

evening set	16100 Feb 10 17:56	21° ✕ 41'50		conjunction	16106 Mar 12 21:33	5° ♀ 28'43	0°22'29
				minimum elong	16106 Mar 12 21:34	5° ♀ 28'43	0°22'30
conjunction	16100 Feb 26 20:10	22° ✕ 17'24	0°20'59	max. Earth dist.	16106 Mar 12 21:42	5° ♀ 28'44	31.18883 AU
minimum elong	16100 Feb 26 20:10	22° ✕ 17'24	0°21'10	morning rise	16106 Mar 28 23:30	6° ♀ 04'11	
max. Earth dist.	16100 Feb 26 23:15	22° ✕ 17'41	31.11519 AU	retrograde	16106 Jun 25 21:23	7° ♀ 58'27	
morning rise	16100 Mar 14 22:22	22° ✕ 53'00		opposition	16106 Sep 12 05:17	6° ♀ 35'06	0°24'05
retrograde	16100 Jun 12 00:24	24° ✕ 47'53		min. Earth dist.	16106 Sep 12 04:43	6° ♀ 35'08	29.19568 AU
opposition	16100 Aug 29 15:06	23° ✕ 24'14	0°22'36	direct	16106 Nov 30 06:16	5° ♀ 10'58	
min. Earth dist.	16100 Aug 29 13:07	23° ✕ 24'22	29.12012 AU	evening set	16107 Feb 27 07:30	7° ♀ 05'00	
direct	16100 Nov 16 09:36	22° ✕ 00'02					
evening set	16101 Feb 13 06:15	23° ✕ 54'05		conjunction	16107 Mar 15 09:45	7° ♀ 40'28	0°22'37
				minimum elong	16107 Mar 15 09:45	7° ♀ 40'28	0°22'35
conjunction	16101 Mar 01 08:29	24° ✕ 29'38	0°21'19	max. Earth dist.	16107 Mar 15 10:19	7° ♀ 40'31	31.20215 AU
minimum elong	16101 Mar 01 08:29	24° ✕ 29'38	0°21'27	morning rise	16107 Mar 31 11:25	8° ♀ 15'56	
max. Earth dist.	16101 Mar 01 10:36	24° ✕ 29'49	31.12516 AU	retrograde	16107 Jun 28 06:23	10° ♀ 10'07	
morning rise	16101 Mar 17 10:46	25° ✕ 05'12		opposition	16107 Sep 14 15:44	8° ♀ 46'50	0°24'12
retrograde	16101 Jun 14 12:54	26° ✕ 59'57		min. Earth dist.	16107 Sep 14 16:00	8° ♀ 46'49	29.20845 AU
opposition	16101 Sep 01 01:29	25° ✕ 36'18	0°22'56	direct	16107 Dec 02 17:53	7° ♀ 22'44	
min. Earth dist.	16101 Aug 31 22:47	25° ✕ 36'30	29.13045 AU	evening set	16108 Feb 29 19:52	9° ♀ 16'46	
direct	16101 Nov 18 21:49	24° ✕ 12'04					
evening set	16102 Feb 15 18:33	26° ✕ 06'06		conjunction	16108 Mar 16 21:56	9° ♀ 52'13	0°22'43
				minimum elong	16108 Mar 16 21:56	9° ♀ 52'13	0°22'41
conjunction	16102 Mar 03 20:46	26° ✕ 41'38	0°21'37	max. Earth dist.	16108 Mar 16 20:38	9° ♀ 52'06	31.21440 AU
minimum elong	16102 Mar 03 20:47	26° ✕ 41'38	0°21'44	morning rise	16108 Apr 01 23:39	10° ♀ 27'39	
max. Earth dist.	16102 Mar 03 22:51	26° ✕ 41'49	31.13585 AU	retrograde	16108 Jun 29 17:44	12° ♀ 21'44	
morning rise	16102 Mar 19 22:55	27° ✕ 17'11		opposition	16108 Sep 16 01:59	10° ♀ 58'31	0°24'17
retrograde	16102 Jun 17 00:08	29° ✕ 11'49		min. Earth dist.	16108 Sep 16 02:27	10° ♀ 58'29	29.22012 AU
opposition	16102 Sep 03 11:55	27° ✕ 48'11	0°23'14	direct	16108 Dec 04 04:09	9° ♀ 34'24	
min. Earth dist.	16102 Sep 03 10:23	27° ✕ 48'18	29.14177 AU	evening set	16109 Mar 03 08:05	11° ♀ 28'27	
direct	16102 Nov 21 09:45	26° ✕ 23'57					
evening set	16103 Feb 18 06:43	28° ✕ 17'58		conjunction	16109 Mar 19 10:15	12° ♀ 03'53	0°22'47
				minimum elong	16109 Mar 19 10:15	12° ♀ 03'53	0°22'42
conjunction	16103 Mar 06 09:00	28° ✕ 53'29	0°21'53	max. Earth dist.	16109 Mar 19 09:03	12° ♀ 03'46	31.22533 AU
minimum elong	16103 Mar 06 09:00	28° ✕ 53'29	0°21'57	morning rise	16109 Apr 04 11:43	12° ♀ 39'17	
max. Earth dist.	16103 Mar 06 10:58	28° ✕ 53'39	31.14786 AU	retrograde	16109 Jul 02 03:17	14° ♀ 33'17	
morning rise	16103 Mar 22 11:04	29° ✕ 29'00		opposition	16109 Sep 18 12:25	13° ♀ 10'06	0°24'20
	16103 Apr 06 06:20	0° ♀		min. Earth dist.	16109 Sep 18 14:24	13° ♀ 09'58	29.23039 AU
retrograde	16103 Jun 19 12:07	1° ♀ 23'32		direct	16109 Dec 06 14:35	11° ♀ 45'59	
opposition	16103 Sep 05 22:15	29° ✕ 59'57	0°23'29	evening set	16110 Mar 05 20:17	13° ♀ 40'01	
	16103 Sep 05 21:29	30° ♁					
min. Earth dist.	16103 Sep 05 19:53	0° ♀ 00'07	29.15431 AU	conjunction	16110 Mar 21 22:18	14° ♀ 15'26	0°22'49
direct	16103 Nov 23 22:38	28° ✕ 35'43		minimum elong	16110 Mar 21 22:18	14° ♀ 15'26	0°22'43
	16104 Feb 06 13:58	0° ♀		max. Earth dist.	16110 Mar 21 19:45	14° ♀ 15'12	31.23509 AU
evening set	16104 Feb 20 18:51	0° ♀ 29'43		morning rise	16110 Apr 06 23:43	14° ♀ 50'49	
				retrograde	16110 Jul 04 15:06	16° ♀ 44'43	
conjunction	16104 Mar 07 21:03	1° ♀ 05'14	0°22'07	opposition	16110 Sep 20 22:35	15° ♀ 21'34	0°24'21
minimum elong	16104 Mar 07 21:03	1° ♀ 05'14	0°22'11	min. Earth dist.	16110 Sep 21 00:13	15° ♀ 21'27	29.23962 AU
max. Earth dist.	16104 Mar 07 22:20	1° ♀ 05'21	31.16096 AU	direct	16110 Dec 09 02:38	13° ♀ 57'26	
morning rise	16104 Mar 23 23:09	1° ♀ 40'44		evening set	16111 Mar 08 08:21	15° ♀ 51'26	
retrograde	16104 Jun 20 22:52	3° ♀ 35'10					
opposition	16104 Sep 07 08:42	2° ♀ 11'39	0°23'43	conjunction	16111 Mar 24 10:19	16° ♀ 26'50	0°22'49
min. Earth dist.	16104 Sep 07 07:24	2° ♀ 11'45	29.16792 AU	minimum elong	16111 Mar 24 10:19	16° ♀ 26'50	0°22'41
direct	16104 Nov 25 08:38	0° ♀ 47'27		max. Earth dist.	16111 Mar 24 07:23	16° ♀ 26'34	31.24385 AU
evening set	16105 Feb 22 07:02	2° ♀ 41'28		morning rise	16111 Apr 09 11:33	17° ♀ 02'12	
				retrograde	16111 Jul 07 01:53	18° ♀ 56'00	
conjunction	16105 Mar 10 09:22	3° ♀ 16'58	0°22'19	opposition	16111 Sep 23 08:53	17° ♀ 32'52	0°24'20
minimum elong	16105 Mar 10 09:22	3° ♀ 16'58	0°22'20	min. Earth dist.	16111 Sep 23 12:00	17° ♀ 32'39	29.24811 AU
max. Earth dist.	16105 Mar 10 11:07	3° ♀ 17'07	31.17490 AU	direct	16111 Dec 11 14:13	16° ♀ 08'42	
morning rise	16105 Mar 26 11:17	3° ♀ 52'27		evening set	16112 Mar 09 20:12	18° ♀ 02'42	
retrograde	16105 Jun 23 09:50	5° ♀ 46'47					
opposition	16105 Sep 09 18:53	4° ♀ 23'22	0°23'55	conjunction	16112 Mar 25 22:10	18° ♀ 38'05	0°22'47
min. Earth dist.	16105 Sep 09 17:38	4° ♀ 23'27	29.18188 AU	minimum elong	16112 Mar 25 22:11	18° ♀ 38'05	0°22'38
direct	16105 Nov 27 20:49	2° ♀ 59'12		max. Earth dist.	16112 Mar 25 18:51	18° ♀ 37'47	31.25218 AU
evening set	16106 Feb 24 19:25	4° ♀ 53'14		morning rise	16112 Apr 10 23:19	19° ♀ 13'25	
				retrograde	16112 Jul 08 13:14	21° ♀ 07'07	

opposition	16112 Sep 24 18:59	19° Υ 44'00	0°24'17	conjunction	16119 Apr 11 07:39	3° \mathcal{B} 54'16	0°21'40
min. Earth dist.	16112 Sep 24 21:39	19° Υ 43'48	29.25621 AU	minimum elong	16119 Apr 11 07:39	3° \mathcal{B} 54'16	0°21'19
direct	16112 Dec 13 03:19	18° Υ 19'49		max. Earth dist.	16119 Apr 11 01:40	3° \mathcal{B} 53'44	31.32075 AU
evening set	16113 Mar 12 08:12	20° Υ 13'48		morning rise	16119 Apr 27 07:37	4° \mathcal{B} 29'29	
				retrograde	16119 Jul 24 12:25	6° \mathcal{B} 22'41	
conjunction	16113 Mar 28 09:59	20° Υ 49'10	0°22'44	opposition	16119 Oct 10 17:36	4° \mathcal{B} 59'58	0°22'57
minimum elong	16113 Mar 28 09:59	20° Υ 49'10	0°22'31	min. Earth dist.	16119 Oct 10 22:29	4° \mathcal{B} 59'37	29.32572 AU
max. Earth dist.	16113 Mar 28 05:43	20° Υ 48'47	31.26021 AU	direct	16119 Dec 29 05:14	3° \mathcal{B} 35'55	
morning rise	16113 Apr 13 11:02	21° Υ 24'29		evening set	16120 Mar 27 18:17	5° \mathcal{B} 29'59	
retrograde	16113 Jul 10 23:34	23° Υ 18'04					
opposition	16113 Sep 27 05:03	21° Υ 54'58	0°24'12	conjunction	16120 Apr 12 19:16	6° \mathcal{B} 05'14	0°21'23
min. Earth dist.	16113 Sep 27 08:50	21° Υ 54'42	29.26445 AU	minimum elong	16120 Apr 12 19:17	6° \mathcal{B} 05'14	0°21'00
direct	16113 Dec 15 13:31	20° Υ 30'46		max. Earth dist.	16120 Apr 12 12:47	6° \mathcal{B} 04'39	31.33020 AU
evening set	16114 Mar 14 19:58	22° Υ 24'45		morning rise	16120 Apr 28 19:00	6° \mathcal{B} 40'25	
				retrograde	16120 Jul 25 22:52	8° \mathcal{B} 33'34	
conjunction	16114 Mar 30 21:47	23° Υ 00'06	0°22'38	opposition	16120 Oct 12 03:53	7° \mathcal{B} 10'53	0°22'37
minimum elong	16114 Mar 30 21:47	23° Υ 00'06	0°22'25	min. Earth dist.	16120 Oct 12 10:22	7° \mathcal{B} 10'26	29.33452 AU
max. Earth dist.	16114 Mar 30 18:06	22° Υ 59'46	31.26867 AU	direct	16120 Dec 30 16:09	5° \mathcal{B} 46'51	
morning rise	16114 Apr 15 22:33	23° Υ 35'23		evening set	16121 Mar 30 06:05	7° \mathcal{B} 40'56	
retrograde	16114 Jul 13 10:08	25° Υ 28'52					
opposition	16114 Sep 29 15:11	24° Υ 05'49	0°24'05	conjunction	16121 Apr 15 06:56	8° \mathcal{B} 16'10	0°21'03
min. Earth dist.	16114 Sep 29 18:44	24° Υ 05'34	29.27318 AU	minimum elong	16121 Apr 15 06:56	8° \mathcal{B} 16'10	0°20'38
direct	16114 Dec 18 02:12	22° Υ 41'37		max. Earth dist.	16121 Apr 14 23:49	8° \mathcal{B} 15'31	31.33826 AU
evening set	16115 Mar 17 07:39	24° Υ 35'34		morning rise	16121 May 01 06:26	8° \mathcal{B} 51'20	
				retrograde	16121 Jul 28 09:48	10° \mathcal{B} 44'24	
conjunction	16115 Apr 02 09:12	25° Υ 10'55	0°22'30	opposition	16121 Oct 14 13:58	9° \mathcal{B} 21'45	0°22'15
minimum elong	16115 Apr 02 09:12	25° Υ 10'55	0°22'15	min. Earth dist.	16121 Oct 14 20:15	9° \mathcal{B} 21'19	29.34171 AU
max. Earth dist.	16115 Apr 02 04:19	25° Υ 10'28	31.27785 AU	direct	16122 Jan 02 04:44	7° \mathcal{B} 57'43	
morning rise	16115 Apr 18 09:56	25° Υ 46'11		evening set	16122 Apr 01 17:53	9° \mathcal{B} 51'47	
retrograde	16115 Jul 15 21:03	27° Υ 39'36					
opposition	16115 Oct 02 01:18	26° Υ 16'34	0°23'55	conjunction	16122 Apr 17 18:28	10° \mathcal{B} 27'00	0°20'42
min. Earth dist.	16115 Oct 02 04:58	26° Υ 16'19	29.28293 AU	minimum elong	16122 Apr 17 18:29	10° \mathcal{B} 27'00	0°20'17
direct	16115 Dec 20 11:52	24° Υ 52'23		max. Earth dist.	16122 Apr 17 10:05	10° \mathcal{B} 26'15	31.34468 AU
evening set	16116 Mar 18 19:17	26° Υ 46'21		morning rise	16122 May 03 17:49	11° \mathcal{B} 02'09	
				retrograde	16122 Jul 30 20:44	12° \mathcal{B} 55'08	
conjunction	16116 Apr 03 20:54	27° Υ 21'41	0°22'21	opposition	16122 Oct 17 00:15	11° \mathcal{B} 32'30	0°21'52
minimum elong	16116 Apr 03 20:55	27° Υ 21'41	0°22'05	min. Earth dist.	16122 Oct 17 07:47	11° \mathcal{B} 31'59	29.34749 AU
max. Earth dist.	16116 Apr 03 16:53	27° Υ 21'19	31.28804 AU	direct	16123 Jan 04 15:16	10° \mathcal{B} 08'26	
morning rise	16116 Apr 19 21:19	27° Υ 56'56		evening set	16123 Apr 04 05:18	12° \mathcal{B} 02'29	
retrograde	16116 Jul 17 05:13	29° Υ 50'17					
opposition	16116 Oct 03 11:19	28° Υ 27'20	0°23'44	conjunction	16123 Apr 20 05:53	12° \mathcal{B} 37'42	0°20'19
min. Earth dist.	16116 Oct 03 15:30	28° Υ 27'02	29.29347 AU	minimum elong	16123 Apr 20 05:53	12° \mathcal{B} 37'42	0°19'52
direct	16116 Dec 21 23:08	27° Υ 03'11		max. Earth dist.	16123 Apr 19 21:48	12° \mathcal{B} 36'57	31.34977 AU
evening set	16117 Mar 21 07:08	28° Υ 57'10		morning rise	16123 May 06 04:55	13° \mathcal{B} 12'48	
					16123 Jul 14 20:48	15° \mathcal{B}	
conjunction	16117 Apr 06 08:29	29° Υ 32'28	0°22'09	retrograde	16123 Aug 02 07:20	15° \mathcal{B} 05'43	
minimum elong	16117 Apr 06 08:29	29° Υ 32'28	0°21'51		16123 Aug 20 19:59	15° \mathcal{R} \mathcal{B}	
max. Earth dist.	16117 Apr 06 03:05	29° Υ 31'59	31.29902 AU	opposition	16123 Oct 19 10:25	13° \mathcal{B} 43'05	0°21'26
	16117 Apr 18 19:44	0° \mathcal{B}		min. Earth dist.	16123 Oct 19 18:11	13° \mathcal{B} 42'32	29.35185 AU
morning rise	16117 Apr 22 08:54	0° \mathcal{B} 07'43		direct	16124 Jan 07 04:49	12° \mathcal{B} 18'59	
retrograde	16117 Jul 19 15:58	2° \mathcal{B} 01'00		evening set	16124 Apr 05 16:57	14° \mathcal{B} 13'00	
opposition	16117 Oct 05 21:22	0° \mathcal{B} 38'08	0°23'30				
min. Earth dist.	16117 Oct 06 01:17	0° \mathcal{B} 37'52	29.30463 AU	conjunction	16124 Apr 21 17:14	14° \mathcal{B} 48'12	0°19'55
	16117 Oct 29 16:02	30° \mathcal{R} Υ		minimum elong	16124 Apr 21 17:14	14° \mathcal{B} 48'12	0°19'28
direct	16117 Dec 24 08:33	29° Υ 14'02		max. Earth dist.	16124 Apr 21 07:32	14° \mathcal{B} 47'18	31.35363 AU
	16118 Feb 16 10:32	0° \mathcal{B}			16124 Apr 27 01:09	15° \mathcal{B}	
evening set	16118 Mar 23 18:46	1° \mathcal{B} 08'02		morning rise	16124 May 07 16:13	15° \mathcal{B} 23'17	
				retrograde	16124 Aug 03 17:54	17° \mathcal{B} 16'06	
conjunction	16118 Apr 08 20:05	1° \mathcal{B} 43'20	0°21'55	opposition	16124 Oct 20 20:24	15° \mathcal{B} 53'27	0°20'59
minimum elong	16118 Apr 08 20:05	1° \mathcal{B} 43'20	0°21'36	min. Earth dist.	16124 Oct 21 04:38	15° \mathcal{B} 52'53	29.35535 AU
max. Earth dist.	16118 Apr 08 15:13	1° \mathcal{B} 42'54	31.31009 AU		16124 Nov 24 18:54	15° \mathcal{R} \mathcal{B}	
morning rise	16118 Apr 24 20:08	2° \mathcal{B} 18'34		direct	16125 Jan 08 15:30	14° \mathcal{B} 29'19	
retrograde	16118 Jul 22 01:16	4° \mathcal{B} 11'49			16125 Feb 21 11:41	15° \mathcal{B}	
opposition	16118 Oct 08 07:33	2° \mathcal{B} 49'01	0°23'15	evening set	16125 Apr 08 04:23	16° \mathcal{B} 23'19	
min. Earth dist.	16118 Oct 08 12:51	2° \mathcal{B} 48'39	29.31555 AU				
direct	16118 Dec 26 17:37	1° \mathcal{B} 24'57		conjunction	16125 Apr 24 04:39	16° \mathcal{B} 58'29	0°19'29
evening set	16119 Mar 26 06:34	3° \mathcal{B} 19'00		minimum elong	16125 Apr 24 04:39	16° \mathcal{B} 58'29	0°18'59

max. Earth dist.	16125 Apr 23 19:34	16° 8 57'39	31.35674 AU	retrograde	16131 Aug 19 14:59	2° II 25'40	
morning rise	16125 May 10 03:14	17° 8 33'33		opposition	16131 Nov 05 19:12	1° II 03'14	0°17'04
retrograde	16125 Aug 06 01:57	19° 8 26'16		min. Earth dist.	16131 Nov 06 05:02	1° II 02'34	29.38448 AU
opposition	16125 Oct 23 06:33	18° 8 03'38	0°20'30		16131 Dec 19 02:55	30° R 8	
min. Earth dist.	16125 Oct 23 15:30	18° 8 03'01	29.35821 AU	direct	16132 Jan 24 17:41	29° 8 39'08	
direct	16126 Jan 11 03:22	16° 8 39'27			16132 Feb 29 19:02	0° II	
evening set	16126 Apr 10 15:43	18° 8 33'25		evening set	16132 Apr 23 10:43	1° II 33'16	
conjunction	16126 Apr 26 15:37	19° 8 08'34	0°19'01	conjunction	16132 May 09 09:33	2° II 08'21	0°15'44
minimum elong	16126 Apr 26 15:37	19° 8 08'34	0°18'31	minimum elong	16132 May 09 09:33	2° II 08'21	0°15'07
max. Earth dist.	16126 Apr 26 05:18	19° 8 07'38	31.35961 AU	behind sun begin	16132 May 09 07:25	2° II 08'09	
morning rise	16126 May 12 14:08	19° 8 43'37		behind sun end	16132 May 09 11:42	2° II 08'32	
retrograde	16126 Aug 08 12:07	21° 8 36'16		max. Earth dist.	16132 May 08 23:09	2° II 07'24	31.38645 AU
opposition	16126 Oct 25 16:35	20° 8 13'37	0°20'00	morning rise	16132 May 25 06:31	2° II 43'18	
min. Earth dist.	16126 Oct 26 01:00	20° 8 13'02	29.36123 AU	retrograde	16132 Aug 21 01:58	4° II 35'50	
direct	16127 Jan 13 13:35	18° 8 49'24		opposition	16132 Nov 07 05:20	3° II 13'28	0°16'24
evening set	16127 Apr 13 02:55	20° 8 43'21		min. Earth dist.	16132 Nov 07 15:27	3° II 12'46	29.38824 AU
conjunction	16127 Apr 29 02:45	21° 8 18'29	0°18'32	direct	16133 Jan 26 06:51	1° II 49'24	
minimum elong	16127 Apr 29 02:45	21° 8 18'29	0°18'00	evening set	16133 Apr 25 22:04	3° II 43'34	
max. Earth dist.	16127 Apr 28 17:10	21° 8 17'37	31.36279 AU	conjunction	16133 May 11 20:30	4° II 18'38	0°15'06
morning rise	16127 May 15 00:53	21° 8 53'31		minimum elong	16133 May 11 20:30	4° II 18'38	0°14'28
retrograde	16127 Aug 10 20:39	23° 8 46'06		behind sun begin	16133 May 11 17:39	4° II 18'23	
opposition	16127 Oct 28 02:41	22° 8 23'28	0°19'28	behind sun end	16133 May 11 23:21	4° II 18'53	
min. Earth dist.	16127 Oct 28 12:06	22° 8 22'49	29.36481 AU	max. Earth dist.	16133 May 11 08:31	4° II 17'32	31.38959 AU
direct	16128 Jan 15 23:02	20° 8 59'14		morning rise	16133 May 27 17:21	4° II 53'35	
evening set	16128 Apr 14 14:08	22° 8 53'12		retrograde	16133 Aug 23 13:10	6° II 46'06	
conjunction	16128 Apr 30 13:43	23° 8 28'19	0°18'01	opposition	16133 Nov 09 15:40	5° II 23'46	0°15'42
minimum elong	16128 Apr 30 13:43	23° 8 28'19	0°17'29	min. Earth dist.	16133 Nov 10 02:03	5° II 23'04	29.39077 AU
max. Earth dist.	16128 Apr 30 03:34	23° 8 27'23	31.36685 AU	direct	16134 Jan 28 17:28	3° II 59'43	
morning rise	16128 May 16 11:45	24° 8 03'20		evening set	16134 Apr 28 09:05	5° II 53'54	
retrograde	16128 Aug 12 06:58	25° 8 55'52		conjunction	16134 May 14 07:27	6° II 28'58	0°14'27
opposition	16128 Oct 29 12:42	24° 8 33'16	0°18'54	minimum elong	16134 May 14 07:26	6° II 28'58	0°13'49
min. Earth dist.	16128 Oct 29 21:08	24° 8 32'41	29.36922 AU	behind sun begin	16134 May 14 04:04	6° II 28'40	
direct	16129 Jan 17 10:20	23° 8 09'03		behind sun end	16134 May 14 10:49	6° II 29'16	
evening set	16129 Apr 17 01:20	25° 8 03'02		max. Earth dist.	16134 May 13 20:02	6° II 27'55	31.39131 AU
conjunction	16129 May 03 00:43	25° 8 38'09	0°17'29	morning rise	16134 May 30 03:51	7° II 03'53	
minimum elong	16129 May 03 00:43	25° 8 38'09	0°16'55	retrograde	16134 Aug 25 21:34	8° II 56'24	
max. Earth dist.	16129 May 02 14:35	25° 8 37'14	31.37159 AU	opposition	16134 Nov 12 02:05	7° II 34'06	0°15'00
morning rise	16129 May 18 22:27	26° 8 13'09		min. Earth dist.	16134 Nov 12 13:22	7° II 33'19	29.39172 AU
retrograde	16129 Aug 14 16:58	28° 8 05'41		direct	16135 Jan 31 05:20	6° II 10'02	
opposition	16129 Oct 31 22:51	26° 8 43'08	0°18'19	evening set	16135 Apr 30 20:18	8° II 04'14	
min. Earth dist.	16129 Nov 01 08:19	26° 8 42'29	29.37432 AU	conjunction	16135 May 16 18:16	8° II 39'17	0°13'46
direct	16130 Jan 19 20:08	25° 8 18'57		minimum elong	16135 May 16 18:17	8° II 39'17	0°13'07
evening set	16130 Apr 19 12:27	27° 8 12'59		behind sun begin	16135 May 16 14:26	8° II 38'56	
conjunction	16130 May 05 11:40	27° 8 48'05	0°16'56	behind sun end	16135 May 16 22:07	8° II 39'37	
minimum elong	16130 May 05 11:40	27° 8 48'05	0°16'21	max. Earth dist.	16135 May 16 05:24	8° II 38'06	31.39164 AU
max. Earth dist.	16130 May 05 01:38	27° 8 47'10	31.37694 AU	morning rise	16135 Jun 01 14:37	9° II 14'11	
morning rise	16130 May 21 09:10	28° 8 23'04		retrograde	16135 Aug 28 08:09	11° II 06'40	
retrograde	16130 Jul 17 15:08	0° II		opposition	16135 Nov 14 12:15	9° II 44'22	0°14'16
opposition	16130 Aug 17 03:43	0° II 15'36		min. Earth dist.	16135 Nov 14 23:13	9° II 43'37	29.39138 AU
min. Earth dist.	16130 Sep 17 05:12	30° R 8		direct	16136 Feb 02 15:55	8° II 20'17	
direct	16130 Nov 03 08:56	28° 8 53'07	0°17'42	evening set	16136 May 02 07:21	10° II 14'29	
evening set	16130 Nov 03 17:48	28° 8 52'30	29.37959 AU	conjunction	16136 May 18 05:15	10° II 49'31	0°13'05
conjunction	16131 Jan 22 07:43	27° 8 28'59		minimum elong	16136 May 18 05:14	10° II 49'31	0°12'25
evening set	16131 Apr 21 23:32	29° 8 23'03		behind sun begin	16136 May 18 01:00	10° II 49'09	
conjunction	16131 May 07 22:27	29° 8 58'09	0°16'20	behind sun end	16136 May 18 09:28	10° II 49'54	
minimum elong	16131 May 07 22:27	29° 8 58'09	0°15'44	max. Earth dist.	16136 May 17 16:41	10° II 48'22	31.39058 AU
behind sun begin	16131 May 07 21:21	29° 8 58'03		morning rise	16136 Jun 03 01:12	11° II 24'25	
behind sun end	16131 May 07 23:33	29° 8 58'14		retrograde	16136 Aug 29 16:50	13° II 16'52	
max. Earth dist.	16131 May 07 11:33	29° 8 57'09	31.38205 AU	opposition	16136 Nov 15 22:40	11° II 54'33	0°13'31
morning rise	16131 May 08 18:38	0° II		min. Earth dist.	16136 Nov 16 11:00	11° II 53'42	29.38976 AU
evening set	16131 May 23 19:47	0° II 33'07		direct	16137 Feb 04 01:48	10° II 30'26	
				evening set	16137 May 04 18:22	12° II 24'37	

conjunction	16137 May 20 15:56	12° Π 59'38	0°12'23	opposition	16142 Nov 29 12:47	24° Π 53'11	0°08'41
minimum elong	16137 May 20 15:56	12° Π 59'38	0°11'41	min. Earth dist.	16142 Nov 30 00:05	24° Π 52'25	29.38096 AU
behind sun begin	16137 May 20 11:21	12° Π 59'13		direct	16143 Feb 17 19:42	23° Π 28'59	
behind sun end	16137 May 20 20:32	13° Π 00'02		evening set	16143 May 18 10:44	25° Π 23'13	
max. Earth dist.	16137 May 20 02:44	12° Π 58'25	31.38856 AU				
morning rise	16137 Jun 05 11:44	13° Π 34'31		conjunction	16143 Jun 03 06:58	25° Π 58'09	0°07'50
retrograde	16137 Sep 01 01:57	15° Π 26'55		minimum elong	16143 Jun 03 06:58	25° Π 58'09	0°07'06
opposition	16137 Nov 18 08:53	14° Π 04'36	0°12'45	behind sun begin	16143 Jun 03 00:58	25° Π 57'37	
min. Earth dist.	16137 Nov 18 20:24	14° Π 03'48	29.38734 AU	behind sun end	16143 Jun 03 12:57	25° Π 58'41	
direct	16138 Feb 06 13:33	12° Π 40'26		max. Earth dist.	16143 Jun 02 18:49	25° Π 57'03	31.38098 AU
evening set	16138 May 07 05:15	14° Π 34'35		morning rise	16143 Jun 19 01:10	26° Π 32'57	
				retrograde	16143 Sep 14 14:51	28° Π 25'21	
conjunction	16138 May 23 02:36	15° Π 09'36	0°11'39	opposition	16143 Dec 01 23:14	27° Π 03'02	0°07'50
minimum elong	16138 May 23 02:36	15° Π 09'36	0°10'58	min. Earth dist.	16143 Dec 02 11:14	27° Π 02'13	29.38109 AU
behind sun begin	16138 May 22 21:42	15° Π 09'10		direct	16144 Feb 20 07:22	25° Π 38'52	
behind sun end	16138 May 23 07:29	15° Π 10'02		evening set	16144 May 19 21:37	27° Π 33'08	
max. Earth dist.	16138 May 22 13:16	15° Π 08'22	31.38591 AU				
morning rise	16138 Jun 07 22:06	15° Π 44'28		conjunction	16144 Jun 04 17:26	28° Π 08'04	0°07'02
retrograde	16138 Sep 03 11:08	17° Π 36'50		minimum elong	16144 Jun 04 17:26	28° Π 08'04	0°06'18
opposition	16138 Nov 20 19:17	16° Π 14'28	0°11'58	behind sun begin	16144 Jun 04 11:18	28° Π 07'32	
min. Earth dist.	16138 Nov 21 07:45	16° Π 13'37	29.38478 AU	behind sun end	16144 Jun 04 23:34	28° Π 08'37	
direct	16139 Feb 08 22:56	14° Π 50'15		max. Earth dist.	16144 Jun 04 04:13	28° Π 06'51	31.38095 AU
evening set	16139 May 09 15:54	16° Π 44'24		morning rise	16144 Jun 20 11:34	28° Π 42'52	
					16144 Jul 31 14:15	0° \mathfrak{C}	
conjunction	16139 May 25 13:04	17° Π 19'23	0°10'55	retrograde	16144 Sep 16 02:17	0° \mathfrak{C} 35'18	
minimum elong	16139 May 25 13:04	17° Π 19'23	0°10'13		16144 Nov 03 00:06	30° \mathfrak{R} Π	
behind sun begin	16139 May 25 07:54	17° Π 18'56		opposition	16144 Dec 03 09:46	29° Π 13'01	0°06'58
behind sun end	16139 May 25 18:14	17° Π 19'51		min. Earth dist.	16144 Dec 03 21:09	29° Π 12'14	29.38070 AU
max. Earth dist.	16139 May 25 00:11	17° Π 18'12	31.38351 AU	direct	16145 Feb 21 18:23	27° Π 48'53	
morning rise	16139 Jun 10 08:20	17° Π 54'14		evening set	16145 May 22 08:19	29° Π 43'11	
retrograde	16139 Sep 05 20:57	19° Π 46'35			16145 May 30 00:28	0° \mathfrak{C}	
opposition	16139 Nov 23 05:35	18° Π 24'12	0°11'11				
min. Earth dist.	16139 Nov 23 17:12	18° Π 23'24	29.38254 AU	conjunction	16145 Jun 07 03:59	0° \mathfrak{C} 18'07	0°06'13
direct	16140 Feb 11 10:20	16° Π 59'57		minimum elong	16145 Jun 07 03:58	0° \mathfrak{C} 18'07	0°05'28
evening set	16140 May 11 02:46	18° Π 54'06		behind sun begin	16145 Jun 06 21:43	0° \mathfrak{C} 17'34	
				behind sun end	16145 Jun 07 10:14	0° \mathfrak{C} 18'40	
conjunction	16140 May 26 23:34	19° Π 29'04	0°10'10	max. Earth dist.	16145 Jun 06 15:15	0° \mathfrak{C} 16'57	31.37997 AU
minimum elong	16140 May 26 23:35	19° Π 29'04	0°09'28	morning rise	16145 Jun 22 21:41	0° \mathfrak{C} 52'54	
behind sun begin	16140 May 26 18:10	19° Π 28'35		retrograde	16145 Sep 18 11:29	2° \mathfrak{C} 45'23	
behind sun end	16140 May 27 04:59	19° Π 29'32		opposition	16145 Dec 05 20:34	1° \mathfrak{C} 23'08	0°06'05
max. Earth dist.	16140 May 26 10:05	19° Π 27'49	31.38163 AU	min. Earth dist.	16145 Dec 06 09:10	1° \mathfrak{C} 22'16	29.37921 AU
morning rise	16140 Jun 11 18:39	20° Π 03'54			16146 Feb 16 08:03	30° \mathfrak{R} Π	
retrograde	16140 Sep 07 07:50	21° Π 56'14		direct	16146 Feb 24 04:32	29° Π 59'01	
opposition	16140 Nov 24 15:53	20° Π 33'50	0°10'22		16146 Mar 03 22:57	0° \mathfrak{C}	
min. Earth dist.	16140 Nov 25 03:51	20° Π 33'01	29.38122 AU	evening set	16146 May 24 19:08	1° \mathfrak{C} 53'21	
direct	16141 Feb 12 20:37	19° Π 09'35					
evening set	16141 May 13 13:27	21° Π 03'44		conjunction	16146 Jun 09 14:29	2° \mathfrak{C} 28'16	0°05'23
				minimum elong	16146 Jun 09 14:29	2° \mathfrak{C} 28'16	0°04'40
conjunction	16141 May 29 10:10	21° Π 38'42	0°09'24	behind sun begin	16146 Jun 09 08:08	2° \mathfrak{C} 27'42	
minimum elong	16141 May 29 10:10	21° Π 38'42	0°08'41	behind sun end	16146 Jun 09 20:50	2° \mathfrak{C} 28'50	
behind sun begin	16141 May 29 04:32	21° Π 38'12		max. Earth dist.	16146 Jun 09 01:15	2° \mathfrak{C} 27'03	31.37793 AU
behind sun end	16141 May 29 15:47	21° Π 39'12		morning rise	16146 Jun 25 08:02	3° \mathfrak{C} 03'03	
max. Earth dist.	16141 May 28 21:51	21° Π 37'34	31.38079 AU	retrograde	16146 Sep 20 21:23	4° \mathfrak{C} 55'34	
morning rise	16141 Jun 14 04:51	22° Π 13'31		opposition	16146 Dec 08 07:15	3° \mathfrak{C} 33'20	0°05'11
retrograde	16141 Sep 09 18:25	24° Π 05'52		min. Earth dist.	16146 Dec 08 19:03	3° \mathfrak{C} 32'32	29.37646 AU
opposition	16141 Nov 27 02:21	22° Π 43'28	0°09'32	direct	16147 Feb 26 15:54	2° \mathfrak{C} 09'14	
min. Earth dist.	16141 Nov 27 14:01	22° Π 42'40	29.38074 AU	evening set	16147 May 27 05:52	4° \mathfrak{C} 03'36	
direct	16142 Feb 15 09:26	21° Π 19'14		max. Earth dist.	16147 Jun 11 11:21	4° \mathfrak{C} 37'15	31.37439 AU
evening set	16142 May 16 00:07	23° Π 13'25					
				conjunction	16147 Jun 12 01:00	4° \mathfrak{C} 38'31	0°04'33
conjunction	16142 May 31 20:24	23° Π 48'22	0°08'38	minimum elong	16147 Jun 12 00:59	4° \mathfrak{C} 38'31	0°03'49
minimum elong	16142 May 31 20:24	23° Π 48'22	0°07'55	behind sun begin	16147 Jun 11 18:34	4° \mathfrak{C} 37'57	
behind sun begin	16142 May 31 14:35	23° Π 47'51		behind sun end	16147 Jun 12 07:24	4° \mathfrak{C} 39'05	
behind sun end	16142 Jun 01 02:14	23° Π 48'53		morning rise	16147 Jun 27 18:18	5° \mathfrak{C} 13'17	
max. Earth dist.	16142 May 31 07:12	23° Π 47'10	31.38073 AU	retrograde	16147 Sep 23 07:14	7° \mathfrak{C} 05'51	
morning rise	16142 Jun 16 15:01	24° Π 23'11		opposition	16147 Dec 10 18:09	5° \mathfrak{C} 43'37	0°04'18
retrograde	16142 Sep 12 05:38	26° Π 15'33		min. Earth dist.	16147 Dec 11 07:05	5° \mathfrak{C} 42'44	29.37224 AU

direct	16148 Feb 29 01:08	4°☾19'30		behind sun end	16153 Jun 24 21:37	17°☾40'29	
evening set	16148 May 28 16:39	6°☾13'53		max. Earth dist.	16153 Jun 24 01:43	17°☾38'41	31.33442 AU
				morning rise	16153 Jul 10 07:09	18°☾14'39	
conjunction	16148 Jun 13 11:35	6°☾48'48	0°03'43	retrograde	16153 Oct 05 23:49	20°☾07'25	
minimum elong	16148 Jun 13 11:34	6°☾48'48	0°02'59	opposition	16153 Dec 23 11:33	18°☾45'02	-0°01'09
behind sun begin	16148 Jun 13 05:07	6°☾48'14		min. Earth dist.	16153 Dec 23 22:56	18°☾44'16	29.33158 AU
behind sun end	16148 Jun 13 18:02	6°☾49'22		direct	16154 Mar 13 22:40	17°☾20'51	
max. Earth dist.	16148 Jun 12 22:06	6°☾47'34	31.36945 AU	evening set	16154 Jun 11 08:02	19°☾15'20	
morning rise	16148 Jun 29 04:36	7°☾23'34					
retrograde	16148 Sep 24 17:15	9°☾16'09		conjunction	16154 Jun 27 01:29	19°☾50'12	-0°01'31
opposition	16148 Dec 12 04:54	7°☾53'55	0°03'23	minimum elong	16154 Jun 27 01:27	19°☾50'12	0°02'14
min. Earth dist.	16148 Dec 12 17:22	7°☾53'04	29.36648 AU	behind sun begin	16154 Jun 26 18:59	19°☾49'38	
direct	16149 Mar 02 12:33	6°☾29'48		behind sun end	16154 Jun 27 07:55	19°☾50'47	
evening set	16149 May 31 03:29	8°☾24'12		max. Earth dist.	16154 Jun 26 12:58	19°☾49'03	31.32872 AU
				morning rise	16154 Jul 12 17:08	20°☾24'56	
conjunction	16149 Jun 15 22:01	8°☾59'05	0°02'51	retrograde	16154 Oct 08 09:23	22°☾17'47	
minimum elong	16149 Jun 15 22:02	8°☾59'05	0°02'07	opposition	16154 Dec 25 22:38	20°☾55'25	-0°02'04
behind sun begin	16149 Jun 15 15:33	8°☾58'31		min. Earth dist.	16154 Dec 26 10:46	20°☾54'35	29.32625 AU
behind sun end	16149 Jun 16 04:31	8°☾59'40		direct	16155 Mar 16 09:07	19°☾31'16	
max. Earth dist.	16149 Jun 15 07:37	8°☾57'46	31.36310 AU	evening set	16155 Jun 13 18:29	21°☾25'46	
morning rise	16149 Jul 01 14:55	9°☾33'51					
retrograde	16149 Sep 27 04:36	11°☾26'28		conjunction	16155 Jun 29 11:41	22°☾00'38	-0°02'23
opposition	16149 Dec 14 15:52	10°☾04'12	0°02'29	minimum elong	16155 Jun 29 11:41	22°☾00'38	0°03'06
min. Earth dist.	16149 Dec 15 04:50	10°☾03'19	29.35968 AU	behind sun begin	16155 Jun 29 05:14	22°☾00'04	
direct	16150 Mar 04 22:58	8°☾40'04		behind sun end	16155 Jun 29 18:07	22°☾01'13	
evening set	16150 Jun 02 13:54	10°☾34'28		max. Earth dist.	16155 Jun 28 23:19	21°☾59'30	31.32368 AU
				morning rise	16155 Jul 15 03:15	22°☾35'23	
conjunction	16150 Jun 18 08:23	11°☾09'21	0°01'59	retrograde	16155 Oct 10 18:59	24°☾28'17	
minimum elong	16150 Jun 18 08:23	11°☾09'21	0°01'16	opposition	16155 Dec 28 09:41	23°☾05'57	-0°02'58
behind sun begin	16150 Jun 18 01:54	11°☾08'47		min. Earth dist.	16155 Dec 28 20:37	23°☾05'12	29.32116 AU
behind sun end	16150 Jun 18 14:51	11°☾09'55		direct	16156 Mar 17 20:33	21°☾41'50	
max. Earth dist.	16150 Jun 17 19:04	11°☾08'08	31.35588 AU	evening set	16156 Jun 15 05:05	23°☾36'23	
morning rise	16150 Jul 04 00:55	11°☾44'06					
retrograde	16150 Sep 29 15:12	13°☾36'45		conjunction	16156 Jun 30 21:59	24°☾11'15	-0°03'14
opposition	16150 Dec 17 02:46	12°☾14'26	0°01'35	minimum elong	16156 Jun 30 22:00	24°☾11'15	0°03'56
min. Earth dist.	16150 Dec 17 15:42	12°☾13'33	29.35211 AU	behind sun begin	16156 Jun 30 15:36	24°☾10'41	
direct	16151 Mar 07 12:00	10°☾50'16		behind sun end	16156 Jul 01 04:23	24°☾11'49	
evening set	16151 Jun 05 00:34	12°☾44'41		max. Earth dist.	16156 Jun 30 09:33	24°☾10'06	31.31846 AU
				morning rise	16156 Jul 16 13:20	24°☾46'00	
conjunction	16151 Jun 20 18:38	13°☾19'33	0°01'07	retrograde	16156 Oct 12 05:01	26°☾39'00	
minimum elong	16151 Jun 20 18:38	13°☾19'33	0°00'23	opposition	16156 Dec 29 20:56	25°☾16'40	-0°03'52
behind sun begin	16151 Jun 20 12:11	13°☾18'59		min. Earth dist.	16156 Dec 30 08:39	25°☾15'52	29.31584 AU
behind sun end	16151 Jun 21 01:05	13°☾20'08		direct	16157 Mar 20 05:27	23°☾52'35	
max. Earth dist.	16151 Jun 20 04:24	13°☾18'15	31.34826 AU	evening set	16157 Jun 17 15:40	25°☾47'10	
morning rise	16151 Jul 06 11:08	13°☾54'18					
retrograde	16151 Oct 02 02:28	15°☾46'59		conjunction	16157 Jul 03 08:25	26°☾22'02	-0°04'05
opposition	16151 Dec 19 13:31	14°☾24'37	0°00'40	minimum elong	16157 Jul 03 08:24	26°☾22'02	0°04'46
min. Earth dist.	16151 Dec 20 01:56	14°☾23'47	29.34464 AU	behind sun begin	16157 Jul 03 02:05	26°☾21'29	
direct	16152 Mar 08 22:29	13°☾00'25		behind sun end	16157 Jul 03 14:43	26°☾22'36	
evening set	16152 Jun 06 11:04	14°☾54'51		max. Earth dist.	16157 Jul 02 20:36	26°☾20'57	31.31285 AU
				morning rise	16157 Jul 18 23:29	26°☾56'47	
conjunction	16152 Jun 22 05:03	15°☾29'44	0°00'13	retrograde	16157 Oct 14 15:20	28°☾49'52	
minimum elong	16152 Jun 22 05:02	15°☾29'44	0°00'29	opposition	16158 Jan 01 08:17	27°☾27'33	-0°04'46
behind sun begin	16152 Jun 21 22:35	15°☾29'09		min. Earth dist.	16158 Jan 01 19:17	27°☾26'48	29.30973 AU
behind sun end	16152 Jun 22 11:30	15°☾30'18		direct	16158 Mar 22 16:37	26°☾03'29	
max. Earth dist.	16152 Jun 21 16:04	15°☾28'32	31.34092 AU	evening set	16158 Jun 20 02:15	27°☾58'06	
morning rise	16152 Jul 07 21:08	16°☾04'28					
desc. node	16152 Sep 23 07:17	17°☾55'26		conjunction	16158 Jul 05 18:37	28°☾32'58	-0°04'55
retrograde	16152 Oct 03 11:57	17°☾57'11		minimum elong	16158 Jul 05 18:38	28°☾32'58	0°05'35
opposition	16152 Dec 21 00:34	16°☾34'48	-0°00'14	behind sun begin	16158 Jul 05 12:25	28°☾32'25	
min. Earth dist.	16152 Dec 21 13:16	16°☾33'56	29.33764 AU	behind sun end	16158 Jul 06 00:51	28°☾33'31	
direct	16153 Mar 11 10:50	15°☾10'36		max. Earth dist.	16158 Jul 05 06:02	28°☾31'48	31.30623 AU
evening set	16153 Jun 08 21:35	17°☾05'03		morning rise	16158 Jul 21 09:39	29°☾07'43	
					16158 Aug 16 04:20	0°☾	
conjunction	16153 Jun 24 15:09	17°☾39'55	-0°00'39	retrograde	16158 Oct 17 02:53	1°☾00'54	
minimum elong	16153 Jun 24 15:09	17°☾39'55	0°01'23		16158 Dec 21 13:56	30°☾	
behind sun begin	16153 Jun 24 08:41	17°☾39'21		opposition	16159 Jan 03 19:44	29°☾38'33	-0°05'40

min. Earth dist.	16159 Jan 04 07:09	29° Ω 37'47	29.30260 AU	behind sun begin	16164 Jul 18 03:56	11° Ω 38'37	
direct	16159 Mar 25 02:49	28° Ω 14'30		behind sun end	16164 Jul 18 14:11	11° Ω 39'32	
	16159 Jun 18 07:20	0° Ω		max. Earth dist.	16164 Jul 17 21:40	11° Ω 38'02	31.24068 AU
evening set	16159 Jun 22 12:53	0° Ω 09'09		morning rise	16164 Aug 02 23:02	12° Ω 13'50	
				retrograde	16164 Oct 29 20:05	14° Ω 07'22	
conjunction	16159 Jul 08 05:13	0° Ω 44'01	-0°05'44	opposition	16165 Jan 16 17:06	12° Ω 44'41	-0°10'47
minimum elong	16159 Jul 08 05:12	0° Ω 44'00	0°06'24	min. Earth dist.	16165 Jan 17 03:10	12° Ω 43'59	29.23459 AU
behind sun begin	16159 Jul 07 23:07	0° Ω 43'28		direct	16165 Apr 07 02:51	11° Ω 20'27	
behind sun end	16159 Jul 08 11:18	0° Ω 44'33		evening set	16165 Jul 05 04:20	13° Ω 15'06	
max. Earth dist.	16159 Jul 07 17:35	0° Ω 42'56	31.29837 AU				
morning rise	16159 Jul 23 19:53	1° Ω 18'45		conjunction	16165 Jul 20 19:18	13° Ω 49'57	-0°10'28
retrograde	16159 Oct 19 13:28	3° Ω 12'00		minimum elong	16165 Jul 20 19:18	13° Ω 49'57	0°11'03
opposition	16160 Jan 06 07:07	1° Ω 49'38	-0°06'33	behind sun begin	16165 Jul 20 14:27	13° Ω 49'30	
min. Earth dist.	16160 Jan 06 18:42	1° Ω 48'51	29.29393 AU	behind sun end	16165 Jul 21 00:10	13° Ω 50'23	
direct	16160 Mar 26 14:57	0° Ω 25'35		max. Earth dist.	16165 Jul 20 08:08	13° Ω 48'55	31.22861 AU
evening set	16160 Jun 23 23:43	2° Ω 20'15		morning rise	16165 Aug 05 09:08	14° Ω 24'42	
					16165 Aug 22 04:29	15° Ω	
conjunction	16160 Jul 09 15:38	2° Ω 55'06	-0°06'34	retrograde	16165 Nov 01 06:30	16° Ω 18'19	
minimum elong	16160 Jul 09 15:38	2° Ω 55'06	0°07'12		16166 Jan 16 12:25	15° Ω	
behind sun begin	16160 Jul 09 09:41	2° Ω 54'34		opposition	16166 Jan 19 04:55	14° Ω 55'35	-0°11'35
behind sun end	16160 Jul 09 21:35	2° Ω 55'38		min. Earth dist.	16166 Jan 19 15:11	14° Ω 54'53	29.22314 AU
max. Earth dist.	16160 Jul 09 02:50	2° Ω 53'55	31.28901 AU	direct	16166 Apr 09 12:32	13° Ω 31'22	
morning rise	16160 Jul 25 06:18	3° Ω 29'51			16166 Jun 25 09:10	15° Ω	
retrograde	16160 Oct 21 01:33	5° Ω 23'10		evening set	16166 Jul 07 14:37	15° Ω 26'01	
opposition	16161 Jan 07 18:41	4° Ω 00'45	-0°07'25				
min. Earth dist.	16161 Jan 08 05:52	4° Ω 00'00	29.28386 AU	conjunction	16166 Jul 23 05:31	16° Ω 00'52	-0°11'13
direct	16161 Mar 29 01:26	2° Ω 36'41		minimum elong	16166 Jul 23 05:31	16° Ω 00'52	0°11'46
evening set	16161 Jun 26 10:14	4° Ω 31'21		behind sun begin	16166 Jul 23 00:58	16° Ω 00'28	
				behind sun end	16166 Jul 23 10:05	16° Ω 01'17	
conjunction	16161 Jul 12 02:07	5° Ω 06'12	-0°07'22	max. Earth dist.	16166 Jul 22 19:36	15° Ω 59'57	31.21771 AU
minimum elong	16161 Jul 12 02:06	5° Ω 06'12	0°08'01	morning rise	16166 Aug 07 19:10	16° Ω 35'38	
behind sun begin	16161 Jul 11 20:19	5° Ω 05'41		retrograde	16166 Nov 03 16:42	18° Ω 29'22	
behind sun end	16161 Jul 12 07:53	5° Ω 06'43		opposition	16167 Jan 21 16:38	17° Ω 06'37	-0°12'22
max. Earth dist.	16161 Jul 11 14:14	5° Ω 05'06	31.27814 AU	min. Earth dist.	16167 Jan 22 01:41	17° Ω 06'00	29.21261 AU
morning rise	16161 Jul 27 16:25	5° Ω 40'56		direct	16167 Apr 12 00:05	15° Ω 42'25	
retrograde	16161 Oct 23 11:58	7° Ω 34'19		evening set	16167 Jul 10 01:10	17° Ω 37'06	
opposition	16162 Jan 10 06:23	6° Ω 11'51	-0°08'17				
min. Earth dist.	16162 Jan 10 18:12	6° Ω 11'02	29.27231 AU	conjunction	16167 Jul 25 15:45	18° Ω 11'57	-0°11'57
direct	16162 Mar 31 14:25	4° Ω 47'44		minimum elong	16167 Jul 25 15:45	18° Ω 11'57	0°12'29
evening set	16162 Jun 28 20:53	6° Ω 42'24		behind sun begin	16167 Jul 25 11:32	18° Ω 11'34	
				behind sun end	16167 Jul 25 19:59	18° Ω 12'20	
conjunction	16162 Jul 14 12:26	7° Ω 17'15	-0°08'10	max. Earth dist.	16167 Jul 25 05:27	18° Ω 11'00	31.20763 AU
minimum elong	16162 Jul 14 12:26	7° Ω 17'15	0°08'47	morning rise	16167 Aug 10 05:24	18° Ω 46'44	
behind sun begin	16162 Jul 14 06:51	7° Ω 16'45		retrograde	16167 Nov 06 04:21	20° Ω 40'35	
behind sun end	16162 Jul 14 18:01	7° Ω 17'45		opposition	16168 Jan 24 04:20	19° Ω 17'49	-0°13'08
max. Earth dist.	16162 Jul 13 23:53	7° Ω 16'05	31.26614 AU	min. Earth dist.	16168 Jan 24 13:16	19° Ω 17'13	29.20294 AU
morning rise	16162 Jul 30 02:45	7° Ω 51'59		direct	16168 Apr 13 09:45	17° Ω 53'39	
retrograde	16162 Oct 26 00:19	9° Ω 45'24		evening set	16168 Jul 11 11:37	19° Ω 48'24	
opposition	16163 Jan 12 17:48	8° Ω 22'52	-0°09'08				
min. Earth dist.	16163 Jan 13 04:38	8° Ω 22'07	29.25987 AU	conjunction	16168 Jul 27 02:12	20° Ω 23'16	-0°12'39
direct	16163 Apr 03 02:59	6° Ω 58'42		minimum elong	16168 Jul 27 02:11	20° Ω 23'16	0°13'10
evening set	16163 Jul 01 07:22	8° Ω 53'21		behind sun begin	16168 Jul 26 22:20	20° Ω 22'55	
				behind sun end	16168 Jul 27 06:02	20° Ω 23'36	
conjunction	16163 Jul 16 22:49	9° Ω 28'12	-0°08'57	max. Earth dist.	16168 Jul 26 17:28	20° Ω 22'27	31.19818 AU
minimum elong	16163 Jul 16 22:49	9° Ω 28'12	0°09'34	morning rise	16168 Aug 11 15:33	20° Ω 58'02	
behind sun begin	16163 Jul 16 17:27	9° Ω 27'43		retrograde	16168 Nov 07 15:16	22° Ω 52'02	
behind sun end	16163 Jul 17 04:11	9° Ω 28'41		opposition	16169 Jan 25 16:17	21° Ω 29'16	-0°13'54
max. Earth dist.	16163 Jul 16 11:00	9° Ω 27'07	31.25337 AU	min. Earth dist.	16169 Jan 26 00:54	21° Ω 28'41	29.19354 AU
morning rise	16163 Aug 01 12:55	10° Ω 02'57		direct	16169 Apr 15 21:08	20° Ω 05'09	
retrograde	16163 Oct 28 10:05	11° Ω 56'25		evening set	16169 Jul 13 22:09	21° Ω 59'56	
opposition	16164 Jan 15 05:32	10° Ω 33'48	-0°09'58				
min. Earth dist.	16164 Jan 15 17:08	10° Ω 33'00	29.24704 AU	conjunction	16169 Jul 29 12:22	22° Ω 34'48	-0°13'21
direct	16164 Apr 04 14:32	9° Ω 09'36		minimum elong	16169 Jul 29 12:22	22° Ω 34'48	0°13'51
evening set	16164 Jul 02 17:51	11° Ω 04'15		behind sun begin	16169 Jul 29 08:57	22° Ω 34'30	
				behind sun end	16169 Jul 29 15:46	22° Ω 35'06	
conjunction	16164 Jul 18 09:04	11° Ω 39'05	-0°09'43	max. Earth dist.	16169 Jul 29 03:02	22° Ω 33'56	31.18887 AU
minimum elong	16164 Jul 18 09:04	11° Ω 39'05	0°10'18	morning rise	16169 Aug 14 01:47	23° Ω 09'36	

retrograde	16169 Nov 10 04:00	25°03'44		max. Earth dist.	16175 Aug 11 20:43	5°04'47'05	31.11709 AU
opposition	16170 Jan 28 04:17	23°04'58	-0°14'38	morning rise	16175 Aug 27 16:42	6°04'22'37	
min. Earth dist.	16170 Jan 28 12:06	23°04'26	29.18420 AU	retrograde	16175 Nov 24 00:49	8°04'17'22	
direct	16170 Apr 18 06:51	22°01'53		opposition	16176 Feb 11 05:35	6°04'54'18	-0°18'33
evening set	16170 Jul 16 08:42	24°01'14'3		min. Earth dist.	16176 Feb 11 12:07	6°04'53'51	29.10977 AU
				direct	16176 May 01 09:00	5°04'30'11	
conjunction	16170 Jul 31 22:54	24°04'36	-0°14'02	evening set	16176 Jul 29 01:05	7°04'25'04	
minimum elong	16170 Jul 31 22:54	24°04'36	0°14'30				
behind sun begin	16170 Jul 31 19:59	24°04'20		conjunction	16176 Aug 13 14:22	7°04'59'58	-0°17'38
behind sun end	16170 Aug 01 01:49	24°04'51		minimum elong	16176 Aug 13 14:22	7°04'59'58	0°17'57
max. Earth dist.	16170 Jul 31 14:46	24°04'51	31.17925 AU	max. Earth dist.	16176 Aug 13 06:50	7°04'59'16	31.10255 AU
morning rise	16170 Aug 16 12:04	25°02'12'4		morning rise	16176 Aug 29 03:17	8°04'34'51	
retrograde	16170 Nov 12 15:32	27°01'54'0		retrograde	16176 Nov 25 11:46	10°04'29'41	
opposition	16171 Jan 30 16:19	25°05'25'3	-0°15'21	opposition	16177 Feb 12 17:59	9°04'06'31	-0°19'07
min. Earth dist.	16171 Jan 31 00:38	25°05'21'9	29.17428 AU	min. Earth dist.	16177 Feb 13 00:15	9°04'06'06	29.09559 AU
direct	16171 Apr 20 19:30	24°02'28'51		direct	16177 May 03 19:17	7°04'42'23	
evening set	16171 Jul 18 19:28	26°02'23'44		evening set	16177 Jul 31 11:30	9°04'37'13	
conjunction	16171 Aug 03 09:25	26°05'58'36	-0°14'41	conjunction	16177 Aug 16 00:50	10°04'12'08	-0°18'08
minimum elong	16171 Aug 03 09:25	26°05'58'36	0°15'09	minimum elong	16177 Aug 16 00:50	10°04'12'08	0°18'27
behind sun begin	16171 Aug 03 07:08	26°05'24		max. Earth dist.	16177 Aug 15 19:09	10°04'11'37	31.08871 AU
behind sun end	16171 Aug 03 11:42	26°05'48'9		morning rise	16177 Aug 31 13:33	10°04'47'01	
max. Earth dist.	16171 Aug 03 00:45	26°05'57'48	31.16901 AU	retrograde	16177 Nov 27 21:46	12°04'41'57	
morning rise	16171 Aug 18 22:37	27°03'33'26		opposition	16178 Feb 15 06:24	11°04'18'43	-0°19'39
retrograde	16171 Nov 15 05:22	29°02'27'49		min. Earth dist.	16178 Feb 15 12:00	11°04'18'20	29.08224 AU
opposition	16172 Feb 02 04:25	28°05'05'01	-0°16'02	direct	16178 May 06 06:47	9°04'54'33	
min. Earth dist.	16172 Feb 02 11:40	28°05'04'31	29.16353 AU	evening set	16178 Aug 02 22:13	11°04'49'23	
direct	16172 Apr 22 08:10	26°04'40'59					
evening set	16172 Jul 20 06:11	28°03'35'55		conjunction	16178 Aug 18 11:19	12°04'24'18	-0°18'38
				minimum elong	16178 Aug 18 11:19	12°04'24'18	0°18'55
conjunction	16172 Aug 04 20:01	29°01'10'48	-0°15'19	max. Earth dist.	16178 Aug 18 05:18	12°04'23'45	31.07604 AU
minimum elong	16172 Aug 04 20:01	29°01'10'48	0°15'45	morning rise	16178 Sep 03 00:11	12°04'59'12	
behind sun begin	16172 Aug 04 18:35	29°01'10'40		retrograde	16178 Nov 30 10:35	14°04'54'14	
behind sun end	16172 Aug 04 21:27	29°01'10'56		opposition	16179 Feb 17 18:38	13°04'30'56	-0°20'09
max. Earth dist.	16172 Aug 04 11:53	29°01'10'03	31.15760 AU	min. Earth dist.	16179 Feb 17 23:06	13°04'30'37	29.07025 AU
morning rise	16172 Aug 20 09:01	29°04'45'38		direct	16179 May 08 16:52	12°04'06'46	
	16172 Aug 26 23:51	0°04'00		evening set	16179 Aug 05 08:49	14°04'01'37	
retrograde	16172 Nov 16 16:10	1°04'40'08					
opposition	16173 Feb 03 16:47	0°04'17'17	-0°16'42	conjunction	16179 Aug 20 21:59	14°04'36'32	-0°19'06
min. Earth dist.	16173 Feb 04 00:56	0°04'16'44	29.15159 AU	minimum elong	16179 Aug 20 22:00	14°04'36'32	0°19'22
	16173 Feb 14 07:24	30°04'00		max. Earth dist.	16179 Aug 20 17:31	14°04'36'08	31.06458 AU
direct	16173 Apr 24 19:45	28°05'53'16		morning rise	16179 Sep 05 10:42	15°04'11'28	
	16173 Jun 29 07:34	0°04'00		retrograde	16179 Dec 02 21:56	17°04'06'36	
evening set	16173 Jul 22 16:58	0°04'48'13		opposition	16180 Feb 20 07:10	15°04'43'15	-0°20'38
				min. Earth dist.	16180 Feb 20 11:37	15°04'42'57	29.05933 AU
conjunction	16173 Aug 07 06:40	1°04'23'06	-0°15'56	direct	16180 May 10 05:07	14°04'19'07	
minimum elong	16173 Aug 07 06:40	1°04'23'06	0°16'21	evening set	16180 Aug 06 19:29	16°04'13'59	
max. Earth dist.	16173 Aug 06 22:44	1°04'22'22	31.14515 AU				
morning rise	16173 Aug 22 19:38	1°04'57'57		conjunction	16180 Aug 22 08:28	16°04'48'55	-0°19'32
retrograde	16173 Nov 19 03:24	3°04'52'32		minimum elong	16180 Aug 22 08:28	16°04'48'55	0°19'46
opposition	16174 Feb 06 05:02	2°04'29'39	-0°17'20	max. Earth dist.	16180 Aug 22 04:03	16°04'48'31	31.05425 AU
min. Earth dist.	16174 Feb 06 11:58	2°04'29'10	29.13848 AU	morning rise	16180 Sep 06 21:16	17°04'23'51	
direct	16174 Apr 27 08:55	1°04'05'37		retrograde	16180 Dec 04 11:40	19°04'19'07	
evening set	16174 Jul 25 03:40	3°04'00'32		opposition	16181 Feb 21 19:40	17°04'55'45	-0°21'05
				min. Earth dist.	16181 Feb 21 22:33	17°04'55'33	29.04938 AU
conjunction	16174 Aug 09 17:14	3°04'35'26	-0°16'31	direct	16181 May 12 17:00	16°04'31'38	
minimum elong	16174 Aug 09 17:14	3°04'35'26	0°16'54	evening set	16181 Aug 09 06:14	18°04'26'32	
max. Earth dist.	16174 Aug 09 09:03	3°04'34'41	31.13147 AU				
morning rise	16174 Aug 25 06:12	4°04'10'18		conjunction	16181 Aug 24 19:11	19°04'01'29	-0°19'56
retrograde	16174 Nov 21 14:55	6°04'04'59		minimum elong	16181 Aug 24 19:12	19°04'01'29	0°20'10
opposition	16175 Feb 08 17:24	4°04'42'00	-0°17'57	max. Earth dist.	16181 Aug 24 15:44	19°04'01'10	31.04457 AU
min. Earth dist.	16175 Feb 09 00:57	4°04'41'29	29.12440 AU	morning rise	16181 Sep 09 07:56	19°04'36'26	
direct	16175 Apr 29 20:06	3°04'17'56		retrograde	16181 Dec 06 23:24	21°04'31'51	
evening set	16175 Jul 27 14:19	5°04'12'50		opposition	16182 Feb 24 08:21	20°04'08'27	-0°21'30
				min. Earth dist.	16182 Feb 24 11:46	20°04'08'13	29.03998 AU
conjunction	16175 Aug 12 03:53	5°04'47'45	-0°17'05	direct	16182 May 15 04:07	18°04'44'23	
minimum elong	16175 Aug 12 03:53	5°04'47'45	0°17'27	evening set	16182 Aug 11 16:59	20°04'39'19	

conjunction	16182 Aug 27 05:56	21° 14 '16 -0°20'19	max. Earth dist.	16188 Sep 08 23:25	4° 4 '34'49 30.96570 AU
minimum elong	16182 Aug 27 05:56	21° 14 '16 0°20'30	morning rise	16188 Sep 24 13:11	5° 0 '09'59
max. Earth dist.	16182 Aug 27 03:06	21° 14 '01 31.03532 AU	retrograde	16188 Dec 22 11:42	7° 0 '06'13
morning rise	16182 Sep 11 18:44	21° 14 '49'15	opposition	16189 Mar 12 02:35	5° 0 '42'31 -0°23'30
retrograde	16182 Dec 09 12:15	23° 14 '44'47	min. Earth dist.	16189 Mar 12 03:32	5° 0 '42'27 28.95901 AU
opposition	16183 Feb 26 20:58	22° 14 '21'23 -0°21'54	direct	16189 May 30 16:02	4° 0 '18'32
min. Earth dist.	16183 Feb 26 22:59	22° 14 '21'14 29.03062 AU	evening set	16189 Aug 26 22:27	6° 0 '13'29
direct	16183 May 17 17:27	20° 14 '57'21			
evening set	16183 Aug 14 03:59	22° 14 '52'19	conjunction	16189 Sep 11 11:12	6° 0 '48'32 -0°22'05
			minimum elong	16189 Sep 11 11:12	6° 0 '48'32 0°22'04
conjunction	16183 Aug 29 16:47	23° 14 '27'18 -0°20'40	max. Earth dist.	16189 Sep 11 10:29	6° 0 '48'28 30.95248 AU
minimum elong	16183 Aug 29 16:47	23° 14 '27'18 0°20'49	morning rise	16189 Sep 27 00:25	7° 0 '23'39
max. Earth dist.	16183 Aug 29 13:50	23° 14 '27'02 31.02575 AU	retrograde	16189 Dec 25 01:21	9° 0 '19'59
morning rise	16183 Sep 14 05:38	24° 14 '02'17	opposition	16190 Mar 14 15:24	7° 0 '56'12 -0°23'39
retrograde	16183 Dec 12 01:11	25° 14 '57'58	min. Earth dist.	16190 Mar 14 14:47	7° 0 '56'14 28.94622 AU
opposition	16184 Feb 29 09:47	24° 14 '34'33 -0°22'15	direct	16190 Jun 02 03:40	6° 0 '32'11
min. Earth dist.	16184 Feb 29 12:20	24° 14 '34'22 29.02089 AU	evening set	16190 Aug 29 09:29	8° 0 '27'08
direct	16184 May 19 04:49	23° 14 '10'34			
evening set	16184 Aug 15 14:58	25° 14 '05'33	conjunction	16190 Sep 13 22:19	9° 0 '02'12 -0°22'12
			minimum elong	16190 Sep 13 22:19	9° 0 '02'12 0°22'09
conjunction	16184 Aug 31 03:51	25° 14 '40'33 -0°20'59	max. Earth dist.	16190 Sep 13 22:35	9° 0 '02'14 30.94009 AU
minimum elong	16184 Aug 31 03:51	25° 14 '40'33 0°21'06	morning rise	16190 Sep 29 11:34	9° 0 '37'20
max. Earth dist.	16184 Aug 31 01:55	25° 14 '40'22 31.01570 AU	retrograde	16190 Dec 27 13:20	11° 0 '33'46
morning rise	16184 Sep 15 16:36	26° 14 '15'34	opposition	16191 Mar 17 04:27	10° 0 '09'55 -0°23'46
retrograde	16184 Dec 13 12:24	28° 14 '11'22	min. Earth dist.	16191 Mar 17 04:09	10° 0 '09'56 28.93446 AU
opposition	16185 Mar 02 22:41	26° 14 '47'56 -0°22'34	direct	16191 Jun 04 14:56	8° 0 '45'54
min. Earth dist.	16185 Mar 03 00:16	26° 14 '47'49 29.01033 AU	evening set	16191 Aug 31 20:33	10° 0 '40'52
direct	16185 May 21 17:55	25° 14 '23'59			
evening set	16185 Aug 18 02:03	27° 14 '18'59	conjunction	16191 Sep 16 09:25	11° 0 '15'56 -0°22'17
			minimum elong	16191 Sep 16 09:25	11° 0 '15'56 0°22'13
conjunction	16185 Sep 02 14:45	27° 14 '54'00 -0°21'16	max. Earth dist.	16191 Sep 16 10:33	11° 0 '16'03 30.92900 AU
minimum elong	16185 Sep 02 14:45	27° 14 '54'00 0°21'22	morning rise	16191 Oct 01 22:44	11° 0 '51'06
max. Earth dist.	16185 Sep 02 12:07	27° 14 '53'45 31.00464 AU	retrograde	16191 Dec 30 03:03	13° 0 '47'37
morning rise	16185 Sep 18 03:42	28° 14 '29'02	opposition	16192 Mar 18 17:19	12° 0 '23'44 -0°23'50
	16185 Nov 07 02:29	0° 0 '	min. Earth dist.	16192 Mar 18 15:16	12° 0 '23'52 28.92392 AU
retrograde	16185 Dec 16 00:32	0° 0 '24'58	direct	16192 Jun 06 05:02	10° 0 '59'44
	16186 Jan 25 02:10	30° 0 ' 14 '	evening set	16192 Sep 02 07:43	12° 0 '54'42
opposition	16186 Mar 05 11:42	29° 0 '01'29 -0°22'51			
min. Earth dist.	16186 Mar 05 13:24	29° 0 '01'22 28.99878 AU	conjunction	16192 Sep 17 20:32	13° 0 '29'48 -0°22'21
direct	16186 May 24 04:36	27° 0 '37'33	minimum elong	16192 Sep 17 20:32	13° 0 '29'48 0°22'15
evening set	16186 Aug 20 13:09	29° 0 '32'34	max. Earth dist.	16192 Sep 17 21:55	13° 0 '29'56 30.91906 AU
	16186 Sep 01 18:01	0° 0 '	morning rise	16192 Oct 03 10:02	14° 0 '04'58
			retrograde	16192 Dec 31 17:01	16° 0 '01'37
conjunction	16186 Sep 05 02:01	0° 0 '07'35 -0°21'31	opposition	16193 Mar 21 06:27	14° 0 '37'41 -0°23'53
minimum elong	16186 Sep 05 02:01	0° 0 '07'35 0°21'35	min. Earth dist.	16193 Mar 21 04:34	14° 0 '37'49 28.91464 AU
max. Earth dist.	16186 Sep 05 00:39	0° 0 '07'27 30.99247 AU	direct	16193 Jun 08 16:58	13° 0 '13'43
morning rise	16186 Sep 20 14:52	0° 0 '42'38	evening set	16193 Sep 04 18:43	15° 0 '08'41
retrograde	16186 Dec 18 11:12	2° 0 '38'41			
opposition	16187 Mar 08 00:32	1° 0 '15'09 -0°23'06	conjunction	16193 Sep 20 07:46	15° 0 '43'48 -0°22'22
min. Earth dist.	16187 Mar 08 02:07	1° 0 '15'02 28.98599 AU	minimum elong	16193 Sep 20 07:46	15° 0 '43'48 0°22'14
	16187 May 03 09:28	30° 0 ' 14 '	max. Earth dist.	16193 Sep 20 10:34	15° 0 '44'04 30.91029 AU
direct	16187 May 26 16:34	29° 0 '51'12	morning rise	16193 Oct 05 21:18	16° 0 '19'01
	16187 Jun 18 14:20	0° 0 '	retrograde	16194 Jan 03 04:30	18° 0 '15'46
evening set	16187 Aug 23 00:24	1° 0 '46'12	opposition	16194 Mar 23 19:28	16° 0 '51'49 -0°23'53
			min. Earth dist.	16194 Mar 23 16:16	16° 0 '52'02 28.90617 AU
conjunction	16187 Sep 07 13:07	2° 0 '21'14 -0°21'44	direct	16194 Jun 11 06:12	15° 0 '27'52
minimum elong	16187 Sep 07 13:07	2° 0 '21'14 0°21'47	evening set	16194 Sep 07 06:04	17° 0 '22'51
max. Earth dist.	16187 Sep 07 10:59	2° 0 '21'02 30.97933 AU			
morning rise	16187 Sep 23 02:12	2° 0 '56'19	conjunction	16194 Sep 22 19:01	17° 0 '57'59 -0°22'21
retrograde	16187 Dec 21 00:27	4° 0 '52'27	minimum elong	16194 Sep 22 19:01	17° 0 '57'59 0°22'12
opposition	16188 Mar 09 13:30	3° 0 '28'50 -0°23'19	max. Earth dist.	16194 Sep 22 21:23	17° 0 '58'13 30.90215 AU
min. Earth dist.	16188 Mar 09 14:21	3° 0 '28'47 28.97257 AU	morning rise	16194 Oct 08 08:50	18° 0 '33'13
direct	16188 May 28 03:27	2° 0 '04'52	retrograde	16195 Jan 05 17:29	20° 0 '30'05
evening set	16188 Aug 24 11:20	3° 0 '59'51	opposition	16195 Mar 26 08:29	19° 0 '06'07 -0°23'51
			min. Earth dist.	16195 Mar 26 05:15	19° 0 '06'20 28.89829 AU
conjunction	16188 Sep 09 00:10	4° 0 '34'53 -0°21'55	direct	16195 Jun 13 17:29	17° 0 '42'13
minimum elong	16188 Sep 09 00:10	4° 0 '34'53 0°21'56	evening set	16195 Sep 09 17:22	19° 0 '37'12

conjunction	16195 Sep 25 06:33	20° <u>♂</u> 12'22	-0°22'18	retrograde	16202 Jan 22 10:55	6° <u>♂</u> 13'17	
minimum elong	16195 Sep 25 06:33	20° <u>♂</u> 12'22	0°22'08	opposition	16202 Apr 12 05:30	4° <u>♂</u> 48'54	-0°22'36
max. Earth dist.	16195 Sep 25 10:30	20° <u>♂</u> 12'44	30.89433 AU	min. Earth dist.	16202 Apr 12 00:24	4° <u>♂</u> 49'15	28.83024 AU
morning rise	16195 Oct 10 20:20	20° <u>♂</u> 47'37		direct	16202 Jun 30 07:13	3° <u>♂</u> 24'55	
retrograde	16196 Jan 08 05:13	22° <u>♂</u> 44'35		evening set	16202 Sep 26 02:16	5° <u>♂</u> 19'46	
opposition	16196 Mar 27 21:44	21° <u>♂</u> 20'36	-0°23'46				
min. Earth dist.	16196 Mar 27 18:07	21° <u>♂</u> 20'51	28.89040 AU	conjunction	16202 Oct 11 16:15	5° <u>♂</u> 55'02	-0°21'02
direct	16196 Jun 15 06:19	19° <u>♂</u> 56'44		minimum elong	16202 Oct 11 16:15	5° <u>♂</u> 55'02	0°20'40
evening set	16196 Sep 11 04:49	21° <u>♂</u> 51'44		max. Earth dist.	16202 Oct 11 22:30	5° <u>♂</u> 55'37	30.82515 AU
				morning rise	16202 Oct 27 07:15	6° <u>♂</u> 30'26	
conjunction	16196 Sep 26 17:54	22° <u>♂</u> 26'54	-0°22'13	retrograde	16203 Jan 24 23:09	8° <u>♂</u> 27'54	
minimum elong	16196 Sep 26 17:54	22° <u>♂</u> 26'54	0°22'01	opposition	16203 Apr 14 18:31	7° <u>♂</u> 03'28	-0°22'17
max. Earth dist.	16196 Sep 26 21:15	22° <u>♂</u> 27'13	30.88637 AU	min. Earth dist.	16203 Apr 14 12:02	7° <u>♂</u> 03'55	28.82045 AU
morning rise	16196 Oct 12 07:59	23° <u>♂</u> 02'11		direct	16203 Jul 02 20:58	5° <u>♂</u> 39'28	
retrograde	16197 Jan 09 18:38	24° <u>♂</u> 59'16		evening set	16203 Sep 28 13:57	7° <u>♂</u> 34'19	
opposition	16197 Mar 30 11:02	23° <u>♂</u> 35'15	-0°23'40				
min. Earth dist.	16197 Mar 30 06:47	23° <u>♂</u> 35'33	28.88225 AU	conjunction	16203 Oct 14 03:54	8° <u>♂</u> 09'35	-0°20'43
direct	16197 Jun 17 17:38	22° <u>♂</u> 11'24		minimum elong	16203 Oct 14 03:54	8° <u>♂</u> 09'35	0°20'20
evening set	16197 Sep 13 16:21	24° <u>♂</u> 06'24		max. Earth dist.	16203 Oct 14 09:51	8° <u>♂</u> 10'09	30.81605 AU
				morning rise	16203 Oct 29 19:15	8° <u>♂</u> 45'01	
conjunction	16197 Sep 29 05:39	24° <u>♂</u> 41'35	-0°22'06	retrograde	16204 Jan 27 13:04	10° <u>♂</u> 42'33	
minimum elong	16197 Sep 29 05:39	24° <u>♂</u> 41'35	0°21'53	opposition	16204 Apr 16 07:47	9° <u>♂</u> 18'03	-0°21'56
max. Earth dist.	16197 Sep 29 10:04	24° <u>♂</u> 42'00	30.87775 AU	min. Earth dist.	16204 Apr 16 01:02	9° <u>♂</u> 18'31	28.81217 AU
morning rise	16197 Oct 14 19:45	25° <u>♂</u> 16'54		direct	16204 Jul 04 08:57	7° <u>♂</u> 54'04	
retrograde	16198 Jan 12 05:35	27° <u>♂</u> 14'04		evening set	16204 Sep 30 01:21	9° <u>♂</u> 48'53	
opposition	16198 Apr 02 00:19	25° <u>♂</u> 50'01	-0°23'31				
min. Earth dist.	16198 Apr 01 20:30	25° <u>♂</u> 50'17	28.87320 AU	conjunction	16204 Oct 15 15:37	10° <u>♂</u> 24'12	-0°20'23
direct	16198 Jun 20 05:41	24° <u>♂</u> 26'10		minimum elong	16204 Oct 15 15:37	10° <u>♂</u> 24'12	0°19'59
evening set	16198 Sep 16 04:02	26° <u>♂</u> 21'09		max. Earth dist.	16204 Oct 15 23:25	10° <u>♂</u> 24'56	30.80847 AU
				morning rise	16204 Oct 31 07:01	10° <u>♂</u> 59'39	
conjunction	16198 Oct 01 17:23	26° <u>♂</u> 56'22	-0°21'57	retrograde	16205 Jan 29 01:16	12° <u>♂</u> 57'16	
minimum elong	16198 Oct 01 17:23	26° <u>♂</u> 56'22	0°21'42	opposition	16205 Apr 18 20:59	11° <u>♂</u> 32'44	-0°21'33
max. Earth dist.	16198 Oct 01 21:15	26° <u>♂</u> 56'43	30.86827 AU	min. Earth dist.	16205 Apr 18 13:28	11° <u>♂</u> 33'16	28.80527 AU
morning rise	16198 Oct 17 07:45	27° <u>♂</u> 31'41		direct	16205 Jul 06 22:22	10° <u>♂</u> 08'46	
retrograde	16199 Jan 14 19:27	29° <u>♂</u> 28'56		evening set	16205 Oct 02 13:05	12° <u>♂</u> 03'36	
opposition	16199 Apr 04 13:36	28° <u>♂</u> 04'49	-0°23'20				
min. Earth dist.	16199 Apr 04 08:42	28° <u>♂</u> 05'09	28.86314 AU	conjunction	16205 Oct 18 03:23	12° <u>♂</u> 38'55	-0°20'01
direct	16199 Jun 22 17:15	26° <u>♂</u> 40'57		minimum elong	16205 Oct 18 03:23	12° <u>♂</u> 38'55	0°19'35
evening set	16199 Sep 18 15:38	28° <u>♂</u> 35'55		max. Earth dist.	16205 Oct 18 10:48	12° <u>♂</u> 39'37	30.80236 AU
				morning rise	16205 Nov 02 19:10	13° <u>♂</u> 14'24	
conjunction	16199 Oct 04 05:07	29° <u>♂</u> 11'08	-0°21'46		16206 Jan 04 14:07	15° <u>♂</u>	
minimum elong	16199 Oct 04 05:07	29° <u>♂</u> 11'08	0°21'29	retrograde	16206 Jan 31 14:38	15° <u>♂</u> 12'05	
max. Earth dist.	16199 Oct 04 09:29	29° <u>♂</u> 11'32	30.85764 AU		16206 Feb 28 00:29	15° <u>♂</u> 11'05	
morning rise	16199 Oct 19 19:36	29° <u>♂</u> 46'29		opposition	16206 Apr 21 10:01	13° <u>♂</u> 47'34	-0°21'08
	16199 Oct 25 23:15	0° <u>♂</u>		min. Earth dist.	16206 Apr 21 01:42	13° <u>♂</u> 48'08	28.79988 AU
retrograde	16200 Jan 17 07:32	1° <u>♂</u> 43'48		direct	16206 Jul 09 09:37	12° <u>♂</u> 23'36	
opposition	16200 Apr 07 03:00	0° <u>♂</u> 19'36	-0°23'07	evening set	16206 Oct 05 00:44	14° <u>♂</u> 18'27	
min. Earth dist.	16200 Apr 06 22:54	0° <u>♂</u> 19'53	28.85215 AU				
	16200 Apr 19 01:26	30° <u>♂</u> 19'53		conjunction	16206 Oct 20 15:20	14° <u>♂</u> 53'48	-0°19'37
direct	16200 Jun 25 05:08	28° <u>♂</u> 55'42		minimum elong	16206 Oct 20 15:20	14° <u>♂</u> 53'48	0°19'10
	16200 Aug 27 16:58	0° <u>♂</u>		max. Earth dist.	16206 Oct 21 00:12	14° <u>♂</u> 54'38	30.79748 AU
evening set	16200 Sep 21 03:13	0° <u>♂</u> 50'37			16206 Oct 23 08:21	15° <u>♂</u>	
				morning rise	16206 Nov 05 07:13	15° <u>♂</u> 29'19	
conjunction	16200 Oct 06 16:52	1° <u>♂</u> 25'51	-0°21'33	retrograde	16207 Feb 03 01:39	17° <u>♂</u> 27'05	
minimum elong	16200 Oct 06 16:52	1° <u>♂</u> 25'51	0°21'15	opposition	16207 Apr 23 23:15	16° <u>♂</u> 02'34	-0°20'41
max. Earth dist.	16200 Oct 06 21:44	1° <u>♂</u> 26'18	30.84655 AU	min. Earth dist.	16207 Apr 23 14:58	16° <u>♂</u> 03'08	28.79550 AU
morning rise	16200 Oct 22 07:32	2° <u>♂</u> 01'13			16207 Jun 05 09:04	15° <u>♂</u> 11'05	
retrograde	16201 Jan 19 21:26	3° <u>♂</u> 58'35		direct	16207 Jul 11 21:30	14° <u>♂</u> 38'39	
opposition	16201 Apr 09 16:12	2° <u>♂</u> 34'17	-0°22'52		16207 Aug 16 10:32	15° <u>♂</u>	
min. Earth dist.	16201 Apr 09 10:42	2° <u>♂</u> 34'40	28.84096 AU	evening set	16207 Oct 07 12:28	16° <u>♂</u> 33'31	
direct	16201 Jun 27 19:11	1° <u>♂</u> 10'20					
evening set	16201 Sep 23 14:45	3° <u>♂</u> 05'13		conjunction	16207 Oct 23 03:09	17° <u>♂</u> 08'53	-0°19'11
				minimum elong	16207 Oct 23 03:09	17° <u>♂</u> 08'53	0°18'42
conjunction	16201 Oct 09 04:28	3° <u>♂</u> 40'28	-0°21'18	max. Earth dist.	16207 Oct 23 11:53	17° <u>♂</u> 09'42	30.79363 AU
minimum elong	16201 Oct 09 04:28	3° <u>♂</u> 40'28	0°20'58	morning rise	16207 Nov 07 19:20	17° <u>♂</u> 44'25	
max. Earth dist.	16201 Oct 09 09:24	3° <u>♂</u> 40'56	30.83544 AU	retrograde	16208 Feb 05 16:00	19° <u>♂</u> 42'17	
morning rise	16201 Oct 24 19:25	4° <u>♂</u> 15'51		opposition	16208 Apr 25 12:25	18° <u>♂</u> 17'46	-0°20'12

min. Earth dist.	16208 Apr 25 02:52	18° M 18'26	28.79196 AU	min. Earth dist.	16214 May 09 09:42	1° 5 51'46	28.76505 AU
direct	16208 Jul 13 08:20	16° M 53'54		direct	16214 Jul 27 13:14	0° 5 27'08	
evening set	16208 Oct 09 00:22	18° M 48'47		evening set	16214 Oct 23 00:56	2° 5 21'54	
conjunction	16208 Oct 24 15:15	19° M 24'10	-0°18'43	conjunction	16214 Nov 07 17:02	2° 5 57'23	-0°15'22
minimum elong	16208 Oct 24 15:15	19° M 24'10	0°18'14	minimum elong	16214 Nov 07 17:03	2° 5 57'23	0°14'46
max. Earth dist.	16208 Oct 25 00:42	19° M 25'03	30.79022 AU	behind sun begin	16214 Nov 07 14:25	2° 5 57'08	
morning rise	16208 Nov 09 07:37	19° M 59'44		behind sun end	16214 Nov 07 19:40	2° 5 57'37	
retrograde	16209 Feb 07 04:04	21° M 57'41		max. Earth dist.	16214 Nov 08 03:05	2° 5 58'19	30.76268 AU
opposition	16209 Apr 28 01:43	20° M 33'11	-0°19'42	morning rise	16214 Nov 23 11:01	3° 5 33'03	
min. Earth dist.	16209 Apr 27 16:55	20° M 33'47	28.78870 AU	retrograde	16215 Feb 21 14:10	5° 5 31'08	
direct	16209 Jul 15 19:35	19° M 09'21		opposition	16215 May 12 08:48	4° 5 06'22	-0°16'01
evening set	16209 Oct 11 12:18	21° M 04'14		min. Earth dist.	16215 May 11 22:14	4° 5 07'06	28.76068 AU
conjunction	16209 Oct 27 03:25	21° M 39'39	-0°18'13	direct	16215 Jul 30 01:09	2° 5 42'23	
minimum elong	16209 Oct 27 03:25	21° M 39'39	0°17'42	evening set	16215 Oct 25 12:50	4° 5 37'06	
max. Earth dist.	16209 Oct 27 13:10	21° M 40'34	30.78695 AU	conjunction	16215 Nov 10 05:18	5° 5 12'36	-0°14'44
morning rise	16209 Nov 11 20:01	22° M 15'13		minimum elong	16215 Nov 10 05:17	5° 5 12'36	0°14'06
retrograde	16210 Feb 09 18:17	24° M 13'15		behind sun begin	16215 Nov 10 02:05	5° 5 12'19	
opposition	16210 Apr 30 14:53	22° M 48'45	-0°19'09	behind sun end	16215 Nov 10 08:30	5° 5 12'54	
min. Earth dist.	16210 Apr 30 04:58	22° M 49'26	28.78515 AU	max. Earth dist.	16215 Nov 10 16:48	5° 5 13'41	30.75878 AU
direct	16210 Jul 18 08:47	21° M 24'55		morning rise	16215 Nov 25 23:22	5° 5 48'17	
evening set	16210 Oct 14 00:30	23° M 19'50		retrograde	16216 Feb 24 01:41	7° 5 46'22	
conjunction	16210 Oct 29 15:43	23° M 55'16	-0°17'42	opposition	16216 May 13 21:54	6° 5 21'33	-0°15'19
minimum elong	16210 Oct 29 15:43	23° M 55'16	0°17'10	min. Earth dist.	16216 May 13 11:16	6° 5 22'18	28.75746 AU
max. Earth dist.	16210 Oct 30 01:05	23° M 56'08	30.78298 AU	direct	16216 Jul 31 14:32	4° 5 57'34	
morning rise	16210 Nov 14 08:36	24° M 30'51		evening set	16216 Oct 27 00:57	6° 5 52'14	
retrograde	16211 Feb 12 07:48	26° M 28'57		conjunction	16216 Nov 11 17:34	7° 5 27'45	-0°14'04
opposition	16211 May 03 04:12	25° M 04'25	-0°18'34	minimum elong	16216 Nov 11 17:34	7° 5 27'45	0°13'27
min. Earth dist.	16211 May 02 19:11	25° M 05'02	28.78088 AU	behind sun begin	16216 Nov 11 13:54	7° 5 27'25	
direct	16211 Jul 20 19:51	23° M 40'35		behind sun end	16216 Nov 11 21:14	7° 5 28'05	
evening set	16211 Oct 16 12:36	25° M 35'29		max. Earth dist.	16216 Nov 12 04:51	7° 5 28'49	30.75640 AU
conjunction	16211 Nov 01 04:10	26° M 10'55	-0°17'09	morning rise	16216 Nov 27 12:01	8° 5 03'27	
minimum elong	16211 Nov 01 04:10	26° M 10'55	0°16'36	retrograde	16217 Feb 25 15:57	10° 5 01'32	
max. Earth dist.	16211 Nov 01 14:16	26° M 11'52	30.77835 AU	opposition	16217 May 16 10:46	8° 5 36'41	-0°14'36
morning rise	16211 Nov 16 21:11	26° M 46'32		min. Earth dist.	16217 May 15 22:51	8° 5 37'31	28.75589 AU
retrograde	16212 Feb 14 21:19	28° M 44'39		direct	16217 Aug 03 02:23	7° 5 12'41	
opposition	16212 May 04 17:27	27° M 20'04	-0°17'58	evening set	16217 Oct 29 13:03	9° 5 07'20	
min. Earth dist.	16212 May 04 07:29	27° M 20'46	28.77578 AU	conjunction	16217 Nov 14 05:57	9° 5 42'52	-0°13'23
direct	16212 Jul 22 09:59	25° M 56'13		minimum elong	16217 Nov 14 05:56	9° 5 42'52	0°12'44
evening set	16212 Oct 18 00:42	27° M 51'05		behind sun begin	16217 Nov 14 01:51	9° 5 42'29	
conjunction	16212 Nov 02 16:21	28° M 26'32	-0°16'35	behind sun end	16217 Nov 14 10:02	9° 5 43'14	
minimum elong	16212 Nov 02 16:21	28° M 26'32	0°16'01	max. Earth dist.	16217 Nov 14 18:06	9° 5 44'00	30.75551 AU
behind sun begin	16212 Nov 02 15:51	28° M 26'29		morning rise	16217 Nov 30 00:37	10° 5 18'35	
behind sun end	16212 Nov 02 16:51	28° M 26'35		retrograde	16218 Feb 28 02:53	12° 5 16'40	
max. Earth dist.	16212 Nov 03 01:39	28° M 27'24	30.77302 AU	opposition	16218 May 18 23:47	10° 5 51'49	-0°13'51
morning rise	16212 Nov 18 09:48	29° M 02'10		min. Earth dist.	16218 May 18 12:22	10° 5 52'37	28.75577 AU
retrograde	16212 Dec 16 14:26	0° 5		direct	16218 Aug 05 13:56	9° 5 27'49	
opposition	16213 Feb 16 12:21	1° 5 00'17		evening set	16218 Nov 01 01:10	11° 5 22'28	
min. Earth dist.	16213 Apr 22 10:33	30° R M		conjunction	16218 Nov 16 18:20	11° 5 58'00	-0°12'40
direct	16213 May 07 06:45	29° M 35'38	-0°17'21	minimum elong	16218 Nov 16 18:20	11° 5 58'00	0°12'01
evening set	16213 May 06 21:08	29° M 36'18	28.77037 AU	behind sun begin	16218 Nov 16 13:53	11° 5 57'36	
conjunction	16213 Jul 24 22:55	28° M 11'45		behind sun end	16218 Nov 16 22:46	11° 5 58'25	
minimum elong	16213 Oct 17 13:36	0° 5		max. Earth dist.	16218 Nov 17 06:57	11° 5 59'12	30.75619 AU
behind sun begin	16213 Oct 20 12:45	0° 5 06'33		morning rise	16218 Dec 02 13:14	12° 5 33'44	
behind sun end	16213 Nov 05 04:48	0° 5 42'02	-0°15'59	retrograde	16219 Mar 02 16:12	14° 5 31'51	
max. Earth dist.	16213 Nov 05 04:48	0° 5 42'02	0°15'24	opposition	16219 May 21 12:36	13° 5 07'01	-0°13'05
morning rise	16213 Nov 05 02:54	0° 5 41'52		min. Earth dist.	16219 May 20 23:47	13° 5 07'54	28.75708 AU
retrograde	16213 Nov 05 06:42	0° 5 42'12		direct	16219 Aug 08 02:05	11° 5 43'02	
opposition	16213 Nov 05 15:29	0° 5 43'02	30.76759 AU	evening set	16219 Nov 03 13:27	13° 5 37'41	
min. Earth dist.	16213 Nov 20 22:21	1° 5 17'41		conjunction	16219 Nov 19 06:46	14° 5 13'14	-0°11'57
morning rise	16214 Feb 19 00:37	3° 5 15'47		minimum elong	16219 Nov 19 06:46	14° 5 13'14	0°11'16
retrograde	16214 May 09 19:43	1° 5 51'04	-0°16'42	behind sun begin	16219 Nov 19 02:00	14° 5 12'48	

behind sun end	16219 Nov 19 11:33	14° \mathring{A} 13'41		evening set	16225 Nov 16 16:33	27° \mathring{A} 11'30	
max. Earth dist.	16219 Nov 19 19:28	14° \mathring{A} 14'26	30.75810 AU				
morning rise	16219 Dec 05 02:00	14° \mathring{A} 48'59		conjunction	16225 Dec 02 11:28	27° \mathring{A} 47'10	-0°07'14
retrograde	16220 Mar 04 05:18	16° \mathring{A} 47'08		minimum elong	16225 Dec 02 11:28	27° \mathring{A} 47'10	0°06'31
opposition	16220 May 23 01:41	15° \mathring{A} 22'19	-0°12'17	behind sun begin	16225 Dec 02 05:21	27° \mathring{A} 46'36	
min. Earth dist.	16220 May 22 13:32	15° \mathring{A} 23'10	28.75959 AU	behind sun end	16225 Dec 02 17:34	27° \mathring{A} 47'43	
direct	16220 Aug 09 12:13	13° \mathring{A} 58'23		max. Earth dist.	16225 Dec 02 23:53	27° \mathring{A} 48'19	30.77134 AU
evening set	16220 Nov 05 01:37	15° \mathring{A} 53'02		morning rise	16225 Dec 18 08:19	28° \mathring{A} 23'00	
					16226 Feb 10 17:45	0° \mathring{B}	
conjunction	16220 Nov 20 19:19	16° \mathring{A} 28'37	-0°11'12	retrograde	16226 Mar 18 17:11	0° \mathring{B} 21'08	
minimum elong	16220 Nov 20 19:19	16° \mathring{A} 28'37	0°10'32		16226 Apr 24 05:41	30° \mathring{R} \mathring{A}	
behind sun begin	16220 Nov 20 14:16	16° \mathring{A} 28'09		opposition	16226 Jun 06 06:59	28° \mathring{A} 56'23	-0°07'10
behind sun end	16220 Nov 21 00:23	16° \mathring{A} 29'04		min. Earth dist.	16226 Jun 05 18:21	28° \mathring{A} 57'16	28.77167 AU
max. Earth dist.	16220 Nov 21 08:59	16° \mathring{A} 29'54	30.76106 AU	direct	16226 Aug 23 17:47	27° \mathring{A} 32'29	
morning rise	16220 Dec 06 14:45	17° \mathring{A} 04'23		evening set	16226 Nov 19 05:04	29° \mathring{A} 27'07	
retrograde	16221 Mar 06 19:06	19° \mathring{A} 02'33			16226 Dec 03 19:00	0° \mathring{B}	
opposition	16221 May 25 14:35	17° \mathring{A} 37'47	-0°11'28				
min. Earth dist.	16221 May 25 01:27	17° \mathring{A} 38'41	28.76271 AU	conjunction	16226 Dec 05 00:15	0° \mathring{B} 02'46	-0°06'24
direct	16221 Aug 12 01:46	16° \mathring{A} 13'52		minimum elong	16226 Dec 05 00:14	0° \mathring{B} 02'46	0°05'42
evening set	16221 Nov 07 14:11	18° \mathring{A} 08'34		behind sun begin	16226 Dec 04 18:00	0° \mathring{B} 02'12	
				behind sun end	16226 Dec 05 06:29	0° \mathring{B} 03'20	
conjunction	16221 Nov 23 08:00	18° \mathring{A} 44'09	-0°10'26	max. Earth dist.	16226 Dec 05 13:11	0° \mathring{B} 03'59	30.77187 AU
minimum elong	16221 Nov 23 07:59	18° \mathring{A} 44'09	0°09'45	morning rise	16226 Dec 20 21:16	0° \mathring{B} 38'37	
behind sun begin	16221 Nov 23 02:40	18° \mathring{A} 43'40		retrograde	16227 Mar 21 03:44	2° \mathring{B} 36'42	
behind sun end	16221 Nov 23 13:19	18° \mathring{A} 44'38		opposition	16227 Jun 08 19:43	1° \mathring{B} 11'57	-0°06'16
max. Earth dist.	16221 Nov 23 20:45	18° \mathring{A} 45'21	30.76426 AU	min. Earth dist.	16227 Jun 08 07:55	1° \mathring{B} 12'46	28.77243 AU
morning rise	16221 Dec 09 03:48	19° \mathring{A} 19'56			16227 Jul 30 07:46	30° \mathring{R} \mathring{A}	
retrograde	16222 Mar 09 10:08	21° \mathring{A} 18'08		direct	16227 Aug 26 05:56	29° \mathring{A} 48'01	
opposition	16222 May 28 03:28	19° \mathring{A} 53'24	-0°10'38		16227 Sep 21 15:58	0° \mathring{B}	
min. Earth dist.	16222 May 27 14:59	19° \mathring{A} 54'16	28.76594 AU	evening set	16227 Nov 21 17:35	1° \mathring{B} 42'36	
direct	16222 Aug 14 13:27	18° \mathring{A} 29'31					
evening set	16222 Nov 10 02:43	20° \mathring{A} 24'14		conjunction	16227 Dec 07 13:03	2° \mathring{B} 18'16	-0°05'34
				minimum elong	16227 Dec 07 13:03	2° \mathring{B} 18'16	0°04'51
conjunction	16222 Nov 25 20:55	20° \mathring{A} 59'51	-0°09'39	behind sun begin	16227 Dec 07 06:43	2° \mathring{B} 17'41	
minimum elong	16222 Nov 25 20:55	20° \mathring{A} 59'51	0°08'58	behind sun end	16227 Dec 07 19:24	2° \mathring{B} 18'50	
behind sun begin	16222 Nov 25 15:22	20° \mathring{A} 59'20		max. Earth dist.	16227 Dec 08 02:05	2° \mathring{B} 19'29	30.77306 AU
behind sun end	16222 Nov 26 02:29	21° \mathring{A} 00'21		morning rise	16227 Dec 23 10:21	2° \mathring{B} 54'07	
max. Earth dist.	16222 Nov 26 10:40	21° \mathring{A} 01'08	30.76721 AU	retrograde	16228 Mar 22 16:54	4° \mathring{B} 52'09	
morning rise	16222 Dec 11 16:49	21° \mathring{A} 35'38		opposition	16228 Jun 10 08:15	3° \mathring{B} 27'22	-0°05'22
retrograde	16223 Mar 11 23:12	23° \mathring{A} 33'51		min. Earth dist.	16228 Jun 09 19:19	3° \mathring{B} 28'16	28.77404 AU
opposition	16223 May 30 16:27	22° \mathring{A} 09'09	-0°09'47	direct	16228 Aug 27 18:06	2° \mathring{B} 03'24	
min. Earth dist.	16223 May 30 03:50	22° \mathring{A} 10'01	28.76847 AU	evening set	16228 Nov 23 06:06	3° \mathring{B} 57'57	
direct	16223 Aug 17 03:13	20° \mathring{A} 45'18					
evening set	16223 Nov 12 15:19	22° \mathring{A} 40'00		conjunction	16228 Dec 09 01:47	4° \mathring{B} 33'38	-0°04'43
				minimum elong	16228 Dec 09 01:46	4° \mathring{B} 33'38	0°04'01
conjunction	16223 Nov 28 09:37	23° \mathring{A} 15'38	-0°08'51	behind sun begin	16228 Dec 08 19:20	4° \mathring{B} 33'03	
minimum elong	16223 Nov 28 09:37	23° \mathring{A} 15'38	0°08'09	behind sun end	16228 Dec 09 08:12	4° \mathring{B} 34'13	
behind sun begin	16223 Nov 28 03:50	23° \mathring{A} 15'06		max. Earth dist.	16228 Dec 09 14:47	4° \mathring{B} 34'51	30.77513 AU
behind sun end	16223 Nov 28 15:23	23° \mathring{A} 16'09		morning rise	16228 Dec 24 23:23	5° \mathring{B} 09'30	
max. Earth dist.	16223 Nov 28 22:09	23° \mathring{A} 16'48	30.76936 AU	retrograde	16229 Mar 25 04:59	7° \mathring{B} 07'30	
morning rise	16223 Dec 14 05:56	23° \mathring{A} 51'27		opposition	16229 Jun 12 20:53	5° \mathring{B} 42'42	-0°04'28
retrograde	16224 Mar 13 13:58	25° \mathring{A} 49'39		min. Earth dist.	16229 Jun 12 08:46	5° \mathring{B} 43'33	28.77677 AU
opposition	16224 Jun 01 05:28	24° \mathring{A} 24'57	-0°08'56	direct	16229 Aug 30 04:00	4° \mathring{B} 18'42	
min. Earth dist.	16224 May 31 16:55	24° \mathring{A} 25'49	28.77022 AU	evening set	16229 Nov 25 18:37	6° \mathring{B} 13'14	
direct	16224 Aug 18 15:12	23° \mathring{A} 01'06					
evening set	16224 Nov 14 03:54	24° \mathring{A} 55'47		conjunction	16229 Dec 11 14:40	6° \mathring{B} 48'55	-0°03'52
				minimum elong	16229 Dec 11 14:40	6° \mathring{B} 48'55	0°03'09
conjunction	16224 Nov 29 22:36	25° \mathring{A} 31'26	-0°08'03	behind sun begin	16229 Dec 11 08:11	6° \mathring{B} 48'20	
minimum elong	16224 Nov 29 22:36	25° \mathring{A} 31'26	0°07'21	behind sun end	16229 Dec 11 21:09	6° \mathring{B} 49'30	
behind sun begin	16224 Nov 29 16:39	25° \mathring{A} 30'53		max. Earth dist.	16229 Dec 12 04:27	6° \mathring{B} 50'12	30.77851 AU
behind sun end	16224 Nov 30 04:33	25° \mathring{A} 31'58		morning rise	16229 Dec 27 12:26	7° \mathring{B} 24'47	
max. Earth dist.	16224 Nov 30 11:57	25° \mathring{A} 32'41	30.77061 AU	retrograde	16230 Mar 27 17:14	9° \mathring{B} 22'44	
morning rise	16224 Dec 15 19:03	26° \mathring{A} 07'15		opposition	16230 Jun 15 09:10	7° \mathring{B} 57'56	-0°03'33
retrograde	16225 Mar 16 02:45	28° \mathring{A} 05'26		min. Earth dist.	16230 Jun 14 19:58	7° \mathring{B} 58'52	28.78076 AU
opposition	16225 Jun 03 18:16	26° \mathring{A} 40'43	-0°08'03	direct	16230 Sep 01 17:38	6° \mathring{B} 33'56	
min. Earth dist.	16225 Jun 03 06:19	26° \mathring{A} 41'33	28.77107 AU	evening set	16230 Nov 28 07:15	8° \mathring{B} 28'28	
direct	16225 Aug 21 05:10	25° \mathring{A} 16'51					

conjunction	16230 Dec 14 03:26	9°30'04"09	-0°03'00"	retrograde	16236 Apr 10 01:51	22°35'54"10	
minimum elong	16230 Dec 14 03:24	9°30'04"09	0°02'18"	opposition	16236 Jun 28 11:34	21°32'29"34	0°02'01"
behind sun begin	16230 Dec 13 20:54	9°30'03"33		min. Earth dist.	16236 Jun 27 23:43	21°32'30"24	28.82295 AU
behind sun end	16230 Dec 14 09:55	9°30'04"44		direct	16236 Sep 14 19:19	20°32'05"37	
max. Earth dist.	16230 Dec 14 16:30	9°30'05"22	30.78320 AU	evening set	16236 Dec 11 11:37	22°32'00"07	
morning rise	16230 Dec 30 01:33	9°30'40"01					
retrograde	16231 Mar 30 06:44	11°33'37"56		conjunction	16236 Dec 27 09:25	22°32'35"51	0°02'20"
opposition	16231 Jun 17 21:42	10°32'13"09	-0°02'38"	minimum elong	16236 Dec 27 09:24	22°32'35"51	0°03'00"
min. Earth dist.	16231 Jun 17 08:52	10°32'14"03	28.78623 AU	behind sun begin	16236 Dec 27 02:54	22°32'35"16	
direct	16231 Sep 04 04:16	8°32'49"09		behind sun end	16236 Dec 27 15:54	22°32'36"26	
evening set	16231 Nov 30 19:36	10°32'43"39		max. Earth dist.	16236 Dec 27 22:11	22°32'37"03	30.82593 AU
				morning rise	16237 Jan 12 08:53	23°32'11"45	
conjunction	16231 Dec 16 16:11	11°32'19"21	-0°02'07"	retrograde	16237 Apr 12 15:55	25°32'09"22	
minimum elong	16231 Dec 16 16:12	11°32'19"21	0°01'25"	opposition	16237 Jun 30 23:46	23°32'44"46	0°02'56"
behind sun begin	16231 Dec 16 09:41	11°32'18"46		min. Earth dist.	16237 Jun 30 11:22	23°32'45"38	28.82879 AU
behind sun end	16231 Dec 16 22:42	11°32'19"57		direct	16237 Sep 17 08:17	22°32'20"48	
max. Earth dist.	16231 Dec 17 06:35	11°32'20"42	30.78933 AU	evening set	16237 Dec 14 00:35	24°32'15"16	
morning rise	16232 Jan 01 14:26	11°32'55"14					
retrograde	16232 Mar 31 19:18	13°32'53"07		conjunction	16237 Dec 29 22:32	24°32'51"00	0°03'11"
opposition	16232 Jun 19 10:07	12°32'28"22	-0°01'42"	minimum elong	16237 Dec 29 22:33	24°32'51"00	0°03'52"
min. Earth dist.	16232 Jun 18 20:49	12°32'29"18	28.79288 AU	behind sun begin	16237 Dec 29 16:06	24°32'50"25	
direct	16232 Sep 05 17:00	11°32'04"22		behind sun end	16237 Dec 30 05:01	24°32'51"35	
evening set	16232 Dec 02 08:20	12°32'58"53		max. Earth dist.	16237 Dec 30 10:46	24°32'52"08	30.83131 AU
				morning rise	16238 Jan 14 22:15	25°32'26"54	
conjunction	16232 Dec 18 05:03	13°32'34"35	-0°01'14"	retrograde	16238 Apr 15 03:20	27°32'24"25	
minimum elong	16232 Dec 18 05:02	13°32'34"35	0°00'32"	opposition	16238 Jul 03 11:57	25°32'59"49	0°03'50"
behind sun begin	16232 Dec 17 22:32	13°32'34"00		min. Earth dist.	16238 Jul 03 00:56	26°32'00"35	28.83394 AU
behind sun end	16232 Dec 18 11:32	13°32'35"10		direct	16238 Sep 19 19:07	24°32'35"48	
max. Earth dist.	16232 Dec 18 18:28	13°32'35"51	30.79657 AU	evening set	16238 Dec 16 13:20	26°32'30"13	
morning rise	16233 Jan 03 03:42	14°32'10"29					
retrograde	16233 Apr 03 10:10	16°32'08"19		conjunction	16239 Jan 01 11:40	27°32'05"57	0°04'02"
opposition	16233 Jun 21 22:25	14°32'43"37	-0°00'46"	minimum elong	16239 Jan 01 11:40	27°32'05"57	0°04'41"
min. Earth dist.	16233 Jun 21 09:11	14°32'44"32	28.80057 AU	behind sun begin	16239 Jan 01 05:17	27°32'05"23	
direct	16233 Sep 08 04:38	13°32'19"38		behind sun end	16239 Jan 01 18:03	27°32'06"32	
evening set	16233 Dec 04 21:01	15°32'14"10		max. Earth dist.	16239 Jan 02 00:09	27°32'07"07	30.83639 AU
				morning rise	16239 Jan 17 11:29	27°32'41"51	
conjunction	16233 Dec 20 18:06	15°32'49"53	-0°00'19"	retrograde	16239 Apr 17 15:01	29°32'39"17	
minimum elong	16233 Dec 20 18:07	15°32'49"53	0°00'23"	opposition	16239 Jul 05 23:57	28°32'14"40	0°04'45"
behind sun begin	16233 Dec 20 11:37	15°32'49"18		min. Earth dist.	16239 Jul 05 12:13	28°32'15"29	28.83893 AU
behind sun end	16233 Dec 21 00:36	15°32'50"28		direct	16239 Sep 22 08:25	26°32'50"36	
max. Earth dist.	16233 Dec 21 08:31	15°32'51"14	30.80444 AU	evening set	16239 Dec 19 02:03	28°32'44"59	
morning rise	16234 Jan 05 16:51	16°32'25"46					
retrograde	16234 Apr 05 23:27	18°32'23"34		conjunction	16240 Jan 04 00:28	29°32'20"43	0°04'53"
asc. node	16234 Apr 26 17:55	18°32'16"32		minimum elong	16240 Jan 04 00:28	29°32'20"43	0°05'32"
opposition	16234 Jun 24 10:48	16°32'58"55	0°00'09"	behind sun begin	16240 Jan 03 18:11	29°32'20"09	
min. Earth dist.	16234 Jun 23 22:07	16°32'59"48	28.80848 AU	behind sun end	16240 Jan 04 06:45	29°32'21"17	
direct	16234 Sep 10 18:29	15°32'34"58		max. Earth dist.	16240 Jan 04 11:59	29°32'21"47	30.84150 AU
evening set	16234 Dec 07 09:49	17°32'29"30		morning rise	16240 Jan 20 00:39	29°32'56"37	
					16240 Jan 21 13:39	0°00'00"	
conjunction	16234 Dec 23 07:02	18°32'05"13	0°00'34"	retrograde	16240 Apr 19 03:16	1°00'53"57	
minimum elong	16234 Dec 23 07:02	18°32'05"13	0°01'16"	opposition	16240 Jul 07 12:00	0°00'29"19	0°05'38"
behind sun begin	16234 Dec 23 00:31	18°32'04"38		min. Earth dist.	16240 Jul 07 01:02	0°00'30"05	28.84437 AU
behind sun end	16234 Dec 23 13:33	18°32'05"48			16240 Jul 25 07:12	30°00'00"	
max. Earth dist.	16234 Dec 23 20:21	18°32'06"28	30.81232 AU	direct	16240 Sep 23 18:44	29°32'05"13	
morning rise	16235 Jan 08 06:06	18°32'41"07			16240 Nov 20 23:47	0°00'00"	
retrograde	16235 Apr 08 13:44	20°32'38"53		evening set	16240 Dec 20 14:43	0°00'59"34	
opposition	16235 Jun 26 23:08	19°32'14"15	0°01'05"				
min. Earth dist.	16235 Jun 26 10:04	19°32'15"10	28.81615 AU	conjunction	16241 Jan 05 13:33	1°00'35"18	0°05'42"
direct	16235 Sep 13 06:55	17°32'50"19		minimum elong	16241 Jan 05 13:33	1°00'35"18	0°06'20"
evening set	16235 Dec 09 22:44	19°32'44"50		behind sun begin	16241 Jan 05 07:23	1°00'34"45	
				behind sun end	16241 Jan 05 19:43	1°00'35"51	
conjunction	16235 Dec 25 20:13	20°32'20"34	0°01'28"	max. Earth dist.	16241 Jan 06 02:00	1°00'36"28	30.84726 AU
minimum elong	16235 Dec 25 20:14	20°32'20"34	0°02'09"	morning rise	16241 Jan 21 13:46	2°00'11"11	
behind sun begin	16235 Dec 25 13:43	20°32'19"59		retrograde	16241 Apr 21 14:57	4°00'08"26	
behind sun end	16235 Dec 26 02:46	20°32'21"09		opposition	16241 Jul 09 23:40	2°00'43"49	0°06'31"
max. Earth dist.	16235 Dec 26 09:41	20°32'21"49	30.81953 AU	min. Earth dist.	16241 Jul 09 12:25	2°00'44"36	28.85052 AU
morning rise	16236 Jan 10 19:26	20°32'56"28		direct	16241 Sep 26 07:06	1°00'19"40	

evening set	16241 Dec 23 03:31	3° \approx 14'01		behind sun end	16247 Jan 19 23:49	15° \approx 01'49	
					16247 Jan 19 04:04	15° \approx	
conjunction	16242 Jan 08 02:24	3° \approx 49'44	0°06'31	max. Earth dist.	16247 Jan 20 06:16	15° \approx 02'26	30.90686 AU
minimum elong	16242 Jan 08 02:23	3° \approx 49'44	0°07'09	morning rise	16247 Feb 04 20:12	15° \approx 37'15	
behind sun begin	16242 Jan 07 20:23	3° \approx 49'12		retrograde	16247 May 05 21:05	17° \approx 34'05	
behind sun end	16242 Jan 08 08:24	3° \approx 50'16		opposition	16247 Jul 23 21:39	16° \approx 09'46	0°11'35
max. Earth dist.	16242 Jan 08 13:43	3° \approx 50'47	30.85399 AU	min. Earth dist.	16247 Jul 23 11:42	16° \approx 10'28	28.91314 AU
morning rise	16242 Jan 24 02:57	4° \approx 25'37			16247 Sep 10 20:03	15° \approx	
retrograde	16242 Apr 24 04:37	6° \approx 22'47		direct	16247 Oct 10 06:58	14° \approx 45'45	
opposition	16242 Jul 12 11:27	4° \approx 58'10	0°07'24		16247 Nov 08 06:38	15° \approx	
min. Earth dist.	16242 Jul 12 00:16	4° \approx 58'57	28.85794 AU	evening set	16248 Jan 06 07:44	16° \approx 40'07	
direct	16242 Sep 28 18:29	3° \approx 34'00					
evening set	16242 Dec 25 16:01	5° \approx 28'20		conjunction	16248 Jan 22 07:58	17° \approx 15'51	0°11'12
				minimum elong	16248 Jan 22 07:58	17° \approx 15'51	0°11'44
conjunction	16243 Jan 10 15:14	6° \approx 04'04	0°07'20	behind sun begin	16248 Jan 22 03:24	17° \approx 15'27	
minimum elong	16243 Jan 10 15:15	6° \approx 04'04	0°07'56	behind sun end	16248 Jan 22 12:32	17° \approx 16'16	
behind sun begin	16243 Jan 10 09:24	6° \approx 03'32		max. Earth dist.	16248 Jan 22 19:17	17° \approx 16'54	30.91911 AU
behind sun end	16243 Jan 10 21:05	6° \approx 04'35		morning rise	16248 Feb 07 09:19	17° \approx 51'43	
max. Earth dist.	16243 Jan 11 03:44	6° \approx 05'13	30.86200 AU	retrograde	16248 May 07 08:52	19° \approx 48'29	
morning rise	16243 Jan 26 15:48	6° \approx 39'56		opposition	16248 Jul 25 09:11	18° \approx 24'14	0°12'22
retrograde	16243 Apr 26 16:53	8° \approx 37'02		min. Earth dist.	16248 Jul 24 22:52	18° \approx 24'57	28.92495 AU
opposition	16243 Jul 14 23:13	7° \approx 12'26	0°08'16	direct	16248 Oct 11 19:42	17° \approx 00'13	
min. Earth dist.	16243 Jul 14 12:17	7° \approx 13'12	28.86665 AU	evening set	16249 Jan 07 20:47	18° \approx 54'35	
direct	16243 Oct 01 07:48	5° \approx 48'17					
evening set	16243 Dec 28 04:44	7° \approx 42'37		conjunction	16249 Jan 23 21:04	19° \approx 30'19	0°11'56
				minimum elong	16249 Jan 23 21:04	19° \approx 30'19	0°12'25
conjunction	16244 Jan 13 04:04	8° \approx 18'21	0°08'08	behind sun begin	16249 Jan 23 16:51	19° \approx 29'57	
minimum elong	16244 Jan 13 04:04	8° \approx 18'20	0°08'44	behind sun end	16249 Jan 24 01:18	19° \approx 30'42	
behind sun begin	16244 Jan 12 22:25	8° \approx 17'50		max. Earth dist.	16249 Jan 24 06:53	19° \approx 31'14	30.93043 AU
behind sun end	16244 Jan 13 09:42	8° \approx 18'51		morning rise	16249 Feb 08 22:39	20° \approx 06'11	
max. Earth dist.	16244 Jan 13 15:39	8° \approx 19'25	30.87156 AU	retrograde	16249 May 09 21:03	22° \approx 02'50	
morning rise	16244 Jan 29 04:56	8° \approx 54'13		opposition	16249 Jul 27 20:40	20° \approx 38'38	0°13'08
retrograde	16244 Apr 28 06:40	10° \approx 51'14		min. Earth dist.	16249 Jul 27 11:36	20° \approx 39'16	28.93586 AU
opposition	16244 Jul 16 10:48	9° \approx 26'41	0°09'07	direct	16249 Oct 14 05:19	19° \approx 14'36	
min. Earth dist.	16244 Jul 15 23:11	9° \approx 27'30	28.87696 AU	evening set	16250 Jan 10 09:38	21° \approx 08'57	
direct	16244 Oct 02 19:24	8° \approx 02'33					
evening set	16244 Dec 29 17:23	9° \approx 56'53		conjunction	16250 Jan 26 10:16	21° \approx 44'41	0°12'38
				minimum elong	16250 Jan 26 10:16	21° \approx 44'41	0°13'08
conjunction	16245 Jan 14 17:01	10° \approx 32'38	0°08'55	behind sun begin	16250 Jan 26 06:27	21° \approx 44'20	
minimum elong	16245 Jan 14 17:02	10° \approx 32'38	0°09'30	behind sun end	16250 Jan 26 14:05	21° \approx 45'01	
behind sun begin	16245 Jan 14 11:36	10° \approx 32'08		max. Earth dist.	16250 Jan 26 20:23	21° \approx 45'37	30.94085 AU
behind sun end	16245 Jan 14 22:27	10° \approx 33'07		morning rise	16250 Feb 11 11:48	22° \approx 20'31	
max. Earth dist.	16245 Jan 15 05:10	10° \approx 33'45	30.88246 AU	retrograde	16250 May 12 07:59	24° \approx 17'04	
morning rise	16245 Jan 30 17:59	11° \approx 08'30		opposition	16250 Jul 30 08:07	22° \approx 52'53	0°13'53
retrograde	16245 Apr 30 19:05	13° \approx 05'27		min. Earth dist.	16250 Jul 29 23:11	22° \approx 53'30	28.94576 AU
opposition	16245 Jul 18 22:31	11° \approx 40'59	0°09'57	direct	16250 Oct 16 17:39	21° \approx 28'50	
min. Earth dist.	16245 Jul 18 11:50	11° \approx 41'43	28.88843 AU	evening set	16251 Jan 12 22:25	23° \approx 23'08	
direct	16245 Oct 05 07:40	10° \approx 16'53					
evening set	16246 Jan 01 06:08	12° \approx 11'14		conjunction	16251 Jan 28 23:02	23° \approx 58'51	0°13'19
				minimum elong	16251 Jan 28 23:02	23° \approx 58'51	0°13'47
conjunction	16246 Jan 17 05:57	12° \approx 46'58	0°09'42	behind sun begin	16251 Jan 28 19:40	23° \approx 58'33	
minimum elong	16246 Jan 17 05:57	12° \approx 46'58	0°10'16	behind sun end	16251 Jan 29 02:25	23° \approx 59'09	
behind sun begin	16246 Jan 17 00:47	12° \approx 46'30		max. Earth dist.	16251 Jan 29 07:36	23° \approx 59'38	30.95048 AU
behind sun end	16246 Jan 17 11:07	12° \approx 47'26		morning rise	16251 Feb 14 00:52	24° \approx 34'41	
max. Earth dist.	16246 Jan 17 17:38	12° \approx 48'03	30.89449 AU	retrograde	16251 May 14 20:04	26° \approx 31'07	
morning rise	16246 Feb 02 07:05	13° \approx 22'50		opposition	16251 Aug 01 19:33	25° \approx 06'55	0°14'36
	16246 Mar 29 15:55	15° \approx		min. Earth dist.	16251 Aug 01 11:07	25° \approx 07'31	28.95521 AU
retrograde	16246 May 03 09:40	15° \approx 19'43		direct	16251 Oct 19 04:52	23° \approx 42'50	
	16246 Jun 07 11:46	15° \approx		evening set	16252 Jan 15 11:08	25° \approx 37'06	
opposition	16246 Jul 21 09:57	13° \approx 55'20	0°10'46				
min. Earth dist.	16246 Jul 20 22:35	13° \approx 56'07	28.90071 AU	conjunction	16252 Jan 31 12:04	26° \approx 12'48	0°13'59
direct	16246 Oct 07 20:22	12° \approx 31'16		minimum elong	16252 Jan 31 12:04	26° \approx 12'48	0°14'27
evening set	16247 Jan 03 19:00	14° \approx 25'38		behind sun begin	16252 Jan 31 09:16	26° \approx 12'33	
				behind sun end	16252 Jan 31 14:53	26° \approx 13'03	
conjunction	16247 Jan 19 18:55	15° \approx 01'23	0°10'27	max. Earth dist.	16252 Jan 31 21:20	26° \approx 13'39	30.95975 AU
minimum elong	16247 Jan 19 18:56	15° \approx 01'23	0°11'00	morning rise	16252 Feb 16 13:51	26° \approx 48'37	
behind sun begin	16247 Jan 19 14:02	15° \approx 00'57		retrograde	16252 May 16 06:52	28° \approx 44'55	

opposition	16252 Aug 03 06:46	27° \approx 20'43	0°15'18	opposition	16258 Aug 17 00:48	10° \mathbf{H} 39'34	0°18'59
min. Earth dist.	16252 Aug 02 23:05	27° \approx 21'15	28.96442 AU	min. Earth dist.	16258 Aug 16 18:19	10° \mathbf{H} 40'01	29.03656 AU
direct	16252 Oct 20 17:19	25° \approx 56'35		direct	16258 Nov 03 15:14	9° \mathbf{H} 15'25	
evening set	16253 Jan 16 23:54	27° \approx 50'49		evening set	16259 Jan 31 03:11	11° \mathbf{H} 09'34	
conjunction	16253 Feb 02 00:54	28° \approx 26'30	0°14'38	conjunction	16259 Feb 16 05:00	11° \mathbf{H} 45'12	0°18'01
minimum elong	16253 Feb 02 00:54	28° \approx 26'30	0°15'03	minimum elong	16259 Feb 16 05:00	11° \mathbf{H} 45'12	0°18'17
behind sun begin	16253 Feb 01 22:45	28° \approx 26'18		max. Earth dist.	16259 Feb 16 12:26	11° \mathbf{H} 45'53	31.04400 AU
behind sun end	16253 Feb 02 03:03	28° \approx 26'41		morning rise	16259 Mar 04 07:10	12° \mathbf{H} 20'54	
max. Earth dist.	16253 Feb 02 08:49	28° \approx 27'14	30.96914 AU	retrograde	16259 Jun 01 18:25	14° \mathbf{H} 16'28	
morning rise	16253 Feb 18 02:56	29° \approx 02'18		opposition	16259 Aug 19 11:42	12° \mathbf{H} 52'36	0°19'30
	16253 Mar 18 19:29	0° \mathbf{H}		min. Earth dist.	16259 Aug 19 05:20	12° \mathbf{H} 53'03	29.05142 AU
retrograde	16253 May 18 19:59	0° \mathbf{H} 58'28		direct	16259 Nov 06 03:02	11° \mathbf{H} 28'30	
	16253 Jul 21 04:27	30° \mathbf{R} \approx		evening set	16260 Feb 02 16:00	13° \mathbf{H} 22'40	
opposition	16253 Aug 05 17:53	29° \approx 34'16	0°15'59	conjunction	16260 Feb 18 17:43	13° \mathbf{H} 58'18	0°18'29
min. Earth dist.	16253 Aug 05 09:52	29° \approx 34'50	28.97402 AU	minimum elong	16260 Feb 18 17:43	13° \mathbf{H} 58'18	0°18'45
direct	16253 Oct 23 04:43	28° \approx 10'04		max. Earth dist.	16260 Feb 18 23:29	13° \mathbf{H} 58'50	31.05872 AU
	16254 Jan 17 13:20	0° \mathbf{H}		morning rise	16260 Mar 05 20:04	14° \mathbf{H} 34'00	
evening set	16254 Jan 19 12:30	0° \mathbf{H} 04'16		retrograde	16260 Jun 03 06:19	16° \mathbf{H} 29'29	
conjunction	16254 Feb 04 13:41	0° \mathbf{H} 39'57	0°15'15	opposition	16260 Aug 20 22:32	15° \mathbf{H} 05'42	0°19'59
minimum elong	16254 Feb 04 13:41	0° \mathbf{H} 39'57	0°15'40	min. Earth dist.	16260 Aug 20 16:53	15° \mathbf{H} 06'06	29.06588 AU
behind sun begin	16254 Feb 04 12:36	0° \mathbf{H} 39'51		direct	16260 Nov 07 13:04	13° \mathbf{H} 41'38	
behind sun end	16254 Feb 04 14:46	0° \mathbf{H} 40'03		evening set	16261 Feb 04 04:43	15° \mathbf{H} 35'50	
max. Earth dist.	16254 Feb 04 22:00	0° \mathbf{H} 40'43	30.97891 AU	conjunction	16261 Feb 20 06:41	16° \mathbf{H} 11'27	0°18'56
morning rise	16254 Feb 20 15:39	1° \mathbf{H} 15'43		minimum elong	16261 Feb 20 06:41	16° \mathbf{H} 11'27	0°19'09
retrograde	16254 May 21 07:27	3° \mathbf{H} 11'46		max. Earth dist.	16261 Feb 20 12:46	16° \mathbf{H} 12'01	31.07259 AU
opposition	16254 Aug 08 05:01	1° \mathbf{H} 47'34	0°16'38	morning rise	16261 Mar 08 08:51	16° \mathbf{H} 47'08	
min. Earth dist.	16254 Aug 07 22:01	1° \mathbf{H} 48'04	28.98422 AU	retrograde	16261 Jun 05 16:52	18° \mathbf{H} 42'33	
direct	16254 Oct 25 17:29	0° \mathbf{H} 23'22		opposition	16261 Aug 23 09:30	17° \mathbf{H} 18'50	0°20'27
evening set	16255 Jan 22 01:05	2° \mathbf{H} 17'31		min. Earth dist.	16261 Aug 23 04:54	17° \mathbf{H} 19'09	29.07912 AU
conjunction	16255 Feb 07 02:23	2° \mathbf{H} 53'11	0°15'51	direct	16261 Nov 10 00:33	15° \mathbf{H} 54'47	
minimum elong	16255 Feb 07 02:22	2° \mathbf{H} 53'11	0°16'14	evening set	16262 Feb 06 17:27	17° \mathbf{H} 48'59	
max. Earth dist.	16255 Feb 07 10:08	2° \mathbf{H} 53'54	30.98970 AU	conjunction	16262 Feb 22 19:19	18° \mathbf{H} 24'36	0°19'20
morning rise	16255 Feb 23 04:27	3° \mathbf{H} 28'56		minimum elong	16262 Feb 22 19:20	18° \mathbf{H} 24'36	0°19'33
retrograde	16255 May 23 20:53	5° \mathbf{H} 24'52		max. Earth dist.	16262 Feb 22 23:39	18° \mathbf{H} 24'59	31.08525 AU
opposition	16255 Aug 10 15:58	4° \mathbf{H} 00'41	0°17'16	morning rise	16262 Mar 10 21:38	19° \mathbf{H} 00'15	
min. Earth dist.	16255 Aug 10 08:07	4° \mathbf{H} 01'14	28.99555 AU	retrograde	16262 Jun 08 05:39	20° \mathbf{H} 55'35	
direct	16255 Oct 28 06:30	2° \mathbf{H} 36'27		opposition	16262 Aug 25 20:19	19° \mathbf{H} 31'55	0°20'52
evening set	16256 Jan 24 13:35	4° \mathbf{H} 30'35		min. Earth dist.	16262 Aug 25 15:43	19° \mathbf{H} 32'14	29.09116 AU
conjunction	16256 Feb 09 14:59	5° \mathbf{H} 06'15	0°16'26	direct	16262 Nov 12 11:19	18° \mathbf{H} 07'52	
minimum elong	16256 Feb 09 14:59	5° \mathbf{H} 06'15	0°16'48	evening set	16263 Feb 09 06:04	20° \mathbf{H} 02'03	
max. Earth dist.	16256 Feb 09 22:37	5° \mathbf{H} 06'57	31.00158 AU	conjunction	16263 Feb 25 08:06	20° \mathbf{H} 37'39	0°19'43
morning rise	16256 Feb 25 17:08	5° \mathbf{H} 42'00		minimum elong	16263 Feb 25 08:06	20° \mathbf{H} 37'39	0°19'54
retrograde	16256 May 25 07:51	7° \mathbf{H} 37'48		max. Earth dist.	16263 Feb 25 12:21	20° \mathbf{H} 38'02	31.09664 AU
opposition	16256 Aug 12 03:02	6° \mathbf{H} 13'40	0°17'52	morning rise	16263 Mar 13 10:17	21° \mathbf{H} 13'17	
min. Earth dist.	16256 Aug 11 20:20	6° \mathbf{H} 14'09	29.00812 AU	retrograde	16263 Jun 10 16:54	23° \mathbf{H} 08'30	
direct	16256 Oct 29 17:23	4° \mathbf{H} 49'27		opposition	16263 Aug 28 07:10	21° \mathbf{H} 44'52	0°21'15
evening set	16257 Jan 26 02:08	6° \mathbf{H} 43'35		min. Earth dist.	16263 Aug 28 04:03	21° \mathbf{H} 45'05	29.10205 AU
conjunction	16257 Feb 11 03:44	7° \mathbf{H} 19'14	0°16'59	direct	16263 Nov 15 00:00	20° \mathbf{H} 20'49	
minimum elong	16257 Feb 11 03:44	7° \mathbf{H} 19'14	0°17'18	evening set	16264 Feb 11 18:36	22° \mathbf{H} 14'59	
max. Earth dist.	16257 Feb 11 11:34	7° \mathbf{H} 19'57	31.01482 AU	conjunction	16264 Feb 27 20:42	22° \mathbf{H} 50'34	0°20'04
morning rise	16257 Feb 27 05:53	7° \mathbf{H} 54'57		minimum elong	16264 Feb 27 20:42	22° \mathbf{H} 50'34	0°20'14
retrograde	16257 May 27 19:44	9° \mathbf{H} 50'39		max. Earth dist.	16264 Feb 27 23:50	22° \mathbf{H} 50'51	31.10717 AU
opposition	16257 Aug 14 13:48	8° \mathbf{H} 26'36	0°18'26	morning rise	16264 Mar 14 22:58	23° \mathbf{H} 26'11	
min. Earth dist.	16257 Aug 14 06:25	8° \mathbf{H} 27'07	29.02185 AU	retrograde	16264 Jun 12 05:51	25° \mathbf{H} 21'16	
direct	16257 Nov 01 05:48	7° \mathbf{H} 02'25		opposition	16264 Aug 29 17:47	23° \mathbf{H} 57'39	0°21'37
evening set	16258 Jan 28 14:48	8° \mathbf{H} 56'32		min. Earth dist.	16264 Aug 29 14:18	23° \mathbf{H} 57'54	29.11212 AU
conjunction	16258 Feb 13 16:22	9° \mathbf{H} 32'11	0°17'31	direct	16264 Nov 16 13:16	22° \mathbf{H} 33'34	
minimum elong	16258 Feb 13 16:22	9° \mathbf{H} 32'11	0°17'50	evening set	16265 Feb 13 07:11	24° \mathbf{H} 27'43	
max. Earth dist.	16258 Feb 13 23:12	9° \mathbf{H} 32'49	31.02907 AU	conjunction	16265 Mar 01 09:17	25° \mathbf{H} 03'17	0°20'24
morning rise	16258 Mar 01 18:39	10° \mathbf{H} 07'54		minimum elong	16265 Mar 01 09:17	25° \mathbf{H} 03'17	0°20'31
retrograde	16258 May 30 07:51	12° \mathbf{H} 03'32					

max. Earth dist.	16265 Mar 01 11:51	25° ✕ 03'31	31.11689 AU	min. Earth dist.	16271 Sep 14 17:52	9° ♀ 22'17	29.19054 AU
morning rise	16265 Mar 17 11:29	25° ✕ 38'53		direct	16271 Dec 02 18:20	7° ♀ 58'04	
retrograde	16265 Jun 14 16:27	27° ✕ 33'51		evening set	16272 Feb 29 20:51	9° ♀ 52'07	
opposition	16265 Sep 01 04:23	26° ✕ 10'15	0°21'57				
min. Earth dist.	16265 Sep 01 02:28	26° ✕ 10'23	29.12174 AU	conjunction	16272 Mar 16 23:02	10° ♀ 27'35	0°21'48
direct	16265 Nov 19 00:22	24° ✕ 46'08		minimum elong	16272 Mar 16 23:02	10° ♀ 27'35	0°21'45
evening set	16266 Feb 15 19:34	26° ✕ 40'15		max. Earth dist.	16272 Mar 16 23:29	10° ♀ 27'38	31.19704 AU
				morning rise	16272 Apr 02 00:42	11° ♀ 03'03	
conjunction	16266 Mar 03 21:46	27° ✕ 15'48	0°20'41	retrograde	16272 Jun 29 19:11	12° ♀ 57'17	
minimum elong	16266 Mar 03 21:46	27° ✕ 15'48	0°20'48	opposition	16272 Sep 16 05:25	11° ♀ 34'00	0°23'18
max. Earth dist.	16266 Mar 04 00:15	27° ✕ 16'02	31.12652 AU	min. Earth dist.	16272 Sep 16 05:50	11° ♀ 33'58	29.20348 AU
morning rise	16266 Mar 19 23:53	27° ✕ 51'23		direct	16272 Dec 04 05:55	10° ♀ 09'54	
retrograde	16266 Jun 17 04:18	29° ✕ 46'13		evening set	16273 Mar 03 09:10	12° ♀ 03'57	
opposition	16266 Sep 03 14:53	28° ✕ 22'37	0°22'14				
min. Earth dist.	16266 Sep 03 12:28	28° ✕ 22'47	29.13136 AU	conjunction	16273 Mar 19 11:14	12° ♀ 39'24	0°21'52
direct	16266 Nov 21 13:28	26° ✕ 58'29		minimum elong	16273 Mar 19 11:14	12° ♀ 39'24	0°21'47
evening set	16267 Feb 18 07:49	28° ✕ 52'33		max. Earth dist.	16273 Mar 19 10:31	12° ♀ 39'20	31.20961 AU
				morning rise	16273 Apr 04 12:51	13° ♀ 14'50	
conjunction	16267 Mar 06 09:55	29° ✕ 28'06	0°20'57	retrograde	16273 Jul 02 07:18	15° ♀ 08'59	
minimum elong	16267 Mar 06 09:55	29° ✕ 28'06	0°21'01	opposition	16273 Sep 18 15:39	13° ♀ 45'46	0°23'22
max. Earth dist.	16267 Mar 06 11:22	29° ✕ 28'14	31.13630 AU	min. Earth dist.	16273 Sep 18 15:47	13° ♀ 45'45	29.21548 AU
	16267 Mar 20 19:45	0° ♀		direct	16273 Dec 06 18:05	12° ♀ 21'40	
morning rise	16267 Mar 22 12:06	0° ♀ 03'39		evening set	16274 Mar 05 21:26	14° ♀ 15'44	
retrograde	16267 Jun 19 16:05	1° ♀ 58'22					
opposition	16267 Sep 06 01:27	0° ♀ 34'47	0°22'30	conjunction	16274 Mar 21 23:26	14° ♀ 51'10	0°21'55
min. Earth dist.	16267 Sep 05 23:55	0° ♀ 34'54	29.14152 AU	minimum elong	16274 Mar 21 23:26	14° ♀ 51'10	0°21'48
	16267 Sep 27 10:53	30° ♄		max. Earth dist.	16274 Mar 21 21:59	14° ♀ 51'02	31.22092 AU
direct	16267 Nov 23 23:56	29° ✕ 10'37		morning rise	16274 Apr 07 00:53	15° ♀ 26'35	
	16268 Jan 18 17:41	0° ♀		retrograde	16274 Jul 04 18:07	17° ♀ 20'39	
evening set	16268 Feb 20 20:02	1° ♀ 04'40		opposition	16274 Sep 21 02:09	15° ♀ 57'28	0°23'23
				min. Earth dist.	16274 Sep 21 03:56	15° ♀ 57'20	29.22623 AU
conjunction	16268 Mar 07 22:19	1° ♀ 40'12	0°21'11	direct	16274 Dec 09 04:46	14° ♀ 33'22	
minimum elong	16268 Mar 07 22:19	1° ♀ 40'12	0°21'14	evening set	16275 Mar 08 09:30	16° ♀ 27'25	
max. Earth dist.	16268 Mar 08 00:23	1° ♀ 40'23	31.14680 AU				
morning rise	16268 Mar 24 00:18	2° ♀ 15'44		conjunction	16275 Mar 24 11:32	17° ♀ 02'50	0°21'55
retrograde	16268 Jun 21 01:06	4° ♀ 10'19		minimum elong	16275 Mar 24 11:32	17° ♀ 02'50	0°21'46
opposition	16268 Sep 07 11:47	2° ♀ 46'46	0°22'44	max. Earth dist.	16275 Mar 24 09:43	17° ♀ 02'41	31.23105 AU
min. Earth dist.	16268 Sep 07 10:10	2° ♀ 46'53	29.15240 AU	morning rise	16275 Apr 09 12:52	17° ♀ 38'14	
direct	16268 Nov 25 12:10	1° ♀ 22'35		retrograde	16275 Jul 07 05:54	19° ♀ 32'11	
evening set	16269 Feb 22 08:24	3° ♀ 16'37		opposition	16275 Sep 23 12:28	18° ♀ 09'02	0°23'23
				min. Earth dist.	16275 Sep 23 14:07	18° ♀ 08'55	29.23559 AU
conjunction	16269 Mar 10 10:31	3° ♀ 52'08	0°21'23	direct	16275 Dec 11 18:08	16° ♀ 44'56	
minimum elong	16269 Mar 10 10:31	3° ♀ 52'08	0°21'24	evening set	16276 Mar 09 21:47	18° ♀ 38'58	
max. Earth dist.	16269 Mar 10 11:12	3° ♀ 52'11	31.15822 AU				
morning rise	16269 Mar 26 12:35	4° ♀ 27'39		conjunction	16276 Mar 25 23:38	19° ♀ 14'22	0°21'54
retrograde	16269 Jun 23 11:45	6° ♀ 22'07		minimum elong	16276 Mar 25 23:38	19° ♀ 14'22	0°21'44
opposition	16269 Sep 09 22:13	4° ♀ 58'38	0°22'55	max. Earth dist.	16276 Mar 25 20:19	19° ♀ 14'04	31.23978 AU
min. Earth dist.	16269 Sep 09 20:47	4° ♀ 58'44	29.16440 AU	morning rise	16276 Apr 11 00:55	19° ♀ 49'44	
direct	16269 Nov 27 21:51	3° ♀ 34'27		retrograde	16276 Jul 08 17:22	21° ♀ 43'35	
evening set	16270 Feb 24 20:26	5° ♀ 28'28		opposition	16276 Sep 24 22:42	20° ♀ 20'27	0°23'20
				min. Earth dist.	16276 Sep 25 01:34	20° ♀ 20'15	29.24385 AU
conjunction	16270 Mar 12 22:41	6° ♀ 03'58	0°21'33	direct	16276 Dec 13 04:58	18° ♀ 56'19	
minimum elong	16270 Mar 12 22:41	6° ♀ 03'58	0°21'33	evening set	16277 Mar 12 09:49	20° ♀ 50'20	
max. Earth dist.	16270 Mar 13 00:17	6° ♀ 04'07	31.17065 AU				
morning rise	16270 Mar 29 00:30	6° ♀ 39'28		conjunction	16277 Mar 28 11:46	21° ♀ 25'44	0°21'50
retrograde	16270 Jun 25 21:16	8° ♀ 33'51		minimum elong	16277 Mar 28 11:46	21° ♀ 25'44	0°21'39
opposition	16270 Sep 12 08:41	7° ♀ 10'25	0°23'05	max. Earth dist.	16277 Mar 28 08:41	21° ♀ 25'27	31.24756 AU
min. Earth dist.	16270 Sep 12 07:54	7° ♀ 10'28	29.17719 AU	morning rise	16277 Apr 13 12:47	22° ♀ 01'04	
direct	16270 Nov 30 08:17	5° ♀ 46'16		retrograde	16277 Jul 11 02:26	23° ♀ 54'48	
evening set	16271 Feb 27 08:40	7° ♀ 40'17		opposition	16277 Sep 27 08:57	22° ♀ 31'41	0°23'15
				min. Earth dist.	16277 Sep 27 12:07	22° ♀ 31'28	29.25116 AU
conjunction	16271 Mar 15 10:46	8° ♀ 15'46	0°21'41	direct	16277 Dec 15 17:29	21° ♀ 07'32	
minimum elong	16271 Mar 15 10:46	8° ♀ 15'46	0°21'40	evening set	16278 Mar 14 21:46	23° ♀ 01'31	
max. Earth dist.	16271 Mar 15 11:04	8° ♀ 15'48	31.18385 AU				
morning rise	16271 Mar 31 12:40	8° ♀ 51'15		conjunction	16278 Mar 30 23:26	23° ♀ 36'53	0°21'45
retrograde	16271 Jun 28 09:04	10° ♀ 45'34		minimum elong	16278 Mar 30 23:26	23° ♀ 36'53	0°21'33
opposition	16271 Sep 14 18:56	9° ♀ 22'12	0°23'13	max. Earth dist.	16278 Mar 30 18:48	23° ♀ 36'28	31.25465 AU

morning rise	16278 Apr 16 00:27	24° Υ 12'13	opposition	16284 Oct 12 07:28	7° \mathcal{B} 46'56	0°21'50
retrograde	16278 Jul 13 12:49	26° Υ 05'51	min. Earth dist.	16284 Oct 12 12:18	7° \mathcal{B} 46'36	29.31156 AU
opposition	16278 Sep 29 19:08	24° Υ 42'44	direct	16284 Dec 30 21:13	6° \mathcal{B} 22'49	
min. Earth dist.	16278 Sep 29 22:37	24° Υ 42'29	evening set	16285 Mar 30 07:45	8° \mathcal{B} 16'53	
direct	16278 Dec 18 03:32	23° Υ 18'32				
evening set	16279 Mar 17 09:32	25° Υ 12'30	conjunction	16285 Apr 15 08:38	8° \mathcal{B} 52'09	0°20'20
			minimum elong	16285 Apr 15 08:38	8° \mathcal{B} 52'09	0°19'57
conjunction	16279 Apr 02 11:18	25° Υ 47'52	max. Earth dist.	16285 Apr 15 02:03	8° \mathcal{B} 51'34	31.31652 AU
minimum elong	16279 Apr 02 11:18	25° Υ 47'52	morning rise	16285 May 01 08:24	9° \mathcal{B} 27'21	
max. Earth dist.	16279 Apr 02 07:24	25° Υ 47'31	retrograde	16285 Jul 28 15:10	11° \mathcal{B} 20'31	
morning rise	16279 Apr 18 12:01	26° Υ 23'10	opposition	16285 Oct 14 17:41	9° \mathcal{B} 57'46	0°21'30
retrograde	16279 Jul 15 21:36	28° Υ 16'42	min. Earth dist.	16285 Oct 14 23:29	9° \mathcal{B} 57'21	29.32139 AU
opposition	16279 Oct 02 05:13	26° Υ 53'36	direct	16286 Jan 02 08:03	8° \mathcal{B} 33'41	
min. Earth dist.	16279 Oct 02 09:33	26° Υ 53'18	evening set	16286 Apr 01 19:13	10° \mathcal{B} 27'46	
direct	16279 Dec 20 14:00	25° Υ 29'23				
evening set	16280 Mar 18 21:23	27° Υ 23'20	conjunction	16286 Apr 17 20:05	11° \mathcal{B} 03'01	0°20'00
			minimum elong	16286 Apr 17 20:06	11° \mathcal{B} 03'01	0°19'36
conjunction	16280 Apr 03 22:56	27° Υ 58'40	max. Earth dist.	16286 Apr 17 13:53	11° \mathcal{B} 02'27	31.32580 AU
minimum elong	16280 Apr 03 22:56	27° Υ 58'40	morning rise	16286 May 03 19:32	11° \mathcal{B} 38'11	
max. Earth dist.	16280 Apr 03 17:47	27° Υ 58'12	retrograde	16286 Jul 31 00:17	13° \mathcal{B} 31'18	
morning rise	16280 Apr 19 23:39	28° Υ 33'57	opposition	16286 Oct 17 03:53	12° \mathcal{B} 08'37	0°21'08
	16280 Jun 06 13:14	0° \mathcal{B}	min. Earth dist.	16286 Oct 17 10:06	12° \mathcal{B} 08'11	29.32999 AU
retrograde	16280 Jul 17 08:21	0° \mathcal{B} 27'23	direct	16287 Jan 04 20:12	10° \mathcal{B} 44'33	
	16280 Aug 28 00:29	30° $\mathcal{R}\Upsilon$	evening set	16287 Apr 04 07:00	12° \mathcal{B} 38'38	
opposition	16280 Oct 03 15:14	29° Υ 04'19				
min. Earth dist.	16280 Oct 03 19:00	29° Υ 04'03	conjunction	16287 Apr 20 07:33	13° \mathcal{B} 13'53	0°19'39
direct	16280 Dec 22 00:11	27° Υ 40'04	minimum elong	16287 Apr 20 07:33	13° \mathcal{B} 13'53	0°19'14
evening set	16281 Mar 21 09:04	29° Υ 34'02	max. Earth dist.	16287 Apr 19 23:34	13° \mathcal{B} 13'09	31.33378 AU
	16281 Apr 02 05:23	0° \mathcal{B}	morning rise	16287 May 06 06:57	13° \mathcal{B} 49'02	
				16287 Jun 12 09:16	15° \mathcal{B}	
conjunction	16281 Apr 06 10:34	0° \mathcal{B} 09'21	retrograde	16287 Aug 02 11:21	15° \mathcal{B} 42'04	
minimum elong	16281 Apr 06 10:34	0° \mathcal{B} 09'21		16287 Sep 24 00:26	15° $\mathcal{R}\mathcal{B}$	
max. Earth dist.	16281 Apr 06 05:54	0° \mathcal{B} 08'55	opposition	16287 Oct 19 13:59	14° \mathcal{B} 19'25	0°20'44
morning rise	16281 Apr 22 10:57	0° \mathcal{B} 44'37	min. Earth dist.	16287 Oct 19 20:37	14° \mathcal{B} 18'58	29.33737 AU
retrograde	16281 Jul 19 17:22	2° \mathcal{B} 37'58	direct	16288 Jan 07 06:41	12° \mathcal{B} 55'21	
opposition	16281 Oct 06 01:22	1° \mathcal{B} 14'56	evening set	16288 Apr 05 18:35	14° \mathcal{B} 49'26	
min. Earth dist.	16281 Oct 06 06:08	1° \mathcal{B} 14'36		16288 Apr 10 15:11	15° \mathcal{B}	
	16281 Nov 30 12:31	30° $\mathcal{R}\Upsilon$				
direct	16281 Dec 24 11:08	29° Υ 50'42	conjunction	16288 Apr 21 19:09	15° \mathcal{B} 24'40	0°19'16
	16282 Jan 17 07:11	0° \mathcal{B}	minimum elong	16288 Apr 21 19:09	15° \mathcal{B} 24'40	0°18'50
evening set	16282 Mar 23 20:43	1° \mathcal{B} 44'40	max. Earth dist.	16288 Apr 21 11:34	15° \mathcal{B} 23'59	31.34037 AU
			morning rise	16288 May 07 18:10	15° \mathcal{B} 59'48	
conjunction	16282 Apr 08 22:04	2° \mathcal{B} 19'58	retrograde	16288 Aug 03 20:21	17° \mathcal{B} 52'46	
minimum elong	16282 Apr 08 22:04	2° \mathcal{B} 19'58	opposition	16288 Oct 21 00:13	16° \mathcal{B} 30'08	0°20'19
max. Earth dist.	16282 Apr 08 16:50	2° \mathcal{B} 19'30	min. Earth dist.	16288 Oct 21 08:02	16° \mathcal{B} 29'36	29.34321 AU
morning rise	16282 Apr 24 22:21	2° \mathcal{B} 55'13	direct	16289 Jan 08 17:40	15° \mathcal{B} 06'03	
retrograde	16282 Jul 22 04:43	4° \mathcal{B} 48'31	evening set	16289 Apr 08 06:11	17° \mathcal{B} 00'07	
opposition	16282 Oct 08 11:22	3° \mathcal{B} 25'32				
min. Earth dist.	16282 Oct 08 15:14	3° \mathcal{B} 25'16	conjunction	16289 Apr 24 06:25	17° \mathcal{B} 35'19	0°18'51
direct	16282 Dec 26 22:16	2° \mathcal{B} 01'20	minimum elong	16289 Apr 24 06:25	17° \mathcal{B} 35'19	0°18'24
evening set	16283 Mar 26 08:16	3° \mathcal{B} 55'19	max. Earth dist.	16289 Apr 23 21:20	17° \mathcal{B} 34'30	31.34563 AU
			morning rise	16289 May 10 05:22	18° \mathcal{B} 10'26	
conjunction	16283 Apr 11 09:30	4° \mathcal{B} 30'37	retrograde	16289 Aug 06 06:17	20° \mathcal{B} 03'19	
minimum elong	16283 Apr 11 09:30	4° \mathcal{B} 30'37	opposition	16289 Oct 23 10:18	18° \mathcal{B} 40'42	0°19'51
max. Earth dist.	16283 Apr 11 04:07	4° \mathcal{B} 30'08	min. Earth dist.	16289 Oct 23 17:47	18° \mathcal{B} 40'11	29.34789 AU
morning rise	16283 Apr 27 09:38	5° \mathcal{B} 05'50	direct	16290 Jan 11 04:27	17° \mathcal{B} 16'35	
retrograde	16283 Jul 24 15:21	6° \mathcal{B} 59'06	evening set	16290 Apr 10 17:37	19° \mathcal{B} 10'38	
opposition	16283 Oct 10 21:32	5° \mathcal{B} 36'12				
min. Earth dist.	16283 Oct 11 02:39	5° \mathcal{B} 35'51	conjunction	16290 Apr 26 17:47	19° \mathcal{B} 45'49	0°18'25
direct	16283 Dec 29 08:08	4° \mathcal{B} 12'02	minimum elong	16290 Apr 26 17:47	19° \mathcal{B} 45'49	0°17'57
evening set	16284 Mar 27 19:56	6° \mathcal{B} 06'04	max. Earth dist.	16290 Apr 26 08:50	19° \mathcal{B} 45'00	31.34976 AU
			morning rise	16290 May 12 16:23	20° \mathcal{B} 20'54	
conjunction	16284 Apr 12 21:06	6° \mathcal{B} 41'20	retrograde	16290 Aug 08 14:25	22° \mathcal{B} 13'43	
minimum elong	16284 Apr 12 21:06	6° \mathcal{B} 41'20	opposition	16290 Oct 25 20:29	20° \mathcal{B} 51'05	0°19'23
max. Earth dist.	16284 Apr 12 15:46	6° \mathcal{B} 40'51	min. Earth dist.	16290 Oct 26 05:20	20° \mathcal{B} 50'28	29.35166 AU
morning rise	16284 Apr 28 21:00	7° \mathcal{B} 16'33	direct	16291 Jan 13 14:51	19° \mathcal{B} 26'56	
retrograde	16284 Jul 26 03:13	9° \mathcal{B} 09'45	evening set	16291 Apr 13 04:56	21° \mathcal{B} 20'56	

conjunction	16291 Apr 29 04:55	21° 8 56'06	0°17'58	evening set	16297 Apr 26 00:03	4° II 20'36	
minimum elong	16291 Apr 29 04:55	21° 8 56'06	0°17'28				
max. Earth dist.	16291 Apr 28 19:15	21° 8 55'13	31.35330 AU	conjunction	16297 May 11 22:52	4° II 55'41	0°14'42
morning rise	16291 May 15 03:25	22° 8 31'10		minimum elong	16297 May 11 22:52	4° II 55'42	0°14'07
retrograde	16291 Aug 11 00:49	24° 8 23'54		behind sun begin	16297 May 11 19:43	4° II 55'25	
opposition	16291 Oct 28 06:30	23° 8 01'15	0°18'52	behind sun end	16297 May 12 02:00	4° II 55'58	
min. Earth dist.	16291 Oct 28 14:41	23° 8 00'41	29.35492 AU	max. Earth dist.	16297 May 11 12:58	4° II 54'47	31.38091 AU
direct	16292 Jan 16 01:54	21° 8 37'03		morning rise	16297 May 27 19:48	5° II 30'39	
evening set	16292 Apr 14 16:19	23° 8 31'03		retrograde	16297 Aug 23 14:31	7° II 23'11	
				opposition	16297 Nov 09 19:24	6° II 00'46	0°15'18
conjunction	16292 Apr 30 16:05	24° 8 06'12	0°17'29	min. Earth dist.	16297 Nov 10 05:23	6° II 00'05	29.38354 AU
minimum elong	16292 Apr 30 16:05	24° 8 06'12	0°16'57	direct	16298 Jan 28 20:27	4° II 36'41	
max. Earth dist.	16292 Apr 30 06:04	24° 8 05'17	31.35645 AU	evening set	16298 Apr 28 11:18	6° II 30'48	
morning rise	16292 May 16 14:19	24° 8 41'14					
retrograde	16292 Aug 12 10:32	26° 8 33'54		conjunction	16298 May 14 09:45	7° II 05'53	0°14'05
opposition	16292 Oct 29 16:36	25° 8 11'15	0°18'20	minimum elong	16298 May 14 09:45	7° II 05'53	0°13'28
min. Earth dist.	16292 Oct 30 01:56	25° 8 10'36	29.35826 AU	behind sun begin	16298 May 14 06:08	7° II 05'33	
direct	16293 Jan 17 12:03	23° 8 47'01		behind sun end	16298 May 14 13:22	7° II 06'12	
evening set	16293 Apr 17 03:32	25° 8 40'59		max. Earth dist.	16298 May 13 22:37	7° II 04'52	31.38584 AU
				morning rise	16298 May 30 06:36	7° II 40'50	
conjunction	16293 May 03 03:10	26° 8 16'07	0°16'58	retrograde	16298 Aug 26 00:57	9° II 33'21	
minimum elong	16293 May 03 03:10	26° 8 16'07	0°16'26	opposition	16298 Nov 12 05:34	8° II 11'01	0°14'37
max. Earth dist.	16293 May 02 17:34	26° 8 15'14	31.36004 AU	min. Earth dist.	16298 Nov 12 15:05	8° II 10'21	29.38795 AU
morning rise	16293 May 19 01:07	26° 8 51'08		direct	16299 Jan 31 06:50	6° II 46'57	
retrograde	16293 Aug 14 21:14	28° 8 43'43		evening set	16299 Apr 30 22:27	8° II 41'07	
opposition	16293 Nov 01 02:42	27° 8 21'05	0°17'47				
min. Earth dist.	16293 Nov 01 11:21	27° 8 20'29	29.36213 AU	conjunction	16299 May 16 20:47	9° II 16'11	0°13'26
direct	16294 Jan 20 01:00	25° 8 56'50		minimum elong	16299 May 16 20:47	9° II 16'11	0°12'49
evening set	16294 Apr 19 14:39	27° 8 50'49		behind sun begin	16299 May 16 16:46	9° II 15'50	
				behind sun end	16299 May 17 00:48	9° II 16'33	
conjunction	16294 May 05 13:57	28° 8 25'56	0°16'26	max. Earth dist.	16299 May 16 09:42	9° II 15'10	31.38949 AU
minimum elong	16294 May 05 13:57	28° 8 25'56	0°15'53	morning rise	16299 Jun 01 17:17	9° II 51'07	
behind sun begin	16294 May 05 13:27	28° 8 25'53		retrograde	16299 Aug 28 09:36	11° II 43'39	
behind sun end	16294 May 05 14:27	28° 8 25'58		opposition	16299 Nov 14 16:03	10° II 21'21	0°13'55
max. Earth dist.	16294 May 05 03:34	28° 8 24'59	31.36432 AU	min. Earth dist.	16299 Nov 15 03:01	10° II 20'36	29.39088 AU
morning rise	16294 May 21 11:46	29° 8 00'56		direct	16300 Feb 02 16:45	8° II 57'19	
	16294 Jun 20 09:26	0° II		evening set	16300 May 03 09:43	10° II 51'31	
retrograde	16294 Aug 17 08:31	0° II 53'29					
	16294 Oct 16 13:32	30° 8		conjunction	16300 May 19 07:46	11° II 26'34	0°12'46
opposition	16294 Nov 03 12:54	29° 8 30'52	0°17'12	minimum elong	16300 May 19 07:46	11° II 26'34	0°12'08
min. Earth dist.	16294 Nov 03 21:52	29° 8 30'15	29.36697 AU	behind sun begin	16300 May 19 03:23	11° II 26'11	
direct	16295 Jan 22 11:32	28° 8 06'38		behind sun end	16300 May 19 12:09	11° II 26'57	
	16295 Apr 21 18:32	0° II		max. Earth dist.	16300 May 18 19:52	11° II 25'29	31.39167 AU
evening set	16295 Apr 22 01:44	0° II 00'39		morning rise	16300 Jun 04 04:04	12° II 01'29	
				retrograde	16300 Aug 30 20:06	13° II 54'01	
conjunction	16295 May 08 01:00	0° II 35'45	0°15'53	opposition	16300 Nov 17 02:20	12° II 31'45	0°13'12
minimum elong	16295 May 08 01:00	0° II 35'45	0°15'19	min. Earth dist.	16300 Nov 17 12:47	12° II 31'02	29.39219 AU
behind sun begin	16295 May 07 23:09	0° II 35'35		direct	16301 Feb 05 03:09	11° II 07'42	
behind sun end	16295 May 08 02:52	0° II 35'55		evening set	16301 May 05 20:55	13° II 01'56	
max. Earth dist.	16295 May 07 15:31	0° II 34'53	31.36957 AU				
morning rise	16295 May 23 22:28	1° II 10'44		conjunction	16301 May 21 18:42	13° II 36'58	0°12'06
retrograde	16295 Aug 19 17:45	3° II 03'15		minimum elong	16301 May 21 18:43	13° II 36'58	0°11'27
opposition	16295 Nov 05 22:55	1° II 40'42	0°16'35	behind sun begin	16301 May 21 14:01	13° II 36'33	
min. Earth dist.	16295 Nov 06 07:58	1° II 40'05	29.37244 AU	behind sun end	16301 May 21 23:24	13° II 37'23	
direct	16296 Jan 24 23:20	0° II 16'31		max. Earth dist.	16301 May 21 06:09	13° II 35'49	31.39215 AU
evening set	16296 Apr 23 13:01	2° II 10'34		morning rise	16301 Jun 06 14:44	14° II 11'53	
				retrograde	16301 Sep 02 06:14	16° II 04'24	
conjunction	16296 May 09 11:55	2° II 45'39	0°15'18	opposition	16301 Nov 19 12:52	14° II 42'08	0°12'28
minimum elong	16296 May 09 11:55	2° II 45'39	0°14'44	min. Earth dist.	16301 Nov 20 00:38	14° II 41'20	29.39200 AU
behind sun begin	16296 May 09 09:20	2° II 45'25		direct	16302 Feb 07 13:06	13° II 18'05	
behind sun end	16296 May 09 14:30	2° II 45'53		evening set	16302 May 08 07:50	15° II 12'18	
max. Earth dist.	16296 May 09 01:09	2° II 44'40	31.37532 AU				
morning rise	16296 May 25 09:18	3° II 20'37		conjunction	16302 May 24 05:31	15° II 47'20	0°11'24
retrograde	16296 Aug 21 05:11	5° II 13'08		minimum elong	16302 May 24 05:30	15° II 47'20	0°10'45
opposition	16296 Nov 07 09:05	3° II 50'39	0°15'57	behind sun begin	16302 May 24 00:32	15° II 46'53	
min. Earth dist.	16296 Nov 07 18:03	3° II 50'02	29.37825 AU	behind sun end	16302 May 24 10:29	15° II 47'46	
direct	16297 Jan 26 09:44	2° II 26'31		max. Earth dist.	16302 May 23 17:09	15° II 46'12	31.39127 AU

morning rise	16302 Jun 09 01:16	16°II22'13		conjunction	16308 Jun 05 20:57	28°II47'15	0°06'58
retrograde	16302 Sep 04 16:59	18°II14'43		minimum elong	16308 Jun 05 20:58	28°II47'15	0°06'17
opposition	16302 Nov 21 23:15	16°II52'27	0°11'43	behind sun begin	16308 Jun 05 14:49	28°II46'42	
min. Earth dist.	16302 Nov 22 10:46	16°II51'39	29.39034 AU	behind sun end	16308 Jun 06 03:07	28°II47'48	
direct	16303 Feb 10 02:13	15°II28'22		max. Earth dist.	16308 Jun 05 08:19	28°II46'06	31.37727 AU
evening set	16303 May 10 18:57	17°II22'35		morning rise	16308 Jun 21 15:15	29°II22'04	
					16308 Jul 09 23:16	0°☾	
conjunction	16303 May 26 16:15	17°II57'36	0°10'41	retrograde	16308 Sep 17 04:24	1°☾14'29	
minimum elong	16303 May 26 16:16	17°II57'36	0°10'02		16308 Nov 29 19:16	30°☿II	
behind sun begin	16303 May 26 11:02	17°II57'08		opposition	16308 Dec 04 13:52	29°II52'09	0°06'55
behind sun end	16303 May 26 21:30	17°II58'04		min. Earth dist.	16308 Dec 05 02:01	29°II51'19	29.37695 AU
max. Earth dist.	16303 May 26 02:41	17°II56'21	31.38905 AU	direct	16309 Feb 22 21:21	28°II27'59	
morning rise	16303 Jun 11 11:53	18°II32'29			16309 May 12 23:14	0°☾	
retrograde	16303 Sep 07 04:12	20°II24'57		evening set	16309 May 23 11:31	0°☾22'14	
opposition	16303 Nov 24 09:32	19°II02'39	0°10'57				
min. Earth dist.	16303 Nov 24 21:39	19°II01'49	29.38774 AU	conjunction	16309 Jun 08 07:26	0°☾57'10	0°06'11
direct	16304 Feb 12 12:57	17°II38'31		minimum elong	16309 Jun 08 07:25	0°☾57'10	0°05'30
evening set	16304 May 12 05:49	19°II32'45		behind sun begin	16309 Jun 08 01:10	0°☾56'37	
				behind sun end	16309 Jun 08 13:41	0°☾57'44	
conjunction	16304 May 28 03:04	20°II07'44	0°09'58	max. Earth dist.	16309 Jun 07 18:43	0°☾56'00	31.37650 AU
minimum elong	16304 May 28 03:03	20°II07'44	0°09'18	morning rise	16309 Jun 24 01:31	1°☾31'59	
behind sun begin	16304 May 27 21:35	20°II07'15		retrograde	16309 Sep 19 14:51	3°☾24'26	
behind sun end	16304 May 28 08:31	20°II08'13		opposition	16309 Dec 07 00:25	2°☾02'08	0°06'05
max. Earth dist.	16304 May 27 14:18	20°II06'34	31.38609 AU	min. Earth dist.	16309 Dec 07 11:37	2°☾01'22	29.37606 AU
morning rise	16304 Jun 12 22:18	20°II42'36		direct	16310 Feb 25 07:40	0°☾37'59	
retrograde	16304 Sep 08 13:18	22°II35'02		evening set	16310 May 25 22:11	2°☾32'16	
opposition	16304 Nov 25 20:01	21°II12'42	0°10'10				
min. Earth dist.	16304 Nov 26 08:16	21°II11'52	29.38454 AU	conjunction	16310 Jun 10 17:48	3°☾07'12	0°05'24
direct	16305 Feb 14 01:12	19°II48'33		minimum elong	16310 Jun 10 17:49	3°☾07'12	0°04'43
evening set	16305 May 14 16:37	21°II42'45		behind sun begin	16310 Jun 10 11:28	3°☾06'38	
				behind sun end	16310 Jun 11 00:10	3°☾07'46	
conjunction	16305 May 30 13:25	22°II17'44	0°09'14	max. Earth dist.	16310 Jun 10 04:48	3°☾06'00	31.37536 AU
minimum elong	16305 May 30 13:25	22°II17'44	0°08'34	morning rise	16310 Jun 26 11:41	3°☾42'00	
behind sun begin	16305 May 30 07:45	22°II17'14		retrograde	16310 Sep 22 00:52	5°☾34'30	
behind sun end	16305 May 30 19:05	22°II18'14		opposition	16310 Dec 09 11:09	4°☾12'13	0°05'13
max. Earth dist.	16305 May 29 23:39	22°II16'28	31.38294 AU	min. Earth dist.	16310 Dec 09 23:22	4°☾11'23	29.37466 AU
morning rise	16305 Jun 15 08:34	22°II52'34		direct	16311 Feb 27 17:17	2°☾48'05	
retrograde	16305 Sep 11 00:52	24°II44'59		evening set	16311 May 28 08:58	4°☾42'25	
opposition	16305 Nov 28 06:25	23°II22'37	0°09'22				
min. Earth dist.	16305 Nov 28 18:10	23°II21'49	29.38163 AU	conjunction	16311 Jun 13 04:27	5°☾17'20	0°04'36
direct	16306 Feb 16 13:02	21°II58'26		minimum elong	16311 Jun 13 04:26	5°☾17'20	0°03'55
evening set	16306 May 17 03:18	23°II52'38		behind sun begin	16311 Jun 12 22:02	5°☾16'46	
max. Earth dist.	16306 Jun 01 11:25	24°II26'27	31.38024 AU	behind sun end	16311 Jun 13 10:51	5°☾17'54	
				max. Earth dist.	16311 Jun 12 15:53	5°☾16'11	31.37350 AU
conjunction	16306 Jun 02 00:00	24°II27'36	0°08'29	morning rise	16311 Jun 28 21:59	5°☾52'08	
minimum elong	16306 Jun 02 00:00	24°II27'36	0°07'49	retrograde	16311 Sep 24 11:09	7°☾44'40	
behind sun begin	16306 Jun 01 18:09	24°II27'05		opposition	16311 Dec 11 21:46	6°☾22'24	0°04'22
behind sun end	16306 Jun 02 05:51	24°II28'07		min. Earth dist.	16311 Dec 12 09:42	6°☾21'35	29.37215 AU
morning rise	16306 Jun 17 18:44	25°II02'25		direct	16312 Mar 01 05:19	4°☾58'17	
retrograde	16306 Sep 13 09:58	26°II54'49		evening set	16312 May 29 19:54	6°☾52'39	
opposition	16306 Nov 30 16:52	25°II32'27	0°08'34				
min. Earth dist.	16306 Dec 01 05:13	25°II31'36	29.37934 AU	conjunction	16312 Jun 14 14:58	7°☾27'34	0°03'48
direct	16307 Feb 19 00:39	24°II08'15		minimum elong	16312 Jun 14 14:58	7°☾27'34	0°03'06
evening set	16307 May 19 14:05	26°II02'27		behind sun begin	16312 Jun 14 08:31	7°☾26'59	
				behind sun end	16312 Jun 14 21:25	7°☾28'08	
conjunction	16307 Jun 04 10:28	26°II37'25	0°07'44	max. Earth dist.	16312 Jun 14 01:15	7°☾26'18	31.37036 AU
minimum elong	16307 Jun 04 10:27	26°II37'25	0°07'03	morning rise	16312 Jun 30 08:23	8°☾02'20	
behind sun begin	16307 Jun 04 04:27	26°II36'53		retrograde	16312 Sep 25 22:51	9°☾54'55	
behind sun end	16307 Jun 04 16:27	26°II37'57		opposition	16312 Dec 13 08:38	8°☾32'40	0°03'30
max. Earth dist.	16307 Jun 03 21:14	26°II36'12	31.37846 AU	min. Earth dist.	16312 Dec 13 20:58	8°☾31'49	29.36845 AU
morning rise	16307 Jun 20 05:06	27°II12'14		direct	16313 Mar 03 15:19	7°☾08'32	
retrograde	16307 Sep 15 19:55	29°II04'38		evening set	16313 Jun 01 06:30	9°☾02'56	
opposition	16307 Dec 03 03:17	27°II42'16	0°07'45				
min. Earth dist.	16307 Dec 03 14:30	27°II41'30	29.37790 AU	conjunction	16313 Jun 17 01:30	9°☾37'50	0°02'59
direct	16308 Feb 21 11:35	26°II18'04		minimum elong	16313 Jun 17 01:29	9°☾37'50	0°02'18
evening set	16308 May 21 00:47	28°II12'18		behind sun begin	16313 Jun 16 19:00	9°☾37'16	
				behind sun end	16313 Jun 17 07:57	9°☾38'25	

max. Earth dist.	16313 Jun 16 12:34	9°☾36'39	31.36590 AU	evening set	16319 Jun 14 22:11	22°☾04'13	
morning rise	16313 Jul 02 18:30	10°☾12'37					
retrograde	16313 Sep 28 08:38	12°☾05'13		conjunction	16319 Jun 30 15:35	22°☾39'05	-0°02'02
opposition	16313 Dec 15 19:34	10°☾42'58	0°02'38	minimum elong	16319 Jun 30 15:36	22°☾39'05	0°02'41
min. Earth dist.	16313 Dec 16 08:14	10°☾42'06	29.36319 AU	behind sun begin	16319 Jun 30 09:08	22°☾38'30	
direct	16314 Mar 06 03:34	9°☾18'50		behind sun end	16319 Jun 30 22:03	22°☾39'39	
evening set	16314 Jun 03 17:22	11°☾13'14		max. Earth dist.	16319 Jun 30 02:21	22°☾37'52	31.32044 AU
				morning rise	16319 Jul 16 07:26	23°☾13'50	
conjunction	16314 Jun 19 11:56	11°☾48'08	0°02'09	retrograde	16319 Oct 11 21:20	25°☾06'39	
minimum elong	16314 Jun 19 11:56	11°☾48'08	0°01'28	opposition	16319 Dec 29 13:05	23°☾44'12	-0°02'35
behind sun begin	16314 Jun 19 05:27	11°☾47'34		min. Earth dist.	16319 Dec 30 01:13	23°☾43'23	29.31730 AU
behind sun end	16314 Jun 19 18:25	11°☾48'43		direct	16320 Mar 18 21:44	22°☾19'58	
max. Earth dist.	16314 Jun 18 21:42	11°☾46'50	31.36000 AU	evening set	16320 Jun 16 08:35	24°☾14'26	
morning rise	16314 Jul 05 04:54	12°☾22'54					
retrograde	16314 Sep 30 20:49	14°☾15'33		conjunction	16320 Jul 02 01:53	24°☾49'18	-0°02'51
opposition	16314 Dec 18 06:19	12°☾53'16	0°01'46	minimum elong	16320 Jul 02 01:52	24°☾49'18	0°03'30
min. Earth dist.	16314 Dec 18 18:43	12°☾52'25	29.35666 AU	behind sun begin	16320 Jul 01 19:27	24°☾48'44	
direct	16315 Mar 08 15:21	11°☾29'07		behind sun end	16320 Jul 02 08:17	24°☾49'53	
evening set	16315 Jun 06 04:03	13°☾23'32		max. Earth dist.	16320 Jul 01 13:49	24°☾48'12	31.31415 AU
				morning rise	16320 Jul 17 17:25	25°☾24'03	
conjunction	16315 Jun 21 22:31	13°☾58'26	0°01'19	retrograde	16320 Oct 13 07:31	27°☾16'57	
minimum elong	16315 Jun 21 22:33	13°☾58'26	0°00'38	opposition	16320 Dec 31 00:10	25°☾54'31	-0°03'27
behind sun begin	16315 Jun 21 16:05	13°☾57'51		min. Earth dist.	16320 Dec 31 11:25	25°☾53'45	29.31133 AU
behind sun end	16315 Jun 22 05:01	13°☾59'00		direct	16321 Mar 21 09:02	24°☾30'19	
max. Earth dist.	16315 Jun 21 09:06	13°☾57'12	31.35277 AU	evening set	16321 Jun 18 18:57	26°☾24'49	
morning rise	16315 Jul 07 15:09	14°☾33'11					
retrograde	16315 Oct 03 06:27	16°☾25'51		conjunction	16321 Jul 04 11:52	26°☾59'41	-0°03'40
opposition	16315 Dec 20 17:18	15°☾03'32	0°00'54	minimum elong	16321 Jul 04 11:52	26°☾59'41	0°04'17
min. Earth dist.	16315 Dec 21 06:39	15°☾02'37	29.34884 AU	behind sun begin	16321 Jul 04 05:30	26°☾59'07	
direct	16316 Mar 10 03:25	13°☾39'22		behind sun end	16321 Jul 04 18:14	27°☾00'15	
evening set	16316 Jun 07 14:43	15°☾33'47		max. Earth dist.	16321 Jul 03 23:16	26°☾58'32	31.30855 AU
				morning rise	16321 Jul 20 03:22	27°☾34'26	
conjunction	16316 Jun 23 08:51	16°☾08'40	0°00'28	retrograde	16321 Oct 15 19:25	29°☾27'26	
minimum elong	16316 Jun 23 08:51	16°☾08'40	0°00'13	opposition	16322 Jan 02 11:20	28°☾05'01	-0°04'18
behind sun begin	16316 Jun 23 02:27	16°☾08'06		min. Earth dist.	16322 Jan 02 22:24	28°☾04'15	29.30600 AU
behind sun end	16316 Jun 23 15:15	16°☾09'14		direct	16322 Mar 23 18:03	26°☾40'50	
max. Earth dist.	16316 Jun 22 18:44	16°☾07'22	31.34461 AU	evening set	16322 Jun 21 05:22	28°☾35'24	
morning rise	16316 Jul 09 01:21	16°☾43'25					
retrograde	16316 Oct 04 16:39	18°☾36'06		conjunction	16322 Jul 06 22:13	29°☾10'16	-0°04'28
opposition	16316 Dec 22 04:09	17°☾13'45	0°00'02	minimum elong	16322 Jul 06 22:13	29°☾10'16	0°05'06
min. Earth dist.	16316 Dec 22 16:28	17°☾12'54	29.34038 AU	behind sun begin	16322 Jul 06 15:57	29°☾09'43	
desc. node	16317 Jan 02 15:02	16°☾55'05		behind sun end	16322 Jul 07 04:30	29°☾10'50	
direct	16317 Mar 12 15:06	15°☾49'32		max. Earth dist.	16322 Jul 06 10:54	29°☾09'14	31.30326 AU
evening set	16317 Jun 10 01:15	17°☾43'57		morning rise	16322 Jul 22 13:22	29°☾45'01	
					16322 Jul 29 12:32	0°♈	
conjunction	16317 Jun 25 19:12	18°☾18'50	-0°00'23	retrograde	16322 Oct 18 05:45	1°♈38'07	
minimum elong	16317 Jun 25 19:12	18°☾18'50	0°01'03	opposition	16323 Jan 04 22:28	0°♈15'42	-0°05'10
behind sun begin	16317 Jun 25 12:44	18°☾18'16		min. Earth dist.	16323 Jan 05 09:39	0°♈14'56	29.30057 AU
behind sun end	16317 Jun 26 01:40	18°☾19'25			16323 Jan 14 13:15	30°♈☾	
max. Earth dist.	16317 Jun 25 05:38	18°☾17'35	31.33599 AU	direct	16323 Mar 26 05:49	28°☾51'34	
morning rise	16317 Jul 11 11:24	18°☾53'35			16323 Jun 01 03:35	0°♈	
retrograde	16317 Oct 07 01:23	20°☾46'18		evening set	16323 Jun 23 16:02	0°♈46'11	
opposition	16317 Dec 24 15:10	19°☾23'54	-0°00'51				
min. Earth dist.	16317 Dec 25 04:14	19°☾23'00	29.33195 AU	conjunction	16323 Jul 09 08:31	1°♈21'03	-0°05'16
direct	16318 Mar 15 01:24	17°☾59'40		minimum elong	16323 Jul 09 08:30	1°♈21'03	0°05'52
evening set	16318 Jun 12 11:38	19°☾54'04		behind sun begin	16323 Jul 09 02:19	1°♈20'30	
				behind sun end	16323 Jul 09 14:41	1°♈21'36	
conjunction	16318 Jun 28 05:22	20°☾28'57	-0°01'13	max. Earth dist.	16323 Jul 08 20:14	1°♈19'55	31.29769 AU
minimum elong	16318 Jun 28 05:21	20°☾28'57	0°01'53	morning rise	16323 Jul 24 23:38	1°♈55'48	
behind sun begin	16318 Jun 27 22:53	20°☾28'23		retrograde	16323 Oct 20 19:07	3°♈48'58	
behind sun end	16318 Jun 28 11:49	20°☾29'32		opposition	16324 Jan 07 09:47	2°♈26'34	-0°06'01
max. Earth dist.	16318 Jun 27 16:08	20°☾27'44	31.32786 AU	min. Earth dist.	16324 Jan 07 20:21	2°♈25'51	29.29472 AU
morning rise	16318 Jul 13 21:23	21°☾03'42		direct	16324 Mar 27 17:46	1°♈02'29	
retrograde	16318 Oct 09 11:29	22°☾56'27		evening set	16324 Jun 25 02:32	2°♈57'08	
opposition	16318 Dec 27 02:05	21°☾34'01	-0°01'43				
min. Earth dist.	16318 Dec 27 13:49	21°☾33'13	29.32411 AU	conjunction	16324 Jul 10 18:53	3°♈32'00	-0°06'03
direct	16319 Mar 17 12:07	20°☾09'46		minimum elong	16324 Jul 10 18:54	3°♈32'00	0°06'40

behind sun begin	16324 Jul 10 12:50	3° Ω 31'27		min. Earth dist.	16330 Jan 20 17:42	15° Ω 32'38	29.23602 AU
behind sun end	16324 Jul 11 00:57	3° Ω 32'32			16330 Feb 10 04:20	15° Ω 32'38	
max. Earth dist.	16324 Jul 10 07:38	3° Ω 30'58	31.29133 AU	direct	16330 Apr 10 15:28	14° Ω 09'09	
morning rise	16324 Jul 26 09:39	4° Ω 06'45			16330 Jun 06 11:26	15° Ω 32'38	
retrograde	16324 Oct 22 05:29	6° Ω 00'01		evening set	16330 Jul 08 18:10	16° Ω 03'48	
opposition	16325 Jan 08 21:21	4° Ω 37'36	-0°06'52				
min. Earth dist.	16325 Jan 09 08:44	4° Ω 36'50	29.28788 AU	conjunction	16330 Jul 24 09:11	16° Ω 38'39	-0°10'34
direct	16325 Mar 30 05:35	3° Ω 13'32		minimum elong	16330 Jul 24 09:11	16° Ω 38'39	0°11'05
evening set	16325 Jun 27 13:14	5° Ω 08'13		behind sun begin	16330 Jul 24 04:21	16° Ω 38'13	
				behind sun end	16330 Jul 24 14:02	16° Ω 39'05	
conjunction	16325 Jul 13 05:17	5° Ω 43'05	-0°06'50	max. Earth dist.	16330 Jul 23 21:47	16° Ω 37'35	31.23003 AU
minimum elong	16325 Jul 13 05:16	5° Ω 43'05	0°07'25	morning rise	16330 Aug 08 23:11	17° Ω 13'24	
behind sun begin	16325 Jul 12 23:22	5° Ω 42'33		retrograde	16330 Nov 04 20:39	19° Ω 07'03	
behind sun end	16325 Jul 13 11:10	5° Ω 43'36		opposition	16331 Jan 22 18:56	17° Ω 44'20	-0°11'40
max. Earth dist.	16325 Jul 12 17:26	5° Ω 41'59	31.28400 AU	min. Earth dist.	16331 Jan 23 04:54	17° Ω 43'39	29.22434 AU
morning rise	16325 Jul 28 19:58	6° Ω 17'50		direct	16331 Apr 13 00:55	16° Ω 20'06	
retrograde	16325 Oct 24 16:52	8° Ω 11'10		evening set	16331 Jul 11 04:38	18° Ω 14'46	
opposition	16326 Jan 11 08:45	6° Ω 48'45	-0°07'42				
min. Earth dist.	16326 Jan 11 19:09	6° Ω 48'03	29.27993 AU	conjunction	16331 Jul 26 19:37	18° Ω 49'36	-0°11'16
direct	16326 Apr 01 17:34	5° Ω 24'41		minimum elong	16331 Jul 26 19:37	18° Ω 49'36	0°11'46
evening set	16326 Jun 29 23:50	7° Ω 19'23		behind sun begin	16331 Jul 26 15:03	18° Ω 49'12	
				behind sun end	16331 Jul 27 00:11	18° Ω 50'01	
conjunction	16326 Jul 15 15:44	7° Ω 54'15	-0°07'36	max. Earth dist.	16331 Jul 26 09:46	18° Ω 48'42	31.21866 AU
minimum elong	16326 Jul 15 15:44	7° Ω 54'15	0°08'11	morning rise	16331 Aug 11 09:18	19° Ω 24'22	
behind sun begin	16326 Jul 15 09:59	7° Ω 53'44		retrograde	16331 Nov 07 06:52	21° Ω 18'06	
behind sun end	16326 Jul 15 21:28	7° Ω 54'45		opposition	16332 Jan 25 06:46	19° Ω 55'20	-0°12'24
max. Earth dist.	16326 Jul 15 04:04	7° Ω 53'10	31.27530 AU	min. Earth dist.	16332 Jan 25 16:23	19° Ω 54'40	29.21339 AU
morning rise	16326 Jul 31 06:12	8° Ω 29'00		direct	16332 Apr 14 13:06	18° Ω 31'07	
retrograde	16326 Oct 27 03:05	10° Ω 22'25		evening set	16332 Jul 12 15:07	20° Ω 25'47	
opposition	16327 Jan 13 20:27	8° Ω 59'57	-0°08'31				
min. Earth dist.	16327 Jan 14 07:51	8° Ω 59'10	29.27055 AU	conjunction	16332 Jul 28 05:46	21° Ω 00'37	-0°11'58
direct	16327 Apr 04 05:01	7° Ω 35'52		minimum elong	16332 Jul 28 05:45	21° Ω 00'37	0°12'27
evening set	16327 Jul 02 10:32	9° Ω 30'34		behind sun begin	16332 Jul 28 01:31	21° Ω 00'15	
				behind sun end	16332 Jul 28 09:59	21° Ω 01'00	
conjunction	16327 Jul 18 02:14	10° Ω 05'26	-0°08'22	max. Earth dist.	16332 Jul 27 19:30	20° Ω 59'41	31.20828 AU
minimum elong	16327 Jul 18 02:13	10° Ω 05'26	0°08'55	morning rise	16332 Aug 12 19:28	21° Ω 35'23	
behind sun begin	16327 Jul 17 20:40	10° Ω 04'56		retrograde	16332 Nov 08 20:06	23° Ω 29'14	
behind sun end	16327 Jul 18 07:46	10° Ω 05'56		opposition	16333 Jan 26 18:33	22° Ω 06'26	-0°13'08
max. Earth dist.	16327 Jul 17 14:37	10° Ω 04'21	31.26528 AU	min. Earth dist.	16333 Jan 27 02:58	22° Ω 05'51	29.20354 AU
morning rise	16327 Aug 02 16:32	10° Ω 40'11		direct	16333 Apr 17 00:25	20° Ω 42'14	
retrograde	16327 Oct 29 13:44	12° Ω 33'39		evening set	16333 Jul 15 01:33	22° Ω 36'57	
opposition	16328 Jan 16 07:57	11° Ω 11'09	-0°09'19				
min. Earth dist.	16328 Jan 16 18:24	11° Ω 10'26	29.25979 AU	conjunction	16333 Jul 30 16:09	23° Ω 11'48	-0°12'38
direct	16328 Apr 05 17:18	9° Ω 47'02		minimum elong	16333 Jul 30 16:09	23° Ω 11'48	0°13'05
evening set	16328 Jul 03 21:13	11° Ω 41'43		behind sun begin	16333 Jul 30 12:15	23° Ω 11'27	
				behind sun end	16333 Jul 30 20:03	23° Ω 12'09	
conjunction	16328 Jul 19 12:38	12° Ω 16'35	-0°09'07	max. Earth dist.	16333 Jul 30 07:20	23° Ω 10'59	31.19881 AU
minimum elong	16328 Jul 19 12:38	12° Ω 16'35	0°09'40	morning rise	16333 Aug 15 05:36	23° Ω 46'34	
behind sun begin	16328 Jul 19 07:18	12° Ω 16'06		retrograde	16333 Nov 11 06:54	25° Ω 40'32	
behind sun end	16328 Jul 19 17:58	12° Ω 17'03		opposition	16334 Jan 29 06:26	24° Ω 17'43	-0°13'51
max. Earth dist.	16328 Jul 19 00:38	12° Ω 15'28	31.25397 AU	min. Earth dist.	16334 Jan 29 15:15	24° Ω 17'07	29.19442 AU
morning rise	16328 Aug 04 02:51	12° Ω 51'20		direct	16334 Apr 19 11:42	22° Ω 53'34	
retrograde	16328 Oct 30 23:31	14° Ω 44'52		evening set	16334 Jul 17 12:05	24° Ω 48'19	
opposition	16329 Jan 17 19:43	13° Ω 22'17	-0°10'07				
min. Earth dist.	16329 Jan 18 06:47	13° Ω 21'32	29.24813 AU	conjunction	16334 Aug 02 02:29	25° Ω 23'11	-0°13'18
direct	16329 Apr 08 03:34	11° Ω 58'08		minimum elong	16334 Aug 02 02:29	25° Ω 23'11	0°13'45
evening set	16329 Jul 06 07:34	13° Ω 52'48		behind sun begin	16334 Aug 01 22:59	25° Ω 22'52	
				behind sun end	16334 Aug 02 05:58	25° Ω 23'29	
conjunction	16329 Jul 21 22:56	14° Ω 27'39	-0°09'51	max. Earth dist.	16334 Aug 01 17:36	25° Ω 22'21	31.19003 AU
minimum elong	16329 Jul 21 22:56	14° Ω 27'39	0°10'22	morning rise	16334 Aug 17 15:58	25° Ω 57'58	
behind sun begin	16329 Jul 21 17:50	14° Ω 27'12		retrograde	16334 Nov 13 19:16	27° Ω 52'03	
behind sun end	16329 Jul 22 04:02	14° Ω 28'06		opposition	16335 Jan 31 18:17	26° Ω 29'15	-0°14'32
max. Earth dist.	16329 Jul 21 12:07	14° Ω 26'39	31.24205 AU	min. Earth dist.	16335 Feb 01 01:42	26° Ω 28'44	29.18568 AU
	16329 Aug 05 10:35	15° Ω		direct	16335 Apr 21 23:45	25° Ω 05'08	
morning rise	16329 Aug 06 12:55	15° Ω 02'24		evening set	16335 Jul 19 22:40	26° Ω 59'56	
retrograde	16329 Nov 02 08:57	16° Ω 55'59					
opposition	16330 Jan 20 07:22	15° Ω 33'20	-0°10'54	conjunction	16335 Aug 04 12:54	27° Ω 34'49	-0°13'56

minimum elong	16335 Aug 04 12:54	27°034'49	0°14'21	opposition	16341 Feb 13 19:57	9°042'54	-0°18'12
behind sun begin	16335 Aug 04 09:51	27°034'32		min. Earth dist.	16341 Feb 14 02:54	9°042'25	29.11830 AU
behind sun end	16335 Aug 04 15:57	27°035'05		direct	16341 May 04 20:01	8°018'53	
max. Earth dist.	16335 Aug 04 04:32	27°034'02	31.18119 AU	evening set	16341 Aug 01 15:12	10°013'48	
morning rise	16335 Aug 20 02:12	28°009'37					
	16335 Nov 01 03:39	0°00		conjunction	16341 Aug 17 04:36	10°048'43	-0°17'17
retrograde	16335 Nov 16 06:38	0°003'50		minimum elong	16341 Aug 17 04:36	10°048'43	0°17'34
	16335 Dec 01 11:31	30°00		max. Earth dist.	16341 Aug 16 21:00	10°048'00	31.11096 AU
opposition	16336 Feb 03 06:23	28°041'01	-0°15'13	morning rise	16341 Sep 01 17:37	11°023'36	
min. Earth dist.	16336 Feb 03 14:30	28°040'28	29.17680 AU	retrograde	16341 Nov 29 03:20	13°018'30	
direct	16336 Apr 23 11:11	27°016'58		opposition	16342 Feb 16 08:12	11°055'25	-0°18'43
evening set	16336 Jul 21 09:18	29°011'49		min. Earth dist.	16342 Feb 16 14:16	11°055'00	29.10356 AU
				direct	16342 May 07 07:22	10°031'21	
conjunction	16336 Aug 05 23:24	29°046'42	-0°14'33	evening set	16342 Aug 04 01:52	12°026'16	
minimum elong	16336 Aug 05 23:24	29°046'42	0°14'57				
behind sun begin	16336 Aug 05 20:55	29°046'29		conjunction	16342 Aug 19 15:18	13°001'11	-0°17'46
behind sun end	16336 Aug 06 01:54	29°046'55		minimum elong	16342 Aug 19 15:18	13°001'11	0°18'02
max. Earth dist.	16336 Aug 05 15:34	29°045'59	31.17217 AU	max. Earth dist.	16342 Aug 19 08:58	13°000'36	31.09606 AU
	16336 Aug 11 20:56	0°00		morning rise	16342 Sep 04 04:10	13°036'04	
morning rise	16336 Aug 21 12:37	0°021'31		retrograde	16342 Dec 01 13:57	15°031'03	
retrograde	16336 Nov 17 18:25	2°015'52		opposition	16343 Feb 18 20:42	14°007'53	-0°19'13
opposition	16337 Feb 04 18:31	0°053'04	-0°15'52	min. Earth dist.	16343 Feb 19 03:09	14°007'26	29.08879 AU
min. Earth dist.	16337 Feb 05 01:26	0°052'35	29.16739 AU	direct	16343 May 09 18:42	12°043'47	
	16337 Mar 11 18:07	30°00		evening set	16343 Aug 06 12:35	14°038'40	
direct	16337 Apr 25 23:33	29°029'03					
	16337 Jun 08 14:57	0°00		conjunction	16343 Aug 22 01:49	15°013'35	-0°18'12
evening set	16337 Jul 23 19:58	1°023'56		minimum elong	16343 Aug 22 01:49	15°013'35	0°18'26
				max. Earth dist.	16343 Aug 21 19:42	15°013'01	31.08165 AU
conjunction	16337 Aug 08 09:51	1°058'50	-0°15'09	morning rise	16343 Sep 06 14:43	15°048'29	
minimum elong	16337 Aug 08 09:51	1°058'49	0°15'31	retrograde	16343 Dec 04 02:53	17°043'33	
behind sun begin	16337 Aug 08 08:01	1°058'40		opposition	16344 Feb 21 09:05	16°020'18	-0°19'41
behind sun end	16337 Aug 08 11:40	1°058'59		min. Earth dist.	16344 Feb 21 13:48	16°019'58	29.07481 AU
max. Earth dist.	16337 Aug 08 01:40	1°058'04	31.16230 AU	direct	16344 May 11 07:50	14°056'10	
morning rise	16337 Aug 23 23:03	2°033'40		evening set	16344 Aug 07 23:17	16°051'03	
retrograde	16337 Nov 20 05:04	4°028'09					
opposition	16338 Feb 07 06:50	3°005'20	-0°16'29	conjunction	16344 Aug 23 12:26	17°025'59	-0°18'38
min. Earth dist.	16338 Feb 07 14:21	3°004'49	29.15710 AU	minimum elong	16344 Aug 23 12:26	17°025'59	0°18'51
direct	16338 Apr 28 09:47	1°041'21		max. Earth dist.	16344 Aug 23 07:06	17°025'29	31.06815 AU
evening set	16338 Jul 26 06:43	3°036'16		morning rise	16344 Sep 08 01:17	18°000'54	
				retrograde	16344 Dec 05 15:15	19°056'04	
conjunction	16338 Aug 10 20:36	4°011'10	-0°15'43	opposition	16345 Feb 22 21:40	18°032'43	-0°20'07
minimum elong	16338 Aug 10 20:36	4°011'10	0°16'04	min. Earth dist.	16345 Feb 23 02:37	18°032'23	29.06200 AU
behind sun begin	16338 Aug 10 20:03	4°011'07		direct	16345 May 13 20:06	17°008'36	
behind sun end	16338 Aug 10 21:09	4°011'13		evening set	16345 Aug 10 09:51	19°003'29	
max. Earth dist.	16338 Aug 10 13:24	4°010'30	31.15139 AU				
morning rise	16338 Aug 26 09:36	4°046'01		conjunction	16345 Aug 25 23:01	19°038'25	-0°19'01
retrograde	16338 Nov 22 15:06	6°040'37		minimum elong	16345 Aug 25 23:01	19°038'25	0°19'12
opposition	16339 Feb 09 19:01	5°017'46	-0°17'05	max. Earth dist.	16345 Aug 25 18:41	19°038'01	31.05599 AU
min. Earth dist.	16339 Feb 10 02:03	5°017'17	29.14544 AU	morning rise	16345 Sep 10 11:50	20°013'21	
direct	16339 Apr 30 21:36	3°053'48		retrograde	16345 Dec 08 03:09	22°008'37	
evening set	16339 Jul 28 17:42	5°048'44		opposition	16346 Feb 25 10:05	20°045'14	-0°20'31
				min. Earth dist.	16346 Feb 25 13:23	20°045'01	29.05029 AU
conjunction	16339 Aug 13 07:17	6°023'38	-0°16'16	direct	16346 May 16 09:15	19°021'07	
minimum elong	16339 Aug 13 07:17	6°023'38	0°16'35	evening set	16346 Aug 12 20:40	21°016'01	
max. Earth dist.	16339 Aug 12 23:08	6°022'53	31.13908 AU				
morning rise	16339 Aug 28 20:22	6°058'30		conjunction	16346 Aug 28 09:39	21°050'58	-0°19'24
retrograde	16339 Nov 25 03:41	8°053'13		minimum elong	16346 Aug 28 09:39	21°050'58	0°19'33
opposition	16340 Feb 12 07:28	7°030'19	-0°17'39	max. Earth dist.	16346 Aug 28 05:20	21°050'34	31.04475 AU
min. Earth dist.	16340 Feb 12 14:24	7°029'51	29.13252 AU	morning rise	16346 Sep 12 22:34	22°025'55	
direct	16340 May 02 07:12	6°006'20		retrograde	16346 Dec 10 14:20	24°021'18	
evening set	16340 Jul 30 04:21	8°001'16		opposition	16347 Feb 27 22:36	22°057'53	-0°20'54
				min. Earth dist.	16347 Feb 28 02:06	22°057'39	29.03952 AU
conjunction	16340 Aug 14 17:59	8°036'11	-0°16'47	direct	16347 May 18 19:51	21°033'48	
minimum elong	16340 Aug 14 17:59	8°036'11	0°17'06	evening set	16347 Aug 15 07:25	23°028'42	
max. Earth dist.	16340 Aug 14 11:04	8°035'32	31.12548 AU				
morning rise	16340 Aug 30 06:51	9°011'03		conjunction	16347 Aug 30 20:29	24°003'40	-0°19'44
retrograde	16340 Nov 26 14:04	11°005'52		minimum elong	16347 Aug 30 20:29	24°003'40	0°19'52

max. Earth dist.	16347 Aug 30 17:43	24° 00 03'25	31.03433 AU	min. Earth dist.	16354 Mar 15 17:48	8° 00 31'04	28.95918 AU
morning rise	16347 Sep 15 09:16	24° 00 38'38		direct	16354 Jun 03 06:27	7° 00 07'09	
retrograde	16347 Dec 13 01:08	26° 00 34'08		evening set	16354 Aug 30 12:40	9° 00 02'06	
opposition	16348 Mar 01 11:16	25° 00 10'42	-0°21'15				
min. Earth dist.	16348 Mar 01 13:46	25° 00 10'32	29.02925 AU	conjunction	16354 Sep 15 01:37	9° 00 37'10	-0°21'16
direct	16348 May 20 08:30	23° 00 46'39		minimum elong	16354 Sep 15 01:37	9° 00 37'10	0°21'13
evening set	16348 Aug 16 18:15	25° 00 41'34		max. Earth dist.	16354 Sep 15 01:00	9° 00 37'07	30.95225 AU
				morning rise	16354 Sep 30 14:49	10° 00 12'17	
conjunction	16348 Sep 01 07:06	26° 00 16'33	-0°20'03	retrograde	16354 Dec 28 16:55	12° 00 08'35	
minimum elong	16348 Sep 01 07:06	26° 00 16'33	0°20'10	opposition	16355 Mar 18 05:19	10° 00 44'47	-0°22'46
max. Earth dist.	16348 Sep 01 03:52	26° 00 16'15	31.02424 AU	min. Earth dist.	16355 Mar 18 05:06	10° 00 44'48	28.94538 AU
morning rise	16348 Sep 16 20:05	26° 00 51'33		direct	16355 Jun 05 20:07	9° 00 20'45	
retrograde	16348 Dec 14 14:07	28° 00 47'11		evening set	16355 Sep 01 23:48	11° 00 15'42	
opposition	16349 Mar 04 00:03	27° 00 23'43	-0°21'34				
min. Earth dist.	16349 Mar 04 02:10	27° 00 23'35	29.01927 AU	conjunction	16355 Sep 17 12:39	11° 00 50'46	-0°21'22
direct	16349 May 22 18:36	25° 00 59'42		minimum elong	16355 Sep 17 12:39	11° 00 50'46	0°21'17
evening set	16349 Aug 19 05:09	27° 00 54'39		max. Earth dist.	16355 Sep 17 12:03	11° 00 50'43	30.93870 AU
				morning rise	16355 Oct 03 02:02	12° 00 25'54	
conjunction	16349 Sep 03 18:08	28° 00 29'38	-0°20'20	retrograde	16355 Dec 31 04:57	14° 00 22'18	
minimum elong	16349 Sep 03 18:08	28° 00 29'38	0°20'24	opposition	16356 Mar 19 18:24	12° 00 58'25	-0°22'51
max. Earth dist.	16349 Sep 03 16:20	28° 00 29'28	31.01410 AU	min. Earth dist.	16356 Mar 19 18:16	12° 00 58'25	28.93239 AU
morning rise	16349 Sep 19 06:59	29° 00 04'39		direct	16356 Jun 07 07:37	11° 00 34'22	
	16349 Oct 16 08:12	0° 00 00		evening set	16356 Sep 03 10:41	13° 00 29'18	
retrograde	16349 Dec 17 00:38	1° 00 00'25					
	16350 Feb 20 07:58	30° 00 00		conjunction	16356 Sep 18 23:43	14° 00 04'23	-0°21'26
opposition	16350 Mar 06 12:44	29° 00 36'56	-0°21'51	minimum elong	16356 Sep 18 23:43	14° 00 04'23	0°21'20
min. Earth dist.	16350 Mar 06 14:48	29° 00 36'48	29.00891 AU	max. Earth dist.	16356 Sep 19 00:52	14° 00 04'29	30.92627 AU
direct	16350 May 25 06:50	28° 00 12'57		morning rise	16356 Oct 04 13:04	14° 00 39'32	
	16350 Aug 18 01:44	0° 00 00		retrograde	16357 Jan 01 16:34	16° 00 36'01	
evening set	16350 Aug 21 16:18	0° 00 07'55		opposition	16357 Mar 22 07:21	15° 00 12'05	-0°22'54
				min. Earth dist.	16357 Mar 22 05:58	15° 00 12'11	28.92054 AU
conjunction	16350 Sep 06 05:07	0° 00 42'55	-0°20'35	direct	16357 Jun 09 21:14	13° 00 48'02	
minimum elong	16350 Sep 06 05:07	0° 00 42'55	0°20'39	evening set	16357 Sep 05 21:53	15° 00 42'58	
max. Earth dist.	16350 Sep 06 02:36	0° 00 42'41	31.00351 AU				
morning rise	16350 Sep 21 18:09	1° 00 17'57		conjunction	16357 Sep 21 10:48	16° 00 18'04	-0°21'28
retrograde	16350 Dec 19 14:14	3° 00 13'51		minimum elong	16357 Sep 21 10:48	16° 00 18'04	0°21'20
opposition	16351 Mar 09 01:34	1° 00 50'20	-0°22'06	max. Earth dist.	16357 Sep 21 11:38	16° 00 18'09	30.91514 AU
min. Earth dist.	16351 Mar 09 02:48	1° 00 50'15	28.99794 AU	morning rise	16357 Oct 07 00:26	16° 00 53'15	
direct	16351 May 27 17:32	0° 00 26'21		retrograde	16358 Jan 04 05:32	18° 00 49'50	
evening set	16351 Aug 24 03:21	2° 00 21'21		opposition	16358 Mar 24 20:10	17° 00 25'51	-0°22'55
				min. Earth dist.	16358 Mar 24 18:14	17° 00 25'59	28.91021 AU
conjunction	16351 Sep 08 16:14	2° 00 56'22	-0°20'48	direct	16358 Jun 12 07:56	16° 00 01'49	
minimum elong	16351 Sep 08 16:14	2° 00 56'22	0°20'49	evening set	16358 Sep 08 08:57	17° 00 56'45	
max. Earth dist.	16351 Sep 08 14:44	2° 00 56'13	30.99196 AU				
morning rise	16351 Sep 24 05:10	3° 00 31'25		conjunction	16358 Sep 23 22:05	18° 00 31'52	-0°21'28
retrograde	16351 Dec 22 01:39	5° 00 27'27		minimum elong	16358 Sep 23 22:05	18° 00 31'52	0°21'20
opposition	16352 Mar 10 14:37	4° 00 03'53	-0°22'19	max. Earth dist.	16358 Sep 24 00:40	18° 00 32'07	30.90544 AU
min. Earth dist.	16352 Mar 10 16:28	4° 00 03'45	28.98589 AU	morning rise	16358 Oct 09 11:40	19° 00 07'05	
direct	16352 May 29 04:47	2° 00 39'55		retrograde	16359 Jan 06 15:43	21° 00 03'47	
evening set	16352 Aug 25 14:32	4° 00 34'54		opposition	16359 Mar 27 09:12	19° 00 39'46	-0°22'54
				min. Earth dist.	16359 Mar 27 06:42	19° 00 39'57	28.90110 AU
conjunction	16352 Sep 10 03:22	5° 00 09'56	-0°20'59	direct	16359 Jun 14 20:22	18° 00 15'47	
minimum elong	16352 Sep 10 03:22	5° 00 09'56	0°21'00	evening set	16359 Sep 10 20:07	20° 00 10'43	
max. Earth dist.	16352 Sep 10 01:41	5° 00 09'46	30.97949 AU				
morning rise	16352 Sep 25 16:27	5° 00 45'00		conjunction	16359 Sep 26 09:09	20° 00 45'51	-0°21'26
retrograde	16352 Dec 23 15:33	7° 00 41'08		minimum elong	16359 Sep 26 09:09	20° 00 45'51	0°21'15
opposition	16353 Mar 13 03:30	6° 00 17'30	-0°22'30	max. Earth dist.	16359 Sep 26 11:31	20° 00 46'04	30.89701 AU
min. Earth dist.	16353 Mar 13 04:05	6° 00 17'28	28.97290 AU	morning rise	16359 Oct 11 23:00	21° 00 21'05	
direct	16353 May 31 17:55	4° 00 53'31		retrograde	16360 Jan 09 05:04	23° 00 17'54	
evening set	16353 Aug 28 01:36	6° 00 48'30		opposition	16360 Mar 28 22:16	21° 00 53'52	-0°22'51
				min. Earth dist.	16360 Mar 28 18:32	21° 00 54'08	28.89320 AU
conjunction	16353 Sep 12 14:29	7° 00 23'33	-0°21'08	direct	16360 Jun 16 06:36	20° 00 29'55	
minimum elong	16353 Sep 12 14:29	7° 00 23'33	0°21'07	evening set	16360 Sep 12 07:20	22° 00 24'52	
max. Earth dist.	16353 Sep 12 13:06	7° 00 23'25	30.96603 AU				
morning rise	16353 Sep 28 03:39	7° 00 58'39		conjunction	16360 Sep 27 20:32	23° 00 00'01	-0°21'22
retrograde	16353 Dec 26 04:33	9° 00 54'52		minimum elong	16360 Sep 27 20:32	23° 00 00'01	0°21'11
opposition	16354 Mar 15 16:32	8° 00 31'09	-0°22'39	max. Earth dist.	16360 Sep 28 00:18	23° 00 00'22	30.88948 AU

morning rise	16360 Oct 13 10:25	23° <u>♂</u> 35'17	opposition	16367 Apr 14 18:51	7° <u>♂</u> 36'46	-0°21'30
retrograde	16361 Jan 10 16:46	25° <u>♂</u> 32'13	min. Earth dist.	16367 Apr 14 13:25	7° <u>♂</u> 37'09	28.83612 AU
opposition	16361 Mar 31 11:23	24° <u>♂</u> 08'11 -0°22'46	direct	16367 Jul 02 21:36	6° <u>♂</u> 12'51	
min. Earth dist.	16361 Mar 31 07:59	24° <u>♂</u> 08'25 28.88602 AU	evening set	16367 Sep 28 16:13	8° <u>♂</u> 07'44	
direct	16361 Jun 18 17:16	22° <u>♂</u> 44'16				
evening set	16361 Sep 14 18:39	24° <u>♂</u> 39'14	conjunction	16367 Oct 14 06:15	8° <u>♂</u> 43'00	-0°20'00
			minimum elong	16367 Oct 14 06:15	8° <u>♂</u> 43'00	0°19'38
conjunction	16361 Sep 30 07:56	25° <u>♂</u> 14'24 -0°21'16	max. Earth dist.	16367 Oct 14 12:29	8° <u>♂</u> 43'35	30.83114 AU
minimum elong	16361 Sep 30 07:56	25° <u>♂</u> 14'24 0°21'02	morning rise	16367 Oct 29 21:16	9° <u>♂</u> 18'24	
max. Earth dist.	16361 Sep 30 11:48	25° <u>♂</u> 14'46 30.88260 AU	retrograde	16368 Jan 27 12:25	11° <u>♂</u> 15'52	
morning rise	16361 Oct 15 22:02	25° <u>♂</u> 49'41	opposition	16368 Apr 16 08:07	9° <u>♂</u> 51'29	-0°21'10
retrograde	16362 Jan 13 06:52	27° <u>♂</u> 46'44	min. Earth dist.	16368 Apr 16 02:15	9° <u>♂</u> 51'53	28.82643 AU
opposition	16362 Apr 03 00:27	26° <u>♂</u> 22'41 -0°22'38	direct	16368 Jul 04 11:12	8° <u>♂</u> 27'31	
min. Earth dist.	16362 Apr 02 19:42	26° <u>♂</u> 23'01 28.87918 AU	evening set	16368 Sep 30 03:56	10° <u>♂</u> 22'22	
direct	16362 Jun 21 05:59	24° <u>♂</u> 58'48				
evening set	16362 Sep 17 06:08	26° <u>♂</u> 53'47	conjunction	16368 Oct 15 17:57	10° <u>♂</u> 57'39	-0°19'41
			minimum elong	16368 Oct 15 17:58	10° <u>♂</u> 57'39	0°19'18
conjunction	16362 Oct 02 19:27	27° <u>♂</u> 28'59 -0°21'08	max. Earth dist.	16368 Oct 15 23:48	10° <u>♂</u> 58'12	30.82194 AU
minimum elong	16362 Oct 02 19:27	27° <u>♂</u> 28'59 0°20'54	morning rise	16368 Oct 31 09:21	11° <u>♂</u> 33'05	
max. Earth dist.	16362 Oct 02 23:44	27° <u>♂</u> 29'23 30.87559 AU	retrograde	16369 Jan 29 01:57	13° <u>♂</u> 30'35	
morning rise	16362 Oct 18 09:40	28° <u>♂</u> 04'17	opposition	16369 Apr 18 21:11	12° <u>♂</u> 06'08	-0°20'49
	16363 Jan 06 14:04	0° <u>♂</u>	min. Earth dist.	16369 Apr 18 14:17	12° <u>♂</u> 06'37	28.81782 AU
retrograde	16363 Jan 15 20:05	0° <u>♂</u> 01'27	direct	16369 Jul 06 22:29	10° <u>♂</u> 42'09	
	16363 Jan 25 04:53	30° <u>♂</u> 4	evening set	16369 Oct 02 15:31	12° <u>♂</u> 36'59	
opposition	16363 Apr 05 13:44	28° <u>♂</u> 37'22 -0°22'29				
min. Earth dist.	16363 Apr 05 09:42	28° <u>♂</u> 37'39 28.87208 AU	conjunction	16369 Oct 18 05:49	13° <u>♂</u> 12'17	-0°19'20
direct	16363 Jun 23 17:28	27° <u>♂</u> 13'31	minimum elong	16369 Oct 18 05:49	13° <u>♂</u> 12'17	0°18'55
evening set	16363 Sep 19 17:42	29° <u>♂</u> 08'31	max. Earth dist.	16369 Oct 18 13:02	13° <u>♂</u> 12'58	30.81381 AU
			morning rise	16369 Nov 02 21:18	13° <u>♂</u> 47'44	
conjunction	16363 Oct 05 07:10	29° <u>♂</u> 43'43 -0°20'59		16369 Dec 09 12:03	15° <u>♂</u>	
minimum elong	16363 Oct 05 07:10	29° <u>♂</u> 43'43 0°20'42	retrograde	16370 Jan 31 13:12	15° <u>♂</u> 45'18	
max. Earth dist.	16363 Oct 05 12:00	29° <u>♂</u> 44'10 30.86828 AU		16370 Mar 27 21:14	15° <u>♂</u> 47'44	
	16363 Oct 12 10:23	0° <u>♂</u>	opposition	16370 Apr 21 10:24	14° <u>♂</u> 20'48	-0°20'25
morning rise	16363 Oct 20 21:29	0° <u>♂</u> 19'03	min. Earth dist.	16370 Apr 21 03:38	14° <u>♂</u> 21'17	28.81034 AU
retrograde	16364 Jan 18 09:40	2° <u>♂</u> 16'18	direct	16370 Jul 09 10:15	12° <u>♂</u> 56'49	
opposition	16364 Apr 07 03:00	0° <u>♂</u> 52'12 -0°22'17	evening set	16370 Oct 05 03:09	14° <u>♂</u> 51'38	
min. Earth dist.	16364 Apr 06 21:42	0° <u>♂</u> 52'34 28.86434 AU		16370 Oct 08 20:57	15° <u>♂</u>	
	16364 May 11 03:25	30° <u>♂</u> 4				
direct	16364 Jun 25 06:44	29° <u>♂</u> 28'21	conjunction	16370 Oct 20 17:33	15° <u>♂</u> 26'57	-0°18'57
	16364 Aug 07 23:20	0° <u>♂</u>	minimum elong	16370 Oct 20 17:33	15° <u>♂</u> 26'57	0°18'32
evening set	16364 Sep 21 05:21	1° <u>♂</u> 23'21	max. Earth dist.	16370 Oct 21 01:00	15° <u>♂</u> 27'39	30.80709 AU
			morning rise	16370 Nov 05 09:17	16° <u>♂</u> 02'26	
conjunction	16364 Oct 06 18:49	1° <u>♂</u> 58'34 -0°20'47	retrograde	16371 Feb 03 02:38	18° <u>♂</u> 00'04	
minimum elong	16364 Oct 06 18:49	1° <u>♂</u> 58'34 0°20'29	opposition	16371 Apr 23 23:30	16° <u>♂</u> 35'33	-0°20'00
max. Earth dist.	16364 Oct 06 23:10	1° <u>♂</u> 58'59 30.86005 AU	min. Earth dist.	16371 Apr 23 15:10	16° <u>♂</u> 36'07	28.80429 AU
morning rise	16364 Oct 22 09:25	2° <u>♂</u> 33'55	direct	16371 Jul 11 22:24	15° <u>♂</u> 11'34	
retrograde	16365 Jan 19 23:28	4° <u>♂</u> 31'16	evening set	16371 Oct 07 14:52	17° <u>♂</u> 06'24	
opposition	16365 Apr 09 16:26	3° <u>♂</u> 07'06 -0°22'03				
min. Earth dist.	16365 Apr 09 11:47	3° <u>♂</u> 07'25 28.85568 AU	conjunction	16371 Oct 23 05:25	17° <u>♂</u> 41'44	-0°18'33
direct	16365 Jun 27 19:08	1° <u>♂</u> 43'14	minimum elong	16371 Oct 23 05:25	17° <u>♂</u> 41'44	0°18'06
evening set	16365 Sep 23 17:00	3° <u>♂</u> 38'12	max. Earth dist.	16371 Oct 23 13:36	17° <u>♂</u> 42'30	30.80166 AU
			morning rise	16371 Nov 07 21:22	18° <u>♂</u> 17'14	
conjunction	16365 Oct 09 06:46	4° <u>♂</u> 13'27 -0°20'33	retrograde	16372 Feb 05 15:21	20° <u>♂</u> 14'57	
minimum elong	16365 Oct 09 06:46	4° <u>♂</u> 13'27 0°20'13	opposition	16372 Apr 25 12:48	18° <u>♂</u> 50'25	-0°19'33
max. Earth dist.	16365 Oct 09 12:11	4° <u>♂</u> 13'57 30.85091 AU	min. Earth dist.	16372 Apr 25 04:52	18° <u>♂</u> 50'58	28.79957 AU
morning rise	16365 Oct 24 21:25	4° <u>♂</u> 48'49	direct	16372 Jul 13 09:08	17° <u>♂</u> 26'29	
retrograde	16366 Jan 22 12:33	6° <u>♂</u> 46'12	evening set	16372 Oct 09 02:30	19° <u>♂</u> 21'19	
opposition	16366 Apr 12 05:32	5° <u>♂</u> 21'58 -0°21'48				
min. Earth dist.	16366 Apr 12 00:13	5° <u>♂</u> 22'20 28.84603 AU	conjunction	16372 Oct 24 17:19	19° <u>♂</u> 56'40	-0°18'07
direct	16366 Jun 30 09:50	3° <u>♂</u> 58'05	minimum elong	16372 Oct 24 17:20	19° <u>♂</u> 56'40	0°17'39
evening set	16366 Sep 26 04:48	5° <u>♂</u> 53'01	max. Earth dist.	16372 Oct 25 02:21	19° <u>♂</u> 57'31	30.79759 AU
			morning rise	16372 Nov 09 09:29	20° <u>♂</u> 32'11	
conjunction	16366 Oct 11 18:31	6° <u>♂</u> 28'16 -0°20'17	retrograde	16373 Feb 07 05:17	22° <u>♂</u> 30'00	
minimum elong	16366 Oct 11 18:32	6° <u>♂</u> 28'16 0°19'58	opposition	16373 Apr 28 01:56	21° <u>♂</u> 05'28	-0°19'04
max. Earth dist.	16366 Oct 11 23:12	6° <u>♂</u> 28'42 30.84105 AU	min. Earth dist.	16373 Apr 27 16:29	21° <u>♂</u> 06'07	28.79590 AU
morning rise	16366 Oct 27 09:32	7° <u>♂</u> 03'40	direct	16373 Jul 15 21:46	19° <u>♂</u> 41'34	
retrograde	16367 Jan 25 01:33	9° <u>♂</u> 01'05	evening set	16373 Oct 11 14:27	21° <u>♂</u> 36'25	

conjunction	16373 Oct 27 05:20	22° M 11'48	-0°17'39	evening set	16379 Oct 25 15:11	5° 7 10'06	
minimum elong	16373 Oct 27 05:20	22° M 11'48	0°17'09				
max. Earth dist.	16373 Oct 27 14:09	22° M 12'38	30.79427 AU	conjunction	16379 Nov 10 07:22	5° 7 45'36	-0°14'19
morning rise	16373 Nov 11 21:49	22° M 47'21		minimum elong	16379 Nov 10 07:22	5° 7 45'36	0°13'44
retrograde	16374 Feb 09 19:41	24° M 45'14		behind sun begin	16379 Nov 10 03:53	5° 7 45'17	
opposition	16374 Apr 30 15:07	23° M 20'43	-0°18'33	behind sun end	16379 Nov 10 10:50	5° 7 45'55	
min. Earth dist.	16374 Apr 30 06:12	23° M 21'20	28.79294 AU	max. Earth dist.	16379 Nov 10 17:21	5° 7 46'32	30.77001 AU
direct	16374 Jul 18 09:43	21° M 56'52		morning rise	16379 Nov 26 01:16	6° 7 21'17	
evening set	16374 Oct 14 02:21	23° M 51'45		retrograde	16380 Feb 24 02:54	8° 7 19'23	
				opposition	16380 May 13 22:36	6° 7 54'43	-0°14'53
conjunction	16374 Oct 29 17:34	24° M 27'09	-0°17'09	min. Earth dist.	16380 May 13 12:06	6° 7 55'27	28.76737 AU
minimum elong	16374 Oct 29 17:34	24° M 27'09	0°16'40	direct	16380 Jul 31 15:10	5° 7 30'49	
max. Earth dist.	16374 Oct 30 03:40	24° M 28'06	30.79150 AU	evening set	16380 Oct 27 03:17	7° 7 25'35	
morning rise	16374 Nov 14 10:08	25° M 02'43					
retrograde	16375 Feb 12 10:02	27° M 00'41		conjunction	16380 Nov 11 19:42	8° 7 01'06	-0°13'41
opposition	16375 May 03 04:22	25° M 36'11	-0°18'00	minimum elong	16380 Nov 11 19:42	8° 7 01'06	0°13'06
min. Earth dist.	16375 May 02 18:37	25° M 36'52	28.79013 AU	behind sun begin	16380 Nov 11 15:49	8° 7 00'45	
direct	16375 Jul 21 00:00	24° M 12'22		behind sun end	16380 Nov 11 23:35	8° 7 01'27	
evening set	16375 Oct 16 14:25	26° M 07'17		max. Earth dist.	16380 Nov 12 06:13	8° 7 02'05	30.76475 AU
				morning rise	16380 Nov 27 13:52	8° 7 36'47	
conjunction	16375 Nov 01 05:39	26° M 42'42	-0°16'38	retrograde	16381 Feb 25 14:48	10° 7 34'54	
minimum elong	16375 Nov 01 05:38	26° M 42'42	0°16'06	opposition	16381 May 16 11:44	9° 7 10'10	-0°14'12
max. Earth dist.	16375 Nov 01 14:58	26° M 43'35	30.78862 AU	min. Earth dist.	16381 May 16 01:55	9° 7 10'51	28.76254 AU
morning rise	16375 Nov 16 22:36	27° M 18'18		direct	16381 Aug 03 01:57	7° 7 46'13	
retrograde	16376 Feb 14 23:54	29° M 16'21		evening set	16381 Oct 29 15:25	9° 7 40'56	
opposition	16376 May 04 17:46	27° M 51'51	-0°17'26				
min. Earth dist.	16376 May 04 08:13	27° M 52'30	28.78710 AU	conjunction	16381 Nov 14 08:07	10° 7 16'27	-0°13'02
direct	16376 Jul 22 11:25	26° M 28'03		minimum elong	16381 Nov 14 08:07	10° 7 16'27	0°12'25
evening set	16376 Oct 18 02:33	28° M 22'58		behind sun begin	16381 Nov 14 03:52	10° 7 16'04	
				behind sun end	16381 Nov 14 12:22	10° 7 16'51	
conjunction	16376 Nov 02 18:09	28° M 58'25	-0°16'05	max. Earth dist.	16381 Nov 14 19:13	10° 7 17'30	30.76046 AU
minimum elong	16376 Nov 02 18:09	28° M 58'25	0°15'34	morning rise	16381 Nov 30 02:28	10° 7 52'10	
behind sun begin	16376 Nov 02 16:30	28° M 58'16		retrograde	16382 Feb 28 03:45	12° 7 50'15	
behind sun end	16376 Nov 02 19:49	28° M 58'34		opposition	16382 May 19 00:32	11° 7 25'28	-0°13'29
max. Earth dist.	16376 Nov 03 04:34	28° M 59'24	30.78515 AU	min. Earth dist.	16382 May 18 13:15	11° 7 26'16	28.75881 AU
morning rise	16376 Nov 18 11:11	29° M 34'02		direct	16382 Aug 05 14:51	10° 7 01'29	
	16376 Nov 30 10:46	0° 7		evening set	16382 Nov 01 03:37	11° 7 56'11	
retrograde	16377 Feb 16 12:31	1° 7 32'07					
opposition	16377 May 07 06:58	0° 7 07'37	-0°16'50	conjunction	16382 Nov 16 20:25	12° 7 31'43	-0°12'21
min. Earth dist.	16377 May 06 21:26	0° 7 08'17	28.78316 AU	minimum elong	16382 Nov 16 20:25	12° 7 31'43	0°11'45
	16377 May 11 21:04	30° R M		behind sun begin	16382 Nov 16 15:51	12° 7 31'18	
direct	16377 Jul 25 01:34	28° M 43'50		behind sun end	16382 Nov 17 01:00	12° 7 32'08	
	16377 Oct 02 08:33	0° 7		max. Earth dist.	16382 Nov 17 07:25	12° 7 32'45	30.75739 AU
evening set	16377 Oct 20 14:53	0° 7 38'44		morning rise	16382 Dec 02 15:07	13° 7 07'26	
				retrograde	16383 Mar 02 16:55	15° 7 05'31	
conjunction	16377 Nov 05 06:34	1° 7 14'12	-0°15'31	opposition	16383 May 21 13:36	13° 7 40'42	-0°12'46
minimum elong	16377 Nov 05 06:34	1° 7 14'12	0°14'58	min. Earth dist.	16383 May 21 02:42	13° 7 41'28	28.75658 AU
behind sun begin	16377 Nov 05 04:08	1° 7 13'59		direct	16383 Aug 08 02:32	12° 7 16'42	
behind sun end	16377 Nov 05 09:00	1° 7 14'26		evening set	16383 Nov 03 15:36	14° 7 11'22	
max. Earth dist.	16377 Nov 05 15:53	1° 7 15'05	30.78080 AU				
morning rise	16377 Nov 21 00:00	1° 7 49'51		conjunction	16383 Nov 19 08:49	14° 7 46'54	-0°11'40
retrograde	16378 Feb 19 03:20	3° 7 47'57		minimum elong	16383 Nov 19 08:48	14° 7 46'54	0°11'02
opposition	16378 May 09 20:14	2° 7 23'25	-0°16'12	behind sun begin	16383 Nov 19 03:57	14° 7 46'28	
min. Earth dist.	16378 May 09 10:16	2° 7 24'06	28.77835 AU	behind sun end	16383 Nov 19 13:40	14° 7 47'21	
direct	16378 Jul 27 13:56	0° 7 59'36		max. Earth dist.	16383 Nov 19 21:12	14° 7 48'04	30.75593 AU
evening set	16378 Oct 23 02:59	2° 7 54'28		morning rise	16383 Dec 05 03:39	15° 7 22'38	
				retrograde	16384 Mar 04 06:11	17° 7 20'44	
conjunction	16378 Nov 07 18:59	3° 7 29'57	-0°14'55	opposition	16384 May 23 02:30	15° 7 55'53	-0°12'01
minimum elong	16378 Nov 07 18:59	3° 7 29'57	0°14'22	min. Earth dist.	16384 May 22 14:27	15° 7 56'44	28.75581 AU
behind sun begin	16378 Nov 07 16:00	3° 7 29'41		direct	16384 Aug 09 15:58	14° 7 31'52	
behind sun end	16378 Nov 07 21:59	3° 7 30'14		evening set	16384 Nov 05 03:54	16° 7 26'32	
max. Earth dist.	16378 Nov 08 05:12	3° 7 30'55	30.77551 AU				
morning rise	16378 Nov 23 12:33	4° 7 05'37		conjunction	16384 Nov 20 21:11	17° 7 02'05	-0°10'58
retrograde	16379 Feb 21 14:16	6° 7 03'44		minimum elong	16384 Nov 20 21:12	17° 7 02'05	0°10'21
opposition	16379 May 12 09:32	4° 7 39'08	-0°15'33	behind sun begin	16384 Nov 20 16:04	17° 7 01'37	
min. Earth dist.	16379 May 12 00:08	4° 7 39'47	28.77279 AU	behind sun end	16384 Nov 21 02:19	17° 7 02'33	
direct	16379 Jul 30 02:53	3° 7 15'18		max. Earth dist.	16384 Nov 21 09:02	17° 7 03'12	30.75594 AU

morning rise	16384 Dec 06 16:28	17° \nearrow 37'50		evening set	16390 Nov 19 06:38	29° \nearrow 59'14	
retrograde	16385 Mar 06 20:16	19° \nearrow 35'56			16390 Nov 19 14:53	0° \searrow	
opposition	16385 May 25 15:17	18° \nearrow 11'05	-0°11'15				
min. Earth dist.	16385 May 25 03:19	18° \nearrow 11'55	28.75661 AU	conjunction	16390 Dec 05 01:35	0° \searrow 34'53	-0°06'24
direct	16385 Aug 12 03:03	16° \nearrow 47'05		minimum elong	16390 Dec 05 01:34	0° \searrow 34'53	0°05'45
evening set	16385 Nov 07 16:05	18° \nearrow 41'44		behind sun begin	16390 Dec 04 19:20	0° \searrow 34'19	
				behind sun end	16390 Dec 05 07:48	0° \searrow 35'27	
conjunction	16385 Nov 23 09:49	19° \nearrow 17'19	-0°10'14	max. Earth dist.	16390 Dec 05 14:26	0° \searrow 36'06	30.76917 AU
minimum elong	16385 Nov 23 09:49	19° \nearrow 17'19	0°09'36	morning rise	16390 Dec 20 22:16	1° \searrow 10'43	
behind sun begin	16385 Nov 23 04:26	19° \nearrow 16'50		retrograde	16391 Mar 21 03:55	3° \searrow 08'50	
behind sun end	16385 Nov 23 15:11	19° \nearrow 17'48		opposition	16391 Jun 08 20:31	1° \searrow 44'06	-0°06'18
max. Earth dist.	16385 Nov 23 23:05	19° \nearrow 18'34	30.75733 AU	min. Earth dist.	16391 Jun 08 07:50	1° \searrow 44'59	28.76971 AU
morning rise	16385 Dec 09 05:11	19° \nearrow 53'04		direct	16391 Aug 26 06:17	0° \searrow 20'10	
retrograde	16386 Mar 09 09:40	21° \nearrow 51'10		evening set	16391 Nov 21 19:11	2° \searrow 14'48	
opposition	16386 May 28 04:10	20° \nearrow 26'21	-0°10'27				
min. Earth dist.	16386 May 27 15:51	20° \nearrow 27'13	28.75849 AU	conjunction	16391 Dec 07 14:17	2° \searrow 50'27	-0°05'36
direct	16386 Aug 14 17:10	19° \nearrow 02'22		minimum elong	16391 Dec 07 14:17	2° \searrow 50'27	0°04'56
evening set	16386 Nov 10 04:23	20° \nearrow 57'02		behind sun begin	16391 Dec 07 07:57	2° \searrow 49'52	
				behind sun end	16391 Dec 07 20:38	2° \searrow 51'01	
conjunction	16386 Nov 25 22:11	21° \nearrow 32'37	-0°09'30	max. Earth dist.	16391 Dec 08 02:35	2° \searrow 51'36	30.77004 AU
minimum elong	16386 Nov 25 22:12	21° \nearrow 32'37	0°08'52	morning rise	16391 Dec 23 11:22	3° \searrow 26'18	
behind sun begin	16386 Nov 25 16:37	21° \nearrow 32'07		retrograde	16392 Mar 22 16:20	5° \searrow 24'22	
behind sun end	16386 Nov 26 03:47	21° \nearrow 33'08		opposition	16392 Jun 10 09:20	3° \searrow 59'36	-0°05'26
max. Earth dist.	16386 Nov 26 10:44	21° \nearrow 33'48	30.75976 AU	min. Earth dist.	16392 Jun 09 21:37	4° \searrow 00'25	28.77056 AU
morning rise	16386 Dec 11 17:58	22° \nearrow 08'24		direct	16392 Aug 27 17:35	2° \searrow 35'38	
retrograde	16387 Mar 12 00:42	24° \nearrow 06'31		evening set	16392 Nov 23 07:42	4° \searrow 30'14	
opposition	16387 May 30 17:05	22° \nearrow 41'43	-0°09'39				
min. Earth dist.	16387 May 30 04:13	22° \nearrow 42'37	28.76129 AU	conjunction	16392 Dec 09 03:15	5° \searrow 05'54	-0°04'48
direct	16387 Aug 17 05:23	21° \nearrow 17'47		minimum elong	16392 Dec 09 03:14	5° \searrow 05'54	0°04'09
evening set	16387 Nov 12 16:47	23° \nearrow 12'27		behind sun begin	16392 Dec 08 20:49	5° \searrow 05'20	
				behind sun end	16392 Dec 09 09:38	5° \searrow 06'29	
conjunction	16387 Nov 28 10:57	23° \nearrow 48'03	-0°08'45	max. Earth dist.	16392 Dec 09 16:22	5° \searrow 07'08	30.77099 AU
minimum elong	16387 Nov 28 10:57	23° \nearrow 48'03	0°08'05	morning rise	16392 Dec 25 00:27	5° \searrow 41'45	
behind sun begin	16387 Nov 28 05:10	23° \nearrow 47'32		retrograde	16393 Mar 25 04:59	7° \searrow 39'47	
behind sun end	16387 Nov 28 16:44	23° \nearrow 48'35		opposition	16393 Jun 12 21:44	6° \searrow 15'00	-0°04'34
max. Earth dist.	16387 Nov 29 00:29	23° \nearrow 49'20	30.76267 AU	min. Earth dist.	16393 Jun 12 09:18	6° \searrow 15'52	28.77165 AU
morning rise	16387 Dec 14 06:52	24° \nearrow 23'51		direct	16393 Aug 30 06:22	4° \searrow 50'59	
retrograde	16388 Mar 13 12:38	26° \nearrow 22'00		evening set	16393 Nov 25 20:20	6° \searrow 45'34	
opposition	16388 Jun 01 05:59	24° \nearrow 57'14	-0°08'50				
min. Earth dist.	16388 May 31 17:46	24° \nearrow 58'05	28.76426 AU	conjunction	16393 Dec 11 15:57	7° \searrow 21'14	-0°03'59
direct	16388 Aug 18 17:59	23° \nearrow 33'19		minimum elong	16393 Dec 11 15:57	7° \searrow 21'14	0°03'19
evening set	16388 Nov 14 05:22	25° \nearrow 28'00		behind sun begin	16393 Dec 11 09:29	7° \searrow 20'39	
				behind sun end	16393 Dec 11 22:25	7° \searrow 21'49	
conjunction	16388 Nov 29 23:44	26° \nearrow 03'37	-0°07'58	max. Earth dist.	16393 Dec 12 04:16	7° \searrow 22'23	30.77244 AU
minimum elong	16388 Nov 29 23:44	26° \nearrow 03'37	0°07'19	morning rise	16393 Dec 27 13:34	7° \searrow 57'06	
behind sun begin	16388 Nov 29 17:47	26° \nearrow 03'04		retrograde	16394 Mar 27 18:44	9° \searrow 55'05	
behind sun end	16388 Nov 30 05:41	26° \nearrow 04'09		opposition	16394 Jun 15 10:20	8° \searrow 30'16	-0°03'42
max. Earth dist.	16388 Nov 30 12:38	26° \nearrow 04'50	30.76559 AU	min. Earth dist.	16394 Jun 14 22:13	8° \searrow 31'07	28.77367 AU
morning rise	16388 Dec 15 20:00	26° \nearrow 39'26		direct	16394 Sep 01 17:27	7° \searrow 06'14	
retrograde	16389 Mar 16 02:38	28° \nearrow 37'34		evening set	16394 Nov 28 08:38	9° \searrow 00'47	
opposition	16389 Jun 03 18:49	27° \nearrow 12'50	-0°08'00				
min. Earth dist.	16389 Jun 03 05:56	27° \nearrow 13'44	28.76688 AU	conjunction	16394 Dec 14 04:40	9° \searrow 36'28	-0°03'10
direct	16389 Aug 21 06:16	25° \nearrow 48'56		minimum elong	16394 Dec 14 04:39	9° \searrow 36'28	0°02'31
evening set	16389 Nov 16 18:02	27° \nearrow 43'37		behind sun begin	16394 Dec 13 22:09	9° \searrow 35'53	
				behind sun end	16394 Dec 14 11:10	9° \searrow 37'03	
conjunction	16389 Dec 02 12:38	28° \nearrow 19'15	-0°07'12	max. Earth dist.	16394 Dec 14 18:21	9° \searrow 37'45	30.77497 AU
minimum elong	16389 Dec 02 12:38	28° \nearrow 19'15	0°06'32	morning rise	16394 Dec 30 02:21	10° \searrow 12'20	
behind sun begin	16389 Dec 02 06:32	28° \nearrow 18'42		retrograde	16395 Mar 30 08:04	12° \searrow 10'15	
behind sun end	16389 Dec 02 18:44	28° \nearrow 19'48		opposition	16395 Jun 17 22:49	10° \searrow 45'26	-0°02'49
max. Earth dist.	16389 Dec 03 01:34	28° \nearrow 20'28	30.76770 AU	min. Earth dist.	16395 Jun 17 10:19	10° \searrow 46'19	28.77679 AU
morning rise	16389 Dec 18 09:06	28° \nearrow 55'05		direct	16395 Sep 04 07:48	9° \searrow 21'23	
	16390 Jan 19 16:03	0° \searrow		evening set	16395 Nov 30 21:13	11° \searrow 15'56	
retrograde	16390 Mar 18 15:01	0° \searrow 53'13					
	16390 May 18 00:10	30° \nwarrow		conjunction	16395 Dec 16 17:21	11° \searrow 51'37	-0°02'19
opposition	16390 Jun 06 07:44	29° \nwarrow 28'29	-0°07'09	minimum elong	16395 Dec 16 17:21	11° \searrow 51'37	0°01'40
min. Earth dist.	16390 Jun 05 20:01	29° \nwarrow 29'18	28.76862 AU	behind sun begin	16395 Dec 16 10:51	11° \searrow 51'01	
direct	16390 Aug 23 17:18	28° \nwarrow 04'34		behind sun end	16395 Dec 16 23:52	11° \searrow 52'12	

max. Earth dist.	16395 Dec 17 06:12	11° $\overline{3}$ 52'49	30.77887 AU	evening set	16401 Dec 14 01:14	24° $\overline{3}$ 47'01	
morning rise	16396 Jan 01 15:28	12° $\overline{3}$ 27'29					
retrograde	16396 Mar 31 22:28	14° $\overline{3}$ 25'22		conjunction	16401 Dec 29 22:59	25° $\overline{3}$ 22'45	0°02'48
opposition	16396 Jun 19 11:09	13° $\overline{3}$ 00'33	-0°01'56	minimum elong	16401 Dec 29 23:00	25° $\overline{3}$ 22'45	0°03'25
min. Earth dist.	16396 Jun 18 22:09	13° $\overline{3}$ 01'27	28.78152 AU	behind sun begin	16401 Dec 29 16:31	25° $\overline{3}$ 22'09	
direct	16396 Sep 05 19:56	11° $\overline{3}$ 36'29		behind sun end	16401 Dec 30 05:29	25° $\overline{3}$ 23'20	
evening set	16396 Dec 02 09:42	13° $\overline{3}$ 31'01		max. Earth dist.	16401 Dec 30 12:38	25° $\overline{3}$ 24'01	30.82611 AU
				morning rise	16402 Jan 14 22:18	25° $\overline{3}$ 58'38	
conjunction	16396 Dec 18 06:14	14° $\overline{3}$ 06'43	-0°01'28	retrograde	16402 Apr 15 02:59	27° $\overline{3}$ 56'16	
minimum elong	16396 Dec 18 06:13	14° $\overline{3}$ 06'43	0°00'49	opposition	16402 Jul 03 12:50	26° $\overline{3}$ 31'43	0°03'24
behind sun begin	16396 Dec 17 23:43	14° $\overline{3}$ 06'08		min. Earth dist.	16402 Jul 03 00:15	26° $\overline{3}$ 32'36	28.83013 AU
behind sun end	16396 Dec 18 12:44	14° $\overline{3}$ 07'18		direct	16402 Sep 19 19:49	25° $\overline{3}$ 07'46	
max. Earth dist.	16396 Dec 18 20:10	14° $\overline{3}$ 08'01	30.78426 AU	evening set	16402 Dec 16 14:07	27° $\overline{3}$ 02'16	
morning rise	16397 Jan 03 04:26	14° $\overline{3}$ 42'35					
retrograde	16397 Apr 03 10:30	16° $\overline{3}$ 40'26		conjunction	16403 Jan 01 11:58	27° $\overline{3}$ 38'00	0°03'37
opposition	16397 Jun 21 23:31	15° $\overline{3}$ 15'38	-0°01'03	minimum elong	16403 Jan 01 11:58	27° $\overline{3}$ 38'00	0°04'13
min. Earth dist.	16397 Jun 21 10:52	15° $\overline{3}$ 16'31	28.78762 AU	behind sun begin	16403 Jan 01 05:33	27° $\overline{3}$ 37'25	
direct	16397 Sep 08 08:31	13° $\overline{3}$ 51'35		behind sun end	16403 Jan 01 18:24	27° $\overline{3}$ 38'35	
evening set	16397 Dec 04 22:15	15° $\overline{3}$ 46'07		max. Earth dist.	16403 Jan 02 00:16	27° $\overline{3}$ 39'09	30.83377 AU
				morning rise	16403 Jan 17 11:38	28° $\overline{3}$ 13'54	
conjunction	16397 Dec 20 18:55	16° $\overline{3}$ 21'49	-0°00'36		16403 Mar 22 09:16	0° \approx	
minimum elong	16397 Dec 20 18:56	16° $\overline{3}$ 21'49	0°00'03	retrograde	16403 Apr 17 15:52	0° \approx 11'28	
behind sun begin	16397 Dec 20 13:10	16° $\overline{3}$ 21'18			16403 May 14 07:46	30° \overline{R} $\overline{3}$	
behind sun end	16397 Dec 21 00:42	16° $\overline{3}$ 22'20		opposition	16403 Jul 06 01:11	28° $\overline{3}$ 46'55	0°04'17
max. Earth dist.	16397 Dec 21 08:27	16° $\overline{3}$ 23'05	30.79117 AU	min. Earth dist.	16403 Jul 05 13:30	28° $\overline{3}$ 47'44	28.83738 AU
morning rise	16398 Jan 05 17:28	16° $\overline{3}$ 57'42		direct	16403 Sep 22 07:07	27° $\overline{3}$ 22'56	
retrograde	16398 Apr 06 01:06	18° $\overline{3}$ 55'29		evening set	16403 Dec 19 02:58	29° $\overline{3}$ 17'25	
opposition	16398 Jun 24 11:46	17° $\overline{3}$ 30'44	-0°00'09				
min. Earth dist.	16398 Jun 23 22:10	17° $\overline{3}$ 31'41	28.79519 AU	conjunction	16404 Jan 04 01:15	29° $\overline{3}$ 53'09	0°04'26
asc. node	16398 Sep 05 08:23	16° $\overline{3}$ 07'14		minimum elong	16404 Jan 04 01:14	29° $\overline{3}$ 53'09	0°05'02
direct	16398 Sep 10 21:20	16° $\overline{3}$ 06'43		behind sun begin	16404 Jan 03 18:54	29° $\overline{3}$ 52'34	
evening set	16398 Dec 07 10:52	18° $\overline{3}$ 01'14		behind sun end	16404 Jan 04 07:35	29° $\overline{3}$ 53'43	
				max. Earth dist.	16404 Jan 04 14:12	29° $\overline{3}$ 54'21	30.84056 AU
conjunction	16398 Dec 23 07:49	18° $\overline{3}$ 36'57	0°00'15		16404 Jan 07 01:55	0° \approx	
minimum elong	16398 Dec 23 07:49	18° $\overline{3}$ 36'57	0°00'54	morning rise	16404 Jan 20 00:58	0° \approx 29'02	
behind sun begin	16398 Dec 23 01:18	18° $\overline{3}$ 36'22		retrograde	16404 Apr 19 03:59	2° \approx 26'30	
behind sun end	16398 Dec 23 14:20	18° $\overline{3}$ 37'32		opposition	16404 Jul 07 13:12	1° \approx 01'57	0°05'09
max. Earth dist.	16398 Dec 23 21:50	18° $\overline{3}$ 38'16	30.79929 AU	min. Earth dist.	16404 Jul 07 01:46	1° \approx 02'45	28.84376 AU
morning rise	16399 Jan 08 06:32	19° $\overline{3}$ 12'50			16404 Aug 17 23:30	30° \overline{R} $\overline{3}$	
retrograde	16399 Apr 08 13:43	21° $\overline{3}$ 10'36		direct	16404 Sep 23 20:35	29° $\overline{3}$ 37'56	
min. Earth dist.	16399 Jun 26 11:31	19° $\overline{3}$ 46'47	28.80384 AU		16404 Oct 30 00:59	0° \approx	
opposition	16399 Jun 27 00:09	19° $\overline{3}$ 45'54	0°00'44	evening set	16404 Dec 20 15:55	1° \approx 32'22	
direct	16399 Sep 13 08:42	18° $\overline{3}$ 21'55					
evening set	16399 Dec 09 23:26	20° $\overline{3}$ 16'26		conjunction	16405 Jan 05 14:17	2° \approx 08'06	0°05'14
				minimum elong	16405 Jan 05 14:17	2° \approx 08'06	0°05'49
conjunction	16399 Dec 25 20:41	20° $\overline{3}$ 52'09	0°01'07	behind sun begin	16405 Jan 05 08:03	2° \approx 07'32	
minimum elong	16399 Dec 25 20:42	20° $\overline{3}$ 52'09	0°01'45	behind sun end	16405 Jan 05 20:32	2° \approx 08'40	
behind sun begin	16399 Dec 25 14:11	20° $\overline{3}$ 51'34		max. Earth dist.	16405 Jan 06 01:45	2° \approx 09'10	30.84680 AU
behind sun end	16399 Dec 26 03:13	20° $\overline{3}$ 52'44		morning rise	16405 Jan 21 14:24	2° \approx 43'59	
max. Earth dist.	16399 Dec 26 10:45	20° $\overline{3}$ 53'28	30.80838 AU	retrograde	16405 Apr 21 17:47	4° \approx 41'21	
morning rise	16400 Jan 10 19:39	21° $\overline{3}$ 28'03		opposition	16405 Jul 10 01:14	3° \approx 16'47	0°06'00
retrograde	16400 Apr 10 02:13	23° $\overline{3}$ 25'46		min. Earth dist.	16405 Jul 09 13:51	3° \approx 17'35	28.84991 AU
opposition	16400 Jun 28 12:21	22° $\overline{3}$ 01'08	0°01'38	direct	16405 Sep 26 08:20	1° \approx 52'43	
min. Earth dist.	16400 Jun 27 22:51	22° $\overline{3}$ 02'05	28.81302 AU	evening set	16405 Dec 23 04:36	3° \approx 47'08	
direct	16400 Sep 14 21:18	20° $\overline{3}$ 37'10					
evening set	16400 Dec 11 12:23	22° $\overline{3}$ 31'42		conjunction	16406 Jan 08 03:19	4° \approx 22'51	0°06'02
				minimum elong	16406 Jan 08 03:18	4° \approx 22'51	0°06'37
conjunction	16400 Dec 27 09:47	23° $\overline{3}$ 07'26	0°01'58	behind sun begin	16406 Jan 07 21:11	4° \approx 22'18	
minimum elong	16400 Dec 27 09:46	23° $\overline{3}$ 07'26	0°02'35	behind sun end	16406 Jan 08 09:25	4° \approx 23'24	
behind sun begin	16400 Dec 27 03:16	23° $\overline{3}$ 06'50		max. Earth dist.	16406 Jan 08 15:31	4° \approx 24'00	30.85288 AU
behind sun end	16400 Dec 27 16:17	23° $\overline{3}$ 08'01		morning rise	16406 Jan 24 03:26	4° \approx 58'44	
max. Earth dist.	16400 Dec 27 23:06	23° $\overline{3}$ 08'40	30.81746 AU	retrograde	16406 Apr 24 05:42	6° \approx 56'00	
morning rise	16401 Jan 12 09:00	23° $\overline{3}$ 43'20		opposition	16406 Jul 12 13:12	5° \approx 31'25	0°06'51
retrograde	16401 Apr 12 14:19	25° $\overline{3}$ 41'01		min. Earth dist.	16406 Jul 12 02:29	5° \approx 32'10	28.85613 AU
opposition	16401 Jul 01 00:36	24° $\overline{3}$ 16'26	0°02'31	direct	16406 Sep 28 21:17	4° \approx 07'20	
min. Earth dist.	16401 Jun 30 12:23	24° $\overline{3}$ 17'17	28.82200 AU	evening set	16406 Dec 25 17:23	6° \approx 01'42	
direct	16401 Sep 17 07:40	22° $\overline{3}$ 52'29					

conjunction	16407 Jan 10 16:13	6°37'25"	0°06'49"	max. Earth dist.	16412 Jan 22 19:35	17°49'51"	30.90816 AU
minimum elong	16407 Jan 10 16:14	6°37'25"	0°07'22"	morning rise	16412 Feb 07 10:00	18°24'42"	
behind sun begin	16407 Jan 10 10:16	6°36'53"		retrograde	16412 May 07 08:34	20°21'30"	
behind sun end	16407 Jan 10 22:11	6°37'57"		opposition	16412 Jul 25 11:14	18°57'11"	0°11'38"
max. Earth dist.	16407 Jan 11 03:37	6°38'29"	30.85948 AU	min. Earth dist.	16412 Jul 25 00:58	18°57'54"	28.91443 AU
morning rise	16407 Jan 26 16:39	7°13'18"		direct	16412 Oct 11 18:59	17°33'08"	
retrograde	16407 Apr 26 20:11	9°10'27"		evening set	16413 Jan 07 21:38	19°27'30"	
opposition	16407 Jul 15 00:58	7°45'53"	0°07'41"				
min. Earth dist.	16407 Jul 14 13:35	7°46'40"	28.86312 AU	conjunction	16413 Jan 23 21:50	20°03'13"	0°11'14"
direct	16407 Oct 01 10:23	6°21'45"		minimum elong	16413 Jan 23 21:51	20°03'13"	0°11'43"
evening set	16407 Dec 28 06:03	8°16'05"		behind sun begin	16413 Jan 23 17:16	20°02'49"	
				behind sun end	16413 Jan 24 02:25	20°03'38"	
conjunction	16408 Jan 13 05:10	8°51'49"	0°07'35"	max. Earth dist.	16413 Jan 24 09:26	20°04'18"	30.92054 AU
minimum elong	16408 Jan 13 05:10	8°51'49"	0°08'08"	morning rise	16413 Feb 08 23:05	20°39'05"	
behind sun begin	16408 Jan 12 23:22	8°51'18"		retrograde	16413 May 09 20:07	22°35'49"	
behind sun end	16408 Jan 13 10:58	8°52'20"		opposition	16413 Jul 27 22:48	21°11'35"	0°12'23"
max. Earth dist.	16408 Jan 13 16:57	8°52'55"	30.86682 AU	min. Earth dist.	16413 Jul 27 12:49	21°12'17"	28.92665 AU
morning rise	16408 Jan 29 05:43	9°27'41"		direct	16413 Oct 14 07:07	19°47'34"	
retrograde	16408 Apr 28 07:58	11°24'46"		evening set	16414 Jan 10 10:32	21°41'57"	
opposition	16408 Jul 16 12:49	10°00'12"	0°08'30"				
min. Earth dist.	16408 Jul 16 02:28	10°00'55"	28.87102 AU	conjunction	16414 Jan 26 10:43	22°17'40"	0°11'56"
direct	16408 Oct 02 22:21	8°36'03"		minimum elong	16414 Jan 26 10:43	22°17'40"	0°12'23"
evening set	16408 Dec 29 18:46	10°30'23"		behind sun begin	16414 Jan 26 06:28	22°17'18"	
				behind sun end	16414 Jan 26 14:58	22°18'03"	
conjunction	16409 Jan 14 18:07	11°06'06"	0°08'20"	max. Earth dist.	16414 Jan 26 20:40	22°18'36"	30.93254 AU
minimum elong	16409 Jan 14 18:07	11°06'06"	0°08'52"	morning rise	16414 Feb 11 12:13	22°53'31"	
behind sun begin	16409 Jan 14 12:31	11°05'36"		retrograde	16414 May 12 09:41	24°50'13"	
behind sun end	16409 Jan 14 23:43	11°06'36"		opposition	16414 Jul 30 10:22	23°26'01"	0°13'06"
max. Earth dist.	16409 Jan 15 05:47	11°07'11"	30.87535 AU	min. Earth dist.	16414 Jul 30 00:42	23°26'42"	28.93832 AU
morning rise	16409 Jan 30 18:50	11°41'58"		direct	16414 Oct 16 17:34	22°02'02"	
retrograde	16409 Apr 30 20:27	13°38'57"		evening set	16415 Jan 12 23:25	23°56'25"	
opposition	16409 Jul 19 00:20	12°14'25"	0°09'18"				
min. Earth dist.	16409 Jul 18 12:59	12°15'13"	28.88012 AU	conjunction	16415 Jan 28 23:54	24°32'08"	0°12'36"
direct	16409 Oct 05 10:57	10°50'17"		minimum elong	16415 Jan 28 23:54	24°32'08"	0°13'02"
evening set	16410 Jan 01 07:31	12°44'36"		behind sun begin	16415 Jan 28 20:01	24°31'47"	
				behind sun end	16415 Jan 29 03:47	24°32'29"	
conjunction	16410 Jan 17 06:59	13°20'20"	0°09'05"	max. Earth dist.	16415 Jan 29 10:10	24°33'05"	30.94362 AU
minimum elong	16410 Jan 17 06:58	13°20'20"	0°09'36"	morning rise	16415 Feb 14 01:21	25°07'58"	
behind sun begin	16410 Jan 17 01:35	13°19'51"		retrograde	16415 May 14 21:32	27°04'35"	
behind sun end	16410 Jan 17 12:22	13°20'49"		opposition	16415 Aug 01 21:54	25°40'26"	0°13'48"
max. Earth dist.	16410 Jan 17 18:15	13°21'22"	30.88506 AU	min. Earth dist.	16415 Aug 01 13:19	25°41'02"	28.94885 AU
morning rise	16410 Feb 02 07:53	13°56'12"		direct	16415 Oct 19 06:12	24°16'26"	
	16410 Mar 06 08:24	15°		evening set	16416 Jan 15 12:22	26°10'48"	
retrograde	16410 May 03 08:24	15°53'06"					
	16410 Jul 02 09:03	15°		conjunction	16416 Jan 31 12:58	26°46'31"	0°13'14"
opposition	16410 Jul 21 12:07	14°28'38"	0°10'06"	minimum elong	16416 Jan 31 12:58	26°46'31"	0°13'39"
min. Earth dist.	16410 Jul 21 01:39	14°29'22"	28.89056 AU	behind sun begin	16416 Jan 31 09:30	26°46'12"	
direct	16410 Oct 07 21:08	13°04'31"		behind sun end	16416 Jan 31 16:26	26°46'49"	
evening set	16411 Jan 03 20:00	14°58'50"		max. Earth dist.	16416 Jan 31 21:43	26°47'19"	30.95371 AU
	16411 Jan 04 08:51	15°		morning rise	16416 Feb 16 14:41	27°22'20"	
				retrograde	16416 May 16 11:55	29°18'50"	
conjunction	16411 Jan 19 19:48	15°34'33"	0°09'49"	opposition	16416 Aug 03 09:18	27°54'42"	0°14'29"
minimum elong	16411 Jan 19 19:49	15°34'33"	0°10'19"	min. Earth dist.	16416 Aug 03 00:33	27°55'18"	28.95839 AU
behind sun begin	16411 Jan 19 14:40	15°34'06"		direct	16416 Oct 20 19:43	26°30'40"	
behind sun end	16411 Jan 20 00:57	15°35'01"		evening set	16417 Jan 17 01:15	28°25'00"	
max. Earth dist.	16411 Jan 20 07:44	15°35'40"	30.89617 AU				
morning rise	16411 Feb 04 20:48	16°10'25"		conjunction	16417 Feb 02 02:02	29°00'43"	0°13'52"
retrograde	16411 May 05 20:36	18°07'16"		minimum elong	16417 Feb 02 02:02	29°00'43"	0°14'15"
opposition	16411 Jul 23 23:43	16°42'52"	0°10'53"	behind sun begin	16417 Feb 01 23:02	29°00'27"	
min. Earth dist.	16411 Jul 23 12:34	16°43'39"	28.90209 AU	behind sun end	16417 Feb 02 05:02	29°00'59"	
direct	16411 Oct 10 08:39	15°18'47"		max. Earth dist.	16417 Feb 02 10:41	29°01'31"	30.96271 AU
evening set	16412 Jan 06 08:51	17°13'07"		morning rise	16417 Feb 18 03:44	29°36'31"	
					16417 Mar 01 03:34	0°	
conjunction	16412 Jan 22 08:43	17°48'50"	0°10'32"	retrograde	16417 May 18 22:57	1°32'54"	
minimum elong	16412 Jan 22 08:43	17°48'50"	0°11'01"	opposition	16417 Aug 05 20:38	0°08'46"	0°15'08"
behind sun begin	16412 Jan 22 03:50	17°48'24"		min. Earth dist.	16417 Aug 05 13:24	0°09'16"	28.96708 AU
behind sun end	16412 Jan 22 13:35	17°49'17"			16417 Aug 11 02:02	30°	

direct	16417 Oct 23 07:52	28° \approx 44'42		conjunction	16424 Feb 18 19:05	14° \mathbb{H} 33'45	0°17'35
	16417 Dec 31 20:48	0° \mathbb{H}		minimum elong	16424 Feb 18 19:05	14° \mathbb{H} 33'45	0°17'49
evening set	16418 Jan 19 14:01	0° \mathbb{H} 39'00		max. Earth dist.	16424 Feb 19 02:09	14° \mathbb{H} 34'24	31.03448 AU
				morning rise	16424 Mar 05 21:12	15° \mathbb{H} 09'27	
conjunction	16418 Feb 04 14:58	1° \mathbb{H} 14'42	0°14'28	retrograde	16424 Jun 03 06:44	17° \mathbb{H} 04'59	
minimum elong	16418 Feb 04 14:58	1° \mathbb{H} 14'42	0°14'50	opposition	16424 Aug 21 01:41	15° \mathbb{H} 41'01	0°19'01
behind sun begin	16418 Feb 04 12:32	1° \mathbb{H} 14'29		min. Earth dist.	16424 Aug 20 19:53	15° \mathbb{H} 41'26	29.04147 AU
behind sun end	16418 Feb 04 17:23	1° \mathbb{H} 14'55		direct	16424 Nov 07 16:23	14° \mathbb{H} 16'50	
max. Earth dist.	16418 Feb 04 23:01	1° \mathbb{H} 15'26	30.97131 AU	evening set	16425 Feb 04 05:57	16° \mathbb{H} 10'58	
morning rise	16418 Feb 20 16:47	1° \mathbb{H} 50'29					
retrograde	16418 May 21 11:53	3° \mathbb{H} 46'43		conjunction	16425 Feb 20 07:39	16° \mathbb{H} 46'35	0°18'01
opposition	16418 Aug 08 07:49	2° \mathbb{H} 22'35	0°15'46	minimum elong	16425 Feb 20 07:39	16° \mathbb{H} 46'35	0°18'14
min. Earth dist.	16418 Aug 07 23:57	2° \mathbb{H} 23'08	28.97554 AU	max. Earth dist.	16425 Feb 20 13:30	16° \mathbb{H} 47'07	31.04856 AU
direct	16418 Oct 25 21:00	0° \mathbb{H} 58'28		morning rise	16425 Mar 08 09:53	17° \mathbb{H} 22'16	
evening set	16419 Jan 22 02:38	2° \mathbb{H} 52'43		retrograde	16425 Jun 05 20:06	19° \mathbb{H} 17'44	
				opposition	16425 Aug 23 12:25	17° \mathbb{H} 53'51	0°19'28
conjunction	16419 Feb 07 03:41	3° \mathbb{H} 28'25	0°15'02	min. Earth dist.	16425 Aug 23 06:17	17° \mathbb{H} 54'16	29.05567 AU
minimum elong	16419 Feb 07 03:41	3° \mathbb{H} 28'25	0°15'23	direct	16425 Nov 10 04:19	16° \mathbb{H} 29'41	
behind sun begin	16419 Feb 07 02:00	3° \mathbb{H} 28'16		evening set	16426 Feb 06 18:33	18° \mathbb{H} 23'51	
behind sun end	16419 Feb 07 05:21	3° \mathbb{H} 28'34					
max. Earth dist.	16419 Feb 07 11:06	3° \mathbb{H} 29'05	30.97974 AU	conjunction	16426 Feb 22 20:21	18° \mathbb{H} 59'28	0°18'25
morning rise	16419 Feb 23 05:38	4° \mathbb{H} 04'11		minimum elong	16426 Feb 22 20:21	18° \mathbb{H} 59'28	0°18'36
retrograde	16419 May 23 23:59	6° \mathbb{H} 00'17		max. Earth dist.	16426 Feb 23 02:16	19° \mathbb{H} 00'01	31.06261 AU
opposition	16419 Aug 10 19:04	4° \mathbb{H} 36'08	0°16'22	morning rise	16426 Mar 10 22:30	19° \mathbb{H} 35'08	
min. Earth dist.	16419 Aug 10 12:26	4° \mathbb{H} 36'36	28.98418 AU	retrograde	16426 Jun 08 07:13	21° \mathbb{H} 30'32	
direct	16419 Oct 28 08:25	3° \mathbb{H} 11'59		opposition	16426 Aug 25 23:22	20° \mathbb{H} 06'44	0°19'53
evening set	16420 Jan 24 15:15	5° \mathbb{H} 06'11		min. Earth dist.	16426 Aug 25 18:47	20° \mathbb{H} 07'03	29.06955 AU
				direct	16426 Nov 12 15:24	18° \mathbb{H} 42'37	
conjunction	16420 Feb 09 16:33	5° \mathbb{H} 41'52	0°15'36	evening set	16427 Feb 09 07:05	20° \mathbb{H} 36'47	
minimum elong	16420 Feb 09 16:33	5° \mathbb{H} 41'52	0°15'55				
max. Earth dist.	16420 Feb 10 00:15	5° \mathbb{H} 42'34	30.98865 AU	conjunction	16427 Feb 25 08:59	21° \mathbb{H} 12'24	0°18'48
morning rise	16420 Feb 25 18:30	6° \mathbb{H} 17'38		minimum elong	16427 Feb 25 08:59	21° \mathbb{H} 12'24	0°18'58
retrograde	16420 May 25 11:01	8° \mathbb{H} 13'35		max. Earth dist.	16427 Feb 25 14:03	21° \mathbb{H} 12'51	31.07616 AU
opposition	16420 Aug 12 05:56	6° \mathbb{H} 49'27	0°16'57	morning rise	16427 Mar 13 11:11	21° \mathbb{H} 48'03	
min. Earth dist.	16420 Aug 11 22:48	6° \mathbb{H} 49'57	28.99335 AU	retrograde	16427 Jun 10 20:28	23° \mathbb{H} 43'22	
direct	16420 Oct 29 21:00	5° \mathbb{H} 25'14		opposition	16427 Aug 28 10:09	22° \mathbb{H} 19'37	0°20'16
evening set	16421 Jan 26 03:58	7° \mathbb{H} 19'24		min. Earth dist.	16427 Aug 28 05:13	22° \mathbb{H} 19'58	29.08252 AU
				direct	16427 Nov 15 04:16	20° \mathbb{H} 55'31	
conjunction	16421 Feb 11 05:13	7° \mathbb{H} 55'04	0°16'08	evening set	16428 Feb 11 19:50	22° \mathbb{H} 49'42	
minimum elong	16421 Feb 11 05:13	7° \mathbb{H} 55'04	0°16'26				
max. Earth dist.	16421 Feb 11 11:49	7° \mathbb{H} 55'40	30.99825 AU	conjunction	16428 Feb 27 21:44	23° \mathbb{H} 25'18	0°19'09
morning rise	16421 Feb 27 07:21	8° \mathbb{H} 30'49		minimum elong	16428 Feb 27 21:44	23° \mathbb{H} 25'18	0°19'16
retrograde	16421 May 27 21:39	10° \mathbb{H} 26'39		max. Earth dist.	16428 Feb 28 01:44	23° \mathbb{H} 25'40	31.08849 AU
opposition	16421 Aug 14 16:59	9° \mathbb{H} 02'31	0°17'30	morning rise	16428 Mar 14 23:56	24° \mathbb{H} 00'57	
min. Earth dist.	16421 Aug 14 10:32	9° \mathbb{H} 02'58	29.00358 AU	retrograde	16428 Jun 12 08:44	25° \mathbb{H} 56'09	
direct	16421 Nov 01 07:20	7° \mathbb{H} 38'18		opposition	16428 Aug 29 20:56	24° \mathbb{H} 32'28	0°20'37
evening set	16422 Jan 28 16:17	9° \mathbb{H} 32'25		min. Earth dist.	16428 Aug 29 17:36	24° \mathbb{H} 32'42	29.09436 AU
				direct	16428 Nov 16 15:33	23° \mathbb{H} 08'22	
conjunction	16422 Feb 13 17:48	10° \mathbb{H} 08'05	0°16'38	evening set	16429 Feb 13 08:23	25° \mathbb{H} 02'33	
minimum elong	16422 Feb 13 17:49	10° \mathbb{H} 08'05	0°16'55				
max. Earth dist.	16422 Feb 14 01:24	10° \mathbb{H} 08'46	31.00904 AU	conjunction	16429 Mar 01 10:26	25° \mathbb{H} 38'08	0°19'28
morning rise	16422 Mar 01 19:49	10° \mathbb{H} 43'48		minimum elong	16429 Mar 01 10:26	25° \mathbb{H} 38'08	0°19'35
retrograde	16422 May 30 07:41	12° \mathbb{H} 39'31		max. Earth dist.	16429 Mar 01 14:14	25° \mathbb{H} 38'29	31.09982 AU
opposition	16422 Aug 17 03:57	11° \mathbb{H} 15'26	0°18'02	morning rise	16429 Mar 17 12:32	26° \mathbb{H} 13'45	
min. Earth dist.	16422 Aug 16 21:25	11° \mathbb{H} 15'53	29.01495 AU	retrograde	16429 Jun 14 19:47	28° \mathbb{H} 08'51	
direct	16422 Nov 03 18:54	9° \mathbb{H} 51'11		opposition	16429 Sep 01 07:38	26° \mathbb{H} 45'12	0°20'57
evening set	16423 Jan 31 04:53	11° \mathbb{H} 45'18		min. Earth dist.	16429 Sep 01 04:09	26° \mathbb{H} 45'27	29.10509 AU
				direct	16429 Nov 19 04:18	25° \mathbb{H} 21'07	
conjunction	16423 Feb 16 06:22	12° \mathbb{H} 20'57	0°17'07	evening set	16430 Feb 15 20:49	27° \mathbb{H} 15'15	
minimum elong	16423 Feb 16 06:22	12° \mathbb{H} 20'57	0°17'23				
max. Earth dist.	16423 Feb 16 12:40	12° \mathbb{H} 21'31	31.02116 AU	conjunction	16430 Mar 03 22:46	27° \mathbb{H} 50'50	0°19'45
morning rise	16423 Mar 04 08:35	12° \mathbb{H} 56'39		minimum elong	16430 Mar 03 22:47	27° \mathbb{H} 50'50	0°19'51
retrograde	16423 Jun 01 20:12	14° \mathbb{H} 52'17		max. Earth dist.	16430 Mar 04 01:07	27° \mathbb{H} 51'03	31.11015 AU
opposition	16423 Aug 19 14:47	13° \mathbb{H} 28'14	0°18'32	morning rise	16430 Mar 20 00:58	28° \mathbb{H} 26'26	
min. Earth dist.	16423 Aug 19 08:11	13° \mathbb{H} 28'42	29.02777 AU		16430 May 12 04:13	0° \mathbb{V}	
direct	16423 Nov 06 04:37	12° \mathbb{H} 04'00		retrograde	16430 Jun 17 06:22	0° \mathbb{V} 21'26	
evening set	16424 Feb 02 17:21	13° \mathbb{H} 58'07			16430 Jul 23 20:48	30° \mathbb{R} \mathbb{H}	

opposition	16430 Sep 03 18:24	28° \mathbf{K} 57'48	0°21'14	conjunction	16437 Mar 19 12:36	13° \mathbf{Y} 15'13	0°20'58
min. Earth dist.	16430 Sep 03 15:56	28° \mathbf{K} 57'58	29.11517 AU	minimum elong	16437 Mar 19 12:36	13° \mathbf{Y} 15'13	0°20'54
direct	16430 Nov 21 14:40	27° \mathbf{K} 33'41		max. Earth dist.	16437 Mar 19 12:46	13° \mathbf{Y} 15'13	31.18825 AU
evening set	16431 Feb 18 09:11	29° \mathbf{K} 27'48		morning rise	16437 Apr 04 14:16	13° \mathbf{Y} 50'40	
	16431 Mar 04 23:06	0° \mathbf{Y}		retrograde	16437 Jul 02 11:06	15° \mathbf{Y} 44'56	
				opposition	16437 Sep 18 19:15	14° \mathbf{Y} 21'35	0°22'25
conjunction	16431 Mar 06 11:21	0° \mathbf{Y} 03'22	0°20'01	min. Earth dist.	16437 Sep 18 19:11	14° \mathbf{Y} 21'35	29.19524 AU
minimum elong	16431 Mar 06 11:21	0° \mathbf{Y} 03'22	0°20'06	direct	16437 Dec 06 20:58	12° \mathbf{Y} 57'28	
max. Earth dist.	16431 Mar 06 14:14	0° \mathbf{Y} 03'38	31.11999 AU	evening set	16438 Mar 05 22:33	14° \mathbf{Y} 51'32	
morning rise	16431 Mar 22 13:22	0° \mathbf{Y} 38'57					
retrograde	16431 Jun 19 15:59	2° \mathbf{Y} 33'49		conjunction	16438 Mar 22 00:38	15° \mathbf{Y} 27'00	0°21'01
opposition	16431 Sep 06 04:51	1° \mathbf{Y} 10'13	0°21'30	minimum elong	16438 Mar 22 00:38	15° \mathbf{Y} 27'00	0°20'54
min. Earth dist.	16431 Sep 06 02:49	1° \mathbf{Y} 10'22	29.12481 AU	max. Earth dist.	16438 Mar 22 00:55	15° \mathbf{Y} 27'01	31.20212 AU
	16431 Oct 25 18:25	30° \mathbf{K} 8'8		morning rise	16438 Apr 07 02:09	16° \mathbf{Y} 02'26	
direct	16431 Nov 24 02:03	29° \mathbf{K} 46'04		retrograde	16438 Jul 04 22:01	17° \mathbf{Y} 56'37	
	16431 Dec 23 00:32	0° \mathbf{Y}		opposition	16438 Sep 21 05:36	16° \mathbf{Y} 33'22	0°22'27
evening set	16432 Feb 20 21:39	1° \mathbf{Y} 40'10		min. Earth dist.	16438 Sep 21 05:24	16° \mathbf{Y} 33'22	29.20883 AU
				direct	16438 Dec 09 09:38	15° \mathbf{Y} 09'16	
conjunction	16432 Mar 07 23:41	2° \mathbf{Y} 15'43	0°20'15	evening set	16439 Mar 08 10:54	17° \mathbf{Y} 03'21	
minimum elong	16432 Mar 07 23:41	2° \mathbf{Y} 15'43	0°20'17				
max. Earth dist.	16432 Mar 08 00:57	2° \mathbf{Y} 15'50	31.12966 AU	conjunction	16439 Mar 24 12:48	17° \mathbf{Y} 38'48	0°21'02
morning rise	16432 Mar 24 01:50	2° \mathbf{Y} 51'17		minimum elong	16439 Mar 24 12:48	17° \mathbf{Y} 38'48	0°20'55
retrograde	16432 Jun 21 03:34	4° \mathbf{Y} 46'02		max. Earth dist.	16439 Mar 24 11:33	17° \mathbf{Y} 38'41	31.21533 AU
opposition	16432 Sep 07 15:20	3° \mathbf{Y} 22'27	0°21'44	morning rise	16439 Apr 09 14:18	18° \mathbf{Y} 14'13	
min. Earth dist.	16432 Sep 07 13:26	3° \mathbf{Y} 22'35	29.13460 AU	retrograde	16439 Jul 07 09:24	20° \mathbf{Y} 08'19	
direct	16432 Nov 25 11:43	1° \mathbf{Y} 58'16		opposition	16439 Sep 23 15:56	18° \mathbf{Y} 45'08	0°22'27
evening set	16433 Feb 22 09:50	3° \mathbf{Y} 52'20		min. Earth dist.	16439 Sep 23 16:52	18° \mathbf{Y} 45'04	29.22163 AU
				direct	16439 Dec 11 19:48	17° \mathbf{Y} 21'04	
conjunction	16433 Mar 10 12:00	4° \mathbf{Y} 27'52	0°20'27	evening set	16440 Mar 09 23:07	19° \mathbf{Y} 15'09	
minimum elong	16433 Mar 10 12:00	4° \mathbf{Y} 27'52	0°20'28				
max. Earth dist.	16433 Mar 10 13:56	4° \mathbf{Y} 28'02	31.13953 AU	conjunction	16440 Mar 26 01:08	19° \mathbf{Y} 50'35	0°21'02
morning rise	16433 Mar 26 13:53	5° \mathbf{Y} 03'25		minimum elong	16440 Mar 26 01:08	19° \mathbf{Y} 50'35	0°20'52
retrograde	16433 Jun 23 12:21	6° \mathbf{Y} 58'03		max. Earth dist.	16440 Mar 26 00:08	19° \mathbf{Y} 50'30	31.22745 AU
opposition	16433 Sep 10 01:48	5° \mathbf{Y} 34'29	0°21'56	morning rise	16440 Apr 11 02:21	20° \mathbf{Y} 25'59	
min. Earth dist.	16433 Sep 10 00:42	5° \mathbf{Y} 34'34	29.14477 AU	retrograde	16440 Jul 08 19:30	22° \mathbf{Y} 19'59	
direct	16433 Nov 27 23:26	4° \mathbf{Y} 10'17		opposition	16440 Sep 25 02:22	20° \mathbf{Y} 56'51	0°22'25
evening set	16434 Feb 24 22:05	6° \mathbf{Y} 04'20		min. Earth dist.	16440 Sep 25 03:59	20° \mathbf{Y} 56'44	29.23299 AU
				direct	16440 Dec 13 07:47	19° \mathbf{Y} 32'47	
conjunction	16434 Mar 13 00:08	6° \mathbf{Y} 39'51	0°20'38	evening set	16441 Mar 12 11:21	21° \mathbf{Y} 26'52	
minimum elong	16434 Mar 13 00:08	6° \mathbf{Y} 39'51	0°20'37				
max. Earth dist.	16434 Mar 13 00:56	6° \mathbf{Y} 39'55	31.15020 AU	conjunction	16441 Mar 28 13:06	22° \mathbf{Y} 02'16	0°20'59
morning rise	16434 Mar 29 02:05	7° \mathbf{Y} 15'22		minimum elong	16441 Mar 28 13:06	22° \mathbf{Y} 02'16	0°20'49
retrograde	16434 Jun 26 00:18	9° \mathbf{Y} 09'54		max. Earth dist.	16441 Mar 28 10:14	22° \mathbf{Y} 02'01	31.23813 AU
opposition	16434 Sep 12 12:07	7° \mathbf{Y} 46'21	0°22'06	morning rise	16441 Apr 13 14:21	22° \mathbf{Y} 37'39	
min. Earth dist.	16434 Sep 12 10:23	7° \mathbf{Y} 46'29	29.15596 AU	retrograde	16441 Jul 11 06:35	24° \mathbf{Y} 31'34	
direct	16434 Nov 30 10:43	6° \mathbf{Y} 22'09		opposition	16441 Sep 27 12:44	23° \mathbf{Y} 08'28	0°22'21
evening set	16435 Feb 27 10:10	8° \mathbf{Y} 16'11		min. Earth dist.	16441 Sep 27 14:40	23° \mathbf{Y} 08'20	29.24303 AU
				direct	16441 Dec 15 18:00	21° \mathbf{Y} 44'23	
conjunction	16435 Mar 15 12:18	8° \mathbf{Y} 51'41	0°20'46	evening set	16442 Mar 14 23:25	23° \mathbf{Y} 38'26	
minimum elong	16435 Mar 15 12:18	8° \mathbf{Y} 51'41	0°20'45				
max. Earth dist.	16435 Mar 15 13:28	8° \mathbf{Y} 51'47	31.16185 AU	conjunction	16442 Mar 31 01:16	24° \mathbf{Y} 13'50	0°20'54
morning rise	16435 Mar 31 14:06	9° \mathbf{Y} 27'11		minimum elong	16442 Mar 31 01:16	24° \mathbf{Y} 13'50	0°20'42
retrograde	16435 Jun 28 10:25	11° \mathbf{Y} 21'37		max. Earth dist.	16442 Mar 30 22:38	24° \mathbf{Y} 13'36	31.24745 AU
opposition	16435 Sep 14 22:36	9° \mathbf{Y} 58'08	0°22'14	morning rise	16442 Apr 16 02:12	24° \mathbf{Y} 49'12	
min. Earth dist.	16435 Sep 14 22:03	9° \mathbf{Y} 58'10	29.16819 AU	retrograde	16442 Jul 13 14:58	26° \mathbf{Y} 43'00	
direct	16435 Dec 02 20:53	8° \mathbf{Y} 33'56		opposition	16442 Sep 29 23:05	25° \mathbf{Y} 19'55	0°22'15
evening set	16436 Feb 29 22:22	10° \mathbf{Y} 27'58		min. Earth dist.	16442 Sep 30 02:16	25° \mathbf{Y} 19'42	29.25172 AU
				direct	16442 Dec 18 05:16	23° \mathbf{Y} 55'50	
conjunction	16436 Mar 17 00:29	11° \mathbf{Y} 03'27	0°20'53	evening set	16443 Mar 17 11:30	25° \mathbf{Y} 49'51	
minimum elong	16436 Mar 17 00:29	11° \mathbf{Y} 03'27	0°20'49				
max. Earth dist.	16436 Mar 17 01:11	11° \mathbf{Y} 03'31	31.17469 AU	conjunction	16443 Apr 02 13:11	26° \mathbf{Y} 25'14	0°20'48
morning rise	16436 Apr 02 02:14	11° \mathbf{Y} 38'56		minimum elong	16443 Apr 02 13:11	26° \mathbf{Y} 25'14	0°20'35
retrograde	16436 Jun 29 22:59	13° \mathbf{Y} 33'16		max. Earth dist.	16443 Apr 02 09:00	26° \mathbf{Y} 24'51	31.25569 AU
opposition	16436 Sep 16 08:47	12° \mathbf{Y} 09'51	0°22'20	morning rise	16443 Apr 18 14:10	27° \mathbf{Y} 00'34	
min. Earth dist.	16436 Sep 16 07:30	12° \mathbf{Y} 09'56	29.18141 AU	retrograde	16443 Jul 16 02:14	28° \mathbf{Y} 54'16	
direct	16436 Dec 04 09:47	10° \mathbf{Y} 45'41		opposition	16443 Oct 02 09:17	27° \mathbf{Y} 31'12	0°22'07
evening set	16437 Mar 03 10:34	12° \mathbf{Y} 39'44		min. Earth dist.	16443 Oct 02 12:14	27° \mathbf{Y} 30'59	29.25945 AU

direct	16443 Dec 20 16:16	26° Υ 07'04		minimum elong	16450 Apr 17 22:30	11° \mathcal{B} 41'02	0°18'53
evening set	16444 Mar 18 23:29	28° Υ 01'04		max. Earth dist.	16450 Apr 17 15:58	11° \mathcal{B} 40'26	31.31158 AU
				morning rise	16450 May 03 22:18	12° \mathcal{B} 16'13	
conjunction	16444 Apr 04 01:08	28° Υ 36'26	0°20'40	retrograde	16450 Jul 31 04:34	14° \mathcal{B} 09'24	
minimum elong	16444 Apr 04 01:08	28° Υ 36'26	0°20'24	opposition	16450 Oct 17 08:13	12° \mathcal{B} 46'37	0°20'21
max. Earth dist.	16444 Apr 03 20:55	28° Υ 36'03	31.26293 AU	min. Earth dist.	16450 Oct 17 13:24	12° \mathcal{B} 46'16	29.31637 AU
morning rise	16444 Apr 20 01:51	29° Υ 11'44		direct	16451 Jan 04 22:41	11° \mathcal{B} 22'32	
	16444 May 13 21:07	0° \mathcal{B}		evening set	16451 Apr 04 09:17	13° \mathcal{B} 16'36	
retrograde	16444 Jul 17 11:32	1° \mathcal{B} 05'20					
	16444 Sep 23 02:22	30° $\mathcal{R}\Upsilon$		conjunction	16451 Apr 20 10:08	13° \mathcal{B} 51'52	0°18'56
opposition	16444 Oct 03 19:31	29° Υ 42'17	0°21'57	minimum elong	16451 Apr 20 10:08	13° \mathcal{B} 51'52	0°18'32
min. Earth dist.	16444 Oct 03 24:00	29° Υ 41'58	29.26646 AU	max. Earth dist.	16451 Apr 20 04:03	13° \mathcal{B} 51'19	31.32084 AU
direct	16444 Dec 22 02:22	28° Υ 18'07		morning rise	16451 May 06 09:35	14° \mathcal{B} 27'03	
	16445 Mar 15 19:08	0° \mathcal{B}			16451 May 22 05:39	15° \mathcal{B}	
evening set	16445 Mar 21 11:21	0° \mathcal{B} 12'06		retrograde	16451 Aug 02 12:39	16° \mathcal{B} 20'11	
					16451 Oct 18 06:12	15° $\mathcal{R}\mathcal{B}$	
conjunction	16445 Apr 06 12:53	0° \mathcal{B} 47'26	0°20'30	opposition	16451 Oct 19 18:28	14° \mathcal{B} 57'29	0°19'59
minimum elong	16445 Apr 06 12:53	0° \mathcal{B} 47'26	0°20'14	min. Earth dist.	16451 Oct 20 00:53	14° \mathcal{B} 57'03	29.32519 AU
max. Earth dist.	16445 Apr 06 08:07	0° \mathcal{B} 47'00	31.26988 AU	direct	16452 Jan 07 09:19	13° \mathcal{B} 33'26	
morning rise	16445 Apr 22 13:30	1° \mathcal{B} 22'44			16452 Mar 23 17:23	15° \mathcal{B}	
retrograde	16445 Jul 19 23:03	3° \mathcal{B} 16'13		evening set	16452 Apr 05 21:04	15° \mathcal{B} 27'31	
opposition	16445 Oct 06 05:38	1° \mathcal{B} 53'11	0°21'46				
min. Earth dist.	16445 Oct 06 09:27	1° \mathcal{B} 52'55	29.27335 AU	conjunction	16452 Apr 21 21:36	16° \mathcal{B} 02'47	0°18'34
direct	16445 Dec 24 15:19	0° \mathcal{B} 28'59		minimum elong	16452 Apr 21 21:37	16° \mathcal{B} 02'47	0°18'08
evening set	16446 Mar 23 23:00	2° \mathcal{B} 22'57		max. Earth dist.	16452 Apr 21 14:03	16° \mathcal{B} 02'05	31.32917 AU
				morning rise	16452 May 07 20:57	16° \mathcal{B} 37'56	
conjunction	16446 Apr 09 00:24	2° \mathcal{B} 58'17	0°20'19	retrograde	16452 Aug 03 23:44	18° \mathcal{B} 31'02	
minimum elong	16446 Apr 09 00:24	2° \mathcal{B} 58'17	0°20'00	opposition	16452 Oct 21 04:35	17° \mathcal{B} 08'23	0°19'34
max. Earth dist.	16446 Apr 08 19:07	2° \mathcal{B} 57'48	31.27681 AU	min. Earth dist.	16452 Oct 21 10:42	17° \mathcal{B} 07'58	29.33289 AU
morning rise	16446 Apr 25 00:52	3° \mathcal{B} 33'32		direct	16453 Jan 08 19:20	15° \mathcal{B} 44'21	
retrograde	16446 Jul 22 10:13	5° \mathcal{B} 26'57		evening set	16453 Apr 08 08:44	17° \mathcal{B} 38'27	
opposition	16446 Oct 08 15:52	4° \mathcal{B} 03'55	0°21'32				
min. Earth dist.	16446 Oct 08 20:44	4° \mathcal{B} 03'35	29.28060 AU	conjunction	16453 Apr 24 09:10	18° \mathcal{B} 13'41	0°18'11
direct	16446 Dec 27 02:27	2° \mathcal{B} 39'42		minimum elong	16453 Apr 24 09:10	18° \mathcal{B} 13'41	0°17'45
evening set	16447 Mar 26 10:41	4° \mathcal{B} 33'41		max. Earth dist.	16453 Apr 24 01:28	18° \mathcal{B} 12'59	31.33610 AU
				morning rise	16453 May 10 08:11	18° \mathcal{B} 48'50	
conjunction	16447 Apr 11 12:04	5° \mathcal{B} 08'59	0°20'05	retrograde	16453 Aug 06 08:56	20° \mathcal{B} 41'53	
minimum elong	16447 Apr 11 12:04	5° \mathcal{B} 08'59	0°19'47	opposition	16453 Oct 23 14:55	19° \mathcal{B} 19'16	0°19'09
max. Earth dist.	16447 Apr 11 07:05	5° \mathcal{B} 08'32	31.28439 AU	min. Earth dist.	16453 Oct 23 22:39	19° \mathcal{B} 18'44	29.33918 AU
morning rise	16447 Apr 27 12:18	5° \mathcal{B} 44'13		direct	16454 Jan 11 04:32	17° \mathcal{B} 55'13	
retrograde	16447 Jul 24 20:21	7° \mathcal{B} 37'33		evening set	16454 Apr 10 20:14	19° \mathcal{B} 49'20	
opposition	16447 Oct 11 01:51	6° \mathcal{B} 14'33	0°21'17				
min. Earth dist.	16447 Oct 11 06:15	6° \mathcal{B} 14'15	29.28849 AU	conjunction	16454 Apr 26 20:32	20° \mathcal{B} 24'33	0°17'46
direct	16447 Dec 29 14:59	4° \mathcal{B} 50'21		minimum elong	16454 Apr 26 20:32	20° \mathcal{B} 24'33	0°17'18
evening set	16448 Mar 27 22:30	6° \mathcal{B} 44'20		max. Earth dist.	16454 Apr 26 12:07	20° \mathcal{B} 23'47	31.34173 AU
				morning rise	16454 May 12 19:25	20° \mathcal{B} 59'40	
conjunction	16448 Apr 12 23:37	7° \mathcal{B} 19'37	0°19'51	retrograde	16454 Aug 08 19:50	22° \mathcal{B} 52'39	
minimum elong	16448 Apr 12 23:37	7° \mathcal{B} 19'37	0°19'30	opposition	16454 Oct 26 01:06	21° \mathcal{B} 30'03	0°18'41
max. Earth dist.	16448 Apr 12 17:32	7° \mathcal{B} 19'04	31.29275 AU	min. Earth dist.	16454 Oct 26 08:26	21° \mathcal{B} 29'33	29.34400 AU
morning rise	16448 Apr 28 23:45	7° \mathcal{B} 54'51		direct	16455 Jan 13 17:39	20° \mathcal{B} 05'59	
retrograde	16448 Jul 26 07:36	9° \mathcal{B} 48'07		evening set	16455 Apr 13 07:54	22° \mathcal{B} 00'05	
opposition	16448 Oct 12 12:03	8° \mathcal{B} 25'10	0°21'00				
min. Earth dist.	16448 Oct 12 16:55	8° \mathcal{B} 24'50	29.29737 AU	conjunction	16455 Apr 29 07:59	22° \mathcal{B} 35'17	0°17'20
direct	16448 Dec 31 01:08	7° \mathcal{B} 01'00		minimum elong	16455 Apr 29 07:59	22° \mathcal{B} 35'17	0°16'52
evening set	16449 Mar 30 09:57	8° \mathcal{B} 55'00		max. Earth dist.	16455 Apr 28 22:35	22° \mathcal{B} 34'26	31.34582 AU
				morning rise	16455 May 15 06:40	23° \mathcal{B} 10'23	
conjunction	16449 Apr 15 11:05	9° \mathcal{B} 30'17	0°19'34	retrograde	16455 Aug 11 06:36	25° \mathcal{B} 03'18	
minimum elong	16449 Apr 15 11:05	9° \mathcal{B} 30'17	0°19'13	opposition	16455 Oct 28 11:16	23° \mathcal{B} 40'42	0°18'12
max. Earth dist.	16449 Apr 15 05:57	9° \mathcal{B} 29'49	31.30198 AU	min. Earth dist.	16455 Oct 28 19:57	23° \mathcal{B} 40'06	29.34754 AU
morning rise	16449 May 01 10:53	10° \mathcal{B} 05'29		direct	16456 Jan 16 04:22	22° \mathcal{B} 16'35	
retrograde	16449 Jul 28 17:30	11° \mathcal{B} 58'42		evening set	16456 Apr 14 19:22	24° \mathcal{B} 10'41	
opposition	16449 Oct 14 22:12	10° \mathcal{B} 35'51	0°20'42				
min. Earth dist.	16449 Oct 15 03:23	10° \mathcal{B} 35'29	29.30677 AU	conjunction	16456 Apr 30 19:23	24° \mathcal{B} 45'52	0°16'52
direct	16450 Jan 02 12:53	9° \mathcal{B} 11'43		minimum elong	16456 Apr 30 19:23	24° \mathcal{B} 45'52	0°16'23
evening set	16450 Apr 01 21:40	11° \mathcal{B} 05'45		max. Earth dist.	16456 Apr 30 10:04	24° \mathcal{B} 45'01	31.34884 AU
				morning rise	16456 May 16 17:46	25° \mathcal{B} 20'56	
conjunction	16450 Apr 17 22:30	11° \mathcal{B} 41'02	0°19'16	retrograde	16456 Aug 12 16:28	27° \mathcal{B} 13'46	

opposition	16456 Oct 29 21:26	25° 8 51'10	0°17'42	conjunction	16462 May 14 13:04	7° II 45'41	0°13'40
min. Earth dist.	16456 Oct 30 05:59	25° 8 50'34	29.35000 AU	minimum elong	16462 May 14 13:04	7° II 45'41	0°13'05
direct	16457 Jan 17 17:00	24° 8 27'00		behind sun begin	16462 May 14 09:13	7° II 45'20	
evening set	16457 Apr 17 06:42	26° 8 21'04		behind sun end	16462 May 14 16:56	7° II 46'01	
				max. Earth dist.	16462 May 14 02:48	7° II 44'44	31.36683 AU
conjunction	16457 May 03 06:22	26° 8 56'14	0°16'23	morning rise	16462 May 30 10:07	8° II 20'39	
minimum elong	16457 May 03 06:22	26° 8 56'14	0°15'54	retrograde	16462 Aug 26 03:10	10° II 13'10	
behind sun begin	16457 May 03 06:00	26° 8 56'12		opposition	16462 Nov 12 10:16	8° II 50'39	0°14'12
behind sun end	16457 May 03 06:44	26° 8 56'16		min. Earth dist.	16462 Nov 12 20:11	8° II 49'58	29.36937 AU
max. Earth dist.	16457 May 02 19:49	26° 8 55'16	31.35099 AU	direct	16463 Jan 31 09:13	7° II 26'26	
morning rise	16457 May 19 04:39	27° 8 31'17		evening set	16463 May 01 01:26	9° II 20'31	
retrograde	16457 Aug 15 03:46	29° 8 24'02					
opposition	16457 Nov 01 07:36	28° 8 01'24	0°17'10	conjunction	16463 May 16 23:59	9° II 55'36	0°13'03
min. Earth dist.	16457 Nov 01 16:42	28° 8 00'46	29.35204 AU	minimum elong	16463 May 16 23:59	9° II 55'36	0°12'29
direct	16458 Jan 20 04:08	26° 8 37'12		behind sun begin	16463 May 16 19:47	9° II 55'14	
evening set	16458 Apr 19 17:53	28° 8 31'14		behind sun end	16463 May 17 04:11	9° II 55'58	
				max. Earth dist.	16463 May 16 13:30	9° II 54'38	31.37173 AU
conjunction	16458 May 05 17:32	29° 8 06'23	0°15'53	morning rise	16463 Jun 01 20:49	10° II 30'33	
minimum elong	16458 May 05 17:32	29° 8 06'23	0°15'22	retrograde	16463 Aug 28 13:44	12° II 23'04	
behind sun begin	16458 May 05 15:46	29° 8 06'13		opposition	16463 Nov 14 20:20	11° II 00'37	0°13'32
behind sun end	16458 May 05 19:19	29° 8 06'32		min. Earth dist.	16463 Nov 15 05:38	10° II 59'59	29.37399 AU
max. Earth dist.	16458 May 05 07:53	29° 8 05'30	31.35292 AU	direct	16464 Feb 02 21:07	9° II 36'27	
morning rise	16458 May 21 15:28	29° 8 41'24		evening set	16464 May 02 12:38	11° II 30'35	
	16458 May 30 09:50	0° II					
retrograde	16458 Aug 17 13:11	1° II 34'04		conjunction	16464 May 18 10:53	12° II 05'39	0°12'26
opposition	16458 Nov 03 17:38	0° II 11'25	0°16'37	minimum elong	16464 May 18 10:53	12° II 05'39	0°11'50
min. Earth dist.	16458 Nov 04 03:06	0° II 10'46	29.35400 AU	behind sun begin	16464 May 18 06:22	12° II 05'15	
	16458 Nov 10 15:33	30° R 8		behind sun end	16464 May 18 15:24	12° II 06'03	
direct	16459 Jan 22 16:57	28° 8 47'11		max. Earth dist.	16464 May 17 23:41	12° II 04'38	31.37598 AU
	16459 Apr 02 02:14	0° II		morning rise	16464 Jun 03 07:28	12° II 40'36	
evening set	16459 Apr 22 05:11	0° II 41'12		retrograde	16464 Aug 30 00:50	14° II 33'08	
				opposition	16464 Nov 16 06:46	13° II 10'44	0°12'51
conjunction	16459 May 08 04:29	1° II 16'19	0°15'22	min. Earth dist.	16464 Nov 16 17:07	13° II 10'01	29.37792 AU
minimum elong	16459 May 08 04:29	1° II 16'19	0°14'51	direct	16465 Feb 04 06:47	11° II 46'36	
behind sun begin	16459 May 08 02:01	1° II 16'06		evening set	16465 May 04 23:35	13° II 40'46	
behind sun end	16459 May 08 06:56	1° II 16'32					
max. Earth dist.	16459 May 07 17:37	1° II 15'20	31.35514 AU	conjunction	16465 May 20 21:42	14° II 15'50	0°11'47
morning rise	16459 May 24 02:21	1° II 51'20		minimum elong	16465 May 20 21:43	14° II 15'50	0°11'12
retrograde	16459 Aug 19 23:33	3° II 43'55		behind sun begin	16465 May 20 16:55	14° II 15'24	
opposition	16459 Nov 06 03:44	2° II 21'16	0°16'03	behind sun end	16465 May 21 02:30	14° II 16'15	
min. Earth dist.	16459 Nov 06 12:42	2° II 20'39	29.35662 AU	max. Earth dist.	16465 May 20 10:50	14° II 14'50	31.37935 AU
direct	16460 Jan 25 03:32	0° II 57'00		morning rise	16465 Jun 05 17:58	14° II 50'45	
evening set	16460 Apr 23 16:14	2° II 51'01		retrograde	16465 Sep 01 10:57	16° II 43'18	
				opposition	16465 Nov 18 17:09	15° II 20'56	0°12'09
conjunction	16460 May 09 15:27	3° II 26'07	0°14'49	min. Earth dist.	16465 Nov 19 03:25	15° II 20'14	29.38057 AU
minimum elong	16460 May 09 15:27	3° II 26'07	0°14'16	direct	16466 Feb 06 18:45	13° II 56'50	
behind sun begin	16460 May 09 12:26	3° II 25'51		evening set	16466 May 07 10:49	15° II 51'03	
behind sun end	16460 May 09 18:28	3° II 26'23					
max. Earth dist.	16460 May 09 05:32	3° II 25'13	31.35808 AU	conjunction	16466 May 23 08:34	16° II 26'05	0°11'07
morning rise	16460 May 25 12:53	4° II 01'07		minimum elong	16466 May 23 08:34	16° II 26'05	0°10'31
retrograde	16460 Aug 21 07:23	5° II 53'39		behind sun begin	16466 May 23 03:30	16° II 25'38	
opposition	16460 Nov 07 13:56	4° II 31'02	0°15'27	behind sun end	16466 May 23 13:38	16° II 26'32	
min. Earth dist.	16460 Nov 07 23:35	4° II 30'22	29.36006 AU	max. Earth dist.	16466 May 22 20:15	16° II 24'58	31.38133 AU
direct	16461 Jan 26 14:19	3° II 06'46		morning rise	16466 Jun 08 04:43	17° II 01'00	
evening set	16461 Apr 26 03:20	5° II 00'47		retrograde	16466 Sep 03 22:57	18° II 53'33	
				opposition	16466 Nov 21 03:27	17° II 31'13	0°11'26
conjunction	16461 May 12 02:15	5° II 35'53	0°14'15	min. Earth dist.	16466 Nov 21 14:20	17° II 30'28	29.38193 AU
minimum elong	16461 May 12 02:15	5° II 35'53	0°13'42	direct	16467 Feb 09 05:37	16° II 07'07	
behind sun begin	16461 May 11 22:48	5° II 35'34		evening set	16467 May 09 21:54	18° II 01'21	
behind sun end	16461 May 12 05:41	5° II 36'11					
max. Earth dist.	16461 May 11 15:35	5° II 34'54	31.36213 AU	conjunction	16467 May 25 19:36	18° II 36'23	0°10'27
morning rise	16461 May 27 23:35	6° II 10'51		minimum elong	16467 May 25 19:36	18° II 36'23	0°09'51
retrograde	16461 Aug 23 18:09	8° II 03'22		behind sun begin	16467 May 25 14:18	18° II 35'55	
opposition	16461 Nov 09 23:59	6° II 40'47	0°14'50	behind sun end	16467 May 26 00:54	18° II 36'52	
min. Earth dist.	16461 Nov 10 08:41	6° II 40'11	29.36450 AU	max. Earth dist.	16467 May 25 07:54	18° II 35'19	31.38190 AU
direct	16462 Jan 29 00:15	5° II 16'33		morning rise	16467 Jun 10 15:20	19° II 11'17	
evening set	16462 Apr 28 14:17	7° II 10'35		retrograde	16467 Sep 06 09:02	21° II 03'49	

opposition	16467 Nov 23 13:57	19°II41'30	0°10'42	conjunction	16473 Jun 07 11:09	1°☿36'52	0°06'09
min. Earth dist.	16467 Nov 24 01:30	19°II40'43	29.38171 AU	minimum elong	16473 Jun 07 11:09	1°☿36'52	0°05'31
direct	16468 Feb 11 18:34	18°II17'25		behind sun begin	16473 Jun 07 04:54	1°☿36'18	
evening set	16468 May 11 09:00	20°II11'39		behind sun end	16473 Jun 07 17:24	1°☿37'25	
				max. Earth dist.	16473 Jun 06 22:11	1°☿35'40	31.36966 AU
conjunction	16468 May 27 06:17	20°II46'41	0°09'46	morning rise	16473 Jun 23 05:33	2°☿11'41	
minimum elong	16468 May 27 06:17	20°II46'41	0°09'08	retrograde	16473 Sep 18 18:44	4°☿04'09	
behind sun begin	16468 May 27 00:46	20°II46'11		opposition	16473 Dec 06 04:45	2°☿41'47	0°06'03
behind sun end	16468 May 27 11:48	20°II47'10		min. Earth dist.	16473 Dec 06 16:28	2°☿40'59	29.36938 AU
max. Earth dist.	16468 May 26 17:09	20°II45'28	31.38106 AU	direct	16474 Feb 24 09:30	1°☿17'35	
morning rise	16468 Jun 12 01:56	21°II21'34		evening set	16474 May 25 01:40	3°☿11'51	
retrograde	16468 Sep 07 19:47	23°II14'05					
opposition	16468 Nov 25 00:21	21°II51'46	0°09'58	conjunction	16474 Jun 09 21:41	3°☿46'48	0°05'24
min. Earth dist.	16468 Nov 25 11:36	21°II51'00	29.38029 AU	minimum elong	16474 Jun 09 21:42	3°☿46'48	0°04'45
direct	16469 Feb 13 05:31	20°II27'39		behind sun begin	16474 Jun 09 15:21	3°☿46'14	
evening set	16469 May 13 19:54	22°II21'54		behind sun end	16474 Jun 10 04:02	3°☿47'22	
				max. Earth dist.	16474 Jun 09 09:38	3°☿45'42	31.36902 AU
conjunction	16469 May 29 17:06	22°II56'55	0°09'03	morning rise	16474 Jun 25 15:47	4°☿21'37	
minimum elong	16469 May 29 17:06	22°II56'55	0°08'27	retrograde	16474 Sep 21 04:39	6°☿14'06	
behind sun begin	16469 May 29 11:24	22°II56'24		opposition	16474 Dec 08 15:10	4°☿51'47	0°05'14
behind sun end	16469 May 29 22:48	22°II57'25		min. Earth dist.	16474 Dec 09 02:28	4°☿51'00	29.36886 AU
max. Earth dist.	16469 May 29 04:35	22°II55'46	31.37906 AU	direct	16475 Feb 26 21:03	3°☿27'36	
morning rise	16469 Jun 14 12:21	23°II31'47		evening set	16475 May 27 12:32	5°☿21'54	
retrograde	16469 Sep 10 03:45	25°II24'16					
opposition	16469 Nov 27 10:49	24°II01'57	0°09'12	conjunction	16475 Jun 12 08:10	5°☿56'50	0°04'38
min. Earth dist.	16469 Nov 27 23:07	24°II01'06	29.37788 AU	minimum elong	16475 Jun 12 08:09	5°☿56'50	0°04'00
direct	16470 Feb 15 16:50	22°II37'48		behind sun begin	16475 Jun 12 01:45	5°☿56'16	
evening set	16470 May 16 06:47	24°II32'02		behind sun end	16475 Jun 12 14:34	5°☿57'24	
				max. Earth dist.	16475 Jun 11 19:07	5°☿55'39	31.36866 AU
conjunction	16470 Jun 01 03:41	25°II07'03	0°08'21	morning rise	16475 Jun 28 02:08	6°☿31'39	
minimum elong	16470 Jun 01 03:41	25°II07'03	0°07'42	retrograde	16475 Sep 23 17:03	8°☿24'11	
behind sun begin	16470 May 31 21:48	25°II06'31		opposition	16475 Dec 11 01:50	7°☿01'53	0°04'25
behind sun end	16470 Jun 01 09:33	25°II07'34		min. Earth dist.	16475 Dec 11 13:12	7°☿01'06	29.36853 AU
max. Earth dist.	16470 May 31 14:20	25°II05'49	31.37645 AU	direct	16476 Feb 29 07:45	5°☿37'44	
morning rise	16470 Jun 16 22:51	25°II41'54		evening set	16476 May 28 23:07	7°☿32'05	
retrograde	16470 Sep 12 14:29	27°II34'22					
opposition	16470 Nov 29 21:10	26°II12'01	0°08'26	conjunction	16476 Jun 13 18:37	8°☿07'01	0°03'51
min. Earth dist.	16470 Nov 30 08:37	26°II11'14	29.37505 AU	minimum elong	16476 Jun 13 18:38	8°☿07'01	0°03'13
direct	16471 Feb 18 03:34	24°II47'50		behind sun begin	16476 Jun 13 12:10	8°☿06'26	
evening set	16471 May 18 17:38	26°II42'04		behind sun end	16476 Jun 14 01:05	8°☿07'35	
				max. Earth dist.	16476 Jun 13 06:44	8°☿05'55	31.36807 AU
conjunction	16471 Jun 03 14:18	27°II17'03	0°07'37	morning rise	16476 Jun 29 12:11	8°☿41'48	
minimum elong	16471 Jun 03 14:18	27°II17'03	0°07'00	retrograde	16476 Sep 25 03:17	10°☿34'23	
behind sun begin	16471 Jun 03 08:17	27°II16'31		opposition	16476 Dec 12 12:38	9°☿12'07	0°03'35
behind sun end	16471 Jun 03 20:19	27°II17'35		min. Earth dist.	16476 Dec 13 00:29	9°☿11'18	29.36758 AU
max. Earth dist.	16471 Jun 03 01:17	27°II15'52	31.37353 AU	direct	16477 Mar 02 20:17	7°☿48'00	
morning rise	16471 Jun 19 09:08	27°II51'54		evening set	16477 May 31 09:58	9°☿42'23	
retrograde	16471 Sep 14 22:42	29°II44'21					
opposition	16471 Dec 02 07:40	28°II21'59	0°07'39	conjunction	16477 Jun 16 05:05	10°☿17'18	0°03'04
min. Earth dist.	16471 Dec 02 20:06	28°II21'08	29.37237 AU	minimum elong	16477 Jun 16 05:04	10°☿17'18	0°02'27
direct	16472 Feb 20 13:01	26°II57'46		behind sun begin	16477 Jun 15 22:36	10°☿16'44	
evening set	16472 May 20 04:24	28°II52'00		behind sun end	16477 Jun 16 11:33	10°☿17'53	
				max. Earth dist.	16477 Jun 15 16:01	10°☿16'06	31.36675 AU
conjunction	16472 Jun 05 00:50	29°II26'58	0°06'53	morning rise	16477 Jul 01 22:34	10°☿52'06	
minimum elong	16472 Jun 05 00:50	29°II26'58	0°06'15	retrograde	16477 Sep 27 14:49	12°☿44'43	
behind sun begin	16472 Jun 04 18:41	29°II26'26		opposition	16477 Dec 14 23:20	11°☿22'27	0°02'45
behind sun end	16472 Jun 05 06:58	29°II27'31		min. Earth dist.	16477 Dec 15 10:42	11°☿21'41	29.36576 AU
max. Earth dist.	16472 Jun 04 12:07	29°II25'48	31.37121 AU	direct	16478 Mar 05 06:59	9°☿58'21	
	16472 Jun 19 23:26	0°☿		evening set	16478 Jun 02 20:42	11°☿52'46	
morning rise	16472 Jun 20 19:25	0°☿01'48					
retrograde	16472 Sep 16 08:12	1°☿54'15		conjunction	16478 Jun 18 15:42	12°☿27'41	0°02'16
opposition	16472 Dec 03 18:09	0°☿31'53	0°06'51	minimum elong	16478 Jun 18 15:43	12°☿27'41	0°01'38
min. Earth dist.	16472 Dec 04 05:25	0°☿31'07	29.37040 AU	behind sun begin	16478 Jun 18 09:13	12°☿27'07	
	16472 Dec 23 14:22	30°☿II		behind sun end	16478 Jun 18 22:12	12°☿28'16	
direct	16473 Feb 22 00:49	29°II07'40		max. Earth dist.	16478 Jun 18 03:12	12°☿26'32	31.36418 AU
	16473 Apr 21 02:48	0°☿		morning rise	16478 Jul 04 08:50	13°☿02'28	
evening set	16473 May 22 15:01	1°☿01'54		retrograde	16478 Sep 30 00:10	14°☿55'07	

opposition	16478 Dec 17 10:19	13°☾32'53	0°01'55	minimum elong	16484 Jul 01 06:19	25°☾30'02	0°03'10
min. Earth dist.	16478 Dec 17 22:48	13°☾32'01	29.36247 AU	behind sun begin	16484 Jun 30 23:52	25°☾29'27	
direct	16479 Mar 07 18:49	12°☾08'47		behind sun end	16484 Jul 01 12:45	25°☾30'36	
evening set	16479 Jun 05 07:35	14°☾03'13		max. Earth dist.	16484 Jun 30 16:37	25°☾28'46	31.32157 AU
				morning rise	16484 Jul 16 22:16	26°☾04'47	
conjunction	16479 Jun 21 02:16	14°☾38'08	0°01'28	retrograde	16484 Oct 12 14:28	27°☾57'38	
minimum elong	16479 Jun 21 02:14	14°☾38'08	0°00'50	opposition	16484 Dec 30 04:26	26°☾35'12	-0°03'06
behind sun begin	16479 Jun 20 19:46	14°☾37'34		min. Earth dist.	16484 Dec 30 16:22	26°☾34'23	29.31754 AU
behind sun end	16479 Jun 21 08:42	14°☾38'42		direct	16485 Mar 20 12:21	25°☾10'58	
max. Earth dist.	16479 Jun 20 12:52	14°☾36'54	31.36018 AU	evening set	16485 Jun 17 23:20	27°☾05'26	
morning rise	16479 Jul 06 19:13	15°☾12'54					
retrograde	16479 Oct 02 11:34	17°☾05'35		conjunction	16485 Jul 03 16:40	27°☾40'18	-0°03'20
opposition	16479 Dec 19 21:12	15°☾43'21	0°01'04	minimum elong	16485 Jul 03 16:41	27°☾40'18	0°03'55
min. Earth dist.	16479 Dec 20 08:55	15°☾42'32	29.35764 AU	behind sun begin	16485 Jul 03 10:17	27°☾39'44	
direct	16480 Mar 09 06:26	14°☾19'15		behind sun end	16485 Jul 03 23:04	27°☾40'52	
evening set	16480 Jun 06 18:24	16°☾13'42		max. Earth dist.	16485 Jul 03 04:30	27°☾39'11	31.31347 AU
				morning rise	16485 Jul 19 08:16	28°☾15'02	
conjunction	16480 Jun 22 12:51	16°☾48'36	0°00'39		16485 Sep 23 06:27	0°♂	
minimum elong	16480 Jun 22 12:51	16°☾48'36	0°00'01	retrograde	16485 Oct 15 00:42	0°♂07'58	
behind sun begin	16480 Jun 22 08:50	16°☾48'16			16485 Nov 06 01:40	30°♂☾	
behind sun end	16480 Jun 22 16:51	16°☾48'56		opposition	16486 Jan 01 15:30	28°☾45'30	-0°03'56
max. Earth dist.	16480 Jun 21 23:26	16°☾47'22	31.35452 AU	min. Earth dist.	16486 Jan 02 03:29	28°☾44'41	29.30987 AU
morning rise	16480 Jul 08 05:32	17°☾23'22		direct	16486 Mar 23 00:35	27°☾21'17	
retrograde	16480 Oct 03 20:30	19°☾16'05		evening set	16486 Jun 20 09:55	29°☾15'47	
opposition	16480 Dec 21 08:20	17°☾53'49	0°00'14				
min. Earth dist.	16480 Dec 21 21:15	17°☾52'56	29.35130 AU	conjunction	16486 Jul 06 02:55	29°☾50'39	-0°04'06
direct	16481 Mar 11 16:28	16°☾29'42		minimum elong	16486 Jul 06 02:54	29°☾50'39	0°04'41
desc. node	16481 Apr 14 09:11	16°☾48'03		behind sun begin	16486 Jul 05 20:34	29°☾50'05	
evening set	16481 Jun 09 05:01	18°☾24'09		behind sun end	16486 Jul 06 09:14	29°☾51'13	
				max. Earth dist.	16486 Jul 05 14:06	29°☾49'28	31.30633 AU
conjunction	16481 Jun 24 23:15	18°☾59'03	-0°00'10		16486 Jul 10 07:07	0°♂	
minimum elong	16481 Jun 24 23:17	18°☾59'03	0°00'47	morning rise	16486 Jul 21 18:28	0°♂125'24	
behind sun begin	16481 Jun 24 16:49	18°☾58'28		retrograde	16486 Oct 17 12:36	2°♂18'24	
behind sun end	16481 Jun 25 05:44	18°☾59'37		opposition	16487 Jan 04 02:36	0°♂155'56	-0°04'45
max. Earth dist.	16481 Jun 24 09:58	18°☾57'49	31.34752 AU	min. Earth dist.	16487 Jan 04 13:29	0°♂155'12	29.30309 AU
morning rise	16481 Jul 10 15:47	19°☾33'49			16487 Feb 10 08:30	30°♂☾	
retrograde	16481 Oct 06 06:05	21°☾26'33		direct	16487 Mar 25 11:13	29°☾31'44	
opposition	16481 Dec 23 19:17	20°☾04'15	-0°00'37		16487 May 06 10:34	0°♂	
min. Earth dist.	16481 Dec 24 07:29	20°☾03'25	29.34354 AU	evening set	16487 Jun 22 20:21	1°♂126'18	
direct	16482 Mar 14 04:29	18°☾40'07					
evening set	16482 Jun 11 15:48	20°☾34'33		conjunction	16487 Jul 08 13:13	2°♂01'10	-0°04'52
				minimum elong	16487 Jul 08 13:13	2°♂01'10	0°05'26
conjunction	16482 Jun 27 09:45	21°☾09'27	-0°00'59	behind sun begin	16487 Jul 08 06:58	2°♂00'37	
minimum elong	16482 Jun 27 09:45	21°☾09'27	0°01'36	behind sun end	16487 Jul 08 19:27	2°♂01'43	
behind sun begin	16482 Jun 27 03:16	21°☾08'52		max. Earth dist.	16487 Jul 08 01:31	2°♂00'05	31.29977 AU
behind sun end	16482 Jun 27 16:13	21°☾10'01		morning rise	16487 Jul 24 04:26	2°♂135'55	
max. Earth dist.	16482 Jun 26 19:45	21°☾08'09	31.33922 AU	retrograde	16487 Oct 19 22:35	4°♂129'00	
morning rise	16482 Jul 13 02:06	21°☾44'12		opposition	16488 Jan 06 13:55	3°♂06'33	-0°05'34
retrograde	16482 Oct 08 16:33	23°☾36'59		min. Earth dist.	16488 Jan 07 01:24	3°♂05'46	29.29672 AU
opposition	16482 Dec 26 06:14	22°☾14'37	-0°01'27	direct	16488 Mar 26 23:18	1°♂142'24	
min. Earth dist.	16482 Dec 26 19:07	22°☾13'45	29.33493 AU	evening set	16488 Jun 24 06:55	3°♂137'00	
direct	16483 Mar 16 13:35	20°☾50'26					
evening set	16483 Jun 14 02:23	22°☾44'53		conjunction	16488 Jul 09 23:28	4°♂11'52	-0°05'37
				minimum elong	16488 Jul 09 23:29	4°♂11'52	0°06'11
conjunction	16483 Jun 29 20:12	23°☾19'46	-0°01'47	behind sun begin	16488 Jul 09 17:21	4°♂11'20	
minimum elong	16483 Jun 29 20:13	23°☾19'46	0°02'22	behind sun end	16488 Jul 10 05:36	4°♂12'25	
behind sun begin	16483 Jun 29 13:45	23°☾19'11		max. Earth dist.	16488 Jul 09 11:35	4°♂10'47	31.29359 AU
behind sun end	16483 Jun 30 02:41	23°☾20'20		morning rise	16488 Jul 25 14:36	4°♂146'37	
max. Earth dist.	16483 Jun 29 07:11	23°☾18'34	31.33038 AU	retrograde	16488 Oct 21 10:58	6°♂139'48	
morning rise	16483 Jul 15 12:14	23°☾54'31		opposition	16489 Jan 08 01:09	5°♂17'22	-0°06'22
retrograde	16483 Oct 11 02:14	25°☾47'19		min. Earth dist.	16489 Jan 08 11:26	5°♂16'40	29.29045 AU
opposition	16483 Dec 28 17:19	24°☾24'56	-0°02'17	direct	16489 Mar 29 11:07	3°♂153'15	
min. Earth dist.	16483 Dec 29 05:40	24°☾24'05	29.32596 AU	evening set	16489 Jun 26 17:23	5°♂147'54	
direct	16484 Mar 18 01:36	23°☾00'43					
evening set	16484 Jun 15 12:54	24°☾55'10		conjunction	16489 Jul 12 09:46	6°♂122'46	-0°06'22
				minimum elong	16489 Jul 12 09:46	6°♂122'46	0°06'54
conjunction	16484 Jul 01 06:19	25°☾30'02	-0°02'34	behind sun begin	16489 Jul 12 03:45	6°♂122'14	

behind sun end	16489 Jul 12 15:46	6°Ω23'19		morning rise	16494 Aug 08 04:07	17°Ω53'47	
max. Earth dist.	16489 Jul 11 22:09	6°Ω21'42	31.28707 AU	retrograde	16494 Nov 04 01:11	19°Ω47'26	
morning rise	16489 Jul 28 00:41	6°Ω57'32		opposition	16495 Jan 21 22:37	18°Ω24'49	-0°10'59
retrograde	16489 Oct 23 20:12	8°Ω50'49		min. Earth dist.	16495 Jan 22 09:34	18°Ω24'04	29.23294 AU
opposition	16490 Jan 10 12:39	7°Ω28'23	-0°07'10	direct	16495 Apr 12 04:45	17°Ω00'39	
min. Earth dist.	16490 Jan 10 23:54	7°Ω27'37	29.28370 AU	evening set	16495 Jul 10 09:13	18°Ω55'21	
direct	16490 Mar 31 21:16	6°Ω04'18					
evening set	16490 Jun 29 04:02	7°Ω58'59		conjunction	16495 Jul 26 00:19	19°Ω30'13	-0°10'38
				minimum elong	16495 Jul 26 00:19	19°Ω30'13	0°11'05
conjunction	16490 Jul 14 20:13	8°Ω33'51	-0°07'06	behind sun begin	16495 Jul 25 19:28	19°Ω29'47	
minimum elong	16490 Jul 14 20:14	8°Ω33'51	0°07'38	behind sun end	16495 Jul 26 05:10	19°Ω30'39	
behind sun begin	16490 Jul 14 14:22	8°Ω33'20		max. Earth dist.	16495 Jul 25 12:48	19°Ω29'09	31.22647 AU
behind sun end	16490 Jul 15 02:05	8°Ω34'23		morning rise	16495 Aug 10 14:23	20°Ω04'59	
max. Earth dist.	16490 Jul 14 09:01	8°Ω32'49	31.27993 AU	retrograde	16495 Nov 06 13:21	21°Ω58'42	
morning rise	16490 Jul 30 10:57	9°Ω08'37		opposition	16496 Jan 24 10:18	20°Ω35'59	-0°11'42
retrograde	16490 Oct 26 05:52	11°Ω01'59		min. Earth dist.	16496 Jan 24 20:08	20°Ω35'18	29.22006 AU
opposition	16491 Jan 12 23:58	9°Ω39'33	-0°07'58	direct	16496 Apr 13 16:05	19°Ω11'46	
min. Earth dist.	16491 Jan 13 10:24	9°Ω38'51	29.27598 AU	evening set	16496 Jul 11 19:40	21°Ω06'28	
direct	16491 Apr 03 09:02	8°Ω15'29					
evening set	16491 Jul 01 14:48	10°Ω10'12		conjunction	16496 Jul 27 10:41	21°Ω41'19	-0°11'17
				minimum elong	16496 Jul 27 10:41	21°Ω41'19	0°11'44
conjunction	16491 Jul 17 06:40	10°Ω45'05	-0°07'50	behind sun begin	16496 Jul 27 06:06	21°Ω40'54	
minimum elong	16491 Jul 17 06:40	10°Ω45'05	0°08'21	behind sun end	16496 Jul 27 15:16	21°Ω41'43	
behind sun begin	16491 Jul 17 00:57	10°Ω44'34		max. Earth dist.	16496 Jul 27 00:18	21°Ω40'21	31.21360 AU
behind sun end	16491 Jul 17 12:22	10°Ω45'35		morning rise	16496 Aug 12 00:29	22°Ω16'05	
max. Earth dist.	16491 Jul 16 18:46	10°Ω43'59	31.27164 AU	retrograde	16496 Nov 07 23:59	24°Ω09'51	
morning rise	16491 Aug 01 21:16	11°Ω19'51		opposition	16497 Jan 25 22:07	22°Ω47'03	-0°12'24
retrograde	16491 Oct 28 16:55	13°Ω13'18		min. Earth dist.	16497 Jan 26 08:22	22°Ω46'21	29.20751 AU
opposition	16492 Jan 15 11:39	11°Ω50'51	-0°08'44	direct	16497 Apr 16 04:52	21°Ω22'49	
min. Earth dist.	16492 Jan 15 22:36	11°Ω50'06	29.26718 AU	evening set	16497 Jul 14 06:05	23°Ω17'29	
direct	16492 Apr 04 17:47	10°Ω26'47					
evening set	16492 Jul 03 01:18	12°Ω21'30		conjunction	16497 Jul 29 20:53	23°Ω52'21	-0°11'56
				minimum elong	16497 Jul 29 20:54	23°Ω52'21	0°12'21
conjunction	16492 Jul 18 17:06	12°Ω56'23	-0°08'33	behind sun begin	16497 Jul 29 16:36	23°Ω51'58	
minimum elong	16492 Jul 18 17:06	12°Ω56'23	0°09'04	behind sun end	16497 Jul 30 01:11	23°Ω52'44	
behind sun begin	16492 Jul 18 11:35	12°Ω55'53		max. Earth dist.	16497 Jul 29 10:43	23°Ω51'24	31.20153 AU
behind sun end	16492 Jul 18 22:37	12°Ω56'52		morning rise	16497 Aug 14 10:40	24°Ω27'07	
max. Earth dist.	16492 Jul 18 06:07	12°Ω55'22	31.26216 AU	retrograde	16497 Nov 10 12:15	26°Ω20'58	
morning rise	16492 Aug 03 07:25	13°Ω31'09		opposition	16498 Jan 28 09:49	24°Ω58'06	-0°13'05
	16492 Sep 21 13:43	15°Ω		min. Earth dist.	16498 Jan 28 18:25	24°Ω57'31	29.19589 AU
retrograde	16492 Oct 30 02:54	15°Ω24'41		direct	16498 Apr 18 17:29	23°Ω33'50	
	16492 Dec 08 21:56	15°℞Ω		evening set	16498 Jul 16 16:36	25°Ω28'32	
opposition	16493 Jan 16 23:19	14°Ω02'12	-0°09'30				
min. Earth dist.	16493 Jan 17 09:58	14°Ω01'28	29.25694 AU	conjunction	16498 Aug 01 07:13	26°Ω03'23	-0°12'34
direct	16493 Apr 07 06:11	12°Ω38'07		minimum elong	16498 Aug 01 07:13	26°Ω03'23	0°12'58
evening set	16493 Jul 05 12:03	14°Ω32'51		behind sun begin	16498 Aug 01 03:15	26°Ω03'02	
	16493 Jul 17 17:10	15°Ω		behind sun end	16498 Aug 01 11:11	26°Ω03'45	
				max. Earth dist.	16498 Jul 31 21:37	26°Ω02'30	31.19039 AU
conjunction	16493 Jul 21 03:31	15°Ω07'43	-0°09'16	morning rise	16498 Aug 16 20:50	26°Ω38'10	
minimum elong	16493 Jul 21 03:30	15°Ω07'43	0°09'44	retrograde	16498 Nov 12 22:02	28°Ω32'07	
behind sun begin	16493 Jul 20 22:11	15°Ω07'14		opposition	16499 Jan 30 21:39	27°Ω09'13	-0°13'45
behind sun end	16493 Jul 21 08:49	15°Ω08'11		min. Earth dist.	16499 Jan 31 06:41	27°Ω08'36	29.18539 AU
max. Earth dist.	16493 Jul 20 15:27	15°Ω06'36	31.25130 AU	direct	16499 Apr 21 04:04	25°Ω44'58	
morning rise	16493 Aug 05 17:51	15°Ω42'29		evening set	16499 Jul 19 03:04	27°Ω39'41	
retrograde	16493 Nov 01 15:04	17°Ω36'05					
opposition	16494 Jan 19 10:51	16°Ω13'32	-0°10'15	conjunction	16499 Aug 03 17:34	28°Ω14'33	-0°13'11
min. Earth dist.	16494 Jan 19 21:26	16°Ω12'49	29.24551 AU	minimum elong	16499 Aug 03 17:35	28°Ω14'33	0°13'33
	16494 Mar 14 22:28	15°℞Ω		behind sun begin	16499 Aug 03 13:58	28°Ω14'13	
direct	16494 Apr 09 16:37	14°Ω49'25		behind sun end	16499 Aug 03 21:11	28°Ω14'52	
	16494 May 05 03:51	15°Ω		max. Earth dist.	16499 Aug 03 09:03	28°Ω13'45	31.18048 AU
evening set	16494 Jul 07 22:38	16°Ω44'09		morning rise	16499 Aug 19 07:03	28°Ω49'20	
					16499 Sep 24 14:50	0°℞	
conjunction	16494 Jul 23 14:05	17°Ω19'01	-0°09'57	retrograde	16499 Nov 15 08:26	0°℞43'23	
minimum elong	16494 Jul 23 14:05	17°Ω19'01	0°10'26		16500 Jan 08 07:23	30°℞Ω	
behind sun begin	16494 Jul 23 09:00	17°Ω18'33		opposition	16500 Feb 02 09:32	29°Ω20'28	-0°14'23
behind sun end	16494 Jul 23 19:10	17°Ω19'28		min. Earth dist.	16500 Feb 02 17:08	29°Ω19'57	29.17584 AU
max. Earth dist.	16494 Jul 23 03:10	17°Ω18'00	31.23926 AU	direct	16500 Apr 23 16:13	27°Ω56'16	

evening set	16500 Jul 21 13:30	29°05'10"	min. Earth dist.	16506 Feb 16 17:32	12°03'22"	29.11654 AU
	16500 Jul 25 15:09	0°00'	direct	16506 May 07 10:35	11°00'08"	49
			evening set	16506 Aug 04 05:53	13°00'03"	46
conjunction	16500 Aug 06 03:46	0°00'25"53 -0°13'46"				
minimum elong	16500 Aug 06 03:45	0°00'25"53 0°14'08"	conjunction	16506 Aug 19 19:25	13°00'38"41 -0°16'54"	
behind sun begin	16500 Aug 06 00:33	0°00'25"36	minimum elong	16506 Aug 19 19:25	13°00'38"41 0°17'09"	
behind sun end	16500 Aug 06 06:58	0°00'26"10	max. Earth dist.	16506 Aug 19 12:33	13°00'38"03 31.11005 AU	
max. Earth dist.	16500 Aug 05 19:04	0°00'25"05 31.17131 AU	morning rise	16506 Sep 04 08:25	14°00'13"35	
morning rise	16500 Aug 21 17:14	1°00'00"41	retrograde	16506 Dec 01 20:41	16°00'08"30	
retrograde	16500 Nov 17 20:00	2°00'54"52	opposition	16507 Feb 18 23:01	14°00'45"27 -0°18'18"	
opposition	16501 Feb 04 21:33	1°00'31"57 -0°15'01"	min. Earth dist.	16507 Feb 19 04:37	14°00'45"04 29.10333 AU	
min. Earth dist.	16501 Feb 05 05:13	1°00'31"25 29.16700 AU	direct	16507 May 09 23:46	13°00'21"25	
direct	16501 Apr 26 01:18	0°00'07"47	evening set	16507 Aug 06 16:44	15°00'16"22	
evening set	16501 Jul 24 00:00	2°00'02"34				
conjunction	16501 Aug 08 14:16	2°00'37"27 -0°14'21"	conjunction	16507 Aug 22 06:09	15°00'51"18 -0°17'21"	
minimum elong	16501 Aug 08 14:16	2°00'37"27 0°14'41"	minimum elong	16507 Aug 22 06:09	15°00'51"18 0°17'33"	
behind sun begin	16501 Aug 08 11:31	2°00'37"12	max. Earth dist.	16507 Aug 21 23:30	15°00'50"41 31.09641 AU	
behind sun end	16501 Aug 08 17:01	2°00'37"42	morning rise	16507 Sep 06 19:08	16°00'26"12	
max. Earth dist.	16501 Aug 08 06:56	2°00'36"46 31.16258 AU	retrograde	16507 Dec 04 07:12	18°00'21"13	
morning rise	16501 Aug 24 03:32	3°00'12"16	opposition	16508 Feb 21 11:35	16°00'58"04 -0°18'45"	
retrograde	16501 Nov 20 06:19	5°00'06"35	min. Earth dist.	16508 Feb 21 17:51	16°00'57"38 29.08952 AU	
opposition	16502 Feb 07 09:27	3°00'43"40 -0°15'37"	direct	16508 May 11 11:13	15°00'34"01	
min. Earth dist.	16502 Feb 07 16:34	3°00'43"11 29.15819 AU	evening set	16508 Aug 08 03:18	17°00'28"56	
direct	16502 Apr 28 13:20	2°00'19"33				
evening set	16502 Jul 26 10:47	4°00'14"23	conjunction	16508 Aug 23 16:44	18°00'03"52 -0°17'45"	
conjunction	16502 Aug 11 00:44	4°00'49"16 -0°14'54"	minimum elong	16508 Aug 23 16:44	18°00'03"52 0°17'57"	
minimum elong	16502 Aug 11 00:44	4°00'49"16 0°15'14"	max. Earth dist.	16508 Aug 23 11:08	18°00'03"21 31.08257 AU	
behind sun begin	16502 Aug 10 22:33	4°00'49"04	morning rise	16508 Sep 08 05:39	18°00'38"47	
behind sun end	16502 Aug 11 02:55	4°00'49"28	retrograde	16508 Dec 05 18:16	20°00'33"52	
max. Earth dist.	16502 Aug 10 16:39	4°00'48"31 31.15372 AU	opposition	16509 Feb 22 23:58	19°00'10"39 -0°19'10"	
morning rise	16502 Aug 26 14:04	5°00'24"07	min. Earth dist.	16509 Feb 23 04:53	19°00'10"19 29.07570 AU	
retrograde	16502 Nov 22 19:08	7°00'18"33	direct	16509 May 14 00:49	17°00'46"34	
opposition	16503 Feb 09 21:38	5°00'55"38 -0°16'12"	evening set	16509 Aug 10 14:08	19°00'41"28	
min. Earth dist.	16503 Feb 10 04:22	5°00'55"11 29.14918 AU	conjunction	16509 Aug 26 03:21	20°00'16"25 -0°18'09"	
direct	16503 Apr 30 23:07	4°00'31"34	minimum elong	16509 Aug 26 03:21	20°00'16"25 0°18'18"	
evening set	16503 Jul 28 21:22	6°00'26"27	max. Earth dist.	16509 Aug 25 21:33	20°00'15"53 31.06900 AU	
conjunction	16503 Aug 13 11:19	7°00'01"21 -0°15'27"	morning rise	16509 Sep 10 16:22	20°00'51"21	
minimum elong	16503 Aug 13 11:19	7°00'01"21 0°15'44"	retrograde	16509 Dec 08 06:09	22°00'46"31	
behind sun begin	16503 Aug 13 09:52	7°00'01"13	opposition	16510 Feb 25 12:21	21°00'23"13 -0°19'34"	
behind sun end	16503 Aug 13 12:46	7°00'01"28	min. Earth dist.	16510 Feb 25 17:13	21°00'22"53 29.06266 AU	
max. Earth dist.	16503 Aug 13 04:37	7°00'00"44 31.14431 AU	direct	16510 May 16 11:19	19°00'59"07	
morning rise	16503 Aug 29 00:23	7°00'36"11	evening set	16510 Aug 13 00:50	21°00'54"01	
retrograde	16503 Nov 25 06:00	9°00'30"47	conjunction	16510 Aug 28 14:07	22°00'28"58 -0°18'30"	
opposition	16504 Feb 12 10:00	8°00'07"51 -0°16'46"	minimum elong	16510 Aug 28 14:07	22°00'28"58 0°18'39"	
min. Earth dist.	16504 Feb 12 16:59	8°00'07"23 29.13935 AU	max. Earth dist.	16510 Aug 28 09:57	22°00'28"35 31.05645 AU	
direct	16504 May 02 10:28	6°00'43"50	morning rise	16510 Sep 13 02:57	23°00'03"54	
evening set	16504 Jul 30 08:15	8°00'38"44	retrograde	16510 Dec 10 15:54	24°00'59"11	
conjunction	16504 Aug 14 21:55	9°00'13"38 -0°15'57"	opposition	16511 Feb 28 00:53	23°00'35"49 -0°19'57"	
minimum elong	16504 Aug 14 21:55	9°00'13"38 0°16'15"	min. Earth dist.	16511 Feb 28 04:43	23°00'35"33 29.05061 AU	
max. Earth dist.	16504 Aug 14 14:32	9°00'12"57 31.13409 AU	direct	16511 May 19 00:08	22°00'11"44	
morning rise	16504 Aug 30 11:05	9°00'48"30	evening set	16511 Aug 15 11:33	24°00'06"37	
retrograde	16504 Nov 26 19:23	11°00'43"13	conjunction	16511 Aug 31 00:36	24°00'41"34 -0°18'50"	
opposition	16505 Feb 13 22:14	10°00'20"16 -0°17'18"	minimum elong	16511 Aug 31 00:36	24°00'41"34 0°18'57"	
min. Earth dist.	16505 Feb 14 04:17	10°00'19"51 29.12862 AU	max. Earth dist.	16511 Aug 30 20:07	24°00'41"09 31.04504 AU	
direct	16505 May 04 21:28	8°00'56"15	morning rise	16511 Sep 15 13:37	25°00'16"32	
evening set	16505 Aug 01 19:01	10°00'51"12	retrograde	16511 Dec 13 03:54	27°00'11"55	
conjunction	16505 Aug 17 08:42	11°00'26"07 -0°16'27"	opposition	16512 Mar 01 13:30	25°00'48"31 -0°20'17"	
minimum elong	16505 Aug 17 08:42	11°00'26"07 0°16'42"	min. Earth dist.	16512 Mar 01 16:30	25°00'48"19 29.03983 AU	
max. Earth dist.	16505 Aug 17 02:00	11°00'25"30 31.12264 AU	direct	16512 May 20 09:58	24°00'24"26	
morning rise	16505 Sep 01 21:42	12°00'00"59	evening set	16512 Aug 16 22:16	26°00'19"20	
retrograde	16505 Nov 29 07:25	13°00'55"49	conjunction	16512 Sep 01 11:26	26°00'54"18 -0°19'09"	
opposition	16506 Feb 16 10:43	12°00'32"50 -0°17'49"	minimum elong	16512 Sep 01 11:26	26°00'54"18 0°19'15"	
			max. Earth dist.	16512 Sep 01 08:41	26°00'54"03 31.03470 AU	

morning rise	16512 Sep 17 00:18	27° <u>0</u> 29'17	direct	16519 Jun 05 21:52	9° <u>0</u> 58'08	
retrograde	16512 Dec 14 14:42	29° <u>0</u> 24'48	evening set	16519 Sep 02 03:43	11° <u>0</u> 53'07	
opposition	16513 Mar 04 02:04	28° <u>0</u> 01'22 -0°20'36				
min. Earth dist.	16513 Mar 04 04:59	28° <u>0</u> 01'10 29.02988 AU	conjunction	16519 Sep 17 16:46	12° <u>0</u> 28'11 -0°20'27	
direct	16513 May 22 20:55	26° <u>0</u> 37'19	minimum elong	16519 Sep 17 16:46	12° <u>0</u> 28'11 0°20'23	
evening set	16513 Aug 19 09:09	28° <u>0</u> 32'13	max. Earth dist.	16519 Sep 17 16:28	12° <u>0</u> 28'09 30.96066 AU	
			morning rise	16519 Oct 03 05:59	13° <u>0</u> 03'18	
conjunction	16513 Sep 03 22:10	29° <u>0</u> 07'12 -0°19'25	retrograde	16519 Dec 31 06:48	14° <u>0</u> 59'37	
minimum elong	16513 Sep 03 22:10	29° <u>0</u> 07'12 0°19'29	opposition	16520 Mar 19 20:27	13° <u>0</u> 35'53 -0°21'53	
max. Earth dist.	16513 Sep 03 19:10	29° <u>0</u> 06'55 31.02517 AU	min. Earth dist.	16520 Mar 19 20:41	13° <u>0</u> 35'52 28.95381 AU	
morning rise	16513 Sep 19 11:13	29° <u>0</u> 42'12	direct	16520 Jun 07 11:27	12° <u>0</u> 11'56	
	16513 Sep 27 15:43	0° <u>0</u>	evening set	16520 Sep 03 15:00	14° <u>0</u> 06'53	
retrograde	16513 Dec 17 04:13	1° <u>0</u> 37'50				
opposition	16514 Mar 06 14:42	0° <u>0</u> 14'23 -0°20'53	conjunction	16520 Sep 19 03:56	14° <u>0</u> 41'57 -0°20'31	
min. Earth dist.	16514 Mar 06 16:20	0° <u>0</u> 14'16 29.02054 AU	minimum elong	16520 Sep 19 03:56	14° <u>0</u> 41'57 0°20'26	
	16514 Mar 15 09:13	30° <u>0</u> 09'00	max. Earth dist.	16520 Sep 19 02:58	14° <u>0</u> 41'52 30.94695 AU	
direct	16514 May 25 08:03	28° <u>0</u> 50'21	morning rise	16520 Oct 04 17:26	15° <u>0</u> 17'06	
	16514 Jul 31 02:00	0° <u>0</u>	retrograde	16521 Jan 01 19:05	17° <u>0</u> 13'29	
evening set	16514 Aug 21 20:01	0° <u>0</u> 45'18	opposition	16521 Mar 22 09:20	15° <u>0</u> 49'40 -0°21'56	
			min. Earth dist.	16521 Mar 22 09:07	15° <u>0</u> 49'41 28.94013 AU	
conjunction	16514 Sep 06 09:03	1° <u>0</u> 20'17 -0°19'40	direct	16521 Jun 09 22:11	14° <u>0</u> 25'40	
minimum elong	16514 Sep 06 09:03	1° <u>0</u> 20'17 0°19'43	evening set	16521 Sep 06 02:06	16° <u>0</u> 20'36	
max. Earth dist.	16514 Sep 06 07:07	1° <u>0</u> 20'06 31.01583 AU				
morning rise	16514 Sep 21 22:01	1° <u>0</u> 55'18	conjunction	16521 Sep 21 15:13	16° <u>0</u> 55'42 -0°20'33	
retrograde	16514 Dec 19 16:26	3° <u>0</u> 51'04	minimum elong	16521 Sep 21 15:13	16° <u>0</u> 55'42 0°20'26	
opposition	16515 Mar 09 03:34	2° <u>0</u> 27'35 -0°21'08	max. Earth dist.	16521 Sep 21 15:51	16° <u>0</u> 55'45 30.93333 AU	
min. Earth dist.	16515 Mar 09 05:40	2° <u>0</u> 27'26 29.01123 AU	morning rise	16521 Oct 07 04:40	17° <u>0</u> 30'51	
direct	16515 May 27 20:11	1° <u>0</u> 03'36	retrograde	16522 Jan 04 05:57	19° <u>0</u> 27'20	
evening set	16515 Aug 24 07:03	2° <u>0</u> 58'34	opposition	16522 Mar 24 22:22	18° <u>0</u> 03'26 -0°21'57	
			min. Earth dist.	16522 Mar 24 21:59	18° <u>0</u> 03'28 28.92681 AU	
conjunction	16515 Sep 08 20:01	3° <u>0</u> 33'34 -0°19'53	direct	16522 Jun 12 10:00	16° <u>0</u> 39'25	
minimum elong	16515 Sep 08 20:01	3° <u>0</u> 33'34 0°19'55	evening set	16522 Sep 08 13:17	18° <u>0</u> 34'20	
max. Earth dist.	16515 Sep 08 18:15	3° <u>0</u> 33'24 31.00653 AU				
morning rise	16515 Sep 24 09:04	4° <u>0</u> 08'36	conjunction	16522 Sep 24 02:17	19° <u>0</u> 09'26 -0°20'34	
retrograde	16515 Dec 22 06:09	6° <u>0</u> 04'30	minimum elong	16522 Sep 24 02:17	19° <u>0</u> 09'26 0°20'25	
opposition	16516 Mar 10 16:23	4° <u>0</u> 40'59 -0°21'21	max. Earth dist.	16522 Sep 24 02:49	19° <u>0</u> 09'29 30.92053 AU	
min. Earth dist.	16516 Mar 10 17:05	4° <u>0</u> 40'56 29.00170 AU	morning rise	16522 Oct 09 15:56	19° <u>0</u> 44'37	
direct	16516 May 29 08:34	3° <u>0</u> 17'02	retrograde	16523 Jan 06 19:03	21° <u>0</u> 41'11	
evening set	16516 Aug 25 18:06	5° <u>0</u> 12'01	opposition	16523 Mar 27 11:19	20° <u>0</u> 17'14 -0°21'56	
			min. Earth dist.	16523 Mar 27 09:29	20° <u>0</u> 17'21 28.91461 AU	
conjunction	16516 Sep 10 07:02	5° <u>0</u> 47'02 -0°20'05	direct	16523 Jun 14 21:28	18° <u>0</u> 53'12	
minimum elong	16516 Sep 10 07:01	5° <u>0</u> 47'02 0°20'05	evening set	16523 Sep 11 00:24	20° <u>0</u> 48'07	
max. Earth dist.	16516 Sep 10 05:26	5° <u>0</u> 46'53 30.99660 AU				
morning rise	16516 Sep 25 20:09	6° <u>0</u> 22'05	conjunction	16523 Sep 26 13:32	21° <u>0</u> 23'14 -0°20'32	
retrograde	16516 Dec 23 18:29	8° <u>0</u> 18'07	minimum elong	16523 Sep 26 13:32	21° <u>0</u> 23'14 0°20'22	
opposition	16517 Mar 13 05:25	6° <u>0</u> 54'34 -0°21'32	max. Earth dist.	16523 Sep 26 15:21	21° <u>0</u> 23'24 30.90889 AU	
min. Earth dist.	16517 Mar 13 06:56	6° <u>0</u> 54'28 28.99141 AU	morning rise	16523 Oct 12 03:12	21° <u>0</u> 58'26	
direct	16517 May 31 20:14	5° <u>0</u> 30'38	retrograde	16524 Jan 09 07:05	23° <u>0</u> 55'07	
evening set	16517 Aug 28 05:18	7° <u>0</u> 25'38	opposition	16524 Mar 29 00:23	22° <u>0</u> 31'06 -0°21'54	
			min. Earth dist.	16524 Mar 28 22:40	22° <u>0</u> 31'13 28.90371 AU	
conjunction	16517 Sep 12 18:18	8° <u>0</u> 00'40 -0°20'14	direct	16524 Jun 16 09:09	21° <u>0</u> 07'05	
minimum elong	16517 Sep 12 18:18	8° <u>0</u> 00'40 0°20'12	evening set	16524 Sep 12 11:31	23° <u>0</u> 02'01	
max. Earth dist.	16517 Sep 12 17:24	8° <u>0</u> 00'35 30.98580 AU				
morning rise	16517 Sep 28 07:23	8° <u>0</u> 35'44	conjunction	16524 Sep 28 00:43	23° <u>0</u> 37'09 -0°20'29	
retrograde	16517 Dec 26 07:18	10° <u>0</u> 31'52	minimum elong	16524 Sep 28 00:44	23° <u>0</u> 37'09 0°20'17	
opposition	16518 Mar 15 18:14	9° <u>0</u> 08'17 -0°21'41	max. Earth dist.	16524 Sep 28 03:02	23° <u>0</u> 37'22 30.89874 AU	
min. Earth dist.	16518 Mar 15 18:45	9° <u>0</u> 08'14 28.97995 AU	morning rise	16524 Oct 13 14:36	24° <u>0</u> 12'22	
direct	16518 Jun 03 10:18	7° <u>0</u> 44'21	retrograde	16525 Jan 10 20:43	26° <u>0</u> 09'10	
evening set	16518 Aug 30 16:40	9° <u>0</u> 39'21	opposition	16525 Mar 31 13:17	24° <u>0</u> 45'07 -0°21'49	
			min. Earth dist.	16525 Mar 31 09:50	24° <u>0</u> 45'21 28.89411 AU	
conjunction	16518 Sep 15 05:32	10° <u>0</u> 14'24 -0°20'22	direct	16525 Jun 18 20:47	23° <u>0</u> 21'07	
minimum elong	16518 Sep 15 05:32	10° <u>0</u> 14'24 0°20'19	evening set	16525 Sep 14 22:47	25° <u>0</u> 16'04	
max. Earth dist.	16518 Sep 15 03:58	10° <u>0</u> 14'15 30.97374 AU				
morning rise	16518 Sep 30 18:48	10° <u>0</u> 49'30	conjunction	16525 Sep 30 12:00	25° <u>0</u> 51'13 -0°20'24	
retrograde	16518 Dec 28 20:18	12° <u>0</u> 45'44	minimum elong	16525 Sep 30 12:00	25° <u>0</u> 51'13 0°20'10	
opposition	16519 Mar 18 07:23	11° <u>0</u> 22'04 -0°21'48	max. Earth dist.	16525 Sep 30 14:48	25° <u>0</u> 51'29 30.88964 AU	
min. Earth dist.	16519 Mar 18 08:17	11° <u>0</u> 22'01 28.96738 AU	morning rise	16525 Oct 16 02:01	26° <u>0</u> 26'28	

retrograde	16526 Jan 13 09:38	28° <u>♂</u> 23'23	evening set	16532 Sep 30 07:31	10° <u>♂</u> 58'51
opposition	16526 Apr 03 02:19	26° <u>♂</u> 59'18 -0°21'42			
min. Earth dist.	16526 Apr 02 23:19	26° <u>♂</u> 59'31 28.88557 AU	conjunction	16532 Oct 15 21:35	11° <u>♂</u> 34'08 -0°18'56
direct	16526 Jun 21 08:31	25° <u>♂</u> 35'21	minimum elong	16532 Oct 15 21:35	11° <u>♂</u> 34'08 0°18'34
evening set	16526 Sep 17 10:03	27° <u>♂</u> 30'18	max. Earth dist.	16532 Oct 16 03:15	11° <u>♂</u> 34'40 30.83129 AU
			morning rise	16532 Oct 31 12:44	12° <u>♂</u> 09'34
conjunction	16526 Oct 02 23:27	28° <u>♂</u> 05'29 -0°20'17	retrograde	16533 Jan 29 02:29	14° <u>♂</u> 07'02
minimum elong	16526 Oct 02 23:27	28° <u>♂</u> 05'29 0°20'03	opposition	16533 Apr 18 22:56	12° <u>♂</u> 42'41 -0°20'01
max. Earth dist.	16526 Oct 03 03:26	28° <u>♂</u> 05'51 30.88162 AU	min. Earth dist.	16533 Apr 18 17:43	12° <u>♂</u> 43'03 28.82629 AU
morning rise	16526 Oct 18 13:31	28° <u>♂</u> 40'45	direct	16533 Jul 07 00:17	11° <u>♂</u> 18'44
	16526 Nov 28 17:13	0° <u>♂</u>	evening set	16533 Oct 02 19:10	13° <u>♂</u> 13'36
retrograde	16527 Jan 15 23:57	0° <u>♂</u> 37'46			
	16527 Mar 06 23:25	30° <u>♂</u> 13'41	conjunction	16533 Oct 18 09:20	13° <u>♂</u> 48'54 -0°18'36
opposition	16527 Apr 05 15:25	29° <u>♂</u> 13'41 -0°21'34	minimum elong	16533 Oct 18 09:20	13° <u>♂</u> 48'54 0°18'13
min. Earth dist.	16527 Apr 05 10:59	29° <u>♂</u> 13'59 28.87782 AU	max. Earth dist.	16533 Oct 18 15:11	13° <u>♂</u> 49'27 30.82132 AU
direct	16527 Jun 23 22:41	27° <u>♂</u> 49'46	morning rise	16533 Nov 03 00:42	14° <u>♂</u> 24'20
evening set	16527 Sep 19 21:24	29° <u>♂</u> 44'44		16533 Nov 19 17:21	15° <u>♂</u>
	16527 Sep 26 16:41	0° <u>♂</u>	retrograde	16534 Jan 31 15:48	16° <u>♂</u> 21'51
				16534 Apr 19 22:31	15° <u>♂</u>
conjunction	16527 Oct 05 10:45	0° <u>♂</u> 19'56 -0°20'08	opposition	16534 Apr 21 11:58	14° <u>♂</u> 57'25 -0°19'39
minimum elong	16527 Oct 05 10:45	0° <u>♂</u> 19'56 0°19'52	min. Earth dist.	16534 Apr 21 05:15	14° <u>♂</u> 57'52 28.81654 AU
max. Earth dist.	16527 Oct 05 14:30	0° <u>♂</u> 20'17 30.87411 AU	direct	16534 Jul 09 12:14	13° <u>♂</u> 33'25
morning rise	16527 Oct 21 01:07	0° <u>♂</u> 55'15		16534 Sep 22 03:55	15° <u>♂</u>
retrograde	16528 Jan 18 13:37	2° <u>♂</u> 52'22	evening set	16534 Oct 05 06:51	15° <u>♂</u> 28'15
opposition	16528 Apr 07 04:40	1° <u>♂</u> 28'16 -0°21'23			
min. Earth dist.	16528 Apr 07 00:28	1° <u>♂</u> 28'33 28.87053 AU	conjunction	16534 Oct 20 21:06	16° <u>♂</u> 03'33 -0°18'15
direct	16528 Jun 25 10:20	0° <u>♂</u> 04'23	minimum elong	16534 Oct 20 21:07	16° <u>♂</u> 03'33 0°17'51
evening set	16528 Sep 21 08:50	1° <u>♂</u> 59'23	max. Earth dist.	16534 Oct 21 03:26	16° <u>♂</u> 04'09 30.81194 AU
			morning rise	16534 Nov 05 12:41	16° <u>♂</u> 39'01
conjunction	16528 Oct 06 22:27	2° <u>♂</u> 34'36 -0°19'57	retrograde	16535 Feb 03 04:24	18° <u>♂</u> 36'34
minimum elong	16528 Oct 06 22:27	2° <u>♂</u> 34'36 0°19'40	opposition	16535 Apr 24 01:16	17° <u>♂</u> 12'03 -0°19'16
max. Earth dist.	16528 Oct 07 03:34	2° <u>♂</u> 35'04 30.86680 AU	min. Earth dist.	16535 Apr 23 18:57	17° <u>♂</u> 12'29 28.80782 AU
morning rise	16528 Oct 22 12:49	3° <u>♂</u> 09'55	direct	16535 Jul 12 00:20	15° <u>♂</u> 48'01
retrograde	16529 Jan 20 01:15	5° <u>♂</u> 07'09	evening set	16535 Oct 07 18:20	17° <u>♂</u> 42'50
opposition	16529 Apr 09 17:44	3° <u>♂</u> 43'02 -0°21'11			
min. Earth dist.	16529 Apr 09 12:53	3° <u>♂</u> 43'22 28.86304 AU	conjunction	16535 Oct 23 08:52	18° <u>♂</u> 18'09 -0°17'53
direct	16529 Jun 27 23:45	2° <u>♂</u> 19'10	minimum elong	16535 Oct 23 08:52	18° <u>♂</u> 18'09 0°17'27
evening set	16529 Sep 23 20:35	4° <u>♂</u> 14'10	max. Earth dist.	16535 Oct 23 16:25	18° <u>♂</u> 18'51 30.80392 AU
			morning rise	16535 Nov 08 00:35	18° <u>♂</u> 53'37
conjunction	16529 Oct 09 10:08	4° <u>♂</u> 49'25 -0°19'44	retrograde	16536 Feb 05 18:10	20° <u>♂</u> 51'13
minimum elong	16529 Oct 09 10:08	4° <u>♂</u> 49'25 0°19'26	opposition	16536 Apr 25 14:20	19° <u>♂</u> 26'39 -0°18'51
max. Earth dist.	16529 Oct 09 14:21	4° <u>♂</u> 49'48 30.85910 AU	min. Earth dist.	16536 Apr 25 06:28	19° <u>♂</u> 27'12 28.80046 AU
morning rise	16529 Oct 25 00:49	5° <u>♂</u> 24'46	direct	16536 Jul 13 14:03	18° <u>♂</u> 02'37
retrograde	16530 Jan 22 15:02	7° <u>♂</u> 22'04	evening set	16536 Oct 09 06:07	19° <u>♂</u> 57'25
opposition	16530 Apr 12 07:02	5° <u>♂</u> 57'56 -0°20'56			
min. Earth dist.	16530 Apr 12 01:59	5° <u>♂</u> 58'17 28.85507 AU	conjunction	16536 Oct 24 20:40	20° <u>♂</u> 32'45 -0°17'28
direct	16530 Jun 30 11:36	4° <u>♂</u> 34'05	minimum elong	16536 Oct 24 20:41	20° <u>♂</u> 32'45 0°17'02
evening set	16530 Sep 26 08:08	6° <u>♂</u> 29'04	max. Earth dist.	16536 Oct 25 04:05	20° <u>♂</u> 33'27 30.79730 AU
			morning rise	16536 Nov 09 12:44	21° <u>♂</u> 08'15
conjunction	16530 Oct 11 21:56	7° <u>♂</u> 04'20 -0°19'30	retrograde	16537 Feb 07 07:42	23° <u>♂</u> 05'54
minimum elong	16530 Oct 11 21:56	7° <u>♂</u> 04'20 0°19'11	opposition	16537 Apr 28 03:23	21° <u>♂</u> 41'18 -0°18'24
max. Earth dist.	16530 Oct 12 03:24	7° <u>♂</u> 04'51 30.85060 AU	min. Earth dist.	16537 Apr 27 19:39	21° <u>♂</u> 41'50 28.79470 AU
morning rise	16530 Oct 27 12:36	7° <u>♂</u> 39'42	direct	16537 Jul 16 01:24	20° <u>♂</u> 17'16
retrograde	16531 Jan 25 02:38	9° <u>♂</u> 37'06	evening set	16537 Oct 11 17:46	22° <u>♂</u> 12'04
opposition	16531 Apr 14 20:25	8° <u>♂</u> 12'54 -0°20'40			
min. Earth dist.	16531 Apr 14 15:31	8° <u>♂</u> 13'14 28.84608 AU	conjunction	16537 Oct 27 08:40	22° <u>♂</u> 47'26 -0°17'02
direct	16531 Jul 03 00:36	6° <u>♂</u> 49'02	minimum elong	16537 Oct 27 08:40	22° <u>♂</u> 47'26 0°16'35
evening set	16531 Sep 28 19:55	8° <u>♂</u> 44'00	max. Earth dist.	16537 Oct 27 17:39	22° <u>♂</u> 48'16 30.79227 AU
			morning rise	16537 Nov 12 00:47	23° <u>♂</u> 22'57
conjunction	16531 Oct 14 09:44	9° <u>♂</u> 19'16 -0°19'14	retrograde	16538 Feb 09 20:26	25° <u>♂</u> 20'40
minimum elong	16531 Oct 14 09:44	9° <u>♂</u> 19'16 0°18'53	opposition	16538 Apr 30 16:28	23° <u>♂</u> 56'03 -0°17'55
max. Earth dist.	16531 Oct 14 14:34	9° <u>♂</u> 19'43 30.84130 AU	min. Earth dist.	16538 Apr 30 07:39	23° <u>♂</u> 56'40 28.79032 AU
morning rise	16531 Oct 30 00:45	9° <u>♂</u> 54'40	direct	16538 Jul 18 15:04	22° <u>♂</u> 32'03
retrograde	16532 Jan 27 15:20	11° <u>♂</u> 52'06	evening set	16538 Oct 14 05:30	24° <u>♂</u> 26'51
opposition	16532 Apr 16 09:38	10° <u>♂</u> 27'50 -0°20'21			
min. Earth dist.	16532 Apr 16 03:53	10° <u>♂</u> 28'14 28.83641 AU	conjunction	16538 Oct 29 20:24	25° <u>♂</u> 02'14 -0°16'35
direct	16532 Jul 04 12:30	9° <u>♂</u> 03'56	minimum elong	16538 Oct 29 20:24	25° <u>♂</u> 02'14 0°16'07

max. Earth dist.	16538 Oct 30 04:56	25° \mathcal{M} 03'02	30.78863 AU	min. Earth dist.	16544 May 13 14:11	7° \mathcal{A} 29'07	28.77587 AU
morning rise	16538 Nov 14 12:55	25° \mathcal{M} 37'47		direct	16544 Jul 31 14:32	6° \mathcal{A} 04'38	
retrograde	16539 Feb 12 11:10	27° \mathcal{M} 35'34		evening set	16544 Oct 27 05:59	7° \mathcal{A} 59'29	
opposition	16539 May 03 05:41	26° \mathcal{M} 10'58	-0°17'24				
min. Earth dist.	16539 May 02 20:22	26° \mathcal{M} 11'37	28.78734 AU	conjunction	16544 Nov 11 22:16	8° \mathcal{A} 34'59	-0°13'17
direct	16539 Jul 21 03:03	24° \mathcal{M} 47'00		minimum elong	16544 Nov 11 22:16	8° \mathcal{A} 34'59	0°12'45
evening set	16539 Oct 16 17:17	26° \mathcal{M} 41'50		behind sun begin	16544 Nov 11 18:12	8° \mathcal{A} 34'36	
				behind sun end	16544 Nov 12 02:21	8° \mathcal{A} 35'21	
conjunction	16539 Nov 01 08:32	27° \mathcal{M} 17'14	-0°16'05	max. Earth dist.	16544 Nov 12 08:51	8° \mathcal{A} 35'58	30.77386 AU
minimum elong	16539 Nov 01 08:32	27° \mathcal{M} 17'14	0°15'37	morning rise	16544 Nov 27 16:06	9° \mathcal{A} 10'39	
behind sun begin	16539 Nov 01 06:57	27° \mathcal{M} 17'05		retrograde	16545 Feb 25 16:46	11° \mathcal{A} 08'46	
behind sun end	16539 Nov 01 10:07	27° \mathcal{M} 17'23		opposition	16545 May 16 12:44	9° \mathcal{A} 44'11	-0°13'48
max. Earth dist.	16539 Nov 01 18:39	27° \mathcal{M} 18'11	30.78611 AU	min. Earth dist.	16545 May 16 02:13	9° \mathcal{A} 44'54	28.77180 AU
morning rise	16539 Nov 17 01:07	27° \mathcal{M} 52'48		direct	16545 Aug 03 03:43	8° \mathcal{A} 20'19	
retrograde	16540 Feb 14 23:16	29° \mathcal{M} 50'40		evening set	16545 Oct 29 18:18	10° \mathcal{A} 15'09	
opposition	16540 May 04 18:46	28° \mathcal{M} 26'05	-0°16'52				
min. Earth dist.	16540 May 04 09:23	28° \mathcal{M} 26'44	28.78521 AU	conjunction	16545 Nov 14 10:41	10° \mathcal{A} 50'39	-0°12'40
direct	16540 Jul 22 15:52	27° \mathcal{M} 02'11		minimum elong	16545 Nov 14 10:40	10° \mathcal{A} 50'39	0°12'07
evening set	16540 Oct 18 05:16	28° \mathcal{M} 57'01		behind sun begin	16545 Nov 14 06:16	10° \mathcal{A} 50'15	
				behind sun end	16545 Nov 14 15:04	10° \mathcal{A} 51'03	
conjunction	16540 Nov 02 20:36	29° \mathcal{M} 32'27	-0°15'35	max. Earth dist.	16545 Nov 14 20:41	10° \mathcal{A} 51'36	30.76965 AU
minimum elong	16540 Nov 02 20:36	29° \mathcal{M} 32'27	0°15'05	morning rise	16545 Nov 30 04:53	11° \mathcal{A} 26'21	
behind sun begin	16540 Nov 02 18:17	29° \mathcal{M} 32'14		retrograde	16546 Feb 28 06:15	13° \mathcal{A} 24'28	
behind sun end	16540 Nov 02 22:55	29° \mathcal{M} 32'39		opposition	16546 May 19 01:57	11° \mathcal{A} 59'49	-0°13'07
max. Earth dist.	16540 Nov 03 06:14	29° \mathcal{M} 33'21	30.78435 AU	min. Earth dist.	16546 May 18 16:02	12° \mathcal{A} 00'30	28.76771 AU
	16540 Nov 14 23:23	0° \mathcal{A}		direct	16546 Aug 05 14:55	10° \mathcal{A} 35'54	
morning rise	16540 Nov 18 13:35	0° \mathcal{A} 08'03		evening set	16546 Nov 01 06:17	12° \mathcal{A} 30'42	
retrograde	16541 Feb 16 12:49	2° \mathcal{A} 05'59					
opposition	16541 May 07 07:54	0° \mathcal{A} 41'26	-0°16'18	conjunction	16546 Nov 16 23:03	13° \mathcal{A} 06'13	-0°12'02
min. Earth dist.	16541 May 06 21:42	0° \mathcal{A} 42'08	28.78358 AU	minimum elong	16546 Nov 16 23:03	13° \mathcal{A} 06'13	0°11'28
	16541 Jun 02 08:26	30° \mathcal{R} \mathcal{M}		behind sun begin	16546 Nov 16 18:22	13° \mathcal{A} 05'47	
direct	16541 Jul 25 03:25	29° \mathcal{M} 17'34		behind sun end	16546 Nov 17 03:45	13° \mathcal{A} 06'39	
	16541 Sep 13 18:52	0° \mathcal{A}		max. Earth dist.	16546 Nov 17 10:24	13° \mathcal{A} 07'17	30.76575 AU
evening set	16541 Oct 20 17:18	1° \mathcal{A} 12'26		morning rise	16546 Dec 02 17:22	13° \mathcal{A} 41'55	
				retrograde	16547 Mar 02 19:36	15° \mathcal{A} 40'02	
conjunction	16541 Nov 05 08:53	1° \mathcal{A} 47'53	-0°15'02	opposition	16547 May 21 15:00	14° \mathcal{A} 15'19	-0°12'26
minimum elong	16541 Nov 05 08:53	1° \mathcal{A} 47'53	0°14'32	min. Earth dist.	16547 May 21 04:12	14° \mathcal{A} 16'04	28.76409 AU
behind sun begin	16541 Nov 05 06:01	1° \mathcal{A} 47'37		direct	16547 Aug 08 05:30	12° \mathcal{A} 51'23	
behind sun end	16541 Nov 05 11:45	1° \mathcal{A} 48'08		evening set	16547 Nov 03 18:35	14° \mathcal{A} 46'08	
max. Earth dist.	16541 Nov 05 19:21	1° \mathcal{A} 48'52	30.78258 AU				
morning rise	16541 Nov 21 01:58	2° \mathcal{A} 23'30		conjunction	16547 Nov 19 11:25	15° \mathcal{A} 21'40	-0°11'22
retrograde	16542 Feb 19 00:39	4° \mathcal{A} 21'31		minimum elong	16547 Nov 19 11:24	15° \mathcal{A} 21'40	0°10'48
opposition	16542 May 09 21:10	2° \mathcal{A} 56'59	-0°15'43	behind sun begin	16547 Nov 19 06:27	15° \mathcal{A} 21'13	
min. Earth dist.	16542 May 09 11:41	2° \mathcal{A} 57'38	28.78169 AU	behind sun end	16547 Nov 19 16:22	15° \mathcal{A} 22'07	
direct	16542 Jul 27 14:49	1° \mathcal{A} 33'09		max. Earth dist.	16547 Nov 19 22:03	15° \mathcal{A} 22'40	30.76263 AU
evening set	16542 Oct 23 05:31	3° \mathcal{A} 28'02		morning rise	16547 Dec 05 06:09	15° \mathcal{A} 57'23	
				retrograde	16548 Mar 04 10:47	17° \mathcal{A} 55'29	
conjunction	16542 Nov 07 21:16	4° \mathcal{A} 03'30	-0°14'29	opposition	16548 May 23 03:54	16° \mathcal{A} 30'43	-0°11'43
minimum elong	16542 Nov 07 21:16	4° \mathcal{A} 03'30	0°13'57	min. Earth dist.	16548 May 22 16:54	16° \mathcal{A} 31'29	28.76163 AU
behind sun begin	16542 Nov 07 17:57	4° \mathcal{A} 03'12		direct	16548 Aug 09 18:14	15° \mathcal{A} 06'45	
behind sun end	16542 Nov 08 00:35	4° \mathcal{A} 03'48		evening set	16548 Nov 05 06:42	17° \mathcal{A} 01'28	
max. Earth dist.	16542 Nov 08 07:29	4° \mathcal{A} 04'28	30.78052 AU				
morning rise	16542 Nov 23 14:38	4° \mathcal{A} 39'08		conjunction	16548 Nov 20 23:56	17° \mathcal{A} 37'01	-0°10'42
retrograde	16543 Feb 21 14:51	6° \mathcal{A} 37'13		minimum elong	16548 Nov 20 23:57	17° \mathcal{A} 37'01	0°10'07
opposition	16543 May 12 10:23	5° \mathcal{A} 12'41	-0°15'06	behind sun begin	16548 Nov 20 18:44	17° \mathcal{A} 36'33	
min. Earth dist.	16543 May 11 23:48	5° \mathcal{A} 13'25	28.77925 AU	behind sun end	16548 Nov 21 05:09	17° \mathcal{A} 37'30	
direct	16543 Jul 30 02:22	3° \mathcal{A} 48'52		max. Earth dist.	16548 Nov 21 12:03	17° \mathcal{A} 38'10	30.76071 AU
evening set	16543 Oct 25 17:44	5° \mathcal{A} 43'45		morning rise	16548 Dec 06 18:47	18° \mathcal{A} 12'45	
				retrograde	16549 Mar 06 22:22	20° \mathcal{A} 10'50	
conjunction	16543 Nov 10 09:41	6° \mathcal{A} 19'14	-0°13'54	opposition	16549 May 25 16:50	18° \mathcal{A} 46'03	-0°10'59
minimum elong	16543 Nov 10 09:41	6° \mathcal{A} 19'14	0°13'22	min. Earth dist.	16549 May 25 05:36	18° \mathcal{A} 46'50	28.76035 AU
behind sun begin	16543 Nov 10 05:57	6° \mathcal{A} 18'53		direct	16549 Aug 12 07:31	17° \mathcal{A} 22'04	
behind sun end	16543 Nov 10 13:24	6° \mathcal{A} 19'34		evening set	16549 Nov 07 18:55	19° \mathcal{A} 16'46	
max. Earth dist.	16543 Nov 10 19:47	6° \mathcal{A} 20'11	30.77755 AU				
morning rise	16543 Nov 26 03:19	6° \mathcal{A} 54'54		conjunction	16549 Nov 23 12:15	19° \mathcal{A} 52'19	-0°10'00
retrograde	16544 Feb 24 03:13	8° \mathcal{A} 53'01		minimum elong	16549 Nov 23 12:15	19° \mathcal{A} 52'19	0°09'25
opposition	16544 May 13 23:45	7° \mathcal{A} 28'27	-0°14'28	behind sun begin	16549 Nov 23 06:49	19° \mathcal{A} 51'49	

behind sun end	16549 Nov 23 17:40	19° \mathring{A} 52'49		opposition	16555 Jun 08 22:12	2° \mathring{B} 18'40	-0°06'15
max. Earth dist.	16549 Nov 23 23:56	19° \mathring{A} 53'25	30.76020 AU	min. Earth dist.	16555 Jun 08 10:09	2° \mathring{B} 19'31	28.77518 AU
morning rise	16549 Dec 09 07:27	20° \mathring{A} 28'04		direct	16555 Aug 26 06:26	0° \mathring{B} 54'47	
retrograde	16550 Mar 09 12:29	22° \mathring{A} 26'08		evening set	16555 Nov 21 21:30	2° \mathring{B} 49'28	
opposition	16550 May 28 05:44	21° \mathring{A} 01'20	-0°10'14				
min. Earth dist.	16550 May 27 17:33	21° \mathring{A} 02'11	28.76058 AU	conjunction	16555 Dec 07 16:28	3° \mathring{B} 25'06	-0°05'34
direct	16550 Aug 14 19:56	19° \mathring{A} 37'21		minimum elong	16555 Dec 07 16:28	3° \mathring{B} 25'06	0°04'58
evening set	16550 Nov 10 07:08	21° \mathring{A} 32'02		behind sun begin	16555 Dec 07 10:08	3° \mathring{B} 24'32	
				behind sun end	16555 Dec 07 22:47	3° \mathring{B} 25'41	
conjunction	16550 Nov 26 00:47	22° \mathring{A} 07'36	-0°09'18	max. Earth dist.	16555 Dec 08 05:54	3° \mathring{B} 26'22	30.77632 AU
minimum elong	16550 Nov 26 00:47	22° \mathring{A} 07'36	0°08'42	morning rise	16555 Dec 23 13:05	4° \mathring{B} 00'56	
behind sun begin	16550 Nov 25 19:09	22° \mathring{A} 07'06		retrograde	16556 Mar 22 18:25	5° \mathring{B} 59'02	
behind sun end	16550 Nov 26 06:25	22° \mathring{A} 08'07		opposition	16556 Jun 10 10:54	4° \mathring{B} 34'21	-0°05'25
max. Earth dist.	16550 Nov 26 13:36	22° \mathring{A} 08'49	30.76108 AU	min. Earth dist.	16556 Jun 09 22:31	4° \mathring{B} 35'13	28.77739 AU
morning rise	16550 Dec 11 20:09	22° \mathring{A} 43'22		direct	16556 Aug 27 20:28	3° \mathring{B} 10'27	
retrograde	16551 Mar 12 00:48	24° \mathring{A} 41'27		evening set	16556 Nov 23 10:20	5° \mathring{B} 05'08	
opposition	16551 May 30 18:41	23° \mathring{A} 16'39	-0°09'28				
min. Earth dist.	16551 May 30 06:54	23° \mathring{A} 17'28	28.76216 AU	conjunction	16556 Dec 09 05:25	5° \mathring{B} 40'47	-0°04'48
direct	16551 Aug 17 08:16	21° \mathring{A} 52'41		minimum elong	16556 Dec 09 05:24	5° \mathring{B} 40'47	0°04'11
evening set	16551 Nov 12 19:22	23° \mathring{A} 47'20		behind sun begin	16556 Dec 08 23:00	5° \mathring{B} 40'12	
				behind sun end	16556 Dec 09 11:48	5° \mathring{B} 41'21	
conjunction	16551 Nov 28 13:17	24° \mathring{A} 22'55	-0°08'35	max. Earth dist.	16556 Dec 09 17:25	5° \mathring{B} 41'54	30.77809 AU
minimum elong	16551 Nov 28 13:17	24° \mathring{A} 22'55	0°07'59	morning rise	16556 Dec 25 02:27	6° \mathring{B} 16'37	
behind sun begin	16551 Nov 28 07:28	24° \mathring{A} 22'24		retrograde	16557 Mar 25 09:15	8° \mathring{B} 14'41	
behind sun end	16551 Nov 28 19:05	24° \mathring{A} 23'27		opposition	16557 Jun 12 23:43	6° \mathring{B} 49'59	-0°04'35
max. Earth dist.	16551 Nov 29 02:03	24° \mathring{A} 24'08	30.76337 AU	min. Earth dist.	16557 Jun 12 11:45	6° \mathring{B} 50'49	28.77878 AU
morning rise	16551 Dec 14 09:00	24° \mathring{A} 58'42		direct	16557 Aug 30 08:41	5° \mathring{B} 26'03	
retrograde	16552 Mar 13 14:33	26° \mathring{A} 56'47		evening set	16557 Nov 25 22:49	7° \mathring{B} 20'42	
opposition	16552 Jun 01 07:30	25° \mathring{A} 32'00	-0°08'41				
min. Earth dist.	16552 May 31 18:28	25° \mathring{A} 32'55	28.76492 AU	conjunction	16557 Dec 11 18:17	7° \mathring{B} 56'22	-0°04'01
direct	16552 Aug 18 20:26	24° \mathring{A} 08'03		minimum elong	16557 Dec 11 18:17	7° \mathring{B} 56'22	0°03'25
evening set	16552 Nov 14 07:49	26° \mathring{A} 02'43		behind sun begin	16557 Dec 11 11:49	7° \mathring{B} 55'47	
				behind sun end	16557 Dec 12 00:45	7° \mathring{B} 56'57	
conjunction	16552 Nov 30 01:56	26° \mathring{A} 38'19	-0°07'51	max. Earth dist.	16557 Dec 12 07:17	7° \mathring{B} 57'35	30.77911 AU
minimum elong	16552 Nov 30 01:55	26° \mathring{A} 38'19	0°07'14	morning rise	16557 Dec 27 15:24	8° \mathring{B} 32'12	
behind sun begin	16552 Nov 29 19:57	26° \mathring{A} 37'46		retrograde	16558 Mar 27 21:16	10° \mathring{B} 30'13	
behind sun end	16552 Nov 30 07:54	26° \mathring{A} 38'52		opposition	16558 Jun 15 12:26	9° \mathring{B} 05'30	-0°03'45
max. Earth dist.	16552 Nov 30 14:54	26° \mathring{A} 39'32	30.76647 AU	min. Earth dist.	16558 Jun 15 00:39	9° \mathring{B} 06'20	28.77957 AU
morning rise	16552 Dec 15 21:53	27° \mathring{A} 14'07		direct	16558 Sep 01 22:02	7° \mathring{B} 41'33	
retrograde	16553 Mar 16 02:05	29° \mathring{A} 12'12		evening set	16558 Nov 28 11:30	9° \mathring{B} 36'10	
opposition	16553 Jun 03 20:21	27° \mathring{A} 47'27	-0°07'53				
min. Earth dist.	16553 Jun 03 08:15	27° \mathring{A} 48'18	28.76836 AU	conjunction	16558 Dec 14 07:07	10° \mathring{B} 11'50	-0°03'13
direct	16553 Aug 21 07:33	26° \mathring{A} 23'32		minimum elong	16558 Dec 14 07:06	10° \mathring{B} 11'50	0°02'37
evening set	16553 Nov 16 20:17	28° \mathring{A} 18'12		behind sun begin	16558 Dec 14 00:37	10° \mathring{B} 11'14	
				behind sun end	16558 Dec 14 13:36	10° \mathring{B} 12'25	
conjunction	16553 Dec 02 14:43	28° \mathring{A} 53'49	-0°07'06	max. Earth dist.	16558 Dec 14 19:09	10° \mathring{B} 12'57	30.78000 AU
minimum elong	16553 Dec 02 14:43	28° \mathring{A} 53'49	0°06'30	morning rise	16558 Dec 30 04:39	10° \mathring{B} 47'41	
behind sun begin	16553 Dec 02 08:36	28° \mathring{A} 53'16		retrograde	16559 Mar 30 12:04	12° \mathring{B} 45'38	
behind sun end	16553 Dec 02 20:49	28° \mathring{A} 54'23		opposition	16559 Jun 18 00:59	11° \mathring{B} 20'53	-0°02'54
max. Earth dist.	16553 Dec 03 04:11	28° \mathring{A} 55'05	30.77014 AU	min. Earth dist.	16559 Jun 17 12:48	11° \mathring{B} 21'44	28.78062 AU
morning rise	16553 Dec 18 10:52	29° \mathring{A} 29'37		direct	16559 Sep 04 10:55	9° \mathring{B} 56'53	
	16554 Jan 01 14:21	0° \mathring{B}		evening set	16559 Dec 01 00:01	11° \mathring{B} 51'28	
retrograde	16554 Mar 18 15:34	1° \mathring{B} 27'44					
opposition	16554 Jun 06 09:12	0° \mathring{B} 03'01	-0°07'04	conjunction	16559 Dec 16 19:59	12° \mathring{B} 27'09	-0°02'25
min. Earth dist.	16554 Jun 05 20:09	0° \mathring{B} 03'56	28.77197 AU	minimum elong	16559 Dec 16 19:59	12° \mathring{B} 27'09	0°01'49
	16554 Jun 08 04:30	30° \mathring{R} \mathring{A}		behind sun begin	16559 Dec 16 13:29	12° \mathring{B} 26'34	
direct	16554 Aug 23 19:45	28° \mathring{A} 39'07		behind sun end	16559 Dec 17 02:30	12° \mathring{B} 27'45	
	16554 Nov 03 12:05	0° \mathring{B}		max. Earth dist.	16559 Dec 17 08:55	12° \mathring{B} 28'22	30.78121 AU
evening set	16554 Nov 19 08:51	0° \mathring{B} 33'48		morning rise	16560 Jan 01 17:41	13° \mathring{B} 03'01	
				retrograde	16560 Apr 01 00:33	15° \mathring{B} 00'55	
conjunction	16554 Dec 05 03:24	1° \mathring{B} 09'26	-0°06'20	opposition	16560 Jun 19 13:32	13° \mathring{B} 36'08	-0°02'04
minimum elong	16554 Dec 05 03:23	1° \mathring{B} 09'26	0°05'44	min. Earth dist.	16560 Jun 19 02:00	13° \mathring{B} 36'57	28.78220 AU
behind sun begin	16554 Dec 04 21:10	1° \mathring{B} 08'52		direct	16560 Sep 05 24:00	12° \mathring{B} 12'07	
behind sun end	16554 Dec 05 09:37	1° \mathring{B} 10'00		evening set	16560 Dec 02 12:36	14° \mathring{B} 06'40	
max. Earth dist.	16554 Dec 05 16:10	1° \mathring{B} 10'38	30.77355 AU				
morning rise	16554 Dec 20 23:54	1° \mathring{B} 45'15		conjunction	16560 Dec 18 08:47	14° \mathring{B} 42'21	-0°01'37
retrograde	16555 Mar 21 05:05	3° \mathring{B} 43'22		minimum elong	16560 Dec 18 08:47	14° \mathring{B} 42'21	0°01'00

behind sun begin	16560 Dec 18 02:16	14°34'46"		min. Earth dist.	16566 Jul 03 02:41	27°30'32"	28.81824 AU
behind sun end	16560 Dec 18 15:17	14°34'56"		direct	16566 Sep 19 21:16	25°34'39"	
max. Earth dist.	16560 Dec 18 21:21	14°34'32"	30.78333 AU	evening set	16566 Dec 16 16:08	27°33'11"	
morning rise	16561 Jan 03 06:46	15°31'13"					
retrograde	16561 Apr 03 13:47	17°31'04"		conjunction	16567 Jan 01 13:52	28°31'25"	0°03'14"
opposition	16561 Jun 22 01:48	15°35'17"	-0°01'13"	minimum elong	16567 Jan 01 13:52	28°31'25"	0°03'48"
min. Earth dist.	16561 Jun 21 13:10	15°35'21"	28.78489 AU	behind sun begin	16567 Jan 01 07:25	28°31'20"	
direct	16561 Sep 08 12:38	14°32'14"		behind sun end	16567 Jan 01 20:19	28°31'30"	
evening set	16561 Dec 05 01:11	16°32'14"		max. Earth dist.	16567 Jan 02 03:43	28°31'41"	30.82254 AU
				morning rise	16567 Jan 17 13:07	28°34'48"	
conjunction	16561 Dec 20 21:33	16°35'28"	-0°00'48"		16567 Feb 22 18:55	0°34'25"	
minimum elong	16561 Dec 20 21:34	16°35'28"	0°00'12"	retrograde	16567 Apr 17 16:40	0°34'25"	
behind sun begin	16561 Dec 20 15:07	16°35'53"			16567 Jun 12 12:42	30°31'30"	
behind sun end	16561 Dec 21 04:00	16°35'02"		opposition	16567 Jul 06 03:24	29°32'51"	0°03'51"
max. Earth dist.	16561 Dec 21 10:26	16°35'40"	30.78659 AU	min. Earth dist.	16567 Jul 05 15:12	29°32'42"	28.82692 AU
morning rise	16562 Jan 05 19:46	17°33'20"		direct	16567 Sep 22 09:37	27°35'52"	
retrograde	16562 Apr 06 00:50	19°33'08"		evening set	16567 Dec 19 05:05	29°35'24"	
opposition	16562 Jun 24 14:17	18°30'22"	-0°00'22"		16567 Dec 22 15:28	0°34'25"	
min. Earth dist.	16562 Jun 24 02:24	18°30'71"	28.78893 AU				
direct	16562 Sep 10 23:48	16°34'21"		conjunction	16568 Jan 04 02:57	0°34'28"	0°04'01"
evening set	16562 Dec 07 13:33	18°33'49"		minimum elong	16568 Jan 04 02:56	0°34'28"	0°04'34"
asc. node	16562 Dec 20 16:45	19°30'61"		behind sun begin	16568 Jan 03 20:32	0°34'27"	
				behind sun end	16568 Jan 04 09:19	0°34'28"	
conjunction	16562 Dec 23 10:18	19°31'23"	0°00'02"	max. Earth dist.	16568 Jan 04 15:21	0°34'29"	30.83101 AU
minimum elong	16562 Dec 23 10:18	19°31'23"	0°00'37"	morning rise	16568 Jan 20 02:33	1°34'04"	
behind sun begin	16562 Dec 23 03:48	19°31'55"		retrograde	16568 Apr 19 07:55	3°34'01"	
behind sun end	16562 Dec 23 16:47	19°31'30"		opposition	16568 Jul 07 15:35	1°34'37"	0°04'41"
max. Earth dist.	16562 Dec 23 23:42	19°31'34"	30.79144 AU	min. Earth dist.	16568 Jul 07 03:26	1°34'37"	28.83502 AU
morning rise	16563 Jan 08 08:42	19°34'48"		direct	16568 Sep 23 22:38	0°34'13"	
retrograde	16563 Apr 08 14:02	21°34'09"		evening set	16568 Dec 20 17:57	2°34'07"	
opposition	16563 Jun 27 02:33	20°32'23"	0°00'29"				
min. Earth dist.	16563 Jun 26 13:29	20°32'18"	28.79444 AU	conjunction	16569 Jan 05 16:06	2°34'43"	0°04'48"
direct	16563 Sep 13 11:29	18°35'72"		minimum elong	16569 Jan 05 16:06	2°34'43"	0°05'20"
evening set	16563 Dec 10 02:14	20°35'15"		behind sun begin	16569 Jan 05 09:48	2°34'42"	
				behind sun end	16569 Jan 05 22:25	2°34'43"	
conjunction	16563 Dec 25 23:05	21°32'73"	0°00'51"	max. Earth dist.	16569 Jan 06 04:55	2°34'44"	30.83853 AU
minimum elong	16563 Dec 25 23:06	21°32'73"	0°01'25"	morning rise	16569 Jan 21 15:46	3°34'19"	
behind sun begin	16563 Dec 25 16:35	21°32'57"		retrograde	16569 Apr 21 20:05	5°34'16"	
behind sun end	16563 Dec 26 05:37	21°32'08"		opposition	16569 Jul 10 03:46	3°34'52"	0°05'30"
max. Earth dist.	16563 Dec 26 12:06	21°32'45"	30.79765 AU	min. Earth dist.	16569 Jul 09 16:42	3°34'52"	28.84209 AU
morning rise	16564 Jan 10 21:51	22°30'32"		direct	16569 Sep 26 11:53	2°34'28"	
retrograde	16564 Apr 10 02:03	24°30'10"		evening set	16569 Dec 23 06:49	4°34'22"	
opposition	16564 Jun 28 14:46	22°33'26"	0°01'19"				
min. Earth dist.	16564 Jun 28 02:29	22°33'17"	28.80141 AU	conjunction	16570 Jan 08 05:10	4°34'58"	0°05'33"
direct	16564 Sep 14 21:35	21°31'23"		minimum elong	16570 Jan 08 05:10	4°34'58"	0°06'04"
evening set	16564 Dec 11 14:47	23°30'54"		behind sun begin	16570 Jan 07 22:58	4°34'57"	
				behind sun end	16570 Jan 08 11:22	4°34'58"	
conjunction	16564 Dec 27 12:04	23°34'23"	0°01'39"	max. Earth dist.	16570 Jan 08 16:59	4°34'59"	30.84534 AU
minimum elong	16564 Dec 27 12:03	23°34'23"	0°02'14"	morning rise	16570 Jan 24 05:07	5°34'34"	
behind sun begin	16564 Dec 27 05:32	23°34'20"		retrograde	16570 Apr 24 09:50	7°34'31"	
behind sun end	16564 Dec 27 18:34	23°34'31"		opposition	16570 Jul 12 15:47	6°34'07"	0°06'19"
max. Earth dist.	16564 Dec 28 02:02	23°34'55"	30.80526 AU	min. Earth dist.	16570 Jul 12 04:07	6°34'07"	28.84857 AU
morning rise	16565 Jan 12 10:53	24°31'83"		direct	16570 Sep 29 00:48	4°34'43"	
retrograde	16565 Apr 12 14:16	26°31'16"		evening set	16570 Dec 25 19:32	6°34'37"	
opposition	16565 Jul 01 02:57	24°35'13"	0°02'10"				
min. Earth dist.	16565 Jun 30 14:01	24°35'22"	28.80945 AU	conjunction	16571 Jan 10 18:08	7°34'13"	0°06'18"
direct	16565 Sep 17 10:39	23°32'72"		minimum elong	16571 Jan 10 18:08	7°34'13"	0°06'50"
evening set	16565 Dec 14 03:25	25°32'20"		behind sun begin	16571 Jan 10 12:03	7°34'12"	
				behind sun end	16571 Jan 11 00:13	7°34'13"	
conjunction	16565 Dec 30 00:46	25°35'74"	0°02'27"	max. Earth dist.	16571 Jan 11 05:49	7°34'14"	30.85156 AU
minimum elong	16565 Dec 30 00:45	25°35'74"	0°03'01"	morning rise	16571 Jan 26 18:16	7°34'49"	
behind sun begin	16565 Dec 29 18:15	25°35'08"		retrograde	16571 Apr 26 21:38	9°34'46"	
behind sun end	16565 Dec 30 07:15	25°35'18"		opposition	16571 Jul 15 03:50	8°34'21"	0°07'07"
max. Earth dist.	16565 Dec 30 13:42	25°35'58"	30.81373 AU	min. Earth dist.	16571 Jul 14 17:25	8°34'22"	28.85473 AU
morning rise	16566 Jan 14 23:58	26°33'37"		direct	16571 Oct 01 12:53	6°34'57"	
retrograde	16566 Apr 15 04:15	28°33'16"		evening set	16571 Dec 28 08:18	8°34'52"	
opposition	16566 Jul 03 15:15	27°30'63"	0°03'01"				

conjunction	16572 Jan 13 07:11	9° \approx 27'47	0°07'03	max. Earth dist.	16577 Jan 24 10:04	20° \approx 39'24	30.90260 AU
minimum elong	16572 Jan 13 07:11	9° \approx 27'47	0°07'32	morning rise	16577 Feb 09 00:31	21° \approx 14'15	
behind sun begin	16572 Jan 13 01:15	9° \approx 27'14		retrograde	16577 May 09 23:10	23° \approx 11'00	
behind sun end	16572 Jan 13 13:07	9° \approx 28'19		opposition	16577 Jul 28 01:32	21° \approx 46'34	0°11'39
max. Earth dist.	16572 Jan 13 18:48	9° \approx 28'51	30.85784 AU	min. Earth dist.	16577 Jul 27 14:46	21° \approx 47'20	28.90891 AU
morning rise	16572 Jan 29 07:28	10° \approx 03'39		direct	16577 Oct 14 10:28	20° \approx 22'26	
retrograde	16572 Apr 28 10:43	12° \approx 00'48		evening set	16578 Jan 10 12:13	22° \approx 16'45	
opposition	16572 Jul 16 15:26	10° \approx 36'14	0°07'54				
min. Earth dist.	16572 Jul 16 04:17	10° \approx 37'01	28.86111 AU	conjunction	16578 Jan 26 12:17	22° \approx 52'28	0°11'14
direct	16572 Oct 03 01:36	9° \approx 12'06		minimum elong	16578 Jan 26 12:17	22° \approx 52'28	0°11'38
evening set	16572 Dec 29 21:05	11° \approx 06'27		behind sun begin	16578 Jan 26 07:40	22° \approx 52'03	
				behind sun end	16578 Jan 26 16:54	22° \approx 52'53	
conjunction	16573 Jan 14 20:02	11° \approx 42'10	0°07'47	max. Earth dist.	16578 Jan 26 23:49	22° \approx 53'32	30.91527 AU
minimum elong	16573 Jan 14 20:03	11° \approx 42'10	0°08'16	morning rise	16578 Feb 11 13:27	23° \approx 28'18	
behind sun begin	16573 Jan 14 14:17	11° \approx 41'39		retrograde	16578 May 12 11:01	25° \approx 24'59	
behind sun end	16573 Jan 15 01:49	11° \approx 42'41		opposition	16578 Jul 30 13:06	24° \approx 00'39	0°12'21
max. Earth dist.	16573 Jan 15 07:02	11° \approx 43'11	30.86446 AU	min. Earth dist.	16578 Jul 30 03:15	24° \approx 01'20	28.92194 AU
morning rise	16573 Jan 30 20:35	12° \approx 18'02		direct	16578 Oct 16 22:34	22° \approx 36'34	
retrograde	16573 Apr 30 21:35	14° \approx 15'05		evening set	16579 Jan 13 00:57	24° \approx 30'54	
opposition	16573 Jul 19 03:15	12° \approx 50'31	0°08'41				
min. Earth dist.	16573 Jul 18 17:05	12° \approx 51'13	28.86822 AU	conjunction	16579 Jan 29 01:09	25° \approx 06'37	0°11'53
direct	16573 Oct 05 12:11	11° \approx 26'20		minimum elong	16579 Jan 29 01:09	25° \approx 06'37	0°12'17
evening set	16574 Jan 01 09:33	13° \approx 20'39		behind sun begin	16579 Jan 28 20:51	25° \approx 06'14	
				behind sun end	16579 Jan 29 05:27	25° \approx 07'00	
conjunction	16574 Jan 17 08:52	13° \approx 56'22	0°08'30	max. Earth dist.	16579 Jan 29 11:46	25° \approx 07'36	30.92860 AU
minimum elong	16574 Jan 17 08:52	13° \approx 56'22	0°08'57	morning rise	16579 Feb 14 02:34	25° \approx 42'27	
behind sun begin	16574 Jan 17 03:17	13° \approx 55'52		retrograde	16579 May 15 01:16	27° \approx 39'05	
behind sun end	16574 Jan 17 14:27	13° \approx 56'52		opposition	16579 Aug 02 00:31	26° \approx 14'50	0°13'02
max. Earth dist.	16574 Jan 17 20:43	13° \approx 57'28	30.87207 AU	min. Earth dist.	16579 Aug 01 14:12	26° \approx 15'33	28.93523 AU
morning rise	16574 Feb 02 09:26	14° \approx 32'14		direct	16579 Oct 19 10:45	24° \approx 50'47	
	16574 Feb 15 10:05	15° \approx		evening set	16580 Jan 15 13:53	26° \approx 45'09	
retrograde	16574 May 03 08:44	16° \approx 29'11					
opposition	16574 Jul 21 14:55	15° \approx 04'37	0°09'27	conjunction	16580 Jan 31 14:14	27° \approx 20'52	0°12'30
min. Earth dist.	16574 Jul 21 04:06	15° \approx 05'23	28.87633 AU	minimum elong	16580 Jan 31 14:14	27° \approx 20'52	0°12'52
	16574 Jul 24 08:50	15° \approx		behind sun begin	16580 Jan 31 10:15	27° \approx 20'31	
direct	16574 Oct 08 00:47	13° \approx 40'26		behind sun end	16580 Jan 31 18:13	27° \approx 21'14	
	16574 Dec 18 10:32	15° \approx		max. Earth dist.	16580 Feb 01 00:31	27° \approx 21'49	30.94157 AU
evening set	16575 Jan 03 22:18	15° \approx 34'43		morning rise	16580 Feb 16 15:41	27° \approx 56'42	
				retrograde	16580 May 16 13:52	29° \approx 53'16	
conjunction	16575 Jan 19 21:39	16° \approx 10'26	0°09'12	opposition	16580 Aug 03 12:00	28° \approx 29'05	0°13'41
minimum elong	16575 Jan 19 21:39	16° \approx 10'26	0°09'40	min. Earth dist.	16580 Aug 03 03:14	28° \approx 29'42	28.94790 AU
behind sun begin	16575 Jan 19 16:17	16° \approx 09'57		direct	16580 Oct 20 22:41	27° \approx 05'05	
behind sun end	16575 Jan 20 03:02	16° \approx 10'55		evening set	16581 Jan 17 02:46	28° \approx 59'27	
max. Earth dist.	16575 Jan 20 08:26	16° \approx 11'26	30.88084 AU				
morning rise	16575 Feb 04 22:33	16° \approx 46'17		conjunction	16581 Feb 02 03:20	29° \approx 35'10	0°13'07
retrograde	16575 May 05 21:26	18° \approx 43'10		minimum elong	16581 Feb 02 03:20	29° \approx 35'10	0°13'28
opposition	16575 Jul 24 02:27	17° \approx 18'38	0°10'12	behind sun begin	16581 Feb 01 23:44	29° \approx 34'51	
min. Earth dist.	16575 Jul 23 15:58	17° \approx 19'22	28.88589 AU	behind sun end	16581 Feb 02 06:56	29° \approx 35'30	
direct	16575 Oct 10 10:38	15° \approx 54'26		max. Earth dist.	16581 Feb 02 13:03	29° \approx 36'04	30.95383 AU
evening set	16576 Jan 06 10:53	17° \approx 48'43			16581 Feb 13 05:19	0° \approx	
				morning rise	16581 Feb 18 04:52	0° \approx 10'59	
conjunction	16576 Jan 22 10:39	18° \approx 24'26	0°09'53	retrograde	16581 May 19 03:38	2° \approx 07'28	
minimum elong	16576 Jan 22 10:38	18° \approx 24'26	0°10'19	opposition	16581 Aug 05 23:26	0° \approx 43'21	0°14'19
behind sun begin	16576 Jan 22 05:30	18° \approx 23'58		min. Earth dist.	16581 Aug 05 14:14	0° \approx 44'00	28.95956 AU
behind sun end	16576 Jan 22 15:47	18° \approx 24'53			16581 Sep 02 02:00	30° \approx	
max. Earth dist.	16576 Jan 22 22:26	18° \approx 25'31	30.89104 AU	direct	16581 Oct 23 11:38	29° \approx 19'21	
morning rise	16576 Feb 07 11:31	19° \approx 00'17			16581 Dec 12 06:41	0° \approx	
retrograde	16576 May 07 08:55	20° \approx 57'04		evening set	16582 Jan 19 15:35	1° \approx 13'43	
opposition	16576 Jul 25 14:02	19° \approx 32'35	0°10'56				
min. Earth dist.	16576 Jul 25 03:33	19° \approx 33'19	28.89670 AU	conjunction	16582 Feb 04 16:13	1° \approx 49'25	0°13'42
direct	16576 Oct 11 22:36	18° \approx 08'25		minimum elong	16582 Feb 04 16:13	1° \approx 49'25	0°14'01
evening set	16577 Jan 07 23:35	20° \approx 02'42		behind sun begin	16582 Feb 04 13:01	1° \approx 49'08	
				behind sun end	16582 Feb 04 19:24	1° \approx 49'43	
conjunction	16577 Jan 23 23:21	20° \approx 38'25	0°10'34	max. Earth dist.	16582 Feb 05 00:50	1° \approx 50'13	30.96491 AU
minimum elong	16577 Jan 23 23:21	20° \approx 38'25	0°11'00	morning rise	16582 Feb 20 17:55	2° \approx 25'14	
behind sun begin	16577 Jan 23 18:28	20° \approx 37'58		retrograde	16582 May 21 14:16	4° \approx 21'38	
behind sun end	16577 Jan 24 04:14	20° \approx 38'51		opposition	16582 Aug 08 10:58	2° \approx 57'32	0°14'56

min. Earth dist.	16582 Aug 08 03:14	2° ✕ 58'05	28.97019 AU	direct	16588 Nov 07 19:51	14° ✕ 54'09	
direct	16582 Oct 25 22:25	1° ✕ 33'32		evening set	16589 Feb 04 08:07	16° ✕ 48'17	
evening set	16583 Jan 22 04:23	3° ✕ 27'51					
				conjunction	16589 Feb 20 09:40	17° ✕ 23'55	0°17'09
conjunction	16583 Feb 07 05:19	4° ✕ 03'33	0°14'16	minimum elong	16589 Feb 20 09:40	17° ✕ 23'55	0°17'20
minimum elong	16583 Feb 07 05:19	4° ✕ 03'33	0°14'35	max. Earth dist.	16589 Feb 20 16:05	17° ✕ 24'30	31.03642 AU
behind sun begin	16583 Feb 07 02:38	4° ✕ 03'19		morning rise	16589 Mar 08 11:43	17° ✕ 59'36	
behind sun end	16583 Feb 07 08:00	4° ✕ 03'48		retrograde	16589 Jun 05 22:48	19° ✕ 55'09	
max. Earth dist.	16583 Feb 07 14:08	4° ✕ 04'22	30.97510 AU	opposition	16589 Aug 23 16:20	18° ✕ 31'11	0°18'32
morning rise	16583 Feb 23 07:01	4° ✕ 39'21		min. Earth dist.	16589 Aug 23 10:49	18° ✕ 31'34	29.04302 AU
retrograde	16583 May 24 01:18	6° ✕ 35'37		direct	16589 Nov 10 07:49	17° ✕ 07'00	
opposition	16583 Aug 10 22:07	5° ✕ 11'33	0°15'32	evening set	16590 Feb 06 20:27	19° ✕ 01'08	
min. Earth dist.	16583 Aug 10 14:21	5° ✕ 12'06	28.97989 AU				
direct	16583 Oct 28 10:55	3° ✕ 47'31		conjunction	16590 Feb 22 22:09	19° ✕ 36'45	0°17'33
evening set	16584 Jan 24 17:17	5° ✕ 41'48		minimum elong	16590 Feb 22 22:09	19° ✕ 36'45	0°17'42
				max. Earth dist.	16590 Feb 23 04:24	19° ✕ 37'19	31.04975 AU
conjunction	16584 Feb 09 18:12	6° ✕ 17'30	0°14'48	morning rise	16590 Mar 11 00:15	20° ✕ 12'25	
minimum elong	16584 Feb 09 18:13	6° ✕ 17'30	0°15'05	retrograde	16590 Jun 08 11:38	22° ✕ 07'53	
behind sun begin	16584 Feb 09 16:06	6° ✕ 17'19		opposition	16590 Aug 26 03:08	20° ✕ 43'59	0°18'56
behind sun end	16584 Feb 09 20:19	6° ✕ 17'41		min. Earth dist.	16590 Aug 25 20:55	20° ✕ 44'25	29.05663 AU
max. Earth dist.	16584 Feb 10 01:25	6° ✕ 18'10	30.98455 AU	direct	16590 Nov 12 20:47	19° ✕ 19'50	
morning rise	16584 Feb 25 20:08	6° ✕ 53'17		evening set	16591 Feb 09 09:06	21° ✕ 13'58	
retrograde	16584 May 25 13:21	8° ✕ 49'26					
opposition	16584 Aug 12 09:23	7° ✕ 25'22	0°16'06	conjunction	16591 Feb 25 10:48	21° ✕ 49'35	0°17'55
min. Earth dist.	16584 Aug 12 02:23	7° ✕ 25'51	28.98924 AU	minimum elong	16591 Feb 25 10:48	21° ✕ 49'35	0°18'03
direct	16584 Oct 29 20:33	6° ✕ 01'17		max. Earth dist.	16591 Feb 25 16:15	21° ✕ 50'04	31.06360 AU
evening set	16585 Jan 26 05:49	7° ✕ 55'32		morning rise	16591 Mar 13 12:58	22° ✕ 25'14	
				retrograde	16591 Jun 10 22:53	24° ✕ 20'37	
conjunction	16585 Feb 11 07:02	8° ✕ 31'13	0°15'19	opposition	16591 Aug 28 13:55	22° ✕ 56'48	0°19'19
minimum elong	16585 Feb 11 07:02	8° ✕ 31'13	0°15'36	min. Earth dist.	16591 Aug 28 09:07	22° ✕ 57'08	29.07063 AU
behind sun begin	16585 Feb 11 05:47	8° ✕ 31'06		direct	16591 Nov 15 07:01	21° ✕ 32'41	
behind sun end	16585 Feb 11 08:16	8° ✕ 31'20		evening set	16592 Feb 11 21:42	23° ✕ 26'50	
max. Earth dist.	16585 Feb 11 14:55	8° ✕ 31'56	30.99377 AU				
morning rise	16585 Feb 27 08:50	9° ✕ 06'59		conjunction	16592 Feb 27 23:35	24° ✕ 02'27	0°18'15
retrograde	16585 May 27 23:09	11° ✕ 03'00		minimum elong	16592 Feb 27 23:35	24° ✕ 02'27	0°18'22
opposition	16585 Aug 14 20:31	9° ✕ 38'57	0°16'38	max. Earth dist.	16592 Feb 28 05:15	24° ✕ 02'58	31.07748 AU
min. Earth dist.	16585 Aug 14 13:51	9° ✕ 39'25	28.99845 AU	morning rise	16592 Mar 15 01:38	24° ✕ 38'06	
direct	16585 Nov 01 09:02	8° ✕ 14'50		retrograde	16592 Jun 12 10:32	26° ✕ 33'23	
evening set	16586 Jan 28 18:31	10° ✕ 09'02		opposition	16592 Aug 30 00:44	25° ✕ 09'39	0°19'40
				min. Earth dist.	16592 Aug 29 19:57	25° ✕ 09'59	29.08414 AU
conjunction	16586 Feb 13 19:42	10° ✕ 44'42	0°15'49	direct	16592 Nov 16 19:24	23° ✕ 45'34	
minimum elong	16586 Feb 13 19:42	10° ✕ 44'42	0°16'04	evening set	16593 Feb 13 10:21	25° ✕ 39'44	
max. Earth dist.	16586 Feb 14 02:12	10° ✕ 45'17	31.00325 AU				
morning rise	16586 Mar 01 21:45	11° ✕ 20'27		conjunction	16593 Mar 01 12:06	26° ✕ 15'20	0°18'34
retrograde	16586 May 30 11:27	13° ✕ 16'20		minimum elong	16593 Mar 01 12:06	26° ✕ 15'20	0°18'40
opposition	16586 Aug 17 07:31	11° ✕ 52'17	0°17'09	max. Earth dist.	16593 Mar 01 16:04	26° ✕ 15'41	31.09053 AU
min. Earth dist.	16586 Aug 17 00:46	11° ✕ 52'45	29.00826 AU	morning rise	16593 Mar 17 14:15	26° ✕ 50'58	
direct	16586 Nov 03 20:16	10° ✕ 28'07		retrograde	16593 Jun 14 22:27	28° ✕ 46'11	
evening set	16587 Jan 31 07:00	12° ✕ 22'18		opposition	16593 Sep 01 11:39	27° ✕ 22'30	0°19'59
				min. Earth dist.	16593 Sep 01 07:45	27° ✕ 22'47	29.09675 AU
conjunction	16587 Feb 16 08:27	12° ✕ 57'57	0°16'17	direct	16593 Nov 19 05:05	25° ✕ 58'26	
minimum elong	16587 Feb 16 08:26	12° ✕ 57'57	0°16'31	evening set	16594 Feb 15 22:55	27° ✕ 52'36	
max. Earth dist.	16587 Feb 16 15:39	12° ✕ 58'37	31.01331 AU				
morning rise	16587 Mar 04 10:24	13° ✕ 33'40		conjunction	16594 Mar 04 00:54	28° ✕ 28'11	0°18'51
retrograde	16587 Jun 01 21:51	15° ✕ 29'27		minimum elong	16594 Mar 04 00:54	28° ✕ 28'11	0°18'55
opposition	16587 Aug 19 18:32	14° ✕ 05'24	0°17'38	max. Earth dist.	16594 Mar 04 05:08	28° ✕ 28'34	31.10247 AU
min. Earth dist.	16587 Aug 19 12:42	14° ✕ 05'49	29.01873 AU	morning rise	16594 Mar 20 02:52	29° ✕ 03'49	
direct	16587 Nov 06 07:43	12° ✕ 41'13			16594 Apr 17 02:53	0° °	
evening set	16588 Feb 02 19:36	14° ✕ 35'22		retrograde	16594 Jun 17 08:05	0° ° 58'56	
					16594 Aug 19 23:17	30° ° ✕	
conjunction	16588 Feb 18 21:03	15° ✕ 11'00	0°16'44	opposition	16594 Sep 03 22:25	29° ✕ 35'18	0°20'16
minimum elong	16588 Feb 18 21:03	15° ✕ 11'00	0°16'55	min. Earth dist.	16594 Sep 03 19:16	29° ✕ 35'32	29.10799 AU
max. Earth dist.	16588 Feb 19 03:21	15° ✕ 11'35	31.02434 AU	direct	16594 Nov 21 17:08	28° ✕ 11'15	
morning rise	16588 Mar 05 23:08	15° ✕ 46'43			16595 Feb 15 23:38	0° °	
retrograde	16588 Jun 03 10:57	17° ✕ 42'22		evening set	16595 Feb 18 11:36	0° ° 05'23	
opposition	16588 Aug 21 05:20	16° ✕ 18'21	0°18'06				
min. Earth dist.	16588 Aug 20 22:45	16° ✕ 18'49	29.03030 AU	conjunction	16595 Mar 06 13:30	0° ° 40'58	0°19'06

minimum elong	16595 Mar 06 13:30	0°♈40'58	0°19'10
max. Earth dist.	16595 Mar 06 15:49	0°♈41'10	31.11317 AU
morning rise	16595 Mar 22 15:38	1°♈16'34	
retrograde	16595 Jun 19 19:53	3°♈11'35	
opposition	16595 Sep 06 09:08	1°♈47'59	0°20'31
min. Earth dist.	16595 Sep 06 06:17	1°♈48'11	29.11812 AU
direct	16595 Nov 24 03:50	0°♈23'54	
evening set	16596 Feb 21 00:05	2°♈18'02	

conjunction	16596 Mar 08 02:08	2°♈53'36	0°19'20
minimum elong	16596 Mar 08 02:08	2°♈53'36	0°19'21
max. Earth dist.	16596 Mar 08 04:42	2°♈53'50	31.12268 AU
morning rise	16596 Mar 24 04:03	3°♈29'11	
retrograde	16596 Jun 21 05:40	5°♈24'05	
opposition	16596 Sep 07 19:48	4°♈00'31	0°20'44
min. Earth dist.	16596 Sep 07 18:18	4°♈00'37	29.12720 AU
direct	16596 Nov 25 14:40	2°♈36'24	
evening set	16597 Feb 22 12:32	4°♈30'32	

conjunction	16597 Mar 10 14:31	5°♈06'04	0°19'31
minimum elong	16597 Mar 10 14:31	5°♈06'04	0°19'32
max. Earth dist.	16597 Mar 10 15:51	5°♈06'11	31.13157 AU
morning rise	16597 Mar 26 16:31	5°♈41'38	
retrograde	16597 Jun 23 18:05	7°♈36'25	
opposition	16597 Sep 10 06:18	6°♈12'52	0°20'56
min. Earth dist.	16597 Sep 10 04:22	6°♈13'00	29.13588 AU
direct	16597 Nov 28 02:44	4°♈48'43	
evening set	16598 Feb 25 00:45	6°♈42'49	

conjunction	16598 Mar 13 02:48	7°♈18'20	0°19'42
minimum elong	16598 Mar 13 02:48	7°♈18'20	0°19'40
max. Earth dist.	16598 Mar 13 04:00	7°♈18'27	31.14008 AU
morning rise	16598 Mar 29 04:43	7°♈53'53	
retrograde	16598 Jun 26 05:12	9°♈48'34	
opposition	16598 Sep 12 16:54	8°♈25'00	0°21'06
min. Earth dist.	16598 Sep 12 16:20	8°♈25'03	29.14444 AU
direct	16598 Nov 30 14:55	7°♈00'50	
evening set	16599 Feb 27 13:02	8°♈54'54	

conjunction	16599 Mar 15 15:07	9°♈30'25	0°19'50
minimum elong	16599 Mar 15 15:07	9°♈30'25	0°19'48
max. Earth dist.	16599 Mar 15 15:55	9°♈30'29	31.14883 AU
morning rise	16599 Mar 31 16:58	10°♈05'56	
retrograde	16599 Jun 28 17:02	12°♈00'30	
opposition	16599 Sep 15 03:08	10°♈36'57	0°21'14
min. Earth dist.	16599 Sep 15 01:56	10°♈37'02	29.15336 AU
direct	16599 Dec 03 04:03	9°♈12'45	
evening set	16600 Mar 02 01:18	11°♈06'49	

conjunction	16600 Mar 18 03:17	11°♈42'19	0°19'57
minimum elong	16600 Mar 18 03:17	11°♈42'19	0°19'52
max. Earth dist.	16600 Mar 18 03:23	11°♈42'19	31.15806 AU
morning rise	16600 Apr 03 05:05	12°♈17'49	
retrograde	16600 Jul 01 03:48	14°♈12'16	
opposition	16600 Sep 17 13:38	12°♈48'45	0°21'20
min. Earth dist.	16600 Sep 17 13:28	12°♈48'46	29.16316 AU
direct	16600 Dec 05 14:26	11°♈24'32	
evening set	16601 Mar 04 13:13	13°♈18'35	

conjunction	16601 Mar 20 15:18	13°♈54'04	0°20'02
minimum elong	16601 Mar 20 15:18	13°♈54'04	0°19'57
max. Earth dist.	16601 Mar 20 16:03	13°♈54'08	31.16839 AU
morning rise	16601 Apr 05 16:55	14°♈29'32	
retrograde	16601 Jul 03 15:13	16°♈23'53	
opposition	16601 Sep 20 00:01	15°♈00'25	0°21'25
min. Earth dist.	16601 Sep 19 23:23	15°♈00'28	29.17398 AU
direct	16601 Dec 08 03:18	13°♈36'13	