46'03	
direct	13016 Jun 05 13:54	12° \mathbb{A} 36'53			13022 Jan 19 20:02	0° \mathbb{B}	
evening set	13016 Sep 14 05:14	19° \mathbb{A} 56'28		retrograde	13022 Apr 05 13:34	4° \mathbb{B} 26'34	
				opposition	13022 Jun 13 02:36	1° \mathbb{B} 01'47	1°59'35
conjunction	13016 Oct 01 11:07	22° \mathbb{A} 02'00	-0°10'34	min. Earth dist.	13022 Jun 13 02:21	1° \mathbb{B} 01'50	8.52892 AU
minimum elong	13016 Oct 01 11:07	22° \mathbb{A} 02'00	0°10'18		13022 Jun 26 08:06	30° \mathbb{R} \mathbb{A}	
behind sun begin	13016 Oct 01 05:29	22° \mathbb{A} 00'18		direct	13022 Aug 20 01:32	27° \mathbb{A} 38'05	
behind sun end	13016 Oct 01 16:46	22° \mathbb{A} 03'43			13022 Oct 12 05:46	0° \mathbb{B}	
max. Earth dist.	13016 Oct 02 00:27	22° \mathbb{A} 06'04	10.65418 AU	evening set	13022 Nov 30 12:34	5° \mathbb{B} 12'40	
morning rise	13016 Oct 18 20:07	24° \mathbb{A} 08'26					
	13016 Dec 16 06:36	0° \mathbb{M}		conjunction	13022 Dec 18 04:00	7° \mathbb{B} 22'21	1°41'25
retrograde	13017 Jan 31 04:20	1° \mathbb{M} 42'49		minimum elong	13022 Dec 18 03:58	7° \mathbb{B} 22'21	1°42'25
	13017 Mar 19 01:05	30° \mathbb{R} \mathbb{A}		max. Earth dist.	13022 Dec 18 02:38	7° \mathbb{B} 21'56	10.51321 AU
asc. node	13017 Mar 20 04:00	29° \mathbb{A} 55'28		morning rise	13023 Jan 04 20:25	9° \mathbb{B} 32'24	
opposition	13017 Apr 10 22:57	28° \mathbb{A} 18'22	0°01'42	retrograde	13023 Apr 18 19:06	17° \mathbb{B} 13'51	
min. Earth dist.	13017 Apr 10 12:08	28° \mathbb{A} 20'28	8.64715 AU	opposition	13023 Jun 26 01:26	13° \mathbb{B} 49'11	2°09'53
direct	13017 Jun 18 05:16	24° \mathbb{A} 57'18		min. Earth dist.	13023 Jun 26 03:25	13° \mathbb{B} 48'47	8.49962 AU
	13017 Sep 06 23:09	0° \mathbb{M}		direct	13023 Sep 02 01:49	10° \mathbb{B} 24'48	
evening set	13017 Sep 26 22:00	2° \mathbb{M} 17'50		evening set	13023 Dec 14 01:06	18° \mathbb{B} 03'09	
conjunction	13017 Oct 14 06:10	4° \mathbb{M} 24'05	0°12'52	conjunction	13023 Dec 31 17:19	20° \mathbb{B} 13'29	1°47'10
minimum elong	13017 Oct 14 06:09	4° \mathbb{M} 24'04	0°13'20	minimum elong	13023 Dec 31 17:19	20° \mathbb{B} 13'29	1°48'07
behind sun begin	13017 Oct 14 02:04	4° \mathbb{M} 22'50		max. Earth dist.	13023 Dec 31 12:50	20° \mathbb{B} 12'06	10.48400 AU
behind sun end	13017 Oct 14 10:14	4° \mathbb{M} 25'18		morning rise	13024 Jan 18 09:47	22° \mathbb{B} 23'59	
max. Earth dist.	13017 Oct 14 19:02	4° \mathbb{M} 28'00	10.63885 AU		13024 Apr 20 08:25	0° \mathbb{A}	
morning rise	13017 Oct 31 17:14	6° \mathbb{M} 31'11		retrograde	13024 May 01 01:54	0° \mathbb{A} 06'10	
retrograde	13018 Feb 13 03:31	14° \mathbb{M} 06'48			13024 May 11 20:17	30° \mathbb{R} \mathbb{B}	
opposition	13018 Apr 23 17:45	10° \mathbb{M} 42'09	0°30'22	opposition	13024 Jul 08 02:05	26° \mathbb{B} 41'41	2°13'45
min. Earth dist.	13018 Apr 23 07:39	10° \mathbb{M} 44'07	8.62960 AU	min. Earth dist.	13024 Jul 08 06:32	26° \mathbb{B} 40'48	8.47140 AU
direct	13018 Jun 30 21:26	7° \mathbb{M} 20'47		direct	13024 Sep 14 04:36	23° \mathbb{B} 16'39	
evening set	13018 Oct 09 17:58	14° \mathbb{M} 43'01			13024 Dec 18 12:38	0° \mathbb{A}	
	13018 Oct 12 02:33	15° \mathbb{M}		evening set	13024 Dec 26 15:58	0° \mathbb{A} 58'36	
conjunction	13018 Oct 27 04:08	16° \mathbb{M} 49'59	0°35'41	conjunction	13025 Jan 13 08:42	3° \mathbb{A} 09'31	1°47'32
minimum elong	13018 Oct 27 04:07	16° \mathbb{M} 49'59	0°36'21	minimum elong	13025 Jan 13 08:42	3° \mathbb{A} 09'32	1°48'25
max. Earth dist.	13018 Oct 27 15:40	16° \mathbb{M} 53'31	10.61916 AU	max. Earth dist.	13025 Jan 13 00:52	3° \mathbb{A} 07'06	10.45720 AU
morning rise	13018 Nov 13 17:00	18° \mathbb{M} 57'47		morning rise	13025 Jan 31 01:06	5° \mathbb{A} 20'25	
retrograde	13019 Feb 26 05:15	26° \mathbb{M} 34'42		retrograde	13025 May 14 10:25	13° \mathbb{A} 02'54	
opposition	13019 May 06 12:48	23° \mathbb{M} 09'55	0°57'44	opposition	13025 Jul 21 04:32	9° \mathbb{A} 38'40	2°10'54
min. Earth dist.	13019 May 06 04:17	23° \mathbb{M} 11'35	8.60818 AU	min. Earth dist.	13025 Jul 21 11:35	9° \mathbb{A} 37'16	8.44656 AU
direct	13019 Jul 13 12:54	19° \mathbb{M} 48'08		direct	13025 Sep 27 09:01	6° \mathbb{A} 13'00	
evening set	13019 Oct 22 17:30	27° \mathbb{M} 12'47		evening set	13026 Jan 09 08:44	13° \mathbb{A} 58'09	
					13026 Jan 17 17:58	15° \mathbb{A}	
conjunction	13019 Nov 09 05:16	29° \mathbb{M} 20'26	0°56'57				

conjunction	13026 Jan 27 01:43	16° \approx 09'33	1°42'27			13032 Mar 11 21:40	0° \mathcal{B}
minimum elong	13026 Jan 27 01:45	16° \approx 09'33	1°43'12	evening set		13032 Mar 30 06:01	2° \mathcal{B} 10'31
max. Earth dist.	13026 Jan 26 14:39	16° \approx 06'06	10.43484 AU				
morning rise	13026 Feb 13 17:52	18° \approx 20'44		conjunction		13032 Apr 16 16:12	4° \mathcal{B} 20'37 -0°12'31
retrograde	13026 May 27 18:00	26° \approx 03'01		minimum elong		13032 Apr 16 16:12	4° \mathcal{B} 20'37 0°12'59
opposition	13026 Aug 03 08:29	22° \approx 39'04	2°01'20	behind sun begin		13032 Apr 16 11:51	4° \mathcal{B} 19'16
min. Earth dist.	13026 Aug 03 17:53	22° \approx 37'12	8.42684 AU	behind sun end		13032 Apr 16 20:32	4° \mathcal{B} 21'58
direct	13026 Oct 10 17:29	19° \approx 12'52		max. Earth dist.		13032 Apr 16 03:53	4° \mathcal{B} 16'46 10.44007 AU
evening set	13027 Jan 23 02:25	27° \approx 00'37		morning rise		13032 May 03 23:32	6° \mathcal{B} 29'53
				retrograde		13032 Aug 13 08:47	14° \mathcal{B} 05'11
conjunction	13027 Feb 09 19:23	29° \approx 12'20	1°32'06	opposition		13032 Oct 20 07:12	10° \mathcal{B} 43'01 -0°30'13
minimum elong	13027 Feb 09 19:25	29° \approx 12'21	1°32'41	min. Earth dist.		13032 Oct 20 16:11	10° \mathcal{B} 41'16 8.45123 AU
max. Earth dist.	13027 Feb 09 06:05	29° \approx 08'11	10.41835 AU	direct		13032 Dec 28 19:29	7° \mathcal{B} 16'58
	13027 Feb 16 04:09	0° \mathcal{H}		evening set		13033 Apr 12 14:31	15° \mathcal{B} 04'09
morning rise	13027 Feb 27 10:59	1° \mathcal{H} 23'40				13033 Apr 12 00:57	15° \mathcal{B}
retrograde	13027 Jun 10 00:56	9° \mathcal{H} 05'21		conjunction		13033 Apr 29 22:07	17° \mathcal{B} 13'19 -0°36'10
opposition	13027 Aug 16 14:04	5° \mathcal{H} 41'41	1°45'30	minimum elong		13033 Apr 29 22:06	17° \mathcal{B} 13'19 0°36'49
min. Earth dist.	13027 Aug 17 00:34	5° \mathcal{H} 39'36	8.41343 AU	max. Earth dist.		13033 Apr 29 11:56	17° \mathcal{B} 10'08 10.46333 AU
direct	13027 Oct 24 04:43	2° \mathcal{H} 15'08		morning rise		13033 May 17 03:00	19° \mathcal{B} 21'41
evening set	13028 Feb 05 19:59	10° \mathcal{H} 04'39		retrograde		13033 Aug 26 11:30	26° \mathcal{B} 55'48
				opposition		13033 Nov 02 16:01	23° \mathcal{B} 33'53 -0°58'30
conjunction	13028 Feb 23 12:39	12° \mathcal{H} 16'30	1°16'58	min. Earth dist.		13033 Nov 02 22:38	23° \mathcal{B} 32'35 8.47683 AU
minimum elong	13028 Feb 23 12:41	12° \mathcal{H} 16'31	1°17'22	direct		13034 Jan 11 07:37	20° \mathcal{B} 08'26
max. Earth dist.	13028 Feb 22 22:40	12° \mathcal{H} 12'08	10.40864 AU	evening set		13034 Apr 25 19:49	27° \mathcal{B} 53'19
morning rise	13028 Mar 12 03:18	14° \mathcal{H} 27'49				13034 May 12 20:08	0° \mathcal{I}
retrograde	13028 Jun 22 08:33	22° \mathcal{H} 08'33					
opposition	13028 Aug 28 20:52	18° \mathcal{H} 45'10	1°24'11	conjunction		13034 May 13 00:44	0° \mathcal{I} 01'26 -0°57'53
min. Earth dist.	13028 Aug 29 07:38	18° \mathcal{H} 43'02	8.40701 AU	minimum elong		13034 May 13 00:42	0° \mathcal{I} 01'26 0°58'42
direct	13028 Nov 05 16:25	15° \mathcal{H} 18'24		max. Earth dist.		13034 May 12 17:49	29° \mathcal{B} 59'17 10.49068 AU
evening set	13029 Feb 18 13:05	23° \mathcal{H} 08'54		morning rise		13034 May 30 03:02	2° \mathcal{I} 08'49
				retrograde		13034 Sep 08 14:03	9° \mathcal{I} 41'59
conjunction	13029 Mar 08 05:00	25° \mathcal{H} 20'42	0°57'52	opposition		13034 Nov 16 00:24	6° \mathcal{I} 20'16 -1°23'41
minimum elong	13029 Mar 08 05:02	25° \mathcal{H} 20'42	0°58'03	min. Earth dist.		13034 Nov 16 04:16	6° \mathcal{I} 19'31 8.50593 AU
max. Earth dist.	13029 Mar 07 15:01	25° \mathcal{H} 16'19	10.40609 AU	direct		13035 Jan 24 17:50	2° \mathcal{I} 55'32
morning rise	13029 Mar 25 18:18	27° \mathcal{H} 31'46		evening set		13035 May 08 21:57	10° \mathcal{I} 37'43
	13029 Apr 15 16:41	0° \mathcal{Y}					
retrograde	13029 Jul 05 17:05	5° \mathcal{Y} 11'14		conjunction		13035 May 26 00:13	12° \mathcal{I} 44'46 -1°16'39
opposition	13029 Sep 11 04:34	1° \mathcal{Y} 48'10	0°58'30	minimum elong		13035 May 26 00:11	12° \mathcal{I} 44'45 1°17'34
min. Earth dist.	13029 Sep 11 15:21	1° \mathcal{Y} 46'02	8.40780 AU	max. Earth dist.		13035 May 25 20:36	12° \mathcal{I} 43'38 10.52078 AU
	13029 Oct 05 03:46	30° \mathcal{R} \mathcal{H}		morning rise		13035 Jun 12 00:12	14° \mathcal{I} 51'11
direct	13029 Nov 19 04:01	28° \mathcal{H} 21'20		retrograde		13035 Sep 21 16:32	22° \mathcal{I} 23'31
	13030 Jan 02 11:40	0° \mathcal{Y}		opposition		13035 Nov 29 07:58	19° \mathcal{I} 01'59 -1°44'36
evening set	13030 Mar 04 04:56	6° \mathcal{Y} 12'03		min. Earth dist.		13035 Nov 29 09:40	19° \mathcal{I} 01'39 8.53714 AU
				direct		13036 Feb 07 00:52	15° \mathcal{I} 38'00
conjunction	13030 Mar 21 19:29	8° \mathcal{Y} 23'31	0°35'47	evening set		13036 May 20 20:49	23° \mathcal{I} 17'11
minimum elong	13030 Mar 21 19:31	8° \mathcal{Y} 23'32	0°35'45				
max. Earth dist.	13030 Mar 21 05:50	8° \mathcal{Y} 19'15	10.41070 AU	conjunction		13036 Jun 06 20:39	25° \mathcal{I} 23'12 -1°31'34
morning rise	13030 Apr 08 07:03	10° \mathcal{Y} 34'11		minimum elong		13036 Jun 06 20:38	25° \mathcal{I} 23'12 1°32'34
retrograde	13030 Jul 18 23:21	18° \mathcal{Y} 12'14		max. Earth dist.		13036 Jun 06 19:36	25° \mathcal{I} 22'52 10.55219 AU
opposition	13030 Sep 24 13:12	14° \mathcal{Y} 49'28	0°29'51	morning rise		13036 Jun 23 18:49	27° \mathcal{I} 28'45
min. Earth dist.	13030 Sep 24 23:59	14° \mathcal{Y} 47'20	8.41575 AU			13036 Jul 15 08:45	0° \mathcal{G}
direct	13030 Dec 02 17:22	11° \mathcal{Y} 22'44		retrograde		13036 Oct 03 16:25	5° \mathcal{G} 00'24
evening set	13031 Mar 17 18:40	19° \mathcal{Y} 12'54		opposition		13036 Dec 11 14:36	1° \mathcal{G} 38'58 -2°00'18
				min. Earth dist.		13036 Dec 11 14:17	1° \mathcal{G} 39'02 8.56888 AU
conjunction	13031 Apr 04 07:15	21° \mathcal{Y} 23'47	0°11'57			13037 Jan 03 01:33	30° \mathcal{R} \mathcal{I}
minimum elong	13031 Apr 04 07:15	21° \mathcal{Y} 23'48	0°11'41	direct		13037 Feb 19 06:27	28° \mathcal{I} 15'43
behind sun begin	13031 Apr 04 02:11	21° \mathcal{Y} 22'13				13037 Apr 06 04:49	0° \mathcal{G}
behind sun end	13031 Apr 04 12:20	21° \mathcal{Y} 25'22		evening set		13037 Jun 02 16:35	5° \mathcal{G} 51'45
max. Earth dist.	13031 Apr 03 17:57	21° \mathcal{Y} 19'38	10.42221 AU				
morning rise	13031 Apr 21 16:48	23° \mathcal{Y} 33'50		conjunction		13037 Jun 19 14:24	7° \mathcal{G} 56'50 -1°42'01
	13031 Jun 25 15:04	0° \mathcal{B}		minimum elong		13037 Jun 19 14:23	7° \mathcal{G} 56'49 1°43'01
retrograde	13031 Aug 01 04:20	1° \mathcal{B} 10'29		max. Earth dist.		13037 Jun 19 15:46	7° \mathcal{G} 57'15 10.58343 AU
	13031 Sep 07 09:56	30° \mathcal{R} \mathcal{Y}		morning rise		13037 Jul 06 11:20	10° \mathcal{G} 01'37
desc. node	13031 Oct 04 18:35	28° \mathcal{Y} 02'54		retrograde		13037 Oct 16 14:36	17° \mathcal{G} 32'47
opposition	13031 Oct 07 22:15	27° \mathcal{Y} 48'02	-0°00'16	opposition		13037 Dec 24 19:59	14° \mathcal{G} 11'22 -2°10'08
min. Earth dist.	13031 Oct 08 08:38	27° \mathcal{Y} 45'59	8.43047 AU	min. Earth dist.		13037 Dec 24 17:21	14° \mathcal{G} 11'52 8.59972 AU
direct	13031 Dec 16 07:01	24° \mathcal{Y} 21'33					

direct	13038 Mar 04 11:28	10° $\mathring{\text{U}}$ 48'51	direct	13044 May 18 13:12	24° $\mathring{\text{M}}$ 55'30
evening set	13038 Jun 15 09:21	18° $\mathring{\text{U}}$ 21'36		13044 Aug 07 18:52	0° $\mathring{\text{U}}$
			evening set	13044 Aug 27 05:53	2° $\mathring{\text{U}}$ 14'25
conjunction	13038 Jul 02 05:55	20° $\mathring{\text{U}}$ 25'55 -1°47'33			
minimum elong	13038 Jul 02 05:55	20° $\mathring{\text{U}}$ 25'55 1°48'32	conjunction	13044 Sep 13 08:28	4° $\mathring{\text{U}}$ 18'50 -0°43'17
max. Earth dist.	13038 Jul 02 10:20	20° $\mathring{\text{U}}$ 27'17 10.61320 AU	minimum elong	13044 Sep 13 08:29	4° $\mathring{\text{U}}$ 18'50 0°43'19
morning rise	13038 Jul 19 02:13	22° $\mathring{\text{U}}$ 30'08	max. Earth dist.	13044 Sep 13 22:04	4° $\mathring{\text{U}}$ 22'59 10.68716 AU
	13038 Oct 25 06:40	0° $\mathring{\text{O}}$	morning rise	13044 Sep 30 13:38	6° $\mathring{\text{U}}$ 24'01
retrograde	13038 Oct 29 13:11	0° $\mathring{\text{O}}$ 00'57	retrograde	13045 Jan 12 17:24	13° $\mathring{\text{U}}$ 56'19
	13038 Nov 02 19:51	30° $\mathring{\text{R}}$ $\mathring{\text{U}}$	opposition	13045 Mar 23 14:58	10° $\mathring{\text{U}}$ 32'50 -0°39'40
opposition	13039 Jan 06 23:51	26° $\mathring{\text{U}}$ 39'25 -2°13'46	min. Earth dist.	13045 Mar 23 03:30	10° $\mathring{\text{U}}$ 35'02 8.68177 AU
min. Earth dist.	13039 Jan 06 18:14	26° $\mathring{\text{U}}$ 40'30 8.62833 AU	direct	13045 May 31 03:19	7° $\mathring{\text{U}}$ 12'32
direct	13039 Mar 17 13:14	23° $\mathring{\text{U}}$ 17'37	evening set	13045 Sep 08 18:38	14° $\mathring{\text{U}}$ 31'22
	13039 Jun 21 09:58	0° $\mathring{\text{O}}$			
evening set	13039 Jun 27 23:28	0° $\mathring{\text{O}}$ 47'04	conjunction	13045 Sep 25 23:27	16° $\mathring{\text{U}}$ 36'26 -0°21'09
			minimum elong	13045 Sep 25 23:28	16° $\mathring{\text{U}}$ 36'26 0°20'58
conjunction	13039 Jul 14 19:35	2° $\mathring{\text{O}}$ 50'51 -1°48'02	max. Earth dist.	13045 Sep 26 12:37	16° $\mathring{\text{U}}$ 40'26 10.67443 AU
minimum elong	13039 Jul 14 19:36	2° $\mathring{\text{O}}$ 50'52 1°48'55	morning rise	13045 Oct 13 07:06	18° $\mathring{\text{U}}$ 42'21
max. Earth dist.	13039 Jul 15 03:34	2° $\mathring{\text{O}}$ 53'19 10.64012 AU	retrograde	13046 Jan 25 15:09	26° $\mathring{\text{U}}$ 15'45
morning rise	13039 Jul 31 15:54	4° $\mathring{\text{O}}$ 54'43	opposition	13046 Apr 05 09:55	22° $\mathring{\text{U}}$ 51'49 -0°11'33
retrograde	13039 Nov 11 11:00	12° $\mathring{\text{O}}$ 25'16	min. Earth dist.	13046 Apr 04 23:23	22° $\mathring{\text{U}}$ 53'51 8.66581 AU
opposition	13040 Jan 20 02:06	9° $\mathring{\text{O}}$ 03'34 -2°11'09	direct	13046 Jun 12 17:20	19° $\mathring{\text{U}}$ 31'11
min. Earth dist.	13040 Jan 19 17:53	9° $\mathring{\text{O}}$ 05'08 8.65329 AU	asc. node	13046 Sep 04 14:06	24° $\mathring{\text{U}}$ 53'49
direct	13040 Mar 29 11:40	5° $\mathring{\text{O}}$ 42'23	evening set	13046 Sep 21 09:56	26° $\mathring{\text{U}}$ 50'46
evening set	13040 Jul 09 11:44	13° $\mathring{\text{O}}$ 08'45			
	13040 Jul 24 16:17	15° $\mathring{\text{O}}$	conjunction	13046 Oct 08 16:54	28° $\mathring{\text{U}}$ 56'32 0°02'07
			minimum elong	13046 Oct 08 16:54	28° $\mathring{\text{U}}$ 56'32 0°02'30
conjunction	13040 Jul 26 08:00	15° $\mathring{\text{O}}$ 12'13 -1°43'30	behind sun begin	13046 Oct 08 09:46	28° $\mathring{\text{U}}$ 54'23
minimum elong	13040 Jul 26 08:02	15° $\mathring{\text{O}}$ 12'13 1°44'15	behind sun end	13046 Oct 09 00:03	28° $\mathring{\text{U}}$ 58'42
max. Earth dist.	13040 Jul 26 18:35	15° $\mathring{\text{O}}$ 15'28 10.66282 AU	max. Earth dist.	13046 Oct 09 04:19	29° $\mathring{\text{U}}$ 00'01 10.65576 AU
morning rise	13040 Aug 12 05:01	17° $\mathring{\text{O}}$ 15'55		13046 Oct 17 09:12	0° $\mathring{\text{M}}$
retrograde	13040 Nov 23 07:56	24° $\mathring{\text{O}}$ 46'21	morning rise	13046 Oct 26 02:59	1° $\mathring{\text{M}}$ 03'13
opposition	13041 Feb 01 02:39	21° $\mathring{\text{O}}$ 24'25 -2°02'28	retrograde	13047 Feb 07 12:41	8° $\mathring{\text{M}}$ 37'52
min. Earth dist.	13041 Jan 31 16:50	21° $\mathring{\text{O}}$ 26'17 8.67330 AU	opposition	13047 Apr 18 04:26	5° $\mathring{\text{M}}$ 13'30 0°17'12
direct	13041 Apr 11 08:38	18° $\mathring{\text{O}}$ 03'42	min. Earth dist.	13047 Apr 17 19:38	5° $\mathring{\text{M}}$ 15'13 8.64452 AU
evening set	13041 Jul 21 22:35	25° $\mathring{\text{O}}$ 27'19	direct	13047 Jun 25 09:07	1° $\mathring{\text{M}}$ 52'22
			evening set	13047 Oct 04 04:05	9° $\mathring{\text{M}}$ 13'29
conjunction	13041 Aug 07 19:35	27° $\mathring{\text{O}}$ 30'41 -1°34'13			
minimum elong	13041 Aug 07 19:37	27° $\mathring{\text{O}}$ 30'42 1°34'50	conjunction	13047 Oct 21 13:08	11° $\mathring{\text{M}}$ 20'02 0°25'15
max. Earth dist.	13041 Aug 08 07:22	27° $\mathring{\text{O}}$ 34'18 10.68008 AU	minimum elong	13047 Oct 21 13:07	11° $\mathring{\text{M}}$ 20'02 0°25'50
morning rise	13041 Aug 24 18:05	29° $\mathring{\text{O}}$ 34'28	max. Earth dist.	13047 Oct 21 22:40	11° $\mathring{\text{M}}$ 22'57 10.63214 AU
	13041 Aug 28 07:39	0° $\mathring{\text{M}}$	morning rise	13047 Nov 08 01:17	13° $\mathring{\text{M}}$ 27'28
retrograde	13041 Dec 06 04:35	7° $\mathring{\text{M}}$ 04'56		13047 Nov 21 05:46	15° $\mathring{\text{M}}$
opposition	13042 Feb 14 01:47	3° $\mathring{\text{M}}$ 42'42 -1°48'13	retrograde	13048 Feb 20 12:12	21° $\mathring{\text{M}}$ 03'31
min. Earth dist.	13042 Feb 13 15:27	3° $\mathring{\text{M}}$ 44'40 8.68714 AU	opposition	13048 Apr 29 23:08	17° $\mathring{\text{M}}$ 38'47 0°45'18
direct	13042 Apr 24 02:53	0° $\mathring{\text{M}}$ 22'19	min. Earth dist.	13048 Apr 29 15:59	17° $\mathring{\text{M}}$ 40'10 8.61891 AU
evening set	13042 Aug 03 08:35	7° $\mathring{\text{M}}$ 43'37		13048 Jun 08 02:41	15° $\mathring{\text{R}}$ $\mathring{\text{M}}$
			direct	13048 Jul 07 01:03	14° $\mathring{\text{R}}$ $\mathring{\text{M}}$ 17'03
conjunction	13042 Aug 20 06:57	9° $\mathring{\text{M}}$ 47'07 -1°20'39		13048 Aug 04 16:29	15° $\mathring{\text{M}}$
minimum elong	13042 Aug 20 07:00	9° $\mathring{\text{M}}$ 47'08 1°21'05	evening set	13048 Oct 16 01:20	21° $\mathring{\text{M}}$ 40'23
max. Earth dist.	13042 Aug 20 19:13	9° $\mathring{\text{M}}$ 50'52 10.69053 AU			
morning rise	13042 Sep 06 07:30	11° $\mathring{\text{M}}$ 51'13	conjunction	13048 Nov 02 12:20	23° $\mathring{\text{M}}$ 47'42 0°47'21
retrograde	13042 Dec 18 23:40	19° $\mathring{\text{M}}$ 21'58	minimum elong	13048 Nov 02 12:18	23° $\mathring{\text{M}}$ 47'41 0°48'06
opposition	13043 Feb 26 23:21	15° $\mathring{\text{M}}$ 59'21 -1°29'04	max. Earth dist.	13048 Nov 02 20:27	23° $\mathring{\text{M}}$ 50'11 10.60461 AU
min. Earth dist.	13043 Feb 26 12:38	16° $\mathring{\text{M}}$ 01'24 8.69339 AU	morning rise	13048 Nov 20 02:03	25° $\mathring{\text{M}}$ 55'50
direct	13043 May 06 19:52	12° $\mathring{\text{M}}$ 39'09		13048 Dec 27 02:03	0° $\mathring{\text{J}}$
evening set	13043 Aug 15 18:46	19° $\mathring{\text{M}}$ 58'53	retrograde	13049 Mar 04 12:25	3° $\mathring{\text{J}}$ 33'25
			opposition	13049 May 12 18:14	0° $\mathring{\text{J}}$ 08'21 1°11'26
conjunction	13043 Sep 01 19:05	22° $\mathring{\text{M}}$ 02'45 -1°03'25	min. Earth dist.	13049 May 12 12:20	0° $\mathring{\text{J}}$ 09'30 8.59006 AU
minimum elong	13043 Sep 01 19:08	22° $\mathring{\text{M}}$ 02'45 1°03'39		13049 May 14 12:52	30° $\mathring{\text{R}}$ $\mathring{\text{M}}$
max. Earth dist.	13043 Sep 02 08:02	22° $\mathring{\text{M}}$ 06'42 10.69287 AU	direct	13049 Jul 19 18:43	26° $\mathring{\text{M}}$ 45'57
morning rise	13043 Sep 18 21:54	24° $\mathring{\text{M}}$ 07'19		13049 Sep 20 16:52	0° $\mathring{\text{J}}$
	13043 Nov 16 19:39	0° $\mathring{\text{U}}$	evening set	13049 Oct 29 02:19	4° $\mathring{\text{J}}$ 12'08
retrograde	13043 Dec 31 19:19	1° $\mathring{\text{U}}$ 38'42			
	13044 Feb 15 22:21	30° $\mathring{\text{R}}$ $\mathring{\text{M}}$	conjunction	13049 Nov 15 14:59	6° $\mathring{\text{J}}$ 20'13 1°07'20
opposition	13044 Mar 10 19:30	28° $\mathring{\text{M}}$ 15'40 -1°05'53	minimum elong	13049 Nov 15 14:57	6° $\mathring{\text{J}}$ 20'13 1°08'13
min. Earth dist.	13044 Mar 10 08:19	28° $\mathring{\text{M}}$ 17'49 8.69134 AU	max. Earth dist.	13049 Nov 15 21:16	6° $\mathring{\text{J}}$ 22'09 10.57433 AU

morning rise	13049 Dec 03 05:53	8°♊29'02		retrograde	13056 Jun 03 05:41	3°♋17'22	
retrograde	13050 Mar 17 14:43	16°♊08'05			13056 Aug 08 09:27	30°♋	
opposition	13050 May 25 14:01	12°♊42'47	1°34'20	opposition	13056 Aug 09 19:19	29°♋53'15	1°53'35
min. Earth dist.	13050 May 25 09:55	12°♊43'36	8.55916 AU	min. Earth dist.	13056 Aug 10 03:52	29°♋51'32	8.40997 AU
direct	13050 Aug 01 13:37	9°♊19'39		direct	13056 Oct 17 06:44	26°♋26'38	
evening set	13050 Nov 11 06:59	16°♊49'11		evening set	13056 Dec 22 18:51	0°♋	
					13057 Jan 29 19:26	4°♋15'44	
conjunction	13050 Nov 28 20:57	18°♊58'02	1°24'12	conjunction	13057 Feb 16 12:24	6°♋27'40	1°24'30
minimum elong	13050 Nov 28 20:55	18°♊58'01	1°25'10	minimum elong	13057 Feb 16 12:27	6°♋27'41	1°24'59
max. Earth dist.	13050 Nov 29 00:09	18°♊59'01	10.54261 AU	max. Earth dist.	13057 Feb 16 00:08	6°♋23'50	10.40504 AU
morning rise	13050 Dec 16 12:43	21°♊07'27		morning rise	13057 Mar 06 03:32	8°♋39'07	
retrograde	13051 Mar 30 19:38	28°♊47'50		retrograde	13057 Jun 16 14:40	16°♋20'44	
opposition	13051 Jun 07 11:00	25°♊22'28	1°52'50	opposition	13057 Aug 23 01:57	12°♋57'08	1°34'38
min. Earth dist.	13051 Jun 07 09:32	25°♊22'45	8.52751 AU	min. Earth dist.	13057 Aug 23 12:09	12°♋55'06	8.40351 AU
direct	13051 Aug 14 09:02	21°♊58'32		direct	13057 Oct 30 17:17	9°♋30'25	
evening set	13051 Nov 24 15:01	29°♊31'45		evening set	13058 Feb 12 13:30	17°♋20'57	
	13051 Nov 28 12:12	0°♋					
conjunction	13051 Dec 12 05:57	1°♋41'18	1°37'03	conjunction	13058 Mar 02 05:45	19°♋32'54	1°07'05
minimum elong	13051 Dec 12 05:55	1°♋41'17	1°38'03	minimum elong	13058 Mar 02 05:48	19°♋32'54	1°07'22
max. Earth dist.	13051 Dec 12 05:26	1°♋41'08	10.51088 AU	max. Earth dist.	13058 Mar 01 15:58	19°♋28'35	10.40249 AU
morning rise	13051 Dec 29 22:19	3°♋51'17		morning rise	13058 Mar 19 19:50	21°♋44'12	
retrograde	13052 Apr 11 23:57	11°♋32'47		retrograde	13058 Jun 29 22:45	29°♋24'40	
opposition	13052 Jun 19 09:27	8°♋07'27	2°05'56	opposition	13058 Sep 05 09:47	26°♋01'36	1°10'46
min. Earth dist.	13052 Jun 19 10:56	8°♋07'09	8.49660 AU	min. Earth dist.	13058 Sep 05 20:42	25°♋59'26	8.40440 AU
direct	13052 Aug 26 08:54	4°♋42'45		direct	13058 Nov 13 06:05	22°♋34'56	
evening set	13052 Dec 07 02:13	12°♋19'47		evening set	13059 Feb 22 17:03	0°♋	
					13059 Feb 26 06:35	0°♋26'04	
conjunction	13052 Dec 24 17:59	14°♋29'58	1°45'11	conjunction	13059 Mar 15 21:42	2°♋37'47	0°46'13
minimum elong	13052 Dec 24 17:58	14°♋29'58	1°46'10	minimum elong	13059 Mar 15 21:44	2°♋37'47	0°46'16
max. Earth dist.	13052 Dec 24 14:03	14°♋28'45	10.48078 AU	max. Earth dist.	13059 Mar 15 07:43	2°♋33'23	10.40730 AU
morning rise	13053 Jan 11 10:40	16°♋40'27		morning rise	13059 Apr 02 10:18	4°♋48'45	
retrograde	13053 Apr 25 05:09	24°♋22'47		retrograde	13059 Jul 13 05:09	12°♋27'51	
opposition	13053 Jul 02 09:20	20°♋57'35	2°12'52	opposition	13059 Sep 18 18:36	9°♋05'15	0°43'16
min. Earth dist.	13053 Jul 02 13:12	20°♋56'49	8.46805 AU	min. Earth dist.	13059 Sep 19 05:06	9°♋03'11	8.41257 AU
direct	13053 Sep 08 11:31	17°♋32'12		direct	13059 Nov 26 20:53	5°♋38'48	
evening set	13053 Dec 20 16:02	25°♋12'53		evening set	13060 Mar 10 21:51	13°♋29'40	
conjunction	13054 Jan 07 08:35	27°♋23'42	1°48'04	conjunction	13060 Mar 28 11:26	15°♋40'53	0°23'00
minimum elong	13054 Jan 07 08:35	27°♋23'42	1°49'00	minimum elong	13060 Mar 28 11:27	15°♋40'54	0°22'50
max. Earth dist.	13054 Jan 07 02:11	27°♋21'43	10.45383 AU	max. Earth dist.	13060 Mar 27 22:31	15°♋36'51	10.41908 AU
morning rise	13054 Jan 25 01:16	29°♋34'35		morning rise	13060 Apr 14 22:06	17°♋51'18	
	13054 Jan 28 13:21	0°♋		retrograde	13060 Jul 25 12:13	25°♋28'57	
retrograde	13054 May 08 12:34	7°♋17'23		opposition	13060 Oct 01 03:56	22°♋06'45	0°13'36
opposition	13054 Jul 15 10:56	3°♋52'25	2°13'08	min. Earth dist.	13060 Oct 01 13:21	22°♋04'54	8.42734 AU
min. Earth dist.	13054 Jul 15 16:26	3°♋51'19	8.44320 AU	direct	13060 Dec 09 10:31	18°♋40'37	
direct	13054 Sep 21 15:31	0°♋26'29		desc. node	13061 Mar 20 17:27	26°♋03'09	
evening set	13055 Jan 03 08:01	8°♋10'31		evening set	13061 Mar 24 11:04	26°♋30'29	
conjunction	13055 Jan 21 01:03	10°♋21'51	1°45'30	conjunction	13061 Apr 10 22:33	28°♋40'59	-0°01'23
minimum elong	13055 Jan 21 01:04	10°♋21'52	1°46'19	minimum elong	13061 Apr 10 22:35	28°♋41'00	0°01'46
max. Earth dist.	13055 Jan 20 16:40	10°♋19'14	10.43139 AU	behind sun begin	13061 Apr 10 15:24	28°♋38'46	
morning rise	13055 Feb 07 17:24	12°♋33'03		behind sun end	13061 Apr 11 05:45	28°♋43'13	
	13055 Feb 28 14:17	15°♋		max. Earth dist.	13061 Apr 10 11:09	28°♋37'26	10.43675 AU
retrograde	13055 May 21 21:06	20°♋15'52			13061 Apr 21 11:05	0°♋	
opposition	13055 Jul 28 14:15	16°♋51'17	2°06'38	morning rise	13061 Apr 28 06:55	0°♋50'38	
min. Earth dist.	13055 Jul 28 21:11	16°♋49'54	8.42343 AU	retrograde	13061 Aug 07 18:58	8°♋26'48	
	13055 Aug 22 03:58	15°♋		opposition	13061 Oct 14 13:23	5°♋04'57	-0°16'38
direct	13055 Oct 04 21:59	13°♋24'56		min. Earth dist.	13061 Oct 14 22:03	5°♋03'16	8.44735 AU
	13055 Nov 17 01:38	15°♋		direct	13061 Dec 22 22:33	1°♋39'14	
evening set	13056 Jan 17 01:24	21°♋11'50		evening set	13062 Apr 06 21:34	9°♋27'28	
conjunction	13056 Feb 03 18:36	23°♋23'33	1°37'31	conjunction	13062 Apr 24 06:30	11°♋37'05	-0°25'31
minimum elong	13056 Feb 03 18:38	23°♋23'33	1°38'12	minimum elong	13062 Apr 24 06:29	11°♋37'05	0°26'05
max. Earth dist.	13056 Feb 03 08:24	23°♋20'22	10.41482 AU	max. Earth dist.	13062 Apr 23 20:09	11°♋33'51	10.45864 AU
morning rise	13056 Feb 21 10:25	25°♋34'56		morning rise	13062 May 11 12:22	13°♋45'52	
	13056 Apr 01 03:07	0°♋					

	13062 May 21 18:13	15°♄		13068 Jul 27 16:39	0°♄
retrograde	13062 Aug 20 22:56	21°♄20'42	retrograde	13068 Nov 05 04:43	7°♄16'02
opposition	13062 Oct 27 22:55	17°♄59'10 -0°45'52	opposition	13069 Jan 13 16:55	3°♄54'01 -2°13'03
min. Earth dist.	13062 Oct 28 06:53	17°♄57'37 8.47069 AU	min. Earth dist.	13069 Jan 13 11:42	3°♄55'01 8.61852 AU
	13062 Dec 13 18:50	15°♄	direct	13069 Mar 24 03:01	0°♄32'02
direct	13063 Jan 05 11:21	14°♄33'55	evening set	13069 Jul 04 09:31	8°♄01'03
	13063 Jan 28 01:42	15°♄			
evening set	13063 Apr 20 04:51	22°♄20'08	conjunction	13069 Jul 21 05:39	10°♄04'58 -1°46'02
			minimum elong	13069 Jul 21 05:40	10°♄04'58 1°46'51
conjunction	13063 May 07 10:58	24°♄28'45 -0°48'16	max. Earth dist.	13069 Jul 21 12:59	10°♄07'14 10.62687 AU
minimum elong	13063 May 07 10:56	24°♄28'45 0°49'00	morning rise	13069 Aug 07 02:34	12°♄09'05
max. Earth dist.	13063 May 07 01:41	24°♄25'51 10.48271 AU		13069 Aug 31 21:47	15°♄
morning rise	13063 May 24 14:26	26°♄36'37	retrograde	13069 Nov 18 01:13	19°♄40'50
	13063 Jun 23 02:02	0°♄	opposition	13070 Jan 26 19:17	16°♄18'25 -2°06'59
retrograde	13063 Sep 03 01:42	4°♄10'31	min. Earth dist.	13070 Jan 26 11:41	16°♄19'52 8.63664 AU
opposition	13063 Nov 10 08:06	0°♄49'12 -1°12'38		13070 Feb 13 08:41	15°♄
min. Earth dist.	13063 Nov 10 14:56	0°♄47'52 8.49555 AU	direct	13070 Apr 06 03:27	12°♄56'48
	13063 Nov 21 00:18	30°♄		13070 May 25 23:17	15°♄
direct	13064 Jan 18 23:23	27°♄24'31	evening set	13070 Jul 16 21:39	20°♄22'58
	13064 Mar 15 13:42	0°♄			
evening set	13064 May 02 09:10	5°♄08'28	conjunction	13070 Aug 02 18:26	22°♄26'44 -1°38'45
			minimum elong	13070 Aug 02 18:28	22°♄26'45 1°39'27
conjunction	13064 May 19 12:32	7°♄16'04 -1°08'30	max. Earth dist.	13070 Aug 03 04:41	22°♄29'54 10.64303 AU
minimum elong	13064 May 19 12:30	7°♄16'03 1°09'23	morning rise	13070 Aug 19 16:27	24°♄30'51
max. Earth dist.	13064 May 19 05:02	7°♄13'43 10.50779 AU		13070 Oct 11 19:33	0°♄
morning rise	13064 Jun 05 13:43	9°♄23'01	retrograde	13070 Nov 30 23:14	2°♄02'40
retrograde	13064 Sep 15 04:19	16°♄56'15		13071 Jan 21 20:39	30°♄
opposition	13064 Nov 22 16:37	13°♄35'02 -1°35'38	opposition	13071 Feb 08 19:49	28°♄39'49 -1°55'04
min. Earth dist.	13064 Nov 22 21:10	13°♄34'10 8.52121 AU	min. Earth dist.	13071 Feb 08 09:52	28°♄41'43 8.65038 AU
direct	13065 Jan 31 09:08	10°♄10'59	direct	13071 Apr 18 23:58	25°♄18'32
evening set	13065 May 15 10:23	17°♄52'19		13071 Jul 05 18:51	0°♄
			evening set	13071 Jul 29 08:44	2°♄42'13
conjunction	13065 Jun 01 11:18	19°♄58'57 -1°25'16			
minimum elong	13065 Jun 01 11:16	19°♄58'56 1°26'14	conjunction	13071 Aug 15 06:49	4°♄46'04 -1°26'57
max. Earth dist.	13065 Jun 01 07:02	19°♄57'37 10.53346 AU	minimum elong	13071 Aug 15 06:51	4°♄46'04 1°27'28
morning rise	13065 Jun 18 10:23	22°♄05'02	max. Earth dist.	13071 Aug 15 19:34	4°♄49'59 10.65446 AU
retrograde	13065 Sep 28 05:53	29°♄37'47	morning rise	13071 Sep 01 06:29	6°♄50'24
opposition	13065 Dec 06 00:34	26°♄16'32 -1°53'50	retrograde	13071 Dec 13 20:36	14°♄22'26
min. Earth dist.	13065 Dec 06 02:07	26°♄16'14 8.54722 AU	opposition	13072 Feb 21 18:53	10°♄59'10 -1°37'52
direct	13066 Feb 13 17:00	22°♄53'05	min. Earth dist.	13072 Feb 21 07:24	11°♄01'22 8.65894 AU
	13066 May 24 00:12	0°♄	direct	13072 Apr 30 17:53	7°♄38'08
evening set	13066 May 28 08:18	0°♄31'30	evening set	13072 Aug 09 19:39	14°♄59'53
conjunction	13066 Jun 14 07:10	2°♄37'12 -1°37'49	conjunction	13072 Aug 26 19:18	17°♄03'59 -1°11'09
minimum elong	13066 Jun 14 07:09	2°♄37'11 1°38'50	minimum elong	13072 Aug 26 19:20	17°♄04'00 1°11'28
max. Earth dist.	13066 Jun 14 06:37	2°♄37'01 10.55915 AU	max. Earth dist.	13072 Aug 27 08:58	17°♄08'10 10.66049 AU
morning rise	13066 Jul 01 04:36	4°♄42'31	morning rise	13072 Sep 12 21:08	19°♄08'43
retrograde	13066 Oct 11 06:40	12°♄14'55	retrograde	13072 Dec 25 17:28	26°♄41'10
opposition	13066 Dec 19 07:30	8°♄53'30 -2°06'25	opposition	13073 Mar 05 16:39	23°♄17'32 -1°16'12
min. Earth dist.	13066 Dec 19 06:14	8°♄53'44 8.57278 AU	min. Earth dist.	13073 Mar 05 04:53	23°♄19'47 8.66192 AU
direct	13067 Feb 26 23:22	5°♄30'36	direct	13073 May 13 10:57	19°♄56'37
evening set	13067 Jun 10 03:22	13°♄05'53	evening set	13073 Aug 22 07:05	27°♄17'05
conjunction	13067 Jun 27 00:40	15°♄10'48 -1°45'37	conjunction	13073 Sep 08 08:41	29°♄21'36 -0°52'06
minimum elong	13067 Jun 27 00:39	15°♄10'48 1°46'37	minimum elong	13073 Sep 08 08:43	29°♄21'37 0°52'13
max. Earth dist.	13067 Jun 27 03:15	15°♄11'36 10.58395 AU	max. Earth dist.	13073 Sep 08 22:24	29°♄25'48 10.66093 AU
morning rise	13067 Jul 13 21:10	17°♄15'30		13073 Sep 13 14:15	0°♄
retrograde	13067 Oct 24 06:50	24°♄47'34	morning rise	13073 Sep 25 13:03	1°♄26'53
opposition	13068 Jan 01 12:55	21°♄25'54 -2°12'53	retrograde	13074 Jan 07 14:45	8°♄59'57
min. Earth dist.	13068 Jan 01 09:37	21°♄26'32 8.59691 AU	opposition	13074 Mar 18 13:20	5°♄35'57 -0°51'02
direct	13068 Mar 11 02:07	18°♄03'29	min. Earth dist.	13074 Mar 18 01:46	5°♄38'11 8.65931 AU
evening set	13068 Jun 21 19:40	25°♄35'35	direct	13074 May 26 02:48	2°♄15'03
			evening set	13074 Sep 03 19:44	9°♄34'57
conjunction	13068 Jul 08 16:00	27°♄39'54 -1°48'22	conjunction	13074 Sep 20 23:37	11°♄40'02 -0°30'38
minimum elong	13068 Jul 08 16:00	27°♄39'54 1°49'18	minimum elong	13074 Sep 20 23:38	11°♄40'02 0°30'33
max. Earth dist.	13068 Jul 08 20:44	27°♄41'22 10.60687 AU	max. Earth dist.	13074 Sep 21 13:18	11°♄44'13 10.65574 AU
morning rise	13068 Jul 25 12:22	29°♄44'13			

morning rise	13074 Oct 08 06:30	13°♊45'57		conjunction	13080 Dec 06 01:29	26°♊40'55	1°32'07
retrograde	13075 Jan 20 11:35	21°♊19'52		minimum elong	13080 Dec 06 01:27	26°♊40'54	1°33'07
opposition	13075 Mar 31 09:08	17°♊55'33	-0°23'30	max. Earth dist.	13080 Dec 06 04:12	26°♊41'45	10.53729 AU
min. Earth dist.	13075 Mar 30 21:41	17°♊57'45	8.65119 AU	morning rise	13080 Dec 23 17:33	28°♊50'33	
direct	13075 Jun 07 19:05	14°♊34'32			13081 Jan 02 11:41	0°♊	
evening set	13075 Sep 16 10:29	21°♊54'41		retrograde	13081 Apr 06 21:20	6°♊31'19	
				opposition	13081 Jun 14 09:50	3°♊06'31	2°00'59
conjunction	13075 Oct 03 16:42	24°♊00'24	-0°07'46	min. Earth dist.	13081 Jun 14 08:43	3°♊06'45	8.52499 AU
minimum elong	13075 Oct 03 16:43	24°♊00'24	0°07'27		13081 Aug 03 07:21	30°♊♊	
behind sun begin	13075 Oct 03 10:12	23°♊58'26		direct	13081 Aug 21 09:04	29°♊42'47	
behind sun end	13075 Oct 03 23:13	24°♊02'22			13081 Sep 08 08:18	0°♊	
max. Earth dist.	13075 Oct 04 06:38	24°♊04'39	10.64509 AU	evening set	13081 Dec 01 20:58	7°♊17'44	
morning rise	13075 Oct 21 01:50	26°♊06'59					
	13075 Nov 25 06:27	0°♊		conjunction	13081 Dec 19 12:28	9°♊27'29	1°42'14
retrograde	13076 Feb 02 10:15	3°♊41'57		minimum elong	13081 Dec 19 12:27	9°♊27'29	1°43'14
asc. node	13076 Feb 05 19:42	3°♊41'22		max. Earth dist.	13081 Dec 19 11:55	9°♊27'19	10.51052 AU
opposition	13076 Apr 12 04:21	0°♊17'22	0°05'11	morning rise	13082 Jan 06 04:49	11°♊37'33	
min. Earth dist.	13076 Apr 11 17:02	0°♊19'34	8.63797 AU	retrograde	13082 Apr 20 03:03	19°♊19'04	
	13076 Apr 15 22:03	30°♊♊		opposition	13082 Jun 27 08:51	15°♊54'24	2°10'29
direct	13076 Jun 19 11:06	26°♊56'11		min. Earth dist.	13082 Jun 27 10:31	15°♊54'05	8.49817 AU
	13076 Aug 19 15:21	0°♊		direct	13082 Sep 03 09:22	12°♊29'59	
evening set	13076 Sep 28 03:56	4°♊17'18		evening set	13082 Dec 15 09:42	20°♊08'31	
conjunction	13076 Oct 15 12:18	6°♊23'44	0°15'39	conjunction	13083 Jan 02 01:52	22°♊18'52	1°47'19
minimum elong	13076 Oct 15 12:17	6°♊23'44	0°16'10	minimum elong	13083 Jan 02 01:52	22°♊18'52	1°48'17
max. Earth dist.	13076 Oct 16 01:26	6°♊27'44	10.62963 AU	max. Earth dist.	13083 Jan 01 21:10	22°♊17'25	10.48363 AU
morning rise	13076 Nov 01 23:29	8°♊31'00		morning rise	13083 Jan 19 18:20	24°♊29'22	
	13077 Jan 08 16:52	15°♊			13083 Mar 13 06:00	0°♊	
retrograde	13077 Feb 14 11:40	16°♊07'10		retrograde	13083 May 03 10:32	2°♊11'24	
	13077 Mar 23 14:09	15°♊♊			13083 Jun 24 17:30	30°♊♊	
opposition	13077 Apr 24 23:37	12°♊42'24	0°33'45	opposition	13083 Jul 10 09:34	28°♊46'58	2°13'32
min. Earth dist.	13077 Apr 24 13:25	12°♊44'23	8.62049 AU	min. Earth dist.	13083 Jul 10 14:26	28°♊46'00	8.47196 AU
direct	13077 Jul 02 01:26	9°♊20'54		direct	13083 Sep 16 11:20	25°♊21'53	
	13077 Sep 26 04:49	15°♊			13083 Dec 02 09:58	0°♊	
evening set	13077 Oct 11 00:29	16°♊43'46		evening set	13083 Dec 29 00:29	3°♊03'54	
conjunction	13077 Oct 28 10:43	18°♊50'53	0°38'20	conjunction	13084 Jan 15 17:06	5°♊14'48	1°47'01
minimum elong	13077 Oct 28 10:42	18°♊50'53	0°39'01	minimum elong	13084 Jan 15 17:06	5°♊14'48	1°47'53
max. Earth dist.	13077 Oct 28 21:42	18°♊54'15	10.61025 AU	max. Earth dist.	13084 Jan 15 08:37	5°♊12'10	10.45857 AU
morning rise	13077 Nov 14 23:46	20°♊58'51		morning rise	13084 Feb 02 09:32	7°♊25'40	
retrograde	13078 Feb 27 12:03	28°♊36'16			13084 May 03 13:31	15°♊	
opposition	13078 May 07 19:10	25°♊11'25	1°00'51	retrograde	13084 May 15 17:46	15°♊07'53	
min. Earth dist.	13078 May 07 11:10	25°♊12'59	8.59960 AU		13084 May 27 21:11	15°♊♊	
direct	13078 Jul 14 18:42	21°♊49'29		opposition	13084 Jul 22 11:59	11°♊43'44	2°09'50
evening set	13078 Oct 24 00:38	29°♊14'48		min. Earth dist.	13084 Jul 22 19:27	11°♊42'15	8.44862 AU
	13078 Oct 30 06:19	0°♊♊		direct	13084 Sep 28 17:23	8°♊18'04	
					13085 Jan 01 22:44	15°♊	
conjunction	13078 Nov 10 12:28	1°♊22'36	0°59'18	evening set	13085 Jan 10 16:59	16°♊03'10	
minimum elong	13078 Nov 10 12:26	1°♊22'36	1°00'09				
max. Earth dist.	13078 Nov 10 20:22	1°♊25'02	10.58780 AU	conjunction	13085 Jan 28 09:56	18°♊14'30	1°41'17
morning rise	13078 Nov 28 03:00	3°♊31'11		minimum elong	13085 Jan 28 09:57	18°♊14'31	1°42'01
retrograde	13079 Mar 12 13:30	11°♊09'51		max. Earth dist.	13085 Jan 27 22:42	18°♊11'01	10.43752 AU
opposition	13079 May 20 15:06	7°♊44'59	1°25'12	morning rise	13085 Feb 15 02:05	20°♊25'39	
min. Earth dist.	13079 May 20 09:43	7°♊46'02	8.57621 AU	retrograde	13085 May 28 23:56	28°♊07'38	
direct	13079 Jul 27 13:54	4°♊22'31		opposition	13085 Aug 04 15:48	24°♊43'45	1°59'30
evening set	13079 Nov 06 04:12	11°♊50'46		min. Earth dist.	13085 Aug 05 01:01	24°♊41'55	8.43003 AU
				direct	13085 Oct 12 02:35	21°♊17'36	
conjunction	13079 Nov 23 17:29	13°♊59'15	1°17'33	evening set	13086 Jan 24 10:24	29°♊05'10	
minimum elong	13079 Nov 23 17:27	13°♊59'15	1°18'29		13086 Jan 31 20:43	0°♊♊	
max. Earth dist.	13079 Nov 23 22:46	14°♊00'53	10.56322 AU				
morning rise	13079 Dec 11 08:59	16°♊08'24		conjunction	13086 Feb 11 03:25	1°♊16'50	1°30'20
retrograde	13080 Mar 24 17:09	23°♊48'12		minimum elong	13086 Feb 11 03:27	1°♊16'51	1°30'54
opposition	13080 Jun 01 11:58	20°♊23'21	1°45'36	max. Earth dist.	13086 Feb 10 14:41	1°♊12'52	10.42201 AU
min. Earth dist.	13080 Jun 01 08:40	20°♊24'00	8.55115 AU	morning rise	13086 Feb 28 18:55	3°♊28'05	
direct	13080 Aug 08 10:02	17°♊00'18		retrograde	13086 Jun 11 08:08	11°♊09'26	
evening set	13080 Nov 18 10:57	24°♊31'47		opposition	13086 Aug 17 21:12	7°♊45'50	1°42'59
				min. Earth dist.	13086 Aug 18 07:07	7°♊43'52	8.41742 AU

direct	13086 Oct 25 12:14	4° X 19'21		max. Earth dist.	13092 Apr 30 18:23	19° C 10'14	10.46747 AU
evening set	13087 Feb 07 03:48	12° X 08'37		morning rise	13092 May 18 08:26	21° C 21'26	
				retrograde	13092 Aug 27 17:36	28° C 55'21	
conjunction	13087 Feb 24 20:28	14° X 20'24	1°14'43	opposition	13092 Nov 03 22:11	25° C 33'25	-1°01'33
minimum elong	13087 Feb 24 20:30	14° X 20'25	1°15'06	min. Earth dist.	13092 Nov 04 04:22	25° C 32'13	8.48059 AU
max. Earth dist.	13087 Feb 24 07:10	14° X 16'15	10.41295 AU	direct	13093 Jan 12 14:08	22° C 08'01	
morning rise	13087 Mar 14 10:54	16° X 31'37		evening set	13093 Apr 27 01:23	29° C 52'31	
retrograde	13087 Jun 24 16:43	24° X 11'58			13093 Apr 28 01:49	0° II	
opposition	13087 Aug 31 03:55	20° X 48'40	1°21'08				
min. Earth dist.	13087 Aug 31 14:26	20° X 46'35	8.41153 AU	conjunction	13093 May 14 06:08	2° II 00'33	-1°00'10
direct	13087 Nov 07 22:43	17° X 21'59		minimum elong	13093 May 14 06:06	2° II 00'32	1°01'01
evening set	13088 Feb 20 20:35	25° X 12'10		max. Earth dist.	13093 May 13 23:34	1° II 58'29	10.49395 AU
				morning rise	13093 May 31 08:10	4° II 07'49	
conjunction	13088 Mar 09 12:22	27° X 23'52	0°55'15	retrograde	13093 Sep 09 20:35	11° II 40'48	
minimum elong	13088 Mar 09 12:24	27° X 23'53	0°55'24	opposition	13093 Nov 17 06:21	8° II 19'05	-1°26'15
max. Earth dist.	13088 Mar 08 22:29	27° X 19'31	10.41086 AU	min. Earth dist.	13093 Nov 17 10:32	8° II 18'17	8.50874 AU
morning rise	13088 Mar 27 01:28	29° X 34'51		direct	13094 Jan 25 22:43	4° II 54'22	
	13088 Mar 30 11:56	0° Y		evening set	13094 May 10 03:14	12° II 36'15	
retrograde	13088 Jul 06 23:25	7° Y 13'56					
opposition	13088 Sep 12 11:33	3° Y 50'57	0°55'06	conjunction	13094 May 27 05:14	14° II 43'12	-1°18'29
min. Earth dist.	13088 Sep 12 22:43	3° Y 48'44	8.41274 AU	minimum elong	13094 May 27 05:12	14° II 43'12	1°19'26
direct	13088 Nov 20 11:34	0° Y 24'10		max. Earth dist.	13094 May 27 01:05	14° II 41'54	10.52301 AU
evening set	13089 Mar 05 12:03	8° Y 14'33		morning rise	13094 Jun 13 05:06	16° II 49'33	
				retrograde	13094 Sep 22 21:22	24° II 21'48	
conjunction	13089 Mar 23 02:23	10° Y 25'55	0°32'57	opposition	13094 Nov 30 13:55	21° II 00'15	-1°46'34
minimum elong	13089 Mar 23 02:24	10° Y 25'55	0°32'53	min. Earth dist.	13094 Nov 30 16:14	20° II 59'48	8.53885 AU
max. Earth dist.	13089 Mar 22 12:05	10° Y 21'26	10.41577 AU	direct	13095 Feb 08 06:22	17° II 36'14	
morning rise	13089 Apr 09 13:52	12° Y 36'28		evening set	13095 May 23 01:44	25° II 15'13	
retrograde	13089 Jul 20 05:21	20° Y 14'09					
opposition	13089 Sep 25 19:59	16° Y 51'29	0°26'15	conjunction	13095 Jun 09 01:20	27° II 21'09	-1°32'53
min. Earth dist.	13089 Sep 26 07:23	16° Y 49'14	8.42085 AU	minimum elong	13095 Jun 09 01:18	27° II 21'09	1°33'54
direct	13089 Dec 04 00:51	13° Y 24'47		max. Earth dist.	13095 Jun 08 23:34	27° II 20'36	10.55327 AU
evening set	13090 Mar 19 01:30	21° Y 14'36		morning rise	13095 Jun 25 23:30	29° II 26'39	
					13095 Jun 30 13:42	0° C	
conjunction	13090 Apr 05 13:49	23° Y 25'22	0°09'02	retrograde	13095 Oct 05 20:45	6° C 58'22	
minimum elong	13090 Apr 05 13:49	23° Y 25'22	0°08'45	opposition	13095 Dec 13 20:23	3° C 36'53	-2°01'35
behind sun begin	13090 Apr 05 07:37	23° Y 23'27		min. Earth dist.	13095 Dec 13 20:17	3° C 36'54	8.56936 AU
behind sun end	13090 Apr 05 20:02	23° Y 27'18		direct	13096 Feb 21 13:20	0° C 13'37	
max. Earth dist.	13090 Apr 04 23:49	23° Y 21'00	10.42728 AU	evening set	13096 Jun 03 21:15	7° C 49'30	
morning rise	13090 Apr 22 23:18	25° Y 35'18					
	13090 Jun 01 13:16	0° C		conjunction	13096 Jun 20 19:01	9° C 54'33	-1°42'45
retrograde	13090 Aug 02 10:16	3° C 11'36		minimum elong	13096 Jun 20 19:00	9° C 54'33	1°43'46
desc. node	13090 Aug 23 03:38	2° C 48'53		max. Earth dist.	13096 Jun 20 20:21	9° C 54'58	10.58321 AU
	13090 Oct 06 21:42	30° R Y		morning rise	13096 Jul 07 15:57	11° C 59'19	
opposition	13090 Oct 09 04:46	29° Y 49'12	-0°03'51	retrograde	13096 Oct 17 20:15	19° C 30'37	
min. Earth dist.	13090 Oct 09 15:13	29° Y 47'09	8.43542 AU	opposition	13096 Dec 26 01:31	16° C 09'08	-2°10'41
direct	13090 Dec 17 14:05	26° Y 22'47		min. Earth dist.	13096 Dec 25 22:27	16° C 09'43	8.59880 AU
	13091 Feb 23 05:13	0° C		direct	13097 Mar 05 16:49	12° C 46'37	
evening set	13091 Apr 01 12:23	4° C 11'22		evening set	13097 Jun 16 13:55	20° C 19'17	
conjunction	13091 Apr 18 22:23	6° C 21'20	-0°15'21	conjunction	13097 Jul 03 10:35	22° C 23'38	-1°47'42
minimum elong	13091 Apr 18 22:23	6° C 21'20	0°15'51	minimum elong	13097 Jul 03 10:35	22° C 23'38	1°48'40
behind sun begin	13091 Apr 18 21:18	6° C 21'00		max. Earth dist.	13097 Jul 03 15:39	22° C 25'12	10.61153 AU
behind sun end	13091 Apr 18 23:27	6° C 21'40		morning rise	13097 Jul 20 06:49	24° C 27'52	
max. Earth dist.	13091 Apr 18 10:12	6° C 17'32	10.44482 AU		13097 Sep 11 18:19	0° C	
morning rise	13091 May 06 05:32	8° C 30'29		retrograde	13097 Oct 30 18:43	1° C 58'54	
	13091 Jul 11 07:46	15° C			13097 Dec 20 14:57	30° R C	
retrograde	13091 Aug 15 13:51	16° C 05'31		opposition	13098 Jan 08 05:25	28° C 37'18	-2°13'34
	13091 Sep 20 13:00	15° R C		min. Earth dist.	13098 Jan 07 23:20	28° C 38'28	8.62591 AU
opposition	13091 Oct 22 13:34	12° C 43'21	-0°33'38	direct	13098 Mar 18 18:01	25° C 15'29	
min. Earth dist.	13091 Oct 22 22:00	12° C 41'42	8.45572 AU		13098 Jun 05 06:48	0° C	
direct	13091 Dec 31 03:00	9° C 17'22		evening set	13098 Jun 29 04:03	2° C 44'59	
	13092 Mar 27 09:48	15° C					
evening set	13092 Apr 13 20:21	17° C 04'08		conjunction	13098 Jul 16 00:14	4° C 48'49	-1°47'34
				minimum elong	13098 Jul 16 00:15	4° C 48'49	1°48'26
conjunction	13092 May 01 03:50	19° C 13'11	-0°38'47	max. Earth dist.	13098 Jul 16 08:28	4° C 51'21	10.63702 AU
minimum elong	13092 May 01 03:49	19° C 13'11	0°39'28	morning rise	13098 Aug 01 20:35	6° C 52'44	

retrograde	13098 Nov 12 16:51	14°02'36"	
opposition	13099 Jan 21 07:50	11°01'50"	-2°10'12"
min. Earth dist.	13099 Jan 20 23:48	11°03'22"	8.64954 AU
direct	13099 Mar 31 17:02	7°04'38"	
	13099 Jul 10 16:50	15°00'	
evening set	13099 Jul 11 16:30	15°07'07"	
conjunction	13099 Jul 28 12:49	17°01'41"	-1°42'26"
minimum elong	13099 Jul 28 12:51	17°01'41"	1°43'11"
max. Earth dist.	13099 Jul 28 22:50	17°01'45"	10.65857 AU
morning rise	13099 Aug 14 10:05	19°01'42"	
retrograde	13099 Nov 25 14:31	26°04'51"	
opposition	13100 Feb 03 08:30	23°02'31"	-2°00'50"
min. Earth dist.	13100 Feb 02 23:18	23°02'50"	8.66857 AU
direct	13100 Apr 13 12:50	20°02'32"	
evening set	13100 Jul 24 03:35	27°02'22"	
conjunction	13100 Aug 10 00:43	29°02'51"	-1°32'37"
minimum elong	13100 Aug 10 00:46	29°02'52"	1°33'12"
max. Earth dist.	13100 Aug 10 11:59	29°03'19"	10.67507 AU
	13100 Aug 14 02:58	0°00'	
morning rise	13100 Aug 26 23:33	1°03'33"	
retrograde	13100 Dec 08 09:32	9°04'38"	
opposition	13101 Feb 16 07:46	5°04'22"	-1°45'57"
min. Earth dist.	13101 Feb 15 21:34	5°04'41"	8.68190 AU
direct	13101 Apr 26 08:33	2°02'21"	
evening set	13101 Aug 05 13:52	9°04'32"	
conjunction	13101 Aug 22 12:31	11°04'47"	-1°18'34"
minimum elong	13101 Aug 22 12:34	11°04'47"	1°18'59"
max. Earth dist.	13101 Aug 23 01:20	11°05'51"	10.68531 AU
morning rise	13101 Sep 08 13:17	13°05'51"	
retrograde	13101 Dec 21 05:33	21°02'22"	