

retrograde	3100 Jan 26 15:07	25° <u>♁</u> 25'39		min. Earth dist.	3106 Apr 28 13:52	7° <u>♁</u> 05'18	29.34315 AU
opposition	3100 Apr 14 01:37	24° <u>♁</u> 03'40	1°29'39	direct	3106 Jul 17 17:40	5° <u>♁</u> 41'58	
min. Earth dist.	3100 Apr 14 21:59	24° <u>♁</u> 02'15	29.30797 AU	evening set	3106 Oct 16 11:59	7° <u>♁</u> 37'51	
direct	3100 Jul 03 20:08	22° <u>♁</u> 38'44		max. Earth dist.	3106 Oct 31 07:14	8° <u>♁</u> 10'36	31.34512 AU
evening set	3100 Oct 02 16:27	24° <u>♁</u> 34'37					
conjunction	3100 Oct 18 13:21	25° <u>♁</u> 09'39	1°24'50	conjunction	3106 Nov 01 05:35	8° <u>♁</u> 12'41	1°33'07
minimum elong	3100 Oct 18 13:20	25° <u>♁</u> 09'39	1°24'50	minimum elong	3106 Nov 01 05:35	8° <u>♁</u> 12'41	1°33'07
max. Earth dist.	3100 Oct 17 15:25	25° <u>♁</u> 07'36	31.30922 AU	morning rise	3106 Nov 16 19:54	8° <u>♁</u> 47'14	
morning rise	3100 Nov 03 06:39	25° <u>♁</u> 44'24		retrograde	3107 Feb 11 12:57	10° <u>♁</u> 39'07	
retrograde	3101 Jan 28 22:47	27° <u>♁</u> 36'14		opposition	3107 Apr 30 04:47	9° <u>♁</u> 17'20	1°39'57
opposition	3101 Apr 16 12:19	26° <u>♁</u> 14'15	1°31'32	min. Earth dist.	3107 May 01 01:32	9° <u>♁</u> 15'55	29.34888 AU
min. Earth dist.	3101 Apr 17 09:14	26° <u>♁</u> 12'49	29.31235 AU	direct	3107 Jul 20 04:16	7° <u>♁</u> 52'40	
direct	3101 Jul 06 08:11	24° <u>♁</u> 49'19		evening set	3107 Oct 18 23:02	9° <u>♁</u> 48'33	
evening set	3101 Oct 05 03:50	26° <u>♁</u> 45'10		conjunction	3107 Nov 03 16:13	10° <u>♁</u> 23'21	1°34'02
max. Earth dist.	3101 Oct 20 01:11	27° <u>♁</u> 18'02	31.31385 AU	minimum elong	3107 Nov 03 16:12	10° <u>♁</u> 23'21	1°34'03
				max. Earth dist.	3107 Nov 02 18:34	10° <u>♁</u> 21'20	31.35019 AU
conjunction	3101 Oct 21 00:02	27° <u>♁</u> 20'10	1°26'32	morning rise	3107 Nov 19 05:55	10° <u>♁</u> 57'52	
minimum elong	3101 Oct 21 00:02	27° <u>♁</u> 20'10	1°26'33	retrograde	3108 Feb 13 22:35	12° <u>♁</u> 49'45	
morning rise	3101 Nov 05 17:00	27° <u>♁</u> 54'53		opposition	3108 May 01 15:51	11° <u>♁</u> 28'01	1°40'52
retrograde	3102 Jan 31 08:54	29° <u>♁</u> 46'41		min. Earth dist.	3108 May 02 12:41	11° <u>♁</u> 26'35	29.35323 AU
opposition	3102 Apr 18 22:53	28° <u>♁</u> 24'43	1°33'17	direct	3108 Jul 21 18:06	10° <u>♁</u> 03'22	
min. Earth dist.	3102 Apr 19 18:56	28° <u>♁</u> 23'20	29.31737 AU	evening set	3108 Oct 20 10:10	11° <u>♁</u> 59'14	
direct	3102 Jul 08 18:54	26° <u>♁</u> 59'48		max. Earth dist.	3108 Nov 04 03:50	12° <u>♁</u> 31'52	31.35385 AU
evening set	3102 Oct 07 15:09	28° <u>♁</u> 55'38					
conjunction	3102 Oct 23 10:58	29° <u>♁</u> 30'36	1°28'07	conjunction	3108 Nov 05 02:41	12° <u>♁</u> 34'00	1°34'50
minimum elong	3102 Oct 23 10:58	29° <u>♁</u> 30'36	1°28'06	minimum elong	3108 Nov 05 02:40	12° <u>♁</u> 34'00	1°34'49
max. Earth dist.	3102 Oct 22 13:09	29° <u>♁</u> 28'34	31.31918 AU	morning rise	3108 Nov 20 16:02	13° <u>♁</u> 08'29	
	3102 Nov 05 17:11	0° <u>♁</u>		retrograde	3109 Feb 10 13:18	15° <u>♁</u>	
morning rise	3102 Nov 08 03:13	0° <u>♁</u> 05'17			3109 Feb 15 09:38	15° <u>♁</u> 00'24	
retrograde	3103 Feb 02 17:39	1° <u>♁</u> 57'05			3109 Feb 20 04:29	15° <u>♁</u>	
opposition	3103 Apr 21 09:32	0° <u>♁</u> 35'08	1°34'53	opposition	3109 May 04 02:55	13° <u>♁</u> 38'39	1°41'38
min. Earth dist.	3103 Apr 22 06:27	0° <u>♁</u> 33'42	29.32316 AU	min. Earth dist.	3109 May 04 23:36	13° <u>♁</u> 37'14	29.35628 AU
	3103 May 13 07:45	30° <u>♁</u>		direct	3109 Jul 24 05:07	12° <u>♁</u> 14'01	
direct	3103 Jul 11 04:48	29° <u>♁</u> 10'15		evening set	3109 Oct 22 20:55	14° <u>♁</u> 09'51	
	3103 Sep 06 04:43	0° <u>♁</u>		conjunction	3109 Nov 07 13:08	14° <u>♁</u> 44'35	1°35'29
evening set	3103 Oct 10 02:32	1° <u>♁</u> 06'06		minimum elong	3109 Nov 07 13:08	14° <u>♁</u> 44'35	1°35'29
				max. Earth dist.	3109 Nov 06 15:11	14° <u>♁</u> 42'32	31.35608 AU
conjunction	3103 Oct 25 21:42	1° <u>♁</u> 41'01	1°29'34		3109 Nov 14 10:51	15° <u>♁</u>	
minimum elong	3103 Oct 25 21:42	1° <u>♁</u> 41'01	1°29'34	morning rise	3109 Nov 23 01:53	15° <u>♁</u> 19'02	
max. Earth dist.	3103 Oct 24 23:28	1° <u>♁</u> 38'57	31.32545 AU	retrograde	3110 Feb 17 17:13	17° <u>♁</u> 10'57	
morning rise	3103 Nov 10 13:33	2° <u>♁</u> 15'40		opposition	3110 May 06 14:07	15° <u>♁</u> 49'11	1°42'16
retrograde	3104 Feb 05 04:48	4° <u>♁</u> 07'29		min. Earth dist.	3110 May 07 11:33	15° <u>♁</u> 47'43	29.35771 AU
opposition	3104 Apr 22 20:13	2° <u>♁</u> 45'35	1°36'22		3110 Jun 07 14:09	15° <u>♁</u>	
min. Earth dist.	3104 Apr 23 15:58	2° <u>♁</u> 44'13	29.32972 AU	direct	3110 Jul 26 17:33	14° <u>♁</u> 24'34	
direct	3104 Jul 12 16:54	1° <u>♁</u> 20'44			3110 Sep 12 07:05	15° <u>♁</u>	
evening set	3104 Oct 11 13:37	3° <u>♁</u> 16'36		evening set	3110 Oct 25 07:53	16° <u>♁</u> 20'20	
max. Earth dist.	3104 Oct 26 10:28	3° <u>♁</u> 49'28	31.33217 AU				
conjunction	3104 Oct 27 08:19	3° <u>♁</u> 51'29	1°30'53	conjunction	3110 Nov 09 23:27	16° <u>♁</u> 55'02	1°36'00
minimum elong	3104 Oct 27 08:19	3° <u>♁</u> 51'29	1°30'53	minimum elong	3110 Nov 09 23:27	16° <u>♁</u> 55'02	1°35'59
morning rise	3104 Nov 11 23:34	4° <u>♁</u> 26'06		max. Earth dist.	3110 Nov 09 00:22	16° <u>♁</u> 52'53	31.35689 AU
retrograde	3105 Feb 06 15:45	6° <u>♁</u> 17'57		morning rise	3110 Nov 25 11:55	17° <u>♁</u> 29'28	
opposition	3105 Apr 25 07:06	4° <u>♁</u> 56'05	1°37'42	retrograde	3111 Feb 20 03:01	19° <u>♁</u> 21'22	
min. Earth dist.	3105 Apr 26 03:45	4° <u>♁</u> 54'40	29.33661 AU	opposition	3111 May 09 01:05	17° <u>♁</u> 59'35	1°42'45
direct	3105 Jul 15 04:30	3° <u>♁</u> 31'19		min. Earth dist.	3111 May 09 21:49	17° <u>♁</u> 58'10	29.35790 AU
evening set	3105 Oct 14 00:47	5° <u>♁</u> 27'12		direct	3111 Jul 29 04:30	16° <u>♁</u> 34'57	
				evening set	3111 Oct 27 18:35	18° <u>♁</u> 30'40	
conjunction	3105 Oct 29 18:58	6° <u>♁</u> 02'03	1°32'04	max. Earth dist.	3111 Nov 11 11:37	19° <u>♁</u> 03'16	31.35650 AU
minimum elong	3105 Oct 29 18:57	6° <u>♁</u> 02'03	1°32'05	conjunction	3111 Nov 12 09:48	19° <u>♁</u> 05'20	1°36'23
max. Earth dist.	3105 Oct 28 21:15	6° <u>♁</u> 00'02	31.33900 AU	minimum elong	3111 Nov 12 09:48	19° <u>♁</u> 05'20	1°36'23
morning rise	3105 Nov 14 09:44	6° <u>♁</u> 36'38		morning rise	3111 Nov 27 21:41	19° <u>♁</u> 39'44	
retrograde	3106 Feb 09 02:37	8° <u>♁</u> 28'30		retrograde	3112 Feb 22 11:40	21° <u>♁</u> 31'38	
opposition	3106 Apr 27 17:47	7° <u>♁</u> 06'41	1°38'54	opposition	3112 May 10 12:24	20° <u>♁</u> 09'48	1°43'05

min. Earth dist.	3112 May 11 10:04	20° <del>M</del> 08'19	29.35714 AU	evening set	3118 Nov 11 18:25	3° <del>X</del> 40'18	
direct	3112 Jul 30 14:57	18° <del>M</del> 45'09		max. Earth dist.	3118 Nov 26 11:52	4° <del>X</del> 13'03	31.35979 AU
evening set	3112 Oct 29 05:04	20° <del>M</del> 40'48					
				conjunction	3118 Nov 27 06:37	4° <del>X</del> 14'48	1°35'14
conjunction	3112 Nov 13 19:44	21° <del>M</del> 15'26	1°36'37	minimum elong	3118 Nov 27 06:37	4° <del>X</del> 14'48	1°35'13
minimum elong	3112 Nov 13 19:44	21° <del>M</del> 15'26	1°36'37	morning rise	3118 Dec 12 15:51	4° <del>X</del> 49'04	
max. Earth dist.	3112 Nov 12 21:23	21° <del>M</del> 13'21	31.35559 AU	retrograde	3119 Mar 09 10:35	6° <del>X</del> 41'17	
morning rise	3112 Nov 29 07:19	21° <del>M</del> 49'49		opposition	3119 May 26 19:29	5° <del>X</del> 19'27	1°41'21
retrograde	3113 Feb 23 21:55	23° <del>M</del> 41'42		min. Earth dist.	3119 May 27 14:08	5° <del>X</del> 18'11	29.36141 AU
opposition	3113 May 12 23:32	22° <del>M</del> 19'50	1°43'17	direct	3119 Aug 16 01:37	3° <del>X</del> 55'05	
min. Earth dist.	3113 May 13 19:52	22° <del>M</del> 18'27	29.35610 AU	evening set	3119 Nov 14 04:39	5° <del>X</del> 50'34	
direct	3113 Aug 02 03:21	20° <del>M</del> 55'10					
evening set	3113 Oct 31 15:29	22° <del>M</del> 50'45		conjunction	3119 Nov 29 16:17	6° <del>X</del> 25'03	1°34'31
max. Earth dist.	3113 Nov 15 07:54	23° <del>M</del> 23'19	31.35456 AU	minimum elong	3119 Nov 29 16:17	6° <del>X</del> 25'03	1°34'31
				max. Earth dist.	3119 Nov 28 20:54	6° <del>X</del> 23'14	31.36090 AU
conjunction	3113 Nov 16 05:43	23° <del>M</del> 25'21	1°36'44	morning rise	3119 Dec 15 01:21	6° <del>X</del> 59'19	
minimum elong	3113 Nov 16 05:43	23° <del>M</del> 25'21	1°36'45	retrograde	3120 Mar 10 21:04	8° <del>X</del> 51'37	
morning rise	3113 Dec 01 16:51	23° <del>M</del> 59'43		opposition	3120 May 28 07:06	7° <del>X</del> 29'48	1°40'31
retrograde	3114 Feb 26 08:09	25° <del>M</del> 51'37		min. Earth dist.	3120 May 29 00:38	7° <del>X</del> 28'37	29.36205 AU
opposition	3114 May 15 10:40	24° <del>M</del> 29'42	1°43'19	direct	3120 Aug 17 12:15	6° <del>X</del> 05'30	
min. Earth dist.	3114 May 16 07:32	24° <del>M</del> 28'17	29.35541 AU	evening set	3120 Nov 15 14:35	8° <del>X</del> 00'58	
direct	3114 Aug 04 14:18	23° <del>M</del> 05'02		max. Earth dist.	3120 Nov 30 07:36	8° <del>X</del> 33'43	31.36091 AU
evening set	3114 Nov 03 01:50	25° <del>M</del> 00'35					
				conjunction	3120 Dec 01 01:59	8° <del>X</del> 35'26	1°33'40
conjunction	3114 Nov 18 15:39	25° <del>M</del> 35'09	1°36'43	minimum elong	3120 Dec 01 01:59	8° <del>X</del> 35'26	1°33'39
minimum elong	3114 Nov 18 15:39	25° <del>M</del> 35'09	1°36'42	morning rise	3120 Dec 16 10:37	9° <del>X</del> 09'41	
max. Earth dist.	3114 Nov 17 18:34	25° <del>M</del> 33'11	31.35426 AU	retrograde	3121 Mar 13 06:27	11° <del>X</del> 02'05	
morning rise	3114 Dec 04 02:22	26° <del>M</del> 09'29		opposition	3121 May 30 18:55	9° <del>X</del> 40'16	1°39'33
retrograde	3115 Feb 28 18:25	28° <del>M</del> 01'25		min. Earth dist.	3121 May 31 13:18	9° <del>X</del> 39'01	29.36146 AU
opposition	3115 May 17 21:54	26° <del>M</del> 39'29	1°43'14	direct	3121 Aug 19 22:09	8° <del>X</del> 16'00	
min. Earth dist.	3115 May 18 17:32	26° <del>M</del> 38'09	29.35544 AU	evening set	3121 Nov 18 00:43	10° <del>X</del> 11'26	
direct	3115 Aug 07 03:04	25° <del>M</del> 14'51					
evening set	3115 Nov 05 12:06	27° <del>M</del> 10'22		conjunction	3121 Dec 03 11:41	10° <del>X</del> 45'53	1°32'41
max. Earth dist.	3115 Nov 20 04:17	27° <del>M</del> 42'57	31.35476 AU	minimum elong	3121 Dec 03 11:41	10° <del>X</del> 45'53	1°32'42
				max. Earth dist.	3121 Dec 02 17:09	10° <del>X</del> 44'09	31.35971 AU
conjunction	3115 Nov 21 01:23	27° <del>M</del> 44'55	1°36'33	morning rise	3121 Dec 18 20:08	11° <del>X</del> 20'08	
minimum elong	3115 Nov 21 01:23	27° <del>M</del> 44'55	1°36'33	retrograde	3122 Mar 15 16:57	13° <del>X</del> 12'35	
morning rise	3115 Dec 06 11:46	28° <del>M</del> 19'14		opposition	3122 Jun 02 06:28	11° <del>X</del> 50'46	1°38'26
	3116 Feb 05 11:27	0° <del>X</del>		min. Earth dist.	3122 Jun 02 23:39	11° <del>X</del> 49'36	29.35946 AU
retrograde	3116 Mar 02 05:02	0° <del>X</del> 11'14		direct	3122 Aug 22 10:15	10° <del>X</del> 26'32	
	3116 Mar 28 08:21	30° <del>R</del> <del>M</del>		evening set	3122 Nov 20 10:48	12° <del>X</del> 21'56	
opposition	3116 May 19 09:15	28° <del>M</del> 49'18	1°42'59				
min. Earth dist.	3116 May 20 04:44	28° <del>M</del> 47'58	29.35649 AU	conjunction	3122 Dec 05 21:27	12° <del>X</del> 56'22	1°31'35
direct	3116 Aug 08 13:30	27° <del>M</del> 24'42		minimum elong	3122 Dec 05 21:27	12° <del>X</del> 56'22	1°31'34
evening set	3116 Nov 06 22:13	29° <del>M</del> 20'13		max. Earth dist.	3122 Dec 05 03:01	12° <del>X</del> 54'38	31.35696 AU
				morning rise	3122 Dec 21 05:36	13° <del>X</del> 30'36	
conjunction	3116 Nov 22 11:13	29° <del>M</del> 54'45	1°36'15	retrograde	3123 Mar 18 03:52	15° <del>X</del> 23'08	
minimum elong	3116 Nov 22 11:13	29° <del>M</del> 54'45	1°36'15	opposition	3123 Jun 04 18:23	14° <del>X</del> 01'16	1°37'11
max. Earth dist.	3116 Nov 21 15:38	29° <del>M</del> 52'55	31.35622 AU	min. Earth dist.	3123 Jun 05 12:13	14° <del>X</del> 00'03	29.35606 AU
	3116 Nov 24 19:28	0° <del>X</del>		direct	3123 Aug 24 20:34	12° <del>X</del> 37'03	
morning rise	3116 Dec 07 21:07	0° <del>X</del> 29'02		evening set	3123 Nov 22 20:37	14° <del>X</del> 32'23	
retrograde	3117 Mar 04 14:49	2° <del>X</del> 21'06					
opposition	3117 May 21 20:35	0° <del>X</del> 59'12	1°42'35	conjunction	3123 Dec 08 06:59	15° <del>X</del> 06'48	1°30'20
min. Earth dist.	3117 May 22 15:32	0° <del>X</del> 57'54	29.35814 AU	minimum elong	3123 Dec 08 06:59	15° <del>X</del> 06'48	1°30'21
	3117 Jul 01 00:13	30° <del>R</del> <del>M</del>		max. Earth dist.	3123 Dec 07 13:18	15° <del>X</del> 05'08	31.35299 AU
direct	3117 Aug 11 02:51	29° <del>M</del> 34'41		morning rise	3123 Dec 23 14:52	15° <del>X</del> 41'02	
	3117 Sep 20 01:01	0° <del>X</del>		retrograde	3124 Mar 19 14:10	17° <del>X</del> 33'36	
evening set	3117 Nov 09 08:21	1° <del>X</del> 30'11		opposition	3124 Jun 06 06:14	16° <del>X</del> 11'41	1°35'47
				min. Earth dist.	3124 Jun 06 23:01	16° <del>X</del> 10'33	29.35141 AU
conjunction	3117 Nov 24 20:48	2° <del>X</del> 04'42	1°35'48	direct	3124 Aug 26 08:48	14° <del>X</del> 47'29	
minimum elong	3117 Nov 24 20:48	2° <del>X</del> 04'42	1°35'49	evening set	3124 Nov 24 06:28	16° <del>X</del> 42'44	
max. Earth dist.	3117 Nov 24 00:40	2° <del>X</del> 02'49	31.35809 AU				
morning rise	3117 Dec 10 06:33	2° <del>X</del> 38'59		conjunction	3124 Dec 09 16:26	17° <del>X</del> 17'08	1°28'59
retrograde	3118 Mar 07 02:27	4° <del>X</del> 31'07		minimum elong	3124 Dec 09 16:27	17° <del>X</del> 17'08	1°28'59
opposition	3118 May 24 07:57	3° <del>X</del> 09'15	1°42'03	max. Earth dist.	3124 Dec 08 22:31	17° <del>X</del> 15'27	31.34799 AU
min. Earth dist.	3118 May 25 02:11	3° <del>X</del> 08'00	29.36004 AU	morning rise	3124 Dec 25 00:13	17° <del>X</del> 51'22	
direct	3118 Aug 13 13:38	1° <del>X</del> 44'48		retrograde	3125 Mar 22 01:22	19° <del>X</del> 43'59	

opposition	3125 Jun 08 18:04	18° $\mathring{\text{A}}$ 22'00	1°34'16			3131 Sep 19 14:12	0° $\mathring{\text{B}}$	
min. Earth dist.	3125 Jun 09 10:47	18° $\mathring{\text{A}}$ 20'52	29.34623 AU	evening set		3131 Dec 10 01:08	1° $\mathring{\text{B}}$ 53'52	
direct	3125 Aug 28 19:45	16° $\mathring{\text{A}}$ 57'46						
evening set	3125 Nov 26 16:01	18° $\mathring{\text{A}}$ 52'57		conjunction		3131 Dec 25 09:22	2° $\mathring{\text{B}}$ 28'13	1°16'00
max. Earth dist.	3125 Dec 11 09:35	19° $\mathring{\text{A}}$ 25'49	31.34269 AU	minimum elong		3131 Dec 25 09:22	2° $\mathring{\text{B}}$ 28'13	1°16'01
				max. Earth dist.		3131 Dec 24 21:04	2° $\mathring{\text{B}}$ 27'04	31.32161 AU
conjunction	3125 Dec 12 01:51	19° $\mathring{\text{A}}$ 27'20	1°27'29	morning rise		3132 Jan 09 16:02	3° $\mathring{\text{B}}$ 02'27	
minimum elong	3125 Dec 12 01:52	19° $\mathring{\text{A}}$ 27'20	1°27'30	retrograde		3132 Apr 06 01:50	4° $\mathring{\text{B}}$ 55'42	
morning rise	3125 Dec 27 09:19	20° $\mathring{\text{A}}$ 01'33		opposition		3132 Jun 24 06:31	3° $\mathring{\text{B}}$ 33'30	1°19'58
retrograde	3126 Mar 24 11:38	21° $\mathring{\text{A}}$ 54'13		min. Earth dist.		3132 Jun 24 18:23	3° $\mathring{\text{B}}$ 32'42	29.32050 AU
opposition	3126 Jun 11 05:57	20° $\mathring{\text{A}}$ 32'10	1°32'37	direct		3132 Sep 13 04:20	2° $\mathring{\text{B}}$ 09'36	
min. Earth dist.	3126 Jun 11 22:00	20° $\mathring{\text{A}}$ 31'05	29.34086 AU	evening set		3132 Dec 11 10:39	4° $\mathring{\text{B}}$ 04'25	
direct	3126 Aug 31 09:45	19° $\mathring{\text{A}}$ 07'57						
evening set	3126 Nov 29 01:42	21° $\mathring{\text{A}}$ 03'03		conjunction		3132 Dec 26 18:46	4° $\mathring{\text{B}}$ 38'47	1°13'41
				minimum elong		3132 Dec 26 18:47	4° $\mathring{\text{B}}$ 38'47	1°13'41
conjunction	3126 Dec 14 11:03	21° $\mathring{\text{A}}$ 37'25	1°25'53	max. Earth dist.		3132 Dec 26 07:33	4° $\mathring{\text{B}}$ 37'43	31.31794 AU
minimum elong	3126 Dec 14 11:04	21° $\mathring{\text{A}}$ 37'25	1°25'52	morning rise		3133 Jan 11 01:17	5° $\mathring{\text{B}}$ 13'01	
max. Earth dist.	3126 Dec 13 18:30	21° $\mathring{\text{A}}$ 35'52	31.33759 AU	retrograde		3133 Apr 08 12:40	7° $\mathring{\text{B}}$ 06'23	
morning rise	3126 Dec 29 18:28	22° $\mathring{\text{A}}$ 11'38		opposition		3133 Jun 26 18:47	5° $\mathring{\text{B}}$ 44'11	1°17'26
retrograde	3127 Mar 26 23:10	24° $\mathring{\text{A}}$ 04'22		min. Earth dist.		3133 Jun 27 05:32	5° $\mathring{\text{B}}$ 43'27	29.31616 AU
opposition	3127 Jun 13 17:49	22° $\mathring{\text{A}}$ 42'14	1°30'50	direct		3133 Sep 15 15:50	4° $\mathring{\text{B}}$ 20'19	
min. Earth dist.	3127 Jun 14 08:38	22° $\mathring{\text{A}}$ 41'14	29.33614 AU	evening set		3133 Dec 13 20:17	6° $\mathring{\text{B}}$ 15'07	
direct	3127 Sep 02 20:55	21° $\mathring{\text{A}}$ 18'02						
evening set	3127 Dec 01 11:11	23° $\mathring{\text{A}}$ 13'05		conjunction		3133 Dec 29 04:07	6° $\mathring{\text{B}}$ 49'28	1°11'15
				minimum elong		3133 Dec 29 04:07	6° $\mathring{\text{B}}$ 49'28	1°11'16
conjunction	3127 Dec 16 20:27	23° $\mathring{\text{A}}$ 47'26	1°24'09	max. Earth dist.		3133 Dec 28 16:29	6° $\mathring{\text{B}}$ 48'23	31.31298 AU
minimum elong	3127 Dec 16 20:27	23° $\mathring{\text{A}}$ 47'26	1°24'09	morning rise		3134 Jan 13 10:41	7° $\mathring{\text{B}}$ 23'43	
max. Earth dist.	3127 Dec 16 05:44	23° $\mathring{\text{A}}$ 46'04	31.33328 AU	retrograde		3134 Apr 11 01:02	9° $\mathring{\text{B}}$ 17'12	
morning rise	3128 Jan 01 03:30	24° $\mathring{\text{A}}$ 21'39		opposition		3134 Jun 29 07:15	7° $\mathring{\text{B}}$ 54'58	1°14'47
retrograde	3128 Mar 28 07:39	26° $\mathring{\text{A}}$ 14'27		min. Earth dist.		3134 Jun 29 17:58	7° $\mathring{\text{B}}$ 54'15	29.31052 AU
opposition	3128 Jun 15 05:55	24° $\mathring{\text{A}}$ 52'18	1°28'55	direct		3134 Sep 18 02:22	6° $\mathring{\text{B}}$ 31'10	
min. Earth dist.	3128 Jun 15 20:30	24° $\mathring{\text{A}}$ 51'19	29.33224 AU	evening set		3134 Dec 16 05:47	8° $\mathring{\text{B}}$ 25'55	
direct	3128 Sep 04 09:16	23° $\mathring{\text{A}}$ 28'08						
evening set	3128 Dec 02 20:39	25° $\mathring{\text{A}}$ 23'07		conjunction		3134 Dec 31 13:36	9° $\mathring{\text{B}}$ 00'16	1°08'44
				minimum elong		3134 Dec 31 13:36	9° $\mathring{\text{B}}$ 00'16	1°08'43
conjunction	3128 Dec 18 05:32	25° $\mathring{\text{A}}$ 57'28	1°22'17	max. Earth dist.		3134 Dec 31 03:26	8° $\mathring{\text{B}}$ 59'19	31.30655 AU
minimum elong	3128 Dec 18 05:32	25° $\mathring{\text{A}}$ 57'28	1°22'17	morning rise		3135 Jan 15 19:56	9° $\mathring{\text{B}}$ 34'32	
max. Earth dist.	3128 Dec 17 14:52	25° $\mathring{\text{A}}$ 56'06	31.32994 AU	retrograde		3135 Apr 13 12:12	11° $\mathring{\text{B}}$ 28'07	
morning rise	3129 Jan 02 12:36	26° $\mathring{\text{A}}$ 31'41		opposition		3135 Jul 01 19:48	10° $\mathring{\text{B}}$ 05'51	1°12'02
retrograde	3129 Mar 30 18:25	28° $\mathring{\text{A}}$ 24'34		min. Earth dist.		3135 Jul 02 06:04	10° $\mathring{\text{B}}$ 05'09	29.30319 AU
opposition	3129 Jun 17 17:53	27° $\mathring{\text{A}}$ 02'24	1°26'52	direct		3135 Sep 20 15:44	8° $\mathring{\text{B}}$ 42'05	
min. Earth dist.	3129 Jun 18 06:44	27° $\mathring{\text{A}}$ 01'32	29.32920 AU	evening set		3135 Dec 18 15:27	10° $\mathring{\text{B}}$ 36'47	
direct	3129 Sep 06 20:44	25° $\mathring{\text{A}}$ 38'17						
evening set	3129 Dec 05 06:07	27° $\mathring{\text{A}}$ 33'13		conjunction		3136 Jan 02 22:57	11° $\mathring{\text{B}}$ 11'08	1°06'06
				minimum elong		3136 Jan 02 22:57	11° $\mathring{\text{B}}$ 11'08	1°06'07
conjunction	3129 Dec 20 14:52	28° $\mathring{\text{A}}$ 07'35	1°20'19	max. Earth dist.		3136 Jan 02 12:10	11° $\mathring{\text{B}}$ 10'07	31.29858 AU
minimum elong	3129 Dec 20 14:52	28° $\mathring{\text{A}}$ 07'35	1°20'19	morning rise		3136 Jan 18 05:26	11° $\mathring{\text{B}}$ 45'24	
max. Earth dist.	3129 Dec 20 01:35	28° $\mathring{\text{A}}$ 06'20	31.32714 AU	retrograde		3136 Apr 15 00:47	13° $\mathring{\text{B}}$ 39'06	
morning rise	3130 Jan 04 21:42	28° $\mathring{\text{A}}$ 41'48		opposition		3136 Jul 03 08:21	12° $\mathring{\text{B}}$ 16'46	1°09'11
	3130 Feb 15 04:50	0° $\mathring{\text{B}}$		min. Earth dist.		3136 Jul 03 17:41	12° $\mathring{\text{B}}$ 16'08	29.29454 AU
retrograde	3130 Apr 02 04:10	0° $\mathring{\text{B}}$ 34'48		direct		3136 Sep 22 02:45	10° $\mathring{\text{B}}$ 53'00	
	3130 May 20 03:19	30° $\mathring{\text{R}}$ $\mathring{\text{A}}$		evening set		3136 Dec 20 00:46	12° $\mathring{\text{B}}$ 47'38	
opposition	3130 Jun 20 05:55	29° $\mathring{\text{A}}$ 12'37	1°24'41					
min. Earth dist.	3130 Jun 20 19:11	29° $\mathring{\text{A}}$ 11'43	29.32652 AU	conjunction		3137 Jan 04 08:20	13° $\mathring{\text{B}}$ 21'59	1°03'23
direct	3130 Sep 09 07:14	27° $\mathring{\text{A}}$ 48'34		minimum elong		3137 Jan 04 08:20	13° $\mathring{\text{B}}$ 21'59	1°03'22
evening set	3130 Dec 07 15:40	29° $\mathring{\text{A}}$ 43'28		max. Earth dist.		3137 Jan 03 23:02	13° $\mathring{\text{B}}$ 21'07	31.28928 AU
	3130 Dec 15 02:18	0° $\mathring{\text{B}}$		morning rise		3137 Jan 19 14:40	13° $\mathring{\text{B}}$ 56'16	
max. Earth dist.	3130 Dec 22 11:24	0° $\mathring{\text{B}}$ 16'37	31.32461 AU	retrograde		3137 Apr 17 10:09	15° $\mathring{\text{B}}$ 50'04	
				opposition		3137 Jul 05 20:58	14° $\mathring{\text{B}}$ 27'39	1°06'14
conjunction	3130 Dec 23 00:09	0° $\mathring{\text{B}}$ 17'49	1°18'13	min. Earth dist.		3137 Jul 06 06:24	14° $\mathring{\text{B}}$ 27'00	29.28465 AU
minimum elong	3130 Dec 23 00:09	0° $\mathring{\text{B}}$ 17'49	1°18'13	direct		3137 Sep 24 15:38	13° $\mathring{\text{B}}$ 03'53	
morning rise	3131 Jan 07 06:56	0° $\mathring{\text{B}}$ 52'03		evening set		3137 Dec 22 10:16	14° $\mathring{\text{B}}$ 58'26	
retrograde	3131 Apr 04 14:41	2° $\mathring{\text{B}}$ 45'09						
opposition	3131 Jun 22 18:05	1° $\mathring{\text{B}}$ 22'59	1°22'23	conjunction		3138 Jan 06 17:35	15° $\mathring{\text{B}}$ 32'48	1°00'35
min. Earth dist.	3131 Jun 23 05:39	1° $\mathring{\text{B}}$ 22'12	29.32377 AU	minimum elong		3138 Jan 06 17:35	15° $\mathring{\text{B}}$ 32'48	1°00'35
	3131 Sep 03 20:59	30° $\mathring{\text{R}}$ $\mathring{\text{A}}$		max. Earth dist.		3138 Jan 06 08:14	15° $\mathring{\text{B}}$ 31'55	31.27918 AU
direct	3131 Sep 11 18:47	29° $\mathring{\text{A}}$ 59'00		morning rise		3138 Jan 22 00:04	16° $\mathring{\text{B}}$ 07'05	

retrograde	3138 Apr 19 21:26	18°300'58		evening set	3145 Jan 06 03:22	0°15'04	
opposition	3138 Jul 08 09:17	16°338'28	1°03'11				
min. Earth dist.	3138 Jul 08 17:07	16°337'56	29.27432 AU	conjunction	3145 Jan 21 10:14	0°49'29	0°38'42
direct	3138 Sep 27 03:55	15°314'42		minimum elong	3145 Jan 21 10:14	0°49'29	0°38'41
evening set	3138 Dec 24 19:36	17°309'11		max. Earth dist.	3145 Jan 21 07:18	0°49'12	31.21976 AU
				morning rise	3145 Feb 05 17:11	1°23'54	
conjunction	3139 Jan 09 02:52	17°343'33	0°57'41	retrograde	3145 May 05 05:18	3°18'44	
minimum elong	3139 Jan 09 02:52	17°343'33	0°57'40	opposition	3145 Jul 24 02:10	1°55'53	0°39'32
max. Earth dist.	3139 Jan 08 18:53	17°342'48	31.26883 AU	min. Earth dist.	3145 Jul 24 03:46	1°55'46	29.21584 AU
morning rise	3139 Jan 24 09:16	18°317'51		direct	3145 Oct 12 07:30	0°32'24	
retrograde	3139 Apr 22 07:34	20°311'50		evening set	3146 Jan 08 12:50	2°26'35	
opposition	3139 Jul 10 22:00	18°349'15	1°00'03				
min. Earth dist.	3139 Jul 11 05:55	18°348'43	29.26419 AU	conjunction	3146 Jan 23 19:48	3°01'00	0°35'18
direct	3139 Sep 29 15:14	17°325'30		minimum elong	3146 Jan 23 19:49	3°01'00	0°35'19
evening set	3139 Dec 27 04:49	19°319'55		max. Earth dist.	3146 Jan 23 18:20	3°00'52	31.21135 AU
				morning rise	3146 Feb 08 02:42	3°35'27	
conjunction	3140 Jan 11 11:59	19°354'16	0°54'43	retrograde	3146 May 07 16:17	5°30'25	
minimum elong	3140 Jan 11 11:59	19°354'17	0°54'43	opposition	3146 Jul 26 15:05	4°07'30	0°35'52
max. Earth dist.	3140 Jan 11 05:01	19°353'37	31.25912 AU	min. Earth dist.	3146 Jul 26 16:46	4°07'24	29.20688 AU
morning rise	3140 Jan 26 18:26	20°328'36		direct	3146 Oct 14 20:18	2°44'04	
retrograde	3140 Apr 23 17:38	22°322'42		evening set	3147 Jan 10 22:29	4°38'12	
opposition	3140 Jul 12 10:33	21°300'03	0°56'50				
min. Earth dist.	3140 Jul 12 16:20	20°359'39	29.25481 AU	conjunction	3147 Jan 26 05:22	5°12'38	0°31'51
direct	3140 Oct 01 03:02	19°336'19		minimum elong	3147 Jan 26 05:22	5°12'38	0°31'51
evening set	3140 Dec 28 14:08	21°330'40		max. Earth dist.	3147 Jan 26 03:49	5°12'30	31.20194 AU
				morning rise	3147 Feb 10 12:28	5°47'06	
conjunction	3141 Jan 12 21:11	22°305'03	0°51'39	retrograde	3147 May 10 05:32	7°42'12	
minimum elong	3141 Jan 12 21:11	22°305'03	0°51'39	opposition	3147 Jul 29 04:05	6°19'13	0°32'09
max. Earth dist.	3141 Jan 12 14:52	22°304'27	31.25017 AU	min. Earth dist.	3147 Jul 29 04:16	6°19'13	29.19679 AU
morning rise	3141 Jan 28 03:44	22°339'23		direct	3147 Oct 17 08:56	4°55'48	
retrograde	3141 Apr 26 04:32	24°333'37		evening set	3148 Jan 13 08:00	6°49'53	
opposition	3141 Jul 14 23:06	23°310'55	0°53'31				
min. Earth dist.	3141 Jul 15 04:44	23°310'32	29.24638 AU	conjunction	3148 Jan 28 14:56	7°24'20	0°28'22
direct	3141 Oct 03 12:11	21°347'13		minimum elong	3148 Jan 28 14:56	7°24'20	0°28'22
evening set	3141 Dec 30 23:21	23°341'32		max. Earth dist.	3148 Jan 28 14:18	7°24'16	31.19111 AU
				morning rise	3148 Feb 12 22:08	7°58'49	
conjunction	3142 Jan 15 06:28	24°315'55	0°48'31	retrograde	3148 May 11 16:36	9°54'03	
minimum elong	3142 Jan 15 06:28	24°315'55	0°48'32	opposition	3148 Jul 30 17:16	8°30'59	0°28'24
max. Earth dist.	3142 Jan 15 01:46	24°315'28	31.24219 AU	min. Earth dist.	3148 Jul 30 17:56	8°30'56	29.18531 AU
morning rise	3142 Jan 30 13:00	24°350'16		direct	3148 Oct 18 20:42	7°07'34	
retrograde	3142 Apr 28 15:24	26°344'39		evening set	3149 Jan 14 17:37	9°01'34	
opposition	3142 Jul 17 11:43	25°321'54	0°50'08				
min. Earth dist.	3142 Jul 17 15:42	25°321'38	29.23855 AU	conjunction	3149 Jan 30 00:38	9°36'01	0°24'49
direct	3142 Oct 05 23:13	23°358'16		minimum elong	3149 Jan 30 00:38	9°36'01	0°24'49
evening set	3143 Jan 02 08:40	25°352'32		max. Earth dist.	3149 Jan 30 00:39	9°36'01	31.17910 AU
				morning rise	3149 Feb 14 08:00	10°10'32	
conjunction	3143 Jan 17 15:34	26°326'56	0°45'19	retrograde	3149 May 14 03:10	12°05'51	
minimum elong	3143 Jan 17 15:35	26°326'56	0°45'19	opposition	3149 Aug 02 06:03	10°42'42	0°24'36
max. Earth dist.	3143 Jan 17 10:58	26°326'30	31.23465 AU	min. Earth dist.	3149 Aug 02 05:06	10°42'46	29.17266 AU
morning rise	3143 Feb 01 22:18	27°301'19		direct	3149 Oct 21 09:08	9°19'15	
retrograde	3143 May 01 04:13	28°355'50		evening set	3150 Jan 17 03:13	11°13'11	
opposition	3143 Jul 20 00:30	27°333'04	0°46'40				
min. Earth dist.	3143 Jul 20 03:58	27°332'50	29.23120 AU	conjunction	3150 Feb 01 10:13	11°47'39	0°21'15
direct	3143 Oct 08 09:24	26°309'29		minimum elong	3150 Feb 01 10:13	11°47'39	0°21'16
evening set	3144 Jan 04 17:56	28°303'43		max. Earth dist.	3150 Feb 01 10:24	11°47'40	31.16603 AU
				morning rise	3150 Feb 16 17:50	12°22'11	
conjunction	3144 Jan 20 00:59	28°338'07	0°42'03	retrograde	3150 May 16 14:14	14°17'37	
minimum elong	3144 Jan 20 00:59	28°338'07	0°42'03	opposition	3150 Aug 04 19:08	12°54'21	0°20'46
max. Earth dist.	3144 Jan 19 22:19	28°337'52	31.22733 AU	min. Earth dist.	3150 Aug 04 18:17	12°54'24	29.15941 AU
morning rise	3144 Feb 04 07:38	29°312'31		direct	3150 Oct 23 19:35	11°30'53	
	3144 Feb 27 04:47	0°		evening set	3151 Jan 19 12:34	13°24'43	
retrograde	3144 May 02 16:10	1°07'12					
	3144 Jul 11 20:44	30°R3		conjunction	3151 Feb 03 19:43	13°59'12	0°17'40
opposition	3144 Jul 21 13:20	29°344'23	0°43'08	minimum elong	3151 Feb 03 19:44	13°59'12	0°17'39
min. Earth dist.	3144 Jul 21 16:01	29°344'12	29.22372 AU	max. Earth dist.	3151 Feb 03 21:38	13°59'23	31.15275 AU
direct	3144 Oct 09 21:24	28°320'52		morning rise	3151 Feb 19 03:23	14°33'45	
	3144 Dec 30 05:09	0°			3151 Mar 03 08:00	15°	

retrograde	3151 May 19 00:59	16° $\approx$ 29'18	evening set	3157 Jan 31 22:07	26° $\approx$ 35'14
opposition	3151 Aug 07 08:06	15° $\approx$ 05'55 0°16'54			
min. Earth dist.	3151 Aug 07 05:34	15° $\approx$ 06'05 29.14620 AU	conjunction	3157 Feb 16 05:46	27° $\approx$ 09'49 -0°04'27
	3151 Aug 10 23:19	15° $\approx$	minimum elong	3157 Feb 16 05:45	27° $\approx$ 09'49 0°04'27
direct	3151 Oct 26 07:39	13° $\approx$ 42'26	behind sun begin	3157 Feb 15 23:28	27° $\approx$ 09'15
	3152 Jan 04 19:42	15° $\approx$	behind sun end	3157 Feb 16 12:03	27° $\approx$ 10'23
evening set	3152 Jan 21 22:10	15° $\approx$ 36'13	max. Earth dist.	3157 Feb 16 13:17	27° $\approx$ 10'31 31.09044 AU
			morning rise	3157 Mar 03 14:47	27° $\approx$ 44'33
conjunction	3152 Feb 06 05:13	16° $\approx$ 10'42 0°14'02	retrograde	3157 Jun 01 04:53	29° $\approx$ 41'00
minimum elong	3152 Feb 06 05:13	16° $\approx$ 10'42 0°14'03	opposition	3157 Aug 20 14:03	28° $\approx$ 17'17 -0°06'40
behind sun begin	3152 Feb 06 01:53	16° $\approx$ 10'24	min. Earth dist.	3157 Aug 20 06:32	28° $\approx$ 17'48 29.08627 AU
behind sun end	3152 Feb 06 08:33	16° $\approx$ 11'00	direct	3157 Nov 08 02:05	26° $\approx$ 54'03
max. Earth dist.	3152 Feb 06 07:14	16° $\approx$ 10'53 31.13989 AU	evening set	3158 Feb 03 07:59	28° $\approx$ 47'43
morning rise	3152 Feb 21 13:13	16° $\approx$ 45'17			
retrograde	3152 May 20 13:31	18° $\approx$ 40'57	conjunction	3158 Feb 18 15:48	29° $\approx$ 22'19 -0°08'07
opposition	3152 Aug 08 21:05	17° $\approx$ 17'27 0°13'01	minimum elong	3158 Feb 18 15:48	29° $\approx$ 22'19 0°08'07
min. Earth dist.	3152 Aug 08 17:53	17° $\approx$ 17'40 29.13390 AU	behind sun begin	3158 Feb 18 10:05	29° $\approx$ 21'48
direct	3152 Oct 27 17:35	15° $\approx$ 53'59	behind sun end	3158 Feb 18 21:32	29° $\approx$ 22'50
evening set	3153 Jan 23 07:33	17° $\approx$ 47'42	max. Earth dist.	3158 Feb 19 00:15	29° $\approx$ 23'06 31.08197 AU
			morning rise	3158 Mar 06 01:02	29° $\approx$ 57'05
conjunction	3153 Feb 07 14:52	18° $\approx$ 22'12 0°10'24		3158 Mar 07 08:43	0° $\approx$
minimum elong	3153 Feb 07 14:52	18° $\approx$ 22'12 0°10'23	retrograde	3158 Jun 03 16:46	1° $\approx$ 53'41
behind sun begin	3153 Feb 07 09:47	18° $\approx$ 21'45	opposition	3158 Aug 23 03:08	0° $\approx$ 29'57 -0°10'37
behind sun end	3153 Feb 07 19:57	18° $\approx$ 22'40	min. Earth dist.	3158 Aug 22 17:57	0° $\approx$ 30'35 29.07753 AU
max. Earth dist.	3153 Feb 07 19:02	18° $\approx$ 22'35 31.12804 AU		3158 Sep 10 21:42	30° $\approx$
morning rise	3153 Feb 22 22:55	18° $\approx$ 56'49	direct	3158 Nov 10 14:27	29° $\approx$ 06'47
retrograde	3153 May 23 01:05	20° $\approx$ 52'37		3159 Jan 06 19:48	0° $\approx$
opposition	3153 Aug 11 10:01	19° $\approx$ 29'03 0°09'06	evening set	3159 Feb 05 17:58	1° $\approx$ 00'25
min. Earth dist.	3153 Aug 11 05:43	19° $\approx$ 29'21 29.12255 AU			
direct	3153 Oct 30 05:08	18° $\approx$ 05'36	conjunction	3159 Feb 21 01:48	1° $\approx$ 35'03 -0°11'48
evening set	3154 Jan 25 17:10	19° $\approx$ 59'18	minimum elong	3159 Feb 21 01:48	1° $\approx$ 35'03 0°11'48
			behind sun begin	3159 Feb 20 21:15	1° $\approx$ 34'38
conjunction	3154 Feb 10 00:24	20° $\approx$ 33'49 0°06'45	behind sun end	3159 Feb 21 06:21	1° $\approx$ 35'28
minimum elong	3154 Feb 10 00:24	20° $\approx$ 33'49 0°06'46	max. Earth dist.	3159 Feb 21 10:17	1° $\approx$ 35'51 31.07283 AU
behind sun begin	3154 Feb 09 18:25	20° $\approx$ 33'16	morning rise	3159 Mar 08 11:21	2° $\approx$ 09'51
behind sun end	3154 Feb 10 06:23	20° $\approx$ 34'21	retrograde	3159 Jun 06 05:14	4° $\approx$ 06'38
max. Earth dist.	3154 Feb 10 04:35	20° $\approx$ 34'11 31.11734 AU	opposition	3159 Aug 25 16:31	2° $\approx$ 42'50 -0°14'33
morning rise	3154 Feb 25 08:47	21° $\approx$ 08'27	min. Earth dist.	3159 Aug 25 07:39	2° $\approx$ 43'27 29.06806 AU
retrograde	3154 May 25 14:28	23° $\approx$ 04'24	direct	3159 Nov 13 01:05	1° $\approx$ 19'42
opposition	3154 Aug 13 22:54	21° $\approx$ 40'47 0°05'10	evening set	3160 Feb 08 04:02	3° $\approx$ 13'19
min. Earth dist.	3154 Aug 13 17:09	21° $\approx$ 41'10 29.11244 AU			
direct	3154 Nov 01 14:44	20° $\approx$ 17'22	conjunction	3160 Feb 23 12:11	3° $\approx$ 47'59 -0°15'27
evening set	3155 Jan 28 02:43	22° $\approx$ 11'03	minimum elong	3160 Feb 23 12:11	3° $\approx$ 47'59 0°15'26
			behind sun begin	3160 Feb 23 10:08	3° $\approx$ 47'48
conjunction	3155 Feb 12 10:11	22° $\approx$ 45'35 0°03'05	behind sun end	3160 Feb 23 14:13	3° $\approx$ 48'10
minimum elong	3155 Feb 12 10:10	22° $\approx$ 45'35 0°03'04	max. Earth dist.	3160 Feb 23 21:59	3° $\approx$ 48'54 31.06282 AU
behind sun begin	3155 Feb 12 03:48	22° $\approx$ 45'01	morning rise	3160 Mar 09 21:52	4° $\approx$ 22'48
behind sun end	3155 Feb 12 16:33	22° $\approx$ 46'10	retrograde	3160 Jun 07 16:55	6° $\approx$ 19'44
max. Earth dist.	3155 Feb 12 16:11	22° $\approx$ 46'08 31.10767 AU	opposition	3160 Aug 27 05:40	4° $\approx$ 55'53 -0°18'28
morning rise	3155 Feb 27 18:39	23° $\approx$ 20'15	min. Earth dist.	3160 Aug 26 19:35	4° $\approx$ 56'34 29.05743 AU
retrograde	3155 May 28 02:28	25° $\approx$ 16'22	direct	3160 Nov 14 13:21	3° $\approx$ 32'45
opposition	3155 Aug 16 12:00	23° $\approx$ 52'42 0°01'14	evening set	3161 Feb 09 14:18	5° $\approx$ 26'21
min. Earth dist.	3155 Aug 16 05:52	23° $\approx$ 53'07 29.10321 AU			
direct	3155 Nov 04 02:58	22° $\approx$ 29'21	conjunction	3161 Feb 24 22:28	6° $\approx$ 01'01 -0°19'06
desc. node	3155 Dec 09 03:43	22° $\approx$ 49'49	minimum elong	3161 Feb 24 22:28	6° $\approx$ 01'01 0°19'06
evening set	3156 Jan 30 12:18	24° $\approx$ 23'01	max. Earth dist.	3161 Feb 25 07:42	6° $\approx$ 01'53 31.05160 AU
			morning rise	3161 Mar 12 08:37	6° $\approx$ 35'53
conjunction	3156 Feb 14 19:48	24° $\approx$ 57'35 -0°00'42	retrograde	3161 Jun 10 05:25	8° $\approx$ 32'55
minimum elong	3156 Feb 14 19:49	24° $\approx$ 57'35 0°00'42	opposition	3161 Aug 29 18:58	7° $\approx$ 08'59 -0°22'21
behind sun begin	3156 Feb 14 13:26	24° $\approx$ 57'00	min. Earth dist.	3161 Aug 29 08:52	7° $\approx$ 09'41 29.04568 AU
behind sun end	3156 Feb 15 02:12	24° $\approx$ 58'09	direct	3161 Nov 16 23:34	5° $\approx$ 45'51
max. Earth dist.	3156 Feb 15 02:18	24° $\approx$ 58'10 31.09892 AU	evening set	3162 Feb 12 00:23	7° $\approx$ 39'23
morning rise	3156 Mar 01 04:37	25° $\approx$ 32'16			
retrograde	3156 May 29 16:54	27° $\approx$ 28'33	conjunction	3162 Feb 27 08:54	8° $\approx$ 14'05 -0°22'43
opposition	3156 Aug 18 01:00	26° $\approx$ 04'52 -0°02'43	minimum elong	3162 Feb 27 08:53	8° $\approx$ 14'05 0°22'42
min. Earth dist.	3156 Aug 17 17:07	26° $\approx$ 05'24 29.09468 AU	max. Earth dist.	3162 Feb 27 19:45	8° $\approx$ 15'06 31.03929 AU
direct	3156 Nov 05 15:01	24° $\approx$ 41'34	morning rise	3162 Mar 14 19:08	8° $\approx$ 48'58

retrograde	3162 Jun 12 16:35	10° <del>✕</del> 46'07	minimum elong	3169 Mar 14 10:38	23° <del>✕</del> 45'26 0°46'52
opposition	3162 Sep 01 08:09	9° <del>✕</del> 22'05 -0°26'12	max. Earth dist.	3169 Mar 15 03:13	23° <del>✕</del> 47'00 30.96538 AU
min. Earth dist.	3162 Aug 31 21:27	9° <del>✕</del> 22'49 29.03295 AU	morning rise	3169 Mar 29 23:06	24° <del>✕</del> 20'31
direct	3162 Nov 19 11:05	7° <del>✕</del> 58'56	retrograde	3169 Jun 28 11:55	26° <del>✕</del> 18'28
evening set	3163 Feb 14 10:39	9° <del>✕</del> 52'24	min. Earth dist.	3169 Sep 16 11:11	24° <del>✕</del> 55'04 28.96198 AU
			opposition	3169 Sep 17 03:49	24° <del>✕</del> 53'55 -0°51'50
conjunction	3163 Mar 01 19:12	10° <del>✕</del> 27'06 -0°26'18	direct	3169 Dec 04 20:43	23° <del>✕</del> 30'48
minimum elong	3163 Mar 01 19:12	10° <del>✕</del> 27'06 0°26'19	evening set	3170 Mar 01 11:19	25° <del>✕</del> 24'07
max. Earth dist.	3163 Mar 02 05:47	10° <del>✕</del> 28'06 31.02649 AU			
morning rise	3163 Mar 17 05:54	11° <del>✕</del> 02'01	conjunction	3170 Mar 16 21:25	25° <del>✕</del> 58'58 -0°50'04
retrograde	3163 Jun 15 06:17	12° <del>✕</del> 59'17	minimum elong	3170 Mar 16 21:25	25° <del>✕</del> 58'58 0°50'04
opposition	3163 Sep 03 21:22	11° <del>✕</del> 35'07 -0°30'01	max. Earth dist.	3170 Mar 17 13:37	26° <del>✕</del> 00'30 30.95798 AU
min. Earth dist.	3163 Sep 03 09:36	11° <del>✕</del> 35'55 29.02023 AU	morning rise	3170 Apr 01 10:22	26° <del>✕</del> 34'06
direct	3163 Nov 21 21:07	10° <del>✕</del> 11'56	retrograde	3170 Jul 01 00:54	28° <del>✕</del> 32'12
evening set	3164 Feb 16 20:44	12° <del>✕</del> 05'21	opposition	3170 Sep 19 17:01	27° <del>✕</del> 07'37 -0°55'14
			min. Earth dist.	3170 Sep 19 00:23	27° <del>✕</del> 08'46 28.95468 AU
conjunction	3164 Mar 03 05:35	12° <del>✕</del> 40'04 -0°29'50	direct	3170 Dec 07 06:42	25° <del>✕</del> 44'33
minimum elong	3164 Mar 03 05:35	12° <del>✕</del> 40'04 0°29'50	evening set	3171 Mar 03 22:06	27° <del>✕</del> 37'52
max. Earth dist.	3164 Mar 03 17:46	12° <del>✕</del> 41'13 31.01380 AU			
morning rise	3164 Mar 18 16:29	13° <del>✕</del> 15'00	conjunction	3171 Mar 19 08:37	28° <del>✕</del> 12'45 -0°53'13
retrograde	3164 Jun 16 18:24	15° <del>✕</del> 12'22	minimum elong	3171 Mar 19 08:37	28° <del>✕</del> 12'45 0°53'14
opposition	3164 Sep 05 10:33	13° <del>✕</del> 48'06 -0°33'47	max. Earth dist.	3171 Mar 20 02:24	28° <del>✕</del> 14'27 30.95047 AU
min. Earth dist.	3164 Sep 04 22:33	13° <del>✕</del> 48'55 29.00789 AU	morning rise	3171 Apr 03 21:44	28° <del>✕</del> 47'54
direct	3164 Nov 23 09:38	12° <del>✕</del> 24'53		3171 May 10 11:48	0° <del>∇</del>
evening set	3165 Feb 18 07:03	14° <del>✕</del> 18'16	retrograde	3171 Jul 03 12:45	0° <del>∇</del> 46'09
				3171 Aug 29 00:28	30° <del>✕</del>
conjunction	3165 Mar 05 16:03	14° <del>✕</del> 53'00 -0°33'21	opposition	3171 Sep 22 06:11	29° <del>✕</del> 21'33 -0°58'34
minimum elong	3165 Mar 05 16:03	14° <del>✕</del> 53'00 0°33'21	min. Earth dist.	3171 Sep 21 13:08	29° <del>✕</del> 22'43 28.94692 AU
max. Earth dist.	3165 Mar 06 04:37	14° <del>✕</del> 54'11 31.00195 AU	direct	3171 Dec 09 18:04	27° <del>✕</del> 58'31
morning rise	3165 Mar 21 03:19	15° <del>✕</del> 27'57	evening set	3172 Mar 05 09:10	29° <del>✕</del> 51'51
retrograde	3165 Jun 19 08:50	17° <del>✕</del> 25'25		3172 Mar 09 00:48	0° <del>∇</del>
opposition	3165 Sep 07 23:26	16° <del>✕</del> 01'04 -0°37'31			
min. Earth dist.	3165 Sep 07 09:43	16° <del>✕</del> 02'00 28.99659 AU	conjunction	3172 Mar 20 19:51	0° <del>∇</del> 26'45 -0°56'17
direct	3165 Nov 25 21:22	14° <del>✕</del> 37'50	minimum elong	3172 Mar 20 19:50	0° <del>∇</del> 26'45 0°56'17
evening set	3166 Feb 20 17:22	16° <del>✕</del> 31'11	max. Earth dist.	3172 Mar 21 12:55	0° <del>∇</del> 28'23 30.94235 AU
			morning rise	3172 Apr 05 09:28	1° <del>∇</del> 01'57
conjunction	3166 Mar 08 02:34	17° <del>✕</del> 05'56 -0°36'48	retrograde	3172 Jul 05 03:17	3° <del>∇</del> 00'19
minimum elong	3166 Mar 08 02:34	17° <del>✕</del> 05'56 0°36'47	opposition	3172 Sep 23 19:23	1° <del>∇</del> 35'41 -1°01'48
max. Earth dist.	3166 Mar 08 16:11	17° <del>✕</del> 07'14 30.99110 AU	min. Earth dist.	3172 Sep 23 01:53	1° <del>∇</del> 36'53 28.93837 AU
morning rise	3166 Mar 23 14:07	17° <del>✕</del> 40'56	direct	3172 Dec 11 04:08	0° <del>∇</del> 12'39
retrograde	3166 Jun 21 20:59	19° <del>✕</del> 38'30	evening set	3173 Mar 07 20:18	2° <del>∇</del> 06'00
opposition	3166 Sep 10 12:37	18° <del>✕</del> 14'04 -0°41'11			
min. Earth dist.	3166 Sep 09 23:03	18° <del>✕</del> 15'00 28.98643 AU	conjunction	3173 Mar 23 07:21	2° <del>∇</del> 40'56 -0°59'16
direct	3166 Nov 28 08:23	16° <del>✕</del> 50'51	minimum elong	3173 Mar 23 07:21	2° <del>∇</del> 40'56 0°59'17
evening set	3167 Feb 23 03:34	18° <del>✕</del> 44'11	max. Earth dist.	3173 Mar 24 01:17	2° <del>∇</del> 42'38 30.93306 AU
			morning rise	3173 Apr 07 21:13	3° <del>∇</del> 16'09
conjunction	3167 Mar 10 13:05	19° <del>✕</del> 18'57 -0°40'12	retrograde	3173 Jul 07 15:35	5° <del>∇</del> 14'38
minimum elong	3167 Mar 10 13:04	19° <del>✕</del> 18'57 0°40'13	opposition	3173 Sep 26 08:28	3° <del>∇</del> 49'56 -1°04'57
max. Earth dist.	3167 Mar 11 03:55	19° <del>✕</del> 20'21 30.98158 AU	min. Earth dist.	3173 Sep 25 15:22	3° <del>∇</del> 51'07 28.92850 AU
morning rise	3167 Mar 26 00:54	19° <del>✕</del> 53'58	direct	3173 Dec 13 16:13	2° <del>∇</del> 26'54
retrograde	3167 Jun 24 10:18	21° <del>✕</del> 51'40	evening set	3174 Mar 10 07:31	4° <del>∇</del> 20'15
min. Earth dist.	3167 Sep 12 10:12	20° <del>✕</del> 28'14 28.97746 AU			
opposition	3167 Sep 13 01:41	20° <del>✕</del> 27'11 -0°44'48	conjunction	3174 Mar 25 18:50	4° <del>∇</del> 55'12 -1°02'10
direct	3167 Nov 30 21:20	19° <del>✕</del> 03'59	minimum elong	3174 Mar 25 18:50	4° <del>∇</del> 55'12 1°02'10
evening set	3168 Feb 25 14:06	20° <del>✕</del> 57'18	max. Earth dist.	3174 Mar 26 12:30	4° <del>∇</del> 56'53 30.92274 AU
			morning rise	3174 Apr 10 09:08	5° <del>∇</del> 30'27
conjunction	3168 Mar 11 23:44	21° <del>✕</del> 32'06 -0°43'33	retrograde	3174 Jul 10 06:23	7° <del>∇</del> 29'01
minimum elong	3168 Mar 11 23:43	21° <del>✕</del> 32'06 0°43'33	opposition	3174 Sep 28 21:36	6° <del>∇</del> 04'15 -1°08'00
max. Earth dist.	3168 Mar 12 14:45	21° <del>✕</del> 33'31 30.97305 AU	min. Earth dist.	3174 Sep 28 03:25	6° <del>∇</del> 05'30 28.91772 AU
morning rise	3168 Mar 27 12:00	22° <del>✕</del> 07'09	direct	3174 Dec 16 03:53	4° <del>∇</del> 41'11
retrograde	3168 Jun 25 23:53	24° <del>✕</del> 04'59	evening set	3175 Mar 12 18:36	6° <del>∇</del> 34'31
opposition	3168 Sep 14 14:46	22° <del>✕</del> 40'27 -0°48'21			
min. Earth dist.	3168 Sep 13 23:30	22° <del>✕</del> 41'30 28.96948 AU	conjunction	3175 Mar 28 06:14	7° <del>∇</del> 09'30 -1°04'59
direct	3168 Dec 02 08:17	21° <del>✕</del> 17'17	minimum elong	3175 Mar 28 06:14	7° <del>∇</del> 09'30 1°04'59
evening set	3169 Feb 27 00:35	23° <del>✕</del> 10'36	max. Earth dist.	3175 Mar 29 00:24	7° <del>∇</del> 11'13 30.91152 AU
			morning rise	3175 Apr 12 20:56	7° <del>∇</del> 44'47
conjunction	3169 Mar 14 10:38	23° <del>✕</del> 45'26 -0°46'51	retrograde	3175 Jul 12 18:57	9° <del>∇</del> 43'25

opposition	3175 Oct 01 10:47	8°♈18'34 -1°10'57	max. Earth dist.	3182 Apr 13 14:33	22°♈52'03 30.85197 AU
min. Earth dist.	3175 Sep 30 17:19	8°♈19'46 28.90638 AU	morning rise	3182 Apr 28 09:47	23°♈25'27
direct	3175 Dec 18 15:05	6°♈55'27	retrograde	3182 Jul 28 14:08	25°♈24'33
evening set	3176 Mar 14 05:47	8°♈48'46	min. Earth dist.	3182 Oct 16 07:46	24°♈00'49 28.85043 AU
			opposition	3182 Oct 17 04:33	23°♈59'22 -1°28'23
conjunction	3176 Mar 29 17:51	9°♈23'46 -1°07'41	direct	3183 Jan 03 01:33	22°♈36'12
minimum elong	3176 Mar 29 17:50	9°♈23'46 1°07'40	evening set	3183 Mar 30 13:57	24°♈29'33
max. Earth dist.	3176 Mar 30 12:46	9°♈25'34 30.90022 AU			
morning rise	3176 Apr 14 08:52	9°♈59'05	conjunction	3183 Apr 15 04:27	25°♈04'44 -1°23'35
retrograde	3176 Jul 14 09:16	11°♈57'46	minimum elong	3183 Apr 15 04:27	25°♈04'44 1°23'36
opposition	3176 Oct 02 23:34	10°♈32'50 -1°13'48	max. Earth dist.	3183 Apr 16 02:25	25°♈06'49 30.84733 AU
min. Earth dist.	3176 Oct 02 04:43	10°♈34'08 28.89524 AU	morning rise	3183 Apr 30 22:20	25°♈40'16
direct	3176 Dec 20 04:42	9°♈09'41	retrograde	3183 Jul 31 04:48	27°♈39'26
evening set	3177 Mar 16 17:08	11°♈02'59	opposition	3183 Oct 19 17:17	26°♈14'14 -1°30'22
			min. Earth dist.	3183 Oct 18 19:39	26°♈15'45 28.84584 AU
conjunction	3177 Apr 01 05:23	11°♈38'01 -1°10'17	direct	3184 Jan 05 12:10	24°♈51'05
minimum elong	3177 Apr 01 05:23	11°♈38'01 1°10'18	evening set	3184 Apr 01 02:01	26°♈44'27
max. Earth dist.	3177 Apr 02 00:09	11°♈39'47 30.88928 AU			
morning rise	3177 Apr 16 20:54	12°♈13'21	conjunction	3184 Apr 16 16:52	27°♈19'41 -1°25'23
retrograde	3177 Jul 16 23:34	14°♈12'06	minimum elong	3184 Apr 16 16:52	27°♈19'41 1°25'22
opposition	3177 Oct 05 12:33	12°♈47'05 -1°16'32	max. Earth dist.	3184 Apr 17 15:01	27°♈21'47 30.84248 AU
min. Earth dist.	3177 Oct 04 18:09	12°♈48'21 28.88485 AU	morning rise	3184 May 02 11:10	27°♈55'15
direct	3177 Dec 22 16:28	11°♈23'54	retrograde	3184 Aug 01 17:35	29°♈54'28
evening set	3178 Mar 19 04:15	13°♈17'11	min. Earth dist.	3184 Oct 20 09:29	28°♈30'41 28.84083 AU
			opposition	3184 Oct 21 06:00	28°♈29'15 -1°32'13
conjunction	3178 Apr 03 16:58	13°♈52'15 -1°12'47	direct	3185 Jan 06 22:51	27°♈06'05
minimum elong	3178 Apr 03 16:58	13°♈52'15 1°12'47	evening set	3185 Apr 03 14:07	28°♈59'29
max. Earth dist.	3178 Apr 04 13:15	13°♈54'10 30.87936 AU			
morning rise	3178 Apr 19 08:43	14°♈27'37	conjunction	3185 Apr 19 05:28	29°♈34'44 -1°27'02
retrograde	3178 Jul 19 11:31	16°♈26'26	minimum elong	3185 Apr 19 05:28	29°♈34'44 1°27'03
min. Earth dist.	3178 Oct 07 05:32	15°♈02'43 28.87553 AU	max. Earth dist.	3185 Apr 20 03:45	29°♈36'51 30.83715 AU
opposition	3178 Oct 08 01:23	15°♈01'21 -1°19'09		3185 Apr 30 08:53	0°♈
direct	3178 Dec 25 05:26	13°♈38'09	morning rise	3185 May 05 00:07	0°♈10'20
evening set	3179 Mar 21 15:42	15°♈31'26	retrograde	3185 Aug 04 08:27	2°♈09'35
			opposition	3185 Oct 23 18:41	0°♈44'21 -1°33'55
conjunction	3179 Apr 06 04:36	16°♈06'31 -1°15'11	min. Earth dist.	3185 Oct 22 21:19	0°♈45'50 28.83504 AU
minimum elong	3179 Apr 06 04:36	16°♈06'31 1°15'12		3185 Nov 20 17:52	30°♈
max. Earth dist.	3179 Apr 07 00:28	16°♈08'24 30.87068 AU	direct	3186 Jan 09 12:22	29°♈21'09
morning rise	3179 Apr 21 20:55	16°♈41'55		3186 Feb 26 13:37	0°♈
retrograde	3179 Jul 22 00:47	18°♈40'48	evening set	3186 Apr 06 02:16	1°♈14'34
opposition	3179 Oct 10 14:15	17°♈15'40 -1°21'38			
min. Earth dist.	3179 Oct 09 18:24	17°♈17'03 28.86765 AU	conjunction	3186 Apr 21 17:53	1°♈49'51 -1°28'34
direct	3179 Dec 27 16:01	15°♈52'28	minimum elong	3186 Apr 21 17:53	1°♈49'51 1°28'34
evening set	3180 Mar 23 03:01	17°♈45'45	max. Earth dist.	3186 Apr 22 15:25	1°♈51'53 30.83083 AU
			morning rise	3186 May 07 13:04	2°♈25'28
conjunction	3180 Apr 07 16:29	18°♈20'52 -1°17'28	retrograde	3186 Aug 06 22:27	4°♈24'45
minimum elong	3180 Apr 07 16:29	18°♈20'52 1°17'27	min. Earth dist.	3186 Oct 25 11:15	3°♈00'51 28.82838 AU
max. Earth dist.	3180 Apr 08 14:01	18°♈22'55 30.86336 AU	opposition	3186 Oct 26 07:32	2°♈59'27 -1°35'29
morning rise	3180 Apr 23 09:03	18°♈56'18	direct	3187 Jan 12 00:06	1°♈36'12
retrograde	3180 Jul 23 12:54	20°♈55'15	evening set	3187 Apr 08 14:26	3°♈29'36
min. Earth dist.	3180 Oct 11 06:34	19°♈31'31 28.86091 AU			
opposition	3180 Oct 12 03:02	19°♈30'06 -1°24'01	conjunction	3187 Apr 24 06:39	4°♈04'55 -1°29'58
direct	3180 Dec 29 03:58	18°♈06'54	minimum elong	3187 Apr 24 06:39	4°♈04'55 1°29'59
evening set	3181 Mar 25 14:38	20°♈00'12	max. Earth dist.	3187 Apr 25 04:56	4°♈07'01 30.82385 AU
			morning rise	3187 May 10 02:08	4°♈40'34
conjunction	3181 Apr 10 04:19	20°♈35'20 -1°19'37	retrograde	3187 Aug 09 11:36	6°♈39'49
minimum elong	3181 Apr 10 04:19	20°♈35'20 1°19'38	opposition	3187 Oct 28 20:00	5°♈14'28 -1°36'54
max. Earth dist.	3181 Apr 11 01:19	20°♈37'20 30.85723 AU	min. Earth dist.	3187 Oct 27 23:00	5°♈15'56 28.82114 AU
morning rise	3181 Apr 25 21:25	21°♈10'48	direct	3188 Jan 14 13:27	3°♈51'10
retrograde	3181 Jul 26 02:45	23°♈09'50	evening set	3188 Apr 10 02:45	5°♈44'34
opposition	3181 Oct 14 15:43	21°♈44'39 -1°26'16			
min. Earth dist.	3181 Oct 13 18:43	21°♈46'06 28.85535 AU	conjunction	3188 Apr 25 19:15	6°♈19'54 -1°31'13
direct	3181 Dec 31 14:18	20°♈21'28	minimum elong	3188 Apr 25 19:15	6°♈19'54 1°31'13
evening set	3182 Mar 28 02:15	22°♈14'47	max. Earth dist.	3188 Apr 26 16:29	6°♈21'55 30.81655 AU
			morning rise	3188 May 11 15:21	6°♈55'35
conjunction	3182 Apr 12 16:23	22°♈49'57 -1°21'40	retrograde	3188 Aug 11 01:49	8°♈54'49
minimum elong	3182 Apr 12 16:22	22°♈49'57 1°21'40	opposition	3188 Oct 30 08:33	7°♈29'24 -1°38'11

min. Earth dist.	3188 Oct 29 12:09	7°830'50	28.81397 AU	conjunction	3195 May 12 13:22	22°804'32	-1°36'05
direct	3189 Jan 16 01:02	6°806'02		minimum elong	3195 May 12 13:22	22°804'32	1°36'06
evening set	3189 Apr 12 14:56	7°859'26		max. Earth dist.	3195 May 13 11:49	22°806'39	30.79359 AU
				morning rise	3195 May 28 12:31	22°840'25	
conjunction	3189 Apr 28 08:01	8°834'48	-1°32'21	retrograde	3195 Aug 27 21:08	24°839'38	
minimum elong	3189 Apr 28 08:01	8°834'48	1°32'21	opposition	3195 Nov 15 22:04	23°814'13	-1°42'49
max. Earth dist.	3189 Apr 29 06:29	8°836'55	30.80952 AU	min. Earth dist.	3195 Nov 15 01:37	23°815'40	28.79519 AU
morning rise	3189 May 14 04:21	9°810'30		direct	3196 Feb 01 08:32	21°850'45	
retrograde	3189 Aug 13 14:11	11°809'43		evening set	3196 Apr 28 06:30	23°844'25	
opposition	3189 Nov 01 20:51	9°844'15	-1°39'18				
min. Earth dist.	3189 Nov 01 00:09	9°845'42	28.80729 AU	conjunction	3196 May 14 02:50	24°820'00	-1°36'11
direct	3190 Jan 18 13:58	8°820'50		minimum elong	3196 May 14 02:50	24°820'00	1°36'11
evening set	3190 Apr 15 03:17	10°814'14		max. Earth dist.	3196 May 15 01:46	24°822'09	30.79466 AU
				morning rise	3196 May 30 02:17	24°855'54	
conjunction	3190 Apr 30 20:39	10°849'37	-1°33'20	retrograde	3196 Aug 29 11:19	26°855'06	
minimum elong	3190 Apr 30 20:39	10°849'37	1°33'19	opposition	3196 Nov 17 10:07	25°829'45	-1°42'52
max. Earth dist.	3190 May 01 18:19	10°851'40	30.80342 AU	min. Earth dist.	3196 Nov 16 13:12	25°831'13	28.79615 AU
morning rise	3190 May 16 17:35	11°825'21		direct	3197 Feb 02 21:23	24°806'17	
retrograde	3190 Aug 16 03:40	13°824'34		evening set	3197 Apr 30 19:35	26°800'00	
opposition	3190 Nov 04 09:11	11°859'03	-1°40'17				
min. Earth dist.	3190 Nov 03 12:13	12°800'32	28.80189 AU	conjunction	3197 May 16 16:12	26°835'37	-1°36'09
direct	3191 Jan 21 00:53	10°835'36		minimum elong	3197 May 16 16:12	26°835'37	1°36'09
evening set	3191 Apr 17 15:30	12°829'00		max. Earth dist.	3197 May 17 13:40	26°837'39	30.79540 AU
				morning rise	3197 Jun 01 16:12	27°811'33	
conjunction	3191 May 03 09:26	13°804'25	-1°34'10	retrograde	3197 Sep 01 02:42	29°810'44	
minimum elong	3191 May 03 09:26	13°804'25	1°34'10	opposition	3197 Nov 19 22:17	27°845'25	-1°42'44
max. Earth dist.	3191 May 04 08:09	13°806'34	30.79857 AU	min. Earth dist.	3197 Nov 19 02:26	27°846'48	28.79666 AU
morning rise	3191 May 19 06:42	13°840'11		direct	3198 Feb 05 09:20	26°821'56	
	3191 Jun 29 20:04	15°8		evening set	3198 May 03 08:38	28°815'42	
retrograde	3191 Aug 18 14:47	15°839'23					
	3191 Oct 08 21:02	15°8		conjunction	3198 May 19 05:54	28°851'21	-1°35'57
opposition	3191 Nov 06 21:29	14°813'52	-1°41'06	minimum elong	3198 May 19 05:54	28°851'21	1°35'57
min. Earth dist.	3191 Nov 06 00:46	14°815'19	28.79777 AU	max. Earth dist.	3198 May 20 03:55	28°853'25	30.79550 AU
direct	3192 Jan 23 12:22	12°850'23		morning rise	3198 Jun 04 06:09	29°827'18	
evening set	3192 Apr 19 03:58	14°843'49			3198 Jun 19 15:05	0°II	
	3192 Apr 26 10:03	15°8		retrograde	3198 Sep 03 15:56	1°II26'26	
				opposition	3198 Nov 22 10:21	0°II01'07	-1°42'27
conjunction	3192 May 04 22:20	15°819'16	-1°34'52	min. Earth dist.	3198 Nov 21 14:47	0°II02'30	28.79627 AU
minimum elong	3192 May 04 22:20	15°819'16	1°34'51		3198 Nov 23 02:22	30°8	
max. Earth dist.	3192 May 05 20:37	15°821'22	30.79529 AU	direct	3199 Feb 07 22:58	28°837'37	
morning rise	3192 May 20 20:06	15°855'03			3199 Apr 21 03:14	0°II	
retrograde	3192 Aug 20 05:07	17°854'15		evening set	3199 May 05 21:50	0°II31'24	
min. Earth dist.	3192 Nov 07 11:56	16°830'15	28.79526 AU				
opposition	3192 Nov 08 09:31	16°828'44	-1°41'46	conjunction	3199 May 21 19:28	1°II07'04	-1°35'37
direct	3193 Jan 24 22:42	15°805'14		minimum elong	3199 May 21 19:28	1°II07'04	1°35'38
evening set	3193 Apr 21 16:28	16°858'43		max. Earth dist.	3199 May 22 15:51	1°II09'00	30.79479 AU
				morning rise	3199 Jun 06 20:21	1°II43'03	
conjunction	3193 May 07 11:17	17°834'12	-1°35'25	retrograde	3199 Sep 06 05:48	3°II42'07	
minimum elong	3193 May 07 11:17	17°834'12	1°35'26	opposition	3199 Nov 24 22:25	2°II16'48	-1°42'01
max. Earth dist.	3193 May 08 09:57	17°836'20	30.79342 AU	min. Earth dist.	3199 Nov 24 03:20	2°II18'08	28.79520 AU
morning rise	3193 May 23 09:28	18°810'01		direct	3200 Feb 10 10:32	0°II53'14	
retrograde	3193 Aug 22 17:04	20°809'13		evening set	3200 May 07 11:01	2°II47'01	
opposition	3193 Nov 10 21:47	18°843'44	-1°42'17				
min. Earth dist.	3193 Nov 10 01:04	18°845'11	28.79414 AU	conjunction	3200 May 23 09:15	3°II22'43	-1°35'09
direct	3194 Jan 27 09:02	17°820'14		minimum elong	3200 May 23 09:15	3°II22'43	1°35'08
evening set	3194 Apr 24 04:52	19°813'46		max. Earth dist.	3200 May 24 05:58	3°II24'40	30.79338 AU
				morning rise	3200 Jun 08 10:25	3°II58'43	
conjunction	3194 May 10 00:13	19°849'16	-1°35'49	retrograde	3200 Sep 07 17:35	5°II57'40	
minimum elong	3194 May 10 00:13	19°849'16	1°35'49	opposition	3200 Nov 26 10:13	4°II32'21	-1°41'25
max. Earth dist.	3194 May 10 23:14	19°851'27	30.79305 AU	min. Earth dist.	3200 Nov 25 16:03	4°II33'38	28.79360 AU
morning rise	3194 May 25 22:49	20°825'07		direct	3201 Feb 11 22:59	3°II08'43	
retrograde	3194 Aug 25 07:28	22°824'20		evening set	3201 May 10 00:14	5°II02'30	
opposition	3194 Nov 13 09:56	20°858'53	-1°42'38				
min. Earth dist.	3194 Nov 12 12:14	21°800'24	28.79428 AU	conjunction	3201 May 25 22:53	5°II38'14	-1°34'31
direct	3195 Jan 29 21:52	19°835'24		minimum elong	3201 May 25 22:53	5°II38'14	1°34'31
evening set	3195 Apr 26 17:40	21°828'59		max. Earth dist.	3201 May 26 18:31	5°II40'05	30.79194 AU
				morning rise	3201 Jun 11 00:34	6°II14'15	



retrograde	3201 Sep 10 07:56	8° $\Pi$ 13'06	minimum elong	3208 Jun 10 23:22	21° $\Pi$ 24'22	1°26'10
opposition	3201 Nov 28 22:00	6° $\Pi$ 47'45 -1°40'41	max. Earth dist.	3208 Jun 11 16:29	21° $\Pi$ 25'59	30.80915 AU
min. Earth dist.	3201 Nov 28 03:27	6° $\Pi$ 49'04 28.79229 AU	morning rise	3208 Jun 27 03:49	22° $\Pi$ 00'31	
direct	3202 Feb 14 10:21	5° $\Pi$ 24'03	retrograde	3208 Sep 26 02:23	23° $\Pi$ 58'43	
evening set	3202 May 12 13:18	7° $\Pi$ 17'50	opposition	3208 Dec 14 06:38	22° $\Pi$ 33'37 -1°31'14	
			min. Earth dist.	3208 Dec 13 14:56	22° $\Pi$ 34'44	28.81294 AU
conjunction	3202 May 28 12:26	7° $\Pi$ 53'35 -1°33'45	direct	3209 Mar 01 20:51	21° $\Pi$ 09'42	
minimum elong	3202 May 28 12:26	7° $\Pi$ 53'35 1°33'45	evening set	3209 May 28 11:09	23° $\Pi$ 03'49	
max. Earth dist.	3202 May 29 08:08	7° $\Pi$ 55'26 30.79083 AU				
morning rise	3202 Jun 13 14:29	8° $\Pi$ 29'38	conjunction	3209 Jun 13 13:35	23° $\Pi$ 39'45 -1°24'26	
retrograde	3202 Sep 12 18:20	10° $\Pi$ 28'23	minimum elong	3209 Jun 13 13:35	23° $\Pi$ 39'45	1°24'26
opposition	3202 Dec 01 09:47	9° $\Pi$ 03'01 -1°39'47	max. Earth dist.	3209 Jun 14 06:57	23° $\Pi$ 41'23	30.81502 AU
min. Earth dist.	3202 Nov 30 16:27	9° $\Pi$ 04'14 28.79159 AU	morning rise	3209 Jun 29 18:12	24° $\Pi$ 15'55	
direct	3203 Feb 16 21:30	7° $\Pi$ 39'14	retrograde	3209 Sep 28 15:20	26° $\Pi$ 14'02	
evening set	3203 May 15 02:30	9° $\Pi$ 33'02	opposition	3209 Dec 16 18:06	24° $\Pi$ 49'01 -1°29'17	
			min. Earth dist.	3209 Dec 16 03:32	24° $\Pi$ 50'03	28.81856 AU
conjunction	3203 May 31 02:11	10° $\Pi$ 08'48 -1°32'51	direct	3210 Mar 04 09:24	23° $\Pi$ 25'05	
minimum elong	3203 May 31 02:11	10° $\Pi$ 08'48 1°32'51	evening set	3210 May 31 00:51	25° $\Pi$ 19'16	
max. Earth dist.	3203 May 31 21:43	10° $\Pi$ 10'38 30.79073 AU				
morning rise	3203 Jun 16 04:38	10° $\Pi$ 44'51	conjunction	3210 Jun 16 03:40	25° $\Pi$ 55'13 -1°22'34	
retrograde	3203 Sep 15 07:15	12° $\Pi$ 43'30	minimum elong	3210 Jun 16 03:40	25° $\Pi$ 55'13	1°22'33
opposition	3203 Dec 03 21:14	11° $\Pi$ 18'08 -1°38'44	max. Earth dist.	3210 Jun 16 19:18	25° $\Pi$ 56'41	30.82042 AU
min. Earth dist.	3203 Dec 03 03:14	11° $\Pi$ 19'24 28.79201 AU	morning rise	3210 Jul 02 08:45	26° $\Pi$ 31'24	
direct	3204 Feb 19 09:52	9° $\Pi$ 54'17	retrograde	3210 Oct 01 05:55	28° $\Pi$ 29'26	
evening set	3204 May 16 15:54	11° $\Pi$ 48'07	opposition	3210 Dec 19 05:31	27° $\Pi$ 04'29 -1°27'13	
			min. Earth dist.	3210 Dec 18 15:05	27° $\Pi$ 05'30	28.82347 AU
conjunction	3204 Jun 01 15:56	12° $\Pi$ 23'55 -1°31'48	direct	3211 Mar 06 21:10	25° $\Pi$ 40'31	
minimum elong	3204 Jun 01 15:56	12° $\Pi$ 23'55 1°31'47	evening set	3211 Jun 02 14:46	27° $\Pi$ 34'45	
max. Earth dist.	3204 Jun 02 10:46	12° $\Pi$ 25'41 30.79173 AU				
morning rise	3204 Jun 17 18:51	12° $\Pi$ 59'59	conjunction	3211 Jun 18 18:03	28° $\Pi$ 10'44 -1°20'34	
retrograde	3204 Sep 16 19:33	14° $\Pi$ 58'32	minimum elong	3211 Jun 18 18:03	28° $\Pi$ 10'44	1°20'34
opposition	3204 Dec 05 08:53	13° $\Pi$ 33'11 -1°37'32	max. Earth dist.	3211 Jun 19 09:07	28° $\Pi$ 12'09	30.82477 AU
min. Earth dist.	3204 Dec 04 16:07	13° $\Pi$ 34'22 28.79375 AU	morning rise	3211 Jul 04 23:23	28° $\Pi$ 46'56	
direct	3205 Feb 20 20:00	12° $\Pi$ 09'17		3211 Aug 11 14:15	0° $\Theta$	
evening set	3205 May 19 05:01	14° $\Pi$ 03'08	retrograde	3211 Oct 03 16:47	0° $\Theta$ 44'50	
				3211 Nov 27 02:08	30° $\kappa$ $\Pi$	
conjunction	3205 Jun 04 05:39	14° $\Pi$ 38'57 -1°30'36	opposition	3211 Dec 21 16:52	29° $\Pi$ 19'56 -1°25'01	
minimum elong	3205 Jun 04 05:40	14° $\Pi$ 38'57 1°30'36	min. Earth dist.	3211 Dec 21 04:14	29° $\Pi$ 20'50	28.82730 AU
max. Earth dist.	3205 Jun 05 00:58	14° $\Pi$ 40'46 30.79423 AU	direct	3212 Mar 08 08:31	27° $\Pi$ 55'56	
morning rise	3205 Jun 20 08:49	15° $\Pi$ 15'03	evening set	3212 Jun 04 04:39	29° $\Pi$ 50'12	
retrograde	3205 Sep 19 08:43	17° $\Pi$ 13'30		3212 Jun 08 15:30	0° $\Theta$	
opposition	3205 Dec 07 20:20	15° $\Pi$ 48'11 -1°36'11				
min. Earth dist.	3205 Dec 07 02:52	15° $\Pi$ 49'25 28.79689 AU	conjunction	3212 Jun 20 08:23	0° $\Theta$ 26'12 -1°18'26	
direct	3206 Feb 23 09:03	14° $\Pi$ 24'16	minimum elong	3212 Jun 20 08:23	0° $\Theta$ 26'12	1°18'27
evening set	3206 May 21 18:27	16° $\Pi$ 18'10	max. Earth dist.	3212 Jun 20 22:23	0° $\Theta$ 27'31	30.82832 AU
			morning rise	3212 Jul 06 14:03	1° $\Theta$ 02'24	
conjunction	3206 Jun 06 19:24	16° $\Pi$ 54'01 -1°29'16	retrograde	3212 Oct 05 05:52	3° $\Theta$ 00'10	
minimum elong	3206 Jun 06 19:24	16° $\Pi$ 54'01 1°29'16	opposition	3212 Dec 23 04:05	1° $\Theta$ 35'18 -1°22'41	
max. Earth dist.	3206 Jun 07 13:26	16° $\Pi$ 55'42 30.79813 AU	min. Earth dist.	3212 Dec 22 15:20	1° $\Theta$ 36'12	28.83040 AU
morning rise	3206 Jun 22 23:07	17° $\Pi$ 30'07	direct	3213 Mar 10 20:49	0° $\Theta$ 11'14	
retrograde	3206 Sep 21 22:54	19° $\Pi$ 28'29	evening set	3213 Jun 06 18:25	2° $\Theta$ 05'32	
opposition	3206 Dec 10 07:51	18° $\Pi$ 03'13 -1°34'41				
min. Earth dist.	3206 Dec 09 15:18	18° $\Pi$ 04'24 28.80149 AU	conjunction	3213 Jun 22 22:27	2° $\Theta$ 41'33 -1°16'12	
direct	3207 Feb 25 20:27	16° $\Pi$ 39'17	minimum elong	3213 Jun 22 22:27	2° $\Theta$ 41'33	1°16'13
evening set	3207 May 24 07:48	18° $\Pi$ 33'15	max. Earth dist.	3213 Jun 23 11:23	2° $\Theta$ 42'45	30.83116 AU
			morning rise	3213 Jul 09 04:26	3° $\Theta$ 17'45	
conjunction	3207 Jun 09 09:24	19° $\Pi$ 09'08 -1°27'47	retrograde	3213 Oct 07 17:24	5° $\Theta$ 15'23	
minimum elong	3207 Jun 09 09:24	19° $\Pi$ 09'08 1°27'48	opposition	3213 Dec 25 15:21	3° $\Theta$ 50'32 -1°20'14	
max. Earth dist.	3207 Jun 10 04:11	19° $\Pi$ 10'54 30.80331 AU	min. Earth dist.	3213 Dec 25 04:18	3° $\Theta$ 51'19	28.83318 AU
morning rise	3207 Jun 25 13:20	19° $\Pi$ 45'15	direct	3214 Mar 13 06:38	2° $\Theta$ 26'24	
retrograde	3207 Sep 24 11:53	21° $\Pi$ 43'32	evening set	3214 Jun 09 08:07	4° $\Theta$ 20'43	
opposition	3207 Dec 12 19:17	20° $\Pi$ 18'22 -1°33'01				
min. Earth dist.	3207 Dec 12 02:56	20° $\Pi$ 19'31 28.80697 AU	conjunction	3214 Jun 25 12:41	4° $\Theta$ 56'45 -1°13'52	
direct	3208 Feb 28 09:40	18° $\Pi$ 54'26	minimum elong	3214 Jun 25 12:41	4° $\Theta$ 56'45	1°13'52
evening set	3208 May 25 21:29	20° $\Pi$ 48'28	max. Earth dist.	3214 Jun 26 01:29	4° $\Theta$ 57'56	30.83408 AU
			morning rise	3214 Jul 11 18:52	5° $\Theta$ 32'58	
conjunction	3208 Jun 10 23:22	21° $\Pi$ 24'22 -1°26'11	retrograde	3214 Oct 10 05:17	7° $\Theta$ 30'26	

opposition	3214 Dec 28 02:16	6°05'36" -1°17'40"	max. Earth dist.	3221 Jul 11 23:13	20°40'32" 30.88170 AU
min. Earth dist.	3214 Dec 27 15:02	6°06'24" 28.83615 AU	morning rise	3221 Jul 27 22:48	21°16'00"
direct	3215 Mar 15 20:02	4°41'23"	retrograde	3221 Oct 25 22:37	23°12'29"
evening set	3215 Jun 11 21:59	6°35'44"	opposition	3222 Jan 12 05:58	21°48'04" -0°56'39"
			min. Earth dist.	3222 Jan 11 22:37	21°48'35" 28.88693 AU
conjunction	3215 Jun 28 02:47	7°11'46" -1°11'24"	direct	3222 Mar 31 08:59	20°23'37"
minimum elong	3215 Jun 28 02:47	7°11'46" 1°11'24"	evening set	3222 Jun 27 22:30	22°18'18"
max. Earth dist.	3215 Jun 28 13:57	7°12'49" 30.83736 AU			
morning rise	3215 Jul 14 09:22	7°48'00"	conjunction	3222 Jul 14 05:26	22°54'26" -0°51'26"
retrograde	3215 Oct 12 17:53	9°45'19"	minimum elong	3222 Jul 14 05:26	22°54'26" 0°51'26"
opposition	3215 Dec 30 13:18	8°20'30" -1°14'59"	max. Earth dist.	3222 Jul 14 12:20	22°55'04" 30.89151 AU
min. Earth dist.	3215 Dec 30 03:13	8°21'13" 28.83985 AU	morning rise	3222 Jul 30 13:10	23°30'39"
direct	3216 Mar 17 07:33	6°56'12"	retrograde	3222 Oct 28 09:51	25°26'59"
evening set	3216 Jun 13 11:39	8°50'35"	opposition	3223 Jan 14 16:42	24°02'39" -0°53'16"
			min. Earth dist.	3223 Jan 14 11:21	24°03'02" 28.89651 AU
conjunction	3216 Jun 29 16:57	9°26'39" -1°08'51"	direct	3223 Apr 02 18:45	22°38'11"
minimum elong	3216 Jun 29 16:57	9°26'39" 1°08'51"	evening set	3223 Jun 30 12:32	24°32'55"
max. Earth dist.	3216 Jun 30 04:37	9°27'44" 30.84152 AU			
morning rise	3216 Jul 15 23:35	10°02'51"	conjunction	3223 Jul 16 19:49	25°09'03" -0°48'14"
retrograde	3216 Oct 14 05:40	12°00'02"	minimum elong	3223 Jul 16 19:49	25°09'03" 0°48'13"
opposition	3217 Jan 01 00:07	10°35'15" -1°12'11"	max. Earth dist.	3223 Jul 17 01:59	25°09'37" 30.90074 AU
min. Earth dist.	3216 Dec 31 14:14	10°35'57" 28.84449 AU	morning rise	3223 Aug 02 03:34	25°45'16"
direct	3217 Mar 19 20:40	9°10'53"	retrograde	3223 Oct 30 21:11	27°41'27"
evening set	3217 Jun 16 01:25	11°05'18"	opposition	3224 Jan 17 03:23	26°17'11" -0°49'49"
			min. Earth dist.	3224 Jan 16 22:11	26°17'33" 28.90516 AU
conjunction	3217 Jul 02 06:54	11°41'22" -1°06'11"	direct	3224 Apr 04 08:03	24°52'40"
minimum elong	3217 Jul 02 06:54	11°41'22" 1°06'11"	evening set	3224 Jul 02 02:38	26°47'26"
max. Earth dist.	3217 Jul 02 16:58	11°42'18" 30.84693 AU			
morning rise	3217 Jul 18 13:55	12°17'35"	conjunction	3224 Jul 18 09:57	27°23'35" -0°44'57"
retrograde	3217 Oct 16 19:29	14°14'37"	minimum elong	3224 Jul 18 09:57	27°23'35" 0°44'58"
opposition	3218 Jan 03 10:58	12°49'52" -1°09'17"	max. Earth dist.	3224 Jul 18 14:06	27°23'58" 30.90893 AU
min. Earth dist.	3218 Jan 03 01:28	12°50'32" 28.85068 AU	morning rise	3224 Aug 03 17:51	27°59'46"
direct	3218 Mar 22 07:59	11°25'27"	retrograde	3224 Nov 01 08:44	29°55'48"
evening set	3218 Jun 18 14:58	13°19'54"	opposition	3225 Jan 18 14:06	28°31'36" -0°46'17"
			min. Earth dist.	3225 Jan 18 10:24	28°31'51" 28.91300 AU
conjunction	3218 Jul 04 20:56	13°56'00" -1°03'25"	direct	3225 Apr 06 18:44	27°07'01"
minimum elong	3218 Jul 04 20:56	13°56'00" 1°03'25"	evening set	3225 Jul 04 16:30	29°01'49"
max. Earth dist.	3218 Jul 05 07:35	13°56'59" 30.85383 AU			
morning rise	3218 Jul 21 04:00	14°32'13"	conjunction	3225 Jul 21 00:11	29°37'57" -0°41'38"
retrograde	3218 Oct 19 08:05	16°29'05"	minimum elong	3225 Jul 21 00:12	29°37'57" 0°41'37"
opposition	3219 Jan 05 21:50	15°04'24" -1°06'16"	max. Earth dist.	3225 Jul 21 04:17	29°38'20" 30.91648 AU
min. Earth dist.	3219 Jan 05 13:10	15°05'01" 28.85821 AU		3225 Jul 30 21:30	0°00'
direct	3219 Mar 24 21:30	13°39'59"	morning rise	3225 Aug 06 08:00	0°14'08"
evening set	3219 Jun 21 04:49	15°34'28"	retrograde	3225 Nov 03 19:57	2°10'00"
			opposition	3226 Jan 21 00:38	0°45'50" -0°42'41"
conjunction	3219 Jul 07 11:00	16°10'35" -1°00'33"	min. Earth dist.	3226 Jan 20 21:35	0°46'03" 28.92019 AU
minimum elong	3219 Jul 07 11:00	16°10'35" 1°00'33"		3226 Feb 18 12:05	30°00'
max. Earth dist.	3219 Jul 07 20:08	16°11'26" 30.86221 AU	direct	3226 Apr 09 07:26	29°21'11"
morning rise	3219 Jul 23 18:24	16°46'48"		3226 May 28 04:50	0°00'
retrograde	3219 Oct 21 21:33	18°43'32"	evening set	3226 Jul 07 06:26	1°16'01"
opposition	3220 Jan 08 08:27	17°18'55" -1°03'10"			
min. Earth dist.	3220 Jan 07 23:38	17°19'33" 28.86716 AU	conjunction	3226 Jul 23 14:08	1°52'09" -0°38'14"
direct	3220 Mar 26 09:39	15°54'29"	minimum elong	3226 Jul 23 14:09	1°52'09" 0°38'14"
evening set	3220 Jun 22 18:40	17°49'03"	max. Earth dist.	3226 Jul 23 16:10	1°52'20" 30.92362 AU
			morning rise	3226 Aug 08 22:10	2°28'19"
conjunction	3220 Jul 09 01:11	18°25'10" -0°57'36"	retrograde	3226 Nov 06 08:41	4°24'01"
minimum elong	3220 Jul 09 01:11	18°25'10" 0°57'36"	opposition	3227 Jan 23 11:09	2°59'52" -0°39'02"
max. Earth dist.	3220 Jul 09 10:13	18°26'00" 30.87163 AU	min. Earth dist.	3227 Jan 23 08:55	3°00'02" 28.92729 AU
morning rise	3220 Jul 25 08:37	19°01'23"	direct	3227 Apr 11 19:08	1°35'09"
retrograde	3220 Oct 23 08:59	20°57'59"	evening set	3227 Jul 09 20:17	3°30'01"
opposition	3221 Jan 09 19:17	19°33'29" -0°59'57"			
min. Earth dist.	3221 Jan 09 12:03	19°33'59" 28.87692 AU	conjunction	3227 Jul 26 04:17	4°06'09" -0°34'48"
direct	3221 Mar 28 20:54	18°09'02"	minimum elong	3227 Jul 26 04:17	4°06'09" 0°34'47"
evening set	3221 Jun 25 08:27	20°03'39"	max. Earth dist.	3227 Jul 26 06:32	4°06'21" 30.93073 AU
			morning rise	3227 Aug 11 12:08	4°42'17"
conjunction	3221 Jul 11 15:12	20°39'47" -0°54'33"	retrograde	3227 Nov 08 20:03	6°37'49"
minimum elong	3221 Jul 11 15:12	20°39'47" 0°54'33"	opposition	3228 Jan 25 21:32	5°13'42" -0°35'20"

min. Earth dist.	3228 Jan 25 20:28	5°♏13'47	28.93451 AU	min. Earth dist.	3234 Feb 07 13:43	18°♏34'37	29.00051 AU
direct	3228 Apr 13 08:42	3°♏48'56		direct	3234 Apr 27 04:58	17°♏09'58	
evening set	3228 Jul 11 10:10	5°♏43'50		evening set	3234 Jul 25 20:09	19°♏05'11	
conjunction	3228 Jul 27 18:08	6°♏19'57	-0°31'18	conjunction	3234 Aug 11 04:24	19°♏41'16	-0°09'37
minimum elong	3228 Jul 27 18:08	6°♏19'57	0°31'19	minimum elong	3234 Aug 11 04:24	19°♏41'16	0°09'38
max. Earth dist.	3228 Jul 27 18:39	6°♏20'00	30.93835 AU	behind sun begin	3234 Aug 10 22:59	19°♏40'48	
morning rise	3228 Aug 13 02:06	6°♏56'05		behind sun end	3234 Aug 11 09:48	19°♏41'45	
retrograde	3228 Nov 10 08:50	8°♏51'26		max. Earth dist.	3234 Aug 11 01:38	19°♏41'02	31.00717 AU
opposition	3229 Jan 27 07:54	7°♏27'22	-0°31'34	morning rise	3234 Aug 27 11:32	20°♏17'17	
min. Earth dist.	3229 Jan 27 06:41	7°♏27'28	28.94255 AU	retrograde	3234 Nov 24 04:17	22°♏11'53	
direct	3229 Apr 15 21:11	6°♏02'33		opposition	3235 Feb 09 21:41	20°♏48'24	-0°08'16
evening set	3229 Jul 13 23:43	7°♏57'29		min. Earth dist.	3235 Feb 10 00:47	20°♏48'10	29.01366 AU
conjunction	3229 Jul 30 07:50	8°♏33'36	-0°27'46	direct	3235 Apr 29 16:37	19°♏23'35	
minimum elong	3229 Jul 30 07:50	8°♏33'36	0°27'46	evening set	3235 Jul 28 10:06	21°♏18'53	
max. Earth dist.	3229 Jul 30 08:26	8°♏33'39	30.94682 AU	conjunction	3235 Aug 13 18:04	21°♏54'56	-0°05'57
morning rise	3229 Aug 15 15:38	9°♏09'42		minimum elong	3235 Aug 13 18:05	21°♏54'56	0°05'56
retrograde	3229 Nov 12 19:50	11°♏04'55		behind sun begin	3235 Aug 13 11:48	21°♏54'23	
opposition	3230 Jan 29 18:20	9°♏40'54	-0°27'46	behind sun end	3235 Aug 14 00:22	21°♏55'30	
min. Earth dist.	3230 Jan 29 18:31	9°♏40'53	28.95164 AU	max. Earth dist.	3235 Aug 13 13:06	21°♏54'30	31.01996 AU
direct	3230 Apr 18 08:54	8°♏16'03		morning rise	3235 Aug 30 01:08	22°♏30'56	
evening set	3230 Jul 16 13:25	10°♏11'01		retrograde	3235 Nov 26 16:10	24°♏25'24	
conjunction	3230 Aug 01 21:35	10°♏47'07	-0°24'12	opposition	3236 Feb 12 07:59	23°♏02'00	-0°04'19
minimum elong	3230 Aug 01 21:35	10°♏47'07	0°24'13	min. Earth dist.	3236 Feb 12 11:58	23°♏01'43	29.02606 AU
max. Earth dist.	3230 Aug 01 21:12	10°♏47'05	30.95668 AU	direct	3236 May 01 04:03	21°♏37'11	
morning rise	3230 Aug 18 05:23	11°♏23'12		evening set	3236 Jul 29 23:51	23°♏32'32	
retrograde	3230 Nov 15 09:03	13°♏18'16		conjunction	3236 Aug 15 07:54	24°♏08'35	-0°02'14
opposition	3231 Feb 01 04:28	11°♏54'20	-0°23'56	minimum elong	3236 Aug 15 07:53	24°♏08'35	0°02'15
min. Earth dist.	3231 Feb 01 04:14	11°♏54'21	28.96214 AU	behind sun begin	3236 Aug 15 01:18	24°♏08'00	
direct	3231 Apr 20 21:14	10°♏29'28		behind sun end	3236 Aug 15 14:29	24°♏09'10	
evening set	3231 Jul 19 03:11	12°♏24'29		max. Earth dist.	3236 Aug 15 02:56	24°♏08'09	31.03178 AU
conjunction	3231 Aug 04 11:22	13°♏00'36	-0°20'36	morning rise	3236 Aug 31 14:32	24°♏44'32	
minimum elong	3231 Aug 04 11:22	13°♏00'36	0°20'36	retrograde	3236 Nov 28 02:50	26°♏38'53	
max. Earth dist.	3231 Aug 04 10:22	13°♏00'30	30.96785 AU	opposition	3237 Feb 13 18:26	25°♏15'32	-0°00'21
morning rise	3231 Aug 20 19:02	13°♏36'40		min. Earth dist.	3237 Feb 13 23:50	25°♏15'10	29.03732 AU
	3231 Oct 04 22:02	15°♏		asc. node	3237 Mar 18 16:35	24°♏23'46	
retrograde	3231 Nov 17 19:37	15°♏31'36		direct	3237 May 03 17:20	23°♏50'43	
	3232 Jan 01 08:38	15°♏♏		evening set	3237 Aug 01 13:31	25°♏46'05	
opposition	3232 Feb 03 14:53	14°♏07'46	-0°20'03	conjunction	3237 Aug 17 21:16	26°♏22'06	0°01'35
min. Earth dist.	3232 Feb 03 16:07	14°♏07'41	28.97404 AU	minimum elong	3237 Aug 17 21:18	26°♏22'06	0°01'35
direct	3232 Apr 22 06:57	12°♏42'55		behind sun begin	3237 Aug 17 14:42	26°♏21'31	
evening set	3232 Jul 20 16:45	14°♏37'59		behind sun end	3237 Aug 18 03:53	26°♏22'41	
	3232 Jul 30 17:16	15°♏		max. Earth dist.	3237 Aug 17 14:14	26°♏21'28	31.04259 AU
conjunction	3232 Aug 06 01:00	15°♏14'05	-0°16'57	morning rise	3237 Sep 03 03:52	26°♏58'01	
minimum elong	3232 Aug 06 01:00	15°♏14'05	0°16'58	retrograde	3237 Nov 30 15:13	28°♏52'14	
max. Earth dist.	3232 Aug 05 23:47	15°♏13'58	30.98041 AU	opposition	3238 Feb 16 04:43	27°♏28'56	0°03'36
morning rise	3232 Aug 22 08:29	15°♏50'08		min. Earth dist.	3238 Feb 16 10:16	27°♏28'33	29.04764 AU
retrograde	3232 Nov 19 06:14	17°♏44'57		direct	3238 May 06 05:39	26°♏04'04	
opposition	3233 Feb 05 01:05	16°♏21'14	-0°16'09	evening set	3238 Aug 04 03:11	27°♏59'28	
min. Earth dist.	3233 Feb 05 02:07	16°♏21'10	28.98697 AU	conjunction	3238 Aug 20 10:57	28°♏35'27	0°05'18
	3233 Apr 10 02:00	15°♏♏		minimum elong	3238 Aug 20 10:57	28°♏35'27	0°05'17
direct	3233 Apr 24 19:38	14°♏56'24		behind sun begin	3238 Aug 20 04:34	28°♏34'54	
	3233 May 09 10:00	15°♏		behind sun end	3238 Aug 20 17:19	28°♏36'01	
evening set	3233 Jul 23 06:31	16°♏51'33		max. Earth dist.	3238 Aug 20 03:33	28°♏34'48	31.05240 AU
conjunction	3233 Aug 08 14:37	17°♏27'38	-0°13'18	morning rise	3238 Sep 05 17:08	29°♏11'20	
minimum elong	3233 Aug 08 14:37	17°♏27'38	0°13'17		3238 Sep 29 16:09	0°♏	
behind sun begin	3233 Aug 08 10:57	17°♏27'19		retrograde	3238 Dec 03 02:07	1°♏05'23	
behind sun end	3233 Aug 08 18:18	17°♏27'58			3239 Feb 07 23:17	30°♏♏	
max. Earth dist.	3233 Aug 08 11:53	17°♏27'24	30.99370 AU	opposition	3239 Feb 18 14:57	29°♏42'08	0°07'33
morning rise	3233 Aug 24 22:03	18°♏03'40		min. Earth dist.	3239 Feb 18 22:23	29°♏41'37	29.05710 AU
retrograde	3233 Nov 21 17:31	19°♏58'23		direct	3239 May 08 18:10	28°♏17'13	
opposition	3234 Feb 07 11:23	18°♏34'47	-0°12'13		3239 Jul 31 19:08	0°♏	
				evening set	3239 Aug 06 16:52	0°♏12'37	

conjunction	3239 Aug 23 00:24	0° $\mathring{M}$ 48'35	0°08'58	morning rise	3245 Sep 21 10:11	14° $\mathring{M}$ 38'46	
minimum elong	3239 Aug 23 00:24	0° $\mathring{M}$ 48'35	0°08'58	retrograde	3245 Dec 18 03:43	16° $\mathring{M}$ 31'56	
behind sun begin	3239 Aug 22 18:47	0° $\mathring{M}$ 48'06		opposition	3246 Mar 05 14:07	15° $\mathring{M}$ 09'04	0°34'24
behind sun end	3239 Aug 23 06:00	0° $\mathring{M}$ 49'05		min. Earth dist.	3246 Mar 06 01:22	15° $\mathring{M}$ 08'17	29.13251 AU
max. Earth dist.	3239 Aug 22 15:34	0° $\mathring{M}$ 47'47	31.06167 AU	direct	3246 May 24 04:15	13° $\mathring{M}$ 44'02	
morning rise	3239 Sep 08 06:23	1° $\mathring{M}$ 24'26		evening set	3246 Aug 22 13:39	15° $\mathring{M}$ 39'39	
retrograde	3239 Dec 05 14:49	3° $\mathring{M}$ 18'19					
opposition	3240 Feb 21 01:06	1° $\mathring{M}$ 55'06	0°11'28	conjunction	3246 Sep 07 19:17	16° $\mathring{M}$ 15'25	0°33'58
min. Earth dist.	3240 Feb 21 08:23	1° $\mathring{M}$ 54'35	29.06616 AU	minimum elong	3246 Sep 07 19:17	16° $\mathring{M}$ 15'25	0°33'57
direct	3240 May 10 07:52	0° $\mathring{M}$ 30'07		max. Earth dist.	3246 Sep 07 05:54	16° $\mathring{M}$ 14'11	31.13894 AU
evening set	3240 Aug 08 06:17	2° $\mathring{M}$ 25'32		morning rise	3246 Sep 23 22:43	16° $\mathring{M}$ 51'00	
				retrograde	3246 Dec 20 15:51	18° $\mathring{M}$ 44'05	
conjunction	3240 Aug 24 13:36	3° $\mathring{M}$ 01'28	0°12'37	opposition	3247 Mar 08 00:09	17° $\mathring{M}$ 21'19	0°38'05
minimum elong	3240 Aug 24 13:36	3° $\mathring{M}$ 01'28	0°12'37	min. Earth dist.	3247 Mar 08 11:22	17° $\mathring{M}$ 20'32	29.14550 AU
behind sun begin	3240 Aug 24 09:29	3° $\mathring{M}$ 01'07		direct	3247 May 26 15:35	15° $\mathring{M}$ 56'19	
behind sun end	3240 Aug 24 17:42	3° $\mathring{M}$ 01'50		evening set	3247 Aug 25 02:49	17° $\mathring{M}$ 52'00	
max. Earth dist.	3240 Aug 24 04:07	3° $\mathring{M}$ 00'37	31.07059 AU				
morning rise	3240 Sep 09 19:12	3° $\mathring{M}$ 37'16		conjunction	3247 Sep 10 08:13	18° $\mathring{M}$ 27'44	0°37'22
retrograde	3240 Dec 07 00:39	5° $\mathring{M}$ 31'00		minimum elong	3247 Sep 10 08:13	18° $\mathring{M}$ 27'44	0°37'23
opposition	3241 Feb 22 11:23	4° $\mathring{M}$ 07'49	0°15'23	max. Earth dist.	3247 Sep 09 18:45	18° $\mathring{M}$ 26'30	31.15147 AU
min. Earth dist.	3241 Feb 22 20:15	4° $\mathring{M}$ 07'11	29.07526 AU	morning rise	3247 Sep 26 11:02	19° $\mathring{M}$ 03'17	
direct	3241 May 12 19:01	2° $\mathring{M}$ 42'47		retrograde	3247 Dec 23 02:40	20° $\mathring{M}$ 56'18	
evening set	3241 Aug 10 19:36	4° $\mathring{M}$ 38'12		opposition	3248 Mar 09 10:34	19° $\mathring{M}$ 33'38	0°41'42
				min. Earth dist.	3248 Mar 09 23:32	19° $\mathring{M}$ 32'43	29.15766 AU
conjunction	3241 Aug 27 02:46	5° $\mathring{M}$ 14'07	0°16'15	direct	3248 May 28 03:49	18° $\mathring{M}$ 08'39	
minimum elong	3241 Aug 27 02:46	5° $\mathring{M}$ 14'07	0°16'16	evening set	3248 Aug 26 15:53	20° $\mathring{M}$ 04'24	
max. Earth dist.	3241 Aug 26 16:58	5° $\mathring{M}$ 13'13	31.07990 AU				
morning rise	3241 Sep 12 08:02	5° $\mathring{M}$ 49'52		conjunction	3248 Sep 11 20:49	20° $\mathring{M}$ 40'06	0°40'43
retrograde	3241 Dec 09 10:57	7° $\mathring{M}$ 43'27		minimum elong	3248 Sep 11 20:49	20° $\mathring{M}$ 40'06	0°40'43
opposition	3242 Feb 24 21:23	6° $\mathring{M}$ 20'17	0°19'15	max. Earth dist.	3248 Sep 11 05:58	20° $\mathring{M}$ 38'43	31.16309 AU
min. Earth dist.	3242 Feb 25 06:03	6° $\mathring{M}$ 19'41	29.08482 AU	morning rise	3248 Sep 27 23:16	21° $\mathring{M}$ 15'35	
direct	3242 May 15 07:57	4° $\mathring{M}$ 55'13		retrograde	3248 Dec 24 15:16	23° $\mathring{M}$ 08'32	
evening set	3242 Aug 13 08:57	6° $\mathring{M}$ 50'39		opposition	3249 Mar 11 20:50	21° $\mathring{M}$ 45'56	0°45'14
				min. Earth dist.	3249 Mar 12 09:38	21° $\mathring{M}$ 45'02	29.16866 AU
conjunction	3242 Aug 29 15:47	7° $\mathring{M}$ 26'32	0°19'52	direct	3249 May 30 17:27	20° $\mathring{M}$ 20'58	
minimum elong	3242 Aug 29 15:47	7° $\mathring{M}$ 26'32	0°19'51	evening set	3249 Aug 29 04:57	22° $\mathring{M}$ 16'45	
max. Earth dist.	3242 Aug 29 04:42	7° $\mathring{M}$ 25'31	31.08982 AU				
morning rise	3242 Sep 14 20:47	8° $\mathring{M}$ 02'15		conjunction	3249 Sep 14 09:31	22° $\mathring{M}$ 52'25	0°44'01
retrograde	3242 Dec 11 21:37	9° $\mathring{M}$ 55'41		minimum elong	3249 Sep 14 09:31	22° $\mathring{M}$ 52'25	0°44'01
opposition	3243 Feb 27 07:35	8° $\mathring{M}$ 32'35	0°23'06	max. Earth dist.	3249 Sep 13 17:53	22° $\mathring{M}$ 50'59	31.17336 AU
min. Earth dist.	3243 Feb 27 17:10	8° $\mathring{M}$ 31'54	29.09533 AU	morning rise	3249 Sep 30 11:26	23° $\mathring{M}$ 27'53	
direct	3243 May 17 17:52	7° $\mathring{M}$ 07'29		retrograde	3249 Dec 27 01:16	25° $\mathring{M}$ 20'44	
evening set	3243 Aug 15 22:09	9° $\mathring{M}$ 02'56		opposition	3250 Mar 14 07:06	23° $\mathring{M}$ 58'11	0°48'43
				min. Earth dist.	3250 Mar 14 21:42	23° $\mathring{M}$ 57'10	29.17842 AU
conjunction	3243 Sep 01 04:51	9° $\mathring{M}$ 38'47	0°23'27	direct	3250 Jun 02 04:40	22° $\mathring{M}$ 33'13	
minimum elong	3243 Sep 01 04:50	9° $\mathring{M}$ 38'47	0°23'27	evening set	3250 Aug 31 17:56	24° $\mathring{M}$ 29'02	
max. Earth dist.	3243 Aug 31 18:08	9° $\mathring{M}$ 37'48	31.10081 AU				
morning rise	3243 Sep 17 09:19	10° $\mathring{M}$ 14'28		conjunction	3250 Sep 16 22:10	25° $\mathring{M}$ 04'40	0°47'14
retrograde	3243 Dec 14 06:59	12° $\mathring{M}$ 07'47		minimum elong	3250 Sep 16 22:10	25° $\mathring{M}$ 04'40	0°47'13
opposition	3244 Feb 29 17:43	10° $\mathring{M}$ 44'45	0°26'55	max. Earth dist.	3250 Sep 16 05:55	25° $\mathring{M}$ 03'10	31.18249 AU
min. Earth dist.	3244 Mar 01 03:34	10° $\mathring{M}$ 44'03	29.10680 AU	morning rise	3250 Oct 02 23:38	25° $\mathring{M}$ 40'04	
direct	3244 May 19 05:41	9° $\mathring{M}$ 19'39		retrograde	3250 Dec 29 11:40	27° $\mathring{M}$ 32'49	
evening set	3244 Aug 17 11:26	11° $\mathring{M}$ 15'09		opposition	3251 Mar 16 17:24	26° $\mathring{M}$ 10'20	0°52'07
				min. Earth dist.	3251 Mar 17 08:01	26° $\mathring{M}$ 09'19	29.18688 AU
conjunction	3244 Sep 02 17:40	11° $\mathring{M}$ 50'58	0°26'59	direct	3251 Jun 04 17:59	24° $\mathring{M}$ 45'21	
minimum elong	3244 Sep 02 17:40	11° $\mathring{M}$ 50'58	0°26'59	evening set	3251 Sep 03 06:53	26° $\mathring{M}$ 41'10	
max. Earth dist.	3244 Sep 02 05:25	11° $\mathring{M}$ 49'50	31.11288 AU				
morning rise	3244 Sep 18 21:54	12° $\mathring{M}$ 26'37		conjunction	3251 Sep 19 10:36	27° $\mathring{M}$ 16'46	0°50'23
retrograde	3244 Dec 15 17:55	14° $\mathring{M}$ 19'51		minimum elong	3251 Sep 19 10:35	27° $\mathring{M}$ 16'46	0°50'24
opposition	3245 Mar 03 03:53	12° $\mathring{M}$ 56'53	0°30'41	max. Earth dist.	3251 Sep 18 16:54	27° $\mathring{M}$ 15'08	31.19039 AU
min. Earth dist.	3245 Mar 03 13:58	12° $\mathring{M}$ 56'11	29.11945 AU	morning rise	3251 Oct 05 11:35	27° $\mathring{M}$ 52'08	
direct	3245 May 21 16:16	11° $\mathring{M}$ 31'49		retrograde	3251 Dec 31 22:19	29° $\mathring{M}$ 44'47	
evening set	3245 Aug 20 00:21	13° $\mathring{M}$ 27'22		opposition	3252 Mar 18 03:41	28° $\mathring{M}$ 22'19	0°55'27
				min. Earth dist.	3252 Mar 18 19:22	28° $\mathring{M}$ 21'13	29.19450 AU
conjunction	3245 Sep 05 06:29	14° $\mathring{M}$ 03'10	0°30'30	direct	3252 Jun 06 04:20	26° $\mathring{M}$ 57'18	
minimum elong	3245 Sep 05 06:29	14° $\mathring{M}$ 03'10	0°30'30	evening set	3252 Sep 04 19:33	28° $\mathring{M}$ 53'06	
max. Earth dist.	3245 Sep 04 18:52	14° $\mathring{M}$ 02'06	31.12582 AU				

conjunction	3252 Sep 20 22:58	29° <u>0</u> 28'40	0°53'27	retrograde	3259 Jan 15 19:21	15° <u>0</u> 03'39	
minimum elong	3252 Sep 20 22:57	29° <u>0</u> 28'40	0°53'27	opposition	3259 Apr 03 03:32	13° <u>0</u> 41'25	1°16'08
max. Earth dist.	3252 Sep 20 05:31	29° <u>0</u> 27'03	31.19767 AU	min. Earth dist.	3259 Apr 03 21:41	13° <u>0</u> 40'10	29.25575 AU
	3252 Oct 05 03:12	0° <u>0</u>		direct	3259 Jun 22 13:48	12° <u>0</u> 16'24	
morning rise	3252 Oct 06 23:21	0° <u>0</u> 04'00		evening set	3259 Sep 21 09:43	14° <u>0</u> 12'18	
retrograde	3253 Jan 02 06:48	1° <u>0</u> 56'32					
opposition	3253 Mar 20 13:56	0° <u>0</u> 34'05	0°58'41	conjunction	3259 Oct 07 09:43	14° <u>0</u> 47'34	1°12'29
min. Earth dist.	3253 Mar 21 06:05	0° <u>0</u> 32'58	29.20155 AU	minimum elong	3259 Oct 07 09:43	14° <u>0</u> 47'34	1°12'30
	3253 Apr 10 12:46	30° <u>8</u> 00		max. Earth dist.	3259 Oct 06 14:09	14° <u>0</u> 45'46	31.26034 AU
direct	3253 Jun 08 16:41	29° <u>0</u> 09'02		morning rise	3259 Oct 23 06:24	15° <u>0</u> 22'35	
	3253 Aug 05 02:42	0° <u>0</u>		retrograde	3260 Jan 18 06:00	17° <u>0</u> 14'41	
evening set	3253 Sep 07 08:07	1° <u>0</u> 04'50		opposition	3260 Apr 04 13:57	15° <u>0</u> 52'32	1°18'40
				min. Earth dist.	3260 Apr 05 07:52	15° <u>0</u> 51'18	29.26600 AU
conjunction	3253 Sep 23 10:57	1° <u>0</u> 40'21	0°56'26	direct	3260 Jun 24 03:08	14° <u>0</u> 27'33	
minimum elong	3253 Sep 23 10:57	1° <u>0</u> 40'21	0°56'27	evening set	3260 Sep 22 21:54	16° <u>0</u> 23'28	
max. Earth dist.	3253 Sep 22 16:00	1° <u>0</u> 38'36	31.20467 AU				
morning rise	3253 Oct 09 11:00	2° <u>0</u> 15'38		conjunction	3260 Oct 08 21:17	16° <u>0</u> 58'43	1°14'49
retrograde	3254 Jan 04 16:25	4° <u>0</u> 08'05		minimum elong	3260 Oct 08 21:17	16° <u>0</u> 58'43	1°14'49
opposition	3254 Mar 23 00:08	2° <u>0</u> 45'39	1°01'50	max. Earth dist.	3260 Oct 08 00:34	16° <u>0</u> 56'48	31.27014 AU
min. Earth dist.	3254 Mar 23 16:28	2° <u>0</u> 44'30	29.20870 AU	morning rise	3260 Oct 24 17:28	17° <u>0</u> 33'41	
direct	3254 Jun 11 03:28	1° <u>0</u> 20'33		retrograde	3261 Jan 19 17:09	19° <u>0</u> 25'46	
evening set	3254 Sep 09 20:33	3° <u>0</u> 16'21		opposition	3261 Apr 07 00:27	18° <u>0</u> 03'39	1°21'06
				min. Earth dist.	3261 Apr 07 19:10	18° <u>0</u> 02'21	29.27548 AU
conjunction	3254 Sep 25 23:06	3° <u>0</u> 51'50	0°59'21	direct	3261 Jun 26 13:59	16° <u>0</u> 38'42	
minimum elong	3254 Sep 25 23:05	3° <u>0</u> 51'50	0°59'20	evening set	3261 Sep 25 09:50	18° <u>0</u> 34'38	
max. Earth dist.	3254 Sep 25 04:57	3° <u>0</u> 50'09	31.21189 AU				
morning rise	3254 Oct 11 22:26	4° <u>0</u> 27'04		conjunction	3261 Oct 11 08:51	19° <u>0</u> 09'50	1°17'02
retrograde	3255 Jan 07 00:47	6° <u>0</u> 19'25		minimum elong	3261 Oct 11 08:51	19° <u>0</u> 09'50	1°17'02
opposition	3255 Mar 25 10:22	4° <u>0</u> 57'00	1°04'53	max. Earth dist.	3261 Oct 10 12:29	19° <u>0</u> 07'57	31.27896 AU
min. Earth dist.	3255 Mar 26 03:35	4° <u>0</u> 55'48	29.21626 AU	morning rise	3261 Oct 27 04:24	19° <u>0</u> 44'46	
direct	3255 Jun 13 14:52	3° <u>0</u> 31'53		retrograde	3262 Jan 22 01:42	21° <u>0</u> 36'48	
evening set	3255 Sep 12 09:03	5° <u>0</u> 27'40		opposition	3262 Apr 09 11:02	20° <u>0</u> 14'44	1°23'24
				min. Earth dist.	3262 Apr 10 06:18	20° <u>0</u> 13'24	29.28358 AU
conjunction	3255 Sep 28 10:56	6° <u>0</u> 03'06	1°02'10	direct	3262 Jun 29 02:41	18° <u>0</u> 49'48	
minimum elong	3255 Sep 28 10:56	6° <u>0</u> 03'06	1°02'10	evening set	3262 Sep 27 21:58	20° <u>0</u> 45'44	
max. Earth dist.	3255 Sep 27 15:35	6° <u>0</u> 01'19	31.21991 AU				
morning rise	3255 Oct 14 09:54	6° <u>0</u> 38'18		conjunction	3262 Oct 13 20:17	21° <u>0</u> 20'53	1°19'08
retrograde	3256 Jan 09 11:52	8° <u>0</u> 30'35		minimum elong	3262 Oct 13 20:17	21° <u>0</u> 20'53	1°19'07
opposition	3256 Mar 26 20:37	7° <u>0</u> 08'11	1°07'51	max. Earth dist.	3262 Oct 12 22:17	21° <u>0</u> 18'51	31.28638 AU
min. Earth dist.	3256 Mar 27 13:04	7° <u>0</u> 07'02	29.22486 AU	morning rise	3262 Oct 29 15:24	21° <u>0</u> 55'47	
direct	3256 Jun 15 01:37	5° <u>0</u> 43'03		retrograde	3263 Jan 24 11:37	23° <u>0</u> 47'46	
evening set	3256 Sep 13 21:08	7° <u>0</u> 38'52		opposition	3263 Apr 11 21:32	22° <u>0</u> 25'45	1°25'35
				min. Earth dist.	3263 Apr 12 16:58	22° <u>0</u> 24'24	29.29046 AU
conjunction	3256 Sep 29 22:40	8° <u>0</u> 14'15	1°04'54	direct	3263 Jul 01 13:19	21° <u>0</u> 00'49	
minimum elong	3256 Sep 29 22:40	8° <u>0</u> 14'15	1°04'53	evening set	3263 Sep 30 09:49	22° <u>0</u> 56'44	
max. Earth dist.	3256 Sep 29 03:59	8° <u>0</u> 12'31	31.22897 AU	max. Earth dist.	3263 Oct 15 10:27	23° <u>0</u> 29'53	31.29256 AU
morning rise	3256 Oct 15 20:56	8° <u>0</u> 49'24					
retrograde	3257 Jan 10 21:33	10° <u>0</u> 41'38		conjunction	3263 Oct 16 07:47	23° <u>0</u> 31'51	1°21'08
opposition	3257 Mar 29 07:00	9° <u>0</u> 19'16	1°10'43	minimum elong	3263 Oct 16 07:47	23° <u>0</u> 31'51	1°21'08
min. Earth dist.	3257 Mar 30 00:32	9° <u>0</u> 18'03	29.23452 AU	morning rise	3263 Nov 01 02:11	24° <u>0</u> 06'42	
direct	3257 Jun 17 13:54	7° <u>0</u> 54'10		retrograde	3264 Jan 26 19:59	25° <u>0</u> 58'39	
evening set	3257 Sep 16 09:23	9° <u>0</u> 50'00		opposition	3264 Apr 13 08:15	24° <u>0</u> 36'38	1°27'39
				min. Earth dist.	3264 Apr 14 04:45	24° <u>0</u> 35'13	29.29606 AU
conjunction	3257 Oct 02 10:21	10° <u>0</u> 25'21	1°07'31	direct	3264 Jul 03 00:33	23° <u>0</u> 11'42	
minimum elong	3257 Oct 02 10:21	10° <u>0</u> 25'21	1°07'32	evening set	3264 Oct 01 21:30	25° <u>0</u> 07'36	
max. Earth dist.	3257 Oct 01 14:59	10° <u>0</u> 23'33	31.23915 AU				
morning rise	3257 Oct 18 08:13	11° <u>0</u> 00'27		conjunction	3264 Oct 17 18:47	25° <u>0</u> 42'41	1°23'00
retrograde	3258 Jan 13 09:12	12° <u>0</u> 52'37		minimum elong	3264 Oct 17 18:47	25° <u>0</u> 42'41	1°22'59
opposition	3258 Mar 31 17:05	11° <u>0</u> 30'20	1°13'28	max. Earth dist.	3264 Oct 16 20:12	25° <u>0</u> 40'35	31.29771 AU
min. Earth dist.	3258 Apr 01 09:57	11° <u>0</u> 29'09	29.24500 AU	morning rise	3264 Nov 02 12:50	26° <u>0</u> 17'29	
direct	3258 Jun 20 02:55	10° <u>0</u> 05'16		retrograde	3265 Jan 28 06:38	28° <u>0</u> 09'24	
evening set	3258 Sep 18 21:36	12° <u>0</u> 01'08		opposition	3265 Apr 15 18:46	26° <u>0</u> 47'23	1°29'35
				min. Earth dist.	3265 Apr 16 14:39	26° <u>0</u> 46'01	29.30083 AU
conjunction	3258 Oct 04 22:07	12° <u>0</u> 36'27	1°10'03	direct	3265 Jul 05 11:29	25° <u>0</u> 22'26	
minimum elong	3258 Oct 04 22:06	12° <u>0</u> 36'27	1°10'03	evening set	3265 Oct 04 09:03	27° <u>0</u> 18'18	
max. Earth dist.	3258 Oct 04 02:35	12° <u>0</u> 34'38	31.24976 AU	max. Earth dist.	3265 Oct 19 07:53	27° <u>0</u> 51'18	31.30209 AU
morning rise	3258 Oct 20 19:22	13° <u>0</u> 11'30					

conjunction	3265 Oct 20 05:58	27° <u>♎</u> 53'21	1°24'45	morning rise	3271 Nov 18 12:30	11° <u>♍</u> 30'15	
minimum elong	3265 Oct 20 05:58	27° <u>♎</u> 53'21	1°24'46	retrograde	3272 Feb 13 04:46	13° <u>♍</u> 22'07	
morning rise	3265 Nov 04 23:21	28° <u>♎</u> 28'07		opposition	3272 Apr 30 21:44	12° <u>♍</u> 00'18	1°39'25
	3265 Dec 27 08:51	0° <u>♍</u>		min. Earth dist.	3272 May 01 17:28	11° <u>♍</u> 58'57	29.34209 AU
retrograde	3266 Jan 30 15:47	0° <u>♍</u> 19'59		direct	3272 Jul 20 22:33	10° <u>♍</u> 35'36	
	3266 Mar 06 18:10	30° <u>♏</u>		evening set	3272 Oct 19 15:18	12° <u>♍</u> 31'28	
opposition	3266 Apr 18 05:20	28° <u>♎</u> 57'58	1°31'24	max. Earth dist.	3272 Nov 03 11:36	13° <u>♍</u> 04'19	31.34442 AU
min. Earth dist.	3266 Apr 19 02:27	28° <u>♎</u> 56'31	29.30510 AU				
direct	3266 Jul 07 23:31	27° <u>♎</u> 33'01		conjunction	3272 Nov 04 08:34	13° <u>♍</u> 06'16	1°33'30
evening set	3266 Oct 06 20:36	29° <u>♎</u> 28'52		minimum elong	3272 Nov 04 08:34	13° <u>♍</u> 06'16	1°33'30
	3266 Oct 20 23:18	0° <u>♍</u>		morning rise	3272 Nov 19 22:21	13° <u>♍</u> 40'48	
					3273 Jan 01 07:55	15° <u>♍</u>	
conjunction	3266 Oct 22 16:53	0° <u>♍</u> 03'52	1°26'23	retrograde	3273 Feb 14 13:26	15° <u>♍</u> 32'43	
minimum elong	3266 Oct 22 16:53	0° <u>♍</u> 03'52	1°26'23		3273 Apr 01 08:44	15° <u>♏</u>	
max. Earth dist.	3266 Oct 21 18:19	0° <u>♍</u> 01'46	31.30637 AU	opposition	3273 May 03 08:48	14° <u>♍</u> 10'56	1°40'16
morning rise	3266 Nov 07 09:51	0° <u>♍</u> 38'35		min. Earth dist.	3273 May 04 05:26	14° <u>♍</u> 09'32	29.34853 AU
retrograde	3267 Feb 02 02:49	2° <u>♍</u> 30'25		direct	3273 Jul 23 09:22	12° <u>♍</u> 46'18	
opposition	3267 Apr 20 15:54	1° <u>♍</u> 08'24	1°33'05	evening set	3273 Oct 22 02:25	14° <u>♍</u> 42'09	
min. Earth dist.	3267 Apr 21 12:03	1° <u>♍</u> 07'01	29.30946 AU		3273 Oct 30 05:06	15° <u>♍</u>	
	3267 Jun 07 19:20	30° <u>♏</u>					
direct	3267 Jul 10 12:24	29° <u>♎</u> 43'26		conjunction	3273 Nov 06 19:02	15° <u>♍</u> 16'55	1°34'14
	3267 Aug 11 17:55	0° <u>♍</u>		minimum elong	3273 Nov 06 19:02	15° <u>♍</u> 16'55	1°34'14
evening set	3267 Oct 09 07:51	1° <u>♍</u> 39'17		max. Earth dist.	3273 Nov 05 21:00	15° <u>♍</u> 14'52	31.35033 AU
max. Earth dist.	3267 Oct 24 05:17	2° <u>♍</u> 12'10	31.31090 AU	morning rise	3273 Nov 22 08:30	15° <u>♍</u> 51'26	
				retrograde	3274 Feb 17 00:03	17° <u>♍</u> 43'22	
conjunction	3267 Oct 25 03:37	2° <u>♍</u> 14'14	1°27'54	opposition	3274 May 05 19:41	16° <u>♍</u> 21'38	1°40'58
minimum elong	3267 Oct 25 03:37	2° <u>♍</u> 14'14	1°27'54	min. Earth dist.	3274 May 06 15:34	16° <u>♍</u> 20'16	29.35380 AU
morning rise	3267 Nov 09 19:58	2° <u>♍</u> 48'56			3274 Jul 12 04:01	15° <u>♏</u>	
retrograde	3268 Feb 04 12:34	4° <u>♍</u> 40'45		direct	3274 Jul 25 20:08	14° <u>♍</u> 57'01	
opposition	3268 Apr 22 02:41	3° <u>♍</u> 18'44	1°34'37		3274 Aug 08 10:58	15° <u>♍</u>	
min. Earth dist.	3268 Apr 22 23:32	3° <u>♍</u> 17'18	29.31453 AU	evening set	3274 Oct 24 13:25	16° <u>♍</u> 52'52	
direct	3268 Jul 11 23:12	1° <u>♍</u> 53'47		max. Earth dist.	3274 Nov 08 08:04	17° <u>♍</u> 25'36	31.35480 AU
evening set	3268 Oct 10 19:04	3° <u>♍</u> 49'37					
				conjunction	3274 Nov 09 05:39	17° <u>♍</u> 27'36	1°34'49
conjunction	3268 Oct 26 14:20	4° <u>♍</u> 24'32	1°29'17	minimum elong	3274 Nov 09 05:39	17° <u>♍</u> 27'36	1°34'49
minimum elong	3268 Oct 26 14:20	4° <u>♍</u> 24'32	1°29'16	morning rise	3274 Nov 24 18:29	18° <u>♍</u> 02'05	
max. Earth dist.	3268 Oct 25 16:38	4° <u>♍</u> 22'31	31.31645 AU	retrograde	3275 Feb 19 09:10	19° <u>♍</u> 54'02	
morning rise	3268 Nov 11 06:10	4° <u>♍</u> 59'11		opposition	3275 May 08 06:59	18° <u>♍</u> 32'19	1°41'32
retrograde	3269 Feb 05 22:53	6° <u>♍</u> 51'00		min. Earth dist.	3275 May 09 04:02	18° <u>♍</u> 30'52	29.35758 AU
opposition	3269 Apr 24 13:16	5° <u>♍</u> 29'01	1°36'02	direct	3275 Jul 28 07:30	17° <u>♍</u> 07'44	
min. Earth dist.	3269 Apr 25 09:16	5° <u>♍</u> 27'38	29.32054 AU	evening set	3275 Oct 27 00:17	19° <u>♍</u> 03'33	
direct	3269 Jul 14 12:36	4° <u>♍</u> 04'06					
evening set	3269 Oct 13 06:14	5° <u>♍</u> 59'56		conjunction	3275 Nov 11 15:57	19° <u>♍</u> 38'15	1°35'17
max. Earth dist.	3269 Oct 28 02:43	6° <u>♍</u> 32'46	31.32294 AU	minimum elong	3275 Nov 11 15:57	19° <u>♍</u> 38'15	1°35'17
				max. Earth dist.	3275 Nov 10 17:55	19° <u>♍</u> 36'12	31.35785 AU
conjunction	3269 Oct 29 00:56	6° <u>♍</u> 34'50	1°30'32	morning rise	3275 Nov 27 04:25	20° <u>♍</u> 12'42	
minimum elong	3269 Oct 29 00:56	6° <u>♍</u> 34'50	1°30'32	retrograde	3276 Feb 21 19:54	22° <u>♍</u> 04'40	
morning rise	3269 Nov 13 16:20	7° <u>♍</u> 09'27		opposition	3276 May 09 18:10	20° <u>♍</u> 42'56	1°41'57
retrograde	3270 Feb 08 10:18	9° <u>♍</u> 01'17		min. Earth dist.	3276 May 10 14:22	20° <u>♍</u> 41'33	29.35980 AU
opposition	3270 Apr 27 00:01	7° <u>♍</u> 39'20	1°37'18	direct	3276 Jul 29 19:29	19° <u>♍</u> 18'22	
min. Earth dist.	3270 Apr 27 20:06	7° <u>♍</u> 37'57	29.32752 AU	evening set	3276 Oct 28 11:07	21° <u>♍</u> 14'08	
direct	3270 Jul 16 23:45	6° <u>♍</u> 14'29		max. Earth dist.	3276 Nov 12 04:09	21° <u>♍</u> 46'45	31.35931 AU
evening set	3270 Oct 15 17:18	8° <u>♍</u> 10'20					
				conjunction	3276 Nov 13 02:19	21° <u>♍</u> 48'48	1°35'36
conjunction	3270 Oct 31 11:35	8° <u>♍</u> 45'12	1°31'39	minimum elong	3276 Nov 13 02:19	21° <u>♍</u> 48'48	1°35'36
minimum elong	3270 Oct 31 11:35	8° <u>♍</u> 45'12	1°31'39	morning rise	3276 Nov 28 14:20	22° <u>♍</u> 23'14	
max. Earth dist.	3270 Oct 30 14:28	8° <u>♍</u> 43'14	31.33018 AU	retrograde	3277 Feb 23 06:05	24° <u>♍</u> 15'12	
morning rise	3270 Nov 16 02:21	9° <u>♍</u> 19'47		opposition	3277 May 12 05:21	22° <u>♍</u> 53'26	1°42'13
retrograde	3271 Feb 10 18:40	11° <u>♍</u> 11'38		min. Earth dist.	3277 May 13 02:30	22° <u>♍</u> 52'00	29.36070 AU
opposition	3271 Apr 29 10:50	9° <u>♍</u> 49'46	1°38'26	direct	3277 Aug 01 06:10	21° <u>♍</u> 28'52	
min. Earth dist.	3271 Apr 30 06:58	9° <u>♍</u> 48'23	29.33481 AU	evening set	3277 Oct 30 21:46	23° <u>♍</u> 24'34	
direct	3271 Jul 19 12:13	8° <u>♍</u> 25'00					
evening set	3271 Oct 18 04:28	10° <u>♍</u> 20'51		conjunction	3277 Nov 15 12:35	23° <u>♍</u> 59'13	1°35'47
				minimum elong	3277 Nov 15 12:35	23° <u>♍</u> 59'13	1°35'48
conjunction	3271 Nov 02 22:05	10° <u>♍</u> 55'41	1°32'39	max. Earth dist.	3277 Nov 14 14:56	23° <u>♍</u> 57'12	31.35963 AU
minimum elong	3271 Nov 02 22:05	10° <u>♍</u> 55'41	1°32'40	morning rise	3277 Dec 01 00:11	24° <u>♍</u> 33'37	
max. Earth dist.	3271 Nov 01 23:59	10° <u>♍</u> 53'38	31.33753 AU	retrograde	3278 Feb 25 16:27	26° <u>♍</u> 25'34	

opposition	3278 May 14 16:33	25° $\mathcal{M}$ 03'46	1°42'21	conjunction	3284 Nov 30 09:14	9° $\mathcal{A}$ 09'14	1°33'17
min. Earth dist.	3278 May 15 13:06	25° $\mathcal{M}$ 02'22	29.36040 AU	minimum elong	3284 Nov 30 09:14	9° $\mathcal{A}$ 09'14	1°33'18
direct	3278 Aug 03 20:21	23° $\mathcal{M}$ 39'11		max. Earth dist.	3284 Nov 29 14:28	9° $\mathcal{A}$ 07'28	31.36217 AU
evening set	3278 Nov 02 08:22	25° $\mathcal{M}$ 34'50		morning rise	3284 Dec 15 18:22	9° $\mathcal{A}$ 43'30	
				retrograde	3285 Mar 12 13:38	11° $\mathcal{A}$ 35'46	
conjunction	3278 Nov 17 22:37	26° $\mathcal{M}$ 09'27	1°35'50	opposition	3285 May 30 00:14	10° $\mathcal{A}$ 13'56	1°39'11
minimum elong	3278 Nov 17 22:37	26° $\mathcal{M}$ 09'27	1°35'50	min. Earth dist.	3285 May 30 17:39	10° $\mathcal{A}$ 12'45	29.36350 AU
max. Earth dist.	3278 Nov 17 00:22	26° $\mathcal{M}$ 07'22	31.35897 AU	direct	3285 Aug 19 03:36	8° $\mathcal{A}$ 49'37	
morning rise	3278 Dec 03 09:53	26° $\mathcal{M}$ 43'48		evening set	3285 Nov 17 07:31	10° $\mathcal{A}$ 45'03	
retrograde	3279 Feb 28 03:42	28° $\mathcal{M}$ 35'46					
opposition	3279 May 17 03:48	27° $\mathcal{M}$ 13'55	1°42'20	conjunction	3285 Dec 02 18:59	11° $\mathcal{A}$ 19'31	1°32'24
min. Earth dist.	3279 May 18 00:19	27° $\mathcal{M}$ 12'31	29.35965 AU	minimum elong	3285 Dec 02 18:59	11° $\mathcal{A}$ 19'31	1°32'24
direct	3279 Aug 06 08:08	25° $\mathcal{M}$ 49'19		max. Earth dist.	3285 Dec 02 00:17	11° $\mathcal{A}$ 17'46	31.36273 AU
evening set	3279 Nov 04 18:41	27° $\mathcal{M}$ 44'54		morning rise	3285 Dec 18 03:49	11° $\mathcal{A}$ 53'47	
max. Earth dist.	3279 Nov 19 11:46	28° $\mathcal{M}$ 17'33	31.35819 AU	retrograde	3286 Mar 15 00:36	13° $\mathcal{A}$ 46'09	
				opposition	3286 Jun 01 12:01	12° $\mathcal{A}$ 24'20	1°38'09
conjunction	3279 Nov 20 08:38	28° $\mathcal{M}$ 19'29	1°35'45	min. Earth dist.	3286 Jun 02 06:03	12° $\mathcal{A}$ 23'06	29.36361 AU
minimum elong	3279 Nov 20 08:38	28° $\mathcal{M}$ 19'29	1°35'46	direct	3286 Aug 21 13:36	11° $\mathcal{A}$ 00'04	
morning rise	3279 Dec 05 19:22	28° $\mathcal{M}$ 53'49		evening set	3286 Nov 19 17:32	12° $\mathcal{A}$ 55'29	
	3280 Jan 08 15:06	0° $\mathcal{A}$		max. Earth dist.	3286 Dec 04 10:52	13° $\mathcal{A}$ 28'16	31.36223 AU
retrograde	3280 Mar 01 11:58	0° $\mathcal{A}$ 45'48					
	3280 Apr 25 18:57	30° $\mathcal{R}\mathcal{M}$		conjunction	3286 Dec 05 04:41	13° $\mathcal{A}$ 29'56	1°31'22
opposition	3280 May 18 15:10	29° $\mathcal{M}$ 23'54	1°42'10	minimum elong	3286 Dec 05 04:41	13° $\mathcal{A}$ 29'56	1°31'21
min. Earth dist.	3280 May 19 11:23	29° $\mathcal{M}$ 22'32	29.35896 AU	morning rise	3286 Dec 20 13:10	14° $\mathcal{A}$ 04'11	
direct	3280 Aug 07 21:00	27° $\mathcal{M}$ 59'18		retrograde	3287 Mar 17 11:40	15° $\mathcal{A}$ 56'38	
evening set	3280 Nov 06 04:57	29° $\mathcal{M}$ 54'50		opposition	3287 Jun 03 23:49	14° $\mathcal{A}$ 34'49	1°36'59
	3280 Nov 08 13:40	0° $\mathcal{A}$		min. Earth dist.	3287 Jun 04 17:06	14° $\mathcal{A}$ 33'39	29.36232 AU
				direct	3287 Aug 24 03:10	13° $\mathcal{A}$ 10'37	
conjunction	3280 Nov 21 18:19	0° $\mathcal{A}$ 29'23	1°35'32	evening set	3287 Nov 22 03:40	15° $\mathcal{A}$ 06'00	
minimum elong	3280 Nov 21 18:19	0° $\mathcal{A}$ 29'23	1°35'31				
max. Earth dist.	3280 Nov 20 20:56	0° $\mathcal{A}$ 27'23	31.35783 AU	conjunction	3287 Dec 07 14:21	15° $\mathcal{A}$ 40'27	1°30'12
morning rise	3280 Dec 07 04:51	1° $\mathcal{A}$ 03'42		minimum elong	3287 Dec 07 14:21	15° $\mathcal{A}$ 40'27	1°30'13
retrograde	3281 Mar 03 22:12	2° $\mathcal{A}$ 55'42		max. Earth dist.	3287 Dec 06 19:52	15° $\mathcal{A}$ 38'43	31.36026 AU
opposition	3281 May 21 02:26	1° $\mathcal{A}$ 33'47	1°41'52	morning rise	3287 Dec 22 22:40	16° $\mathcal{A}$ 14'41	
min. Earth dist.	3281 May 21 21:39	1° $\mathcal{A}$ 32'29	29.35900 AU	retrograde	3288 Mar 19 00:06	18° $\mathcal{A}$ 07'13	
direct	3281 Aug 10 08:12	0° $\mathcal{A}$ 09'12		opposition	3288 Jun 05 11:41	16° $\mathcal{A}$ 45'23	1°35'41
evening set	3281 Nov 08 15:06	2° $\mathcal{A}$ 04'42		min. Earth dist.	3288 Jun 06 04:52	16° $\mathcal{A}$ 44'13	29.35970 AU
max. Earth dist.	3281 Nov 23 08:25	2° $\mathcal{A}$ 37'23	31.35820 AU	direct	3288 Aug 25 14:27	15° $\mathcal{A}$ 21'12	
				evening set	3288 Nov 23 13:30	17° $\mathcal{A}$ 16'33	
conjunction	3281 Nov 24 04:12	2° $\mathcal{A}$ 39'14	1°35'11	max. Earth dist.	3288 Dec 08 06:45	17° $\mathcal{A}$ 49'22	31.35685 AU
minimum elong	3281 Nov 24 04:12	2° $\mathcal{A}$ 39'14	1°35'11				
morning rise	3281 Dec 09 14:12	3° $\mathcal{A}$ 13'32		conjunction	3288 Dec 09 00:02	17° $\mathcal{A}$ 50'59	1°28'55
retrograde	3282 Mar 06 06:47	5° $\mathcal{A}$ 05'34		minimum elong	3288 Dec 09 00:02	17° $\mathcal{A}$ 50'59	1°28'55
opposition	3282 May 23 13:45	3° $\mathcal{A}$ 43'40	1°41'25	morning rise	3288 Dec 24 08:00	18° $\mathcal{A}$ 25'13	
min. Earth dist.	3282 May 24 09:15	3° $\mathcal{A}$ 42'20	29.35971 AU	retrograde	3289 Mar 21 09:00	20° $\mathcal{A}$ 17'49	
direct	3282 Aug 12 19:33	2° $\mathcal{A}$ 19'08		opposition	3289 Jun 07 23:36	18° $\mathcal{A}$ 55'56	1°34'14
evening set	3282 Nov 11 01:21	4° $\mathcal{A}$ 14'36		min. Earth dist.	3289 Jun 08 16:46	18° $\mathcal{A}$ 54'47	29.35541 AU
				direct	3289 Aug 28 03:11	17° $\mathcal{A}$ 31'47	
conjunction	3282 Nov 26 13:54	4° $\mathcal{A}$ 49'07	1°34'41	evening set	3289 Nov 25 23:30	19° $\mathcal{A}$ 27'04	
minimum elong	3282 Nov 26 13:54	4° $\mathcal{A}$ 49'07	1°34'41				
max. Earth dist.	3282 Nov 25 17:51	4° $\mathcal{A}$ 47'14	31.35937 AU	conjunction	3289 Dec 11 09:34	20° $\mathcal{A}$ 01'29	1°27'30
morning rise	3282 Dec 11 23:43	5° $\mathcal{A}$ 23'24		minimum elong	3289 Dec 11 09:34	20° $\mathcal{A}$ 01'29	1°27'31
retrograde	3283 Mar 08 17:23	7° $\mathcal{A}$ 15'30		max. Earth dist.	3289 Dec 10 15:29	19° $\mathcal{A}$ 59'47	31.35195 AU
opposition	3283 May 26 01:11	5° $\mathcal{A}$ 53'37	1°40'49	morning rise	3289 Dec 26 17:28	20° $\mathcal{A}$ 35'43	
min. Earth dist.	3283 May 26 19:09	5° $\mathcal{A}$ 52'23	29.36106 AU	retrograde	3290 Mar 23 19:52	22° $\mathcal{A}$ 28'22	
direct	3283 Aug 15 06:22	4° $\mathcal{A}$ 29'09		opposition	3290 Jun 10 11:23	21° $\mathcal{A}$ 06'26	1°32'40
evening set	3283 Nov 13 11:18	6° $\mathcal{A}$ 24'36		min. Earth dist.	3290 Jun 11 03:45	21° $\mathcal{A}$ 05'20	29.34987 AU
				direct	3290 Aug 30 15:25	19° $\mathcal{A}$ 42'17	
conjunction	3283 Nov 28 23:33	6° $\mathcal{A}$ 59'06	1°34'03	evening set	3290 Nov 28 09:15	21° $\mathcal{A}$ 37'29	
minimum elong	3283 Nov 28 23:33	6° $\mathcal{A}$ 59'06	1°34'04				
max. Earth dist.	3283 Nov 28 04:35	6° $\mathcal{A}$ 57'19	31.36080 AU	conjunction	3290 Dec 13 19:10	22° $\mathcal{A}$ 11'54	1°25'58
morning rise	3283 Dec 14 08:56	7° $\mathcal{A}$ 33'23		minimum elong	3290 Dec 13 19:10	22° $\mathcal{A}$ 11'54	1°25'58
retrograde	3284 Mar 10 02:45	9° $\mathcal{A}$ 25'34		max. Earth dist.	3290 Dec 13 02:33	22° $\mathcal{A}$ 10'20	31.34591 AU
opposition	3284 May 27 12:49	8° $\mathcal{A}$ 03'42	1°40'04	morning rise	3290 Dec 29 02:43	22° $\mathcal{A}$ 46'07	
min. Earth dist.	3284 May 28 07:25	8° $\mathcal{A}$ 02'26	29.36251 AU	retrograde	3291 Mar 26 05:09	24° $\mathcal{A}$ 38'49	
direct	3284 Aug 16 16:45	6° $\mathcal{A}$ 39'19		opposition	3291 Jun 12 23:27	23° $\mathcal{A}$ 16'49	1°30'58
evening set	3284 Nov 14 21:24	8° $\mathcal{A}$ 34'45		min. Earth dist.	3291 Jun 13 16:09	23° $\mathcal{A}$ 15'41	29.34344 AU

direct	3291 Sep 02 03:56	21° $\mathring{\text{A}}$ 52'39		minimum elong	3297 Dec 28 11:51	7° $\mathring{\text{B}}$ 23'06	1°11'59
evening set	3291 Nov 30 18:51	23° $\mathring{\text{A}}$ 47'47		max. Earth dist.	3297 Dec 28 00:51	7° $\mathring{\text{B}}$ 22'04	31.31193 AU
max. Earth dist.	3291 Dec 15 11:44	24° $\mathring{\text{A}}$ 20'36	31.33944 AU	morning rise	3298 Jan 12 18:27	7° $\mathring{\text{B}}$ 57'20	
				retrograde	3298 Apr 10 06:17	9° $\mathring{\text{B}}$ 50'40	
conjunction	3291 Dec 16 04:22	24° $\mathring{\text{A}}$ 22'10	1°24'19	opposition	3298 Jun 28 11:47	8° $\mathring{\text{B}}$ 28'24	1°15'37
minimum elong	3291 Dec 16 04:22	24° $\mathring{\text{A}}$ 22'10	1°24'20	min. Earth dist.	3298 Jun 28 22:51	8° $\mathring{\text{B}}$ 27'39	29.31041 AU
morning rise	3291 Dec 31 11:52	24° $\mathring{\text{A}}$ 56'24		direct	3298 Sep 17 09:26	7° $\mathring{\text{B}}$ 04'28	
retrograde	3292 Mar 27 15:05	26° $\mathring{\text{A}}$ 49'08		evening set	3298 Dec 15 13:09	8° $\mathring{\text{B}}$ 59'14	
opposition	3292 Jun 14 11:20	25° $\mathring{\text{A}}$ 27'04	1°29'09				
min. Earth dist.	3292 Jun 15 02:20	25° $\mathring{\text{A}}$ 26'03	29.33694 AU	conjunction	3298 Dec 30 21:04	9° $\mathring{\text{B}}$ 33'35	1°09'33
direct	3292 Sep 03 15:38	24° $\mathring{\text{A}}$ 02'53		minimum elong	3298 Dec 30 21:04	9° $\mathring{\text{B}}$ 33'35	1°09'32
evening set	3292 Dec 02 04:24	25° $\mathring{\text{A}}$ 57'56		max. Earth dist.	3298 Dec 30 09:39	9° $\mathring{\text{B}}$ 32'31	31.30774 AU
				morning rise	3299 Jan 15 03:45	10° $\mathring{\text{B}}$ 07'50	
conjunction	3292 Dec 17 13:44	26° $\mathring{\text{A}}$ 32'19	1°22'33	retrograde	3299 Apr 12 18:43	12° $\mathring{\text{B}}$ 01'17	
minimum elong	3292 Dec 17 13:44	26° $\mathring{\text{A}}$ 32'19	1°22'33	opposition	3299 Jul 01 00:10	10° $\mathring{\text{B}}$ 38'59	1°12'57
max. Earth dist.	3292 Dec 16 22:15	26° $\mathring{\text{A}}$ 30'52	31.33305 AU	min. Earth dist.	3299 Jul 01 10:07	10° $\mathring{\text{B}}$ 38'19	29.30580 AU
morning rise	3293 Jan 01 20:58	27° $\mathring{\text{A}}$ 06'32		direct	3299 Sep 19 21:15	9° $\mathring{\text{B}}$ 15'07	
retrograde	3293 Mar 29 23:39	28° $\mathring{\text{A}}$ 59'20		evening set	3299 Dec 17 22:28	11° $\mathring{\text{B}}$ 09'51	
opposition	3293 Jun 16 23:15	27° $\mathring{\text{A}}$ 37'12	1°27'12				
min. Earth dist.	3293 Jun 17 14:29	27° $\mathring{\text{A}}$ 36'10	29.33092 AU	conjunction	3300 Jan 02 06:23	11° $\mathring{\text{B}}$ 44'12	1°07'00
direct	3293 Sep 06 02:09	26° $\mathring{\text{A}}$ 13'02		minimum elong	3300 Jan 02 06:23	11° $\mathring{\text{B}}$ 44'12	1°07'00
evening set	3293 Dec 04 13:57	28° $\mathring{\text{A}}$ 08'00		max. Earth dist.	3300 Jan 01 20:27	11° $\mathring{\text{B}}$ 43'16	31.30254 AU
				morning rise	3300 Jan 17 12:53	12° $\mathring{\text{B}}$ 18'28	
conjunction	3293 Dec 19 23:01	28° $\mathring{\text{A}}$ 42'22	1°20'40	retrograde	3300 Apr 15 05:09	14° $\mathring{\text{B}}$ 12'01	
minimum elong	3293 Dec 19 23:01	28° $\mathring{\text{A}}$ 42'22	1°20'41	opposition	3300 Jul 03 12:44	12° $\mathring{\text{B}}$ 49'42	1°10'11
max. Earth dist.	3293 Dec 19 08:20	28° $\mathring{\text{A}}$ 41'00	31.32753 AU	min. Earth dist.	3300 Jul 03 23:03	12° $\mathring{\text{B}}$ 49'00	29.29995 AU
morning rise	3294 Jan 04 06:08	29° $\mathring{\text{A}}$ 16'35		direct	3300 Sep 22 09:35	11° $\mathring{\text{B}}$ 25'53	
	3294 Jan 25 03:43	0° $\mathring{\text{B}}$		evening set	3300 Dec 20 08:05	13° $\mathring{\text{B}}$ 20'34	
retrograde	3294 Apr 01 09:52	1° $\mathring{\text{B}}$ 09'28					
	3294 Jun 11 14:34	30° $\mathring{\text{R}}$ $\mathring{\text{A}}$		conjunction	3301 Jan 04 15:45	13° $\mathring{\text{B}}$ 54'55	1°04'22
opposition	3294 Jun 19 11:11	29° $\mathring{\text{A}}$ 47'17	1°25'07	minimum elong	3301 Jan 04 15:46	13° $\mathring{\text{B}}$ 54'55	1°04'22
min. Earth dist.	3294 Jun 20 00:34	29° $\mathring{\text{A}}$ 46'23	29.32574 AU	max. Earth dist.	3301 Jan 04 05:38	13° $\mathring{\text{B}}$ 53'58	31.29613 AU
direct	3294 Sep 08 12:54	28° $\mathring{\text{A}}$ 23'08		morning rise	3301 Jan 19 22:20	14° $\mathring{\text{B}}$ 29'12	
	3294 Nov 28 14:11	0° $\mathring{\text{B}}$		retrograde	3301 Apr 17 16:04	16° $\mathring{\text{B}}$ 22'51	
evening set	3294 Dec 06 23:23	0° $\mathring{\text{B}}$ 18'03		opposition	3301 Jul 06 01:01	15° $\mathring{\text{B}}$ 00'30	1°07'19
				min. Earth dist.	3301 Jul 06 09:52	14° $\mathring{\text{B}}$ 59'54	29.29277 AU
conjunction	3294 Dec 22 08:09	0° $\mathring{\text{B}}$ 52'25	1°18'40	direct	3301 Sep 24 21:19	13° $\mathring{\text{B}}$ 36'42	
minimum elong	3294 Dec 22 08:09	0° $\mathring{\text{B}}$ 52'25	1°18'40	evening set	3301 Dec 22 17:38	15° $\mathring{\text{B}}$ 31'19	
max. Earth dist.	3294 Dec 21 18:03	0° $\mathring{\text{B}}$ 51'06	31.32283 AU				
morning rise	3295 Jan 06 15:09	1° $\mathring{\text{B}}$ 26'39		conjunction	3302 Jan 07 01:13	16° $\mathring{\text{B}}$ 05'41	1°01'38
retrograde	3295 Apr 03 20:52	3° $\mathring{\text{B}}$ 19'38		minimum elong	3302 Jan 07 01:13	16° $\mathring{\text{B}}$ 05'41	1°01'39
opposition	3295 Jun 21 23:21	1° $\mathring{\text{B}}$ 57'25	1°22'56	max. Earth dist.	3302 Jan 06 15:45	16° $\mathring{\text{B}}$ 04'48	31.28821 AU
min. Earth dist.	3295 Jun 22 12:37	1° $\mathring{\text{B}}$ 56'31	29.32152 AU	morning rise	3302 Jan 22 07:42	16° $\mathring{\text{B}}$ 39'58	
direct	3295 Sep 10 22:50	0° $\mathring{\text{B}}$ 33'18		retrograde	3302 Apr 20 01:43	18° $\mathring{\text{B}}$ 33'44	
evening set	3295 Dec 09 08:46	2° $\mathring{\text{B}}$ 28'10		opposition	3302 Jul 08 13:42	17° $\mathring{\text{B}}$ 11'19	1°04'21
				min. Earth dist.	3302 Jul 08 23:03	17° $\mathring{\text{B}}$ 10'41	29.28420 AU
conjunction	3295 Dec 24 17:26	3° $\mathring{\text{B}}$ 02'32	1°16'33	direct	3302 Sep 27 08:19	15° $\mathring{\text{B}}$ 47'33	
minimum elong	3295 Dec 24 17:26	3° $\mathring{\text{B}}$ 02'32	1°16'34	evening set	3302 Dec 25 03:00	17° $\mathring{\text{B}}$ 42'05	
max. Earth dist.	3295 Dec 24 04:56	3° $\mathring{\text{B}}$ 01'21	31.31904 AU				
morning rise	3296 Jan 09 00:14	3° $\mathring{\text{B}}$ 36'45		conjunction	3303 Jan 09 10:29	18° $\mathring{\text{B}}$ 16'27	0°58'49
retrograde	3296 Apr 05 07:49	5° $\mathring{\text{B}}$ 29'51		minimum elong	3303 Jan 09 10:29	18° $\mathring{\text{B}}$ 16'27	0°58'49
opposition	3296 Jun 23 11:22	4° $\mathring{\text{B}}$ 07'36	1°20'36	max. Earth dist.	3303 Jan 09 01:46	18° $\mathring{\text{B}}$ 15'38	31.27918 AU
min. Earth dist.	3296 Jun 23 23:21	4° $\mathring{\text{B}}$ 06'48	29.31785 AU	morning rise	3303 Jan 24 16:58	18° $\mathring{\text{B}}$ 50'45	
direct	3296 Sep 12 11:07	2° $\mathring{\text{B}}$ 43'34		retrograde	3303 Apr 22 12:16	20° $\mathring{\text{B}}$ 44'37	
evening set	3296 Dec 10 18:11	4° $\mathring{\text{B}}$ 38'24		opposition	3303 Jul 11 02:15	19° $\mathring{\text{B}}$ 22'08	1°01'18
				min. Earth dist.	3303 Jul 11 09:58	19° $\mathring{\text{B}}$ 21'36	29.27456 AU
conjunction	3296 Dec 26 02:31	5° $\mathring{\text{B}}$ 12'45	1°14'19	direct	3303 Sep 29 19:44	17° $\mathring{\text{B}}$ 58'21	
minimum elong	3296 Dec 26 02:31	5° $\mathring{\text{B}}$ 12'45	1°14'19	evening set	3303 Dec 27 12:24	19° $\mathring{\text{B}}$ 52'49	
max. Earth dist.	3296 Dec 25 13:51	5° $\mathring{\text{B}}$ 11'33	31.31555 AU				
morning rise	3297 Jan 10 09:23	5° $\mathring{\text{B}}$ 46'59		conjunction	3304 Jan 11 19:43	20° $\mathring{\text{B}}$ 27'11	0°55'55
retrograde	3297 Apr 07 20:27	7° $\mathring{\text{B}}$ 40'11		minimum elong	3304 Jan 11 19:44	20° $\mathring{\text{B}}$ 27'11	0°55'56
opposition	3297 Jun 25 23:31	6° $\mathring{\text{B}}$ 17'56	1°18'10	max. Earth dist.	3304 Jan 11 11:18	20° $\mathring{\text{B}}$ 26'24	31.26927 AU
min. Earth dist.	3297 Jun 26 10:56	6° $\mathring{\text{B}}$ 17'10	29.31438 AU	morning rise	3304 Jan 27 02:19	21° $\mathring{\text{B}}$ 01'30	
direct	3297 Sep 14 21:10	4° $\mathring{\text{B}}$ 53'57		retrograde	3304 Apr 23 23:31	22° $\mathring{\text{B}}$ 55'29	
evening set	3297 Dec 13 03:34	6° $\mathring{\text{B}}$ 48'45		opposition	3304 Jul 12 14:48	21° $\mathring{\text{B}}$ 32'53	0°58'09
				min. Earth dist.	3304 Jul 12 22:35	21° $\mathring{\text{B}}$ 32'22	29.26460 AU
conjunction	3297 Dec 28 11:51	7° $\mathring{\text{B}}$ 23'06	1°11'59	direct	3304 Oct 01 05:52	20° $\mathring{\text{B}}$ 09'07	



evening set	3304 Dec 28 21:36	22°30'31"		max. Earth dist.	3311 Jan 26 10:56	5°43'43"	31.21348 AU
				morning rise	3311 Feb 10 19:29	6°18'18"	
conjunction	3305 Jan 13 04:59	22°37'52"	0°52'56"	retrograde	3311 May 10 08:40	8°13'14"	
minimum elong	3305 Jan 13 04:59	22°37'53"	0°52'56"	opposition	3311 Jul 29 07:42	6°50'20"	0°34'02"
max. Earth dist.	3305 Jan 12 22:16	22°37'15"	31.25936 AU	min. Earth dist.	3311 Jul 29 09:05	6°50'14"	29.20996 AU
morning rise	3305 Jan 28 11:30	23°12'12"		direct	3311 Oct 17 14:15	5°26'54"	
retrograde	3305 Apr 26 10:27	25°06'17"		evening set	3312 Jan 13 14:58	7°21'02"	
opposition	3305 Jul 15 03:19	23°43'37"	0°54'56"				
min. Earth dist.	3305 Jul 15 09:39	23°43'11"	29.25477 AU	conjunction	3312 Jan 28 22:00	7°55'28"	0°30'08"
direct	3305 Oct 03 18:01	22°19'51"		minimum elong	3312 Jan 28 22:00	7°55'28"	0°30'09"
evening set	3305 Dec 31 06:57	24°14'11"		max. Earth dist.	3312 Jan 28 21:25	7°55'25"	31.20603 AU
				morning rise	3312 Feb 13 05:07	8°29'56"	
conjunction	3306 Jan 15 14:03	24°48'33"	0°49'53"	retrograde	3312 May 11 20:12	10°25'01"	
minimum elong	3306 Jan 15 14:03	24°48'33"	0°49'53"	opposition	3312 Jul 30 20:28	9°02'05"	0°30'20"
max. Earth dist.	3306 Jan 15 07:21	24°47'56"	31.24989 AU	min. Earth dist.	3312 Jul 30 20:19	9°02'06"	29.20194 AU
morning rise	3306 Jan 30 20:44	25°22'54"		direct	3312 Oct 19 02:03	7°38'42"	
retrograde	3306 Apr 28 23:13	27°17'06"		evening set	3313 Jan 15 00:39	9°32'47"	
opposition	3306 Jul 17 15:54	25°54'22"	0°51'38"				
min. Earth dist.	3306 Jul 17 21:15	25°54'00"	29.24580 AU	conjunction	3313 Jan 30 07:36	10°07'14"	0°26'39"
direct	3306 Oct 06 03:36	24°30'37"		minimum elong	3313 Jan 30 07:36	10°07'14"	0°26'39"
evening set	3307 Jan 02 16:09	26°24'55"		max. Earth dist.	3313 Jan 30 06:56	10°07'10"	31.19738 AU
				morning rise	3313 Feb 14 14:57	10°41'44"	
conjunction	3307 Jan 17 23:21	26°59'18"	0°46'46"	retrograde	3313 May 14 07:48	12°36'57"	
minimum elong	3307 Jan 17 23:22	26°59'18"	0°46'45"	opposition	3313 Aug 02 09:32	11°13'57"	0°26'35"
max. Earth dist.	3307 Jan 17 18:43	26°58'52"	31.24140 AU	min. Earth dist.	3313 Aug 02 09:40	11°13'57"	29.19268 AU
morning rise	3307 Feb 02 05:55	27°33'39"		direct	3313 Oct 21 12:14	9°50'36"	
retrograde	3307 May 01 09:40	29°27'59"		evening set	3314 Jan 17 10:11	11°44'38"	
opposition	3307 Jul 20 04:36	28°05'12"	0°48'15"				
min. Earth dist.	3307 Jul 20 09:03	28°04'54"	29.23772 AU	conjunction	3314 Feb 01 17:17	12°19'05"	0°23'08"
direct	3307 Oct 08 15:32	26°41'31"		minimum elong	3314 Feb 01 17:17	12°19'05"	0°23'08"
evening set	3308 Jan 05 01:25	28°35'46"		max. Earth dist.	3314 Feb 01 18:02	12°19'09"	31.18739 AU
				morning rise	3314 Feb 17 00:37	12°53'36"	
conjunction	3308 Jan 20 08:26	29°10'09"	0°43'34"	retrograde	3314 May 16 18:32	14°48'57"	
minimum elong	3308 Jan 20 08:26	29°10'09"	0°43'34"	opposition	3314 Aug 04 22:34	13°25'53"	0°22'48"
max. Earth dist.	3308 Jan 20 03:53	29°09'44"	31.23390 AU	min. Earth dist.	3314 Aug 04 21:38	13°25'57"	29.18186 AU
morning rise	3308 Feb 04 15:16	29°44'32"		direct	3314 Oct 24 00:14	12°02'32"	
	3308 Feb 11 17:48	0°		evening set	3315 Jan 19 19:56	13°56'30"	
retrograde	3308 May 02 23:07	1°39'00"					
opposition	3308 Jul 21 17:14	0°16'11"	0°44'48"	conjunction	3315 Feb 04 02:56	14°30'58"	0°19'35"
min. Earth dist.	3308 Jul 21 20:08	0°16'00"	29.23057 AU	minimum elong	3315 Feb 04 02:56	14°30'58"	0°19'35"
	3308 Jul 31 18:19	30°43'		max. Earth dist.	3315 Feb 04 03:10	14°30'59"	31.17597 AU
direct	3308 Oct 10 03:21	28°52'34"			3315 Feb 16 23:12	15°	
	3308 Dec 14 20:59	0°		morning rise	3315 Feb 19 10:36	15°05'30"	
evening set	3309 Jan 06 10:41	0°46'47"		retrograde	3315 May 19 07:36	17°00'58"	
				opposition	3315 Aug 07 11:41	15°37'48"	0°18'59"
conjunction	3309 Jan 21 17:48	1°21'11"	0°40'18"	min. Earth dist.	3315 Aug 07 10:15	15°37'54"	29.16989 AU
minimum elong	3309 Jan 21 17:48	1°21'11"	0°40'18"		3315 Aug 31 14:34	15°43'	
max. Earth dist.	3309 Jan 21 14:59	1°20'56"	31.22698 AU	direct	3315 Oct 26 09:47	14°14'26"	
morning rise	3309 Feb 06 00:34	1°55'35"			3315 Dec 18 13:28	15°	
retrograde	3309 May 05 10:33	3°50'13"		evening set	3316 Jan 22 05:24	16°08'19"	
opposition	3309 Jul 24 05:53	2°27'22"	0°41'16"				
min. Earth dist.	3309 Jul 24 08:49	2°27'10"	29.22379 AU	conjunction	3316 Feb 06 12:39	16°42'48"	0°16'00"
direct	3309 Oct 12 15:16	1°03'49"		minimum elong	3316 Feb 06 12:39	16°42'48"	0°16'00"
evening set	3310 Jan 08 20:07	2°58'01"		behind sun begin	3316 Feb 06 11:29	16°42'42"	
				behind sun end	3316 Feb 06 13:48	16°42'54"	
conjunction	3310 Jan 24 03:07	3°32'25"	0°36'58"	max. Earth dist.	3316 Feb 06 14:34	16°42'58"	31.16348 AU
minimum elong	3310 Jan 24 03:07	3°32'25"	0°36'58"	morning rise	3316 Feb 21 20:22	17°17'21"	
max. Earth dist.	3310 Jan 24 00:43	3°32'12"	31.22039 AU	retrograde	3316 May 20 18:34	19°12'56"	
morning rise	3310 Feb 08 10:04	4°06'51"		opposition	3316 Aug 09 00:44	17°49'38"	0°15'08"
retrograde	3310 May 07 22:08	6°01'37"		min. Earth dist.	3316 Aug 08 22:48	17°49'46"	29.15695 AU
opposition	3310 Jul 26 18:40	4°38'45"	0°37'41"	direct	3316 Oct 27 22:25	16°26'15"	
min. Earth dist.	3310 Jul 26 19:45	4°38'41"	29.21709 AU	evening set	3317 Jan 23 15:04	18°20'03"	
direct	3310 Oct 15 02:55	3°15'15"					
evening set	3311 Jan 11 05:27	5°09'25"		conjunction	3317 Feb 07 22:13	18°54'33"	0°12'24"
				minimum elong	3317 Feb 07 22:14	18°54'33"	0°12'24"
conjunction	3311 Jan 26 12:27	5°43'51"	0°33'35"	behind sun begin	3317 Feb 07 17:57	18°54'09"	
minimum elong	3311 Jan 26 12:27	5°43'51"	0°33'35"	behind sun end	3317 Feb 08 02:30	18°54'56"	

max. Earth dist.	3317 Feb 08 00:02	18° $\approx$ 54'42	31.15046 AU	opposition	3322 Aug 23 06:52	1° $\mathbb{H}$ 00'59	-0°08'14
morning rise	3317 Feb 23 06:16	19° $\approx$ 29'07		min. Earth dist.	3322 Aug 22 23:18	1° $\mathbb{H}$ 01'30	29.09050 AU
retrograde	3317 May 23 08:18	21° $\approx$ 24'48			3322 Oct 04 02:51	30° $\mathbb{R}$ $\approx$	
opposition	3317 Aug 11 13:36	20° $\approx$ 01'23	0°11'16	direct	3322 Nov 10 19:17	29° $\approx$ 37'44	
min. Earth dist.	3317 Aug 11 10:18	20° $\approx$ 01'37	29.14397 AU		3322 Dec 17 06:27	0° $\mathbb{H}$	
direct	3317 Oct 30 09:55	18° $\approx$ 37'58		evening set	3323 Feb 06 00:55	1° $\mathbb{H}$ 31'20	
evening set	3318 Jan 26 00:38	20° $\approx$ 31'43					
conjunction	3318 Feb 10 07:57	21° $\approx$ 06'14	0°08'47	conjunction	3323 Feb 21 08:49	2° $\mathbb{H}$ 05'56	-0°09'34
minimum elong	3318 Feb 10 07:57	21° $\approx$ 06'14	0°08'47	minimum elong	3323 Feb 21 08:49	2° $\mathbb{H}$ 05'56	0°09'34
behind sun begin	3318 Feb 10 02:23	21° $\approx$ 05'44		behind sun begin	3323 Feb 21 03:28	2° $\mathbb{H}$ 05'27	
behind sun end	3318 Feb 10 13:30	21° $\approx$ 06'44		behind sun end	3323 Feb 21 14:10	2° $\mathbb{H}$ 06'25	
max. Earth dist.	3318 Feb 10 11:28	21° $\approx$ 06'32	31.13758 AU	max. Earth dist.	3323 Feb 21 17:28	2° $\mathbb{H}$ 06'44	31.08595 AU
morning rise	3318 Feb 25 16:04	21° $\approx$ 40'50		morning rise	3323 Mar 08 18:01	2° $\mathbb{H}$ 40'41	
retrograde	3318 May 25 19:47	23° $\approx$ 36'37		retrograde	3323 Jun 06 07:04	4° $\mathbb{H}$ 37'15	
opposition	3318 Aug 14 02:44	22° $\approx$ 13'06	0°07'23	opposition	3323 Aug 25 19:57	3° $\mathbb{H}$ 13'29	-0°12'08
min. Earth dist.	3318 Aug 13 23:15	22° $\approx$ 13'21	29.13146 AU	min. Earth dist.	3323 Aug 25 11:08	3° $\mathbb{H}$ 14'05	29.08142 AU
direct	3318 Nov 01 21:46	20° $\approx$ 49'42		direct	3323 Nov 13 06:42	1° $\mathbb{H}$ 50'17	
evening set	3319 Jan 28 10:08	22° $\approx$ 43'23		evening set	3324 Feb 08 10:55	3° $\mathbb{H}$ 43'53	
conjunction	3319 Feb 12 17:29	23° $\approx$ 17'54	0°05'10	conjunction	3324 Feb 23 18:48	4° $\mathbb{H}$ 18'30	-0°13'11
minimum elong	3319 Feb 12 17:30	23° $\approx$ 17'54	0°05'10	minimum elong	3324 Feb 23 18:48	4° $\mathbb{H}$ 18'30	0°13'12
behind sun begin	3319 Feb 12 11:17	23° $\approx$ 17'20		behind sun begin	3324 Feb 23 14:56	4° $\mathbb{H}$ 18'09	
behind sun end	3319 Feb 12 23:42	23° $\approx$ 18'28		behind sun end	3324 Feb 23 22:39	4° $\mathbb{H}$ 18'51	
max. Earth dist.	3319 Feb 12 21:44	23° $\approx$ 18'16	31.12559 AU	max. Earth dist.	3324 Feb 24 03:05	4° $\mathbb{H}$ 19'17	31.07678 AU
morning rise	3319 Feb 28 01:53	23° $\approx$ 52'31		morning rise	3324 Mar 10 04:26	4° $\mathbb{H}$ 53'17	
retrograde	3319 May 28 08:17	25° $\approx$ 48'27		retrograde	3324 Jun 07 20:48	6° $\mathbb{H}$ 50'02	
opposition	3319 Aug 16 15:43	24° $\approx$ 24'51	0°03'29	opposition	3324 Aug 27 09:09	5° $\mathbb{H}$ 26'14	-0°16'01
min. Earth dist.	3319 Aug 16 10:08	24° $\approx$ 25'14	29.11995 AU	min. Earth dist.	3324 Aug 26 23:54	5° $\mathbb{H}$ 26'52	29.07208 AU
direct	3319 Nov 04 09:47	23° $\approx$ 01'27		direct	3324 Nov 14 15:38	4° $\mathbb{H}$ 03'05	
evening set	3320 Jan 30 19:48	24° $\approx$ 55'06		evening set	3325 Feb 09 20:57	5° $\mathbb{H}$ 56'40	
conjunction	3320 Feb 15 03:16	25° $\approx$ 29'38	0°01'30	conjunction	3325 Feb 25 05:07	6° $\mathbb{H}$ 31'19	-0°16'49
minimum elong	3320 Feb 15 03:15	25° $\approx$ 29'38	0°01'31	minimum elong	3325 Feb 25 05:07	6° $\mathbb{H}$ 31'19	0°16'49
behind sun begin	3320 Feb 14 20:51	25° $\approx$ 29'04		max. Earth dist.	3325 Feb 25 14:55	6° $\mathbb{H}$ 32'14	31.06697 AU
behind sun end	3320 Feb 15 09:39	25° $\approx$ 30'13		morning rise	3325 Mar 12 14:49	7° $\mathbb{H}$ 06'08	
max. Earth dist.	3320 Feb 15 08:26	25° $\approx$ 30'06	31.11450 AU	retrograde	3325 Jun 10 08:34	9° $\mathbb{H}$ 03'02	
morning rise	3320 Mar 01 11:51	26° $\approx$ 04'18		opposition	3325 Aug 29 22:18	7° $\mathbb{H}$ 39'12	-0°19'53
retrograde	3320 May 29 19:47	28° $\approx$ 00'22		min. Earth dist.	3325 Aug 29 12:43	7° $\mathbb{H}$ 39'51	29.06180 AU
desc. node	3320 Jul 09 23:43	27° $\approx$ 34'33		direct	3325 Nov 17 03:46	6° $\mathbb{H}$ 16'05	
opposition	3320 Aug 18 04:42	26° $\approx$ 36'42	-0°00'25	evening set	3326 Feb 12 07:14	8° $\mathbb{H}$ 09'40	
min. Earth dist.	3320 Aug 17 23:08	26° $\approx$ 37'05	29.10941 AU	conjunction	3326 Feb 27 15:25	8° $\mathbb{H}$ 44'19	-0°20'24
direct	3320 Nov 05 21:12	25° $\approx$ 13'20		minimum elong	3326 Feb 27 15:25	8° $\mathbb{H}$ 44'19	0°20'24
evening set	3321 Feb 01 05:26	27° $\approx$ 06'58		max. Earth dist.	3326 Feb 28 00:50	8° $\mathbb{H}$ 45'12	31.05624 AU
conjunction	3321 Feb 16 13:04	27° $\approx$ 41'32	-0°02'16	morning rise	3326 Mar 15 01:31	9° $\mathbb{H}$ 19'10	
minimum elong	3321 Feb 16 13:04	27° $\approx$ 41'32	0°02'16	retrograde	3326 Jun 12 23:31	11° $\mathbb{H}$ 16'13	
behind sun begin	3321 Feb 16 06:41	27° $\approx$ 40'57		opposition	3326 Sep 01 11:35	9° $\mathbb{H}$ 52'19	-0°23'43
behind sun end	3321 Feb 16 19:28	27° $\approx$ 42'06		min. Earth dist.	3326 Sep 01 01:00	9° $\mathbb{H}$ 53'02	29.05053 AU
max. Earth dist.	3321 Feb 16 19:36	27° $\approx$ 42'07	31.10446 AU	direct	3326 Nov 19 14:47	8° $\mathbb{H}$ 29'12	
morning rise	3321 Mar 03 21:51	28° $\approx$ 16'13		evening set	3327 Feb 14 17:23	10° $\mathbb{H}$ 22'46	
retrograde	3321 May 04 18:55	0° $\mathbb{H}$		conjunction	3327 Mar 02 01:50	10° $\mathbb{H}$ 57'27	-0°23'59
	3321 Jun 01 07:59	0° $\mathbb{H}$ 12'26		minimum elong	3327 Mar 02 01:50	10° $\mathbb{H}$ 57'27	0°23'58
	3321 Jun 29 10:26	30° $\mathbb{R}$ $\approx$		max. Earth dist.	3327 Mar 02 12:22	10° $\mathbb{H}$ 58'26	31.04425 AU
opposition	3321 Aug 20 17:39	28° $\approx$ 48'44	-0°04'20	morning rise	3327 Mar 17 12:08	11° $\mathbb{H}$ 32'19	
min. Earth dist.	3321 Aug 20 10:08	28° $\approx$ 49'15	29.09967 AU	retrograde	3327 Jun 15 11:35	13° $\mathbb{H}$ 29'31	
direct	3321 Nov 08 09:19	27° $\approx$ 25'25		opposition	3327 Sep 04 00:56	12° $\mathbb{H}$ 05'30	-0°27'31
evening set	3322 Feb 03 15:09	29° $\approx$ 19'02		min. Earth dist.	3327 Sep 03 14:43	12° $\mathbb{H}$ 06'12	29.03797 AU
conjunction	3322 Feb 18 22:45	29° $\approx$ 53'36	-0°05'56	direct	3327 Nov 22 02:08	10° $\mathbb{H}$ 42'23	
minimum elong	3322 Feb 18 22:46	29° $\approx$ 53'36	0°05'55	evening set	3328 Feb 17 03:42	12° $\mathbb{H}$ 35'55	
behind sun begin	3322 Feb 18 16:39	29° $\approx$ 53'03		conjunction	3328 Mar 03 12:21	13° $\mathbb{H}$ 10'37	-0°27'31
behind sun end	3322 Feb 19 04:53	29° $\approx$ 54'10		minimum elong	3328 Mar 03 12:20	13° $\mathbb{H}$ 10'37	0°27'30
max. Earth dist.	3322 Feb 19 05:36	29° $\approx$ 54'14	31.09499 AU	max. Earth dist.	3328 Mar 03 23:04	13° $\mathbb{H}$ 11'37	31.03128 AU
	3322 Feb 21 18:09	0° $\mathbb{H}$		morning rise	3328 Mar 18 22:59	13° $\mathbb{H}$ 45'31	
morning rise	3322 Mar 06 07:53	0° $\mathbb{H}$ 28'20		retrograde	3328 Jun 17 01:13	15° $\mathbb{H}$ 42'47	
retrograde	3322 Jun 03 19:50	2° $\mathbb{H}$ 24'43		opposition	3328 Sep 05 13:54	14° $\mathbb{H}$ 18'41	-0°31'17

min. Earth dist.	3328 Sep 05 02:14	14° $\mathbf{\text{H}}$ 19'29	29.02459 AU	morning rise	3335 Apr 04 03:15	29° $\mathbf{\text{H}}$ 17'26	
direct	3328 Nov 23 14:42	12° $\mathbf{\text{H}}$ 55'32			3335 Apr 24 08:11	0° $\mathbf{\text{Y}}$	
evening set	3329 Feb 18 13:58	14° $\mathbf{\text{H}}$ 49'01		retrograde	3335 Jul 03 16:32	1° $\mathbf{\text{Y}}$ 15'29	
					3335 Sep 16 19:30	30° $\mathbf{\text{R}}$ $\mathbf{\text{H}}$	
conjunction	3329 Mar 05 22:46	15° $\mathbf{\text{H}}$ 23'44	-0°31'00	opposition	3335 Sep 22 09:22	29° $\mathbf{\text{H}}$ 50'50	-0°56'03
minimum elong	3329 Mar 05 22:46	15° $\mathbf{\text{H}}$ 23'44	0°31'00	min. Earth dist.	3335 Sep 21 16:20	29° $\mathbf{\text{H}}$ 52'00	28.94922 AU
max. Earth dist.	3329 Mar 06 09:59	15° $\mathbf{\text{H}}$ 24'47	31.01758 AU	direct	3335 Dec 09 22:40	28° $\mathbf{\text{H}}$ 27'40	
morning rise	3329 Mar 21 09:44	15° $\mathbf{\text{H}}$ 58'40			3336 Feb 24 23:01	0° $\mathbf{\text{Y}}$	
retrograde	3329 Jun 19 14:03	17° $\mathbf{\text{H}}$ 56'02		evening set	3336 Mar 05 14:54	0° $\mathbf{\text{Y}}$ 20'58	
opposition	3329 Sep 08 03:07	16° $\mathbf{\text{H}}$ 31'49	-0°35'00				
min. Earth dist.	3329 Sep 07 15:48	16° $\mathbf{\text{H}}$ 32'35	29.01093 AU	conjunction	3336 Mar 21 01:24	0° $\mathbf{\text{Y}}$ 55'50	-0°53'57
direct	3329 Nov 26 03:12	15° $\mathbf{\text{H}}$ 08'38		minimum elong	3336 Mar 21 01:23	0° $\mathbf{\text{Y}}$ 55'50	0°53'56
evening set	3330 Feb 21 00:05	17° $\mathbf{\text{H}}$ 02'02		max. Earth dist.	3336 Mar 21 18:47	0° $\mathbf{\text{Y}}$ 57'29	30.94513 AU
				morning rise	3336 Apr 05 14:35	1° $\mathbf{\text{Y}}$ 30'59	
conjunction	3330 Mar 08 09:10	17° $\mathbf{\text{H}}$ 36'47	-0°34'27	retrograde	3336 Jul 05 04:48	3° $\mathbf{\text{Y}}$ 29'10	
minimum elong	3330 Mar 08 09:10	17° $\mathbf{\text{H}}$ 36'47	0°34'27	opposition	3336 Sep 23 22:21	2° $\mathbf{\text{Y}}$ 04'29	-0°59'18
max. Earth dist.	3330 Mar 08 21:41	17° $\mathbf{\text{H}}$ 37'58	31.00410 AU	min. Earth dist.	3336 Sep 23 05:41	2° $\mathbf{\text{Y}}$ 05'38	28.94191 AU
morning rise	3330 Mar 23 20:21	18° $\mathbf{\text{H}}$ 11'44		direct	3336 Dec 11 09:08	0° $\mathbf{\text{Y}}$ 41'22	
retrograde	3330 Jun 22 02:49	20° $\mathbf{\text{H}}$ 09'12		evening set	3337 Mar 08 01:48	2° $\mathbf{\text{Y}}$ 34'41	
opposition	3330 Sep 10 16:10	18° $\mathbf{\text{H}}$ 44'52	-0°38'40				
min. Earth dist.	3330 Sep 10 03:00	18° $\mathbf{\text{H}}$ 45'46	28.99775 AU	conjunction	3337 Mar 23 12:33	3° $\mathbf{\text{Y}}$ 09'35	-0°56'57
direct	3330 Nov 28 16:24	17° $\mathbf{\text{H}}$ 21'40		minimum elong	3337 Mar 23 12:33	3° $\mathbf{\text{Y}}$ 09'35	0°56'57
evening set	3331 Feb 23 10:28	19° $\mathbf{\text{H}}$ 15'01		max. Earth dist.	3337 Mar 24 06:10	3° $\mathbf{\text{Y}}$ 11'15	30.93785 AU
				morning rise	3337 Apr 08 02:06	3° $\mathbf{\text{Y}}$ 44'45	
conjunction	3331 Mar 10 19:37	19° $\mathbf{\text{H}}$ 49'47	-0°37'51	retrograde	3337 Jul 07 19:45	5° $\mathbf{\text{Y}}$ 43'04	
minimum elong	3331 Mar 10 19:37	19° $\mathbf{\text{H}}$ 49'47	0°37'51	opposition	3337 Sep 26 11:24	4° $\mathbf{\text{Y}}$ 18'22	-1°02'29
max. Earth dist.	3331 Mar 11 08:18	19° $\mathbf{\text{H}}$ 50'59	30.99132 AU	min. Earth dist.	3337 Sep 25 17:27	4° $\mathbf{\text{Y}}$ 19'36	28.93449 AU
morning rise	3331 Mar 26 07:14	20° $\mathbf{\text{H}}$ 24'47		direct	3337 Dec 13 21:16	2° $\mathbf{\text{Y}}$ 55'16	
retrograde	3331 Jun 24 14:16	22° $\mathbf{\text{H}}$ 22'21		evening set	3338 Mar 10 12:46	4° $\mathbf{\text{Y}}$ 48'36	
opposition	3331 Sep 13 05:15	20° $\mathbf{\text{H}}$ 57'54	-0°42'16				
min. Earth dist.	3331 Sep 12 16:04	20° $\mathbf{\text{H}}$ 58'48	28.98568 AU	conjunction	3338 Mar 25 23:44	5° $\mathbf{\text{Y}}$ 23'32	-0°59'52
direct	3331 Dec 01 02:50	19° $\mathbf{\text{H}}$ 34'41		minimum elong	3338 Mar 25 23:44	5° $\mathbf{\text{Y}}$ 23'32	0°59'52
evening set	3332 Feb 25 20:42	21° $\mathbf{\text{H}}$ 28'00		max. Earth dist.	3338 Mar 26 17:33	5° $\mathbf{\text{Y}}$ 25'13	30.93002 AU
				morning rise	3338 Apr 10 13:40	5° $\mathbf{\text{Y}}$ 58'45	
conjunction	3332 Mar 12 06:16	22° $\mathbf{\text{H}}$ 02'47	-0°41'12	retrograde	3338 Jul 10 09:44	7° $\mathbf{\text{Y}}$ 57'11	
minimum elong	3332 Mar 12 06:16	22° $\mathbf{\text{H}}$ 02'47	0°41'11	min. Earth dist.	3338 Sep 28 07:28	6° $\mathbf{\text{Y}}$ 33'37	28.92638 AU
max. Earth dist.	3332 Mar 12 20:50	22° $\mathbf{\text{H}}$ 04'10	30.97981 AU	opposition	3338 Sep 29 00:42	6° $\mathbf{\text{Y}}$ 32'26	-1°05'33
morning rise	3332 Mar 27 18:03	22° $\mathbf{\text{H}}$ 37'48		direct	3338 Dec 16 09:08	5° $\mathbf{\text{Y}}$ 09'22	
retrograde	3332 Jun 26 01:22	24° $\mathbf{\text{H}}$ 35'28		evening set	3339 Mar 12 23:54	7° $\mathbf{\text{Y}}$ 02'42	
opposition	3332 Sep 14 18:13	23° $\mathbf{\text{H}}$ 10'58	-0°45'49				
min. Earth dist.	3332 Sep 14 03:36	23° $\mathbf{\text{H}}$ 11'58	28.97477 AU	conjunction	3339 Mar 28 11:18	7° $\mathbf{\text{Y}}$ 37'39	-1°02'42
direct	3332 Dec 02 15:15	21° $\mathbf{\text{H}}$ 47'44		minimum elong	3339 Mar 28 11:18	7° $\mathbf{\text{Y}}$ 37'39	1°02'42
evening set	3333 Feb 27 07:10	23° $\mathbf{\text{H}}$ 41'02		max. Earth dist.	3339 Mar 29 05:47	7° $\mathbf{\text{Y}}$ 39'25	30.92144 AU
				morning rise	3339 Apr 13 01:30	8° $\mathbf{\text{Y}}$ 12'54	
conjunction	3333 Mar 14 16:47	24° $\mathbf{\text{H}}$ 15'50	-0°44'29	retrograde	3339 Jul 12 23:40	10° $\mathbf{\text{Y}}$ 11'26	
minimum elong	3333 Mar 14 16:47	24° $\mathbf{\text{H}}$ 15'50	0°44'29	opposition	3339 Oct 01 13:40	8° $\mathbf{\text{Y}}$ 46'39	-1°08'32
max. Earth dist.	3333 Mar 15 07:09	24° $\mathbf{\text{H}}$ 17'12	30.96954 AU	min. Earth dist.	3339 Sep 30 19:16	8° $\mathbf{\text{Y}}$ 47'55	28.91726 AU
morning rise	3333 Mar 30 05:03	24° $\mathbf{\text{H}}$ 50'53		direct	3339 Dec 18 22:15	7° $\mathbf{\text{Y}}$ 23'34	
retrograde	3333 Jun 28 14:56	26° $\mathbf{\text{H}}$ 48'41		evening set	3340 Mar 14 11:14	9° $\mathbf{\text{Y}}$ 16'54	
opposition	3333 Sep 17 07:14	25° $\mathbf{\text{H}}$ 24'06	-0°49'18				
min. Earth dist.	3333 Sep 16 15:59	25° $\mathbf{\text{H}}$ 25'09	28.96524 AU	conjunction	3340 Mar 29 22:49	9° $\mathbf{\text{Y}}$ 51'53	-1°05'27
direct	3333 Dec 05 00:50	24° $\mathbf{\text{H}}$ 00'53		minimum elong	3340 Mar 29 22:49	9° $\mathbf{\text{Y}}$ 51'53	1°05'27
evening set	3334 Mar 01 17:35	25° $\mathbf{\text{H}}$ 54'10		max. Earth dist.	3340 Mar 30 16:41	9° $\mathbf{\text{Y}}$ 53'35	30.91176 AU
				morning rise	3340 Apr 14 13:33	10° $\mathbf{\text{Y}}$ 27'10	
conjunction	3334 Mar 17 03:36	26° $\mathbf{\text{H}}$ 29'00	-0°47'42	retrograde	3340 Jul 14 12:34	12° $\mathbf{\text{Y}}$ 25'46	
minimum elong	3334 Mar 17 03:35	26° $\mathbf{\text{H}}$ 29'00	0°47'42	min. Earth dist.	3340 Oct 02 09:09	11° $\mathbf{\text{Y}}$ 02'08	28.90722 AU
max. Earth dist.	3334 Mar 17 19:48	26° $\mathbf{\text{H}}$ 30'32	30.96054 AU	opposition	3340 Oct 03 02:51	11° $\mathbf{\text{Y}}$ 00'55	-1°11'25
morning rise	3334 Apr 01 16:02	27° $\mathbf{\text{H}}$ 04'05		direct	3340 Dec 20 09:16	9° $\mathbf{\text{Y}}$ 37'49	
retrograde	3334 Jul 01 02:10	29° $\mathbf{\text{H}}$ 02'00		evening set	3341 Mar 16 22:21	11° $\mathbf{\text{Y}}$ 31'08	
opposition	3334 Sep 19 20:19	27° $\mathbf{\text{H}}$ 37'23	-0°52'43				
min. Earth dist.	3334 Sep 19 04:21	27° $\mathbf{\text{H}}$ 38'28	28.95678 AU	conjunction	3341 Apr 01 10:24	12° $\mathbf{\text{Y}}$ 06'08	-1°08'05
direct	3334 Dec 07 12:41	26° $\mathbf{\text{H}}$ 14'11		minimum elong	3341 Apr 01 10:24	12° $\mathbf{\text{Y}}$ 06'08	1°08'06
evening set	3335 Mar 04 04:09	28° $\mathbf{\text{H}}$ 07'28		max. Earth dist.	3341 Apr 02 05:36	12° $\mathbf{\text{Y}}$ 07'58	30.90135 AU
				morning rise	3341 Apr 17 01:20	12° $\mathbf{\text{Y}}$ 41'27	
conjunction	3335 Mar 19 14:19	28° $\mathbf{\text{H}}$ 42'19	-0°50'52	retrograde	3341 Jul 17 00:52	14° $\mathbf{\text{Y}}$ 40'07	
minimum elong	3335 Mar 19 14:19	28° $\mathbf{\text{H}}$ 42'19	0°50'52	opposition	3341 Oct 05 15:47	13° $\mathbf{\text{Y}}$ 15'11	-1°14'11
max. Earth dist.	3335 Mar 20 06:29	28° $\mathbf{\text{H}}$ 43'51	30.95260 AU	min. Earth dist.	3341 Oct 04 21:12	13° $\mathbf{\text{Y}}$ 16'29	28.89659 AU

direct	3341 Dec 22 22:31	11° $\Upsilon$ 52'04			3348 Jun 26 09:12	0° $\mathcal{B}$	
evening set	3342 Mar 19 09:42	13° $\Upsilon$ 45'21		retrograde	3348 Aug 01 21:40	0° $\mathcal{B}$ 21'32	
					3348 Sep 08 04:04	30° $\mathcal{R}\Upsilon$	
conjunction	3342 Apr 03 21:55	14° $\Upsilon$ 20'23 -1°10'38		min. Earth dist.	3348 Oct 20 11:24	28° $\Upsilon$ 57'51	28.84706 AU
minimum elong	3342 Apr 03 21:55	14° $\Upsilon$ 20'23 1°10'38		opposition	3348 Oct 21 09:11	28° $\Upsilon$ 56'20	-1°30'16
max. Earth dist.	3342 Apr 04 16:29	14° $\Upsilon$ 22'09 30.89078 AU		direct	3349 Jan 07 05:06	27° $\Upsilon$ 33'10	
morning rise	3342 Apr 19 13:25	14° $\Upsilon$ 55'43		evening set	3349 Apr 03 18:24	29° $\Upsilon$ 26'33	
retrograde	3342 Jul 19 14:37	16° $\Upsilon$ 54'28			3349 Apr 18 14:25	0° $\mathcal{B}$	
min. Earth dist.	3342 Oct 07 10:06	15° $\Upsilon$ 30'45 28.88632 AU					
opposition	3342 Oct 08 04:47	15° $\Upsilon$ 29'27 -1°16'51		conjunction	3349 Apr 19 09:11	0° $\mathcal{B}$ 01'47	-1°25'15
direct	3342 Dec 25 08:55	14° $\Upsilon$ 06'18		minimum elong	3349 Apr 19 09:11	0° $\mathcal{B}$ 01'47	1°25'15
evening set	3343 Mar 21 20:53	15° $\Upsilon$ 59'34		max. Earth dist.	3349 Apr 20 07:06	0° $\mathcal{B}$ 03'51	30.84435 AU
				morning rise	3349 May 05 03:30	0° $\mathcal{B}$ 37'20	
conjunction	3343 Apr 06 09:36	16° $\Upsilon$ 34'37 -1°13'04		retrograde	3349 Aug 04 11:55	2° $\mathcal{B}$ 36'33	
minimum elong	3343 Apr 06 09:36	16° $\Upsilon$ 34'37 1°13'04		opposition	3349 Oct 23 22:02	1° $\mathcal{B}$ 11'21	-1°32'03
max. Earth dist.	3343 Apr 07 05:42	16° $\Upsilon$ 36'31 30.88071 AU		min. Earth dist.	3349 Oct 23 01:05	1° $\mathcal{B}$ 12'48	28.84346 AU
morning rise	3343 Apr 22 01:21	17° $\Upsilon$ 10'00			3349 Dec 14 04:00	30° $\mathcal{R}\Upsilon$	
retrograde	3343 Jul 22 01:25	19° $\Upsilon$ 08'48		direct	3350 Jan 09 16:17	29° $\Upsilon$ 48'12	
opposition	3343 Oct 10 17:38	17° $\Upsilon$ 43'43 -1°19'24			3350 Feb 04 19:10	0° $\mathcal{B}$	
min. Earth dist.	3343 Oct 09 22:28	17° $\Upsilon$ 45'03 28.87670 AU		evening set	3350 Apr 06 06:24	1° $\mathcal{B}$ 41'37	
direct	3343 Dec 27 21:14	16° $\Upsilon$ 20'32					
evening set	3344 Mar 23 08:21	18° $\Upsilon$ 13'48		conjunction	3350 Apr 21 21:45	2° $\mathcal{B}$ 16'53	-1°26'51
				minimum elong	3350 Apr 21 21:45	2° $\mathcal{B}$ 16'52	1°26'51
conjunction	3344 Apr 07 21:17	18° $\Upsilon$ 48'52 -1°15'23		max. Earth dist.	3350 Apr 22 20:44	2° $\mathcal{B}$ 19'03	30.84064 AU
minimum elong	3344 Apr 07 21:17	18° $\Upsilon$ 48'52 1°15'23		morning rise	3350 May 07 16:19	2° $\mathcal{B}$ 52'28	
max. Earth dist.	3344 Apr 08 17:02	18° $\Upsilon$ 50'45 30.87165 AU		retrograde	3350 Aug 07 02:25	4° $\mathcal{B}$ 51'43	
morning rise	3344 Apr 23 13:32	19° $\Upsilon$ 24'16		opposition	3350 Oct 26 10:42	3° $\mathcal{B}$ 26'31	-1°33'41
retrograde	3344 Jul 23 15:03	21° $\Upsilon$ 23'08		min. Earth dist.	3350 Oct 25 13:16	3° $\mathcal{B}$ 28'01	28.83950 AU
min. Earth dist.	3344 Oct 11 10:14	19° $\Upsilon$ 59'24 28.86833 AU		direct	3351 Jan 12 06:04	2° $\mathcal{B}$ 03'22	
opposition	3344 Oct 12 06:16	19° $\Upsilon$ 58'00 -1°21'49		evening set	3351 Apr 08 18:42	3° $\mathcal{B}$ 56'49	
direct	3344 Dec 29 07:09	18° $\Upsilon$ 34'48					
evening set	3345 Mar 25 19:47	20° $\Upsilon$ 28'04		conjunction	3351 Apr 24 10:18	4° $\mathcal{B}$ 32'06	-1°28'19
				minimum elong	3351 Apr 24 10:18	4° $\mathcal{B}$ 32'06	1°28'18
conjunction	3345 Apr 10 09:07	21° $\Upsilon$ 03'11 -1°17'36		max. Earth dist.	3351 Apr 25 08:02	4° $\mathcal{B}$ 34'10	30.83629 AU
minimum elong	3345 Apr 10 09:07	21° $\Upsilon$ 03'11 1°17'36		morning rise	3351 May 10 05:30	5° $\mathcal{B}$ 07'44	
max. Earth dist.	3345 Apr 11 06:05	21° $\Upsilon$ 05'10 30.86379 AU		retrograde	3351 Aug 09 16:19	7° $\mathcal{B}$ 07'01	
morning rise	3345 Apr 26 01:40	21° $\Upsilon$ 38'36		opposition	3351 Oct 28 23:31	5° $\mathcal{B}$ 41'48	-1°35'10
retrograde	3345 Jul 26 03:03	23° $\Upsilon$ 37'33		min. Earth dist.	3351 Oct 28 02:39	5° $\mathcal{B}$ 43'15	28.83474 AU
opposition	3345 Oct 14 19:06	22° $\Upsilon$ 12'23 -1°24'08		direct	3352 Jan 14 17:10	4° $\mathcal{B}$ 18'38	
min. Earth dist.	3345 Oct 13 23:14	22° $\Upsilon$ 13'45 28.86121 AU		evening set	3352 Apr 10 07:00	6° $\mathcal{B}$ 12'05	
direct	3345 Dec 31 17:16	20° $\Upsilon$ 49'10					
evening set	3346 Mar 28 07:07	22° $\Upsilon$ 42'27		conjunction	3352 Apr 25 23:10	6° $\mathcal{B}$ 47'24	-1°29'38
				minimum elong	3352 Apr 25 23:10	6° $\mathcal{B}$ 47'24	1°29'38
conjunction	3346 Apr 12 20:51	23° $\Upsilon$ 17'35 -1°19'42		max. Earth dist.	3352 Apr 26 21:37	6° $\mathcal{B}$ 49'32	30.83089 AU
minimum elong	3346 Apr 12 20:51	23° $\Upsilon$ 17'35 1°19'42		morning rise	3352 May 11 18:37	7° $\mathcal{B}$ 23'03	
max. Earth dist.	3346 Apr 13 18:10	23° $\Upsilon$ 19'36 30.85744 AU		retrograde	3352 Aug 11 04:01	9° $\mathcal{B}$ 22'21	
morning rise	3346 Apr 28 13:51	23° $\Upsilon$ 53'03		opposition	3352 Oct 30 12:06	7° $\mathcal{B}$ 57'05	-1°36'31
retrograde	3346 Jul 28 17:39	25° $\Upsilon$ 52'04		min. Earth dist.	3352 Oct 29 15:26	7° $\mathcal{B}$ 58'32	28.82879 AU
min. Earth dist.	3346 Oct 16 10:35	24° $\Upsilon$ 28'20 28.85552 AU		direct	3353 Jan 16 06:00	6° $\mathcal{B}$ 33'53	
opposition	3346 Oct 17 07:49	24° $\Upsilon$ 26'52 -1°26'18		evening set	3353 Apr 12 19:23	8° $\mathcal{B}$ 27'20	
direct	3347 Jan 03 05:26	23° $\Upsilon$ 03'40					
evening set	3347 Mar 30 18:48	24° $\Upsilon$ 56'59		conjunction	3353 Apr 28 11:54	9° $\mathcal{B}$ 02'40	-1°30'50
				minimum elong	3353 Apr 28 11:54	9° $\mathcal{B}$ 02'40	1°30'50
conjunction	3347 Apr 15 08:52	25° $\Upsilon$ 32'08 -1°21'40		max. Earth dist.	3353 Apr 29 09:14	9° $\mathcal{B}$ 04'42	30.82461 AU
minimum elong	3347 Apr 15 08:52	25° $\Upsilon$ 32'08 1°21'40		morning rise	3353 May 14 07:54	9° $\mathcal{B}$ 38'21	
max. Earth dist.	3347 Apr 16 06:30	25° $\Upsilon$ 34'11 30.85223 AU		retrograde	3353 Aug 13 18:06	11° $\mathcal{B}$ 37'38	
morning rise	3347 May 01 02:20	26° $\Upsilon$ 07'38		min. Earth dist.	3353 Nov 01 03:52	10° $\mathcal{B}$ 13'46	28.82221 AU
retrograde	3347 Jul 31 07:22	28° $\Upsilon$ 06'43		opposition	3353 Nov 02 00:44	10° $\mathcal{B}$ 12'19	-1°37'43
opposition	3347 Oct 19 20:32	26° $\Upsilon$ 41'31 -1°28'21		direct	3354 Jan 18 16:58	8° $\mathcal{B}$ 49'03	
min. Earth dist.	3347 Oct 18 24:00	26° $\Upsilon$ 42'56 28.85092 AU		evening set	3354 Apr 15 07:36	10° $\mathcal{B}$ 42'29	
direct	3348 Jan 05 16:36	25° $\Upsilon$ 18'19					
evening set	3348 Apr 01 06:30	27° $\Upsilon$ 11'40		conjunction	3354 May 01 00:38	11° $\mathcal{B}$ 17'51	-1°31'53
				minimum elong	3354 May 01 00:38	11° $\mathcal{B}$ 17'51	1°31'53
conjunction	3348 Apr 16 21:04	27° $\Upsilon$ 46'52 -1°23'32		max. Earth dist.	3354 May 01 22:38	11° $\mathcal{B}$ 19'56	30.81776 AU
minimum elong	3348 Apr 16 21:04	27° $\Upsilon$ 46'52 1°23'32		morning rise	3354 May 16 21:01	11° $\mathcal{B}$ 53'33	
max. Earth dist.	3348 Apr 17 19:29	27° $\Upsilon$ 48'59 30.84810 AU		retrograde	3354 Aug 16 05:41	13° $\mathcal{B}$ 52'49	
morning rise	3348 May 02 14:52	28° $\Upsilon$ 22'23		opposition	3354 Nov 04 13:19	12° $\mathcal{B}$ 27'27	-1°38'47

min. Earth dist.	3354 Nov 03 17:13	12°8'28"51	28.81532 AU	conjunction	3361 May 16 19:35	27°8'03"07	-1°35'17
direct	3355 Jan 21 04:18	11°8'04"07		minimum elong	3361 May 16 19:35	27°8'03"07	1°35'17
evening set	3355 Apr 17 20:01	12°8'57"32		max. Earth dist.	3361 May 17 18:22	27°8'05"16	30.79306 AU
				morning rise	3361 Jun 01 18:59	27°8'39"01	
conjunction	3355 May 03 13:30	13°8'32"55	-1°32'48	retrograde	3361 Sep 01 04:26	29°8'38"09	
minimum elong	3355 May 03 13:30	13°8'32"55	1°32'48	min. Earth dist.	3361 Nov 19 06:12	28°8'14"12	28.79435 AU
max. Earth dist.	3355 May 04 11:13	13°8'34"59	30.81106 AU	opposition	3361 Nov 20 02:39	28°8'12"46	-1°41'51
morning rise	3355 May 19 10:22	14°8'08"39		direct	3362 Feb 05 16:09	26°8'49"16	
	3355 Jun 13 06:22	15°8'		evening set	3362 May 03 12:11	28°8'42"56	
retrograde	3355 Aug 18 19:03	16°8'07"53					
	3355 Oct 27 12:52	15°8'8"		conjunction	3362 May 19 08:52	29°8'18"33	-1°35'11
min. Earth dist.	3355 Nov 06 04:40	14°8'43"55	28.80888 AU	minimum elong	3362 May 19 08:51	29°8'18"33	1°35'11
opposition	3355 Nov 07 01:32	14°8'42"27	-1°39'41	max. Earth dist.	3362 May 20 06:24	29°8'20"35	30.79369 AU
direct	3356 Jan 23 16:24	13°8'19"03		morning rise	3362 Jun 04 08:51	29°8'54"29	
	3356 Apr 13 15:08	15°8'			3362 Jun 06 21:06	0°8'53"37	
evening set	3356 Apr 19 08:30	15°8'12"29		retrograde	3362 Sep 03 19:37	1°8'53"37	
				opposition	3362 Nov 22 14:43	0°8'28"16	-1°41'40
conjunction	3356 May 05 02:22	15°8'47"54	-1°33'35	min. Earth dist.	3362 Nov 21 18:23	0°8'29"42	28.79502 AU
minimum elong	3356 May 05 02:22	15°8'47"54	1°33'35		3362 Dec 09 17:09	30°8'8"	
max. Earth dist.	3356 May 06 00:06	15°8'49"57	30.80489 AU	direct	3363 Feb 08 03:08	29°8'04"47	
morning rise	3356 May 20 23:42	16°8'23"40			3363 Apr 07 01:59	0°8'53"31	
retrograde	3356 Aug 20 07:24	18°8'22"52		evening set	3363 May 06 01:19	0°8'58"31	
opposition	3356 Nov 08 13:56	16°8'57"24	-1°40'26				
min. Earth dist.	3356 Nov 07 17:58	16°8'58"48	28.80327 AU	conjunction	3363 May 21 22:32	1°8'34"10	-1°34'56
direct	3357 Jan 25 03:18	15°8'33"56		minimum elong	3363 May 21 22:32	1°8'34"10	1°34'55
evening set	3357 Apr 21 20:46	17°8'27"23		max. Earth dist.	3363 May 22 20:21	1°8'36"14	30.79410 AU
				morning rise	3363 Jun 06 22:51	2°8'10"08	
conjunction	3357 May 07 15:11	18°8'02"50	-1°34'13	retrograde	3363 Sep 06 07:18	4°8'09"14	
minimum elong	3357 May 07 15:11	18°8'02"50	1°34'12	min. Earth dist.	3363 Nov 24 07:33	2°8'45"16	28.79513 AU
max. Earth dist.	3357 May 08 13:30	18°8'04"56	30.79989 AU	opposition	3363 Nov 25 02:42	2°8'43"56	-1°41'19
morning rise	3357 May 23 12:51	18°8'38"36		direct	3364 Feb 10 14:27	1°8'20"25	
retrograde	3357 Aug 22 21:19	20°8'37"48		evening set	3364 May 07 14:34	3°8'14"12	
min. Earth dist.	3357 Nov 10 04:59	19°8'13"48	28.79889 AU				
opposition	3357 Nov 11 02:10	19°8'12"18	-1°41'02	conjunction	3364 May 23 12:15	3°8'49"53	-1°34'32
direct	3358 Jan 27 15:48	17°8'48"49		minimum elong	3364 May 23 12:15	3°8'49"53	1°34'33
evening set	3358 Apr 24 09:21	19°8'42"17		max. Earth dist.	3364 May 24 09:00	3°8'51"50	30.79394 AU
				morning rise	3364 Jun 08 13:02	4°8'25"52	
conjunction	3358 May 10 04:05	20°8'17"45	-1°34'42	retrograde	3364 Sep 07 20:31	6°8'24"55	
minimum elong	3358 May 10 04:05	20°8'17"45	1°34'42	opposition	3364 Nov 26 14:42	4°8'59"38	-1°40'50
max. Earth dist.	3358 May 11 01:50	20°8'19"49	30.79616 AU	min. Earth dist.	3364 Nov 25 19:19	5°8'01"00	28.79451 AU
morning rise	3358 May 26 02:20	20°8'53"34		direct	3365 Feb 12 02:22	3°8'36"05	
retrograde	3358 Aug 25 11:18	22°8'52"45		evening set	3365 May 10 03:41	5°8'29"54	
opposition	3358 Nov 13 14:24	21°8'27"15	-1°41'28				
min. Earth dist.	3358 Nov 12 18:03	21°8'28"40	28.79598 AU	conjunction	3365 May 26 01:49	6°8'05"36	-1°34'00
direct	3359 Jan 30 03:02	20°8'03"44		minimum elong	3365 May 26 01:49	6°8'05"36	1°34'00
evening set	3359 Apr 26 21:50	21°8'57"14		max. Earth dist.	3365 May 26 22:05	6°8'07"31	30.79283 AU
				morning rise	3365 Jun 11 03:02	6°8'41"37	
conjunction	3359 May 12 17:14	22°8'32"45	-1°35'02	retrograde	3365 Sep 10 08:32	8°8'40"36	
minimum elong	3359 May 12 17:15	22°8'32"45	1°35'02	min. Earth dist.	3365 Nov 28 08:54	7°8'16"34	28.79307 AU
max. Earth dist.	3359 May 13 16:05	22°8'34"54	30.79396 AU	opposition	3365 Nov 29 02:48	7°8'15"18	-1°40'11
morning rise	3359 May 28 15:47	23°8'08"35		direct	3366 Feb 14 12:47	5°8'51"41	
retrograde	3359 Aug 28 01:42	25°8'07"45		evening set	3366 May 12 16:53	7°8'45"31	
min. Earth dist.	3359 Nov 15 05:27	23°8'43"45	28.79436 AU				
opposition	3359 Nov 16 02:30	23°8'42"16	-1°41'46	conjunction	3366 May 28 15:37	8°8'21"15	-1°33'20
direct	3360 Feb 01 16:43	22°8'18"45		minimum elong	3366 May 28 15:37	8°8'21"15	1°33'20
evening set	3360 Apr 28 10:36	24°8'12"18		max. Earth dist.	3366 May 29 11:35	8°8'23"08	30.79126 AU
				morning rise	3366 Jun 13 17:13	8°8'57"17	
conjunction	3360 May 14 06:17	24°8'47"51	-1°35'14	retrograde	3366 Sep 12 21:50	10°8'56"10	
minimum elong	3360 May 14 06:17	24°8'47"51	1°35'14	opposition	3366 Dec 01 14:30	9°8'30"51	-1°39'23
max. Earth dist.	3360 May 15 04:03	24°8'49"54	30.79298 AU	min. Earth dist.	3366 Nov 30 20:06	9°8'32"09	28.79128 AU
morning rise	3360 May 30 05:25	25°8'23"43		direct	3367 Feb 17 01:07	8°8'07"10	
retrograde	3360 Aug 29 15:29	27°8'22"52		evening set	3367 May 15 06:14	10°8'01"00	
opposition	3360 Nov 17 14:35	25°8'57"26	-1°41'53				
min. Earth dist.	3360 Nov 16 18:02	25°8'58"52	28.79400 AU	conjunction	3367 May 31 05:19	10°8'36"45	-1°32'31
direct	3361 Feb 03 03:29	24°8'33"55		minimum elong	3367 May 31 05:19	10°8'36"45	1°32'30
evening set	3361 Apr 30 23:17	26°8'27"32		max. Earth dist.	3367 Jun 01 00:11	10°8'38"32	30.78945 AU
				morning rise	3367 Jun 16 07:28	11°8'12"48	

retrograde	3367 Sep 15 10:34	13° $\Pi$ 11'35		minimum elong	3374 Jun 16 05:49	26° $\Pi$ 22'23	1°22'57
min. Earth dist.	3367 Dec 03 09:15	11° $\Pi$ 47'28	28.78964 AU	max. Earth dist.	3374 Jun 16 22:57	26° $\Pi$ 23'59	30.80628 AU
opposition	3367 Dec 04 02:19	11° $\Pi$ 46'15	-1°38'26	morning rise	3374 Jul 02 10:32	26° $\Pi$ 58'33	
direct	3368 Feb 19 12:57	10° $\Pi$ 22'29		retrograde	3374 Oct 01 06:20	28° $\Pi$ 56'37	
evening set	3368 May 16 19:22	12° $\Pi$ 16'20		opposition	3374 Dec 19 10:23	27° $\Pi$ 31'31	-1°27'40
				min. Earth dist.	3374 Dec 18 19:49	27° $\Pi$ 32'33	28.81032 AU
conjunction	3368 Jun 01 19:04	12° $\Pi$ 52'07	-1°31'33	direct	3375 Mar 07 00:26	26° $\Pi$ 07'30	
minimum elong	3368 Jun 01 19:04	12° $\Pi$ 52'07	1°31'33	evening set	3375 Jun 02 17:06	28° $\Pi$ 01'38	
max. Earth dist.	3368 Jun 02 14:31	12° $\Pi$ 53'56	30.78808 AU				
morning rise	3368 Jun 17 21:26	13° $\Pi$ 28'10		conjunction	3375 Jun 18 20:00	28° $\Pi$ 37'36	-1°21'02
retrograde	3368 Sep 16 23:39	15° $\Pi$ 26'50		minimum elong	3375 Jun 18 20:00	28° $\Pi$ 37'36	1°21'01
opposition	3368 Dec 05 13:50	14° $\Pi$ 01'30	-1°37'20	max. Earth dist.	3375 Jun 19 12:29	28° $\Pi$ 39'08	30.81290 AU
min. Earth dist.	3368 Dec 04 20:24	14° $\Pi$ 02'43	28.78858 AU	morning rise	3375 Jul 05 01:01	29° $\Pi$ 13'46	
direct	3369 Feb 21 02:42	12° $\Pi$ 37'38			3375 Jul 27 09:26	0° $\mathfrak{G}$	
evening set	3369 May 19 08:40	14° $\Pi$ 31'30		retrograde	3375 Oct 03 19:23	1° $\mathfrak{G}$ 11'45	
					3375 Dec 14 01:26	30° $\mathfrak{R}$ $\Pi$	
conjunction	3369 Jun 04 08:41	15° $\Pi$ 07'18	-1°30'27	opposition	3375 Dec 21 21:39	29° $\Pi$ 46'45	-1°25'34
minimum elong	3369 Jun 04 08:41	15° $\Pi$ 07'18	1°30'27	min. Earth dist.	3375 Dec 21 06:49	29° $\Pi$ 47'47	28.81672 AU
max. Earth dist.	3369 Jun 05 02:50	15° $\Pi$ 09'01	30.78761 AU	direct	3376 Mar 08 12:28	28° $\Pi$ 22'43	
morning rise	3369 Jun 20 11:37	15° $\Pi$ 43'23			3376 May 27 10:10	0° $\mathfrak{G}$	
retrograde	3369 Sep 19 13:10	17° $\Pi$ 41'57		evening set	3376 Jun 04 06:54	0° $\mathfrak{G}$ 16'55	
min. Earth dist.	3369 Dec 07 08:41	16° $\Pi$ 17'46	28.78880 AU				
opposition	3369 Dec 08 01:25	16° $\Pi$ 16'35	-1°36'05	conjunction	3376 Jun 20 10:04	0° $\mathfrak{G}$ 52'54	-1°19'00
direct	3370 Feb 23 13:37	14° $\Pi$ 52'39		minimum elong	3376 Jun 20 10:04	0° $\mathfrak{G}$ 52'54	1°19'01
evening set	3370 May 21 21:47	16° $\Pi$ 46'32		max. Earth dist.	3376 Jun 21 01:08	0° $\mathfrak{G}$ 54'19	30.81898 AU
				morning rise	3376 Jul 06 15:27	1° $\mathfrak{G}$ 29'06	
conjunction	3370 Jun 06 22:27	17° $\Pi$ 22'22	-1°29'13	retrograde	3376 Oct 05 07:29	3° $\mathfrak{G}$ 26'59	
minimum elong	3370 Jun 06 22:27	17° $\Pi$ 22'22	1°29'14	opposition	3376 Dec 23 09:04	2° $\mathfrak{G}$ 02'02	-1°23'20
max. Earth dist.	3370 Jun 07 17:28	17° $\Pi$ 24'09	30.78846 AU	min. Earth dist.	3376 Dec 22 19:57	2° $\mathfrak{G}$ 02'58	28.82249 AU
morning rise	3370 Jun 23 01:38	17° $\Pi$ 58'28		direct	3377 Mar 10 23:30	0° $\mathfrak{G}$ 38'00	
retrograde	3370 Sep 22 02:20	19° $\Pi$ 56'54		evening set	3377 Jun 06 20:40	2° $\mathfrak{G}$ 32'15	
opposition	3370 Dec 10 12:54	18° $\Pi$ 31'34	-1°34'41				
min. Earth dist.	3370 Dec 09 20:16	18° $\Pi$ 32'44	28.79030 AU	conjunction	3377 Jun 23 00:24	3° $\mathfrak{G}$ 08'15	-1°16'51
direct	3371 Feb 26 03:15	17° $\Pi$ 07'35		minimum elong	3377 Jun 23 00:24	3° $\mathfrak{G}$ 08'15	1°16'51
evening set	3371 May 24 11:12	19° $\Pi$ 01'30		max. Earth dist.	3377 Jun 23 15:19	3° $\mathfrak{G}$ 09'39	30.82441 AU
				morning rise	3377 Jul 09 05:57	3° $\mathfrak{G}$ 44'27	
conjunction	3371 Jun 09 12:12	19° $\Pi$ 37'21	-1°27'51	retrograde	3377 Oct 07 20:17	5° $\mathfrak{G}$ 42'14	
minimum elong	3371 Jun 09 12:12	19° $\Pi$ 37'21	1°27'50	opposition	3377 Dec 25 20:16	4° $\mathfrak{G}$ 17'20	-1°20'58
max. Earth dist.	3371 Jun 10 05:50	19° $\Pi$ 39'01	30.79082 AU	min. Earth dist.	3377 Dec 25 07:18	4° $\mathfrak{G}$ 18'15	28.82739 AU
morning rise	3371 Jun 25 15:54	20° $\Pi$ 13'28		direct	3378 Mar 13 12:36	2° $\mathfrak{G}$ 53'15	
retrograde	3371 Sep 24 16:52	22° $\Pi$ 11'48		evening set	3378 Jun 09 10:33	4° $\mathfrak{G}$ 47'33	
min. Earth dist.	3371 Dec 12 07:34	20° $\Pi$ 47'39	28.79344 AU				
opposition	3371 Dec 13 00:13	20° $\Pi$ 46'29	-1°33'09	conjunction	3378 Jun 25 14:33	5° $\mathfrak{G}$ 23'35	-1°14'36
direct	3372 Feb 28 15:07	19° $\Pi$ 22'28		minimum elong	3378 Jun 25 14:34	5° $\mathfrak{G}$ 23'35	1°14'36
evening set	3372 May 26 00:32	21° $\Pi$ 16'25		max. Earth dist.	3378 Jun 26 03:30	5° $\mathfrak{G}$ 24'47	30.82899 AU
				morning rise	3378 Jul 11 20:36	5° $\mathfrak{G}$ 59'47	
conjunction	3372 Jun 11 02:05	21° $\Pi$ 52'18	-1°26'21	retrograde	3378 Oct 10 09:38	7° $\mathfrak{G}$ 57'26	
minimum elong	3372 Jun 11 02:05	21° $\Pi$ 52'18	1°26'21	opposition	3378 Dec 28 07:31	6° $\mathfrak{G}$ 32'35	-1°18'30
max. Earth dist.	3372 Jun 11 20:19	21° $\Pi$ 54'01	30.79469 AU	min. Earth dist.	3378 Dec 27 19:53	6° $\mathfrak{G}$ 33'24	28.83165 AU
morning rise	3372 Jun 27 06:02	22° $\Pi$ 28'26		direct	3379 Mar 15 23:30	5° $\mathfrak{G}$ 08'26	
retrograde	3372 Sep 26 04:20	24° $\Pi$ 26'40		evening set	3379 Jun 12 00:23	7° $\mathfrak{G}$ 02'46	
opposition	3372 Dec 14 11:42	23° $\Pi$ 01'25	-1°31'28				
min. Earth dist.	3372 Dec 13 19:53	23° $\Pi$ 02'32	28.79800 AU	conjunction	3379 Jun 28 04:56	7° $\mathfrak{G}$ 38'49	-1°12'13
direct	3373 Mar 02 02:52	21° $\Pi$ 37'24		minimum elong	3379 Jun 28 04:56	7° $\mathfrak{G}$ 38'49	1°12'13
evening set	3373 May 28 13:49	23° $\Pi$ 31'23		max. Earth dist.	3379 Jun 28 18:04	7° $\mathfrak{G}$ 40'02	30.83302 AU
				morning rise	3379 Jul 14 11:04	8° $\mathfrak{G}$ 15'02	
conjunction	3373 Jun 13 15:47	24° $\Pi$ 07'18	-1°24'42	retrograde	3379 Oct 12 22:31	10° $\mathfrak{G}$ 12'31	
minimum elong	3373 Jun 13 15:47	24° $\Pi$ 07'18	1°24'42	opposition	3379 Dec 30 18:31	8° $\mathfrak{G}$ 47'42	-1°15'54
max. Earth dist.	3373 Jun 14 09:11	24° $\Pi$ 08'56	30.80007 AU	min. Earth dist.	3379 Dec 30 07:33	8° $\mathfrak{G}$ 48'28	28.83546 AU
morning rise	3373 Jun 29 20:11	24° $\Pi$ 43'27		direct	3380 Mar 17 13:32	7° $\mathfrak{G}$ 23'29	
retrograde	3373 Sep 28 18:06	26° $\Pi$ 41'35		evening set	3380 Jun 13 14:16	9° $\mathfrak{G}$ 17'52	
opposition	3373 Dec 16 23:03	25° $\Pi$ 16'24	-1°29'38				
min. Earth dist.	3373 Dec 16 06:51	25° $\Pi$ 17'33	28.80386 AU	conjunction	3380 Jun 29 19:02	9° $\mathfrak{G}$ 53'55	-1°09'45
direct	3374 Mar 04 14:26	23° $\Pi$ 52'23		minimum elong	3380 Jun 29 19:03	9° $\mathfrak{G}$ 53'55	1°09'45
evening set	3374 May 31 03:25	25° $\Pi$ 46'27		max. Earth dist.	3380 Jun 30 06:17	9° $\mathfrak{G}$ 54'58	30.83699 AU
				morning rise	3380 Jul 16 01:35	10° $\mathfrak{G}$ 30'08	
conjunction	3374 Jun 16 05:48	26° $\Pi$ 22'23	-1°22'56	retrograde	3380 Oct 14 12:31	12° $\mathfrak{G}$ 27'28	

opposition	3381 Jan 01 05:32	11°02'40 -1°13'12	max. Earth dist.	3387 Jul 17 04:29	25°37'35 30.89056 AU
min. Earth dist.	3380 Dec 31 18:55	11°03'25 28.83959 AU	morning rise	3387 Aug 02 05:30	26°13'10
direct	3381 Mar 20 02:01	9°38'24	retrograde	3387 Oct 31 00:45	28°09'32
evening set	3381 Jun 16 03:52	11°32'48	opposition	3388 Jan 17 09:06	26°45'14 -0°51'25
			min. Earth dist.	3388 Jan 17 03:06	26°45'39 28.89611 AU
conjunction	3381 Jul 02 09:07	12°08'53 -1°07'10	direct	3388 Apr 04 09:48	25°20'46
minimum elong	3381 Jul 02 09:07	12°08'53 1°07'09	evening set	3388 Jul 02 04:48	27°15'32
max. Earth dist.	3381 Jul 02 20:41	12°09'57 30.84133 AU			
morning rise	3381 Jul 18 15:47	12°45'06	conjunction	3388 Jul 18 12:04	27°51'40 -0°46'29
retrograde	3381 Oct 16 23:51	14°42'17	minimum elong	3388 Jul 18 12:04	27°51'40 0°46'30
opposition	3382 Jan 03 16:32	13°17'31 -1°10'23	max. Earth dist.	3388 Jul 18 18:53	27°52'18 30.90101 AU
min. Earth dist.	3382 Jan 03 07:05	13°18'11 28.84423 AU	morning rise	3388 Aug 03 19:44	28°27'53
direct	3382 Mar 22 14:26	11°53'11		3388 Sep 24 07:36	0°0
evening set	3382 Jun 18 17:42	13°47'37	retrograde	3388 Nov 01 12:39	0°02'40'7
				3388 Dec 10 08:30	30°R
conjunction	3382 Jul 04 23:14	14°23'42 -1°04'29	opposition	3389 Jan 18 19:52	28°59'54 -0°47'57
minimum elong	3382 Jul 04 23:15	14°23'42 1°04'30	min. Earth dist.	3389 Jan 18 14:43	29°00'16 28.90615 AU
max. Earth dist.	3382 Jul 05 09:31	14°24'39 30.84656 AU	direct	3389 Apr 06 23:24	27°35'25
morning rise	3382 Jul 21 06:14	14°59'55	evening set	3389 Jul 04 18:50	29°30'14
retrograde	3382 Oct 19 13:41	16°56'57		3389 Jul 18 05:39	0°0
opposition	3383 Jan 06 03:15	15°32'13 -1°07'28			
min. Earth dist.	3383 Jan 05 17:35	15°32'55 28.84997 AU	conjunction	3389 Jul 21 02:09	0°06'23 -0°43'13
direct	3383 Mar 25 02:40	14°07'50	minimum elong	3389 Jul 21 02:09	0°06'23 0°43'12
evening set	3383 Jun 21 07:32	16°02'18	max. Earth dist.	3389 Jul 21 06:39	0°06'48 30.91068 AU
			morning rise	3389 Aug 06 10:05	0°04'23'5
conjunction	3383 Jul 07 13:24	16°38'25 -1°01'42	retrograde	3389 Nov 04 02:06	2°038'41
minimum elong	3383 Jul 07 13:25	16°38'25 1°01'42	opposition	3390 Jan 21 06:38	1°014'31 -0°44'25
max. Earth dist.	3383 Jul 07 23:28	16°39'21 30.85284 AU	min. Earth dist.	3390 Jan 21 02:12	1°014'50 28.91531 AU
morning rise	3383 Jul 23 20:31	17°14'38		3390 Mar 15 23:49	30°R
retrograde	3383 Oct 22 01:32	19°11'31	direct	3390 Apr 09 11:41	29°50'00
opposition	3384 Jan 08 14:11	17°46'50 -1°04'26		3390 May 03 20:01	0°0
min. Earth dist.	3384 Jan 08 05:56	17°47'26 28.85693 AU	evening set	3390 Jul 07 08:54	1°044'51
direct	3384 Mar 26 13:11	16°22'26			
evening set	3384 Jun 22 21:10	18°16'56	conjunction	3390 Jul 23 16:33	2°021'00 -0°39'53
			minimum elong	3390 Jul 23 16:33	2°021'00 0°39'53
conjunction	3384 Jul 09 03:22	18°53'02 -0°58'50	max. Earth dist.	3390 Jul 23 20:48	2°021'24 30.91924 AU
minimum elong	3384 Jul 09 03:22	18°53'02 0°58'51	morning rise	3390 Aug 09 00:21	2°057'11
max. Earth dist.	3384 Jul 09 12:54	18°53'55 30.86060 AU	retrograde	3390 Nov 06 13:32	4°053'07
morning rise	3384 Jul 25 10:39	19°29'16	opposition	3391 Jan 23 17:17	3°029'00 -0°40'49
retrograde	3384 Oct 23 13:13	21°26'00	min. Earth dist.	3391 Jan 23 14:30	3°029'12 28.92329 AU
opposition	3385 Jan 10 00:54	20°01'24 -1°01'19	direct	3391 Apr 12 00:14	2°004'26
min. Earth dist.	3385 Jan 09 16:04	20°02'02 28.86530 AU	evening set	3391 Jul 09 23:01	3°059'19
direct	3385 Mar 29 01:25	18°36'58			
evening set	3385 Jun 25 11:00	20°31'31	conjunction	3391 Jul 26 06:44	4°035'28 -0°36'29
			minimum elong	3391 Jul 26 06:44	4°035'28 0°36'29
conjunction	3385 Jul 11 17:24	21°07'38 -0°55'52	max. Earth dist.	3391 Jul 26 09:02	4°035'41 30.92691 AU
minimum elong	3385 Jul 11 17:24	21°07'38 0°55'52	morning rise	3391 Aug 11 14:41	5°011'38
max. Earth dist.	3385 Jul 12 01:56	21°08'26 30.86966 AU	retrograde	3391 Nov 09 03:25	7°007'23
morning rise	3385 Jul 28 00:53	21°43'52	opposition	3392 Jan 26 03:53	5°043'19 -0°37'10
retrograde	3385 Oct 26 00:16	23°40'29	min. Earth dist.	3392 Jan 26 01:16	5°043'30 28.93054 AU
opposition	3386 Jan 12 11:42	22°15'58 -0°58'06	direct	3392 Apr 13 13:29	4°018'41
min. Earth dist.	3386 Jan 12 04:17	22°16'30 28.87502 AU	evening set	3392 Jul 11 12:50	6°013'35
direct	3386 Mar 31 11:35	20°51'31			
evening set	3386 Jun 28 00:46	22°46'08	conjunction	3392 Jul 27 20:42	6°049'43 -0°33'03
			minimum elong	3392 Jul 27 20:43	6°049'43 0°33'04
conjunction	3386 Jul 14 07:36	23°22'16 -0°52'49	max. Earth dist.	3392 Jul 27 22:34	6°049'54 30.93383 AU
minimum elong	3386 Jul 14 07:37	23°22'16 0°52'50	morning rise	3392 Aug 13 04:33	7°025'52
max. Earth dist.	3386 Jul 14 16:10	23°23'04 30.87994 AU	retrograde	3392 Nov 10 14:22	9°021'27
morning rise	3386 Jul 30 15:09	23°58'29	opposition	3393 Jan 27 14:31	7°057'24 -0°33'28
retrograde	3386 Oct 28 12:28	25°54'58	min. Earth dist.	3393 Jan 27 13:42	7°057'28 28.93734 AU
opposition	3387 Jan 14 22:23	24°30'34 -0°54'48	direct	3393 Apr 16 01:10	6°032'43
min. Earth dist.	3387 Jan 14 15:02	24°31'06 28.88545 AU	evening set	3393 Jul 14 02:41	8°027'38
direct	3387 Apr 02 23:25	23°06'07			
evening set	3387 Jun 30 14:51	25°00'49	conjunction	3393 Jul 30 10:41	9°003'45 -0°29'34
			minimum elong	3393 Jul 30 10:41	9°003'45 0°29'34
conjunction	3387 Jul 16 21:44	25°36'57 -0°49'42	max. Earth dist.	3393 Jul 30 11:31	9°003'50 30.94071 AU
minimum elong	3387 Jul 16 21:44	25°36'57 0°49'41	morning rise	3393 Aug 15 18:34	9°039'53

retrograde	3393 Nov 13 02:05	11°♏35'18		max. Earth dist.	3399 Aug 13 18:21	22°♏24'43	30.99885 AU
opposition	3394 Jan 30 00:47	10°♏11'17	-0°29'43	morning rise	3399 Aug 30 04:19	23°♏00'58	
min. Earth dist.	3394 Jan 29 23:46	10°♏11'21	28.94422 AU	retrograde	3399 Nov 26 20:58	24°♏55'34	
direct	3394 Apr 18 14:02	8°♏46'31		opposition	3400 Feb 12 14:46	23°♏32'01	-0°06'35
evening set	3394 Jul 16 16:35	10°♏41'27		min. Earth dist.	3400 Feb 12 18:11	23°♏31'46	29.00516 AU
				direct	3400 May 02 10:28	22°♏07'09	
conjunction	3394 Aug 02 00:37	11°♏17'35	-0°26'03	evening set	3400 Jul 31 02:43	24°♏02'26	
minimum elong	3394 Aug 02 00:37	11°♏17'35	0°26'03				
max. Earth dist.	3394 Aug 02 00:18	11°♏17'33	30.94775 AU	conjunction	3400 Aug 16 10:41	24°♏38'30	-0°04'23
morning rise	3394 Aug 18 08:28	11°♏53'42		minimum elong	3400 Aug 16 10:41	24°♏38'30	0°04'23
retrograde	3394 Nov 15 12:44	13°♏48'56		behind sun begin	3400 Aug 16 04:12	24°♏37'55	
opposition	3395 Feb 01 11:16	12°♏24'57	-0°25'56	behind sun end	3400 Aug 16 17:10	24°♏39'04	
min. Earth dist.	3395 Feb 01 11:47	12°♏24'55	28.95163 AU	max. Earth dist.	3400 Aug 16 06:04	24°♏38'06	31.01150 AU
direct	3395 Apr 21 00:31	11°♏00'08		morning rise	3400 Sep 01 17:42	25°♏14'28	
evening set	3395 Jul 19 06:17	12°♏55'06		retrograde	3400 Nov 29 10:50	27°♏08'59	
				opposition	3401 Feb 15 01:02	25°♏45'31	-0°02'39
conjunction	3395 Aug 04 14:27	13°♏31'13	-0°22'29	min. Earth dist.	3401 Feb 15 04:31	25°♏45'16	29.01764 AU
minimum elong	3395 Aug 04 14:27	13°♏31'13	0°22'29	direct	3401 May 04 23:45	24°♏20'40	
max. Earth dist.	3395 Aug 04 14:04	13°♏31'10	30.95558 AU	evening set	3401 Aug 02 16:29	26°♏16'02	
morning rise	3395 Aug 20 22:07	14°♏07'18					
	3395 Sep 16 00:23	15°♏		conjunction	3401 Aug 19 00:26	26°♏52'04	-0°00'40
retrograde	3395 Nov 17 23:44	16°♏02'23		minimum elong	3401 Aug 19 00:25	26°♏52'04	0°00'40
	3396 Jan 22 01:42	15°♏		behind sun begin	3401 Aug 18 17:50	26°♏51'29	
opposition	3396 Feb 03 21:31	14°♏38'27	-0°22'07	behind sun end	3401 Aug 19 07:01	26°♏52'39	
min. Earth dist.	3396 Feb 03 21:56	14°♏38'26	28.95989 AU	max. Earth dist.	3401 Aug 18 19:21	26°♏51'38	31.02356 AU
direct	3396 Apr 22 12:22	13°♏13'35		morning rise	3401 Sep 04 07:06	27°♏28'01	
	3396 Jul 16 20:05	15°♏		asc. node	3401 Oct 21 12:22	28°♏54'04	
evening set	3396 Jul 20 20:04	15°♏08'36		retrograde	3401 Dec 01 21:43	29°♏22'25	
				opposition	3402 Feb 17 11:22	27°♏59'02	0°01'16
conjunction	3396 Aug 06 04:07	15°♏44'42	-0°18'54	min. Earth dist.	3402 Feb 17 16:51	27°♏58'39	29.02935 AU
minimum elong	3396 Aug 06 04:07	15°♏44'42	0°18'55	direct	3402 May 07 11:39	26°♏34'11	
max. Earth dist.	3396 Aug 06 02:15	15°♏44'31	30.96448 AU	evening set	3402 Aug 05 06:18	28°♏29'36	
morning rise	3396 Aug 22 11:47	16°♏20'46					
retrograde	3396 Nov 19 10:39	18°♏15'43		conjunction	3402 Aug 21 14:06	29°♏05'37	0°03'06
opposition	3397 Feb 05 07:53	16°♏51'51	-0°18'16	minimum elong	3402 Aug 21 14:06	29°♏05'37	0°03'06
min. Earth dist.	3397 Feb 05 09:10	16°♏51'45	28.96958 AU	behind sun begin	3402 Aug 21 07:33	29°♏05'02	
direct	3397 Apr 24 22:35	15°♏26'57		behind sun end	3402 Aug 21 20:40	29°♏06'12	
evening set	3397 Jul 23 09:33	17°♏22'01		max. Earth dist.	3402 Aug 21 07:38	29°♏05'03	31.03481 AU
				morning rise	3402 Sep 06 20:36	29°♏41'33	
conjunction	3397 Aug 08 17:49	17°♏58'06	-0°15'18		3402 Sep 15 12:38	0°♐	
minimum elong	3397 Aug 08 17:49	17°♏58'06	0°15'17	retrograde	3402 Dec 04 09:45	1°♐35'47	
behind sun begin	3397 Aug 08 16:11	17°♏57'57		opposition	3403 Feb 19 21:39	0°♐12'30	0°05'11
behind sun end	3397 Aug 08 19:27	17°♏58'15		min. Earth dist.	3403 Feb 20 03:06	0°♐12'06	29.04000 AU
max. Earth dist.	3397 Aug 08 16:29	17°♏57'59	30.97484 AU		3403 Feb 27 07:36	30°♐	
morning rise	3397 Aug 25 01:14	18°♏34'09		direct	3403 May 10 00:42	28°♏47'37	
retrograde	3397 Nov 21 21:13	20°♏28'58			3403 Jul 17 19:59	0°♐	
opposition	3398 Feb 07 18:13	19°♏05'12	-0°14'23	evening set	3403 Aug 07 20:00	0°♐43'04	
min. Earth dist.	3398 Feb 07 19:57	19°♏05'04	28.98048 AU				
direct	3398 Apr 27 11:26	17°♏40'18		conjunction	3403 Aug 24 03:37	1°♐19'04	0°06'45
evening set	3398 Jul 25 23:23	19°♏35'26		minimum elong	3403 Aug 24 03:36	1°♐19'04	0°06'45
				behind sun begin	3403 Aug 23 21:28	1°♐18'32	
conjunction	3398 Aug 11 07:28	20°♏11'30	-0°11'40	behind sun end	3403 Aug 24 09:45	1°♐19'37	
minimum elong	3398 Aug 11 07:28	20°♏11'30	0°11'40	max. Earth dist.	3403 Aug 23 19:50	1°♐18'22	31.04487 AU
behind sun begin	3398 Aug 11 02:52	20°♏11'06		morning rise	3403 Sep 09 09:47	1°♐54'58	
behind sun end	3398 Aug 11 12:03	20°♏11'55		retrograde	3403 Dec 06 20:49	3°♐49'04	
max. Earth dist.	3398 Aug 11 04:17	20°♏11'14	30.98644 AU	opposition	3404 Feb 22 08:03	2°♐25'49	0°09'05
morning rise	3398 Aug 27 14:54	20°♏47'32		min. Earth dist.	3404 Feb 22 15:14	2°♐25'19	29.04969 AU
retrograde	3398 Nov 24 09:49	22°♏42'14		direct	3404 May 11 11:33	1°♐00'55	
opposition	3399 Feb 10 04:23	21°♏18'34	-0°10'29	evening set	3404 Aug 09 09:33	2°♐56'22	
min. Earth dist.	3399 Feb 10 06:25	21°♏18'25	28.99259 AU				
direct	3399 Apr 29 22:39	19°♏53'40		conjunction	3404 Aug 25 17:05	3°♐32'21	0°10'23
evening set	3399 Jul 28 13:04	21°♏48'54		minimum elong	3404 Aug 25 17:05	3°♐32'21	0°10'23
				behind sun begin	3404 Aug 25 11:57	3°♐31'54	
conjunction	3399 Aug 13 21:14	22°♏24'58	-0°08'02	behind sun end	3404 Aug 25 22:13	3°♐32'48	
minimum elong	3399 Aug 13 21:14	22°♏24'58	0°08'01	max. Earth dist.	3404 Aug 25 08:50	3°♐31'36	31.05419 AU
behind sun begin	3399 Aug 13 15:22	22°♏24'27		morning rise	3404 Sep 10 22:56	4°♐08'12	
behind sun end	3399 Aug 14 03:06	22°♏25'29		retrograde	3404 Dec 08 07:26	6°♐02'09	



opposition	3405 Feb 23 18:13	4° $\mathring{M}$ 38'57	0°12'58	conjunction	3411 Sep 11 11:49	18° $\mathring{M}$ 59'19	0°35'02
min. Earth dist.	3405 Feb 24 01:38	4° $\mathring{M}$ 38'25	29.05859 AU	minimum elong	3411 Sep 11 11:49	18° $\mathring{M}$ 59'19	0°35'02
direct	3405 May 13 23:43	3° $\mathring{M}$ 13'59		max. Earth dist.	3411 Sep 10 23:05	18° $\mathring{M}$ 58'09	31.12551 AU
evening set	3405 Aug 11 23:05	5° $\mathring{M}$ 09'27		morning rise	3411 Sep 27 15:09	19° $\mathring{M}$ 34'54	
				retrograde	3411 Dec 24 09:09	21° $\mathring{M}$ 27'59	
conjunction	3405 Aug 28 06:20	5° $\mathring{M}$ 45'24	0°14'00	opposition	3412 Mar 10 17:14	20° $\mathring{M}$ 05'07	0°39'12
minimum elong	3405 Aug 28 06:20	5° $\mathring{M}$ 45'24	0°14'00	min. Earth dist.	3412 Mar 11 04:05	20° $\mathring{M}$ 04'21	29.13237 AU
behind sun begin	3405 Aug 28 03:11	5° $\mathring{M}$ 45'08		direct	3412 May 29 11:05	18° $\mathring{M}$ 40'01	
behind sun end	3405 Aug 28 09:29	5° $\mathring{M}$ 45'41		evening set	3412 Aug 27 19:15	20° $\mathring{M}$ 35'41	
max. Earth dist.	3405 Aug 27 20:21	5° $\mathring{M}$ 44'30	31.06286 AU	max. Earth dist.	3412 Sep 12 11:03	21° $\mathring{M}$ 10'10	31.13893 AU
morning rise	3405 Sep 13 12:00	6° $\mathring{M}$ 21'14					
retrograde	3405 Dec 10 17:07	8° $\mathring{M}$ 15'02		conjunction	3412 Sep 13 00:32	21° $\mathring{M}$ 11'25	0°38'23
opposition	3406 Feb 26 04:27	6° $\mathring{M}$ 51'51	0°16'50	minimum elong	3412 Sep 13 00:31	21° $\mathring{M}$ 11'25	0°38'23
min. Earth dist.	3406 Feb 26 13:02	6° $\mathring{M}$ 51'14	29.06720 AU	morning rise	3412 Sep 29 03:23	21° $\mathring{M}$ 46'57	
direct	3406 May 16 10:38	5° $\mathring{M}$ 26'50		retrograde	3412 Dec 25 20:27	23° $\mathring{M}$ 39'58	
evening set	3406 Aug 14 12:29	7° $\mathring{M}$ 22'18		opposition	3413 Mar 13 03:26	22° $\mathring{M}$ 17'12	0°42'45
				min. Earth dist.	3413 Mar 13 15:46	22° $\mathring{M}$ 16'20	29.14589 AU
conjunction	3406 Aug 30 19:40	7° $\mathring{M}$ 58'13	0°17'35	direct	3413 May 31 21:47	20° $\mathring{M}$ 52'09	
minimum elong	3406 Aug 30 19:40	7° $\mathring{M}$ 58'13	0°17'35	evening set	3413 Aug 30 08:16	22° $\mathring{M}$ 47'52	
max. Earth dist.	3406 Aug 30 09:57	7° $\mathring{M}$ 57'20	31.07136 AU				
morning rise	3406 Sep 16 00:51	8° $\mathring{M}$ 34'00		conjunction	3413 Sep 15 13:16	23° $\mathring{M}$ 23'34	0°41'41
retrograde	3406 Dec 13 01:59	10° $\mathring{M}$ 27'39		minimum elong	3413 Sep 15 13:16	23° $\mathring{M}$ 23'34	0°41'41
opposition	3407 Feb 28 14:34	9° $\mathring{M}$ 04'29	0°20'40	max. Earth dist.	3413 Sep 14 23:28	23° $\mathring{M}$ 22'18	31.15220 AU
min. Earth dist.	3407 Feb 28 23:50	9° $\mathring{M}$ 03'50	29.07572 AU	morning rise	3413 Oct 01 15:40	23° $\mathring{M}$ 59'04	
direct	3407 May 18 22:59	7° $\mathring{M}$ 39'25		retrograde	3413 Dec 28 07:03	25° $\mathring{M}$ 52'01	
evening set	3407 Aug 17 01:53	9° $\mathring{M}$ 34'53		opposition	3414 Mar 15 13:41	24° $\mathring{M}$ 29'21	0°46'15
				min. Earth dist.	3414 Mar 16 02:15	24° $\mathring{M}$ 28'28	29.15871 AU
conjunction	3407 Sep 02 08:39	10° $\mathring{M}$ 10'47	0°21'09	direct	3414 Jun 03 10:12	23° $\mathring{M}$ 04'20	
minimum elong	3407 Sep 02 08:38	10° $\mathring{M}$ 10'47	0°21'09	evening set	3414 Sep 01 21:28	25° $\mathring{M}$ 00'06	
max. Earth dist.	3407 Sep 01 21:11	10° $\mathring{M}$ 09'43	31.08014 AU	max. Earth dist.	3414 Sep 17 10:27	25° $\mathring{M}$ 34'20	31.16447 AU
morning rise	3407 Sep 18 13:38	10° $\mathring{M}$ 46'31					
retrograde	3407 Dec 15 13:28	12° $\mathring{M}$ 40'01		conjunction	3414 Sep 18 01:56	25° $\mathring{M}$ 35'46	0°44'55
opposition	3408 Mar 02 00:42	11° $\mathring{M}$ 16'53	0°24'27	minimum elong	3414 Sep 18 01:56	25° $\mathring{M}$ 35'46	0°44'55
min. Earth dist.	3408 Mar 02 10:02	11° $\mathring{M}$ 16'13	29.08493 AU	morning rise	3414 Oct 04 03:54	26° $\mathring{M}$ 11'14	
direct	3408 May 20 09:39	9° $\mathring{M}$ 51'45		retrograde	3414 Dec 30 17:07	28° $\mathring{M}$ 04'06	
evening set	3408 Aug 18 14:50	11° $\mathring{M}$ 47'14		opposition	3415 Mar 18 00:00	26° $\mathring{M}$ 41'31	0°49'40
				min. Earth dist.	3415 Mar 18 13:39	26° $\mathring{M}$ 40'34	29.17056 AU
conjunction	3408 Sep 03 21:30	12° $\mathring{M}$ 23'06	0°24'41	direct	3415 Jun 05 20:43	25° $\mathring{M}$ 16'32	
minimum elong	3408 Sep 03 21:30	12° $\mathring{M}$ 23'06	0°24'40	evening set	3415 Sep 04 10:26	27° $\mathring{M}$ 12'20	
max. Earth dist.	3408 Sep 03 10:38	12° $\mathring{M}$ 22'06	31.08969 AU				
morning rise	3408 Sep 20 01:57	12° $\mathring{M}$ 58'48		conjunction	3415 Sep 20 14:39	27° $\mathring{M}$ 47'58	0°48'05
retrograde	3408 Dec 16 22:51	14° $\mathring{M}$ 52'10		minimum elong	3415 Sep 20 14:39	27° $\mathring{M}$ 47'58	0°48'05
opposition	3409 Mar 04 10:56	13° $\mathring{M}$ 29'04	0°28'13	max. Earth dist.	3415 Sep 19 23:20	27° $\mathring{M}$ 46'33	31.17565 AU
min. Earth dist.	3409 Mar 04 21:19	13° $\mathring{M}$ 28'20	29.09503 AU	morning rise	3415 Oct 06 15:59	28° $\mathring{M}$ 23'23	
direct	3409 May 22 21:45	12° $\mathring{M}$ 03'55			3415 Dec 02 06:19	0° $\mathring{A}$	
evening set	3409 Aug 21 04:03	13° $\mathring{M}$ 59'25		retrograde	3416 Jan 02 02:02	0° $\mathring{A}$ 16'11	
					3416 Feb 02 10:31	30° $\mathring{R}$ $\mathring{M}$	
conjunction	3409 Sep 06 10:17	14° $\mathring{M}$ 35'14	0°28'10	opposition	3416 Mar 19 10:25	28° $\mathring{M}$ 53'40	0°53'00
minimum elong	3409 Sep 06 10:17	14° $\mathring{M}$ 35'14	0°28'10	min. Earth dist.	3416 Mar 20 00:54	28° $\mathring{M}$ 52'39	29.18109 AU
max. Earth dist.	3409 Sep 05 22:04	14° $\mathring{M}$ 34'07	31.10046 AU	direct	3416 Jun 07 08:34	27° $\mathring{M}$ 28'41	
morning rise	3409 Sep 22 14:31	15° $\mathring{M}$ 10'54		evening set	3416 Sep 05 23:19	29° $\mathring{M}$ 24'30	
retrograde	3409 Dec 19 11:08	17° $\mathring{M}$ 04'09		max. Earth dist.	3416 Sep 21 09:43	29° $\mathring{M}$ 58'31	31.18559 AU
opposition	3410 Mar 06 20:53	15° $\mathring{M}$ 41'06	0°31'55				
min. Earth dist.	3410 Mar 07 06:48	15° $\mathring{M}$ 40'24	29.10645 AU	conjunction	3416 Sep 22 02:58	0° $\mathring{A}$ 00'06	0°51'11
direct	3410 May 25 10:45	14° $\mathring{M}$ 15'57		minimum elong	3416 Sep 22 02:57	0° $\mathring{A}$ 00'06	0°51'11
evening set	3410 Aug 23 17:10	16° $\mathring{M}$ 11'30			3416 Sep 22 01:50	0° $\mathring{A}$	
				morning rise	3416 Oct 08 03:59	0° $\mathring{A}$ 35'29	
conjunction	3410 Sep 08 23:12	16° $\mathring{M}$ 47'17	0°31'38	retrograde	3417 Jan 03 13:22	2° $\mathring{A}$ 28'12	
minimum elong	3410 Sep 08 23:11	16° $\mathring{M}$ 47'17	0°31'37	opposition	3417 Mar 21 20:43	1° $\mathring{A}$ 05'43	0°56'16
max. Earth dist.	3410 Sep 08 11:10	16° $\mathring{M}$ 46'11	31.11242 AU	min. Earth dist.	3417 Mar 22 11:28	1° $\mathring{A}$ 04'42	29.19055 AU
morning rise	3410 Sep 25 02:52	17° $\mathring{M}$ 22'54			3417 May 05 18:58	30° $\mathring{R}$ $\mathring{M}$	
retrograde	3410 Dec 21 21:17	19° $\mathring{M}$ 16'04		direct	3417 Jun 09 18:48	29° $\mathring{M}$ 40'43	
opposition	3411 Mar 09 07:08	17° $\mathring{M}$ 53'06	0°35'35		3417 Jul 14 11:41	0° $\mathring{A}$	
min. Earth dist.	3411 Mar 09 18:28	17° $\mathring{M}$ 52'18	29.11903 AU	evening set	3417 Sep 08 12:06	1° $\mathring{A}$ 36'34	
direct	3411 May 27 22:19	16° $\mathring{M}$ 27'58					
evening set	3411 Aug 26 06:10	18° $\mathring{M}$ 23'34		conjunction	3417 Sep 24 15:30	2° $\mathring{A}$ 12'08	0°54'12
				minimum elong	3417 Sep 24 15:30	2° $\mathring{A}$ 12'08	0°54'11

max. Earth dist.	3417 Sep 23 22:30	2° <u>♁</u> 10'34	31.19441 AU	max. Earth dist.	3424 Oct 09 07:33	17° <u>♁</u> 30'24	31.25626 AU
morning rise	3417 Oct 10 15:52	2° <u>♁</u> 47'28					
retrograde	3418 Jan 05 22:13	4° <u>♁</u> 40'05		conjunction	3424 Oct 10 02:37	17° <u>♁</u> 32'10	1°12'48
opposition	3418 Mar 24 07:00	3° <u>♁</u> 17'39	0°59'27	minimum elong	3424 Oct 10 02:37	17° <u>♁</u> 32'10	1°12'49
min. Earth dist.	3418 Mar 24 23:12	3° <u>♁</u> 16'32	29.19890 AU	morning rise	3424 Oct 25 23:17	18° <u>♁</u> 07'11	
direct	3418 Jun 12 06:54	1° <u>♁</u> 52'38		retrograde	3425 Jan 20 22:05	19° <u>♁</u> 59'19	
evening set	3418 Sep 11 00:57	3° <u>♁</u> 48'29		opposition	3425 Apr 08 07:24	18° <u>♁</u> 37'10	1°18'58
max. Earth dist.	3418 Sep 26 09:10	4° <u>♁</u> 22'18	31.20246 AU	min. Earth dist.	3425 Apr 09 01:28	18° <u>♁</u> 35'55	29.26219 AU
				direct	3425 Jun 27 19:51	17° <u>♁</u> 12'13	
conjunction	3418 Sep 27 03:45	4° <u>♁</u> 24'01	0°57'08	evening set	3425 Sep 26 14:46	19° <u>♁</u> 08'08	
minimum elong	3418 Sep 27 03:45	4° <u>♁</u> 24'01	0°57'08				
morning rise	3418 Oct 13 03:46	4° <u>♁</u> 59'18		conjunction	3425 Oct 12 14:09	19° <u>♁</u> 43'23	1°15'04
retrograde	3419 Jan 08 09:55	6° <u>♁</u> 51'50		minimum elong	3425 Oct 12 14:09	19° <u>♁</u> 43'23	1°15'04
opposition	3419 Mar 26 17:15	5° <u>♁</u> 29'25	1°02'32	max. Earth dist.	3425 Oct 11 17:35	19° <u>♁</u> 41'29	31.26674 AU
min. Earth dist.	3419 Mar 27 09:08	5° <u>♁</u> 28'19	29.20671 AU	morning rise	3425 Oct 28 10:25	20° <u>♁</u> 18'22	
direct	3419 Jun 14 20:03	4° <u>♁</u> 04'22		retrograde	3426 Jan 23 09:15	22° <u>♁</u> 10'29	
evening set	3419 Sep 13 13:23	6° <u>♁</u> 00'14		opposition	3426 Apr 10 17:46	20° <u>♁</u> 48'24	1°21'20
				min. Earth dist.	3426 Apr 11 11:46	20° <u>♁</u> 47'09	29.27244 AU
conjunction	3419 Sep 29 15:50	6° <u>♁</u> 35'43	0°59'59	direct	3426 Jun 30 05:53	19° <u>♁</u> 23'28	
minimum elong	3419 Sep 29 15:49	6° <u>♁</u> 35'43	0°59'59	evening set	3426 Sep 29 02:50	21° <u>♁</u> 19'25	
max. Earth dist.	3419 Sep 28 21:29	6° <u>♁</u> 34'01	31.21000 AU	max. Earth dist.	3426 Oct 14 05:49	21° <u>♁</u> 52'47	31.27642 AU
morning rise	3419 Oct 15 15:10	7° <u>♁</u> 10'57					
retrograde	3420 Jan 10 19:21	9° <u>♁</u> 03'24		conjunction	3426 Oct 15 01:50	21° <u>♁</u> 54'38	1°17'13
opposition	3420 Mar 28 03:40	7° <u>♁</u> 41'00	1°05'32	minimum elong	3426 Oct 15 01:50	21° <u>♁</u> 54'38	1°17'13
min. Earth dist.	3420 Mar 28 20:57	7° <u>♁</u> 39'47	29.21435 AU	morning rise	3426 Oct 30 21:22	22° <u>♁</u> 29'35	
direct	3420 Jun 16 07:37	6° <u>♁</u> 15'56		retrograde	3427 Jan 25 17:30	24° <u>♁</u> 21'40	
evening set	3420 Sep 15 01:49	8° <u>♁</u> 11'47		opposition	3427 Apr 13 04:30	22° <u>♁</u> 59'38	1°23'34
max. Earth dist.	3420 Sep 30 08:51	8° <u>♁</u> 45'28	31.21779 AU	min. Earth dist.	3427 Apr 13 23:47	22° <u>♁</u> 58'18	29.28161 AU
				direct	3427 Jul 02 17:34	21° <u>♁</u> 34'45	
conjunction	3420 Oct 01 03:45	8° <u>♁</u> 47'13	1°02'44	evening set	3427 Oct 01 14:49	23° <u>♁</u> 30'41	
minimum elong	3420 Oct 01 03:44	8° <u>♁</u> 47'13	1°02'44				
morning rise	3420 Oct 17 02:40	9° <u>♁</u> 22'25		conjunction	3427 Oct 17 13:09	24° <u>♁</u> 05'52	1°19'15
retrograde	3421 Jan 12 06:35	11° <u>♁</u> 14'46		minimum elong	3427 Oct 17 13:08	24° <u>♁</u> 05'52	1°19'15
opposition	3421 Mar 30 13:48	9° <u>♁</u> 52'23	1°08'26	max. Earth dist.	3427 Oct 16 15:45	24° <u>♁</u> 03'53	31.28497 AU
min. Earth dist.	3421 Mar 31 06:24	9° <u>♁</u> 51'14	29.22237 AU	morning rise	3427 Nov 02 08:17	24° <u>♁</u> 40'46	
direct	3421 Jun 18 20:54	8° <u>♁</u> 27'18		retrograde	3428 Jan 28 04:33	26° <u>♁</u> 32'49	
evening set	3421 Sep 17 14:11	10° <u>♁</u> 23'10		opposition	3428 Apr 14 15:07	25° <u>♁</u> 10'49	1°25'41
				min. Earth dist.	3428 Apr 15 09:56	25° <u>♁</u> 09'31	29.28950 AU
conjunction	3421 Oct 03 15:38	10° <u>♁</u> 58'33	1°05'24	direct	3428 Jul 04 05:30	23° <u>♁</u> 45'56	
minimum elong	3421 Oct 03 15:38	10° <u>♁</u> 58'33	1°05'24	evening set	3428 Oct 03 02:45	25° <u>♁</u> 41'53	
max. Earth dist.	3421 Oct 02 20:21	10° <u>♁</u> 56'46	31.22608 AU	max. Earth dist.	3428 Oct 18 03:22	26° <u>♁</u> 15'03	31.29204 AU
morning rise	3421 Oct 19 14:00	11° <u>♁</u> 33'42					
retrograde	3422 Jan 14 17:51	13° <u>♁</u> 25'59		conjunction	3428 Oct 19 00:40	26° <u>♁</u> 17'01	1°21'11
opposition	3422 Apr 02 00:12	12° <u>♁</u> 03'38	1°11'14	minimum elong	3428 Oct 19 00:40	26° <u>♁</u> 17'01	1°21'11
min. Earth dist.	3422 Apr 02 17:43	12° <u>♁</u> 02'25	29.23123 AU	morning rise	3428 Nov 03 19:08	26° <u>♁</u> 51'53	
direct	3422 Jun 21 08:44	10° <u>♁</u> 38'34		retrograde	3429 Jan 29 14:01	28° <u>♁</u> 43'55	
evening set	3422 Sep 20 02:24	12° <u>♁</u> 34'25		opposition	3429 Apr 17 01:46	27° <u>♁</u> 21'55	1°27'40
max. Earth dist.	3422 Oct 05 08:25	13° <u>♁</u> 08'02	31.23538 AU	min. Earth dist.	3429 Apr 17 22:09	27° <u>♁</u> 20'31	29.29594 AU
				direct	3429 Jul 06 16:18	25° <u>♁</u> 57'02	
conjunction	3422 Oct 06 03:24	13° <u>♁</u> 09'47	1°07'58	evening set	3429 Oct 05 14:41	27° <u>♁</u> 52'59	
minimum elong	3422 Oct 06 03:24	13° <u>♁</u> 09'47	1°07'58				
morning rise	3422 Oct 22 01:10	13° <u>♁</u> 44'53		conjunction	3429 Oct 21 12:02	28° <u>♁</u> 28'04	1°22'59
retrograde	3423 Jan 17 03:32	15° <u>♁</u> 37'06		minimum elong	3429 Oct 21 12:02	28° <u>♁</u> 28'04	1°22'59
opposition	3423 Apr 04 10:32	14° <u>♁</u> 14'48	1°13'55	max. Earth dist.	3429 Oct 20 14:02	28° <u>♁</u> 26'02	31.29780 AU
min. Earth dist.	3423 Apr 05 03:40	14° <u>♁</u> 13'37	29.24093 AU	morning rise	3429 Nov 06 06:04	29° <u>♁</u> 02'54	
direct	3423 Jun 23 21:51	12° <u>♁</u> 49'46			3429 Dec 04 21:03	0° <u>♁</u>	
evening set	3423 Sep 22 14:38	14° <u>♁</u> 45'39		retrograde	3430 Feb 01 01:03	0° <u>♁</u> 54'52	
					3430 Apr 02 19:55	30° <u>♁</u>	
conjunction	3423 Oct 08 15:02	15° <u>♁</u> 20'58	1°10'26	opposition	3430 Apr 19 12:25	29° <u>♁</u> 32'54	1°29'32
minimum elong	3423 Oct 08 15:02	15° <u>♁</u> 20'58	1°10'26	min. Earth dist.	3430 Apr 20 08:16	29° <u>♁</u> 31'31	29.30098 AU
max. Earth dist.	3423 Oct 07 19:08	15° <u>♁</u> 19'07	31.24553 AU	direct	3430 Jul 09 05:59	28° <u>♁</u> 08'00	
morning rise	3423 Oct 24 12:21	15° <u>♁</u> 56'02			3430 Oct 06 06:46	0° <u>♁</u>	
retrograde	3424 Jan 19 13:27	17° <u>♁</u> 48'12		evening set	3430 Oct 08 02:26	0° <u>♁</u> 03'56	
opposition	3424 Apr 05 20:57	16° <u>♁</u> 25'58	1°16'30				
min. Earth dist.	3424 Apr 06 14:28	16° <u>♁</u> 24'45	29.25154 AU	conjunction	3430 Oct 23 23:15	0° <u>♁</u> 38'59	1°24'40
direct	3424 Jun 25 08:07	15° <u>♁</u> 00'58		minimum elong	3430 Oct 23 23:14	0° <u>♁</u> 38'59	1°24'41
evening set	3424 Sep 24 02:32	16° <u>♁</u> 56'52		max. Earth dist.	3430 Oct 23 00:41	0° <u>♁</u> 36'53	31.30216 AU

morning rise	3430 Nov 08 16:41	1° <del>ℓ</del> 13'45			3437 Oct 15 09:11	15° <del>ℓ</del>	
retrograde	3431 Feb 03 12:01	3° <del>ℓ</del> 05'42		evening set	3437 Oct 23 08:53	15° <del>ℓ</del> 17'04	
opposition	3431 Apr 21 23:11	1° <del>ℓ</del> 43'42	1°31'16	max. Earth dist.	3437 Nov 07 04:46	15° <del>ℓ</del> 49'53	31.33391 AU
min. Earth dist.	3431 Apr 22 20:04	1° <del>ℓ</del> 42'16	29.30497 AU				
direct	3431 Jul 11 18:00	0° <del>ℓ</del> 18'48		conjunction	3437 Nov 08 02:11	15° <del>ℓ</del> 51'53	1°32'57
evening set	3431 Oct 10 13:59	2° <del>ℓ</del> 14'42		minimum elong	3437 Nov 08 02:11	15° <del>ℓ</del> 51'52	1°32'57
				morning rise	3437 Nov 23 16:03	16° <del>ℓ</del> 26'25	
conjunction	3431 Oct 26 10:20	2° <del>ℓ</del> 49'42	1°26'14	retrograde	3438 Feb 18 06:25	18° <del>ℓ</del> 18'20	
minimum elong	3431 Oct 26 10:20	2° <del>ℓ</del> 49'42	1°26'14	opposition	3438 May 07 02:33	16° <del>ℓ</del> 56'29	1°39'38
max. Earth dist.	3431 Oct 25 12:06	2° <del>ℓ</del> 47'39	31.30579 AU	min. Earth dist.	3438 May 07 23:13	16° <del>ℓ</del> 55'04	29.33793 AU
morning rise	3431 Nov 11 03:14	3° <del>ℓ</del> 24'26		direct	3438 Jul 27 00:25	15° <del>ℓ</del> 31'46	
retrograde	3432 Feb 05 21:22	5° <del>ℓ</del> 16'20		evening set	3438 Oct 25 19:49	17° <del>ℓ</del> 27'37	
opposition	3432 Apr 23 09:50	3° <del>ℓ</del> 54'20	1°32'53				
min. Earth dist.	3432 Apr 24 06:28	3° <del>ℓ</del> 52'55	29.30828 AU	conjunction	3438 Nov 10 12:33	18° <del>ℓ</del> 02'23	1°33'36
direct	3432 Jul 13 07:35	2° <del>ℓ</del> 29'25		minimum elong	3438 Nov 10 12:33	18° <del>ℓ</del> 02'23	1°33'37
evening set	3432 Oct 12 01:22	4° <del>ℓ</del> 25'17		max. Earth dist.	3438 Nov 09 15:05	18° <del>ℓ</del> 00'23	31.33979 AU
				morning rise	3438 Nov 26 02:00	18° <del>ℓ</del> 36'55	
conjunction	3432 Oct 27 21:07	5° <del>ℓ</del> 00'15	1°27'40	retrograde	3439 Feb 20 17:33	20° <del>ℓ</del> 28'51	
minimum elong	3432 Oct 27 21:07	5° <del>ℓ</del> 00'15	1°27'41	opposition	3439 May 09 13:34	19° <del>ℓ</del> 07'03	1°40'16
max. Earth dist.	3432 Oct 26 22:02	4° <del>ℓ</del> 58'06	31.30898 AU	min. Earth dist.	3439 May 10 09:20	19° <del>ℓ</del> 05'42	29.34339 AU
morning rise	3432 Nov 12 13:36	5° <del>ℓ</del> 34'57		direct	3439 Jul 29 13:45	17° <del>ℓ</del> 42'24	
retrograde	3433 Feb 07 07:14	7° <del>ℓ</del> 26'48		evening set	3439 Oct 28 06:45	19° <del>ℓ</del> 38'14	
opposition	3433 Apr 25 20:31	6° <del>ℓ</del> 04'48	1°34'21				
min. Earth dist.	3433 Apr 26 17:19	6° <del>ℓ</del> 03'22	29.31162 AU	conjunction	3439 Nov 12 22:57	20° <del>ℓ</del> 12'59	1°34'08
direct	3433 Jul 15 18:30	4° <del>ℓ</del> 39'52		minimum elong	3439 Nov 12 22:57	20° <del>ℓ</del> 12'59	1°34'08
evening set	3433 Oct 14 12:37	6° <del>ℓ</del> 35'42		max. Earth dist.	3439 Nov 12 01:11	20° <del>ℓ</del> 10'57	31.34472 AU
max. Earth dist.	3433 Oct 29 10:05	7° <del>ℓ</del> 08'36	31.31241 AU	morning rise	3439 Nov 28 11:57	20° <del>ℓ</del> 47'29	
				retrograde	3440 Feb 23 05:26	22° <del>ℓ</del> 39'27	
conjunction	3433 Oct 30 07:58	7° <del>ℓ</del> 10'38	1°28'59	opposition	3440 May 11 00:40	21° <del>ℓ</del> 17'40	1°40'46
minimum elong	3433 Oct 30 07:58	7° <del>ℓ</del> 10'38	1°28'58	min. Earth dist.	3440 May 11 21:12	21° <del>ℓ</del> 16'16	29.34792 AU
morning rise	3433 Nov 14 23:48	7° <del>ℓ</del> 45'17		direct	3440 Jul 31 01:05	19° <del>ℓ</del> 53'04	
retrograde	3434 Feb 09 15:19	9° <del>ℓ</del> 37'07		evening set	3440 Oct 29 17:30	21° <del>ℓ</del> 48'54	
opposition	3434 Apr 28 07:14	8° <del>ℓ</del> 15'07	1°35'41				
min. Earth dist.	3434 Apr 29 04:09	8° <del>ℓ</del> 13'40	29.31533 AU	conjunction	3440 Nov 14 09:20	22° <del>ℓ</del> 23'37	1°34'31
direct	3434 Jul 18 06:54	6° <del>ℓ</del> 50'11		minimum elong	3440 Nov 14 09:20	22° <del>ℓ</del> 23'37	1°34'32
evening set	3434 Oct 16 23:55	8° <del>ℓ</del> 46'00		max. Earth dist.	3440 Nov 13 12:02	22° <del>ℓ</del> 21'38	31.34860 AU
				morning rise	3440 Nov 29 21:51	22° <del>ℓ</del> 58'05	
conjunction	3434 Nov 01 18:35	9° <del>ℓ</del> 20'54	1°30'10	retrograde	3441 Feb 24 14:59	24° <del>ℓ</del> 50'05	
minimum elong	3434 Nov 01 18:35	9° <del>ℓ</del> 20'54	1°30'10	opposition	3441 May 13 11:51	23° <del>ℓ</del> 28'18	1°41'07
max. Earth dist.	3434 Oct 31 19:51	9° <del>ℓ</del> 18'48	31.31659 AU	min. Earth dist.	3441 May 14 08:08	23° <del>ℓ</del> 26'55	29.35098 AU
morning rise	3434 Nov 17 10:02	9° <del>ℓ</del> 55'32		direct	3441 Aug 02 14:25	22° <del>ℓ</del> 03'44	
retrograde	3435 Feb 12 02:10	11° <del>ℓ</del> 47'21		evening set	3441 Nov 01 04:24	23° <del>ℓ</del> 59'32	
opposition	3435 Apr 30 18:00	10° <del>ℓ</del> 25'22	1°36'53				
min. Earth dist.	3435 May 01 13:59	10° <del>ℓ</del> 24'00	29.32008 AU	conjunction	3441 Nov 16 19:37	24° <del>ℓ</del> 34'13	1°34'47
direct	3435 Jul 20 17:07	9° <del>ℓ</del> 00'29		minimum elong	3441 Nov 16 19:37	24° <del>ℓ</del> 34'13	1°34'46
evening set	3435 Oct 19 10:48	10° <del>ℓ</del> 56'17		max. Earth dist.	3441 Nov 15 21:20	24° <del>ℓ</del> 32'09	31.35095 AU
max. Earth dist.	3435 Nov 03 07:41	11° <del>ℓ</del> 29'10	31.32176 AU	morning rise	3441 Dec 02 07:47	25° <del>ℓ</del> 08'40	
				retrograde	3442 Feb 27 01:42	27° <del>ℓ</del> 00'40	
conjunction	3435 Nov 04 05:07	11° <del>ℓ</del> 31'09	1°31'14	opposition	3442 May 15 23:02	25° <del>ℓ</del> 38'54	1°41'19
minimum elong	3435 Nov 04 05:07	11° <del>ℓ</del> 31'09	1°31'13	min. Earth dist.	3442 May 16 19:28	25° <del>ℓ</del> 37'30	29.35272 AU
morning rise	3435 Nov 19 19:55	12° <del>ℓ</del> 05'45		direct	3442 Aug 05 01:41	24° <del>ℓ</del> 14'19	
retrograde	3436 Feb 14 09:59	13° <del>ℓ</del> 57'36		evening set	3442 Nov 03 15:03	26° <del>ℓ</del> 10'05	
opposition	3436 May 02 04:54	12° <del>ℓ</del> 35'39	1°37'57	max. Earth dist.	3442 Nov 18 08:45	26° <del>ℓ</del> 42'46	31.35200 AU
min. Earth dist.	3436 May 03 01:31	12° <del>ℓ</del> 34'14	29.32566 AU				
direct	3436 Jul 22 04:18	11° <del>ℓ</del> 10'49		conjunction	3442 Nov 19 05:58	26° <del>ℓ</del> 44'45	1°34'54
evening set	3436 Oct 20 21:54	13° <del>ℓ</del> 06'37		minimum elong	3442 Nov 19 05:58	26° <del>ℓ</del> 44'45	1°34'55
				morning rise	3442 Dec 04 17:34	27° <del>ℓ</del> 19'09	
conjunction	3436 Nov 05 15:35	13° <del>ℓ</del> 41'28	1°32'09	retrograde	3443 Mar 01 10:33	29° <del>ℓ</del> 11'10	
minimum elong	3436 Nov 05 15:35	13° <del>ℓ</del> 41'28	1°32'10	opposition	3443 May 18 10:24	27° <del>ℓ</del> 49'22	1°41'23
max. Earth dist.	3436 Nov 04 17:32	13° <del>ℓ</del> 39'25	31.32776 AU	min. Earth dist.	3443 May 19 07:08	27° <del>ℓ</del> 47'58	29.35308 AU
morning rise	3436 Nov 21 06:04	14° <del>ℓ</del> 16'02		direct	3443 Aug 07 15:15	26° <del>ℓ</del> 24'48	
	3436 Dec 12 15:16	15° <del>ℓ</del>		evening set	3443 Nov 06 01:35	28° <del>ℓ</del> 20'30	
retrograde	3437 Feb 15 20:42	16° <del>ℓ</del> 07'54					
	3437 Apr 26 02:31	15° <del>ℓ</del>		conjunction	3443 Nov 21 15:54	28° <del>ℓ</del> 55'08	1°34'54
opposition	3437 May 04 15:30	14° <del>ℓ</del> 46'00	1°38'52	minimum elong	3443 Nov 21 15:54	28° <del>ℓ</del> 55'08	1°34'54
min. Earth dist.	3437 May 05 11:07	14° <del>ℓ</del> 44'40	29.33183 AU	max. Earth dist.	3443 Nov 20 17:46	28° <del>ℓ</del> 53'04	31.35190 AU
direct	3437 Jul 24 14:57	13° <del>ℓ</del> 21'14		morning rise	3443 Dec 07 03:18	29° <del>ℓ</del> 29'31	

	3443 Dec 21 14:04	0°♏		evening set	3450 Nov 21 00:47	13°♏30'21	
retrograde	3444 Mar 02 21:16	1°♏21'32					
opposition	3444 May 19 21:37	29°♏59'42	1°41'18	conjunction	3450 Dec 06 12:16	14°♏04'49	1°31'06
	3444 May 19 17:10	30°♏		minimum elong	3450 Dec 06 12:16	14°♏04'49	1°31'07
min. Earth dist.	3444 May 20 17:33	29°♏58'20	29.35258 AU	max. Earth dist.	3450 Dec 05 17:39	14°♏03'05	31.35507 AU
direct	3444 Aug 09 02:37	28°♏35'07		morning rise	3450 Dec 21 21:16	14°♏39'05	
	3444 Oct 23 21:27	0°♏		retrograde	3451 Mar 18 19:26	16°♏31'25	
evening set	3444 Nov 07 11:58	0°♏30'44		opposition	3451 Jun 05 05:35	15°♏09'31	1°36'46
max. Earth dist.	3444 Nov 22 05:02	1°♏03'23	31.35103 AU	min. Earth dist.	3451 Jun 05 22:37	15°♏08'22	29.35675 AU
				direct	3451 Aug 25 09:13	13°♏45'12	
conjunction	3444 Nov 23 02:01	1°♏05'21	1°34'45	evening set	3451 Nov 23 10:36	15°♏40'35	
minimum elong	3444 Nov 23 02:01	1°♏05'20	1°34'46				
morning rise	3444 Dec 08 12:52	1°♏39'42		conjunction	3451 Dec 08 21:54	16°♏15'03	1°30'02
retrograde	3445 Mar 05 04:27	3°♏31'43		minimum elong	3451 Dec 08 21:55	16°♏15'03	1°30'01
opposition	3445 May 22 08:51	2°♏09'50	1°41'05	max. Earth dist.	3451 Dec 08 04:48	16°♏13'27	31.35637 AU
min. Earth dist.	3445 May 23 05:28	2°♏08'25	29.35154 AU	morning rise	3451 Dec 24 06:29	16°♏49'18	
direct	3445 Aug 11 14:21	0°♏45'14		retrograde	3452 Mar 20 05:08	18°♏41'43	
evening set	3445 Nov 09 22:23	2°♏40'47		opposition	3452 Jun 06 17:22	17°♏19'51	1°35'33
				min. Earth dist.	3452 Jun 07 10:33	17°♏18'41	29.35750 AU
conjunction	3445 Nov 25 11:52	3°♏15'22	1°34'29	direct	3452 Aug 26 22:22	15°♏55'37	
minimum elong	3445 Nov 25 11:52	3°♏15'22	1°34'29	evening set	3452 Nov 24 20:44	17°♏50'58	
max. Earth dist.	3445 Nov 24 14:35	3°♏13'22	31.35009 AU				
morning rise	3445 Dec 10 22:29	3°♏49'42		conjunction	3452 Dec 10 07:31	18°♏25'25	1°28'50
retrograde	3446 Mar 07 14:27	5°♏41'43		minimum elong	3452 Dec 10 07:31	18°♏25'25	1°28'50
opposition	3446 May 24 20:08	4°♏19'47	1°40'43	max. Earth dist.	3452 Dec 09 13:36	18°♏23'45	31.35662 AU
min. Earth dist.	3446 May 25 15:19	4°♏18'29	29.35074 AU	morning rise	3452 Dec 25 16:00	18°♏59'41	
direct	3446 Aug 14 01:24	2°♏55'11		retrograde	3453 Mar 22 16:45	20°♏52'11	
evening set	3446 Nov 12 08:30	4°♏50'40		opposition	3453 Jun 09 05:01	19°♏30'19	1°34'11
				min. Earth dist.	3453 Jun 09 21:17	19°♏29'13	29.35710 AU
conjunction	3446 Nov 27 21:37	5°♏25'13	1°34'05	direct	3453 Aug 29 09:31	18°♏06'08	
minimum elong	3446 Nov 27 21:37	5°♏25'13	1°34'05	evening set	3453 Nov 27 06:44	20°♏01'28	
max. Earth dist.	3446 Nov 27 01:23	5°♏23'20	31.34954 AU				
morning rise	3446 Dec 13 07:45	5°♏59'33		conjunction	3453 Dec 12 17:20	20°♏35'55	1°27'30
retrograde	3447 Mar 09 23:44	7°♏51'36		minimum elong	3453 Dec 12 17:20	20°♏35'55	1°27'30
opposition	3447 May 27 07:38	6°♏29'38	1°40'13	max. Earth dist.	3453 Dec 12 00:28	20°♏34'20	31.35544 AU
min. Earth dist.	3447 May 28 03:14	6°♏28'18	29.35069 AU	morning rise	3453 Dec 28 01:24	21°♏10'10	
direct	3447 Aug 16 11:08	5°♏05'03		retrograde	3454 Mar 25 01:00	23°♏02'45	
evening set	3447 Nov 14 18:38	7°♏00'30		opposition	3454 Jun 11 17:05	21°♏40'53	1°32'42
max. Earth dist.	3447 Nov 29 11:46	7°♏33'11	31.35004 AU	min. Earth dist.	3454 Jun 12 10:02	21°♏39'44	29.35515 AU
				direct	3454 Aug 31 21:14	20°♏16'45	
conjunction	3447 Nov 30 07:20	7°♏35'01	1°33'32	evening set	3454 Nov 29 16:39	22°♏12'02	
minimum elong	3447 Nov 30 07:20	7°♏35'01	1°33'32	max. Earth dist.	3454 Dec 14 09:37	22°♏44'51	31.35281 AU
morning rise	3447 Dec 15 17:11	8°♏09'19					
retrograde	3448 Mar 11 10:11	10°♏01'25		conjunction	3454 Dec 15 02:50	22°♏46'28	1°26'03
opposition	3448 May 28 18:53	8°♏39'27	1°39'34	minimum elong	3454 Dec 15 02:50	22°♏46'28	1°26'03
min. Earth dist.	3448 May 29 12:58	8°♏38'13	29.35158 AU	morning rise	3454 Dec 30 10:47	23°♏20'42	
direct	3448 Aug 17 23:43	7°♏14'55		retrograde	3455 Mar 27 11:31	25°♏13'22	
evening set	3448 Nov 16 04:42	9°♏10'19		opposition	3455 Jun 14 05:00	23°♏51'29	1°31'05
				min. Earth dist.	3455 Jun 14 20:40	23°♏50'25	29.35168 AU
conjunction	3448 Dec 01 17:00	9°♏44'50	1°32'52	direct	3455 Sep 03 08:23	22°♏27'22	
minimum elong	3448 Dec 01 17:00	9°♏44'50	1°32'52	evening set	3455 Dec 02 02:32	24°♏22'36	
max. Earth dist.	3448 Nov 30 21:36	9°♏43'01	31.35136 AU				
morning rise	3448 Dec 17 02:34	10°♏19'07		conjunction	3455 Dec 17 12:29	24°♏57'01	1°24'28
retrograde	3449 Mar 13 21:53	12°♏11'17		minimum elong	3455 Dec 17 12:30	24°♏57'01	1°24'28
opposition	3449 May 31 06:23	10°♏49'20	1°38'46	max. Earth dist.	3455 Dec 16 19:51	24°♏55'27	31.34859 AU
min. Earth dist.	3449 Jun 01 00:33	10°♏48'06	29.35326 AU	morning rise	3456 Jan 01 20:12	25°♏31'16	
direct	3449 Aug 20 09:58	9°♏24'51		retrograde	3456 Mar 28 21:18	27°♏24'00	
evening set	3449 Nov 18 14:41	11°♏20'16		opposition	3456 Jun 15 16:57	26°♏02'03	1°29'21
max. Earth dist.	3449 Dec 03 08:31	11°♏53'03	31.35325 AU	min. Earth dist.	3456 Jun 16 09:25	26°♏00'57	29.34683 AU
				direct	3456 Sep 04 18:07	24°♏37'57	
conjunction	3449 Dec 04 02:41	11°♏54'45	1°32'03	evening set	3456 Dec 03 12:17	26°♏33'06	
minimum elong	3449 Dec 04 02:41	11°♏54'45	1°32'03				
morning rise	3449 Dec 19 11:50	12°♏29'01		conjunction	3456 Dec 18 22:01	27°♏07'31	1°22'47
retrograde	3450 Mar 16 07:40	14°♏21'16		minimum elong	3456 Dec 18 22:01	27°♏07'31	1°22'47
opposition	3450 Jun 02 17:54	12°♏59'21	1°37'50	max. Earth dist.	3456 Dec 18 05:55	27°♏06'00	31.34325 AU
min. Earth dist.	3450 Jun 03 11:19	12°♏58'10	29.35507 AU	morning rise	3457 Jan 03 05:34	27°♏41'45	
direct	3450 Aug 22 22:26	11°♏34'57		retrograde	3457 Mar 31 07:39	29°♏34'32	

opposition	3457 Jun 18 04:53	28° $\mathring{A}$ 12'33	1°27'29	conjunction	3464 Jan 03 14:48	12° $\mathring{B}$ 19'52	1°07'48
min. Earth dist.	3457 Jun 18 20:00	28° $\mathring{A}$ 11'31	29.34090 AU	minimum elong	3464 Jan 03 14:49	12° $\mathring{B}$ 19'52	1°07'48
direct	3457 Sep 07 07:02	26° $\mathring{A}$ 48'26		max. Earth dist.	3464 Jan 03 03:52	12° $\mathring{B}$ 18'50	31.30902 AU
evening set	3457 Dec 05 21:56	28° $\mathring{A}$ 43'31		morning rise	3464 Jan 18 21:35	12° $\mathring{B}$ 54'07	
				retrograde	3464 Apr 15 11:37	14° $\mathring{B}$ 47'32	
conjunction	3457 Dec 21 07:18	29° $\mathring{A}$ 17'54	1°20'58	opposition	3464 Jul 03 17:55	13° $\mathring{B}$ 25'17	1°11'04
minimum elong	3457 Dec 21 07:19	29° $\mathring{A}$ 17'54	1°20'58	min. Earth dist.	3464 Jul 04 03:34	13° $\mathring{B}$ 24'37	29.30725 AU
max. Earth dist.	3457 Dec 20 15:18	29° $\mathring{A}$ 16'24	31.33706 AU	direct	3464 Sep 22 16:06	12° $\mathring{B}$ 01'25	
morning rise	3458 Jan 05 14:44	29° $\mathring{A}$ 52'08		evening set	3464 Dec 20 16:13	13° $\mathring{B}$ 56'09	
	3458 Jan 09 05:07	0° $\mathring{B}$					
retrograde	3458 Apr 02 19:24	1° $\mathring{B}$ 45'00		conjunction	3465 Jan 05 00:11	14° $\mathring{B}$ 30'31	1°05'14
opposition	3458 Jun 20 16:59	0° $\mathring{B}$ 22'55	1°25'29	minimum elong	3465 Jan 05 00:11	14° $\mathring{B}$ 30'31	1°05'14
min. Earth dist.	3458 Jun 21 08:02	0° $\mathring{B}$ 21'54	29.33469 AU	max. Earth dist.	3465 Jan 04 13:55	14° $\mathring{B}$ 29'33	31.30435 AU
	3458 Jul 05 00:01	30° $\mathring{R}$ $\mathring{A}$		morning rise	3465 Jan 20 06:52	15° $\mathring{B}$ 04'47	
direct	3458 Sep 09 16:54	28° $\mathring{A}$ 58'48		retrograde	3465 Apr 17 21:58	16° $\mathring{B}$ 58'20	
	3458 Nov 11 19:11	0° $\mathring{B}$		opposition	3465 Jul 06 06:28	15° $\mathring{B}$ 36'03	1°08'17
evening set	3458 Dec 08 07:27	0° $\mathring{B}$ 53'49		min. Earth dist.	3465 Jul 06 16:40	15° $\mathring{B}$ 35'21	29.30211 AU
				direct	3465 Sep 25 02:18	14° $\mathring{B}$ 12'15	
conjunction	3458 Dec 23 16:40	1° $\mathring{B}$ 28'12	1°19'03	evening set	3465 Dec 23 01:41	16° $\mathring{B}$ 06'55	
minimum elong	3458 Dec 23 16:41	1° $\mathring{B}$ 28'12	1°19'04				
max. Earth dist.	3458 Dec 23 02:16	1° $\mathring{B}$ 26'50	31.33098 AU	conjunction	3466 Jan 07 09:31	16° $\mathring{B}$ 41'17	1°02'34
morning rise	3459 Jan 07 23:51	2° $\mathring{B}$ 02'25		minimum elong	3466 Jan 07 09:31	16° $\mathring{B}$ 41'17	1°02'34
retrograde	3459 Apr 05 05:02	3° $\mathring{B}$ 55'21		max. Earth dist.	3466 Jan 07 00:06	16° $\mathring{B}$ 40'24	31.29869 AU
opposition	3459 Jun 23 05:03	2° $\mathring{B}$ 33'13	1°23'23	morning rise	3466 Jan 22 16:07	17° $\mathring{B}$ 15'34	
min. Earth dist.	3459 Jun 23 18:57	2° $\mathring{B}$ 32'16	29.32876 AU	retrograde	3466 Apr 20 08:26	19° $\mathring{B}$ 09'14	
direct	3459 Sep 12 05:08	1° $\mathring{B}$ 09'06		opposition	3466 Jul 08 18:58	17° $\mathring{B}$ 46'54	1°05'23
evening set	3459 Dec 10 16:56	3° $\mathring{B}$ 04'03		min. Earth dist.	3466 Jul 09 03:46	17° $\mathring{B}$ 46'19	29.29570 AU
max. Earth dist.	3459 Dec 25 11:16	3° $\mathring{B}$ 37'03	31.32545 AU	direct	3466 Sep 27 14:29	16° $\mathring{B}$ 23'08	
				evening set	3466 Dec 25 11:19	18° $\mathring{B}$ 17'46	
conjunction	3459 Dec 26 01:47	3° $\mathring{B}$ 38'25	1°17'01				
minimum elong	3459 Dec 26 01:48	3° $\mathring{B}$ 38'25	1°17'01	conjunction	3467 Jan 09 18:55	18° $\mathring{B}$ 52'08	0°59'49
morning rise	3460 Jan 10 08:59	4° $\mathring{B}$ 12'39		minimum elong	3467 Jan 09 18:55	18° $\mathring{B}$ 52'08	0°59'50
retrograde	3460 Apr 06 17:16	6° $\mathring{B}$ 05'39		max. Earth dist.	3467 Jan 09 09:17	18° $\mathring{B}$ 51'13	31.29159 AU
opposition	3460 Jun 24 17:07	4° $\mathring{B}$ 43'28	1°21'09	morning rise	3467 Jan 25 01:34	19° $\mathring{B}$ 26'25	
min. Earth dist.	3460 Jun 25 06:06	4° $\mathring{B}$ 42'35	29.32366 AU	retrograde	3467 Apr 22 20:29	21° $\mathring{B}$ 20'13	
direct	3460 Sep 13 16:20	3° $\mathring{B}$ 19'23		opposition	3467 Jul 11 07:35	19° $\mathring{B}$ 57'50	1°02'24
evening set	3460 Dec 12 02:20	5° $\mathring{B}$ 14'16		min. Earth dist.	3467 Jul 11 16:29	19° $\mathring{B}$ 57'14	29.28794 AU
				direct	3467 Sep 29 23:50	18° $\mathring{B}$ 34'05	
conjunction	3460 Dec 27 11:09	5° $\mathring{B}$ 48'38	1°14'52	evening set	3467 Dec 27 20:43	20° $\mathring{B}$ 28'39	
minimum elong	3460 Dec 27 11:09	5° $\mathring{B}$ 48'38	1°14'53				
max. Earth dist.	3460 Dec 26 22:34	5° $\mathring{B}$ 47'28	31.32072 AU	conjunction	3468 Jan 12 04:22	21° $\mathring{B}$ 03'01	0°56'59
morning rise	3461 Jan 11 18:02	6° $\mathring{B}$ 22'52		minimum elong	3468 Jan 12 04:23	21° $\mathring{B}$ 03'01	0°56'59
retrograde	3461 Apr 09 03:36	8° $\mathring{B}$ 15'58		max. Earth dist.	3468 Jan 11 20:03	21° $\mathring{B}$ 02'14	31.28311 AU
opposition	3461 Jun 27 05:11	6° $\mathring{B}$ 53'45	1°18'48	morning rise	3468 Jan 27 10:55	21° $\mathring{B}$ 37'19	
min. Earth dist.	3461 Jun 27 17:46	6° $\mathring{B}$ 52'54	29.31919 AU	retrograde	3468 Apr 24 06:51	23° $\mathring{B}$ 31'13	
direct	3461 Sep 16 05:35	5° $\mathring{B}$ 29'43		opposition	3468 Jul 12 20:10	22° $\mathring{B}$ 08'46	0°59'20
evening set	3461 Dec 14 11:54	7° $\mathring{B}$ 24'34		min. Earth dist.	3468 Jul 13 04:16	22° $\mathring{B}$ 08'13	29.27857 AU
				direct	3468 Oct 01 12:10	20° $\mathring{B}$ 45'01	
conjunction	3461 Dec 29 20:20	7° $\mathring{B}$ 58'56	1°12'37	evening set	3468 Dec 29 06:19	22° $\mathring{B}$ 39'31	
minimum elong	3461 Dec 29 20:20	7° $\mathring{B}$ 58'56	1°12'37				
max. Earth dist.	3461 Dec 29 07:37	7° $\mathring{B}$ 57'44	31.31670 AU	conjunction	3469 Jan 13 13:41	23° $\mathring{B}$ 13'53	0°54'05
morning rise	3462 Jan 14 03:17	8° $\mathring{B}$ 33'10		minimum elong	3469 Jan 13 13:41	23° $\mathring{B}$ 13'53	0°54'05
retrograde	3462 Apr 11 15:28	10° $\mathring{B}$ 26'22		max. Earth dist.	3469 Jan 13 04:52	23° $\mathring{B}$ 13'03	31.27315 AU
opposition	3462 Jun 29 17:23	9° $\mathring{B}$ 04'08	1°16'20	morning rise	3469 Jan 28 20:24	23° $\mathring{B}$ 48'12	
min. Earth dist.	3462 Jun 30 04:22	9° $\mathring{B}$ 03'23	29.31534 AU	retrograde	3469 Apr 26 19:38	25° $\mathring{B}$ 42'12	
direct	3462 Sep 18 16:28	7° $\mathring{B}$ 40'09		opposition	3469 Jul 15 08:41	24° $\mathring{B}$ 19'39	0°56'11
evening set	3462 Dec 16 21:10	9° $\mathring{B}$ 34'58		min. Earth dist.	3469 Jul 15 16:13	24° $\mathring{B}$ 19'08	29.26809 AU
				direct	3469 Oct 03 23:14	22° $\mathring{B}$ 55'54	
conjunction	3463 Jan 01 05:32	10° $\mathring{B}$ 09'20	1°10'16	evening set	3469 Dec 31 15:38	24° $\mathring{B}$ 50'20	
minimum elong	3463 Jan 01 05:32	10° $\mathring{B}$ 09'20	1°10'16				
max. Earth dist.	3462 Dec 31 18:24	10° $\mathring{B}$ 08'17	31.31291 AU	conjunction	3470 Jan 15 23:06	25° $\mathring{B}$ 24'42	0°51'06
morning rise	3463 Jan 16 12:17	10° $\mathring{B}$ 43'35		minimum elong	3470 Jan 15 23:06	25° $\mathring{B}$ 24'42	0°51'05
retrograde	3463 Apr 14 00:25	12° $\mathring{B}$ 36'54		max. Earth dist.	3470 Jan 15 16:04	25° $\mathring{B}$ 24'02	31.26229 AU
opposition	3463 Jul 02 05:47	11° $\mathring{B}$ 14'38	1°13'45	morning rise	3470 Jan 31 05:40	25° $\mathring{B}$ 59'02	
min. Earth dist.	3463 Jul 02 17:00	11° $\mathring{B}$ 13'53	29.31149 AU	retrograde	3470 Apr 29 06:29	27° $\mathring{B}$ 53'07	
direct	3463 Sep 21 04:33	9° $\mathring{B}$ 50'44		opposition	3470 Jul 17 21:24	26° $\mathring{B}$ 30'28	0°52'58
evening set	3463 Dec 19 06:42	11° $\mathring{B}$ 45'30		min. Earth dist.	3470 Jul 18 04:34	26° $\mathring{B}$ 29'59	29.25695 AU

direct	3470 Oct 06 12:19	25°30'43"		conjunction	3477 Jan 30 15:50	10°41'19"	0°28'22"
evening set	3471 Jan 03 00:56	27°30'10"		minimum elong	3477 Jan 30 15:50	10°41'19"	0°28'22"
				max. Earth dist.	3477 Jan 30 15:33	10°41'18"	31.19961 AU
conjunction	3471 Jan 18 08:10	27°35'26"	0°48'02"	morning rise	3477 Feb 14 22:59	11°15'48"	
minimum elong	3471 Jan 18 08:11	27°35'26"	0°48'03"	retrograde	3477 May 14 12:07	13°10'51"	
max. Earth dist.	3471 Jan 18 01:11	27°34'47"	31.25126 AU	opposition	3477 Aug 02 14:09	11°47'51"	0°28'27"
morning rise	3471 Feb 02 14:58	28°30'47"		min. Earth dist.	3477 Aug 02 14:14	11°47'51"	29.19576 AU
	3471 Apr 16 06:25	0°00'		direct	3477 Oct 21 17:54	10°24'25"	
retrograde	3471 May 01 18:40	0°03'58"		evening set	3478 Jan 17 18:16	12°18'29"	
	3471 May 17 07:57	30°00'					
opposition	3471 Jul 20 09:58	28°34'14"	0°49'39"	conjunction	3478 Feb 02 01:17	12°52'55"	0°24'54"
min. Earth dist.	3471 Jul 20 15:25	28°34'05"	29.24608 AU	minimum elong	3478 Feb 02 01:17	12°52'55"	0°24'54"
direct	3471 Oct 08 23:23	27°31'7"		max. Earth dist.	3478 Feb 02 00:41	12°52'52"	31.19172 AU
evening set	3472 Jan 05 10:12	29°31'46"		morning rise	3478 Feb 17 08:43	13°27'26"	
					3478 Apr 09 21:46	15°00'	
conjunction	3472 Jan 20 17:28	29°34'09"	0°44'55"	retrograde	3478 May 17 02:00	15°22'38"	
minimum elong	3472 Jan 20 17:28	29°34'09"	0°44'54"		3478 Jun 24 11:04	15°00'	
max. Earth dist.	3472 Jan 20 12:05	29°34'38"	31.24061 AU	opposition	3478 Aug 05 03:09	13°59'36"	0°24'43"
	3472 Jan 26 20:21	0°00'		min. Earth dist.	3478 Aug 05 02:31	13°59'38"	29.18757 AU
morning rise	3472 Feb 05 00:11	0°20'30"		direct	3478 Oct 24 04:07	12°36'12"	
retrograde	3472 May 03 04:07	2°14'48"		evening set	3479 Jan 20 03:42	14°30'14"	
opposition	3472 Jul 21 22:29	0°52'00"	0°46'17"		3479 Feb 02 09:15	15°00'	
min. Earth dist.	3472 Jul 22 03:51	0°51'38"	29.23586 AU				
	3472 Aug 25 10:58	30°00'		conjunction	3479 Feb 04 10:54	15°04'42"	0°21'24"
direct	3472 Oct 10 11:45	29°32'16"		minimum elong	3479 Feb 04 10:54	15°04'42"	0°21'25"
	3472 Nov 23 16:52	0°00'		max. Earth dist.	3479 Feb 04 11:59	15°04'48"	31.18297 AU
evening set	3473 Jan 06 19:31	1°22'29"		morning rise	3479 Feb 19 18:20	15°39'13"	
				retrograde	3479 May 19 13:52	17°34'35"	
conjunction	3473 Jan 22 02:41	1°56'53"	0°41'43"	opposition	3479 Aug 07 16:13	16°11'29"	0°20'57"
minimum elong	3473 Jan 22 02:42	1°56'53"	0°41'44"	min. Earth dist.	3479 Aug 07 15:27	16°11'32"	29.17820 AU
max. Earth dist.	3473 Jan 21 22:00	1°56'27"	31.23099 AU		3479 Sep 29 09:12	15°00'	
morning rise	3473 Feb 06 09:32	2°31'16"		direct	3479 Oct 26 16:12	14°48'06"	
retrograde	3473 May 05 15:53	4°25'41"			3479 Nov 22 10:29	15°00'	
opposition	3473 Jul 24 11:04	3°02'49"	0°42'50"	evening set	3480 Jan 22 13:28	16°42'06"	
min. Earth dist.	3473 Jul 24 14:18	3°02'36"	29.22667 AU				
direct	3473 Oct 12 23:44	1°39'08"		conjunction	3480 Feb 06 20:34	17°16'34"	0°17'52"
evening set	3474 Jan 09 04:43	3°33'19"		minimum elong	3480 Feb 06 20:35	17°16'34"	0°17'52"
				max. Earth dist.	3480 Feb 06 21:18	17°16'38"	31.17306 AU
conjunction	3474 Jan 24 11:50	4°07'43"	0°38'28"	morning rise	3480 Feb 22 04:18	17°51'07"	
minimum elong	3474 Jan 24 11:50	4°07'43"	0°38'28"	retrograde	3480 May 21 02:57	19°46'36"	
max. Earth dist.	3474 Jan 24 08:12	4°07'23"	31.22226 AU	opposition	3480 Aug 09 05:04	18°23'26"	0°17'10"
morning rise	3474 Feb 08 18:45	4°42'07"		min. Earth dist.	3480 Aug 09 03:01	18°23'34"	29.16763 AU
retrograde	3474 May 08 02:25	6°36'42"		direct	3480 Oct 28 02:59	17°00'04"	
opposition	3474 Jul 26 23:53	5°13'48"	0°39'19"	evening set	3481 Jan 23 23:09	18°54'00"	
min. Earth dist.	3474 Jul 27 03:05	5°13'34"	29.21842 AU				
direct	3474 Oct 15 10:00	3°50'10"		conjunction	3481 Feb 08 06:23	19°28'30"	0°14'19"
evening set	3475 Jan 11 13:58	5°44'18"		minimum elong	3481 Feb 08 06:23	19°28'30"	0°14'20"
				behind sun begin	3481 Feb 08 03:15	19°28'13"	
conjunction	3475 Jan 26 21:08	6°18'43"	0°35'09"	behind sun end	3481 Feb 08 09:30	19°28'47"	
minimum elong	3475 Jan 26 21:08	6°18'43"	0°35'10"	max. Earth dist.	3481 Feb 08 08:08	19°28'39"	31.16179 AU
max. Earth dist.	3475 Jan 26 18:59	6°18'31"	31.21447 AU	morning rise	3481 Feb 23 14:10	20°03'03"	
morning rise	3475 Feb 11 04:07	6°53'09"		retrograde	3481 May 23 14:15	21°58'39"	
retrograde	3475 May 10 12:53	8°47'52"		opposition	3481 Aug 11 18:13	20°35'23"	0°13'21"
opposition	3475 Jul 29 12:29	7°24'56"	0°35'45"	min. Earth dist.	3481 Aug 11 16:29	20°35'30"	29.15578 AU
min. Earth dist.	3475 Jul 29 13:52	7°24'51"	29.21081 AU	direct	3481 Oct 30 16:09	19°12'01"	
direct	3475 Oct 17 21:35	6°01'22"		evening set	3482 Jan 26 08:41	21°05'52"	
evening set	3476 Jan 13 23:20	7°55'29"					
				conjunction	3482 Feb 10 15:58	21°40'22"	0°10'45"
conjunction	3476 Jan 29 06:24	8°29'55"	0°31'47"	minimum elong	3482 Feb 10 15:58	21°40'23"	0°10'45"
minimum elong	3476 Jan 29 06:24	8°29'55"	0°31'47"	behind sun begin	3482 Feb 10 11:00	21°39'56"	
max. Earth dist.	3476 Jan 29 04:21	8°29'44"	31.20704 AU	behind sun end	3482 Feb 10 20:55	21°40'49"	
morning rise	3476 Feb 13 13:36	9°04'22"		max. Earth dist.	3482 Feb 10 18:15	21°40'34"	31.14961 AU
retrograde	3476 May 12 01:09	10°59'16"		morning rise	3482 Feb 25 23:59	22°14'57"	
opposition	3476 Jul 31 01:19	9°36'18"	0°32'07"	retrograde	3482 May 26 03:16	24°10'39"	
min. Earth dist.	3476 Jul 31 02:28	9°36'13"	29.20347 AU	opposition	3482 Aug 14 07:14	22°47'17"	0°09'31"
direct	3476 Oct 19 06:06	8°12'47"		min. Earth dist.	3482 Aug 14 03:42	22°47'31"	29.14323 AU
evening set	3477 Jan 15 08:39	10°06'53"		direct	3482 Nov 02 05:06	21°23'53"	

evening set	3483 Jan 28 18:20	23° $\approx$ 17'40		minimum elong	3488 Feb 24 02:30	4° $\times$ 51'22	0°11'00
				behind sun begin	3488 Feb 23 21:37	4° $\times$ 50'55	
conjunction	3483 Feb 13 01:39	23° $\approx$ 52'11	0°07'10	behind sun end	3488 Feb 24 07:22	4° $\times$ 51'48	
minimum elong	3483 Feb 13 01:38	23° $\approx$ 52'11	0°07'11	max. Earth dist.	3488 Feb 24 11:05	4° $\times$ 52'10	31.08435 AU
behind sun begin	3483 Feb 12 19:44	23° $\approx$ 51'39		morning rise	3488 Mar 10 11:45	5° $\times$ 26'06	
behind sun end	3483 Feb 13 07:33	23° $\approx$ 52'43		retrograde	3488 Jun 08 00:55	7° $\times$ 22'37	
max. Earth dist.	3483 Feb 13 04:37	23° $\approx$ 52'26	31.13688 AU	opposition	3488 Aug 27 13:07	5° $\times$ 58'47	-0°13'39
morning rise	3483 Feb 28 09:54	24° $\approx$ 26'47		min. Earth dist.	3488 Aug 27 04:41	5° $\times$ 59'22	29.08025 AU
retrograde	3483 May 28 13:50	26° $\approx$ 22'35		direct	3488 Nov 14 22:42	4° $\times$ 35'31	
opposition	3483 Aug 16 20:13	24° $\approx$ 59'05	0°05'40	evening set	3489 Feb 10 04:30	6° $\times$ 29'05	
min. Earth dist.	3483 Aug 16 16:56	24° $\approx$ 59'19	29.13064 AU				
direct	3483 Nov 04 16:08	23° $\approx$ 35'41		conjunction	3489 Feb 25 12:27	7° $\times$ 03'42	-0°14'35
evening set	3484 Jan 31 03:52	25° $\approx$ 29'23		minimum elong	3489 Feb 25 12:27	7° $\times$ 03'42	0°14'34
				behind sun begin	3489 Feb 25 09:32	7° $\times$ 03'26	
conjunction	3484 Feb 15 11:22	26° $\approx$ 03'54	0°03'35	behind sun end	3489 Feb 25 15:22	7° $\times$ 03'58	
minimum elong	3484 Feb 15 11:22	26° $\approx$ 03'54	0°03'34	max. Earth dist.	3489 Feb 25 21:06	7° $\times$ 04'30	31.07619 AU
behind sun begin	3484 Feb 15 05:01	26° $\approx$ 03'20		morning rise	3489 Mar 12 22:04	7° $\times$ 38'28	
behind sun end	3484 Feb 15 17:43	26° $\approx$ 04'29		retrograde	3489 Jun 10 15:05	9° $\times$ 35'09	
max. Earth dist.	3484 Feb 15 15:51	26° $\approx$ 04'18	31.12452 AU	opposition	3489 Aug 30 02:14	8° $\times$ 11'18	-0°17'29
morning rise	3484 Mar 01 19:45	26° $\approx$ 38'32		min. Earth dist.	3489 Aug 29 16:18	8° $\times$ 11'58	29.07217 AU
retrograde	3484 May 30 00:18	28° $\approx$ 34'27		direct	3489 Nov 17 08:56	6° $\times$ 48'06	
opposition	3484 Aug 18 09:06	27° $\approx$ 10'51	0°01'48	evening set	3490 Feb 12 14:23	8° $\times$ 41'39	
min. Earth dist.	3484 Aug 18 03:55	27° $\approx$ 11'12	29.11857 AU				
direct	3484 Nov 06 04:35	25° $\approx$ 47'26		conjunction	3490 Feb 27 22:31	9° $\times$ 16'17	-0°18'10
evening set	3485 Feb 01 13:31	27° $\approx$ 41'04		minimum elong	3490 Feb 27 22:31	9° $\times$ 16'17	0°18'10
desc. node	3485 Feb 05 17:21	27° $\approx$ 50'21		max. Earth dist.	3490 Feb 28 08:22	9° $\times$ 17'13	31.06794 AU
				morning rise	3490 Mar 15 08:19	9° $\times$ 51'06	
conjunction	3485 Feb 16 20:55	28° $\approx$ 15'37	-0°00'07	retrograde	3490 Jun 13 03:53	11° $\times$ 47'57	
minimum elong	3485 Feb 16 20:56	28° $\approx$ 15'37	0°00'07	opposition	3490 Sep 01 15:33	10° $\times$ 24'04	-0°21'18
behind sun begin	3485 Feb 16 14:45	28° $\approx$ 15'03		min. Earth dist.	3490 Sep 01 05:53	10° $\times$ 24'43	29.06377 AU
behind sun end	3485 Feb 17 03:07	28° $\approx$ 16'10		direct	3490 Nov 19 21:24	9° $\times$ 00'56	
max. Earth dist.	3485 Feb 17 01:36	28° $\approx$ 16'01	31.11287 AU	evening set	3491 Feb 15 00:33	10° $\times$ 54'29	
morning rise	3485 Mar 04 05:37	28° $\approx$ 50'16					
	3485 Apr 08 13:58	0° $\times$		conjunction	3491 Mar 02 08:52	11° $\times$ 29'09	-0°21'43
retrograde	3485 Jun 01 12:19	0° $\times$ 46'19		minimum elong	3491 Mar 02 08:51	11° $\times$ 29'09	0°21'42
	3485 Jul 28 03:39	30° $\times$		max. Earth dist.	3491 Mar 02 19:11	11° $\times$ 30'07	31.05929 AU
opposition	3485 Aug 20 22:09	29° $\approx$ 22'38	-0°02'04	morning rise	3491 Mar 17 18:56	12° $\times$ 03'59	
min. Earth dist.	3485 Aug 20 16:30	29° $\approx$ 23'01	29.10755 AU	retrograde	3491 Jun 15 18:32	14° $\times$ 00'59	
direct	3485 Nov 08 14:08	27° $\approx$ 59'13		opposition	3491 Sep 04 04:34	12° $\times$ 37'04	-0°25'06
evening set	3486 Feb 03 23:07	29° $\approx$ 52'49		min. Earth dist.	3491 Sep 03 17:26	12° $\times$ 37'50	29.05469 AU
	3486 Feb 07 04:28	0° $\times$		direct	3491 Nov 22 09:52	11° $\times$ 13'58	
				evening set	3492 Feb 17 10:53	13° $\times$ 07'32	
conjunction	3486 Feb 19 06:49	0° $\times$ 27'23	-0°03'48				
minimum elong	3486 Feb 19 06:48	0° $\times$ 27'23	0°03'49	conjunction	3492 Mar 03 19:18	13° $\times$ 42'13	-0°25'14
behind sun begin	3486 Feb 19 00:28	0° $\times$ 26'48		minimum elong	3492 Mar 03 19:18	13° $\times$ 42'13	0°25'15
behind sun end	3486 Feb 19 13:08	0° $\times$ 27'57		max. Earth dist.	3492 Mar 04 05:46	13° $\times$ 43'12	31.04956 AU
max. Earth dist.	3486 Feb 19 13:30	0° $\times$ 27'59	31.10240 AU	morning rise	3492 Mar 19 05:41	14° $\times$ 17'06	
morning rise	3486 Mar 06 15:32	1° $\times$ 02'03		retrograde	3492 Jun 17 06:20	16° $\times$ 14'15	
retrograde	3486 Jun 03 23:25	2° $\times$ 58'15		opposition	3492 Sep 05 17:55	14° $\times$ 50'17	-0°28'51
opposition	3486 Aug 23 11:08	1° $\times$ 34'30	-0°05'56	min. Earth dist.	3492 Sep 05 07:26	14° $\times$ 51'00	29.04443 AU
min. Earth dist.	3486 Aug 23 04:03	1° $\times$ 34'59	29.09759 AU	direct	3492 Nov 23 20:56	13° $\times$ 27'13	
direct	3486 Nov 11 02:03	0° $\times$ 11'08		evening set	3493 Feb 18 21:07	15° $\times$ 20'45	
evening set	3487 Feb 06 08:48	2° $\times$ 04'42					
				conjunction	3493 Mar 06 05:49	15° $\times$ 55'27	-0°28'44
conjunction	3487 Feb 21 16:28	2° $\times$ 39'16	-0°07'24	minimum elong	3493 Mar 06 05:48	15° $\times$ 55'27	0°28'43
minimum elong	3487 Feb 21 16:28	2° $\times$ 39'16	0°07'24	max. Earth dist.	3493 Mar 06 17:20	15° $\times$ 56'32	31.03865 AU
behind sun begin	3487 Feb 21 10:36	2° $\times$ 38'44		morning rise	3493 Mar 21 16:22	16° $\times$ 30'21	
behind sun end	3487 Feb 21 22:20	2° $\times$ 39'48		retrograde	3493 Jun 19 18:10	18° $\times$ 27'38	
max. Earth dist.	3487 Feb 21 23:10	2° $\times$ 39'53	31.09300 AU	opposition	3493 Sep 08 07:09	17° $\times$ 03'36	-0°32'34
morning rise	3487 Mar 09 01:38	3° $\times$ 13'59		min. Earth dist.	3493 Sep 07 19:19	17° $\times$ 04'24	29.03282 AU
retrograde	3487 Jun 06 13:02	5° $\times$ 10'20		direct	3493 Nov 26 10:04	15° $\times$ 40'32	
opposition	3487 Aug 26 00:10	3° $\times$ 46'32	-0°09'48	evening set	3494 Feb 21 07:34	17° $\times$ 34'02	
min. Earth dist.	3487 Aug 25 16:07	3° $\times$ 47'05	29.08867 AU				
direct	3487 Nov 13 11:36	2° $\times$ 23'13		conjunction	3494 Mar 08 16:19	18° $\times$ 08'45	-0°32'11
evening set	3488 Feb 08 18:34	4° $\times$ 16'46		minimum elong	3494 Mar 08 16:19	18° $\times$ 08'45	0°32'11
				max. Earth dist.	3494 Mar 09 03:22	18° $\times$ 09'48	31.02649 AU
conjunction	3488 Feb 24 02:30	4° $\times$ 51'22	-0°11'00	morning rise	3494 Mar 24 03:20	18° $\times$ 43'41	

retrograde	3494 Jun 22 07:06	20° $\mathbf{\text{H}}$ 41'05	evening set	3501 Mar 09 08:47	3° $\mathbf{\text{Y}}$ 07'05
opposition	3494 Sep 10 20:27	19° $\mathbf{\text{H}}$ 16'57 -0°36'14			
min. Earth dist.	3494 Sep 10 08:49	19° $\mathbf{\text{H}}$ 17'45 29.02031 AU	conjunction	3501 Mar 24 19:12	3° $\mathbf{\text{Y}}$ 41'57 -0°54'43
direct	3494 Nov 28 20:26	17° $\mathbf{\text{H}}$ 53'52	minimum elong	3501 Mar 24 19:12	3° $\mathbf{\text{Y}}$ 41'57 0°54'43
evening set	3495 Feb 23 17:48	19° $\mathbf{\text{H}}$ 47'18	max. Earth dist.	3501 Mar 25 11:52	3° $\mathbf{\text{Y}}$ 43'32 30.94871 AU
			morning rise	3501 Apr 09 08:26	4° $\mathbf{\text{Y}}$ 17'05
conjunction	3495 Mar 11 02:57	20° $\mathbf{\text{H}}$ 22'03 -0°35'35	retrograde	3501 Jul 09 00:20	6° $\mathbf{\text{Y}}$ 15'15
minimum elong	3495 Mar 11 02:57	20° $\mathbf{\text{H}}$ 22'03 0°35'34	opposition	3501 Sep 27 15:57	4° $\mathbf{\text{Y}}$ 50'35 -1°00'06
max. Earth dist.	3495 Mar 11 15:36	20° $\mathbf{\text{H}}$ 23'15 31.01363 AU	min. Earth dist.	3501 Sep 26 23:28	4° $\mathbf{\text{Y}}$ 51'43 28.94522 AU
morning rise	3495 Mar 26 14:08	20° $\mathbf{\text{H}}$ 57'01	direct	3501 Dec 15 03:29	3° $\mathbf{\text{Y}}$ 27'27
retrograde	3495 Jun 24 18:03	22° $\mathbf{\text{H}}$ 54'31	evening set	3502 Mar 11 19:33	5° $\mathbf{\text{Y}}$ 20'46
opposition	3495 Sep 13 09:35	21° $\mathbf{\text{H}}$ 30'16 -0°39'50			
min. Earth dist.	3495 Sep 12 20:57	21° $\mathbf{\text{H}}$ 31'08 29.00723 AU	conjunction	3502 Mar 27 06:23	5° $\mathbf{\text{Y}}$ 55'39 -0°57'40
direct	3495 Dec 01 09:16	20° $\mathbf{\text{H}}$ 07'09	minimum elong	3502 Mar 27 06:22	5° $\mathbf{\text{Y}}$ 55'39 0°57'40
evening set	3496 Feb 26 04:17	22° $\mathbf{\text{H}}$ 00'33	max. Earth dist.	3502 Mar 28 00:20	5° $\mathbf{\text{Y}}$ 57'21 30.94096 AU
			morning rise	3502 Apr 11 19:51	6° $\mathbf{\text{Y}}$ 30'50
conjunction	3496 Mar 12 13:28	22° $\mathbf{\text{H}}$ 35'18 -0°38'55	retrograde	3502 Jul 11 14:02	8° $\mathbf{\text{Y}}$ 29'06
minimum elong	3496 Mar 12 13:28	22° $\mathbf{\text{H}}$ 35'18 0°38'56	min. Earth dist.	3502 Sep 29 11:05	7° $\mathbf{\text{Y}}$ 05'37 28.93755 AU
max. Earth dist.	3496 Mar 13 01:47	22° $\mathbf{\text{H}}$ 36'28 31.00059 AU	opposition	3502 Sep 30 04:54	7° $\mathbf{\text{Y}}$ 04'24 -1°03'12
morning rise	3496 Mar 28 01:06	23° $\mathbf{\text{H}}$ 10'18	direct	3502 Dec 17 16:43	5° $\mathbf{\text{Y}}$ 41'18
retrograde	3496 Jun 26 06:42	25° $\mathbf{\text{H}}$ 07'53	evening set	3503 Mar 14 06:38	7° $\mathbf{\text{Y}}$ 34'37
opposition	3496 Sep 14 22:37	23° $\mathbf{\text{H}}$ 43'33 -0°43'23			
min. Earth dist.	3496 Sep 14 09:20	23° $\mathbf{\text{H}}$ 44'27 28.99449 AU	conjunction	3503 Mar 29 17:35	8° $\mathbf{\text{Y}}$ 09'33 -1°00'31
direct	3496 Dec 02 19:07	22° $\mathbf{\text{H}}$ 20'24	minimum elong	3503 Mar 29 17:35	8° $\mathbf{\text{Y}}$ 09'33 1°00'31
evening set	3497 Feb 27 14:38	24° $\mathbf{\text{H}}$ 13'45	max. Earth dist.	3503 Mar 30 11:01	8° $\mathbf{\text{Y}}$ 11'12 30.93320 AU
			morning rise	3503 Apr 14 07:35	8° $\mathbf{\text{Y}}$ 44'45
conjunction	3497 Mar 15 00:10	24° $\mathbf{\text{H}}$ 48'32 -0°42'13	retrograde	3503 Jul 14 04:07	10° $\mathbf{\text{Y}}$ 43'09
minimum elong	3497 Mar 15 00:09	24° $\mathbf{\text{H}}$ 48'32 0°42'12	opposition	3503 Oct 02 18:02	9° $\mathbf{\text{Y}}$ 18'25 -1°06'13
max. Earth dist.	3497 Mar 15 14:18	24° $\mathbf{\text{H}}$ 49'52 30.98807 AU	min. Earth dist.	3503 Oct 02 00:39	9° $\mathbf{\text{Y}}$ 19'37 28.92972 AU
morning rise	3497 Mar 30 11:57	25° $\mathbf{\text{H}}$ 23'33	direct	3503 Dec 20 03:32	7° $\mathbf{\text{Y}}$ 55'21
retrograde	3497 Jun 28 18:04	27° $\mathbf{\text{H}}$ 21'15	evening set	3504 Mar 15 17:41	9° $\mathbf{\text{Y}}$ 48'40
opposition	3497 Sep 17 11:46	25° $\mathbf{\text{H}}$ 56'48 -0°46'53			
min. Earth dist.	3497 Sep 16 21:59	25° $\mathbf{\text{H}}$ 57'45 28.98247 AU	conjunction	3504 Mar 31 05:05	10° $\mathbf{\text{Y}}$ 23'37 -1°03'17
direct	3497 Dec 05 06:06	24° $\mathbf{\text{H}}$ 33'38	minimum elong	3504 Mar 31 05:05	10° $\mathbf{\text{Y}}$ 23'37 1°03'17
evening set	3498 Mar 02 01:01	26° $\mathbf{\text{H}}$ 26'58	max. Earth dist.	3504 Mar 31 23:48	10° $\mathbf{\text{Y}}$ 25'24 30.92496 AU
			morning rise	3504 Apr 15 19:13	10° $\mathbf{\text{Y}}$ 58'52
conjunction	3498 Mar 17 10:42	27° $\mathbf{\text{H}}$ 01'45 -0°45'27	retrograde	3504 Jul 15 15:40	12° $\mathbf{\text{Y}}$ 57'22
minimum elong	3498 Mar 17 10:42	27° $\mathbf{\text{H}}$ 01'45 0°45'27	opposition	3504 Oct 04 07:01	11° $\mathbf{\text{Y}}$ 32'36 -1°09'07
max. Earth dist.	3498 Mar 18 01:00	27° $\mathbf{\text{H}}$ 03'06 30.97665 AU	min. Earth dist.	3504 Oct 03 12:59	11° $\mathbf{\text{Y}}$ 33'50 28.92106 AU
morning rise	3498 Apr 01 22:56	27° $\mathbf{\text{H}}$ 36'48	direct	3504 Dec 21 16:14	10° $\mathbf{\text{Y}}$ 09'32
retrograde	3498 Jul 01 08:11	29° $\mathbf{\text{H}}$ 34'37	evening set	3505 Mar 18 05:03	12° $\mathbf{\text{Y}}$ 02'52
min. Earth dist.	3498 Sep 19 09:33	28° $\mathbf{\text{H}}$ 11'08 28.97166 AU			
opposition	3498 Sep 20 00:50	28° $\mathbf{\text{H}}$ 10'05 -0°50'18	conjunction	3505 Apr 02 16:36	12° $\mathbf{\text{Y}}$ 37'50 -1°05'57
direct	3498 Dec 07 16:39	26° $\mathbf{\text{H}}$ 46'55	minimum elong	3505 Apr 02 16:35	12° $\mathbf{\text{Y}}$ 37'50 1°05'57
evening set	3499 Mar 04 11:33	28° $\mathbf{\text{H}}$ 40'13	max. Earth dist.	3505 Apr 03 10:25	12° $\mathbf{\text{Y}}$ 39'32 30.91587 AU
			morning rise	3505 Apr 18 07:16	13° $\mathbf{\text{Y}}$ 13'07
conjunction	3499 Mar 19 21:31	29° $\mathbf{\text{H}}$ 15'02 -0°48'36	retrograde	3505 Jul 18 05:07	15° $\mathbf{\text{Y}}$ 11'43
minimum elong	3499 Mar 19 21:31	29° $\mathbf{\text{H}}$ 15'02 0°48'35	opposition	3505 Oct 06 20:12	13° $\mathbf{\text{Y}}$ 46'53 -1°11'55
max. Earth dist.	3499 Mar 20 13:01	29° $\mathbf{\text{H}}$ 16'30 30.96627 AU	min. Earth dist.	3505 Oct 06 02:06	13° $\mathbf{\text{Y}}$ 48'08 28.91154 AU
morning rise	3499 Apr 04 10:02	29° $\mathbf{\text{H}}$ 50'07	direct	3505 Dec 24 02:33	12° $\mathbf{\text{Y}}$ 23'49
	3499 Apr 08 21:52	0° $\mathbf{\text{Y}}$	evening set	3506 Mar 20 16:14	14° $\mathbf{\text{Y}}$ 17'08
retrograde	3499 Jul 03 21:03	1° $\mathbf{\text{Y}}$ 48'02			
opposition	3499 Sep 22 13:47	0° $\mathbf{\text{Y}}$ 23'27 -0°53'39	conjunction	3506 Apr 05 04:15	14° $\mathbf{\text{Y}}$ 52'08 -1°08'32
min. Earth dist.	3499 Sep 21 22:37	0° $\mathbf{\text{Y}}$ 24'30 28.96192 AU	minimum elong	3506 Apr 05 04:15	14° $\mathbf{\text{Y}}$ 52'08 1°08'32
	3499 Oct 06 23:53	30° $\mathbf{\text{H}}$	max. Earth dist.	3506 Apr 05 23:15	14° $\mathbf{\text{Y}}$ 53'56 30.90571 AU
direct	3499 Dec 10 04:38	29° $\mathbf{\text{H}}$ 00'17	morning rise	3506 Apr 20 19:12	15° $\mathbf{\text{Y}}$ 27'26
	3500 Feb 08 19:42	0° $\mathbf{\text{Y}}$	retrograde	3506 Jul 20 16:53	17° $\mathbf{\text{Y}}$ 26'07
evening set	3500 Mar 06 22:09	0° $\mathbf{\text{Y}}$ 53'35	opposition	3506 Oct 09 09:18	16° $\mathbf{\text{Y}}$ 01'13 -1°14'37
			min. Earth dist.	3506 Oct 08 15:21	16° $\mathbf{\text{Y}}$ 02'28 28.90090 AU
conjunction	3500 Mar 22 08:24	1° $\mathbf{\text{Y}}$ 28'25 -0°51'42	direct	3506 Dec 26 14:04	14° $\mathbf{\text{Y}}$ 38'07
minimum elong	3500 Mar 22 08:24	1° $\mathbf{\text{Y}}$ 28'25 0°51'42	evening set	3507 Mar 23 03:39	16° $\mathbf{\text{Y}}$ 31'25
max. Earth dist.	3500 Mar 23 00:35	1° $\mathbf{\text{Y}}$ 29'57 30.95712 AU			
morning rise	3500 Apr 06 21:14	2° $\mathbf{\text{Y}}$ 03'32	conjunction	3507 Apr 07 15:56	17° $\mathbf{\text{Y}}$ 06'26 -1°11'00
retrograde	3500 Jul 06 11:35	4° $\mathbf{\text{Y}}$ 01'34	minimum elong	3507 Apr 07 15:56	17° $\mathbf{\text{Y}}$ 06'26 1°10'59
min. Earth dist.	3500 Sep 24 09:51	2° $\mathbf{\text{Y}}$ 38'06 28.95321 AU	max. Earth dist.	3507 Apr 08 10:25	17° $\mathbf{\text{Y}}$ 08'11 30.89480 AU
opposition	3500 Sep 25 02:45	2° $\mathbf{\text{Y}}$ 36'56 -0°56'55	morning rise	3507 Apr 23 07:23	17° $\mathbf{\text{Y}}$ 41'46
direct	3500 Dec 12 16:32	1° $\mathbf{\text{Y}}$ 13'47	retrograde	3507 Jul 23 06:47	19° $\mathbf{\text{Y}}$ 40'30



opposition	3507 Oct 11 22:07	18° $\Upsilon$ 15'32	-1°17'12	conjunction	3514 Apr 23 02:55	2° $\mathcal{B}$ 46'59	-1°25'07
min. Earth dist.	3507 Oct 11 03:24	18° $\Upsilon$ 16'49	28.88981 AU	minimum elong	3514 Apr 23 02:55	2° $\mathcal{B}$ 46'59	1°25'08
direct	3507 Dec 29 01:01	16° $\Upsilon$ 52'22		max. Earth dist.	3514 Apr 24 00:34	2° $\mathcal{B}$ 49'03	30.83802 AU
evening set	3508 Mar 24 15:01	18° $\Upsilon$ 45'40		morning rise	3514 May 08 21:16	3° $\mathcal{B}$ 22'33	
				retrograde	3514 Aug 08 05:23	5° $\mathcal{B}$ 21'42	
conjunction	3508 Apr 09 03:40	19° $\Upsilon$ 20'43	-1°13'21	opposition	3514 Oct 27 15:19	3° $\mathcal{B}$ 56'26	-1°31'52
minimum elong	3508 Apr 09 03:40	19° $\Upsilon$ 20'43	1°13'22	min. Earth dist.	3514 Oct 26 18:00	3° $\mathcal{B}$ 57'55	28.83707 AU
max. Earth dist.	3508 Apr 09 22:53	19° $\Upsilon$ 22'32	30.88355 AU	direct	3515 Jan 13 11:43	2° $\mathcal{B}$ 33'13	
morning rise	3508 Apr 24 19:27	19° $\Upsilon$ 56'04		evening set	3515 Apr 10 00:01	4° $\mathcal{B}$ 26'36	
retrograde	3508 Jul 24 19:09	21° $\Upsilon$ 54'52					
opposition	3508 Oct 13 11:04	20° $\Upsilon$ 29'48	-1°19'40	conjunction	3515 Apr 25 15:22	5° $\mathcal{B}$ 01'52	-1°26'38
min. Earth dist.	3508 Oct 12 16:48	20° $\Upsilon$ 31'04	28.87877 AU	minimum elong	3515 Apr 25 15:22	5° $\mathcal{B}$ 01'52	1°26'38
direct	3508 Dec 30 12:54	19° $\Upsilon$ 06'36		max. Earth dist.	3515 Apr 26 14:14	5° $\mathcal{B}$ 04'02	30.83437 AU
evening set	3509 Mar 27 02:15	20° $\Upsilon$ 59'52		morning rise	3515 May 11 09:58	5° $\mathcal{B}$ 37'27	
				retrograde	3515 Aug 10 17:48	7° $\mathcal{B}$ 36'39	
conjunction	3509 Apr 11 15:16	21° $\Upsilon$ 34'57	-1°15'37	min. Earth dist.	3515 Oct 29 06:45	6° $\mathcal{B}$ 12'53	28.83357 AU
minimum elong	3509 Apr 11 15:15	21° $\Upsilon$ 34'57	1°15'36	opposition	3515 Oct 30 03:50	6° $\mathcal{B}$ 11'24	-1°33'25
max. Earth dist.	3509 Apr 12 10:59	21° $\Upsilon$ 36'49	30.87287 AU	direct	3516 Jan 15 23:09	4° $\mathcal{B}$ 48'13	
morning rise	3509 Apr 27 07:26	22° $\Upsilon$ 10'20		evening set	3516 Apr 11 12:09	6° $\mathcal{B}$ 41'38	
retrograde	3509 Jul 27 09:20	24° $\Upsilon$ 09'11					
opposition	3509 Oct 15 23:52	22° $\Upsilon$ 44'03	-1°22'01	conjunction	3516 Apr 27 03:49	7° $\mathcal{B}$ 16'55	-1°28'02
min. Earth dist.	3509 Oct 15 04:05	22° $\Upsilon$ 45'25	28.86854 AU	minimum elong	3516 Apr 27 03:49	7° $\mathcal{B}$ 16'55	1°28'03
direct	3510 Jan 02 00:44	21° $\Upsilon$ 20'48		max. Earth dist.	3516 Apr 28 01:58	7° $\mathcal{B}$ 19'01	30.83097 AU
evening set	3510 Mar 29 13:45	23° $\Upsilon$ 14'05		morning rise	3516 May 12 22:56	7° $\mathcal{B}$ 52'33	
				retrograde	3516 Aug 12 07:27	9° $\mathcal{B}$ 51'48	
conjunction	3510 Apr 14 03:02	23° $\Upsilon$ 49'11	-1°17'45	opposition	3516 Oct 31 16:28	8° $\mathcal{B}$ 26'33	-1°34'50
minimum elong	3510 Apr 14 03:02	23° $\Upsilon$ 49'11	1°17'46	min. Earth dist.	3516 Oct 30 18:57	8° $\mathcal{B}$ 28'03	28.83008 AU
max. Earth dist.	3510 Apr 14 23:01	23° $\Upsilon$ 51'04	30.86309 AU	direct	3517 Jan 17 10:03	7° $\mathcal{B}$ 03'22	
morning rise	3510 Apr 29 19:40	24° $\Upsilon$ 24'36		evening set	3517 Apr 14 00:17	8° $\mathcal{B}$ 56'49	
retrograde	3510 Jul 29 22:25	26° $\Upsilon$ 23'31					
opposition	3510 Oct 18 12:38	24° $\Upsilon$ 58'18	-1°24'15	conjunction	3517 Apr 29 16:22	9° $\mathcal{B}$ 32'08	-1°29'18
min. Earth dist.	3510 Oct 17 17:26	24° $\Upsilon$ 59'38	28.85954 AU	minimum elong	3517 Apr 29 16:22	9° $\mathcal{B}$ 32'08	1°29'17
direct	3511 Jan 04 11:48	23° $\Upsilon$ 35'03		max. Earth dist.	3517 Apr 30 14:53	9° $\mathcal{B}$ 34'16	30.82706 AU
evening set	3511 Apr 01 01:10	25° $\Upsilon$ 28'20		morning rise	3517 May 15 11:52	10° $\mathcal{B}$ 07'47	
				retrograde	3517 Aug 14 19:17	12° $\mathcal{B}$ 07'05	
conjunction	3511 Apr 16 14:59	26° $\Upsilon$ 03'27	-1°19'47	min. Earth dist.	3517 Nov 02 08:40	10° $\mathcal{B}$ 43'16	28.82585 AU
minimum elong	3511 Apr 16 14:59	26° $\Upsilon$ 03'27	1°19'46	opposition	3517 Nov 03 05:14	10° $\mathcal{B}$ 41'50	-1°36'07
max. Earth dist.	3511 Apr 17 12:11	26° $\Upsilon$ 05'28	30.85477 AU	direct	3518 Jan 19 21:12	9° $\mathcal{B}$ 18'37	
morning rise	3511 May 02 07:55	26° $\Upsilon$ 38'55		evening set	3518 Apr 16 12:39	11° $\mathcal{B}$ 12'05	
retrograde	3511 Aug 01 12:59	28° $\Upsilon$ 37'52					
min. Earth dist.	3511 Oct 20 04:38	27° $\Upsilon$ 14'03	28.85191 AU	conjunction	3518 May 02 05:13	11° $\mathcal{B}$ 47'26	-1°30'25
opposition	3511 Oct 21 01:15	27° $\Upsilon$ 12'38	-1°26'21	minimum elong	3518 May 02 05:13	11° $\mathcal{B}$ 47'26	1°30'26
direct	3512 Jan 07 01:24	25° $\Upsilon$ 49'22		max. Earth dist.	3518 May 03 03:21	11° $\mathcal{B}$ 49'32	30.82247 AU
evening set	3512 Apr 02 12:46	27° $\Upsilon$ 42'39		morning rise	3518 May 18 01:09	12° $\mathcal{B}$ 23'07	
				retrograde	3518 Aug 17 09:39	14° $\mathcal{B}$ 22'25	
conjunction	3512 Apr 18 02:46	28° $\Upsilon$ 17'49	-1°21'41	opposition	3518 Nov 05 17:41	12° $\mathcal{B}$ 57'08	-1°37'15
minimum elong	3512 Apr 18 02:46	28° $\Upsilon$ 17'49	1°21'41	min. Earth dist.	3518 Nov 04 20:24	12° $\mathcal{B}$ 58'37	28.82078 AU
max. Earth dist.	3512 Apr 18 23:34	28° $\Upsilon$ 19'48	30.84780 AU	direct	3519 Jan 22 08:28	11° $\mathcal{B}$ 33'52	
morning rise	3512 May 03 20:15	28° $\Upsilon$ 53'19		evening set	3519 Apr 19 01:07	13° $\mathcal{B}$ 27'21	
	3512 Jun 06 04:14	0° $\mathcal{B}$					
retrograde	3512 Aug 03 03:09	0° $\mathcal{B}$ 52'20		conjunction	3519 May 04 18:04	14° $\mathcal{B}$ 02'43	-1°31'24
	3512 Oct 02 06:55	30° $\mathcal{R}\Upsilon$		minimum elong	3519 May 04 18:04	14° $\mathcal{B}$ 02'43	1°31'24
opposition	3512 Oct 22 13:59	29° $\Upsilon$ 27'04	-1°28'19	max. Earth dist.	3519 May 05 15:41	14° $\mathcal{B}$ 04'46	30.81692 AU
min. Earth dist.	3512 Oct 21 17:39	29° $\Upsilon$ 28'29	28.84577 AU	morning rise	3519 May 20 14:30	14° $\mathcal{B}$ 38'26	
direct	3513 Jan 08 12:34	28° $\Upsilon$ 03'48			3519 May 30 13:26	15° $\mathcal{B}$	
evening set	3513 Apr 05 00:20	29° $\Upsilon$ 57'07		retrograde	3519 Aug 19 22:30	16° $\mathcal{B}$ 37'43	
	3513 Apr 06 07:24	0° $\mathcal{B}$		min. Earth dist.	3519 Nov 07 10:16	15° $\mathcal{B}$ 13'46	28.81497 AU
				opposition	3519 Nov 08 06:18	15° $\mathcal{B}$ 12'22	-1°38'14
conjunction	3513 Apr 20 14:53	0° $\mathcal{B}$ 32'19	-1°23'28		3519 Nov 15 15:53	15° $\mathcal{R}\mathcal{B}$	
minimum elong	3513 Apr 20 14:53	0° $\mathcal{B}$ 32'19	1°23'27	direct	3520 Jan 24 20:04	13° $\mathcal{B}$ 49'03	
max. Earth dist.	3513 Apr 21 13:13	0° $\mathcal{B}$ 34'26	30.84232 AU		3520 Mar 31 05:59	15° $\mathcal{B}$	
morning rise	3513 May 06 08:37	1° $\mathcal{B}$ 07'51		evening set	3520 Apr 20 13:24	15° $\mathcal{B}$ 42'31	
retrograde	3513 Aug 05 15:14	3° $\mathcal{B}$ 06'56					
min. Earth dist.	3513 Oct 24 05:21	1° $\mathcal{B}$ 43'08	28.84089 AU	conjunction	3520 May 06 06:55	16° $\mathcal{B}$ 17'55	-1°32'15
opposition	3513 Oct 25 02:37	1° $\mathcal{B}$ 41'39	-1°30'10	minimum elong	3520 May 06 06:55	16° $\mathcal{B}$ 17'55	1°32'16
direct	3514 Jan 11 01:04	0° $\mathcal{B}$ 18'25		max. Earth dist.	3520 May 07 05:06	16° $\mathcal{B}$ 20'01	30.81098 AU
evening set	3514 Apr 07 12:06	2° $\mathcal{B}$ 11'46		morning rise	3520 May 22 03:40	16° $\mathcal{B}$ 53'39	

retrograde	3520 Aug 21 12:38	18° <del>8</del> 52'54	direct	3527 Feb 09 07:57	29° <del>8</del> 33'51
opposition	3520 Nov 09 18:38	17° <del>8</del> 27'30 -1°39'03		3527 Mar 20 11:57	0° <del>II</del>
min. Earth dist.	3520 Nov 08 21:46	17° <del>8</del> 28'58 28.80895 AU	evening set	3527 May 07 05:33	1° <del>II</del> 27'29
direct	3521 Jan 26 09:53	16° <del>8</del> 04'07			
evening set	3521 Apr 23 01:54	17° <del>8</del> 57'35	conjunction	3527 May 23 02:19	2° <del>II</del> 03'05 -1°34'13
			minimum elong	3527 May 23 02:19	2° <del>II</del> 03'05 1°34'13
conjunction	3521 May 08 19:43	18° <del>8</del> 33'01 -1°32'58	max. Earth dist.	3527 May 24 00:23	2° <del>II</del> 05'10 30.79365 AU
minimum elong	3521 May 08 19:42	18° <del>8</del> 33'01 1°32'58	morning rise	3527 Jun 08 02:15	2° <del>II</del> 39'01
max. Earth dist.	3521 May 09 17:02	18° <del>8</del> 35'01 30.80510 AU	retrograde	3527 Sep 07 10:00	4° <del>II</del> 38'05
morning rise	3521 May 24 17:03	19° <del>8</del> 08'46	min. Earth dist.	3527 Nov 25 10:49	3° <del>II</del> 14'11 28.79550 AU
retrograde	3521 Aug 24 02:20	21° <del>8</del> 07'59	opposition	3527 Nov 26 07:37	3° <del>II</del> 12'43 -1°40'36
min. Earth dist.	3521 Nov 11 10:59	19° <del>8</del> 43'56 28.80347 AU	direct	3528 Feb 11 18:37	1° <del>II</del> 49'11
opposition	3521 Nov 12 07:02	19° <del>8</del> 42'32 -1°39'44	evening set	3528 May 08 18:30	3° <del>II</del> 42'53
direct	3522 Jan 28 21:19	18° <del>8</del> 19'05			
evening set	3522 Apr 25 14:15	20° <del>8</del> 12'33	conjunction	3528 May 24 15:38	4° <del>II</del> 18'31 -1°33'55
			minimum elong	3528 May 24 15:38	4° <del>II</del> 18'31 1°33'55
conjunction	3522 May 11 08:43	20° <del>8</del> 48'00 -1°33'32	max. Earth dist.	3528 May 25 13:19	4° <del>II</del> 20'34 30.79536 AU
minimum elong	3522 May 11 08:43	20° <del>8</del> 48'00 1°33'33	morning rise	3528 Jun 09 16:01	4° <del>II</del> 54'29
max. Earth dist.	3522 May 12 07:08	20° <del>8</del> 50'07 30.79999 AU	retrograde	3528 Sep 08 22:21	6° <del>II</del> 53'32
morning rise	3522 May 27 06:21	21° <del>8</del> 23'47	opposition	3528 Nov 27 19:46	5° <del>II</del> 28'14 -1°40'12
retrograde	3522 Aug 26 15:17	23° <del>8</del> 22'57	min. Earth dist.	3528 Nov 27 00:22	5° <del>II</del> 29'36 28.79730 AU
opposition	3522 Nov 14 19:13	21° <del>8</del> 57'28 -1°40'16	direct	3529 Feb 13 05:39	4° <del>II</del> 04'42
min. Earth dist.	3522 Nov 13 22:34	21° <del>8</del> 58'55 28.79881 AU	evening set	3529 May 11 07:36	5° <del>II</del> 58'28
direct	3523 Jan 31 10:33	20° <del>8</del> 33'58			
evening set	3523 Apr 28 02:53	22° <del>8</del> 27'26	conjunction	3529 May 27 05:20	6° <del>II</del> 34'09 -1°33'28
			minimum elong	3529 May 27 05:20	6° <del>II</del> 34'09 1°33'27
conjunction	3523 May 13 21:38	23° <del>8</del> 02'55 -1°33'58	max. Earth dist.	3529 May 28 03:06	6° <del>II</del> 36'12 30.79710 AU
minimum elong	3523 May 13 21:38	23° <del>8</del> 02'55 1°33'57	morning rise	3529 Jun 12 06:03	7° <del>II</del> 10'08
max. Earth dist.	3523 May 14 19:01	23° <del>8</del> 04'56 30.79594 AU	retrograde	3529 Sep 11 12:35	9° <del>II</del> 09'10
morning rise	3523 May 29 19:52	23° <del>8</del> 38'44	min. Earth dist.	3529 Nov 29 11:57	7° <del>II</del> 45'18 28.79869 AU
retrograde	3523 Aug 29 05:55	25° <del>8</del> 37'52	opposition	3529 Nov 30 07:41	7° <del>II</del> 43'54 -1°39'38
min. Earth dist.	3523 Nov 16 10:49	24° <del>8</del> 13'48 28.79550 AU	direct	3530 Feb 15 18:41	6° <del>II</del> 20'22
opposition	3523 Nov 17 07:19	24° <del>8</del> 12'21 -1°40'39	evening set	3530 May 13 20:58	8° <del>II</del> 14'12
direct	3524 Feb 02 22:03	22° <del>8</del> 48'49			
evening set	3524 Apr 29 15:23	24° <del>8</del> 42'19	conjunction	3530 May 29 19:04	8° <del>II</del> 49'54 -1°32'52
			minimum elong	3530 May 29 19:04	8° <del>II</del> 49'54 1°32'52
conjunction	3524 May 15 10:44	25° <del>8</del> 17'50 -1°34'14	max. Earth dist.	3530 May 30 15:19	8° <del>II</del> 51'49 30.79806 AU
minimum elong	3524 May 15 10:44	25° <del>8</del> 17'50 1°34'15	morning rise	3530 Jun 14 20:21	9° <del>II</del> 25'55
max. Earth dist.	3524 May 16 09:19	25° <del>8</del> 19'58 30.79326 AU	retrograde	3530 Sep 14 02:22	11° <del>II</del> 24'54
morning rise	3524 May 31 09:15	25° <del>8</del> 53'40	opposition	3530 Dec 02 19:48	9° <del>II</del> 59'40 -1°38'56
retrograde	3524 Aug 30 18:01	27° <del>8</del> 52'46	min. Earth dist.	3530 Dec 02 01:31	10° <del>II</del> 00'57 28.79921 AU
opposition	3524 Nov 18 19:29	26° <del>8</del> 27'16 -1°40'52	direct	3531 Feb 18 05:46	8° <del>II</del> 36'06
min. Earth dist.	3524 Nov 17 23:02	26° <del>8</del> 28'42 28.79354 AU	evening set	3531 May 16 10:14	10° <del>II</del> 29'58
direct	3525 Feb 04 10:14	25° <del>8</del> 03'43			
evening set	3525 May 02 03:55	26° <del>8</del> 57'14	conjunction	3531 Jun 01 08:59	11° <del>II</del> 05'43 -1°32'08
			minimum elong	3531 Jun 01 08:59	11° <del>II</del> 05'43 1°32'07
conjunction	3525 May 17 23:40	27° <del>8</del> 32'47 -1°34'23	max. Earth dist.	3531 Jun 02 05:29	11° <del>II</del> 07'38 30.79806 AU
minimum elong	3525 May 17 23:40	27° <del>8</del> 32'47 1°34'22	morning rise	3531 Jun 17 10:30	11° <del>II</del> 41'44
max. Earth dist.	3525 May 18 21:34	27° <del>8</del> 34'51 30.79215 AU	retrograde	3531 Sep 16 16:00	13° <del>II</del> 40'39
morning rise	3525 Jun 02 22:46	28° <del>8</del> 08'39	opposition	3531 Dec 05 07:37	12° <del>II</del> 15'25 -1°38'04
	3525 Aug 11 13:44	0° <del>II</del>	min. Earth dist.	3531 Dec 04 13:22	12° <del>II</del> 16'42 28.79865 AU
retrograde	3525 Sep 02 07:44	0° <del>II</del> 07'44	direct	3532 Feb 20 19:16	10° <del>II</del> 51'48
	3525 Sep 24 04:30	30° <del>R</del> <del>8</del>	evening set	3532 May 17 23:38	12° <del>II</del> 45'42
min. Earth dist.	3525 Nov 20 10:40	28° <del>8</del> 43'44 28.79315 AU			
opposition	3525 Nov 21 07:37	28° <del>8</del> 42'16 -1°40'56	conjunction	3532 Jun 02 22:42	13° <del>II</del> 21'28 -1°31'16
direct	3526 Feb 06 21:17	27° <del>8</del> 18'42	minimum elong	3532 Jun 02 22:42	13° <del>II</del> 21'28 1°31'16
evening set	3526 May 04 16:40	29° <del>8</del> 12'16	max. Earth dist.	3532 Jun 03 17:27	13° <del>II</del> 23'14 30.79726 AU
			morning rise	3532 Jun 19 00:49	13° <del>II</del> 57'31
conjunction	3526 May 20 12:57	29° <del>8</del> 47'51 -1°34'22	retrograde	3532 Sep 18 07:20	15° <del>II</del> 56'19
minimum elong	3526 May 20 12:57	29° <del>8</del> 47'51 1°34'23	opposition	3532 Dec 06 19:31	14° <del>II</del> 31'05 -1°37'03
max. Earth dist.	3526 May 21 11:24	29° <del>8</del> 49'58 30.79232 AU	min. Earth dist.	3532 Dec 06 02:02	14° <del>II</del> 32'19 28.79763 AU
	3526 May 25 21:40	0° <del>II</del>	direct	3533 Feb 22 07:53	13° <del>II</del> 07'24
morning rise	3526 Jun 05 12:26	0° <del>II</del> 23'45	evening set	3533 May 20 12:47	15° <del>II</del> 01'18
retrograde	3526 Sep 04 19:27	2° <del>II</del> 22'50			
opposition	3526 Nov 23 19:38	0° <del>II</del> 57'24 -1°40'51	conjunction	3533 Jun 05 12:29	15° <del>II</del> 37'06 -1°30'15
min. Earth dist.	3526 Nov 22 23:33	0° <del>II</del> 58'49 28.79389 AU	minimum elong	3533 Jun 05 12:29	15° <del>II</del> 37'06 1°30'15
	3526 Dec 31 07:05	30° <del>R</del> <del>8</del>	max. Earth dist.	3533 Jun 06 07:52	15° <del>II</del> 38'55 30.79610 AU

morning rise	3533 Jun 21 14:53	16°II13'10			3540 May 13 09:05	0°☾
retrograde	3533 Sep 20 19:03	18°II11'52		evening set	3540 Jun 05 10:38	0°☾47'26
opposition	3533 Dec 09 07:15	16°II46'37 -1°35'54				
min. Earth dist.	3533 Dec 08 14:23	16°II47'48 28.79641 AU		conjunction	3540 Jun 21 13:33	1°☾23'24 -1°19'26
direct	3534 Feb 24 21:04	15°II22'52		minimum elong	3540 Jun 21 13:34	1°☾23'24 1°19'27
evening set	3534 May 23 02:12	17°II16'46		max. Earth dist.	3540 Jun 22 06:18	1°☾24'58 30.81189 AU
				morning rise	3540 Jul 07 18:30	1°☾59'34
conjunction	3534 Jun 08 02:17	17°II52'35 -1°29'06		retrograde	3540 Oct 06 11:32	3°☾57'31
minimum elong	3534 Jun 08 02:17	17°II52'35 1°29'06		opposition	3540 Dec 24 15:04	2°☾32'29 -1°23'50
max. Earth dist.	3534 Jun 08 20:19	17°II54'17 30.79515 AU		min. Earth dist.	3540 Dec 24 00:32	2°☾33'30 28.81561 AU
morning rise	3534 Jun 24 05:13	18°II28'40		direct	3541 Mar 12 06:21	1°☾08'25
retrograde	3534 Sep 23 08:57	20°II27'15		evening set	3541 Jun 08 00:22	3°☾02'36
opposition	3534 Dec 11 18:44	19°II01'59 -1°34'36				
min. Earth dist.	3534 Dec 11 01:54	19°II03'11 28.79572 AU		conjunction	3541 Jun 24 03:33	3°☾38'35 -1°17'23
direct	3535 Feb 27 08:58	17°II38'09		minimum elong	3541 Jun 24 03:33	3°☾38'35 1°17'22
evening set	3535 May 25 15:34	19°II32'04		max. Earth dist.	3541 Jun 24 18:27	3°☾39'59 30.81807 AU
				morning rise	3541 Jul 10 09:00	4°☾14'46
conjunction	3535 Jun 10 16:10	20°II07'55 -1°27'49		retrograde	3541 Oct 09 02:07	6°☾12'37
minimum elong	3535 Jun 10 16:10	20°II07'55 1°27'49		opposition	3541 Dec 27 02:25	4°☾47'40 -1°21'35
max. Earth dist.	3535 Jun 11 10:29	20°II09'38 30.79476 AU		min. Earth dist.	3541 Dec 26 12:53	4°☾48'37 28.82171 AU
morning rise	3535 Jun 26 19:23	20°II44'01		direct	3542 Mar 14 18:15	3°☾23'35
retrograde	3535 Sep 25 20:46	22°II42'29		evening set	3542 Jun 10 14:11	5°☾17'50
opposition	3535 Dec 14 06:19	21°II17'13 -1°33'10				
min. Earth dist.	3535 Dec 13 14:32	21°II18'20 28.79583 AU		conjunction	3542 Jun 26 17:56	5°☾53'51 -1°15'12
direct	3536 Feb 29 20:35	19°II53'19		minimum elong	3542 Jun 26 17:57	5°☾53'51 1°15'12
evening set	3536 May 27 04:45	21°II47'15		max. Earth dist.	3542 Jun 27 09:00	5°☾55'15 30.82387 AU
				morning rise	3542 Jul 12 23:30	6°☾30'02
conjunction	3536 Jun 12 05:48	22°II23'07 -1°26'24		retrograde	3542 Oct 11 14:17	8°☾02'47
minimum elong	3536 Jun 12 05:49	22°II23'07 1°26'25		opposition	3542 Dec 29 13:36	7°☾02'53 -1°19'11
max. Earth dist.	3536 Jun 12 23:29	22°II24'46 30.79555 AU		min. Earth dist.	3542 Dec 29 01:05	7°☾03'46 28.82707 AU
morning rise	3536 Jun 28 09:26	22°II59'14		direct	3543 Mar 17 07:08	5°☾38'47
retrograde	3536 Sep 27 10:16	24°II57'35		evening set	3543 Jun 13 04:10	7°☾33'06
opposition	3536 Dec 15 17:45	23°II32'19 -1°31'34				
min. Earth dist.	3536 Dec 15 01:14	23°II33'29 28.79722 AU		conjunction	3543 Jun 29 08:11	8°☾09'07 -1°12'55
direct	3537 Mar 03 08:05	22°II08'22		minimum elong	3543 Jun 29 08:11	8°☾09'07 1°12'54
evening set	3537 May 29 18:12	24°II02'19		max. Earth dist.	3543 Jun 29 21:15	8°☾10'20 30.82892 AU
				morning rise	3543 Jul 15 14:11	8°☾45'20
conjunction	3537 Jun 14 19:39	24°II38'12 -1°24'51		retrograde	3543 Oct 14 04:56	10°☾42'56
minimum elong	3537 Jun 14 19:39	24°II38'12 1°24'51		opposition	3544 Jan 01 00:52	9°☾18'05 -1°16'41
max. Earth dist.	3537 Jun 15 13:00	24°II39'50 30.79760 AU		min. Earth dist.	3543 Dec 31 12:48	9°☾18'57 28.83167 AU
morning rise	3537 Jun 30 23:40	25°II14'20		direct	3544 Mar 18 19:20	7°☾53'57
retrograde	3537 Sep 29 20:52	27°II12'35		evening set	3544 Jun 14 17:51	9°☾48'17
opposition	3537 Dec 18 05:11	25°II47'21 -1°29'51				
min. Earth dist.	3537 Dec 17 13:58	25°II48'26 28.80003 AU		conjunction	3544 Jun 30 22:20	10°☾24'20 -1°10'31
direct	3538 Mar 05 18:59	24°II23'21		minimum elong	3544 Jun 30 22:21	10°☾24'20 1°10'31
evening set	3538 Jun 01 07:35	26°II17'20		max. Earth dist.	3544 Jul 01 11:17	10°☾25'33 30.83308 AU
				morning rise	3544 Jul 17 04:30	11°☾00'33
conjunction	3538 Jun 17 09:37	26°II53'15 -1°23'11		retrograde	3544 Oct 15 17:06	12°☾58'02
minimum elong	3538 Jun 17 09:38	26°II53'15 1°23'11		opposition	3545 Jan 02 12:08	11°☾33'13 -1°14'03
max. Earth dist.	3538 Jun 18 03:03	26°II54'53 30.80122 AU		min. Earth dist.	3545 Jan 02 01:35	11°☾33'57 28.83545 AU
morning rise	3538 Jul 03 13:57	27°II29'24		direct	3545 Mar 21 07:37	10°☾09'01
retrograde	3538 Oct 02 09:51	29°II27'31		evening set	3545 Jun 17 07:43	12°☾03'23
opposition	3538 Dec 20 16:29	28°II02'21 -1°27'59				
min. Earth dist.	3538 Dec 20 00:40	28°II03'28 28.80421 AU		conjunction	3545 Jul 03 12:34	12°☾39'26 -1°08'01
direct	3539 Mar 08 07:05	26°II38'19		minimum elong	3545 Jul 03 12:34	12°☾39'26 1°08'01
evening set	3539 Jun 03 21:09	28°II32'22		max. Earth dist.	3545 Jul 04 00:05	12°☾40'31 30.83678 AU
				morning rise	3545 Jul 19 19:05	13°☾15'40
conjunction	3539 Jun 19 23:28	29°II08'17 -1°21'22		retrograde	3545 Oct 18 06:25	15°☾12'59
minimum elong	3539 Jun 19 23:28	29°II08'17 1°21'22		opposition	3546 Jan 04 23:02	13°☾48'12 -1°11'20
max. Earth dist.	3539 Jun 20 15:47	29°II09'49 30.80603 AU		min. Earth dist.	3546 Jan 04 12:22	13°☾48'57 28.83896 AU
morning rise	3539 Jul 06 04:14	29°II44'27		direct	3546 Mar 23 19:47	12°☾23'56
	3539 Jul 13 08:52	0°☾		evening set	3546 Jun 19 21:36	14°☾18'20
retrograde	3539 Oct 04 22:31	1°☾42'29				
opposition	3539 Dec 23 03:51	0°☾17'23 -1°25'59		conjunction	3546 Jul 06 02:48	14°☾54'24 -1°05'25
min. Earth dist.	3539 Dec 22 13:18	0°☾18'24 28.80959 AU		minimum elong	3546 Jul 06 02:48	14°☾54'24 1°05'25
	3540 Jan 02 11:06	30°☾II		max. Earth dist.	3546 Jul 06 13:34	14°☾55'24 30.84024 AU
direct	3540 Mar 09 17:10	28°II53'19		morning rise	3546 Jul 22 09:31	15°☾30'38

retrograde	3546 Oct 20 16:52	17°☾27'48		3553 Jul 05 20:00	0°♈
opposition	3547 Jan 07 10:05	16°☾03'03 -1°08'30			
min. Earth dist.	3547 Jan 07 01:06	16°☾03'41 28.84254 AU	conjunction	3553 Jul 22 05:02	0°♈36'19 -0°44'44
direct	3547 Mar 26 06:54	14°☾38'42	minimum elong	3553 Jul 22 05:02	0°♈36'19 0°44'44
evening set	3547 Jun 22 11:17	16°☾33'08	max. Earth dist.	3553 Jul 22 11:59	0°♈36'57 30.89207 AU
			morning rise	3553 Aug 07 12:45	1°♈12'31
conjunction	3547 Jul 08 16:53	17°☾09'13 -1°02'43	retrograde	3553 Nov 05 07:13	3°♈08'45
minimum elong	3547 Jul 08 16:53	17°☾09'13 1°02'43	opposition	3554 Jan 22 13:03	1°♈44'27 -0°46'04
max. Earth dist.	3547 Jul 09 03:16	17°☾10'11 30.84414 AU	min. Earth dist.	3554 Jan 22 08:02	1°♈44'48 28.89774 AU
morning rise	3547 Jul 24 23:46	17°☾45'26	direct	3554 Apr 10 18:13	0°♈19'56
retrograde	3547 Oct 23 05:20	19°☾42'27	evening set	3554 Jul 08 11:53	2°♈14'44
opposition	3548 Jan 09 20:51	18°☾17'44 -1°05'34			
min. Earth dist.	3548 Jan 09 11:31	18°☾18'24 28.84670 AU	conjunction	3554 Jul 24 19:14	2°♈50'53 -0°41'28
direct	3548 Mar 27 18:50	16°☾53'19	minimum elong	3554 Jul 24 19:15	2°♈50'53 0°41'28
evening set	3548 Jun 24 01:05	18°☾47'47	max. Earth dist.	3554 Jul 25 00:29	2°♈51'23 30.90301 AU
			morning rise	3554 Aug 10 03:07	3°♈27'05
conjunction	3548 Jul 10 06:51	19°☾23'53 -0°59'56	retrograde	3554 Nov 07 20:37	5°♈23'11
minimum elong	3548 Jul 10 06:52	19°☾23'53 0°59'56	opposition	3555 Jan 24 23:41	3°♈58'59 -0°42'32
max. Earth dist.	3548 Jul 10 16:04	19°☾24'44 30.84879 AU	min. Earth dist.	3555 Jan 24 18:41	3°♈59'20 28.90839 AU
morning rise	3548 Jul 26 14:01	20°☾00'06	direct	3555 Apr 13 06:50	2°♈34'27
retrograde	3548 Oct 24 16:34	21°☾56'59	evening set	3555 Jul 11 01:51	4°♈29'19
opposition	3549 Jan 11 07:41	20°☾32'17 -1°02'32			
min. Earth dist.	3549 Jan 10 23:40	20°☾32'51 28.85200 AU	conjunction	3555 Jul 27 09:22	5°♈05'28 -0°38'08
direct	3549 Mar 30 04:33	19°☾07'49	minimum elong	3555 Jul 27 09:22	5°♈05'28 0°38'08
evening set	3549 Jun 26 14:40	21°☾02'19	max. Earth dist.	3555 Jul 27 13:43	5°♈05'52 30.91320 AU
			morning rise	3555 Aug 12 17:11	5°♈41'40
conjunction	3549 Jul 12 20:56	21°☾38'25 -0°57'03	retrograde	3555 Nov 10 07:52	7°♈37'37
minimum elong	3549 Jul 12 20:56	21°☾38'25 0°57'03	opposition	3556 Jan 27 10:28	6°♈13'30 -0°38'57
max. Earth dist.	3549 Jul 13 06:28	21°☾39'18 30.85476 AU	min. Earth dist.	3556 Jan 27 07:23	6°♈13'43 28.91819 AU
morning rise	3549 Jul 29 04:10	22°☾14'39	direct	3556 Apr 14 17:58	4°♈48'56
retrograde	3549 Oct 27 04:03	24°☾11'22	evening set	3556 Jul 12 15:50	6°♈43'50
opposition	3550 Jan 13 18:25	22°☾46'44 -0°59'25			
min. Earth dist.	3550 Jan 13 10:16	22°☾47'19 28.85855 AU	conjunction	3556 Jul 28 23:33	7°♈19'59 -0°34'45
direct	3550 Apr 01 17:54	21°☾22'14	minimum elong	3556 Jul 28 23:34	7°♈19'59 0°34'45
evening set	3550 Jun 29 04:32	23°☾16'46	max. Earth dist.	3556 Jul 29 02:53	7°♈20'18 30.92265 AU
			morning rise	3556 Aug 14 07:24	7°♈56'10
conjunction	3550 Jul 15 10:54	23°☾52'53 -0°54'06	retrograde	3556 Nov 11 20:53	9°♈51'57
minimum elong	3550 Jul 15 10:54	23°☾52'53 0°54'05	opposition	3557 Jan 28 20:59	8°♈27'53 -0°35'19
max. Earth dist.	3550 Jul 15 18:46	23°☾53'37 30.86210 AU	min. Earth dist.	3557 Jan 28 17:59	8°♈28'06 28.92709 AU
morning rise	3550 Jul 31 18:26	24°☾29'06	direct	3557 Apr 17 06:17	7°♈03'16
retrograde	3550 Oct 29 17:02	26°☾25'42	evening set	3557 Jul 15 05:54	8°♈58'12
opposition	3551 Jan 16 05:03	25°☾01'07 -0°56'12			
min. Earth dist.	3551 Jan 15 21:35	25°☾01'39 28.86669 AU	conjunction	3557 Jul 31 13:40	9°♈34'21 -0°31'19
direct	3551 Apr 04 05:16	23°☾36'35	minimum elong	3557 Jul 31 13:41	9°♈34'21 0°31'20
evening set	3551 Jul 01 18:12	25°☾31'12	max. Earth dist.	3557 Jul 31 15:23	9°♈34'31 30.93114 AU
			morning rise	3557 Aug 16 21:35	10°♈10'31
conjunction	3551 Jul 18 01:00	26°☾07'19 -0°51'03	retrograde	3557 Nov 14 07:13	12°♈06'08
minimum elong	3551 Jul 18 01:00	26°☾07'19 0°51'03	opposition	3558 Jan 31 07:39	10°♈42'07 -0°31'37
max. Earth dist.	3551 Jul 18 09:26	26°☾08'06 30.87099 AU	min. Earth dist.	3558 Jan 31 06:25	10°♈42'12 28.93527 AU
morning rise	3551 Aug 03 08:29	26°☾43'32	direct	3558 Apr 19 16:38	9°♈17'26
retrograde	3551 Nov 01 04:37	28°☾40'00	evening set	3558 Jul 17 19:49	11°♈12'24
opposition	3552 Jan 18 15:47	27°☾15'31 -0°52'54			
min. Earth dist.	3552 Jan 18 08:54	27°☾16'00 28.87616 AU	conjunction	3558 Aug 03 03:50	11°♈48'32 -0°27'51
direct	3552 Apr 05 17:18	25°☾50'59	minimum elong	3558 Aug 03 03:50	11°♈48'32 0°27'51
evening set	3552 Jul 03 07:56	27°☾45'39	max. Earth dist.	3558 Aug 03 05:17	11°♈48'40 30.93908 AU
			morning rise	3558 Aug 19 11:35	12°♈24'40
conjunction	3552 Jul 19 14:50	28°☾21'47 -0°47'55	retrograde	3558 Nov 16 17:36	14°♈20'07
minimum elong	3552 Jul 19 14:50	28°☾21'47 0°47'56	opposition	3559 Feb 02 18:02	12°♈56'08 -0°27'53
max. Earth dist.	3552 Jul 19 21:40	28°☾22'25 30.88120 AU	min. Earth dist.	3559 Feb 02 17:09	12°♈56'12 28.94293 AU
morning rise	3552 Aug 04 22:36	28°☾58'00	direct	3559 Apr 22 05:52	11°♈31'24
	3552 Sep 05 03:37	0°♈	evening set	3559 Jul 20 09:47	13°♈26'22
retrograde	3552 Nov 02 19:07	0°♈54'21			
	3553 Jan 02 00:35	30°♈☾	conjunction	3559 Aug 05 17:43	14°♈02'30 -0°24'21
opposition	3553 Jan 20 02:26	29°☾29'57 -0°49'31	minimum elong	3559 Aug 05 17:43	14°♈02'30 0°24'21
min. Earth dist.	3553 Jan 19 19:48	29°☾30'25 28.88681 AU	max. Earth dist.	3559 Aug 05 17:13	14°♈02'27 30.94677 AU
direct	3553 Apr 08 05:39	28°☾05'25	morning rise	3559 Aug 22 01:33	14°♈38'37
evening set	3553 Jul 05 21:48	0°♈00'10		3559 Sep 01 03:01	15°♈

retrograde	3559 Nov 19 05:20	16° $\Omega$ 33'53		behind sun end	3565 Aug 19 10:24	27° $\Omega$ 23'50	
opposition	3560 Feb 05 04:30	15° $\Omega$ 09'56	-0°24'07	max. Earth dist.	3565 Aug 18 23:54	27° $\Omega$ 22'55	31.00929 AU
min. Earth dist.	3560 Feb 05 04:32	15° $\Omega$ 09'56	28.95078 AU	morning rise	3565 Sep 04 10:46	27° $\Omega$ 59'13	
	3560 Feb 11 01:08	15° $\mathbb{R}\Omega$		retrograde	3565 Dec 02 04:49	29° $\Omega$ 53'42	
direct	3560 Apr 23 16:40	13° $\Omega$ 45'08		opposition	3566 Feb 17 18:22	28° $\Omega$ 30'12	-0°01'00
	3560 Jul 02 12:59	15° $\Omega$		min. Earth dist.	3566 Feb 17 21:37	28° $\Omega$ 29'59	29.01581 AU
evening set	3560 Jul 21 23:21	15° $\Omega$ 40'07		direct	3566 May 07 17:41	27° $\Omega$ 05'21	
				asc. node	3566 May 23 01:36	27° $\Omega$ 09'19	
conjunction	3560 Aug 07 07:32	16° $\Omega$ 16'14	-0°20'48	evening set	3566 Aug 05 09:37	29° $\Omega$ 00'41	
minimum elong	3560 Aug 07 07:32	16° $\Omega$ 16'14	0°20'48				
max. Earth dist.	3560 Aug 07 07:23	16° $\Omega$ 16'13	30.95476 AU	conjunction	3566 Aug 21 17:25	29° $\Omega$ 36'44	0°00'56
morning rise	3560 Aug 23 15:09	16° $\Omega$ 52'20		minimum elong	3566 Aug 21 17:25	29° $\Omega$ 36'44	0°00'57
retrograde	3560 Nov 20 15:49	18° $\Omega$ 47'27		behind sun begin	3566 Aug 21 10:50	29° $\Omega$ 36'09	
opposition	3561 Feb 06 14:55	17° $\Omega$ 23'32	-0°20'19	behind sun end	3566 Aug 22 00:01	29° $\Omega$ 37'19	
min. Earth dist.	3561 Feb 06 15:46	17° $\Omega$ 23'28	28.95897 AU	max. Earth dist.	3566 Aug 21 12:12	29° $\Omega$ 36'17	31.02232 AU
direct	3561 Apr 26 04:54	15° $\Omega$ 58'40			3566 Sep 01 05:05	0° $\mathbb{N}$	
evening set	3561 Jul 24 13:13	17° $\Omega$ 53'42		morning rise	3566 Sep 07 00:07	0° $\mathbb{N}$ 12'41	
				retrograde	3566 Dec 04 14:56	2° $\mathbb{N}$ 07'04	
conjunction	3561 Aug 09 21:16	18° $\Omega$ 29'47	-0°17'14	opposition	3567 Feb 20 04:45	0° $\mathbb{N}$ 43'41	0°02'53
minimum elong	3561 Aug 09 21:17	18° $\Omega$ 29'47	0°17'15	min. Earth dist.	3567 Feb 20 09:41	0° $\mathbb{N}$ 43'20	29.02874 AU
max. Earth dist.	3561 Aug 09 19:19	18° $\Omega$ 29'37	30.96342 AU		3567 Mar 19 07:32	30° $\mathbb{R}\Omega$	
morning rise	3561 Aug 26 04:58	19° $\Omega$ 05'52		direct	3567 May 10 03:42	29° $\Omega$ 18'51	
retrograde	3561 Nov 23 04:46	21° $\Omega$ 00'49			3567 Jun 29 23:15	0° $\mathbb{N}$	
opposition	3562 Feb 09 01:08	19° $\Omega$ 36'57	-0°16'29	evening set	3567 Aug 07 23:19	1° $\mathbb{N}$ 14'15	
min. Earth dist.	3562 Feb 09 02:09	19° $\Omega$ 36'53	28.96814 AU				
direct	3562 Apr 28 17:22	18° $\Omega$ 12'02		conjunction	3567 Aug 24 07:07	1° $\mathbb{N}$ 50'17	0°04'36
evening set	3562 Jul 27 02:56	20° $\Omega$ 07'07		minimum elong	3567 Aug 24 07:06	1° $\mathbb{N}$ 50'17	0°04'36
				behind sun begin	3567 Aug 24 00:39	1° $\mathbb{N}$ 49'42	
conjunction	3562 Aug 12 11:06	20° $\Omega$ 43'12	-0°13'39	behind sun end	3567 Aug 24 13:34	1° $\mathbb{N}$ 50'51	
minimum elong	3562 Aug 12 11:06	20° $\Omega$ 43'12	0°13'39	max. Earth dist.	3567 Aug 24 01:35	1° $\mathbb{N}$ 49'48	31.03489 AU
behind sun begin	3562 Aug 12 07:42	20° $\Omega$ 42'54		morning rise	3567 Sep 09 13:28	2° $\mathbb{N}$ 26'12	
behind sun end	3562 Aug 12 14:31	20° $\Omega$ 43'30		retrograde	3567 Dec 07 01:14	4° $\mathbb{N}$ 20'28	
max. Earth dist.	3562 Aug 12 09:30	20° $\Omega$ 43'04	30.97306 AU	opposition	3568 Feb 22 15:06	2° $\mathbb{N}$ 57'12	0°06'46
morning rise	3562 Aug 28 18:29	21° $\Omega$ 19'14		min. Earth dist.	3568 Feb 22 20:29	2° $\mathbb{N}$ 56'49	29.04080 AU
retrograde	3562 Nov 25 15:40	23° $\Omega$ 14'04		direct	3568 May 11 16:16	1° $\mathbb{N}$ 32'22	
opposition	3563 Feb 11 11:34	21° $\Omega$ 50'15	-0°12'38	evening set	3568 Aug 09 13:02	3° $\mathbb{N}$ 27'49	
min. Earth dist.	3563 Feb 11 13:50	21° $\Omega$ 50'06	28.97840 AU				
direct	3563 May 01 05:59	20° $\Omega$ 25'20		conjunction	3568 Aug 25 20:32	4° $\mathbb{N}$ 03'50	0°08'13
evening set	3563 Jul 29 16:30	22° $\Omega$ 20'27		minimum elong	3568 Aug 25 20:33	4° $\mathbb{N}$ 03'50	0°08'13
				behind sun begin	3568 Aug 25 14:44	4° $\mathbb{N}$ 03'19	
conjunction	3563 Aug 15 00:33	22° $\Omega$ 56'31	-0°10'03	behind sun end	3568 Aug 26 02:21	4° $\mathbb{N}$ 04'21	
minimum elong	3563 Aug 15 00:33	22° $\Omega$ 56'31	0°10'04	max. Earth dist.	3568 Aug 25 12:54	4° $\mathbb{N}$ 03'09	31.04639 AU
behind sun begin	3563 Aug 14 19:18	22° $\Omega$ 56'04		morning rise	3568 Sep 11 02:47	4° $\mathbb{N}$ 39'44	
behind sun end	3563 Aug 15 05:49	22° $\Omega$ 56'59		retrograde	3568 Dec 08 12:43	6° $\mathbb{N}$ 33'53	
max. Earth dist.	3563 Aug 14 21:41	22° $\Omega$ 56'17	30.98405 AU	opposition	3569 Feb 24 01:31	5° $\mathbb{N}$ 10'41	0°10'39
morning rise	3563 Aug 31 07:54	23° $\Omega$ 32'33		min. Earth dist.	3569 Feb 24 08:00	5° $\mathbb{N}$ 10'14	29.05178 AU
retrograde	3563 Nov 28 04:29	25° $\Omega$ 27'15		direct	3569 May 14 02:18	3° $\mathbb{N}$ 45'50	
opposition	3564 Feb 13 21:50	24° $\Omega$ 03'31	-0°08'46	evening set	3569 Aug 12 02:44	5° $\mathbb{N}$ 41'20	
min. Earth dist.	3564 Feb 13 23:35	24° $\Omega$ 03'24	28.99001 AU				
direct	3564 May 02 18:33	22° $\Omega$ 38'36		conjunction	3569 Aug 28 10:15	6° $\mathbb{N}$ 17'19	0°11'49
evening set	3564 Jul 31 06:08	24° $\Omega$ 33'47		minimum elong	3569 Aug 28 10:15	6° $\mathbb{N}$ 17'19	0°11'48
				behind sun begin	3569 Aug 28 05:43	6° $\mathbb{N}$ 16'55	
conjunction	3564 Aug 16 14:11	25° $\Omega$ 09'51	-0°06'27	behind sun end	3569 Aug 28 14:47	6° $\mathbb{N}$ 17'43	
minimum elong	3564 Aug 16 14:12	25° $\Omega$ 09'51	0°06'27	max. Earth dist.	3569 Aug 28 02:30	6° $\mathbb{N}$ 16'37	31.05670 AU
behind sun begin	3564 Aug 16 07:59	25° $\Omega$ 09'18		morning rise	3569 Sep 13 16:02	6° $\mathbb{N}$ 53'11	
behind sun end	3564 Aug 16 20:24	25° $\Omega$ 10'24		retrograde	3569 Dec 10 22:28	8° $\mathbb{N}$ 47'12	
max. Earth dist.	3564 Aug 16 11:02	25° $\Omega$ 09'36	30.99620 AU	opposition	3570 Feb 26 11:50	7° $\mathbb{N}$ 24'04	0°14'29
morning rise	3564 Sep 01 21:17	25° $\Omega$ 45'51		min. Earth dist.	3570 Feb 26 19:31	7° $\mathbb{N}$ 23'31	29.06144 AU
retrograde	3564 Nov 29 15:45	27° $\Omega$ 40'26		direct	3570 May 16 14:11	5° $\mathbb{N}$ 59'11	
opposition	3565 Feb 15 08:09	26° $\Omega$ 16'49	-0°04'53	evening set	3570 Aug 14 16:30	7° $\mathbb{N}$ 54'42	
min. Earth dist.	3565 Feb 15 11:30	26° $\Omega$ 16'35	29.00268 AU				
direct	3565 May 05 05:29	24° $\Omega$ 51'56		conjunction	3570 Aug 30 23:40	8° $\mathbb{N}$ 30'39	0°15'24
evening set	3565 Aug 02 19:48	26° $\Omega$ 47'11		minimum elong	3570 Aug 30 23:39	8° $\mathbb{N}$ 30'39	0°15'24
				behind sun begin	3570 Aug 30 22:10	8° $\mathbb{N}$ 30'31	
conjunction	3565 Aug 19 03:51	27° $\Omega$ 23'15	-0°02'49	behind sun end	3570 Aug 31 01:09	8° $\mathbb{N}$ 30'47	
minimum elong	3565 Aug 19 03:50	27° $\Omega$ 23'15	0°02'49	max. Earth dist.	3570 Aug 30 13:44	8° $\mathbb{N}$ 29'45	31.06590 AU
behind sun begin	3565 Aug 18 21:15	27° $\Omega$ 22'40		morning rise	3570 Sep 16 05:17	9° $\mathbb{N}$ 06'29	

retrograde	3570 Dec 13 10:24	11° $\mathring{M}$ 00'22		minimum elong	3577 Sep 15 18:15	23° $\mathring{M}$ 58'04	0°39'26
opposition	3571 Feb 28 22:08	9° $\mathring{M}$ 37'16	0°18'18	max. Earth dist.	3577 Sep 15 04:10	23° $\mathring{M}$ 56'46	31.13169 AU
min. Earth dist.	3571 Mar 01 06:12	9° $\mathring{M}$ 36'42	29.07026 AU	morning rise	3577 Oct 01 21:09	24° $\mathring{M}$ 33'36	
direct	3571 May 19 02:55	8° $\mathring{M}$ 12'20		retrograde	3577 Dec 28 13:26	26° $\mathring{M}$ 26'37	
evening set	3571 Aug 17 05:51	10° $\mathring{M}$ 07'52		opposition	3578 Mar 15 21:24	25° $\mathring{M}$ 03'48	0°43'51
				min. Earth dist.	3578 Mar 16 09:25	25° $\mathring{M}$ 02'58	29.13812 AU
conjunction	3571 Sep 02 12:55	10° $\mathring{M}$ 43'48	0°18'57	direct	3578 Jun 03 14:54	23° $\mathring{M}$ 38'43	
minimum elong	3571 Sep 02 12:55	10° $\mathring{M}$ 43'48	0°18'56	evening set	3578 Sep 02 02:01	25° $\mathring{M}$ 34'24	
max. Earth dist.	3571 Sep 02 03:09	10° $\mathring{M}$ 42'54	31.07428 AU				
morning rise	3571 Sep 18 18:03	11° $\mathring{M}$ 19'35		conjunction	3578 Sep 18 07:00	26° $\mathring{M}$ 10'07	0°42'41
retrograde	3571 Dec 15 20:11	13° $\mathring{M}$ 13'20		minimum elong	3578 Sep 18 07:00	26° $\mathring{M}$ 10'07	0°42'42
opposition	3572 Mar 02 08:29	11° $\mathring{M}$ 50'14	0°22'06	max. Earth dist.	3578 Sep 17 17:24	26° $\mathring{M}$ 08'51	31.14410 AU
min. Earth dist.	3572 Mar 02 18:08	11° $\mathring{M}$ 49'34	29.07840 AU	morning rise	3578 Oct 04 09:17	26° $\mathring{M}$ 45'37	
direct	3572 May 20 15:38	10° $\mathring{M}$ 25'16		retrograde	3578 Dec 30 22:33	28° $\mathring{M}$ 38'34	
evening set	3572 Aug 18 19:18	12° $\mathring{M}$ 20'49		opposition	3579 Mar 18 07:44	27° $\mathring{M}$ 15'50	0°47'17
				min. Earth dist.	3579 Mar 18 20:39	27° $\mathring{M}$ 14'56	29.15049 AU
conjunction	3572 Sep 04 02:03	12° $\mathring{M}$ 56'42	0°22'28	direct	3579 Jun 06 02:31	25° $\mathring{M}$ 50'47	
minimum elong	3572 Sep 04 02:03	12° $\mathring{M}$ 56'42	0°22'29	evening set	3579 Sep 04 14:59	27° $\mathring{M}$ 46'31	
max. Earth dist.	3572 Sep 03 14:44	12° $\mathring{M}$ 55'40	31.08236 AU				
morning rise	3572 Sep 20 06:59	13° $\mathring{M}$ 32'27		conjunction	3579 Sep 20 19:24	28° $\mathring{M}$ 22'11	0°45'52
retrograde	3572 Dec 17 08:16	15° $\mathring{M}$ 26'03		minimum elong	3579 Sep 20 19:23	28° $\mathring{M}$ 22'11	0°45'51
opposition	3573 Mar 04 18:30	14° $\mathring{M}$ 02'59	0°25'51	max. Earth dist.	3579 Sep 20 04:01	28° $\mathring{M}$ 20'46	31.15630 AU
min. Earth dist.	3573 Mar 05 03:54	14° $\mathring{M}$ 02'19	29.08646 AU	morning rise	3579 Oct 06 21:23	28° $\mathring{M}$ 57'39	
direct	3573 May 23 04:26	12° $\mathring{M}$ 37'56			3579 Nov 07 14:23	0° $\mathring{A}$	
evening set	3573 Aug 21 08:38	14° $\mathring{M}$ 33'29		retrograde	3580 Jan 02 09:53	0° $\mathring{A}$ 50'33	
					3580 Feb 29 02:26	30° $\mathring{R}$ $\mathring{M}$	
conjunction	3573 Sep 06 15:12	15° $\mathring{M}$ 09'21	0°25'57	opposition	3580 Mar 19 18:00	29° $\mathring{M}$ 27'54	0°50'38
minimum elong	3573 Sep 06 15:12	15° $\mathring{M}$ 09'21	0°25'57	min. Earth dist.	3580 Mar 20 07:03	29° $\mathring{M}$ 26'59	29.16245 AU
max. Earth dist.	3573 Sep 06 03:34	15° $\mathring{M}$ 08'17	31.09042 AU	direct	3580 Jun 07 13:53	28° $\mathring{M}$ 02'52	
morning rise	3573 Sep 22 19:39	15° $\mathring{M}$ 45'03		evening set	3580 Sep 06 03:54	29° $\mathring{M}$ 58'39	
retrograde	3573 Dec 19 19:05	17° $\mathring{M}$ 38'31			3580 Sep 06 18:52	0° $\mathring{A}$	
opposition	3574 Mar 07 04:48	16° $\mathring{M}$ 15'27	0°29'33				
min. Earth dist.	3574 Mar 07 15:42	16° $\mathring{M}$ 14'41	29.09483 AU	conjunction	3580 Sep 22 08:04	0° $\mathring{A}$ 34'18	0°48'58
direct	3574 May 25 16:44	14° $\mathring{M}$ 50'22		minimum elong	3580 Sep 22 08:04	0° $\mathring{A}$ 34'18	0°48'58
evening set	3574 Aug 23 21:49	16° $\mathring{M}$ 45'56		max. Earth dist.	3580 Sep 21 16:54	0° $\mathring{A}$ 32'53	31.16767 AU
				morning rise	3580 Oct 08 09:25	1° $\mathring{A}$ 09'43	
conjunction	3574 Sep 09 04:03	17° $\mathring{M}$ 21'46	0°29'24	retrograde	3581 Jan 03 19:25	3° $\mathring{A}$ 02'32	
minimum elong	3574 Sep 09 04:03	17° $\mathring{M}$ 21'46	0°29'25	opposition	3581 Mar 22 04:18	1° $\mathring{A}$ 39'57	0°53'55
max. Earth dist.	3574 Sep 08 15:51	17° $\mathring{M}$ 20'38	31.09914 AU	min. Earth dist.	3581 Mar 22 19:01	1° $\mathring{A}$ 38'56	29.17332 AU
morning rise	3574 Sep 25 08:09	17° $\mathring{M}$ 57'25		direct	3581 Jun 10 01:28	0° $\mathring{A}$ 14'56	
retrograde	3574 Dec 22 06:53	19° $\mathring{M}$ 50'44		evening set	3581 Sep 08 16:56	2° $\mathring{A}$ 10'46	
opposition	3575 Mar 09 14:55	18° $\mathring{M}$ 27'43	0°33'12				
min. Earth dist.	3575 Mar 10 01:20	18° $\mathring{M}$ 26'59	29.10397 AU	conjunction	3581 Sep 24 20:35	2° $\mathring{A}$ 46'22	0°52'00
direct	3575 May 28 06:19	17° $\mathring{M}$ 02'35		minimum elong	3581 Sep 24 20:35	2° $\mathring{A}$ 46'22	0°51'59
evening set	3575 Aug 26 10:59	18° $\mathring{M}$ 58'10		max. Earth dist.	3581 Sep 24 03:46	2° $\mathring{A}$ 44'49	31.17798 AU
				morning rise	3581 Oct 10 21:34	3° $\mathring{A}$ 21'45	
conjunction	3575 Sep 11 16:51	19° $\mathring{M}$ 33'58	0°32'48	retrograde	3582 Jan 06 07:23	5° $\mathring{A}$ 14'30	
minimum elong	3575 Sep 11 16:50	19° $\mathring{M}$ 33'58	0°32'48	opposition	3582 Mar 24 14:38	3° $\mathring{A}$ 51'59	0°57'07
max. Earth dist.	3575 Sep 11 03:55	19° $\mathring{M}$ 32'46	31.10879 AU	min. Earth dist.	3582 Mar 25 05:06	3° $\mathring{A}$ 50'58	29.18303 AU
morning rise	3575 Sep 27 20:32	20° $\mathring{M}$ 09'35		direct	3582 Jun 12 13:59	2° $\mathring{A}$ 26'57	
retrograde	3575 Dec 24 16:30	22° $\mathring{M}$ 02'47		evening set	3582 Sep 11 05:43	4° $\mathring{A}$ 22'49	
opposition	3576 Mar 11 01:08	20° $\mathring{M}$ 39'48	0°36'49				
min. Earth dist.	3576 Mar 11 12:37	20° $\mathring{M}$ 39'00	29.11437 AU	conjunction	3582 Sep 27 08:59	4° $\mathring{A}$ 58'22	0°54'57
direct	3576 May 29 16:48	19° $\mathring{M}$ 14'40		minimum elong	3582 Sep 27 08:59	4° $\mathring{A}$ 58'22	0°54'57
evening set	3576 Aug 27 23:53	21° $\mathring{M}$ 10'16		max. Earth dist.	3582 Sep 26 15:48	4° $\mathring{A}$ 56'47	31.18696 AU
				morning rise	3582 Oct 13 09:20	5° $\mathring{A}$ 33'43	
conjunction	3576 Sep 13 05:35	21° $\mathring{M}$ 46'02	0°36'09	retrograde	3583 Jan 08 18:01	7° $\mathring{A}$ 26'23	
minimum elong	3576 Sep 13 05:34	21° $\mathring{M}$ 46'02	0°36'10	opposition	3583 Mar 27 01:05	6° $\mathring{A}$ 03'54	1°00'13
max. Earth dist.	3576 Sep 12 16:57	21° $\mathring{M}$ 44'52	31.11979 AU	min. Earth dist.	3583 Mar 27 17:12	6° $\mathring{A}$ 02'47	29.19155 AU
morning rise	3576 Sep 29 08:48	22° $\mathring{M}$ 21'37		direct	3583 Jun 15 02:20	4° $\mathring{A}$ 38'53	
retrograde	3576 Dec 26 02:25	24° $\mathring{M}$ 14'43		evening set	3583 Sep 13 18:26	6° $\mathring{A}$ 34'45	
opposition	3577 Mar 13 11:18	22° $\mathring{M}$ 51'49	0°40'22				
min. Earth dist.	3577 Mar 13 22:44	22° $\mathring{M}$ 51'01	29.12581 AU	conjunction	3583 Sep 29 21:15	7° $\mathring{A}$ 10'16	0°57'49
direct	3577 Jun 01 05:18	21° $\mathring{M}$ 26'42		minimum elong	3583 Sep 29 21:15	7° $\mathring{A}$ 10'16	0°57'49
evening set	3577 Aug 30 13:04	23° $\mathring{M}$ 22'20		max. Earth dist.	3583 Sep 29 03:16	7° $\mathring{A}$ 08'36	31.19502 AU
				morning rise	3583 Oct 15 21:09	7° $\mathring{A}$ 45'33	
conjunction	3577 Sep 15 18:15	23° $\mathring{M}$ 58'04	0°39'27	retrograde	3584 Jan 11 05:35	9° $\mathring{A}$ 38'08	

opposition	3584 Mar 28 11:19	8° <u>♂</u> 15'41	1°03'15	minimum elong	3590 Oct 15 07:38	22° <u>♂</u> 29'24	1°15'18
min. Earth dist.	3584 Mar 29 03:12	8° <u>♂</u> 14'35	29.19915 AU	morning rise	3590 Oct 31 03:52	23° <u>♂</u> 04'24	
direct	3584 Jun 16 16:11	6° <u>♂</u> 50'39		retrograde	3591 Jan 26 01:21	24° <u>♂</u> 56'32	
evening set	3584 Sep 15 07:03	8° <u>♂</u> 46'31		opposition	3591 Apr 13 11:46	23° <u>♂</u> 34'22	1°21'32
				min. Earth dist.	3591 Apr 14 05:14	23° <u>♂</u> 33'10	29.25923 AU
conjunction	3584 Oct 01 09:24	9° <u>♂</u> 22'01	1°00'36	direct	3591 Jul 02 22:55	22° <u>♂</u> 09'23	
minimum elong	3584 Oct 01 09:24	9° <u>♂</u> 22'01	1°00'37	evening set	3591 Oct 01 20:12	24° <u>♂</u> 05'20	
max. Earth dist.	3584 Sep 30 14:30	9° <u>♂</u> 20'16	31.20222 AU				
morning rise	3584 Oct 17 08:49	9° <u>♂</u> 57'15		conjunction	3591 Oct 17 19:09	24° <u>♂</u> 40'33	1°17'22
retrograde	3585 Jan 12 15:07	11° <u>♂</u> 49'45		minimum elong	3591 Oct 17 19:09	24° <u>♂</u> 40'33	1°17'22
opposition	3585 Mar 30 21:41	10° <u>♂</u> 27'19	1°06'10	max. Earth dist.	3591 Oct 16 23:16	24° <u>♂</u> 38'42	31.26383 AU
min. Earth dist.	3585 Mar 31 14:49	10° <u>♂</u> 26'07	29.20621 AU	morning rise	3591 Nov 02 14:45	25° <u>♂</u> 15'30	
direct	3585 Jun 19 03:10	9° <u>♂</u> 02'15		retrograde	3592 Jan 28 11:59	27° <u>♂</u> 07'38	
evening set	3585 Sep 17 19:31	10° <u>♂</u> 58'07		opposition	3592 Apr 14 22:17	25° <u>♂</u> 45'31	1°23'42
				min. Earth dist.	3592 Apr 15 17:08	25° <u>♂</u> 44'13	29.26981 AU
conjunction	3585 Oct 03 21:29	11° <u>♂</u> 33'34	1°03'18	direct	3592 Jul 04 10:47	24° <u>♂</u> 20'35	
minimum elong	3585 Oct 03 21:29	11° <u>♂</u> 33'34	1°03'17	evening set	3592 Oct 03 08:11	26° <u>♂</u> 16'34	
max. Earth dist.	3585 Oct 03 02:50	11° <u>♂</u> 31'51	31.20910 AU	max. Earth dist.	3592 Oct 18 10:13	26° <u>♂</u> 49'51	31.27405 AU
morning rise	3585 Oct 19 20:19	12° <u>♂</u> 08'46					
retrograde	3586 Jan 15 00:29	14° <u>♂</u> 01'10		conjunction	3592 Oct 19 06:37	26° <u>♂</u> 51'44	1°19'21
opposition	3586 Apr 02 07:56	12° <u>♂</u> 38'46	1°09'00	minimum elong	3592 Oct 19 06:37	26° <u>♂</u> 51'44	1°19'22
min. Earth dist.	3586 Apr 03 01:06	12° <u>♂</u> 37'34	29.21304 AU	morning rise	3592 Nov 04 01:44	27° <u>♂</u> 26'39	
direct	3586 Jun 21 16:19	11° <u>♂</u> 13'40		retrograde	3593 Jan 29 23:19	29° <u>♂</u> 18'46	
evening set	3586 Sep 20 07:57	13° <u>♂</u> 09'32		opposition	3593 Apr 17 08:51	27° <u>♂</u> 56'42	1°25'45
				min. Earth dist.	3593 Apr 18 03:20	27° <u>♂</u> 55'26	29.27947 AU
conjunction	3586 Oct 06 09:18	13° <u>♂</u> 44'57	1°05'53	direct	3593 Jul 07 00:19	26° <u>♂</u> 31'48	
minimum elong	3586 Oct 06 09:18	13° <u>♂</u> 44'57	1°05'54	evening set	3593 Oct 05 20:12	28° <u>♂</u> 27'48	
max. Earth dist.	3586 Oct 05 13:27	13° <u>♂</u> 43'06	31.21608 AU				
morning rise	3586 Oct 22 07:42	14° <u>♂</u> 20'06		conjunction	3593 Oct 21 18:02	29° <u>♂</u> 02'56	1°21'12
retrograde	3587 Jan 17 11:04	16° <u>♂</u> 12'25		minimum elong	3593 Oct 21 18:02	29° <u>♂</u> 02'56	1°21'12
opposition	3587 Apr 04 18:17	14° <u>♂</u> 50'02	1°11'43	max. Earth dist.	3593 Oct 20 20:49	29° <u>♂</u> 00'58	31.28305 AU
min. Earth dist.	3587 Apr 05 11:35	14° <u>♂</u> 48'49	29.22046 AU	morning rise	3593 Nov 06 12:35	29° <u>♂</u> 37'49	
direct	3587 Jun 24 02:20	13° <u>♂</u> 24'55			3593 Nov 16 23:28	0° <u>♂</u>	
evening set	3587 Sep 22 19:57	15° <u>♂</u> 20'47		retrograde	3594 Feb 01 09:33	1° <u>♂</u> 29'53	
				opposition	3594 Apr 19 19:35	0° <u>♂</u> 07'53	1°27'40
conjunction	3587 Oct 08 20:59	15° <u>♂</u> 56'09	1°08'24	min. Earth dist.	3594 Apr 20 15:09	0° <u>♂</u> 06'32	29.28799 AU
minimum elong	3587 Oct 08 20:58	15° <u>♂</u> 56'09	1°08'23		3594 Apr 24 13:58	30° <u>♂</u> 18'	
max. Earth dist.	3587 Oct 08 02:05	15° <u>♂</u> 54'24	31.22382 AU	direct	3594 Jul 09 11:11	28° <u>♂</u> 43'00	
morning rise	3587 Oct 24 18:42	16° <u>♂</u> 31'16			3594 Sep 19 11:23	0° <u>♂</u>	
retrograde	3588 Jan 19 18:55	18° <u>♂</u> 23'31		evening set	3594 Oct 08 08:03	0° <u>♂</u> 38'59	
opposition	3588 Apr 06 04:41	17° <u>♂</u> 01'09	1°14'20	max. Earth dist.	3594 Oct 23 08:31	1° <u>♂</u> 12'09	31.29087 AU
min. Earth dist.	3588 Apr 06 22:26	16° <u>♂</u> 59'55	29.22869 AU				
direct	3588 Jun 25 14:23	15° <u>♂</u> 36'03		conjunction	3594 Oct 24 05:27	1° <u>♂</u> 14'05	1°22'56
evening set	3588 Sep 24 08:11	17° <u>♂</u> 31'55		minimum elong	3594 Oct 24 05:27	1° <u>♂</u> 14'05	1°22'57
				morning rise	3594 Nov 08 23:24	1° <u>♂</u> 48'55	
conjunction	3588 Oct 10 08:34	18° <u>♂</u> 07'15	1°10'48	retrograde	3595 Feb 03 19:37	3° <u>♂</u> 40'57	
minimum elong	3588 Oct 10 08:34	18° <u>♂</u> 07'15	1°10'48	opposition	3595 Apr 22 06:20	2° <u>♂</u> 18'59	1°29'27
max. Earth dist.	3588 Oct 09 12:27	18° <u>♂</u> 05'23	31.23264 AU	min. Earth dist.	3595 Apr 23 02:01	2° <u>♂</u> 17'37	29.29508 AU
morning rise	3588 Oct 26 05:55	18° <u>♂</u> 42'19		direct	3595 Jul 12 00:57	0° <u>♂</u> 54'07	
retrograde	3589 Jan 21 05:02	20° <u>♂</u> 34'31		evening set	3595 Oct 10 19:46	2° <u>♂</u> 50'05	
opposition	3589 Apr 08 14:52	19° <u>♂</u> 12'13	1°16'51				
min. Earth dist.	3589 Apr 09 08:05	19° <u>♂</u> 11'01	29.23813 AU	conjunction	3595 Oct 26 16:33	3° <u>♂</u> 25'09	1°24'34
direct	3589 Jun 28 00:55	17° <u>♂</u> 47'07		minimum elong	3595 Oct 26 16:33	3° <u>♂</u> 25'09	1°24'33
evening set	3589 Sep 26 20:15	19° <u>♂</u> 43'01		max. Earth dist.	3595 Oct 25 18:15	3° <u>♂</u> 23'04	31.29727 AU
				morning rise	3595 Nov 11 10:06	3° <u>♂</u> 59'56	
conjunction	3589 Oct 12 20:17	20° <u>♂</u> 18'19	1°13'06	retrograde	3596 Feb 06 06:25	5° <u>♂</u> 51'56	
minimum elong	3589 Oct 12 20:17	20° <u>♂</u> 18'19	1°13'05	opposition	3596 Apr 23 17:03	4° <u>♂</u> 29'58	1°31'07
max. Earth dist.	3589 Oct 12 01:05	20° <u>♂</u> 16'32	31.24252 AU	min. Earth dist.	3596 Apr 24 13:02	4° <u>♂</u> 28'35	29.30092 AU
morning rise	3589 Oct 28 16:55	20° <u>♂</u> 53'21		direct	3596 Jul 13 12:02	3° <u>♂</u> 05'06	
retrograde	3590 Jan 23 14:01	22° <u>♂</u> 45'31		evening set	3596 Oct 12 07:23	5° <u>♂</u> 01'02	
opposition	3590 Apr 11 01:23	21° <u>♂</u> 23'16	1°19'15	max. Earth dist.	3596 Oct 27 06:11	5° <u>♂</u> 34'03	31.30242 AU
min. Earth dist.	3590 Apr 11 19:39	21° <u>♂</u> 22'00	29.24845 AU				
direct	3590 Jun 30 11:09	19° <u>♂</u> 58'14		conjunction	3596 Oct 28 03:49	5° <u>♂</u> 36'04	1°26'03
evening set	3590 Sep 29 08:15	21° <u>♂</u> 54'09		minimum elong	3596 Oct 28 03:49	5° <u>♂</u> 36'04	1°26'04
max. Earth dist.	3590 Oct 14 11:36	22° <u>♂</u> 27'32	31.25318 AU	morning rise	3596 Nov 12 20:42	6° <u>♂</u> 10'49	
				retrograde	3597 Feb 07 14:11	8° <u>♂</u> 02'46	
conjunction	3590 Oct 15 07:38	22° <u>♂</u> 29'24	1°15'17	opposition	3597 Apr 26 03:46	6° <u>♂</u> 40'48	1°32'39

min. Earth dist.	3597 Apr 27 00:32	6° <del>ℳ</del> 39'22	29.30548 AU
direct	3597 Jul 16 00:37	5° <del>ℳ</del> 15'56	
evening set	3597 Oct 14 19:02	7° <del>ℳ</del> 11'50	
conjunction	3597 Oct 30 14:47	7° <del>ℳ</del> 46'49	1°27'26
minimum elong	3597 Oct 30 14:47	7° <del>ℳ</del> 46'49	1°27'25
max. Earth dist.	3597 Oct 29 15:50	7° <del>ℳ</del> 44'41	31.30660 AU
morning rise	3597 Nov 15 07:19	8° <del>ℳ</del> 21'32	
retrograde	3598 Feb 10 00:06	10° <del>ℳ</del> 13'26	
opposition	3598 Apr 28 14:29	8° <del>ℳ</del> 51'28	1°34'03
min. Earth dist.	3598 Apr 29 10:45	8° <del>ℳ</del> 50'04	29.30939 AU
direct	3598 Jul 18 11:30	7° <del>ℳ</del> 26'34	
evening set	3598 Oct 17 06:12	9° <del>ℳ</del> 22'26	
max. Earth dist.	3598 Nov 01 03:40	9° <del>ℳ</del> 55'21	31.31024 AU
conjunction	3598 Nov 02 01:35	9° <del>ℳ</del> 57'23	1°28'41
minimum elong	3598 Nov 02 01:35	9° <del>ℳ</del> 57'23	1°28'41
morning rise	3598 Nov 17 17:27	10° <del>ℳ</del> 32'03	
retrograde	3599 Feb 12 08:32	12° <del>ℳ</del> 23'56	
opposition	3599 May 01 01:25	11° <del>ℳ</del> 01'57	1°35'19
min. Earth dist.	3599 May 01 22:36	11° <del>ℳ</del> 00'29	29.31304 AU
direct	3599 Jul 20 22:05	9° <del>ℳ</del> 37'03	
evening set	3599 Oct 19 17:29	11° <del>ℳ</del> 32'52	
conjunction	3599 Nov 04 12:14	12° <del>ℳ</del> 07'47	1°29'48
minimum elong	3599 Nov 04 12:14	12° <del>ℳ</del> 07'47	1°29'47
max. Earth dist.	3599 Nov 03 13:48	12° <del>ℳ</del> 05'42	31.31406 AU
morning rise	3599 Nov 20 03:44	12° <del>ℳ</del> 42'26	
retrograde	3600 Feb 14 19:01	14° <del>ℳ</del> 34'17	
opposition	3600 May 02 12:01	13° <del>ℳ</del> 12'17	1°36'27
min. Earth dist.	3600 May 03 08:02	13° <del>ℳ</del> 10'55	29.31712 AU
direct	3600 Jul 22 09:55	11° <del>ℳ</del> 47'23	
evening set	3600 Oct 21 04:37	13° <del>ℳ</del> 43'12	
conjunction	3600 Nov 05 22:56	14° <del>ℳ</del> 18'05	1°30'47
minimum elong	3600 Nov 05 22:56	14° <del>ℳ</del> 18'05	1°30'48
max. Earth dist.	3600 Nov 05 01:01	14° <del>ℳ</del> 16'02	31.31840 AU
morning rise	3600 Nov 21 13:51	14° <del>ℳ</del> 52'41	
	3600 Nov 24 23:01	15° <del>ℳ</del>	
retrograde	3601 Feb 16 05:12	16° <del>ℳ</del> 44'33	
opposition	3601 May 04 22:59	15° <del>ℳ</del> 22'34	1°37'27
min. Earth dist.	3601 May 05 19:43	15° <del>ℳ</del> 21'08	29.32196 AU
	3601 May 18 19:23	15° <del>ℳ</del>	
direct	3601 Jul 24 21:16	13° <del>ℳ</del> 57'42	
	3601 Sep 27 01:48	15° <del>ℳ</del>	
evening set	3601 Oct 23 15:40	15° <del>ℳ</del> 53'30	
max. Earth dist.	3601 Nov 07 11:50	16° <del>ℳ</del> 26'20	31.32369 AU
conjunction	3601 Nov 08 09:27	16° <del>ℳ</del> 28'21	1°31'39
minimum elong	3601 Nov 08 09:27	16° <del>ℳ</del> 28'21	1°31'39
morning rise	3601 Nov 23 23:54	17° <del>ℳ</del> 02'55	