

opposition	12600 Feb 23 11:05	12° <u>♏</u> 13'20	0°13'13	opposition	12606 Mar 20 13:45	6° <u>♏</u> 18'44	0°40'00
min. Earth dist.	12600 Feb 22 23:52	12° <u>♏</u> 14'27	19.01638 AU	min. Earth dist.	12606 Mar 20 06:18	6° <u>♏</u> 19'29	18.90322 AU
direct	12600 May 10 13:53	10° <u>♏</u> 16'10		direct	12606 Jun 04 05:25	4° <u>♏</u> 21'20	
evening set	12600 Aug 09 02:57	13° <u>♏</u> 16'41		evening set	12606 Sep 02 16:49	7° <u>♏</u> 22'52	
conjunction	12600 Aug 25 00:22	14° <u>♏</u> 11'02	0°14'09	conjunction	12606 Sep 18 17:11	8° <u>♏</u> 17'51	0°37'58
minimum elong	12600 Aug 25 00:22	14° <u>♏</u> 11'02	0°13'47	minimum elong	12606 Sep 18 17:10	8° <u>♏</u> 17'51	0°38'01
behind sun begin	12600 Aug 24 20:50	14° <u>♏</u> 10'32		max. Earth dist.	12606 Sep 19 01:02	8° <u>♏</u> 18'58	20.88556 AU
behind sun end	12600 Aug 25 03:54	14° <u>♏</u> 11'31		morning rise	12606 Oct 04 19:48	9° <u>♏</u> 13'11	
max. Earth dist.	12600 Aug 25 12:20	14° <u>♏</u> 12'44	21.01322 AU	retrograde	12607 Jan 06 16:34	12° <u>♏</u> 21'07	
morning rise	12600 Sep 09 23:39	15° <u>♏</u> 05'39		opposition	12607 Mar 24 22:41	10° <u>♏</u> 21'47	0°43'58
retrograde	12600 Dec 12 07:31	18° <u>♏</u> 11'25		min. Earth dist.	12607 Mar 24 15:56	10° <u>♏</u> 22'28	18.86701 AU
opposition	12601 Feb 27 19:14	16° <u>♏</u> 12'53	0°17'57	direct	12607 Jun 08 12:41	8° <u>♏</u> 24'13	
min. Earth dist.	12601 Feb 27 08:41	16° <u>♏</u> 13'57	19.00923 AU	evening set	12607 Sep 07 00:24	11° <u>♏</u> 26'04	
direct	12601 May 14 20:24	14° <u>♏</u> 15'47		conjunction	12607 Sep 23 01:13	12° <u>♏</u> 21'12	0°41'26
evening set	12601 Aug 13 08:24	17° <u>♏</u> 16'19		minimum elong	12607 Sep 23 01:12	12° <u>♏</u> 21'12	0°41'32
conjunction	12601 Aug 29 06:09	18° <u>♏</u> 10'43	0°18'23	max. Earth dist.	12607 Sep 23 07:23	12° <u>♏</u> 22'05	20.84737 AU
minimum elong	12601 Aug 29 06:09	18° <u>♏</u> 10'43	0°18'06	morning rise	12607 Oct 09 04:38	13° <u>♏</u> 16'43	
max. Earth dist.	12601 Aug 29 16:47	18° <u>♏</u> 12'14	21.00408 AU	retrograde	12608 Jan 11 03:43	16° <u>♏</u> 25'07	
morning rise	12601 Sep 14 06:07	19° <u>♏</u> 05'26		opposition	12608 Mar 28 07:47	14° <u>♏</u> 25'32	0°47'42
retrograde	12601 Dec 16 17:15	22° <u>♏</u> 11'29		min. Earth dist.	12608 Mar 28 01:45	14° <u>♏</u> 26'09	18.82696 AU
opposition	12602 Mar 04 03:30	20° <u>♏</u> 12'53	0°22'36	direct	12608 Jun 11 20:18	12° <u>♏</u> 27'45	
min. Earth dist.	12602 Mar 03 17:05	20° <u>♏</u> 13'56	18.99794 AU	evening set	12608 Sep 10 08:27	15° <u>♏</u> 30'01	
direct	12602 May 19 01:51	18° <u>♏</u> 15'47		conjunction	12608 Sep 26 10:00	16° <u>♏</u> 25'20	0°44'43
evening set	12602 Aug 17 14:01	21° <u>♏</u> 16'26		minimum elong	12608 Sep 26 10:00	16° <u>♏</u> 25'20	0°44'53
conjunction	12602 Sep 02 12:18	22° <u>♏</u> 10'55	0°22'32	max. Earth dist.	12608 Sep 26 16:36	16° <u>♏</u> 26'17	20.80549 AU
minimum elong	12602 Sep 02 12:18	22° <u>♏</u> 10'55	0°22'18	morning rise	12608 Oct 12 13:53	17° <u>♏</u> 21'01	
max. Earth dist.	12602 Sep 02 23:25	22° <u>♏</u> 12'30	20.99041 AU	retrograde	12609 Jan 14 13:33	20° <u>♏</u> 29'55	
morning rise	12602 Sep 18 12:38	23° <u>♏</u> 05'44		opposition	12609 Apr 01 16:50	18° <u>♏</u> 30'06	0°51'14
retrograde	12602 Dec 21 01:36	26° <u>♏</u> 12'05		min. Earth dist.	12609 Apr 01 11:19	18° <u>♏</u> 30'40	18.78350 AU
opposition	12603 Mar 08 11:54	24° <u>♏</u> 13'25	0°27'09	direct	12609 Jun 16 03:54	16° <u>♏</u> 32'06	
min. Earth dist.	12603 Mar 08 02:17	24° <u>♏</u> 14'23	18.98189 AU	evening set	12609 Sep 14 17:07	19° <u>♏</u> 34'51	
direct	12603 May 23 08:58	22° <u>♏</u> 16'20		conjunction	12609 Sep 30 19:07	20° <u>♏</u> 30'21	0°47'46
evening set	12603 Aug 21 20:12	25° <u>♏</u> 17'07		minimum elong	12609 Sep 30 19:06	20° <u>♏</u> 30'21	0°48'00
conjunction	12603 Sep 06 18:50	26° <u>♏</u> 11'42	0°26'35	max. Earth dist.	12609 Oct 01 00:02	20° <u>♏</u> 31'04	20.76066 AU
minimum elong	12603 Sep 06 18:49	26° <u>♏</u> 11'42	0°26'26	morning rise	12609 Oct 16 23:46	21° <u>♏</u> 26'14	
max. Earth dist.	12603 Sep 07 04:17	26° <u>♏</u> 13'03	20.97200 AU	retrograde	12610 Jan 19 01:01	24° <u>♏</u> 35'41	
morning rise	12603 Sep 22 19:51	27° <u>♏</u> 06'37		opposition	12610 Apr 06 02:19	22° <u>♏</u> 35'37	0°54'30
	12603 Dec 02 03:16	0° <u>♏</u>		min. Earth dist.	12610 Apr 05 21:32	22° <u>♏</u> 36'07	18.73742 AU
retrograde	12603 Dec 25 12:06	0° <u>♏</u> 13'21		direct	12610 Jun 20 11:43	20° <u>♏</u> 37'25	
	12604 Jan 18 01:36	30° <u>♏</u>		evening set	12610 Sep 19 02:05	23° <u>♏</u> 40'43	
opposition	12604 Mar 11 20:25	28° <u>♏</u> 14'34	0°31'35	conjunction	12610 Oct 05 04:49	24° <u>♏</u> 36'25	0°50'35
min. Earth dist.	12604 Mar 11 11:18	28° <u>♏</u> 15'29	18.96100 AU	minimum elong	12610 Oct 05 04:49	24° <u>♏</u> 36'25	0°50'54
direct	12604 May 26 15:07	26° <u>♏</u> 17'24		max. Earth dist.	12610 Oct 05 10:19	24° <u>♏</u> 37'13	20.71329 AU
evening set	12604 Aug 25 02:37	29° <u>♏</u> 18'24		morning rise	12610 Oct 21 09:54	25° <u>♏</u> 32'29	
	12604 Sep 06 06:48	0° <u>♏</u>		retrograde	12611 Jan 23 12:31	28° <u>♏</u> 42'31	
conjunction	12604 Sep 10 01:54	0° <u>♏</u> 13'06	0°30'31	opposition	12611 Apr 10 12:04	26° <u>♏</u> 42'16	0°57'30
minimum elong	12604 Sep 10 01:54	0° <u>♏</u> 13'06	0°30'26	min. Earth dist.	12611 Apr 10 07:30	26° <u>♏</u> 42'44	18.68897 AU
max. Earth dist.	12604 Sep 10 11:29	0° <u>♏</u> 14'29	20.94838 AU	direct	12611 Jun 24 20:14	24° <u>♏</u> 43'51	
morning rise	12604 Sep 26 03:22	1° <u>♏</u> 08'10		evening set	12611 Sep 23 11:53	27° <u>♏</u> 47'45	
retrograde	12604 Dec 28 20:50	4° <u>♏</u> 15'16		conjunction	12611 Oct 09 15:06	28° <u>♏</u> 43'40	0°53'10
opposition	12605 Mar 16 05:04	2° <u>♏</u> 16'20	0°35'52	minimum elong	12611 Oct 09 15:06	28° <u>♏</u> 43'40	0°53'31
min. Earth dist.	12605 Mar 15 20:52	2° <u>♏</u> 17'10	18.93467 AU	max. Earth dist.	12611 Oct 09 18:55	28° <u>♏</u> 44'13	20.66391 AU
direct	12605 May 30 22:21	0° <u>♏</u> 19'06		morning rise	12611 Oct 25 20:59	29° <u>♏</u> 39'58	
evening set	12605 Aug 29 09:37	3° <u>♏</u> 20'19			12611 Oct 31 19:42	0° <u>♏</u>	
conjunction	12605 Sep 14 09:17	4° <u>♏</u> 15'09	0°34'19	retrograde	12612 Jan 28 00:20	2° <u>♏</u> 50'37	
minimum elong	12605 Sep 14 09:17	4° <u>♏</u> 15'09	0°34'18	opposition	12612 Apr 13 22:07	0° <u>♏</u> 50'10	1°00'14
max. Earth dist.	12605 Sep 14 16:55	4° <u>♏</u> 16'15	20.91947 AU	min. Earth dist.	12612 Apr 13 18:25	0° <u>♏</u> 50'32	18.63874 AU
morning rise	12605 Sep 30 11:28	5° <u>♏</u> 10'21			12612 May 04 20:53	30° <u>♏</u>	
retrograde	12606 Jan 02 07:36	8° <u>♏</u> 17'52		direct	12612 Jun 28 04:19	28° <u>♏</u> 51'32	

	12612 Aug 19 12:37	0° 11		minimum elong	12618 Nov 08 13:50	28° 11 18'22	1°03'41
evening set	12612 Sep 26 22:13	1° 11 56'07		max. Earth dist.	12618 Nov 08 12:20	28° 11 18'08	20.26963 AU
				morning rise	12618 Nov 24 23:45	29° 11 16'24	
conjunction	12612 Oct 13 02:18	2° 11 52'16	0°55'28		12618 Dec 07 20:55	0° 11	
minimum elong	12612 Oct 13 02:17	2° 11 52'16	0°55'53	retrograde	12619 Feb 27 07:19	2° 11 31'57	
max. Earth dist.	12612 Oct 13 06:34	2° 11 52'53	20.61273 AU	opposition	12619 May 14 10:04	0° 11 30'23	1°10'00
morning rise	12612 Oct 29 08:38	3° 11 48'47		min. Earth dist.	12619 May 14 11:35	0° 11 30'13	18.23810 AU
retrograde	12613 Jan 31 13:29	7° 11 00'05			12619 May 26 14:07	30° 11	
opposition	12613 Apr 18 08:34	4° 11 59'28	1°02'39	direct	12619 Jul 28 08:21	28° 11 30'03	
min. Earth dist.	12613 Apr 18 05:04	4° 11 59'50	18.58668 AU		12619 Sep 26 07:56	0° 11	
direct	12613 Jul 02 14:00	3° 11 00'39		evening set	12619 Oct 27 22:08	1° 11 40'40	
evening set	12613 Oct 01 09:26	6° 11 05'58					
				conjunction	12619 Nov 13 06:42	2° 11 38'40	1°03'00
conjunction	12613 Oct 17 13:58	7° 11 02'21	0°57'29	minimum elong	12619 Nov 13 06:42	2° 11 38'40	1°03'47
minimum elong	12613 Oct 17 13:58	7° 11 02'21	0°57'59	max. Earth dist.	12619 Nov 13 03:01	2° 11 38'07	20.20590 AU
max. Earth dist.	12613 Oct 17 16:26	7° 11 02'43	20.55992 AU	morning rise	12619 Nov 29 17:20	3° 11 36'59	
morning rise	12613 Nov 02 21:05	7° 11 59'07		retrograde	12620 Mar 02 23:43	6° 11 53'11	
retrograde	12614 Feb 05 02:02	11° 11 11'06		opposition	12620 May 18 00:10	4° 11 51'23	1°09'54
opposition	12614 Apr 22 19:30	9° 11 10'19	1°04'45	min. Earth dist.	12620 May 18 03:31	4° 11 51'02	18.17385 AU
min. Earth dist.	12614 Apr 22 17:06	9° 11 10'34	18.53315 AU	direct	12620 Jul 31 20:27	2° 11 50'42	
direct	12614 Jul 06 22:45	7° 11 11'18		evening set	12620 Oct 31 15:06	6° 11 02'16	
evening set	12614 Oct 05 21:18	10° 11 17'25					
				conjunction	12620 Nov 17 00:30	7° 11 00'33	1°02'43
conjunction	12614 Oct 22 02:40	11° 11 14'03	0°59'13	minimum elong	12620 Nov 17 00:30	7° 11 00'33	1°03'33
minimum elong	12614 Oct 22 02:40	11° 11 14'03	0°59'45	max. Earth dist.	12620 Nov 16 20:45	6° 11 59'59	20.14130 AU
max. Earth dist.	12614 Oct 22 05:32	11° 11 14'29	20.50560 AU	morning rise	12620 Dec 03 11:32	7° 11 59'07	
morning rise	12614 Nov 07 10:14	12° 11 11'04		retrograde	12621 Mar 07 18:53	11° 11 15'59	
	12615 Jan 09 21:43	15° 11		opposition	12621 May 22 14:42	9° 11 13'57	1°09'25
retrograde	12615 Feb 09 16:30	15° 11 23'45		min. Earth dist.	12621 May 22 18:00	9° 11 13'36	18.10900 AU
	12615 Mar 12 20:57	15° 11		direct	12621 Aug 05 11:48	7° 11 12'53	
opposition	12615 Apr 27 06:54	13° 11 22'51	1°06'31	evening set	12621 Nov 05 08:55	10° 11 25'24	
min. Earth dist.	12615 Apr 27 04:42	13° 11 23'05	18.47800 AU				
direct	12615 Jul 11 09:37	11° 11 23'38		conjunction	12621 Nov 21 18:46	11° 11 23'58	1°02'04
evening set	12615 Oct 10 10:08	14° 11 30'35		minimum elong	12621 Nov 21 18:46	11° 11 23'58	1°02'55
	12615 Oct 18 21:00	15° 11		max. Earth dist.	12621 Nov 21 13:17	11° 11 23'09	20.07645 AU
				morning rise	12621 Dec 08 06:24	12° 11 22'49	
conjunction	12615 Oct 26 16:01	15° 11 27'29	1°00'38	retrograde	12622 Mar 12 11:46	15° 11 40'19	
minimum elong	12615 Oct 26 16:00	15° 11 27'29	1°01'15	opposition	12622 May 27 05:56	13° 11 38'03	1°08'30
max. Earth dist.	12615 Oct 26 16:53	15° 11 27'37	20.44965 AU	min. Earth dist.	12622 May 27 10:54	13° 11 37'31	18.04443 AU
morning rise	12615 Nov 12 00:23	16° 11 24'45		direct	12622 Aug 10 01:00	11° 11 36'36	
retrograde	12616 Feb 14 06:36	19° 11 38'11		evening set	12622 Nov 10 03:26	14° 11 50'06	
opposition	12616 Apr 30 18:56	17° 11 37'08	1°07'56				
min. Earth dist.	12616 Apr 30 18:13	17° 11 37'12	18.42116 AU	conjunction	12622 Nov 26 14:03	15° 11 48'57	1°01'02
direct	12616 Jul 14 19:29	15° 11 37'41		minimum elong	12622 Nov 26 14:03	15° 11 48'57	1°01'55
evening set	12616 Oct 13 23:50	18° 11 45'32		max. Earth dist.	12622 Nov 26 08:37	15° 11 48'08	20.01232 AU
				morning rise	12622 Dec 13 02:03	16° 11 48'03	
conjunction	12616 Oct 30 06:33	19° 11 42'43	1°01'44	retrograde	12623 Mar 17 08:17	20° 11 06'11	
minimum elong	12616 Oct 30 06:33	19° 11 42'42	1°02'23	opposition	12623 May 31 21:30	18° 11 03'42	1°07'11
max. Earth dist.	12616 Oct 30 07:27	19° 11 42'50	20.39175 AU	min. Earth dist.	12623 Jun 01 02:08	18° 11 03'12	17.98085 AU
morning rise	12616 Nov 15 15:20	20° 11 40'13		direct	12623 Aug 14 17:51	16° 11 01'53	
retrograde	12617 Feb 17 22:25	23° 11 54'21		evening set	12623 Nov 14 22:52	19° 11 16'22	
opposition	12617 May 05 07:17	21° 11 53'11	1°09'00				
min. Earth dist.	12617 May 05 06:55	21° 11 53'13	18.36217 AU	conjunction	12623 Dec 01 09:59	20° 11 15'30	0°59'38
direct	12617 Jul 19 07:31	19° 11 53'29		minimum elong	12623 Dec 01 09:59	20° 11 15'30	1°00'32
evening set	12617 Oct 18 14:34	23° 11 02'15		max. Earth dist.	12623 Dec 01 03:10	20° 11 14'28	19.94945 AU
				morning rise	12623 Dec 17 22:30	21° 11 14'52	
conjunction	12617 Nov 03 21:46	23° 11 59'41	1°02'30	retrograde	12624 Mar 21 02:03	24° 11 33'37	
minimum elong	12617 Nov 03 21:46	23° 11 59'41	1°03'12	opposition	12624 Jun 04 13:49	22° 11 30'55	1°05'26
max. Earth dist.	12617 Nov 03 20:20	23° 11 59'28	20.33169 AU	min. Earth dist.	12624 Jun 04 20:01	22° 11 30'16	17.91892 AU
morning rise	12617 Nov 20 07:16	24° 11 57'28		direct	12624 Aug 18 08:35	20° 11 28'44	
retrograde	12618 Feb 22 13:53	28° 11 12'19		evening set	12624 Nov 18 19:03	23° 11 44'15	
opposition	12618 May 09 20:28	26° 11 10'57	1°09'41				
min. Earth dist.	12618 May 09 21:49	26° 11 10'49	18.30112 AU	conjunction	12624 Dec 05 06:48	24° 11 43'39	0°57'51
direct	12618 Jul 23 18:44	24° 11 10'57		minimum elong	12624 Dec 05 06:48	24° 11 43'39	0°58'47
evening set	12618 Oct 23 05:47	27° 11 20'39		max. Earth dist.	12624 Dec 04 23:54	24° 11 42'36	19.88858 AU
				morning rise	12624 Dec 21 19:38	25° 11 43'16	
conjunction	12618 Nov 08 13:50	28° 11 18'22	1°02'56	retrograde	12625 Mar 25 23:21	29° 11 02'36	

opposition	12625 Jun 09 06:29	26° \mathring{A} 59'45	1°03'17	conjunction	12632 Jan 08 05:20	26° \mathring{B} 48'11	0°35'51
min. Earth dist.	12625 Jun 09 12:09	26° \mathring{A} 59'09	17.85921 AU	minimum elong	12632 Jan 08 05:21	26° \mathring{B} 48'11	0°36'43
direct	12625 Aug 23 02:48	24° \mathring{A} 57'15		max. Earth dist.	12632 Jan 07 18:31	26° \mathring{B} 46'30	19.54418 AU
evening set	12625 Nov 23 16:05	28° \mathring{A} 13'46		morning rise	12632 Jan 24 19:20	27° \mathring{B} 49'13	
					12632 Mar 05 18:20	0° \mathring{B}	
conjunction	12625 Dec 10 04:17	29° \mathring{A} 13'27	0°55'43	retrograde	12632 Apr 27 08:56	1° \mathring{B} 12'05	
minimum elong	12625 Dec 10 04:17	29° \mathring{A} 13'27	0°56'40		12632 Jun 20 16:30	30° \mathring{R} \mathring{B}	
max. Earth dist.	12625 Dec 09 20:28	29° \mathring{A} 12'16	19.83016 AU	opposition	12632 Jul 10 21:29	29° \mathring{B} 08'56	0°37'39
	12625 Dec 23 00:13	0° \mathring{B}		min. Earth dist.	12632 Jul 11 07:24	29° \mathring{B} 07'51	17.52512 AU
morning rise	12625 Dec 26 17:28	0° \mathring{B} 13'18		direct	12632 Sep 23 21:24	27° \mathring{B} 04'46	
retrograde	12626 Mar 30 18:20	3° \mathring{B} 33'14			12632 Dec 18 20:57	0° \mathring{B}	
opposition	12626 Jun 14 00:01	1° \mathring{B} 30'16	1°00'43	evening set	12632 Dec 26 17:12	0° \mathring{B} 28'00	
min. Earth dist.	12626 Jun 14 07:02	1° \mathring{B} 29'30	17.80232 AU				
	12626 Jul 23 06:57	30° \mathring{R} \mathring{A}		conjunction	12633 Jan 12 07:34	1° \mathring{B} 29'13	0°31'31
direct	12626 Aug 27 18:56	29° \mathring{A} 27'27		minimum elong	12633 Jan 12 07:35	1° \mathring{B} 29'13	0°32'23
	12626 Oct 01 20:21	0° \mathring{B}		max. Earth dist.	12633 Jan 11 19:10	1° \mathring{B} 27'18	19.50664 AU
evening set	12626 Nov 28 13:43	2° \mathring{B} 44'59		morning rise	12633 Jan 28 21:37	2° \mathring{B} 30'24	
				retrograde	12633 May 02 09:22	5° \mathring{B} 53'34	
conjunction	12626 Dec 15 02:28	3° \mathring{B} 44'56	0°53'13	opposition	12633 Jul 15 18:57	3° \mathring{B} 50'22	0°32'42
minimum elong	12626 Dec 15 02:28	3° \mathring{B} 44'56	0°54'09	min. Earth dist.	12633 Jul 16 04:54	3° \mathring{B} 49'17	17.48922 AU
max. Earth dist.	12626 Dec 14 18:24	3° \mathring{B} 43'42	19.77491 AU	direct	12633 Sep 28 20:53	1° \mathring{B} 45'57	
morning rise	12626 Dec 31 16:00	4° \mathring{B} 45'01		evening set	12633 Dec 31 19:47	5° \mathring{B} 09'57	
retrograde	12627 Apr 04 16:50	8° \mathring{B} 05'32					
opposition	12627 Jun 18 18:00	6° \mathring{B} 02'29	0°57'46	conjunction	12634 Jan 17 10:22	6° \mathring{B} 11'19	0°26'58
min. Earth dist.	12627 Jun 19 00:27	6° \mathring{B} 01'47	17.74858 AU	minimum elong	12634 Jan 17 10:22	6° \mathring{B} 11'19	0°27'47
direct	12627 Sep 01 14:28	3° \mathring{B} 59'25		max. Earth dist.	12634 Jan 16 22:34	6° \mathring{B} 09'29	19.47246 AU
evening set	12627 Dec 03 12:28	7° \mathring{B} 17'59		morning rise	12634 Feb 03 00:06	7° \mathring{B} 12'36	
				retrograde	12634 May 07 09:10	10° \mathring{B} 35'58	
conjunction	12627 Dec 20 01:38	8° \mathring{B} 18'11	0°50'23	opposition	12634 Jul 20 16:53	8° \mathring{B} 32'45	0°27'31
minimum elong	12627 Dec 20 01:39	8° \mathring{B} 18'11	0°51'19	min. Earth dist.	12634 Jul 21 03:24	8° \mathring{B} 31'36	17.45689 AU
max. Earth dist.	12627 Dec 19 17:03	8° \mathring{B} 16'52	19.72275 AU	direct	12634 Oct 03 19:27	6° \mathring{B} 28'06	
morning rise	12628 Jan 05 15:22	9° \mathring{B} 18'30		evening set	12635 Jan 05 22:48	9° \mathring{B} 52'46	
retrograde	12628 Apr 08 13:08	12° \mathring{B} 39'34					
opposition	12628 Jun 22 12:38	10° \mathring{B} 36'28	0°54'26	conjunction	12635 Jan 22 13:14	10° \mathring{B} 54'15	0°22'13
min. Earth dist.	12628 Jun 22 20:32	10° \mathring{B} 35'37	17.69804 AU	minimum elong	12635 Jan 22 13:14	10° \mathring{B} 54'15	0°22'59
direct	12628 Sep 05 08:14	8° \mathring{B} 33'11		max. Earth dist.	12635 Jan 22 00:00	10° \mathring{B} 52'12	19.44224 AU
evening set	12628 Dec 07 11:59	11° \mathring{B} 52'46		morning rise	12635 Feb 08 02:57	11° \mathring{B} 55'38	
					12635 Apr 15 22:35	15° \mathring{B}	
conjunction	12628 Dec 24 01:31	12° \mathring{B} 53'13	0°47'12	retrograde	12635 May 12 10:09	15° \mathring{B} 19'10	
minimum elong	12628 Dec 24 01:31	12° \mathring{B} 53'13	0°48'08		12635 Jun 08 03:48	15° \mathring{R} \mathring{B}	
max. Earth dist.	12628 Dec 23 16:09	12° \mathring{B} 51'47	19.67388 AU	opposition	12635 Jul 25 15:09	13° \mathring{B} 15'53	0°22'08
morning rise	12629 Jan 09 15:29	13° \mathring{B} 53'44		min. Earth dist.	12635 Jul 26 01:50	13° \mathring{B} 14'44	17.42882 AU
retrograde	12629 Apr 13 12:35	17° \mathring{B} 15'20		direct	12635 Oct 08 19:31	11° \mathring{B} 11'01	
opposition	12629 Jun 27 07:52	15° \mathring{B} 12'14	0°50'44	evening set	12636 Jan 11 02:03	14° \mathring{B} 36'17	
min. Earth dist.	12629 Jun 27 15:27	15° \mathring{B} 11'24	17.65065 AU		12636 Jan 17 12:50	15° \mathring{B}	
direct	12629 Sep 10 05:05	13° \mathring{B} 08'44					
evening set	12629 Dec 12 12:09	16° \mathring{B} 29'19		conjunction	12636 Jan 27 16:34	15° \mathring{B} 37'52	0°17'19
				minimum elong	12636 Jan 27 16:34	15° \mathring{B} 37'52	0°18'03
conjunction	12629 Dec 29 02:02	17° \mathring{B} 29'59	0°43'42	max. Earth dist.	12636 Jan 27 04:19	15° \mathring{B} 35'58	19.41636 AU
minimum elong	12629 Dec 29 02:03	17° \mathring{B} 29'59	0°44'38	morning rise	12636 Feb 13 05:49	16° \mathring{B} 39'18	
max. Earth dist.	12629 Dec 28 16:32	17° \mathring{B} 28'31	19.62786 AU	retrograde	12636 May 16 10:15	20° \mathring{B} 02'54	
morning rise	12630 Jan 14 16:01	18° \mathring{B} 30'42		opposition	12636 Jul 29 13:40	17° \mathring{B} 59'37	0°16'35
retrograde	12630 Apr 18 10:16	21° \mathring{B} 52'47		min. Earth dist.	12636 Jul 30 00:21	17° \mathring{B} 58'27	17.40525 AU
opposition	12630 Jul 02 03:56	19° \mathring{B} 49'40	0°46'41	direct	12636 Oct 12 18:54	15° \mathring{B} 54'33	
min. Earth dist.	12630 Jul 02 12:51	19° \mathring{B} 48'42	17.60605 AU	evening set	12637 Jan 15 05:38	19° \mathring{B} 20'19	
direct	12630 Sep 15 01:12	17° \mathring{B} 45'58					
evening set	12630 Dec 17 13:15	21° \mathring{B} 07'29		conjunction	12637 Jan 31 19:46	20° \mathring{B} 21'58	0°12'17
				minimum elong	12637 Jan 31 19:47	20° \mathring{B} 21'58	0°12'57
conjunction	12631 Jan 03 03:19	22° \mathring{B} 08'21	0°39'55	behind sun begin	12637 Jan 31 15:45	20° \mathring{B} 21'21	
minimum elong	12631 Jan 03 03:19	22° \mathring{B} 08'22	0°40'50	behind sun end	12637 Jan 31 23:49	20° \mathring{B} 22'35	
max. Earth dist.	12631 Jan 02 16:27	22° \mathring{B} 06'41	19.58470 AU	max. Earth dist.	12637 Jan 31 06:27	20° \mathring{B} 19'54	19.39538 AU
morning rise	12631 Jan 19 17:28	23° \mathring{B} 09'15		morning rise	12637 Feb 17 08:48	21° \mathring{B} 23'26	
retrograde	12631 Apr 23 10:04	26° \mathring{B} 31'46		retrograde	12637 May 21 10:49	24° \mathring{B} 47'05	
opposition	12631 Jul 07 00:20	24° \mathring{B} 28'38	0°42'19	opposition	12637 Aug 03 12:36	22° \mathring{B} 43'45	0°10'54
min. Earth dist.	12631 Jul 07 09:11	24° \mathring{B} 27'40	17.56425 AU	min. Earth dist.	12637 Aug 03 23:25	22° \mathring{B} 42'34	17.38702 AU
direct	12631 Sep 19 23:31	22° \mathring{B} 24'41		direct	12637 Oct 17 19:37	20° \mathring{B} 38'30	
evening set	12631 Dec 22 14:57	25° \mathring{B} 47'07		evening set	12638 Jan 20 08:58	24° \mathring{B} 04'43	


























































































































conjunction	12638 Feb 05 23:02	25° \approx 06'24	0°07'10	opposition	12643 Sep 01 10:01	21° \mathbb{H} 11'20	-0°23'26
minimum elong	12638 Feb 05 23:02	25° \approx 06'24	0°07'47	min. Earth dist.	12643 Sep 01 18:59	21° \mathbb{H} 10'21	17.40115 AU
behind sun begin	12638 Feb 05 16:59	25° \approx 05'28		direct	12643 Nov 16 05:18	19° \mathbb{H} 06'04	
behind sun end	12638 Feb 06 05:06	25° \approx 07'19		evening set	12644 Feb 19 06:01	22° \mathbb{H} 33'14	
max. Earth dist.	12638 Feb 05 11:04	25° \approx 04'32	19.37989 AU				
morning rise	12638 Feb 22 11:31	26° \approx 07'52		conjunction	12644 Mar 06 16:55	23° \mathbb{H} 34'32	-0°23'31
retrograde	12638 May 26 10:41	29° \approx 31'29		minimum elong	12644 Mar 06 16:54	23° \mathbb{H} 34'32	0°23'19
opposition	12638 Aug 08 11:44	27° \approx 28'10	0°05'08	max. Earth dist.	12644 Mar 06 07:01	23° \mathbb{H} 33'00	19.41097 AU
min. Earth dist.	12638 Aug 08 21:51	27° \approx 27'04	17.37435 AU	morning rise	12644 Mar 23 01:35	24° \mathbb{H} 35'31	
direct	12638 Oct 22 20:37	25° \approx 22'48		retrograde	12644 Jun 23 09:16	27° \mathbb{H} 57'56	
evening set	12639 Jan 25 12:44	28° \approx 49'21		opposition	12644 Sep 05 09:52	25° \mathbb{H} 55'25	-0°28'48
				min. Earth dist.	12644 Sep 05 17:30	25° \mathbb{H} 54'36	17.42195 AU
conjunction	12639 Feb 11 02:21	29° \approx 51'02	0°01'59	direct	12644 Nov 20 08:30	23° \mathbb{H} 50'16	
minimum elong	12639 Feb 11 02:20	29° \approx 51'02	0°02'32	evening set	12645 Feb 23 08:51	27° \mathbb{H} 17'17	
behind sun begin	12639 Feb 10 19:36	29° \approx 50'01					
behind sun end	12639 Feb 11 09:04	29° \approx 52'04		conjunction	12645 Mar 11 19:04	28° \mathbb{H} 18'26	-0°28'14
max. Earth dist.	12639 Feb 10 13:45	29° \approx 49'05	19.37023 AU	minimum elong	12645 Mar 11 19:03	28° \mathbb{H} 18'26	0°28'07
	12639 Feb 13 11:38	0° \mathbb{H}		max. Earth dist.	12645 Mar 11 10:00	28° \mathbb{H} 17'01	19.43377 AU
morning rise	12639 Feb 27 14:24	0° \mathbb{H} 52'30		morning rise	12645 Mar 28 02:49	29° \mathbb{H} 19'15	
retrograde	12639 May 31 10:07	4° \mathbb{H} 16'02			12645 Apr 08 12:08	0° \mathbb{Y}	
desc. node	12639 Jul 03 00:22	3° \mathbb{H} 47'44		retrograde	12645 Jun 28 07:26	2° \mathbb{Y} 41'17	
opposition	12639 Aug 13 11:02	2° \mathbb{H} 12'45	-0°00'40	opposition	12645 Sep 10 09:52	0° \mathbb{Y} 38'56	-0°33'58
min. Earth dist.	12639 Aug 13 21:24	2° \mathbb{H} 11'37	17.36785 AU	min. Earth dist.	12645 Sep 10 18:09	0° \mathbb{Y} 38'02	17.44679 AU
direct	12639 Oct 27 21:47	0° \mathbb{H} 07'18			12645 Sep 25 16:01	30° \mathbb{R} \mathbb{H}	
evening set	12640 Jan 30 16:23	3° \mathbb{H} 34'09		direct	12645 Nov 25 09:17	28° \mathbb{H} 33'54	
					12646 Jan 22 17:43	0° \mathbb{Y}	
conjunction	12640 Feb 16 05:43	4° \mathbb{H} 35'49	-0°03'21	evening set	12646 Feb 28 11:10	2° \mathbb{Y} 00'39	
minimum elong	12640 Feb 16 05:42	4° \mathbb{H} 35'48	0°02'52				
behind sun begin	12640 Feb 15 22:59	4° \mathbb{H} 34'47		conjunction	12646 Mar 16 20:34	3° \mathbb{Y} 01'37	-0°32'46
behind sun end	12640 Feb 16 12:25	4° \mathbb{H} 36'50		minimum elong	12646 Mar 16 20:33	3° \mathbb{Y} 01'37	0°32'43
max. Earth dist.	12640 Feb 15 18:20	4° \mathbb{H} 34'03	19.36684 AU	max. Earth dist.	12646 Mar 16 11:16	3° \mathbb{Y} 00'10	19.46049 AU
morning rise	12640 Mar 03 17:08	5° \mathbb{H} 37'13		morning rise	12646 Apr 02 03:38	4° \mathbb{Y} 02'15	
retrograde	12640 Jun 04 10:17	9° \mathbb{H} 00'37		retrograde	12646 Jul 03 07:18	7° \mathbb{Y} 23'51	
opposition	12640 Aug 17 10:35	6° \mathbb{H} 57'26	-0°06'28	opposition	12646 Sep 15 09:34	5° \mathbb{Y} 21'39	-0°38'54
min. Earth dist.	12640 Aug 17 19:45	6° \mathbb{H} 56'26	17.36749 AU	min. Earth dist.	12646 Sep 15 16:31	5° \mathbb{Y} 20'54	17.47525 AU
direct	12640 Nov 01 00:10	4° \mathbb{H} 51'58		direct	12646 Nov 30 11:59	3° \mathbb{Y} 16'44	
evening set	12641 Feb 03 19:58	8° \mathbb{H} 19'01		evening set	12647 Mar 05 13:03	6° \mathbb{Y} 43'08	
conjunction	12641 Feb 20 08:41	9° \mathbb{H} 20'38	-0°08'31	conjunction	12647 Mar 21 21:46	7° \mathbb{Y} 43'55	-0°37'04
minimum elong	12641 Feb 20 08:41	9° \mathbb{H} 20'38	0°08'05	minimum elong	12647 Mar 21 21:45	7° \mathbb{Y} 43'55	0°37'06
behind sun begin	12641 Feb 20 02:42	9° \mathbb{H} 19'43		max. Earth dist.	12647 Mar 21 13:42	7° \mathbb{Y} 42'40	19.49059 AU
behind sun end	12641 Feb 20 14:40	9° \mathbb{H} 21'33		morning rise	12647 Apr 07 03:50	8° \mathbb{Y} 44'21	
max. Earth dist.	12641 Feb 19 21:22	9° \mathbb{H} 18'52	19.36957 AU	retrograde	12647 Jul 08 04:52	12° \mathbb{Y} 05'27	
morning rise	12641 Mar 08 19:30	10° \mathbb{H} 21'58		opposition	12647 Sep 20 09:08	10° \mathbb{Y} 03'25	-0°43'33
retrograde	12641 Jun 09 09:15	13° \mathbb{H} 45'13		min. Earth dist.	12647 Sep 20 16:38	10° \mathbb{Y} 02'37	17.50705 AU
opposition	12641 Aug 22 10:22	11° \mathbb{H} 42'10	-0°12'13	direct	12647 Dec 05 12:42	7° \mathbb{Y} 58'37	
min. Earth dist.	12641 Aug 22 19:54	11° \mathbb{H} 41'08	17.37331 AU	evening set	12648 Mar 09 14:25	11° \mathbb{Y} 24'35	
direct	12641 Nov 06 01:28	9° \mathbb{H} 36'44					
evening set	12642 Feb 08 23:25	13° \mathbb{H} 03'55		conjunction	12648 Mar 25 22:09	12° \mathbb{Y} 25'09	-0°41'06
				minimum elong	12648 Mar 25 22:09	12° \mathbb{Y} 25'09	0°41'12
conjunction	12642 Feb 25 11:40	14° \mathbb{H} 05'27	-0°13'37	max. Earth dist.	12648 Mar 25 13:41	12° \mathbb{Y} 23'50	19.52411 AU
minimum elong	12642 Feb 25 11:39	14° \mathbb{H} 05'27	0°13'16	morning rise	12648 Apr 11 03:32	13° \mathbb{Y} 25'23	
behind sun begin	12642 Feb 25 07:49	14° \mathbb{H} 04'52		retrograde	12648 Jul 12 03:26	16° \mathbb{Y} 45'56	
behind sun end	12642 Feb 25 15:30	14° \mathbb{H} 06'02		opposition	12648 Sep 24 08:24	14° \mathbb{Y} 44'03	-0°47'54
max. Earth dist.	12642 Feb 25 01:12	14° \mathbb{H} 03'50	19.37833 AU	min. Earth dist.	12648 Sep 24 14:33	14° \mathbb{Y} 43'23	17.54223 AU
morning rise	12642 Mar 13 21:49	15° \mathbb{H} 06'41		direct	12648 Dec 09 14:23	12° \mathbb{Y} 39'23	
retrograde	12642 Jun 14 09:52	18° \mathbb{H} 29'43		evening set	12649 Mar 14 14:45	16° \mathbb{Y} 04'49	
opposition	12642 Aug 27 10:02	16° \mathbb{H} 26'50	-0°17'53				
min. Earth dist.	12642 Aug 27 18:19	16° \mathbb{H} 25'56	17.38472 AU	conjunction	12649 Mar 30 21:49	17° \mathbb{Y} 05'10	-0°44'51
direct	12642 Nov 11 04:20	14° \mathbb{H} 21'29		minimum elong	12649 Mar 30 21:48	17° \mathbb{Y} 05'10	0°45'02
evening set	12643 Feb 14 02:51	17° \mathbb{H} 48'43		max. Earth dist.	12649 Mar 30 15:07	17° \mathbb{Y} 04'07	19.56088 AU
				morning rise	12649 Apr 16 02:10	18° \mathbb{Y} 05'09	
conjunction	12643 Mar 02 14:28	18° \mathbb{H} 50'09	-0°18'38	retrograde	12649 Jul 17 00:14	21° \mathbb{Y} 25'07	
minimum elong	12643 Mar 02 14:27	18° \mathbb{H} 50'09	0°18'20	opposition	12649 Sep 29 07:27	19° \mathbb{Y} 23'22	-0°51'54
max. Earth dist.	12643 Mar 02 04:22	18° \mathbb{H} 48'35	19.39227 AU	min. Earth dist.	12649 Sep 29 13:41	19° \mathbb{Y} 22'42	17.58065 AU
morning rise	12643 Mar 18 23:52	19° \mathbb{H} 51'16		direct	12649 Dec 14 15:02	17° \mathbb{Y} 18'51	
retrograde	12643 Jun 19 08:36	23° \mathbb{H} 14'01		evening set	12650 Mar 19 14:36	20° \mathbb{Y} 43'40	

conjunction	12650 Apr 04 20:39	21° Υ 43'46	-0°48'18	minimum elong	12656 May 01 20:37	19° ♄ 02'38	1°02'12
minimum elong	12650 Apr 04 20:38	21° Υ 43'46	0°48'33	max. Earth dist.	12656 May 01 20:17	19° ♄ 02'35	19.91666 AU
max. Earth dist.	12650 Apr 04 13:38	21° Υ 42'41	19.60106 AU	morning rise	12656 May 17 19:38	20° ♄ 00'48	
morning rise	12650 Apr 21 00:21	22° Υ 43'31		retrograde	12656 Aug 17 09:12	23° ♄ 16'10	
retrograde	12650 Jul 21 20:53	26° Υ 02'52		opposition	12656 Oct 31 11:55	21° ♄ 15'44	-1°09'01
opposition	12650 Oct 04 05:50	24° Υ 01'14	-0°55'34	min. Earth dist.	12656 Oct 31 11:20	21° ♄ 15'47	17.94768 AU
min. Earth dist.	12650 Oct 04 10:48	24° Υ 00'43	17.62262 AU	direct	12657 Jan 16 08:30	19° ♄ 13'00	
direct	12650 Dec 19 15:30	21° Υ 56'52		evening set	12657 Apr 20 13:16	22° ♄ 32'09	
evening set	12651 Mar 24 13:29	25° Υ 21'01					
conjunction	12651 Apr 09 18:52	26° Υ 20'52	-0°51'25	conjunction	12657 May 06 13:45	23° ♄ 30'19	-1°02'27
minimum elong	12651 Apr 09 18:51	26° Υ 20'52	0°51'44	minimum elong	12657 May 06 13:44	23° ♄ 30'19	1°03'10
max. Earth dist.	12651 Apr 09 13:55	26° Υ 20'06	19.64474 AU	max. Earth dist.	12657 May 06 15:03	23° ♄ 30'31	19.97859 AU
morning rise	12651 Apr 25 21:33	27° Υ 20'21		morning rise	12657 May 22 12:03	24° ♄ 28'13	
retrograde	12651 Jun 18 14:29	0° ♄		retrograde	12657 Aug 22 02:11	27° ♄ 42'53	
	12651 Jul 26 16:42	0° ♄ 39'03		opposition	12657 Nov 05 07:14	25° ♄ 42'42	-1°09'48
	12651 Sep 03 17:29	30° ♄		min. Earth dist.	12657 Nov 05 05:25	25° ♄ 42'53	18.01000 AU
opposition	12651 Oct 09 04:02	28° Υ 37'34	-0°58'50	direct	12658 Jan 21 05:23	23° ♄ 40'18	
min. Earth dist.	12651 Oct 09 08:32	28° Υ 37'05	17.66809 AU	evening set	12658 Apr 25 06:27	26° ♄ 58'30	
direct	12651 Dec 24 16:22	26° Υ 33'23		conjunction	12658 May 11 06:07	27° ♄ 56'23	-1°02'59
evening set	12652 Mar 28 11:37	29° Υ 56'47		minimum elong	12658 May 11 06:06	27° ♄ 56'23	1°03'43
	12652 Mar 29 08:53	0° ♄		max. Earth dist.	12658 May 11 07:35	27° ♄ 56'36	20.04119 AU
conjunction	12652 Apr 13 15:55	0° ♄ 56'22	-0°54'11	morning rise	12658 May 27 03:53	28° ♄ 54'01	
minimum elong	12652 Apr 13 15:55	0° ♄ 56'22	0°54'35		12658 Jun 15 13:26	0° ♄	
max. Earth dist.	12652 Apr 13 10:59	0° ♄ 55'36	19.69212 AU	retrograde	12658 Aug 26 17:29	2° ♄ 08'00	
morning rise	12652 Apr 29 17:55	1° ♄ 55'36		opposition	12658 Nov 10 01:59	0° ♄ 08'02	-1°10'09
retrograde	12652 Jul 30 11:11	5° ♄ 13'39		min. Earth dist.	12658 Nov 10 00:05	0° ♄ 08'13	18.07284 AU
opposition	12652 Oct 13 01:46	3° ♄ 12'18	-1°01'42		12658 Nov 13 07:17	30° ♄	
min. Earth dist.	12652 Oct 13 04:53	3° ♄ 11'58	17.71751 AU	direct	12659 Jan 25 23:54	28° ♄ 05'57	
direct	12652 Dec 28 15:53	1° ♄ 08'19		evening set	12659 Apr 04 22:45	0° ♄	
evening set	12653 Apr 02 08:45	4° ♄ 30'58			12659 Apr 29 22:43	1° ♄ 23'10	
conjunction	12653 Apr 18 12:23	5° ♄ 30'16	-0°56'35	conjunction	12659 May 15 21:47	2° ♄ 20'47	-1°03'08
minimum elong	12653 Apr 18 12:23	5° ♄ 30'16	0°57'02	minimum elong	12659 May 15 21:46	2° ♄ 20'47	1°03'55
max. Earth dist.	12653 Apr 18 09:43	5° ♄ 29'51	19.74342 AU	max. Earth dist.	12659 May 16 00:25	2° ♄ 21'11	20.10400 AU
morning rise	12653 May 04 13:26	6° ♄ 29'13		morning rise	12659 May 31 18:56	3° ♄ 18'08	
retrograde	12653 Aug 04 05:54	9° ♄ 46'36		retrograde	12659 Aug 31 09:47	6° ♄ 31'25	
opposition	12653 Oct 17 22:58	7° ♄ 45'27	-1°04'10	opposition	12659 Nov 14 20:18	4° ♄ 31'40	-1°10'06
min. Earth dist.	12653 Oct 18 01:07	7° ♄ 45'14	17.77064 AU	min. Earth dist.	12659 Nov 14 17:02	4° ♄ 32'00	18.13538 AU
direct	12654 Jan 02 15:54	5° ♄ 41'45		direct	12660 Jan 30 19:55	2° ♄ 29'54	
evening set	12654 Apr 07 05:12	9° ♄ 03'34		evening set	12660 May 03 14:06	5° ♄ 46'06	
conjunction	12654 Apr 23 07:52	10° ♄ 02'35	-0°58'37	conjunction	12660 May 19 12:27	6° ♄ 43'26	-1°02'55
minimum elong	12654 Apr 23 07:52	10° ♄ 02'35	0°59'09	minimum elong	12660 May 19 12:26	6° ♄ 43'26	1°03'44
max. Earth dist.	12654 Apr 23 05:20	10° ♄ 02'12	19.79836 AU	max. Earth dist.	12660 May 19 15:26	6° ♄ 43'53	20.16621 AU
morning rise	12654 May 09 08:20	11° ♄ 01'17		morning rise	12660 Jun 04 09:08	7° ♄ 40'33	
retrograde	12654 Aug 08 23:07	14° ♄ 18'00		retrograde	12660 Sep 03 23:39	10° ♄ 53'09	
opposition	12654 Oct 22 19:45	12° ♄ 17'04	-1°06'12	opposition	12660 Nov 18 14:09	8° ♄ 53'33	-1°09'39
min. Earth dist.	12654 Oct 22 20:53	12° ♄ 16'57	17.82724 AU	min. Earth dist.	12660 Nov 18 11:02	8° ♄ 53'52	18.19727 AU
direct	12655 Jan 07 13:48	10° ♄ 13'40		direct	12661 Feb 03 12:59	6° ♄ 52'05	
evening set	12655 Apr 12 00:43	13° ♄ 34'39		evening set	12661 May 08 04:38	10° ♄ 07'16	
conjunction	12655 Apr 28 02:43	14° ♄ 33'23	-1°00'16	conjunction	12661 May 24 02:29	11° ♄ 04'20	-1°02'21
minimum elong	12655 Apr 28 02:43	14° ♄ 33'23	1°00'52	minimum elong	12661 May 24 02:29	11° ♄ 04'20	1°03'12
max. Earth dist.	12655 Apr 28 02:10	14° ♄ 33'18	19.85638 AU	max. Earth dist.	12661 May 24 06:18	11° ♄ 04'54	20.22756 AU
	12655 May 05 08:16	15° ♄		morning rise	12661 Jun 08 22:43	12° ♄ 01'11	
morning rise	12655 May 14 02:18	15° ♄ 31'48		retrograde	12661 Sep 08 15:01	15° ♄ 13'05	
retrograde	12655 Aug 13 16:46	18° ♄ 47'50		opposition	12661 Nov 23 07:06	13° ♄ 13'39	-1°08'48
opposition	12655 Oct 27 16:00	16° ♄ 47'10	-1°07'49	min. Earth dist.	12661 Nov 23 02:35	13° ♄ 14'06	18.25790 AU
min. Earth dist.	12655 Oct 27 16:00	16° ♄ 47'10	17.88641 AU	direct	12662 Feb 08 08:03	11° ♄ 12'26	
	12655 Dec 18 07:54	15° ♄		evening set	12662 May 12 18:24	14° ♄ 26'36	
direct	12656 Jan 12 12:23	14° ♄ 44'06		conjunction	12662 May 28 15:42	15° ♄ 23'24	-1°01'25
	12656 Feb 06 05:44	15° ♄		minimum elong	12662 May 28 15:42	15° ♄ 23'24	1°02'19
evening set	12656 Apr 15 19:32	18° ♄ 04'11		max. Earth dist.	12662 May 28 19:57	15° ♄ 24'02	20.28750 AU
conjunction	12656 May 01 20:37	19° ♄ 02'38	-1°01'33	morning rise	12662 Jun 13 11:35	16° ♄ 20'01	
				retrograde	12662 Sep 13 03:01	19° ♄ 31'14	

opposition	12662 Nov 27 23:41	17° Π 31'54	-1°07'34	conjunction	12669 Jun 26 14:22	14° \mathfrak{D} 48'55	-0°46'17
min. Earth dist.	12662 Nov 27 19:32	17° Π 32'20	18.31719 AU	minimum elong	12669 Jun 26 14:22	14° \mathfrak{D} 48'55	0°47'14
direct	12663 Feb 12 23:46	15° Π 30'56		max. Earth dist.	12669 Jun 27 00:05	14° \mathfrak{D} 50'20	20.67587 AU
evening set	12663 May 17 07:10	18° Π 44'04		morning rise	12669 Jul 12 09:10	15° \mathfrak{D} 44'09	
				retrograde	12669 Oct 12 10:35	18° \mathfrak{D} 51'30	
conjunction	12663 Jun 02 04:00	19° Π 40'36	-1°00'10	opposition	12669 Dec 28 01:46	16° \mathfrak{D} 53'00	-0°49'35
minimum elong	12663 Jun 02 04:00	19° Π 40'36	1°01'04	min. Earth dist.	12669 Dec 27 15:22	16° \mathfrak{D} 54'03	18.70103 AU
max. Earth dist.	12663 Jun 02 08:58	19° Π 41'21	20.34614 AU	direct	12670 Mar 15 02:46	14° \mathfrak{D} 53'57	
morning rise	12663 Jun 17 23:33	20° Π 36'59		evening set	12670 Jun 15 03:17	18° \mathfrak{D} 00'41	
retrograde	12663 Sep 17 17:02	23° Π 47'31					
opposition	12663 Dec 02 15:28	21° Π 48'18	-1°05'58	conjunction	12670 Jun 30 22:12	18° \mathfrak{D} 55'48	-0°43'06
min. Earth dist.	12663 Dec 02 09:40	21° Π 48'53	18.37508 AU	minimum elong	12670 Jun 30 22:13	18° \mathfrak{D} 55'48	0°44'01
direct	12664 Feb 17 17:40	19° Π 47'34		max. Earth dist.	12670 Jul 01 08:54	18° \mathfrak{D} 57'22	20.72529 AU
evening set	12664 May 20 19:06	22° Π 59'39		morning rise	12670 Jul 16 16:58	19° \mathfrak{D} 50'53	
				retrograde	12670 Oct 16 19:35	22° \mathfrak{D} 57'52	
conjunction	12664 Jun 05 15:29	23° Π 55'57	-0°58'35	opposition	12671 Jan 01 13:52	20° \mathfrak{D} 59'30	-0°45'55
minimum elong	12664 Jun 05 15:29	23° Π 55'57	0°59'31	min. Earth dist.	12671 Jan 01 04:02	21° \mathfrak{D} 00'30	18.74908 AU
max. Earth dist.	12664 Jun 05 21:23	23° Π 56'50	20.40345 AU	direct	12671 Mar 19 13:23	19° \mathfrak{D} 00'45	
morning rise	12664 Jun 21 10:46	24° Π 52'07		evening set	12671 Jun 19 10:41	22° \mathfrak{D} 06'45	
retrograde	12664 Sep 21 03:44	28° Π 02'01					
opposition	12664 Dec 06 06:45	26° Π 02'52	-1°04'01	conjunction	12671 Jul 05 05:27	23° \mathfrak{D} 01'42	-0°39'41
min. Earth dist.	12664 Dec 06 01:10	26° Π 03'26	18.43201 AU	minimum elong	12671 Jul 05 05:27	23° \mathfrak{D} 01'42	0°40'36
direct	12665 Feb 21 07:36	24° Π 02'22		max. Earth dist.	12671 Jul 05 16:03	23° \mathfrak{D} 03'14	20.77188 AU
evening set	12665 May 25 06:05	27° Π 13'27		morning rise	12671 Jul 21 00:22	23° \mathfrak{D} 56'40	
				retrograde	12671 Oct 21 05:39	27° \mathfrak{D} 03'18	
conjunction	12665 Jun 10 02:07	28° Π 09'31	-0°56'41	opposition	12672 Jan 06 01:26	25° \mathfrak{D} 05'04	-0°42'02
minimum elong	12665 Jun 10 02:07	28° Π 09'31	0°57'37	min. Earth dist.	12672 Jan 05 14:16	25° \mathfrak{D} 06'12	18.79396 AU
max. Earth dist.	12665 Jun 10 08:46	28° Π 10'30	20.45998 AU	direct	12672 Mar 23 00:43	23° \mathfrak{D} 06'35	
morning rise	12665 Jun 25 21:14	29° Π 05'28		evening set	12672 Jun 22 17:46	26° \mathfrak{D} 11'53	
	12665 Jul 12 03:24	0° \mathfrak{D}					
retrograde	12665 Sep 25 16:21	2° \mathfrak{D} 14'45		conjunction	12672 Jul 08 12:33	27° \mathfrak{D} 06'42	-0°36'06
opposition	12665 Dec 10 21:13	0° \mathfrak{D} 15'42	-1°01'44	minimum elong	12672 Jul 08 12:33	27° \mathfrak{D} 06'42	0°36'59
min. Earth dist.	12665 Dec 10 13:44	0° \mathfrak{D} 16'28	18.48807 AU	max. Earth dist.	12672 Jul 08 23:57	27° \mathfrak{D} 08'21	20.81488 AU
	12665 Dec 17 07:38	30° \mathfrak{R} Π		morning rise	12672 Jul 24 07:30	28° \mathfrak{D} 01'33	
direct	12666 Feb 25 23:56	28° Π 15'27			12672 Sep 01 15:37	0° \mathfrak{Q}	
	12666 May 03 04:53	0° \mathfrak{D}		retrograde	12672 Oct 24 13:50	1° \mathfrak{Q} 07'53	
evening set	12666 May 29 16:26	1° \mathfrak{D} 25'35			12672 Dec 18 23:28	30° \mathfrak{R} \mathfrak{D}	
				opposition	12673 Jan 09 12:38	29° \mathfrak{D} 09'46	-0°37'57
conjunction	12666 Jun 14 12:08	2° \mathfrak{D} 21'26	-0°54'29	min. Earth dist.	12673 Jan 09 02:18	29° \mathfrak{D} 10'48	18.83507 AU
minimum elong	12666 Jun 14 12:08	2° \mathfrak{D} 21'26	0°55'26	direct	12673 Mar 27 10:12	27° \mathfrak{D} 11'31	
max. Earth dist.	12666 Jun 14 19:53	2° \mathfrak{D} 22'35	20.51558 AU		12673 Jun 22 05:40	0° \mathfrak{Q}	
morning rise	12666 Jun 30 07:01	3° \mathfrak{D} 17'10		evening set	12673 Jun 27 00:29	0° \mathfrak{Q} 16'09	
retrograde	12666 Sep 30 02:28	6° \mathfrak{D} 25'54					
opposition	12666 Dec 15 11:11	4° \mathfrak{D} 26'58	-0°59'07	conjunction	12673 Jul 12 19:13	1° \mathfrak{Q} 10'50	-0°32'21
min. Earth dist.	12666 Dec 15 03:54	4° \mathfrak{D} 27'43	18.54332 AU	minimum elong	12673 Jul 12 19:13	1° \mathfrak{Q} 10'50	0°33'12
direct	12667 Mar 02 12:14	2° \mathfrak{D} 27'00		max. Earth dist.	12673 Jul 13 06:05	1° \mathfrak{Q} 12'25	20.85394 AU
evening set	12667 Jun 03 02:05	5° \mathfrak{D} 36'13		morning rise	12673 Jul 28 14:27	2° \mathfrak{Q} 05'35	
				retrograde	12673 Oct 28 23:35	5° \mathfrak{Q} 11'40	
conjunction	12667 Jun 18 21:29	6° \mathfrak{D} 31'51	-0°52'00	opposition	12674 Jan 13 23:23	3° \mathfrak{Q} 13'35	-0°33'42
minimum elong	12667 Jun 18 21:29	6° \mathfrak{D} 31'51	0°52'57	min. Earth dist.	12674 Jan 13 12:03	3° \mathfrak{Q} 14'44	18.87185 AU
max. Earth dist.	12667 Jun 19 05:47	6° \mathfrak{D} 33'05	20.57045 AU	direct	12674 Mar 31 20:30	1° \mathfrak{Q} 15'33	
morning rise	12667 Jul 04 16:18	7° \mathfrak{D} 27'25		evening set	12674 Jul 01 06:52	4° \mathfrak{Q} 19'33	
retrograde	12667 Oct 04 14:07	10° \mathfrak{D} 35'39					
opposition	12667 Dec 20 00:34	8° \mathfrak{D} 36'51	-0°56'13	conjunction	12674 Jul 17 01:41	5° \mathfrak{Q} 14'08	-0°28'26
min. Earth dist.	12667 Dec 19 15:22	8° \mathfrak{D} 37'47	18.59756 AU	minimum elong	12674 Jul 17 01:41	5° \mathfrak{Q} 14'08	0°29'16
direct	12668 Mar 06 02:48	6° \mathfrak{D} 37'11		max. Earth dist.	12674 Jul 17 13:08	5° \mathfrak{Q} 15'48	20.88829 AU
evening set	12668 Jun 06 10:56	9° \mathfrak{D} 45'31		morning rise	12674 Aug 01 21:01	6° \mathfrak{Q} 08'48	
				retrograde	12674 Nov 02 06:41	9° \mathfrak{Q} 14'38	
conjunction	12668 Jun 22 06:08	10° \mathfrak{D} 40'58	-0°49'16	opposition	12675 Jan 18 09:54	7° \mathfrak{Q} 16'36	-0°29'18
minimum elong	12668 Jun 22 06:08	10° \mathfrak{D} 40'58	0°50'12	min. Earth dist.	12675 Jan 17 23:31	7° \mathfrak{Q} 17'38	18.90381 AU
max. Earth dist.	12668 Jun 22 15:39	10° \mathfrak{D} 42'23	20.62399 AU	direct	12675 Apr 05 05:07	5° \mathfrak{Q} 18'44	
morning rise	12668 Jul 08 00:52	11° \mathfrak{D} 36'22		evening set	12675 Jul 05 12:57	8° \mathfrak{Q} 22'07	
retrograde	12668 Oct 07 23:51	14° \mathfrak{D} 44'08					
opposition	12668 Dec 23 13:34	12° \mathfrak{D} 45'29	-0°53'02	conjunction	12675 Jul 21 07:49	9° \mathfrak{Q} 16'36	-0°24'24
min. Earth dist.	12668 Dec 23 04:43	12° \mathfrak{D} 46'23	18.65032 AU	minimum elong	12675 Jul 21 07:49	9° \mathfrak{Q} 16'36	0°25'12
direct	12669 Mar 10 14:08	10° \mathfrak{D} 46'08		max. Earth dist.	12675 Jul 21 18:34	9° \mathfrak{Q} 18'10	20.91795 AU
evening set	12669 Jun 10 19:21	13° \mathfrak{D} 53'39		morning rise	12675 Aug 06 03:30	10° \mathfrak{Q} 11'12	

retrograde	12675 Nov 06 16:16	13°♏16'48		evening set	12681 Jul 28 19:48	2°♐22'31	
opposition	12676 Jan 22 19:58	11°♏18'45	-0°24'45				
min. Earth dist.	12676 Jan 22 08:43	11°♏19'53	18.93105 AU	conjunction	12681 Aug 13 16:01	3°♐16'46	0°01'29
direct	12676 Apr 08 14:25	9°♏20'59		minimum elong	12681 Aug 13 16:01	3°♐16'46	0°00'58
evening set	12676 Jul 08 18:31	12°♏23'49		behind sun begin	12681 Aug 13 09:27	3°♐15'50	
				behind sun end	12681 Aug 13 22:36	3°♐17'41	
conjunction	12676 Jul 24 13:37	13°♏18'14	-0°20'16	max. Earth dist.	12681 Aug 14 03:25	3°♐18'23	21.00991 AU
minimum elong	12676 Jul 24 13:37	13°♏18'14	0°21'01	morning rise	12681 Aug 29 13:58	4°♐11'14	
max. Earth dist.	12676 Jul 25 01:06	13°♏19'53	20.94281 AU	retrograde	12681 Nov 30 14:35	7°♐16'28	
morning rise	12676 Aug 09 09:32	14°♏12'46		opposition	12682 Feb 16 01:44	5°♐18'03	0°04'00
	12676 Aug 23 19:18	15°♏		min. Earth dist.	12682 Feb 15 14:06	5°♐19'13	19.01202 AU
retrograde	12676 Nov 09 22:34	17°♏18'11		direct	12682 May 03 09:57	3°♐20'42	
opposition	12677 Jan 26 05:45	15°♏20'04	-0°20'06	evening set	12682 Aug 02 00:38	6°♐21'27	
min. Earth dist.	12677 Jan 25 19:23	15°♏21'06	18.95364 AU				
	12677 Feb 03 15:05	15°♏		conjunction	12682 Aug 17 21:14	7°♐15'43	0°05'54
direct	12677 Apr 12 22:21	13°♏22'23		minimum elong	12682 Aug 17 21:15	7°♐15'43	0°05'26
	12677 Jun 16 00:23	15°♏		behind sun begin	12682 Aug 17 14:53	7°♐14'50	
evening set	12677 Jul 12 23:58	16°♏24'42		behind sun end	12682 Aug 18 03:36	7°♐16'36	
				max. Earth dist.	12682 Aug 18 09:24	7°♐17'27	21.01303 AU
conjunction	12677 Jul 28 19:09	17°♏19'02	-0°16'02	morning rise	12682 Sep 02 19:30	8°♐10'14	
minimum elong	12677 Jul 28 19:10	17°♏19'02	0°16'44	retrograde	12682 Dec 04 21:35	11°♐15'36	
max. Earth dist.	12677 Jul 29 06:02	17°♏20'36	20.96337 AU	opposition	12683 Feb 20 10:11	9°♐17'09	0°08'50
morning rise	12677 Aug 13 15:30	18°♏13'32		min. Earth dist.	12683 Feb 19 23:11	9°♐18'15	19.01334 AU
retrograde	12677 Nov 14 07:31	21°♏18'47		direct	12683 May 07 15:55	7°♐19'54	
opposition	12678 Jan 30 14:54	19°♏20'36	-0°15'22	evening set	12683 Aug 06 05:44	10°♐20'32	
min. Earth dist.	12678 Jan 30 03:41	19°♏21'43	18.97220 AU				
direct	12678 Apr 17 06:26	17°♏22'58		conjunction	12683 Aug 22 02:38	11°♐14'50	0°10'14
evening set	12678 Jul 17 05:06	20°♏24'50		minimum elong	12683 Aug 22 02:38	11°♐14'50	0°09'49
				behind sun begin	12683 Aug 21 21:14	11°♐14'05	
conjunction	12678 Aug 02 00:34	21°♏19'07	-0°11'44	behind sun end	12683 Aug 22 08:01	11°♐15'35	
minimum elong	12678 Aug 02 00:34	21°♏19'07	0°12'24	max. Earth dist.	12683 Aug 22 13:54	11°♐16'26	21.01261 AU
behind sun begin	12678 Aug 01 20:13	21°♏18'31		morning rise	12683 Sep 07 01:30	12°♐09'24	
behind sun end	12678 Aug 02 04:56	21°♏19'44		retrograde	12683 Dec 09 07:14	15°♐14'59	
max. Earth dist.	12678 Aug 02 12:20	21°♏20'49	20.97999 AU	opposition	12684 Feb 24 18:29	13°♐16'29	0°13'38
morning rise	12678 Aug 17 21:09	22°♏13'35		min. Earth dist.	12684 Feb 24 07:06	13°♐17'38	19.01098 AU
retrograde	12678 Nov 18 13:52	25°♏18'45		direct	12684 May 10 22:27	11°♐19'18	
opposition	12679 Feb 04 00:03	23°♏20'29	-0°10'34	evening set	12684 Aug 09 10:55	14°♐19'55	
min. Earth dist.	12679 Feb 03 13:26	23°♏21'33	18.98709 AU				
direct	12679 Apr 21 13:44	21°♏22'56		conjunction	12684 Aug 25 08:20	15°♐14'17	0°14'32
evening set	12679 Jul 21 10:01	24°♏24'24		minimum elong	12684 Aug 25 08:19	15°♐14'17	0°14'12
				behind sun begin	12684 Aug 25 05:06	15°♐13'50	
conjunction	12679 Aug 06 05:38	25°♏18'39	-0°07'23	behind sun end	12684 Aug 25 11:32	15°♐14'44	
minimum elong	12679 Aug 06 05:38	25°♏18'39	0°08'00	max. Earth dist.	12684 Aug 25 20:09	15°♐15'58	21.00812 AU
behind sun begin	12679 Aug 05 23:44	25°♏17'49		morning rise	12684 Sep 10 07:36	16°♐08'55	
behind sun end	12679 Aug 06 11:31	25°♏19'28		retrograde	12684 Dec 12 14:53	19°♐14'44	
max. Earth dist.	12679 Aug 06 16:55	25°♏20'15	20.99327 AU	opposition	12685 Feb 28 02:52	17°♐16'13	0°18'22
morning rise	12679 Aug 22 02:42	26°♏13'06		min. Earth dist.	12685 Feb 27 16:23	17°♐17'16	19.00433 AU
retrograde	12679 Nov 22 22:45	29°♏18'14		direct	12685 May 15 03:48	15°♐19'06	
opposition	12680 Feb 08 08:50	27°♏19'54	-0°05'44	evening set	12685 Aug 13 16:32	18°♐19'45	
min. Earth dist.	12680 Feb 07 21:17	27°♏21'03	18.99874 AU				
direct	12680 Apr 24 20:47	25°♏22'24		conjunction	12685 Aug 29 14:14	19°♐14'10	0°18'46
evening set	12680 Jul 24 14:53	28°♏23'33		minimum elong	12685 Aug 29 14:14	19°♐14'10	0°18'30
				max. Earth dist.	12685 Aug 30 00:48	19°♐15'41	20.99929 AU
conjunction	12680 Aug 09 10:52	29°♏17'48	-0°03'01	morning rise	12685 Sep 14 14:07	20°♐08'54	
minimum elong	12680 Aug 09 10:52	29°♏17'48	0°03'36	retrograde	12685 Dec 17 00:46	23°♐15'01	
behind sun begin	12680 Aug 09 04:21	29°♏16'53		opposition	12686 Mar 04 11:09	21°♐16'26	0°23'02
behind sun end	12680 Aug 09 17:24	29°♏18'43		min. Earth dist.	12686 Mar 04 00:46	21°♐17'29	18.99317 AU
max. Earth dist.	12680 Aug 09 23:01	29°♏19'32	21.00319 AU	direct	12686 May 19 10:38	19°♐19'21	
	12680 Aug 21 17:22	0°♐		evening set	12686 Aug 17 22:24	22°♐20'06	
morning rise	12680 Aug 25 08:15	0°♐12'15					
retrograde	12680 Nov 26 05:25	3°♐17'24		conjunction	12686 Sep 02 20:38	23°♐14'37	0°22'56
opposition	12681 Feb 11 17:21	1°♐19'01	-0°00'52	minimum elong	12686 Sep 02 20:38	23°♐14'37	0°22'44
min. Earth dist.	12681 Feb 11 06:24	1°♐20'07	19.00704 AU	max. Earth dist.	12686 Sep 03 07:28	23°♐16'10	20.98557 AU
	12681 Mar 19 17:42	30°♏		morning rise	12686 Sep 18 20:54	24°♐09'26	
asc. node	12681 Apr 14 17:03	29°♏26'48		retrograde	12686 Dec 21 09:25	27°♐15'53	
direct	12681 Apr 29 03:23	29°♏21'37		opposition	12687 Mar 08 19:45	25°♐17'14	0°27'36
	12681 Jun 07 09:38	0°♐		min. Earth dist.	12687 Mar 08 10:24	25°♐18'10	18.97691 AU

direct	12687 May 23 16:20	23° <u>17</u> 20'08		minimum elong	12693 Oct 01 03:13	21° <u>15</u> 35'07	0°48'25
evening set	12687 Aug 22 04:35	26° <u>17</u> 21'02		max. Earth dist.	12693 Oct 01 08:26	21° <u>15</u> 35'52	20.75836 AU
				morning rise	12693 Oct 17 07:46	22° <u>15</u> 31'00	
conjunction	12687 Sep 07 03:12	27° <u>17</u> 15'38	0°26'59	retrograde	12694 Jan 19 09:26	25° <u>15</u> 40'30	
minimum elong	12687 Sep 07 03:12	27° <u>17</u> 15'38	0°26'51	opposition	12694 Apr 06 10:12	23° <u>15</u> 40'28	0°54'55
max. Earth dist.	12687 Sep 07 12:29	27° <u>17</u> 16'58	20.96677 AU	min. Earth dist.	12694 Apr 06 05:00	23° <u>15</u> 41'00	18.73596 AU
morning rise	12687 Sep 23 04:10	28° <u>17</u> 10'35		direct	12694 Jun 20 19:30	21° <u>15</u> 42'17	
	12687 Oct 29 09:24	0° <u>15</u>		evening set	12694 Sep 19 10:22	24° <u>15</u> 45'39	
retrograde	12687 Dec 25 19:35	1° <u>15</u> 17'23					
	12688 Feb 23 16:36	30° <u>15</u>		conjunction	12694 Oct 05 13:02	25° <u>15</u> 41'22	0°50'57
opposition	12688 Mar 12 04:23	29° <u>15</u> 18'36	0°32'02	minimum elong	12694 Oct 05 13:02	25° <u>15</u> 41'21	0°51'16
min. Earth dist.	12688 Mar 11 19:23	29° <u>15</u> 19'30	18.95546 AU	max. Earth dist.	12694 Oct 05 18:43	25° <u>15</u> 42'11	20.71263 AU
direct	12688 May 26 23:15	27° <u>15</u> 21'26		morning rise	12694 Oct 21 18:02	26° <u>15</u> 37'27	
	12688 Aug 18 16:27	0° <u>15</u>		retrograde	12695 Jan 23 20:19	29° <u>15</u> 47'31	
evening set	12688 Aug 25 11:08	0° <u>15</u> 22'31		opposition	12695 Apr 10 20:01	27° <u>15</u> 47'18	0°57'54
				min. Earth dist.	12695 Apr 10 15:14	27° <u>15</u> 47'47	18.68915 AU
conjunction	12688 Sep 10 10:23	1° <u>15</u> 17'15	0°30'56	direct	12695 Jun 25 04:05	25° <u>15</u> 48'56	
minimum elong	12688 Sep 10 10:22	1° <u>15</u> 17'15	0°30'51	evening set	12695 Sep 23 20:08	28° <u>15</u> 52'53	
max. Earth dist.	12688 Sep 10 19:41	1° <u>15</u> 18'35	20.94257 AU				
morning rise	12688 Sep 26 11:47	2° <u>15</u> 12'19		conjunction	12695 Oct 09 23:19	29° <u>15</u> 48'48	0°53'30
retrograde	12688 Dec 29 04:51	5° <u>15</u> 19'29		minimum elong	12695 Oct 09 23:18	29° <u>15</u> 48'48	0°53'54
opposition	12689 Mar 16 12:57	3° <u>15</u> 20'32	0°36'20	max. Earth dist.	12695 Oct 10 03:22	29° <u>15</u> 49'24	20.66487 AU
min. Earth dist.	12689 Mar 16 05:05	3° <u>15</u> 21'20	18.92864 AU		12695 Oct 13 04:11	0° <u>15</u>	
direct	12689 May 31 06:05	1° <u>15</u> 23'16		morning rise	12695 Oct 26 05:08	0° <u>15</u> 45'06	
evening set	12689 Aug 29 18:05	4° <u>15</u> 24'35		retrograde	12696 Jan 28 09:19	3° <u>15</u> 55'48	
				opposition	12696 Apr 14 06:13	1° <u>15</u> 55'24	1°00'36
conjunction	12689 Sep 14 17:45	5° <u>15</u> 19'26	0°34'44	min. Earth dist.	12696 Apr 14 02:06	1° <u>15</u> 55'49	18.64042 AU
minimum elong	12689 Sep 14 17:44	5° <u>15</u> 19'26	0°34'44		12696 Jun 17 11:01	30° <u>15</u>	
max. Earth dist.	12689 Sep 15 01:22	5° <u>15</u> 20'32	20.91339 AU	direct	12696 Jun 28 12:34	29° <u>15</u> 56'49	
morning rise	12689 Sep 30 19:52	6° <u>15</u> 14'39			12696 Jul 09 12:23	0° <u>15</u>	
retrograde	12690 Jan 02 15:07	9° <u>15</u> 22'12		evening set	12696 Sep 27 06:35	3° <u>15</u> 01'27	
opposition	12690 Mar 20 21:42	7° <u>15</u> 23'03	0°40'28				
min. Earth dist.	12690 Mar 20 14:15	7° <u>15</u> 23'49	18.89717 AU	conjunction	12696 Oct 13 10:34	3° <u>15</u> 57'36	0°55'48
direct	12690 Jun 04 12:42	5° <u>15</u> 25'38		minimum elong	12696 Oct 13 10:33	3° <u>15</u> 57'36	0°56'15
evening set	12690 Sep 03 01:05	8° <u>15</u> 27'14		max. Earth dist.	12696 Oct 13 15:00	3° <u>15</u> 58'15	20.61508 AU
				morning rise	12696 Oct 29 16:49	4° <u>15</u> 54'07	
conjunction	12690 Sep 19 01:24	9° <u>15</u> 22'13	0°38'23	retrograde	12697 Jan 31 21:06	8° <u>15</u> 05'27	
minimum elong	12690 Sep 19 01:23	9° <u>15</u> 22'13	0°38'26	opposition	12697 Apr 18 16:40	6° <u>15</u> 04'54	1°03'00
max. Earth dist.	12690 Sep 19 09:20	9° <u>15</u> 23'22	20.87969 AU	min. Earth dist.	12697 Apr 18 13:02	6° <u>15</u> 05'17	18.58962 AU
morning rise	12690 Oct 05 03:58	10° <u>15</u> 17'35		direct	12697 Jul 02 21:44	4° <u>15</u> 06'09	
retrograde	12691 Jan 07 00:50	13° <u>15</u> 25'34		evening set	12697 Oct 01 17:54	7° <u>15</u> 11'31	
opposition	12691 Mar 25 06:37	11° <u>15</u> 26'12	0°44'25				
min. Earth dist.	12691 Mar 24 23:56	11° <u>15</u> 26'53	18.86150 AU	conjunction	12697 Oct 17 22:23	8° <u>15</u> 07'53	0°57'48
direct	12691 Jun 08 20:40	9° <u>15</u> 28'36		minimum elong	12697 Oct 17 22:22	8° <u>15</u> 07'53	0°58'18
evening set	12691 Sep 07 08:44	12° <u>15</u> 30'33		max. Earth dist.	12697 Oct 18 01:01	8° <u>15</u> 08'17	20.56340 AU
				morning rise	12697 Nov 03 05:25	9° <u>15</u> 04'39	
conjunction	12691 Sep 23 09:30	13° <u>15</u> 25'41	0°41'50	retrograde	12698 Feb 05 11:09	12° <u>15</u> 16'39	
minimum elong	12691 Sep 23 09:29	13° <u>15</u> 25'41	0°41'58	opposition	12698 Apr 23 03:47	10° <u>15</u> 15'57	1°05'05
max. Earth dist.	12691 Sep 23 15:54	13° <u>15</u> 26'37	20.84232 AU	min. Earth dist.	12698 Apr 23 01:08	10° <u>15</u> 16'14	18.53699 AU
morning rise	12691 Oct 09 12:50	14° <u>15</u> 21'13		direct	12698 Jul 07 07:05	8° <u>15</u> 17'00	
retrograde	12692 Jan 11 11:33	17° <u>15</u> 29'40		evening set	12698 Oct 06 05:46	11° <u>15</u> 23'09	
opposition	12692 Mar 28 15:33	15° <u>15</u> 30'04	0°48'09				
min. Earth dist.	12692 Mar 28 09:18	15° <u>15</u> 30'42	18.82253 AU	conjunction	12698 Oct 22 11:04	12° <u>15</u> 19'47	0°59'31
direct	12692 Jun 12 03:27	13° <u>15</u> 32'16		minimum elong	12698 Oct 22 11:03	12° <u>15</u> 19'47	1°00'05
evening set	12692 Sep 10 16:44	16° <u>15</u> 34'37		max. Earth dist.	12698 Oct 22 14:01	12° <u>15</u> 20'13	20.50965 AU
				morning rise	12698 Nov 07 18:33	13° <u>15</u> 16'46	
conjunction	12692 Sep 26 18:12	17° <u>15</u> 29'57	0°45'06		12698 Dec 10 17:37	15° <u>15</u>	
minimum elong	12692 Sep 26 18:12	17° <u>15</u> 29'56	0°45'17	retrograde	12699 Feb 10 00:52	16° <u>15</u> 29'29	
max. Earth dist.	12692 Sep 27 00:58	17° <u>15</u> 30'55	20.80170 AU		12699 Apr 14 21:40	15° <u>15</u>	
morning rise	12692 Oct 12 22:00	18° <u>15</u> 25'38		opposition	12699 Apr 27 15:22	14° <u>15</u> 28'39	1°06'51
retrograde	12693 Jan 14 21:49	21° <u>15</u> 34'35		min. Earth dist.	12699 Apr 27 13:16	14° <u>15</u> 28'52	18.48207 AU
opposition	12693 Apr 02 00:45	19° <u>15</u> 34'47	0°51'39	direct	12699 Jul 11 17:29	12° <u>15</u> 29'29	
min. Earth dist.	12693 Apr 01 19:05	19° <u>15</u> 35'21	18.78047 AU		12699 Sep 29 22:39	15° <u>15</u>	
direct	12693 Jun 16 11:51	17° <u>15</u> 36'48		evening set	12699 Oct 10 18:51	15° <u>15</u> 36'28	
evening set	12693 Sep 15 01:18	20° <u>15</u> 39'37					
				conjunction	12699 Oct 27 00:38	16° <u>15</u> 33'20	1°00'55
conjunction	12693 Oct 01 03:13	21° <u>15</u> 35'07	0°48'09	minimum elong	12699 Oct 27 00:38	16° <u>15</u> 33'20	1°01'32

max. Earth dist.	12699 Oct 27 01:25	16°  33'27	20.45359 AU	min. Earth dist.	12706 May 28 19:13	14°  42'20	18.04549 AU
morning rise	12699 Nov 12 08:54	17°  30'35		direct	12706 Aug 11 10:42	12°  41'23	
retrograde	12700 Feb 14 15:44	20°  44'00		evening set	12706 Nov 11 11:44	15°  54'51	
opposition	12700 May 02 03:23	18°  43'00	1°08'15				
min. Earth dist.	12700 May 02 02:46	18°  43'04	18.42483 AU	conjunction	12706 Nov 27 22:17	16°  53'41	1°01'08
direct	12700 Jul 16 03:55	16°  43'35		minimum elong	12706 Nov 27 22:17	16°  53'41	1°02'02
evening set	12700 Oct 15 08:37	19°  51'26		max. Earth dist.	12706 Nov 27 17:09	16°  52'54	20.01371 AU
				morning rise	12706 Dec 14 10:13	17°  52'46	
conjunction	12700 Oct 31 15:15	20°  48'35	1°02'00	retrograde	12707 Mar 18 15:28	21°  51'053	
minimum elong	12700 Oct 31 15:15	20°  48'35	1°02'41	opposition	12707 Jun 02 06:02	19°  508'24	1°07'17
max. Earth dist.	12700 Oct 31 15:57	20°  48'41	20.39498 AU	min. Earth dist.	12707 Jun 02 10:26	19°  507'56	17.98264 AU
morning rise	12700 Nov 16 23:56	21°  46'05		direct	12707 Aug 16 02:23	17°  506'36	
retrograde	12701 Feb 19 07:13	25°  40'11		evening set	12707 Nov 16 07:11	20°  521'05	
opposition	12701 May 06 15:59	22°  59'01	1°09'17				
min. Earth dist.	12701 May 06 15:55	22°  59'01	18.36491 AU	conjunction	12707 Dec 02 18:12	21°  520'12	0°59'42
direct	12701 Jul 20 15:59	20°  59'20		minimum elong	12707 Dec 02 18:12	21°  520'12	1°00'38
evening set	12701 Oct 19 23:14	24°  08'02		max. Earth dist.	12707 Dec 02 11:31	21°  519'11	19.95169 AU
				morning rise	12707 Dec 19 06:39	22°  519'33	
conjunction	12701 Nov 05 06:21	25°  05'27	1°02'45	retrograde	12708 Mar 22 10:35	25°  538'18	
minimum elong	12701 Nov 05 06:21	25°  05'27	1°03'29	opposition	12708 Jun 05 22:13	23°  535'39	1°05'30
max. Earth dist.	12701 Nov 05 04:43	25°  05'13	20.33389 AU	min. Earth dist.	12708 Jun 06 04:06	23°  535'01	17.92170 AU
morning rise	12701 Nov 21 15:46	26°  03'13		direct	12708 Aug 19 17:17	21°  533'31	
retrograde	12702 Feb 23 22:44	29°  18'02		evening set	12708 Nov 20 03:18	24°  549'01	
opposition	12702 May 11 05:13	27°  16'38	1°09'58				
min. Earth dist.	12702 May 11 06:41	27°  16'29	18.30280 AU	conjunction	12708 Dec 06 14:59	25°  548'25	0°57'54
direct	12702 Jul 25 03:45	25°  16'37		minimum elong	12708 Dec 06 14:59	25°  548'25	0°58'50
evening set	12702 Oct 24 14:32	28°  26'14		max. Earth dist.	12708 Dec 06 08:26	25°  547'26	19.89191 AU
				morning rise	12708 Dec 23 03:44	26°  548'01	
conjunction	12702 Nov 09 22:31	29°  23'56	1°03'10		12709 Mar 10 13:28	0° 	
minimum elong	12702 Nov 09 22:30	29°  23'56	1°03'55	retrograde	12709 Mar 27 07:38	0°  507'24	
max. Earth dist.	12702 Nov 09 20:55	29°  23'42	20.27087 AU		12709 Apr 13 01:33	30°  51	
	12702 Nov 20 01:58	0° 		opposition	12709 Jun 10 14:59	28°  504'37	1°03'19
morning rise	12702 Nov 26 08:20	0°  521'57		min. Earth dist.	12709 Jun 10 20:17	28°  504'03	17.86309 AU
retrograde	12703 Feb 28 15:32	3°  537'26		direct	12709 Aug 24 10:41	26°  502'11	
opposition	12703 May 15 18:43	1°  535'49	1°10'14	evening set	12709 Nov 25 00:11	29°  518'43	
min. Earth dist.	12703 May 15 20:29	1°  535'38	18.23899 AU		12709 Dec 06 11:11	0° 	
	12703 Jun 28 16:52	30°  511		conjunction	12709 Dec 11 12:18	0°  518'23	0°55'43
direct	12703 Jul 29 17:19	29°  35'28		minimum elong	12709 Dec 11 12:18	0°  518'23	0°56'40
	12703 Aug 29 05:07	0° 		max. Earth dist.	12709 Dec 11 04:42	0°  517'14	19.83461 AU
evening set	12703 Oct 29 06:46	2°  546'00		morning rise	12709 Dec 28 01:27	1°  518'14	
				retrograde	12710 Apr 01 03:29	4°  538'13	
conjunction	12703 Nov 14 15:16	3°  543'59	1°03'12	opposition	12710 Jun 15 08:34	2°  535'21	1°00'43
minimum elong	12703 Nov 14 15:16	3°  543'59	1°04'02	min. Earth dist.	12710 Jun 15 15:16	2°  534'37	17.80723 AU
max. Earth dist.	12703 Nov 14 11:31	3°  543'25	20.20658 AU	direct	12710 Aug 29 02:53	0°  532'40	
morning rise	12703 Dec 01 01:50	4°  542'16		evening set	12710 Nov 29 21:58	3°  550'13	
retrograde	12704 Mar 04 07:58	7°  558'25					
opposition	12704 May 19 08:52	5°  556'34	1°10'07	conjunction	12710 Dec 16 10:40	4°  550'09	0°53'12
min. Earth dist.	12704 May 19 12:14	5°  556'13	18.17438 AU	minimum elong	12710 Dec 16 10:40	4°  550'09	0°54'09
direct	12704 Aug 02 06:12	3°  555'51		max. Earth dist.	12710 Dec 16 02:57	4°  548'59	19.78025 AU
evening set	12704 Nov 01 23:38	7°  507'21		morning rise	12711 Jan 02 00:07	5°  550'14	
				retrograde	12711 Apr 06 01:38	9°  510'49	
conjunction	12704 Nov 18 08:56	8°  505'36	1°02'53	opposition	12711 Jun 20 02:27	7°  507'52	0°57'44
minimum elong	12704 Nov 18 08:56	8°  505'36	1°03'44	min. Earth dist.	12711 Jun 20 08:43	7°  507'12	17.75420 AU
max. Earth dist.	12704 Nov 18 05:20	8°  505'04	20.14177 AU	direct	12711 Sep 02 22:09	5°  504'56	
morning rise	12704 Dec 04 19:51	9°  504'10		evening set	12711 Dec 04 20:46	8°  523'32	
retrograde	12705 Mar 09 02:02	12°  520'58					
opposition	12705 May 23 23:17	10°  518'54	1°09'35	conjunction	12711 Dec 21 09:51	9°  523'43	0°50'19
min. Earth dist.	12705 May 24 02:35	10°  518'33	18.10956 AU	minimum elong	12711 Dec 21 09:51	9°  523'43	0°51'16
direct	12705 Aug 06 20:45	8°  517'49		max. Earth dist.	12711 Dec 21 01:16	9°  522'25	19.72853 AU
evening set	12705 Nov 06 17:25	11°  530'17		morning rise	12712 Jan 06 23:32	10°  524'02	
				retrograde	12712 Apr 09 22:22	13°  545'10	
conjunction	12705 Nov 23 03:10	12°  528'50	1°02'12	opposition	12712 Jun 23 21:16	11°  542'11	0°54'21
minimum elong	12705 Nov 23 03:10	12°  528'50	1°03'05	min. Earth dist.	12712 Jun 24 05:07	11°  541'20	17.70379 AU
max. Earth dist.	12705 Nov 22 21:46	12°  528'01	20.07721 AU	direct	12712 Sep 06 16:07	9°  539'01	
morning rise	12705 Dec 09 14:44	13°  527'39		evening set	12712 Dec 08 20:16	12°  558'37	
retrograde	12706 Mar 13 19:53	16°  545'07					
opposition	12706 May 28 14:27	14°  542'50	1°08'38				

conjunction	12712 Dec 25 09:43	13°♄59'03	0°47'07			12719 Mar 18 02:00	15°♈	
minimum elong	12712 Dec 25 09:43	13°♄59'03	0°48'04	retrograde		12719 May 13 17:00	16°♈23'27	
max. Earth dist.	12712 Dec 25 00:26	13°♄57'37	19.67939 AU			12719 Jul 11 10:17	15°♈	
morning rise	12713 Jan 10 23:35	14°♄59'33		opposition		12719 Jul 26 23:16	14°♈20'02	0°21'49
retrograde	12713 Apr 14 21:17	18°♄21'12		min. Earth dist.		12719 Jul 27 09:50	14°♈18'53	17.42788 AU
opposition	12713 Jun 28 16:32	16°♄18'10	0°50'37	direct		12719 Oct 10 04:04	12°♈15'03	
min. Earth dist.	12713 Jun 29 00:05	16°♄17'21	17.65580 AU			12720 Jan 01 03:09	15°♈	
direct	12713 Sep 11 13:40	14°♄14'46		evening set		12720 Jan 12 09:37	15°♈40'09	
evening set	12713 Dec 13 20:36	17°♄35'19						
conjunction	12713 Dec 30 10:23	18°♄35'59	0°43'35	conjunction		12720 Jan 29 00:06	16°♈41'42	0°17'02
minimum elong	12713 Dec 30 10:23	18°♄35'59	0°44'32	minimum elong		12720 Jan 29 00:06	16°♈41'42	0°17'45
max. Earth dist.	12713 Dec 30 00:31	18°♄34'28	19.63249 AU	max. Earth dist.		12720 Jan 28 12:05	16°♈39'50	19.41536 AU
morning rise	12714 Jan 16 00:18	19°♄36'41		morning rise		12720 Feb 14 13:22	17°♈43'07	
retrograde	12714 Apr 19 18:44	22°♄58'46		retrograde		12720 May 17 17:28	21°♈06'37	
opposition	12714 Jul 03 12:33	20°♄55'42	0°46'32	opposition		12720 Jul 30 21:47	19°♈03'11	0°16'15
min. Earth dist.	12714 Jul 03 21:39	20°♄54'43	17.61011 AU	min. Earth dist.		12720 Jul 31 08:25	19°♈02'01	17.40429 AU
direct	12714 Sep 16 09:18	18°♄52'01		direct		12720 Oct 14 04:04	16°♈58'00	
evening set	12714 Dec 18 21:33	22°♄13'30		evening set		12721 Jan 16 12:53	20°♈23'37	
conjunction	12715 Jan 04 11:36	23°♄14'21	0°39'46	conjunction		12721 Feb 02 03:01	21°♈25'14	0°11'58
minimum elong	12715 Jan 04 11:36	23°♄14'21	0°40'40	minimum elong		12721 Feb 02 03:01	21°♈25'14	0°12'39
max. Earth dist.	12715 Jan 04 00:32	23°♄12'39	19.58809 AU	behind sun begin		12721 Feb 01 22:48	21°♈24'35	
morning rise	12715 Jan 21 01:43	24°♄15'14		behind sun end		12721 Feb 02 07:13	21°♈25'52	
retrograde	12715 Apr 24 18:39	27°♄37'42		max. Earth dist.		12721 Feb 01 14:02	21°♈23'13	19.39453 AU
opposition	12715 Jul 08 09:00	25°♄34'33	0°42'08	morning rise		12721 Feb 18 16:03	22°♈26'42	
min. Earth dist.	12715 Jul 08 17:56	25°♄33'35	17.56691 AU	retrograde		12721 May 22 17:08	25°♈50'15	
direct	12715 Sep 21 08:33	23°♄30'36		opposition		12721 Aug 04 20:37	23°♈46'48	0°10'33
evening set	12715 Dec 23 23:10	26°♄52'56		min. Earth dist.		12721 Aug 05 07:06	23°♈45'40	17.38640 AU
conjunction	12716 Jan 09 13:30	27°♄53'58	0°35'40	direct		12721 Oct 19 04:03	21°♈41'28	
minimum elong	12716 Jan 09 13:30	27°♄53'58	0°36'33	evening set		12722 Jan 21 16:15	25°♈07'33	
max. Earth dist.	12716 Jan 09 02:21	27°♄52'15	19.54615 AU	conjunction		12722 Feb 07 06:19	26°♈09'12	0°06'51
morning rise	12716 Jan 26 03:28	28°♄55'00		minimum elong		12722 Feb 07 06:18	26°♈09'12	0°07'27
retrograde	12716 Feb 13 21:13	0°♈		behind sun begin		12722 Feb 07 00:10	26°♈08'16	
opposition	12716 Apr 28 17:02	2°♈17'47		behind sun end		12722 Feb 07 12:26	26°♈10'08	
min. Earth dist.	12716 Jul 12 05:59	0°♈14'35	0°37'26	max. Earth dist.		12722 Feb 06 18:47	26°♈07'25	19.37956 AU
direct	12716 Jul 12 16:09	0°♈13'29	17.52644 AU	morning rise		12722 Feb 23 18:46	27°♈10'40	
evening set	12716 Jul 17 20:21	30°♈		retrograde		12722 Apr 22 06:44	0°♈	
conjunction	12716 Sep 25 05:51	28°♄10'22		opposition		12722 May 27 18:16	0°♈34'13	
minimum elong	12716 Nov 30 08:04	0°♈		min. Earth dist.		12722 Jul 02 18:04	30°♈	
max. Earth dist.	12716 Dec 28 01:18	1°♈33'28		direct		12722 Aug 09 19:34	28°♈30'49	0°04'46
morning rise	12717 Jan 13 15:39	2°♈34'40	0°31'19	evening set		12722 Aug 10 05:30	28°♈29'44	17.37443 AU
retrograde	12717 Jan 13 15:40	2°♈34'40	0°32'09			12722 Oct 24 04:57	26°♈25'24	
opposition	12717 Jan 13 03:11	2°♈32'45	19.50743 AU	conjunction		12723 Jan 26 19:55	29°♈51'52	
min. Earth dist.	12717 Jan 30 05:42	3°♈35'50		minimum elong		12723 Jan 29 01:09	0°♈	
direct	12717 May 03 17:18	6°♈58'54		behind sun begin		12723 Feb 12 09:31	0°♈53'32	0°01'39
evening set	12717 Jul 17 03:22	4°♈55'36	0°32'27	behind sun end		12723 Feb 12 09:31	0°♈53'32	0°02'12
conjunction	12717 Jul 17 13:20	4°♈54'31	17.48949 AU	max. Earth dist.		12723 Feb 12 02:46	0°♈52'30	
minimum elong	12717 Sep 30 05:28	2°♈51'06		morning rise		12723 Feb 12 16:15	0°♈54'33	
max. Earth dist.	12718 Jan 02 03:35	6°♈14'56		retrograde		12723 Feb 11 21:17	0°♈51'38	19.37072 AU
morning rise	12718 Jan 18 18:10	7°♈16'17	0°26'44	evening set		12723 Feb 28 21:37	1°♈54'59	
retrograde	12718 Jan 18 18:10	7°♈16'17	0°27'33	conjunction		12723 Jun 01 17:31	5°♈18'30	
max. Earth dist.	12718 Jan 18 06:21	7°♈14'28	19.47232 AU	minimum elong		12723 Jun 10 11:44	5°♈16'21	
morning rise	12718 Feb 04 07:55	8°♈17'33		behind sun begin		12723 Aug 14 18:55	3°♈15'11	-0°01'03
retrograde	12718 May 08 16:54	11°♈40'49		behind sun end		12723 Aug 15 04:54	3°♈14'06	17.36874 AU
opposition	12718 Jul 22 01:15	9°♈37'28	0°27'14	max. Earth dist.		12723 Oct 29 05:16	1°♈09'44	
min. Earth dist.	12718 Jul 22 11:54	9°♈36'19	17.45638 AU	morning rise		12724 Jan 31 23:30	4°♈36'32	
direct	12718 Oct 05 04:14	7°♈32'44		retrograde		12724 Feb 17 12:48	5°♈38'11	-0°03'42
evening set	12719 Jan 07 06:32	10°♈57'13		opposition		12724 Feb 17 12:48	5°♈38'11	0°03'13
conjunction	12719 Jan 23 20:57	11°♈58'40	0°21'57	behind sun begin		12724 Feb 17 06:06	5°♈37'10	
minimum elong	12719 Jan 23 20:58	11°♈58'40	0°22'44	behind sun end		12724 Feb 17 19:30	5°♈39'13	
max. Earth dist.	12719 Jan 23 07:51	11°♈56'39	19.44148 AU	max. Earth dist.		12724 Feb 17 01:56	5°♈36'30	19.36808 AU
morning rise	12719 Feb 09 10:41	13°♈00'02		morning rise		12724 Mar 05 00:14	6°♈39'36	
retrograde				retrograde		12724 Jun 05 18:38	10°♈03'01	
opposition				opposition		12724 Aug 18 18:22	7°♈59'52	-0°06'52

min. Earth dist.	12724 Aug 19 03:24	7° $\mathbf{\text{H}}$ 58'52	17.36899 AU	min. Earth dist.	12730 Sep 17 00:20	6° $\mathbf{\text{Y}}$ 24'40	17.47243 AU
direct	12724 Nov 02 07:18	5° $\mathbf{\text{H}}$ 54'27		direct	12730 Dec 01 20:03	4° $\mathbf{\text{Y}}$ 20'30	
evening set	12725 Feb 05 03:12	9° $\mathbf{\text{H}}$ 21'29		evening set	12731 Mar 06 20:30	7° $\mathbf{\text{Y}}$ 46'56	
conjunction	12725 Feb 21 15:54	10° $\mathbf{\text{H}}$ 23'06	-0°08'52	conjunction	12731 Mar 23 05:15	8° $\mathbf{\text{Y}}$ 47'44	-0°37'27
minimum elong	12725 Feb 21 15:54	10° $\mathbf{\text{H}}$ 23'06	0°08'27	minimum elong	12731 Mar 23 05:15	8° $\mathbf{\text{Y}}$ 47'44	0°37'29
behind sun begin	12725 Feb 21 10:01	10° $\mathbf{\text{H}}$ 22'12		max. Earth dist.	12731 Mar 22 21:02	8° $\mathbf{\text{Y}}$ 46'27	19.48740 AU
behind sun end	12725 Feb 21 21:47	10° $\mathbf{\text{H}}$ 24'00		morning rise	12731 Apr 08 11:24	9° $\mathbf{\text{Y}}$ 48'11	
max. Earth dist.	12725 Feb 21 04:45	10° $\mathbf{\text{H}}$ 21'22	19.37126 AU	retrograde	12731 Jul 09 12:12	13° $\mathbf{\text{Y}}$ 09'19	
morning rise	12725 Mar 10 02:47	11° $\mathbf{\text{H}}$ 24'27		opposition	12731 Sep 21 16:57	11° $\mathbf{\text{Y}}$ 07'16	-0°43'58
retrograde	12725 Jun 10 17:20	14° $\mathbf{\text{H}}$ 47'45		min. Earth dist.	12731 Sep 22 00:27	11° $\mathbf{\text{Y}}$ 06'27	17.50356 AU
opposition	12725 Aug 23 18:06	12° $\mathbf{\text{H}}$ 44'45	-0°12'38	direct	12731 Dec 06 20:03	9° $\mathbf{\text{Y}}$ 02'26	
min. Earth dist.	12725 Aug 24 03:32	12° $\mathbf{\text{H}}$ 43'43	17.37502 AU	evening set	12732 Mar 10 21:42	12° $\mathbf{\text{Y}}$ 28'24	
direct	12725 Nov 07 08:03	10° $\mathbf{\text{H}}$ 39'23		conjunction	12732 Mar 27 05:30	13° $\mathbf{\text{Y}}$ 28'59	-0°41'29
evening set	12726 Feb 10 06:39	14° $\mathbf{\text{H}}$ 06'36		minimum elong	12732 Mar 27 05:30	13° $\mathbf{\text{Y}}$ 28'59	0°41'36
conjunction	12726 Feb 26 18:55	15° $\mathbf{\text{H}}$ 08'08	-0°13'58	max. Earth dist.	12732 Mar 26 21:08	13° $\mathbf{\text{Y}}$ 27'41	19.52043 AU
minimum elong	12726 Feb 26 18:55	15° $\mathbf{\text{H}}$ 08'08	0°13'38	morning rise	12732 Apr 12 10:56	14° $\mathbf{\text{Y}}$ 29'13	
behind sun begin	12726 Feb 26 15:20	15° $\mathbf{\text{H}}$ 07'35		retrograde	12732 Jul 13 11:21	17° $\mathbf{\text{Y}}$ 49'48	
behind sun end	12726 Feb 26 22:30	15° $\mathbf{\text{H}}$ 08'41		opposition	12732 Sep 25 16:06	15° $\mathbf{\text{Y}}$ 47'51	-0°48'19
max. Earth dist.	12726 Feb 26 08:40	15° $\mathbf{\text{H}}$ 06'32	19.37991 AU	min. Earth dist.	12732 Sep 25 22:03	15° $\mathbf{\text{Y}}$ 47'12	17.53848 AU
morning rise	12726 Mar 15 05:07	16° $\mathbf{\text{H}}$ 09'23		direct	12732 Dec 10 22:29	13° $\mathbf{\text{Y}}$ 43'07	
retrograde	12726 Jun 15 18:17	19° $\mathbf{\text{H}}$ 32'30		evening set	12733 Mar 15 22:05	17° $\mathbf{\text{Y}}$ 08'32	
opposition	12726 Aug 28 17:54	17° $\mathbf{\text{H}}$ 29'40	-0°18'18	conjunction	12733 Apr 01 05:12	18° $\mathbf{\text{Y}}$ 08'53	-0°45'13
min. Earth dist.	12726 Aug 29 02:15	17° $\mathbf{\text{H}}$ 28'46	17.38602 AU	minimum elong	12733 Apr 01 05:12	18° $\mathbf{\text{Y}}$ 08'53	0°45'25
direct	12726 Nov 12 11:27	15° $\mathbf{\text{H}}$ 24'24		max. Earth dist.	12733 Mar 31 22:35	18° $\mathbf{\text{Y}}$ 07'52	19.55723 AU
evening set	12727 Feb 15 10:13	18° $\mathbf{\text{H}}$ 51'40		morning rise	12733 Apr 17 09:38	19° $\mathbf{\text{Y}}$ 08'53	
conjunction	12727 Mar 03 21:49	19° $\mathbf{\text{H}}$ 53'06	-0°19'00	retrograde	12733 Jul 18 07:10	22° $\mathbf{\text{Y}}$ 28'51	
minimum elong	12727 Mar 03 21:49	19° $\mathbf{\text{H}}$ 53'06	0°18'45	opposition	12733 Sep 30 14:58	20° $\mathbf{\text{Y}}$ 27'01	-0°52'19
max. Earth dist.	12727 Mar 03 11:34	19° $\mathbf{\text{H}}$ 51'31	19.39317 AU	min. Earth dist.	12733 Sep 30 21:03	20° $\mathbf{\text{Y}}$ 26'22	17.57728 AU
morning rise	12727 Mar 20 07:16	20° $\mathbf{\text{H}}$ 54'14		direct	12733 Dec 15 22:04	18° $\mathbf{\text{Y}}$ 22'25	
retrograde	12727 Jun 20 16:26	24° $\mathbf{\text{H}}$ 17'05		evening set	12734 Mar 20 21:50	21° $\mathbf{\text{Y}}$ 47'12	
opposition	12727 Sep 02 17:51	22° $\mathbf{\text{H}}$ 14'26	-0°23'51	conjunction	12734 Apr 06 03:58	22° $\mathbf{\text{Y}}$ 47'18	-0°48'39
min. Earth dist.	12727 Sep 03 02:53	22° $\mathbf{\text{H}}$ 13'27	17.40160 AU	minimum elong	12734 Apr 06 03:57	22° $\mathbf{\text{Y}}$ 47'18	0°48'56
direct	12727 Nov 17 12:40	20° $\mathbf{\text{H}}$ 09'15		max. Earth dist.	12734 Apr 05 21:13	22° $\mathbf{\text{Y}}$ 46'16	19.59807 AU
evening set	12728 Feb 20 13:28	23° $\mathbf{\text{H}}$ 36'28		morning rise	12734 Apr 22 07:45	23° $\mathbf{\text{Y}}$ 47'03	
conjunction	12728 Mar 08 00:24	24° $\mathbf{\text{H}}$ 37'47	-0°23'53	retrograde	12734 Jul 23 04:38	27° $\mathbf{\text{Y}}$ 06'23	
minimum elong	12728 Mar 08 00:24	24° $\mathbf{\text{H}}$ 37'46	0°23'42	opposition	12734 Oct 05 13:24	25° $\mathbf{\text{Y}}$ 04'39	-0°55'57
max. Earth dist.	12728 Mar 07 14:30	24° $\mathbf{\text{H}}$ 36'14	19.41089 AU	min. Earth dist.	12734 Oct 05 17:53	25° $\mathbf{\text{Y}}$ 04'11	17.62018 AU
morning rise	12728 Mar 24 09:06	25° $\mathbf{\text{H}}$ 38'46		direct	12734 Dec 20 23:56	23° $\mathbf{\text{Y}}$ 00'12	
retrograde	12728 Jun 24 17:02	29° $\mathbf{\text{H}}$ 01'17		evening set	12735 Mar 25 20:39	26° $\mathbf{\text{Y}}$ 24'18	
opposition	12728 Sep 06 17:47	26° $\mathbf{\text{H}}$ 58'48	-0°29'13	conjunction	12735 Apr 11 02:04	27° $\mathbf{\text{Y}}$ 24'09	-0°51'45
min. Earth dist.	12728 Sep 07 01:31	26° $\mathbf{\text{H}}$ 57'58	17.42132 AU	minimum elong	12735 Apr 11 02:03	27° $\mathbf{\text{Y}}$ 24'09	0°52'07
direct	12728 Nov 21 16:13	24° $\mathbf{\text{H}}$ 53'42		max. Earth dist.	12735 Apr 10 21:30	27° $\mathbf{\text{Y}}$ 23'26	19.64296 AU
evening set	12729 Feb 24 16:11	28° $\mathbf{\text{H}}$ 20'45		morning rise	12735 Apr 27 04:48	28° $\mathbf{\text{Y}}$ 23'38	
conjunction	12729 Mar 13 02:26	29° $\mathbf{\text{H}}$ 21'55	-0°28'37		12735 May 25 21:06	0° $\mathbf{\text{B}}$	
minimum elong	12729 Mar 13 02:26	29° $\mathbf{\text{H}}$ 21'55	0°28'30	retrograde	12735 Jul 27 23:05	1° $\mathbf{\text{B}}$ 42'18	
max. Earth dist.	12729 Mar 12 17:09	29° $\mathbf{\text{H}}$ 20'28	19.43255 AU		12735 Oct 02 21:58	30° $\mathbf{\text{R}}$ $\mathbf{\text{Y}}$	
	12729 Mar 23 06:28	0° $\mathbf{\text{Y}}$		opposition	12735 Oct 10 11:32	29° $\mathbf{\text{Y}}$ 40'44	-0°59'12
morning rise	12729 Mar 29 10:16	0° $\mathbf{\text{Y}}$ 22'45		min. Earth dist.	12735 Oct 10 15:38	29° $\mathbf{\text{Y}}$ 40'18	17.66716 AU
retrograde	12729 Jun 29 15:00	3° $\mathbf{\text{Y}}$ 44'52		direct	12735 Dec 25 23:17	27° $\mathbf{\text{Y}}$ 36'30	
opposition	12729 Sep 11 17:48	1° $\mathbf{\text{Y}}$ 42'32	-0°34'24		12736 Mar 12 14:03	0° $\mathbf{\text{B}}$	
min. Earth dist.	12729 Sep 12 02:11	1° $\mathbf{\text{Y}}$ 41'38	17.44499 AU	evening set	12736 Mar 29 18:50	0° $\mathbf{\text{B}}$ 59'51	
	12729 Oct 28 04:21	30° $\mathbf{\text{R}}$ $\mathbf{\text{H}}$		conjunction	12736 Apr 14 23:13	1° $\mathbf{\text{B}}$ 59'25	-0°54'30
direct	12729 Nov 26 17:03	29° $\mathbf{\text{H}}$ 37'32		minimum elong	12736 Apr 14 23:12	1° $\mathbf{\text{B}}$ 59'25	0°54'55
	12729 Dec 25 20:07	0° $\mathbf{\text{Y}}$		max. Earth dist.	12736 Apr 14 18:38	1° $\mathbf{\text{B}}$ 58'43	19.69208 AU
evening set	12730 Mar 01 18:37	3° $\mathbf{\text{Y}}$ 04'19		morning rise	12736 May 01 01:18	2° $\mathbf{\text{B}}$ 58'39	
conjunction	12730 Mar 18 04:04	4° $\mathbf{\text{Y}}$ 05'18	-0°33'09	retrograde	12736 Jul 31 19:09	6° $\mathbf{\text{B}}$ 16'39	
minimum elong	12730 Mar 18 04:04	4° $\mathbf{\text{Y}}$ 05'18	0°33'07	opposition	12736 Oct 14 09:13	4° $\mathbf{\text{B}}$ 15'16	-1°02'03
max. Earth dist.	12730 Mar 17 18:45	4° $\mathbf{\text{Y}}$ 03'51	19.45816 AU	min. Earth dist.	12736 Oct 14 11:44	4° $\mathbf{\text{B}}$ 15'00	17.71838 AU
morning rise	12730 Apr 03 11:12	5° $\mathbf{\text{Y}}$ 05'58		direct	12736 Dec 29 23:40	2° $\mathbf{\text{B}}$ 11'17	
retrograde	12730 Jul 04 15:07	8° $\mathbf{\text{Y}}$ 27'37		evening set	12737 Apr 03 15:51	5° $\mathbf{\text{B}}$ 33'51	
opposition	12730 Sep 16 17:19	6° $\mathbf{\text{Y}}$ 25'25	-0°39'19				

conjunction	12737 Apr 19 19:36	6°8'33.09" -0°56'53"	minimum elong	12743 May 17 05:32	3°12'23.51" 1°04'08"
minimum elong	12737 Apr 19 19:35	6°8'33.09" 0°57'23"	max. Earth dist.	12743 May 17 08:03	3°12'24.14" 20.10611 AU
max. Earth dist.	12737 Apr 19 17:19	6°8'32.48" 19.74517 AU	morning rise	12743 Jun 02 02:43	4°12'21.13"
morning rise	12737 May 05 20:45	7°8'32.07"	retrograde	12743 Sep 01 17:18	7°12'34.31"
retrograde	12737 Aug 05 12:51	10°8'49.28"	opposition	12743 Nov 16 04:02	5°12'34.48" -1°10'19"
opposition	12737 Oct 19 06:28	8°8'48.19" -1°04'30"	min. Earth dist.	12743 Nov 16 01:11	5°12'35.06" 18.13689 AU
min. Earth dist.	12737 Oct 19 08:21	8°8'48.07" 17.77312 AU	direct	12744 Feb 01 03:47	3°12'33.04"
direct	12738 Jan 03 22:24	6°8'44.38"	evening set	12744 May 04 21:59	6°12'49.19"
evening set	12738 Apr 08 12:24	10°8'06.23"			
conjunction	12738 Apr 24 15:09	11°8'05.24" -0°58'54"	conjunction	12744 May 20 20:23	7°12'46.39" -1°03'06"
minimum elong	12738 Apr 24 15:09	11°8'05.24" 0°59'27"	minimum elong	12744 May 20 20:23	7°12'46.39" 1°03'57"
max. Earth dist.	12738 Apr 24 12:48	11°8'05.03" 19.80151 AU	max. Earth dist.	12744 May 20 22:57	7°12'47.02" 20.16707 AU
morning rise	12738 May 10 15:42	12°8'04.06"	morning rise	12744 Jun 05 17:09	8°12'43.45"
	12738 Jul 13 13:24	15°8'	retrograde	12744 Sep 05 07:30	11°12'56.23"
retrograde	12738 Aug 10 07:22	15°8'20.47"	opposition	12744 Nov 19 21:48	9°12'56.49" -1°09'51"
	12738 Sep 07 13:18	15°8'8"	min. Earth dist.	12744 Nov 19 18:59	9°12'57.07" 18.19752 AU
opposition	12738 Oct 24 03:09	13°8'19.53" -1°06'31"	direct	12745 Feb 04 21:14	7°12'55.21"
min. Earth dist.	12738 Oct 24 04:00	13°8'19.47" 17.83086 AU	evening set	12745 May 09 12:27	11°12'10.35"
direct	12739 Jan 08 20:53	11°8'16.31"	conjunction	12745 May 25 10:25	12°12'07.39" -1°02'30"
evening set	12739 Apr 13 08:01	14°8'37.27"	minimum elong	12745 May 25 10:25	12°12'07.39" 1°03'23"
	12739 Apr 19 13:36	15°8'	max. Earth dist.	12745 May 25 14:02	12°12'08.12" 20.22721 AU
conjunction	12739 Apr 29 10:07	15°8'36.11" -1°00'33"	morning rise	12745 Jun 10 06:43	13°12'04.31"
minimum elong	12739 Apr 29 10:07	15°8'36.11" 1°01'09"	retrograde	12745 Sep 09 22:00	16°12'16.26"
max. Earth dist.	12739 Apr 29 09:46	15°8'36.08" 19.86038 AU	opposition	12745 Nov 24 14:49	14°12'17.01" -1°08'58"
morning rise	12739 May 15 09:47	16°8'34.36"	min. Earth dist.	12745 Nov 24 10:39	14°12'17.27" 18.25699 AU
retrograde	12739 Aug 15 00:43	19°8'50.37"	direct	12746 Feb 09 15:25	12°12'15.49"
opposition	12739 Oct 28 23:34	17°8'49.59" -1°08'07"	evening set	12746 May 14 02:12	15°12'30.01"
min. Earth dist.	12739 Oct 28 23:37	17°8'49.59" 17.89060 AU	conjunction	12746 May 29 23:33	16°12'26.50" -1°01'34"
direct	12740 Jan 13 18:58	15°8'46.58"	minimum elong	12746 May 29 23:33	16°12'26.50" 1°02'28"
evening set	12740 Apr 17 02:51	19°8'07.01"	max. Earth dist.	12746 May 30 03:31	16°12'27.25" 20.28617 AU
conjunction	12740 May 03 03:59	20°8'05.28" -1°01'48"	morning rise	12746 Jun 14 19:31	17°12'23.27"
minimum elong	12740 May 03 03:59	20°8'05.28" 1°02'29"	retrograde	12746 Sep 14 10:59	20°12'34.41"
max. Earth dist.	12740 May 03 03:37	20°8'05.24" 19.92091 AU	opposition	12746 Nov 29 07:16	18°12'35.22" -1°07'43"
morning rise	12740 May 19 03:05	21°8'03.37"	min. Earth dist.	12746 Nov 29 03:13	18°12'35.47" 18.31556 AU
retrograde	12740 Aug 18 17:39	24°8'18.58"	direct	12747 Feb 14 07:36	16°12'34.24"
opposition	12740 Nov 01 19:31	22°8'18.35" -1°09'18"	evening set	12747 May 18 14:57	19°12'47.34"
min. Earth dist.	12740 Nov 01 18:56	22°8'18.38" 17.95184 AU	conjunction	12747 Jun 03 11:52	20°12'44.07" -1°00'16"
direct	12741 Jan 17 15:44	20°8'15.54"	minimum elong	12747 Jun 03 11:52	20°12'44.07" 1°01'13"
evening set	12741 Apr 21 20:49	23°8'35.02"	max. Earth dist.	12747 Jun 03 16:55	20°12'44.52" 20.34440 AU
conjunction	12741 May 07 21:21	24°8'33.12" -1°02'42"	morning rise	12747 Jun 19 07:29	21°12'40.31"
minimum elong	12741 May 07 21:21	24°8'33.12" 1°03'24"	retrograde	12747 Sep 19 00:17	24°12'51.04"
max. Earth dist.	12741 May 07 22:39	24°8'33.24" 19.98252 AU	opposition	12747 Dec 03 23:03	22°12'51.51" -1°06'05"
morning rise	12741 May 23 19:42	25°8'31.05"	min. Earth dist.	12747 Dec 03 17:15	22°12'52.27" 18.37340 AU
retrograde	12741 Aug 23 10:13	28°8'45.45"	direct	12748 Feb 19 00:25	20°12'51.07"
opposition	12741 Nov 06 14:47	26°8'45.37" -1°10'03"	evening set	12748 May 22 02:45	24°12'03.16"
min. Earth dist.	12741 Nov 06 13:18	26°8'45.46" 18.01363 AU	conjunction	12748 Jun 06 23:12	24°12'59.35" -0°58'39"
direct	12742 Jan 22 12:56	24°8'43.16"	minimum elong	12748 Jun 06 23:12	24°12'59.35" 0°59'35"
evening set	12742 Apr 26 14:08	28°8'01.28"	max. Earth dist.	12748 Jun 07 05:05	25°12'00.27" 20.40195 AU
conjunction	12742 May 12 13:51	28°8'59.21" -1°03'12"	morning rise	12748 Jun 22 18:34	25°12'55.45"
minimum elong	12742 May 12 13:50	28°8'59.21" 1°03'59"	retrograde	12748 Sep 22 11:49	29°12'05.41"
max. Earth dist.	12742 May 12 15:02	28°8'59.32" 20.04440 AU	opposition	12748 Dec 07 14:19	27°12'06.34" -1°04'05"
morning rise	12742 May 28 11:41	29°8'56.59"	min. Earth dist.	12748 Dec 07 08:32	27°12'07.09" 18.43083 AU
	12742 May 29 08:03	0°12'	direct	12749 Feb 22 15:11	25°12'06.05"
retrograde	12742 Aug 28 01:39	3°12'10.58"	evening set	12749 May 26 13:52	28°12'17.14"
opposition	12742 Nov 11 09:43	1°12'11.03" -1°10'24"	conjunction	12749 Jun 11 09:58	29°12'13.19" -0°56'43"
min. Earth dist.	12742 Nov 11 08:02	1°12'11.13" 18.07556 AU	minimum elong	12749 Jun 11 09:58	29°12'13.19" 0°57'41"
	12742 Dec 11 19:49	30°8'8"	max. Earth dist.	12749 Jun 11 16:47	29°12'14.20" 20.45919 AU
direct	12743 Jan 27 07:53	29°8'09.01"		12749 Jun 24 13:27	0°12'
	12743 Mar 13 08:48	0°12'	morning rise	12749 Jun 27 05:07	0°12'09.17"
evening set	12743 May 01 06:25	2°12'26.15"	retrograde	12749 Sep 27 00:30	3°12'18.36"
conjunction	12743 May 17 05:33	3°12'23.51" -1°03'20"	opposition	12749 Dec 12 04:38	1°12'19.36" -1°01'46"
			min. Earth dist.	12749 Dec 11 21:01	1°12'20.23" 18.48772 AU

	12750 Jan 16 18:20	30° $\mathbb{R}\mathbb{II}$	max. Earth dist.	12756 Jul 10 07:56	28° \mathbb{Q} 13'24	20.81426 AU
direct	12750 Feb 27 06:26	29° \mathbb{II} 19'24	morning rise	12756 Jul 25 16:03	29° \mathbb{Q} 06'41	
	12750 Apr 08 14:29	0° \mathbb{Q}		12756 Aug 10 21:12	0° \mathbb{Q}	
evening set	12750 May 31 00:18	2° \mathbb{Q} 29'37	retrograde	12756 Oct 25 21:58	2° \mathbb{Q} 12'59	
			opposition	12757 Jan 10 20:43	0° \mathbb{Q} 14'50	-0°37'46
conjunction	12750 Jun 15 20:03	3° \mathbb{Q} 25'28 -0°54'30	min. Earth dist.	12757 Jan 10 10:53	0° \mathbb{Q} 15'49	18.83374 AU
minimum elong	12750 Jun 15 20:03	3° \mathbb{Q} 25'28 0°55'27		12757 Jan 17 00:51	30° $\mathbb{R}\mathbb{Q}$	
max. Earth dist.	12750 Jun 16 03:44	3° \mathbb{Q} 26'37 20.51572 AU	direct	12757 Mar 28 17:56	28° \mathbb{Q} 16'33	
morning rise	12750 Jul 01 15:00	4° \mathbb{Q} 21'14		12757 Jun 02 20:39	0° \mathbb{Q}	
retrograde	12750 Oct 01 10:28	7° \mathbb{Q} 30'01	evening set	12757 Jun 28 09:03	1° \mathbb{Q} 21'11	
opposition	12750 Dec 16 18:44	5° \mathbb{Q} 31'09 -0°59'08				
min. Earth dist.	12750 Dec 16 11:18	5° \mathbb{Q} 31'54 18.54388 AU	conjunction	12757 Jul 14 03:51	2° \mathbb{Q} 15'52	-0°32'10
direct	12751 Mar 03 19:50	3° \mathbb{Q} 31'15	minimum elong	12757 Jul 14 03:51	2° \mathbb{Q} 15'52	0°33'01
evening set	12751 Jun 04 09:53	6° \mathbb{Q} 40'32	max. Earth dist.	12757 Jul 14 14:19	2° \mathbb{Q} 17'23	20.85183 AU
			morning rise	12757 Jul 29 23:04	3° \mathbb{Q} 10'37	
conjunction	12751 Jun 20 05:22	7° \mathbb{Q} 36'11 -0°52'00	retrograde	12757 Oct 30 07:50	6° \mathbb{Q} 16'38	
minimum elong	12751 Jun 20 05:22	7° \mathbb{Q} 36'11 0°52'57	opposition	12758 Jan 15 07:24	4° \mathbb{Q} 18'32	-0°33'29
max. Earth dist.	12751 Jun 20 13:48	7° \mathbb{Q} 37'26 20.57138 AU	min. Earth dist.	12758 Jan 14 20:33	4° \mathbb{Q} 19'37	18.86893 AU
morning rise	12751 Jul 06 00:14	8° \mathbb{Q} 31'46	direct	12758 Apr 02 04:50	2° \mathbb{Q} 20'24	
retrograde	12751 Oct 05 22:49	11° \mathbb{Q} 40'02	evening set	12758 Jul 02 15:29	5° \mathbb{Q} 24'24	
opposition	12751 Dec 21 08:09	9° \mathbb{Q} 41'19 -0°56'11				
min. Earth dist.	12751 Dec 20 22:56	9° \mathbb{Q} 42'15 18.59875 AU	conjunction	12758 Jul 18 10:21	6° \mathbb{Q} 18'59	-0°28'13
direct	12752 Mar 07 09:54	7° \mathbb{Q} 41'42	minimum elong	12758 Jul 18 10:21	6° \mathbb{Q} 18'59	0°29'03
evening set	12752 Jun 07 18:58	10° \mathbb{Q} 50'08	max. Earth dist.	12758 Jul 18 21:15	6° \mathbb{Q} 20'34	20.88465 AU
			morning rise	12758 Aug 03 05:44	7° \mathbb{Q} 13'39	
conjunction	12752 Jun 23 14:13	11° \mathbb{Q} 45'35 -0°49'14	retrograde	12758 Nov 03 15:20	10° \mathbb{Q} 19'24	
minimum elong	12752 Jun 23 14:13	11° \mathbb{Q} 45'35 0°50'12	opposition	12759 Jan 19 17:59	8° \mathbb{Q} 21'18	-0°29'02
max. Earth dist.	12752 Jun 23 23:32	11° \mathbb{Q} 46'57 20.62540 AU	min. Earth dist.	12759 Jan 19 08:04	8° \mathbb{Q} 22'17	18.89946 AU
morning rise	12752 Jul 09 09:00	12° \mathbb{Q} 41'00	direct	12759 Apr 06 13:30	6° \mathbb{Q} 23'19	
retrograde	12752 Oct 09 07:37	15° \mathbb{Q} 48'47	evening set	12759 Jul 06 21:22	9° \mathbb{Q} 26'41	
opposition	12752 Dec 24 21:06	13° \mathbb{Q} 50'13 -0°52'58				
min. Earth dist.	12752 Dec 24 12:23	13° \mathbb{Q} 51'06 18.65184 AU	conjunction	12759 Jul 22 16:18	10° \mathbb{Q} 21'10	-0°24'10
direct	12753 Mar 11 21:25	11° \mathbb{Q} 50'54	minimum elong	12759 Jul 22 16:18	10° \mathbb{Q} 21'10	0°24'58
evening set	12753 Jun 12 03:28	14° \mathbb{Q} 58'29	max. Earth dist.	12759 Jul 23 02:51	10° \mathbb{Q} 22'42	20.91304 AU
			morning rise	12759 Aug 07 12:01	11° \mathbb{Q} 15'46	
conjunction	12753 Jun 27 22:34	15° \mathbb{Q} 53'46 -0°46'13	retrograde	12759 Nov 08 00:13	14° \mathbb{Q} 21'19	
minimum elong	12753 Jun 27 22:34	15° \mathbb{Q} 53'46 0°47'10	opposition	12760 Jan 24 03:59	12° \mathbb{Q} 23'09	-0°24'28
max. Earth dist.	12753 Jun 28 08:12	15° \mathbb{Q} 55'11 20.67741 AU	min. Earth dist.	12760 Jan 23 17:00	12° \mathbb{Q} 24'15	18.92566 AU
morning rise	12753 Jul 13 17:24	16° \mathbb{Q} 49'01	direct	12760 Apr 09 23:18	10° \mathbb{Q} 25'16	
retrograde	12753 Oct 13 19:12	19° \mathbb{Q} 56'23	evening set	12760 Jul 10 02:59	13° \mathbb{Q} 28'05	
opposition	12753 Dec 29 09:32	17° \mathbb{Q} 57'56 -0°49'30				
min. Earth dist.	12753 Dec 28 23:20	17° \mathbb{Q} 58'58 18.70245 AU	conjunction	12760 Jul 25 22:05	14° \mathbb{Q} 22'30	-0°19'59
direct	12754 Mar 16 10:32	15° \mathbb{Q} 58'55	minimum elong	12760 Jul 25 22:06	14° \mathbb{Q} 22'30	0°20'44
evening set	12754 Jun 16 11:30	19° \mathbb{Q} 05'42	max. Earth dist.	12760 Jul 26 09:17	14° \mathbb{Q} 24'06	20.93717 AU
				12760 Aug 05 18:10	15° \mathbb{Q}	
conjunction	12754 Jul 02 06:26	20° \mathbb{Q} 00'49 -0°43'00	morning rise	12760 Aug 10 18:03	15° \mathbb{Q} 17'02	
minimum elong	12754 Jul 02 06:27	20° \mathbb{Q} 00'49 0°43'57	retrograde	12760 Nov 11 07:09	18° \mathbb{Q} 22'23	
max. Earth dist.	12754 Jul 02 16:48	20° \mathbb{Q} 02'20 20.72649 AU	opposition	12761 Jan 27 13:33	16° \mathbb{Q} 24'11	-0°19'48
morning rise	12754 Jul 18 01:15	20° \mathbb{Q} 55'55	min. Earth dist.	12761 Jan 27 03:23	16° \mathbb{Q} 25'12	18.94794 AU
retrograde	12754 Oct 18 03:19	24° \mathbb{Q} 02'54		12761 Mar 07 12:50	15° $\mathbb{R}\mathbb{Q}$	
opposition	12755 Jan 02 21:42	22° \mathbb{Q} 04'35 -0°45'48	direct	12761 Apr 14 06:52	14° \mathbb{Q} 26'24	
min. Earth dist.	12755 Jan 02 12:13	22° \mathbb{Q} 05'32 18.74999 AU		12761 May 20 23:29	15° \mathbb{Q}	
direct	12755 Mar 20 20:38	20° \mathbb{Q} 05'50	evening set	12761 Jul 14 08:21	17° \mathbb{Q} 28'42	
evening set	12755 Jun 20 19:06	23° \mathbb{Q} 11'52				
			conjunction	12761 Jul 30 03:35	18° \mathbb{Q} 23'03	-0°15'44
conjunction	12755 Jul 06 13:56	24° \mathbb{Q} 06'49 -0°39'34	minimum elong	12761 Jul 30 03:35	18° \mathbb{Q} 23'03	0°16'27
minimum elong	12755 Jul 06 13:56	24° \mathbb{Q} 06'49 0°40'28	max. Earth dist.	12761 Jul 30 14:27	18° \mathbb{Q} 24'37	20.95774 AU
max. Earth dist.	12755 Jul 07 00:18	24° \mathbb{Q} 08'20 20.77238 AU	morning rise	12761 Aug 14 23:55	19° \mathbb{Q} 17'33	
morning rise	12755 Jul 22 08:52	25° \mathbb{Q} 01'47	retrograde	12761 Nov 15 15:33	22° \mathbb{Q} 22'47	
retrograde	12755 Oct 22 14:08	28° \mathbb{Q} 08'24	opposition	12762 Jan 31 22:46	20° \mathbb{Q} 24'31	-0°15'02
opposition	12756 Jan 07 09:21	26° \mathbb{Q} 10'12 -0°41'53	min. Earth dist.	12762 Jan 31 11:27	20° \mathbb{Q} 25'39	18.96681 AU
min. Earth dist.	12756 Jan 06 22:35	26° \mathbb{Q} 11'17 18.79397 AU	direct	12762 Apr 18 15:26	18° \mathbb{Q} 26'49	
direct	12756 Mar 24 08:39	24° \mathbb{Q} 11'42	evening set	12762 Jul 18 13:22	21° \mathbb{Q} 28'43	
evening set	12756 Jun 24 02:13	27° \mathbb{Q} 17'00				
			conjunction	12762 Aug 03 08:49	22° \mathbb{Q} 23'01	-0°11'25
conjunction	12756 Jul 09 21:02	28° \mathbb{Q} 11'49 -0°35'57	minimum elong	12762 Aug 03 08:49	22° \mathbb{Q} 23'01	0°12'04
minimum elong	12756 Jul 09 21:02	28° \mathbb{Q} 11'49 0°36'50	behind sun begin	12762 Aug 03 04:18	22° \mathbb{Q} 22'23	

behind sun end	12762 Aug 03 13:20	22° Ω 23'39		retrograde	12767 Dec 10 15:21	16° Υ 20'06	
max. Earth dist.	12762 Aug 03 20:29	22° Ω 24'41	20.97488 AU	opposition	12768 Feb 26 02:24	14° Υ 21'40	0°14'04
morning rise	12762 Aug 19 05:23	23° Ω 17'29		min. Earth dist.	12768 Feb 25 15:12	14° Υ 22'48	19.00910 AU
retrograde	12762 Nov 19 22:08	26° Ω 22'39		direct	12768 May 12 05:53	12° Υ 24'32	
opposition	12763 Feb 05 07:53	24° Ω 24'21	-0°10'13	evening set	12768 Aug 10 19:29	15° Υ 25'16	
min. Earth dist.	12763 Feb 04 21:11	24° Ω 25'26	18.98239 AU				
direct	12763 Apr 22 21:55	22° Ω 26'46		conjunction	12768 Aug 26 16:50	16° Υ 19'38	0°14'55
evening set	12763 Jul 22 18:21	25° Ω 28'17		minimum elong	12768 Aug 26 16:50	16° Υ 19'38	0°14'36
				behind sun begin	12768 Aug 26 13:57	16° Υ 19'14	
conjunction	12763 Aug 07 13:59	26° Ω 22'33	-0°07'04	behind sun end	12768 Aug 26 19:44	16° Υ 20'03	
minimum elong	12763 Aug 07 13:59	26° Ω 22'33	0°07'41	max. Earth dist.	12768 Aug 27 04:23	16° Υ 21'17	21.00608 AU
behind sun begin	12763 Aug 07 08:02	26° Ω 21'43		morning rise	12768 Sep 11 16:03	17° Υ 14'18	
behind sun end	12763 Aug 07 19:57	26° Ω 23'23		retrograde	12768 Dec 13 22:59	20° Υ 20'11	
max. Earth dist.	12763 Aug 08 01:19	26° Ω 24'10	20.98900 AU	opposition	12769 Mar 01 10:43	18° Υ 21'43	0°18'49
morning rise	12763 Aug 23 11:01	27° Ω 17'01		min. Earth dist.	12769 Mar 01 00:43	18° Υ 22'43	19.00203 AU
	12763 Oct 25 05:32	0° Υ		direct	12769 May 16 12:08	16° Υ 24'37	
retrograde	12763 Nov 24 06:58	0° Υ 22'11		evening set	12769 Aug 15 01:11	19° Υ 25'23	
	12763 Dec 24 22:20	30° \Re Ω					
opposition	12764 Feb 09 16:33	28° Ω 23'51	-0°05'21	conjunction	12769 Aug 30 22:52	20° Υ 19'49	0°19'10
min. Earth dist.	12764 Feb 09 04:49	28° Ω 25'01	18.99493 AU	minimum elong	12769 Aug 30 22:52	20° Υ 19'49	0°18'55
direct	12764 Apr 26 05:26	26° Ω 26'21		max. Earth dist.	12769 Aug 31 09:11	20° Υ 21'17	20.99660 AU
evening set	12764 Jul 25 23:10	29° Ω 27'36		morning rise	12769 Sep 15 22:41	21° Υ 14'33	
	12764 Aug 04 11:10	0° Υ		retrograde	12769 Dec 18 09:15	24° Υ 20'43	
				opposition	12770 Mar 05 19:10	22° Υ 22'09	0°23'29
conjunction	12764 Aug 10 19:08	0° Υ 21'51	-0°02'41	min. Earth dist.	12770 Mar 05 09:05	22° Υ 23'10	18.99000 AU
minimum elong	12764 Aug 10 19:09	0° Υ 21'51	0°03'14	direct	12770 May 20 18:21	20° Υ 25'03	
behind sun begin	12764 Aug 10 12:36	0° Υ 20'56		evening set	12770 Aug 19 07:00	23° Υ 25'52	
behind sun end	12764 Aug 11 01:42	0° Υ 22'46					
max. Earth dist.	12764 Aug 11 07:12	0° Υ 23'34	20.99981 AU	conjunction	12770 Sep 04 05:11	24° Υ 20'23	0°23'20
morning rise	12764 Aug 26 16:32	1° Υ 16'20		minimum elong	12770 Sep 04 05:11	24° Υ 20'23	0°23'08
retrograde	12764 Nov 27 13:28	4° Υ 21'32		max. Earth dist.	12770 Sep 04 15:30	24° Υ 21'52	20.98181 AU
opposition	12765 Feb 13 01:11	2° Υ 23'11	-0°00'29	morning rise	12770 Sep 20 05:25	25° Υ 15'13	
min. Earth dist.	12765 Feb 12 14:14	2° Υ 24'17	19.00404 AU	retrograde	12770 Dec 22 17:08	28° Υ 21'41	
asc. node	12765 Mar 19 01:03	1° Υ 07'51		opposition	12771 Mar 10 03:51	26° Υ 23'00	0°28'03
direct	12765 Apr 30 11:11	0° Υ 25'48		min. Earth dist.	12771 Mar 09 18:57	26° Υ 23'54	18.97253 AU
evening set	12765 Jul 30 04:04	3° Υ 26'49		direct	12771 May 25 01:07	24° Υ 25'51	
				evening set	12771 Aug 23 13:15	27° Υ 26'47	
conjunction	12765 Aug 15 00:18	4° Υ 21'05	0°01'51	conjunction	12771 Sep 08 11:52	28° Υ 21'23	0°27'24
minimum elong	12765 Aug 15 00:17	4° Υ 21'04	0°01'21	minimum elong	12771 Sep 08 11:51	28° Υ 21'23	0°27'17
behind sun begin	12765 Aug 14 17:43	4° Υ 20'09		max. Earth dist.	12771 Sep 08 20:43	28° Υ 22'39	20.96181 AU
behind sun end	12765 Aug 15 06:52	4° Υ 22'00		morning rise	12771 Sep 24 12:46	29° Υ 16'19	
max. Earth dist.	12765 Aug 15 11:48	4° Υ 22'43	21.00727 AU		12771 Oct 07 21:02	0° Ω	
morning rise	12765 Aug 30 22:10	5° Υ 15'34		retrograde	12771 Dec 27 03:54	2° Ω 23'06	
retrograde	12765 Dec 01 22:40	8° Υ 20'53		opposition	12772 Mar 13 12:19	0° Ω 24'15	0°32'30
opposition	12766 Feb 17 09:32	6° Υ 22'31	0°04'24	min. Earth dist.	12772 Mar 13 03:32	0° Ω 25'08	18.94996 AU
min. Earth dist.	12766 Feb 16 21:50	6° Υ 23'41	19.00967 AU		12772 Mar 23 14:31	30° \Re Υ	
direct	12766 May 04 17:58	4° Υ 25'13		direct	12772 May 28 08:06	28° Υ 26'59	
evening set	12766 Aug 03 09:02	7° Υ 26'05			12772 Jul 29 12:45	0° Ω	
				evening set	12772 Aug 26 19:41	1° Ω 28'04	
conjunction	12766 Aug 19 05:39	8° Υ 20'22	0°06'16	conjunction	12772 Sep 11 18:54	2° Ω 22'47	0°31'21
minimum elong	12766 Aug 19 05:38	8° Υ 20'22	0°05'49	minimum elong	12772 Sep 11 18:53	2° Ω 22'47	0°31'17
behind sun begin	12766 Aug 18 23:19	8° Υ 19'29		max. Earth dist.	12772 Sep 12 03:45	2° Ω 24'04	20.93668 AU
behind sun end	12766 Aug 19 11:56	8° Υ 21'15		morning rise	12772 Sep 27 20:17	3° Ω 17'51	
max. Earth dist.	12766 Aug 19 17:43	8° Υ 22'05	21.01096 AU	retrograde	12772 Dec 30 11:56	6° Ω 24'58	
morning rise	12766 Sep 04 03:52	9° Υ 14'54		opposition	12773 Mar 17 20:58	4° Ω 25'55	0°36'48
retrograde	12766 Dec 06 05:45	12° Υ 20'21		min. Earth dist.	12773 Mar 17 13:20	4° Ω 26'41	18.92249 AU
opposition	12767 Feb 21 18:03	10° Υ 21'58	0°09'15	direct	12773 Jun 01 14:39	2° Ω 28'31	
min. Earth dist.	12767 Feb 21 07:15	10° Υ 23'03	19.01144 AU	evening set	12773 Aug 31 02:25	5° Ω 29'48	
direct	12767 May 08 23:44	8° Υ 24'46					
evening set	12767 Aug 07 14:05	11° Υ 25'32					
conjunction	12767 Aug 23 10:59	12° Υ 19'51	0°10'37	conjunction	12773 Sep 16 02:03	6° Ω 24'39	0°35'09
minimum elong	12767 Aug 23 10:59	12° Υ 19'51	0°10'14	minimum elong	12773 Sep 16 02:02	6° Ω 24'39	0°35'10
behind sun begin	12767 Aug 23 05:43	12° Υ 19'07		max. Earth dist.	12773 Sep 16 09:37	6° Ω 25'44	20.90716 AU
behind sun end	12767 Aug 23 16:15	12° Υ 20'35		morning rise	12773 Oct 02 04:06	7° Ω 19'50	
max. Earth dist.	12767 Aug 23 22:19	12° Υ 21'28	21.01079 AU	retrograde	12774 Jan 03 22:46	10° Ω 27'20	
morning rise	12767 Sep 08 09:49	13° Υ 14'26		opposition	12774 Mar 22 05:38	8° Ω 28'04	0°40'55

min. Earth dist.	12774 Mar 21 22:03	8° <u>♂</u> 28'50	18.89104 AU	conjunction	12780 Oct 14 18:47	5° <u>♂</u> 01'40	0°56'08
direct	12774 Jun 05 22:21	6° <u>♂</u> 30'30		minimum elong	12780 Oct 14 18:46	5° <u>♂</u> 01'40	0°56'36
evening set	12774 Sep 04 09:29	9° <u>♂</u> 32'04		max. Earth dist.	12780 Oct 14 23:28	5° <u>♂</u> 02'21	20.61790 AU
				morning rise	12780 Oct 31 00:58	5° <u>♂</u> 58'11	
conjunction	12774 Sep 20 09:44	10° <u>♂</u> 27'03	0°38'47	retrograde	12781 Feb 02 06:25	9° <u>♂</u> 09'33	
minimum elong	12774 Sep 20 09:43	10° <u>♂</u> 27'03	0°38'52	opposition	12781 Apr 20 00:50	7° <u>♂</u> 09'06	1°03'23
max. Earth dist.	12774 Sep 20 17:37	10° <u>♂</u> 28'11	20.87383 AU	min. Earth dist.	12781 Apr 19 21:12	7° <u>♂</u> 09'28	18.59295 AU
morning rise	12774 Oct 06 12:15	11° <u>♂</u> 22'24		direct	12781 Jul 04 05:16	5° <u>♂</u> 10'26	
retrograde	12775 Jan 08 07:33	14° <u>♂</u> 30'19		evening set	12781 Oct 03 02:10	8° <u>♂</u> 15'51	
opposition	12775 Mar 26 14:30	12° <u>♂</u> 30'50	0°44'52				
min. Earth dist.	12775 Mar 26 07:46	12° <u>♂</u> 31'31	18.85609 AU	conjunction	12781 Oct 19 06:32	9° <u>♂</u> 12'14	0°58'08
direct	12775 Jun 10 04:42	10° <u>♂</u> 33'06		minimum elong	12781 Oct 19 06:32	9° <u>♂</u> 12'14	0°58'40
evening set	12775 Sep 08 16:59	13° <u>♂</u> 35'01		max. Earth dist.	12781 Oct 19 09:22	9° <u>♂</u> 12'39	20.56707 AU
				morning rise	12781 Nov 04 13:29	10° <u>♂</u> 08'59	
conjunction	12775 Sep 24 17:42	14° <u>♂</u> 30'09	0°42'14	retrograde	12782 Feb 06 19:48	13° <u>♂</u> 21'03	
minimum elong	12775 Sep 24 17:42	14° <u>♂</u> 30'09	0°42'23	opposition	12782 Apr 24 12:00	11° <u>♂</u> 20'27	1°05'27
max. Earth dist.	12775 Sep 25 00:22	14° <u>♂</u> 31'06	20.83743 AU	min. Earth dist.	12782 Apr 24 09:19	11° <u>♂</u> 20'44	18.54085 AU
morning rise	12775 Oct 10 20:59	15° <u>♂</u> 25'39		direct	12782 Jul 08 14:32	9° <u>♂</u> 21'37	
retrograde	12776 Jan 12 18:49	18° <u>♂</u> 34'03		evening set	12782 Oct 07 14:17	12° <u>♂</u> 27'49	
opposition	12776 Mar 29 23:28	16° <u>♂</u> 34'21	0°48'35				
min. Earth dist.	12776 Mar 29 16:51	16° <u>♂</u> 35'01	18.81827 AU	conjunction	12782 Oct 23 19:27	13° <u>♂</u> 24'27	0°59'50
direct	12776 Jun 13 12:38	14° <u>♂</u> 36'27		minimum elong	12782 Oct 23 19:27	13° <u>♂</u> 24'27	1°00'24
evening set	12776 Sep 12 00:59	17° <u>♂</u> 38'47		max. Earth dist.	12782 Oct 23 22:17	13° <u>♂</u> 24'52	20.51348 AU
				morning rise	12782 Nov 09 02:50	14° <u>♂</u> 21'26	
conjunction	12776 Sep 28 02:22	18° <u>♂</u> 34'06	0°45'29		12782 Nov 20 14:44	15° <u>♂</u>	
minimum elong	12776 Sep 28 02:21	18° <u>♂</u> 34'06	0°45'43	retrograde	12783 Feb 11 10:02	17° <u>♂</u> 34'12	
max. Earth dist.	12776 Sep 28 09:21	18° <u>♂</u> 35'06	20.79812 AU	opposition	12783 Apr 28 23:36	15° <u>♂</u> 33'28	1°07'11
morning rise	12776 Oct 14 06:05	19° <u>♂</u> 29'47		min. Earth dist.	12783 Apr 28 21:46	15° <u>♂</u> 33'39	18.48580 AU
retrograde	12777 Jan 16 04:49	22° <u>♂</u> 38'41			12783 May 12 14:39	15° <u>♂</u> 33'39	
opposition	12777 Apr 03 08:35	20° <u>♂</u> 38'48	0°52'05	direct	12783 Jul 13 01:33	13° <u>♂</u> 34'25	
min. Earth dist.	12777 Apr 03 02:45	20° <u>♂</u> 39'24	18.77770 AU		12783 Sep 09 18:51	15° <u>♂</u>	
direct	12777 Jun 17 19:34	18° <u>♂</u> 40'45		evening set	12783 Oct 12 03:22	16° <u>♂</u> 41'26	
evening set	12777 Sep 16 09:33	21° <u>♂</u> 43'34					
				conjunction	12783 Oct 28 09:04	17° <u>♂</u> 38'19	1°01'13
conjunction	12777 Oct 02 11:25	22° <u>♂</u> 39'04	0°48'31	minimum elong	12783 Oct 28 09:04	17° <u>♂</u> 38'19	1°01'52
minimum elong	12777 Oct 02 11:25	22° <u>♂</u> 39'04	0°48'48	max. Earth dist.	12783 Oct 28 09:34	17° <u>♂</u> 38'23	20.45698 AU
max. Earth dist.	12777 Oct 02 17:04	22° <u>♂</u> 39'53	20.75645 AU	morning rise	12783 Nov 13 17:14	18° <u>♂</u> 35'33	
morning rise	12777 Oct 18 15:53	23° <u>♂</u> 34'56		retrograde	12784 Feb 16 00:35	21° <u>♂</u> 49'01	
retrograde	12778 Jan 20 16:48	26° <u>♂</u> 44'24		opposition	12784 May 02 11:46	19° <u>♂</u> 48'06	1°08'34
opposition	12778 Apr 07 18:08	24° <u>♂</u> 44'21	0°55'20	min. Earth dist.	12784 May 02 11:13	19° <u>♂</u> 48'09	18.42783 AU
min. Earth dist.	12778 Apr 07 12:29	24° <u>♂</u> 44'56	18.73491 AU	direct	12784 Jul 16 12:15	17° <u>♂</u> 48'45	
direct	12778 Jun 22 03:24	22° <u>♂</u> 46'09		evening set	12784 Oct 15 17:04	20° <u>♂</u> 56'38	
evening set	12778 Sep 20 18:30	25° <u>♂</u> 49'31					
				conjunction	12784 Oct 31 23:35	21° <u>♂</u> 53'47	1°02'17
conjunction	12778 Oct 06 21:07	26° <u>♂</u> 45'13	0°51'19	minimum elong	12784 Oct 31 23:35	21° <u>♂</u> 53'47	1°02'59
minimum elong	12778 Oct 06 21:06	26° <u>♂</u> 45'13	0°51'40	max. Earth dist.	12784 Oct 31 23:58	21° <u>♂</u> 53'50	20.39750 AU
max. Earth dist.	12778 Oct 07 03:10	26° <u>♂</u> 46'05	20.71244 AU	morning rise	12784 Nov 17 08:09	22° <u>♂</u> 51'16	
morning rise	12778 Oct 23 02:03	27° <u>♂</u> 41'17		retrograde	12785 Feb 19 15:26	26° <u>♂</u> 05'24	
	12778 Dec 10 03:10	0° <u>♂</u>		opposition	12785 May 07 00:18	24° <u>♂</u> 04'17	1°09'36
retrograde	12779 Jan 25 04:32	0° <u>♂</u> 51'21		min. Earth dist.	12785 May 07 00:26	24° <u>♂</u> 04'16	18.36700 AU
	12779 Mar 13 08:40	30° <u>♂</u> 49'00		direct	12785 Jul 21 00:34	22° <u>♂</u> 04'39	
opposition	12779 Apr 12 04:02	28° <u>♂</u> 51'09	0°58'18	evening set	12785 Oct 20 07:42	25° <u>♂</u> 13'22	
min. Earth dist.	12779 Apr 11 23:04	28° <u>♂</u> 51'40	18.68979 AU				
direct	12779 Jun 26 11:35	26° <u>♂</u> 52'48		conjunction	12785 Nov 05 14:44	26° <u>♂</u> 10'47	1°03'01
evening set	12779 Sep 25 04:23	29° <u>♂</u> 56'47		minimum elong	12785 Nov 05 14:43	26° <u>♂</u> 10'47	1°03'46
	12779 Sep 26 03:00	0° <u>♂</u>		max. Earth dist.	12785 Nov 05 12:51	26° <u>♂</u> 10'30	20.33566 AU
				morning rise	12785 Nov 22 00:03	27° <u>♂</u> 08'32	
conjunction	12779 Oct 11 07:30	0° <u>♂</u> 52'42	0°53'52		12786 Jan 24 23:37	0° <u>♂</u>	
minimum elong	12779 Oct 11 07:30	0° <u>♂</u> 52'42	0°54'16	retrograde	12786 Feb 24 06:59	0° <u>♂</u> 23'21	
max. Earth dist.	12779 Oct 11 11:59	0° <u>♂</u> 53'21	20.66633 AU		12786 Mar 27 00:38	30° <u>♂</u> 49'00	
morning rise	12779 Oct 27 13:14	1° <u>♂</u> 49'00		opposition	12786 May 11 13:26	28° <u>♂</u> 21'59	1°10'14
retrograde	12780 Jan 29 17:09	4° <u>♂</u> 59'42		min. Earth dist.	12786 May 11 14:53	28° <u>♂</u> 21'50	18.30428 AU
opposition	12780 Apr 15 14:09	2° <u>♂</u> 59'21	1°00'59	direct	12786 Jul 25 12:24	26° <u>♂</u> 21'59	
min. Earth dist.	12780 Apr 15 09:46	2° <u>♂</u> 59'48	18.64260 AU	evening set	12786 Oct 24 22:48	29° <u>♂</u> 31'36	
direct	12780 Jun 29 19:39	1° <u>♂</u> 00'51			12786 Nov 02 01:03	0° <u>♂</u>	
evening set	12780 Sep 28 14:53	4° <u>♂</u> 05'32					
				conjunction	12786 Nov 10 06:42	0° <u>♂</u> 29'18	1°03'24

minimum elong	12786 Nov 10 06:42	0°♏29'18	1°04'11	min. Earth dist.	12793 Jun 11 04:24	29°♏08'52	17.86864 AU
max. Earth dist.	12786 Nov 10 05:01	0°♏29'03	20.27218 AU	direct	12793 Aug 24 19:14	27°♏07'04	
morning rise	12786 Nov 26 16:28	1°♏27'18			12793 Nov 18 15:10	0°♏	
retrograde	12787 Feb 28 23:19	4°♏42'46		evening set	12793 Nov 25 08:18	0°♏23'32	
opposition	12787 May 16 02:57	2°♏41'10	1°10'29				
min. Earth dist.	12787 May 16 04:45	2°♏40'59	18.24019 AU	conjunction	12793 Dec 11 20:20	1°♏23'11	0°55'46
direct	12787 Jul 30 01:51	0°♏40'50		minimum elong	12793 Dec 11 20:20	1°♏23'11	0°56'44
evening set	12787 Oct 29 15:01	3°♏51'21		max. Earth dist.	12793 Dec 11 12:58	1°♏22'04	19.84059 AU
				morning rise	12793 Dec 28 09:26	2°♏23'01	
conjunction	12787 Nov 14 23:25	4°♏49'19	1°03'25	retrograde	12794 Apr 01 11:21	5°♏42'59	
minimum elong	12787 Nov 14 23:25	4°♏49'19	1°04'14	opposition	12794 Jun 15 16:54	3°♏40'10	1°00'44
max. Earth dist.	12787 Nov 14 19:39	4°♏48'45	20.20779 AU	min. Earth dist.	12794 Jun 15 23:30	3°♏39'27	17.81349 AU
morning rise	12787 Dec 01 09:53	5°♏47'35		direct	12794 Aug 29 11:33	1°♏37'33	
retrograde	12788 Mar 04 15:46	9°♏03'43		evening set	12794 Nov 30 06:08	4°♏55'04	
opposition	12788 May 19 16:55	7°♏01'52	1°10'20				
min. Earth dist.	12788 May 19 20:06	7°♏01'32	18.17570 AU	conjunction	12794 Dec 16 18:47	5°♏54'59	0°53'12
direct	12788 Aug 02 14:24	5°♏01'08		minimum elong	12794 Dec 16 18:47	5°♏54'59	0°54'10
evening set	12788 Nov 02 07:48	8°♏12'37		max. Earth dist.	12794 Dec 16 11:20	5°♏53'51	19.78664 AU
				morning rise	12795 Jan 02 08:10	6°♏55'03	
conjunction	12788 Nov 18 17:01	9°♏10'52	1°03'04	retrograde	12795 Apr 06 10:03	10°♏15'37	
minimum elong	12788 Nov 18 17:00	9°♏10'52	1°03'57	opposition	12795 Jun 20 10:59	8°♏12'45	0°57'43
max. Earth dist.	12788 Nov 18 13:36	9°♏10'21	20.14329 AU	min. Earth dist.	12795 Jun 20 17:17	8°♏12'04	17.76053 AU
morning rise	12788 Dec 05 03:51	10°♏09'24		direct	12795 Sep 03 06:40	6°♏09'54	
retrograde	12789 Mar 09 10:06	13°♏26'10		evening set	12795 Dec 05 05:04	9°♏28'27	
opposition	12789 May 24 07:26	11°♏24'06	1°09'47				
min. Earth dist.	12789 May 24 10:35	11°♏23'46	18.11137 AU	conjunction	12795 Dec 21 18:03	10°♏28'37	0°50'18
direct	12789 Aug 07 05:14	9°♏23'01		minimum elong	12795 Dec 21 18:03	10°♏28'37	0°51'16
evening set	12789 Nov 07 01:23	12°♏35'26		max. Earth dist.	12795 Dec 21 09:20	10°♏27'18	19.73462 AU
				morning rise	12796 Jan 07 07:40	11°♏28'55	
conjunction	12789 Nov 23 11:03	13°♏33'58	1°02'21	retrograde	12796 Apr 10 06:52	14°♏50'02	
minimum elong	12789 Nov 23 11:03	13°♏33'58	1°03'14	opposition	12796 Jun 24 05:49	12°♏47'07	0°54'19
max. Earth dist.	12789 Nov 23 05:54	13°♏33'11	20.07937 AU	min. Earth dist.	12796 Jun 24 13:51	12°♏46'15	17.70955 AU
morning rise	12789 Dec 09 22:33	14°♏32'46		direct	12796 Sep 07 00:45	10°♏44'01	
retrograde	12790 Mar 14 03:30	17°♏50'13		evening set	12796 Dec 09 04:39	14°♏03'34	
opposition	12790 May 28 22:38	15°♏47'55	1°08'48				
min. Earth dist.	12790 May 29 03:06	15°♏47'27	18.04805 AU	conjunction	12796 Dec 25 18:03	15°♏03'59	0°47'03
direct	12790 Aug 11 18:35	13°♏46'28		minimum elong	12796 Dec 25 18:04	15°♏03'59	0°48'01
evening set	12790 Nov 11 19:46	16°♏59'53		max. Earth dist.	12796 Dec 25 08:43	15°♏02'33	19.68467 AU
				morning rise	12797 Jan 11 07:52	16°♏04'29	
conjunction	12790 Nov 28 06:15	17°♏58'41	1°01'16	retrograde	12797 Apr 15 06:19	19°♏26'06	
minimum elong	12790 Nov 28 06:15	17°♏58'41	1°02'11	opposition	12797 Jun 29 01:12	17°♏23'07	0°50'33
max. Earth dist.	12790 Nov 28 01:31	17°♏57'59	20.01671 AU	min. Earth dist.	12797 Jun 29 08:54	17°♏22'17	17.66054 AU
morning rise	12790 Dec 14 18:04	18°♏57'45		direct	12797 Sep 11 21:37	15°♏19'45	
retrograde	12791 Mar 18 23:43	22°♏15'50		evening set	12797 Dec 14 04:52	18°♏40'15	
opposition	12791 Jun 02 14:08	20°♏13'21	1°07'24				
min. Earth dist.	12791 Jun 02 18:20	20°♏12'54	17.98616 AU	conjunction	12797 Dec 30 18:37	19°♏40'54	0°43'30
direct	12791 Aug 16 10:52	18°♏11'35		minimum elong	12797 Dec 30 18:37	19°♏40'54	0°44'26
evening set	12791 Nov 16 15:12	21°♏26'00		max. Earth dist.	12797 Dec 30 08:28	19°♏39'20	19.63663 AU
				morning rise	12798 Jan 16 08:32	20°♏41'35	
conjunction	12791 Dec 03 02:07	22°♏25'05	0°59'48	retrograde	12798 Apr 20 03:49	24°♏03'40	
minimum elong	12791 Dec 03 02:07	22°♏25'05	1°00'44	opposition	12798 Jul 03 21:19	22°♏00'36	0°46'25
max. Earth dist.	12791 Dec 02 19:45	22°♏24'07	19.95574 AU	min. Earth dist.	12798 Jul 04 06:36	21°♏59'35	17.61363 AU
morning rise	12791 Dec 19 14:31	23°♏24'25		direct	12798 Sep 16 17:55	19°♏56'57	
retrograde	12792 Mar 22 18:06	26°♏43'08		evening set	12798 Dec 19 05:50	23°♏18'21	
opposition	12792 Jun 06 06:29	24°♏40'30	1°05'36				
min. Earth dist.	12792 Jun 06 12:03	24°♏39'54	17.92629 AU	conjunction	12799 Jan 04 19:51	24°♏19'12	0°39'38
direct	12792 Aug 20 01:38	22°♏38'24		minimum elong	12799 Jan 04 19:52	24°♏19'12	0°40'34
evening set	12792 Nov 20 11:13	25°♏53'51		max. Earth dist.	12799 Jan 04 08:45	24°♏17'29	19.59103 AU
				morning rise	12799 Jan 21 09:56	25°♏20'04	
conjunction	12792 Dec 06 22:49	26°♏53'13	0°57'58	retrograde	12799 Apr 25 03:14	28°♏42'32	
minimum elong	12792 Dec 06 22:50	26°♏53'13	0°58'55	opposition	12799 Jul 08 17:36	26°♏39'23	0°41'59
max. Earth dist.	12792 Dec 06 16:48	26°♏52'19	19.89700 AU	min. Earth dist.	12799 Jul 09 02:35	26°♏38'24	17.56932 AU
morning rise	12792 Dec 23 11:29	27°♏52'48		direct	12799 Sep 21 16:22	24°♏35'27	
	12793 Feb 02 02:20	0°♏		evening set	12799 Dec 24 07:22	27°♏57'43	
retrograde	12793 Mar 27 15:34	1°♏12'09					
	12793 May 21 16:18	30°♏♏		conjunction	12800 Jan 09 21:39	28°♏58'45	0°35'30
opposition	12793 Jun 10 23:19	29°♏09'25	1°03'22	minimum elong	12800 Jan 09 21:39	28°♏58'45	0°36'23

max. Earth dist.	12800 Jan 09 10:20	28° Z 57'00	19.54816 AU	minimum elong	12806 Feb 07 13:51	27° X 13'33	0°07'08
morning rise	12800 Jan 26 11:37	29° Z 59'46		behind sun begin	12806 Feb 07 07:38	27° X 12'37	
	12800 Jan 26 13:12	0° X		behind sun end	12806 Feb 07 20:03	27° X 14'30	
retrograde	12800 Apr 29 01:26	3° X 22'32		max. Earth dist.	12806 Feb 07 02:41	27° X 11'50	19.38382 AU
opposition	12800 Jul 12 14:38	1° X 19'19	0°37'14	morning rise	12806 Feb 24 02:19	28° X 15'01	
min. Earth dist.	12800 Jul 13 00:51	1° X 18'12	17.52811 AU		12806 Mar 27 08:16	0° X	
	12800 Aug 14 14:25	30° R Z		retrograde	12806 May 28 01:47	1° X 38'34	
direct	12800 Sep 25 14:23	29° Z 15'07			12806 Jul 31 15:10	30° R X	
	12800 Nov 05 19:04	0° X		opposition	12806 Aug 10 03:44	29° X 35'13	0°04'24
evening set	12800 Dec 28 09:14	2° X 38'09		min. Earth dist.	12806 Aug 10 13:19	29° X 34'10	17.37925 AU
				direct	12806 Oct 24 12:20	27° X 29'52	
conjunction	12801 Jan 13 23:33	3° X 39'21	0°31'07		12807 Jan 11 05:05	0° X	
minimum elong	12801 Jan 13 23:34	3° X 39'21	0°31'59	evening set	12807 Jan 27 03:28	0° X 56'17	
max. Earth dist.	12801 Jan 13 11:15	3° X 37'27	19.50885 AU				
morning rise	12801 Jan 30 13:35	4° X 40'30		conjunction	12807 Feb 12 17:02	1° X 57'56	0°01'19
retrograde	12801 May 04 01:19	8° X 03'34		minimum elong	12807 Feb 12 17:02	1° X 57'56	0°01'51
opposition	12801 Jul 17 11:55	6° X 00'15	0°32'13	behind sun begin	12807 Feb 12 10:17	1° X 56'54	
min. Earth dist.	12801 Jul 17 21:41	5° X 59'11	17.49074 AU	behind sun end	12807 Feb 12 23:47	1° X 58'57	
direct	12801 Sep 30 14:09	3° X 55'46		max. Earth dist.	12807 Feb 12 05:03	1° X 56'04	19.37609 AU
evening set	12802 Jan 02 11:33	7° X 19'33		morning rise	12807 Mar 01 05:10	2° X 59'23	
				desc. node	12807 May 17 07:07	6° X 15'58	
conjunction	12802 Jan 19 02:04	8° X 20'52	0°26'31	retrograde	12807 Jun 02 02:05	6° X 22'53	
minimum elong	12802 Jan 19 02:04	8° X 20'52	0°27'20	opposition	12807 Aug 15 02:56	4° X 19'38	-0°01'26
max. Earth dist.	12802 Jan 18 14:18	8° X 19'03	19.47353 AU	min. Earth dist.	12807 Aug 15 12:30	4° X 18'35	17.37450 AU
morning rise	12802 Feb 04 15:49	9° X 22'08		direct	12807 Oct 29 13:02	2° X 14'16	
retrograde	12802 May 09 00:12	12° X 45'24		evening set	12808 Feb 01 07:02	5° X 41'00	
opposition	12802 Jul 22 09:35	10° X 42'02	0°26'59				
min. Earth dist.	12802 Jul 22 20:09	10° X 40'53	17.45765 AU	conjunction	12808 Feb 17 20:21	6° X 42'39	-0°04'03
direct	12802 Oct 05 12:42	8° X 37'17		minimum elong	12808 Feb 17 20:22	6° X 42'39	0°03'35
evening set	12803 Jan 07 14:22	12° X 01'44		behind sun begin	12808 Feb 17 13:41	6° X 41'38	
				behind sun end	12808 Feb 18 03:02	6° X 43'40	
conjunction	12803 Jan 24 04:45	13° X 03'10	0°21'42	max. Earth dist.	12808 Feb 17 09:45	6° X 41'00	19.37417 AU
minimum elong	12803 Jan 24 04:45	13° X 03'10	0°22'29	morning rise	12808 Mar 05 07:48	7° X 44'02	
max. Earth dist.	12803 Jan 23 15:53	13° X 01'11	19.44290 AU	retrograde	12808 Jun 06 02:18	11° X 07'27	
morning rise	12803 Feb 09 18:28	14° X 04'31		opposition	12808 Aug 19 02:26	9° X 04'21	-0°07'16
	12803 Feb 25 12:39	15° X		min. Earth dist.	12808 Aug 19 11:22	9° X 03'22	17.37519 AU
retrograde	12803 May 14 01:04	17° X 27'56		direct	12808 Nov 02 14:53	6° X 59'00	
opposition	12803 Jul 27 07:37	15° X 24'31	0°21'32	evening set	12809 Feb 05 10:39	10° X 25'58	
min. Earth dist.	12803 Jul 27 17:47	15° X 23'24	17.42955 AU				
	12803 Aug 05 17:39	15° R X		conjunction	12809 Feb 21 23:21	11° X 27'33	-0°09'14
direct	12803 Oct 10 12:54	13° X 19'32		minimum elong	12809 Feb 21 23:21	11° X 27'33	0°08'49
	12803 Dec 12 11:42	15° X		behind sun begin	12809 Feb 21 17:34	11° X 26'40	
evening set	12804 Jan 12 17:17	16° X 44'35		behind sun end	12809 Feb 22 05:08	11° X 28'26	
				max. Earth dist.	12809 Feb 21 12:11	11° X 25'49	19.37743 AU
conjunction	12804 Jan 29 07:43	17° X 46'07	0°16'45	morning rise	12809 Mar 10 10:17	12° X 28'53	
minimum elong	12804 Jan 29 07:43	17° X 46'07	0°17'29	retrograde	12809 Jun 11 01:36	15° X 52'09	
max. Earth dist.	12804 Jan 28 20:00	17° X 44'18	19.41735 AU	opposition	12809 Aug 24 02:12	13° X 49'11	-0°13'02
morning rise	12804 Feb 14 20:56	18° X 47'32		min. Earth dist.	12809 Aug 24 11:32	13° X 48'10	17.38099 AU
retrograde	12804 May 18 00:44	22° X 11'02		direct	12809 Nov 07 16:09	11° X 43'52	
opposition	12804 Jul 31 06:02	20° X 07'36	0°15'56	evening set	12810 Feb 10 14:13	15° X 10'58	
min. Earth dist.	12804 Jul 31 16:21	20° X 06'28	17.40677 AU				
direct	12804 Oct 14 11:56	18° X 02'26		conjunction	12810 Feb 27 02:31	16° X 12'29	-0°14'21
evening set	12805 Jan 16 20:34	21° X 28'00		minimum elong	12810 Feb 27 02:30	16° X 12'29	0°14'02
				behind sun begin	12810 Feb 26 23:14	16° X 11'59	
conjunction	12805 Feb 02 10:39	22° X 29'36	0°11'41	behind sun end	12810 Feb 27 05:46	16° X 12'59	
minimum elong	12805 Feb 02 10:39	22° X 29'36	0°12'20	max. Earth dist.	12810 Feb 26 16:16	16° X 10'53	19.38552 AU
behind sun begin	12805 Feb 02 06:16	22° X 28'56		morning rise	12810 Mar 15 12:42	17° X 13'43	
behind sun end	12805 Feb 02 15:03	22° X 30'16		retrograde	12810 Jun 16 01:54	20° X 36'45	
max. Earth dist.	12805 Feb 01 22:01	22° X 27'38	19.39755 AU	opposition	12810 Aug 29 01:52	18° X 33'56	-0°18'44
morning rise	12805 Feb 18 23:42	23° X 31'03		min. Earth dist.	12810 Aug 29 10:24	18° X 33'00	17.39122 AU
retrograde	12805 May 23 01:47	26° X 54'37		direct	12810 Nov 12 19:10	16° X 28'39	
opposition	12805 Aug 05 04:43	24° X 51'11	0°10'12	evening set	12811 Feb 15 17:47	19° X 55'47	
min. Earth dist.	12805 Aug 05 14:39	24° X 50'06	17.39004 AU				
direct	12805 Oct 19 12:14	22° X 45'53		conjunction	12811 Mar 04 05:23	20° X 57'12	-0°19'23
evening set	12806 Jan 21 23:47	26° X 11'54		minimum elong	12811 Mar 04 05:23	20° X 57'12	0°19'07
				max. Earth dist.	12811 Mar 03 18:51	20° X 55'34	19.39784 AU
conjunction	12806 Feb 07 13:51	27° X 13'33	0°06'32	morning rise	12811 Mar 20 14:53	21° X 58'19	

retrograde	12811 Jun 21 00:31	25° H 21'04	evening set	12818 Mar 21 04:24	22° Y 48'04
opposition	12811 Sep 03 01:51	23° H 18'23 -0°24'17			
min. Earth dist.	12811 Sep 03 11:00	23° H 17'23 17.40571 AU	conjunction	12818 Apr 06 10:35	23° Y 48'10 -0°49'01
direct	12811 Nov 17 20:30	21° H 13'09	minimum elong	12818 Apr 06 10:35	23° Y 48'10 0°49'19
evening set	12812 Feb 20 20:50	24° H 40'13	max. Earth dist.	12818 Apr 06 04:15	23° Y 47'11 19.59849 AU
			morning rise	12818 Apr 22 14:25	24° Y 47'55
conjunction	12812 Mar 08 07:48	25° H 41'30 -0°24'17	retrograde	12818 Jul 23 10:47	28° Y 07'12
minimum elong	12812 Mar 08 07:48	25° H 41'30 0°24'07	opposition	12818 Oct 05 20:20	26° Y 05'26 -0°56'21
max. Earth dist.	12812 Mar 07 21:50	25° H 39'57 19.41436 AU	min. Earth dist.	12818 Oct 06 00:28	26° Y 04'59 17.62109 AU
morning rise	12812 Mar 24 16:31	26° H 42'28	direct	12818 Dec 21 06:17	24° Y 00'58
	12812 Jun 11 18:53	0° Y	evening set	12819 Mar 26 03:12	27° Y 25'01
retrograde	12812 Jun 25 00:40	0° Y 04'53			
	12812 Jul 08 08:35	30° R H	conjunction	12819 Apr 11 08:40	28° Y 24'52 -0°52'06
opposition	12812 Sep 07 01:41	28° H 02'19 -0°29'40	minimum elong	12819 Apr 11 08:40	28° Y 24'51 0°52'28
min. Earth dist.	12812 Sep 07 09:36	28° H 01'28 17.42417 AU	max. Earth dist.	12819 Apr 11 04:29	28° Y 24'13 19.64445 AU
direct	12812 Nov 22 00:00	25° H 57'10	morning rise	12819 Apr 27 11:29	29° Y 24'21
evening set	12813 Feb 24 23:37	29° H 24'03		12819 May 07 12:08	0° B
	12813 Mar 06 16:36	0° Y	retrograde	12819 Jul 28 06:31	2° B 43'00
conjunction	12813 Mar 13 09:52	0° Y 25'11 -0°29'01	opposition	12819 Oct 10 18:29	0° B 41'28 -0°59'35
minimum elong	12813 Mar 13 09:52	0° Y 25'11 0°28'55	min. Earth dist.	12819 Oct 10 22:18	0° B 41'03 17.66926 AU
max. Earth dist.	12813 Mar 13 00:15	0° Y 23'41 19.43478 AU	direct	12819 Oct 27 07:11	30° R Y
morning rise	12813 Mar 29 17:45	1° Y 26'00		12819 Dec 26 05:55	28° Y 37'16
retrograde	12813 Jun 29 22:22	4° Y 48'00	evening set	12820 Feb 21 19:12	0° B
opposition	12813 Sep 12 01:26	2° Y 45'34 -0°34'51		12820 Mar 30 01:12	2° B 00'36
min. Earth dist.	12813 Sep 12 10:01	2° Y 44'38 17.44666 AU	conjunction	12820 Apr 15 05:40	3° B 00'11 -0°54'50
direct	12813 Nov 27 00:51	0° Y 40'28	minimum elong	12820 Apr 15 05:39	3° B 00'10 0°55'17
evening set	12814 Mar 02 01:52	4° Y 07'05	max. Earth dist.	12820 Apr 15 01:32	2° B 59'32 19.69479 AU
			morning rise	12820 May 01 07:50	3° B 59'25
conjunction	12814 Mar 18 11:23	5° Y 08'03 -0°33'33	retrograde	12820 Aug 01 02:05	7° B 17'27
minimum elong	12814 Mar 18 11:23	5° Y 08'03 0°33'31	opposition	12820 Oct 14 16:04	5° B 16'08 -1°02'25
max. Earth dist.	12814 Mar 18 01:59	5° Y 06'35 19.45929 AU	min. Earth dist.	12820 Oct 14 18:13	5° B 15'54 17.72158 AU
morning rise	12814 Apr 03 18:34	6° Y 08'41	direct	12820 Dec 30 05:06	3° B 12'13
retrograde	12814 Jul 04 21:53	9° Y 30'14	evening set	12821 Apr 03 22:24	6° B 34'50
opposition	12814 Sep 17 00:55	7° Y 27'55 -0°39'46			
min. Earth dist.	12814 Sep 17 08:04	7° Y 27'09 17.47306 AU	conjunction	12821 Apr 20 02:12	7° B 34'08 -0°57'12
direct	12814 Dec 02 03:55	5° Y 22'54	minimum elong	12821 Apr 20 02:12	7° B 34'08 0°57'42
evening set	12815 Mar 07 03:34	8° Y 49'09	max. Earth dist.	12821 Apr 20 00:15	7° B 33'50 19.74885 AU
			morning rise	12821 May 06 03:25	8° B 33'07
conjunction	12815 Mar 23 12:21	9° Y 49'56 -0°37'50	retrograde	12821 Aug 05 20:47	11° B 50'30
minimum elong	12815 Mar 23 12:20	9° Y 49'56 0°37'55	opposition	12821 Oct 19 13:12	9° B 49'27 -1°04'50
max. Earth dist.	12815 Mar 23 03:59	9° Y 48'38 19.48762 AU	min. Earth dist.	12821 Oct 19 15:01	9° B 49'15 17.77715 AU
morning rise	12815 Apr 08 18:34	10° Y 50'22	direct	12822 Jan 04 04:27	7° B 45'52
retrograde	12815 Jul 09 18:53	14° Y 11'24	evening set	12822 Apr 08 19:03	11° B 07'41
opposition	12815 Sep 22 00:20	12° Y 09'13 -0°44'25			
min. Earth dist.	12815 Sep 22 07:56	12° Y 08'24 17.50350 AU	conjunction	12822 Apr 24 21:51	12° B 06'43 -0°59'12
direct	12815 Dec 07 04:29	10° Y 04'17	minimum elong	12822 Apr 24 21:51	12° B 06'43 0°59'47
evening set	12816 Mar 11 04:36	13° Y 30'06	max. Earth dist.	12822 Apr 24 19:41	12° B 06'23 19.80582 AU
			morning rise	12822 May 10 22:29	13° B 05'25
conjunction	12816 Mar 27 12:29	14° Y 30'39 -0°41'52		12822 Jun 15 06:06	15° B
minimum elong	12816 Mar 27 12:29	14° Y 30'39 0°42'00	retrograde	12822 Aug 10 14:49	16° B 22'09
max. Earth dist.	12816 Mar 27 04:17	14° Y 29'23 19.52021 AU		12822 Oct 08 20:47	15° R B
morning rise	12816 Apr 12 18:00	15° Y 30'53	opposition	12822 Oct 24 09:59	14° B 21'21 -1°06'51
retrograde	12816 Jul 13 17:14	18° Y 51'21	min. Earth dist.	12822 Oct 24 10:38	14° B 21'17 17.83534 AU
opposition	12816 Sep 25 23:17	16° Y 49'17 -0°48'45	direct	12823 Jan 09 02:54	12° B 18'05
min. Earth dist.	12816 Sep 26 05:11	16° Y 48'39 17.53823 AU		12823 Apr 02 11:27	15° B
direct	12816 Dec 11 06:09	14° Y 44'28	evening set	12823 Apr 13 14:40	15° B 39'04
evening set	12817 Mar 16 04:43	18° Y 09'45			
			conjunction	12823 Apr 29 16:48	16° B 37'49 -1°00'50
conjunction	12817 Apr 01 11:54	19° Y 10'06 -0°45'36	minimum elong	12823 Apr 29 16:48	16° B 37'49 1°01'28
minimum elong	12817 Apr 01 11:54	19° Y 10'06 0°45'50	max. Earth dist.	12823 Apr 29 16:36	16° B 37'47 19.86490 AU
max. Earth dist.	12817 Apr 01 05:30	19° Y 09'06 19.55707 AU	morning rise	12823 May 15 16:31	17° B 36'15
morning rise	12817 Apr 17 16:27	20° Y 10'05	retrograde	12823 Aug 15 08:06	20° B 52'18
retrograde	12817 Jul 18 13:42	23° Y 29'58	opposition	12823 Oct 29 06:24	18° B 51'46 -1°08'26
opposition	12817 Sep 30 22:07	21° Y 28'03 -0°52'44	min. Earth dist.	12823 Oct 29 06:33	18° B 51'45 17.89515 AU
min. Earth dist.	12817 Oct 01 04:05	21° Y 27'24 17.57735 AU	direct	12824 Jan 14 01:35	16° B 48'51
direct	12817 Dec 16 06:03	19° Y 23'23	evening set	12824 Apr 17 09:40	20° B 08'55

conjunction	12824 May 03 10:52	21° 8 07'22	-1°02'05	min. Earth dist.	12830 Nov 29 09:29	19° II 36'29	18.31723 AU
minimum elong	12824 May 03 10:51	21° 8 07'22	1°02'46	direct	12831 Feb 14 14:20	17° II 34'59	
max. Earth dist.	12824 May 03 10:23	21° 8 07'18	19.92536 AU	evening set	12831 May 18 21:21	20° II 48'02	
morning rise	12824 May 19 10:02	22° 8 05'32					
retrograde	12824 Aug 19 00:59	25° 8 20'54		conjunction	12831 Jun 03 18:21	21° II 44'35	-1°00'24
opposition	12824 Nov 02 02:16	23° 8 20'35	-1°09'36	minimum elong	12831 Jun 03 18:21	21° II 44'35	1°01'20
min. Earth dist.	12824 Nov 02 01:38	23° 8 20'39	17.95617 AU	max. Earth dist.	12831 Jun 03 23:38	21° II 45'22	20.34634 AU
direct	12825 Jan 17 22:24	21° 8 17'58		morning rise	12831 Jun 19 13:59	22° II 40'57	
evening set	12825 Apr 22 03:38	24° 8 37'07		retrograde	12831 Sep 19 06:07	25° II 51'23	
				opposition	12831 Dec 04 05:17	23° II 52'06	-1°06'13
conjunction	12825 May 08 04:16	25° 8 35'18	-1°02'57	min. Earth dist.	12831 Dec 03 23:28	23° II 52'42	18.37576 AU
minimum elong	12825 May 08 04:15	25° 8 35'18	1°03'42	direct	12832 Feb 19 07:48	21° II 51'19	
max. Earth dist.	12825 May 08 05:26	25° 8 35'28	19.98661 AU	evening set	12832 May 22 09:16	25° II 03'22	
morning rise	12825 May 24 02:40	26° 8 33'11					
retrograde	12825 Aug 23 17:09	29° 8 47'50		conjunction	12832 Jun 07 05:45	25° II 59'40	-0°58'46
opposition	12825 Nov 06 21:39	27° 8 47'45	-1°10'20	minimum elong	12832 Jun 07 05:45	25° II 59'40	0°59'44
min. Earth dist.	12825 Nov 06 20:22	27° 8 47'53	18.01744 AU	max. Earth dist.	12832 Jun 07 11:39	26° II 00'33	20.40477 AU
direct	12826 Jan 22 19:40	25° 8 45'26		morning rise	12832 Jun 23 01:11	26° II 55'50	
evening set	12826 Apr 26 21:00	29° 8 03'37			12832 Sep 08 00:20	0° III	
				retrograde	12832 Sep 22 17:28	0° III 05'39	
conjunction	12826 May 12 20:44	0° II 01'30	-1°03'26		12832 Oct 07 15:07	30° R II	
minimum elong	12826 May 12 20:44	0° II 01'30	1°04'13	opposition	12832 Dec 07 20:21	28° II 06'31	-1°04'12
	12826 May 12 10:53	0° II		min. Earth dist.	12832 Dec 07 14:29	28° II 07'07	18.43416 AU
max. Earth dist.	12826 May 12 21:34	0° II 01'37	20.04785 AU	direct	12833 Feb 22 21:20	26° II 06'00	
morning rise	12826 May 28 18:38	0° II 59'07		evening set	12833 May 26 20:19	29° II 17'07	
retrograde	12826 Aug 28 08:40	4° II 13'04			12833 Jun 07 23:51	0° III	
opposition	12826 Nov 11 16:28	2° II 13'09	-1°10'39				
min. Earth dist.	12826 Nov 11 14:47	2° II 13'20	18.07865 AU	conjunction	12833 Jun 11 16:32	0° III 13'11	-0°56'48
direct	12827 Jan 27 14:46	0° II 11'07		minimum elong	12833 Jun 11 16:32	0° III 13'11	0°57'46
evening set	12827 May 01 13:18	3° II 28'18		max. Earth dist.	12833 Jun 11 23:34	0° III 14'14	20.46298 AU
				morning rise	12833 Jun 27 11:43	1° III 09'08	
conjunction	12827 May 17 12:31	4° II 25'54	-1°03'33	retrograde	12833 Sep 27 05:59	4° III 18'23	
minimum elong	12827 May 17 12:31	4° II 25'54	1°04'24	opposition	12833 Dec 12 10:48	2° III 19'25	-1°01'51
max. Earth dist.	12827 May 17 14:47	4° II 26'15	20.10883 AU	min. Earth dist.	12833 Dec 12 03:13	2° III 20'12	18.49190 AU
morning rise	12827 Jun 02 09:46	5° II 23'15		direct	12834 Feb 27 13:03	0° III 19'14	
retrograde	12827 Sep 02 00:03	8° II 36'29		evening set	12834 May 31 06:44	3° III 29'26	
opposition	12827 Nov 16 10:45	6° II 36'44	-1°10'34				
min. Earth dist.	12827 Nov 16 08:07	6° II 37'01	18.13924 AU	conjunction	12834 Jun 16 02:32	4° III 25'18	-0°54'33
direct	12828 Feb 01 10:49	4° II 34'58		minimum elong	12834 Jun 16 02:32	4° III 25'18	0°55'32
evening set	12828 May 05 04:42	7° II 51'07		max. Earth dist.	12834 Jun 16 10:12	4° III 26'26	20.52022 AU
				morning rise	12834 Jul 01 21:34	5° III 21'03	
conjunction	12828 May 21 03:11	8° II 48'27	-1°03'18	retrograde	12834 Oct 01 17:01	8° III 29'48	
minimum elong	12828 May 21 03:11	8° II 48'27	1°04'10	opposition	12834 Dec 17 00:55	6° III 31'00	-0°59'11
max. Earth dist.	12828 May 21 05:23	8° II 48'46	20.16909 AU	min. Earth dist.	12834 Dec 16 17:30	6° III 31'45	18.54860 AU
morning rise	12828 Jun 06 00:03	9° II 45'33		direct	12835 Mar 04 01:18	4° III 31'08	
retrograde	12828 Sep 05 14:03	12° II 58'03		evening set	12835 Jun 04 16:29	7° III 40'27	
opposition	12828 Nov 20 04:25	10° II 58'26	-1°10'03				
min. Earth dist.	12828 Nov 20 01:38	10° II 58'43	18.19922 AU	conjunction	12835 Jun 20 12:03	8° III 36'06	-0°52'02
direct	12829 Feb 05 03:58	8° II 56'54		minimum elong	12835 Jun 20 12:03	8° III 36'06	0°53'00
evening set	12829 May 09 19:08	12° II 12'00		max. Earth dist.	12835 Jun 20 20:34	8° III 37'22	20.57626 AU
				morning rise	12835 Jul 06 06:57	9° III 31'41	
conjunction	12829 May 25 17:11	13° II 09'04	-1°02'41	retrograde	12835 Oct 06 04:42	12° III 39'56	
minimum elong	12829 May 25 17:11	13° II 09'04	1°03'35	opposition	12835 Dec 21 14:23	10° III 41'19	-0°56'13
max. Earth dist.	12829 May 25 20:44	13° II 09'36	20.22872 AU	min. Earth dist.	12835 Dec 21 05:20	10° III 42'14	18.60365 AU
morning rise	12829 Jun 10 13:33	14° II 05'55		direct	12836 Mar 07 15:32	8° III 41'47	
retrograde	12829 Sep 10 04:22	17° II 17'41		evening set	12836 Jun 08 01:36	11° III 50'15	
opposition	12829 Nov 24 21:11	15° II 18'11	-1°09'09				
min. Earth dist.	12829 Nov 24 17:13	15° II 18'36	18.25839 AU	conjunction	12836 Jun 23 20:55	12° III 45'44	-0°49'15
direct	12830 Feb 09 22:59	13° II 16'53		minimum elong	12836 Jun 23 20:55	12° III 45'44	0°50'13
evening set	12830 May 14 08:49	16° II 30'58		max. Earth dist.	12836 Jun 24 05:59	12° III 47'04	20.63021 AU
				morning rise	12836 Jul 09 15:48	13° III 41'08	
conjunction	12830 May 30 06:14	17° II 27'46	-1°01'43	retrograde	12836 Oct 09 15:11	16° III 48'57	
minimum elong	12830 May 30 06:14	17° II 27'46	1°02'38	opposition	12836 Dec 25 03:31	14° III 50'30	-0°52'59
max. Earth dist.	12830 May 30 10:04	17° II 28'20	20.28764 AU	min. Earth dist.	12836 Dec 24 18:59	14° III 51'21	18.65644 AU
morning rise	12830 Jun 15 02:17	18° II 24'22		direct	12837 Mar 12 02:57	12° III 51'17	
retrograde	12830 Sep 14 16:44	21° II 35'27		evening set	12837 Jun 12 10:16	15° III 58'56	
opposition	12830 Nov 29 13:36	19° II 36'03	-1°07'52				

conjunction	12837 Jun 28 05:25	16°☿54'14 -0°46'13			12843 Oct 08 12:11	15°♊
minimum elong	12837 Jun 28 05:25	16°☿54'14 0°47'11	retrograde		12843 Nov 08 07:31	15°♊23'26
max. Earth dist.	12837 Jun 28 14:54	16°☿55'37 20.68165 AU			12843 Dec 09 16:39	15°♋♊
morning rise	12837 Jul 14 00:16	17°☿49'29	opposition		12844 Jan 24 10:29	13°♊25'15 -0°24'17
retrograde	12837 Oct 14 02:06	20°☿56'53	min. Earth dist.		12844 Jan 23 23:43	13°♊26'20 18.92156 AU
opposition	12837 Dec 29 15:57	18°☿58'34 -0°49'29	direct		12844 Apr 10 06:08	11°♊27'19
min. Earth dist.	12837 Dec 29 06:04	18°☿59'34 18.70627 AU	evening set		12844 Jul 10 10:06	14°♊30'11
direct	12838 Mar 16 15:47	16°☿59'39			12844 Jul 19 02:57	15°♊
evening set	12838 Jun 16 18:30	20°☿06'32				
conjunction	12838 Jul 02 13:28	21°☿01'39 -0°42'58	conjunction		12844 Jul 26 05:14	15°♊24'37 -0°19'48
minimum elong	12838 Jul 02 13:28	21°☿01'40 0°43'54	minimum elong		12844 Jul 26 05:14	15°♊24'37 0°20'34
max. Earth dist.	12838 Jul 02 23:18	21°☿03'06 20.72978 AU	max. Earth dist.		12844 Jul 26 16:12	15°♊26'12 20.93302 AU
morning rise	12838 Jul 18 08:19	21°☿56'46	morning rise		12844 Aug 11 01:12	16°♊19'10
retrograde	12838 Oct 18 11:21	25°☿03'48	retrograde		12844 Nov 11 13:30	19°♊24'31
opposition	12839 Jan 03 04:17	23°☿05'36 -0°45'45	opposition		12845 Jan 27 20:10	17°♊26'17 -0°19'35
min. Earth dist.	12839 Jan 02 19:09	23°☿06'31 18.75267 AU	min. Earth dist.		12845 Jan 27 10:09	17°♊27'17 18.94389 AU
direct	12839 Mar 21 02:50	21°☿06'57	direct		12845 Apr 14 13:38	15°♊28'27
evening set	12839 Jun 21 02:06	24°☿13'05	evening set		12845 Jul 14 15:26	18°♊30'49
conjunction	12839 Jul 06 20:59	25°☿08'03 -0°39'30	conjunction		12845 Jul 30 10:41	19°♊25'10 -0°15'32
minimum elong	12839 Jul 06 21:00	25°☿08'03 0°40'26	minimum elong		12845 Jul 30 10:41	19°♊25'10 0°16'13
max. Earth dist.	12839 Jul 07 06:57	25°☿09'30 20.77429 AU	max. Earth dist.		12845 Jul 30 21:39	19°♊26'45 20.95383 AU
morning rise	12839 Jul 22 15:56	26°☿03'02	morning rise		12845 Aug 15 06:58	20°♊19'41
retrograde	12839 Oct 22 21:53	29°☿09'44	retrograde		12845 Nov 15 22:29	23°♊24'54
opposition	12840 Jan 07 16:00	27°☿11'36 -0°41'48	opposition		12846 Feb 01 05:19	21°♊26'38 -0°14'48
min. Earth dist.	12840 Jan 07 05:39	27°☿12'39 18.79505 AU	min. Earth dist.		12846 Jan 31 18:01	21°♊27'46 18.96315 AU
direct	12840 Mar 24 14:35	25°☿13'10	direct		12846 Apr 18 22:04	19°♊28'53
evening set	12840 Jun 24 09:26	28°☿18'35	evening set		12846 Jul 18 20:33	22°♊30'50
conjunction	12840 Jul 10 04:16	29°☿13'25 -0°35'52	conjunction		12846 Aug 03 16:00	23°♊25'09 -0°11'11
minimum elong	12840 Jul 10 04:16	29°☿13'25 0°36'45	minimum elong		12846 Aug 03 16:00	23°♊25'09 0°11'51
max. Earth dist.	12840 Jul 10 14:25	29°☿14'54 20.81446 AU	behind sun begin		12846 Aug 03 11:23	23°♊24'30
	12840 Jul 23 13:15	0°♊	behind sun end		12846 Aug 03 20:37	23°♊25'47
morning rise	12840 Jul 25 23:19	0°♊08'18	max. Earth dist.		12846 Aug 04 03:34	23°♊26'48 20.97151 AU
retrograde	12840 Oct 26 05:41	3°♊14'39	morning rise		12846 Aug 19 12:35	24°♊19'37
opposition	12841 Jan 11 03:16	1°♊16'34 -0°37'40	retrograde		12846 Nov 20 04:51	27°♊24'47
min. Earth dist.	12841 Jan 10 17:57	1°♊17'30 18.83305 AU	opposition		12847 Feb 05 14:28	25°♊26'28 -0°09'57
	12841 Feb 14 16:35	30°♋☿	min. Earth dist.		12847 Feb 05 03:52	25°♊27'32 18.97933 AU
direct	12841 Mar 29 00:38	29°☿18'19	direct		12847 Apr 23 04:41	23°♊28'51
	12841 May 09 00:32	0°♊	evening set		12847 Jul 23 01:28	26°♊30'25
evening set	12841 Jun 28 16:17	2°♊23'02	conjunction		12847 Aug 07 21:08	27°♊24'42 -0°06'49
conjunction	12841 Jul 14 11:09	3°♊17'45 -0°32'03	minimum elong		12847 Aug 07 21:09	27°♊24'42 0°07'24
minimum elong	12841 Jul 14 11:09	3°♊17'45 0°32'55	behind sun begin		12847 Aug 07 15:08	27°♊23'51
max. Earth dist.	12841 Jul 14 21:08	3°♊19'12 20.85029 AU	behind sun end		12847 Aug 08 03:10	27°♊25'33
morning rise	12841 Jul 30 06:24	4°♊12'31	max. Earth dist.		12847 Aug 08 08:35	27°♊26'20 20.98620 AU
retrograde	12841 Oct 30 15:36	7°♊18'34	morning rise		12847 Aug 23 18:11	28°♊19'10
opposition	12842 Jan 15 14:04	5°♊20'29 -0°33'21			12847 Sep 25 16:00	0°♋
min. Earth dist.	12842 Jan 15 03:38	5°♊21'32 18.86656 AU	retrograde		12847 Nov 24 13:53	1°♋24'20
direct	12842 Apr 02 11:38	3°♊22'22			12848 Jan 26 14:48	30°♋♊
evening set	12842 Jul 02 22:36	6°♊26'26	opposition		12848 Feb 09 23:12	29°♊26'00 -0°05'04
conjunction	12842 Jul 18 17:29	7°♊21'02 -0°28'05	min. Earth dist.		12848 Feb 09 11:30	29°♊27'10 18.99231 AU
minimum elong	12842 Jul 18 17:30	7°♊21'02 0°28'55	direct		12848 Apr 26 12:15	27°♊28'28
max. Earth dist.	12842 Jul 19 03:51	7°♊22'32 20.88161 AU			12848 Jul 17 06:27	0°♋
morning rise	12842 Aug 03 12:55	8°♊15'43	evening set		12848 Jul 26 06:26	0°♋29'46
retrograde	12842 Nov 03 22:11	11°♊21'29	conjunction		12848 Aug 11 02:26	1°♋24'02 -0°02'24
opposition	12843 Jan 20 00:38	9°♊23'22 -0°28'53	minimum elong		12848 Aug 11 02:24	1°♋24'02 0°02'58
min. Earth dist.	12843 Jan 19 15:05	9°♊24'20 18.89588 AU	behind sun begin		12848 Aug 10 19:51	1°♋23'07
direct	12843 Apr 06 20:23	7°♊25'22	behind sun end		12848 Aug 11 08:58	1°♋24'57
evening set	12843 Jul 07 04:32	10°♊28'47	max. Earth dist.		12848 Aug 11 14:15	1°♋25'43 20.99737 AU
conjunction	12843 Jul 22 23:31	11°♊23'17 -0°24'00	morning rise		12848 Aug 26 23:47	2°♋18'31
minimum elong	12843 Jul 22 23:31	11°♊23'17 0°24'48	retrograde		12848 Nov 27 20:44	5°♋23'43
max. Earth dist.	12843 Jul 23 09:55	11°♊24'47 20.90911 AU	opposition		12849 Feb 13 07:47	3°♋25'22 -0°00'10
morning rise	12843 Aug 07 19:14	12°♊17'54	min. Earth dist.		12849 Feb 12 21:02	3°♋26'26 19.00171 AU
			asc. node		12849 Feb 25 03:37	2°♋57'11
			direct		12849 Apr 30 18:10	1°♋27'57

evening set	12849 Jul 30 11:27	4° <u>♏</u> 29'02		direct	12855 May 25 08:51	25° <u>♏</u> 28'10	
				evening set	12855 Aug 23 20:56	28° <u>♏</u> 29'10	
conjunction	12849 Aug 15 07:42	5° <u>♏</u> 23'18	0°02'09				
minimum elong	12849 Aug 15 07:41	5° <u>♏</u> 23'18	0°01'39	conjunction	12855 Sep 08 19:33	29° <u>♏</u> 23'47	0°27'47
behind sun begin	12849 Aug 15 01:06	5° <u>♏</u> 22'23		minimum elong	12855 Sep 08 19:33	29° <u>♏</u> 23'47	0°27'40
behind sun end	12849 Aug 15 14:16	5° <u>♏</u> 24'13		max. Earth dist.	12855 Sep 09 04:12	29° <u>♏</u> 25'01	20.95332 AU
max. Earth dist.	12849 Aug 15 19:07	5° <u>♏</u> 24'55	21.00500 AU		12855 Sep 19 07:53	0° <u>♏</u>	
morning rise	12849 Aug 31 05:32	6° <u>♏</u> 17'48		morning rise	12855 Sep 24 20:26	0° <u>♏</u> 18'44	
retrograde	12849 Dec 02 05:56	9° <u>♏</u> 23'06		retrograde	12855 Dec 27 10:12	3° <u>♏</u> 25'32	
opposition	12850 Feb 17 16:20	7° <u>♏</u> 24'44	0°04'44	opposition	12856 Mar 13 19:33	1° <u>♏</u> 26'36	0°32'55
min. Earth dist.	12850 Feb 17 04:44	7° <u>♏</u> 25'54	19.00734 AU	min. Earth dist.	12856 Mar 13 11:00	1° <u>♏</u> 27'28	18.94101 AU
direct	12850 May 05 01:27	5° <u>♏</u> 27'26			12856 Apr 23 00:05	30° <u>♏</u>	
evening set	12850 Aug 03 16:26	8° <u>♏</u> 28'21		direct	12856 May 28 15:54	29° <u>♏</u> 29'15	
					12856 Jul 02 13:00	0° <u>♏</u>	
conjunction	12850 Aug 19 13:00	9° <u>♏</u> 22'38	0°06'34	evening set	12856 Aug 27 03:19	2° <u>♏</u> 30'24	
minimum elong	12850 Aug 19 13:00	9° <u>♏</u> 22'38	0°06'08				
behind sun begin	12850 Aug 19 06:45	9° <u>♏</u> 21'46		conjunction	12856 Sep 12 02:28	3° <u>♏</u> 25'08	0°31'44
behind sun end	12850 Aug 19 19:16	9° <u>♏</u> 23'31		minimum elong	12856 Sep 12 02:28	3° <u>♏</u> 25'08	0°31'42
max. Earth dist.	12850 Aug 20 00:45	9° <u>♏</u> 24'18	21.00850 AU	max. Earth dist.	12856 Sep 12 11:08	3° <u>♏</u> 26'23	20.92747 AU
morning rise	12850 Sep 04 11:15	10° <u>♏</u> 17'10		morning rise	12856 Sep 28 03:48	4° <u>♏</u> 20'13	
retrograde	12850 Dec 06 13:15	13° <u>♏</u> 22'39		retrograde	12856 Dec 30 18:40	7° <u>♏</u> 27'22	
opposition	12851 Feb 22 00:59	11° <u>♏</u> 24'15	0°09'36	opposition	12857 Mar 18 04:05	5° <u>♏</u> 28'14	0°37'14
min. Earth dist.	12851 Feb 21 14:30	11° <u>♏</u> 25'18	19.00872 AU	min. Earth dist.	12857 Mar 17 20:43	5° <u>♏</u> 28'59	18.91321 AU
direct	12851 May 09 07:00	9° <u>♏</u> 27'03		direct	12857 Jun 01 22:23	3° <u>♏</u> 30'45	
evening set	12851 Aug 07 21:44	12° <u>♏</u> 27'52		evening set	12857 Aug 31 10:02	6° <u>♏</u> 32'08	
conjunction	12851 Aug 23 18:37	13° <u>♏</u> 22'11	0°10'56	conjunction	12857 Sep 16 09:37	7° <u>♏</u> 26'59	0°35'32
minimum elong	12851 Aug 23 18:38	13° <u>♏</u> 22'11	0°10'33	minimum elong	12857 Sep 16 09:37	7° <u>♏</u> 26'59	0°35'34
behind sun begin	12851 Aug 23 13:29	13° <u>♏</u> 21'28		max. Earth dist.	12857 Sep 16 17:19	7° <u>♏</u> 28'06	20.89798 AU
behind sun end	12851 Aug 23 23:46	13° <u>♏</u> 22'55		morning rise	12857 Oct 02 11:36	8° <u>♏</u> 22'12	
max. Earth dist.	12851 Aug 24 05:39	13° <u>♏</u> 23'46	21.00771 AU	retrograde	12858 Jan 04 05:15	11° <u>♏</u> 29'45	
morning rise	12851 Sep 08 17:24	14° <u>♏</u> 16'47		opposition	12858 Mar 22 12:45	9° <u>♏</u> 30'26	0°41'21
retrograde	12851 Dec 10 22:51	17° <u>♏</u> 22'28		min. Earth dist.	12858 Mar 22 05:06	9° <u>♏</u> 31'12	18.88209 AU
opposition	12852 Feb 26 09:20	15° <u>♏</u> 24'02	0°14'26	direct	12858 Jun 06 04:59	7° <u>♏</u> 32'48	
min. Earth dist.	12852 Feb 25 22:25	15° <u>♏</u> 25'07	19.00555 AU	evening set	12858 Sep 04 16:57	10° <u>♏</u> 34'28	
direct	12852 May 12 14:10	13° <u>♏</u> 26'52					
evening set	12852 Aug 11 03:14	16° <u>♏</u> 27'40		conjunction	12858 Sep 20 17:07	11° <u>♏</u> 29'28	0°39'10
				minimum elong	12858 Sep 20 17:07	11° <u>♏</u> 29'28	0°39'16
conjunction	12852 Aug 27 00:34	17° <u>♏</u> 22'03	0°15'16	max. Earth dist.	12858 Sep 21 01:04	11° <u>♏</u> 30'37	20.86520 AU
minimum elong	12852 Aug 27 00:33	17° <u>♏</u> 22'03	0°14'58	morning rise	12858 Oct 06 19:36	12° <u>♏</u> 24'50	
behind sun begin	12852 Aug 26 22:01	17° <u>♏</u> 21'42		retrograde	12859 Jan 08 14:23	15° <u>♏</u> 32'50	
behind sun end	12852 Aug 27 03:05	17° <u>♏</u> 22'24		opposition	12859 Mar 26 21:39	13° <u>♏</u> 33'19	0°45'17
max. Earth dist.	12852 Aug 27 11:29	17° <u>♏</u> 23'37	21.00192 AU	min. Earth dist.	12859 Mar 26 14:55	13° <u>♏</u> 34'00	18.84788 AU
morning rise	12852 Sep 11 23:45	18° <u>♏</u> 16'43		direct	12859 Jun 10 12:11	11° <u>♏</u> 35'33	
retrograde	12852 Dec 14 06:23	21° <u>♏</u> 22'38		evening set	12859 Sep 09 00:30	14° <u>♏</u> 37'34	
opposition	12853 Mar 01 17:55	19° <u>♏</u> 24'08	0°19'12				
min. Earth dist.	12853 Mar 01 08:23	19° <u>♏</u> 25'06	18.99719 AU	conjunction	12859 Sep 25 01:10	15° <u>♏</u> 32'43	0°42'37
direct	12853 May 16 19:37	17° <u>♏</u> 27'00		minimum elong	12859 Sep 25 01:10	15° <u>♏</u> 32'43	0°42'47
evening set	12853 Aug 15 08:56	20° <u>♏</u> 27'49		max. Earth dist.	12859 Sep 25 08:02	15° <u>♏</u> 33'43	20.82968 AU
				morning rise	12859 Oct 11 04:21	16° <u>♏</u> 28'15	
conjunction	12853 Aug 31 06:36	21° <u>♏</u> 22'16	0°19'32	retrograde	12860 Jan 13 02:07	19° <u>♏</u> 36'44	
minimum elong	12853 Aug 31 06:36	21° <u>♏</u> 22'16	0°19'17	opposition	12860 Mar 30 06:30	17° <u>♏</u> 37'02	0°49'00
max. Earth dist.	12853 Aug 31 16:28	21° <u>♏</u> 23'40	20.99096 AU	min. Earth dist.	12860 Mar 29 23:39	17° <u>♏</u> 37'44	18.81108 AU
morning rise	12853 Sep 16 06:20	22° <u>♏</u> 17'00		direct	12860 Jun 13 19:05	15° <u>♏</u> 39'07	
retrograde	12853 Dec 18 16:16	25° <u>♏</u> 23'12		evening set	12860 Sep 12 08:29	18° <u>♏</u> 41'34	
opposition	12854 Mar 06 02:26	23° <u>♏</u> 24'36	0°23'54				
min. Earth dist.	12854 Mar 05 16:41	23° <u>♏</u> 25'34	18.98353 AU	conjunction	12860 Sep 28 09:48	19° <u>♏</u> 36'54	0°45'52
direct	12854 May 21 03:00	21° <u>♏</u> 27'25		minimum elong	12860 Sep 28 09:47	19° <u>♏</u> 36'54	0°46'05
evening set	12854 Aug 19 14:51	24° <u>♏</u> 28'19		max. Earth dist.	12860 Sep 28 16:50	19° <u>♏</u> 37'55	20.79150 AU
				morning rise	12860 Oct 14 13:27	20° <u>♏</u> 32'36	
conjunction	12854 Sep 04 13:01	25° <u>♏</u> 22'50	0°23'43	retrograde	12861 Jan 16 11:56	23° <u>♏</u> 41'36	
minimum elong	12854 Sep 04 13:01	25° <u>♏</u> 22'50	0°23'32	opposition	12861 Apr 03 15:47	21° <u>♏</u> 41'44	0°52'29
max. Earth dist.	12854 Sep 04 22:43	25° <u>♏</u> 24'14	20.97458 AU	min. Earth dist.	12861 Apr 03 09:49	21° <u>♏</u> 42'21	18.77168 AU
morning rise	12854 Sep 20 13:13	26° <u>♏</u> 17'41		direct	12861 Jun 18 02:30	19° <u>♏</u> 43'42	
retrograde	12854 Dec 23 00:12	29° <u>♏</u> 24'10		evening set	12861 Sep 16 16:56	22° <u>♏</u> 46'37	
opposition	12855 Mar 10 11:04	27° <u>♏</u> 25'25	0°28'28				
min. Earth dist.	12855 Mar 10 02:39	27° <u>♏</u> 26'16	18.96461 AU	conjunction	12861 Oct 02 18:45	23° <u>♏</u> 42'08	0°48'53

minimum elong	12861 Oct 02 18:44	23° <u>0</u> 42'08	0°49'11	max. Earth dist.	12867 Oct 28 17:26	18° <u>1</u> 42'28	20.45325 AU
max. Earth dist.	12861 Oct 03 00:38	23° <u>0</u> 42'59	20.75101 AU	morning rise	12867 Nov 14 01:04	19° <u>1</u> 39'38	
morning rise	12861 Oct 18 23:07	24° <u>0</u> 38'01		retrograde	12868 Feb 16 08:14	22° <u>1</u> 53'04	
retrograde	12862 Jan 21 00:50	27° <u>0</u> 47'36		opposition	12868 May 02 19:27	20° <u>1</u> 52'04	1°08'54
opposition	12862 Apr 08 01:23	25° <u>0</u> 47'34	0°55'43	min. Earth dist.	12868 May 02 18:53	20° <u>1</u> 52'08	18.42393 AU
min. Earth dist.	12862 Apr 07 19:24	25° <u>0</u> 48'11	18.73004 AU	direct	12868 Jul 16 20:21	18° <u>1</u> 52'39	
direct	12862 Jun 22 10:39	23° <u>0</u> 49'23		evening set	12868 Oct 16 01:03	22° <u>1</u> 00'29	
evening set	12862 Sep 21 02:05	26° <u>0</u> 52'52					
conjunction	12862 Oct 07 04:36	27° <u>0</u> 48'35	0°51'40	conjunction	12868 Nov 01 07:30	22° <u>1</u> 57'37	1°02'34
minimum elong	12862 Oct 07 04:35	27° <u>0</u> 48'35	0°52'01	minimum elong	12868 Nov 01 07:30	22° <u>1</u> 57'37	1°03'17
max. Earth dist.	12862 Oct 07 10:42	27° <u>0</u> 49'28	20.70811 AU	max. Earth dist.	12868 Nov 01 07:53	22° <u>1</u> 57'40	20.39359 AU
morning rise	12862 Oct 23 09:28	28° <u>0</u> 44'41		morning rise	12868 Nov 17 16:00	23° <u>1</u> 55'06	
	12862 Nov 15 20:39	0° <u>1</u>		retrograde	12869 Feb 19 23:06	27° <u>1</u> 09'10	
retrograde	12863 Jan 25 11:36	1° <u>1</u> 54'50		opposition	12869 May 07 08:05	25° <u>1</u> 07'57	1°09'54
	12863 Apr 10 07:26	30° <u>8</u> <u>0</u>		min. Earth dist.	12869 May 07 08:17	25° <u>1</u> 07'56	18.36318 AU
opposition	12863 Apr 12 11:17	29° <u>0</u> 54'41	0°58'41	direct	12869 Jul 21 08:15	23° <u>1</u> 08'13	
min. Earth dist.	12863 Apr 12 06:15	29° <u>0</u> 55'12	18.68598 AU	evening set	12869 Oct 20 15:26	26° <u>1</u> 16'53	
direct	12863 Jun 26 18:13	27° <u>0</u> 56'21		conjunction	12869 Nov 05 22:24	27° <u>1</u> 14'17	1°03'17
	12863 Sep 06 22:54	0° <u>1</u>		minimum elong	12869 Nov 05 22:24	27° <u>1</u> 14'17	1°04'02
evening set	12863 Sep 25 11:59	1° <u>1</u> 00'27		max. Earth dist.	12869 Nov 05 20:47	27° <u>1</u> 14'02	20.33210 AU
conjunction	12863 Oct 11 15:03	1° <u>1</u> 56'22	0°54'12	morning rise	12869 Nov 22 07:40	28° <u>1</u> 12'01	
minimum elong	12863 Oct 11 15:02	1° <u>1</u> 56'22	0°54'38		12869 Dec 26 15:56	0° <u>0</u> <u>7</u>	
max. Earth dist.	12863 Oct 11 19:40	1° <u>1</u> 57'03	20.66293 AU	retrograde	12870 Feb 24 14:32	1° <u>0</u> <u>7</u> 26'46	
morning rise	12863 Oct 27 20:41	2° <u>1</u> 52'41			12870 Apr 27 21:09	30° <u>8</u> <u>1</u>	
retrograde	12864 Jan 30 01:31	6° <u>1</u> 03'28		opposition	12870 May 11 21:11	29° <u>1</u> 25'18	1°10'31
opposition	12864 Apr 15 21:34	4° <u>1</u> 03'10	1°01'22	min. Earth dist.	12870 May 11 22:25	29° <u>1</u> 25'10	18.30108 AU
min. Earth dist.	12864 Apr 15 16:59	4° <u>1</u> 03'38	18.63952 AU	direct	12870 Jul 25 20:23	27° <u>1</u> 25'13	
direct	12864 Jun 30 03:37	2° <u>1</u> 04'41			12870 Oct 15 01:16	0° <u>0</u> <u>7</u>	
evening set	12864 Sep 28 22:36	5° <u>1</u> 09'28		evening set	12870 Oct 25 06:34	0° <u>0</u> <u>7</u> 34'45	
conjunction	12864 Oct 15 02:22	6° <u>1</u> 05'37	0°56'28	conjunction	12870 Nov 10 14:23	1° <u>0</u> <u>7</u> 32'26	1°03'38
minimum elong	12864 Oct 15 02:21	6° <u>1</u> 05'37	0°56'58	minimum elong	12870 Nov 10 14:23	1° <u>0</u> <u>7</u> 32'26	1°04'26
max. Earth dist.	12864 Oct 15 07:02	6° <u>1</u> 06'18	20.61499 AU	max. Earth dist.	12870 Nov 10 13:01	1° <u>0</u> <u>7</u> 32'14	20.26946 AU
morning rise	12864 Oct 31 08:26	7° <u>1</u> 02'08		morning rise	12870 Nov 27 00:03	2° <u>0</u> <u>7</u> 30'26	
retrograde	12865 Feb 02 13:16	10° <u>1</u> 13'34		retrograde	12871 Mar 01 06:46	5° <u>0</u> <u>7</u> 45'49	
opposition	12865 Apr 20 08:19	8° <u>1</u> 13'09	1°03'45	opposition	12871 May 16 10:33	3° <u>0</u> <u>7</u> 44'08	1°10'45
min. Earth dist.	12865 Apr 20 04:49	8° <u>1</u> 13'31	18.59014 AU	min. Earth dist.	12871 May 16 12:15	3° <u>0</u> <u>7</u> 43'57	18.23810 AU
direct	12865 Jul 04 12:18	6° <u>1</u> 14'30		direct	12871 Jul 30 09:40	1° <u>0</u> <u>7</u> 43'43	
evening set	12865 Oct 03 10:07	9° <u>1</u> 20'00		evening set	12871 Oct 29 22:39	4° <u>0</u> <u>7</u> 54'10	
conjunction	12865 Oct 19 14:24	10° <u>1</u> 16'22	0°58'27	conjunction	12871 Nov 15 06:58	5° <u>0</u> <u>7</u> 52'08	1°03'38
minimum elong	12865 Oct 19 14:23	10° <u>1</u> 16'22	0°59'00	minimum elong	12871 Nov 15 06:57	5° <u>0</u> <u>7</u> 52'08	1°04'29
max. Earth dist.	12865 Oct 19 17:12	10° <u>1</u> 16'47	20.56422 AU	max. Earth dist.	12871 Nov 15 03:36	5° <u>0</u> <u>7</u> 51'38	20.20639 AU
morning rise	12865 Nov 04 21:13	11° <u>1</u> 13'07		morning rise	12871 Dec 01 17:22	6° <u>0</u> <u>7</u> 50'23	
retrograde	12866 Feb 07 03:58	14° <u>1</u> 25'14		retrograde	12872 Mar 04 23:08	10° <u>0</u> <u>7</u> 06'28	
opposition	12866 Apr 24 19:36	12° <u>1</u> 24'38	1°05'48	opposition	12872 May 20 00:34	8° <u>0</u> <u>7</u> 04'33	1°10'34
min. Earth dist.	12866 Apr 24 16:54	12° <u>1</u> 24'55	18.53788 AU	min. Earth dist.	12872 May 20 03:22	8° <u>0</u> <u>7</u> 04'15	18.17511 AU
direct	12866 Jul 08 22:42	10° <u>1</u> 25'46		direct	12872 Aug 02 22:39	6° <u>0</u> <u>7</u> 03'46	
evening set	12866 Oct 07 22:15	13° <u>1</u> 32'01		evening set	12872 Nov 02 15:14	9° <u>0</u> <u>7</u> 15'11	
conjunction	12866 Oct 24 03:21	14° <u>1</u> 28'39	1°00'08	conjunction	12872 Nov 19 00:20	10° <u>0</u> <u>7</u> 13'25	1°03'16
minimum elong	12866 Oct 24 03:20	14° <u>1</u> 28'39	1°00'46	minimum elong	12872 Nov 19 00:20	10° <u>0</u> <u>7</u> 13'25	1°04'08
max. Earth dist.	12866 Oct 24 05:59	14° <u>1</u> 29'02	20.51026 AU	max. Earth dist.	12872 Nov 18 21:26	10° <u>0</u> <u>7</u> 12'59	20.14348 AU
	12866 Nov 02 01:24	15° <u>1</u>		morning rise	12872 Dec 05 11:05	11° <u>0</u> <u>7</u> 11'56	
morning rise	12866 Nov 09 10:39	15° <u>1</u> 25'38		retrograde	12873 Mar 09 16:48	14° <u>0</u> <u>7</u> 28'41	
retrograde	12867 Feb 11 17:18	18° <u>1</u> 38'24		opposition	12873 May 24 15:04	12° <u>0</u> <u>7</u> 26'35	1°09'58
opposition	12867 Apr 29 07:23	16° <u>1</u> 37'38	1°07'31	min. Earth dist.	12873 May 24 17:53	12° <u>0</u> <u>7</u> 26'17	18.11249 AU
min. Earth dist.	12867 Apr 29 05:45	16° <u>1</u> 37'48	18.48230 AU	direct	12873 Aug 07 13:06	10° <u>0</u> <u>7</u> 25'30	
	12867 Jun 14 06:11	15° <u>0</u> <u>8</u>		evening set	12873 Nov 07 08:52	13° <u>0</u> <u>7</u> 37'53	
direct	12867 Jul 13 09:05	14° <u>1</u> 38'31		conjunction	12873 Nov 23 18:27	14° <u>0</u> <u>7</u> 36'23	1°02'31
	12867 Aug 11 01:36	15° <u>1</u>		minimum elong	12873 Nov 23 18:27	14° <u>0</u> <u>7</u> 36'23	1°03'26
evening set	12867 Oct 12 11:23	17° <u>1</u> 45'32		max. Earth dist.	12873 Nov 23 13:43	14° <u>0</u> <u>7</u> 35'41	20.08138 AU
conjunction	12867 Oct 28 17:01	18° <u>1</u> 42'24	1°01'31	morning rise	12873 Dec 10 05:52	15° <u>0</u> <u>7</u> 35'11	
minimum elong	12867 Oct 28 17:00	18° <u>1</u> 42'24	1°02'10	retrograde	12874 Mar 14 10:39	18° <u>0</u> <u>7</u> 52'36	
				opposition	12874 May 29 06:11	16° <u>0</u> <u>7</u> 50'19	1°08'58

min. Earth dist.	12874 May 29 10:08	16° 7 49'54	18.05104 AU	conjunction	12880 Dec 26 01:24	16° 3 08'06	0°47'03
direct	12874 Aug 12 03:01	14° 7 48'55		minimum elong	12880 Dec 26 01:24	16° 3 08'06	0°48'01
evening set	12874 Nov 12 03:10	18° 7 02'18		max. Earth dist.	12880 Dec 25 16:03	16° 3 06'40	19.69063 AU
				morning rise	12881 Jan 11 15:09	17° 3 08'35	
conjunction	12874 Nov 28 13:35	19° 7 01'06	1°01'24	retrograde	12881 Apr 15 14:20	20° 3 30'13	
minimum elong	12874 Nov 28 13:34	19° 7 01'06	1°02'20	opposition	12881 Jun 29 09:09	18° 3 27'17	0°50'31
max. Earth dist.	12874 Nov 28 09:18	19° 7 00'28	20.02058 AU	min. Earth dist.	12881 Jun 29 16:55	18° 3 26'27	17.66589 AU
morning rise	12874 Dec 15 01:20	20° 7 00'09		direct	12881 Sep 12 05:40	16° 3 23'59	
retrograde	12875 Mar 19 06:16	23° 7 18'14		evening set	12881 Dec 14 12:23	19° 3 44'25	
opposition	12875 Jun 02 21:50	21° 7 15'50	1°07'32				
min. Earth dist.	12875 Jun 03 01:36	21° 7 15'26	17.99093 AU	conjunction	12881 Dec 31 02:03	20° 3 45'02	0°43'28
direct	12875 Aug 16 18:30	19° 7 14'09		minimum elong	12881 Dec 31 02:03	20° 3 45'02	0°44'25
evening set	12875 Nov 16 22:34	22° 7 28'34		max. Earth dist.	12881 Dec 30 15:38	20° 3 43'27	19.64144 AU
				morning rise	12882 Jan 16 15:56	21° 3 45'43	
conjunction	12875 Dec 03 09:23	23° 7 27'39	0°59'55	retrograde	12882 Apr 20 11:11	25° 3 07'45	
minimum elong	12875 Dec 03 09:23	23° 7 27'39	1°00'52	opposition	12882 Jul 04 05:06	23° 3 04'43	0°46'22
max. Earth dist.	12875 Dec 03 03:21	23° 7 26'44	19.96133 AU	min. Earth dist.	12882 Jul 04 14:31	23° 3 03'42	17.61792 AU
morning rise	12875 Dec 19 21:42	24° 7 26'58		direct	12882 Sep 17 01:13	21° 3 01'05	
retrograde	12876 Mar 23 01:43	27° 7 45'43		evening set	12882 Dec 19 13:16	24° 3 22'24	
opposition	12876 Jun 06 14:07	25° 7 43'12	1°05'42				
min. Earth dist.	12876 Jun 06 19:12	25° 7 42'39	17.93262 AU	conjunction	12883 Jan 05 03:15	25° 3 23'13	0°39'35
direct	12876 Aug 20 09:18	23° 7 41'14		minimum elong	12883 Jan 05 03:15	25° 3 23'13	0°40'30
evening set	12876 Nov 20 18:39	26° 7 56'43		max. Earth dist.	12883 Jan 04 16:11	25° 3 21'31	19.59490 AU
				morning rise	12883 Jan 21 17:16	26° 3 24'04	
conjunction	12876 Dec 07 06:12	27° 7 56'04	0°58'03	retrograde	12883 Apr 25 11:02	29° 3 46'28	
minimum elong	12876 Dec 07 06:12	27° 7 56'04	0°59'01	opposition	12883 Jul 09 01:26	27° 3 43'18	0°41'54
max. Earth dist.	12876 Dec 07 00:31	27° 7 55'13	19.90398 AU	min. Earth dist.	12883 Jul 09 10:24	27° 3 42'20	17.57279 AU
morning rise	12876 Dec 23 18:47	28° 7 55'38		direct	12883 Sep 22 00:50	25° 3 39'22	
	12877 Jan 11 17:38	0° 3		evening set	12883 Dec 24 14:40	29° 3 01'30	
retrograde	12877 Mar 27 23:18	2° 3 15'03			12884 Jan 09 12:34	0° 3	
opposition	12877 Jun 11 07:02	0° 3 12'28	1°03'27				
min. Earth dist.	12877 Jun 11 11:51	0° 3 11'57	17.87611 AU	conjunction	12884 Jan 10 04:51	0° 3 02'31	0°35'25
	12877 Jun 16 03:34	30° 7 11'16		minimum elong	12884 Jan 10 04:52	0° 3 02'31	0°36'19
direct	12877 Aug 25 02:32	28° 7 10'16		max. Earth dist.	12884 Jan 09 17:30	0° 3 00'46	19.55134 AU
	12877 Oct 30 12:37	0° 3		morning rise	12884 Jan 26 18:47	1° 3 03'30	
evening set	12877 Nov 25 15:42	1° 3 26'46		retrograde	12884 Apr 29 08:28	4° 3 26'13	
				opposition	12884 Jul 12 22:21	2° 3 22'56	0°37'07
conjunction	12877 Dec 12 03:37	2° 3 26'24	0°55'49	min. Earth dist.	12884 Jul 13 08:36	2° 3 21'50	17.53108 AU
minimum elong	12877 Dec 12 03:38	2° 3 26'24	0°56'48	direct	12884 Sep 25 21:49	0° 3 18'42	
max. Earth dist.	12877 Dec 11 20:22	2° 3 25'18	19.84836 AU	evening set	12884 Dec 28 16:31	3° 3 41'37	
morning rise	12877 Dec 28 16:42	3° 3 26'14					
retrograde	12878 Apr 01 19:37	6° 3 46'16		conjunction	12885 Jan 14 06:49	4° 3 42'46	0°31'00
opposition	12878 Jun 16 00:42	4° 3 43'37	1°00'48	minimum elong	12885 Jan 14 06:49	4° 3 42'46	0°31'52
min. Earth dist.	12878 Jun 16 07:10	4° 3 42'55	17.82134 AU	max. Earth dist.	12885 Jan 13 18:44	4° 3 40'54	19.51173 AU
direct	12878 Aug 29 18:25	2° 3 41'10		morning rise	12885 Jan 30 20:48	5° 3 43'54	
evening set	12878 Nov 30 13:40	5° 3 58'43		retrograde	12885 May 04 08:46	9° 3 06'52	
				opposition	12885 Jul 17 19:30	7° 3 03'29	0°32'05
conjunction	12878 Dec 17 02:14	6° 3 58'37	0°53'14	min. Earth dist.	12885 Jul 18 05:09	7° 3 02'26	17.49360 AU
minimum elong	12878 Dec 17 02:14	6° 3 58'37	0°54'14	direct	12885 Sep 30 21:56	4° 3 58'57	
max. Earth dist.	12878 Dec 16 18:51	6° 3 57'30	19.79436 AU	evening set	12886 Jan 02 18:41	8° 3 22'35	
morning rise	12879 Jan 02 15:31	7° 3 58'41					
retrograde	12879 Apr 06 18:32	11° 3 19'18		conjunction	12886 Jan 19 09:10	9° 3 23'53	0°26'22
opposition	12879 Jun 20 18:46	9° 3 16'34	0°57'45	minimum elong	12886 Jan 19 09:10	9° 3 23'53	0°27'11
min. Earth dist.	12879 Jun 21 01:07	9° 3 15'53	17.76798 AU	max. Earth dist.	12886 Jan 18 21:34	9° 3 22'06	19.47644 AU
direct	12879 Sep 03 14:00	7° 3 13'51		morning rise	12886 Feb 04 22:55	10° 3 25'07	
evening set	12879 Dec 05 12:39	10° 3 32'25		retrograde	12886 May 09 07:27	13° 3 48'17	
				opposition	12886 Jul 22 17:14	11° 3 44'51	0°26'48
conjunction	12879 Dec 22 01:32	11° 3 32'34	0°50'19	min. Earth dist.	12886 Jul 23 03:44	11° 3 43'42	17.46071 AU
minimum elong	12879 Dec 22 01:32	11° 3 32'34	0°51'17	direct	12886 Oct 05 20:12	9° 3 40'04	
max. Earth dist.	12879 Dec 21 16:34	11° 3 31'12	19.74166 AU	evening set	12887 Jan 07 21:24	13° 3 40'22	
morning rise	12880 Jan 07 15:06	12° 3 32'52					
retrograde	12880 Apr 10 15:05	15° 3 54'00		conjunction	12887 Jan 24 11:45	14° 3 05'46	0°21'33
opposition	12880 Jun 24 13:45	13° 3 51'11	0°54'19	minimum elong	12887 Jan 24 11:45	14° 3 05'46	0°22'18
min. Earth dist.	12880 Jun 24 21:51	13° 3 50'19	17.71609 AU	max. Earth dist.	12887 Jan 23 23:18	14° 3 03'51	19.44616 AU
direct	12880 Sep 07 07:47	11° 3 48'11			12887 Feb 08 02:45	15° 3	
evening set	12880 Dec 09 12:03	15° 3 07'43		morning rise	12887 Feb 10 01:26	15° 3 07'06	
				retrograde	12887 May 14 07:49	18° 3 30'25	

opposition	12887 Jul 27 15:07	16° 26 '56	0°21'20	evening set	12893 Feb 05 17:50	11° 18 '14	
min. Earth dist.	12887 Jul 28 00:57	16° 25 '52	17.43313 AU				
	12887 Sep 02 08:41	15° 18 '		conjunction	12893 Feb 22 06:32	12° 18 '29'50	-0°09'31
direct	12887 Oct 10 20:33	14° 21 '56		minimum elong	12893 Feb 22 06:32	12° 18 '29'50	0°09'08
	12887 Nov 17 15:33	15° 15 '		behind sun begin	12893 Feb 22 00:50	12° 18 '28'58	
evening set	12888 Jan 13 00:16	17° 46 '51		behind sun end	12893 Feb 22 12:13	12° 18 '30'42	
				max. Earth dist.	12893 Feb 21 19:12	12° 18 '28'04	19.38208 AU
conjunction	12888 Jan 29 14:41	18° 48 '21	0°16'34	morning rise	12893 Mar 10 17:29	13° 18 '31'10	
minimum elong	12888 Jan 29 14:41	18° 48 '21	0°17'16	retrograde	12893 Jun 11 09:49	16° 18 '54'28	
max. Earth dist.	12888 Jan 29 03:19	18° 46 '36	19.42132 AU	opposition	12893 Aug 24 09:47	14° 18 '51'34	-0°13'23
morning rise	12888 Feb 15 03:54	19° 49 '44		min. Earth dist.	12893 Aug 24 19:14	14° 18 '50'32	17.38506 AU
retrograde	12888 May 18 07:35	23° 13 '10		direct	12893 Nov 07 23:07	12° 18 '46'19	
opposition	12888 Jul 31 13:35	21° 09 '42	0°15'42	evening set	12894 Feb 10 21:24	16° 18 '13'25	
min. Earth dist.	12888 Jul 31 23:41	21° 08 '36	17.41119 AU				
direct	12888 Oct 14 19:40	19° 04 '34		conjunction	12894 Feb 27 09:43	17° 18 '14'56	-0°14'40
evening set	12889 Jan 17 03:23	22° 30 '00		minimum elong	12894 Feb 27 09:43	17° 18 '14'56	0°14'20
				behind sun begin	12894 Feb 27 06:43	17° 18 '14'28	
conjunction	12889 Feb 02 17:29	23° 31 '35	0°11'28	behind sun end	12894 Feb 27 12:43	17° 18 '15'23	
minimum elong	12889 Feb 02 17:29	23° 31 '35	0°12'08	max. Earth dist.	12894 Feb 26 23:21	17° 18 '13'19	19.38886 AU
behind sun begin	12889 Feb 02 12:59	23° 30 '54		morning rise	12894 Mar 15 19:56	18° 18 '16'10	
behind sun end	12889 Feb 02 21:58	23° 32 '16		retrograde	12894 Jun 16 10:08	21° 18 '39'15	
max. Earth dist.	12889 Feb 02 05:18	23° 29 '42	19.40243 AU	opposition	12894 Aug 29 09:36	19° 18 '36'28	-0°19'05
morning rise	12889 Feb 19 06:33	24° 33 '01		min. Earth dist.	12894 Aug 29 18:21	19° 18 '35'31	17.39383 AU
retrograde	12889 May 23 08:12	27° 56 '32		direct	12894 Nov 13 01:49	17° 18 '31'16	
opposition	12889 Aug 05 12:18	25° 53 '07	0°09'57	evening set	12895 Feb 16 00:54	20° 18 '58'22	
min. Earth dist.	12889 Aug 05 21:50	25° 52 '05	17.39527 AU				
direct	12889 Oct 19 20:04	23° 47 '53		conjunction	12895 Mar 04 12:29	21° 18 '59'48	-0°19'43
evening set	12890 Jan 22 06:44	27° 13 '49		minimum elong	12895 Mar 04 12:29	21° 18 '59'48	0°19'29
				max. Earth dist.	12895 Mar 04 01:35	21° 18 '58'06	19.39965 AU
conjunction	12890 Feb 07 20:47	28° 15 '27	0°06'18	morning rise	12895 Mar 20 22:01	23° 18 '00'55	
minimum elong	12890 Feb 07 20:48	28° 15 '27	0°06'53	retrograde	12895 Jun 21 08:18	26° 18 '23'43	
behind sun begin	12890 Feb 07 14:32	28° 14 '30		opposition	12895 Sep 03 09:28	24° 18 '21'03	-0°24'39
behind sun end	12890 Feb 08 03:03	28° 16 '24		min. Earth dist.	12895 Sep 03 18:41	24° 18 '20'02	17.40677 AU
max. Earth dist.	12890 Feb 07 10:00	28° 13 '47	19.38941 AU	direct	12895 Nov 18 03:42	22° 18 '15'51	
morning rise	12890 Feb 24 09:18	29° 16 '54		evening set	12896 Feb 21 03:56	25° 18 '42'54	
	12890 Mar 08 11:25	0° 18 '					
retrograde	12890 May 28 09:01	2° 18 '40'26		conjunction	12896 Mar 08 14:57	26° 18 '44'12	-0°24'37
opposition	12890 Aug 10 11:13	0° 18 '37'08	0°04'08	minimum elong	12896 Mar 08 14:57	26° 18 '44'12	0°24'28
min. Earth dist.	12890 Aug 10 20:46	0° 18 '36'05	17.38504 AU	max. Earth dist.	12896 Mar 08 04:50	26° 18 '42'37	19.41466 AU
	12890 Aug 24 20:33	30° 18 '		morning rise	12896 Mar 24 23:42	27° 18 '45'11	
direct	12890 Oct 24 19:58	28° 31 '52			12896 May 06 00:16	0° 18 '	
	12890 Dec 22 14:16	0° 18 '		retrograde	12896 Jun 25 08:03	1° 18 '07'38	
evening set	12891 Jan 27 10:29	1° 18 '58'14			12896 Aug 16 11:26	30° 18 '	
				opposition	12896 Sep 07 09:12	29° 18 '05'04	-0°30'03
conjunction	12891 Feb 13 00:03	2° 18 '59'53	0°01'03	min. Earth dist.	12896 Sep 07 17:17	29° 18 '04'11	17.42377 AU
minimum elong	12891 Feb 13 00:03	2° 18 '59'53	0°01'35	direct	12896 Nov 22 07:05	26° 18 '59'55	
behind sun begin	12891 Feb 12 17:18	2° 18 '58'51			12897 Feb 17 20:24	0° 18 '	
behind sun end	12891 Feb 13 06:48	3° 18 '00'54		evening set	12897 Feb 25 06:33	0° 18 '26'47	
max. Earth dist.	12891 Feb 12 12:17	2° 18 '58'03	19.38200 AU				
morning rise	12891 Mar 01 12:13	4° 18 '01'19		conjunction	12897 Mar 13 16:51	1° 18 '27'55	-0°29'22
desc. node	12891 Apr 28 17:36	6° 18 '52'04		minimum elong	12897 Mar 13 16:51	1° 18 '27'55	0°29'17
retrograde	12891 Jun 02 09:25	7° 18 '24'50		max. Earth dist.	12897 Mar 13 06:55	1° 18 '26'23	19.43373 AU
opposition	12891 Aug 15 10:33	5° 18 '21'40	-0°01'44	morning rise	12897 Mar 30 00:51	2° 18 '28'45	
min. Earth dist.	12891 Aug 15 20:01	5° 18 '20'38	17.38031 AU	retrograde	12897 Jun 30 05:31	5° 18 '50'47	
direct	12891 Oct 29 20:38	3° 18 '16'23		opposition	12897 Sep 12 08:56	3° 18 '48'19	-0°35'14
evening set	12892 Feb 01 14:02	6° 18 '43'06		min. Earth dist.	12897 Sep 12 17:33	3° 18 '47'23	17.44500 AU
				direct	12897 Nov 27 08:29	1° 18 '43'12	
conjunction	12892 Feb 18 03:22	7° 18 '44'44	-0°04'19	evening set	12898 Mar 02 08:45	5° 18 '09'47	
minimum elong	12892 Feb 18 03:21	7° 18 '44'44	0°03'51				
behind sun begin	12892 Feb 17 20:41	7° 18 '43'43		conjunction	12898 Mar 18 18:20	6° 18 '10'46	-0°33'54
behind sun end	12892 Feb 18 10:00	7° 18 '45'45		minimum elong	12898 Mar 18 18:20	6° 18 '10'46	0°33'55
max. Earth dist.	12892 Feb 17 16:55	7° 18 '43'07	19.37971 AU	max. Earth dist.	12898 Mar 18 08:56	6° 18 '09'18	19.45710 AU
morning rise	12892 Mar 05 14:48	8° 18 '46'08		morning rise	12898 Apr 04 01:33	7° 18 '11'24	
retrograde	12892 Jun 06 10:24	12° 18 '09'35		retrograde	12898 Jul 05 04:52	10° 18 '32'58	
opposition	12892 Aug 19 10:07	10° 18 '06'33	-0°07'35	opposition	12898 Sep 17 08:14	8° 18 '30'36	-0°40'10
min. Earth dist.	12892 Aug 19 19:15	10° 18 '05'33	17.38036 AU	min. Earth dist.	12898 Sep 17 15:24	8° 18 '29'49	17.47045 AU
direct	12892 Nov 02 21:39	8° 18 '01'18		direct	12898 Dec 02 11:34	6° 18 '25'32	

evening set	12899 Mar 07 10:23	9° Υ 51'45		max. Earth dist.	12905 Apr 21 07:02	8° \mathcal{B} 35'39	19.74806 AU
				morning rise	12905 May 07 10:22	9° \mathcal{B} 34'56	
conjunction	12899 Mar 23 19:12	10° Υ 52'32 -0°38'12		retrograde	12905 Aug 07 03:13	12° \mathcal{B} 52'19	
minimum elong	12899 Mar 23 19:12	10° Υ 52'32 0°38'16		opposition	12905 Oct 20 20:14	10° \mathcal{B} 51'15 -1°05'11	
max. Earth dist.	12899 Mar 23 10:44	10° Υ 51'13 19.48474 AU		min. Earth dist.	12905 Oct 20 22:16	10° \mathcal{B} 51'02 17.77620 AU	
morning rise	12899 Apr 09 01:31	11° Υ 52'59		direct	12906 Jan 05 10:47	8° \mathcal{B} 47'39	
retrograde	12899 Jul 10 01:27	15° Υ 14'00		evening set	12906 Apr 10 01:54	12° \mathcal{B} 09'27	
opposition	12899 Sep 22 07:36	13° Υ 11'45 -0°44'49					
min. Earth dist.	12899 Sep 22 15:06	13° Υ 10'56 17.50046 AU		conjunction	12906 Apr 26 04:46	13° \mathcal{B} 08'29 -0°59'30	
direct	12899 Dec 07 11:29	11° Υ 06'45		minimum elong	12906 Apr 26 04:45	13° \mathcal{B} 08'29 1°00'06	
evening set	12900 Mar 12 11:12	14° Υ 32'30		max. Earth dist.	12906 Apr 26 02:27	13° \mathcal{B} 08'07 19.80457 AU	
				morning rise	12906 May 12 05:27	14° \mathcal{B} 07'12	
conjunction	12900 Mar 28 19:08	15° Υ 33'04 -0°42'13			12906 May 27 09:06	15° \mathcal{B}	
minimum elong	12900 Mar 28 19:08	15° Υ 33'04 0°42'23		retrograde	12906 Aug 11 22:17	17° \mathcal{B} 23'56	
max. Earth dist.	12900 Mar 28 11:11	15° Υ 31'50 19.51713 AU		opposition	12906 Oct 25 17:00	15° \mathcal{B} 23'06 -1°07'10	
morning rise	12900 Apr 14 00:43	16° Υ 33'18		min. Earth dist.	12906 Oct 25 17:46	15° \mathcal{B} 23'01 17.83373 AU	
retrograde	12900 Jul 15 00:30	19° Υ 53'46			12906 Nov 03 21:30	15° \mathcal{R} \mathcal{B}	
opposition	12900 Sep 27 06:30	17° Υ 51'37 -0°49'08		direct	12907 Jan 10 09:51	13° \mathcal{B} 19'48	
min. Earth dist.	12900 Sep 27 12:08	17° Υ 51'01 17.53524 AU			12907 Mar 15 08:59	15° \mathcal{B}	
direct	12900 Dec 12 13:46	15° Υ 46'44		evening set	12907 Apr 14 21:41	16° \mathcal{B} 40'46	
evening set	12901 Mar 17 11:25	19° Υ 11'58					
				conjunction	12907 Apr 30 23:54	17° \mathcal{B} 39'32 -1°01'07	
conjunction	12901 Apr 02 18:37	20° Υ 12'18 -0°45'57		minimum elong	12907 Apr 30 23:53	17° \mathcal{B} 39'32 1°01'46	
minimum elong	12901 Apr 02 18:37	20° Υ 12'18 0°46'11		max. Earth dist.	12907 Apr 30 23:29	17° \mathcal{B} 39'28 19.86285 AU	
max. Earth dist.	12901 Apr 02 12:17	20° Υ 11'19 19.55427 AU		morning rise	12907 May 16 23:40	18° \mathcal{B} 37'58	
morning rise	12901 Apr 18 23:13	21° Υ 12'18		retrograde	12907 Aug 16 15:28	21° \mathcal{B} 54'02	
retrograde	12901 Jul 19 19:58	24° Υ 32'10		opposition	12907 Oct 30 13:30	19° \mathcal{B} 53'27 -1°08'44	
opposition	12901 Oct 02 05:07	22° Υ 30'11 -0°53'07		min. Earth dist.	12907 Oct 30 14:00	19° \mathcal{B} 53'24 17.89263 AU	
min. Earth dist.	12901 Oct 02 10:50	22° Υ 29'34 17.57491 AU		direct	12908 Jan 15 07:44	17° \mathcal{B} 50'29	
direct	12901 Dec 17 12:35	20° Υ 25'27		evening set	12908 Apr 18 16:38	21° \mathcal{B} 10'33	
evening set	12902 Mar 22 11:04	23° Υ 50'06					
				conjunction	12908 May 04 17:55	22° \mathcal{B} 09'02 -1°02'21	
conjunction	12902 Apr 07 17:19	24° Υ 50'12 -0°49'21		minimum elong	12908 May 04 17:54	22° \mathcal{B} 09'01 1°03'04	
minimum elong	12902 Apr 07 17:19	24° Υ 50'12 0°49'40		max. Earth dist.	12908 May 04 17:08	22° \mathcal{B} 08'54 19.92226 AU	
max. Earth dist.	12902 Apr 07 11:12	24° Υ 49'15 19.59643 AU		morning rise	12908 May 20 17:11	23° \mathcal{B} 07'12	
morning rise	12902 Apr 23 21:12	25° Υ 49'57		retrograde	12908 Aug 20 08:38	26° \mathcal{B} 22'35	
retrograde	12902 Jul 24 18:00	29° Υ 09'14		opposition	12908 Nov 03 09:24	24° \mathcal{B} 22'13 -1°09'53	
opposition	12902 Oct 07 03:23	27° Υ 07'25 -0°56'43		min. Earth dist.	12908 Nov 03 08:57	24° \mathcal{B} 22'16 17.95246 AU	
min. Earth dist.	12902 Oct 07 07:10	27° Υ 07'00 17.61941 AU		direct	12909 Jan 19 05:15	22° \mathcal{B} 19'33	
direct	12902 Dec 22 13:56	25° Υ 02'55		evening set	12909 Apr 23 10:44	25° \mathcal{B} 38'42	
evening set	12903 Mar 27 09:47	28° Υ 26'55					
				conjunction	12909 May 09 11:27	26° \mathcal{B} 36'54 -1°03'12	
conjunction	12903 Apr 12 15:18	29° Υ 26'46 -0°52'26		minimum elong	12909 May 09 11:27	26° \mathcal{B} 36'54 1°03'57	
minimum elong	12903 Apr 12 15:18	29° Υ 26'46 0°52'49		max. Earth dist.	12909 May 09 12:22	26° \mathcal{B} 37'02 19.98225 AU	
max. Earth dist.	12903 Apr 12 11:14	29° Υ 26'09 19.64314 AU		morning rise	12909 May 25 09:54	27° \mathcal{B} 34'48	
	12903 Apr 21 14:09	0° \mathcal{B}			12909 Jul 12 13:56	0° \mathcal{I}	
morning rise	12903 Apr 28 18:11	0° \mathcal{B} 26'16		retrograde	12909 Aug 25 00:50	0° \mathcal{I} 49'28	
retrograde	12903 Jul 29 12:42	3° \mathcal{B} 44'56			12909 Oct 09 00:31	30° \mathcal{R} \mathcal{B}	
opposition	12903 Oct 12 01:27	1° \mathcal{B} 43'21 -0°59'57		opposition	12909 Nov 08 04:40	28° \mathcal{B} 49'19 -1°10'37	
min. Earth dist.	12903 Oct 12 05:10	1° \mathcal{B} 42'57 17.66823 AU		min. Earth dist.	12909 Nov 08 03:49	28° \mathcal{B} 49'24 18.01248 AU	
	12903 Nov 28 21:06	30° \mathcal{R} Υ		direct	12910 Jan 24 02:27	26° \mathcal{B} 46'57	
direct	12903 Dec 27 12:18	29° Υ 39'08			12910 Apr 26 17:18	0° \mathcal{I}	
	12904 Jan 24 20:23	0° \mathcal{B}		evening set	12910 Apr 28 04:08	0° \mathcal{I} 05'09	
evening set	12904 Mar 31 07:56	3° \mathcal{B} 02'27					
				conjunction	12910 May 14 03:58	1° \mathcal{I} 03'03 -1°03'40	
conjunction	12904 Apr 16 12:28	4° \mathcal{B} 02'02 -0°55'09		minimum elong	12910 May 14 03:58	1° \mathcal{I} 03'03 1°04'29	
minimum elong	12904 Apr 16 12:27	4° \mathcal{B} 02'02 0°55'36		max. Earth dist.	12910 May 14 04:29	1° \mathcal{I} 03'08 20.04232 AU	
max. Earth dist.	12904 Apr 16 08:25	4° \mathcal{B} 01'25 19.69398 AU		morning rise	12910 May 30 01:58	2° \mathcal{I} 00'42	
morning rise	12904 May 02 14:42	5° \mathcal{B} 01'17		retrograde	12910 Aug 29 16:06	5° \mathcal{I} 14'40	
retrograde	12904 Aug 02 09:20	8° \mathcal{B} 19'19		opposition	12910 Nov 12 23:30	3° \mathcal{I} 14'41 -1°10'55	
opposition	12904 Oct 15 22:56	6° \mathcal{B} 17'59 -1°02'46		min. Earth dist.	12910 Nov 12 22:00	3° \mathcal{I} 14'50 18.07259 AU	
min. Earth dist.	12904 Oct 16 01:01	6° \mathcal{B} 17'45 17.72084 AU		direct	12911 Jan 28 22:10	1° \mathcal{I} 12'35	
direct	12904 Dec 31 12:39	4° \mathcal{B} 14'03		evening set	12911 May 02 20:16	4° \mathcal{I} 29'48	
evening set	12905 Apr 05 05:11	7° \mathcal{B} 36'38					
				conjunction	12911 May 18 19:36	5° \mathcal{I} 27'25 -1°03'46	
conjunction	12905 Apr 21 09:03	8° \mathcal{B} 35'58 -0°57'30		minimum elong	12911 May 18 19:36	5° \mathcal{I} 27'25 1°04'37	
minimum elong	12905 Apr 21 09:03	8° \mathcal{B} 35'57 0°58'03		max. Earth dist.	12911 May 18 21:50	5° \mathcal{I} 27'46 20.10234 AU	

morning rise	12911 Jun 03 16:56	6° Π 24'48	direct	12918 Feb 28 19:13	1° Θ 21'48
retrograde	12911 Sep 03 07:05	9° Π 38'03	evening set	12918 Jun 01 13:58	4° Θ 32'06
opposition	12911 Nov 17 17:44	7° Π 38'14 -1°10'48			
min. Earth dist.	12911 Nov 17 15:24	7° Π 38'28 18.13242 AU	conjunction	12918 Jun 17 09:49	5° Θ 27'59 -0°54'36
direct	12912 Feb 02 18:04	5° Π 36'23	minimum elong	12918 Jun 17 09:49	5° Θ 27'59 0°55'35
evening set	12912 May 06 11:44	8° Π 52'35	max. Earth dist.	12918 Jun 17 17:30	5° Θ 29'07 20.52085 AU
			morning rise	12918 Jul 03 04:55	6° Θ 23'46
conjunction	12912 May 22 10:18	9° Π 49'56 -1°03'30	retrograde	12918 Oct 03 00:16	9° Θ 32'33
minimum elong	12912 May 22 10:18	9° Π 49'56 1°04'23	opposition	12918 Dec 18 07:55	7° Θ 33'50 -0°59'13
max. Earth dist.	12912 May 22 12:26	9° Π 50'15 20.16214 AU	min. Earth dist.	12918 Dec 18 00:17	7° Θ 34'37 18.54971 AU
morning rise	12912 Jun 07 07:17	10° Π 47'03	direct	12919 Mar 05 07:58	5° Θ 34'03
retrograde	12912 Sep 06 20:52	13° Π 59'35	evening set	12919 Jun 05 23:41	8° Θ 43'26
opposition	12912 Nov 21 11:11	11° Π 59'54 -1°10'16			
min. Earth dist.	12912 Nov 21 08:23	12° Π 00'11 18.19228 AU	conjunction	12919 Jun 21 19:20	9° Θ 39'06 -0°52'03
direct	12913 Feb 06 11:48	9° Π 58'17	minimum elong	12919 Jun 21 19:20	9° Θ 39'06 0°53'02
evening set	12913 May 11 02:06	13° Π 13'28	max. Earth dist.	12919 Jun 22 04:02	9° Θ 40'23 20.57773 AU
			morning rise	12919 Jul 07 14:17	10° Θ 34'41
conjunction	12913 May 27 00:15	14° Π 10'33 -1°02'51	retrograde	12919 Oct 07 12:56	13° Θ 42'59
minimum elong	12913 May 27 00:15	14° Π 10'33 1°03'46	opposition	12919 Dec 22 21:27	11° Θ 44'26 -0°56'14
max. Earth dist.	12913 May 27 04:03	14° Π 11'07 20.22199 AU	min. Earth dist.	12919 Dec 22 12:29	11° Θ 45'21 18.60534 AU
morning rise	12913 Jun 11 20:42	15° Π 07'25	direct	12920 Mar 08 22:24	9° Θ 44'57
retrograde	12913 Sep 11 10:45	18° Π 19'14	evening set	12920 Jun 09 09:04	12° Θ 53'29
opposition	12913 Nov 26 04:05	16° Π 19'41 -1°09'20			
min. Earth dist.	12913 Nov 26 00:02	16° Π 20'06 18.25209 AU	conjunction	12920 Jun 25 04:24	13° Θ 48'57 -0°49'15
direct	12914 Feb 11 05:37	14° Π 18'20	minimum elong	12920 Jun 25 04:25	13° Θ 48'57 0°50'13
evening set	12914 May 15 15:42	17° Π 32'29	max. Earth dist.	12920 Jun 25 13:16	13° Θ 50'16 20.63202 AU
			morning rise	12920 Jul 10 23:20	14° Θ 44'23
conjunction	12914 May 31 13:10	18° Π 29'18 -1°01'52	retrograde	12920 Oct 10 22:10	17° Θ 52'12
minimum elong	12914 May 31 13:10	18° Π 29'18 1°02'48	opposition	12920 Dec 26 10:31	15° Θ 53'48 -0°52'58
max. Earth dist.	12914 May 31 17:13	18° Π 29'55 20.28190 AU	min. Earth dist.	12920 Dec 26 02:10	15° Θ 54'38 18.65824 AU
morning rise	12914 Jun 16 09:17	19° Π 25'56	direct	12921 Mar 13 09:44	13° Θ 54'36
retrograde	12914 Sep 15 23:34	22° Π 37'05	evening set	12921 Jun 13 17:52	17° Θ 02'18
opposition	12914 Nov 30 20:27	20° Π 37'40 -1°08'01			
min. Earth dist.	12914 Nov 30 15:53	20° Π 38'08 18.31226 AU	conjunction	12921 Jun 29 13:05	17° Θ 57'36 -0°46'12
direct	12915 Feb 15 21:40	18° Π 36'35	minimum elong	12921 Jun 29 13:05	17° Θ 57'36 0°47'09
evening set	12915 May 20 04:21	21° Π 49'44	max. Earth dist.	12921 Jun 29 22:28	17° Θ 58'58 20.68332 AU
			morning rise	12921 Jul 15 07:56	18° Θ 52'51
conjunction	12915 Jun 05 01:26	22° Π 46'18 -1°00'31	retrograde	12921 Oct 15 09:45	22° Θ 00'14
minimum elong	12915 Jun 05 01:26	22° Π 46'18 1°01'29	opposition	12921 Dec 30 23:08	20° Θ 01'57 -0°49'27
max. Earth dist.	12915 Jun 05 07:08	22° Π 47'09 20.34220 AU	min. Earth dist.	12921 Dec 30 13:35	20° Θ 02'55 18.70768 AU
morning rise	12915 Jun 20 21:08	23° Π 42'42	direct	12922 Mar 17 23:30	18° Θ 03'02
retrograde	12915 Sep 20 12:50	26° Π 53'12	evening set	12922 Jun 18 02:08	21° Θ 09'56
opposition	12915 Dec 05 12:06	24° Π 53'57 -1°06'20			
min. Earth dist.	12915 Dec 05 05:57	24° Π 54'35 18.37255 AU	conjunction	12922 Jul 03 21:07	22° Θ 05'03 -0°42'55
direct	12916 Feb 20 13:47	22° Π 53'11	minimum elong	12922 Jul 03 21:07	22° Θ 05'03 0°43'53
evening set	12916 May 23 16:14	26° Π 05'21	max. Earth dist.	12922 Jul 04 06:34	22° Θ 06'26 20.73082 AU
			morning rise	12922 Jul 19 16:00	23° Θ 00'10
conjunction	12916 Jun 08 12:49	27° Π 01'40 -0°58'51	retrograde	12922 Oct 19 18:26	26° Θ 07'10
minimum elong	12916 Jun 08 12:49	27° Π 01'40 0°59'49	opposition	12923 Jan 04 11:31	24° Θ 08'58 -0°45'41
max. Earth dist.	12916 Jun 08 18:52	27° Π 02'34 20.40247 AU	min. Earth dist.	12923 Jan 04 02:45	24° Θ 09'51 18.75327 AU
morning rise	12916 Jun 24 08:21	27° Π 57'51	direct	12923 Mar 22 09:38	22° Θ 10'17
	12916 Aug 03 01:38	0° Θ	evening set	12923 Jun 22 09:54	25° Θ 16'24
retrograde	12916 Sep 24 00:45	1° Θ 07'45			
	12916 Nov 17 11:52	30° \mathcal{R} Π	conjunction	12923 Jul 08 04:52	26° Θ 11'22 -0°39'27
opposition	12916 Dec 09 03:16	29° Π 08'40 -1°04'17	minimum elong	12923 Jul 08 04:52	26° Θ 11'22 0°40'22
min. Earth dist.	12916 Dec 08 20:56	29° Π 09'19 18.43268 AU	max. Earth dist.	12923 Jul 08 14:33	26° Θ 12'47 20.77436 AU
direct	12917 Feb 24 03:57	27° Π 08'13	morning rise	12923 Jul 23 23:48	27° Θ 06'21
	12917 May 22 11:50	0° Θ		12923 Oct 01 11:03	0° \mathcal{O}
evening set	12917 May 28 03:23	0° Θ 19'26	retrograde	12923 Oct 24 04:45	0° \mathcal{O} 12'58
				12923 Nov 16 04:34	30° \mathcal{R} Θ
conjunction	12917 Jun 12 23:40	1° Θ 15'32 -0°56'53	opposition	12924 Jan 08 23:08	28° Θ 14'49 -0°41'43
minimum elong	12917 Jun 12 23:40	1° Θ 15'32 0°57'52	min. Earth dist.	12924 Jan 08 13:15	28° Θ 15'49 18.79459 AU
max. Earth dist.	12917 Jun 13 07:01	1° Θ 16'37 20.46228 AU	direct	12924 Mar 25 22:24	26° Θ 16'19
morning rise	12917 Jun 28 18:54	2° Θ 11'30	evening set	12924 Jun 25 17:13	29° Θ 21'42
retrograde	12917 Sep 28 13:42	5° Θ 20'49		12924 Jul 06 18:42	0° \mathcal{O}
opposition	12917 Dec 13 17:42	3° Θ 21'56 -1°01'55			
min. Earth dist.	12917 Dec 13 09:54	3° Θ 22'44 18.49188 AU	conjunction	12924 Jul 11 12:07	0° \mathcal{O} 16'33 -0°35'46

minimum elong	12924 Jul 11 12:07	0°Ω16'33	0°36'41	behind sun end	12930 Aug 05 04:21	24°Ω28'10	
max. Earth dist.	12924 Jul 11 21:46	0°Ω17'57	20.81349 AU	max. Earth dist.	12930 Aug 05 11:06	24°Ω29'09	20.97261 AU
morning rise	12924 Jul 27 07:13	1°Ω11'25		morning rise	12930 Aug 20 20:13	25°Ω22'00	
retrograde	12924 Oct 27 12:58	4°Ω17'41		retrograde	12930 Nov 21 13:13	28°Ω27'13	
opposition	12925 Jan 12 10:30	2°Ω19'32	-0°37'33	opposition	12931 Feb 06 21:40	26°Ω28'59	-0°09'42
min. Earth dist.	12925 Jan 12 01:32	2°Ω20'27	18.83159 AU	min. Earth dist.	12931 Feb 06 11:01	26°Ω30'03	18.98081 AU
direct	12925 Mar 30 07:37	0°Ω21'12		direct	12931 Apr 24 11:48	24°Ω31'26	
evening set	12925 Jun 29 23:56	3°Ω25'52		evening set	12931 Jul 24 09:14	27°Ω33'07	
conjunction	12925 Jul 15 18:52	4°Ω20'35	-0°31'56	conjunction	12931 Aug 09 04:58	28°Ω27'25	-0°06'35
minimum elong	12925 Jul 15 18:52	4°Ω20'35	0°32'48	minimum elong	12931 Aug 09 04:57	28°Ω27'24	0°07'11
max. Earth dist.	12925 Jul 16 04:44	4°Ω22'01	20.84847 AU	behind sun begin	12931 Aug 08 22:54	28°Ω26'34	
morning rise	12925 Jul 31 14:07	5°Ω15'21		behind sun end	12931 Aug 09 11:01	28°Ω28'15	
retrograde	12925 Oct 31 22:12	8°Ω21'17		max. Earth dist.	12931 Aug 09 16:28	28°Ω29'03	20.98803 AU
opposition	12926 Jan 16 21:12	6°Ω23'09	-0°33'13	morning rise	12931 Aug 25 01:58	29°Ω21'53	
min. Earth dist.	12926 Jan 16 11:00	6°Ω24'10	18.86451 AU		12931 Sep 05 15:50	0°♊	
direct	12926 Apr 03 19:02	4°Ω24'56		retrograde	12931 Nov 25 22:25	2°♊27'07	
evening set	12926 Jul 04 06:17	7°Ω28'57		opposition	12932 Feb 11 06:22	0°♊28'53	-0°04'48
conjunction	12926 Jul 20 01:13	8°Ω23'33	-0°27'57	min. Earth dist.	12932 Feb 10 18:42	0°♊30'03	18.99438 AU
minimum elong	12926 Jul 20 01:13	8°Ω23'33	0°28'48		12932 Feb 23 09:59	30°♋	
max. Earth dist.	12926 Jul 20 11:22	8°Ω25'01	20.87954 AU	direct	12932 Apr 27 19:38	28°Ω31'28	
morning rise	12926 Aug 04 20:40	9°Ω18'13			12932 Jun 27 13:21	0°♊	
retrograde	12926 Nov 05 05:52	12°Ω23'54		evening set	12932 Jul 27 14:20	1°♊32'53	
opposition	12927 Jan 21 07:41	10°Ω25'43	-0°28'43	conjunction	12932 Aug 12 10:18	2°♊27'10	-0°02'09
min. Earth dist.	12927 Jan 20 22:13	10°Ω26'40	18.89396 AU	minimum elong	12932 Aug 12 10:18	2°♊27'10	0°02'41
direct	12927 Apr 08 03:27	8°Ω27'38		behind sun begin	12932 Aug 12 03:44	2°♊26'15	
evening set	12927 Jul 08 12:04	11°Ω31'02		behind sun end	12932 Aug 12 16:52	2°♊28'05	
conjunction	12927 Jul 24 07:06	12°Ω25'32	-0°23'51	max. Earth dist.	12932 Aug 12 21:58	2°♊28'50	20.99963 AU
minimum elong	12927 Jul 24 07:07	12°Ω25'32	0°24'38	morning rise	12932 Aug 28 07:41	3°♊21'40	
max. Earth dist.	12927 Jul 24 17:37	12°Ω27'03	20.90742 AU	retrograde	12932 Nov 29 04:52	6°♊26'57	
morning rise	12927 Aug 09 02:50	13°Ω20'09		asc. node	12933 Feb 05 16:23	4°♊50'06	
	12927 Sep 10 11:05	15°♋		opposition	12933 Feb 14 15:13	4°♊28'44	0°00'07
retrograde	12927 Nov 09 14:37	16°Ω25'37		min. Earth dist.	12933 Feb 14 04:40	4°♊29'47	19.00403 AU
	12928 Jan 12 00:10	15°♋		direct	12933 May 02 01:32	2°♊31'26	
opposition	12928 Jan 25 17:34	14°Ω27'25	-0°24'06	evening set	12933 Jul 31 19:22	5°♊32'38	
min. Earth dist.	12928 Jan 25 06:41	14°Ω28'30	18.92024 AU	conjunction	12933 Aug 16 15:36	6°♊26'55	0°02'25
direct	12928 Apr 11 13:13	12°Ω29'26		minimum elong	12933 Aug 16 15:36	6°♊26'55	0°01'56
	12928 Jul 01 23:54	15°♋		behind sun begin	12933 Aug 16 09:01	6°♊26'00	
evening set	12928 Jul 11 17:42	15°Ω32'19		behind sun end	12933 Aug 16 22:11	6°♊27'50	
conjunction	12928 Jul 27 12:50	16°Ω26'45	-0°19'38	max. Earth dist.	12933 Aug 17 03:03	6°♊28'33	21.00727 AU
minimum elong	12928 Jul 27 12:50	16°Ω26'45	0°20'22	morning rise	12933 Sep 01 13:25	7°♊21'26	
max. Earth dist.	12928 Jul 27 23:42	16°Ω28'18	20.93212 AU	retrograde	12933 Dec 03 14:27	10°♊26'50	
morning rise	12928 Aug 12 08:48	17°Ω21'18		opposition	12934 Feb 18 23:52	8°♊28'36	0°05'03
retrograde	12928 Nov 12 21:39	20°Ω26'37		min. Earth dist.	12934 Feb 18 12:30	8°♊29'44	19.00944 AU
opposition	12929 Jan 29 03:08	18°Ω28'24	-0°19'22	direct	12934 May 06 08:50	6°♊31'24	
min. Earth dist.	12929 Jan 28 17:01	18°Ω29'25	18.94350 AU	evening set	12934 Aug 05 00:37	9°♊32'27	
direct	12929 Apr 15 20:40	16°Ω30'34		conjunction	12934 Aug 20 21:08	10°♊26'45	0°06'52
evening set	12929 Jul 15 23:04	19°Ω32'59		minimum elong	12934 Aug 20 21:09	10°♊26'46	0°06'26
conjunction	12929 Jul 31 18:22	20°Ω27'21	-0°15'20	behind sun begin	12934 Aug 20 14:56	10°♊25'53	
minimum elong	12929 Jul 31 18:22	20°Ω27'21	0°16'02	behind sun end	12934 Aug 21 03:22	10°♊27'38	
behind sun begin	12929 Jul 31 17:33	20°Ω27'14		max. Earth dist.	12934 Aug 21 08:32	10°♊28'23	21.01032 AU
behind sun end	12929 Jul 31 19:11	20°Ω27'28		morning rise	12934 Sep 05 19:22	11°♊21'18	
max. Earth dist.	12929 Aug 01 05:27	20°Ω28'56	20.95397 AU	retrograde	12934 Dec 07 21:14	14°♊26'52	
morning rise	12929 Aug 16 14:39	21°Ω21'51		opposition	12935 Feb 23 08:34	12°♊28'35	0°09'56
retrograde	12929 Nov 17 06:29	24°Ω27'05		min. Earth dist.	12935 Feb 22 22:33	12°♊29'36	19.01016 AU
opposition	12930 Feb 02 12:25	22°Ω28'52	-0°14'34	direct	12935 May 10 14:42	10°♊31'28	
min. Earth dist.	12930 Feb 02 00:57	22°Ω30'01	18.96377 AU	evening set	12935 Aug 09 05:57	13°♊32'24	
direct	12930 Apr 20 05:19	20°Ω31'10		conjunction	12935 Aug 25 02:52	14°♊26'45	0°11'15
evening set	12930 Jul 20 04:09	23°Ω33'11		minimum elong	12935 Aug 25 02:51	14°♊26'45	0°10'53
conjunction	12930 Aug 04 23:37	24°Ω27'31	-0°10'58	behind sun begin	12935 Aug 24 21:50	14°♊26'02	
minimum elong	12930 Aug 04 23:37	24°Ω27'31	0°11'37	behind sun end	12935 Aug 25 07:52	14°♊27'27	
behind sun begin	12930 Aug 04 18:53	24°Ω26'51		max. Earth dist.	12935 Aug 25 13:34	14°♊28'16	21.00856 AU
				morning rise	12935 Sep 10 01:35	15°♊21'21	

retrograde	12935 Dec 12 06:59	18° 17 27'05		min. Earth dist.	12942 Mar 23 12:25	10° 15 35'04	18.87863 AU
opposition	12936 Feb 27 17:05	16° 17 28'44	0°14'48	direct	12942 Jun 07 14:10	8° 15 36'32	
min. Earth dist.	12936 Feb 27 06:36	16° 17 29'47	19.00573 AU	evening set	12942 Sep 06 00:55	11° 15 38'10	
direct	12936 May 13 21:43	14° 17 31'37					
evening set	12936 Aug 12 11:33	17° 17 32'31		conjunction	12942 Sep 22 01:01	12° 15 33'10	0°39'32
				minimum elong	12942 Sep 22 01:01	12° 15 33'10	0°39'39
conjunction	12936 Aug 28 08:49	18° 17 26'54	0°15'36	max. Earth dist.	12942 Sep 22 08:54	12° 15 34'18	20.86209 AU
minimum elong	12936 Aug 28 08:49	18° 17 26'54	0°15'18	morning rise	12942 Oct 08 03:26	13° 15 28'31	
behind sun begin	12936 Aug 28 06:40	18° 17 26'36		retrograde	12943 Jan 09 21:16	16° 15 36'26	
behind sun end	12936 Aug 28 10:57	18° 17 27'12		opposition	12943 Mar 28 05:01	14° 15 36'51	0°45'41
max. Earth dist.	12936 Aug 28 19:08	18° 17 28'23	21.00132 AU	min. Earth dist.	12943 Mar 27 22:17	14° 15 37'32	18.84521 AU
morning rise	12936 Sep 13 07:58	19° 17 21'34		direct	12943 Jun 11 19:53	12° 15 39'00	
retrograde	12936 Dec 15 14:11	22° 17 27'31		evening set	12943 Sep 10 08:23	15° 15 41'00	
opposition	12937 Mar 03 01:40	20° 17 29'03	0°19'35				
min. Earth dist.	12937 Mar 02 16:40	20° 17 29'58	18.99581 AU	conjunction	12943 Sep 26 09:01	16° 15 36'09	0°42'59
direct	12937 May 18 03:50	18° 17 31'55		minimum elong	12943 Sep 26 09:01	16° 15 36'09	0°43'09
evening set	12937 Aug 16 17:16	21° 17 32'47		max. Earth dist.	12943 Sep 26 16:03	16° 15 37'10	20.82742 AU
				morning rise	12943 Oct 12 12:06	17° 15 31'40	
conjunction	12937 Sep 01 14:56	22° 17 27'14	0°19'52	retrograde	12944 Jan 14 08:44	20° 15 40'05	
minimum elong	12937 Sep 01 14:56	22° 17 27'14	0°19'39	opposition	12944 Mar 31 13:58	18° 15 40'20	0°49'24
max. Earth dist.	12937 Sep 02 00:24	22° 17 28'35	20.98884 AU	min. Earth dist.	12944 Mar 31 06:56	18° 15 41'03	18.80923 AU
morning rise	12937 Sep 17 14:38	23° 17 21'59		direct	12944 Jun 15 03:47	16° 15 42'22	
retrograde	12937 Dec 20 00:07	26° 17 28'10		evening set	12944 Sep 13 16:18	19° 15 44'48	
opposition	12938 Mar 07 10:12	24° 17 29'32	0°24'17				
min. Earth dist.	12938 Mar 07 00:46	24° 17 30'29	18.98070 AU	conjunction	12944 Sep 29 17:31	20° 15 40'08	0°46'13
direct	12938 May 22 11:07	22° 17 32'19		minimum elong	12944 Sep 29 17:31	20° 15 40'07	0°46'29
evening set	12938 Aug 20 23:01	25° 17 33'13		max. Earth dist.	12944 Sep 30 00:37	20° 15 41'09	20.79002 AU
				morning rise	12944 Oct 15 21:06	21° 15 35'49	
conjunction	12938 Sep 05 21:09	26° 17 27'44	0°24'04	retrograde	12945 Jan 17 18:59	24° 15 44'47	
minimum elong	12938 Sep 05 21:09	26° 17 27'44	0°23'54	opposition	12945 Apr 04 23:17	22° 15 44'54	0°52'53
max. Earth dist.	12938 Sep 06 06:24	26° 17 29'03	20.97120 AU	min. Earth dist.	12945 Apr 04 17:21	22° 15 45'30	18.77057 AU
morning rise	12938 Sep 21 21:22	27° 17 22'34		direct	12945 Jun 19 10:21	20° 15 46'49	
	12938 Nov 19 20:16	0° 15		evening set	12945 Sep 18 00:51	23° 15 49'46	
retrograde	12938 Dec 24 07:32	0° 15 29'01					
	12939 Jan 28 14:04	30° 15 17		conjunction	12945 Oct 04 02:38	24° 15 45'16	0°49'14
opposition	12939 Mar 11 18:48	28° 15 30'12	0°28'52	minimum elong	12945 Oct 04 02:37	24° 15 45'16	0°49'32
min. Earth dist.	12939 Mar 11 10:42	28° 15 31'01	18.96076 AU	max. Earth dist.	12945 Oct 04 08:43	24° 15 46'09	20.75023 AU
direct	12939 May 26 17:10	26° 15 32'52		morning rise	12945 Oct 20 06:54	25° 15 41'09	
evening set	12939 Aug 25 05:06	29° 15 33'50		retrograde	12946 Jan 22 07:28	28° 15 50'43	
	12939 Sep 01 21:42	0° 15		opposition	12946 Apr 09 08:54	26° 15 50'42	0°56'06
				min. Earth dist.	12946 Apr 09 02:52	26° 15 51'19	18.72950 AU
conjunction	12939 Sep 10 03:41	0° 15 28'27	0°28'09	direct	12946 Jun 23 18:11	24° 15 52'30	
minimum elong	12939 Sep 10 03:41	0° 15 28'27	0°28'04	evening set	12946 Sep 22 10:00	27° 15 56'02	
max. Earth dist.	12939 Sep 10 12:11	0° 15 29'40	20.94922 AU				
morning rise	12939 Sep 26 04:29	1° 15 23'24		conjunction	12946 Oct 08 12:27	28° 15 51'44	0°52'00
retrograde	12939 Dec 28 17:51	4° 15 30'08		minimum elong	12946 Oct 08 12:26	28° 15 51'44	0°52'24
opposition	12940 Mar 15 03:03	2° 15 31'06	0°33'20	max. Earth dist.	12946 Oct 08 18:30	28° 15 52'37	20.70772 AU
min. Earth dist.	12940 Mar 14 18:33	2° 15 31'58	18.93679 AU	morning rise	12946 Oct 24 17:16	29° 15 47'50	
direct	12940 May 30 00:39	0° 15 33'38			12946 Oct 28 07:40	0° 15	
evening set	12940 Aug 28 11:25	3° 15 34'46		retrograde	12947 Jan 26 19:17	2° 15 58'00	
				opposition	12947 Apr 13 18:57	0° 15 57'52	0°59'04
conjunction	12940 Sep 13 10:30	4° 15 29'30	0°32'06	min. Earth dist.	12947 Apr 13 14:10	0° 15 58'22	18.68558 AU
minimum elong	12940 Sep 13 10:30	4° 15 29'30	0°32'04		12947 May 08 08:22	30° 15 17	
max. Earth dist.	12940 Sep 13 18:57	4° 15 30'42	20.92329 AU	direct	12947 Jun 28 02:08	28° 15 59'34	
morning rise	12940 Sep 29 11:47	5° 15 24'34			12947 Aug 16 04:37	0° 15	
retrograde	12941 Jan 01 01:36	8° 15 31'38		evening set	12947 Sep 26 20:02	2° 15 03'43	
opposition	12941 Mar 19 11:39	6° 15 32'25	0°37'38				
min. Earth dist.	12941 Mar 19 04:19	6° 15 33'09	18.90921 AU	conjunction	12947 Oct 12 23:01	2° 15 59'39	0°54'32
direct	12941 Jun 03 06:21	4° 15 34'49		minimum elong	12947 Oct 12 23:00	2° 15 59'39	0°54'59
evening set	12941 Sep 01 17:56	7° 15 36'10		max. Earth dist.	12947 Oct 13 03:36	3° 15 00'19	20.66239 AU
				morning rise	12947 Oct 29 04:32	3° 15 55'57	
conjunction	12941 Sep 17 17:28	8° 15 31'00	0°35'54	retrograde	12948 Jan 31 08:46	7° 15 06'47	
minimum elong	12941 Sep 17 17:28	8° 15 31'00	0°35'57	opposition	12948 Apr 17 05:12	5° 15 06'31	1°01'44
max. Earth dist.	12941 Sep 18 01:17	8° 15 32'08	20.89419 AU	min. Earth dist.	12948 Apr 17 00:49	5° 15 06'58	18.63871 AU
morning rise	12941 Oct 03 19:22	9° 15 26'12		direct	12948 Jul 01 10:29	3° 15 08'04	
retrograde	12942 Jan 05 12:27	12° 15 33'41		evening set	12948 Sep 30 06:46	6° 15 12'55	
opposition	12942 Mar 23 20:16	10° 15 34'16	0°41'46				

conjunction	12948 Oct 16 10:26	7°M.09'04	0°56'47	minimum elong	12954 Nov 11 21:53	2°♂36'12	1°04'41
minimum elong	12948 Oct 16 10:26	7°M.09'04	0°57'18	max. Earth dist.	12954 Nov 11 20:41	2°♂36'01	20.26453 AU
max. Earth dist.	12948 Oct 16 14:42	7°M.09'41	20.61377 AU	morning rise	12954 Nov 28 07:30	3°♂34'12	
morning rise	12948 Nov 01 16:26	8°M.05'35		retrograde	12955 Mar 02 13:44	6°♂49'38	
retrograde	12949 Feb 03 21:42	11°M.17'04		opposition	12955 May 17 18:12	4°♂47'54	1°10'59
opposition	12949 Apr 21 16:09	9°M.16'41	1°04'06	min. Earth dist.	12955 May 17 19:43	4°♂47'44	18.23360 AU
min. Earth dist.	12949 Apr 21 13:03	9°M.17'00	18.58841 AU	direct	12955 Jul 31 17:19	2°♂47'26	
direct	12949 Jul 05 20:01	7°M.18'03		evening set	12955 Oct 31 06:09	5°♂57'55	
evening set	12949 Oct 04 18:10	10°M.23'36					
conjunction	12949 Oct 20 22:24	11°M.19'59	0°58'46	conjunction	12955 Nov 16 14:21	6°♂55'52	1°03'50
minimum elong	12949 Oct 20 22:23	11°M.19'59	0°59'21	minimum elong	12955 Nov 16 14:21	6°♂55'52	1°04'42
max. Earth dist.	12949 Oct 21 00:51	11°M.20'20	20.56184 AU	max. Earth dist.	12955 Nov 16 11:21	6°♂55'25	20.20237 AU
morning rise	12949 Nov 06 05:08	12°M.16'45		morning rise	12955 Dec 03 00:39	7°♂54'08	
	12950 Jan 05 08:57	15°M.		retrograde	12956 Mar 06 06:36	11°♂10'14	
retrograde	12950 Feb 08 12:00	15°M.28'54		opposition	12956 May 21 08:09	9°♂08'16	1°10'46
	12950 Mar 15 01:33	15°K.M.		min. Earth dist.	12956 May 21 10:27	9°♂08'02	18.17170 AU
opposition	12950 Apr 26 03:29	13°M.28'19	1°06'09	direct	12956 Aug 04 06:31	7°♂07'29	
min. Earth dist.	12950 Apr 26 00:59	13°M.28'35	18.53480 AU	evening set	12956 Nov 03 22:45	10°♂18'54	
direct	12950 Jul 10 05:59	11°M.29'26		conjunction	12956 Nov 20 07:46	11°♂17'08	1°03'26
evening set	12950 Oct 09 06:22	14°M.35'44		minimum elong	12956 Nov 20 07:45	11°♂17'08	1°04'20
	12950 Oct 16 06:14	15°M.		max. Earth dist.	12956 Nov 20 05:15	11°♂16'46	20.14076 AU
conjunction	12950 Oct 25 11:22	15°M.32'22	1°00'26	morning rise	12956 Dec 06 18:24	12°♂15'39	
minimum elong	12950 Oct 25 11:22	15°M.32'22	1°01'03	retrograde	12957 Mar 11 00:02	15°♂32'25	
max. Earth dist.	12950 Oct 25 13:29	15°M.32'41	20.50652 AU	opposition	12957 May 25 22:40	13°♂30'17	1°10'09
morning rise	12950 Nov 10 18:36	16°M.29'23		min. Earth dist.	12957 May 26 01:09	13°♂30'02	18.11054 AU
retrograde	12951 Feb 13 01:31	19°M.42'10		direct	12957 Aug 08 20:35	11°♂29'11	
opposition	12951 Apr 30 15:07	17°M.41'23	1°07'51	evening set	12957 Nov 08 16:14	14°♂41'34	
min. Earth dist.	12951 Apr 30 13:51	17°M.41'31	18.47796 AU	conjunction	12957 Nov 25 01:44	15°♂40'04	1°02'40
direct	12951 Jul 14 16:40	15°M.42'15		minimum elong	12957 Nov 25 01:44	15°♂40'04	1°03'35
evening set	12951 Oct 13 19:20	18°M.49'18		max. Earth dist.	12957 Nov 24 21:30	15°♂39'26	20.08024 AU
conjunction	12951 Oct 30 00:55	19°M.46'12	1°01'48	morning rise	12957 Dec 11 13:06	16°♂38'52	
minimum elong	12951 Oct 30 00:54	19°M.46'11	1°02'30	retrograde	12958 Mar 15 18:11	19°♂56'18	
max. Earth dist.	12951 Oct 30 01:05	19°M.46'13	20.44845 AU	opposition	12958 May 30 13:51	17°♂54'01	1°09'07
morning rise	12951 Nov 15 08:54	20°M.43'26		min. Earth dist.	12958 May 30 17:17	17°♂53'39	18.05070 AU
retrograde	12952 Feb 17 16:34	23°M.56'54		direct	12958 Aug 13 10:30	15°♂52'37	
opposition	12952 May 04 03:13	21°M.55'52	1°09'12	evening set	12958 Nov 13 10:38	19°♂06'00	
min. Earth dist.	12952 May 04 02:41	21°M.55'55	18.41874 AU	conjunction	12958 Nov 29 20:57	20°♂04'48	1°01'31
direct	12952 Jul 18 04:12	19°M.56'24		minimum elong	12958 Nov 29 20:57	20°♂04'48	1°02'29
evening set	12952 Oct 17 08:47	23°M.04'16		max. Earth dist.	12958 Nov 29 17:11	20°♂04'14	20.02106 AU
conjunction	12952 Nov 02 15:08	24°M.01'25	1°02'50	morning rise	12958 Dec 16 08:36	21°♂03'50	
minimum elong	12952 Nov 02 15:07	24°M.01'25	1°03'34	retrograde	12959 Mar 20 13:48	24°♂21'55	
max. Earth dist.	12952 Nov 02 15:23	24°M.01'27	20.38818 AU	opposition	12959 Jun 04 05:26	22°♂19'32	1°07'40
morning rise	12952 Nov 18 23:33	24°M.58'54		min. Earth dist.	12959 Jun 04 08:57	22°♂19'10	17.99219 AU
retrograde	12953 Feb 21 06:27	28°M.13'01		direct	12959 Aug 18 02:05	20°♂17'53	
opposition	12953 May 08 15:48	26°M.11'45	1°10'11	evening set	12959 Nov 18 06:04	23°♂32'17	
min. Earth dist.	12953 May 08 16:04	26°M.11'43	18.35769 AU	conjunction	12959 Dec 04 16:47	24°♂31'21	1°00'00
direct	12953 Jul 22 15:57	24°M.11'58		minimum elong	12959 Dec 04 16:47	24°♂31'21	1°00'58
evening set	12953 Oct 21 23:10	27°M.20'40		max. Earth dist.	12959 Dec 04 11:13	24°♂30'31	19.96337 AU
conjunction	12953 Nov 07 06:03	28°M.18'04	1°03'31	morning rise	12959 Dec 21 05:03	25°♂30'39	
minimum elong	12953 Nov 07 06:03	28°M.18'04	1°04'19	retrograde	12960 Mar 24 09:10	28°♂49'25	
max. Earth dist.	12953 Nov 07 04:32	28°M.17'51	20.32668 AU	opposition	12960 Jun 07 21:51	26°♂46'56	1°05'48
morning rise	12953 Nov 23 15:14	29°M.15'49		min. Earth dist.	12960 Jun 08 02:39	26°♂46'25	17.93526 AU
	12953 Dec 06 17:34	0°♂		direct	12960 Aug 21 17:12	24°♂45'01	
retrograde	12954 Feb 25 22:30	2°♂30'36		evening set	12960 Nov 22 02:07	28°♂00'27	
opposition	12954 May 13 04:45	0°♂29'04	1°10'47	conjunction	12960 Dec 08 13:34	28°♂59'48	0°58'07
min. Earth dist.	12954 May 13 05:45	0°♂28'58	18.29587 AU	minimum elong	12960 Dec 08 13:34	28°♂59'48	0°59'06
	12954 May 24 20:48	30°K.M.		max. Earth dist.	12960 Dec 08 08:22	28°♂59'01	19.90710 AU
direct	12954 Jul 27 04:28	28°M.28'56		morning rise	12960 Dec 25 02:04	29°♂59'21	
	12954 Sep 25 15:41	0°♂			12960 Dec 25 06:26	0°♂	
evening set	12954 Oct 26 14:10	1°♂38'31		retrograde	12961 Mar 29 06:32	3°♂18'45	
conjunction	12954 Nov 11 21:54	2°♂36'12	1°03'51	opposition	12961 Jun 12 14:52	1°♂16'12	1°03'31
				min. Earth dist.	12961 Jun 12 19:40	1°♂15'41	17.87954 AU

	12961 Jul 14 15:50	30°R ⁷		conjunction	12968 Jan 11 12:08	1°≈05'07	0°35'19
direct	12961 Aug 26 10:24	29° ⁷ 14'03		minimum elong	12968 Jan 11 12:08	1°≈05'08	0°36'12
	12961 Oct 07 06:55	0° ³		max. Earth dist.	12968 Jan 11 00:51	1°≈03'23	19.55373 AU
evening set	12961 Nov 26 23:25	2° ³ 30'31		morning rise	12968 Jan 28 02:04	2°≈06'07	
				retrograde	12968 Apr 30 16:31	5°≈28'48	
conjunction	12961 Dec 13 11:14	3° ³ 30'08	0°55'52	opposition	12968 Jul 14 06:03	3°≈25'31	0°37'00
minimum elong	12961 Dec 13 11:14	3° ³ 30'08	0°56'52	min. Earth dist.	12968 Jul 14 16:04	3°≈24'26	17.53371 AU
max. Earth dist.	12961 Dec 13 04:05	3° ³ 29'03	19.85195 AU	direct	12968 Sep 27 05:19	1°≈21'18	
morning rise	12961 Dec 30 00:14	4° ³ 29'56		evening set	12968 Dec 29 23:35	4°≈44'09	
retrograde	12962 Apr 03 03:03	7° ³ 49'57					
opposition	12962 Jun 17 08:32	5° ³ 47'19	1°00'50	conjunction	12969 Jan 15 13:52	5°≈45'18	0°30'53
min. Earth dist.	12962 Jun 17 15:00	5° ³ 46'37	17.82497 AU	minimum elong	12969 Jan 15 13:52	5°≈45'18	0°31'45
direct	12962 Aug 31 03:18	3° ³ 44'53		max. Earth dist.	12969 Jan 15 02:12	5°≈43'30	19.51465 AU
evening set	12962 Dec 01 21:27	7° ³ 02'23		morning rise	12969 Feb 01 03:51	6°≈46'25	
				retrograde	12969 May 05 16:05	10°≈09'23	
conjunction	12962 Dec 18 09:56	8° ³ 02'15	0°53'16	opposition	12969 Jul 19 03:12	8°≈06'01	0°31'56
minimum elong	12962 Dec 18 09:56	8° ³ 02'15	0°54'15	min. Earth dist.	12969 Jul 19 12:26	8°≈05'01	17.49687 AU
max. Earth dist.	12962 Dec 18 02:38	8° ³ 01'09	19.79784 AU	direct	12969 Oct 02 05:03	6°≈01'33	
morning rise	12963 Jan 03 23:08	9° ³ 02'18		evening set	12970 Jan 04 01:47	9°≈25'08	
retrograde	12963 Apr 08 01:28	12° ³ 22'52					
opposition	12963 Jun 22 02:47	10° ³ 20'08	0°57'46	conjunction	12970 Jan 20 16:13	10°≈26'25	0°26'13
min. Earth dist.	12963 Jun 22 09:12	10° ³ 19'27	17.77128 AU	minimum elong	12970 Jan 20 16:13	10°≈26'25	0°27'02
direct	12963 Sep 04 22:09	8° ³ 17'26		max. Earth dist.	12970 Jan 20 04:51	10°≈24'40	19.48016 AU
evening set	12963 Dec 06 20:19	11° ³ 35'54		morning rise	12970 Feb 06 05:58	11°≈27'39	
				retrograde	12970 May 10 14:37	14°≈50'50	
conjunction	12963 Dec 23 09:06	12° ³ 36'02	0°50'19	opposition	12970 Jul 24 00:48	12°≈47'26	0°26'38
minimum elong	12963 Dec 23 09:06	12° ³ 36'02	0°51'18	min. Earth dist.	12970 Jul 24 10:56	12°≈46'20	17.46497 AU
max. Earth dist.	12963 Dec 23 00:00	12° ³ 34'39	19.74470 AU	direct	12970 Oct 07 03:29	10°≈42'44	
morning rise	12964 Jan 08 22:37	13° ³ 36'17		evening set	12971 Jan 09 04:27	14°≈07'00	
retrograde	12964 Apr 11 22:44	16° ³ 57'23			12971 Jan 23 12:41	15°≈	
opposition	12964 Jun 25 21:44	14° ³ 54'33	0°54'18				
min. Earth dist.	12964 Jun 26 05:49	14° ³ 53'41	17.71888 AU	conjunction	12971 Jan 25 18:47	15°≈08'24	0°21'23
direct	12964 Sep 08 16:42	12° ³ 51'32		minimum elong	12971 Jan 25 18:47	15°≈08'24	0°22'09
evening set	12964 Dec 10 19:46	16° ³ 10'58		max. Earth dist.	12971 Jan 25 06:46	15°≈06'33	19.45102 AU
				morning rise	12971 Feb 11 08:27	16°≈09'43	
conjunction	12964 Dec 27 09:04	17° ³ 11'20	0°47'01	retrograde	12971 May 15 15:21	19°≈33'05	
minimum elong	12964 Dec 27 09:04	17° ³ 11'20	0°47'59	opposition	12971 Jul 28 22:48	17°≈29'41	0°21'08
max. Earth dist.	12964 Dec 26 23:46	17° ³ 09'54	19.69319 AU	min. Earth dist.	12971 Jul 29 08:03	17°≈28'40	17.43860 AU
morning rise	12965 Jan 12 22:45	18° ³ 11'48		direct	12971 Oct 12 03:55	15°≈24'48	
retrograde	12965 Apr 16 21:46	21° ³ 33'22		evening set	12972 Jan 14 07:11	18°≈49'42	
opposition	12965 Jun 30 17:02	19° ³ 30'25	0°50'28				
min. Earth dist.	12965 Jul 01 00:48	19° ³ 29'34	17.66827 AU	conjunction	12972 Jan 30 21:33	19°≈51'12	0°16'23
direct	12965 Sep 13 13:16	17° ³ 27'05		minimum elong	12972 Jan 30 21:34	19°≈51'12	0°17'06
evening set	12965 Dec 15 19:56	20° ³ 47'26		max. Earth dist.	12972 Jan 30 10:33	19°≈49'30	19.42742 AU
				morning rise	12972 Feb 16 10:48	20°≈52'35	
conjunction	12966 Jan 01 09:32	21° ³ 48'01	0°43'25	retrograde	12972 May 19 14:55	24°≈16'04	
minimum elong	12966 Jan 01 09:32	21° ³ 48'01	0°44'22	opposition	12972 Aug 01 21:17	22°≈12'43	0°15'29
max. Earth dist.	12965 Dec 31 23:01	21° ³ 46'25	19.64371 AU	min. Earth dist.	12972 Aug 02 07:01	22°≈11'40	17.41785 AU
morning rise	12966 Jan 17 23:25	22° ³ 48'41		direct	12972 Oct 16 02:48	20°≈07'44	
retrograde	12966 Apr 21 19:23	26° ³ 10'40		evening set	12973 Jan 18 10:27	23°≈33'10	
opposition	12966 Jul 05 13:00	24° ³ 07'36	0°46'18				
min. Earth dist.	12966 Jul 05 22:20	24° ³ 06'35	17.62010 AU	conjunction	12973 Feb 04 00:33	24°≈34'44	0°11'16
direct	12966 Sep 18 09:22	22° ³ 03'58		minimum elong	12973 Feb 04 00:33	24°≈34'44	0°11'55
evening set	12966 Dec 20 20:41	25° ³ 25'12		behind sun begin	12973 Feb 03 19:57	24°≈34'02	
				behind sun end	12973 Feb 04 05:09	24°≈35'26	
conjunction	12967 Jan 06 10:38	26° ³ 26'00	0°39'30	max. Earth dist.	12973 Feb 03 12:44	24°≈32'55	19.40963 AU
minimum elong	12967 Jan 06 10:38	26° ³ 26'00	0°40'26	morning rise	12973 Feb 20 13:38	25°≈36'10	
max. Earth dist.	12967 Jan 05 23:47	26° ³ 24'20	19.59705 AU	retrograde	12973 May 24 16:23	28°≈59'45	
morning rise	12967 Jan 23 00:36	27° ³ 26'50		opposition	12973 Aug 06 19:55	26°≈56'28	0°09'43
	12967 Mar 14 12:50	0°≈		min. Earth dist.	12973 Aug 07 05:05	26°≈55'28	17.40285 AU
retrograde	12967 Apr 26 18:33	0°≈49'11		direct	12973 Oct 21 03:09	24°≈51'24	
	12967 Jun 09 20:30	30°R ³		evening set	12974 Jan 23 13:53	28°≈17'21	
opposition	12967 Jul 10 09:09	28° ³ 46'00	0°41'48				
min. Earth dist.	12967 Jul 10 17:58	28° ³ 45'03	17.57501 AU	conjunction	12974 Feb 09 03:56	29°≈18'58	0°06'05
direct	12967 Sep 23 07:38	26° ³ 42'04		minimum elong	12974 Feb 09 03:55	29°≈18'58	0°06'41
	12967 Dec 24 18:28	0°≈		behind sun begin	12974 Feb 08 21:37	29°≈18'00	
evening set	12967 Dec 25 22:00	0°≈04'08		behind sun end	12974 Feb 09 10:13	29°≈19'55	

max. Earth dist.	12974 Feb 08 17:19	29° \approx 17'19	19.39723 AU	direct	12979 Nov 19 11:19	23° $\cancel{\text{H}}$ 19'21	
	12974 Feb 20 03:30	0° $\cancel{\text{H}}$		evening set	12980 Feb 22 11:07	26° $\cancel{\text{H}}$ 46'15	
morning rise	12974 Feb 25 16:26	0° $\cancel{\text{H}}$ 20'24					
retrograde	12974 May 29 16:49	3° $\cancel{\text{H}}$ 44'00		conjunction	12980 Mar 09 22:11	27° $\cancel{\text{H}}$ 47'31	-0°24'56
opposition	12974 Aug 11 19:01	1° $\cancel{\text{H}}$ 40'50	0°03'52	minimum elong	12980 Mar 09 22:11	27° $\cancel{\text{H}}$ 47'31	0°24'48
min. Earth dist.	12974 Aug 12 04:32	1° $\cancel{\text{H}}$ 39'48	17.39293 AU	max. Earth dist.	12980 Mar 09 12:11	27° $\cancel{\text{H}}$ 45'57	19.41765 AU
	12974 Sep 25 16:06	30° $\cancel{\text{R}}$ \approx		morning rise	12980 Mar 26 06:59	28° $\cancel{\text{H}}$ 48'28	
direct	12974 Oct 26 02:59	29° \approx 35'43			12980 Apr 15 18:39	0° $\cancel{\text{Y}}$	
	12974 Nov 25 05:45	0° $\cancel{\text{H}}$		retrograde	12980 Jun 26 15:41	2° $\cancel{\text{Y}}$ 10'49	
evening set	12975 Jan 28 17:40	3° $\cancel{\text{H}}$ 02'05		opposition	12980 Sep 08 16:58	0° $\cancel{\text{Y}}$ 08'11	-0°30'25
				min. Earth dist.	12980 Sep 09 01:13	0° $\cancel{\text{Y}}$ 07'17	17.42635 AU
conjunction	12975 Feb 14 07:11	4° $\cancel{\text{H}}$ 03'42	0°00'48		12980 Sep 11 20:31	30° $\cancel{\text{R}}$ $\cancel{\text{H}}$	
minimum elong	12975 Feb 14 07:11	4° $\cancel{\text{H}}$ 03'42	0°01'19	direct	12980 Nov 23 14:51	28° $\cancel{\text{H}}$ 02'59	
behind sun begin	12975 Feb 14 00:26	4° $\cancel{\text{H}}$ 02'40			12981 Jan 31 08:42	0° $\cancel{\text{Y}}$	
behind sun end	12975 Feb 14 13:55	4° $\cancel{\text{H}}$ 04'44		evening set	12981 Feb 26 13:47	1° $\cancel{\text{Y}}$ 29'41	
max. Earth dist.	12975 Feb 13 19:29	4° $\cancel{\text{H}}$ 01'53	19.38977 AU				
morning rise	12975 Mar 02 19:21	5° $\cancel{\text{H}}$ 05'08		conjunction	12981 Mar 15 00:06	2° $\cancel{\text{Y}}$ 30'48	-0°29'41
desc. node	12975 Apr 12 03:02	7° $\cancel{\text{H}}$ 15'33		minimum elong	12981 Mar 15 00:06	2° $\cancel{\text{Y}}$ 30'48	0°29'38
retrograde	12975 Jun 03 17:45	8° $\cancel{\text{H}}$ 28'42		max. Earth dist.	12981 Mar 14 14:06	2° $\cancel{\text{Y}}$ 29'15	19.43604 AU
opposition	12975 Aug 16 18:21	6° $\cancel{\text{H}}$ 25'38	-0°02'00	morning rise	12981 Mar 31 08:10	3° $\cancel{\text{Y}}$ 31'36	
min. Earth dist.	12975 Aug 17 03:42	6° $\cancel{\text{H}}$ 24'37	17.38786 AU	retrograde	12981 Jul 01 12:54	6° $\cancel{\text{Y}}$ 53'32	
direct	12975 Oct 31 03:49	4° $\cancel{\text{H}}$ 20'29		opposition	12981 Sep 13 16:27	4° $\cancel{\text{Y}}$ 50'58	-0°35'36
evening set	12976 Feb 02 21:22	7° $\cancel{\text{H}}$ 47'08		min. Earth dist.	12981 Sep 14 01:06	4° $\cancel{\text{Y}}$ 50'02	17.44711 AU
				direct	12981 Nov 28 15:48	2° $\cancel{\text{Y}}$ 45'47	
conjunction	12976 Feb 19 10:40	8° $\cancel{\text{H}}$ 48'46	-0°04'35	evening set	12982 Mar 03 15:52	6° $\cancel{\text{Y}}$ 12'13	
minimum elong	12976 Feb 19 10:40	8° $\cancel{\text{H}}$ 48'46	0°04'08				
behind sun begin	12976 Feb 19 04:02	8° $\cancel{\text{H}}$ 47'45		conjunction	12982 Mar 20 01:31	7° $\cancel{\text{Y}}$ 13'10	-0°34'14
behind sun end	12976 Feb 19 17:18	8° $\cancel{\text{H}}$ 49'46		minimum elong	12982 Mar 20 01:30	7° $\cancel{\text{Y}}$ 13'10	0°34'15
max. Earth dist.	12976 Feb 19 00:10	8° $\cancel{\text{H}}$ 47'08	19.38689 AU	max. Earth dist.	12982 Mar 19 16:23	7° $\cancel{\text{Y}}$ 11'45	19.45915 AU
morning rise	12976 Mar 06 22:07	9° $\cancel{\text{H}}$ 50'08		morning rise	12982 Apr 05 08:46	8° $\cancel{\text{Y}}$ 13'47	
retrograde	12976 Jun 07 18:04	13° $\cancel{\text{H}}$ 13'36		retrograde	12982 Jul 06 11:59	11° $\cancel{\text{Y}}$ 35'14	
opposition	12976 Aug 20 17:58	11° $\cancel{\text{H}}$ 10'38	-0°07'53	opposition	12982 Sep 18 15:45	9° $\cancel{\text{Y}}$ 32'46	-0°40'32
min. Earth dist.	12976 Aug 21 03:15	11° $\cancel{\text{H}}$ 09'37	17.38713 AU	min. Earth dist.	12982 Sep 18 22:54	9° $\cancel{\text{Y}}$ 32'00	17.47254 AU
direct	12976 Nov 04 05:24	9° $\cancel{\text{H}}$ 05'27		direct	12982 Dec 03 19:05	7° $\cancel{\text{Y}}$ 27'39	
evening set	12977 Feb 07 01:08	12° $\cancel{\text{H}}$ 32'19		evening set	12983 Mar 08 17:18	10° $\cancel{\text{Y}}$ 53'43	
conjunction	12977 Feb 23 13:50	13° $\cancel{\text{H}}$ 33'53	-0°09'48	conjunction	12983 Mar 25 02:07	11° $\cancel{\text{Y}}$ 54'28	-0°38'31
minimum elong	12977 Feb 23 13:50	13° $\cancel{\text{H}}$ 33'53	0°09'25	minimum elong	12983 Mar 25 02:07	11° $\cancel{\text{Y}}$ 54'28	0°38'38
behind sun begin	12977 Feb 23 08:13	13° $\cancel{\text{H}}$ 33'02		max. Earth dist.	12983 Mar 24 17:51	11° $\cancel{\text{Y}}$ 53'11	19.48697 AU
behind sun end	12977 Feb 23 19:26	13° $\cancel{\text{H}}$ 34'44		morning rise	12983 Apr 10 08:29	12° $\cancel{\text{Y}}$ 54'54	
max. Earth dist.	12977 Feb 23 02:17	13° $\cancel{\text{H}}$ 32'05	19.38831 AU	retrograde	12983 Jul 11 08:23	16° $\cancel{\text{Y}}$ 15'50	
morning rise	12977 Mar 12 00:50	14° $\cancel{\text{H}}$ 35'12		opposition	12983 Sep 23 14:59	14° $\cancel{\text{Y}}$ 13'30	-0°45'11
retrograde	12977 Jun 12 17:37	17° $\cancel{\text{H}}$ 58'29		min. Earth dist.	12983 Sep 23 22:16	14° $\cancel{\text{Y}}$ 12'43	17.50301 AU
opposition	12977 Aug 25 17:43	15° $\cancel{\text{H}}$ 55'36	-0°13'42	direct	12983 Dec 08 19:22	12° $\cancel{\text{Y}}$ 08'28	
min. Earth dist.	12977 Aug 26 03:09	15° $\cancel{\text{H}}$ 54'34	17.39070 AU	evening set	12984 Mar 12 18:08	15° $\cancel{\text{Y}}$ 34'06	
direct	12977 Nov 09 06:47	13° $\cancel{\text{H}}$ 50'23					
evening set	12978 Feb 12 04:45	17° $\cancel{\text{H}}$ 17'22		conjunction	12984 Mar 29 02:07	16° $\cancel{\text{Y}}$ 34'39	-0°42'33
				minimum elong	12984 Mar 29 02:07	16° $\cancel{\text{Y}}$ 34'39	0°42'43
conjunction	12978 Feb 28 17:05	18° $\cancel{\text{H}}$ 18'52	-0°14'57	max. Earth dist.	12984 Mar 28 18:37	16° $\cancel{\text{Y}}$ 33'29	19.52006 AU
minimum elong	12978 Feb 28 17:05	18° $\cancel{\text{H}}$ 18'52	0°14'40	morning rise	12984 Apr 14 07:43	17° $\cancel{\text{Y}}$ 34'52	
behind sun begin	12978 Feb 28 14:24	18° $\cancel{\text{H}}$ 18'27		retrograde	12984 Jul 15 06:41	20° $\cancel{\text{Y}}$ 55'16	
behind sun end	12978 Feb 28 19:46	18° $\cancel{\text{H}}$ 19'17		opposition	12984 Sep 27 13:42	18° $\cancel{\text{Y}}$ 53'05	-0°49'30
max. Earth dist.	12978 Feb 28 06:37	18° $\cancel{\text{H}}$ 17'14	19.39390 AU	min. Earth dist.	12984 Sep 27 19:04	18° $\cancel{\text{Y}}$ 52'30	17.53868 AU
morning rise	12978 Mar 17 03:18	19° $\cancel{\text{H}}$ 20'05		direct	12984 Dec 12 21:09	16° $\cancel{\text{Y}}$ 48'12	
retrograde	12978 Jun 17 17:40	22° $\cancel{\text{H}}$ 43'06		evening set	12985 Mar 17 18:17	20° $\cancel{\text{Y}}$ 13'21	
opposition	12978 Aug 30 17:25	20° $\cancel{\text{H}}$ 40'19	-0°19'25				
min. Earth dist.	12978 Aug 31 02:24	20° $\cancel{\text{H}}$ 39'20	17.39827 AU	conjunction	12985 Apr 03 01:32	21° $\cancel{\text{Y}}$ 13'41	-0°46'16
direct	12978 Nov 14 09:49	18° $\cancel{\text{H}}$ 35'06		minimum elong	12985 Apr 03 01:31	21° $\cancel{\text{Y}}$ 13'41	0°46'32
evening set	12979 Feb 17 08:16	22° $\cancel{\text{H}}$ 02'05		max. Earth dist.	12985 Apr 02 19:27	21° $\cancel{\text{Y}}$ 12'44	19.55824 AU
				morning rise	12985 Apr 19 06:12	22° $\cancel{\text{Y}}$ 13'40	
conjunction	12979 Mar 05 19:52	23° $\cancel{\text{H}}$ 03'28	-0°20'01	retrograde	12985 Jul 20 02:55	25° $\cancel{\text{Y}}$ 33'31	
minimum elong	12979 Mar 05 19:52	23° $\cancel{\text{H}}$ 03'28	0°19'47	opposition	12985 Oct 02 12:22	23° $\cancel{\text{Y}}$ 31'32	-0°53'28
max. Earth dist.	12979 Mar 05 08:45	23° $\cancel{\text{H}}$ 01'45	19.40359 AU	min. Earth dist.	12985 Oct 02 17:49	23° $\cancel{\text{Y}}$ 30'57	17.57939 AU
morning rise	12979 Mar 22 05:28	24° $\cancel{\text{H}}$ 04'35		direct	12985 Dec 17 20:22	21° $\cancel{\text{Y}}$ 26'52	
retrograde	12979 Jun 22 16:02	27° $\cancel{\text{H}}$ 27'18		evening set	12986 Mar 22 17:52	24° $\cancel{\text{Y}}$ 51'28	
opposition	12979 Sep 04 17:18	25° $\cancel{\text{H}}$ 24'34	-0°25'00				
min. Earth dist.	12979 Sep 05 02:34	25° $\cancel{\text{H}}$ 23'34	17.41019 AU	conjunction	12986 Apr 08 00:11	25° $\cancel{\text{Y}}$ 51'33	-0°49'40

minimum elong	12986 Apr 08 00:11	25° Υ 51'33	0°50'00	max. Earth dist.	12992 May 04 23:42	23° \mathcal{S} 11'14	19.92383 AU
max. Earth dist.	12986 Apr 07 18:30	25° Υ 50'41	19.60137 AU	morning rise	12992 May 21 00:13	24° \mathcal{S} 09'36	
morning rise	12986 Apr 24 04:07	26° Υ 51'19		retrograde	12992 Aug 20 16:07	27° \mathcal{S} 24'57	
	12986 Jul 05 09:19	0° \mathcal{S}		opposition	12992 Nov 03 16:12	25° \mathcal{S} 24'34	-1°10'10
retrograde	12986 Jul 25 00:35	0° \mathcal{S} 10'35		min. Earth dist.	12992 Nov 03 15:58	25° \mathcal{S} 24'36	17.95329 AU
	12986 Aug 13 20:10	30° $\mathcal{R}\Upsilon$		direct	12993 Jan 19 12:17	23° \mathcal{S} 21'53	
opposition	12986 Oct 07 10:31	28° Υ 08'50	-0°57'04	evening set	12993 Apr 23 17:35	26° \mathcal{S} 41'00	
min. Earth dist.	12986 Oct 07 14:05	28° Υ 08'28	17.62470 AU				
direct	12986 Dec 22 20:45	26° Υ 04'25		conjunction	12993 May 09 18:23	27° \mathcal{S} 39'12	-1°03'26
evening set	12987 Mar 27 16:40	29° Υ 28'26		minimum elong	12993 May 09 18:23	27° \mathcal{S} 39'12	1°04'13
	12987 Apr 05 07:21	0° \mathcal{S}		max. Earth dist.	12993 May 09 18:54	27° \mathcal{S} 39'17	19.98233 AU
				morning rise	12993 May 25 16:55	28° \mathcal{S} 37'06	
conjunction	12987 Apr 12 22:14	0° \mathcal{S} 28'17	-0°52'44		12993 Jun 19 10:33	0° \mathcal{I}	
minimum elong	12987 Apr 12 22:14	0° \mathcal{S} 28'17	0°53'08	retrograde	12993 Aug 25 07:11	1° \mathcal{I} 51'43	
max. Earth dist.	12987 Apr 12 18:19	0° \mathcal{S} 27'40	19.64870 AU		12993 Nov 05 02:15	30° $\mathcal{R}\mathcal{S}$	
morning rise	12987 Apr 29 01:12	1° \mathcal{S} 27'47		opposition	12993 Nov 08 11:31	29° \mathcal{S} 51'31	-1°10'52
retrograde	12987 Jul 29 20:08	4° \mathcal{S} 46'27		min. Earth dist.	12993 Nov 08 11:02	29° \mathcal{S} 51'34	18.01185 AU
opposition	12987 Oct 12 08:35	2° \mathcal{S} 44'58	-1°00'17	direct	12994 Jan 24 09:25	27° \mathcal{S} 49'05	
min. Earth dist.	12987 Oct 12 12:16	2° \mathcal{S} 44'35	17.67392 AU		12994 Apr 08 15:26	0° \mathcal{I}	
direct	12987 Dec 27 19:13	0° \mathcal{S} 40'51		evening set	12994 Apr 28 10:49	1° \mathcal{I} 07'13	
evening set	12988 Mar 31 14:43	4° \mathcal{S} 04'11					
				conjunction	12994 May 14 10:43	2° \mathcal{I} 05'07	-1°03'54
conjunction	12988 Apr 16 19:21	5° \mathcal{S} 03'46	-0°55'27	minimum elong	12994 May 14 10:43	2° \mathcal{I} 05'07	1°04'43
minimum elong	12988 Apr 16 19:20	5° \mathcal{S} 03'46	0°55'56	max. Earth dist.	12994 May 14 10:51	2° \mathcal{I} 05'08	20.04105 AU
max. Earth dist.	12988 Apr 16 15:26	5° \mathcal{S} 03'10	19.69963 AU	morning rise	12994 May 30 08:48	3° \mathcal{I} 02'45	
morning rise	12988 May 02 21:41	6° \mathcal{S} 03'01		retrograde	12994 Aug 29 23:01	6° \mathcal{I} 16'39	
retrograde	12988 Aug 02 16:48	9° \mathcal{S} 21'05		opposition	12994 Nov 13 06:11	4° \mathcal{I} 16'35	-1°11'09
opposition	12988 Oct 16 06:06	7° \mathcal{S} 19'51	-1°03'05	min. Earth dist.	12994 Nov 13 04:47	4° \mathcal{I} 16'43	18.07076 AU
min. Earth dist.	12988 Oct 16 08:09	7° \mathcal{S} 19'38	17.72630 AU	direct	12995 Jan 29 05:18	2° \mathcal{I} 14'22	
direct	12988 Dec 31 18:43	5° \mathcal{S} 16'01		evening set	12995 May 03 02:55	5° \mathcal{I} 31'30	
evening set	12989 Apr 05 12:06	8° \mathcal{S} 38'38					
				conjunction	12995 May 19 02:21	6° \mathcal{I} 29'07	-1°03'58
conjunction	12989 Apr 21 16:01	9° \mathcal{S} 37'57	-0°57'48	minimum elong	12995 May 19 02:21	6° \mathcal{I} 29'07	1°04'51
minimum elong	12989 Apr 21 16:01	9° \mathcal{S} 37'57	0°58'20	max. Earth dist.	12995 May 19 04:23	6° \mathcal{I} 29'26	20.10010 AU
max. Earth dist.	12989 Apr 21 13:51	9° \mathcal{S} 37'37	19.75319 AU	morning rise	12995 Jun 03 23:45	7° \mathcal{I} 26'29	
morning rise	12989 May 07 17:23	10° \mathcal{S} 36'56		retrograde	12995 Sep 03 13:06	10° \mathcal{I} 39'38	
retrograde	12989 Aug 07 11:02	13° \mathcal{S} 54'20		opposition	12995 Nov 18 00:13	8° \mathcal{I} 39'42	-1°11'00
opposition	12989 Oct 21 03:17	11° \mathcal{S} 53'22	-1°05'29	min. Earth dist.	12995 Nov 17 22:07	8° \mathcal{I} 39'55	18.12995 AU
min. Earth dist.	12989 Oct 21 05:32	11° \mathcal{S} 53'07	17.78096 AU	direct	12996 Feb 03 00:55	6° \mathcal{I} 37'43	
direct	12990 Jan 05 17:12	9° \mathcal{S} 49'50		evening set	12996 May 06 18:11	9° \mathcal{I} 53'48	
evening set	12990 Apr 10 08:51	13° \mathcal{S} 11'39					
				conjunction	12996 May 22 16:51	10° \mathcal{I} 51'09	-1°03'40
conjunction	12990 Apr 26 11:47	14° \mathcal{S} 10'42	-0°59'46	minimum elong	12996 May 22 16:50	10° \mathcal{I} 51'09	1°04'34
minimum elong	12990 Apr 26 11:46	14° \mathcal{S} 10'42	1°00'24	max. Earth dist.	12996 May 22 18:49	10° \mathcal{I} 51'27	20.15955 AU
max. Earth dist.	12990 Apr 26 09:15	14° \mathcal{S} 10'18	19.80883 AU	morning rise	12996 Jun 07 13:56	11° \mathcal{I} 48'16	
	12990 May 09 22:04	15° \mathcal{S}		retrograde	12996 Sep 07 03:20	15° \mathcal{I} 00'41	
morning rise	12990 May 12 12:32	15° \mathcal{S} 09'25		opposition	12996 Nov 21 17:38	13° \mathcal{I} 00'52	-1°10'27
retrograde	12990 Aug 12 06:01	18° \mathcal{S} 26'10		min. Earth dist.	12996 Nov 21 14:41	13° \mathcal{I} 01'10	18.18976 AU
opposition	12990 Oct 26 00:06	16° \mathcal{S} 25'23	-1°07'28	direct	12997 Feb 06 18:24	10° \mathcal{I} 59'08	
min. Earth dist.	12990 Oct 26 00:57	16° \mathcal{S} 25'18	17.83742 AU	evening set	12997 May 11 08:29	14° \mathcal{I} 14'12	
	12990 Dec 02 08:25	15° $\mathcal{R}\mathcal{S}$					
direct	12991 Jan 10 16:19	14° \mathcal{S} 22'10		conjunction	12997 May 27 06:42	15° \mathcal{I} 11'17	-1°03'00
	12991 Feb 18 03:18	15° \mathcal{S}		minimum elong	12997 May 27 06:42	15° \mathcal{I} 11'17	1°03'56
evening set	12991 Apr 15 04:29	17° \mathcal{S} 43'07		max. Earth dist.	12997 May 27 10:38	15° \mathcal{I} 11'52	20.21964 AU
				morning rise	12997 Jun 12 03:10	16° \mathcal{I} 08'08	
conjunction	12991 May 01 06:46	18° \mathcal{S} 41'53	-1°01'23	retrograde	12997 Sep 11 16:45	19° \mathcal{I} 19'51	
minimum elong	12991 May 01 06:45	18° \mathcal{S} 41'53	1°02'03	opposition	12997 Nov 26 10:21	17° \mathcal{I} 20'11	-1°09'29
max. Earth dist.	12991 May 01 06:04	18° \mathcal{S} 41'47	19.86586 AU	min. Earth dist.	12997 Nov 26 06:17	17° \mathcal{I} 20'37	18.25010 AU
morning rise	12991 May 17 06:36	19° \mathcal{S} 40'20		direct	12998 Feb 11 12:44	15° \mathcal{I} 18'44	
retrograde	12991 Aug 16 22:43	22° \mathcal{S} 56'23		evening set	12998 May 15 22:05	18° \mathcal{I} 32'48	
opposition	12991 Oct 30 20:32	20° \mathcal{S} 55'50	-1°09'02				
min. Earth dist.	12991 Oct 30 21:21	20° \mathcal{S} 55'45	17.89496 AU	conjunction	12998 May 31 19:37	19° \mathcal{I} 29'37	-1°01'59
direct	12992 Jan 15 14:26	18° \mathcal{S} 52'54		minimum elong	12998 May 31 19:36	19° \mathcal{I} 29'37	1°02'57
evening set	12992 Apr 18 23:32	22° \mathcal{S} 12'57		max. Earth dist.	12998 May 31 23:43	19° \mathcal{I} 30'14	20.28035 AU
				morning rise	12998 Jun 16 15:49	20° \mathcal{I} 26'14	
conjunction	12992 May 05 00:53	23° \mathcal{S} 11'25	-1°02'36	retrograde	12998 Sep 16 05:51	23° \mathcal{I} 37'18	
minimum elong	12992 May 05 00:53	23° \mathcal{S} 11'25	1°03'19	opposition	12998 Dec 01 02:39	21° \mathcal{I} 37'48	-1°08'09

min. Earth dist.	12998 Nov 30 21:49	21° Π 38'18	18.31118 AU	conjunction	13005 Jun 30 19:52	18° \mathfrak{D} 57'54	-0°46'11
direct	12999 Feb 16 04:01	19° Π 36'39		minimum elong	13005 Jun 30 19:52	18° \mathfrak{D} 57'54	0°47'10
evening set	12999 May 20 10:34	22° Π 49'45		max. Earth dist.	13005 Jul 01 04:59	18° \mathfrak{D} 59'14	20.68284 AU
				morning rise	13005 Jul 16 14:43	19° \mathfrak{D} 53'10	
conjunction	12999 Jun 05 07:46	23° Π 46'19	-1°00'37	retrograde	13005 Oct 16 16:01	23° \mathfrak{D} 00'35	
minimum elong	12999 Jun 05 07:46	23° Π 46'19	1°01'35	opposition	13006 Jan 01 05:24	21° \mathfrak{D} 02'21	-0°49'25
max. Earth dist.	12999 Jun 05 13:44	23° Π 47'12	20.34159 AU	min. Earth dist.	13005 Dec 31 20:08	21° \mathfrak{D} 03'17	18.70679 AU
morning rise	12999 Jun 21 03:32	24° Π 42'42		direct	13006 Mar 19 04:44	19° \mathfrak{D} 03'26	
retrograde	12999 Sep 20 18:45	27° Π 53'09		evening set	13006 Jun 19 08:58	22° \mathfrak{D} 10'24	
opposition	12999 Dec 05 18:16	25° Π 53'51	-1°06'26				
min. Earth dist.	12999 Dec 05 12:09	25° Π 54'28	18.37231 AU	conjunction	13006 Jul 05 04:01	23° \mathfrak{D} 05'33	-0°42'53
direct	13000 Feb 20 20:49	23° Π 53'02		minimum elong	13006 Jul 05 04:01	23° \mathfrak{D} 05'33	0°43'50
evening set	13000 May 24 22:35	27° Π 05'10		max. Earth dist.	13006 Jul 05 12:54	23° \mathfrak{D} 06'51	20.72949 AU
				morning rise	13006 Jul 20 22:57	24° \mathfrak{D} 00'41	
conjunction	13000 Jun 09 19:14	28° Π 01'30	-0°58'56	retrograde	13006 Oct 21 01:17	27° \mathfrak{D} 07'41	
minimum elong	13000 Jun 09 19:14	28° Π 01'30	0°59'56	opposition	13007 Jan 05 17:44	25° \mathfrak{D} 09'31	-0°45'39
max. Earth dist.	13000 Jun 10 01:18	28° Π 02'24	20.40261 AU	min. Earth dist.	13007 Jan 05 09:09	25° \mathfrak{D} 10'23	18.75152 AU
morning rise	13000 Jun 25 14:50	28° Π 57'41		direct	13007 Mar 23 15:54	23° \mathfrak{D} 10'50	
	13000 Jul 14 06:31	0° \mathfrak{D}		evening set	13007 Jun 23 16:35	26° \mathfrak{D} 17'00	
retrograde	13000 Sep 25 06:51	2° \mathfrak{D} 07'32					
opposition	13000 Dec 10 09:16	0° \mathfrak{D} 08'27	-1°04'22	conjunction	13007 Jul 09 11:39	27° \mathfrak{D} 12'00	-0°39'23
min. Earth dist.	13000 Dec 10 02:55	0° \mathfrak{D} 09'06	18.43310 AU	minimum elong	13007 Jul 09 11:39	27° \mathfrak{D} 12'00	0°40'20
	13000 Dec 13 19:58	30° \mathfrak{R} Π		max. Earth dist.	13007 Jul 09 21:04	27° \mathfrak{D} 13'22	20.77223 AU
direct	13001 Feb 25 10:32	28° Π 07'58		morning rise	13007 Jul 25 06:39	28° \mathfrak{D} 06'59	
	13001 May 05 04:15	0° \mathfrak{D}			13007 Aug 31 07:31	0° \mathfrak{D}	
evening set	13001 May 29 09:49	1° \mathfrak{D} 19'12		retrograde	13007 Oct 25 11:57	1° \mathfrak{D} 13'37	
					13007 Dec 22 07:22	30° \mathfrak{R} \mathfrak{D}	
conjunction	13001 Jun 14 06:11	2° \mathfrak{D} 15'18	-0°56'56	opposition	13008 Jan 10 05:22	29° \mathfrak{D} 15'28	-0°41'39
minimum elong	13001 Jun 14 06:11	2° \mathfrak{D} 15'18	0°57'56	min. Earth dist.	13008 Jan 09 19:43	29° \mathfrak{D} 16'27	18.79210 AU
max. Earth dist.	13001 Jun 14 13:42	2° \mathfrak{D} 16'25	20.46293 AU	direct	13008 Mar 27 03:54	27° \mathfrak{D} 16'57	
morning rise	13001 Jun 30 01:27	3° \mathfrak{D} 11'16			13008 Jun 20 08:24	0° \mathfrak{D}	
retrograde	13001 Sep 29 19:10	6° \mathfrak{D} 20'34		evening set	13008 Jun 26 23:52	0° \mathfrak{D} 22'23	
opposition	13001 Dec 14 23:50	4° \mathfrak{D} 21'42	-1°01'59				
min. Earth dist.	13001 Dec 14 16:15	4° \mathfrak{D} 22'28	18.49264 AU	conjunction	13008 Jul 12 18:48	1° \mathfrak{D} 17'14	-0°35'42
direct	13002 Mar 02 01:40	2° \mathfrak{D} 21'35		minimum elong	13008 Jul 12 18:49	1° \mathfrak{D} 17'14	0°36'35
evening set	13002 Jun 02 20:23	5° \mathfrak{D} 31'54		max. Earth dist.	13008 Jul 13 04:07	1° \mathfrak{D} 18'35	20.81083 AU
				morning rise	13008 Jul 28 13:58	2° \mathfrak{D} 12'07	
conjunction	13002 Jun 18 16:17	6° \mathfrak{D} 27'47	-0°54'39	retrograde	13008 Oct 28 19:21	5° \mathfrak{D} 18'22	
minimum elong	13002 Jun 18 16:17	6° \mathfrak{D} 27'47	0°55'39	opposition	13009 Jan 13 16:33	3° \mathfrak{D} 20'13	-0°37'27
max. Earth dist.	13002 Jun 18 23:52	6° \mathfrak{D} 28'54	20.52166 AU	min. Earth dist.	13009 Jan 13 07:42	3° \mathfrak{D} 21'07	18.82887 AU
morning rise	13002 Jul 04 11:27	7° \mathfrak{D} 23'34		direct	13009 Mar 31 13:56	1° \mathfrak{D} 21'51	
retrograde	13002 Oct 04 06:43	10° \mathfrak{D} 32'22		evening set	13009 Jul 01 06:33	4° \mathfrak{D} 26'33	
opposition	13002 Dec 19 14:04	8° \mathfrak{D} 33'41	-0°59'16				
min. Earth dist.	13002 Dec 19 06:33	8° \mathfrak{D} 34'26	18.55050 AU	conjunction	13009 Jul 17 01:32	5° \mathfrak{D} 21'17	-0°31'51
direct	13003 Mar 06 14:23	6° \mathfrak{D} 33'54		minimum elong	13009 Jul 17 01:32	5° \mathfrak{D} 21'17	0°32'43
evening set	13003 Jun 07 06:19	9° \mathfrak{D} 43'21		max. Earth dist.	13009 Jul 17 11:29	5° \mathfrak{D} 22'43	20.84590 AU
				morning rise	13009 Aug 01 20:48	6° \mathfrak{D} 16'03	
conjunction	13003 Jun 23 02:03	10° \mathfrak{D} 39'01	-0°52'05	retrograde	13009 Nov 02 05:23	9° \mathfrak{D} 21'59	
minimum elong	13003 Jun 23 02:03	10° \mathfrak{D} 39'01	0°53'04	opposition	13010 Jan 18 03:16	7° \mathfrak{D} 23'49	-0°33'06
max. Earth dist.	13003 Jun 23 10:41	10° \mathfrak{D} 40'18	20.57839 AU	min. Earth dist.	13010 Jan 17 17:05	7° \mathfrak{D} 24'51	18.86222 AU
morning rise	13003 Jul 08 21:01	11° \mathfrak{D} 34'37		direct	13010 Apr 05 01:07	5° \mathfrak{D} 25'35	
retrograde	13003 Oct 08 18:16	14° \mathfrak{D} 42'55		evening set	13010 Jul 05 12:44	8° \mathfrak{D} 29'37	
opposition	13003 Dec 24 03:32	12° \mathfrak{D} 44'25	-0°56'15				
min. Earth dist.	13003 Dec 23 18:53	12° \mathfrak{D} 45'18	18.60585 AU	conjunction	13010 Jul 21 07:41	9° \mathfrak{D} 24'14	-0°27'51
direct	13004 Mar 10 04:05	10° \mathfrak{D} 44'58		minimum elong	13010 Jul 21 07:41	9° \mathfrak{D} 24'14	0°28'40
evening set	13004 Jun 10 15:47	13° \mathfrak{D} 53'34		max. Earth dist.	13010 Jul 21 17:51	9° \mathfrak{D} 25'42	20.87765 AU
				morning rise	13010 Aug 06 03:11	10° \mathfrak{D} 18'55	
conjunction	13004 Jun 26 11:10	14° \mathfrak{D} 49'03	-0°49'15	retrograde	13010 Nov 06 11:59	13° \mathfrak{D} 24'36	
minimum elong	13004 Jun 26 11:10	14° \mathfrak{D} 49'03	0°50'15	opposition	13011 Jan 22 13:44	11° \mathfrak{D} 26'25	-0°28'35
max. Earth dist.	13004 Jun 26 19:37	14° \mathfrak{D} 50'18	20.63227 AU	min. Earth dist.	13011 Jan 22 04:10	11° \mathfrak{D} 27'22	18.89258 AU
morning rise	13004 Jul 12 06:09	15° \mathfrak{D} 44'29		direct	13011 Apr 09 09:21	9° \mathfrak{D} 28'18	
retrograde	13004 Oct 12 05:03	18° \mathfrak{D} 52'20		evening set	13011 Jul 09 18:37	12° \mathfrak{D} 31'45	
opposition	13004 Dec 27 16:46	16° \mathfrak{D} 53'59	-0°52'58				
min. Earth dist.	13004 Dec 27 08:36	16° \mathfrak{D} 54'48	18.65818 AU	conjunction	13011 Jul 25 13:42	13° \mathfrak{D} 26'16	-0°23'43
direct	13005 Mar 14 15:51	14° \mathfrak{D} 54'48		minimum elong	13011 Jul 25 13:42	13° \mathfrak{D} 26'16	0°24'30
evening set	13005 Jun 15 00:35	18° \mathfrak{D} 02'35		max. Earth dist.	13011 Jul 26 00:28	13° \mathfrak{D} 27'49	20.90659 AU
				morning rise	13011 Aug 10 09:24	14° \mathfrak{D} 20'52	

	13011 Aug 22 05:21	15°♈	min. Earth dist.	13017 Feb 15 11:16	5°♏31'00	19.00628 AU
retrograde	13011 Nov 10 21:14	17°♏26'20	direct	13017 May 03 07:46	3°♏32'42	
opposition	13012 Jan 26 23:27	15°♏28'08 -0°23'57	evening set	13017 Aug 02 02:25	6°♏33'56	
min. Earth dist.	13012 Jan 26 12:32	15°♏29'14 18.91999 AU				
	13012 Feb 07 18:58	15°♏♏	conjunction	13017 Aug 17 22:38	7°♏28'13 0°02'39	
direct	13012 Apr 12 19:28	13°♏30'10	minimum elong	13017 Aug 17 22:39	7°♏28'13 0°02'11	
	13012 Jun 13 01:34	15°♏	behind sun begin	13017 Aug 17 16:05	7°♏27'18	
evening set	13012 Jul 13 00:17	16°♏33'06	behind sun end	13017 Aug 18 05:14	7°♏29'08	
			max. Earth dist.	13017 Aug 18 09:50	7°♏29'49 21.00919 AU	
conjunction	13012 Jul 28 19:26	17°♏27'32 -0°19'29	morning rise	13017 Sep 02 20:24	8°♏22'44	
minimum elong	13012 Jul 28 19:26	17°♏27'32 0°20'14	retrograde	13017 Dec 04 21:21	11°♏28'07	
max. Earth dist.	13012 Jul 29 06:18	17°♏29'06 20.93247 AU	opposition	13018 Feb 20 06:21	9°♏29'55 0°05'18	
morning rise	13012 Aug 13 15:26	18°♏22'05	min. Earth dist.	13018 Feb 19 19:16	9°♏31'02 19.01092 AU	
retrograde	13012 Nov 14 03:51	21°♏27'24	direct	13018 May 07 15:43	7°♏32'44	
opposition	13013 Jan 30 09:11	19°♏29'13 -0°19'12	evening set	13018 Aug 06 07:44	10°♏33'49	
min. Earth dist.	13013 Jan 29 23:00	19°♏30'14 18.94439 AU				
direct	13013 Apr 17 02:22	17°♏31'24	conjunction	13018 Aug 22 04:16	11°♏28'07 0°07'06	
evening set	13013 Jul 17 05:34	20°♏33'51	minimum elong	13018 Aug 22 04:15	11°♏28'07 0°06'41	
			behind sun begin	13018 Aug 21 22:05	11°♏27'16	
conjunction	13013 Aug 02 00:54	21°♏28'13 -0°15'10	behind sun end	13018 Aug 22 10:25	11°♏28'59	
minimum elong	13013 Aug 02 00:54	21°♏28'13 0°15'52	max. Earth dist.	13018 Aug 22 15:00	11°♏29'39 21.01119 AU	
behind sun begin	13013 Aug 01 23:37	21°♏28'03	morning rise	13018 Sep 07 02:27	12°♏22'40	
behind sun end	13013 Aug 02 02:11	21°♏28'24	retrograde	13018 Dec 09 04:50	15°♏28'13	
max. Earth dist.	13013 Aug 02 12:13	21°♏29'51 20.95534 AU	opposition	13019 Feb 24 15:12	13°♏29'57 0°10'13	
morning rise	13013 Aug 17 21:09	22°♏22'44	min. Earth dist.	13019 Feb 24 05:36	13°♏30'55 19.01033 AU	
retrograde	13013 Nov 18 12:50	25°♏27'58	direct	13019 May 11 21:28	11°♏32'49	
opposition	13014 Feb 03 18:31	23°♏29'47 -0°14'23	evening set	13019 Aug 10 13:15	14°♏33'48	
min. Earth dist.	13014 Feb 03 07:02	23°♏30'56 18.96554 AU				
direct	13014 Apr 21 11:27	21°♏32'07	conjunction	13019 Aug 26 10:09	15°♏28'08 0°11'30	
evening set	13014 Jul 21 10:51	24°♏34'11	minimum elong	13019 Aug 26 10:09	15°♏28'08 0°11'09	
			behind sun begin	13019 Aug 26 05:14	15°♏27'27	
conjunction	13014 Aug 06 06:19	25°♏28'30 -0°10'48	behind sun end	13019 Aug 26 15:04	15°♏28'49	
minimum elong	13014 Aug 06 06:19	25°♏28'30 0°11'28	max. Earth dist.	13019 Aug 26 20:22	15°♏29'35 21.00794 AU	
behind sun begin	13014 Aug 06 01:31	25°♏27'50	morning rise	13019 Sep 11 08:48	16°♏22'44	
behind sun end	13014 Aug 06 11:06	25°♏29'10	retrograde	13019 Dec 13 14:09	19°♏28'27	
max. Earth dist.	13014 Aug 06 17:41	25°♏30'08 20.97474 AU	opposition	13020 Feb 28 23:39	17°♏30'05 0°15'05	
morning rise	13014 Aug 22 02:56	26°♏22'59	min. Earth dist.	13020 Feb 28 13:35	17°♏31'06 19.00429 AU	
retrograde	13014 Nov 22 19:52	29°♏28'11	direct	13020 May 15 05:22	15°♏32'57	
opposition	13015 Feb 08 03:45	27°♏30'01 -0°09'30	evening set	13020 Aug 13 18:55	18°♏33'52	
min. Earth dist.	13015 Feb 07 17:13	27°♏31'04 18.98321 AU				
direct	13015 Apr 25 17:40	25°♏32'30	conjunction	13020 Aug 29 16:10	19°♏28'15 0°15'52	
evening set	13015 Jul 25 15:57	28°♏34'13	minimum elong	13020 Aug 29 16:10	19°♏28'15 0°15'35	
			behind sun begin	13020 Aug 29 14:26	19°♏28'01	
conjunction	13015 Aug 10 11:42	29°♏28'30 -0°06'23	behind sun end	13020 Aug 29 17:53	19°♏28'30	
minimum elong	13015 Aug 10 11:42	29°♏28'30 0°06'59	max. Earth dist.	13020 Aug 30 01:48	19°♏29'38 20.99914 AU	
behind sun begin	13015 Aug 10 05:36	29°♏27'39	morning rise	13020 Sep 14 15:17	20°♏22'55	
behind sun end	13015 Aug 10 17:48	29°♏29'22	retrograde	13020 Dec 16 21:18	23°♏28'51	
max. Earth dist.	13015 Aug 10 23:14	29°♏30'09 20.99056 AU	opposition	13021 Mar 04 08:21	21°♏30'21 0°19'53	
	13015 Aug 19 14:39	0°♏	min. Earth dist.	13021 Mar 03 23:47	21°♏31'13 18.99290 AU	
morning rise	13015 Aug 26 08:42	0°♏22'59	direct	13021 May 19 11:09	19°♏33'10	
retrograde	13015 Nov 27 04:51	3°♏28'11	evening set	13021 Aug 18 00:26	22°♏34'03	
opposition	13016 Feb 12 12:40	1°♏30'02 -0°04'35				
min. Earth dist.	13016 Feb 12 01:07	1°♏31'11 18.99693 AU	conjunction	13021 Sep 02 22:07	23°♏28'30 0°20'09	
	13016 Mar 26 05:01	30°♏♏	minimum elong	13021 Sep 02 22:07	23°♏28'30 0°19'56	
direct	13016 Apr 29 01:54	29°♏32'39	max. Earth dist.	13021 Sep 03 07:22	23°♏29'49 20.98537 AU	
	13016 Jun 01 01:32	0°♏	morning rise	13021 Sep 18 21:46	24°♏23'15	
evening set	13016 Jul 28 21:10	2°♏34'06	retrograde	13021 Dec 21 06:55	27°♏29'25	
			opposition	13022 Mar 08 16:50	25°♏30'45 0°24'36	
conjunction	13016 Aug 13 17:06	3°♏28'22 -0°01'57	min. Earth dist.	13022 Mar 08 07:41	25°♏31'40 18.97677 AU	
minimum elong	13016 Aug 13 17:06	3°♏28'22 0°02'29	direct	13022 May 23 18:48	23°♏33'29	
behind sun begin	13016 Aug 13 10:32	3°♏27'27	evening set	13022 Aug 22 06:18	26°♏34'25	
behind sun end	13016 Aug 13 23:40	3°♏29'18				
max. Earth dist.	13016 Aug 14 04:26	3°♏29'59 21.00209 AU	conjunction	13022 Sep 07 04:23	27°♏28'57 0°24'21	
morning rise	13016 Aug 29 14:28	4°♏22'52	minimum elong	13022 Sep 07 04:23	27°♏28'57 0°24'13	
retrograde	13016 Nov 30 12:11	7°♏28'08	max. Earth dist.	13022 Sep 07 13:20	27°♏30'13 20.96702 AU	
asc. node	13017 Jan 21 05:35	6°♏28'48	morning rise	13022 Sep 23 04:33	28°♏23'47	
opposition	13017 Feb 15 21:34	5°♏29'58 0°00'22		13022 Oct 24 09:05	0°♏	

retrograde	13022 Dec 25 14:07	1°♂30'13		conjunction	13029 Oct 05 09:58	25°♂48'24	0°49'32
	13023 Mar 01 02:14	30°♂♂		minimum elong	13029 Oct 05 09:58	25°♂48'24	0°49'53
opposition	13023 Mar 13 01:19	29°♂31'22	0°29'12	max. Earth dist.	13029 Oct 05 16:04	25°♂49'17	20.74907 AU
min. Earth dist.	13023 Mar 12 17:31	29°♂32'10	18.95648 AU	morning rise	13029 Oct 21 14:11	26°♂44'18	
direct	13023 May 28 00:36	27°♂34'00		retrograde	13030 Jan 23 15:42	29°♂53'58	
	13023 Aug 15 20:56	0°♂		opposition	13030 Apr 10 16:06	27°♂54'02	0°56'27
evening set	13023 Aug 26 12:17	0°♂35'02		min. Earth dist.	13030 Apr 10 10:04	27°♂54'39	18.72825 AU
				direct	13030 Jun 25 01:35	25°♂55'54	
conjunction	13023 Sep 11 10:52	1°♂29'40	0°28'27	evening set	13030 Sep 23 17:39	28°♂59'32	
minimum elong	13023 Sep 11 10:51	1°♂29'40	0°28'22				
max. Earth dist.	13023 Sep 11 19:25	1°♂30'53	20.94493 AU	conjunction	13030 Oct 09 20:00	29°♂55'16	0°52'19
morning rise	13023 Sep 27 11:36	2°♂24'37		minimum elong	13030 Oct 09 19:59	29°♂55'16	0°52'42
retrograde	13023 Dec 30 00:08	5°♂31'22		max. Earth dist.	13030 Oct 10 01:42	29°♂56'05	20.70626 AU
opposition	13024 Mar 16 09:42	3°♂32'21	0°33'40		13030 Oct 11 04:35	0°♂	
min. Earth dist.	13024 Mar 16 01:16	3°♂33'12	18.93265 AU	morning rise	13030 Oct 26 00:44	0°♂51'22	
direct	13024 May 31 07:39	1°♂34'52		retrograde	13031 Jan 28 02:31	4°♂01'37	
evening set	13024 Aug 29 18:32	4°♂36'05		opposition	13031 Apr 15 02:09	2°♂01'33	0°59'24
				min. Earth dist.	13031 Apr 14 21:42	2°♂02'01	18.68380 AU
conjunction	13024 Sep 14 17:33	5°♂30'49	0°32'24	direct	13031 Jun 29 08:37	0°♂03'17	
minimum elong	13024 Sep 14 17:32	5°♂30'49	0°32'24	evening set	13031 Sep 28 03:47	3°♂07'32	
max. Earth dist.	13024 Sep 15 01:56	5°♂32'01	20.91934 AU				
morning rise	13024 Sep 30 18:46	6°♂25'53		conjunction	13031 Oct 14 06:42	4°♂03'27	0°54'50
retrograde	13025 Jan 02 08:06	9°♂33'02		minimum elong	13031 Oct 14 06:41	4°♂03'27	0°55'18
opposition	13025 Mar 20 18:21	7°♂33'49	0°37'58	max. Earth dist.	13031 Oct 14 11:01	4°♂04'05	20.66012 AU
min. Earth dist.	13025 Mar 20 11:04	7°♂34'34	18.90557 AU	morning rise	13031 Oct 30 12:07	4°♂59'46	
direct	13025 Jun 04 13:40	5°♂36'15		retrograde	13032 Feb 01 16:46	8°♂10'39	
evening set	13025 Sep 03 01:09	8°♂37'42		opposition	13032 Apr 18 12:39	6°♂10'24	1°02'04
				min. Earth dist.	13032 Apr 18 08:27	6°♂10'50	18.63584 AU
conjunction	13025 Sep 19 00:40	9°♂32'33	0°36'13	direct	13032 Jul 02 18:51	4°♂11'56	
minimum elong	13025 Sep 19 00:39	9°♂32'33	0°36'16	evening set	13032 Oct 01 14:28	7°♂16'50	
max. Earth dist.	13025 Sep 19 08:38	9°♂33'42	20.89088 AU				
morning rise	13025 Oct 05 02:29	10°♂27'46		conjunction	13032 Oct 17 18:03	8°♂12'59	0°57'05
retrograde	13026 Jan 06 19:01	13°♂35'20		minimum elong	13032 Oct 17 18:02	8°♂12'59	0°57'37
opposition	13026 Mar 25 02:58	11°♂35'57	0°42'06	max. Earth dist.	13032 Oct 17 21:50	8°♂13'32	20.61018 AU
min. Earth dist.	13026 Mar 24 19:02	11°♂36'46	18.87570 AU	morning rise	13032 Nov 02 23:57	9°♂09'31	
direct	13026 Jun 08 20:33	9°♂38'16		retrograde	13033 Feb 05 04:36	12°♂21'01	
evening set	13026 Sep 07 08:07	12°♂40'02		opposition	13033 Apr 22 23:41	10°♂20'35	1°04'26
				min. Earth dist.	13033 Apr 22 20:59	10°♂20'52	18.58410 AU
conjunction	13026 Sep 23 08:10	13°♂35'02	0°39'50	direct	13033 Jul 07 03:23	8°♂21'53	
minimum elong	13026 Sep 23 08:10	13°♂35'02	0°39'59	evening set	13033 Oct 06 01:57	11°♂27'27	
max. Earth dist.	13026 Sep 23 15:58	13°♂36'09	20.85951 AU				
morning rise	13026 Oct 09 10:33	14°♂30'24		conjunction	13033 Oct 22 06:07	12°♂23'50	0°59'03
retrograde	13027 Jan 11 03:57	17°♂38'26		minimum elong	13033 Oct 22 06:07	12°♂23'50	0°59'38
opposition	13027 Mar 29 11:55	15°♂38'54	0°46'02	max. Earth dist.	13033 Oct 22 08:20	12°♂24'09	20.55684 AU
min. Earth dist.	13027 Mar 29 05:10	15°♂39'35	18.84298 AU	morning rise	13033 Nov 07 12:46	13°♂20'35	
direct	13027 Jun 13 02:50	13°♂41'07			13033 Dec 09 04:07	15°♂	
evening set	13027 Sep 11 15:38	16°♂43'15		retrograde	13034 Feb 09 19:10	16°♂32'43	
					13034 Apr 16 02:13	15°♂♂	
conjunction	13027 Sep 27 16:14	17°♂38'25	0°43'17	opposition	13034 Apr 27 10:55	14°♂32'03	1°06'28
minimum elong	13027 Sep 27 16:14	17°♂38'25	0°43'30	min. Earth dist.	13034 Apr 27 08:38	14°♂32'17	18.52917 AU
max. Earth dist.	13027 Sep 27 23:23	17°♂39'27	20.82550 AU	direct	13034 Jul 11 14:28	12°♂33'04	
morning rise	13027 Oct 13 19:14	18°♂33'56			13034 Sep 28 20:07	15°♂	
retrograde	13028 Jan 15 16:15	21°♂42'28		evening set	13034 Oct 10 14:01	15°♂39'20	
opposition	13028 Apr 01 20:51	19°♂42'48	0°49'45				
min. Earth dist.	13028 Apr 01 13:41	19°♂43'32	18.80758 AU	conjunction	13034 Oct 26 18:58	16°♂35'58	1°00'43
direct	13028 Jun 16 10:20	17°♂44'54		minimum elong	13034 Oct 26 18:57	16°♂35'58	1°01'23
evening set	13028 Sep 14 23:42	20°♂47'29		max. Earth dist.	13034 Oct 26 20:48	16°♂36'14	20.50038 AU
				morning rise	13034 Nov 12 02:08	17°♂32'57	
conjunction	13028 Oct 01 00:52	21°♂42'49	0°46'31	retrograde	13035 Feb 14 08:09	20°♂45'43	
minimum elong	13028 Oct 01 00:51	21°♂42'49	0°46'47	opposition	13035 May 01 22:38	18°♂44'48	1°08'09
max. Earth dist.	13028 Oct 01 07:48	21°♂43'50	20.78864 AU	min. Earth dist.	13035 May 01 21:40	18°♂44'54	18.47141 AU
morning rise	13028 Oct 17 04:24	22°♂38'32		direct	13035 Jul 16 00:36	16°♂45'31	
retrograde	13029 Jan 19 02:01	25°♂47'36		evening set	13035 Oct 15 02:50	19°♂52'32	
opposition	13029 Apr 06 06:22	23°♂47'49	0°53'13				
min. Earth dist.	13029 Apr 06 00:27	23°♂48'25	18.76935 AU	conjunction	13035 Oct 31 08:20	20°♂49'25	1°02'04
direct	13029 Jun 20 16:49	21°♂49'49		minimum elong	13035 Oct 31 08:20	20°♂49'25	1°02'46
evening set	13029 Sep 19 08:15	24°♂52'53		max. Earth dist.	13035 Oct 31 08:36	20°♂49'27	20.44165 AU

morning rise	13035 Nov 16 16:13	21° \mathbb{M} 46'39	direct	13042 Aug 14 18:03	16° \mathbb{X} 54'43	
retrograde	13036 Feb 18 23:02	25° \mathbb{M} 00'03	evening set	13042 Nov 14 17:54	20° \mathbb{X} 08'12	
opposition	13036 May 05 10:36	22° \mathbb{M} 58'53 1°09'29				
min. Earth dist.	13036 May 05 10:01	22° \mathbb{M} 58'56 18.41183 AU	conjunction	13042 Dec 01 04:08	21° \mathbb{X} 07'00 1°01'37	
direct	13036 Jul 19 12:01	20° \mathbb{M} 59'17	minimum elong	13042 Dec 01 04:08	21° \mathbb{X} 07'00 1°02'35	
evening set	13036 Oct 18 16:17	24° \mathbb{M} 07'06	max. Earth dist.	13042 Dec 01 00:36	21° \mathbb{X} 06'28 20.01985 AU	
			morning rise	13042 Dec 17 15:44	22° \mathbb{X} 06'03	
conjunction	13036 Nov 03 22:32	25° \mathbb{M} 04'14 1°03'04	retrograde	13043 Mar 21 20:51	25° \mathbb{X} 24'15	
minimum elong	13036 Nov 03 22:31	25° \mathbb{M} 04'14 1°03'50	opposition	13043 Jun 05 12:55	23° \mathbb{X} 21'55 1°07'45	
max. Earth dist.	13036 Nov 03 22:49	25° \mathbb{M} 04'16 20.38131 AU	min. Earth dist.	13043 Jun 05 16:19	23° \mathbb{X} 21'34 17.99130 AU	
morning rise	13036 Nov 20 06:52	26° \mathbb{M} 01'43	direct	13043 Aug 19 09:30	21° \mathbb{X} 20'21	
retrograde	13037 Feb 22 13:35	29° \mathbb{M} 15'46	evening set	13043 Nov 19 13:21	24° \mathbb{X} 34'51	
opposition	13037 May 09 23:07	27° \mathbb{M} 14'22 1°10'27				
min. Earth dist.	13037 May 09 23:27	27° \mathbb{M} 14'20 18.35101 AU	conjunction	13043 Dec 05 23:58	25° \mathbb{X} 33'55 1°00'05	
direct	13037 Jul 23 23:33	25° \mathbb{M} 14'27	minimum elong	13043 Dec 05 23:58	25° \mathbb{X} 33'55 1°01'04	
evening set	13037 Oct 23 06:29	28° \mathbb{M} 23'06	max. Earth dist.	13043 Dec 05 18:30	25° \mathbb{X} 33'06 19.96267 AU	
			morning rise	13043 Dec 22 12:09	26° \mathbb{X} 33'14	
conjunction	13037 Nov 08 13:18	29° \mathbb{M} 20'30 1°03'44	retrograde	13044 Mar 25 16:34	29° \mathbb{X} 52'07	
minimum elong	13037 Nov 08 13:18	29° \mathbb{M} 20'30 1°04'32	opposition	13044 Jun 09 05:25	27° \mathbb{X} 49'43 1°05'52	
max. Earth dist.	13037 Nov 08 12:02	29° \mathbb{M} 20'19 20.32023 AU	min. Earth dist.	13044 Jun 09 10:02	27° \mathbb{X} 49'13 17.93461 AU	
	13037 Nov 19 17:02	0° \mathbb{X}	direct	13044 Aug 23 00:50	25° \mathbb{X} 47'53	
morning rise	13037 Nov 24 22:24	0° \mathbb{X} 18'14	evening set	13044 Nov 23 09:37	29° \mathbb{X} 03'26	
retrograde	13038 Feb 27 05:11	3° \mathbb{X} 32'59				
opposition	13038 May 14 12:04	1° \mathbb{X} 31'20 1°11'01	conjunction	13044 Dec 09 20:59	0° \mathbb{Z} 02'47 0°58'10	
min. Earth dist.	13038 May 14 12:49	1° \mathbb{X} 31'15 18.28976 AU	minimum elong	13044 Dec 09 20:59	0° \mathbb{Z} 02'47 0°59'10	
	13038 Jun 24 16:46	30° \mathbb{K} \mathbb{M}		13044 Dec 09 02:33	0° \mathbb{Z}	
direct	13038 Jul 28 11:40	29° \mathbb{M} 31'06	max. Earth dist.	13044 Dec 09 15:44	0° \mathbb{Z} 02'00 19.90633 AU	
	13038 Aug 30 17:04	0° \mathbb{X}	morning rise	13044 Dec 26 09:24	1° \mathbb{Z} 02'21	
evening set	13038 Oct 27 21:29	2° \mathbb{X} 40'39	retrograde	13045 Mar 30 14:05	4° \mathbb{Z} 21'52	
			opposition	13045 Jun 13 22:29	2° \mathbb{Z} 19'23 1°03'34	
conjunction	13038 Nov 13 05:06	3° \mathbb{X} 38'19 1°04'03	min. Earth dist.	13045 Jun 14 03:21	2° \mathbb{Z} 18'52 17.87858 AU	
minimum elong	13038 Nov 13 05:06	3° \mathbb{X} 38'19 1°04'54	direct	13045 Aug 27 18:06	0° \mathbb{Z} 17'17	
max. Earth dist.	13038 Nov 13 04:02	3° \mathbb{X} 38'09 20.25880 AU	evening set	13045 Nov 28 06:55	3° \mathbb{Z} 33'51	
morning rise	13038 Nov 29 14:36	4° \mathbb{X} 36'19				
retrograde	13039 Mar 03 21:09	7° \mathbb{X} 51'43	conjunction	13045 Dec 14 18:40	4° \mathbb{Z} 33'28 0°55'54	
opposition	13039 May 19 01:23	5° \mathbb{X} 49'53 1°11'11	minimum elong	13045 Dec 14 18:40	4° \mathbb{Z} 33'28 0°56'54	
min. Earth dist.	13039 May 19 02:48	5° \mathbb{X} 49'45 18.22839 AU	max. Earth dist.	13045 Dec 14 11:18	4° \mathbb{Z} 32'21 19.85066 AU	
direct	13039 Aug 02 00:33	3° \mathbb{X} 49'21	morning rise	13045 Dec 31 07:37	5° \mathbb{Z} 33'17	
evening set	13039 Nov 01 13:24	6° \mathbb{X} 59'50	retrograde	13046 Apr 04 10:40	8° \mathbb{Z} 53'24	
			opposition	13046 Jun 18 16:18	6° \mathbb{Z} 50'48 1°00'51	
conjunction	13039 Nov 17 21:32	7° \mathbb{X} 57'47 1°04'00	min. Earth dist.	13046 Jun 18 22:42	6° \mathbb{Z} 50'07 17.82332 AU	
minimum elong	13039 Nov 17 21:32	7° \mathbb{X} 57'47 1°04'53	direct	13046 Sep 01 10:27	4° \mathbb{Z} 48'24	
max. Earth dist.	13039 Nov 17 18:48	7° \mathbb{X} 57'22 20.19772 AU	evening set	13046 Dec 03 04:55	8° \mathbb{Z} 05'57	
morning rise	13039 Dec 04 07:45	8° \mathbb{X} 56'02				
retrograde	13040 Mar 07 13:49	12° \mathbb{X} 12'09	conjunction	13046 Dec 19 17:19	9° \mathbb{Z} 05'50 0°53'16	
opposition	13040 May 22 15:24	10° \mathbb{X} 10'08 1°10'57	minimum elong	13046 Dec 19 17:20	9° \mathbb{Z} 05'50 0°54'17	
min. Earth dist.	13040 May 22 17:19	10° \mathbb{X} 09'56 18.16766 AU	max. Earth dist.	13046 Dec 19 09:59	9° \mathbb{Z} 04'43 19.79581 AU	
direct	13040 Aug 05 13:41	8° \mathbb{X} 09'18	morning rise	13047 Jan 05 06:26	10° \mathbb{Z} 05'52	
evening set	13040 Nov 05 05:51	11° \mathbb{X} 20'45	retrograde	13047 Apr 09 09:38	13° \mathbb{Z} 26'31	
			opposition	13047 Jun 23 10:29	11° \mathbb{Z} 23'48 0°57'45	
conjunction	13040 Nov 21 14:47	12° \mathbb{X} 18'59 1°03'34	min. Earth dist.	13047 Jun 23 16:55	11° \mathbb{Z} 23'06 17.76895 AU	
minimum elong	13040 Nov 21 14:47	12° \mathbb{X} 18'59 1°04'29	direct	13047 Sep 06 06:04	9° \mathbb{Z} 21'05	
max. Earth dist.	13040 Nov 21 12:33	12° \mathbb{X} 18'39 20.13732 AU	evening set	13047 Dec 08 03:45	12° \mathbb{Z} 39'35	
morning rise	13040 Dec 08 01:22	13° \mathbb{X} 17'30				
retrograde	13041 Mar 12 07:15	16° \mathbb{X} 34'19	conjunction	13047 Dec 24 16:28	13° \mathbb{Z} 39'43 0°50'17	
opposition	13041 May 27 06:01	14° \mathbb{X} 32'10 1°10'18	minimum elong	13047 Dec 24 16:29	13° \mathbb{Z} 39'43 0°51'16	
min. Earth dist.	13041 May 27 08:17	14° \mathbb{X} 31'56 18.10771 AU	max. Earth dist.	13047 Dec 24 07:19	13° \mathbb{Z} 38'19 19.74221 AU	
direct	13041 Aug 10 03:52	12° \mathbb{X} 31'05	morning rise	13048 Jan 10 05:58	14° \mathbb{Z} 39'59	
evening set	13041 Nov 09 23:29	15° \mathbb{X} 43'31	retrograde	13048 Apr 13 06:03	18° \mathbb{Z} 01'07	
			opposition	13048 Jun 27 05:25	15° \mathbb{Z} 58'15 0°54'16	
conjunction	13041 Nov 26 08:55	16° \mathbb{X} 42'02 1°02'47	min. Earth dist.	13048 Jun 27 13:22	15° \mathbb{Z} 57'24 17.71628 AU	
minimum elong	13041 Nov 26 08:55	16° \mathbb{X} 42'02 1°03'44	direct	13048 Sep 09 23:45	13° \mathbb{Z} 55'13	
max. Earth dist.	13041 Nov 26 04:57	16° \mathbb{X} 41'26 20.07802 AU	evening set	13048 Dec 12 02:58	17° \mathbb{Z} 14'37	
morning rise	13041 Dec 12 20:12	17° \mathbb{X} 40'49				
retrograde	13042 Mar 17 01:28	20° \mathbb{X} 58'20	conjunction	13048 Dec 28 16:15	18° \mathbb{Z} 14'59 0°46'58	
opposition	13042 May 31 21:08	18° \mathbb{X} 56'04 1°09'14	minimum elong	13048 Dec 28 16:15	18° \mathbb{Z} 15'00 0°47'57	
min. Earth dist.	13042 Jun 01 00:13	18° \mathbb{X} 55'45 18.04902 AU	max. Earth dist.	13048 Dec 28 07:16	18° \mathbb{Z} 13'37 19.69064 AU	

morning rise	13049 Jan 14 05:54	19°31'27"	retrograde	13055 May 16 22:23	20°34'49"	
retrograde	13049 Apr 18 05:34	22°33'02"	opposition	13055 Jul 30 06:05	18°31'25"	0°20'56"
opposition	13049 Jul 02 00:41	20°34'02"	min. Earth dist.	13055 Jul 30 14:49	18°30'28"	17.44498 AU
min. Earth dist.	13049 Jul 02 08:19	20°33'12"	direct	13055 Oct 13 10:54	16°26'36"	
direct	13049 Sep 14 21:18	18°30'40"	evening set	13056 Jan 15 13:53	19°51'22"	
evening set	13049 Dec 17 03:07	21°35'57"				
conjunction	13050 Jan 02 16:40	22°35'13"	conjunction	13056 Feb 01 04:13	20°52'50"	0°16'11"
minimum elong	13050 Jan 02 16:40	22°35'13"	minimum elong	13056 Feb 01 04:13	20°52'50"	0°16'54"
max. Earth dist.	13050 Jan 02 06:23	22°34'58"	max. Earth dist.	13056 Jan 31 17:42	20°51'13"	19.43457 AU
morning rise	13050 Jan 19 06:32	23°35'12"	morning rise	13056 Feb 17 17:27	21°54'11"	
retrograde	13050 Apr 23 02:04	27°314'10"	retrograde	13056 May 20 21:45	25°17'38"	
opposition	13050 Jul 06 20:28	25°311'01"	opposition	13056 Aug 03 04:31	23°14'19"	0°15'16"
min. Earth dist.	13050 Jul 07 05:34	25°310'02"	min. Earth dist.	13056 Aug 03 14:03	23°13'17"	17.42560 AU
direct	13050 Sep 19 16:43	23°307'19"	direct	13056 Oct 17 09:38	21°09'25"	
evening set	13050 Dec 22 03:44	26°328'28"	evening set	13057 Jan 19 17:07	24°34'45"	
conjunction	13051 Jan 07 17:38	27°329'15"	conjunction	13057 Feb 05 07:13	25°36'18"	0°11'04"
minimum elong	13051 Jan 07 17:39	27°329'16"	minimum elong	13057 Feb 05 07:12	25°36'18"	0°11'43"
max. Earth dist.	13051 Jan 07 07:23	27°327'41"	behind sun begin	13057 Feb 05 02:30	25°35'35"	
morning rise	13051 Jan 24 07:34	28°330'05"	behind sun end	13057 Feb 05 11:54	25°37'00"	
retrograde	13051 Feb 19 23:40	0°	max. Earth dist.	13057 Feb 04 19:50	25°34'32"	19.41777 AU
retrograde	13051 Apr 28 01:51	1°52'23"	morning rise	13057 Feb 21 20:18	26°37'42"	
opposition	13051 Jul 07 12:23	30°33'	retrograde	13057 May 19 06:40	0°	
min. Earth dist.	13051 Jul 11 16:39	29°349'07"	retrograde	13057 May 25 23:09	0°01'15"	
direct	13051 Jul 12 01:06	29°348'12"	opposition	13057 Jun 01 16:29	30°33'	
evening set	13051 Sep 24 15:51	27°345'08"	min. Earth dist.	13057 Aug 08 03:14	27°58'02"	0°09'29"
conjunction	13051 Dec 07 18:38	0°	direct	13057 Aug 08 12:11	27°57'03"	17.41113 AU
conjunction	13051 Dec 27 04:47	1°07'04"	evening set	13057 Oct 22 10:43	25°53'03"	
minimum elong	13052 Jan 12 18:51	2°08'02"	evening set	13058 Jan 24 20:41	29°18'55"	
max. Earth dist.	13052 Jan 12 18:51	2°08'03"		13058 Feb 04 23:10	0°	
morning rise	13052 Jan 12 08:05	2°06'23"	conjunction	13058 Feb 10 10:40	0°20'30"	0°05'52"
retrograde	13052 May 01 22:54	6°31'38"	minimum elong	13058 Feb 10 10:40	0°20'30"	0°06'26"
opposition	13052 Jul 15 13:31	4°28'16"	behind sun begin	13058 Feb 10 04:20	0°19'32"	
min. Earth dist.	13052 Jul 15 23:06	4°27'13"	behind sun end	13058 Feb 10 17:01	0°21'28"	
direct	13052 Sep 28 12:32	2°23'59"	max. Earth dist.	13058 Feb 10 00:09	0°18'53"	19.40545 AU
evening set	13052 Dec 31 06:23	5°46'42"	morning rise	13058 Feb 26 23:09	1°21'55"	
conjunction	13053 Jan 16 20:38	6°47'50"	retrograde	13058 May 30 23:20	4°45'29"	
minimum elong	13053 Jan 16 20:38	6°47'50"	opposition	13058 Aug 13 02:19	2°42'24"	0°03'37"
max. Earth dist.	13053 Jan 16 09:45	6°46'09"	min. Earth dist.	13058 Aug 13 11:56	2°41'21"	17.40097 AU
morning rise	13053 Feb 02 10:34	7°48'55"	direct	13058 Oct 27 10:20	0°37'23"	
retrograde	13053 May 06 23:19	11°11'48"	evening set	13059 Jan 30 00:32	4°03'40"	
opposition	13053 Jul 20 10:29	9°08'23"	conjunction	13059 Feb 15 14:03	5°05'16"	0°00'34"
min. Earth dist.	13053 Jul 20 19:12	9°07'26"	minimum elong	13059 Feb 15 14:03	5°05'16"	0°01'05"
direct	13053 Oct 03 12:34	7°03'52"	behind sun begin	13059 Feb 15 07:19	5°04'14"	
evening set	13054 Jan 05 08:30	10°27'18"	behind sun end	13059 Feb 15 20:47	5°06'17"	
conjunction	13054 Jan 21 22:52	11°28'34"	max. Earth dist.	13059 Feb 15 02:18	5°03'27"	19.39747 AU
minimum elong	13054 Jan 21 22:53	11°28'34"	morning rise	13059 Mar 04 02:13	6°06'40"	
max. Earth dist.	13054 Jan 21 12:05	11°26'54"	desc. node	13059 Mar 27 06:46	7°26'53"	
morning rise	13054 Feb 07 12:37	12°29'46"	retrograde	13059 Jun 05 00:41	9°30'13"	
retrograde	13054 Mar 28 07:28	15°	opposition	13059 Aug 18 01:44	7°27'13"	-0°02'16"
opposition	13054 May 11 21:30	15°52'52"	min. Earth dist.	13059 Aug 18 11:01	7°26'12"	17.39510 AU
min. Earth dist.	13054 Jun 26 14:12	15°	direct	13059 Nov 01 11:45	5°22'09"	
direct	13054 Jul 25 08:10	13°49'26"	evening set	13060 Feb 04 04:07	8°48'45"	
evening set	13054 Jul 25 17:50	13°48'23"	conjunction	13060 Feb 20 17:25	9°50'20"	-0°04'49"
direct	13054 Oct 08 10:22	11°44'44"	minimum elong	13060 Feb 20 17:25	9°50'20"	0°04'23"
evening set	13055 Jan 08 00:13	15°	behind sun begin	13060 Feb 20 10:48	9°49'20"	
conjunction	13055 Jan 27 01:21	16°10'14"	behind sun end	13060 Feb 21 00:02	9°51'21"	
minimum elong	13055 Jan 27 01:21	16°10'14"	max. Earth dist.	13060 Feb 20 06:49	9°48'42"	19.39356 AU
max. Earth dist.	13055 Jan 26 14:07	16°08'30"	morning rise	13060 Mar 08 04:53	10°51'43"	
morning rise	13055 Feb 12 14:58	17°11'32"	retrograde	13060 Jun 09 01:09	14°15'09"	
			opposition	13060 Aug 22 01:23	12°12'15"	-0°08'09"
			min. Earth dist.	13060 Aug 22 10:53	12°11'13"	17.39317 AU
			direct	13060 Nov 05 12:08	10°07'09"	
			evening set	13061 Feb 08 08:00	13°33'57"	

conjunction	13061 Feb 24 20:41	14° $\mathbf{\text{X}}$ 35'31	-0°10'03	conjunction	13067 Mar 26 08:40	12° $\mathbf{\text{Y}}$ 56'18	-0°38'49
minimum elong	13061 Feb 24 20:41	14° $\mathbf{\text{X}}$ 35'31	0°09'41	minimum elong	13067 Mar 26 08:39	12° $\mathbf{\text{Y}}$ 56'18	0°38'55
behind sun begin	13061 Feb 24 15:10	14° $\mathbf{\text{X}}$ 34'40		max. Earth dist.	13067 Mar 26 00:28	12° $\mathbf{\text{Y}}$ 55'01	19.48907 AU
behind sun end	13061 Feb 25 02:12	14° $\mathbf{\text{X}}$ 36'21		morning rise	13067 Apr 11 15:06	13° $\mathbf{\text{Y}}$ 56'43	
max. Earth dist.	13061 Feb 24 08:55	14° $\mathbf{\text{X}}$ 33'41	19.39371 AU	retrograde	13067 Jul 12 15:17	17° $\mathbf{\text{Y}}$ 17'41	
morning rise	13061 Mar 13 07:44	15° $\mathbf{\text{X}}$ 36'49		opposition	13067 Sep 24 21:56	15° $\mathbf{\text{Y}}$ 15'22	-0°45'30
retrograde	13061 Jun 14 01:28	19° $\mathbf{\text{X}}$ 00'06		min. Earth dist.	13067 Sep 25 04:50	15° $\mathbf{\text{Y}}$ 14'37	17.50551 AU
opposition	13061 Aug 27 00:58	16° $\mathbf{\text{X}}$ 57'16	-0°13'59	direct	13067 Dec 10 01:50	13° $\mathbf{\text{Y}}$ 10'23	
min. Earth dist.	13061 Aug 27 10:27	16° $\mathbf{\text{X}}$ 56'14	17.39544 AU	evening set	13068 Mar 14 00:30	16° $\mathbf{\text{Y}}$ 36'00	
direct	13061 Nov 10 14:09	14° $\mathbf{\text{X}}$ 52'07					
evening set	13062 Feb 13 11:34	18° $\mathbf{\text{X}}$ 19'03		conjunction	13068 Mar 30 08:36	17° $\mathbf{\text{Y}}$ 36'33	-0°42'49
				minimum elong	13068 Mar 30 08:35	17° $\mathbf{\text{Y}}$ 36'33	0°43'02
conjunction	13062 Mar 01 23:56	19° $\mathbf{\text{X}}$ 20'33	-0°15'13	max. Earth dist.	13068 Mar 30 01:26	17° $\mathbf{\text{Y}}$ 35'26	19.52295 AU
minimum elong	13062 Mar 01 23:56	19° $\mathbf{\text{X}}$ 20'33	0°14'55	morning rise	13068 Apr 15 14:16	18° $\mathbf{\text{Y}}$ 36'46	
behind sun begin	13062 Mar 01 21:32	19° $\mathbf{\text{X}}$ 20'11		retrograde	13068 Jul 16 14:02	21° $\mathbf{\text{Y}}$ 57'12	
behind sun end	13062 Mar 02 02:20	19° $\mathbf{\text{X}}$ 20'55		opposition	13068 Sep 28 20:43	19° $\mathbf{\text{Y}}$ 55'03	-0°49'49
max. Earth dist.	13062 Mar 01 13:20	19° $\mathbf{\text{X}}$ 18'54	19.39802 AU	min. Earth dist.	13068 Sep 29 01:47	19° $\mathbf{\text{Y}}$ 54'30	17.54192 AU
morning rise	13062 Mar 18 10:10	20° $\mathbf{\text{X}}$ 21'46		direct	13068 Dec 14 03:48	17° $\mathbf{\text{Y}}$ 50'14	
retrograde	13062 Jun 19 01:04	23° $\mathbf{\text{X}}$ 44'47		evening set	13069 Mar 19 00:47	21° $\mathbf{\text{Y}}$ 15'23	
opposition	13062 Sep 01 00:44	21° $\mathbf{\text{X}}$ 42'02	-0°19'43				
min. Earth dist.	13062 Sep 01 09:54	21° $\mathbf{\text{X}}$ 41'02	17.40180 AU	conjunction	13069 Apr 04 08:05	22° $\mathbf{\text{Y}}$ 15'43	-0°46'33
direct	13062 Nov 15 15:45	19° $\mathbf{\text{X}}$ 36'53		minimum elong	13069 Apr 04 08:04	22° $\mathbf{\text{Y}}$ 15'43	0°46'49
evening set	13063 Feb 18 14:56	23° $\mathbf{\text{X}}$ 03'49		max. Earth dist.	13069 Apr 04 02:02	22° $\mathbf{\text{Y}}$ 14'46	19.56182 AU
				morning rise	13069 Apr 20 12:51	23° $\mathbf{\text{Y}}$ 15'42	
conjunction	13063 Mar 07 02:32	24° $\mathbf{\text{X}}$ 05'12	-0°20'17	retrograde	13069 Jul 21 09:50	26° $\mathbf{\text{Y}}$ 35'34	
minimum elong	13063 Mar 07 02:32	24° $\mathbf{\text{X}}$ 05'12	0°20'05	opposition	13069 Oct 03 19:18	24° $\mathbf{\text{Y}}$ 33'39	-0°53'47
max. Earth dist.	13063 Mar 06 15:13	24° $\mathbf{\text{X}}$ 03'27	19.40658 AU	min. Earth dist.	13069 Oct 04 00:36	24° $\mathbf{\text{Y}}$ 33'03	17.58318 AU
morning rise	13063 Mar 23 12:11	25° $\mathbf{\text{X}}$ 06'18		direct	13069 Dec 19 02:34	22° $\mathbf{\text{Y}}$ 29'03	
retrograde	13063 Jun 23 23:53	28° $\mathbf{\text{X}}$ 29'03		evening set	13070 Mar 24 00:28	25° $\mathbf{\text{Y}}$ 53'40	
opposition	13063 Sep 06 00:29	26° $\mathbf{\text{X}}$ 26'20	-0°25'19				
min. Earth dist.	13063 Sep 06 09:41	26° $\mathbf{\text{X}}$ 25'20	17.41270 AU	conjunction	13070 Apr 09 06:52	26° $\mathbf{\text{Y}}$ 53'45	-0°49'56
direct	13063 Nov 20 18:14	24° $\mathbf{\text{X}}$ 21'10		minimum elong	13070 Apr 09 06:52	26° $\mathbf{\text{Y}}$ 53'45	0°50'18
evening set	13064 Feb 23 17:48	27° $\mathbf{\text{X}}$ 48'01		max. Earth dist.	13070 Apr 09 01:21	26° $\mathbf{\text{Y}}$ 52'54	19.60532 AU
				morning rise	13070 Apr 25 10:53	27° $\mathbf{\text{Y}}$ 53'30	
conjunction	13064 Mar 11 04:55	28° $\mathbf{\text{X}}$ 49'17	-0°25'13		13070 Jun 03 18:18	0° $\mathbf{\text{Z}}$	
minimum elong	13064 Mar 11 04:55	28° $\mathbf{\text{X}}$ 49'17	0°25'05	retrograde	13070 Jul 26 08:06	1° $\mathbf{\text{Z}}$ 12'48	
max. Earth dist.	13064 Mar 10 18:55	28° $\mathbf{\text{X}}$ 47'44	19.41979 AU		13070 Sep 19 02:41	30° $\mathbf{\text{R}}$ $\mathbf{\text{Y}}$	
morning rise	13064 Mar 27 13:45	29° $\mathbf{\text{X}}$ 50'15		opposition	13070 Oct 08 17:35	29° $\mathbf{\text{Y}}$ 11'07	-0°57'22
	13064 Mar 30 06:01	0° $\mathbf{\text{Y}}$		min. Earth dist.	13070 Oct 08 21:06	29° $\mathbf{\text{Y}}$ 10'44	17.62860 AU
retrograde	13064 Jun 27 22:38	3° $\mathbf{\text{Y}}$ 12'36		direct	13070 Dec 24 03:41	27° $\mathbf{\text{Y}}$ 06'46	
opposition	13064 Sep 09 23:59	1° $\mathbf{\text{Y}}$ 09'59	-0°30'44		13071 Mar 20 08:06	0° $\mathbf{\text{Z}}$	
min. Earth dist.	13064 Sep 10 08:17	1° $\mathbf{\text{Y}}$ 09'05	17.42821 AU	evening set	13071 Mar 28 23:16	0° $\mathbf{\text{Z}}$ 30'45	
	13064 Oct 08 13:30	30° $\mathbf{\text{R}}$ $\mathbf{\text{X}}$					
direct	13064 Nov 24 20:59	29° $\mathbf{\text{X}}$ 04'48		conjunction	13071 Apr 14 04:54	1° $\mathbf{\text{Z}}$ 30'36	-0°53'00
	13065 Jan 10 00:02	0° $\mathbf{\text{Y}}$		minimum elong	13071 Apr 14 04:53	1° $\mathbf{\text{Z}}$ 30'36	0°53'26
evening set	13065 Feb 27 20:22	2° $\mathbf{\text{Y}}$ 31'28		max. Earth dist.	13071 Apr 14 00:52	1° $\mathbf{\text{Z}}$ 29'59	19.65245 AU
				morning rise	13071 Apr 30 07:57	2° $\mathbf{\text{Z}}$ 30'07	
conjunction	13065 Mar 16 06:43	3° $\mathbf{\text{Y}}$ 32'36	-0°29'59	retrograde	13071 Jul 31 03:07	5° $\mathbf{\text{Z}}$ 48'48	
minimum elong	13065 Mar 16 06:43	3° $\mathbf{\text{Y}}$ 32'35	0°29'56	opposition	13071 Oct 13 15:44	3° $\mathbf{\text{Z}}$ 47'21	-1°00'35
max. Earth dist.	13065 Mar 15 20:36	3° $\mathbf{\text{Y}}$ 31'01	19.43771 AU	min. Earth dist.	13071 Oct 13 19:33	3° $\mathbf{\text{Z}}$ 46'57	17.67740 AU
morning rise	13065 Apr 01 14:52	4° $\mathbf{\text{Y}}$ 33'24		direct	13071 Dec 29 02:00	1° $\mathbf{\text{Z}}$ 43'17	
retrograde	13065 Jul 02 20:07	7° $\mathbf{\text{Y}}$ 55'20		evening set	13072 Apr 01 21:35	5° $\mathbf{\text{Z}}$ 06'35	
opposition	13065 Sep 14 23:30	5° $\mathbf{\text{Y}}$ 52'47	-0°35'56				
min. Earth dist.	13065 Sep 15 07:56	5° $\mathbf{\text{Y}}$ 51'52	17.44872 AU	conjunction	13072 Apr 18 02:16	6° $\mathbf{\text{Z}}$ 06'10	-0°55'43
direct	13065 Nov 29 22:56	3° $\mathbf{\text{Y}}$ 47'37		minimum elong	13072 Apr 18 02:16	6° $\mathbf{\text{Z}}$ 06'10	0°56'12
evening set	13066 Mar 04 22:20	7° $\mathbf{\text{Y}}$ 14'01		max. Earth dist.	13072 Apr 17 22:16	6° $\mathbf{\text{Z}}$ 05'33	19.70271 AU
				morning rise	13072 May 04 04:39	7° $\mathbf{\text{Z}}$ 05'25	
conjunction	13066 Mar 21 08:00	8° $\mathbf{\text{Y}}$ 14'58	-0°34'31	retrograde	13072 Aug 03 23:51	10° $\mathbf{\text{Z}}$ 23'29	
minimum elong	13066 Mar 21 08:00	8° $\mathbf{\text{Y}}$ 14'58	0°34'34	opposition	13072 Oct 17 13:12	8° $\mathbf{\text{Z}}$ 22'15	-1°03'23
max. Earth dist.	13066 Mar 20 23:08	8° $\mathbf{\text{Y}}$ 13'35	19.46077 AU	min. Earth dist.	13072 Oct 17 15:27	8° $\mathbf{\text{Z}}$ 22'01	17.72890 AU
morning rise	13066 Apr 06 15:17	9° $\mathbf{\text{Y}}$ 15'35		direct	13073 Jan 02 02:21	6° $\mathbf{\text{Z}}$ 18'27	
retrograde	13066 Jul 07 18:36	12° $\mathbf{\text{Y}}$ 37'03		evening set	13073 Apr 06 19:06	9° $\mathbf{\text{Z}}$ 41'01	
opposition	13066 Sep 19 22:44	10° $\mathbf{\text{Y}}$ 34'36	-0°40'52				
min. Earth dist.	13066 Sep 20 05:38	10° $\mathbf{\text{Y}}$ 33'51	17.47435 AU	conjunction	13073 Apr 22 23:05	10° $\mathbf{\text{Z}}$ 40'21	-0°58'04
direct	13066 Dec 05 01:40	8° $\mathbf{\text{Y}}$ 29'30		minimum elong	13073 Apr 22 23:04	10° $\mathbf{\text{Z}}$ 40'21	0°58'38
evening set	13067 Mar 09 23:49	11° $\mathbf{\text{Y}}$ 55'32		max. Earth dist.	13073 Apr 22 20:37	10° $\mathbf{\text{Z}}$ 39'58	19.75521 AU
				morning rise	13073 May 09 00:31	11° $\mathbf{\text{Z}}$ 39'20	

retrograde	13073 Aug 08 17:54	14°♄56'43	direct	13080 Feb 04 08:03	7°♄39'04
opposition	13073 Oct 22 10:35	12°♄55'44 -1°05'47	evening set	13080 May 08 01:10	10°♄55'12
min. Earth dist.	13073 Oct 22 13:11	12°♄55'27 17.78236 AU			
direct	13074 Jan 07 00:20	10°♄52'12	conjunction	13080 May 23 23:53	11°♄52'33 -1°03'49
evening set	13074 Apr 11 15:52	14°♄13'58	minimum elong	13080 May 23 23:53	11°♄52'33 1°04'44
	13074 Apr 24 06:21	15°♄	max. Earth dist.	13080 May 24 01:57	11°♄52'52 20.15489 AU
			morning rise	13080 Jun 08 21:02	12°♄49'41
conjunction	13074 Apr 27 18:51	15°♄13'00 -1°00'02	retrograde	13080 Sep 08 10:24	16°♄02'08
minimum elong	13074 Apr 27 18:51	15°♄13'00 1°00'40	opposition	13080 Nov 23 00:25	14°♄02'17 -1°10'36
max. Earth dist.	13074 Apr 27 16:06	15°♄12'35 19.80948 AU	min. Earth dist.	13080 Nov 22 21:13	14°♄02'37 18.18544 AU
morning rise	13074 May 13 19:40	16°♄11'44	direct	13081 Feb 08 01:51	12°♄00'30
retrograde	13074 Aug 13 13:05	19°♄28'27	evening set	13081 May 12 15:28	15°♄15'40
opposition	13074 Oct 27 07:23	17°♄27'40 -1°07'45			
min. Earth dist.	13074 Oct 27 08:30	17°♄27'32 17.83734 AU	conjunction	13081 May 28 13:46	16°♄12'45 -1°03'08
direct	13075 Jan 11 23:38	15°♄24'23	minimum elong	13081 May 28 13:46	16°♄12'45 1°04'04
evening set	13075 Apr 16 11:41	18°♄45'19	max. Earth dist.	13081 May 28 17:54	16°♄13'23 20.21573 AU
			morning rise	13081 Jun 13 10:18	17°♄09'38
conjunction	13075 May 02 14:01	19°♄44'05 -1°01'38	retrograde	13081 Sep 12 23:46	20°♄21'24
minimum elong	13075 May 02 14:01	19°♄44'05 1°02'19	opposition	13081 Nov 27 17:13	18°♄21'45 -1°09'37
max. Earth dist.	13075 May 02 12:58	19°♄43'55 19.86499 AU	min. Earth dist.	13081 Nov 27 13:03	18°♄22'11 18.24664 AU
morning rise	13075 May 18 13:56	20°♄42'31	direct	13082 Feb 12 19:23	16°♄20'18
retrograde	13075 Aug 18 06:02	23°♄58'33	evening set	13082 May 17 04:59	19°♄34'28
opposition	13075 Nov 01 03:44	21°♄57'57 -1°09'18			
min. Earth dist.	13075 Nov 01 05:01	21°♄57'49 17.89336 AU	conjunction	13082 Jun 02 02:35	20°♄31'18 -1°02'05
direct	13076 Jan 16 21:16	19°♄54'57	minimum elong	13082 Jun 02 02:35	20°♄31'18 1°03'03
evening set	13076 Apr 20 06:42	23°♄14'58	max. Earth dist.	13082 Jun 02 06:44	20°♄31'56 20.27732 AU
			morning rise	13082 Jun 17 22:52	21°♄27'57
conjunction	13076 May 06 08:08	24°♄13'27 -1°02'50	retrograde	13082 Sep 17 12:58	24°♄39'06
minimum elong	13076 May 06 08:08	24°♄13'27 1°03'35	opposition	13082 Dec 02 09:27	22°♄39'38 -1°08'15
max. Earth dist.	13076 May 06 06:37	24°♄13'13 19.92148 AU	min. Earth dist.	13082 Dec 02 04:23	22°♄40'09 18.30849 AU
morning rise	13076 May 22 07:34	25°♄11'38	direct	13083 Feb 17 11:15	20°♄38'31
retrograde	13076 Aug 21 23:17	28°♄26'57	evening set	13083 May 21 17:36	23°♄51'44
opposition	13076 Nov 04 23:28	26°♄26'31 -1°10'25			
min. Earth dist.	13076 Nov 04 23:27	26°♄26'31 17.95021 AU	conjunction	13083 Jun 06 14:54	24°♄48'19 -1°00'42
direct	13077 Jan 20 19:03	24°♄23'44	minimum elong	13083 Jun 06 14:54	24°♄48'19 1°01'41
evening set	13077 Apr 25 00:43	27°♄42'50	max. Earth dist.	13083 Jun 06 20:55	24°♄49'13 20.33921 AU
			morning rise	13083 Jun 22 10:43	25°♄44'44
conjunction	13077 May 11 01:35	28°♄41'02 -1°03'39	retrograde	13083 Sep 22 01:46	28°♄55'15
minimum elong	13077 May 11 01:35	28°♄41'02 1°04'27	opposition	13083 Dec 07 00:57	26°♄56'01 -1°06'31
max. Earth dist.	13077 May 11 01:53	28°♄41'05 19.97860 AU	min. Earth dist.	13083 Dec 06 18:57	26°♄56'38 18.37014 AU
morning rise	13077 May 27 00:11	29°♄38'57	direct	13084 Feb 22 03:03	24°♄55'15
	13077 Jun 01 23:23	0°♄	evening set	13084 May 25 05:41	28°♄07'31
retrograde	13077 Aug 26 15:02	2°♄53'32			
opposition	13077 Nov 09 18:39	0°♄53'15 -1°11'06	conjunction	13084 Jun 10 02:25	29°♄03'52 -0°58'59
min. Earth dist.	13077 Nov 09 18:30	0°♄53'16 18.00760 AU	minimum elong	13084 Jun 10 02:25	29°♄03'52 0°59'59
	13077 Dec 01 18:22	30°♄	max. Earth dist.	13084 Jun 10 08:17	29°♄04'44 20.40057 AU
direct	13078 Jan 25 16:16	28°♄50'44	morning rise	13084 Jun 25 22:06	0°♄00'04
	13078 Mar 19 10:26	0°♄		13084 Jun 25 21:37	0°♄
evening set	13078 Apr 29 17:55	2°♄08'51	retrograde	13084 Sep 25 14:09	3°♄10'01
			opposition	13084 Dec 10 16:08	1°♄10'59 -1°04'25
conjunction	13078 May 15 17:55	3°♄06'46 -1°04'05	min. Earth dist.	13084 Dec 10 09:44	1°♄11'38 18.43106 AU
minimum elong	13078 May 15 17:55	3°♄06'46 1°04'57			
max. Earth dist.	13078 May 15 17:56	3°♄06'46 20.03643 AU	direct	13085 Jan 10 15:00	30°♄
morning rise	13078 May 31 16:06	4°♄04'25		13085 Feb 25 17:04	29°♄10'32
retrograde	13078 Aug 31 06:10	7°♄18'17	evening set	13085 Apr 11 08:10	0°♄
opposition	13078 Nov 14 13:14	5°♄18'07 -1°11'21		13085 May 29 16:55	2°♄21'53
min. Earth dist.	13078 Nov 14 11:49	5°♄18'16 18.06591 AU	conjunction	13085 Jun 14 13:22	3°♄18'00 -0°56'58
direct	13079 Jan 30 12:20	3°♄15'50	minimum elong	13085 Jun 14 13:22	3°♄18'00 0°57'59
evening set	13079 May 04 09:50	6°♄32'57	max. Earth dist.	13085 Jun 14 20:46	3°♄19'06 20.46078 AU
			morning rise	13085 Jun 30 08:40	4°♄14'00
conjunction	13079 May 20 09:21	7°♄30'35 -1°04'09	retrograde	13085 Sep 30 02:40	7°♄23'22
minimum elong	13079 May 20 09:21	7°♄30'35 1°05'01	opposition	13085 Dec 15 06:45	5°♄24'33 -1°02'00
max. Earth dist.	13079 May 20 11:30	7°♄30'55 20.09515 AU	min. Earth dist.	13085 Dec 14 23:24	5°♄25'18 18.49034 AU
morning rise	13079 Jun 05 06:50	8°♄27'58	direct	13086 Mar 02 08:24	3°♄24'27
retrograde	13079 Sep 04 20:36	11°♄41'07	evening set	13086 Jun 03 03:41	6°♄34'52
opposition	13079 Nov 19 07:14	9°♄41'07 -1°11'11			
min. Earth dist.	13079 Nov 19 05:10	9°♄41'19 18.12508 AU	conjunction	13086 Jun 18 23:38	7°♄30'46 -0°54'39

minimum elong	13086 Jun 18 23:38	7°☿30'46	0°55'39	opposition	13093 Jan 13 23:24	4°♄22'12	-0°37'18
max. Earth dist.	13086 Jun 19 06:50	7°☿31'50	20.51911 AU	min. Earth dist.	13093 Jan 13 14:28	4°♄23'06	18.82194 AU
morning rise	13086 Jul 04 18:53	8°☿26'34		direct	13093 Mar 31 20:55	2°♄23'40	
retrograde	13086 Oct 04 13:56	11°☿35'25		evening set	13093 Jul 01 13:44	5°♄28'22	
opposition	13086 Dec 19 20:59	9°☿36'45	-0°59'15				
min. Earth dist.	13086 Dec 19 13:38	9°☿37'30	18.54764 AU	conjunction	13093 Jul 17 08:46	6°♄23'05	-0°31'42
direct	13087 Mar 06 20:48	7°☿36'58		minimum elong	13093 Jul 17 08:46	6°♄23'05	0°32'34
evening set	13087 Jun 07 13:35	10°☿46'29		max. Earth dist.	13093 Jul 17 19:00	6°♄24'34	20.83944 AU
				morning rise	13093 Aug 02 04:02	7°♄17'52	
conjunction	13087 Jun 23 09:25	11°☿42'12	-0°52'04	retrograde	13093 Nov 02 10:58	10°♄23'44	
minimum elong	13087 Jun 23 09:25	11°☿42'12	0°53'04	opposition	13094 Jan 18 10:06	8°♄25'29	-0°32'55
max. Earth dist.	13087 Jun 23 17:48	11°☿43'26	20.57509 AU	min. Earth dist.	13094 Jan 17 23:43	8°♄26'32	18.85642 AU
morning rise	13087 Jul 09 04:26	12°☿37'48		direct	13094 Apr 05 07:56	6°♄27'08	
retrograde	13087 Oct 09 01:59	15°☿46'08		evening set	13094 Jul 05 20:03	9°♄31'11	
opposition	13087 Dec 24 10:37	13°☿47'38	-0°56'13				
min. Earth dist.	13087 Dec 24 02:23	13°☿48'28	18.60204 AU	conjunction	13094 Jul 21 15:01	10°♄25'48	-0°27'41
direct	13088 Mar 10 11:32	11°☿48'08		minimum elong	13094 Jul 21 15:01	10°♄25'48	0°28'31
evening set	13088 Jun 10 23:11	14°☿56'47		max. Earth dist.	13094 Jul 22 01:15	10°♄27'16	20.87260 AU
				morning rise	13094 Aug 06 10:32	11°♄20'29	
conjunction	13088 Jun 26 18:37	15°☿52'17	-0°49'13	retrograde	13094 Nov 06 19:08	14°♄26'08	
minimum elong	13088 Jun 26 18:37	15°☿52'17	0°50'12	opposition	13095 Jan 22 20:27	12°♄27'53	-0°28'23
max. Earth dist.	13088 Jun 27 02:35	15°☿53'27	20.62787 AU	min. Earth dist.	13095 Jan 22 10:33	12°♄28'53	18.88838 AU
morning rise	13088 Jul 12 13:39	16°☿47'43		direct	13095 Apr 09 16:03	10°♄29'43	
retrograde	13088 Oct 12 11:55	19°☿55'34		evening set	13095 Jul 10 01:51	13°♄33'12	
opposition	13088 Dec 27 23:46	17°☿57'10	-0°52'55				
min. Earth dist.	13088 Dec 27 15:56	17°☿57'58	18.65319 AU	conjunction	13095 Jul 25 21:00	14°♄27'43	-0°23'32
direct	13089 Mar 14 22:55	15°☿57'55		minimum elong	13095 Jul 25 21:01	14°♄27'43	0°24'19
evening set	13089 Jun 15 08:04	19°☿05'43		max. Earth dist.	13095 Jul 26 08:03	14°♄29'19	20.90322 AU
					13095 Aug 04 04:09	15°♄	
conjunction	13089 Jul 01 03:25	20°☿01'03	-0°46'07	morning rise	13095 Aug 10 16:43	15°♄22'20	
minimum elong	13089 Jul 01 03:26	20°☿01'03	0°47'06	retrograde	13095 Nov 11 04:10	18°♄27'48	
max. Earth dist.	13089 Jul 01 12:17	20°☿02'21	20.67725 AU	opposition	13096 Jan 27 06:18	16°♄29'36	-0°23'44
morning rise	13089 Jul 16 22:19	20°☿56'19		min. Earth dist.	13096 Jan 26 19:05	16°♄30'43	18.91745 AU
retrograde	13089 Oct 16 22:50	24°☿03'42			13096 Mar 09 12:30	15°♄	
opposition	13090 Jan 01 12:28	22°☿05'23	-0°49'21	direct	13096 Apr 13 01:29	14°♄31'37	
min. Earth dist.	13090 Jan 01 03:39	22°☿06'17	18.70061 AU		13096 May 16 17:52	15°♄	
direct	13090 Mar 19 12:51	20°☿06'22		evening set	13096 Jul 13 07:33	17°♄34'36	
evening set	13090 Jun 19 16:19	23°☿13'19					
				conjunction	13096 Jul 29 02:42	18°♄29'03	-0°19'17
conjunction	13090 Jul 05 11:26	24°☿08'28	-0°42'48	minimum elong	13096 Jul 29 02:42	18°♄29'03	0°20'01
minimum elong	13090 Jul 05 11:26	24°☿08'28	0°43'46	max. Earth dist.	13096 Jul 29 13:39	18°♄30'37	20.93074 AU
max. Earth dist.	13090 Jul 05 19:58	24°☿09'43	20.72283 AU	morning rise	13096 Aug 13 22:42	19°♄23'37	
morning rise	13090 Jul 21 06:28	25°☿03'36		retrograde	13096 Nov 14 11:32	22°♄28'57	
retrograde	13090 Oct 21 08:00	28°☿10'34		opposition	13097 Jan 30 16:01	20°♄30'47	-0°18'59
opposition	13091 Jan 06 00:44	26°☿12'16	-0°45'32	min. Earth dist.	13097 Jan 30 05:32	20°♄31'50	18.94344 AU
min. Earth dist.	13091 Jan 05 16:26	26°☿13'07	18.74441 AU	direct	13097 Apr 17 09:03	18°♄33'00	
direct	13091 Mar 23 23:11	24°☿13'25		evening set	13097 Jul 17 12:58	21°♄35'32	
evening set	13091 Jun 23 23:58	27°☿19'35					
				conjunction	13097 Aug 02 08:20	22°♄29'56	-0°14'58
conjunction	13091 Jul 09 19:07	28°☿14'35	-0°39'17	minimum elong	13097 Aug 02 08:20	22°♄29'56	0°15'40
minimum elong	13091 Jul 09 19:07	28°☿14'35	0°40'12	behind sun begin	13097 Aug 02 06:39	22°♄29'41	
max. Earth dist.	13091 Jul 10 04:30	28°☿15'57	20.76489 AU	behind sun end	13097 Aug 02 10:00	22°♄30'10	
morning rise	13091 Jul 25 14:09	29°☿09'35		max. Earth dist.	13097 Aug 02 19:54	22°♄31'35	20.95513 AU
	13091 Aug 09 20:08	0°♄		morning rise	13097 Aug 18 04:34	23°♄24'27	
retrograde	13091 Oct 25 17:27	2°♄16'07		retrograde	13097 Nov 18 21:02	26°♄29'43	
opposition	13092 Jan 10 12:09	0°♄17'50	-0°41'31	opposition	13098 Feb 04 01:24	24°♄31'36	-0°14'08
min. Earth dist.	13092 Jan 10 02:47	0°♄18'47	18.78467 AU	min. Earth dist.	13098 Feb 03 13:46	24°♄32'46	18.96597 AU
	13092 Jan 17 22:03	30°♄		direct	13098 Apr 21 17:43	22°♄34'00	
direct	13092 Mar 27 11:49	28°☿19'09		evening set	13098 Jul 21 18:15	25°♄36'09	
	13092 May 31 16:12	0°♄					
evening set	13092 Jun 27 07:12	1°♄24'33		conjunction	13098 Aug 06 13:43	26°♄30'29	-0°10'34
				minimum elong	13098 Aug 06 13:43	26°♄30'29	0°11'12
conjunction	13092 Jul 13 02:11	2°♄19'24	-0°35'34	behind sun begin	13098 Aug 06 08:49	26°♄29'48	
minimum elong	13092 Jul 13 02:11	2°♄19'25	0°36'29	behind sun end	13098 Aug 06 18:37	26°♄31'11	
max. Earth dist.	13092 Jul 13 11:25	2°♄20'45	20.80355 AU	max. Earth dist.	13098 Aug 07 01:06	26°♄32'07	20.97575 AU
morning rise	13092 Jul 28 21:24	3°♄14'17		morning rise	13098 Aug 22 10:21	27°♄25'00	
retrograde	13092 Oct 29 02:08	6°♄20'28			13098 Oct 19 00:25	0°♄	

retrograde	13098 Nov 23 03:54	0° \mathring{M} 30'14	
	13098 Dec 29 03:14	30° \mathring{R} 8 \mathring{Q}	
opposition	13099 Feb 08 10:44	28° \mathring{Q} 32'10	-0°09'14
min. Earth dist.	13099 Feb 08 00:08	28° \mathring{Q} 33'13	18.98464 AU
direct	13099 Apr 26 00:21	26° \mathring{Q} 34'44	
evening set	13099 Jul 25 23:32	29° \mathring{Q} 36'33	
	13099 Aug 01 20:49	0° \mathring{M}	
conjunction	13099 Aug 10 19:17	0° \mathring{M} 30'52	-0°06'09
minimum elong	13099 Aug 10 19:18	0° \mathring{M} 30'52	0°06'44
behind sun begin	13099 Aug 10 13:09	0° \mathring{M} 30'00	
behind sun end	13099 Aug 11 01:27	0° \mathring{M} 31'44	
max. Earth dist.	13099 Aug 11 06:56	0° \mathring{M} 32'32	20.99232 AU
morning rise	13099 Aug 26 16:14	1° \mathring{M} 25'21	
retrograde	13099 Nov 27 13:23	4° \mathring{M} 30'37	
opposition	13100 Feb 12 19:34	2° \mathring{M} 32'34	-0°04'18
min. Earth dist.	13100 Feb 12 08:11	2° \mathring{M} 33'42	18.99889 AU
direct	13100 Apr 30 08:46	0° \mathring{M} 35'16	
evening set	13100 Jul 30 04:55	3° \mathring{M} 36'50	
conjunction	13100 Aug 15 00:50	4° \mathring{M} 31'08	-0°01'41
minimum elong	13100 Aug 15 00:49	4° \mathring{M} 31'08	0°02'12
behind sun begin	13100 Aug 14 18:14	4° \mathring{M} 30'13	
behind sun end	13100 Aug 15 07:24	4° \mathring{M} 32'03	
max. Earth dist.	13100 Aug 15 11:55	4° \mathring{M} 32'43	21.00415 AU
morning rise	13100 Aug 30 22:09	5° \mathring{M} 25'38	
retrograde	13100 Dec 01 20:01	8° \mathring{M} 30'58	
asc. node	13101 Jan 01 10:55	8° \mathring{M} 08'51	
opposition	13101 Feb 17 04:38	6° \mathring{M} 32'54	0°00'39
min. Earth dist.	13101 Feb 16 18:35	6° \mathring{M} 33'54	19.00830 AU
direct	13101 May 04 14:45	4° \mathring{M} 35'43	
evening set	13101 Aug 03 10:08	7° \mathring{M} 37'04	
conjunction	13101 Aug 19 06:23	8° \mathring{M} 31'21	0°02'55
minimum elong	13101 Aug 19 06:23	8° \mathring{M} 31'21	0°02'27
behind sun begin	13101 Aug 18 23:48	8° \mathring{M} 30'26	
behind sun end	13101 Aug 19 12:57	8° \mathring{M} 32'16	
max. Earth dist.	13101 Aug 19 17:26	8° \mathring{M} 32'56	21.01098 AU
morning rise	13101 Sep 04 04:05	9° \mathring{M} 25'52	
retrograde	13101 Dec 06 05:30	12° \mathring{M} 31'18	