





































































































































opposition	12100 Mar 05 12:08	21° <u>♏</u> 25'39	0°28'37	direct	12106 Jun 13 23:55	13° <u>♏</u> 45'05	
min. Earth dist.	12100 Mar 05 03:25	21° <u>♏</u> 26'32	18.97279 AU	evening set	12106 Sep 12 13:58	16° <u>♏</u> 48'17	
direct	12100 May 20 07:44	19° <u>♏</u> 28'22					
evening set	12100 Aug 18 15:21	22° <u>♏</u> 28'52		conjunction	12106 Sep 28 17:05	17° <u>♏</u> 43'59	0°48'07
				minimum elong	12106 Sep 28 17:04	17° <u>♏</u> 43'59	0°48'17
conjunction	12100 Sep 03 14:51	23° <u>♏</u> 23'30	0°27'51	max. Earth dist.	12106 Sep 28 22:39	17° <u>♏</u> 44'48	20.73474 AU
minimum elong	12100 Sep 03 14:50	23° <u>♏</u> 23'30	0°27'40	morning rise	12106 Oct 14 22:38	18° <u>♏</u> 40'04	
max. Earth dist.	12100 Sep 04 00:52	23° <u>♏</u> 24'56	20.95947 AU	retrograde	12107 Jan 17 02:27	21° <u>♏</u> 50'08	
morning rise	12100 Sep 19 16:37	24° <u>♏</u> 18'30		opposition	12107 Apr 04 01:46	19° <u>♏</u> 50'09	0°54'48
retrograde	12100 Dec 22 10:43	27° <u>♏</u> 25'19		min. Earth dist.	12107 Apr 03 20:53	19° <u>♏</u> 50'39	18.70984 AU
opposition	12101 Mar 09 20:08	25° <u>♏</u> 26'09	0°32'54	direct	12107 Jun 18 09:10	17° <u>♏</u> 52'00	
min. Earth dist.	12101 Mar 09 10:54	25° <u>♏</u> 27'05	18.94552 AU	evening set	12107 Sep 17 00:11	20° <u>♏</u> 55'52	
direct	12101 May 24 15:17	23° <u>♏</u> 28'47					
evening set	12101 Aug 22 21:46	26° <u>♏</u> 29'32		conjunction	12107 Oct 03 03:50	21° <u>♏</u> 51'47	0°50'47
				minimum elong	12107 Oct 03 03:49	21° <u>♏</u> 51'47	0°51'01
conjunction	12101 Sep 07 21:40	27° <u>♏</u> 24'19	0°31'39	max. Earth dist.	12107 Oct 03 07:24	21° <u>♏</u> 52'19	20.68364 AU
minimum elong	12101 Sep 07 21:40	27° <u>♏</u> 24'19	0°31'30	morning rise	12107 Oct 19 10:07	22° <u>♏</u> 48'06	
max. Earth dist.	12101 Sep 08 06:19	27° <u>♏</u> 25'33	20.93061 AU	retrograde	12108 Jan 21 13:59	25° <u>♏</u> 58'48	
morning rise	12101 Sep 24 00:12	28° <u>♏</u> 19'28		opposition	12108 Apr 07 12:05	23° <u>♏</u> 58'36	0°57'38
	12101 Oct 26 19:10	0° <u>♏</u>		min. Earth dist.	12108 Apr 07 09:15	23° <u>♏</u> 58'54	18.65675 AU
retrograde	12101 Dec 26 19:11	1° <u>♏</u> 26'43		direct	12108 Jun 21 16:36	22° <u>♏</u> 00'14	
	12102 Feb 28 14:16	30° <u>♏</u>		evening set	12108 Sep 20 10:47	25° <u>♏</u> 04'46	
opposition	12102 Mar 14 04:28	29° <u>♏</u> 27'24	0°37'02				
min. Earth dist.	12102 Mar 13 20:31	29° <u>♏</u> 28'12	18.91514 AU	conjunction	12108 Oct 06 15:13	26° <u>♏</u> 00'56	0°53'12
direct	12102 May 28 20:12	27° <u>♏</u> 29'55		minimum elong	12108 Oct 06 15:12	26° <u>♏</u> 00'56	0°53'30
	12102 Aug 17 19:06	0° <u>♏</u>		max. Earth dist.	12108 Oct 06 18:26	26° <u>♏</u> 01'24	20.62868 AU
evening set	12102 Aug 27 04:27	0° <u>♏</u> 31'02		morning rise	12108 Oct 22 22:02	26° <u>♏</u> 57'28	
					12109 Jan 06 09:49	0° <u>♏</u>	
conjunction	12102 Sep 12 05:08	1° <u>♏</u> 25'58	0°35'18	retrograde	12109 Jan 25 03:44	0° <u>♏</u> 08'49	
minimum elong	12102 Sep 12 05:07	1° <u>♏</u> 25'58	0°35'14		12109 Feb 13 00:58	30° <u>♏</u>	
max. Earth dist.	12102 Sep 12 14:10	1° <u>♏</u> 27'16	20.89860 AU	opposition	12109 Apr 11 22:37	28° <u>♏</u> 08'23	1°00'12
morning rise	12102 Sep 28 08:10	2° <u>♏</u> 21'17		min. Earth dist.	12109 Apr 11 19:44	28° <u>♏</u> 08'41	18.59996 AU
retrograde	12102 Dec 31 05:39	5° <u>♏</u> 29'00		direct	12109 Jun 26 03:02	26° <u>♏</u> 09'44	
opposition	12103 Mar 18 12:51	3° <u>♏</u> 29'34	0°41'00	evening set	12109 Sep 24 22:17	29° <u>♏</u> 15'00	
min. Earth dist.	12103 Mar 18 04:31	3° <u>♏</u> 30'24	18.88139 AU		12109 Oct 07 21:12	0° <u>♏</u>	
direct	12103 Jun 02 03:51	1° <u>♏</u> 32'00					
evening set	12103 Aug 31 11:57	4° <u>♏</u> 33'31		conjunction	12109 Oct 11 03:18	0° <u>♏</u> 11'25	0°55'22
				minimum elong	12109 Oct 11 03:17	0° <u>♏</u> 11'25	0°55'43
conjunction	12103 Sep 16 13:02	5° <u>♏</u> 28'38	0°38'47	max. Earth dist.	12109 Oct 11 04:48	0° <u>♏</u> 11'38	20.57031 AU
minimum elong	12103 Sep 16 13:02	5° <u>♏</u> 28'38	0°38'46	morning rise	12109 Oct 27 10:51	1° <u>♏</u> 08'12	
max. Earth dist.	12103 Sep 16 20:30	5° <u>♏</u> 29'42	20.86315 AU	retrograde	12110 Jan 29 16:00	4° <u>♏</u> 20'12	
morning rise	12103 Oct 02 16:49	6° <u>♏</u> 24'07		opposition	12110 Apr 16 09:35	2° <u>♏</u> 19'31	1°02'28
retrograde	12104 Jan 04 15:20	9° <u>♏</u> 32'22		min. Earth dist.	12110 Apr 16 08:40	2° <u>♏</u> 19'37	18.54029 AU
opposition	12104 Mar 21 21:34	7° <u>♏</u> 32'48	0°44'46	direct	12110 Jun 30 11:29	0° <u>♏</u> 20'33	
min. Earth dist.	12104 Mar 21 14:52	7° <u>♏</u> 33'29	18.84426 AU	evening set	12110 Sep 29 10:21	3° <u>♏</u> 26'36	
direct	12104 Jun 05 09:21	5° <u>♏</u> 35'08					
evening set	12104 Sep 03 19:53	8° <u>♏</u> 37'09		conjunction	12110 Oct 15 16:10	4° <u>♏</u> 23'16	0°57'14
				minimum elong	12110 Oct 15 16:10	4° <u>♏</u> 23'16	0°57'38
conjunction	12104 Sep 19 21:43	9° <u>♏</u> 32'27	0°42'05	max. Earth dist.	12110 Oct 15 17:19	4° <u>♏</u> 23'26	20.50951 AU
minimum elong	12104 Sep 19 21:43	9° <u>♏</u> 32'27	0°42'09	morning rise	12110 Nov 01 00:18	5° <u>♏</u> 20'18	
max. Earth dist.	12104 Sep 20 05:20	9° <u>♏</u> 33'33	20.82426 AU	retrograde	12111 Feb 03 06:57	8° <u>♏</u> 32'58	
morning rise	12104 Oct 06 02:00	10° <u>♏</u> 28'07		opposition	12111 Apr 20 20:48	6° <u>♏</u> 32'02	1°04'24
retrograde	12105 Jan 08 02:54	13° <u>♏</u> 36'57		min. Earth dist.	12111 Apr 20 19:44	6° <u>♏</u> 32'09	18.47844 AU
opposition	12105 Mar 26 06:35	11° <u>♏</u> 37'16	0°48'20	direct	12111 Jul 04 22:26	4° <u>♏</u> 32'44	
min. Earth dist.	12105 Mar 25 23:41	11° <u>♏</u> 37'58	18.80347 AU	evening set	12111 Oct 03 23:15	7° <u>♏</u> 39'37	
direct	12105 Jun 09 17:29	9° <u>♏</u> 39'28					
evening set	12105 Sep 08 04:33	12° <u>♏</u> 42'03		conjunction	12111 Oct 20 05:38	8° <u>♏</u> 36'33	0°58'49
				minimum elong	12111 Oct 20 05:37	8° <u>♏</u> 36'33	0°59'17
conjunction	12105 Sep 24 06:52	13° <u>♏</u> 37'32	0°45'12	max. Earth dist.	12111 Oct 20 05:22	8° <u>♏</u> 36'30	20.44675 AU
minimum elong	12105 Sep 24 06:51	13° <u>♏</u> 37'32	0°45'19	morning rise	12111 Nov 05 14:24	9° <u>♏</u> 33'50	
max. Earth dist.	12105 Sep 24 12:44	13° <u>♏</u> 38'23	20.78152 AU	retrograde	12112 Feb 07 20:41	12° <u>♏</u> 47'12	
morning rise	12105 Oct 10 11:54	14° <u>♏</u> 33'25		opposition	12112 Apr 24 08:37	10° <u>♏</u> 46'01	1°06'00
retrograde	12106 Jan 12 13:48	17° <u>♏</u> 42'52		min. Earth dist.	12112 Apr 24 09:18	10° <u>♏</u> 45'57	18.41511 AU
opposition	12106 Mar 30 16:09	15° <u>♏</u> 43'02	0°51'41	direct	12112 Jul 08 08:07	8° <u>♏</u> 46'23	
min. Earth dist.	12106 Mar 30 11:10	15° <u>♏</u> 43'32	18.75878 AU	evening set	12112 Oct 07 12:48	11° <u>♏</u> 54'08	

conjunction	12112 Oct 23 19:57	12° \mathcal{M} 51'20	1°00'04	minimum elong	12118 Nov 20 03:40	8° \mathcal{Z} 56'48	1°01'11
minimum elong	12112 Oct 23 19:56	12° \mathcal{M} 51'20	1°00'35	max. Earth dist.	12118 Nov 19 21:44	8° \mathcal{Z} 55'54	20.00253 AU
max. Earth dist.	12112 Oct 23 19:18	12° \mathcal{M} 51'15	20.38301 AU	morning rise	12118 Dec 06 16:12	9° \mathcal{Z} 56'00	
morning rise	12112 Nov 09 05:16	13° \mathcal{M} 48'54		retrograde	12119 Mar 10 22:31	13° \mathcal{Z} 14'23	
	12112 Nov 30 21:32	15° \mathcal{M}		opposition	12119 May 25 10:19	11° \mathcal{Z} 12'00	1°06'36
retrograde	12113 Feb 11 12:46	17° \mathcal{M} 02'57		min. Earth dist.	12119 May 25 15:08	11° \mathcal{Z} 11'29	17.97180 AU
opposition	12113 Apr 28 20:46	15° \mathcal{M} 01'32	1°07'14	direct	12119 Aug 08 05:03	9° \mathcal{Z} 10'18	
min. Earth dist.	12113 Apr 28 21:07	15° \mathcal{M} 01'30	18.35104 AU	evening set	12119 Nov 08 12:34	12° \mathcal{Z} 25'11	
	12113 Apr 29 11:23	15° \mathcal{R} \mathcal{M}					
direct	12113 Jul 12 19:42	13° \mathcal{M} 01'35		conjunction	12119 Nov 25 00:11	13° \mathcal{Z} 24'26	0°59'13
	12113 Sep 20 17:45	15° \mathcal{M}		minimum elong	12119 Nov 25 00:11	13° \mathcal{Z} 24'26	1°00'01
evening set	12113 Oct 12 03:11	16° \mathcal{M} 10'14		max. Earth dist.	12119 Nov 24 17:41	13° \mathcal{Z} 23'27	19.94073 AU
				morning rise	12119 Dec 11 12:58	14° \mathcal{Z} 23'54	
conjunction	12113 Oct 28 10:57	17° \mathcal{M} 07'43	1°01'00	retrograde	12120 Mar 14 17:20	17° \mathcal{Z} 42'58	
minimum elong	12113 Oct 28 10:57	17° \mathcal{M} 07'43	1°01'34	opposition	12120 May 29 02:58	15° \mathcal{Z} 40'27	1°05'06
max. Earth dist.	12113 Oct 28 09:14	17° \mathcal{M} 07'28	20.31867 AU	min. Earth dist.	12120 May 29 09:18	15° \mathcal{Z} 39'47	17.91016 AU
morning rise	12113 Nov 13 20:55	18° \mathcal{M} 05'33		direct	12120 Aug 11 20:49	13° \mathcal{Z} 38'27	
retrograde	12114 Feb 16 04:14	21° \mathcal{M} 20'20		evening set	12120 Nov 12 09:29	16° \mathcal{Z} 54'23	
opposition	12114 May 03 09:38	19° \mathcal{M} 18'41	1°08'06				
min. Earth dist.	12114 May 03 11:35	19° \mathcal{M} 18'29	18.28667 AU	conjunction	12120 Nov 28 21:34	17° \mathcal{Z} 53'55	0°57'40
direct	12114 Jul 17 06:37	17° \mathcal{M} 18'25		minimum elong	12120 Nov 28 21:34	17° \mathcal{Z} 53'55	0°58'28
evening set	12114 Oct 16 18:27	20° \mathcal{M} 28'02		max. Earth dist.	12120 Nov 28 13:17	17° \mathcal{Z} 52'40	19.87939 AU
				morning rise	12120 Dec 15 10:52	18° \mathcal{Z} 53'38	
conjunction	12114 Nov 02 02:58	21° \mathcal{M} 25'48	1°01'35	retrograde	12121 Mar 19 14:21	22° \mathcal{Z} 13'21	
minimum elong	12114 Nov 02 02:57	21° \mathcal{M} 25'48	1°02'13	opposition	12121 Jun 02 20:08	20° \mathcal{Z} 10'41	1°03'11
max. Earth dist.	12114 Nov 02 00:38	21° \mathcal{M} 25'28	20.25439 AU	min. Earth dist.	12121 Jun 03 02:54	20° \mathcal{Z} 09'57	17.84910 AU
morning rise	12114 Nov 18 13:28	22° \mathcal{M} 23'55		direct	12121 Aug 16 15:27	18° \mathcal{Z} 08'19	
retrograde	12115 Feb 20 21:36	25° \mathcal{M} 39'24		evening set	12121 Nov 17 07:10	21° \mathcal{Z} 25'20	
opposition	12115 May 07 22:45	23° \mathcal{M} 37'33	1°08'36				
min. Earth dist.	12115 May 08 00:25	23° \mathcal{M} 37'23	18.22250 AU	conjunction	12121 Dec 03 19:54	22° \mathcal{Z} 25'08	0°55'44
direct	12115 Jul 21 19:28	21° \mathcal{M} 36'59		minimum elong	12121 Dec 03 19:54	22° \mathcal{Z} 25'08	0°56'35
evening set	12115 Oct 21 10:38	24° \mathcal{M} 47'36		max. Earth dist.	12121 Dec 03 11:20	22° \mathcal{Z} 23'50	19.81860 AU
				morning rise	12121 Dec 20 09:23	23° \mathcal{Z} 25'06	
conjunction	12115 Nov 06 19:46	25° \mathcal{M} 45'40	1°01'50	retrograde	12122 Mar 24 10:20	26° \mathcal{Z} 45'24	
minimum elong	12115 Nov 06 19:46	25° \mathcal{M} 45'40	1°02'29	opposition	12122 Jun 07 14:00	24° \mathcal{Z} 42'35	1°00'51
max. Earth dist.	12115 Nov 06 16:37	25° \mathcal{M} 45'12	20.19037 AU	min. Earth dist.	12122 Jun 07 22:00	24° \mathcal{Z} 41'44	17.78877 AU
morning rise	12115 Nov 23 06:47	26° \mathcal{M} 44'03		direct	12122 Aug 21 09:05	22° \mathcal{Z} 39'52	
	12116 Feb 22 10:19	0° \mathcal{Z}		evening set	12122 Nov 22 05:46	25° \mathcal{Z} 57'55	
retrograde	12116 Feb 25 14:09	0° \mathcal{Z} 00'15					
	12116 Feb 28 17:33	30° \mathcal{R} \mathcal{M}		conjunction	12122 Dec 08 18:49	26° \mathcal{Z} 57'59	0°53'27
opposition	12116 May 11 12:47	27° \mathcal{M} 58'15	1°08'42	minimum elong	12122 Dec 08 18:49	26° \mathcal{Z} 57'59	0°54'17
min. Earth dist.	12116 May 11 15:55	27° \mathcal{M} 57'55	18.15882 AU	max. Earth dist.	12122 Dec 08 08:22	26° \mathcal{Z} 56'23	19.75904 AU
direct	12116 Jul 25 07:50	25° \mathcal{M} 57'24		morning rise	12122 Dec 25 08:43	27° \mathcal{Z} 58'11	
evening set	12116 Oct 25 03:31	29° \mathcal{M} 09'02			12123 Feb 01 12:31	0° \mathcal{Z}	
	12116 Nov 08 11:49	0° \mathcal{Z}		retrograde	12123 Mar 29 08:02	1° \mathcal{Z} 19'02	
					12123 May 25 23:23	30° \mathcal{R} \mathcal{Z}	
conjunction	12116 Nov 10 13:19	0° \mathcal{Z} 07'24	1°01'43	opposition	12123 Jun 12 08:16	29° \mathcal{Z} 16'03	0°58'08
minimum elong	12116 Nov 10 13:19	0° \mathcal{Z} 07'24	1°02'25	min. Earth dist.	12123 Jun 12 16:50	29° \mathcal{Z} 15'08	17.73006 AU
max. Earth dist.	12116 Nov 10 09:25	0° \mathcal{Z} 06'49	20.12716 AU	direct	12123 Aug 26 04:52	27° \mathcal{Z} 12'58	
morning rise	12116 Nov 27 00:54	1° \mathcal{Z} 06'04			12123 Nov 18 02:23	0° \mathcal{Z}	
retrograde	12117 Mar 01 08:54	4° \mathcal{Z} 23'01		evening set	12123 Nov 27 04:57	0° \mathcal{Z} 32'01	
opposition	12117 May 16 03:18	2° \mathcal{Z} 20'52	1°08'24				
min. Earth dist.	12117 May 16 06:16	2° \mathcal{Z} 20'33	18.09593 AU	conjunction	12123 Dec 13 18:34	1° \mathcal{Z} 32'21	0°50'48
direct	12117 Jul 29 22:23	0° \mathcal{Z} 19'44		minimum elong	12123 Dec 13 18:34	1° \mathcal{Z} 32'21	0°51'40
evening set	12117 Oct 29 21:34	3° \mathcal{Z} 32'26		max. Earth dist.	12123 Dec 13 08:22	1° \mathcal{Z} 30'47	19.70133 AU
				morning rise	12123 Dec 30 08:29	2° \mathcal{Z} 32'46	
conjunction	12117 Nov 15 08:01	4° \mathcal{Z} 31'06	1°01'15	retrograde	12124 Apr 02 05:32	5° \mathcal{Z} 54'07	
minimum elong	12117 Nov 15 08:01	4° \mathcal{Z} 31'06	1°01'59	opposition	12124 Jun 16 03:15	3° \mathcal{Z} 51'00	0°55'02
max. Earth dist.	12117 Nov 15 03:28	4° \mathcal{Z} 30'25	20.06452 AU	min. Earth dist.	12124 Jun 16 12:29	3° \mathcal{Z} 50'00	17.67356 AU
morning rise	12117 Dec 01 20:02	5° \mathcal{Z} 30'02		direct	12124 Aug 30 00:17	1° \mathcal{Z} 47'34	
retrograde	12118 Mar 06 02:40	8° \mathcal{Z} 47'47		evening set	12124 Dec 01 04:48	5° \mathcal{Z} 07'36	
opposition	12118 May 20 18:28	6° \mathcal{Z} 45'27	1°07'42				
min. Earth dist.	12118 May 20 23:04	6° \mathcal{Z} 44'58	18.03361 AU	conjunction	12124 Dec 17 18:39	6° \mathcal{Z} 08'09	0°47'50
direct	12118 Aug 03 12:23	4° \mathcal{Z} 44'03		minimum elong	12124 Dec 17 18:39	6° \mathcal{Z} 08'09	0°48'41
evening set	12118 Nov 03 16:39	7° \mathcal{Z} 57'50		max. Earth dist.	12124 Dec 17 06:45	6° \mathcal{Z} 06'20	19.64633 AU
				morning rise	12125 Jan 03 08:56	7° \mathcal{Z} 08'48	
conjunction	12118 Nov 20 03:40	8° \mathcal{Z} 56'48	1°00'25	retrograde	12125 Apr 07 03:47	10° \mathcal{Z} 30'38	

opposition	12125 Jun 20 22:44	8°  27'22	0°51'33	conjunction	12132 Jan 21 10:52	8°  54'43	0°19'06
min. Earth dist.	12125 Jun 21 08:32	8°  26'18	17.62016 AU	minimum elong	12132 Jan 21 10:52	8°  54'43	0°19'50
direct	12125 Sep 03 20:49	6°  23'34		max. Earth dist.	12132 Jan 20 22:30	8°  52'48	19.38410 AU
evening set	12125 Dec 06 05:21	9°  44'34		morning rise	12132 Feb 07 00:13	9°  56'18	
				retrograde	12132 May 10 04:13	13°  20'16	
conjunction	12125 Dec 22 19:40	10°  45'22	0°44'31	opposition	12132 Jul 23 05:19	11°  16'56	0°18'39
minimum elong	12125 Dec 22 19:41	10°  45'22	0°45'22	min. Earth dist.	12132 Jul 23 15:32	11°  15'49	17.37498 AU
max. Earth dist.	12125 Dec 22 08:24	10°  43'38	19.59460 AU	direct	12132 Oct 06 11:04	9°  11'47	
morning rise	12126 Jan 08 09:53	11°  46'12		evening set	12133 Jan 09 00:19	12°  38'16	
retrograde	12126 Apr 12 02:53	15°  08'27					
opposition	12126 Jun 25 18:37	13°  05'04	0°47'42	conjunction	12133 Jan 25 14:40	13°  40'04	0°14'12
min. Earth dist.	12126 Jun 26 04:38	13°  03'59	17.57028 AU	minimum elong	12133 Jan 25 14:40	13°  40'04	0°14'52
direct	12126 Sep 08 17:54	11°  00'57		behind sun begin	12133 Jan 25 12:15	13°  39'42	
evening set	12126 Dec 11 06:39	14°  22'53		behind sun end	12133 Jan 25 17:05	13°  40'26	
				max. Earth dist.	12133 Jan 25 01:54	13°  38'05	19.36683 AU
conjunction	12126 Dec 27 21:02	15°  23'52	0°40'55	morning rise	12133 Feb 11 03:37	14°  41'40	
minimum elong	12126 Dec 27 21:02	15°  23'52	0°41'46		12133 Feb 16 04:54	15° 	
max. Earth dist.	12126 Dec 27 08:15	15°  21'54	19.54684 AU	retrograde	12133 May 15 03:20	18°  05'44	
morning rise	12127 Jan 13 11:25	16°  24'54		opposition	12133 Jul 28 04:50	16°  02'29	0°13'07
retrograde	12127 Apr 17 01:37	19°  47'32		min. Earth dist.	12133 Jul 28 16:09	16°  01'15	17.36002 AU
opposition	12127 Jun 30 15:12	17°  44'04	0°43'32		12133 Aug 22 03:57	15°  R 	
min. Earth dist.	12127 Jul 01 01:47	17°  42'55	17.52482 AU	direct	12133 Oct 11 11:33	13°  57'15	
direct	12127 Sep 13 14:52	15°  39'39			12133 Nov 29 13:45	15° 	
evening set	12127 Dec 16 08:10	19°  02'28		evening set	12134 Jan 14 04:39	17°  24'14	
conjunction	12128 Jan 01 22:53	20°  03'39	0°37'01	conjunction	12134 Jan 30 18:42	18°  26'03	0°09'12
minimum elong	12128 Jan 01 22:53	20°  03'39	0°37'50	minimum elong	12134 Jan 30 18:43	18°  26'04	0°09'49
max. Earth dist.	12128 Jan 01 11:05	20°  01'50	19.50371 AU	behind sun begin	12134 Jan 30 13:15	18°  25'13	
morning rise	12128 Jan 18 13:03	21°  04'49		behind sun end	12134 Jan 31 00:11	18°  26'54	
retrograde	12128 Apr 21 02:27	24°  27'49		max. Earth dist.	12134 Jan 30 05:48	18°  24'03	19.35410 AU
opposition	12128 Jul 04 12:16	22°  24'18	0°39'03	morning rise	12134 Feb 16 07:13	19°  27'40	
min. Earth dist.	12128 Jul 04 22:25	22°  23'12	17.48415 AU	retrograde	12134 May 20 05:03	22°  51'44	
direct	12128 Sep 17 13:16	20°  19'39		opposition	12134 Aug 02 04:27	20°  48'35	0°07'28
evening set	12128 Dec 20 10:33	23°  43'18		min. Earth dist.	12134 Aug 02 14:52	20°  47'26	17.34940 AU
				direct	12134 Oct 16 14:41	18°  43'15	
conjunction	12129 Jan 06 01:12	24°  44'40	0°32'51	evening set	12135 Jan 19 09:05	22°  10'38	
minimum elong	12129 Jan 06 01:13	24°  44'40	0°33'40				
max. Earth dist.	12129 Jan 05 12:17	24°  42'40	19.46571 AU	conjunction	12135 Feb 04 22:46	23°  12'27	0°04'08
morning rise	12129 Jan 22 15:24	25°  45'59		minimum elong	12135 Feb 04 22:47	23°  12'27	0°04'43
retrograde	12129 Apr 26 01:31	29°  09'17		behind sun begin	12135 Feb 04 16:12	23°  11'27	
opposition	12129 Jul 09 09:48	27°  05'46	0°34'17	behind sun end	12135 Feb 05 05:22	23°  13'28	
min. Earth dist.	12129 Jul 09 20:39	27°  04'34	17.44892 AU	max. Earth dist.	12135 Feb 04 10:04	23°  10'29	19.34561 AU
direct	12129 Sep 22 10:56	25°  00'54		morning rise	12135 Feb 21 10:38	24°  14'02	
evening set	12129 Dec 25 13:19	28°  25'23		retrograde	12135 May 25 04:27	27°  38'02	
				opposition	12135 Aug 07 04:35	25°  34'57	0°01'46
conjunction	12130 Jan 11 04:09	29°  26'53	0°28'28	min. Earth dist.	12135 Aug 07 15:57	25°  33'43	17.34317 AU
minimum elong	12130 Jan 11 04:10	29°  26'53	0°29'15	direct	12135 Oct 21 16:09	23°  29'34	
max. Earth dist.	12130 Jan 10 16:04	29°  25'01	19.43323 AU	desc. node	12135 Nov 24 07:58	23°  59'47	
	12130 Jan 20 01:20	0° 		evening set	12136 Jan 24 13:20	26°  57'12	
morning rise	12130 Jan 27 18:05	0°  28'19					
retrograde	12130 May 01 03:12	3°  51'53		conjunction	12136 Feb 10 02:35	27°  59'00	-0°01'05
opposition	12130 Jul 14 07:50	1°  48'24	0°29'17	minimum elong	12136 Feb 10 02:33	27°  59'00	0°00'34
min. Earth dist.	12130 Jul 14 17:56	1°  47'18	17.41905 AU	behind sun begin	12136 Feb 09 19:50	27°  57'59	
	12130 Sep 02 11:28	30°  R 		behind sun end	12136 Feb 10 09:16	28°  00'02	
direct	12130 Sep 27 10:32	29°  43'26		max. Earth dist.	12136 Feb 09 13:27	27°  56'58	19.34168 AU
	12130 Oct 22 05:11	0° 		morning rise	12136 Feb 26 13:57	29°  00'32	
evening set	12130 Dec 30 16:38	3°  08'38			12136 Mar 14 08:57	0° 	
				retrograde	12136 May 29 06:09	2°  H 	24'25
conjunction	12131 Jan 16 07:17	4°  10'17	0°23'52	opposition	12136 Aug 11 04:43	0°  H 	21'23
minimum elong	12131 Jan 16 07:17	4°  10'17	0°24'37	min. Earth dist.	12136 Aug 11 15:01	0°  H 	20'16
max. Earth dist.	12131 Jan 15 18:27	4°  08'17	19.40604 AU		12136 Aug 19 09:46	30°  R 	
morning rise	12131 Feb 01 20:59	5°  11'47		direct	12136 Oct 25 19:45	28°  15'55	
retrograde	12131 May 06 02:25	8°  35'36			12136 Dec 29 01:25	0° 	
opposition	12131 Jul 19 06:26	6°  32'11	0°24'04	evening set	12137 Jan 28 17:36	1°  H 	43'44
min. Earth dist.	12131 Jul 19 17:27	6°  30'58	17.39454 AU				
direct	12131 Oct 02 09:34	4°  27'06		conjunction	12137 Feb 14 06:25	2°  H 	45'29
evening set	12132 Jan 04 20:17	7°  53'00		minimum elong	12137 Feb 14 06:25	2°  H 	45'29
							0°05'46

behind sun begin	12137 Feb 13 23:58	2° H 44'30		max. Earth dist.	12143 Mar 15 12:29	1° Y 10'31	19.45570 AU
behind sun end	12137 Feb 14 12:51	2° H 46'28		morning rise	12143 Apr 01 01:52	2° Y 12'12	
max. Earth dist.	12137 Feb 13 18:11	2° H 43'34	19.34222 AU	retrograde	12143 Jul 02 01:36	5° Y 33'25	
morning rise	12137 Mar 02 17:01	3° H 46'56		opposition	12143 Sep 14 05:19	3° Y 31'07	-0°40'56
retrograde	12137 Jun 03 05:32	7° H 10'35		min. Earth dist.	12143 Sep 14 11:39	3° Y 30'26	17.47442 AU
opposition	12137 Aug 16 04:56	5° H 07'38	-0°09'39	direct	12143 Nov 29 10:19	1° Y 26'00	
min. Earth dist.	12137 Aug 16 15:57	5° H 06'26	17.34437 AU	evening set	12144 Mar 03 12:44	4° Y 52'19	
direct	12137 Oct 30 21:00	3° H 02'06					
evening set	12138 Feb 02 21:46	6° H 29'59		conjunction	12144 Mar 19 20:16	5° Y 52'57	-0°38'46
				minimum elong	12144 Mar 19 20:15	5° Y 52'57	0°38'46
conjunction	12138 Feb 19 09:52	7° H 31'39	-0°11'18	max. Earth dist.	12144 Mar 19 12:44	5° Y 51'47	19.49429 AU
minimum elong	12138 Feb 19 09:52	7° H 31'39	0°10'54	morning rise	12144 Apr 05 01:20	6° Y 53'13	
behind sun begin	12138 Feb 19 04:48	7° H 30'52		retrograde	12144 Jul 05 23:24	10° Y 13'56	
behind sun end	12138 Feb 19 14:56	7° H 32'25		opposition	12144 Sep 18 04:49	8° Y 11'51	-0°45'18
max. Earth dist.	12138 Feb 18 21:03	7° H 29'39	19.34763 AU	min. Earth dist.	12144 Sep 18 10:29	8° Y 11'15	17.51552 AU
morning rise	12138 Mar 07 19:55	8° H 33'00		direct	12144 Dec 03 11:46	6° Y 06'58	
retrograde	12138 Jun 08 07:01	11° H 56'22		evening set	12145 Mar 08 13:16	9° Y 32'47	
opposition	12138 Aug 21 05:12	9° H 53'28	-0°15'17				
min. Earth dist.	12138 Aug 21 15:06	9° H 52'23	17.35226 AU	conjunction	12145 Mar 24 20:03	10° Y 33'11	-0°42'33
direct	12138 Nov 05 00:27	7° H 47'53		minimum elong	12145 Mar 24 20:03	10° Y 33'11	0°42'38
evening set	12139 Feb 08 01:20	11° H 15'44		max. Earth dist.	12145 Mar 24 14:18	10° Y 32'18	19.53763 AU
				morning rise	12145 Apr 10 00:08	11° Y 33'13	
conjunction	12139 Feb 24 12:56	12° H 17'17	-0°16'17	retrograde	12145 Jul 10 20:45	14° Y 53'21	
minimum elong	12139 Feb 24 12:55	12° H 17'17	0°15'56	opposition	12145 Sep 23 03:56	12° Y 51'33	-0°49'22
max. Earth dist.	12139 Feb 24 01:43	12° H 15'32	19.35801 AU	min. Earth dist.	12145 Sep 23 08:31	12° Y 51'03	17.56081 AU
morning rise	12139 Mar 12 22:02	13° H 18'31		direct	12145 Dec 08 13:33	10° Y 46'57	
retrograde	12139 Jun 13 06:02	16° H 41'32		evening set	12146 Mar 13 13:17	14° Y 12'10	
opposition	12139 Aug 26 05:33	14° H 38'42	-0°20'48				
min. Earth dist.	12139 Aug 26 15:34	14° H 37'37	17.36527 AU	conjunction	12146 Mar 29 19:04	15° Y 12'18	-0°46'03
direct	12139 Nov 10 01:43	12° H 33'07		minimum elong	12146 Mar 29 19:03	15° Y 12'18	0°46'12
evening set	12140 Feb 13 04:43	16° H 00'49		max. Earth dist.	12146 Mar 29 13:32	15° Y 11'27	19.58480 AU
				morning rise	12146 Apr 14 22:19	16° Y 12'05	
conjunction	12140 Feb 29 15:26	17° H 02'14	-0°21'10	retrograde	12146 Jul 15 17:01	19° Y 31'39	
minimum elong	12140 Feb 29 15:26	17° H 02'14	0°20'52	opposition	12146 Sep 28 03:00	17° Y 30'05	-0°53'05
max. Earth dist.	12140 Feb 29 03:51	17° H 00'25	19.37382 AU	min. Earth dist.	12146 Sep 28 07:21	17° Y 29'37	17.60980 AU
morning rise	12140 Mar 16 23:56	18° H 03'18		direct	12146 Dec 13 14:04	15° Y 25'46	
retrograde	12140 Jun 17 06:17	21° H 25'56		evening set	12147 Mar 18 12:18	18° Y 50'18	
opposition	12140 Aug 30 05:35	19° H 23'10	-0°26'10				
min. Earth dist.	12140 Aug 30 14:28	19° H 22'12	17.38393 AU	conjunction	12147 Apr 03 17:16	19° Y 50'11	-0°49'14
direct	12140 Nov 14 04:47	17° H 17'36		minimum elong	12147 Apr 03 17:15	19° Y 50'11	0°49'26
evening set	12141 Feb 17 07:29	20° H 45'04		max. Earth dist.	12147 Apr 03 13:07	19° Y 49'32	19.63527 AU
				morning rise	12147 Apr 19 19:37	20° Y 49'41	
conjunction	12141 Mar 05 17:39	21° H 46'19	-0°25'52	retrograde	12147 Jul 20 13:42	24° Y 08'38	
minimum elong	12141 Mar 05 17:38	21° H 46'19	0°25'41	opposition	12147 Oct 03 01:35	22° Y 07'19	-0°56'26
max. Earth dist.	12141 Mar 05 08:03	21° H 44'50	19.39526 AU	min. Earth dist.	12147 Oct 03 04:34	22° Y 07'00	17.66154 AU
morning rise	12141 Mar 22 01:10	22° H 47'13		direct	12147 Dec 18 15:35	20° Y 03'17	
retrograde	12141 Jun 22 04:41	26° H 09'24		evening set	12148 Mar 22 10:47	23° Y 27'05	
opposition	12141 Sep 04 05:42	24° H 06'45	-0°31'20				
min. Earth dist.	12141 Sep 04 14:07	24° H 05'50	17.40824 AU	conjunction	12148 Apr 07 14:48	24° Y 26'40	-0°52'05
direct	12141 Nov 19 06:16	22° H 01'16		minimum elong	12148 Apr 07 14:47	24° Y 26'40	0°52'22
evening set	12142 Feb 22 09:55	25° H 28'26		max. Earth dist.	12148 Apr 07 11:06	24° Y 26'06	19.68816 AU
				morning rise	12148 Apr 23 16:20	25° Y 25'55	
conjunction	12142 Mar 10 19:05	26° H 29'29	-0°30'24	retrograde	12148 Jul 24 08:23	28° Y 44'12	
minimum elong	12142 Mar 10 19:04	26° H 29'29	0°30'16	opposition	12148 Oct 06 23:44	26° Y 43'07	-0°59'25
max. Earth dist.	12142 Mar 10 09:20	26° H 27'58	19.42253 AU	min. Earth dist.	12148 Oct 07 02:54	26° Y 42'47	17.71559 AU
morning rise	12142 Mar 27 01:52	27° H 30'12		direct	12148 Dec 22 14:27	24° Y 39'21	
	12142 May 14 07:58	0° Y		evening set	12149 Mar 27 08:24	28° Y 02'21	
retrograde	12142 Jun 27 03:44	0° Y 51'54					
	12142 Aug 11 05:26	30° R H		conjunction	12149 Apr 12 11:36	29° Y 01'39	-0°54'35
opposition	12142 Sep 09 05:35	28° H 49'24	-0°36'16	minimum elong	12149 Apr 12 11:35	29° Y 01'39	0°54'56
min. Earth dist.	12142 Sep 09 12:54	28° H 48'37	17.43852 AU	max. Earth dist.	12149 Apr 12 08:41	29° Y 01'12	19.74312 AU
direct	12142 Nov 24 08:46	26° H 44'04		morning rise	12149 Apr 28 12:19	0° B 00'37	
	12143 Feb 24 12:02	0° Y			12149 Apr 28 08:13	0° B	
evening set	12143 Feb 27 11:35	0° Y 10'51		retrograde	12149 Jul 29 04:23	3° B 18'13	
				opposition	12149 Oct 11 21:26	1° B 17'20	-1°02'00
conjunction	12143 Mar 15 20:06	1° Y 11'43	-0°34'43	min. Earth dist.	12149 Oct 11 23:03	1° B 17'10	17.77125 AU
minimum elong	12143 Mar 15 20:05	1° Y 11'43	0°34'39		12149 Nov 13 21:17	30° R Y	

direct	12149 Dec 27 14:51	29° Υ 13'51	evening set	12156 Apr 27 12:53	29° \mathcal{B} 17'45
	12150 Feb 08 02:06	0° \mathcal{B}		12156 May 09 07:33	0° Π
evening set	12150 Apr 01 05:05	2° \mathcal{B} 35'58			
conjunction	12150 Apr 17 07:24	3° \mathcal{B} 34'59 -0°56'45	conjunction	12156 May 13 10:55	0° Π 15'01 -1°01'55
minimum elong	12150 Apr 17 07:24	3° \mathcal{B} 34'59 0°57'09	minimum elong	12156 May 13 10:55	0° Π 15'01 1°02'37
max. Earth dist.	12150 Apr 17 05:19	3° \mathcal{B} 34'40 19.79942 AU	max. Earth dist.	12156 May 13 15:20	0° Π 15'41 20.16300 AU
morning rise	12150 May 03 07:18	4° \mathcal{B} 33'40	morning rise	12156 May 29 07:08	1° Π 12'03
retrograde	12150 Aug 02 21:52	7° \mathcal{B} 50'34	retrograde	12156 Aug 28 21:50	4° Π 24'30
opposition	12150 Oct 16 18:48	5° \mathcal{B} 49'53 -1°04'11	opposition	12156 Nov 12 13:15	2° Π 24'42 -1°08'36
min. Earth dist.	12150 Oct 16 20:38	5° \mathcal{B} 49'41 17.82828 AU	min. Earth dist.	12156 Nov 12 09:12	2° Π 25'08 18.19553 AU
direct	12151 Jan 01 12:22	3° \mathcal{B} 46'39	direct	12157 Jan 28 14:00	0° Π 23'07
evening set	12151 Apr 06 00:52	7° \mathcal{B} 07'49	evening set	12157 May 02 03:03	3° Π 38'03
conjunction	12151 Apr 22 02:21	8° \mathcal{B} 06'32 -0°58'32	conjunction	12157 May 18 00:22	4° Π 35'02 -1°01'30
minimum elong	12151 Apr 22 02:21	8° \mathcal{B} 06'32 0°59'00	minimum elong	12157 May 18 00:22	4° Π 35'02 1°02'13
max. Earth dist.	12151 Apr 22 00:50	8° \mathcal{B} 06'18 19.85707 AU	max. Earth dist.	12157 May 18 04:57	4° Π 35'43 20.22790 AU
morning rise	12151 May 08 01:36	9° \mathcal{B} 04'57	morning rise	12157 Jun 02 20:19	5° Π 31'49
retrograde	12151 Aug 07 16:34	12° \mathcal{B} 21'07	retrograde	12157 Sep 02 12:18	8° Π 43'35
opposition	12151 Oct 21 15:19	10° \mathcal{B} 20'35 -1°05'57	opposition	12157 Nov 17 06:09	6° Π 43'59 -1°07'56
min. Earth dist.	12151 Oct 21 15:24	10° \mathcal{B} 20'34 17.88642 AU	min. Earth dist.	12157 Nov 17 00:09	6° Π 44'36 18.26065 AU
direct	12152 Jan 06 10:59	8° \mathcal{B} 17'36	direct	12158 Feb 02 07:50	4° Π 42'44
evening set	12152 Apr 09 19:36	11° \mathcal{B} 37'46	evening set	12158 May 06 16:07	7° Π 56'38
conjunction	12152 Apr 25 20:23	12° \mathcal{B} 36'13 -0°59'57	conjunction	12158 May 22 13:03	8° Π 53'22 -1°00'44
minimum elong	12152 Apr 25 20:23	12° \mathcal{B} 36'13 1°00'28	minimum elong	12158 May 22 13:03	8° Π 53'22 1°01'30
max. Earth dist.	12152 Apr 25 20:07	12° \mathcal{B} 36'10 19.91570 AU	max. Earth dist.	12158 May 22 19:39	8° Π 54'21 20.29305 AU
morning rise	12152 May 11 18:54	13° \mathcal{B} 34'21	morning rise	12158 Jun 07 08:28	9° Π 49'54
retrograde	12152 Jun 06 07:32	15° \mathcal{B}	retrograde	12158 Sep 07 00:35	13° Π 01'01
	12152 Aug 11 09:02	16° \mathcal{B} 49'45	opposition	12158 Nov 21 22:38	11° Π 01'38 -1°06'52
	12152 Oct 21 05:28	15° \mathcal{R}	min. Earth dist.	12158 Nov 21 16:34	11° Π 02'15 18.32569 AU
opposition	12152 Oct 25 11:26	14° \mathcal{B} 49'21 -1°07'19	direct	12159 Feb 07 00:31	9° Π 00'45
min. Earth dist.	12152 Oct 25 11:45	14° \mathcal{B} 49'19 17.94562 AU	evening set	12159 May 11 04:40	12° Π 13'38
direct	12153 Jan 10 07:21	12° \mathcal{B} 46'36	conjunction	12159 May 27 00:58	13° Π 10'05 -0°59'38
	12153 Mar 26 06:57	15° \mathcal{B}	minimum elong	12159 May 27 00:58	13° Π 10'05 1°00'25
evening set	12153 Apr 14 13:26	16° \mathcal{B} 05'46	max. Earth dist.	12159 May 27 07:25	13° Π 11'03 20.35788 AU
conjunction	12153 Apr 30 13:23	17° \mathcal{B} 03'54 -1°01'00	morning rise	12159 Jun 11 20:15	14° Π 06'23
minimum elong	12153 Apr 30 13:22	17° \mathcal{B} 03'54 1°01'35	retrograde	12159 Sep 11 14:12	17° Π 16'53
max. Earth dist.	12153 Apr 30 13:35	17° \mathcal{B} 03'55 19.97550 AU	opposition	12159 Nov 26 14:14	15° Π 17'42 -1°05'28
morning rise	12153 May 16 11:20	18° \mathcal{B} 01'45	min. Earth dist.	12159 Nov 26 06:41	15° Π 18'28 18.39007 AU
retrograde	12153 Aug 16 01:57	21° \mathcal{B} 16'23	direct	12160 Feb 11 16:37	13° Π 17'09
opposition	12153 Oct 30 06:45	19° \mathcal{B} 16'07 -1°08'15	evening set	12160 May 14 16:21	16° Π 29'03
min. Earth dist.	12153 Oct 30 05:05	19° \mathcal{B} 16'18 18.00600 AU	conjunction	12160 May 30 12:24	17° Π 25'16 -0°58'13
direct	12154 Jan 15 04:42	17° \mathcal{B} 13'37	minimum elong	12160 May 30 12:24	17° Π 25'16 0°59'03
evening set	12154 Apr 19 06:12	20° \mathcal{B} 31'43	max. Earth dist.	12160 May 30 20:36	17° Π 26'29 20.42154 AU
conjunction	12154 May 05 05:31	21° \mathcal{B} 29'34 -1°01'40	morning rise	12160 Jun 15 07:15	18° Π 21'21
minimum elong	12154 May 05 05:30	21° \mathcal{B} 29'34 1°02'17	retrograde	12160 Sep 15 01:18	21° Π 31'14
max. Earth dist.	12154 May 05 07:31	21° \mathcal{B} 29'52 20.03652 AU	opposition	12160 Nov 30 05:33	19° Π 32'15 -1°03'42
morning rise	12154 May 21 02:45	22° \mathcal{B} 27'08	min. Earth dist.	12160 Nov 29 22:04	19° Π 33'01 18.45287 AU
retrograde	12154 Aug 20 16:55	25° \mathcal{B} 41'01	direct	12161 Feb 15 07:47	17° Π 32'04
opposition	12154 Nov 04 01:41	23° \mathcal{B} 40'53 -1°08'47	evening set	12161 May 19 03:26	20° Π 42'58
min. Earth dist.	12154 Nov 03 23:53	23° \mathcal{B} 41'04 18.06782 AU	conjunction	12161 Jun 03 22:55	21° Π 38'57 -0°56'29
direct	12155 Jan 20 00:06	21° \mathcal{B} 38'40	minimum elong	12161 Jun 03 22:55	21° Π 38'57 0°57'20
evening set	12155 Apr 23 21:58	24° \mathcal{B} 55'41	max. Earth dist.	12161 Jun 04 06:41	21° Π 40'06 20.48339 AU
conjunction	12155 May 09 20:30	25° \mathcal{B} 53'14 -1°01'59	morning rise	12161 Jun 19 17:43	22° Π 34'49
minimum elong	12155 May 09 20:30	25° \mathcal{B} 53'14 1°02'38	retrograde	12161 Sep 19 14:14	25° Π 44'08
max. Earth dist.	12155 May 09 22:58	25° \mathcal{B} 53'36 20.09912 AU	opposition	12161 Dec 04 20:14	23° Π 45'19 -1°01'36
morning rise	12155 May 25 17:21	26° \mathcal{B} 50'32	min. Earth dist.	12161 Dec 04 11:37	23° Π 46'12 18.51362 AU
retrograde	12155 Aug 13 12:21	0° Π	direct	12162 Feb 19 22:27	21° Π 45'27
	12155 Aug 25 08:30	0° Π 03'42	evening set	12162 May 23 13:43	24° Π 55'24
opposition	12155 Sep 06 04:29	30° \mathcal{R}	conjunction	12162 Jun 08 09:03	25° Π 51'09 -0°54'29
min. Earth dist.	12155 Nov 08 19:46	28° \mathcal{B} 03'43 -1°08'54	minimum elong	12162 Jun 08 09:03	25° Π 51'09 0°55'20
direct	12156 Jan 24 19:42	26° \mathcal{B} 01'47	max. Earth dist.	12162 Jun 08 18:24	25° Π 52'32 20.54280 AU
			morning rise	12162 Jun 24 03:32	26° Π 46'49

retrograde	12162 Sep 24 00:12	29°II55'35		conjunction	12169 Jul 06 14:29	24°☿37'13	-0°33'32
opposition	12162 Dec 09 10:26	27°II56'56	-0°59'12	minimum elong	12169 Jul 06 14:29	24°☿37'13	0°34'21
min. Earth dist.	12162 Dec 09 01:54	27°II57'48	18.57159 AU	max. Earth dist.	12169 Jul 07 01:53	24°☿38'52	20.86907 AU
direct	12163 Feb 24 12:23	25°II57'22		morning rise	12169 Jul 22 09:35	25°☿31'52	
evening set	12163 May 27 23:26	29°II06'23		retrograde	12169 Oct 22 17:23	28°☿37'38	
				opposition	12170 Jan 07 21:35	26°☿39'21	-0°35'05
conjunction	12163 Jun 12 18:21	0°☿01'55	-0°52'11	min. Earth dist.	12170 Jan 07 09:47	26°☿40'32	18.88720 AU
minimum elong	12163 Jun 12 18:21	0°☿01'55	0°53'03	direct	12170 Mar 25 17:24	24°☿41'12	
	12163 Jun 12 05:22	0°☿		evening set	12170 Jun 25 01:42	27°☿44'37	
max. Earth dist.	12163 Jun 13 03:00	0°☿03'11	20.59925 AU				
morning rise	12163 Jun 28 12:56	0°☿57'24		conjunction	12170 Jul 10 20:22	28°☿39'04	-0°29'47
retrograde	12163 Sep 28 11:56	4°☿05'39		minimum elong	12170 Jul 10 20:22	28°☿39'04	0°30'35
opposition	12163 Dec 13 24:00	2°☿07'06	-0°56'30	max. Earth dist.	12170 Jul 11 09:19	28°☿40'57	20.90433 AU
min. Earth dist.	12163 Dec 13 14:41	2°☿08'03	18.62639 AU	morning rise	12170 Jul 26 15:33	29°☿33'39	
direct	12164 Feb 29 01:27	0°☿07'48			12170 Aug 03 12:54	0°♂	
evening set	12164 May 31 08:24	3°☿15'54		retrograde	12170 Oct 27 01:14	2°♂39'09	
				opposition	12171 Jan 12 07:26	0°♂40'56	-0°30'51
conjunction	12164 Jun 16 03:17	4°☿11'15	-0°49'38	min. Earth dist.	12171 Jan 11 19:11	0°♂42'10	18.92096 AU
minimum elong	12164 Jun 16 03:17	4°☿11'15	0°50'29		12171 Jan 29 16:35	30°♂☿	
max. Earth dist.	12164 Jun 16 13:19	4°☿12'43	20.65222 AU	direct	12171 Mar 30 01:43	28°☿43'00	
morning rise	12164 Jul 01 21:38	5°☿06'33			12171 May 25 13:21	0°♂	
retrograde	12164 Oct 01 20:55	8°☿14'17		evening set	12171 Jun 29 07:09	1°♂45'49	
opposition	12164 Dec 17 12:57	6°☿15'50	-0°53'31				
min. Earth dist.	12164 Dec 17 03:42	6°☿16'46	18.67749 AU	conjunction	12171 Jul 15 01:47	2°♂40'11	-0°25'53
direct	12165 Mar 04 14:23	4°☿16'46		minimum elong	12171 Jul 15 01:48	2°♂40'11	0°26'39
evening set	12165 Jun 04 16:52	7°☿23'58		max. Earth dist.	12171 Jul 15 13:58	2°♂41'57	20.93662 AU
				morning rise	12171 Jul 30 21:28	3°♂34'42	
conjunction	12165 Jun 20 11:25	8°☿19'07	-0°46'50	retrograde	12171 Oct 31 09:57	6°♂40'01	
minimum elong	12165 Jun 20 11:25	8°☿19'07	0°47'42	opposition	12172 Jan 16 17:03	4°♂41'51	-0°26'28
max. Earth dist.	12165 Jun 20 20:42	8°☿20'29	20.70166 AU	min. Earth dist.	12172 Jan 16 04:39	4°♂43'05	18.95166 AU
morning rise	12165 Jul 06 05:58	9°☿14'16		direct	12172 Apr 02 09:32	2°♂44'06	
retrograde	12165 Oct 06 07:06	12°☿21'32		evening set	12172 Jul 02 12:13	5°♂46'25	
opposition	12165 Dec 22 01:25	10°☿23'08	-0°50'16				
min. Earth dist.	12165 Dec 21 15:31	10°☿24'08	18.72525 AU	conjunction	12172 Jul 18 07:10	6°♂40'43	-0°21'53
direct	12166 Mar 09 01:35	8°☿24'15		minimum elong	12172 Jul 18 07:10	6°♂40'43	0°22'39
evening set	12166 Jun 09 00:20	11°☿30'34		max. Earth dist.	12172 Jul 18 20:41	6°♂42'40	20.96553 AU
				morning rise	12172 Aug 03 02:58	7°♂35'10	
conjunction	12166 Jun 24 18:58	12°☿25'34	-0°43'48	retrograde	12172 Nov 03 17:57	10°♂40'21	
minimum elong	12166 Jun 24 18:58	12°☿25'34	0°44'39	opposition	12173 Jan 20 02:20	8°♂42'14	-0°21'59
max. Earth dist.	12166 Jun 25 05:53	12°☿27'10	20.74774 AU	min. Earth dist.	12173 Jan 19 13:35	8°♂43'31	18.97864 AU
morning rise	12166 Jul 10 13:27	13°☿20'34		direct	12173 Apr 06 17:16	6°♂44'42	
retrograde	12166 Oct 10 15:32	16°☿27'22		evening set	12173 Jul 06 17:20	9°♂46'32	
opposition	12166 Dec 26 13:16	14°☿29'00	-0°46'47				
min. Earth dist.	12166 Dec 26 03:07	14°☿30'01	18.76971 AU	conjunction	12173 Jul 22 12:17	10°♂40'46	-0°17'48
direct	12167 Mar 13 13:22	12°☿30'18		minimum elong	12173 Jul 22 12:18	10°♂40'46	0°18'30
evening set	12167 Jun 13 07:30	15°☿35'48		max. Earth dist.	12173 Jul 23 00:52	10°♂42'35	20.99067 AU
				morning rise	12173 Aug 07 08:37	11°♂35'12	
conjunction	12167 Jun 29 01:54	16°☿30'38	-0°40'34	retrograde	12173 Nov 08 02:20	14°♂40'17	
minimum elong	12167 Jun 29 01:54	16°☿30'38	0°41'25	opposition	12174 Jan 24 11:30	12°♂42'12	-0°17'24
max. Earth dist.	12167 Jun 29 12:14	16°☿32'08	20.79080 AU	min. Earth dist.	12174 Jan 23 22:58	12°♂43'27	19.00181 AU
morning rise	12167 Jul 14 20:41	17°☿25'31		direct	12174 Apr 11 00:14	10°♂44'50	
retrograde	12167 Oct 15 00:34	20°☿31'55		evening set	12174 Jul 10 22:05	13°♂46'16	
opposition	12167 Dec 31 00:24	18°☿33'33	-0°43'04				
min. Earth dist.	12167 Dec 30 13:40	18°☿34'38	18.81148 AU	conjunction	12174 Jul 26 17:28	14°♂40'29	-0°13'38
direct	12168 Mar 16 22:48	16°☿35'01		minimum elong	12174 Jul 26 17:28	14°♂40'29	0°14'19
evening set	12168 Jun 16 14:01	19°☿39'46		behind sun begin	12174 Jul 26 14:19	14°♂40'02	
				behind sun end	12174 Jul 26 20:38	14°♂40'55	
conjunction	12168 Jul 02 08:34	20°☿34'28	-0°37'08	max. Earth dist.	12174 Jul 27 07:09	14°♂42'26	21.01160 AU
minimum elong	12168 Jul 02 08:34	20°☿34'28	0°37'58		12174 Aug 01 08:58	15°♂	
max. Earth dist.	12168 Jul 02 20:31	20°☿36'12	20.83121 AU	morning rise	12174 Aug 11 14:02	15°♂34'52	
morning rise	12168 Jul 18 03:19	21°☿29'13		retrograde	12174 Nov 12 10:47	18°♂39'56	
retrograde	12168 Oct 18 08:32	24°☿35'15		opposition	12175 Jan 28 20:22	16°♂41'52	-0°12'45
opposition	12169 Jan 03 11:11	22°☿36'57	-0°39'10	min. Earth dist.	12175 Jan 28 07:41	16°♂43'08	19.02034 AU
min. Earth dist.	12169 Jan 02 23:56	22°☿38'04	18.85057 AU		12175 Mar 21 06:20	15°♂♂	
direct	12169 Mar 21 08:52	20°☿38'37		direct	12175 Apr 15 08:01	14°♂44'39	
evening set	12169 Jun 20 20:05	23°☿42'39			12175 May 10 00:31	15°♂	
				evening set	12175 Jul 15 03:08	17°♂45'45	

conjunction	12175 Jul 30 22:36	18°Ω39'55	-0°09'24	behind sun end	12180 Aug 19 05:50	8°♊35'12	
minimum elong	12175 Jul 30 22:36	18°Ω39'55	0°10'02	max. Earth dist.	12180 Aug 19 12:39	8°♊36'11	21.02878 AU
behind sun begin	12175 Jul 30 17:17	18°Ω39'10		morning rise	12180 Sep 04 00:35	9°♊29'08	
behind sun end	12175 Jul 31 03:56	18°Ω40'40		retrograde	12180 Dec 06 10:13	12°♊34'41	
max. Earth dist.	12175 Jul 31 10:57	18°Ω41'41	21.02771 AU	opposition	12181 Feb 21 22:14	10°♊36'03	0°15'40
morning rise	12175 Aug 15 19:43	19°Ω34'19		min. Earth dist.	12181 Feb 21 11:38	10°♊37'07	19.02243 AU
retrograde	12175 Nov 16 18:35	22°Ω39'22		direct	12181 May 09 00:27	8°♊38'54	
opposition	12176 Feb 02 04:59	20°Ω41'17	-0°08'02	evening set	12181 Aug 07 08:53	11°♊39'02	
min. Earth dist.	12176 Feb 01 17:03	20°Ω42'29	19.03395 AU				
direct	12176 Apr 18 14:11	18°Ω44'10		conjunction	12181 Aug 23 06:40	12°♊33'23	0°16'18
evening set	12176 Jul 18 08:01	21°Ω44'59		minimum elong	12181 Aug 23 06:39	12°♊33'23	0°15'57
				behind sun begin	12181 Aug 23 05:45	12°♊33'15	
conjunction	12176 Aug 03 03:58	22°Ω39'09	-0°05'09	behind sun end	12181 Aug 23 07:34	12°♊33'30	
minimum elong	12176 Aug 03 03:57	22°Ω39'09	0°05'44	max. Earth dist.	12181 Aug 23 16:51	12°♊34'50	21.01508 AU
behind sun begin	12176 Aug 02 21:38	22°Ω38'16		morning rise	12181 Sep 08 06:48	13°♊28'03	
behind sun end	12176 Aug 03 10:15	22°Ω40'02		retrograde	12181 Dec 10 18:49	16°♊33'52	
max. Earth dist.	12176 Aug 03 17:00	22°Ω41'01	21.03860 AU	opposition	12182 Feb 26 06:12	14°♊35'04	0°20'16
morning rise	12176 Aug 19 01:19	23°Ω33'33		min. Earth dist.	12182 Feb 25 20:26	14°♊36'03	19.00702 AU
retrograde	12176 Nov 20 03:03	26°Ω38'37		direct	12182 May 13 05:26	12°♊37'51	
opposition	12177 Feb 05 13:34	24°Ω40'31	-0°03'17	evening set	12182 Aug 11 14:05	15°♊38'03	
min. Earth dist.	12177 Feb 05 01:35	24°Ω41'43	19.04203 AU				
direct	12177 Apr 22 22:07	22°Ω43'28		conjunction	12182 Aug 27 12:33	16°♊32'30	0°20'25
evening set	12177 Jul 22 12:56	25°Ω44'02		minimum elong	12182 Aug 27 12:33	16°♊32'30	0°20'09
				max. Earth dist.	12182 Aug 27 23:32	16°♊34'04	20.99788 AU
conjunction	12177 Aug 07 09:03	26°Ω38'12	-0°00'50	morning rise	12182 Sep 12 13:07	17°♊27'16	
minimum elong	12177 Aug 07 09:02	26°Ω38'12	0°01'23	retrograde	12182 Dec 15 03:00	20°♊33'22	
behind sun begin	12177 Aug 07 02:27	26°Ω37'17		opposition	12183 Mar 02 14:03	18°♊34'27	0°24'48
behind sun end	12177 Aug 07 15:37	26°Ω39'07		min. Earth dist.	12183 Mar 02 03:53	18°♊35'28	18.98804 AU
max. Earth dist.	12177 Aug 07 20:35	26°Ω39'51	21.04393 AU	direct	12183 May 17 12:19	16°♊37'11	
morning rise	12177 Aug 23 07:04	27°Ω32'37		evening set	12183 Aug 15 19:50	19°♊37'32	
	12177 Oct 15 21:12	0°♊					
asc. node	12177 Oct 17 14:38	0°♊03'09		conjunction	12183 Aug 31 18:36	20°♊32'04	0°24'27
retrograde	12177 Nov 24 10:40	0°♊37'47		minimum elong	12183 Aug 31 18:36	20°♊32'04	0°24'14
	12178 Jan 04 00:06	30°♋Ω		max. Earth dist.	12183 Sep 01 04:12	20°♊33'27	20.97722 AU
opposition	12178 Feb 09 22:06	28°Ω39'34	0°01'29	morning rise	12183 Sep 16 19:53	21°♊26'58	
min. Earth dist.	12178 Feb 09 11:00	28°Ω40'40	19.04463 AU	retrograde	12183 Dec 19 11:51	24°♊33'26	
direct	12178 Apr 27 03:49	26°Ω42'32		opposition	12184 Mar 05 22:01	22°♊34'23	0°29'12
evening set	12178 Jul 26 17:47	29°Ω42'54		min. Earth dist.	12184 Mar 05 12:52	22°♊35'18	18.96582 AU
	12178 Jul 31 19:09	0°♊		direct	12184 May 20 17:38	20°♊37'04	
				evening set	12184 Aug 19 01:43	23°♊37'38	
conjunction	12178 Aug 11 14:28	0°♊37'05	0°03'36				
minimum elong	12178 Aug 11 14:28	0°♊37'05	0°03'06	conjunction	12184 Sep 04 01:11	24°♊32'19	0°28'22
behind sun begin	12178 Aug 11 07:55	0°♊36'10		minimum elong	12184 Sep 04 01:11	24°♊32'19	0°28'12
behind sun end	12178 Aug 11 21:02	0°♊38'00		max. Earth dist.	12184 Sep 04 11:29	24°♊33'47	20.95337 AU
max. Earth dist.	12178 Aug 12 02:38	0°♊38'49	21.04380 AU	morning rise	12184 Sep 20 02:53	25°♊27'19	
morning rise	12178 Aug 27 12:51	1°♊31'33		retrograde	12184 Dec 22 21:12	28°♊34'12	
retrograde	12178 Nov 28 18:37	4°♊36'47		opposition	12185 Mar 10 06:07	26°♊35'02	0°33'28
opposition	12179 Feb 14 06:09	2°♊38'27	0°06'15	min. Earth dist.	12185 Mar 09 20:34	26°♊36'00	18.94028 AU
min. Earth dist.	12179 Feb 13 19:01	2°♊39'34	19.04180 AU	direct	12185 May 25 00:22	24°♊37'41	
direct	12179 May 01 11:42	0°♊41'24		evening set	12185 Aug 23 08:07	27°♊38'33	
evening set	12179 Jul 30 22:49	3°♊41'37					
				conjunction	12185 Sep 08 08:00	28°♊33'21	0°32'09
conjunction	12179 Aug 15 19:44	4°♊35'50	0°07'52	minimum elong	12185 Sep 08 07:59	28°♊33'21	0°32'03
minimum elong	12179 Aug 15 19:45	4°♊35'50	0°07'25	max. Earth dist.	12185 Sep 08 16:53	28°♊34'37	20.92622 AU
behind sun begin	12179 Aug 15 13:43	4°♊35'00		morning rise	12185 Sep 24 10:29	29°♊28'31	
behind sun end	12179 Aug 16 01:46	4°♊36'41			12185 Oct 03 23:11	0°♋	
max. Earth dist.	12179 Aug 16 06:26	4°♊37'21	21.03854 AU	retrograde	12185 Dec 27 06:17	2°♋35'51	
morning rise	12179 Aug 31 18:49	5°♊30'21		opposition	12186 Mar 14 14:33	0°♋36'35	0°37'36
retrograde	12179 Dec 03 02:30	8°♊35'44		min. Earth dist.	12186 Mar 14 06:16	0°♋37'25	18.91151 AU
opposition	12180 Feb 18 14:17	6°♊37'14	0°10'59		12186 Mar 29 21:39	30°♋♊	
min. Earth dist.	12180 Feb 18 04:03	6°♊38'16	19.03427 AU	direct	12186 May 29 06:07	28°♊39'10	
direct	12180 May 04 16:57	4°♊40'08			12186 Jul 25 19:12	0°♋	
evening set	12180 Aug 03 03:39	7°♊40'16		evening set	12186 Aug 27 14:59	1°♋40'24	
conjunction	12180 Aug 19 01:10	8°♊34'33	0°12'07	conjunction	12186 Sep 12 15:37	2°♋35'22	0°35'48
minimum elong	12180 Aug 19 01:09	8°♊34'33	0°11'43	minimum elong	12186 Sep 12 15:36	2°♋35'22	0°35'45
behind sun begin	12180 Aug 18 20:29	8°♊33'54		max. Earth dist.	12186 Sep 13 00:59	2°♋36'42	20.89572 AU

morning rise	12186 Sep 28 18:35	3° <u>♄</u> 30'41			12193 Sep 17 16:17	0° <u>♄</u>	
retrograde	12186 Dec 31 16:59	6° <u>♄</u> 38'31		evening set	12193 Sep 25 08:51	0° <u>♄</u> 25'54	
opposition	12187 Mar 18 22:54	4° <u>♄</u> 39'09	0°41'33				
min. Earth dist.	12187 Mar 18 14:30	4° <u>♄</u> 40'00	18.87917 AU	conjunction	12193 Oct 11 13:48	1° <u>♄</u> 22'17	0°55'46
direct	12187 Jun 02 13:27	2° <u>♄</u> 41'40		minimum elong	12193 Oct 11 13:47	1° <u>♄</u> 22'17	0°56'08
evening set	12187 Aug 31 22:37	5° <u>♄</u> 43'20		max. Earth dist.	12193 Oct 11 15:20	1° <u>♄</u> 22'30	20.57054 AU
				morning rise	12193 Oct 27 21:19	2° <u>♄</u> 19'03	
conjunction	12187 Sep 16 23:39	6° <u>♄</u> 38'28	0°39'17	retrograde	12194 Jan 30 02:01	5° <u>♄</u> 31'00	
minimum elong	12187 Sep 16 23:39	6° <u>♄</u> 38'28	0°39'18	opposition	12194 Apr 16 19:59	3° <u>♄</u> 30'16	1°02'54
max. Earth dist.	12187 Sep 17 07:18	6° <u>♄</u> 39'34	20.86153 AU	min. Earth dist.	12194 Apr 16 18:51	3° <u>♄</u> 30'23	18.54099 AU
morning rise	12187 Oct 03 03:23	7° <u>♄</u> 33'58		direct	12194 Jun 30 22:10	1° <u>♄</u> 31'14	
retrograde	12188 Jan 05 02:24	10° <u>♄</u> 42'20		evening set	12194 Sep 29 20:51	4° <u>♄</u> 37'13	
opposition	12188 Mar 22 07:51	8° <u>♄</u> 42'52	0°45'19				
min. Earth dist.	12188 Mar 22 01:04	8° <u>♄</u> 43'33	18.84312 AU	conjunction	12194 Oct 16 02:36	5° <u>♄</u> 33'52	0°57'37
direct	12188 Jun 05 19:24	6° <u>♄</u> 45'17		minimum elong	12194 Oct 16 02:35	5° <u>♄</u> 33'52	0°58'03
evening set	12188 Sep 04 06:34	9° <u>♄</u> 47'27		max. Earth dist.	12194 Oct 16 04:00	5° <u>♄</u> 34'04	20.51072 AU
				morning rise	12194 Nov 01 10:37	6° <u>♄</u> 30'53	
conjunction	12188 Sep 20 08:21	10° <u>♄</u> 42'45	0°42'35	retrograde	12195 Feb 03 17:00	9° <u>♄</u> 43'27	
minimum elong	12188 Sep 20 08:20	10° <u>♄</u> 42'45	0°42'39	opposition	12195 Apr 21 07:02	7° <u>♄</u> 42'29	1°04'48
max. Earth dist.	12188 Sep 20 16:10	10° <u>♄</u> 43'53	20.82343 AU	min. Earth dist.	12195 Apr 21 05:41	7° <u>♄</u> 42'37	18.48028 AU
morning rise	12188 Oct 06 12:32	11° <u>♄</u> 38'26		direct	12195 Jul 05 09:25	5° <u>♄</u> 43'08	
retrograde	12189 Jan 08 14:14	14° <u>♄</u> 47'22		evening set	12195 Oct 04 09:41	8° <u>♄</u> 49'56	
opposition	12189 Mar 26 17:00	12° <u>♄</u> 47'46	0°48'53				
min. Earth dist.	12189 Mar 26 10:15	12° <u>♄</u> 48'28	18.80286 AU	conjunction	12195 Oct 20 15:58	9° <u>♄</u> 46'50	0°59'09
direct	12189 Jun 10 03:54	10° <u>♄</u> 50'04		minimum elong	12195 Oct 20 15:58	9° <u>♄</u> 46'50	0°59'38
evening set	12189 Sep 08 15:29	13° <u>♄</u> 52'46		max. Earth dist.	12195 Oct 20 15:53	9° <u>♄</u> 46'49	20.44927 AU
				morning rise	12195 Nov 06 00:40	10° <u>♄</u> 44'06	
conjunction	12189 Sep 24 17:44	14° <u>♄</u> 48'16	0°45'41	retrograde	12196 Feb 08 06:14	13° <u>♄</u> 57'21	
minimum elong	12189 Sep 24 17:43	14° <u>♄</u> 48'16	0°45'49	opposition	12196 Apr 24 18:52	11° <u>♄</u> 56'08	1°06'22
max. Earth dist.	12189 Sep 24 23:30	14° <u>♄</u> 49'06	20.78097 AU	min. Earth dist.	12196 Apr 24 19:11	11° <u>♄</u> 56'06	18.41836 AU
morning rise	12189 Oct 10 22:42	15° <u>♄</u> 44'09		direct	12196 Jul 08 18:24	9° <u>♄</u> 56'29	
retrograde	12190 Jan 13 00:24	18° <u>♄</u> 53'41		evening set	12196 Oct 07 23:00	13° <u>♄</u> 04'08	
opposition	12190 Mar 31 02:34	16° <u>♄</u> 53'55	0°52'13				
min. Earth dist.	12190 Mar 30 21:44	16° <u>♄</u> 54'24	18.75826 AU	conjunction	12196 Oct 24 06:05	14° <u>♄</u> 01'18	1°00'23
direct	12190 Jun 14 10:34	14° <u>♄</u> 56'01		minimum elong	12196 Oct 24 06:05	14° <u>♄</u> 01'18	1°00'55
evening set	12190 Sep 13 00:52	17° <u>♄</u> 59'17		max. Earth dist.	12196 Oct 24 05:55	14° <u>♄</u> 01'16	20.38697 AU
				morning rise	12196 Nov 09 15:20	14° <u>♄</u> 58'50	
conjunction	12190 Sep 29 03:56	18° <u>♄</u> 55'00	0°48'34		12196 Nov 09 23:29	15° <u>♄</u>	
minimum elong	12190 Sep 29 03:56	18° <u>♄</u> 55'00	0°48'46	retrograde	12197 Feb 11 22:59	18° <u>♄</u> 12'47	
max. Earth dist.	12190 Sep 29 09:26	18° <u>♄</u> 55'48	20.73413 AU	opposition	12197 Apr 29 07:02	16° <u>♄</u> 11'20	1°07'34
morning rise	12190 Oct 15 09:25	19° <u>♄</u> 51'05		min. Earth dist.	12197 Apr 29 06:58	16° <u>♄</u> 11'21	18.35573 AU
retrograde	12191 Jan 17 13:05	23° <u>♄</u> 01'11			12197 May 29 16:44	15° <u>♄</u> 11'23	
opposition	12191 Apr 04 12:21	21° <u>♄</u> 01'13	0°55'18	direct	12197 Jul 13 06:53	14° <u>♄</u> 11'23	
min. Earth dist.	12191 Apr 04 07:35	21° <u>♄</u> 01'43	18.70916 AU		12197 Aug 25 17:39	15° <u>♄</u>	
direct	12191 Jun 18 19:54	19° <u>♄</u> 03'06		evening set	12197 Oct 12 13:27	17° <u>♄</u> 19'57	
evening set	12191 Sep 17 10:58	22° <u>♄</u> 06'59					
				conjunction	12197 Oct 28 21:08	18° <u>♄</u> 17'24	1°01'17
conjunction	12191 Oct 03 14:31	23° <u>♄</u> 02'54	0°51'14	minimum elong	12197 Oct 28 21:07	18° <u>♄</u> 17'24	1°01'52
minimum elong	12191 Oct 03 14:31	23° <u>♄</u> 02'54	0°51'29	max. Earth dist.	12197 Oct 28 19:40	18° <u>♄</u> 17'11	20.32408 AU
max. Earth dist.	12191 Oct 03 17:57	23° <u>♄</u> 03'24	20.68294 AU	morning rise	12197 Nov 14 07:01	19° <u>♄</u> 15'12	
morning rise	12191 Oct 19 20:45	23° <u>♄</u> 59'13		retrograde	12198 Feb 16 13:21	22° <u>♄</u> 29'52	
retrograde	12192 Jan 22 00:06	27° <u>♄</u> 09'55		opposition	12198 May 03 19:47	20° <u>♄</u> 28'14	1°08'24
opposition	12192 Apr 07 22:35	25° <u>♄</u> 09'42	0°58'08	min. Earth dist.	12198 May 03 21:25	20° <u>♄</u> 28'04	18.29281 AU
min. Earth dist.	12192 Apr 07 19:45	25° <u>♄</u> 10'00	18.65610 AU	direct	12198 Jul 17 16:59	18° <u>♄</u> 27'59	
direct	12192 Jun 22 03:41	23° <u>♄</u> 11'18		evening set	12198 Oct 17 04:39	21° <u>♄</u> 37'31	
evening set	12192 Sep 20 21:32	26° <u>♄</u> 15'50					
				conjunction	12198 Nov 02 13:06	22° <u>♄</u> 35'15	1°01'50
conjunction	12192 Oct 07 01:55	27° <u>♄</u> 12'00	0°53'38	minimum elong	12198 Nov 02 13:05	22° <u>♄</u> 35'15	1°02'28
minimum elong	12192 Oct 07 01:55	27° <u>♄</u> 12'00	0°53'58	max. Earth dist.	12198 Nov 02 11:15	22° <u>♄</u> 34'58	20.26121 AU
max. Earth dist.	12192 Oct 07 05:12	27° <u>♄</u> 12'28	20.62822 AU	morning rise	12198 Nov 18 23:30	23° <u>♄</u> 33'19	
morning rise	12192 Oct 23 08:40	28° <u>♄</u> 08'31		retrograde	12199 Feb 21 07:33	26° <u>♄</u> 48'43	
	12192 Nov 28 16:35	0° <u>♄</u>		opposition	12199 May 08 09:02	24° <u>♄</u> 46'55	1°08'51
retrograde	12193 Jan 25 13:46	1° <u>♄</u> 19'50		min. Earth dist.	12199 May 08 10:21	24° <u>♄</u> 46'47	18.22994 AU
	12193 Mar 26 15:12	30° <u>♄</u>		direct	12199 Jul 22 06:31	22° <u>♄</u> 46'24	
opposition	12193 Apr 12 09:01	29° <u>♄</u> 19'22	1°00'40	evening set	12199 Oct 21 20:44	25° <u>♄</u> 56'57	
min. Earth dist.	12193 Apr 12 06:04	29° <u>♄</u> 19'40	18.59980 AU				
direct	12193 Jun 26 13:47	27° <u>♄</u> 20'40		conjunction	12199 Nov 07 05:45	26° <u>♄</u> 54'59	1°02'03

minimum elong	12199 Nov 07 05:45	26° \mathbb{M} .54'59	1°02'44	opposition	12206 Jun 09 00:19	25° \mathbb{X} 52'08	1°00'51
max. Earth dist.	12199 Nov 07 02:52	26° \mathbb{M} .54'33	20.19836 AU	min. Earth dist.	12206 Jun 09 08:35	25° \mathbb{X} 51'15	17.79264 AU
morning rise	12199 Nov 23 16:42	27° \mathbb{M} .53'20		direct	12206 Aug 22 19:32	23° \mathbb{X} 49'28	
	12200 Jan 03 22:56	0° \mathbb{X}		evening set	12206 Nov 23 15:58	27° \mathbb{X} 07'28	
retrograde	12200 Feb 25 23:40	1° \mathbb{X} 09'29					
	12200 Apr 21 13:21	30° \mathbb{R} \mathbb{M}		conjunction	12206 Dec 10 04:59	28° \mathbb{X} 07'31	0°53'25
opposition	12200 May 12 23:06	29° \mathbb{M} .07'33	1°08'55	minimum elong	12206 Dec 10 04:59	28° \mathbb{X} 07'31	0°54'18
min. Earth dist.	12200 May 13 02:06	29° \mathbb{M} .07'15	18.16722 AU	max. Earth dist.	12206 Dec 09 18:29	28° \mathbb{X} 05'55	19.76259 AU
direct	12200 Jul 26 18:13	27° \mathbb{M} .06'47		morning rise	12206 Dec 26 18:50	29° \mathbb{X} 07'43	
	12200 Oct 21 06:18	0° \mathbb{X}			12207 Jan 10 21:40	0° \mathbb{Z}	
evening set	12200 Oct 26 13:49	0° \mathbb{X} 18'22		retrograde	12207 Mar 30 18:03	2° \mathbb{Z} 28'32	
				opposition	12207 Jun 13 18:37	0° \mathbb{Z} 25'35	0°58'05
conjunction	12200 Nov 11 23:32	1° \mathbb{X} 16'42	1°01'55	min. Earth dist.	12207 Jun 14 03:07	0° \mathbb{Z} 24'40	17.73334 AU
minimum elong	12200 Nov 11 23:31	1° \mathbb{X} 16'42	1°02'37		12207 Jun 23 17:31	30° \mathbb{R} \mathbb{X}	
max. Earth dist.	12200 Nov 11 19:56	1° \mathbb{X} 16'10	20.13584 AU	direct	12207 Aug 27 15:05	28° \mathbb{X} 22'31	
morning rise	12200 Nov 28 11:00	2° \mathbb{X} 15'20			12207 Oct 28 18:13	0° \mathbb{Z}	
retrograde	12201 Mar 02 19:10	5° \mathbb{X} 32'14		evening set	12207 Nov 28 14:52	1° \mathbb{Z} 41'32	
opposition	12201 May 17 13:35	3° \mathbb{X} 30'12	1°08'35				
min. Earth dist.	12201 May 17 16:32	3° \mathbb{X} 29'53	18.10473 AU	conjunction	12207 Dec 15 04:26	2° \mathbb{Z} 41'50	0°50'45
direct	12201 Jul 31 08:58	1° \mathbb{X} 29'10		minimum elong	12207 Dec 15 04:26	2° \mathbb{Z} 41'50	0°51'37
evening set	12201 Oct 31 07:57	4° \mathbb{X} 41'50		max. Earth dist.	12207 Dec 14 18:14	2° \mathbb{Z} 40'17	19.70444 AU
				morning rise	12207 Dec 31 18:20	3° \mathbb{Z} 42'15	
conjunction	12201 Nov 16 18:17	5° \mathbb{X} 40'28	1°01'24	retrograde	12208 Apr 03 15:13	7° \mathbb{Z} 03'35	
minimum elong	12201 Nov 16 18:17	5° \mathbb{X} 40'28	1°02'10	opposition	12208 Jun 17 13:32	5° \mathbb{Z} 00'29	0°54'56
max. Earth dist.	12201 Nov 16 13:38	5° \mathbb{X} 39'46	20.07323 AU	min. Earth dist.	12208 Jun 17 22:48	4° \mathbb{Z} 59'29	17.67657 AU
morning rise	12201 Dec 03 06:13	6° \mathbb{X} 39'23		direct	12208 Aug 31 10:46	2° \mathbb{Z} 57'04	
retrograde	12202 Mar 07 13:03	9° \mathbb{X} 57'01		evening set	12208 Dec 02 14:45	6° \mathbb{Z} 17'03	
opposition	12202 May 22 04:56	7° \mathbb{X} 54'52	1°07'52				
min. Earth dist.	12202 May 22 09:46	7° \mathbb{X} 54'21	18.04207 AU	conjunction	12208 Dec 19 04:32	7° \mathbb{Z} 17'36	0°47'44
direct	12202 Aug 04 22:34	5° \mathbb{X} 53'33		minimum elong	12208 Dec 19 04:32	7° \mathbb{Z} 17'36	0°48'36
evening set	12202 Nov 05 03:05	9° \mathbb{X} 07'19		max. Earth dist.	12208 Dec 18 16:45	7° \mathbb{Z} 15'48	19.64935 AU
				morning rise	12209 Jan 04 18:47	8° \mathbb{Z} 18'14	
conjunction	12202 Nov 21 14:00	10° \mathbb{X} 06'15	1°00'33	retrograde	12209 Apr 08 13:36	11° \mathbb{Z} 40'02	
minimum elong	12202 Nov 21 13:59	10° \mathbb{X} 06'15	1°01'20	opposition	12209 Jun 22 08:49	9° \mathbb{Z} 36'46	0°51'25
max. Earth dist.	12202 Nov 21 08:00	10° \mathbb{X} 05'21	20.01052 AU	min. Earth dist.	12209 Jun 22 18:24	9° \mathbb{Z} 35'44	17.62328 AU
morning rise	12202 Dec 08 02:24	11° \mathbb{X} 05'26		direct	12209 Sep 05 07:18	7° \mathbb{Z} 33'00	
retrograde	12203 Mar 12 09:26	14° \mathbb{X} 23'48		evening set	12209 Dec 07 15:10	10° \mathbb{Z} 53'57	
opposition	12203 May 26 20:46	12° \mathbb{X} 21'30	1°06'43				
min. Earth dist.	12203 May 27 01:48	12° \mathbb{X} 20'58	17.97924 AU	conjunction	12209 Dec 24 05:26	11° \mathbb{Z} 54'43	0°44'23
direct	12203 Aug 09 15:00	10° \mathbb{X} 19'53		minimum elong	12209 Dec 24 05:26	11° \mathbb{Z} 54'43	0°45'16
evening set	12203 Nov 09 23:05	13° \mathbb{X} 34'44		max. Earth dist.	12209 Dec 23 18:19	11° \mathbb{Z} 53'01	19.59788 AU
				morning rise	12210 Jan 09 19:36	12° \mathbb{Z} 55'33	
conjunction	12203 Nov 26 10:36	14° \mathbb{X} 33'58	0°59'19	retrograde	12210 Apr 13 12:17	16° \mathbb{Z} 17'46	
minimum elong	12203 Nov 26 10:36	14° \mathbb{X} 33'58	1°00'07	opposition	12210 Jun 27 04:47	14° \mathbb{Z} 14'24	0°47'32
max. Earth dist.	12203 Nov 26 03:45	14° \mathbb{X} 32'56	19.94755 AU	min. Earth dist.	12210 Jun 27 14:38	14° \mathbb{Z} 13'20	17.57384 AU
morning rise	12203 Dec 12 23:19	15° \mathbb{X} 33'24		direct	12210 Sep 10 03:53	12° \mathbb{Z} 10'19	
retrograde	12204 Mar 16 04:22	18° \mathbb{X} 52'27		evening set	12210 Dec 12 16:17	15° \mathbb{Z} 32'11	
opposition	12204 May 30 13:28	16° \mathbb{X} 50'01	1°05'10				
min. Earth dist.	12204 May 30 20:08	16° \mathbb{X} 49'18	17.91634 AU	conjunction	12210 Dec 29 06:36	16° \mathbb{Z} 33'09	0°40'44
direct	12204 Aug 13 07:06	14° \mathbb{X} 48'04		minimum elong	12210 Dec 29 06:36	16° \mathbb{Z} 33'09	0°41'35
evening set	12204 Nov 13 19:50	18° \mathbb{X} 03'58		max. Earth dist.	12210 Dec 28 18:03	16° \mathbb{Z} 31'13	19.55070 AU
				morning rise	12211 Jan 14 20:56	17° \mathbb{Z} 34'09	
conjunction	12204 Nov 30 07:53	19° \mathbb{X} 03'29	0°57'43	retrograde	12211 Apr 18 11:50	20° \mathbb{Z} 56'47	
minimum elong	12204 Nov 30 07:53	19° \mathbb{X} 03'29	0°58'33	opposition	12211 Jul 02 01:17	18° \mathbb{Z} 53'19	0°43'19
max. Earth dist.	12204 Nov 29 23:27	19° \mathbb{X} 02'12	19.88492 AU	min. Earth dist.	12211 Jul 02 11:26	18° \mathbb{Z} 52'13	17.52907 AU
morning rise	12204 Dec 16 21:07	20° \mathbb{X} 03'11		direct	12211 Sep 15 01:07	16° \mathbb{Z} 48'57	
retrograde	12205 Mar 21 01:00	23° \mathbb{X} 22'52		evening set	12211 Dec 17 17:51	20° \mathbb{Z} 11'42	
opposition	12205 Jun 04 06:38	21° \mathbb{X} 20'15	1°03'13				
min. Earth dist.	12205 Jun 04 13:33	21° \mathbb{X} 19'31	17.85397 AU	conjunction	12212 Jan 03 08:31	21° \mathbb{Z} 12'52	0°36'48
direct	12205 Aug 18 01:09	19° \mathbb{X} 17'57		minimum elong	12212 Jan 03 08:31	21° \mathbb{Z} 12'52	0°37'39
evening set	12205 Nov 18 17:30	22° \mathbb{X} 34'55		max. Earth dist.	12212 Jan 02 20:58	21° \mathbb{Z} 11'05	19.50838 AU
				morning rise	12212 Jan 19 22:39	22° \mathbb{Z} 14'01	
conjunction	12205 Dec 05 06:09	23° \mathbb{X} 34'42	0°55'45	retrograde	12212 Apr 22 11:46	25° \mathbb{Z} 37'00	
minimum elong	12205 Dec 05 06:10	23° \mathbb{X} 34'42	0°56'35	opposition	12212 Jul 05 22:17	23° \mathbb{Z} 33'31	0°38'48
max. Earth dist.	12205 Dec 04 21:19	23° \mathbb{X} 33'22	19.82295 AU	min. Earth dist.	12212 Jul 06 08:10	23° \mathbb{Z} 32'26	17.48924 AU
morning rise	12205 Dec 21 19:35	24° \mathbb{X} 34'39		direct	12212 Sep 18 22:54	21° \mathbb{Z} 28'55	
retrograde	12206 Mar 25 20:59	27° \mathbb{X} 54'55		evening set	12212 Dec 21 20:08	24° \mathbb{Z} 52'30	

conjunction	12213 Jan 07 10:46	25° $\overline{3}$ 53'50	0°32'37	conjunction	12219 Feb 06 08:11	24° \approx 20'39	0°03'43
minimum elong	12213 Jan 07 10:47	25° $\overline{3}$ 53'51	0°33'26	minimum elong	12219 Feb 06 08:10	24° \approx 20'38	0°04'18
max. Earth dist.	12213 Jan 06 21:59	25° $\overline{3}$ 51'52	19.47120 AU	behind sun begin	12219 Feb 06 01:32	24° \approx 19'38	
morning rise	12213 Jan 24 00:59	26° $\overline{3}$ 55'08		behind sun end	12219 Feb 06 14:48	24° \approx 21'39	
	12213 Apr 01 11:26	0° \approx		max. Earth dist.	12219 Feb 05 19:08	24° \approx 18'37	19.34623 AU
retrograde	12213 Apr 27 11:49	0° \approx 18'26		morning rise	12219 Feb 22 20:03	25° \approx 22'12	
	12213 May 23 17:23	30° \overline{R} $\overline{3}$		retrograde	12219 May 26 14:14	28° \approx 46'09	
opposition	12213 Jul 10 19:54	28° $\overline{3}$ 14'56	0°34'00	opposition	12219 Aug 08 14:36	26° \approx 42'59	0°01'17
min. Earth dist.	12213 Jul 11 06:23	28° $\overline{3}$ 13'48	17.45466 AU	min. Earth dist.	12219 Aug 09 02:08	26° \approx 41'43	17.34305 AU
direct	12213 Sep 23 20:49	26° $\overline{3}$ 10'10		direct	12219 Oct 23 01:36	24° \approx 37'31	
evening set	12213 Dec 26 22:54	29° $\overline{3}$ 34'33		desc. node	12219 Oct 26 15:40	24° \approx 37'52	
	12214 Jan 02 21:14	0° \approx		evening set	12220 Jan 25 22:48	28° \approx 05'03	
conjunction	12214 Jan 12 13:42	0° \approx 36'03	0°28'11	conjunction	12220 Feb 11 12:01	29° \approx 06'50	-0°01'32
minimum elong	12214 Jan 12 13:43	0° \approx 36'03	0°28'59	minimum elong	12220 Feb 11 12:01	29° \approx 06'50	0°01'00
max. Earth dist.	12214 Jan 12 01:48	0° \approx 34'12	19.43912 AU	behind sun begin	12220 Feb 11 05:17	29° \approx 05'48	
morning rise	12214 Jan 29 03:36	1° \approx 37'27		behind sun end	12220 Feb 11 18:45	29° \approx 07'51	
retrograde	12214 May 02 12:39	5° \approx 01'00		max. Earth dist.	12220 Feb 10 22:49	29° \approx 04'46	19.34090 AU
opposition	12214 Jul 15 17:51	2° \approx 57'34	0°28'57		12220 Feb 25 16:59	0° \overline{H}	
min. Earth dist.	12214 Jul 16 03:54	2° \approx 56'28	17.42494 AU	morning rise	12220 Feb 27 23:25	0° \overline{H} 08'21	
direct	12214 Sep 28 20:41	0° \approx 52'39		retrograde	12220 May 30 15:38	3° \overline{H} 32'09	
evening set	12215 Jan 01 02:18	4° \approx 17'48		opposition	12220 Aug 12 14:29	1° \overline{H} 29'02	-0°04'27
conjunction	12215 Jan 17 16:54	5° \approx 19'24	0°23'34	min. Earth dist.	12220 Aug 13 00:56	1° \overline{H} 27'54	17.34007 AU
minimum elong	12215 Jan 17 16:54	5° \approx 19'24	0°24'20		12220 Sep 19 10:38	30° \overline{R} \approx	
max. Earth dist.	12215 Jan 17 03:58	5° \approx 17'24	19.41181 AU	direct	12220 Oct 27 05:38	29° \approx 23'29	
morning rise	12215 Feb 03 06:37	6° \approx 20'54			12220 Dec 03 07:14	0° \overline{H}	
retrograde	12215 May 07 12:25	9° \approx 44'40		evening set	12221 Jan 30 02:58	2° \overline{H} 51'12	
opposition	12215 Jul 20 16:31	7° \approx 41'17	0°23'42	conjunction	12221 Feb 15 15:46	3° \overline{H} 52'57	-0°06'42
min. Earth dist.	12215 Jul 21 03:30	7° \approx 40'05	17.40002 AU	minimum elong	12221 Feb 15 15:46	3° \overline{H} 52'57	0°06'14
direct	12215 Oct 03 19:34	5° \approx 36'15		behind sun begin	12221 Feb 15 09:24	3° \overline{H} 51'58	
evening set	12216 Jan 06 05:49	9° \approx 02'02		behind sun end	12221 Feb 15 22:08	3° \overline{H} 53'55	
conjunction	12216 Jan 22 20:24	10° \approx 03'45	0°18'46	max. Earth dist.	12221 Feb 15 03:20	3° \overline{H} 51'00	19.34032 AU
minimum elong	12216 Jan 22 20:24	10° \approx 03'45	0°19'29	morning rise	12221 Mar 04 02:25	4° \overline{H} 54'23	
max. Earth dist.	12216 Jan 22 08:01	10° \approx 01'49	19.38911 AU	retrograde	12221 Jun 04 14:45	8° \overline{H} 17'59	
morning rise	12216 Feb 08 09:45	11° \approx 05'18		opposition	12221 Aug 17 14:43	6° \overline{H} 14'56	-0°10'10
retrograde	12216 May 11 13:54	14° \approx 29'14		min. Earth dist.	12221 Aug 18 01:53	6° \overline{H} 13'43	17.34203 AU
opposition	12216 Jul 24 15:30	12° \approx 25'54	0°18'16	direct	12221 Nov 01 07:04	4° \overline{H} 09'19	
min. Earth dist.	12216 Jul 25 01:51	12° \approx 24'46	17.37938 AU	evening set	12222 Feb 04 06:56	7° \overline{H} 37'08	
direct	12216 Oct 07 21:22	10° \approx 20'45		conjunction	12222 Feb 20 19:02	8° \overline{H} 38'46	-0°11'46
evening set	12217 Jan 10 09:58	13° \approx 47'07		minimum elong	12222 Feb 20 19:02	8° \overline{H} 38'46	0°11'21
max. Earth dist.	12217 Jan 26 11:08	14° \approx 46'51	19.37054 AU	behind sun begin	12222 Feb 20 14:10	8° \overline{H} 38'02	
conjunction	12217 Jan 27 00:16	14° \approx 48'53	0°13'50	behind sun end	12222 Feb 20 23:54	8° \overline{H} 39'31	
minimum elong	12217 Jan 27 00:16	14° \approx 48'53	0°14'31	max. Earth dist.	12222 Feb 20 06:21	8° \overline{H} 36'48	19.34495 AU
behind sun begin	12217 Jan 26 21:28	14° \approx 48'28		morning rise	12222 Mar 09 05:06	9° \overline{H} 40'08	
behind sun end	12217 Jan 27 03:05	14° \approx 49'19		retrograde	12222 Jun 09 15:31	13° \overline{H} 03'28	
	12217 Jan 29 23:22	15° \approx		opposition	12222 Aug 22 14:48	11° \overline{H} 00'28	-0°15'48
morning rise	12217 Feb 12 13:14	15° \approx 50'28		min. Earth dist.	12222 Aug 23 00:39	10° \overline{H} 59'24	17.34935 AU
retrograde	12217 May 16 13:26	19° \approx 14'28		direct	12222 Nov 06 10:27	8° \overline{H} 54'49	
opposition	12217 Jul 29 14:53	17° \approx 11'12	0°12'41	evening set	12223 Feb 09 10:28	12° \overline{H} 22'36	
min. Earth dist.	12217 Jul 30 02:23	17° \approx 09'57	17.36298 AU	conjunction	12223 Feb 25 22:03	13° \overline{H} 24'09	-0°16'45
direct	12217 Oct 12 21:26	15° \approx 05'56		minimum elong	12223 Feb 25 22:03	13° \overline{H} 24'09	0°16'25
evening set	12218 Jan 15 14:15	18° \approx 32'47		max. Earth dist.	12223 Feb 25 10:58	13° \overline{H} 22'26	19.35501 AU
conjunction	12218 Feb 01 04:19	19° \approx 34'36	0°08'48	morning rise	12223 Mar 14 07:12	14° \overline{H} 25'23	
minimum elong	12218 Feb 01 04:19	19° \approx 34'36	0°09'26	retrograde	12223 Jun 14 14:59	17° \overline{H} 48'24	
behind sun begin	12218 Jan 31 22:43	19° \approx 33'44		opposition	12223 Aug 27 15:01	15° \overline{H} 45'29	-0°21'19
behind sun end	12218 Feb 01 09:55	19° \approx 35'27		min. Earth dist.	12223 Aug 28 01:02	15° \overline{H} 44'24	17.36234 AU
max. Earth dist.	12218 Jan 31 15:14	19° \approx 32'34	19.35628 AU	direct	12223 Nov 11 11:51	13° \overline{H} 39'51	
morning rise	12218 Feb 17 16:48	20° \approx 36'11		evening set	12224 Feb 14 13:39	17° \overline{H} 07'31	
retrograde	12218 May 21 15:03	24° \approx 00'11		conjunction	12224 Mar 02 00:25	18° \overline{H} 08'55	-0°21'37
opposition	12218 Aug 03 14:33	21° \approx 56'58	0°07'01	minimum elong	12224 Mar 02 00:24	18° \overline{H} 08'55	0°21'22
min. Earth dist.	12218 Aug 04 01:09	21° \approx 55'48	17.35079 AU	max. Earth dist.	12224 Mar 01 13:07	18° \overline{H} 07'10	19.37102 AU
direct	12218 Oct 18 00:44	19° \approx 51'36		morning rise	12224 Mar 18 08:58	19° \overline{H} 10'01	
evening set	12219 Jan 20 18:30	23° \approx 18'50		retrograde	12224 Jun 18 15:01	22° \overline{H} 32'40	

opposition	12224 Aug 31 15:04	20° ✕ 29'51 -0°26'41	conjunction	12231 Apr 05 02:38	20° Υ 58'29 -0°49'38
min. Earth dist.	12224 Aug 31 23:39	20° ✕ 28'55 17.38138 AU	minimum elong	12231 Apr 05 02:37	20° Υ 58'29 0°49'53
direct	12224 Nov 15 13:55	18° ✕ 24'16	max. Earth dist.	12231 Apr 04 22:25	20° Υ 57'50 19.63310 AU
evening set	12225 Feb 18 16:24	21° ✕ 51'44	morning rise	12231 Apr 21 05:01	21° Υ 58'01
			retrograde	12231 Jul 21 23:16	25° Υ 17'01
conjunction	12225 Mar 07 02:35	22° ✕ 53'00 -0°26'20	opposition	12231 Oct 04 11:00	23° Υ 15'40 -0°56'53
minimum elong	12225 Mar 07 02:34	22° ✕ 53'00 0°26'08	min. Earth dist.	12231 Oct 04 14:12	23° Υ 15'20 17.65896 AU
max. Earth dist.	12225 Mar 06 17:17	22° ✕ 51'33 19.39302 AU	direct	12231 Dec 20 00:53	21° Υ 11'37
morning rise	12225 Mar 23 10:07	23° ✕ 53'55	evening set	12232 Mar 23 20:06	24° Υ 35'26
retrograde	12225 Jun 23 14:27	27° ✕ 16'08			
opposition	12225 Sep 05 15:03	25° ✕ 13'30 -0°31'50	conjunction	12232 Apr 09 00:12	25° Υ 35'03 -0°52'29
min. Earth dist.	12225 Sep 05 23:18	25° ✕ 12'36 17.40640 AU	minimum elong	12232 Apr 09 00:11	25° Υ 35'03 0°52'46
direct	12225 Nov 20 15:34	23° ✕ 08'02	max. Earth dist.	12232 Apr 08 20:10	25° Υ 34'25 19.68510 AU
evening set	12226 Feb 23 18:50	26° ✕ 35'14	morning rise	12232 Apr 25 01:49	26° Υ 34'18
			retrograde	12232 Jul 25 17:59	29° Υ 52'37
conjunction	12226 Mar 12 04:03	27° ✕ 36'19 -0°30'51	opposition	12232 Oct 08 09:18	27° Υ 51'28 -0°59'51
minimum elong	12226 Mar 12 04:02	27° ✕ 36'19 0°30'45	min. Earth dist.	12232 Oct 08 12:28	27° Υ 51'08 17.71209 AU
max. Earth dist.	12226 Mar 11 18:36	27° ✕ 34'50 19.42113 AU	direct	12232 Dec 23 23:55	25° Υ 47'40
morning rise	12226 Mar 28 10:54	28° ✕ 37'03	evening set	12233 Mar 28 17:43	29° Υ 10'39
	12226 Apr 21 11:17	0° Υ		12233 Apr 11 04:29	0° ♄
retrograde	12226 Jun 28 13:05	1° Υ 58'50			
	12226 Sep 09 05:23	30° ♁	conjunction	12233 Apr 13 20:59	0° ♄ 09'58 -0°54'58
opposition	12226 Sep 10 14:57	29° ✕ 56'22 -0°36'46	minimum elong	12233 Apr 13 20:58	0° ♄ 09'58 0°55'20
min. Earth dist.	12226 Sep 10 21:55	29° ✕ 55'37 17.43746 AU	max. Earth dist.	12233 Apr 13 18:00	0° ♄ 09'30 19.73917 AU
direct	12226 Nov 25 16:48	27° ✕ 51'05	morning rise	12233 Apr 29 21:45	1° ♄ 08'57
	12227 Feb 06 08:39	0° Υ	retrograde	12233 Jul 30 13:50	4° ♄ 26'32
evening set	12227 Feb 28 20:24	1° Υ 17'56	opposition	12233 Oct 13 06:57	2° ♄ 25'35 -1°02'25
			min. Earth dist.	12233 Oct 13 08:38	2° ♄ 25'24 17.76694 AU
conjunction	12227 Mar 17 04:58	2° Υ 18'49 -0°35'09	direct	12233 Dec 29 00:31	0° ♄ 22'01
minimum elong	12227 Mar 17 04:57	2° Υ 18'49 0°35'06	evening set	12234 Apr 02 14:28	3° ♄ 44'05
max. Earth dist.	12227 Mar 16 21:42	2° Υ 17'41 19.45495 AU			
morning rise	12227 Apr 02 10:48	3° Υ 19'20	conjunction	12234 Apr 18 16:51	4° ♄ 43'07 -0°57'06
retrograde	12227 Jul 03 12:00	6° Υ 40'39	minimum elong	12234 Apr 18 16:50	4° ♄ 43'07 0°57'32
opposition	12227 Sep 15 14:42	4° Υ 38'25 -0°41'26	max. Earth dist.	12234 Apr 18 14:33	4° ♄ 42'45 19.79485 AU
min. Earth dist.	12227 Sep 15 21:01	4° Υ 37'44 17.47381 AU	morning rise	12234 May 04 16:51	5° ♄ 41'49
direct	12227 Nov 30 19:06	2° Υ 33'22	retrograde	12234 Aug 04 07:08	8° ♄ 58'41
evening set	12228 Mar 04 21:45	5° Υ 59'46	opposition	12234 Oct 18 04:17	6° ♄ 57'52 -1°04'35
			min. Earth dist.	12234 Oct 18 06:02	6° ♄ 57'41 17.82354 AU
conjunction	12228 Mar 21 05:19	7° Υ 00'26 -0°39'12	direct	12235 Jan 02 21:57	4° ♄ 54'32
minimum elong	12228 Mar 21 05:19	7° Υ 00'26 0°39'14	evening set	12235 Apr 07 10:04	8° ♄ 15'39
max. Earth dist.	12228 Mar 20 21:55	6° Υ 59'17 19.49376 AU			
morning rise	12228 Apr 06 10:27	8° Υ 00'44	conjunction	12235 Apr 23 11:41	9° ♄ 14'23 -0°58'52
retrograde	12228 Jul 07 08:57	11° Υ 21'32	minimum elong	12235 Apr 23 11:40	9° ♄ 14'23 0°59'21
opposition	12228 Sep 19 14:05	9° Υ 19'31 -0°45'48	max. Earth dist.	12235 Apr 23 10:17	9° ♄ 14'10 19.85227 AU
min. Earth dist.	12228 Sep 19 19:44	9° Υ 18'55 17.51493 AU	morning rise	12235 May 09 11:01	10° ♄ 12'48
direct	12228 Dec 04 20:15	7° Υ 14'42	retrograde	12235 Aug 09 01:55	13° ♄ 28'54
evening set	12229 Mar 09 22:24	10° Υ 40'37	opposition	12235 Oct 23 00:49	11° ♄ 28'15 -1°06'19
			min. Earth dist.	12235 Oct 23 00:48	11° ♄ 28'15 17.88164 AU
conjunction	12229 Mar 26 05:14	11° Υ 41'02 -0°42'59	direct	12236 Jan 07 21:27	9° ♄ 25'08
minimum elong	12229 Mar 26 05:14	11° Υ 41'02 0°43'05	evening set	12236 Apr 11 04:51	12° ♄ 45'15
max. Earth dist.	12229 Mar 25 23:36	11° Υ 40'09 19.53687 AU			
morning rise	12229 Apr 11 09:21	12° Υ 41'04	conjunction	12236 Apr 27 05:41	13° ♄ 43'41 -1°00'16
retrograde	12229 Jul 12 06:42	16° Υ 01'19	minimum elong	12236 Apr 27 05:41	13° ♄ 43'41 1°00'49
opposition	12229 Sep 24 13:24	13° Υ 59'33 -0°49'50	max. Earth dist.	12236 Apr 27 05:27	13° ♄ 43'39 19.91113 AU
min. Earth dist.	12229 Sep 24 18:10	13° Υ 59'02 17.55982 AU	morning rise	12236 May 13 04:17	14° ♄ 41'49
direct	12229 Dec 09 22:50	11° Υ 55'00		12236 May 18 07:09	15° ♄
evening set	12230 Mar 14 22:26	15° Υ 20'16	retrograde	12236 Aug 12 17:17	17° ♄ 57'10
			opposition	12236 Oct 26 20:47	15° ♄ 56'38 -1°07'39
conjunction	12230 Mar 31 04:13	16° Υ 20'26 -0°46'28	min. Earth dist.	12236 Oct 26 20:52	15° ♄ 56'38 17.94142 AU
minimum elong	12230 Mar 31 04:13	16° Υ 20'26 0°46'37		12236 Nov 19 07:01	15° ♁
max. Earth dist.	12230 Mar 30 22:35	16° Υ 19'33 19.58345 AU	direct	12237 Jan 11 17:12	13° ♄ 53'47
morning rise	12230 Apr 16 07:32	17° Υ 20'13		12237 Mar 04 05:29	15° ♄
retrograde	12230 Jul 17 02:29	20° Υ 39'52	evening set	12237 Apr 15 22:40	17° ♄ 12'52
opposition	12230 Sep 29 12:28	18° Υ 38'19 -0°53'33			
min. Earth dist.	12230 Sep 29 16:52	18° Υ 37'51 17.60808 AU	conjunction	12237 May 01 22:41	18° ♄ 11'00 -1°01'17
direct	12230 Dec 14 23:13	16° Υ 34'01	minimum elong	12237 May 01 22:41	18° ♄ 11'00 1°01'52
evening set	12231 Mar 19 21:36	19° Υ 58'36	max. Earth dist.	12237 May 01 23:14	18° ♄ 11'05 19.97184 AU

morning rise	12237 May 17 20:42	19° ♄ 08'51	direct	12244 Feb 13 01:36	14° ♊ 25'17	
retrograde	12237 Aug 17 11:04	22° ♄ 23'27	evening set	12244 May 16 02:08	17° ♊ 37'17	
opposition	12237 Oct 31 16:08	20° ♄ 23'05 -1°08'33				
min. Earth dist.	12237 Oct 31 14:05	20° ♄ 23'17 18.00300 AU	conjunction	12244 May 31 22:12	18° ♊ 33'31 -0°58'17	
direct	12238 Jan 16 15:03	18° ♄ 20'30	minimum elong	12244 May 31 22:12	18° ♊ 33'31 0°59'07	
evening set	12238 Apr 20 15:21	21° ♄ 38'33	max. Earth dist.	12244 Jun 01 06:13	18° ♊ 34'42 20.42365 AU	
			morning rise	12244 Jun 16 17:06	19° ♊ 29'36	
conjunction	12238 May 06 14:41	22° ♄ 36'23 -1°01'55	retrograde	12244 Sep 16 12:19	22° ♊ 39'35	
minimum elong	12238 May 06 14:41	22° ♄ 36'23 1°02'34	opposition	12244 Dec 01 15:08	20° ♊ 40'42 -1°03'45	
max. Earth dist.	12238 May 06 16:57	22° ♄ 36'44 20.03428 AU	min. Earth dist.	12244 Dec 01 08:02	20° ♊ 41'26 18.45462 AU	
morning rise	12238 May 22 12:00	23° ♄ 33'58	direct	12245 Feb 16 16:49	18° ♊ 40'37	
retrograde	12238 Aug 22 01:13	26° ♄ 47'50	evening set	12245 May 20 13:23	21° ♊ 51'38	
opposition	12238 Nov 05 11:01	24° ♄ 47'39 -1°09'02				
min. Earth dist.	12238 Nov 05 08:50	24° ♄ 47'52 18.06641 AU	conjunction	12245 Jun 05 08:56	22° ♊ 47'38 -0°56'32	
direct	12239 Jan 21 09:01	22° ♄ 45'23	minimum elong	12245 Jun 05 08:56	22° ♊ 47'38 0°57'23	
evening set	12239 Apr 25 07:15	26° ♄ 02'24	max. Earth dist.	12245 Jun 05 16:27	22° ♊ 48'44 20.48467 AU	
			morning rise	12245 Jun 21 03:46	23° ♊ 43'31	
conjunction	12239 May 11 05:51	26° ♄ 59'57 -1°02'11	retrograde	12245 Sep 21 00:21	26° ♊ 52'55	
minimum elong	12239 May 11 05:51	26° ♄ 59'57 1°02'52	opposition	12245 Dec 06 05:55	24° ♊ 54'11 -1°01'38	
max. Earth dist.	12239 May 11 08:40	27° ♄ 00'23 20.09854 AU	min. Earth dist.	12245 Dec 05 21:32	24° ♊ 55'02 18.51437 AU	
morning rise	12239 May 27 02:45	27° ♄ 57'16	direct	12246 Feb 21 08:01	22° ♊ 54'23	
	12239 Jul 05 05:30	0° ♊	evening set	12246 May 24 23:39	26° ♊ 04'26	
retrograde	12239 Aug 26 17:48	1° ♊ 10'25				
	12239 Oct 20 16:11	30° ♋	conjunction	12246 Jun 09 19:02	27° ♊ 00'13 -0°54'29	
opposition	12239 Nov 10 04:56	29° ♋ 10'27 -1°09'07	minimum elong	12246 Jun 09 19:02	27° ♊ 00'13 0°55'21	
min. Earth dist.	12239 Nov 10 00:41	29° ♋ 10'53 18.13131 AU	max. Earth dist.	12246 Jun 10 04:01	27° ♊ 01'32 20.54290 AU	
direct	12240 Jan 26 05:09	27° ♋ 08'31	morning rise	12246 Jun 25 13:35	27° ♊ 55'54	
	12240 Apr 21 21:26	0° ♊		12246 Aug 05 10:11	0° ♋	
evening set	12240 Apr 28 22:14	0° ♊ 24'32	retrograde	12246 Sep 25 10:56	1° ♋ 04'43	
				12246 Nov 17 20:31	30° ♋	
conjunction	12240 May 14 20:19	1° ♊ 21'49 -1°02'06	opposition	12246 Dec 10 20:10	29° ♊ 06'08 -0°59'11	
minimum elong	12240 May 14 20:19	1° ♊ 21'49 1°02'49	min. Earth dist.	12246 Dec 10 12:03	29° ♊ 06'57 18.57102 AU	
max. Earth dist.	12240 May 15 00:54	1° ♊ 22'30 20.16392 AU	direct	12247 Feb 25 22:02	27° ♊ 06'36	
morning rise	12240 May 30 16:37	2° ♊ 18'52		12247 May 24 19:40	0° ♋	
retrograde	12240 Aug 30 07:16	5° ♊ 31'20	evening set	12247 May 29 09:30	0° ♋ 15'41	
opposition	12240 Nov 13 22:35	3° ♊ 31'36 -1°08'48				
min. Earth dist.	12240 Nov 13 18:23	3° ♊ 32'02 18.19704 AU	conjunction	12247 Jun 14 04:30	1° ♋ 11'15 -0°52'09	
direct	12241 Jan 29 21:41	1° ♊ 30'03	minimum elong	12247 Jun 14 04:30	1° ♋ 11'15 0°53'01	
evening set	12241 May 03 12:23	4° ♊ 45'03	max. Earth dist.	12247 Jun 14 12:43	1° ♋ 12'27 20.59802 AU	
			morning rise	12247 Jun 29 23:07	2° ♋ 06'44	
conjunction	12241 May 19 09:46	5° ♊ 42'03 -1°01'39	retrograde	12247 Sep 29 21:37	5° ♋ 15'01	
minimum elong	12241 May 19 09:46	5° ♊ 42'03 1°02'25	opposition	12247 Dec 15 09:34	3° ♋ 16'30 -0°56'27	
max. Earth dist.	12241 May 19 14:36	5° ♊ 42'46 20.22989 AU	min. Earth dist.	12247 Dec 15 00:31	3° ♋ 17'25 18.62449 AU	
morning rise	12241 Jun 04 05:45	6° ♊ 38'51	direct	12248 Mar 01 11:28	1° ♋ 17'11	
retrograde	12241 Sep 03 22:29	9° ♊ 50'40	evening set	12248 Jun 01 18:29	4° ♋ 25'20	
opposition	12241 Nov 18 15:31	7° ♊ 51'10 -1°08'05				
min. Earth dist.	12241 Nov 18 09:27	7° ♊ 51'47 18.26296 AU	conjunction	12248 Jun 17 13:26	5° ♋ 20'42 -0°49'34	
direct	12242 Feb 03 16:40	5° ♊ 50'00	minimum elong	12248 Jun 17 13:26	5° ♋ 20'42 0°50'27	
evening set	12242 May 08 01:42	9° ♊ 03'59	max. Earth dist.	12248 Jun 17 23:04	5° ♋ 22'07 20.64980 AU	
			morning rise	12248 Jul 03 07:51	6° ♋ 16'01	
conjunction	12242 May 23 22:40	10° ♊ 00'44 -1°00'51	retrograde	12248 Oct 03 06:50	9° ♋ 23'44	
minimum elong	12242 May 23 22:40	10° ♊ 00'44 1°01'38	opposition	12248 Dec 18 22:36	7° ♋ 25'17 -0°53'26	
max. Earth dist.	12242 May 24 05:16	10° ♊ 01'43 20.29559 AU	min. Earth dist.	12248 Dec 18 13:41	7° ♋ 26'11 18.67462 AU	
morning rise	12242 Jun 08 18:09	10° ♊ 57'17	direct	12249 Mar 05 23:56	5° ♋ 26'10	
retrograde	12242 Sep 08 11:02	14° ♊ 08'29	evening set	12249 Jun 06 02:45	8° ♋ 33'23	
opposition	12242 Nov 23 08:00	12° ♊ 09'12 -1°07'00				
min. Earth dist.	12242 Nov 23 02:08	12° ♊ 09'48 18.32834 AU	conjunction	12249 Jun 21 21:23	9° ♋ 28'33 -0°46'44	
direct	12243 Feb 08 08:27	10° ♊ 08'25	minimum elong	12249 Jun 21 21:23	9° ♋ 28'33 0°47'36	
evening set	12243 May 12 14:17	13° ♊ 21'24	max. Earth dist.	12249 Jun 22 06:29	9° ♋ 29'53 20.69851 AU	
			morning rise	12249 Jul 07 16:00	10° ♋ 23'43	
conjunction	12243 May 28 10:41	14° ♊ 17'53 -0°59'44	retrograde	12249 Oct 07 16:56	13° ♋ 30'57	
minimum elong	12243 May 28 10:41	14° ♊ 17'53 1°00'34	opposition	12249 Dec 23 11:01	11° ♋ 32'30 -0°50'09	
max. Earth dist.	12243 May 28 17:07	14° ♊ 18'50 20.36047 AU	min. Earth dist.	12249 Dec 23 01:07	11° ♋ 33'30 18.72196 AU	
morning rise	12243 Jun 13 06:01	15° ♊ 14'12	direct	12250 Mar 10 11:54	9° ♋ 33'33	
retrograde	12243 Sep 13 00:48	18° ♊ 24'47	evening set	12250 Jun 10 10:20	12° ♋ 39'53	
opposition	12243 Nov 27 23:48	16° ♊ 25'43 -1°05'33				
min. Earth dist.	12243 Nov 27 16:25	16° ♊ 26'28 18.39249 AU	conjunction	12250 Jun 26 05:01	13° ♋ 34'53 -0°43'40	

minimum elong	12250 Jun 26 05:01	13°☿34'53	0°44'33	opposition	12257 Jan 21 12:23	9°♄51'28	-0°21'37
max. Earth dist.	12250 Jun 26 15:50	13°☿36'28	20.74448 AU	min. Earth dist.	12257 Jan 20 23:57	9°♄52'43	18.97849 AU
morning rise	12250 Jul 11 23:32	14°☿29'54		direct	12257 Apr 08 03:57	7°♄53'57	
retrograde	12250 Oct 12 01:06	17°☿36'40		evening set	12257 Jul 08 03:46	10°♄55'51	
opposition	12250 Dec 27 22:46	15°☿38'15	-0°46'37				
min. Earth dist.	12250 Dec 27 12:42	15°☿39'15	18.76668 AU	conjunction	12257 Jul 23 22:44	11°♄50'06	-0°17'27
direct	12251 Mar 14 22:46	13°☿39'29		minimum elong	12257 Jul 23 22:45	11°♄50'06	0°18'11
evening set	12251 Jun 14 17:29	16°☿44'59		max. Earth dist.	12257 Jul 24 11:08	11°♄51'53	20.99027 AU
				morning rise	12257 Aug 08 19:05	12°♄44'32	
conjunction	12251 Jun 30 11:56	17°☿39'50	-0°40'24		12257 Sep 25 04:12	15°♄	
minimum elong	12251 Jun 30 11:57	17°☿39'50	0°41'15	retrograde	12257 Nov 09 12:42	15°♄49'40	
max. Earth dist.	12251 Jun 30 22:15	17°☿41'20	20.78806 AU		12257 Dec 26 10:57	15°♄	
morning rise	12251 Jul 16 06:45	18°☿34'42		opposition	12258 Jan 25 21:38	13°♄51'37	-0°17'01
retrograde	12251 Oct 16 10:42	21°☿41'04		min. Earth dist.	12258 Jan 25 09:22	13°♄52'50	19.00103 AU
opposition	12252 Jan 01 10:03	19°☿42'40	-0°42'53	direct	12258 Apr 12 10:29	11°♄54'15	
min. Earth dist.	12251 Dec 31 23:05	19°☿43'46	18.80914 AU	evening set	12258 Jul 12 08:47	14°♄55'47	
direct	12252 Mar 18 08:55	17°☿44'05			12258 Jul 13 14:48	15°♄	
evening set	12252 Jun 17 23:57	20°☿48'51					
				conjunction	12258 Jul 28 04:10	15°♄49'59	-0°13'16
conjunction	12252 Jul 03 18:32	21°☿43'33	-0°36'56	minimum elong	12258 Jul 28 04:10	15°♄49'59	0°13'56
minimum elong	12252 Jul 03 18:32	21°☿43'33	0°37'47	behind sun begin	12258 Jul 28 00:43	15°♄49'30	
max. Earth dist.	12252 Jul 04 06:33	21°☿45'18	20.82926 AU	behind sun end	12258 Jul 28 07:37	15°♄50'28	
morning rise	12252 Jul 19 13:18	22°☿38'18		max. Earth dist.	12258 Jul 28 17:29	15°♄51'54	21.01032 AU
retrograde	12252 Oct 19 18:30	25°☿44'19		morning rise	12258 Aug 13 00:42	16°♄44'24	
opposition	12253 Jan 04 20:53	23°☿45'59	-0°38'56	retrograde	12258 Nov 13 20:16	19°♄49'29	
min. Earth dist.	12253 Jan 04 09:36	23°☿47'07	18.84905 AU	opposition	12259 Jan 30 06:27	17°♄51'27	-0°12'19
direct	12253 Mar 22 18:54	21°☿47'37		min. Earth dist.	12259 Jan 29 18:20	17°♄52'40	19.01848 AU
evening set	12253 Jun 22 06:10	24°☿51'41		direct	12259 Apr 16 18:04	15°♄54'15	
				evening set	12259 Jul 16 13:56	18°♄55'26	
conjunction	12253 Jul 08 00:37	25°☿46'15	-0°33'18				
minimum elong	12253 Jul 08 00:38	25°☿46'15	0°34'08	conjunction	12259 Aug 01 09:25	19°♄49'37	-0°09'01
max. Earth dist.	12253 Jul 08 12:04	25°☿47'55	20.86800 AU	minimum elong	12259 Aug 01 09:25	19°♄49'37	0°09'39
morning rise	12253 Jul 23 19:46	26°☿40'55		behind sun begin	12259 Aug 01 03:58	19°♄48'51	
retrograde	12253 Oct 24 03:37	29°☿46'39		behind sun end	12259 Aug 01 14:52	19°♄50'22	
opposition	12254 Jan 09 07:18	27°☿48'22	-0°34'49	max. Earth dist.	12259 Aug 01 21:13	19°♄51'18	21.02516 AU
min. Earth dist.	12254 Jan 08 19:22	27°☿49'33	18.88649 AU	morning rise	12259 Aug 17 06:32	20°♄44'01	
direct	12254 Mar 27 03:10	25°☿50'12		retrograde	12259 Nov 18 05:09	23°♄49'06	
evening set	12254 Jun 26 11:46	28°☿53'38		opposition	12260 Feb 03 15:17	21°♄51'03	-0°07'35
				min. Earth dist.	12260 Feb 03 03:40	21°♄52'12	19.03065 AU
conjunction	12254 Jul 12 06:30	29°☿48'06	-0°29'31	direct	12260 Apr 20 00:41	19°♄53'55	
minimum elong	12254 Jul 12 06:30	29°☿48'06	0°30'19	evening set	12260 Jul 19 18:45	22°♄54'48	
max. Earth dist.	12254 Jul 12 19:30	29°☿49'59	20.90394 AU				
	12254 Jul 15 16:30	0°♄		conjunction	12260 Aug 04 14:41	23°♄48'59	-0°04'44
morning rise	12254 Jul 28 01:44	0°♄42'41		minimum elong	12260 Aug 04 14:41	23°♄48'59	0°05'19
retrograde	12254 Oct 28 11:22	3°♄48'11		behind sun begin	12260 Aug 04 08:19	23°♄48'06	
opposition	12255 Jan 13 17:19	1°♄49'58	-0°30'33	behind sun end	12260 Aug 04 21:03	23°♄49'53	
min. Earth dist.	12255 Jan 13 05:11	1°♄51'11	18.92076 AU	max. Earth dist.	12260 Aug 05 03:13	23°♄50'47	21.03449 AU
	12255 Mar 13 12:57	30°♄		morning rise	12260 Aug 20 12:03	24°♄43'24	
direct	12255 Mar 31 12:28	29°☿52'02		retrograde	12260 Nov 21 12:41	27°♄48'31	
	12255 Apr 18 06:20	0°♄		opposition	12261 Feb 06 23:52	25°♄50'24	-0°02'48
evening set	12255 Jun 30 17:23	2°♄54'53		min. Earth dist.	12261 Feb 06 12:20	25°♄51'33	19.03715 AU
				direct	12261 Apr 24 07:47	23°♄53'19	
conjunction	12255 Jul 16 12:03	3°♄49'16	-0°25'36	evening set	12261 Jul 23 23:43	26°♄53'56	
minimum elong	12255 Jul 16 12:03	3°♄49'16	0°26'23				
max. Earth dist.	12255 Jul 17 00:12	3°♄51'01	20.93658 AU	conjunction	12261 Aug 08 19:50	27°♄48'07	-0°00'22
morning rise	12255 Aug 01 07:44	4°♄43'47		minimum elong	12261 Aug 08 19:50	27°♄48'07	0°00'55
retrograde	12255 Nov 01 20:08	7°♄49'06		behind sun begin	12261 Aug 08 13:16	27°♄47'12	
opposition	12256 Jan 18 02:55	5°♄50'57	-0°26'09	behind sun end	12261 Aug 09 02:25	27°♄49'02	
min. Earth dist.	12256 Jan 17 14:35	5°♄52'11	18.95165 AU	max. Earth dist.	12261 Aug 09 06:53	27°♄49'42	21.03842 AU
direct	12256 Apr 03 19:22	3°♄53'14		morning rise	12261 Aug 24 17:52	28°♄42'34	
evening set	12256 Jul 03 22:37	6°♄55'35		asc. node	12261 Sep 08 13:37	29°♄30'47	
					12261 Sep 18 06:58	0°♄	
conjunction	12256 Jul 19 17:35	7°♄49'54	-0°21'35	retrograde	12261 Nov 25 21:04	1°♄47'44	
minimum elong	12256 Jul 19 17:36	7°♄49'54	0°22'19		12262 Feb 06 23:03	30°♄	
max. Earth dist.	12256 Jul 20 07:03	7°♄51'50	20.96552 AU	opposition	12262 Feb 11 08:14	29°♄49'30	0°01'59
morning rise	12256 Aug 04 13:24	8°♄44'21		min. Earth dist.	12262 Feb 10 21:21	29°♄50'35	19.03857 AU
retrograde	12256 Nov 05 03:47	11°♄49'33		direct	12262 Apr 28 14:17	27°♄52'24	

	12262 Jul 11 20:19	0°♊	evening set	12268 Aug 20 12:06	24°♊48'01	
evening set	12262 Jul 28 04:26	0°♊52'50				
conjunction	12262 Aug 13 01:08	1°♊47'02 0°04'03	conjunction	12268 Sep 05 11:33	25°♊42'41 0°28'51	
minimum elong	12262 Aug 13 01:07	1°♊47'02 0°03'33	minimum elong	12268 Sep 05 11:33	25°♊42'41 0°28'42	
behind sun begin	12262 Aug 12 18:35	1°♊46'08	max. Earth dist.	12268 Sep 05 22:02	25°♊44'11 20.95049 AU	
behind sun end	12262 Aug 13 07:39	1°♊47'57	morning rise	12268 Sep 21 13:14	26°♊37'43	
max. Earth dist.	12262 Aug 13 13:00	1°♊48'44 21.03736 AU	retrograde	12268 Dec 24 07:15	29°♊44'36	
morning rise	12262 Aug 28 23:30	2°♊41'31	opposition	12269 Mar 11 16:15	27°♊45'27 0°34'01	
retrograde	12262 Nov 30 04:50	5°♊46'46	min. Earth dist.	12269 Mar 11 06:46	27°♊46'25 18.93774 AU	
opposition	12263 Feb 15 16:19	3°♊48'24 0°06'46	direct	12269 May 26 11:01	25°♊48'06	
min. Earth dist.	12263 Feb 15 05:23	3°♊49'30 19.03514 AU	evening set	12269 Aug 24 18:40	28°♊49'01	
direct	12263 May 02 21:11	1°♊51'17				
evening set	12263 Aug 01 09:20	4°♊51'34	conjunction	12269 Sep 09 18:31	29°♊43'49 0°32'39	
			minimum elong	12269 Sep 09 18:30	29°♊43'49 0°32'32	
conjunction	12263 Aug 17 06:14	5°♊45'48 0°08'21	max. Earth dist.	12269 Sep 10 03:24	29°♊45'06 20.92399 AU	
minimum elong	12263 Aug 17 06:14	5°♊45'48 0°07'55		12269 Sep 14 10:59	0°♊	
behind sun begin	12263 Aug 17 00:19	5°♊44'58	morning rise	12269 Sep 25 20:58	0°♊38'59	
behind sun end	12263 Aug 17 12:09	5°♊46'37	retrograde	12269 Dec 28 16:42	3°♊46'21	
max. Earth dist.	12263 Aug 17 16:48	5°♊47'18 21.03181 AU	opposition	12270 Mar 16 00:37	1°♊47'05 0°38'08	
morning rise	12263 Sep 02 05:16	6°♊40'20	min. Earth dist.	12270 Mar 15 16:22	1°♊47'55 18.90949 AU	
retrograde	12263 Dec 04 12:30	9°♊45'44		12270 May 10 09:19	30°♊	
opposition	12264 Feb 20 00:17	7°♊47'13 0°11'31	direct	12270 May 30 16:07	29°♊49'39	
min. Earth dist.	12264 Feb 19 13:59	7°♊48'15 19.02765 AU		12270 Jun 19 17:48	0°♊	
direct	12264 May 06 03:13	5°♊50'03	evening set	12270 Aug 29 01:36	2°♊50'56	
evening set	12264 Aug 04 14:12	8°♊50'16				
conjunction	12264 Aug 20 11:41	9°♊44'34 0°12'36	conjunction	12270 Sep 14 02:11	3°♊45'54 0°36'17	
minimum elong	12264 Aug 20 11:41	9°♊44'33 0°12'12	minimum elong	12270 Sep 14 02:11	3°♊45'54 0°36'15	
behind sun begin	12264 Aug 20 07:14	9°♊43'56	max. Earth dist.	12270 Sep 14 11:29	3°♊47'14 20.89376 AU	
behind sun end	12264 Aug 20 16:08	9°♊45'11	morning rise	12270 Sep 30 05:06	4°♊41'13	
max. Earth dist.	12264 Aug 20 23:13	9°♊46'12 21.02239 AU	retrograde	12271 Jan 02 02:46	7°♊49'03	
morning rise	12264 Sep 05 11:04	10°♊39'09	opposition	12271 Mar 20 09:12	5°♊49'42 0°42'05	
retrograde	12264 Dec 07 21:04	13°♊44'45	min. Earth dist.	12271 Mar 20 00:59	5°♊50'32 18.87718 AU	
opposition	12265 Feb 23 08:13	11°♊46'05 0°16'12	direct	12271 Jun 03 23:52	3°♊52'12	
min. Earth dist.	12265 Feb 22 21:37	11°♊47'09 19.01640 AU	evening set	12271 Sep 02 09:15	6°♊53'54	
direct	12265 May 10 10:04	9°♊48'53				
evening set	12265 Aug 08 19:16	12°♊49'05	conjunction	12271 Sep 18 10:13	7°♊49'01 0°39'45	
			minimum elong	12271 Sep 18 10:12	7°♊49'01 0°39'47	
conjunction	12265 Aug 24 17:03	13°♊43'27 0°16'47	max. Earth dist.	12271 Sep 18 17:35	7°♊50'05 20.85934 AU	
minimum elong	12265 Aug 24 17:03	13°♊43'27 0°16'28	morning rise	12271 Oct 04 13:52	8°♊44'31	
max. Earth dist.	12265 Aug 25 03:21	13°♊44'55 21.00945 AU	retrograde	12272 Jan 06 13:16	11°♊52'54	
morning rise	12265 Sep 09 17:10	14°♊38'08	opposition	12272 Mar 23 18:12	9°♊53'24 0°45'51	
retrograde	12265 Dec 12 04:36	17°♊43'59	min. Earth dist.	12272 Mar 23 11:33	9°♊54'04 18.84065 AU	
opposition	12266 Feb 27 16:11	15°♊45'10 0°20'49	direct	12272 Jun 07 05:54	7°♊55'46	
min. Earth dist.	12266 Feb 27 06:16	15°♊46'10 19.00183 AU	evening set	12272 Sep 05 17:24	10°♊57'57	
direct	12266 May 14 15:26	13°♊47'56				
evening set	12266 Aug 13 00:33	16°♊48'12	conjunction	12272 Sep 21 19:08	11°♊53'15 0°43'03	
			minimum elong	12272 Sep 21 19:07	11°♊53'15 0°43'09	
conjunction	12266 Aug 28 22:59	17°♊42'40 0°20'55	max. Earth dist.	12272 Sep 22 02:35	11°♊54'20 20.82054 AU	
minimum elong	12266 Aug 28 22:59	17°♊42'40 0°20'38	morning rise	12272 Oct 07 23:14	12°♊48'56	
max. Earth dist.	12266 Aug 29 10:07	17°♊44'15 20.99314 AU	retrograde	12273 Jan 10 00:20	15°♊57'51	
morning rise	12266 Sep 13 23:30	18°♊37'27	opposition	12273 Mar 28 03:25	13°♊58'12 0°49'24	
retrograde	12266 Dec 16 13:39	21°♊43'35	min. Earth dist.	12273 Mar 27 20:53	13°♊58'52 18.79953 AU	
opposition	12267 Mar 03 23:55	19°♊44'39 0°25'20	direct	12273 Jun 11 14:12	12°♊00'26	
min. Earth dist.	12267 Mar 03 13:48	19°♊45'40 18.98379 AU	evening set	12273 Sep 10 02:15	15°♊03'07	
direct	12267 May 18 22:31	17°♊47'22				
evening set	12267 Aug 17 06:18	20°♊47'48	conjunction	12273 Sep 26 04:28	15°♊58'37 0°46'09	
			minimum elong	12273 Sep 26 04:27	15°♊58'37 0°46'18	
conjunction	12267 Sep 02 05:04	21°♊42'21 0°24'56	max. Earth dist.	12273 Sep 26 09:48	15°♊59'23 20.77714 AU	
minimum elong	12267 Sep 02 05:03	21°♊42'21 0°24'44	morning rise	12273 Oct 12 09:23	16°♊54'30	
max. Earth dist.	12267 Sep 02 14:46	21°♊43'44 20.97348 AU	retrograde	12274 Jan 14 11:25	20°♊03'59	
morning rise	12267 Sep 18 06:19	22°♊37'15	opposition	12274 Apr 01 13:04	18°♊04'08 0°52'43	
retrograde	12267 Dec 20 21:48	25°♊43'45	min. Earth dist.	12274 Apr 01 08:20	18°♊04'37 18.75393 AU	
opposition	12268 Mar 07 08:02	23°♊44'42 0°29'45	direct	12274 Jun 15 21:22	16°♊06'09	
min. Earth dist.	12268 Mar 06 22:48	23°♊45'38 18.96252 AU	evening set	12274 Sep 14 11:36	19°♊09'24	
direct	12268 May 22 03:28	21°♊47'22				
			conjunction	12274 Sep 30 14:37	20°♊05'06 0°49'01	
			minimum elong	12274 Sep 30 14:37	20°♊05'06 0°49'15	

max. Earth dist.	12274 Sep 30 19:54	20° <u>05</u> '52	20.72941 AU	morning rise	12280 Nov 11 01:28	16° <u>08</u> '14	
morning rise	12274 Oct 16 20:01	21° <u>01</u> '11		retrograde	12281 Feb 13 08:22	19° <u>02</u> '14	
retrograde	12275 Jan 18 23:19	24° <u>11</u> '14		opposition	12281 Apr 30 17:12	17° <u>20</u> '51	1°07'53
opposition	12275 Apr 05 22:43	22° <u>11</u> '11	0°55'48	min. Earth dist.	12281 Apr 30 16:44	17° <u>20</u> '54	18.35841 AU
min. Earth dist.	12275 Apr 05 18:06	22° <u>11</u> '39	18.70417 AU	direct	12281 Jul 14 16:47	15° <u>20</u> '58	
direct	12275 Jun 20 06:38	20° <u>12</u> '57		evening set	12281 Oct 13 23:45	18° <u>29</u> '35	
evening set	12275 Sep 18 21:39	23° <u>16</u> '49					
conjunction	12275 Oct 05 01:09	24° <u>12</u> '44	0°51'40	conjunction	12281 Oct 30 07:21	19° <u>27</u> '02	1°01'33
minimum elong	12275 Oct 05 01:09	24° <u>12</u> '44	0°51'57	minimum elong	12281 Oct 30 07:21	19° <u>27</u> '02	1°02'09
max. Earth dist.	12275 Oct 05 04:31	24° <u>13</u> '13	20.67792 AU	max. Earth dist.	12281 Oct 30 06:14	19° <u>26</u> '52	20.32781 AU
morning rise	12275 Oct 21 07:19	25° <u>09</u> '02		morning rise	12281 Nov 15 17:10	20° <u>24</u> '50	
retrograde	12276 Jan 23 10:44	28° <u>19</u> '41		retrograde	12282 Feb 17 23:56	23° <u>39</u> '33	
opposition	12276 Apr 09 08:57	26° <u>19</u> '23	0°58'36	opposition	12282 May 05 06:05	21° <u>38</u> '01	1°08'41
min. Earth dist.	12276 Apr 09 06:02	26° <u>19</u> '41	18.65116 AU	min. Earth dist.	12282 May 05 07:19	21° <u>37</u> '53	18.29755 AU
direct	12276 Jun 23 14:28	24° <u>20</u> '53		direct	12282 Jul 19 03:24	19° <u>37</u> '52	
evening set	12276 Sep 22 08:00	27° <u>25</u> '24		evening set	12282 Oct 18 14:56	22° <u>47</u> '27	
conjunction	12276 Oct 08 12:21	28° <u>21</u> '33	0°54'03	conjunction	12282 Nov 03 23:17	23° <u>45</u> '11	1°02'04
minimum elong	12276 Oct 08 12:20	28° <u>21</u> '33	0°54'23	minimum elong	12282 Nov 03 23:17	23° <u>45</u> '11	1°02'44
max. Earth dist.	12276 Oct 08 15:55	28° <u>22</u> '04	20.62352 AU	max. Earth dist.	12282 Nov 03 21:56	23° <u>44</u> '59	20.26686 AU
morning rise	12276 Oct 24 19:02	29° <u>18</u> '04		morning rise	12282 Nov 20 09:35	24° <u>43</u> '15	
	12276 Nov 06 09:43	0° <u>00</u> '		retrograde	12283 Feb 22 17:46	27° <u>58</u> '42	
retrograde	12277 Jan 26 23:54	2° <u>29</u> '21		opposition	12283 May 09 19:19	25° <u>57</u> '02	1°09'06
opposition	12277 Apr 13 19:23	0° <u>28</u> '48	1°01'06	min. Earth dist.	12283 May 09 20:19	25° <u>56</u> '56	18.23640 AU
min. Earth dist.	12277 Apr 13 16:19	0° <u>29</u> '07	18.59549 AU	direct	12283 Jul 23 16:22	23° <u>56</u> '39	
	12277 Apr 25 13:11	30° <u>00</u> '		evening set	12283 Oct 23 07:12	27° <u>07</u> '14	
direct	12277 Jun 28 00:42	28° <u>30</u> '02		conjunction	12283 Nov 08 16:06	28° <u>05</u> '15	1°02'15
	12277 Aug 27 11:04	0° <u>00</u> '		minimum elong	12283 Nov 08 16:06	28° <u>05</u> '15	1°02'57
evening set	12277 Sep 26 19:22	1° <u>35</u> '16		max. Earth dist.	12283 Nov 08 13:22	28° <u>04</u> '51	20.20552 AU
conjunction	12277 Oct 13 00:13	2° <u>31</u> '39	0°56'09	morning rise	12283 Nov 25 02:59	29° <u>03</u> '36	
minimum elong	12277 Oct 13 00:13	2° <u>31</u> '39	0°56'33		12283 Dec 11 21:51	0° <u>00</u> '	
max. Earth dist.	12277 Oct 13 02:03	2° <u>31</u> '55	20.56677 AU	retrograde	12284 Feb 27 10:31	2° <u>19</u> '47	
morning rise	12277 Oct 29 07:40	3° <u>28</u> '25		opposition	12284 May 13 09:27	0° <u>18</u> '00	1°09'08
retrograde	12278 Jan 31 12:00	6° <u>40</u> '20		min. Earth dist.	12284 May 13 12:18	0° <u>17</u> '42	18.17492 AU
opposition	12278 Apr 18 06:08	4° <u>39</u> '34	1°03'18		12284 May 20 12:31	30° <u>00</u> '	
min. Earth dist.	12278 Apr 18 04:47	4° <u>39</u> '42	18.53792 AU	direct	12284 Jul 27 04:10	28° <u>17</u> '22	
direct	12278 Jul 02 09:07	2° <u>40</u> '30		evening set	12284 Sep 29 15:08	0° <u>00</u> '	
evening set	12278 Oct 01 07:15	5° <u>46</u> '30			12284 Oct 27 00:15	1° <u>28</u> '58	
conjunction	12278 Oct 17 12:56	6° <u>43</u> '08	0°57'58	conjunction	12284 Nov 12 09:54	2° <u>27</u> '17	1°02'05
minimum elong	12278 Oct 17 12:55	6° <u>43</u> '08	0°58'25	minimum elong	12284 Nov 12 09:54	2° <u>27</u> '17	1°02'50
max. Earth dist.	12278 Oct 17 14:51	6° <u>43</u> '25	20.50841 AU	max. Earth dist.	12284 Nov 12 06:29	2° <u>26</u> '47	20.14383 AU
morning rise	12278 Nov 02 20:51	7° <u>40</u> '09		morning rise	12284 Nov 28 21:17	3° <u>25</u> '54	
retrograde	12279 Feb 05 02:37	10° <u>52</u> '44		retrograde	12285 Mar 03 06:05	6° <u>42</u> '50	
opposition	12279 Apr 22 17:17	8° <u>51</u> '44	1°05'11	opposition	12285 May 18 00:03	4° <u>40</u> '55	1°08'46
min. Earth dist.	12279 Apr 22 15:37	8° <u>51</u> '55	18.47888 AU	min. Earth dist.	12285 May 18 02:56	4° <u>40</u> '36	18.11285 AU
direct	12279 Jul 06 19:52	6° <u>52</u> '24		direct	12285 Jul 31 19:12	2° <u>39</u> '59	
evening set	12279 Oct 05 19:56	9° <u>59</u> '13		evening set	12285 Oct 31 18:32	5° <u>52</u> '39	
conjunction	12279 Oct 22 02:07	10° <u>56</u> '07	0°59'29	conjunction	12285 Nov 17 04:45	6° <u>51</u> '16	1°01'33
minimum elong	12279 Oct 22 02:06	10° <u>56</u> '07	1°00'00	minimum elong	12285 Nov 17 04:45	6° <u>51</u> '16	1°02'19
max. Earth dist.	12279 Oct 22 02:29	10° <u>56</u> '10	20.44879 AU	max. Earth dist.	12285 Nov 16 23:52	6° <u>50</u> '32	20.08129 AU
morning rise	12279 Nov 07 10:44	11° <u>53</u> '23		morning rise	12285 Dec 03 16:36	7° <u>50</u> '09	
	12280 Jan 24 12:58	15° <u>00</u> '		retrograde	12286 Mar 07 23:33	11° <u>07</u> '46	
retrograde	12280 Feb 09 16:13	15° <u>06</u> '40		opposition	12286 May 22 15:22	9° <u>05</u> '43	1°08'00
	12280 Feb 26 00:04	15° <u>00</u> '		min. Earth dist.	12286 May 22 20:16	9° <u>05</u> '11	18.04998 AU
opposition	12280 Apr 26 05:07	13° <u>05</u> '28	1°06'42	direct	12286 Aug 05 08:51	7° <u>04</u> '29	
min. Earth dist.	12280 Apr 26 05:01	13° <u>05</u> '29	18.41892 AU	evening set	12286 Nov 05 13:36	10° <u>18</u> '11	
direct	12280 Jul 10 05:24	11° <u>05</u> '51		conjunction	12286 Nov 22 00:28	11° <u>17</u> '05	1°00'39
evening set	12280 Oct 09 09:20	14° <u>13</u> '33		minimum elong	12286 Nov 22 00:27	11° <u>17</u> '05	1°01'28
	12280 Oct 22 15:40	15° <u>00</u> '		max. Earth dist.	12286 Nov 21 18:23	11° <u>16</u> '10	20.01818 AU
conjunction	12280 Oct 25 16:20	15° <u>10</u> '43	1°00'41	morning rise	12286 Dec 08 12:47	12° <u>16</u> '14	
minimum elong	12280 Oct 25 16:20	15° <u>10</u> '43	1°01'14	retrograde	12287 Mar 12 19:52	15° <u>34</u> '32	
max. Earth dist.	12280 Oct 25 16:43	15° <u>10</u> '46	20.38855 AU	opposition	12287 May 27 07:17	13° <u>32</u> '17	1°06'49
				min. Earth dist.	12287 May 27 12:15	13° <u>31</u> '46	17.98661 AU

direct	12287 Aug 10 02:00	11° \nearrow 30'43		minimum elong	12293 Dec 24 14:55	13° \searrow 02'44	0°45'07
evening set	12287 Nov 10 09:23	14° \nearrow 45'27		max. Earth dist.	12293 Dec 24 04:15	13° \searrow 01'06	19.60736 AU
				morning rise	12294 Jan 10 05:01	14° \searrow 03'31	
conjunction	12287 Nov 26 20:50	15° \nearrow 44'39	0°59'23	retrograde	12294 Apr 13 21:37	17° \searrow 25'36	
minimum elong	12287 Nov 26 20:50	15° \nearrow 44'39	1°00'13	opposition	12294 Jun 27 14:44	15° \searrow 22'16	0°47'21
max. Earth dist.	12287 Nov 26 13:46	15° \nearrow 43'35	19.95465 AU	min. Earth dist.	12294 Jun 28 00:17	15° \searrow 21'13	17.58397 AU
morning rise	12287 Dec 13 09:31	16° \nearrow 44'04		direct	12294 Sep 10 13:49	13° \searrow 18'14	
retrograde	12288 Mar 16 14:07	20° \nearrow 03'00		evening set	12294 Dec 13 01:47	16° \searrow 39'56	
opposition	12288 May 30 23:57	18° \nearrow 00'34	1°05'14				
min. Earth dist.	12288 May 31 06:39	17° \nearrow 59'51	17.92317 AU	conjunction	12294 Dec 29 16:02	17° \searrow 40'52	0°40'34
direct	12288 Aug 13 17:27	15° \nearrow 58'37		minimum elong	12294 Dec 29 16:02	17° \searrow 40'52	0°41'26
evening set	12288 Nov 14 06:07	19° \nearrow 14'23		max. Earth dist.	12294 Dec 29 03:59	17° \searrow 39'01	19.56152 AU
				morning rise	12295 Jan 15 06:20	18° \searrow 41'50	
conjunction	12288 Nov 30 18:07	20° \nearrow 13'51	0°57'45	retrograde	12295 Apr 18 20:55	22° \searrow 04'21	
minimum elong	12288 Nov 30 18:07	20° \nearrow 13'51	0°58'36	opposition	12295 Jul 02 11:12	20° \searrow 00'58	0°43'06
max. Earth dist.	12288 Nov 30 09:44	20° \nearrow 12'35	19.89161 AU	min. Earth dist.	12295 Jul 02 20:52	19° \searrow 59'55	17.54054 AU
morning rise	12288 Dec 17 07:16	21° \nearrow 13'31		direct	12295 Sep 15 11:10	17° \searrow 56'42	
retrograde	12289 Mar 21 11:13	24° \nearrow 33'04		evening set	12295 Dec 18 03:09	21° \searrow 19'19	
opposition	12289 Jun 04 16:54	22° \nearrow 30'26	1°03'15				
min. Earth dist.	12289 Jun 04 23:43	22° \nearrow 29'42	17.86055 AU	conjunction	12296 Jan 03 17:47	22° \searrow 20'27	0°36'36
direct	12289 Aug 18 12:29	20° \nearrow 28'06		minimum elong	12296 Jan 03 17:47	22° \searrow 20'27	0°37'26
evening set	12289 Nov 19 03:39	23° \nearrow 44'54		max. Earth dist.	12296 Jan 03 06:44	22° \searrow 18'45	19.52046 AU
				morning rise	12296 Jan 20 07:55	23° \searrow 21'34	
conjunction	12289 Dec 05 16:14	24° \nearrow 44'39	0°55'45	retrograde	12296 Apr 22 21:12	26° \searrow 44'28	
minimum elong	12289 Dec 05 16:14	24° \nearrow 44'39	0°56'38	opposition	12296 Jul 06 08:13	24° \searrow 41'06	0°38'33
max. Earth dist.	12289 Dec 05 07:24	24° \nearrow 43'19	19.82955 AU	min. Earth dist.	12296 Jul 06 17:55	24° \searrow 40'02	17.50178 AU
morning rise	12289 Dec 22 05:37	25° \nearrow 44'34		direct	12296 Sep 19 08:51	22° \searrow 36'39	
retrograde	12290 Mar 26 06:22	29° \nearrow 04'40		evening set	12296 Dec 22 05:32	26° \searrow 00'08	
opposition	12290 Jun 09 10:37	27° \nearrow 01'51	1°00'50				
min. Earth dist.	12290 Jun 09 18:50	27° \nearrow 00'58	17.79933 AU	conjunction	12297 Jan 07 20:06	27° \searrow 01'27	0°32'23
direct	12290 Aug 23 05:30	24° \nearrow 59'09		minimum elong	12297 Jan 07 20:07	27° \searrow 01'27	0°33'12
evening set	12290 Nov 24 01:51	28° \nearrow 16'57		max. Earth dist.	12297 Jan 07 07:39	26° \searrow 59'31	19.48412 AU
				morning rise	12297 Jan 24 10:18	28° \searrow 02'42	
conjunction	12290 Dec 10 14:48	29° \nearrow 16'58	0°53'24		12297 Mar 01 05:11	0° \approx	
minimum elong	12290 Dec 10 14:48	29° \nearrow 16'58	0°54'16	retrograde	12297 Apr 27 21:13	1° \approx 25'57	
max. Earth dist.	12290 Dec 10 04:39	29° \nearrow 15'25	19.76944 AU		12297 Jun 26 16:58	30° \nearrow 13	
	12290 Dec 22 10:11	0° \searrow		opposition	12297 Jul 11 05:40	29° \searrow 22'37	0°33'43
morning rise	12290 Dec 27 04:34	0° \searrow 17'07		min. Earth dist.	12297 Jul 11 16:01	29° \searrow 21'29	17.46776 AU
retrograde	12291 Mar 31 04:17	3° \searrow 37'46		direct	12297 Sep 24 06:54	27° \searrow 18'00	
opposition	12291 Jun 14 04:47	1° \searrow 34'46	0°58'02		12297 Dec 15 10:09	0° \approx	
min. Earth dist.	12291 Jun 14 13:01	1° \searrow 33'53	17.74044 AU	evening set	12297 Dec 27 08:20	0° \approx 42'19	
	12291 Jul 26 00:38	30° \nearrow 17					
direct	12291 Aug 28 01:42	29° \nearrow 31'42		conjunction	12298 Jan 12 23:05	1° \approx 43'47	0°27'56
	12291 Sep 29 15:00	0° \searrow		minimum elong	12298 Jan 12 23:05	1° \approx 43'47	0°28'44
evening set	12291 Nov 29 00:45	2° \searrow 50'30		max. Earth dist.	12298 Jan 12 11:26	1° \approx 41'58	19.45227 AU
				morning rise	12298 Jan 29 12:56	2° \approx 45'09	
conjunction	12291 Dec 15 14:14	3° \searrow 50'46	0°50'41	retrograde	12298 May 02 22:43	6° \approx 08'40	
minimum elong	12291 Dec 15 14:14	3° \searrow 50'46	0°51'34	opposition	12298 Jul 16 03:44	4° \approx 05'23	0°28'39
max. Earth dist.	12291 Dec 15 04:19	3° \searrow 49'15	19.71187 AU	min. Earth dist.	12298 Jul 16 13:55	4° \approx 04'17	17.43796 AU
morning rise	12292 Jan 01 04:05	4° \searrow 51'08		direct	12298 Sep 29 05:49	2° \approx 00'39	
retrograde	12292 Apr 04 00:50	8° \searrow 12'18		evening set	12299 Jan 01 11:38	5° \approx 25'42	
opposition	12292 Jun 17 23:34	6° \searrow 09'10	0°54'51				
min. Earth dist.	12292 Jun 18 08:41	6° \searrow 08'11	17.68446 AU	conjunction	12299 Jan 18 02:10	6° \approx 27'17	0°23'16
direct	12292 Aug 31 20:29	4° \searrow 05'44		minimum elong	12299 Jan 18 02:10	6° \approx 27'17	0°24'02
evening set	12292 Dec 03 00:25	7° \searrow 25'32		max. Earth dist.	12299 Jan 17 13:13	6° \approx 25'16	19.42452 AU
				morning rise	12299 Feb 03 15:52	7° \approx 28'44	
conjunction	12292 Dec 19 14:10	8° \searrow 26'02	0°47'37	retrograde	12299 May 07 22:44	10° \approx 52'29	
minimum elong	12292 Dec 19 14:10	8° \searrow 26'02	0°48'31	opposition	12299 Jul 21 02:24	8° \approx 49'14	0°23'21
max. Earth dist.	12292 Dec 19 02:50	8° \searrow 24'18	19.65771 AU	min. Earth dist.	12299 Jul 21 13:27	8° \approx 48'02	17.41231 AU
morning rise	12293 Jan 05 04:22	9° \searrow 26'37		direct	12299 Oct 04 05:22	6° \approx 44'20	
retrograde	12293 Apr 08 23:21	12° \searrow 48'16		evening set	12300 Jan 06 15:16	10° \approx 10'03	
opposition	12293 Jun 22 18:52	10° \searrow 45'00	0°51'17				
min. Earth dist.	12293 Jun 23 04:02	10° \searrow 44'00	17.63219 AU	conjunction	12300 Jan 23 05:49	11° \approx 11'44	0°18'27
direct	12293 Sep 05 17:24	8° \searrow 41'14		minimum elong	12300 Jan 23 05:49	11° \approx 11'44	0°19'11
evening set	12293 Dec 08 00:44	12° \searrow 02'00		max. Earth dist.	12300 Jan 22 17:23	11° \approx 09'48	19.40085 AU
				morning rise	12300 Feb 08 19:07	12° \approx 13'15	
conjunction	12293 Dec 24 14:55	13° \searrow 02'44	0°44'15		12300 Apr 05 22:57	15° \approx	

retrograde	12300 May 13 00:01	15° \approx 37'07		direct	12305 Nov 02 16:19	5° \approx 16'04	
	12300 Jun 19 14:44	15° \approx		evening set	12306 Feb 05 15:22	8° \approx 43'40	
opposition	12300 Jul 26 01:14	13° \approx 33'55	0°17'54				
min. Earth dist.	12300 Jul 26 11:48	13° \approx 32'45	17.39056 AU	conjunction	12306 Feb 22 03:31	9° \approx 45'16	-0°12'11
direct	12300 Oct 09 06:10	11° \approx 28'53		minimum elong	12306 Feb 22 03:30	9° \approx 45'16	0°11'48
evening set	12301 Jan 11 19:21	14° \approx 55'09		behind sun begin	12306 Feb 21 22:50	9° \approx 44'34	
	12301 Jan 13 03:09	15° \approx		behind sun end	12306 Feb 22 08:10	9° \approx 45'59	
				max. Earth dist.	12306 Feb 21 15:00	9° \approx 43'19	19.35149 AU
conjunction	12301 Jan 28 09:37	15° \approx 56'53	0°13'29	morning rise	12306 Mar 10 13:35	10° \approx 46'35	
minimum elong	12301 Jan 28 09:37	15° \approx 56'53	0°14'10	retrograde	12306 Jun 11 00:07	14° \approx 09'46	
behind sun begin	12301 Jan 28 06:29	15° \approx 56'25		opposition	12306 Aug 23 23:39	12° \approx 06'42	-0°16'17
behind sun end	12301 Jan 28 12:45	15° \approx 57'22		min. Earth dist.	12306 Aug 24 09:13	12° \approx 05'40	17.35596 AU
max. Earth dist.	12301 Jan 27 20:10	15° \approx 54'48	19.38109 AU	direct	12306 Nov 07 19:39	10° \approx 01'01	
morning rise	12301 Feb 13 22:34	16° \approx 58'27		evening set	12307 Feb 10 18:36	13° \approx 28'35	
retrograde	12301 May 17 23:20	20° \approx 22'23					
opposition	12301 Jul 31 00:38	18° \approx 19'11	0°12'18	conjunction	12307 Feb 27 06:12	14° \approx 30'05	-0°17'11
min. Earth dist.	12301 Jul 31 12:14	18° \approx 17'55	17.37290 AU	minimum elong	12307 Feb 27 06:12	14° \approx 30'05	0°16'52
direct	12301 Oct 14 07:02	16° \approx 14'00		max. Earth dist.	12307 Feb 26 19:15	14° \approx 28'23	19.36177 AU
evening set	12302 Jan 16 23:25	19° \approx 40'44		morning rise	12307 Mar 15 15:24	15° \approx 31'17	
				retrograde	12307 Jun 15 22:38	18° \approx 54'08	
conjunction	12302 Feb 02 13:27	20° \approx 42'30	0°08'26	opposition	12307 Aug 28 23:45	16° \approx 51'10	-0°21'48
minimum elong	12302 Feb 02 13:28	20° \approx 42'31	0°09'04	min. Earth dist.	12307 Aug 29 09:29	16° \approx 50'06	17.36934 AU
behind sun begin	12302 Feb 02 07:45	20° \approx 41'38		direct	12307 Nov 12 20:25	14° \approx 45'30	
behind sun end	12302 Feb 02 19:10	20° \approx 43'23		evening set	12308 Feb 15 21:44	18° \approx 12'57	
max. Earth dist.	12302 Feb 02 00:19	20° \approx 40'28	19.36556 AU				
morning rise	12302 Feb 19 01:55	21° \approx 44'04		conjunction	12308 Mar 03 08:32	19° \approx 14'19	-0°22'03
retrograde	12302 May 23 00:22	25° \approx 07'59		minimum elong	12308 Mar 03 08:32	19° \approx 14'19	0°21'48
opposition	12302 Aug 05 00:07	23° \approx 04'49	0°06'36	max. Earth dist.	12308 Mar 02 21:28	19° \approx 12'36	19.37831 AU
min. Earth dist.	12302 Aug 05 10:49	23° \approx 03'39	17.35948 AU	morning rise	12308 Mar 19 17:07	20° \approx 15'22	
direct	12302 Oct 19 09:49	20° \approx 59'30		retrograde	12308 Jun 19 23:15	23° \approx 37'52	
evening set	12303 Jan 22 03:36	24° \approx 26'36		opposition	12308 Sep 01 23:32	21° \approx 35'01	-0°27'10
				min. Earth dist.	12308 Sep 02 07:44	21° \approx 34'07	17.38899 AU
conjunction	12303 Feb 07 17:15	25° \approx 28'22	0°03'20	direct	12308 Nov 16 23:09	19° \approx 29'25	
minimum elong	12303 Feb 07 17:15	25° \approx 28'22	0°03'55	evening set	12309 Feb 20 00:25	22° \approx 56'42	
behind sun begin	12303 Feb 07 10:35	25° \approx 27'21					
behind sun end	12303 Feb 07 23:55	25° \approx 29'23		conjunction	12309 Mar 08 10:37	23° \approx 57'56	-0°26'46
max. Earth dist.	12303 Feb 07 03:58	25° \approx 26'18	19.35441 AU	minimum elong	12309 Mar 08 10:37	23° \approx 57'56	0°26'35
morning rise	12303 Feb 24 05:10	26° \approx 29'54		max. Earth dist.	12309 Mar 08 01:28	23° \approx 56'30	19.40097 AU
retrograde	12303 May 27 23:16	29° \approx 53'45		morning rise	12309 Mar 24 18:13	24° \approx 58'48	
opposition	12303 Aug 09 23:55	27° \approx 50'35	0°00'51	retrograde	12309 Jun 24 21:38	28° \approx 20'54	
min. Earth dist.	12303 Aug 10 11:32	27° \approx 49'19	17.35079 AU	opposition	12309 Sep 06 23:31	26° \approx 18'15	-0°32'19
desc. node	12303 Sep 30 13:52	26° \approx 00'15		min. Earth dist.	12309 Sep 07 07:36	26° \approx 17'22	17.41456 AU
direct	12303 Oct 24 11:27	25° \approx 45'09		direct	12309 Nov 21 23:48	24° \approx 12'48	
evening set	12304 Jan 27 07:36	29° \approx 12'30		evening set	12310 Feb 25 02:38	27° \approx 39'50	
	12304 Feb 09 01:57	0° \approx					
conjunction	12304 Feb 12 20:51	0° \approx 14'15	-0°01'57	conjunction	12310 Mar 13 11:53	28° \approx 40'52	-0°31'17
minimum elong	12304 Feb 12 20:52	0° \approx 14'15	0°01'27	minimum elong	12310 Mar 13 11:52	28° \approx 40'52	0°31'10
behind sun begin	12304 Feb 12 14:08	0° \approx 13'13		max. Earth dist.	12310 Mar 13 02:34	28° \approx 39'25	19.42943 AU
behind sun end	12304 Feb 13 03:36	0° \approx 15'17		morning rise	12310 Mar 29 18:47	29° \approx 41'34	
max. Earth dist.	12304 Feb 12 07:42	0° \approx 12'12	19.34824 AU		12310 Apr 03 20:39	0° \approx	
morning rise	12304 Feb 29 08:17	1° \approx 15'44		retrograde	12310 Jun 29 21:22	3° \approx 03'15	
retrograde	12304 Jun 01 00:15	4° \approx 39'25		opposition	12310 Sep 11 23:15	1° \approx 00'48	-0°37'14
opposition	12304 Aug 13 23:43	2° \approx 36'17	-0°04'55	min. Earth dist.	12310 Sep 12 06:04	1° \approx 00'03	17.44573 AU
min. Earth dist.	12304 Aug 14 10:09	2° \approx 35'09	17.34704 AU		12310 Oct 06 10:55	30° \approx	
direct	12304 Oct 28 14:55	0° \approx 30'44		direct	12310 Nov 27 02:02	28° \approx 55'33	
evening set	12305 Jan 31 11:37	3° \approx 58'15			12311 Jan 16 04:49	0° \approx	
max. Earth dist.	12305 Feb 16 11:53	4° \approx 58'00	19.34704 AU	evening set	12311 Mar 02 04:17	2° \approx 22'14	
conjunction	12305 Feb 17 00:24	4° \approx 59'57	-0°07'07	conjunction	12311 Mar 18 12:53	3° \approx 23'06	-0°35'35
minimum elong	12305 Feb 17 00:24	4° \approx 59'57	0°06'39	minimum elong	12311 Mar 18 12:53	3° \approx 23'05	0°35'33
behind sun begin	12305 Feb 16 18:06	4° \approx 58'59		max. Earth dist.	12311 Mar 18 05:36	3° \approx 21'57	19.46305 AU
behind sun end	12305 Feb 17 06:41	5° \approx 00'54		morning rise	12311 Apr 03 18:46	4° \approx 23'35	
morning rise	12305 Mar 05 11:04	6° \approx 01'22		retrograde	12311 Jul 04 19:14	7° \approx 44'48	
retrograde	12305 Jun 05 22:59	9° \approx 24'49		opposition	12311 Sep 16 22:52	5° \approx 42'35	-0°41'54
opposition	12305 Aug 18 23:41	7° \approx 21'42	-0°10'38	min. Earth dist.	12311 Sep 17 05:24	5° \approx 41'52	17.48163 AU
min. Earth dist.	12305 Aug 19 10:47	7° \approx 20'30	17.34861 AU	direct	12311 Dec 02 02:52	3° \approx 37'33	
				evening set	12312 Mar 06 05:36	7° \approx 03'50	





























































































































conjunction	12312 Mar 22 13:12	8° Υ 04'27	-0°39'37	retrograde	12318 Aug 05 14:28	10° δ 01'45	
minimum elong	12312 Mar 22 13:12	8° Υ 04'27	0°39'39	opposition	12318 Oct 19 11:55	8° δ 00'53	-1°04'56
max. Earth dist.	12312 Mar 22 05:32	8° Υ 03'16	19.50110 AU	min. Earth dist.	12318 Oct 19 13:53	8° δ 00'40	17.82043 AU
morning rise	12312 Apr 07 18:24	9° Υ 04'44		direct	12319 Jan 04 06:15	5° δ 57'29	
retrograde	12312 Jul 08 17:40	12° Υ 25'27		evening set	12319 Apr 08 17:30	9° δ 18'35	
opposition	12312 Sep 20 22:19	10° Υ 23'27	-0°46'15				
min. Earth dist.	12312 Sep 21 04:03	10° Υ 22'50	17.52170 AU	conjunction	12319 Apr 24 19:12	10° δ 17'20	-0°59'11
direct	12312 Dec 06 04:27	8° Υ 18'39		minimum elong	12319 Apr 24 19:11	10° δ 17'20	0°59'41
evening set	12313 Mar 11 06:11	11° Υ 44'26		max. Earth dist.	12319 Apr 24 17:51	10° δ 17'07	19.84878 AU
				morning rise	12319 May 10 18:35	11° δ 15'46	
conjunction	12313 Mar 27 13:03	12° Υ 44'50	-0°43'24	retrograde	12319 Aug 10 08:39	14° δ 31'52	
minimum elong	12313 Mar 27 13:03	12° Υ 44'50	0°43'30	opposition	12319 Oct 24 08:11	12° δ 31'09	-1°06'40
max. Earth dist.	12313 Mar 27 07:09	12° Υ 43'55	19.54289 AU	min. Earth dist.	12319 Oct 24 08:22	12° δ 31'08	17.87795 AU
morning rise	12313 Apr 12 17:11	13° Υ 44'51		direct	12320 Jan 09 04:45	10° δ 28'00	
retrograde	12313 Jul 13 14:50	17° Υ 05'01		evening set	12320 Apr 12 12:14	13° δ 48'08	
opposition	12313 Sep 25 21:34	15° Υ 03'15	-0°50'18				
min. Earth dist.	12313 Sep 26 02:41	15° Υ 02'43	17.56509 AU	conjunction	12320 Apr 28 13:06	14° δ 46'35	-1°00'33
direct	12313 Dec 11 06:01	12° Υ 58'43		minimum elong	12320 Apr 28 13:06	14° δ 46'35	1°01'06
evening set	12314 Mar 16 06:15	16° Υ 23'54		max. Earth dist.	12320 Apr 28 12:51	14° δ 46'32	19.90741 AU
					12320 May 02 04:45	15° δ	
conjunction	12314 Apr 01 12:05	17° Υ 24'02	-0°46'52	morning rise	12320 May 14 11:47	15° δ 44'44	
minimum elong	12314 Apr 01 12:04	17° Υ 24'02	0°47'04	retrograde	12320 Aug 14 00:53	19° δ 00'06	
max. Earth dist.	12314 Apr 01 05:57	17° Υ 23'05	19.58786 AU	opposition	12320 Oct 28 04:12	16° δ 59'32	-1°07'57
morning rise	12314 Apr 17 15:28	18° Υ 23'49		min. Earth dist.	12320 Oct 28 04:10	16° δ 59'32	17.93786 AU
retrograde	12314 Jul 18 11:17	21° Υ 43'24			12321 Jan 01 14:24	15° δ	
opposition	12314 Sep 30 20:33	19° Υ 41'50	-0°53'59	direct	12321 Jan 13 00:54	14° δ 56'38	
min. Earth dist.	12314 Oct 01 01:09	19° Υ 41'21	17.61163 AU		12321 Jan 24 10:35	15° δ	
direct	12314 Dec 16 06:51	17° Υ 37'32		evening set	12321 Apr 17 05:54	18° δ 15'46	
evening set	12315 Mar 21 05:17	21° Υ 02'02					
				conjunction	12321 May 03 06:00	19° δ 13'55	-1°01'32
conjunction	12315 Apr 06 10:24	22° Υ 01'55	-0°50'02	minimum elong	12321 May 03 06:00	19° δ 13'55	1°02'10
minimum elong	12315 Apr 06 10:24	22° Υ 01'55	0°50'16	max. Earth dist.	12321 May 03 06:52	19° δ 14'03	19.96850 AU
max. Earth dist.	12315 Apr 06 05:52	22° Υ 01'13	19.63567 AU	morning rise	12321 May 19 04:03	20° δ 11'47	
morning rise	12315 Apr 22 12:52	23° Υ 01'26		retrograde	12321 Aug 18 17:57	23° δ 26'25	
retrograde	12315 Jul 23 07:35	26° Υ 20'24		opposition	12321 Nov 01 23:29	21° δ 26'03	-1°08'50
opposition	12315 Oct 05 19:05	24° Υ 19'02	-0°57'19	min. Earth dist.	12321 Nov 01 21:16	21° δ 26'17	18.00004 AU
min. Earth dist.	12315 Oct 05 22:43	24° Υ 18'39	17.66055 AU	direct	12322 Jan 17 21:42	19° δ 23'27	
direct	12315 Dec 21 08:25	22° Υ 14'59		evening set	12322 Apr 21 22:43	22° δ 41'34	
evening set	12316 Mar 25 03:50	25° Υ 38'44					
				conjunction	12322 May 07 22:07	23° δ 39'26	-1°02'09
conjunction	12316 Apr 10 07:58	26° Υ 38'20	-0°52'51	minimum elong	12322 May 07 22:07	23° δ 39'26	1°02'48
minimum elong	12316 Apr 10 07:57	26° Υ 38'20	0°53'11	max. Earth dist.	12322 May 08 00:28	23° δ 39'47	20.03173 AU
max. Earth dist.	12316 Apr 10 03:25	26° Υ 37'38	19.68574 AU	morning rise	12322 May 23 19:31	24° δ 37'02	
morning rise	12316 Apr 26 09:39	27° Υ 37'36		retrograde	12322 Aug 23 09:09	27° δ 50'57	
	12316 Jun 11 06:58	0° δ		opposition	12322 Nov 06 18:15	25° δ 50'47	-1°09'17
retrograde	12316 Jul 27 02:04	0° δ 55'53		min. Earth dist.	12322 Nov 06 15:55	25° δ 51'01	18.06430 AU
	12316 Sep 12 15:07	30° δ		direct	12323 Jan 22 16:18	23° δ 48'32	
opposition	12316 Oct 09 17:08	28° Υ 54'42	-1°00'15	evening set	12323 Apr 26 14:35	27° δ 05'38	
min. Earth dist.	12316 Oct 09 20:38	28° Υ 54'20	17.71180 AU				
direct	12316 Dec 25 07:57	26° Υ 50'52		conjunction	12323 May 12 13:19	28° δ 03'12	-1°02'24
	12317 Mar 26 04:58	0° δ		minimum elong	12323 May 12 13:19	28° δ 03'12	1°03'07
evening set	12317 Mar 30 01:23	0° δ 13'49		max. Earth dist.	12323 May 12 16:23	28° δ 03'40	20.09682 AU
				morning rise	12323 May 28 10:17	29° δ 00'32	
conjunction	12317 Apr 15 04:44	1° δ 13'08	-0°55'20		12323 Jun 14 20:36	0° Π	
minimum elong	12317 Apr 15 04:43	1° δ 13'08	0°55'42	retrograde	12323 Aug 28 01:26	2° Π 13'45	
max. Earth dist.	12317 Apr 15 01:32	1° δ 12'39	19.73804 AU	opposition	12323 Nov 11 12:19	0° Π 13'49	-1°09'20
morning rise	12317 May 01 05:34	2° δ 12'07		min. Earth dist.	12323 Nov 11 07:56	0° Π 14'16	18.12987 AU
retrograde	12317 Jul 31 21:23	5° δ 29'42			12323 Nov 17 01:48	30° δ	
opposition	12317 Oct 14 14:46	3° δ 28'42	-1°02'48	direct	12324 Jan 27 11:45	28° δ 11'55	
min. Earth dist.	12317 Oct 14 16:51	3° δ 28'28	17.76503 AU		12324 Apr 03 12:45	0° Π	
direct	12317 Dec 30 08:31	1° δ 25'05		evening set	12324 Apr 30 05:41	1° Π 28'00	
evening set	12318 Apr 03 21:55	4° δ 47'08					
				conjunction	12324 May 16 03:50	2° Π 25'18	-1°02'17
conjunction	12318 Apr 20 00:21	5° δ 46'10	-0°57'27	minimum elong	12324 May 16 03:49	2° Π 25'18	1°03'02
minimum elong	12318 Apr 20 00:21	5° δ 46'10	0°57'53	max. Earth dist.	12324 May 16 08:25	2° Π 26'00	20.16273 AU
max. Earth dist.	12318 Apr 19 21:46	5° δ 45'46	19.79229 AU	morning rise	12324 Jun 01 00:12	3° Π 22'22	
morning rise	12318 May 06 00:28	6° δ 44'52		retrograde	12324 Aug 31 14:57	6° Π 34'54	

opposition	12324 Nov 15 05:57	4° Π 35'12	-1°08'59	conjunction	12331 Jun 15 12:42	2° \mathfrak{D} 14'53	-0°52'09
min. Earth dist.	12324 Nov 15 01:44	4° Π 35'38	18.19602 AU	minimum elong	12331 Jun 15 12:42	2° \mathfrak{D} 14'53	0°53'03
direct	12325 Jan 31 05:31	2° Π 33'41		max. Earth dist.	12331 Jun 15 20:39	2° \mathfrak{D} 16'03	20.59279 AU
evening set	12325 May 04 20:00	5° Π 48'45		morning rise	12331 Jul 01 07:23	3° \mathfrak{D} 10'24	
				retrograde	12331 Oct 01 06:18	6° \mathfrak{D} 18'38	
conjunction	12325 May 20 17:29	6° Π 45'46	-1°01'48	opposition	12331 Dec 16 17:20	4° \mathfrak{D} 20'02	-0°56'26
minimum elong	12325 May 20 17:29	6° Π 45'46	1°02'35	min. Earth dist.	12331 Dec 16 08:31	4° \mathfrak{D} 20'56	18.61887 AU
max. Earth dist.	12325 May 20 22:21	6° Π 46'30	20.22899 AU	direct	12332 Mar 02 19:28	2° \mathfrak{D} 20'38	
morning rise	12325 Jun 05 13:32	7° Π 42'35		evening set	12332 Jun 03 02:29	5° \mathfrak{D} 28'47	
retrograde	12325 Sep 05 06:21	10° Π 54'26					
opposition	12325 Nov 19 22:59	8° Π 54'58	-1°08'15	conjunction	12332 Jun 18 21:29	6° \mathfrak{D} 24'10	-0°49'32
min. Earth dist.	12325 Nov 19 16:54	8° Π 55'35	18.26208 AU	minimum elong	12332 Jun 18 21:30	6° \mathfrak{D} 24'10	0°50'25
direct	12326 Feb 04 23:42	6° Π 53'49		max. Earth dist.	12332 Jun 19 07:02	6° \mathfrak{D} 25'34	20.64394 AU
evening set	12326 May 09 09:21	10° Π 07'51		morning rise	12332 Jul 04 15:59	7° \mathfrak{D} 19'30	
				retrograde	12332 Oct 04 14:58	10° \mathfrak{D} 27'13	
conjunction	12326 May 25 06:24	11° Π 04'36	-1°00'59	opposition	12332 Dec 20 06:22	8° \mathfrak{D} 28'41	-0°53'22
minimum elong	12326 May 25 06:24	11° Π 04'36	1°01'48	min. Earth dist.	12332 Dec 19 21:42	8° \mathfrak{D} 29'33	18.66870 AU
max. Earth dist.	12326 May 25 12:47	11° Π 05'34	20.29463 AU	direct	12333 Mar 07 08:01	6° \mathfrak{D} 29'29	
morning rise	12326 Jun 10 01:58	12° Π 01'10		evening set	12333 Jun 07 10:52	9° \mathfrak{D} 36'45	
retrograde	12326 Sep 09 18:32	15° Π 12'23					
opposition	12326 Nov 24 15:36	13° Π 13'07	-1°07'08	conjunction	12333 Jun 23 05:33	10° \mathfrak{D} 31'56	-0°46'40
min. Earth dist.	12326 Nov 24 09:52	13° Π 13'43	18.32723 AU	minimum elong	12333 Jun 23 05:33	10° \mathfrak{D} 31'56	0°47'34
direct	12327 Feb 09 16:07	11° Π 12'20		max. Earth dist.	12333 Jun 23 14:44	10° \mathfrak{D} 33'17	20.69268 AU
evening set	12327 May 13 22:09	14° Π 25'21		morning rise	12333 Jul 09 00:12	11° \mathfrak{D} 27'06	
				retrograde	12333 Oct 09 01:16	14° \mathfrak{D} 34'21	
conjunction	12327 May 29 18:37	15° Π 21'51	-0°59'50	opposition	12333 Dec 24 18:44	12° \mathfrak{D} 35'52	-0°50'03
minimum elong	12327 May 29 18:37	15° Π 21'51	1°00'40	min. Earth dist.	12333 Dec 24 08:46	12° \mathfrak{D} 36'52	18.71638 AU
max. Earth dist.	12327 May 30 00:49	15° Π 22'46	20.35910 AU	direct	12334 Mar 11 19:56	10° \mathfrak{D} 36'52	
morning rise	12327 Jun 14 13:59	16° Π 18'10		evening set	12334 Jun 11 18:23	13° \mathfrak{D} 43'17	
retrograde	12327 Sep 14 08:45	19° Π 28'45					
opposition	12327 Nov 29 07:19	17° Π 29'41	-1°05'39	conjunction	12334 Jun 27 13:07	14° \mathfrak{D} 38'19	-0°43'35
min. Earth dist.	12327 Nov 29 00:06	17° Π 30'25	18.39080 AU	minimum elong	12334 Jun 27 13:08	14° \mathfrak{D} 38'19	0°44'27
direct	12328 Feb 14 09:04	15° Π 29'13		max. Earth dist.	12334 Jun 28 00:02	14° \mathfrak{D} 39'54	20.73919 AU
evening set	12328 May 17 10:08	18° Π 41'15		morning rise	12334 Jul 13 07:42	15° \mathfrak{D} 33'20	
				retrograde	12334 Oct 13 09:43	18° \mathfrak{D} 40'10	
conjunction	12328 Jun 02 06:16	19° Π 37'30	-0°58'22	opposition	12334 Dec 29 06:36	16° \mathfrak{D} 41'44	-0°46'30
minimum elong	12328 Jun 02 06:16	19° Π 37'30	0°59'13	min. Earth dist.	12334 Dec 28 20:32	16° \mathfrak{D} 42'45	18.76180 AU
max. Earth dist.	12328 Jun 02 13:49	19° Π 38'37	20.42156 AU	direct	12335 Mar 16 06:56	14° \mathfrak{D} 42'58	
morning rise	12328 Jun 18 01:13	20° Π 33'36		evening set	12335 Jun 16 01:38	17° \mathfrak{D} 48'36	
retrograde	12328 Sep 17 19:41	23° Π 43'33					
opposition	12328 Dec 02 22:51	21° Π 44'40	-1°03'50	conjunction	12335 Jul 01 20:08	18° \mathfrak{D} 43'28	-0°40'16
min. Earth dist.	12328 Dec 02 16:04	21° Π 45'21	18.45208 AU	minimum elong	12335 Jul 01 20:08	18° \mathfrak{D} 43'28	0°41'09
direct	12329 Feb 17 24:00	19° Π 44'31		max. Earth dist.	12335 Jul 02 06:33	18° \mathfrak{D} 44'59	20.78359 AU
evening set	12329 May 21 21:21	22° Π 55'33		morning rise	12335 Jul 17 14:57	19° \mathfrak{D} 38'22	
				retrograde	12335 Oct 17 18:56	22° \mathfrak{D} 44'50	
conjunction	12329 Jun 06 16:59	23° Π 51'33	-0°56'35	opposition	12336 Jan 02 17:48	20° \mathfrak{D} 46'29	-0°42'44
minimum elong	12329 Jun 06 16:59	23° Π 51'33	0°57'27	min. Earth dist.	12336 Jan 02 06:40	20° \mathfrak{D} 47'36	18.80508 AU
max. Earth dist.	12329 Jun 07 00:08	23° Π 52'37	20.48159 AU	direct	12336 Mar 19 16:59	18° \mathfrak{D} 47'56	
morning rise	12329 Jun 22 11:52	24° Π 47'26		evening set	12336 Jun 19 08:15	21° \mathfrak{D} 52'52	
retrograde	12329 Sep 22 08:54	27° Π 56'49					
opposition	12329 Dec 07 13:39	25° Π 58'03	-1°01'40	conjunction	12336 Jul 05 02:53	22° \mathfrak{D} 47'36	-0°36'47
min. Earth dist.	12329 Dec 07 05:32	25° Π 58'52	18.51070 AU	minimum elong	12336 Jul 05 02:53	22° \mathfrak{D} 47'36	0°37'38
direct	12330 Feb 22 15:44	23° Π 58'11		max. Earth dist.	12336 Jul 05 14:55	22° \mathfrak{D} 49'20	20.82563 AU
evening set	12330 May 26 07:48	27° Π 08'14		morning rise	12336 Jul 20 21:41	23° \mathfrak{D} 42'23	
				retrograde	12336 Oct 21 03:06	26° \mathfrak{D} 48'31	
conjunction	12330 Jun 11 03:15	28° Π 04'01	-0°54'30	opposition	12337 Jan 06 04:48	24° \mathfrak{D} 50'16	-0°38'45
minimum elong	12330 Jun 11 03:16	28° Π 04'01	0°55'23	min. Earth dist.	12337 Jan 05 17:32	24° \mathfrak{D} 51'23	18.84578 AU
max. Earth dist.	12330 Jun 11 11:46	28° Π 05'17	20.53866 AU	direct	12337 Mar 24 02:26	22° \mathfrak{D} 51'58	
morning rise	12330 Jun 26 21:52	28° Π 59'43		evening set	12337 Jun 23 14:28	25° \mathfrak{D} 56'12	
	12330 Jul 15 01:12	0° \mathfrak{D}					
retrograde	12330 Sep 26 18:30	2° \mathfrak{D} 08'30		conjunction	12337 Jul 09 08:59	26° \mathfrak{D} 50'49	-0°33'08
opposition	12330 Dec 12 03:49	0° \mathfrak{D} 09'51	-0°59'12	minimum elong	12337 Jul 09 08:59	26° \mathfrak{D} 50'49	0°33'57
min. Earth dist.	12330 Dec 11 20:10	0° \mathfrak{D} 10'37	18.56625 AU	max. Earth dist.	12337 Jul 09 20:27	26° \mathfrak{D} 52'28	20.86504 AU
	12330 Dec 16 04:57	30° \mathfrak{R} Π		morning rise	12337 Jul 25 04:10	27° \mathfrak{D} 45'30	
direct	12331 Feb 27 05:23	28° Π 10'13			12337 Sep 09 15:29	0° \mathfrak{D}	
	12331 May 06 06:49	0° \mathfrak{D}		retrograde	12337 Oct 25 12:19	0° \mathfrak{D} 51'23	
evening set	12331 May 30 17:36	1° \mathfrak{D} 19'19			12337 Dec 12 02:42	30° \mathfrak{R} \mathfrak{D}	

opposition	12338 Jan 10 15:20	28° $\mathring{\text{U}}$ 53'12 -0°34'37	retrograde	12343 Nov 19 14:05	24° $\mathring{\text{U}}$ 56'47	
min. Earth dist.	12338 Jan 10 03:18	28° $\mathring{\text{U}}$ 54'25 18.88371 AU	opposition	12344 Feb 05 00:07	22° $\mathring{\text{U}}$ 58'41 -0°07'11	
direct	12338 Mar 28 11:27	26° $\mathring{\text{U}}$ 55'09	min. Earth dist.	12344 Feb 04 12:51	22° $\mathring{\text{U}}$ 59'49 19.02321 AU	
evening set	12338 Jun 27 20:22	29° $\mathring{\text{U}}$ 58'46	direct	12344 Apr 21 09:35	21° $\mathring{\text{U}}$ 01'30	
	12338 Jun 28 05:06	0° $\mathring{\text{U}}$	evening set	12344 Jul 21 04:13	24° $\mathring{\text{U}}$ 02'27	
conjunction	12338 Jul 13 15:06	0° $\mathring{\text{U}}$ 53'16 -0°29'19	conjunction	12344 Aug 06 00:12	24° $\mathring{\text{U}}$ 56'39 -0°04'22	
minimum elong	12338 Jul 13 15:07	0° $\mathring{\text{U}}$ 53'16 0°30'08	minimum elong	12344 Aug 06 00:12	24° $\mathring{\text{U}}$ 56'39 0°04'57	
max. Earth dist.	12338 Jul 14 03:59	0° $\mathring{\text{U}}$ 55'08 20.90130 AU	behind sun begin	12344 Aug 05 17:47	24° $\mathring{\text{U}}$ 55'45	
morning rise	12338 Jul 29 10:22	1° $\mathring{\text{U}}$ 47'53	behind sun end	12344 Aug 06 06:36	24° $\mathring{\text{U}}$ 57'33	
retrograde	12338 Oct 29 20:05	4° $\mathring{\text{U}}$ 53'31	max. Earth dist.	12344 Aug 06 12:21	24° $\mathring{\text{U}}$ 58'23 21.02647 AU	
opposition	12339 Jan 15 01:22	2° $\mathring{\text{U}}$ 55'26 -0°30'19	morning rise	12344 Aug 21 21:34	25° $\mathring{\text{U}}$ 51'04	
min. Earth dist.	12339 Jan 14 13:29	2° $\mathring{\text{U}}$ 56'38 18.91817 AU	retrograde	12344 Nov 22 21:33	28° $\mathring{\text{U}}$ 56'12	
direct	12339 Apr 01 19:27	0° $\mathring{\text{U}}$ 57'36	opposition	12345 Feb 08 08:45	26° $\mathring{\text{U}}$ 58'00 -0°02'23	
evening set	12339 Jul 02 02:10	4° $\mathring{\text{U}}$ 00'40	min. Earth dist.	12345 Feb 07 21:41	26° $\mathring{\text{U}}$ 59'06 19.02863 AU	
conjunction	12339 Jul 17 20:52	4° $\mathring{\text{U}}$ 55'04 -0°25'22	direct	12345 Apr 25 17:42	25° $\mathring{\text{U}}$ 00'49	
minimum elong	12339 Jul 17 20:52	4° $\mathring{\text{U}}$ 55'04 0°26'09	evening set	12345 Jul 25 09:04	28° $\mathring{\text{U}}$ 01'29	
max. Earth dist.	12339 Jul 18 08:48	4° $\mathring{\text{U}}$ 56'48 20.93396 AU	asc. node	12345 Aug 05 22:02	28° $\mathring{\text{U}}$ 40'51	
morning rise	12339 Aug 02 16:33	5° $\mathring{\text{U}}$ 49'37	conjunction	12345 Aug 10 05:15	28° $\mathring{\text{U}}$ 55'40 0°00'02	
retrograde	12339 Nov 03 05:15	8° $\mathring{\text{U}}$ 55'05	minimum elong	12345 Aug 10 05:14	28° $\mathring{\text{U}}$ 55'40 0°00'31	
opposition	12340 Jan 19 11:15	6° $\mathring{\text{U}}$ 57'04 -0°25'52	behind sun begin	12345 Aug 09 22:40	28° $\mathring{\text{U}}$ 54'46	
min. Earth dist.	12340 Jan 18 23:01	6° $\mathring{\text{U}}$ 58'17 18.94886 AU	behind sun end	12345 Aug 10 11:48	28° $\mathring{\text{U}}$ 56'35	
direct	12340 Apr 05 03:51	4° $\mathring{\text{U}}$ 59'25	max. Earth dist.	12345 Aug 10 16:07	28° $\mathring{\text{U}}$ 57'13 21.02959 AU	
evening set	12340 Jul 05 07:31	8° $\mathring{\text{U}}$ 01'58	morning rise	12345 Aug 26 03:17	29° $\mathring{\text{U}}$ 50'08	
conjunction	12340 Jul 21 02:29	8° $\mathring{\text{U}}$ 56'19 -0°21'19		12345 Aug 29 02:07	0° $\mathring{\text{U}}$	
minimum elong	12340 Jul 21 02:29	8° $\mathring{\text{U}}$ 56'19 0°22'05	retrograde	12345 Nov 27 05:43	2° $\mathring{\text{U}}$ 55'18	
max. Earth dist.	12340 Jul 21 15:38	8° $\mathring{\text{U}}$ 58'12 20.96245 AU	opposition	12346 Feb 12 17:10	0° $\mathring{\text{U}}$ 56'57 0°02'26	
morning rise	12340 Aug 05 22:18	9° $\mathring{\text{U}}$ 50'48	min. Earth dist.	12346 Feb 12 06:25	0° $\mathring{\text{U}}$ 58'01 19.02954 AU	
retrograde	12340 Nov 06 13:08	12° $\mathring{\text{U}}$ 56'08		12346 Mar 09 10:38	30° $\mathring{\text{R}}$	
opposition	12341 Jan 22 20:54	10° $\mathring{\text{U}}$ 58'10 -0°21'19	direct	12346 Apr 29 23:36	28° $\mathring{\text{U}}$ 59'44	
min. Earth dist.	12341 Jan 22 08:53	10° $\mathring{\text{U}}$ 59'22 18.97506 AU		12346 Jun 18 14:15	0° $\mathring{\text{U}}$	
direct	12341 Apr 09 11:35	9° $\mathring{\text{U}}$ 00'42	evening set	12346 Jul 29 13:52	2° $\mathring{\text{U}}$ 00'11	
evening set	12341 Jul 09 12:59	12° $\mathring{\text{U}}$ 02'47	conjunction	12346 Aug 14 10:34	2° $\mathring{\text{U}}$ 54'24 0°04'28	
conjunction	12341 Jul 25 07:59	12° $\mathring{\text{U}}$ 57'04 -0°17'10	minimum elong	12346 Aug 14 10:33	2° $\mathring{\text{U}}$ 54'24 0°03'59	
minimum elong	12341 Jul 25 07:59	12° $\mathring{\text{U}}$ 57'04 0°17'53	behind sun begin	12346 Aug 14 04:03	2° $\mathring{\text{U}}$ 53'30	
max. Earth dist.	12341 Jul 25 19:56	12° $\mathring{\text{U}}$ 58'47 20.98635 AU	behind sun end	12346 Aug 14 17:04	2° $\mathring{\text{U}}$ 55'19	
morning rise	12341 Aug 10 04:18	13° $\mathring{\text{U}}$ 51'31	max. Earth dist.	12346 Aug 14 22:22	2° $\mathring{\text{U}}$ 56'05 21.02832 AU	
	12341 Aug 31 13:19	15° $\mathring{\text{U}}$	morning rise	12346 Aug 30 08:54	3° $\mathring{\text{U}}$ 48'53	
retrograde	12341 Nov 10 21:55	16° $\mathring{\text{U}}$ 56'46	retrograde	12346 Dec 01 12:48	6° $\mathring{\text{U}}$ 54'08	
	12342 Jan 26 17:58	15° $\mathring{\text{R}}$	opposition	12347 Feb 17 01:10	4° $\mathring{\text{U}}$ 55'39 0°07'13	
opposition	12342 Jan 27 06:12	14° $\mathring{\text{U}}$ 58'47 -0°16'41	min. Earth dist.	12347 Feb 16 14:27	4° $\mathring{\text{U}}$ 56'44 19.02625 AU	
min. Earth dist.	12342 Jan 26 18:16	14° $\mathring{\text{U}}$ 59'58 18.99655 AU	direct	12347 May 04 07:04	2° $\mathring{\text{U}}$ 58'25	
direct	12342 Apr 13 18:59	13° $\mathring{\text{U}}$ 01'27	evening set	12347 Aug 02 18:51	5° $\mathring{\text{U}}$ 58'44	
	12342 Jun 24 02:43	15° $\mathring{\text{U}}$	conjunction	12347 Aug 18 15:44	6° $\mathring{\text{U}}$ 52'59 0°08'46	
evening set	12342 Jul 13 18:06	16° $\mathring{\text{U}}$ 03'07	minimum elong	12347 Aug 18 15:44	6° $\mathring{\text{U}}$ 52'59 0°08'20	
conjunction	12342 Jul 29 13:31	16° $\mathring{\text{U}}$ 57'22 -0°12'57	behind sun begin	12347 Aug 18 09:55	6° $\mathring{\text{U}}$ 52'10	
minimum elong	12342 Jul 29 13:31	16° $\mathring{\text{U}}$ 57'22 0°13'38	behind sun end	12347 Aug 18 21:34	6° $\mathring{\text{U}}$ 53'48	
behind sun begin	12342 Jul 29 09:52	16° $\mathring{\text{U}}$ 56'51	max. Earth dist.	12347 Aug 19 02:19	6° $\mathring{\text{U}}$ 54'29 21.02321 AU	
behind sun end	12342 Jul 29 17:10	16° $\mathring{\text{U}}$ 57'52	morning rise	12347 Sep 03 14:45	7° $\mathring{\text{U}}$ 47'31	
max. Earth dist.	12342 Jul 30 02:18	16° $\mathring{\text{U}}$ 59'12 21.00513 AU	retrograde	12347 Dec 05 21:22	10° $\mathring{\text{U}}$ 52'55	
morning rise	12342 Aug 14 10:03	17° $\mathring{\text{U}}$ 51'47	opposition	12348 Feb 21 09:18	8° $\mathring{\text{U}}$ 54'18 0°11'59	
retrograde	12342 Nov 15 05:50	20° $\mathring{\text{U}}$ 56'58	min. Earth dist.	12348 Feb 20 22:51	8° $\mathring{\text{U}}$ 55'21 19.01943 AU	
opposition	12343 Jan 31 15:17	18° $\mathring{\text{U}}$ 58'57 -0°11'58	direct	12348 May 07 12:36	6° $\mathring{\text{U}}$ 57'02	
min. Earth dist.	12343 Jan 31 03:42	19° $\mathring{\text{U}}$ 00'07 19.01256 AU	evening set	12348 Aug 05 23:37	9° $\mathring{\text{U}}$ 57'17	
direct	12343 Apr 18 03:02	17° $\mathring{\text{U}}$ 01'43	conjunction	12348 Aug 21 21:05	10° $\mathring{\text{U}}$ 51'36 0°13'02	
evening set	12343 Jul 17 23:19	20° $\mathring{\text{U}}$ 03'01	minimum elong	12348 Aug 21 21:05	10° $\mathring{\text{U}}$ 51'36 0°12'40	
conjunction	12343 Aug 02 18:48	20° $\mathring{\text{U}}$ 57'13 -0°08'40	behind sun begin	12348 Aug 21 16:52	10° $\mathring{\text{U}}$ 51'00	
minimum elong	12343 Aug 02 18:49	20° $\mathring{\text{U}}$ 57'13 0°09'18	behind sun end	12348 Aug 22 01:19	10° $\mathring{\text{U}}$ 52'11	
behind sun begin	12343 Aug 02 13:16	20° $\mathring{\text{U}}$ 56'26	max. Earth dist.	12348 Aug 22 08:43	10° $\mathring{\text{U}}$ 53'15 21.01459 AU	
behind sun end	12343 Aug 03 00:22	20° $\mathring{\text{U}}$ 58'00	morning rise	12348 Sep 06 20:27	11° $\mathring{\text{U}}$ 46'12	
max. Earth dist.	12343 Aug 03 06:08	20° $\mathring{\text{U}}$ 58'50 21.01847 AU	retrograde	12348 Dec 09 04:51	14° $\mathring{\text{U}}$ 51'49	
morning rise	12343 Aug 18 15:55	21° $\mathring{\text{U}}$ 51'39	opposition	12349 Feb 24 17:19	12° $\mathring{\text{U}}$ 53'05 0°16'41	
			min. Earth dist.	12349 Feb 24 06:41	12° $\mathring{\text{U}}$ 54'09 19.00908 AU	

direct	12349 May 11 19:16	10° <u>♏</u> 55'48		minimum elong	12355 Sep 19 20:22	8° <u>♏</u> 57'41	0°40'17
evening set	12349 Aug 10 04:51	13° <u>♏</u> 56'04		max. Earth dist.	12355 Sep 20 03:26	8° <u>♏</u> 58'42	20.85424 AU
				morning rise	12355 Oct 05 23:58	9° <u>♏</u> 53'12	
conjunction	12349 Aug 26 02:38	14° <u>♏</u> 50'27	0°17'14	retrograde	12356 Jan 07 23:28	13° <u>♏</u> 01'41	
minimum elong	12349 Aug 26 02:37	14° <u>♏</u> 50'27	0°16'54	opposition	12356 Mar 25 04:00	11° <u>♏</u> 02'13	0°46'22
max. Earth dist.	12349 Aug 26 12:57	14° <u>♏</u> 51'55	21.00262 AU	min. Earth dist.	12356 Mar 24 21:35	11° <u>♏</u> 02'52	18.83506 AU
morning rise	12349 Sep 11 02:42	15° <u>♏</u> 45'08		direct	12356 Jun 08 15:28	9° <u>♏</u> 04'36	
retrograde	12349 Dec 13 14:00	18° <u>♏</u> 51'01		evening set	12356 Sep 07 03:32	12° <u>♏</u> 06'53	
opposition	12350 Mar 01 01:13	16° <u>♏</u> 52'10	0°21'19				
min. Earth dist.	12350 Feb 28 15:06	16° <u>♏</u> 53'11	18.99551 AU	conjunction	12356 Sep 23 05:13	13° <u>♏</u> 02'13	0°43'31
direct	12350 May 16 00:38	14° <u>♏</u> 54'53		minimum elong	12356 Sep 23 05:13	13° <u>♏</u> 02'13	0°43'37
evening set	12350 Aug 14 10:10	17° <u>♏</u> 55'15		max. Earth dist.	12356 Sep 23 12:25	13° <u>♏</u> 03'15	20.81441 AU
				morning rise	12356 Oct 09 09:16	13° <u>♏</u> 57'55	
conjunction	12350 Aug 30 08:36	18° <u>♏</u> 49'43	0°21'22	retrograde	12357 Jan 11 10:56	17° <u>♏</u> 06'55	
minimum elong	12350 Aug 30 08:36	18° <u>♏</u> 49'43	0°21'06	opposition	12357 Mar 29 13:16	15° <u>♏</u> 07'15	0°49'55
max. Earth dist.	12350 Aug 30 19:47	18° <u>♏</u> 51'19	20.98730 AU	min. Earth dist.	12357 Mar 29 07:07	15° <u>♏</u> 07'53	18.79286 AU
morning rise	12350 Sep 15 09:04	19° <u>♏</u> 44'31		direct	12357 Jun 13 00:24	13° <u>♏</u> 09'28	
retrograde	12350 Dec 17 22:16	22° <u>♏</u> 50'42		evening set	12357 Sep 11 12:24	16° <u>♏</u> 12'14	
opposition	12351 Mar 05 09:12	20° <u>♏</u> 51'46	0°25'51				
min. Earth dist.	12351 Mar 04 23:00	20° <u>♏</u> 52'48	18.97841 AU	conjunction	12357 Sep 27 14:34	17° <u>♏</u> 07'45	0°46'36
direct	12351 May 20 06:51	18° <u>♏</u> 54'29		minimum elong	12357 Sep 27 14:34	17° <u>♏</u> 07'45	0°46'47
evening set	12351 Aug 18 15:54	21° <u>♏</u> 55'00		max. Earth dist.	12357 Sep 27 19:37	17° <u>♏</u> 08'28	20.77008 AU
				morning rise	12357 Oct 13 19:26	18° <u>♏</u> 03'38	
conjunction	12351 Sep 03 14:38	22° <u>♏</u> 49'34	0°25'24	retrograde	12358 Jan 15 20:59	21° <u>♏</u> 13'11	
minimum elong	12351 Sep 03 14:37	22° <u>♏</u> 49'34	0°25'12	opposition	12358 Apr 02 22:42	19° <u>♏</u> 13'17	0°53'13
max. Earth dist.	12351 Sep 04 00:25	22° <u>♏</u> 50'58	20.96851 AU	min. Earth dist.	12358 Apr 02 18:10	19° <u>♏</u> 13'45	18.74655 AU
morning rise	12351 Sep 19 15:50	23° <u>♏</u> 44'29		direct	12358 Jun 17 07:24	17° <u>♏</u> 15'14	
retrograde	12351 Dec 22 07:46	26° <u>♏</u> 51'04		evening set	12358 Sep 15 21:39	20° <u>♏</u> 18'33	
opposition	12352 Mar 08 17:25	24° <u>♏</u> 52'02	0°30'15				
min. Earth dist.	12352 Mar 08 07:57	24° <u>♏</u> 53'00	18.95789 AU	conjunction	12358 Oct 02 00:38	21° <u>♏</u> 14'16	0°49'28
direct	12352 May 23 12:38	22° <u>♏</u> 54'44		minimum elong	12358 Oct 02 00:37	21° <u>♏</u> 14'16	0°49'42
evening set	12352 Aug 21 21:55	25° <u>♏</u> 55'29		max. Earth dist.	12358 Oct 02 05:50	21° <u>♏</u> 15'02	20.72189 AU
				morning rise	12358 Oct 18 05:57	22° <u>♏</u> 10'22	
conjunction	12352 Sep 06 21:21	26° <u>♏</u> 50'11	0°29'19	retrograde	12359 Jan 20 08:49	25° <u>♏</u> 20'27	
minimum elong	12352 Sep 06 21:20	26° <u>♏</u> 50'11	0°29'11	opposition	12359 Apr 07 08:23	23° <u>♏</u> 20'19	0°56'17
max. Earth dist.	12352 Sep 07 07:51	26° <u>♏</u> 51'42	20.94614 AU	min. Earth dist.	12359 Apr 07 03:55	23° <u>♏</u> 20'47	18.69664 AU
morning rise	12352 Sep 22 22:58	27° <u>♏</u> 45'14		direct	12359 Jun 21 16:57	21° <u>♏</u> 22'01	
	12352 Nov 08 22:56	0° <u>♏</u>		evening set	12359 Sep 20 07:28	24° <u>♏</u> 25'55	
retrograde	12352 Dec 25 17:24	0° <u>♏</u> 52'14					
	12353 Feb 11 18:19	30° <u>♏</u>		conjunction	12359 Oct 06 10:54	25° <u>♏</u> 21'50	0°52'05
opposition	12353 Mar 13 01:41	28° <u>♏</u> 53'08	0°34'32	minimum elong	12359 Oct 06 10:53	25° <u>♏</u> 21'50	0°52'23
min. Earth dist.	12353 Mar 12 16:17	28° <u>♏</u> 54'05	18.93360 AU	max. Earth dist.	12359 Oct 06 14:16	25° <u>♏</u> 22'20	20.67052 AU
direct	12353 May 27 19:12	26° <u>♏</u> 55'48		morning rise	12359 Oct 22 17:00	26° <u>♏</u> 18'09	
evening set	12353 Aug 26 04:34	29° <u>♏</u> 56'51		retrograde	12360 Jan 24 19:56	29° <u>♏</u> 28'49	
	12353 Aug 27 02:57	0° <u>♏</u>		opposition	12360 Apr 10 18:33	27° <u>♏</u> 28'26	0°59'03
				min. Earth dist.	12360 Apr 10 15:30	27° <u>♏</u> 28'45	18.64405 AU
conjunction	12353 Sep 11 04:22	0° <u>♏</u> 51'41	0°33'07	direct	12360 Jun 25 00:40	25° <u>♏</u> 29'51	
minimum elong	12353 Sep 11 04:22	0° <u>♏</u> 51'41	0°33'02	evening set	12360 Sep 23 17:52	28° <u>♏</u> 34'23	
max. Earth dist.	12353 Sep 11 13:11	0° <u>♏</u> 52'57	20.91991 AU				
morning rise	12353 Sep 27 06:47	1° <u>♏</u> 46'53		conjunction	12360 Oct 09 22:08	29° <u>♏</u> 30'32	0°54'27
retrograde	12353 Dec 30 03:00	4° <u>♏</u> 54'21		minimum elong	12360 Oct 09 22:08	29° <u>♏</u> 30'32	0°54'48
opposition	12354 Mar 17 10:14	2° <u>♏</u> 55'09	0°38'39	max. Earth dist.	12360 Oct 10 01:51	29° <u>♏</u> 31'05	20.61677 AU
min. Earth dist.	12354 Mar 17 02:03	2° <u>♏</u> 55'59	18.90534 AU		12360 Oct 18 08:25	0° <u>♏</u>	
direct	12354 Jun 01 01:20	0° <u>♏</u> 57'46		morning rise	12360 Oct 26 04:44	0° <u>♏</u> 27'04	
evening set	12354 Aug 30 11:39	3° <u>♏</u> 59'11		retrograde	12361 Jan 28 08:53	3° <u>♏</u> 38'21	
				opposition	12361 Apr 15 04:49	1° <u>♏</u> 37'43	1°01'32
conjunction	12354 Sep 15 12:10	4° <u>♏</u> 54'10	0°36'45	min. Earth dist.	12361 Apr 15 01:37	1° <u>♏</u> 38'03	18.58929 AU
minimum elong	12354 Sep 15 12:10	4° <u>♏</u> 54'10	0°36'44		12361 May 31 10:47	30° <u>♏</u>	
max. Earth dist.	12354 Sep 15 21:18	4° <u>♏</u> 55'29	20.88938 AU	direct	12361 Jun 29 10:37	29° <u>♏</u> 38'52	
morning rise	12354 Oct 01 14:59	5° <u>♏</u> 49'31			12361 Jul 27 21:35	0° <u>♏</u>	
retrograde	12355 Jan 03 13:51	8° <u>♏</u> 57'29		evening set	12361 Sep 28 05:07	2° <u>♏</u> 44'06	
opposition	12355 Mar 21 18:51	6° <u>♏</u> 58'10	0°42'36				
min. Earth dist.	12355 Mar 21 10:59	6° <u>♏</u> 58'58	18.87249 AU	conjunction	12361 Oct 14 09:54	3° <u>♏</u> 40'29	0°56'32
direct	12355 Jun 05 08:57	5° <u>♏</u> 00'42		minimum elong	12361 Oct 14 09:53	3° <u>♏</u> 40'29	0°56'56
evening set	12355 Sep 03 19:28	8° <u>♏</u> 02'32		max. Earth dist.	12361 Oct 14 11:50	3° <u>♏</u> 40'46	20.56112 AU
				morning rise	12361 Oct 30 17:16	4° <u>♏</u> 37'15	
conjunction	12355 Sep 19 20:23	8° <u>♏</u> 57'41	0°40'13	retrograde	12362 Feb 01 21:20	7° <u>♏</u> 49'10	

opposition	12362 Apr 19 15:41	5° ℓ 48'18	1°03'43	direct	12368 Jul 28 14:42	29° ℓ 25'33	
min. Earth dist.	12362 Apr 19 13:57	5° ℓ 48'29	18.53295 AU		12368 Sep 02 21:46	0° ♊	
direct	12362 Jul 03 18:54	3° ℓ 49'10		evening set	12368 Oct 28 10:10	2° ♊ 37'09	
evening set	12362 Oct 02 16:54	6° ℓ 55'09					
				conjunction	12368 Nov 13 19:45	3° ♊ 35'27	1°02'16
conjunction	12362 Oct 18 22:29	7° ℓ 51'48	0°58'19	minimum elong	12368 Nov 13 19:44	3° ♊ 35'27	1°03'01
minimum elong	12362 Oct 18 22:29	7° ℓ 51'48	0°58'48	max. Earth dist.	12368 Nov 13 16:27	3° ♊ 34'57	20.14591 AU
max. Earth dist.	12362 Oct 19 00:44	7° ℓ 52'07	20.50409 AU	morning rise	12368 Nov 30 07:02	4° ♊ 34'03	
morning rise	12362 Nov 04 06:18	8° ℓ 48'48		retrograde	12369 Mar 04 15:09	7° ♊ 50'56	
retrograde	12363 Feb 06 11:50	12° ℓ 01'22		opposition	12369 May 19 09:52	5° ♊ 49'02	1°08'58
opposition	12363 Apr 24 02:49	10° ℓ 00'18	1°05'33	min. Earth dist.	12369 May 19 12:49	5° ♊ 48'43	18.11485 AU
min. Earth dist.	12363 Apr 24 00:46	10° ℓ 00'31	18.47533 AU	direct	12369 Aug 02 05:26	3° ♊ 48'07	
direct	12363 Jul 08 05:51	8° ℓ 00'54		evening set	12369 Nov 02 04:25	7° ♊ 00'45	
evening set	12363 Oct 07 05:38	11° ℓ 07'43					
				conjunction	12369 Nov 18 14:33	7° ♊ 59'20	1°01'43
conjunction	12363 Oct 23 11:45	12° ℓ 04'36	0°59'48	minimum elong	12369 Nov 18 14:33	7° ♊ 59'20	1°02'31
minimum elong	12363 Oct 23 11:44	12° ℓ 04'36	1°00'20	max. Earth dist.	12369 Nov 18 09:32	7° ♊ 58'35	20.08313 AU
max. Earth dist.	12363 Oct 23 12:21	12° ℓ 04'41	20.44604 AU	morning rise	12369 Dec 05 02:21	8° ♊ 58'13	
morning rise	12363 Nov 08 20:18	13° ℓ 01'52		retrograde	12370 Mar 09 09:12	12° ♊ 15'48	
	12363 Dec 17 08:48	15° ℓ		opposition	12370 May 24 01:19	10° ♊ 13'44	1°08'10
retrograde	12364 Feb 11 01:34	16° ℓ 15'07		min. Earth dist.	12370 May 24 06:17	10° ♊ 13'12	18.05169 AU
	12364 Apr 08 16:27	15° ♋		direct	12370 Aug 06 19:20	8° ♊ 12'29	
opposition	12364 Apr 27 14:39	14° ℓ 13'52	1°07'03	evening set	12370 Nov 06 23:16	11° ♊ 26'08	
min. Earth dist.	12364 Apr 27 14:08	14° ℓ 13'55	18.41699 AU				
direct	12364 Jul 11 14:47	12° ℓ 14'13		conjunction	12370 Nov 23 10:04	12° ♊ 25'01	1°00'47
	12364 Oct 04 08:49	15° ℓ		minimum elong	12370 Nov 23 10:04	12° ♊ 25'01	1°01'37
evening set	12364 Oct 10 18:57	15° ℓ 21'53		max. Earth dist.	12370 Nov 23 04:10	12° ♊ 24'08	20.01978 AU
				morning rise	12370 Dec 09 22:18	13° ♊ 24'10	
conjunction	12364 Oct 27 01:55	16° ℓ 19'03	1°00'58	retrograde	12371 Mar 14 05:16	16° ♊ 42'25	
minimum elong	12364 Oct 27 01:55	16° ℓ 19'03	1°01'34	opposition	12371 Mar 28 17:10	14° ♊ 40'10	1°06'57
max. Earth dist.	12364 Oct 27 02:45	16° ℓ 19'10	20.38740 AU	min. Earth dist.	12371 May 28 22:04	14° ♊ 39'38	17.98817 AU
morning rise	12364 Nov 12 10:59	17° ℓ 16'33		direct	12371 Aug 11 11:42	12° ♊ 38'34	
retrograde	12365 Feb 14 18:05	20° ℓ 30'32		evening set	12371 Nov 11 19:04	15° ♊ 53'15	
opposition	12365 May 02 02:52	18° ℓ 29'07	1°08'11				
min. Earth dist.	12365 May 02 02:04	18° ℓ 29'12	18.35799 AU	conjunction	12371 Nov 28 06:25	16° ♊ 52'25	0°59'29
direct	12365 Jul 16 03:02	16° ℓ 29'14		minimum elong	12371 Nov 28 06:25	16° ♊ 52'25	1°00'20
evening set	12365 Oct 15 09:28	19° ℓ 37'49		max. Earth dist.	12371 Nov 27 23:24	16° ♊ 51'22	19.95630 AU
				morning rise	12371 Dec 14 19:03	17° ♊ 51'49	
conjunction	12365 Oct 31 16:58	20° ℓ 35'16	1°01'49	retrograde	12372 Mar 18 00:06	21° ♊ 10'43	
minimum elong	12365 Oct 31 16:58	20° ℓ 35'16	1°02'27	opposition	12372 Jun 01 09:39	19° ♊ 08'16	1°05'20
max. Earth dist.	12365 Oct 31 16:08	20° ℓ 35'08	20.32810 AU	min. Earth dist.	12372 Jun 01 16:20	19° ♊ 07'33	17.92501 AU
morning rise	12365 Nov 17 02:43	21° ℓ 33'03		direct	12372 Aug 15 03:28	17° ♊ 06'19	
retrograde	12366 Feb 19 09:00	24° ℓ 47'44		evening set	12372 Nov 15 15:35	20° ♊ 22'00	
opposition	12366 May 06 15:41	22° ℓ 46'13	1°08'58				
min. Earth dist.	12366 May 06 16:41	22° ℓ 46'06	18.29844 AU	conjunction	12372 Dec 02 03:32	21° ♊ 21'28	0°57'49
direct	12366 Jul 20 13:13	20° ℓ 46'05		minimum elong	12372 Dec 02 03:32	21° ♊ 21'28	0°58'42
evening set	12366 Oct 20 00:43	23° ℓ 55'39		max. Earth dist.	12372 Dec 01 19:29	21° ♊ 20'15	19.89369 AU
				morning rise	12372 Dec 18 16:38	22° ♊ 21'07	
conjunction	12366 Nov 05 09:01	24° ℓ 53'22	1°02'19	retrograde	12373 Mar 22 20:39	25° ♊ 40'37	
minimum elong	12366 Nov 05 09:00	24° ℓ 53'22	1°02'59	opposition	12373 Jun 06 02:36	23° ♊ 37'58	1°03'18
max. Earth dist.	12366 Nov 05 08:03	24° ℓ 53'14	20.26827 AU	min. Earth dist.	12373 Jun 06 09:10	23° ♊ 37'16	17.86295 AU
morning rise	12366 Nov 21 19:13	25° ℓ 51'25		direct	12373 Aug 19 21:21	21° ♊ 35'39	
retrograde	12367 Feb 24 03:12	29° ℓ 06'51		evening set	12373 Nov 20 12:58	24° ♊ 52'23	
opposition	12367 May 11 05:04	27° ℓ 05'13	1°09'21				
min. Earth dist.	12367 May 11 05:57	27° ℓ 05'07	18.23820 AU	conjunction	12373 Dec 07 01:26	25° ♊ 52'06	0°55'47
direct	12367 Jul 25 02:38	25° ℓ 04'51		minimum elong	12373 Dec 07 01:26	25° ♊ 52'06	0°56'40
evening set	12367 Oct 24 16:57	28° ℓ 15'25		max. Earth dist.	12373 Dec 06 16:49	25° ♊ 50'48	19.83232 AU
				morning rise	12373 Dec 23 14:45	26° ♊ 52'00	
conjunction	12367 Nov 10 01:46	29° ℓ 13'26	1°02'28		12374 Mar 06 08:45	0° ♋	
minimum elong	12367 Nov 10 01:46	29° ℓ 13'26	1°03'12	retrograde	12374 Mar 27 16:17	0° ♋ 12'04	
max. Earth dist.	12367 Nov 09 23:09	29° ℓ 13'02	20.20756 AU		12374 Apr 18 03:19	30° ♋	
	12367 Nov 23 04:03	0° ♋		opposition	12374 Jun 10 20:08	28° ♋ 09'15	1°00'51
morning rise	12367 Nov 26 12:35	0° ♋ 11'45		min. Earth dist.	12374 Jun 11 04:07	28° ♋ 08'24	17.80259 AU
retrograde	12368 Feb 28 19:48	3° ♋ 27'57		direct	12374 Aug 24 15:13	26° ♋ 06'34	
opposition	12368 May 14 19:18	1° ♋ 26'10	1°09'21	evening set	12374 Nov 25 11:02	29° ♋ 24'18	
min. Earth dist.	12368 May 14 22:11	1° ♋ 25'52	18.17706 AU		12374 Dec 05 08:26	0° ♋	
	12368 Jun 21 16:55	30° ♋					

conjunction	12374 Dec 11 23:55	0°  24'18	0°53'23	min. Earth dist.	12381 Jul 13 01:21	0°  29'06	17.47702 AU
minimum elong	12374 Dec 11 23:55	0°  24'18	0°54'18		12381 Jul 24 07:18	30°  R 	
max. Earth dist.	12374 Dec 11 14:12	0°  22'49	19.77323 AU	direct	12381 Sep 25 15:55	28°  25'43	
morning rise	12374 Dec 28 13:37	1°  24'26			12381 Nov 25 13:11	0° 	
retrograde	12375 Apr 01 13:11	4°  34'5'03		evening set	12381 Dec 28 17:19	1°  49'57	
opposition	12375 Jun 15 14:11	2°  34'2'04	0°58'01				
min. Earth dist.	12375 Jun 15 21:57	2°  34'1'14	17.74483 AU	conjunction	12382 Jan 14 08:00	2°  51'23	0°27'44
direct	12375 Aug 29 10:36	0°  33'9'02		minimum elong	12382 Jan 14 08:00	2°  51'23	0°28'32
evening set	12375 Nov 30 09:43	3°  35'7'46		max. Earth dist.	12382 Jan 13 20:14	2°  49'33	19.46105 AU
				morning rise	12382 Jan 30 21:48	3°  52'43	
conjunction	12375 Dec 16 23:07	4°  35'8'01	0°50'39	retrograde	12382 May 04 07:45	7°  16'12	
minimum elong	12375 Dec 16 23:07	4°  35'8'01	0°51'32	opposition	12382 Jul 17 13:11	5°  12'59	0°28'25
max. Earth dist.	12375 Dec 16 13:29	4°  35'6'33	19.71686 AU	min. Earth dist.	12382 Jul 17 23:32	5°  11'51	17.44620 AU
morning rise	12376 Jan 02 12:56	5°  35'8'22		direct	12382 Sep 30 15:36	3°  08'18	
retrograde	12376 Apr 05 10:00	9°  31'9'30		evening set	12383 Jan 02 20:44	6°  33'15	
opposition	12376 Jun 19 08:57	7°  31'6'24	0°54'47				
min. Earth dist.	12376 Jun 19 17:43	7°  31'5'27	17.69010 AU	conjunction	12383 Jan 19 11:13	7°  34'47	0°23'03
direct	12376 Sep 02 05:50	5°  31'3'02		minimum elong	12383 Jan 19 11:13	7°  34'47	0°23'50
evening set	12376 Dec 04 09:21	8°  32'2'46		max. Earth dist.	12383 Jan 18 21:55	7°  32'43	19.43212 AU
				morning rise	12383 Feb 05 00:54	8°  36'13	
conjunction	12376 Dec 20 23:01	9°  33'3'14	0°47'34	retrograde	12383 May 09 07:39	11°  59'54	
minimum elong	12376 Dec 20 23:01	9°  33'3'15	0°48'27	opposition	12383 Jul 22 11:48	9°  56'40	0°23'06
max. Earth dist.	12376 Dec 20 12:06	9°  33'1'34	19.66400 AU	min. Earth dist.	12383 Jul 22 22:56	9°  55'27	17.41922 AU
morning rise	12377 Jan 06 13:09	10°  33'3'48		direct	12383 Oct 05 14:38	7°  51'48	
retrograde	12377 Apr 10 08:14	13°  35'5'26		evening set	12384 Jan 08 00:16	11°  17'23	
opposition	12377 Jun 24 04:05	11°  35'2'13	0°51'11				
min. Earth dist.	12377 Jun 24 12:43	11°  35'1'17	17.63917 AU	conjunction	12384 Jan 24 14:49	12°  19'02	0°18'12
direct	12377 Sep 07 02:34	9°  34'8'33		minimum elong	12384 Jan 24 14:50	12°  19'02	0°18'55
evening set	12377 Dec 09 09:36	13°  30'9'15		max. Earth dist.	12384 Jan 24 02:10	12°  17'04	19.40701 AU
				morning rise	12384 Feb 10 04:07	13°  20'31	
conjunction	12377 Dec 25 23:43	14°  30'9'58	0°44'09		12384 Mar 10 14:33	15° 	
minimum elong	12377 Dec 25 23:43	14°  30'9'58	0°45'03	retrograde	12384 May 13 09:07	16°  44'19	
max. Earth dist.	12377 Dec 25 13:21	14°  30'8'23	19.61501 AU		12384 Jul 19 04:49	15°  R 	
morning rise	12378 Jan 11 13:47	15°  31'0'43		opposition	12384 Jul 26 10:43	14°  41'05	0°17'36
retrograde	12378 Apr 15 06:33	18°  32'2'48		min. Earth dist.	12384 Jul 26 21:31	14°  39'55	17.39596 AU
opposition	12378 Jun 29 00:01	16°  32'9'33	0°47'14	direct	12384 Oct 09 16:19	12°  36'03	
min. Earth dist.	12378 Jun 29 09:15	16°  32'8'33	17.59225 AU		12384 Dec 25 11:23	15° 	
direct	12378 Sep 11 22:45	14°  32'5'38		evening set	12385 Jan 12 04:19	16°  02'11	
evening set	12378 Dec 14 10:30	17°  34'7'16					
				conjunction	12385 Jan 28 18:33	17°  03'53	0°13'13
conjunction	12378 Dec 31 00:42	18°  34'8'11	0°40'27	minimum elong	12385 Jan 28 18:33	17°  03'54	0°13'54
minimum elong	12378 Dec 31 00:42	18°  34'8'11	0°41'19	behind sun begin	12385 Jan 28 15:12	17°  03'23	
max. Earth dist.	12378 Dec 30 13:02	18°  34'6'23	19.57037 AU	behind sun end	12385 Jan 28 21:54	17°  04'24	
morning rise	12379 Jan 16 14:59	19°  34'9'07		max. Earth dist.	12385 Jan 28 04:48	17°  01'45	19.38579 AU
retrograde	12379 Apr 20 06:20	23°  31'1'38		morning rise	12385 Feb 14 07:31	18°  05'26	
opposition	12379 Jul 03 20:30	21°  30'8'21	0°42'58	retrograde	12385 May 18 08:20	21°  29'16	
min. Earth dist.	12379 Jul 04 05:47	21°  30'7'21	17.54977 AU	opposition	12385 Jul 31 09:58	19°  26'03	0°11'59
direct	12379 Sep 16 20:11	19°  30'4'13		min. Earth dist.	12385 Jul 31 21:41	19°  24'46	17.37693 AU
evening set	12379 Dec 19 12:04	22°  32'6'47		direct	12385 Oct 14 16:18	17°  20'50	
				evening set	12386 Jan 17 08:20	20°  47'26	
conjunction	12380 Jan 05 02:39	23°  32'7'54	0°36'27				
minimum elong	12380 Jan 05 02:39	23°  32'7'54	0°37'20	conjunction	12386 Feb 02 22:23	21°  49'11	0°08'09
max. Earth dist.	12380 Jan 04 15:47	23°  32'6'13	19.52998 AU	minimum elong	12386 Feb 02 22:23	21°  49'11	0°08'46
morning rise	12380 Jan 21 16:44	24°  32'9'00		behind sun begin	12386 Feb 02 16:35	21°  48'18	
retrograde	12380 Apr 24 06:21	27°  35'1'53		behind sun end	12386 Feb 03 04:11	21°  50'04	
opposition	12380 Jul 07 17:27	25°  34'8'37	0°38'23	max. Earth dist.	12386 Feb 02 09:13	21°  47'08	19.36903 AU
min. Earth dist.	12380 Jul 08 03:10	25°  34'7'34	17.51139 AU	morning rise	12386 Feb 19 10:51	22°  50'43	
direct	12380 Sep 20 17:42	23°  34'4'18		retrograde	12386 May 23 09:46	26°  14'33	
evening set	12380 Dec 23 14:31	27°  30'7'44		opposition	12386 Aug 05 09:26	24°  11'19	0°06'15
				min. Earth dist.	12386 Aug 05 20:17	24°  10'08	17.36243 AU
conjunction	12381 Jan 09 05:02	28°  30'9'01	0°32'13	direct	12386 Oct 19 19:16	22°  05'59	
minimum elong	12381 Jan 09 05:03	28°  30'9'01	0°33'03	evening set	12387 Jan 22 12:18	25°  32'56	
max. Earth dist.	12381 Jan 08 16:34	28°  30'7'05	19.49365 AU				
morning rise	12381 Jan 25 19:12	29°  31'0'15		conjunction	12387 Feb 08 01:58	26°  34'41	0°03'01
	12381 Feb 08 21:57	0° 		minimum elong	12387 Feb 08 01:57	26°  34'41	0°03'35
retrograde	12381 Apr 29 06:49	2°  33'3'28		behind sun begin	12387 Feb 07 19:16	26°  33'40	
opposition	12381 Jul 12 15:05	0°  30'1'3	0°33'31	behind sun end	12387 Feb 08 08:38	26°  35'42	

max. Earth dist.	12387 Feb 07 12:33	26° \approx 32'36	19.35696 AU	conjunction	12393 Mar 08 19:07	25° \cancel{H} 04'00	-0°27'09
morning rise	12387 Feb 24 13:56	27° \approx 36'13		minimum elong	12393 Mar 08 19:07	25° \cancel{H} 04'00	0°26'58
	12387 Apr 11 02:29	0° \cancel{H}		max. Earth dist.	12393 Mar 08 10:14	25° \cancel{H} 02'36	19.40491 AU
retrograde	12387 May 28 08:27	0° \cancel{H} 59'58		morning rise	12393 Mar 25 02:45	26° \cancel{H} 04'53	
	12387 Jul 16 00:30	30° \cancel{R}		retrograde	12393 Jun 25 07:02	29° \cancel{H} 27'04	
opposition	12387 Aug 10 09:12	28° \approx 56'45	0°00'29	opposition	12393 Sep 07 08:35	27° \cancel{H} 24'31	-0°32'45
min. Earth dist.	12387 Aug 10 20:52	28° \approx 55'29	17.35295 AU	min. Earth dist.	12393 Sep 07 16:40	27° \cancel{H} 23'39	17.41857 AU
desc. node	12387 Sep 08 20:46	27° \approx 44'19		direct	12393 Nov 22 08:33	25° \cancel{H} 19'13	
direct	12387 Oct 24 19:56	26° \approx 51'16		evening set	12394 Feb 25 11:18	28° \cancel{H} 46'18	
	12388 Jan 22 13:59	0° \cancel{H}					
evening set	12388 Jan 27 16:18	0° \cancel{H} 18'31		conjunction	12394 Mar 13 20:35	29° \cancel{H} 47'21	-0°31'40
				minimum elong	12394 Mar 13 20:34	29° \cancel{H} 47'21	0°31'35
conjunction	12388 Feb 13 05:36	1° \cancel{H} 20'15	-0°02'17	max. Earth dist.	12394 Mar 13 11:24	29° \cancel{H} 45'55	19.43337 AU
minimum elong	12388 Feb 13 05:35	1° \cancel{H} 20'14	0°01'46		12394 Mar 17 05:22	0° \cancel{Y}	
behind sun begin	12388 Feb 12 22:51	1° \cancel{H} 19'13		morning rise	12394 Mar 30 03:32	0° \cancel{Y} 48'04	
behind sun end	12388 Feb 13 12:19	1° \cancel{H} 21'16		retrograde	12394 Jun 30 06:43	4° \cancel{Y} 09'51	
max. Earth dist.	12388 Feb 12 16:37	1° \cancel{H} 18'13	19.35016 AU	opposition	12394 Sep 12 08:21	2° \cancel{Y} 07'30	-0°37'40
morning rise	12388 Feb 29 17:01	2° \cancel{H} 21'43		min. Earth dist.	12394 Sep 12 15:08	2° \cancel{Y} 06'46	17.44948 AU
retrograde	12388 Jun 01 09:33	5° \cancel{H} 45'20		direct	12394 Nov 27 10:10	0° \cancel{Y} 02'22	
opposition	12388 Aug 14 08:49	3° \cancel{H} 42'08	-0°05'18	evening set	12395 Mar 02 13:00	3° \cancel{Y} 29'07	
min. Earth dist.	12388 Aug 14 19:15	3° \cancel{H} 41'00	17.34882 AU				
direct	12388 Oct 28 23:56	1° \cancel{H} 36'34		conjunction	12395 Mar 18 21:38	4° \cancel{Y} 29'58	-0°35'58
evening set	12389 Jan 31 20:13	5° \cancel{H} 03'59		minimum elong	12395 Mar 18 21:38	4° \cancel{Y} 29'58	0°35'57
				max. Earth dist.	12395 Mar 18 14:19	4° \cancel{Y} 28'50	19.46643 AU
conjunction	12389 Feb 17 09:01	6° \cancel{H} 05'40	-0°07'27	morning rise	12395 Apr 04 03:35	5° \cancel{Y} 30'29	
minimum elong	12389 Feb 17 09:00	6° \cancel{H} 05'40	0°07'01	retrograde	12395 Jul 05 05:16	8° \cancel{Y} 51'47	
behind sun begin	12389 Feb 17 02:47	6° \cancel{H} 04'43		opposition	12395 Sep 17 08:07	6° \cancel{Y} 49'39	-0°42'20
behind sun end	12389 Feb 17 15:14	6° \cancel{H} 06'37		min. Earth dist.	12395 Sep 17 14:52	6° \cancel{Y} 48'55	17.48454 AU
max. Earth dist.	12389 Feb 16 20:36	6° \cancel{H} 03'44	19.34881 AU	direct	12395 Dec 02 11:28	4° \cancel{Y} 44'44	
morning rise	12389 Mar 05 19:44	7° \cancel{H} 07'04		evening set	12396 Mar 06 14:28	8° \cancel{Y} 11'02	
retrograde	12389 Jun 06 07:51	10° \cancel{H} 30'30					
opposition	12389 Aug 19 08:50	8° \cancel{H} 27'21	-0°11'02	conjunction	12396 Mar 22 22:05	9° \cancel{Y} 11'41	-0°40'01
min. Earth dist.	12389 Aug 19 19:48	8° \cancel{H} 26'09	17.35049 AU	minimum elong	12396 Mar 22 22:05	9° \cancel{Y} 11'41	0°40'05
direct	12389 Nov 03 00:55	6° \cancel{H} 21'43		max. Earth dist.	12396 Mar 22 14:14	9° \cancel{Y} 10'27	19.50342 AU
evening set	12390 Feb 05 23:46	9° \cancel{H} 49'14		morning rise	12396 Apr 08 03:19	10° \cancel{Y} 11'57	
				retrograde	12396 Jul 09 03:03	13° \cancel{Y} 32'44	
conjunction	12390 Feb 22 11:55	10° \cancel{H} 50'50	-0°12'33	opposition	12396 Sep 21 07:30	11° \cancel{Y} 30'48	-0°46'41
minimum elong	12390 Feb 22 11:55	10° \cancel{H} 50'50	0°12'09	min. Earth dist.	12396 Sep 21 13:21	11° \cancel{Y} 30'10	17.52338 AU
behind sun begin	12390 Feb 22 07:25	10° \cancel{H} 50'09		direct	12396 Dec 06 13:11	9° \cancel{Y} 26'03	
behind sun end	12390 Feb 22 16:24	10° \cancel{H} 51'31		evening set	12397 Mar 11 15:09	12° \cancel{Y} 51'51	
max. Earth dist.	12390 Feb 21 23:52	10° \cancel{H} 48'57	19.35354 AU				
morning rise	12390 Mar 10 22:01	11° \cancel{H} 52'08		conjunction	12397 Mar 27 22:04	13° \cancel{Y} 52'16	-0°43'47
retrograde	12390 Jun 11 08:39	15° \cancel{H} 15'20		minimum elong	12397 Mar 27 22:03	13° \cancel{Y} 52'15	0°43'55
opposition	12390 Aug 24 08:45	13° \cancel{H} 12'16	-0°16'41	max. Earth dist.	12397 Mar 27 15:57	13° \cancel{Y} 51'19	19.54386 AU
min. Earth dist.	12390 Aug 24 18:03	13° \cancel{H} 11'15	17.35831 AU	morning rise	12397 Apr 13 02:14	14° \cancel{Y} 52'18	
direct	12390 Nov 08 04:37	11° \cancel{H} 06'37		retrograde	12397 Jul 14 00:16	18° \cancel{Y} 12'30	
evening set	12391 Feb 11 03:06	14° \cancel{H} 34'09		opposition	12397 Sep 26 06:50	16° \cancel{Y} 10'45	-0°50'44
				min. Earth dist.	12397 Sep 26 12:15	16° \cancel{Y} 10'10	17.56534 AU
conjunction	12391 Feb 27 14:43	15° \cancel{H} 35'39	-0°17'33	direct	12397 Dec 11 15:02	14° \cancel{Y} 06'14	
minimum elong	12391 Feb 27 14:42	15° \cancel{H} 35'39	0°17'14	evening set	12398 Mar 16 15:06	17° \cancel{Y} 31'23	
max. Earth dist.	12391 Feb 27 04:03	15° \cancel{H} 33'59	19.36447 AU				
morning rise	12391 Mar 15 23:57	16° \cancel{H} 36'50		conjunction	12398 Apr 01 20:59	18° \cancel{Y} 31'32	-0°47'15
retrograde	12391 Jun 16 07:25	19° \cancel{H} 59'44		minimum elong	12398 Apr 01 20:58	18° \cancel{Y} 31'32	0°47'27
opposition	12391 Aug 29 08:44	17° \cancel{H} 56'48	-0°22'13	max. Earth dist.	12398 Apr 01 14:32	18° \cancel{Y} 30'32	19.58732 AU
min. Earth dist.	12391 Aug 29 18:17	17° \cancel{H} 55'46	17.37246 AU	morning rise	12398 Apr 18 00:27	19° \cancel{Y} 31'19	
direct	12391 Nov 13 05:25	15° \cancel{H} 51'13		retrograde	12398 Jul 18 20:29	22° \cancel{Y} 50'56	
evening set	12392 Feb 16 06:13	19° \cancel{H} 18'41		opposition	12398 Oct 01 05:46	20° \cancel{Y} 49'20	-0°54'25
				min. Earth dist.	12398 Oct 01 10:31	20° \cancel{Y} 48'50	17.61029 AU
conjunction	12392 Mar 03 17:03	20° \cancel{H} 20'03	-0°22'26	direct	12398 Dec 16 16:11	18° \cancel{Y} 44'59	
minimum elong	12392 Mar 03 17:03	20° \cancel{H} 20'03	0°22'11	evening set	12399 Mar 21 14:15	22° \cancel{Y} 09'28	
max. Earth dist.	12392 Mar 03 06:23	20° \cancel{H} 18'23	19.38180 AU				
morning rise	12392 Mar 20 01:41	21° \cancel{H} 21'07		conjunction	12399 Apr 06 19:26	23° \cancel{Y} 09'21	-0°50'24
retrograde	12392 Jun 20 07:57	24° \cancel{H} 43'40		minimum elong	12399 Apr 06 19:25	23° \cancel{Y} 09'21	0°50'41
opposition	12392 Sep 02 08:37	22° \cancel{H} 40'55	-0°27'35	max. Earth dist.	12399 Apr 06 14:38	23° \cancel{Y} 08'37	19.63355 AU
min. Earth dist.	12392 Sep 02 16:35	22° \cancel{H} 40'03	17.39275 AU	morning rise	12399 Apr 22 21:56	24° \cancel{Y} 08'53	
direct	12392 Nov 17 07:52	20° \cancel{H} 35'27		retrograde	12399 Jul 23 16:16	27° \cancel{Y} 27'49	
evening set	12393 Feb 20 08:54	24° \cancel{H} 02'46		opposition	12399 Oct 06 04:06	25° \cancel{Y} 26'23	-0°57'44

min. Earth dist.	12399 Oct 06 08:06	25° Υ 25'58	17.65771 AU	direct	12406 Jan 18 07:09	20° δ 28'41	
direct	12399 Dec 21 17:40	23° Υ 22'15		evening set	12406 Apr 22 07:13	23° δ 46'48	
evening set	12400 Mar 25 12:46	26° Υ 45'57					
				conjunction	12406 May 08 06:43	24° δ 44'41	-1°02'23
conjunction	12400 Apr 10 16:57	27° Υ 45'33	-0°53'13	minimum elong	12406 May 08 06:42	24° δ 44'41	1°03'04
minimum elong	12400 Apr 10 16:56	27° Υ 45'33	0°53'33	max. Earth dist.	12406 May 08 09:03	24° δ 45'02	20.02878 AU
max. Earth dist.	12400 Apr 10 12:00	27° Υ 44'47	19.68223 AU	morning rise	12406 May 24 04:14	25° δ 42'18	
morning rise	12400 Apr 26 18:44	28° Υ 44'49		retrograde	12406 Aug 23 17:16	28° δ 56'14	
	12400 May 18 15:39	0° δ		opposition	12406 Nov 07 02:55	26° δ 56'03	-1°09'31
retrograde	12400 Jul 27 11:02	2° δ 03'03		min. Earth dist.	12406 Nov 07 00:30	26° δ 56'18	18.06157 AU
opposition	12400 Oct 10 02:11	0° δ 01'46	-1°00'40	direct	12407 Jan 23 00:48	24° δ 53'47	
min. Earth dist.	12400 Oct 10 05:45	0° δ 01'23	17.70771 AU	evening set	12407 Apr 26 23:13	28° δ 10'56	
	12400 Oct 10 18:48	30° κ Υ					
direct	12400 Dec 25 17:14	27° Υ 57'48		conjunction	12407 May 12 22:02	29° δ 08'32	-1°02'36
	12401 Mar 06 17:45	0° δ		minimum elong	12407 May 12 22:02	29° δ 08'32	1°03'19
evening set	12401 Mar 30 10:06	1° δ 20'40		max. Earth dist.	12407 May 13 01:12	29° δ 09'01	20.09426 AU
					12407 May 27 03:26	0° Π	
conjunction	12401 Apr 15 13:32	2° δ 20'00	-0°55'41	morning rise	12407 May 28 19:04	0° Π 05'53	
minimum elong	12401 Apr 15 13:32	2° δ 20'00	0°56'05	retrograde	12407 Aug 28 09:52	3° Π 19'08	
max. Earth dist.	12401 Apr 15 10:15	2° δ 19'29	19.73344 AU	opposition	12407 Nov 11 20:54	1° Π 19'13	-1°09'33
morning rise	12401 May 01 14:26	3° δ 18'59		min. Earth dist.	12407 Nov 11 16:38	1° Π 19'40	18.12735 AU
retrograde	12401 Aug 01 05:54	6° δ 36'30			12407 Dec 16 13:11	30° κ δ	
opposition	12401 Oct 14 23:40	4° δ 35'21	-1°03'11	direct	12408 Jan 27 20:43	29° δ 17'20	
min. Earth dist.	12401 Oct 15 01:53	4° δ 35'07	17.76008 AU		12408 Mar 08 23:43	0° Π	
direct	12401 Dec 30 17:39	2° δ 31'36		evening set	12408 Apr 30 14:27	2° Π 33'30	
evening set	12402 Apr 04 06:39	5° δ 53'33					
				conjunction	12408 May 16 12:39	3° Π 30'49	-1°02'27
conjunction	12402 Apr 20 09:09	6° δ 52'35	-0°57'46	minimum elong	12408 May 16 12:39	3° Π 30'49	1°03'13
minimum elong	12402 Apr 20 09:08	6° δ 52'35	0°58'14	max. Earth dist.	12408 May 16 17:04	3° Π 31'29	20.16022 AU
max. Earth dist.	12402 Apr 20 06:22	6° δ 52'09	19.78712 AU	morning rise	12408 Jun 01 09:07	4° Π 27'55	
morning rise	12402 May 06 09:21	7° δ 51'18		retrograde	12408 Aug 31 23:57	7° Π 40'30	
retrograde	12402 Aug 05 23:08	11° δ 08'05		opposition	12408 Nov 15 14:42	5° Π 40'50	-1°09'10
opposition	12402 Oct 19 20:37	9° δ 07'04	-1°05'18	min. Earth dist.	12408 Nov 15 10:39	5° Π 41'15	18.19340 AU
min. Earth dist.	12402 Oct 19 22:28	9° δ 06'52	17.81525 AU	direct	12409 Jan 31 13:14	3° Π 39'20	
direct	12403 Jan 04 15:11	7° δ 03'31		evening set	12409 May 05 04:44	6° Π 54'30	
evening set	12403 Apr 09 02:07	10° δ 24'33					
				conjunction	12409 May 21 02:19	7° Π 51'32	-1°01'57
conjunction	12403 Apr 25 03:54	11° δ 23'17	-0°59'29	minimum elong	12409 May 21 02:18	7° Π 51'32	1°02'45
minimum elong	12403 Apr 25 03:54	11° δ 23'17	1°00'01	max. Earth dist.	12409 May 21 07:11	7° Π 52'17	20.22615 AU
max. Earth dist.	12403 Apr 25 02:41	11° δ 23'06	19.84366 AU	morning rise	12409 Jun 05 22:24	8° Π 48'23	
morning rise	12403 May 11 03:21	12° δ 21'43		retrograde	12409 Sep 05 15:13	12° Π 00'20	
	12403 Jul 04 01:58	15° δ		opposition	12409 Nov 20 07:48	10° Π 00'54	-1°08'24
retrograde	12403 Aug 10 17:13	15° δ 37'46		min. Earth dist.	12409 Nov 20 01:57	10° Π 01'30	18.25896 AU
	12403 Sep 18 10:29	15° κ δ		direct	12410 Feb 05 08:05	7° Π 59'46	
opposition	12403 Oct 24 16:58	13° δ 36'54	-1°06'59	evening set	12410 May 09 18:20	11° Π 13'55	
min. Earth dist.	12403 Oct 24 17:00	13° δ 36'54	17.87307 AU				
direct	12404 Jan 09 14:15	11° δ 33'37		conjunction	12410 May 25 15:26	12° Π 10'43	-1°01'06
evening set	12404 Apr 12 20:48	14° δ 53'42		minimum elong	12410 May 25 15:26	12° Π 10'43	1°01'56
	12404 Apr 14 14:57	15° δ		max. Earth dist.	12410 May 25 21:33	12° Π 11'38	20.29114 AU
				morning rise	12410 Jun 10 11:04	13° Π 07'18	
conjunction	12404 Apr 28 21:43	15° δ 52'09	-1°00'50	retrograde	12410 Sep 10 04:20	16° Π 18'36	
minimum elong	12404 Apr 28 21:42	15° δ 52'08	1°01'26	opposition	12410 Nov 25 00:20	14° Π 19'23	-1°07'15
max. Earth dist.	12404 Apr 28 21:28	15° δ 52'06	19.90283 AU	min. Earth dist.	12410 Nov 24 18:58	14° Π 19'56	18.32336 AU
morning rise	12404 May 14 20:27	16° δ 50'18		direct	12411 Feb 09 23:50	12° Π 18'36	
retrograde	12404 Aug 14 09:00	20° δ 05'37		evening set	12411 May 14 07:13	15° Π 31'46	
opposition	12404 Oct 28 12:51	18° δ 04'58	-1°08'15				
min. Earth dist.	12404 Oct 28 12:33	18° δ 05'00	17.93371 AU	conjunction	12411 May 30 03:47	16° Π 28'17	-0°59'56
direct	12405 Jan 13 09:42	16° δ 01'59		minimum elong	12411 May 30 03:47	16° Π 28'17	1°00'48
evening set	12405 Apr 17 14:31	19° δ 21'05		max. Earth dist.	12411 May 30 09:49	16° Π 29'11	20.35474 AU
				morning rise	12411 Jun 14 23:12	17° Π 24'39	
conjunction	12405 May 03 14:42	20° δ 19'15	-1°01'48	retrograde	12411 Sep 14 18:09	20° Π 35'19	
minimum elong	12405 May 03 14:42	20° δ 19'15	1°02'25	opposition	12411 Nov 29 16:16	18° Π 36'16	-1°05'45
max. Earth dist.	12405 May 03 15:47	20° δ 19'25	19.96479 AU	min. Earth dist.	12411 Nov 29 09:19	18° Π 36'59	18.38594 AU
morning rise	12405 May 19 12:49	21° δ 17'07		direct	12412 Feb 14 17:17	16° Π 35'49	
retrograde	12405 Aug 19 02:33	24° δ 31'45		evening set	12412 May 17 19:14	19° Π 47'58	
opposition	12405 Nov 02 08:07	22° δ 31'19	-1°09'06				
min. Earth dist.	12405 Nov 02 05:45	22° δ 31'34	17.99673 AU	conjunction	12412 Jun 02 15:25	20° Π 44'15	-0°58'26

minimum elong	12412 Jun 02 15:25	20° II 44'15	0°59'18	opposition	12418 Dec 29 15:11	17° III 48'42	-0°46'22
max. Earth dist.	12412 Jun 02 22:40	20° II 45'20	20.41615 AU	min. Earth dist.	12418 Dec 29 04:57	17° III 49'44	18.75949 AU
morning rise	12412 Jun 18 10:26	21° II 40'23		direct	12419 Mar 16 15:27	15° III 49'54	
retrograde	12412 Sep 18 05:47	24° II 50'26		evening set	12419 Jun 16 10:46	18° III 55'34	
opposition	12412 Dec 03 07:48	22° II 51'32	-1°03'54				
min. Earth dist.	12412 Dec 03 01:19	22° II 52'12	18.44618 AU	conjunction	12419 Jul 02 05:20	19° III 50'27	-0°40'08
direct	12413 Feb 18 08:46	20° II 51'22		minimum elong	12419 Jul 02 05:21	19° III 50'27	0°41'01
evening set	12413 May 22 06:34	24° II 02'31		max. Earth dist.	12419 Jul 02 16:00	19° III 52'00	20.78214 AU
				morning rise	12419 Jul 18 00:11	20° III 45'21	
conjunction	12413 Jun 07 02:17	24° II 58'33	-0°56'37	retrograde	12419 Oct 18 04:31	23° III 51'47	
minimum elong	12413 Jun 07 02:17	24° II 58'33	0°55'31	opposition	12420 Jan 03 02:32	21° III 53'26	-0°42'34
max. Earth dist.	12413 Jun 07 09:15	24° II 59'35	20.47523 AU	min. Earth dist.	12420 Jan 02 15:07	21° III 54'35	18.80437 AU
morning rise	12413 Jun 22 21:14	25° II 54'28		direct	12420 Mar 20 01:46	19° III 54'53	
retrograde	12413 Sep 22 17:59	29° II 03'54		evening set	12420 Jun 19 17:22	22° III 59'49	
opposition	12413 Dec 07 22:31	27° II 05'07	-1°01'42				
min. Earth dist.	12413 Dec 07 14:34	27° II 05'55	18.50397 AU	conjunction	12420 Jul 05 12:02	23° III 54'33	-0°36'38
direct	12414 Feb 23 00:25	25° II 05'12		minimum elong	12420 Jul 05 12:03	23° III 54'33	0°37'30
evening set	12414 May 26 16:54	28° II 15'20		max. Earth dist.	12420 Jul 06 00:15	23° III 56'20	20.82561 AU
				morning rise	12420 Jul 21 06:52	24° III 49'21	
conjunction	12414 Jun 11 12:27	29° II 11'09	-0°54'31	retrograde	12420 Oct 21 12:07	27° III 55'27	
minimum elong	12414 Jun 11 12:27	29° II 11'09	0°55'25	opposition	12421 Jan 06 13:36	25° III 57'13	-0°38'34
max. Earth dist.	12414 Jun 11 20:45	29° II 12'23	20.53170 AU	min. Earth dist.	12421 Jan 06 02:22	25° III 58'20	18.84632 AU
	12414 Jun 25 07:47	0° III		direct	12421 Mar 24 11:25	23° III 58'56	
morning rise	12414 Jun 27 07:10	0° III 06'52		evening set	12421 Jun 23 23:47	27° III 03'11	
retrograde	12414 Sep 27 04:07	3° III 15'42					
opposition	12414 Dec 12 12:43	1° III 17'00	-0°59'12	conjunction	12421 Jul 09 18:20	27° III 57'47	-0°32'57
min. Earth dist.	12414 Dec 12 05:11	1° III 17'45	18.55916 AU	minimum elong	12421 Jul 09 18:21	27° III 57'47	0°33'47
	12415 Jan 15 20:40	30° R II		max. Earth dist.	12421 Jul 10 05:57	27° III 59'28	20.86607 AU
direct	12415 Feb 27 14:40	29° II 17'18		morning rise	12421 Jul 25 13:32	28° III 52'29	
	12415 Apr 10 00:01	0° III			12421 Aug 15 10:53	0° III	
evening set	12415 May 31 02:40	2° III 26'27		retrograde	12421 Oct 25 21:56	1° III 58'20	
				opposition	12422 Jan 11 00:04	0° III 00'11	-0°34'24
conjunction	12415 Jun 15 21:49	3° III 22'03	-0°52'08	min. Earth dist.	12422 Jan 10 12:03	0° III 01'23	18.88510 AU
minimum elong	12415 Jun 15 21:50	3° III 22'03	0°53'02		12422 Jan 11 01:50	30° R III	
max. Earth dist.	12415 Jun 16 05:50	3° III 23'14	20.58577 AU	direct	12422 Mar 28 20:13	28° III 02'07	
morning rise	12415 Jul 01 16:33	4° III 17'34			12422 Jun 07 20:46	0° III	
retrograde	12415 Oct 01 14:56	7° III 25'50		evening set	12422 Jun 28 05:45	1° III 05'46	
opposition	12415 Dec 17 02:05	5° III 27'10	-0°56'23				
min. Earth dist.	12415 Dec 16 17:05	5° III 28'05	18.61212 AU	conjunction	12422 Jul 14 00:32	2° III 00'17	-0°29'07
direct	12416 Mar 03 04:36	3° III 27'41		minimum elong	12422 Jul 14 00:32	2° III 00'17	0°29'56
evening set	12416 Jun 03 11:35	6° III 35'53		max. Earth dist.	12422 Jul 14 13:22	2° III 02'08	20.90291 AU
				morning rise	12422 Jul 29 19:49	2° III 54'53	
conjunction	12416 Jun 19 06:38	7° III 31'17	-0°49'29	retrograde	12422 Oct 30 05:36	6° III 00'30	
minimum elong	12416 Jun 19 06:38	7° III 31'17	0°50'24	opposition	12423 Jan 15 10:21	4° III 02'27	-0°30'04
max. Earth dist.	12416 Jun 19 16:14	7° III 32'42	20.63767 AU	min. Earth dist.	12423 Jan 14 22:44	4° III 03'37	18.91987 AU
morning rise	12416 Jul 05 01:10	8° III 26'38		direct	12423 Apr 02 05:15	2° III 04'38	
retrograde	12416 Oct 04 23:46	11° III 34'21		evening set	12423 Jul 02 11:37	5° III 07'43	
opposition	12416 Dec 20 15:08	9° III 35'45	-0°53'18				
min. Earth dist.	12416 Dec 20 06:14	9° III 36'39	18.66310 AU	conjunction	12423 Jul 18 06:20	6° III 02'08	-0°25'09
direct	12417 Mar 07 16:54	7° III 36'29		minimum elong	12423 Jul 18 06:20	6° III 02'08	0°25'56
evening set	12417 Jun 07 19:49	10° III 43'47		max. Earth dist.	12423 Jul 18 18:12	6° III 03'51	20.93560 AU
				morning rise	12423 Aug 03 02:00	6° III 56'40	
conjunction	12417 Jun 23 14:34	11° III 38'59	-0°46'35	retrograde	12423 Nov 03 14:52	10° III 02'08	
minimum elong	12417 Jun 23 14:35	11° III 38'59	0°47'29	opposition	12424 Jan 19 20:16	8° III 04'08	-0°25'37
max. Earth dist.	12417 Jun 24 00:02	11° III 40'22	20.68782 AU	min. Earth dist.	12424 Jan 19 08:13	8° III 05'21	18.95035 AU
morning rise	12417 Jul 09 09:16	12° III 34'09		direct	12424 Apr 05 13:08	6° III 06'31	
retrograde	12417 Oct 09 10:21	15° III 41'24		evening set	12424 Jul 05 17:11	9° III 09'07	
opposition	12417 Dec 25 03:28	13° III 42'52	-0°49'57				
min. Earth dist.	12417 Dec 24 17:04	13° III 43'55	18.71234 AU	conjunction	12424 Jul 21 12:10	10° III 03'27	-0°21'04
direct	12418 Mar 12 04:54	11° III 43'49		minimum elong	12424 Jul 21 12:10	10° III 03'27	0°21'49
evening set	12418 Jun 12 03:30	14° III 50'16		max. Earth dist.	12424 Jul 22 01:01	10° III 05'18	20.96363 AU
				morning rise	12424 Aug 06 07:59	10° III 57'56	
conjunction	12418 Jun 27 22:16	15° III 45'18	-0°43'28	retrograde	12424 Nov 06 22:27	14° III 03'16	
minimum elong	12418 Jun 27 22:16	15° III 45'19	0°44'22	opposition	12425 Jan 23 06:02	12° III 05'19	-0°21'02
max. Earth dist.	12418 Jun 28 09:20	15° III 46'55	20.73602 AU	min. Earth dist.	12425 Jan 22 18:26	12° III 06'29	18.97587 AU
morning rise	12418 Jul 13 16:52	16° III 40'20		direct	12425 Apr 09 21:28	10° III 07'52	
retrograde	12418 Oct 13 18:09	19° III 47'09		evening set	12425 Jul 09 22:38	13° III 10'00	

conjunction	12425 Jul 25 17:41	14°04'17	-0°16'54	behind sun begin	12430 Aug 14 13:45	4°00'01'03	
minimum elong	12425 Jul 25 17:41	14°04'17	0°17'37	behind sun end	12430 Aug 15 02:42	4°00'02'51	
max. Earth dist.	12425 Jul 26 05:14	14°05'56	20.98662 AU	max. Earth dist.	12430 Aug 15 08:03	4°00'03'38	21.02607 AU
morning rise	12425 Aug 10 14:01	14°05'44		morning rise	12430 Aug 30 18:33	4°00'56'27	
	12425 Aug 10 23:03	15°00		retrograde	12430 Dec 01 22:23	8°00'01'44	
retrograde	12425 Nov 11 07:29	18°03'59		opposition	12431 Feb 17 10:25	6°00'03'18	0°07'38
opposition	12426 Jan 27 15:27	16°06'01	-0°16'22	min. Earth dist.	12431 Feb 16 23:41	6°00'04'22	19.02440 AU
min. Earth dist.	12426 Jan 27 03:46	16°07'11	18.99620 AU	direct	12431 May 04 15:25	4°00'06'05	
	12426 Feb 25 20:50	15°00		evening set	12431 Aug 03 04:25	7°00'06'30	
direct	12426 Apr 14 04:59	14°08'41					
	12426 May 29 20:42	15°00		conjunction	12431 Aug 19 01:19	8°00'00'45	0°09'08
evening set	12426 Jul 14 03:53	17°00'10'24		minimum elong	12431 Aug 19 01:18	8°00'00'45	0°08'43
				behind sun begin	12431 Aug 18 19:35	7°00'59'57	
conjunction	12426 Jul 29 23:19	18°04'38	-0°12'39	behind sun end	12431 Aug 19 07:01	8°00'01'33	
minimum elong	12426 Jul 29 23:19	18°04'38	0°13'19	max. Earth dist.	12431 Aug 19 12:02	8°00'02'17	21.02175 AU
behind sun begin	12426 Jul 29 19:28	18°04'06		morning rise	12431 Sep 04 00:16	8°00'55'19	
behind sun end	12426 Jul 30 03:10	18°05'11		retrograde	12431 Dec 06 06:39	12°00'00'47	
max. Earth dist.	12426 Jul 30 11:34	18°06'23	21.00416 AU	opposition	12432 Feb 21 18:33	10°00'02'13	0°12'24
morning rise	12426 Aug 14 19:51	18°05'04		min. Earth dist.	12432 Feb 21 07:52	10°00'03'17	19.01842 AU
retrograde	12426 Nov 15 14:34	22°04'14		direct	12432 May 07 21:20	8°00'05'00	
opposition	12427 Feb 01 00:28	20°06'14	-0°11'37	evening set	12432 Aug 06 09:21	11°00'05'22	
min. Earth dist.	12427 Jan 31 13:20	20°07'21	19.01097 AU				
direct	12427 Apr 18 12:19	18°08'59		conjunction	12432 Aug 22 06:49	11°00'59'41	0°13'25
evening set	12427 Jul 18 09:06	21°00'10'19		minimum elong	12432 Aug 22 06:48	11°00'59'41	0°13'02
				behind sun begin	12432 Aug 22 02:47	11°00'59'07	
conjunction	12427 Aug 03 04:39	22°04'32	-0°08'22	behind sun end	12432 Aug 22 10:49	12°00'00'15	
minimum elong	12427 Aug 03 04:38	22°04'32	0°09'00	max. Earth dist.	12432 Aug 22 18:32	12°00'01'21	21.01402 AU
behind sun begin	12427 Aug 02 23:00	22°03'45		morning rise	12432 Sep 07 06:08	12°00'54'18	
behind sun end	12427 Aug 03 10:16	22°05'19		retrograde	12432 Dec 09 15:02	15°00'59'59	
max. Earth dist.	12427 Aug 03 15:34	22°06'05	21.01642 AU	opposition	12433 Feb 25 02:34	14°00'01'19	0°17'07
morning rise	12427 Aug 19 01:45	22°05'57		min. Earth dist.	12433 Feb 24 15:58	14°00'02'23	19.00895 AU
retrograde	12427 Nov 19 23:16	26°04'06		direct	12433 May 12 04:04	12°00'04'07	
opposition	12428 Feb 05 09:21	24°06'00	-0°06'50	evening set	12433 Aug 10 14:34	15°00'04'29	
min. Earth dist.	12428 Feb 04 22:13	24°07'07	19.02074 AU				
direct	12428 Apr 21 19:44	22°08'46		conjunction	12433 Aug 26 12:20	15°00'58'52	0°17'38
evening set	12428 Jul 21 13:50	25°09'47		minimum elong	12433 Aug 26 12:19	15°00'58'52	0°17'19
				max. Earth dist.	12433 Aug 26 22:46	16°00'00'21	21.00289 AU
conjunction	12428 Aug 06 09:50	26°03'59	-0°04'02	morning rise	12433 Sep 11 12:23	16°00'53'35	
minimum elong	12428 Aug 06 09:50	26°03'59	0°04'37	retrograde	12433 Dec 13 23:39	19°00'59'32	
behind sun begin	12428 Aug 06 03:23	26°03'05		opposition	12434 Mar 01 10:38	18°00'00'46	0°21'45
behind sun end	12428 Aug 06 16:17	26°04'53		min. Earth dist.	12434 Mar 01 00:24	18°00'01'48	18.99609 AU
max. Earth dist.	12428 Aug 06 21:45	26°05'41	21.02377 AU	direct	12434 May 16 09:18	16°00'03'33	
morning rise	12428 Aug 22 07:13	26°05'58'25		evening set	12434 Aug 14 19:58	19°00'04'00	
	12428 Nov 11 06:51	0°00					
retrograde	12428 Nov 23 06:24	0°00'03'33		conjunction	12434 Aug 30 18:21	19°00'58'29	0°21'46
	12428 Dec 05 09:45	30°00		minimum elong	12434 Aug 30 18:20	19°00'58'29	0°21'31
opposition	12429 Feb 08 18:00	28°05'21	-0°02'01	max. Earth dist.	12434 Aug 31 05:35	20°00'00'05	20.98814 AU
min. Earth dist.	12429 Feb 08 07:07	28°06'26	19.02583 AU	morning rise	12434 Sep 15 18:46	20°00'53'17	
direct	12429 Apr 26 02:14	26°08'09		retrograde	12434 Dec 18 08:22	23°00'59'32	
asc. node	12429 Jul 06 17:57	28°07'46		opposition	12435 Mar 05 18:40	22°00'00'42	0°26'18
evening set	12429 Jul 25 18:47	29°08'52		min. Earth dist.	12435 Mar 05 08:37	22°00'01'43	18.97943 AU
	12429 Aug 09 17:30	0°00		direct	12435 May 20 16:29	20°00'03'29	
				evening set	12435 Aug 19 01:53	23°00'04'05	
conjunction	12429 Aug 10 14:56	0°00'03'05	0°00'23				
minimum elong	12429 Aug 10 14:57	0°00'03'05	0°00'09	conjunction	12435 Sep 04 00:34	23°00'58'40	0°25'48
behind sun begin	12429 Aug 10 08:29	0°00'02'10		minimum elong	12435 Sep 04 00:34	23°00'58'40	0°25'37
behind sun end	12429 Aug 10 21:25	0°00'03'59		max. Earth dist.	12435 Sep 04 10:18	24°00'00'04	20.96967 AU
max. Earth dist.	12429 Aug 11 01:45	0°00'04'37	21.02685 AU	morning rise	12435 Sep 20 01:43	24°00'53'35	
morning rise	12429 Aug 26 12:58	0°00'57'32		retrograde	12435 Dec 22 17:45	28°00'00'13	
retrograde	12429 Nov 27 14:42	4°00'02'44		opposition	12436 Mar 09 02:58	26°00'01'16	0°30'43
opposition	12430 Feb 13 02:14	2°00'04'24	0°02'49	min. Earth dist.	12436 Mar 08 17:35	26°00'02'13	18.95906 AU
min. Earth dist.	12430 Feb 12 15:24	2°00'05'29	19.02702 AU	direct	12436 May 23 21:51	24°00'04'01	
direct	12430 Apr 30 09:02	0°00'07'11		evening set	12436 Aug 22 07:56	27°00'04'51	
evening set	12430 Jul 29 23:33	3°00'07'43					
				conjunction	12436 Sep 07 07:19	27°00'59'33	0°29'44
conjunction	12430 Aug 14 20:13	4°00'01'57	0°04'50	minimum elong	12436 Sep 07 07:18	27°00'59'33	0°29'37
minimum elong	12430 Aug 14 20:14	4°00'01'57	0°04'20	max. Earth dist.	12436 Sep 07 17:39	28°00'01'02	20.94718 AU



























































































































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	12436 Oct 13 18:31	0° <u>01</u>	evening set	12443 Sep 20 17:32	25° <u>03</u> 34'07	
retrograde	12436 Dec 26 02:56	2° <u>01</u> 38				
opposition	12437 Mar 13 11:23	0° <u>02</u> 35 0°35'00	conjunction	12443 Oct 06 20:53	26° <u>03</u> 0'03 0°52'28	
min. Earth dist.	12437 Mar 13 02:22	0° <u>03</u> 30 18.93436 AU	minimum elong	12443 Oct 06 20:53	26° <u>03</u> 0'02 0°52'47	
	12437 Mar 14 12:59	30° <u>08</u>	max. Earth dist.	12443 Oct 07 00:20	26° <u>03</u> 0'33 20.66571 AU	
direct	12437 May 28 05:20	28° <u>17</u> 05'18	morning rise	12443 Oct 23 02:56	27° <u>02</u> 26'21	
	12437 Aug 05 20:39	0° <u>01</u>		12443 Dec 17 11:03	0° <u>01</u>	
evening set	12437 Aug 26 14:50	1° <u>06</u> 24	retrograde	12444 Jan 25 05:56	0° <u>03</u> 36'59	
				12444 Mar 04 18:35	30° <u>08</u>	
conjunction	12437 Sep 11 14:35	2° <u>01</u> 14 0°33'32	opposition	12444 Apr 11 04:15	28° <u>03</u> 36'30 0°59'28	
minimum elong	12437 Sep 11 14:34	2° <u>01</u> 14 0°33'28	min. Earth dist.	12444 Apr 11 01:04	28° <u>03</u> 36'50 18.63953 AU	
max. Earth dist.	12437 Sep 11 23:00	2° <u>02</u> 27 20.92025 AU	direct	12444 Jun 25 10:36	26° <u>03</u> 37'51	
morning rise	12437 Sep 27 16:55	2° <u>05</u> 26	evening set	12444 Sep 24 03:47	29° <u>04</u> 42'23	
retrograde	12437 Dec 30 13:15	6° <u>03</u> 55		12444 Sep 29 06:53	0° <u>01</u>	
opposition	12438 Mar 17 19:53	4° <u>04</u> 44 0°39'07				
min. Earth dist.	12438 Mar 17 12:01	4° <u>05</u> 31 18.90514 AU	conjunction	12444 Oct 10 08:00	0° <u>03</u> 38'32 0°54'48	
direct	12438 Jun 01 11:16	2° <u>07</u> 20	minimum elong	12444 Oct 10 08:00	0° <u>03</u> 38'32 0°55'11	
evening set	12438 Aug 30 22:02	5° <u>08</u> 48	max. Earth dist.	12444 Oct 10 11:56	0° <u>03</u> 39'06 20.61255 AU	
			morning rise	12444 Oct 26 14:31	1° <u>03</u> 35'03	
conjunction	12438 Sep 15 22:30	6° <u>03</u> 47 0°37'10	retrograde	12445 Jan 28 18:55	4° <u>04</u> 46'19	
minimum elong	12438 Sep 15 22:29	6° <u>03</u> 47 0°37'11	opposition	12445 Apr 15 14:35	2° <u>04</u> 45'38 1°01'56	
max. Earth dist.	12438 Sep 16 07:06	6° <u>05</u> 01 20.88851 AU	min. Earth dist.	12445 Apr 15 11:19	2° <u>04</u> 45'58 18.58546 AU	
morning rise	12438 Oct 02 01:14	6° <u>05</u> 07	direct	12445 Jun 29 20:28	0° <u>04</u> 46'44	
retrograde	12439 Jan 03 22:45	10° <u>07</u> 03	evening set	12445 Sep 28 15:02	3° <u>05</u> 51'59	
opposition	12439 Mar 22 04:42	8° <u>07</u> 44 0°43'05				
min. Earth dist.	12439 Mar 21 21:18	8° <u>08</u> 29 18.87090 AU	conjunction	12445 Oct 14 19:44	4° <u>04</u> 48'23 0°56'52	
direct	12439 Jun 05 19:01	6° <u>10</u> 13	minimum elong	12445 Oct 14 19:43	4° <u>04</u> 48'23 0°57'19	
evening set	12439 Sep 04 05:44	9° <u>12</u> 02	max. Earth dist.	12445 Oct 14 21:50	4° <u>04</u> 48'41 20.55773 AU	
			morning rise	12445 Oct 31 03:01	5° <u>04</u> 45'09	
conjunction	12439 Sep 20 06:36	10° <u>07</u> 11 0°40'39	retrograde	12446 Feb 02 07:04	8° <u>04</u> 57'04	
minimum elong	12439 Sep 20 06:36	10° <u>07</u> 10 0°40'42	opposition	12446 Apr 20 01:19	6° <u>05</u> 56'11 1°04'04	
max. Earth dist.	12439 Sep 20 13:09	10° <u>08</u> 07 20.85189 AU	min. Earth dist.	12446 Apr 19 23:25	6° <u>05</u> 56'23 18.53005 AU	
morning rise	12439 Oct 06 10:08	11° <u>08</u> 24	direct	12446 Jul 04 04:56	4° <u>05</u> 57'03	
retrograde	12440 Jan 08 09:42	14° <u>08</u> 11'08	evening set	12446 Oct 03 02:48	8° <u>06</u> 03'05	
opposition	12440 Mar 25 13:52	12° <u>08</u> 11'35 0°46'50				
min. Earth dist.	12440 Mar 25 07:42	12° <u>08</u> 12'13 18.83195 AU	conjunction	12446 Oct 19 08:20	8° <u>06</u> 59'44 0°58'38	
direct	12440 Jun 09 01:57	10° <u>08</u> 13'53	minimum elong	12446 Oct 19 08:20	8° <u>06</u> 59'44 0°59'07	
evening set	12440 Sep 07 13:51	13° <u>08</u> 16'08	max. Earth dist.	12446 Oct 19 10:51	9° <u>07</u> 00'06 20.50171 AU	
			morning rise	12446 Nov 04 16:04	9° <u>07</u> 56'44	
conjunction	12440 Sep 23 15:31	14° <u>08</u> 11'27 0°43'56	retrograde	12447 Feb 06 21:33	13° <u>08</u> 09'21	
minimum elong	12440 Sep 23 15:30	14° <u>08</u> 11'27 0°44'04	opposition	12447 Apr 24 12:33	11° <u>08</u> 08'18 1°05'53	
max. Earth dist.	12440 Sep 23 22:17	14° <u>08</u> 12'26 20.81066 AU	min. Earth dist.	12447 Apr 24 10:24	11° <u>08</u> 08'32 18.47347 AU	
morning rise	12440 Oct 09 19:30	15° <u>08</u> 07'09	direct	12447 Jul 08 15:38	9° <u>08</u> 08'56	
retrograde	12441 Jan 11 19:55	18° <u>08</u> 16'04	evening set	12447 Oct 07 15:24	12° <u>08</u> 15'48	
opposition	12441 Mar 29 23:00	16° <u>08</u> 16'19 0°50'22				
min. Earth dist.	12441 Mar 29 17:12	16° <u>08</u> 16'54 18.78858 AU	conjunction	12447 Oct 23 21:27	13° <u>08</u> 12'42 1°00'05	
direct	12441 Jun 13 10:05	14° <u>08</u> 18'24	minimum elong	12447 Oct 23 21:26	13° <u>08</u> 12'42 1°00'39	
evening set	12441 Sep 11 22:36	17° <u>08</u> 21'08	max. Earth dist.	12447 Oct 23 22:15	13° <u>08</u> 12'49 20.44469 AU	
			morning rise	12447 Nov 09 05:57	14° <u>08</u> 09'58	
conjunction	12441 Sep 28 00:44	18° <u>08</u> 16'38 0°47'01		12447 Nov 24 06:07	15° <u>08</u>	
minimum elong	12441 Sep 28 00:43	18° <u>08</u> 16'38 0°47'12	retrograde	12448 Feb 11 11:17	17° <u>08</u> 23'19	
max. Earth dist.	12441 Sep 28 05:31	18° <u>08</u> 17'19 20.76543 AU	opposition	12448 Apr 28 00:28	15° <u>08</u> 22'07 1°07'21	
morning rise	12441 Oct 14 05:32	19° <u>08</u> 12'31	min. Earth dist.	12448 Apr 27 23:46	15° <u>08</u> 22'11 18.41608 AU	
retrograde	12442 Jan 16 07:02	22° <u>08</u> 21'59		12448 May 06 21:37	15° <u>08</u>	
opposition	12442 Apr 03 08:30	20° <u>08</u> 21'58 0°53'40	direct	12448 Jul 12 01:06	13° <u>08</u> 22'31	
min. Earth dist.	12442 Apr 03 04:01	20° <u>08</u> 22'26 18.74165 AU		12448 Sep 12 22:47	15° <u>08</u>	
direct	12442 Jun 17 17:42	18° <u>08</u> 23'49	evening set	12448 Oct 11 04:51	16° <u>08</u> 30'17	
evening set	12442 Sep 16 07:40	21° <u>08</u> 27'05				
			conjunction	12448 Oct 27 11:45	17° <u>08</u> 27'27 1°01'14	
conjunction	12442 Oct 02 10:35	22° <u>08</u> 22'47 0°49'52	minimum elong	12448 Oct 27 11:44	17° <u>08</u> 27'27 1°01'50	
minimum elong	12442 Oct 02 10:34	22° <u>08</u> 22'47 0°50'08	max. Earth dist.	12448 Oct 27 12:46	17° <u>08</u> 27'36 20.38688 AU	
max. Earth dist.	12442 Oct 02 15:48	22° <u>08</u> 23'33 20.71686 AU	morning rise	12448 Nov 12 20:44	18° <u>08</u> 24'58	
morning rise	12442 Oct 18 15:49	23° <u>08</u> 18'52	retrograde	12449 Feb 15 03:29	21° <u>08</u> 39'02	
retrograde	12443 Jan 20 18:28	26° <u>08</u> 28'54	opposition	12449 May 02 12:36	19° <u>08</u> 37'43 1°08'28	
opposition	12443 Apr 07 18:09	24° <u>08</u> 28'40 0°56'43	min. Earth dist.	12449 May 02 11:48	19° <u>08</u> 37'48 18.35775 AU	
min. Earth dist.	12443 Apr 07 13:43	24° <u>08</u> 29'07 18.69167 AU	direct	12449 Jul 16 12:37	17° <u>08</u> 37'54	

evening set	12449 Oct 15 19:24	20° \mathbb{M} 46'36		max. Earth dist.	12455 Nov 28 09:04	18° \mathbb{X} 00'35	19.95323 AU
				morning rise	12455 Dec 15 04:39	19° \mathbb{X} 01'01	
conjunction	12449 Nov 01 02:49	21° \mathbb{M} 44'03	1°02'03	retrograde	12456 Mar 18 08:49	22° \mathbb{X} 19'51	
minimum elong	12449 Nov 01 02:49	21° \mathbb{M} 44'03	1°02'42	opposition	12456 Jun 01 19:31	20° \mathbb{X} 17'19	1°05'22
max. Earth dist.	12449 Nov 01 01:56	21° \mathbb{M} 43'55	20.32805 AU	min. Earth dist.	12456 Jun 02 02:01	20° \mathbb{X} 16'37	17.92214 AU
morning rise	12449 Nov 17 12:30	22° \mathbb{M} 41'50		direct	12456 Aug 15 13:27	18° \mathbb{X} 15'16	
retrograde	12450 Feb 19 19:05	25° \mathbb{M} 56'38		evening set	12456 Nov 16 01:15	21° \mathbb{X} 30'53	
opposition	12450 May 07 01:36	23° \mathbb{M} 55'12	1°09'12				
min. Earth dist.	12450 May 07 02:37	23° \mathbb{M} 55'05	18.29843 AU	conjunction	12456 Dec 02 13:08	22° \mathbb{X} 30'19	0°57'50
direct	12450 Jul 20 23:16	21° \mathbb{M} 55'09		minimum elong	12456 Dec 02 13:08	22° \mathbb{X} 30'19	0°58'43
evening set	12450 Oct 20 10:37	25° \mathbb{M} 04'49		max. Earth dist.	12456 Dec 02 05:28	22° \mathbb{X} 29'09	19.89117 AU
				morning rise	12456 Dec 19 02:08	23° \mathbb{X} 29'57	
conjunction	12450 Nov 05 18:49	26° \mathbb{M} 02'32	1°02'31	retrograde	12457 Mar 23 06:02	26° \mathbb{X} 49'22	
minimum elong	12450 Nov 05 18:49	26° \mathbb{M} 02'32	1°03'14	opposition	12457 Jun 06 12:14	24° \mathbb{X} 46'38	1°03'18
max. Earth dist.	12450 Nov 05 17:49	26° \mathbb{M} 02'24	20.26810 AU	min. Earth dist.	12457 Jun 06 18:30	24° \mathbb{X} 45'57	17.86092 AU
morning rise	12450 Nov 22 04:55	27° \mathbb{M} 00'36		direct	12457 Aug 20 08:16	22° \mathbb{X} 44'12	
	12451 Jan 30 10:28	0° \mathbb{X}		evening set	12457 Nov 20 22:32	26° \mathbb{X} 00'50	
retrograde	12451 Feb 24 13:05	0° \mathbb{X} 16'08					
	12451 Mar 21 21:01	30° \mathbb{R} \mathbb{M}		conjunction	12457 Dec 07 10:54	27° \mathbb{X} 00'33	0°55'46
opposition	12451 May 11 15:05	28° \mathbb{M} 14'34	1°09'34	minimum elong	12457 Dec 07 10:55	27° \mathbb{X} 00'33	0°56'41
min. Earth dist.	12451 May 11 16:05	28° \mathbb{M} 14'28	18.23778 AU	max. Earth dist.	12457 Dec 07 02:37	26° \mathbb{X} 59'17	19.83092 AU
direct	12451 Jul 25 12:35	26° \mathbb{M} 14'15		morning rise	12457 Dec 24 00:11	28° \mathbb{X} 00'26	
evening set	12451 Oct 25 03:02	29° \mathbb{M} 24'54			12458 Jan 30 12:48	0° \mathbb{Z}	
	12451 Nov 04 01:43	0° \mathbb{X}		retrograde	12458 Mar 28 00:48	1° \mathbb{Z} 20'24	
					12458 May 25 10:00	30° \mathbb{R} \mathbb{X}	
conjunction	12451 Nov 10 11:45	0° \mathbb{X} 22'55	1°02'39	opposition	12458 Jun 11 05:50	29° \mathbb{X} 17'30	1°00'49
minimum elong	12451 Nov 10 11:45	0° \mathbb{X} 22'55	1°03'23	min. Earth dist.	12458 Jun 11 13:30	29° \mathbb{X} 16'41	17.80195 AU
max. Earth dist.	12451 Nov 10 08:46	0° \mathbb{X} 22'28	20.20673 AU	direct	12458 Aug 25 00:43	27° \mathbb{X} 14'44	
morning rise	12451 Nov 26 22:30	1° \mathbb{X} 21'15			12458 Nov 16 14:21	0° \mathbb{Z}	
retrograde	12452 Feb 29 05:48	4° \mathbb{X} 37'30		evening set	12458 Nov 25 20:22	0° \mathbb{Z} 32'22	
opposition	12452 May 15 05:19	2° \mathbb{X} 35'46	1°09'33				
min. Earth dist.	12452 May 15 08:19	2° \mathbb{X} 35'27	18.17580 AU	conjunction	12458 Dec 12 09:11	1° \mathbb{Z} 32'19	0°53'20
direct	12452 Jul 29 00:25	0° \mathbb{X} 35'10		minimum elong	12458 Dec 12 09:11	1° \mathbb{Z} 32'19	0°54'15
evening set	12452 Oct 28 20:12	3° \mathbb{X} 46'48		max. Earth dist.	12458 Dec 12 00:10	1° \mathbb{Z} 30'57	19.77342 AU
				morning rise	12458 Dec 28 22:50	2° \mathbb{Z} 32'26	
conjunction	12452 Nov 14 05:43	4° \mathbb{X} 45'06	1°02'25	retrograde	12459 Apr 01 23:01	5° \mathbb{Z} 52'58	
minimum elong	12452 Nov 14 05:43	4° \mathbb{X} 45'06	1°03'13	opposition	12459 Jun 15 23:54	3° \mathbb{Z} 49'55	0°57'56
max. Earth dist.	12452 Nov 14 02:12	4° \mathbb{X} 44'35	20.14414 AU	min. Earth dist.	12459 Jun 16 07:07	3° \mathbb{Z} 49'08	17.74598 AU
morning rise	12452 Nov 30 16:55	5° \mathbb{X} 43'42		direct	12459 Aug 29 20:48	1° \mathbb{Z} 46'49	
retrograde	12453 Mar 05 01:29	9° \mathbb{X} 00'38		evening set	12459 Nov 30 19:06	5° \mathbb{Z} 05'27	
opposition	12453 May 19 19:58	6° \mathbb{X} 58'43	1°09'07				
min. Earth dist.	12453 May 19 22:59	6° \mathbb{X} 58'24	18.11258 AU	conjunction	12459 Dec 17 08:25	6° \mathbb{Z} 05'41	0°50'34
direct	12453 Aug 02 15:52	4° \mathbb{X} 57'46		minimum elong	12459 Dec 17 08:26	6° \mathbb{Z} 05'41	0°51'29
evening set	12453 Nov 02 14:20	8° \mathbb{X} 10'24		max. Earth dist.	12459 Dec 16 23:23	6° \mathbb{Z} 04'18	19.71905 AU
				morning rise	12460 Jan 02 22:12	7° \mathbb{Z} 06'00	
conjunction	12453 Nov 19 00:22	9° \mathbb{X} 08'59	1°01'50	retrograde	12460 Apr 05 19:09	10° \mathbb{Z} 27'03	
minimum elong	12453 Nov 19 00:22	9° \mathbb{X} 08'59	1°02'39	opposition	12460 Jun 19 18:33	8° \mathbb{Z} 23'55	0°54'41
max. Earth dist.	12453 Nov 18 19:05	9° \mathbb{X} 08'12	20.08046 AU	min. Earth dist.	12460 Jun 20 02:54	8° \mathbb{Z} 23'00	17.69342 AU
morning rise	12453 Dec 05 12:05	10° \mathbb{X} 07'52		direct	12460 Sep 02 14:56	6° \mathbb{Z} 20'32	
retrograde	12454 Mar 09 18:28	13° \mathbb{X} 25'27		evening set	12460 Dec 04 18:40	9° \mathbb{Z} 40'10	
opposition	12454 May 24 11:16	11° \mathbb{X} 23'20	1°08'17				
min. Earth dist.	12454 May 24 16:15	11° \mathbb{X} 22'48	18.04870 AU	conjunction	12460 Dec 21 08:18	10° \mathbb{Z} 40'37	0°47'27
direct	12454 Aug 07 05:15	9° \mathbb{X} 22'01		minimum elong	12460 Dec 21 08:18	10° \mathbb{Z} 40'37	0°48'21
evening set	12454 Nov 07 09:10	12° \mathbb{X} 35'39		max. Earth dist.	12460 Dec 20 22:10	10° \mathbb{Z} 39'04	19.66847 AU
				morning rise	12461 Jan 06 22:23	11° \mathbb{Z} 41'09	
conjunction	12454 Nov 23 19:54	13° \mathbb{X} 34'31	1°00'52	retrograde	12461 Apr 10 18:10	15° \mathbb{Z} 02'43	
minimum elong	12454 Nov 23 19:54	13° \mathbb{X} 34'31	1°01'43	opposition	12461 Jun 24 13:47	12° \mathbb{Z} 59'30	0°51'03
max. Earth dist.	12454 Nov 23 14:04	13° \mathbb{X} 33'39	20.01664 AU	min. Earth dist.	12461 Jun 24 21:49	12° \mathbb{Z} 58'38	17.64476 AU
morning rise	12454 Dec 10 08:03	14° \mathbb{X} 33'39		direct	12461 Sep 07 11:53	10° \mathbb{Z} 55'53	
retrograde	12455 Mar 14 15:01	17° \mathbb{X} 51'52		evening set	12461 Dec 09 18:49	14° \mathbb{Z} 16'29	
opposition	12455 May 29 03:02	15° \mathbb{X} 49'32	1°07'02				
min. Earth dist.	12455 May 29 07:49	15° \mathbb{X} 49'01	17.98499 AU	conjunction	12461 Dec 26 08:51	15° \mathbb{Z} 17'11	0°44'00
direct	12455 Aug 11 22:26	13° \mathbb{X} 47'52		minimum elong	12461 Dec 26 08:51	15° \mathbb{Z} 17'11	0°44'55
evening set	12455 Nov 12 04:46	17° \mathbb{X} 02'28		max. Earth dist.	12461 Dec 25 23:10	15° \mathbb{Z} 15'42	19.62171 AU
				morning rise	12462 Jan 11 22:52	16° \mathbb{Z} 17'54	
conjunction	12455 Nov 28 16:03	18° \mathbb{X} 01'38	0°59'32	retrograde	12462 Apr 15 16:00	19° \mathbb{Z} 39'56	
minimum elong	12455 Nov 28 16:03	18° \mathbb{X} 01'38	1°00'25	opposition	12462 Jun 29 09:43	17° \mathbb{Z} 36'44	0°47'04

min. Earth dist.	12462 Jun 29 18:34	17° ♁ 35'46	17.59994 AU		12468 Dec 03 15:14	15° ♁	
direct	12462 Sep 12 07:55	15° ♁ 32'55		evening set	12469 Jan 12 13:08	17° ♁ 09'13	
evening set	12462 Dec 14 19:49	18° ♁ 54'28					
				conjunction	12469 Jan 29 03:21	18° ♁ 10'54	0°12'55
conjunction	12462 Dec 31 09:59	19° ♁ 55'22	0°40'16	minimum elong	12469 Jan 29 03:21	18° ♁ 10'54	0°13'35
minimum elong	12462 Dec 31 09:59	19° ♁ 55'22	0°41'11	behind sun begin	12469 Jan 28 23:45	18° ♁ 10'21	
max. Earth dist.	12462 Dec 30 22:56	19° ♁ 53'40	19.57896 AU	behind sun end	12469 Jan 29 06:56	18° ♁ 11'27	
morning rise	12463 Jan 17 00:13	20° ♁ 56'16		max. Earth dist.	12469 Jan 28 13:33	18° ♁ 08'45	19.39486 AU
retrograde	12463 Apr 20 15:49	24° ♁ 18'45		morning rise	12469 Feb 14 16:20	19° ♁ 12'24	
opposition	12463 Jul 04 06:06	22° ♁ 15'33	0°42'45	retrograde	12469 May 18 18:01	22° ♁ 36'09	
min. Earth dist.	12463 Jul 04 15:02	22° ♁ 14'35	17.55909 AU	opposition	12469 Jul 31 19:14	20° ♁ 32'58	0°11'38
direct	12463 Sep 17 05:46	20° ♁ 11'32		min. Earth dist.	12469 Aug 01 06:47	20° ♁ 31'43	17.38586 AU
evening set	12463 Dec 19 21:23	23° ♁ 34'01		direct	12469 Oct 15 01:41	18° ♁ 27'49	
				evening set	12470 Jan 17 16:49	21° ♁ 54'16	
conjunction	12464 Jan 05 11:55	24° ♁ 35'06	0°36'15				
minimum elong	12464 Jan 05 11:55	24° ♁ 35'06	0°37'07	conjunction	12470 Feb 03 06:52	22° ♁ 55'59	0°07'50
max. Earth dist.	12464 Jan 05 01:24	24° ♁ 33'29	19.53980 AU	minimum elong	12470 Feb 03 06:52	22° ♁ 55'59	0°08'28
morning rise	12464 Jan 22 01:58	25° ♁ 36'10		behind sun begin	12470 Feb 03 00:59	22° ♁ 55'05	
retrograde	12464 Apr 24 15:27	28° ♁ 59'01		behind sun end	12470 Feb 03 12:45	22° ♁ 56'53	
opposition	12464 Jul 08 03:11	26° ♁ 55'52	0°38'08	max. Earth dist.	12470 Feb 02 17:57	22° ♁ 53'58	19.37789 AU
min. Earth dist.	12464 Jul 08 12:50	26° ♁ 54'49	17.52157 AU	morning rise	12470 Feb 19 19:19	23° ♁ 57'29	
direct	12464 Sep 21 03:20	24° ♁ 51'40		retrograde	12470 May 23 18:20	27° ♁ 21'13	
evening set	12464 Dec 23 23:51	28° ♁ 15'01		opposition	12470 Aug 05 18:32	25° ♁ 18'01	0°05'53
				min. Earth dist.	12470 Aug 06 05:15	25° ♁ 16'51	17.37126 AU
conjunction	12465 Jan 09 14:18	29° ♁ 16'16	0°31'59	direct	12470 Oct 20 03:41	23° ♁ 12'44	
minimum elong	12465 Jan 09 14:18	29° ♁ 16'16	0°32'50	evening set	12471 Jan 22 20:45	26° ♁ 39'31	
max. Earth dist.	12465 Jan 09 02:01	29° ♁ 14'22	19.50396 AU				
	12465 Jan 21 09:33	0° ♁		conjunction	12471 Feb 08 10:22	27° ♁ 41'14	0°02'41
morning rise	12465 Jan 26 04:24	0° ♁ 17'28		minimum elong	12471 Feb 08 10:22	27° ♁ 41'14	0°03'15
retrograde	12465 Apr 29 16:01	3° ♁ 40'39		behind sun begin	12471 Feb 08 03:40	27° ♁ 40'12	
opposition	12465 Jul 13 00:43	1° ♁ 37'30	0°33'15	behind sun end	12471 Feb 08 17:04	27° ♁ 42'15	
min. Earth dist.	12465 Jul 13 10:50	1° ♁ 36'24	17.48738 AU	max. Earth dist.	12471 Feb 07 21:02	27° ♁ 39'09	19.36585 AU
	12465 Aug 24 23:40	30° ♁ 15'01		morning rise	12471 Feb 24 22:22	28° ♁ 42'43	
direct	12465 Sep 26 02:09	29° ♁ 33'06			12471 Mar 19 04:10	0° ♁	
	12465 Oct 27 17:40	0° ♁		retrograde	12471 May 28 17:12	2° ♁ 06'22	
evening set	12465 Dec 29 02:36	2° ♁ 57'15		opposition	12471 Aug 10 18:02	0° ♁ 03'10	0°00'06
				min. Earth dist.	12471 Aug 11 05:26	0° ♁ 01'55	17.36201 AU
conjunction	12466 Jan 14 17:15	3° ♁ 58'39	0°27'29		12471 Aug 11 22:59	30° ♁ 15'01	
minimum elong	12466 Jan 14 17:16	3° ♁ 58'39	0°28'17	desc. node	12471 Aug 17 06:01	29° ♁ 46'11	
max. Earth dist.	12466 Jan 14 05:33	3° ♁ 56'50	19.47133 AU	direct	12471 Oct 25 05:15	27° ♁ 57'43	
morning rise	12466 Jan 31 07:01	4° ♁ 59'58			12472 Jan 03 10:25	0° ♁	
retrograde	12466 May 04 16:50	8° ♁ 23'23		evening set	12472 Jan 28 00:34	1° ♁ 24'47	
opposition	12466 Jul 17 22:50	6° ♁ 20'15	0°28'07				
min. Earth dist.	12466 Jul 18 09:13	6° ♁ 19'07	17.45634 AU	conjunction	12472 Feb 13 13:51	2° ♁ 26'28	-0°02'38
direct	12466 Oct 01 00:49	4° ♁ 15'40		minimum elong	12472 Feb 13 13:51	2° ♁ 26'28	0°02'08
evening set	12467 Jan 03 05:46	7° ♁ 40'30		behind sun begin	12472 Feb 13 07:07	2° ♁ 25'27	
				behind sun end	12472 Feb 13 20:35	2° ♁ 27'30	
conjunction	12467 Jan 19 20:14	8° ♁ 42'01	0°22'47	max. Earth dist.	12472 Feb 13 01:14	2° ♁ 24'31	19.35942 AU
minimum elong	12467 Jan 19 20:15	8° ♁ 42'01	0°23'33	morning rise	12472 Mar 01 01:17	3° ♁ 27'55	
max. Earth dist.	12467 Jan 19 06:58	8° ♁ 39'57	19.44206 AU	retrograde	12472 Jun 01 17:36	6° ♁ 51'25	
morning rise	12467 Feb 05 09:57	9° ♁ 43'25		opposition	12472 Aug 14 17:39	4° ♁ 48'14	-0°05'41
retrograde	12467 May 09 17:30	13° ♁ 07'02		min. Earth dist.	12472 Aug 15 03:45	4° ♁ 47'08	17.35840 AU
opposition	12467 Jul 22 21:22	11° ♁ 03'53	0°22'47	direct	12472 Oct 29 08:18	2° ♁ 42'41	
min. Earth dist.	12467 Jul 23 08:24	11° ♁ 02'41	17.42889 AU	evening set	12473 Feb 01 04:20	6° ♁ 09'56	
direct	12467 Oct 06 00:43	8° ♁ 59'06					
evening set	12468 Jan 08 09:15	12° ♁ 24'33		conjunction	12473 Feb 17 17:03	7° ♁ 11'34	-0°07'48
				minimum elong	12473 Feb 17 17:03	7° ♁ 11'34	0°07'21
conjunction	12468 Jan 24 23:48	13° ♁ 26'10	0°17'55	behind sun begin	12473 Feb 17 10:54	7° ♁ 10'38	
minimum elong	12468 Jan 24 23:48	13° ♁ 26'10	0°18'39	behind sun end	12473 Feb 17 23:12	7° ♁ 12'30	
max. Earth dist.	12468 Jan 24 11:12	13° ♁ 24'13	19.41646 AU	max. Earth dist.	12473 Feb 17 04:53	7° ♁ 09'41	19.35874 AU
morning rise	12468 Feb 10 13:04	14° ♁ 27'38		morning rise	12473 Mar 06 03:47	8° ♁ 12'56	
	12468 Feb 19 13:42	15° ♁		retrograde	12473 Jun 06 16:15	11° ♁ 36'14	
retrograde	12468 May 13 18:08	17° ♁ 51'20		opposition	12473 Aug 19 17:31	9° ♁ 33'07	-0°11'25
opposition	12468 Jul 26 20:02	15° ♁ 48'11	0°17'16	min. Earth dist.	12473 Aug 20 04:03	9° ♁ 31'58	17.36091 AU
min. Earth dist.	12468 Jul 27 06:53	15° ♁ 47'00	17.40518 AU	direct	12473 Nov 03 09:45	7° ♁ 27'32	
	12468 Aug 14 17:31	15° ♁		evening set	12474 Feb 06 07:52	10° ♁ 54'52	
direct	12468 Oct 10 00:42	13° ♁ 43'13					

conjunction	12474 Feb 22 20:01	11° $\mathbf{\text{X}}$ 56'26	-0°12'54	max. Earth dist.	12480 Mar 22 22:04	10° $\mathbf{\text{Y}}$ 14'50	19.51282 AU
minimum elong	12474 Feb 22 20:01	11° $\mathbf{\text{X}}$ 56'26	0°12'32	morning rise	12480 Apr 08 11:33	11° $\mathbf{\text{Y}}$ 16'22	
behind sun begin	12474 Feb 22 15:44	11° $\mathbf{\text{X}}$ 55'46		retrograde	12480 Jul 09 11:30	14° $\mathbf{\text{Y}}$ 37'02	
behind sun end	12474 Feb 23 00:18	11° $\mathbf{\text{X}}$ 57'05		opposition	12480 Sep 21 15:56	12° $\mathbf{\text{Y}}$ 35'08	-0°47'05
max. Earth dist.	12474 Feb 22 08:22	11° $\mathbf{\text{X}}$ 54'37	19.36447 AU	min. Earth dist.	12480 Sep 21 21:59	12° $\mathbf{\text{Y}}$ 34'28	17.53199 AU
morning rise	12474 Mar 11 06:07	12° $\mathbf{\text{X}}$ 57'42		direct	12480 Dec 06 21:40	10° $\mathbf{\text{Y}}$ 30'25	
retrograde	12474 Jun 11 17:05	16° $\mathbf{\text{X}}$ 20'45		evening set	12481 Mar 11 23:09	13° $\mathbf{\text{Y}}$ 56'05	
opposition	12474 Aug 24 17:18	14° $\mathbf{\text{X}}$ 17'44	-0°17'05				
min. Earth dist.	12474 Aug 25 02:10	14° $\mathbf{\text{X}}$ 16'46	17.36975 AU	conjunction	12481 Mar 28 06:06	14° $\mathbf{\text{Y}}$ 56'28	-0°44'09
direct	12474 Nov 08 12:47	12° $\mathbf{\text{X}}$ 12'11		minimum elong	12481 Mar 28 06:05	14° $\mathbf{\text{Y}}$ 56'28	0°44'17
evening set	12475 Feb 11 11:05	15° $\mathbf{\text{X}}$ 39'32		max. Earth dist.	12481 Mar 27 23:40	14° $\mathbf{\text{Y}}$ 55'28	19.55160 AU
				morning rise	12481 Apr 13 10:19	15° $\mathbf{\text{Y}}$ 56'28	
conjunction	12475 Feb 27 22:42	16° $\mathbf{\text{X}}$ 41'00	-0°17'54	retrograde	12481 Jul 14 08:31	19° $\mathbf{\text{Y}}$ 16'35	
minimum elong	12475 Feb 27 22:42	16° $\mathbf{\text{X}}$ 41'00	0°17'36	opposition	12481 Sep 26 15:10	17° $\mathbf{\text{Y}}$ 14'51	-0°51'07
max. Earth dist.	12475 Feb 27 12:11	16° $\mathbf{\text{X}}$ 39'21	19.37640 AU	min. Earth dist.	12481 Sep 26 21:00	17° $\mathbf{\text{Y}}$ 14'13	17.57225 AU
morning rise	12475 Mar 16 08:00	17° $\mathbf{\text{X}}$ 42'09		direct	12481 Dec 11 22:55	15° $\mathbf{\text{Y}}$ 10'20	
retrograde	12475 Jun 16 15:41	21° $\mathbf{\text{X}}$ 04'56		evening set	12482 Mar 16 23:10	18° $\mathbf{\text{Y}}$ 35'23	
opposition	12475 Aug 29 17:18	19° $\mathbf{\text{X}}$ 02'04	-0°22'37				
min. Earth dist.	12475 Aug 30 02:34	19° $\mathbf{\text{X}}$ 01'04	17.38471 AU	conjunction	12482 Apr 02 05:05	19° $\mathbf{\text{Y}}$ 35'31	-0°47'36
direct	12475 Nov 13 13:27	16° $\mathbf{\text{X}}$ 56'35		minimum elong	12482 Apr 02 05:05	19° $\mathbf{\text{Y}}$ 35'31	0°47'50
evening set	12476 Feb 16 14:14	20° $\mathbf{\text{X}}$ 23'53		max. Earth dist.	12482 Apr 01 22:14	19° $\mathbf{\text{Y}}$ 34'27	19.59339 AU
				morning rise	12482 Apr 18 08:37	20° $\mathbf{\text{Y}}$ 35'17	
conjunction	12476 Mar 04 01:06	21° $\mathbf{\text{X}}$ 25'13	-0°22'47	retrograde	12482 Jul 19 05:00	23° $\mathbf{\text{Y}}$ 54'48	
minimum elong	12476 Mar 04 01:05	21° $\mathbf{\text{X}}$ 25'13	0°22'33	opposition	12482 Oct 01 13:51	21° $\mathbf{\text{Y}}$ 53'12	-0°54'48
max. Earth dist.	12476 Mar 03 14:38	21° $\mathbf{\text{X}}$ 23'35	19.39431 AU	min. Earth dist.	12482 Oct 01 18:52	21° $\mathbf{\text{Y}}$ 52'40	17.61557 AU
morning rise	12476 Mar 20 09:44	22° $\mathbf{\text{X}}$ 26'14		direct	12482 Dec 16 23:40	19° $\mathbf{\text{Y}}$ 48'52	
retrograde	12476 Jun 20 16:34	25° $\mathbf{\text{X}}$ 48'41		evening set	12483 Mar 21 22:10	23° $\mathbf{\text{Y}}$ 13'14	
opposition	12476 Sep 02 17:03	23° $\mathbf{\text{X}}$ 46'01	-0°27'59				
min. Earth dist.	12476 Sep 03 00:50	23° $\mathbf{\text{X}}$ 45'10	17.40531 AU	conjunction	12483 Apr 07 03:26	24° $\mathbf{\text{Y}}$ 13'07	-0°50'45
direct	12476 Nov 17 16:14	21° $\mathbf{\text{X}}$ 40'39		minimum elong	12483 Apr 07 03:25	24° $\mathbf{\text{Y}}$ 13'07	0°51'02
evening set	12477 Feb 20 17:00	25° $\mathbf{\text{X}}$ 07'49		max. Earth dist.	12483 Apr 06 22:22	24° $\mathbf{\text{Y}}$ 12'20	19.63809 AU
				morning rise	12483 Apr 23 06:00	25° $\mathbf{\text{Y}}$ 12'38	
conjunction	12477 Mar 09 03:13	26° $\mathbf{\text{X}}$ 09'00	-0°27'30	retrograde	12483 Jul 24 00:59	28° $\mathbf{\text{Y}}$ 31'29	
minimum elong	12477 Mar 09 03:13	26° $\mathbf{\text{X}}$ 09'00	0°27'21	opposition	12483 Oct 06 12:12	26° $\mathbf{\text{Y}}$ 30'03	-0°58'06
max. Earth dist.	12477 Mar 08 18:15	26° $\mathbf{\text{X}}$ 07'37	19.41744 AU	min. Earth dist.	12483 Oct 06 16:34	26° $\mathbf{\text{Y}}$ 29'35	17.66156 AU
morning rise	12477 Mar 25 10:53	27° $\mathbf{\text{X}}$ 09'52		direct	12483 Dec 22 01:08	24° $\mathbf{\text{Y}}$ 25'54	
	12477 May 22 12:33	0° $\mathbf{\text{Y}}$		evening set	12484 Mar 25 20:31	27° $\mathbf{\text{Y}}$ 49'30	
retrograde	12477 Jun 25 15:00	0° $\mathbf{\text{Y}}$ 31'56					
	12477 Jul 30 11:03	30° $\mathbf{\text{R}}$ $\mathbf{\text{X}}$		conjunction	12484 Apr 11 00:44	28° $\mathbf{\text{Y}}$ 49'06	-0°53'33
opposition	12477 Sep 07 17:05	28° $\mathbf{\text{X}}$ 29'28	-0°33'09	minimum elong	12484 Apr 11 00:44	28° $\mathbf{\text{Y}}$ 49'06	0°53'55
min. Earth dist.	12477 Sep 08 01:14	28° $\mathbf{\text{X}}$ 28'35	17.43090 AU	max. Earth dist.	12484 Apr 10 19:36	28° $\mathbf{\text{Y}}$ 48'18	19.68549 AU
direct	12477 Nov 22 16:50	26° $\mathbf{\text{X}}$ 24'16		morning rise	12484 Apr 27 02:36	29° $\mathbf{\text{Y}}$ 48'21	
evening set	12478 Feb 25 19:17	29° $\mathbf{\text{X}}$ 51'11			12484 Apr 30 08:11	0° $\mathbf{\text{X}}$	
	12478 Feb 28 04:57	0° $\mathbf{\text{Y}}$		retrograde	12484 Jul 27 19:11	3° $\mathbf{\text{X}}$ 06'32	
				opposition	12484 Oct 10 10:05	1° $\mathbf{\text{X}}$ 05'13	-1°01'01
conjunction	12478 Mar 14 04:36	0° $\mathbf{\text{Y}}$ 52'12	-0°32'02	min. Earth dist.	12484 Oct 10 13:45	1° $\mathbf{\text{X}}$ 04'50	17.71050 AU
minimum elong	12478 Mar 14 04:35	0° $\mathbf{\text{Y}}$ 52'12	0°31'56		12484 Nov 06 09:19	30° $\mathbf{\text{R}}$ $\mathbf{\text{Y}}$	
max. Earth dist.	12478 Mar 13 19:20	0° $\mathbf{\text{Y}}$ 50'45	19.44533 AU	direct	12484 Dec 26 00:55	29° $\mathbf{\text{Y}}$ 01'15	
morning rise	12478 Mar 30 11:36	1° $\mathbf{\text{Y}}$ 52'52			12485 Feb 12 03:31	0° $\mathbf{\text{X}}$	
retrograde	12478 Jun 30 15:00	5° $\mathbf{\text{Y}}$ 14'33		evening set	12485 Mar 30 17:45	2° $\mathbf{\text{X}}$ 24'02	
opposition	12478 Sep 12 16:52	3° $\mathbf{\text{Y}}$ 12'16	-0°38'04				
min. Earth dist.	12478 Sep 12 23:44	3° $\mathbf{\text{Y}}$ 11'31	17.46093 AU	conjunction	12485 Apr 15 21:16	3° $\mathbf{\text{X}}$ 23'21	-0°55'59
direct	12478 Nov 27 19:14	1° $\mathbf{\text{Y}}$ 07'13		minimum elong	12485 Apr 15 21:15	3° $\mathbf{\text{X}}$ 23'21	0°56'25
evening set	12479 Mar 02 21:08	4° $\mathbf{\text{Y}}$ 33'48		max. Earth dist.	12485 Apr 15 18:04	3° $\mathbf{\text{X}}$ 22'52	19.73591 AU
				morning rise	12485 May 01 22:13	4° $\mathbf{\text{X}}$ 22'20	
conjunction	12479 Mar 19 05:48	5° $\mathbf{\text{Y}}$ 34'38	-0°36'20	retrograde	12485 Aug 01 13:56	7° $\mathbf{\text{X}}$ 39'48	
minimum elong	12479 Mar 19 05:47	5° $\mathbf{\text{Y}}$ 34'38	0°36'20	opposition	12485 Oct 15 07:27	5° $\mathbf{\text{X}}$ 38'38	-1°03'31
max. Earth dist.	12479 Mar 18 22:11	5° $\mathbf{\text{Y}}$ 33'27	19.47726 AU	min. Earth dist.	12485 Oct 15 09:50	5° $\mathbf{\text{X}}$ 38'23	17.76239 AU
morning rise	12479 Apr 04 11:46	6° $\mathbf{\text{Y}}$ 35'06		direct	12485 Dec 31 01:23	3° $\mathbf{\text{X}}$ 34'53	
retrograde	12479 Jul 05 12:51	9° $\mathbf{\text{Y}}$ 56'17		evening set	12486 Apr 04 14:05	6° $\mathbf{\text{X}}$ 56'47	
opposition	12479 Sep 17 16:29	7° $\mathbf{\text{Y}}$ 54'12	-0°42'44				
min. Earth dist.	12479 Sep 17 23:36	7° $\mathbf{\text{Y}}$ 53'26	17.49471 AU	conjunction	12486 Apr 20 16:38	7° $\mathbf{\text{X}}$ 55'49	-0°58'04
direct	12479 Dec 02 19:58	5° $\mathbf{\text{Y}}$ 49'20		minimum elong	12486 Apr 20 16:38	7° $\mathbf{\text{X}}$ 55'49	0°58'33
evening set	12480 Mar 06 22:37	9° $\mathbf{\text{Y}}$ 15'30		max. Earth dist.	12486 Apr 20 13:55	7° $\mathbf{\text{X}}$ 55'24	19.78937 AU
				morning rise	12486 May 06 16:57	8° $\mathbf{\text{X}}$ 54'31	
conjunction	12480 Mar 23 06:16	10° $\mathbf{\text{Y}}$ 16'06	-0°40'22	retrograde	12486 Aug 06 06:44	12° $\mathbf{\text{X}}$ 11'17	
minimum elong	12480 Mar 23 06:16	10° $\mathbf{\text{Y}}$ 16'06	0°40'26	opposition	12486 Oct 20 04:22	10° $\mathbf{\text{X}}$ 10'16	-1°05'37

min. Earth dist.	12486 Oct 20 06:04	10°8'10"05	17.81756 AU	conjunction	12493 May 21 10:08	8°II55'30	-1°02'05
direct	12487 Jan 04 23:09	8°8'06"44		minimum elong	12493 May 21 10:08	8°II55'30	1°02'54
evening set	12487 Apr 09 09:33	11°8'27"45		max. Earth dist.	12493 May 21 14:39	8°II56'11	20.22609 AU
				morning rise	12493 Jun 06 06:16	9°II52'20	
conjunction	12487 Apr 25 11:24	12°8'26"29	-0°59'45	retrograde	12493 Sep 05 23:11	13°II04'16	
minimum elong	12487 Apr 25 11:24	12°8'26"29	1°00'18	opposition	12493 Nov 20 15:17	11°II04'48	-1°08'32
max. Earth dist.	12487 Apr 25 10:26	12°8'26"20	19.84610 AU	min. Earth dist.	12493 Nov 20 09:50	11°II05'22	18.25813 AU
morning rise	12487 May 11 10:53	13°8'24"55		direct	12494 Feb 05 15:51	9°II03'38	
	12487 Jun 09 00:44	15°8'		evening set	12494 May 10 02:05	12°II17'46	
retrograde	12487 Aug 11 00:33	16°8'40"58					
	12487 Oct 17 02:59	15°8'		conjunction	12494 May 25 23:15	13°II14'33	-1°01'13
opposition	12487 Oct 25 00:31	14°8'40"08	-1°07'16	minimum elong	12494 May 25 23:15	13°II14'33	1°02'04
min. Earth dist.	12487 Oct 25 00:32	14°8'40"08	17.87573 AU	max. Earth dist.	12494 May 26 04:41	13°II15'22	20.28941 AU
direct	12488 Jan 09 21:32	12°8'36"54		morning rise	12494 Jun 10 18:58	14°II11'09	
	12488 Mar 27 15:50	15°8'		retrograde	12494 Sep 10 11:13	17°II22'25	
evening set	12488 Apr 13 04:15	15°8'56"59		opposition	12494 Nov 25 07:56	15°II23'08	-1°07'22
				min. Earth dist.	12494 Nov 25 02:58	15°II23'39	18.32071 AU
conjunction	12488 Apr 29 05:13	16°8'55"26	-1°01'05	direct	12495 Feb 10 07:53	13°II22'17	
minimum elong	12488 Apr 29 05:13	16°8'55"26	1°01'40	evening set	12495 May 14 15:00	16°II35'24	
max. Earth dist.	12488 Apr 29 05:00	16°8'55"24	19.90572 AU				
morning rise	12488 May 15 04:04	17°8'53"35		conjunction	12495 May 30 11:38	17°II31'56	-1°00'01
retrograde	12488 Aug 14 16:43	21°8'08"56		minimum elong	12495 May 30 11:37	17°II31'56	1°00'52
opposition	12488 Oct 28 20:25	19°8'08"20	-1°08'31	max. Earth dist.	12495 May 30 17:08	17°II32'45	20.35111 AU
min. Earth dist.	12488 Oct 28 19:57	19°8'08"23	17.93675 AU	morning rise	12495 Jun 15 07:04	18°II28'18	
direct	12489 Jan 13 17:26	17°8'05"25		retrograde	12495 Sep 15 01:37	21°II38'54	
evening set	12489 Apr 17 21:49	20°8'24"33		opposition	12495 Nov 29 23:45	19°II39'47	-1°05'50
				min. Earth dist.	12495 Nov 29 17:14	19°II40'27	18.38134 AU
conjunction	12489 May 03 22:06	21°8'22"42	-1°02'01	direct	12496 Feb 15 01:31	17°II39'12	
minimum elong	12489 May 03 22:06	21°8'22"42	1°02'41	evening set	12496 May 18 03:04	20°II51'19	
max. Earth dist.	12489 May 03 23:23	21°8'22"54	19.96793 AU				
morning rise	12489 May 19 20:17	22°8'20"36		conjunction	12496 Jun 02 23:19	21°II47'36	-0°58'29
retrograde	12489 Aug 19 09:56	25°8'35"15		minimum elong	12496 Jun 02 23:19	21°II47'36	0°59'23
opposition	12489 Nov 02 15:39	23°8'34"53	-1°09'20	max. Earth dist.	12496 Jun 03 05:53	21°II48'35	20.41067 AU
min. Earth dist.	12489 Nov 02 13:21	23°8'35"08	17.99982 AU	morning rise	12496 Jun 18 18:25	22°II43'44	
direct	12490 Jan 18 14:00	21°8'32"19		retrograde	12496 Sep 18 12:21	25°II53'43	
evening set	12490 Apr 22 14:43	24°8'50"28		opposition	12496 Dec 03 15:15	23°II54'42	-1°03'57
				min. Earth dist.	12496 Dec 03 09:13	23°II55'19	18.43988 AU
conjunction	12490 May 08 14:16	25°8'48"21	-1°02'35	direct	12497 Feb 18 15:58	21°II54'24	
minimum elong	12490 May 08 14:15	25°8'48"21	1°03'16	evening set	12497 May 22 14:11	25°II05'29	
max. Earth dist.	12490 May 08 16:26	25°8'48"41	20.03176 AU				
morning rise	12490 May 24 11:52	26°8'45"58		conjunction	12497 Jun 07 10:01	26°II01'32	-0°56'39
retrograde	12490 Aug 24 01:12	29°8'59"56		minimum elong	12497 Jun 07 10:01	26°II01'32	0°57'33
opposition	12490 Nov 07 10:19	27°8'59'49	-1°09'44	max. Earth dist.	12497 Jun 07 16:39	26°II02'31	20.46823 AU
min. Earth dist.	12490 Nov 07 08:00	28°8'00"03	18.06431 AU	morning rise	12497 Jun 23 05:02	26°II57'28	
direct	12491 Jan 23 08:17	25°8'57"36			12497 Sep 06 18:02	0°☾	
evening set	12491 Apr 27 06:47	29°8'14"47		retrograde	12497 Sep 23 01:18	0°☾06'49	
	12491 May 09 20:07	0°II			12497 Oct 09 10:12	30°RII	
				opposition	12497 Dec 08 05:52	28°II07'54	-1°01'43
conjunction	12491 May 13 05:42	0°II12'23	-1°02'46	min. Earth dist.	12497 Dec 07 22:14	28°II08'41	18.49635 AU
minimum elong	12491 May 13 05:42	0°II12'23	1°03'32	direct	12498 Feb 23 08:22	26°II07'49	
max. Earth dist.	12491 May 13 08:47	0°II12'51	20.09664 AU	evening set	12498 May 27 00:33	29°II17'55	
morning rise	12491 May 29 02:46	1°II09'44			12498 Jun 07 23:25	0°☾	
retrograde	12491 Aug 28 17:46	4°II23'00					
opposition	12491 Nov 12 04:27	2°II23'07	-1°09'44	conjunction	12498 Jun 11 20:09	0°☾13'45	-0°54'31
min. Earth dist.	12491 Nov 12 00:26	2°II23'32	18.12927 AU	minimum elong	12498 Jun 11 20:09	0°☾13'45	0°55'26
direct	12492 Jan 28 03:57	0°II21'16		max. Earth dist.	12498 Jun 12 04:07	0°☾14'56	20.52369 AU
evening set	12492 Apr 30 22:02	3°II37'26		morning rise	12498 Jun 27 14:55	1°☾09'29	
				retrograde	12498 Sep 27 10:50	4°☾18'14	
conjunction	12492 May 16 20:16	4°II34'46	-1°02'36	opposition	12498 Dec 12 19:51	2°☾19'24	-0°59'11
minimum elong	12492 May 16 20:16	4°II34'46	1°03'24	min. Earth dist.	12498 Dec 12 12:38	2°☾20'08	18.55095 AU
max. Earth dist.	12492 May 17 00:17	4°II35'22	20.16154 AU	direct	12499 Feb 27 21:19	0°☾19'33	
morning rise	12492 Jun 01 16:48	5°II31'51		evening set	12499 May 31 10:16	3°☾28'42	
retrograde	12492 Sep 01 07:26	8°II44'27					
opposition	12492 Nov 15 22:16	6°II45'47	-1°09'20	conjunction	12499 Jun 16 05:30	4°☾24'19	-0°52'06
min. Earth dist.	12492 Nov 15 18:28	6°II45'11	18.19411 AU	minimum elong	12499 Jun 16 05:30	4°☾24'19	0°53'01
direct	12493 Jan 31 21:13	4°II43'18		max. Earth dist.	12499 Jun 16 13:33	4°☾25'30	20.57755 AU
evening set	12493 May 05 12:29	7°II58'27		morning rise	12499 Jul 02 00:16	5°☾19'51	

retrograde	12499 Oct 01 22:31	8°  28'04	evening set	12506 Jun 29 13:53	2°  09'58
opposition	12499 Dec 17 09:15	6°  29'19 -0°56'21			
min. Earth dist.	12499 Dec 17 00:17	6°  30'13 18.60405 AU	conjunction	12506 Jul 15 08:40	3°  04'30 -0°28'54
direct	12500 Mar 04 11:53	4°  29'42	minimum elong	12506 Jul 15 08:40	3°  04'30 0°29'44
evening set	12500 Jun 04 19:04	7°  37'57	max. Earth dist.	12506 Jul 15 21:13	3°  06'19 20.89836 AU
			morning rise	12506 Jul 31 03:58	3°  05'08
conjunction	12500 Jun 20 14:09	8°  33'22 -0°49'25	retrograde	12506 Oct 31 13:52	7°  04'54
minimum elong	12500 Jun 20 14:09	8°  33'22 0°50'20	opposition	12507 Jan 16 18:00	5°  06'55 -0°29'50
max. Earth dist.	12500 Jun 20 23:49	8°  34'47 20.62986 AU	min. Earth dist.	12507 Jan 16 06:38	5°  08'04 18.91522 AU
morning rise	12500 Jul 06 08:44	9°  28'43	direct	12507 Apr 03 12:24	3°  09'09
retrograde	12500 Oct 06 07:31	12°  36'28	evening set	12507 Jul 03 19:57	6°  01'25
opposition	12500 Dec 21 22:16	10°  37'48 -0°53'14			
min. Earth dist.	12500 Dec 21 13:25	10°  38'42 18.65567 AU	conjunction	12507 Jul 19 14:42	7°  06'52 -0°24'55
direct	12501 Mar 08 23:41	8°  38'28	minimum elong	12507 Jul 19 14:42	7°  06'52 0°25'42
evening set	12501 Jun 09 03:24	11°  45'51	max. Earth dist.	12507 Jul 20 02:17	7°  08'32 20.93076 AU
			morning rise	12507 Aug 04 10:23	8°  01'26
conjunction	12501 Jun 24 22:14	12°  41'04 -0°46'30	retrograde	12507 Nov 04 23:27	11°  07'00
minimum elong	12501 Jun 24 22:15	12°  41'04 0°47'26	opposition	12508 Jan 21 04:06	9°  09'04 -0°25'21
max. Earth dist.	12501 Jun 25 07:52	12°  42'29 20.68081 AU	min. Earth dist.	12508 Jan 20 16:10	9°  10'15 18.94522 AU
morning rise	12501 Jul 10 16:58	13°  36'17	direct	12508 Apr 06 21:16	7°  11'28
retrograde	12501 Oct 10 18:05	16°  43'34	evening set	12508 Jul 07 01:33	10°  01'42
opposition	12501 Dec 26 10:29	14°  45'01 -0°49'51			
min. Earth dist.	12501 Dec 26 00:02	14°  46'05 18.70577 AU	conjunction	12508 Jul 22 20:33	11°  08'34 -0°20'49
direct	12502 Mar 13 12:01	12°  45'57	minimum elong	12508 Jul 22 20:34	11°  08'34 0°21'35
evening set	12502 Jun 13 11:06	15°  52'32	max. Earth dist.	12508 Jul 23 09:00	11°  10'21 20.95815 AU
			morning rise	12508 Aug 07 16:24	12°  03'05
conjunction	12502 Jun 29 05:56	16°  47'36 -0°43'21		12508 Oct 20 19:51	15°  00
minimum elong	12502 Jun 29 05:57	16°  47'36 0°44'15	retrograde	12508 Nov 08 06:41	15°  08'30
max. Earth dist.	12502 Jun 29 17:02	16°  49'14 20.72989 AU		12508 Nov 27 01:33	15°  00
morning rise	12502 Jul 15 00:36	17°  42'40	opposition	12509 Jan 24 13:58	13°  10'34 -0°20'45
retrograde	12502 Oct 15 02:51	20°  49'34	min. Earth dist.	12509 Jan 24 02:46	13°  11'41 18.96997 AU
opposition	12502 Dec 30 22:26	18°  51'09 -0°46'14	direct	12509 Apr 11 05:12	11°  13'06
min. Earth dist.	12502 Dec 30 12:13	18°  52'11 18.75375 AU	evening set	12509 Jul 11 07:09	14°  15'19
direct	12503 Mar 17 22:32	16°  52'22		12509 Jul 24 07:36	15°  00
evening set	12503 Jun 17 18:23	19°  58'12			
			conjunction	12509 Jul 27 02:15	15°  09'37 -0°16'38
conjunction	12503 Jul 03 13:01	20°  53'06 -0°40'00	minimum elong	12509 Jul 27 02:15	15°  09'37 0°17'20
minimum elong	12503 Jul 03 13:02	20°  53'06 0°40'54	max. Earth dist.	12509 Jul 27 13:30	15°  11'14 20.98034 AU
max. Earth dist.	12503 Jul 03 23:49	20°  54'41 20.77675 AU	morning rise	12509 Aug 11 22:35	16°  04'06
morning rise	12503 Jul 19 07:54	21°  48'02	retrograde	12509 Nov 12 15:39	19°  09'23
retrograde	12503 Oct 19 12:28	24°  54'36	opposition	12510 Jan 28 23:16	17°  11'23 -0°16'03
opposition	12504 Jan 04 09:51	22°  56'18 -0°42'25	min. Earth dist.	12510 Jan 28 11:50	17°  12'32 18.98953 AU
min. Earth dist.	12504 Jan 03 22:19	22°  57'28 18.79926 AU	direct	12510 Apr 15 13:03	15°  14'00
direct	12504 Mar 21 09:19	20°  57'48	evening set	12510 Jul 15 12:24	18°  15'46
evening set	12504 Jun 21 01:12	24°  02'55			
			conjunction	12510 Jul 31 07:51	19°  10'02 -0°12'22
conjunction	12504 Jul 06 19:55	24°  57'42 -0°36'28	minimum elong	12510 Jul 31 07:51	19°  10'02 0°13'03
minimum elong	12504 Jul 06 19:55	24°  57'42 0°37'20	behind sun begin	12510 Jul 31 03:51	19°  09'28
max. Earth dist.	12504 Jul 07 08:02	24°  59'27 20.82077 AU	behind sun end	12510 Jul 31 11:52	19°  10'36
morning rise	12504 Jul 22 14:49	25°  52'31	max. Earth dist.	12510 Jul 31 19:52	19°  11'45 20.99726 AU
retrograde	12504 Oct 22 20:48	28°  58'46	morning rise	12510 Aug 16 04:25	20°  04'29
opposition	12505 Jan 07 21:01	27°  00'36 -0°38'23	retrograde	12510 Nov 16 22:38	23°  09'39
min. Earth dist.	12505 Jan 07 09:52	27°  01'43 18.84170 AU	opposition	12511 Feb 02 08:26	21°  11'35 -0°11'18
direct	12505 Mar 25 18:33	25°  02'23	min. Earth dist.	12511 Feb 01 21:38	21°  12'40 19.00391 AU
evening set	12505 Jun 25 07:40	28°  06'49	direct	12511 Apr 19 20:59	19°  14'14
			evening set	12511 Jul 19 17:26	22°  15'36
conjunction	12505 Jul 11 02:18	29°  01'28 -0°32'46			
minimum elong	12505 Jul 11 02:19	29°  01'28 0°33'37	conjunction	12511 Aug 04 13:00	23°  09'49 -0°08'03
max. Earth dist.	12505 Jul 11 13:50	29°  03'08 20.86157 AU	minimum elong	12511 Aug 04 13:00	23°  09'49 0°08'41
morning rise	12505 Jul 26 21:32	29°  56'11	behind sun begin	12511 Aug 04 07:17	23°  09'01
	12505 Jul 28 00:29	0°  00	behind sun end	12511 Aug 04 18:43	23°  10'37
retrograde	12505 Oct 27 06:20	3°  02'11	max. Earth dist.	12511 Aug 05 00:00	23°  11'23 21.00937 AU
opposition	12506 Jan 12 07:41	1°  04'07 -0°34'11	morning rise	12511 Aug 20 10:06	24°  04'15
min. Earth dist.	12506 Jan 11 19:38	1°  05'19 18.88061 AU	retrograde	12511 Nov 21 07:11	27°  09'22
	12506 Feb 09 11:48	30°  00	opposition	12512 Feb 06 17:17	25°  11'11 -0°06'29
direct	12506 Mar 30 04:11	29°  06'08	min. Earth dist.	12512 Feb 06 06:09	25°  12'18 19.01385 AU
	12506 May 15 22:41	0°  00	direct	12512 Apr 23 03:47	23°  13'52

evening set	12512 Jul 22 22:18	26° Ω 14'53		minimum elong	12517 Aug 27 21:02	17° \mathbb{N} 03'47	0°17'41
				max. Earth dist.	12517 Aug 28 07:29	17° \mathbb{N} 05'16	21.00182 AU
conjunction	12512 Aug 07 18:16	27° Ω 09'05	-0°03'43	morning rise	12517 Sep 12 21:02	17° \mathbb{N} 58'29	
minimum elong	12512 Aug 07 18:16	27° Ω 09'05	0°04'18	retrograde	12517 Dec 15 08:00	21° \mathbb{N} 04'29	
behind sun begin	12512 Aug 07 11:48	27° Ω 08'11		opposition	12518 Mar 02 18:46	19° \mathbb{N} 05'47	0°22'10
behind sun end	12512 Aug 08 00:45	27° Ω 10'00		min. Earth dist.	12518 Mar 02 08:24	19° \mathbb{N} 06'49	18.99536 AU
max. Earth dist.	12512 Aug 08 06:17	27° Ω 10'48	21.01717 AU	direct	12518 May 17 18:00	17° \mathbb{N} 08'36	
morning rise	12512 Aug 23 15:39	28° Ω 03'32		evening set	12518 Aug 16 04:53	20° \mathbb{N} 09'10	
	12512 Oct 01 19:26	0° \mathbb{N}					
retrograde	12512 Nov 24 13:57	1° \mathbb{N} 08'38		conjunction	12518 Sep 01 03:13	21° \mathbb{N} 03'40	0°22'08
	12513 Jan 19 17:27	30° \mathbb{R} Ω		minimum elong	12518 Sep 01 03:13	21° \mathbb{N} 03'40	0°21'55
opposition	12513 Feb 10 01:51	29° Ω 10'21	-0°01'39	max. Earth dist.	12518 Sep 01 14:22	21° \mathbb{N} 05'15	20.98768 AU
min. Earth dist.	12513 Feb 09 15:03	29° Ω 11'25	19.01971 AU	morning rise	12518 Sep 17 03:36	21° \mathbb{N} 58'28	
direct	12513 Apr 27 11:21	27° Ω 13'02		retrograde	12518 Dec 19 16:37	25° \mathbb{N} 04'48	
asc. node	12513 Jun 09 21:08	27° Ω 59'41		opposition	12519 Mar 07 03:04	23° \mathbb{N} 06'02	0°26'43
	12513 Jul 22 23:56	0° \mathbb{N}		min. Earth dist.	12519 Mar 06 17:12	23° \mathbb{N} 07'02	18.97911 AU
evening set	12513 Jul 27 03:10	0° \mathbb{N} 13'47		direct	12519 May 21 23:47	21° \mathbb{N} 08'53	
				evening set	12519 Aug 20 10:50	24° \mathbb{N} 09'37	
conjunction	12513 Aug 11 23:19	1° \mathbb{N} 08'00	0°00'44	conjunction	12519 Sep 05 09:30	25° \mathbb{N} 04'12	0°26'11
minimum elong	12513 Aug 11 23:20	1° \mathbb{N} 08'00	0°00'13	minimum elong	12519 Sep 05 09:30	25° \mathbb{N} 04'12	0°26'01
behind sun begin	12513 Aug 11 16:50	1° \mathbb{N} 07'05		max. Earth dist.	12519 Sep 05 19:09	25° \mathbb{N} 05'35	20.96938 AU
behind sun end	12513 Aug 12 05:51	1° \mathbb{N} 08'54		morning rise	12519 Sep 21 10:36	25° \mathbb{N} 59'08	
max. Earth dist.	12513 Aug 12 10:20	1° \mathbb{N} 09'34	21.02123 AU	retrograde	12519 Dec 24 02:39	29° \mathbb{N} 05'51	
morning rise	12513 Aug 27 21:20	2° \mathbb{N} 02'27		opposition	12520 Mar 10 11:34	27° \mathbb{N} 07'01	0°31'08
retrograde	12513 Nov 28 22:46	5° \mathbb{N} 07'38		min. Earth dist.	12520 Mar 10 02:17	27° \mathbb{N} 07'57	18.95862 AU
opposition	12514 Feb 14 10:12	3° \mathbb{N} 09'13	0°03'12	direct	12520 May 25 06:11	25° \mathbb{N} 09'50	
min. Earth dist.	12514 Feb 13 23:07	3° \mathbb{N} 10'20	19.02198 AU	evening set	12520 Aug 23 17:13	28° \mathbb{N} 10'48	
direct	12514 May 01 17:26	1° \mathbb{N} 11'56					
evening set	12514 Jul 31 07:58	4° \mathbb{N} 12'30		conjunction	12520 Sep 08 16:33	29° \mathbb{N} 05'31	0°30'07
				minimum elong	12520 Sep 08 16:32	29° \mathbb{N} 05'31	0°30'01
conjunction	12514 Aug 16 04:37	5° \mathbb{N} 06'44	0°05'10	max. Earth dist.	12520 Sep 09 02:36	29° \mathbb{N} 06'57	20.94645 AU
minimum elong	12514 Aug 16 04:36	5° \mathbb{N} 06'44	0°04'42	morning rise	12520 Sep 24 18:03	0° Ω 00'34	
behind sun begin	12514 Aug 15 22:10	5° \mathbb{N} 05'50			12520 Sep 24 13:59	0° Ω	
behind sun end	12514 Aug 16 11:03	5° \mathbb{N} 07'38		retrograde	12520 Dec 27 12:26	3° Ω 07'43	
max. Earth dist.	12514 Aug 16 16:32	5° \mathbb{N} 08'26	21.02160 AU	opposition	12521 Mar 14 20:04	1° Ω 08'45	0°35'26
morning rise	12514 Sep 01 02:53	6° \mathbb{N} 01'13		min. Earth dist.	12521 Mar 14 11:29	1° Ω 09'37	18.93325 AU
retrograde	12514 Dec 03 05:34	9° \mathbb{N} 06'30			12521 Apr 14 02:58	30° \mathbb{R} \mathbb{N}	
opposition	12515 Feb 18 18:22	7° \mathbb{N} 08'01	0°08'01	direct	12521 May 29 12:56	29° \mathbb{N} 11'32	
min. Earth dist.	12515 Feb 18 07:33	7° \mathbb{N} 09'06	19.02058 AU		12521 Jul 12 14:09	0° Ω	
direct	12515 May 06 00:08	5° \mathbb{N} 10'46		evening set	12521 Aug 28 00:12	2° Ω 12'47	
evening set	12515 Aug 04 12:57	8° \mathbb{N} 11'13					
conjunction	12515 Aug 20 09:50	9° \mathbb{N} 05'29	0°09'29	conjunction	12521 Sep 12 23:55	3° Ω 07'37	0°33'55
minimum elong	12515 Aug 20 09:49	9° \mathbb{N} 05'29	0°09'04	minimum elong	12521 Sep 12 23:55	3° Ω 07'37	0°33'53
behind sun begin	12515 Aug 20 04:12	9° \mathbb{N} 04'42		max. Earth dist.	12521 Sep 13 07:59	3° Ω 08'47	20.91861 AU
behind sun end	12515 Aug 20 15:27	9° \mathbb{N} 06'16		morning rise	12521 Sep 29 02:11	4° Ω 02'50	
max. Earth dist.	12515 Aug 20 20:40	9° \mathbb{N} 07'01	21.01858 AU	retrograde	12521 Dec 31 22:29	7° Ω 10'25	
morning rise	12515 Sep 05 08:45	10° \mathbb{N} 00'02		opposition	12522 Mar 19 04:51	5° Ω 11'18	0°39'34
retrograde	12515 Dec 07 14:51	13° \mathbb{N} 05'30		min. Earth dist.	12522 Mar 18 21:14	5° Ω 12'04	18.90290 AU
opposition	12516 Feb 23 02:33	11° \mathbb{N} 06'56	0°12'48	direct	12522 Jun 02 19:28	3° Ω 13'58	
min. Earth dist.	12516 Feb 22 15:35	11° \mathbb{N} 08'02	19.01587 AU	evening set	12522 Sep 01 07:24	6° Ω 15'32	
direct	12516 May 09 06:05	9° \mathbb{N} 09'42					
evening set	12516 Aug 07 17:53	12° \mathbb{N} 10'07		conjunction	12522 Sep 17 07:48	7° Ω 10'32	0°37'34
				minimum elong	12522 Sep 17 07:48	7° Ω 10'32	0°37'35
conjunction	12516 Aug 23 15:20	13° \mathbb{N} 04'26	0°13'46	max. Earth dist.	12522 Sep 17 16:03	7° Ω 11'43	20.88562 AU
minimum elong	12516 Aug 23 15:20	13° \mathbb{N} 04'26	0°13'25	morning rise	12522 Oct 03 10:29	8° Ω 05'53	
behind sun begin	12516 Aug 23 11:33	13° \mathbb{N} 03'55		retrograde	12523 Jan 05 08:59	11° Ω 13'55	
behind sun end	12516 Aug 23 19:06	13° \mathbb{N} 04'58		opposition	12523 Mar 23 13:45	9° Ω 14'38	0°43'31
max. Earth dist.	12516 Aug 24 03:05	13° \mathbb{N} 06'07	21.01202 AU	min. Earth dist.	12523 Mar 23 06:45	9° Ω 15'20	18.86741 AU
morning rise	12516 Sep 08 14:38	13° \mathbb{N} 59'04		direct	12523 Jun 07 03:35	7° Ω 17'08	
retrograde	12516 Dec 10 22:24	17° \mathbb{N} 04'46		evening set	12523 Sep 05 15:11	10° Ω 19'04	
opposition	12517 Feb 26 10:43	15° \mathbb{N} 06'08	0°17'31				
min. Earth dist.	12517 Feb 26 00:06	15° \mathbb{N} 07'12	19.00744 AU	conjunction	12523 Sep 21 16:01	11° Ω 14'13	0°41'03
direct	12517 May 13 11:54	13° \mathbb{N} 08'57		minimum elong	12523 Sep 21 16:01	11° Ω 14'13	0°41'09
evening set	12517 Aug 11 23:17	16° \mathbb{N} 09'23		max. Earth dist.	12523 Sep 21 22:18	11° Ω 15'07	20.84794 AU
				morning rise	12523 Oct 07 19:30	12° Ω 09'45	
conjunction	12517 Aug 27 21:02	17° \mathbb{N} 03'47	0°18'00	retrograde	12524 Jan 09 18:52	15° Ω 18'15	

opposition	12524 Mar 26 22:52	13° <u>♄</u> 18'44	0°47'17	conjunction	12530 Oct 20 17:25	10° <u>♄</u> 07'25	0°58'56
min. Earth dist.	12524 Mar 26 16:53	13° <u>♄</u> 19'20	18.82762 AU	minimum elong	12530 Oct 20 17:24	10° <u>♄</u> 07'25	0°59'28
direct	12524 Jun 10 10:26	11° <u>♄</u> 21'01		max. Earth dist.	12530 Oct 20 20:12	10° <u>♄</u> 07'50	20.50169 AU
evening set	12524 Sep 08 23:11	14° <u>♄</u> 23'22		morning rise	12530 Nov 06 01:04	11° <u>♄</u> 04'25	
				retrograde	12531 Feb 08 06:33	14° <u>♄</u> 17'02	
conjunction	12524 Sep 25 00:49	15° <u>♄</u> 18'41	0°44'20	opposition	12531 Apr 25 21:48	12° <u>♄</u> 16'00	1°06'13
minimum elong	12524 Sep 25 00:48	15° <u>♄</u> 18'41	0°44'29	min. Earth dist.	12531 Apr 25 19:26	12° <u>♄</u> 16'15	18.47393 AU
max. Earth dist.	12524 Sep 25 07:26	15° <u>♄</u> 19'39	20.80610 AU	direct	12531 Jul 10 00:43	10° <u>♄</u> 16'39	
morning rise	12524 Oct 11 04:46	16° <u>♄</u> 14'24		evening set	12531 Oct 09 00:45	13° <u>♄</u> 23'31	
retrograde	12525 Jan 13 05:43	19° <u>♄</u> 23'23					
opposition	12525 Mar 31 08:05	17° <u>♄</u> 23'38	0°50'49	conjunction	12531 Oct 25 06:42	14° <u>♄</u> 20'25	1°00'22
min. Earth dist.	12525 Mar 31 02:29	17° <u>♄</u> 24'12	18.78392 AU	minimum elong	12531 Oct 25 06:42	14° <u>♄</u> 20'25	1°00'56
direct	12525 Jun 14 19:25	15° <u>♄</u> 25'42		max. Earth dist.	12531 Oct 25 07:39	14° <u>♄</u> 20'33	20.44557 AU
evening set	12525 Sep 13 07:56	18° <u>♄</u> 28'30			12531 Nov 05 12:49	15° <u>♄</u>	
				morning rise	12531 Nov 10 15:08	15° <u>♄</u> 17'40	
conjunction	12525 Sep 29 09:59	19° <u>♄</u> 24'01	0°47'24	retrograde	12532 Feb 12 20:53	18° <u>♄</u> 31'00	
minimum elong	12525 Sep 29 09:59	19° <u>♄</u> 24'01	0°47'38	opposition	12532 Apr 29 09:39	16° <u>♄</u> 29'49	1°07'39
max. Earth dist.	12525 Sep 29 14:46	19° <u>♄</u> 24'43	20.76080 AU	min. Earth dist.	12532 Apr 29 08:48	16° <u>♄</u> 29'54	18.41725 AU
morning rise	12525 Oct 15 14:43	20° <u>♄</u> 19'55			12532 Jun 09 00:05	15° <u>♄</u>	
retrograde	12526 Jan 17 16:13	23° <u>♄</u> 29'26		direct	12532 Jul 13 10:08	14° <u>♄</u> 30'14	
opposition	12526 Apr 04 17:27	21° <u>♄</u> 29'25	0°54'06		12532 Aug 16 05:20	15° <u>♄</u>	
min. Earth dist.	12526 Apr 04 12:54	21° <u>♄</u> 29'53	18.73721 AU	evening set	12532 Oct 12 14:14	17° <u>♄</u> 38'00	
direct	12526 Jun 19 02:41	19° <u>♄</u> 31'14					
evening set	12526 Sep 17 17:02	22° <u>♄</u> 34'35		conjunction	12532 Oct 28 21:03	18° <u>♄</u> 35'09	1°01'29
				minimum elong	12532 Oct 28 21:03	18° <u>♄</u> 35'09	1°02'08
conjunction	12526 Oct 03 19:52	23° <u>♄</u> 30'17	0°50'14	max. Earth dist.	12532 Oct 28 22:13	18° <u>♄</u> 35'20	20.38819 AU
minimum elong	12526 Oct 03 19:51	23° <u>♄</u> 30'17	0°50'31	morning rise	12532 Nov 14 05:56	19° <u>♄</u> 32'40	
max. Earth dist.	12526 Oct 04 01:08	23° <u>♄</u> 31'03	20.71271 AU	retrograde	12533 Feb 16 12:56	22° <u>♄</u> 46'43	
morning rise	12526 Oct 20 01:02	24° <u>♄</u> 26'23		opposition	12533 May 03 21:57	20° <u>♄</u> 45'24	1°08'44
retrograde	12527 Jan 22 03:24	27° <u>♄</u> 36'27		min. Earth dist.	12533 May 03 21:16	20° <u>♄</u> 45'29	18.35907 AU
opposition	12527 Apr 09 03:11	25° <u>♄</u> 36'12	0°57'07	direct	12533 Jul 17 22:10	18° <u>♄</u> 45'36	
min. Earth dist.	12527 Apr 08 22:42	25° <u>♄</u> 36'40	18.68792 AU	evening set	12533 Oct 17 04:53	21° <u>♄</u> 54'17	
direct	12527 Jun 23 12:02	23° <u>♄</u> 37'48					
evening set	12527 Sep 22 02:44	26° <u>♄</u> 41'42		conjunction	12533 Nov 02 12:10	22° <u>♄</u> 51'43	1°02'17
				minimum elong	12533 Nov 02 12:10	22° <u>♄</u> 51'43	1°02'58
conjunction	12527 Oct 08 06:02	27° <u>♄</u> 37'38	0°52'49	max. Earth dist.	12533 Nov 02 11:12	22° <u>♄</u> 51'35	20.32917 AU
minimum elong	12527 Oct 08 06:02	27° <u>♄</u> 37'38	0°53'10	morning rise	12533 Nov 18 21:44	23° <u>♄</u> 49'30	
max. Earth dist.	12527 Oct 08 09:37	27° <u>♄</u> 38'09	20.66241 AU	retrograde	12534 Feb 21 04:21	27° <u>♄</u> 04'17	
morning rise	12527 Oct 24 12:01	28° <u>♄</u> 33'56		opposition	12534 May 08 10:58	25° <u>♄</u> 02'50	1°09'27
	12527 Nov 20 14:29	0° <u>♄</u>		min. Earth dist.	12534 May 08 12:08	25° <u>♄</u> 02'43	18.29927 AU
retrograde	12528 Jan 26 15:17	1° <u>♄</u> 44'37		direct	12534 Jul 22 09:01	23° <u>♄</u> 02'46	
	12528 Apr 06 02:39	30° <u>♄</u>		evening set	12534 Oct 21 20:15	26° <u>♄</u> 12'24	
opposition	12528 Apr 12 13:19	29° <u>♄</u> 44'07	0°59'52				
min. Earth dist.	12528 Apr 12 09:50	29° <u>♄</u> 44'29	18.63673 AU	conjunction	12534 Nov 07 04:21	27° <u>♄</u> 10'07	1°02'44
direct	12528 Jun 26 19:55	27° <u>♄</u> 45'27		minimum elong	12534 Nov 07 04:21	27° <u>♄</u> 10'07	1°03'27
	12528 Sep 10 09:07	0° <u>♄</u>		max. Earth dist.	12534 Nov 07 03:13	27° <u>♄</u> 09'57	20.26848 AU
evening set	12528 Sep 25 13:05	0° <u>♄</u> 50'01		morning rise	12534 Nov 23 14:21	28° <u>♄</u> 08'10	
					12534 Dec 29 05:51	0° <u>♄</u>	
conjunction	12528 Oct 11 17:14	1° <u>♄</u> 46'10	0°55'09	retrograde	12535 Feb 25 22:00	1° <u>♄</u> 23'40	
minimum elong	12528 Oct 11 17:13	1° <u>♄</u> 46'10	0°55'33		12535 Apr 27 17:28	30° <u>♄</u>	
max. Earth dist.	12528 Oct 11 21:19	1° <u>♄</u> 46'46	20.61027 AU	opposition	12535 May 13 00:31	29° <u>♄</u> 22'03	1°09'47
morning rise	12528 Oct 27 23:40	2° <u>♄</u> 42'42		min. Earth dist.	12535 May 13 01:47	29° <u>♄</u> 21'55	18.23766 AU
retrograde	12529 Jan 30 03:28	5° <u>♄</u> 53'59		direct	12535 Jul 26 22:33	27° <u>♄</u> 21'43	
opposition	12529 Apr 16 23:35	3° <u>♄</u> 53'18	1°02'18		12535 Oct 17 01:38	0° <u>♄</u>	
min. Earth dist.	12529 Apr 16 20:08	3° <u>♄</u> 53'39	18.58377 AU	evening set	12535 Oct 26 12:34	0° <u>♄</u> 32'18	
direct	12529 Jul 01 05:33	1° <u>♄</u> 54'23					
evening set	12529 Sep 30 00:18	4° <u>♄</u> 59'40		conjunction	12535 Nov 11 21:12	1° <u>♄</u> 30'18	1°02'50
				minimum elong	12535 Nov 11 21:12	1° <u>♄</u> 30'18	1°03'36
conjunction	12529 Oct 16 04:56	5° <u>♄</u> 56'03	0°57'11	max. Earth dist.	12535 Nov 11 17:54	1° <u>♄</u> 29'49	20.20605 AU
minimum elong	12529 Oct 16 04:55	5° <u>♄</u> 56'03	0°57'38	morning rise	12535 Nov 28 07:53	2° <u>♄</u> 28'37	
max. Earth dist.	12529 Oct 16 07:12	5° <u>♄</u> 56'23	20.55662 AU	retrograde	12536 Mar 01 14:37	5° <u>♄</u> 44'50	
morning rise	12529 Nov 01 12:09	6° <u>♄</u> 52'49		opposition	12536 May 16 14:47	3° <u>♄</u> 43'02	1°09'44
retrograde	12530 Feb 03 16:33	10° <u>♄</u> 04'45		min. Earth dist.	12536 May 16 18:00	3° <u>♄</u> 42'41	18.17453 AU
opposition	12530 Apr 21 10:29	8° <u>♄</u> 03'52	1°04'25	direct	12536 Jul 30 11:07	1° <u>♄</u> 42'21	
min. Earth dist.	12530 Apr 21 08:12	8° <u>♄</u> 04'07	18.52951 AU	evening set	12536 Oct 30 05:40	4° <u>♄</u> 53'56	
direct	12530 Jul 05 14:08	6° <u>♄</u> 04'44					
evening set	12530 Oct 04 11:58	9° <u>♄</u> 10'47		conjunction	12536 Nov 15 15:08	5° <u>♄</u> 52'13	1°02'34

minimum elong	12536 Nov 15 15:08	5°♏52'13	1°03'22	opposition	12543 Jun 17 08:46	4°♏56'00	0°57'52
max. Earth dist.	12536 Nov 15 11:29	5°♏51'40	20.14236 AU	min. Earth dist.	12543 Jun 17 15:33	4°♏55'16	17.74609 AU
morning rise	12536 Dec 02 02:14	6°♏50'48		direct	12543 Aug 31 04:55	2°♏52'56	
retrograde	12537 Mar 06 09:19	10°♏07'40		evening set	12543 Dec 02 03:38	6°♏11'35	
opposition	12537 May 21 05:15	8°♏05'41	1°09'16				
min. Earth dist.	12537 May 21 08:30	8°♏05'20	18.11035 AU	conjunction	12543 Dec 18 16:54	7°♏11'48	0°50'29
direct	12537 Aug 04 01:47	6°♏04'39		minimum elong	12543 Dec 18 16:54	7°♏11'48	0°51'25
evening set	12537 Nov 03 23:42	9°♏17'14		max. Earth dist.	12543 Dec 18 08:02	7°♏10'27	19.71974 AU
				morning rise	12544 Jan 04 06:39	8°♏12'08	
conjunction	12537 Nov 20 09:40	10°♏15'48	1°01'57	retrograde	12544 Apr 07 04:23	11°♏33'14	
minimum elong	12537 Nov 20 09:39	10°♏15'48	1°02'48	opposition	12544 Jun 21 03:32	9°♏30'08	0°54'35
max. Earth dist.	12537 Nov 20 04:11	10°♏14'59	20.07795 AU	min. Earth dist.	12544 Jun 21 11:31	9°♏29'16	17.69466 AU
morning rise	12537 Dec 06 21:20	11°♏14'39		direct	12544 Sep 03 23:28	7°♏26'49	
retrograde	12538 Mar 11 03:18	14°♏32'12		evening set	12544 Dec 06 03:09	10°♏46'28	
opposition	12538 May 25 20:33	12°♏29'59	1°08'24				
min. Earth dist.	12538 May 26 01:38	12°♏29'27	18.04597 AU	conjunction	12544 Dec 22 16:44	11°♏46'56	0°47'20
direct	12538 Aug 08 15:46	10°♏28'36		minimum elong	12544 Dec 22 16:44	11°♏46'56	0°48'16
evening set	12538 Nov 08 18:12	13°♏42'10		max. Earth dist.	12544 Dec 22 06:59	11°♏45'26	19.67022 AU
				morning rise	12545 Jan 08 06:45	12°♏47'28	
conjunction	12538 Nov 25 04:53	14°♏41'02	1°00'57	retrograde	12545 Apr 12 02:55	16°♏09'05	
minimum elong	12538 Nov 25 04:53	14°♏41'02	1°01'49	opposition	12545 Jun 25 22:40	14°♏05'56	0°50'55
max. Earth dist.	12538 Nov 24 23:13	14°♏40'11	20.01381 AU	min. Earth dist.	12545 Jun 26 06:18	14°♏05'07	17.64690 AU
morning rise	12538 Dec 11 16:59	15°♏40'09		direct	12545 Sep 08 20:31	12°♏02'24	
retrograde	12539 Mar 15 23:02	18°♏58'21		evening set	12545 Dec 11 03:23	15°♏23'02	
opposition	12539 May 30 12:15	16°♏55'56	1°07'07				
min. Earth dist.	12539 May 30 17:01	16°♏55'26	17.98214 AU	conjunction	12545 Dec 27 17:21	16°♏23'43	0°43'53
direct	12539 Aug 13 07:45	14°♏54'11		minimum elong	12545 Dec 27 17:22	16°♏23'43	0°44'48
evening set	12539 Nov 13 13:47	18°♏08'46		max. Earth dist.	12545 Dec 27 07:46	16°♏22'15	19.62419 AU
				morning rise	12546 Jan 13 07:22	17°♏24'27	
conjunction	12539 Nov 30 00:59	19°♏07'55	0°59'36	retrograde	12546 Apr 17 00:56	20°♏46'33	
minimum elong	12539 Nov 30 00:59	19°♏07'55	1°00'29	opposition	12546 Jun 30 18:40	18°♏43'25	0°46'54
max. Earth dist.	12539 Nov 29 18:00	19°♏06'52	19.95048 AU	min. Earth dist.	12546 Jul 01 03:25	18°♏42'28	17.60259 AU
morning rise	12539 Dec 16 13:33	20°♏07'18		direct	12546 Sep 13 16:19	16°♏39'40	
retrograde	12540 Mar 19 17:59	23°♏26'06		evening set	12546 Dec 16 04:18	20°♏01'14	
opposition	12540 Jun 03 04:31	21°♏23'30	1°05'25				
min. Earth dist.	12540 Jun 03 10:58	21°♏22'49	17.91960 AU	conjunction	12547 Jan 01 18:26	21°♏02'07	0°40'07
direct	12540 Aug 16 23:02	19°♏21'24		minimum elong	12547 Jan 01 18:26	21°♏02'07	0°41'00
evening set	12540 Nov 17 10:04	22°♏37'00		max. Earth dist.	12547 Jan 01 07:32	21°♏00'27	19.58160 AU
				morning rise	12547 Jan 18 08:39	22°♏03'02	
conjunction	12540 Dec 03 21:54	23°♏36'25	0°57'51	retrograde	12547 Apr 22 00:55	25°♏25'33	
minimum elong	12540 Dec 03 21:54	23°♏36'25	0°58'46	opposition	12547 Jul 05 15:08	23°♏22'24	0°42'34
max. Earth dist.	12540 Dec 03 14:33	23°♏35'19	19.88888 AU	min. Earth dist.	12547 Jul 05 23:55	23°♏21'27	17.56157 AU
morning rise	12540 Dec 20 10:51	24°♏36'04		direct	12547 Sep 18 14:34	21°♏18'27	
retrograde	12541 Mar 24 14:40	27°♏55'29		evening set	12547 Dec 21 06:01	24°♏40'55	
opposition	12541 Jun 07 21:18	25°♏52'42	1°03'18				
min. Earth dist.	12541 Jun 08 03:17	25°♏52'03	17.85900 AU	conjunction	12548 Jan 06 20:28	25°♏41'59	0°36'04
direct	12541 Aug 21 16:39	23°♏50'15		minimum elong	12548 Jan 06 20:28	25°♏41'59	0°36'57
evening set	12541 Nov 22 07:09	27°♏06'52		max. Earth dist.	12548 Jan 06 09:51	25°♏40'21	19.54201 AU
				morning rise	12548 Jan 23 10:30	26°♏43'03	
conjunction	12541 Dec 08 19:25	28°♏06'34	0°55'45		12548 Apr 11 07:42	0°♏	
minimum elong	12541 Dec 08 19:25	28°♏06'34	0°56'40	retrograde	12548 Apr 26 00:23	0°♏05'55	
max. Earth dist.	12541 Dec 08 11:20	28°♏05'20	19.82939 AU		12548 May 10 20:10	30°♏♏	
morning rise	12541 Dec 25 08:39	29°♏06'27		opposition	12548 Jul 09 12:11	28°♏02'46	0°37'55
	12542 Jan 09 22:23	0°♏		min. Earth dist.	12548 Jul 09 21:57	28°♏01'43	17.52345 AU
retrograde	12542 Mar 29 10:15	2°♏26'27		direct	12548 Sep 22 12:06	25°♏58'35	
opposition	12542 Jun 12 14:50	0°♏23'31	1°00'47	evening set	12548 Dec 25 08:27	29°♏21'53	
min. Earth dist.	12542 Jun 12 22:10	0°♏22'44	17.80093 AU		12549 Jan 04 17:35	0°♏	
	12542 Jun 21 18:50	30°♏♏					
direct	12542 Aug 26 09:41	28°♏20'46		conjunction	12549 Jan 10 22:52	0°♏23'07	0°31'47
	12542 Oct 28 06:36	0°♏		minimum elong	12549 Jan 10 22:52	0°♏23'07	0°32'37
evening set	12542 Nov 27 04:59	1°♏38'23		max. Earth dist.	12549 Jan 10 10:32	0°♏21'13	19.50549 AU
				morning rise	12549 Jan 27 12:58	1°♏24'19	
conjunction	12542 Dec 13 17:46	2°♏38'21	0°53'17	retrograde	12549 May 01 00:48	4°♏47'28	
minimum elong	12542 Dec 13 17:46	2°♏38'21	0°54'14	opposition	12549 Jul 14 09:48	2°♏44'18	0°33'00
max. Earth dist.	12542 Dec 13 09:09	2°♏37'03	19.77294 AU	min. Earth dist.	12549 Jul 14 19:49	2°♏43'12	17.48852 AU
morning rise	12542 Dec 30 07:20	3°♏38'28		direct	12549 Sep 27 11:03	0°♏39'53	
retrograde	12543 Apr 03 07:36	6°♏59'02		evening set	12549 Dec 30 11:02	4°♏03'56	

conjunction	12550 Jan 16 01:39	5°05'19	0°27'15	min. Earth dist.	12555 Aug 12 13:37	1°06'20	17.36479 AU
minimum elong	12550 Jan 16 01:39	5°05'19	0°28'04		12555 Sep 08 07:58	30°08'00	
max. Earth dist.	12550 Jan 15 13:58	5°03'30	19.47213 AU	direct	12555 Oct 26 13:14	29°02'03	
morning rise	12550 Feb 01 15:24	6°06'36			12555 Dec 12 17:14	0°00'00	
retrograde	12550 May 06 01:17	9°29'59		evening set	12556 Jan 29 08:32	2°28'59	
opposition	12550 Jul 19 07:54	7°26'47	0°27'51				
min. Earth dist.	12550 Jul 19 18:19	7°25'39	17.45684 AU	conjunction	12556 Feb 14 21:48	3°30'39	-0°02'58
direct	12550 Oct 02 10:22	5°22'10		minimum elong	12556 Feb 14 21:49	3°30'39	0°02'29
evening set	12551 Jan 04 14:17	8°46'53		behind sun begin	12556 Feb 14 15:05	3°29'38	
				behind sun end	12556 Feb 15 04:32	3°31'41	
conjunction	12551 Jan 21 04:43	9°48'22	0°22'32	max. Earth dist.	12556 Feb 14 09:51	3°28'48	19.36288 AU
minimum elong	12551 Jan 21 04:43	9°48'22	0°23'18	morning rise	12556 Mar 02 09:13	4°32'04	
max. Earth dist.	12551 Jan 20 15:29	9°46'19	19.44237 AU	retrograde	12556 Jun 03 02:28	7°55'30	
morning rise	12551 Feb 06 18:25	10°49'46		opposition	12556 Aug 16 02:06	5°52'19	-0°06'03
retrograde	12551 May 11 01:16	14°13'18		min. Earth dist.	12556 Aug 16 11:50	5°51'15	17.36262 AU
opposition	12551 Jul 24 06:14	12°10'03	0°22'29	direct	12556 Oct 30 16:29	3°46'48	
min. Earth dist.	12551 Jul 24 17:06	12°08'52	17.42909 AU	evening set	12557 Feb 02 12:16	7°13'56	
direct	12551 Oct 07 09:45	10°05'12					
evening set	12552 Jan 09 17:40	13°30'31		conjunction	12557 Feb 19 01:00	8°15'34	-0°08'08
				minimum elong	12557 Feb 19 01:00	8°15'34	0°07'43
conjunction	12552 Jan 26 08:12	14°32'07	0°17'38	behind sun begin	12557 Feb 18 18:55	8°14'38	
minimum elong	12552 Jan 26 08:12	14°32'07	0°18'22	behind sun end	12557 Feb 19 07:04	8°16'29	
max. Earth dist.	12552 Jan 25 19:49	14°30'12	19.41664 AU	max. Earth dist.	12557 Feb 18 13:14	8°13'44	19.36377 AU
	12552 Feb 02 19:14	15°00'00		morning rise	12557 Mar 07 11:46	9°16'55	
morning rise	12552 Feb 11 21:28	15°33'34		retrograde	12557 Jun 08 00:39	12°40'11	
retrograde	12552 May 15 02:26	18°57'11		opposition	12557 Aug 21 01:59	10°37'06	-0°11'48
opposition	12552 Jul 28 04:57	16°53'55	0°16'57	min. Earth dist.	12557 Aug 21 12:04	10°36'00	17.36669 AU
min. Earth dist.	12552 Jul 28 15:44	16°52'45	17.40543 AU	direct	12557 Nov 04 17:04	8°31'36	
	12552 Sep 21 00:51	15°00'00		evening set	12558 Feb 07 15:37	11°58'53	
direct	12552 Oct 11 10:47	14°48'53					
	12552 Oct 31 17:15	15°00'00		conjunction	12558 Feb 24 03:50	13°00'26	-0°13'14
evening set	12553 Jan 13 21:24	18°14'43		minimum elong	12558 Feb 24 03:50	13°00'26	0°12'52
				behind sun begin	12558 Feb 23 23:44	12°59'48	
conjunction	12553 Jan 30 11:34	19°16'22	0°12'37	behind sun end	12558 Feb 24 07:55	13°01'03	
minimum elong	12553 Jan 30 11:34	19°16'22	0°13'18	max. Earth dist.	12558 Feb 23 16:48	12°58'43	19.37095 AU
behind sun begin	12553 Jan 30 07:46	19°15'47		morning rise	12558 Mar 12 13:58	14°01'41	
behind sun end	12553 Jan 30 15:22	19°16'57		retrograde	12558 Jun 13 01:42	17°24'46	
max. Earth dist.	12553 Jan 29 22:03	19°14'16	19.39530 AU	opposition	12558 Aug 26 01:46	15°21'50	-0°17'28
morning rise	12553 Feb 16 00:33	20°17'51		min. Earth dist.	12558 Aug 26 10:21	15°20'54	17.37674 AU
retrograde	12553 May 20 01:35	23°41'30		direct	12558 Nov 09 20:43	13°16'25	
opposition	12553 Aug 02 03:58	21°38'13	0°11'17	evening set	12559 Feb 12 19:01	16°43'45	
min. Earth dist.	12553 Aug 02 15:14	21°37'00	17.38657 AU				
direct	12553 Oct 16 10:40	19°32'59		conjunction	12559 Mar 01 06:39	17°45'12	-0°18'14
evening set	12554 Jan 19 01:03	22°59'17		minimum elong	12559 Mar 01 06:38	17°45'12	0°17'57
				max. Earth dist.	12559 Feb 28 20:23	17°43'36	19.38381 AU
conjunction	12554 Feb 04 15:05	24°00'58	0°07'31	morning rise	12559 Mar 17 16:00	18°46'21	
minimum elong	12554 Feb 04 15:05	24°00'58	0°08'08	retrograde	12559 Jun 18 00:07	22°09'10	
behind sun begin	12554 Feb 04 09:07	24°00'03		opposition	12559 Aug 31 01:39	20°06'26	-0°23'00
behind sun end	12554 Feb 04 21:04	24°01'53		min. Earth dist.	12559 Aug 31 10:51	20°05'26	17.39235 AU
max. Earth dist.	12554 Feb 04 02:40	23°59'02	19.37898 AU	direct	12559 Nov 14 21:24	18°01'07	
morning rise	12554 Feb 21 03:32	25°02'27		evening set	12560 Feb 17 22:14	21°28'26	
retrograde	12554 May 25 02:53	28°26'05					
opposition	12554 Aug 07 03:08	26°22'48	0°05'32	conjunction	12560 Mar 05 09:08	22°29'45	-0°23'07
min. Earth dist.	12554 Aug 07 13:39	26°21'39	17.37284 AU	minimum elong	12560 Mar 05 09:08	22°29'45	0°22'54
direct	12554 Oct 21 12:47	24°17'26		max. Earth dist.	12560 Mar 04 22:58	22°28'10	19.40201 AU
evening set	12555 Jan 24 04:48	27°44'04		morning rise	12560 Mar 21 17:48	23°30'46	
				retrograde	12560 Jun 22 00:59	26°53'17	
conjunction	12555 Feb 09 18:24	28°45'46	0°02'21	opposition	12560 Sep 04 01:33	24°50'45	-0°28'22
minimum elong	12555 Feb 09 18:25	28°45'46	0°02'55	min. Earth dist.	12560 Sep 04 09:21	24°49'54	17.41289 AU
behind sun begin	12555 Feb 09 11:41	28°44'44		direct	12560 Nov 19 00:30	22°45'33	
behind sun end	12555 Feb 10 01:08	28°46'47		evening set	12561 Feb 22 00:59	26°12'44	
max. Earth dist.	12555 Feb 09 05:29	28°43'45	19.36800 AU				
morning rise	12555 Feb 26 06:27	29°47'14		conjunction	12561 Mar 10 11:13	27°13'55	-0°27'51
	12555 Mar 01 18:38	0°00'00		minimum elong	12561 Mar 10 11:12	27°13'55	0°27'42
retrograde	12555 May 30 01:28	3°10'48		max. Earth dist.	12561 Mar 10 02:13	27°12'31	19.42471 AU
desc. node	12555 Jul 27 07:03	1°48'11		morning rise	12561 Mar 26 18:55	28°14'46	
opposition	12555 Aug 12 02:38	1°07'32	-0°00'16		12561 Apr 27 01:49	0°00'00	

retrograde	12561 Jun 26 23:33	1° Υ 36'55	conjunction	12568 Apr 12 08:53	29° Υ 54'29	-0°53'52
	12561 Aug 30 04:40	30° \mathcal{H}	minimum elong	12568 Apr 12 08:52	29° Υ 54'28	0°54'14
opposition	12561 Sep 09 01:38	29° \mathcal{H} 34'34	max. Earth dist.	12568 Apr 12 03:41	29° Υ 53'40	19.68506 AU
min. Earth dist.	12561 Sep 09 09:56	29° \mathcal{H} 33'41		12568 Apr 13 20:36	0° \mathcal{B}	
direct	12561 Nov 24 00:59	27° \mathcal{H} 29'31	morning rise	12568 Apr 28 10:50	0° \mathcal{B} 53'43	
	12562 Feb 11 03:57	0° Υ	retrograde	12568 Jul 29 03:49	4° \mathcal{B} 11'51	
evening set	12562 Feb 27 03:27	0° Υ 56'27	opposition	12568 Oct 11 18:27	2° \mathcal{B} 10'27	-1°01'22
			min. Earth dist.	12568 Oct 11 21:53	2° \mathcal{B} 10'06	17.71008 AU
conjunction	12562 Mar 15 12:47	1° Υ 57'27	direct	12568 Dec 27 09:31	0° \mathcal{B} 06'25	
minimum elong	12562 Mar 15 12:47	1° Υ 57'27	evening set	12569 Apr 01 01:41	3° \mathcal{B} 29'07	
max. Earth dist.	12562 Mar 15 03:28	1° Υ 56'00				
morning rise	12562 Mar 31 19:49	2° Υ 58'08	conjunction	12569 Apr 17 05:16	4° \mathcal{B} 28'26	-0°56'17
retrograde	12562 Jul 01 23:47	6° Υ 19'52	minimum elong	12569 Apr 17 05:16	4° \mathcal{B} 28'26	0°56'44
opposition	12562 Sep 14 01:19	4° Υ 17'41	max. Earth dist.	12569 Apr 17 02:17	4° \mathcal{B} 27'59	19.73561 AU
min. Earth dist.	12562 Sep 14 08:19	4° Υ 16'56	morning rise	12569 May 03 06:17	5° \mathcal{B} 27'25	
direct	12562 Nov 29 03:24	2° Υ 12'45	retrograde	12569 Aug 02 21:49	8° \mathcal{B} 44'50	
evening set	12563 Mar 04 05:19	5° Υ 39'21	opposition	12569 Oct 16 15:50	6° \mathcal{B} 43'36	-1°03'51
			min. Earth dist.	12569 Oct 16 18:04	6° \mathcal{B} 43'22	17.76237 AU
conjunction	12563 Mar 20 14:01	6° Υ 40'11	direct	12570 Jan 01 09:15	4° \mathcal{B} 39'48	
minimum elong	12563 Mar 20 14:00	6° Υ 40'10	evening set	12570 Apr 05 22:12	8° \mathcal{B} 01'38	
max. Earth dist.	12563 Mar 20 06:06	6° Υ 38'57				
morning rise	12563 Apr 05 20:03	7° Υ 40'39	conjunction	12570 Apr 22 00:48	9° \mathcal{B} 00'40	-0°58'20
retrograde	12563 Jul 06 21:39	11° Υ 01'53	minimum elong	12570 Apr 22 00:47	9° \mathcal{B} 00'39	0°58'50
opposition	12563 Sep 19 01:06	8° Υ 59'53	max. Earth dist.	12570 Apr 21 22:06	9° \mathcal{B} 00'15	19.78969 AU
min. Earth dist.	12563 Sep 19 08:26	8° Υ 59'05	morning rise	12570 May 08 01:10	9° \mathcal{B} 59'22	
direct	12563 Dec 04 03:53	6° Υ 55'05	retrograde	12570 Aug 07 15:33	13° \mathcal{B} 16'05	
evening set	12564 Mar 08 06:45	10° Υ 21'14	opposition	12570 Oct 21 12:34	11° \mathcal{B} 15'02	-1°05'54
			min. Earth dist.	12570 Oct 21 13:57	11° \mathcal{B} 14'53	17.81829 AU
conjunction	12564 Mar 24 14:27	11° Υ 21'51	direct	12571 Jan 06 07:07	9° \mathcal{B} 11'29	
minimum elong	12564 Mar 24 14:26	11° Υ 21'51	evening set	12571 Apr 10 17:42	12° \mathcal{B} 32'28	
max. Earth dist.	12564 Mar 24 06:00	11° Υ 20'32				
morning rise	12564 Apr 09 19:46	12° Υ 22'06	conjunction	12571 Apr 26 19:39	13° \mathcal{B} 31'12	-1°00'01
retrograde	12564 Jul 10 20:18	15° Υ 42'48	minimum elong	12571 Apr 26 19:38	13° \mathcal{B} 31'12	1°00'35
opposition	12564 Sep 23 00:27	13° Υ 40'56	max. Earth dist.	12571 Apr 26 18:53	13° \mathcal{B} 31'05	19.84723 AU
min. Earth dist.	12564 Sep 23 06:34	13° Υ 40'17	morning rise	12571 May 12 19:11	14° \mathcal{B} 29'38	
direct	12564 Dec 08 06:05	11° Υ 36'17		12571 May 21 09:23	15° \mathcal{B}	
evening set	12565 Mar 13 07:20	15° Υ 01'55	retrograde	12571 Aug 12 09:09	17° \mathcal{B} 45'40	
			opposition	12571 Oct 26 08:53	15° \mathcal{B} 44'50	-1°07'33
conjunction	12565 Mar 29 14:21	16° Υ 02'17	min. Earth dist.	12571 Oct 26 08:48	15° \mathcal{B} 44'51	17.87719 AU
minimum elong	12565 Mar 29 14:21	16° Υ 02'17		12571 Nov 13 13:25	15° \mathcal{R} \mathcal{B}	
max. Earth dist.	12565 Mar 29 07:39	16° Υ 01'15	direct	12572 Jan 11 05:36	13° \mathcal{B} 41'37	
morning rise	12565 Apr 14 18:38	17° Υ 02'18		12572 Mar 07 08:27	15° \mathcal{B}	
retrograde	12565 Jul 15 16:52	20° Υ 22'25	evening set	12572 Apr 14 12:24	17° \mathcal{B} 01'41	
opposition	12565 Sep 27 23:39	18° Υ 20'41				
min. Earth dist.	12565 Sep 28 05:42	18° Υ 20'02	conjunction	12572 Apr 30 13:26	18° \mathcal{B} 00'08	-1°01'18
direct	12565 Dec 13 06:49	16° Υ 16'11	minimum elong	12572 Apr 30 13:25	18° \mathcal{B} 00'08	1°01'57
evening set	12566 Mar 18 07:13	19° Υ 41'11	max. Earth dist.	12572 Apr 30 13:12	18° \mathcal{B} 00'06	19.90745 AU
			morning rise	12572 May 16 12:21	18° \mathcal{B} 58'18	
conjunction	12566 Apr 03 13:14	20° Υ 41'19	retrograde	12572 Aug 16 01:36	22° \mathcal{B} 13'39	
minimum elong	12566 Apr 03 13:14	20° Υ 41'18	opposition	12572 Oct 30 04:47	20° \mathcal{B} 13'05	-1°08'46
max. Earth dist.	12566 Apr 03 06:09	20° Υ 40'13	min. Earth dist.	12572 Oct 30 04:12	20° \mathcal{B} 13'08	17.93863 AU
morning rise	12566 Apr 19 16:52	21° Υ 41'05	direct	12573 Jan 15 01:28	18° \mathcal{B} 10'12	
retrograde	12566 Jul 20 13:42	25° Υ 00'34	evening set	12573 Apr 19 06:11	21° \mathcal{B} 29'20	
opposition	12566 Oct 02 22:21	22° Υ 58'57				
min. Earth dist.	12566 Oct 03 03:20	22° Υ 58'25	conjunction	12573 May 05 06:33	22° \mathcal{B} 27'31	-1°02'14
direct	12566 Dec 18 08:39	20° Υ 54'34	minimum elong	12573 May 05 06:33	22° \mathcal{B} 27'31	1°02'54
evening set	12567 Mar 23 06:15	24° Υ 18'52	max. Earth dist.	12573 May 05 07:55	22° \mathcal{B} 27'43	19.96986 AU
			morning rise	12573 May 21 04:47	23° \mathcal{B} 25'24	
conjunction	12567 Apr 08 11:35	25° Υ 18'45	retrograde	12573 Aug 20 18:39	26° \mathcal{B} 40'04	
minimum elong	12567 Apr 08 11:35	25° Υ 18'45	opposition	12573 Nov 04 00:00	24° \mathcal{B} 39'45	-1°09'34
max. Earth dist.	12567 Apr 08 06:26	25° Υ 17'57	min. Earth dist.	12573 Nov 03 21:55	24° \mathcal{B} 39'58	18.00170 AU
morning rise	12567 Apr 24 14:13	26° Υ 18'15	direct	12574 Jan 19 22:44	22° \mathcal{B} 37'14	
retrograde	12567 Jul 25 08:34	29° Υ 37'04	evening set	12574 Apr 23 23:12	25° \mathcal{B} 55'26	
opposition	12567 Oct 07 20:34	27° Υ 35'34				
min. Earth dist.	12567 Oct 08 01:04	27° Υ 35'05	conjunction	12574 May 09 22:48	26° \mathcal{B} 53'19	-1°02'46
direct	12567 Dec 23 09:20	25° Υ 31'21	minimum elong	12574 May 09 22:48	26° \mathcal{B} 53'19	1°03'31
evening set	12568 Mar 27 04:36	28° Υ 54'53	max. Earth dist.	12574 May 10 00:44	26° \mathcal{B} 53'37	20.03345 AU

morning rise	12574 May 25 20:30	27° 8 50'57	direct	12581 Feb 20 00:45	23° II 00'27
	12574 Jul 06 07:06	0° II	evening set	12581 May 23 22:53	26° II 11'36
retrograde	12574 Aug 25 09:53	1° II 04'57			
	12574 Oct 16 20:17	30° R 8	conjunction	12581 Jun 08 18:49	27° II 07'40 -0°56'39
opposition	12574 Nov 08 18:52	29° 8 04'53 -1°09'56	minimum elong	12581 Jun 08 18:49	27° II 07'40 0°57'35
min. Earth dist.	12574 Nov 08 16:45	29° 8 05'06 18.06571 AU	max. Earth dist.	12581 Jun 09 01:27	27° II 08'39 20.46189 AU
direct	12575 Jan 24 16:52	27° 8 02'43	morning rise	12581 Jun 24 13:54	28° II 03'37
	12575 Apr 22 23:00	0° II		12581 Aug 01 03:44	0° ☾
evening set	12575 Apr 28 15:23	0° II 19'56	retrograde	12581 Sep 24 09:51	1° ☾ 13'00
				12581 Nov 20 06:47	30° R II
conjunction	12575 May 14 14:21	1° II 17'33 -1°02'57	opposition	12581 Dec 09 14:09	29° II 14'00 -1°01'42
minimum elong	12575 May 14 14:21	1° II 17'33 1°03'43	min. Earth dist.	12581 Dec 09 06:37	29° II 14'47 18.48994 AU
max. Earth dist.	12575 May 14 17:20	1° II 18'00 20.09761 AU	direct	12582 Feb 24 16:14	27° II 13'51
morning rise	12575 May 30 11:27	2° II 14'55		12582 May 21 08:51	0° ☾
retrograde	12575 Aug 30 02:05	5° II 28'13	evening set	12582 May 28 09:11	0° ☾ 24'00
opposition	12575 Nov 13 13:03	3° II 28'24 -1°09'55			
min. Earth dist.	12575 Nov 13 09:23	3° II 28'47 18.12977 AU	conjunction	12582 Jun 13 04:51	1° ☾ 19'51 -0°54'29
direct	12576 Jan 29 12:45	1° II 26'36	minimum elong	12582 Jun 13 04:51	1° ☾ 19'51 0°55'25
evening set	12576 May 02 06:50	4° II 42'50	max. Earth dist.	12582 Jun 13 12:44	1° ☾ 21'01 20.51735 AU
			morning rise	12582 Jun 28 23:42	2° ☾ 15'36
conjunction	12576 May 18 05:07	5° II 40'10 -1°02'45	retrograde	12582 Sep 28 19:37	5° ☾ 24'23
minimum elong	12576 May 18 05:07	5° II 40'10 1°03'34	opposition	12582 Dec 14 04:15	3° ☾ 25'29 -0°59'08
max. Earth dist.	12576 May 18 08:43	5° II 40'43 20.16148 AU	min. Earth dist.	12582 Dec 13 20:56	3° ☾ 26'13 18.54488 AU
morning rise	12576 Jun 03 01:43	6° II 37'17	direct	12583 Mar 01 06:14	1° ☾ 25'34
retrograde	12576 Sep 02 16:25	9° II 49'56	evening set	12583 Jun 01 18:47	4° ☾ 34'46
opposition	12576 Nov 17 06:55	7° II 50'19 -1°09'29			
min. Earth dist.	12576 Nov 17 03:28	7° II 50'41 18.19344 AU	conjunction	12583 Jun 17 14:06	5° ☾ 30'24 -0°52'02
direct	12577 Feb 02 05:41	5° II 48'50	minimum elong	12583 Jun 17 14:06	5° ☾ 30'24 0°52'58
evening set	12577 May 06 21:14	9° II 04'05	max. Earth dist.	12583 Jun 17 22:18	5° ☾ 31'36 20.57179 AU
			morning rise	12583 Jul 03 08:54	6° ☾ 25'57
conjunction	12577 May 22 18:59	10° II 01'09 -1°02'12	retrograde	12583 Oct 03 07:08	9° ☾ 34'12
minimum elong	12577 May 22 18:58	10° II 01'08 1°03'03	opposition	12583 Dec 18 17:37	7° ☾ 35'23 -0°56'15
max. Earth dist.	12577 May 22 23:15	10° II 01'47 20.22470 AU	min. Earth dist.	12583 Dec 18 08:23	7° ☾ 36'19 18.59872 AU
morning rise	12577 Jun 07 15:10	10° II 58'00	direct	12584 Mar 04 20:10	5° ☾ 35'43
retrograde	12577 Sep 07 07:23	14° II 09'59	evening set	12584 Jun 05 03:43	8° ☾ 44'01
opposition	12577 Nov 21 23:59	12° II 10'34 -1°08'39			
min. Earth dist.	12577 Nov 21 18:59	12° II 11'05 18.25597 AU	conjunction	12584 Jun 20 22:51	9° ☾ 39'27 -0°49'20
direct	12578 Feb 07 00:12	10° II 09'24	minimum elong	12584 Jun 20 22:51	9° ☾ 39'27 0°50'16
evening set	12578 May 11 11:00	13° II 23'37	max. Earth dist.	12584 Jun 21 08:27	9° ☾ 40'52 20.62498 AU
			morning rise	12584 Jul 06 17:30	10° ☾ 34'50
conjunction	12578 May 27 08:13	14° II 20'26 -1°01'18	retrograde	12584 Oct 06 15:52	13° ☾ 42'35
minimum elong	12578 May 27 08:13	14° II 20'26 1°02'10	opposition	12584 Dec 22 06:35	11° ☾ 43'54 -0°53'06
max. Earth dist.	12578 May 27 13:08	14° II 21'10 20.28646 AU	min. Earth dist.	12584 Dec 21 21:35	11° ☾ 44'48 18.65126 AU
morning rise	12578 Jun 12 04:00	15° II 17'03	direct	12585 Mar 09 08:01	9° ☾ 44'31
retrograde	12578 Sep 11 20:37	18° II 28'22	evening set	12585 Jun 09 11:58	12° ☾ 51'57
opposition	12578 Nov 26 16:29	16° II 29'06 -1°07'27			
min. Earth dist.	12578 Nov 26 11:57	16° II 29'34 18.31699 AU	conjunction	12585 Jun 25 06:55	13° ☾ 47'12 -0°46'23
direct	12579 Feb 11 16:08	14° II 28'13	minimum elong	12585 Jun 25 06:55	13° ☾ 47'12 0°47'18
evening set	12579 May 15 23:53	17° II 41'25	max. Earth dist.	12585 Jun 25 16:37	13° ☾ 48'37 20.67681 AU
			morning rise	12585 Jul 11 01:41	14° ☾ 42'25
conjunction	12579 May 31 20:37	18° II 37'58 -1°00'04	retrograde	12585 Oct 11 03:02	17° ☾ 49'43
minimum elong	12579 May 31 20:37	18° II 37'58 1°00'58	opposition	12585 Dec 26 18:52	15° ☾ 51'09 -0°49'42
max. Earth dist.	12579 Jun 01 01:52	18° II 38'45 20.34667 AU	min. Earth dist.	12585 Dec 26 08:16	15° ☾ 52'13 18.70208 AU
morning rise	12579 Jun 16 16:08	19° II 34'22	direct	12586 Mar 13 20:22	13° ☾ 52'03
retrograde	12579 Sep 16 10:06	22° II 45'00	evening set	12586 Jun 13 19:47	16° ☾ 58'41
opposition	12579 Dec 01 08:20	20° II 45'52 -1°05'53			
min. Earth dist.	12579 Dec 01 02:11	20° II 46'30 18.37622 AU	conjunction	12586 Jun 29 14:39	17° ☾ 53'46 -0°43'12
direct	12580 Feb 16 09:25	18° II 45'15	minimum elong	12586 Jun 29 14:39	17° ☾ 53'46 0°44'08
evening set	12580 May 19 11:45	21° II 57'25	max. Earth dist.	12586 Jun 30 01:38	17° ☾ 55'22 20.72649 AU
			morning rise	12586 Jul 15 09:22	18° ☾ 48'50
conjunction	12580 Jun 04 08:06	22° II 53'44 -0°58'31	retrograde	12586 Oct 15 10:51	21° ☾ 55'44
minimum elong	12580 Jun 04 08:06	22° II 53'44 0°59'25	opposition	12586 Dec 31 06:46	19° ☾ 57'18 -0°46'03
max. Earth dist.	12580 Jun 04 14:21	22° II 54'39 20.40501 AU	min. Earth dist.	12586 Dec 30 20:39	19° ☾ 58'20 18.75055 AU
morning rise	12580 Jun 20 03:17	23° II 49'53	direct	12587 Mar 18 06:39	17° ☾ 58'30
retrograde	12580 Sep 19 21:34	26° II 59'54	evening set	12587 Jun 18 03:11	21° ☾ 04'22
opposition	12580 Dec 04 23:45	25° II 00'50 -1°03'58			
min. Earth dist.	12580 Dec 04 17:57	25° II 01'26 18.43379 AU	conjunction	12587 Jul 03 21:53	21° ☾ 59'17 -0°39'50

minimum elong	12587 Jul 03 21:53	21°☾59'17	0°40'43	max. Earth dist.	12593 Jul 27 22:24	16°♈16'56	20.97336 AU
max. Earth dist.	12587 Jul 04 08:41	22°☾00'51	20.77373 AU	morning rise	12593 Aug 12 07:45	17°♈09'51	
morning rise	12587 Jul 19 16:47	22°☾54'14		retrograde	12593 Nov 13 00:15	20°♈15'06	
retrograde	12587 Oct 19 21:41	26°☾00'46		opposition	12594 Jan 29 07:50	18°♈17'02	-0°15'42
opposition	12588 Jan 04 18:17	24°☾02'28	-0°42'12	min. Earth dist.	12594 Jan 28 20:27	18°♈18'10	18.98235 AU
min. Earth dist.	12588 Jan 04 06:49	24°☾03'37	18.79627 AU	direct	12594 Apr 15 22:58	16°♈19'32	
direct	12588 Mar 21 17:37	22°☾03'56		evening set	12594 Jul 15 21:22	19°♈21'21	
evening set	12588 Jun 21 09:59	25°☾09'05					
conjunction	12588 Jul 07 04:45	26°☾03'52	-0°36'16	conjunction	12594 Jul 31 16:49	20°♈15'37	-0°12'02
minimum elong	12588 Jul 07 04:45	26°☾03'52	0°37'09	minimum elong	12594 Jul 31 16:49	20°♈15'37	0°12'42
max. Earth dist.	12588 Jul 07 16:43	26°☾05'36	20.81776 AU	behind sun begin	12594 Jul 31 12:37	20°♈15'02	
morning rise	12588 Jul 22 23:41	26°☾58'42		behind sun end	12594 Jul 31 21:02	20°♈16'12	
	12588 Oct 09 05:37	0°♈		max. Earth dist.	12594 Aug 01 04:40	20°♈17'19	20.99007 AU
retrograde	12588 Oct 23 05:19	0°♈04'56		morning rise	12594 Aug 16 13:23	21°♈10'04	
	12588 Nov 06 09:45	30°♈☾		retrograde	12594 Nov 17 06:53	24°♈15'14	
opposition	12589 Jan 08 05:32	28°☾06'45	-0°38'09	opposition	12595 Feb 02 16:53	22°♈17'05	-0°10'55
min. Earth dist.	12589 Jan 07 18:43	28°☾07'50	18.83855 AU	min. Earth dist.	12595 Feb 02 06:06	22°♈18'10	18.99695 AU
direct	12589 Mar 26 03:02	26°☾08'29		direct	12595 Apr 20 05:51	20°♈19'40	
evening set	12589 Jun 25 16:40	29°☾12'57		evening set	12595 Jul 20 02:26	23°♈21'05	
	12589 Jul 09 07:01	0°♈		conjunction	12595 Aug 04 22:00	24°♈15'19	-0°07'43
conjunction	12589 Jul 11 11:20	0°♈07'37	-0°32'32	minimum elong	12595 Aug 04 22:01	24°♈15'19	0°08'20
minimum elong	12589 Jul 11 11:21	0°♈07'37	0°33'23	behind sun begin	12595 Aug 04 16:13	24°♈14'30	
max. Earth dist.	12589 Jul 11 22:45	0°♈09'16	20.85819 AU	behind sun end	12595 Aug 05 03:49	24°♈16'08	
morning rise	12589 Jul 27 06:34	1°♈02'21		max. Earth dist.	12595 Aug 05 09:05	24°♈16'54	21.00282 AU
retrograde	12589 Oct 27 15:27	4°♈08'19		morning rise	12595 Aug 20 19:06	25°♈09'45	
opposition	12590 Jan 12 16:06	2°♈10'13	-0°33'56	retrograde	12595 Nov 21 15:31	28°♈14'53	
min. Earth dist.	12590 Jan 12 04:23	2°♈11'24	18.87692 AU	opposition	12596 Feb 07 01:40	26°♈16'39	-0°06'06
direct	12590 Mar 30 12:50	0°♈12'11		min. Earth dist.	12596 Feb 06 14:13	26°♈17'48	19.00789 AU
evening set	12590 Jun 29 23:00	3°♈16'03		direct	12596 Apr 23 13:24	24°♈19'16	
				evening set	12596 Jul 23 07:10	27°♈20'23	
conjunction	12590 Jul 15 17:49	4°♈10'36	-0°28'40	conjunction	12596 Aug 08 03:10	28°♈14'36	-0°03'22
minimum elong	12590 Jul 15 17:49	4°♈10'36	0°29'29	minimum elong	12596 Aug 08 03:09	28°♈14'36	0°03'55
max. Earth dist.	12590 Jul 16 06:01	4°♈12'22	20.89426 AU	behind sun begin	12596 Aug 07 20:39	28°♈13'42	
morning rise	12590 Jul 31 13:08	5°♈05'15		behind sun end	12596 Aug 08 09:39	28°♈15'31	
retrograde	12590 Oct 31 23:04	8°♈11'00		max. Earth dist.	12596 Aug 08 15:15	28°♈16'20	21.01188 AU
opposition	12591 Jan 17 02:38	6°♈12'58	-0°29'33	morning rise	12596 Aug 24 00:32	29°♈09'03	
min. Earth dist.	12591 Jan 16 15:44	6°♈14'03	18.91066 AU		12596 Sep 08 16:55	0°♈	
direct	12591 Apr 03 21:37	4°♈15'08		retrograde	12596 Nov 24 22:17	2°♈14'12	
evening set	12591 Jul 04 05:01	7°♈18'25		opposition	12597 Feb 10 10:15	0°♈15'54	-0°01'15
				min. Earth dist.	12597 Feb 09 23:16	0°♈17'00	19.01520 AU
conjunction	12591 Jul 19 23:49	8°♈12'53	-0°24'39		12597 Feb 17 01:23	30°♈♈	
minimum elong	12591 Jul 19 23:49	8°♈12'53	0°25'27	direct	12597 Apr 27 19:19	28°♈18'35	
max. Earth dist.	12591 Jul 20 11:08	8°♈14'31	20.92564 AU	asc. node	12597 May 11 08:48	28°♈23'13	
morning rise	12591 Aug 04 19:29	9°♈07'27			12597 Jul 02 05:48	0°♈	
retrograde	12591 Nov 05 08:21	12°♈13'01		evening set	12597 Jul 27 12:06	1°♈19'26	
opposition	12592 Jan 21 12:45	10°♈15'00	-0°25'02				
min. Earth dist.	12592 Jan 21 01:07	10°♈16'10	18.93954 AU	conjunction	12597 Aug 12 08:17	2°♈13'39	0°01'07
direct	12592 Apr 07 06:42	8°♈17'19		minimum elong	12597 Aug 12 08:17	2°♈13'39	0°00'36
evening set	12592 Jul 07 10:45	11°♈20'05		behind sun begin	12597 Aug 12 01:43	2°♈12'44	
				behind sun end	12597 Aug 12 14:50	2°♈14'34	
conjunction	12592 Jul 23 05:48	12°♈14'28	-0°20'32	max. Earth dist.	12597 Aug 12 19:30	2°♈15'15	21.01755 AU
minimum elong	12592 Jul 23 05:48	12°♈14'28	0°21'17	morning rise	12597 Aug 28 06:14	3°♈08'07	
max. Earth dist.	12592 Jul 23 17:48	12°♈16'11	20.95194 AU	retrograde	12597 Nov 29 06:57	6°♈13'21	
morning rise	12592 Aug 08 01:39	13°♈08'59		opposition	12598 Feb 14 18:28	4°♈14'59	0°03'36
	12592 Sep 13 18:56	15°♈		min. Earth dist.	12598 Feb 14 07:02	4°♈16'07	19.01917 AU
retrograde	12592 Nov 08 15:40	16°♈14'23		direct	12598 May 02 02:04	2°♈17'42	
	12593 Jan 06 07:10	15°♈♈		evening set	12598 Jul 31 16:56	5°♈18'23	
opposition	12593 Jan 24 22:31	14°♈16'21	-0°20'25				
min. Earth dist.	12593 Jan 24 11:42	14°♈17'26	18.96332 AU	conjunction	12598 Aug 16 13:35	6°♈12'38	0°05'32
direct	12593 Apr 11 14:41	12°♈18'48		minimum elong	12598 Aug 16 13:34	6°♈12'38	0°05'04
	12593 Jul 05 08:53	15°♈		behind sun begin	12598 Aug 16 07:10	6°♈11'45	
evening set	12593 Jul 11 16:14	15°♈21'03		behind sun end	12598 Aug 16 19:59	6°♈13'32	
				max. Earth dist.	12598 Aug 17 01:43	6°♈14'22	21.01971 AU
conjunction	12593 Jul 27 11:24	16°♈15'22	-0°16'19	morning rise	12598 Sep 01 11:51	7°♈07'09	
minimum elong	12593 Jul 27 11:24	16°♈15'22	0°17'03	retrograde	12598 Dec 03 14:25	10°♈12'29	

opposition	12599 Feb 19 02:48	8° \mathring{M} 14'04	0°08'26
min. Earth dist.	12599 Feb 18 15:52	8° \mathring{M} 15'10	19.01954 AU
direct	12599 May 06 08:02	6° \mathring{M} 16'52	
evening set	12599 Aug 04 21:50	9° \mathring{M} 17'26	
conjunction	12599 Aug 20 18:43	10° \mathring{M} 11'42	0°09'52
minimum elong	12599 Aug 20 18:43	10° \mathring{M} 11'42	0°09'28
behind sun begin	12599 Aug 20 13:13	10° \mathring{M} 10'56	
behind sun end	12599 Aug 21 00:14	10° \mathring{M} 12'29	
max. Earth dist.	12599 Aug 21 05:56	10° \mathring{M} 13'18	21.01838 AU
morning rise	12599 Sep 05 17:38	11° \mathring{M} 06'16	
retrograde	12599 Dec 07 23:27	14° \mathring{M} 11'49	
opposition	12600 Feb 23 11:05	12° \mathring{M} 13'20	0°13'13
min. Earth dist.	12600 Feb 22 23:52	12° \mathring{M} 14'27	19.01638 AU
direct	12600 May 10 13:53	10° \mathring{M} 16'10	
evening set	12600 Aug 09 02:57	13° \mathring{M} 16'41	
conjunction	12600 Aug 25 00:22	14° \mathring{M} 11'02	0°14'09
minimum elong	12600 Aug 25 00:22	14° \mathring{M} 11'02	0°13'47
behind sun begin	12600 Aug 24 20:50	14° \mathring{M} 10'32	
behind sun end	12600 Aug 25 03:54	14° \mathring{M} 11'31	
max. Earth dist.	12600 Aug 25 12:20	14° \mathring{M} 12'44	21.01322 AU
morning rise	12600 Sep 09 23:39	15° \mathring{M} 05'39	
retrograde	12600 Dec 12 07:31	18° \mathring{M} 11'25	
opposition	12601 Feb 27 19:14	16° \mathring{M} 12'53	0°17'57
min. Earth dist.	12601 Feb 27 08:41	16° \mathring{M} 13'57	19.00923 AU
direct	12601 May 14 20:24	14° \mathring{M} 15'47	
evening set	12601 Aug 13 08:24	17° \mathring{M} 16'19	
conjunction	12601 Aug 29 06:09	18° \mathring{M} 10'43	0°18'23
minimum elong	12601 Aug 29 06:09	18° \mathring{M} 10'43	0°18'06
max. Earth dist.	12601 Aug 29 16:47	18° \mathring{M} 12'14	21.00408 AU
morning rise	12601 Sep 14 06:07	19° \mathring{M} 05'26	
retrograde	12601 Dec 16 17:15	22° \mathring{M} 11'29	