

direct	15100 Mar 17 12:40	21°☿19'20	min. Earth dist.	15106 Jan 25 12:24	18°♄29'09	18.72063 AU
evening set	15100 Jun 18 18:18	24°♄31'50	direct	15106 Apr 12 21:19	16°♄29'11	
			evening set	15106 Jul 14 06:58	19°♄36'17	
conjunction	15100 Jul 04 16:50	25°♄28'22 -0°59'45				
minimum elong	15100 Jul 04 16:51	25°♄28'22 1°00'41	conjunction	15106 Jul 30 03:39	20°♄31'30 -0°39'28	
max. Earth dist.	15100 Jul 04 23:33	25°♄29'21 20.39560 AU	minimum elong	15106 Jul 30 03:40	20°♄31'30 0°40'09	
morning rise	15100 Jul 20 13:55	26°♄24'41	max. Earth dist.	15106 Jul 30 11:42	20°♄32'40 20.74499 AU	
retrograde	15100 Oct 20 04:32	29°♄34'22	morning rise	15106 Aug 14 23:39	21°♄26'38	
opposition	15101 Jan 04 02:02	27°♄35'20 -1°04'52	retrograde	15106 Nov 14 18:50	24°♄32'54	
min. Earth dist.	15101 Jan 03 20:07	27°♄35'56 18.42828 AU	opposition	15107 Jan 30 07:43	22°♄34'50 -0°41'28	
direct	15101 Mar 22 03:15	25°♄34'40	min. Earth dist.	15107 Jan 30 00:40	22°♄35'33 18.76849 AU	
evening set	15101 Jun 23 06:07	28°♄46'13	direct	15107 Apr 17 08:55	20°♄35'52	
			evening set	15107 Jul 18 14:57	23°♄42'09	
conjunction	15101 Jul 09 04:07	29°♄42'29 -0°57'01				
minimum elong	15101 Jul 09 04:07	29°♄42'29 0°57'55	conjunction	15107 Aug 03 11:19	24°♄37'11 -0°35'19	
max. Earth dist.	15101 Jul 09 10:25	29°♄43'25 20.46035 AU	minimum elong	15107 Aug 03 11:19	24°♄37'11 0°35'58	
	15101 Jul 14 02:09	0°♄	max. Earth dist.	15107 Aug 03 18:16	24°♄38'11 20.79094 AU	
morning rise	15101 Jul 25 01:02	0°♄38'35	morning rise	15107 Aug 19 07:27	25°♄32'10	
retrograde	15101 Oct 24 17:26	3°♄47'37	retrograde	15107 Nov 19 04:23	28°♄37'58	
opposition	15102 Jan 08 16:15	1°♄48'48 -1°01'39	opposition	15108 Feb 03 18:38	26°♄39'57 -0°36'46	
min. Earth dist.	15102 Jan 08 09:04	1°♄49'32 18.49220 AU	min. Earth dist.	15108 Feb 03 11:02	26°♄40'43 18.81251 AU	
	15102 Mar 05 02:55	30°♄	direct	15108 Apr 20 19:18	24°♄41'08	
direct	15102 Mar 26 18:19	29°♄48'28	evening set	15108 Jul 21 22:09	27°♄46'39	
	15102 Apr 17 01:11	0°♄				
evening set	15102 Jun 27 17:12	2°♄59'04	conjunction	15108 Aug 06 18:32	28°♄41'31 -0°31'01	
			minimum elong	15108 Aug 06 18:32	28°♄41'31 0°31'36	
conjunction	15102 Jul 13 14:57	3°♄55'06 -0°54'01	max. Earth dist.	15108 Aug 07 02:42	28°♄42'42 20.83309 AU	
minimum elong	15102 Jul 13 14:57	3°♄55'07 0°54'53	morning rise	15108 Aug 22 14:30	29°♄36'22	
max. Earth dist.	15102 Jul 13 22:35	3°♄56'14 20.52326 AU		15108 Aug 29 15:27	0°♄	
morning rise	15102 Jul 29 11:29	4°♄50'59	retrograde	15108 Nov 22 11:36	2°♄41'44	
retrograde	15102 Oct 29 03:16	7°♄59'24	opposition	15109 Feb 07 05:17	0°♄43'45 -0°31'55	
opposition	15103 Jan 13 06:00	6°♄00'48 -0°58'08	min. Earth dist.	15109 Feb 06 21:58	0°♄44'29 18.85288 AU	
min. Earth dist.	15103 Jan 12 23:25	6°♄01'28 18.55399 AU		15109 Feb 25 18:31	30°♄	
direct	15103 Mar 31 07:40	4°♄00'47	direct	15109 Apr 25 05:26	28°♄45'06	
evening set	15103 Jul 02 03:39	7°♄10'29		15109 Jun 20 00:38	0°♄	
			evening set	15109 Jul 26 04:49	1°♄49'52	
conjunction	15103 Jul 18 00:57	8°♄06'17 -0°50'44				
minimum elong	15103 Jul 18 00:57	8°♄06'17 0°51'34	conjunction	15109 Aug 11 00:55	2°♄44'36 -0°26'34	
max. Earth dist.	15103 Jul 18 07:50	8°♄07'18 20.58381 AU	minimum elong	15109 Aug 11 00:55	2°♄44'36 0°27'06	
morning rise	15103 Aug 02 21:28	9°♄01'58	max. Earth dist.	15109 Aug 11 08:18	2°♄45'40 20.87192 AU	
retrograde	15103 Nov 02 15:06	12°♄09'47	morning rise	15109 Aug 26 21:05	3°♄39'19	
opposition	15104 Jan 17 19:07	10°♄11'22 -0°54'20	retrograde	15109 Nov 26 20:38	6°♄44'20	
min. Earth dist.	15104 Jan 17 11:37	10°♄12'07 18.61305 AU	opposition	15110 Feb 11 15:26	4°♄46'21 -0°26'55	
direct	15104 Apr 03 21:04	8°♄11'39	min. Earth dist.	15110 Feb 11 07:24	4°♄47'09 18.89025 AU	
evening set	15104 Jul 05 13:25	11°♄20'28	direct	15110 Apr 29 15:00	2°♄47'51	
			evening set	15110 Jul 30 10:57	5°♄51'57	
conjunction	15104 Jul 21 10:32	12°♄16'04 -0°47'12				
minimum elong	15104 Jul 21 10:33	12°♄16'04 0°47'58	conjunction	15110 Aug 15 07:08	6°♄46'33 -0°22'01	
max. Earth dist.	15104 Jul 21 18:31	12°♄17'14 20.64119 AU	minimum elong	15110 Aug 15 07:08	6°♄46'33 0°22'30	
morning rise	15104 Aug 06 06:42	13°♄11'33	max. Earth dist.	15110 Aug 15 15:54	6°♄47'49 20.90775 AU	
	15104 Sep 10 07:01	15°♄	morning rise	15110 Aug 31 03:12	7°♄41'10	
retrograde	15104 Nov 06 00:04	16°♄18'49	retrograde	15110 Dec 01 03:27	10°♄45'51	
	15105 Jan 04 18:38	15°♄	opposition	15111 Feb 16 01:02	8°♄47'54 -0°21'48	
opposition	15105 Jan 21 07:50	14°♄20'33 -0°50'17	min. Earth dist.	15111 Feb 15 17:05	8°♄48'42 18.92463 AU	
min. Earth dist.	15105 Jan 21 00:59	14°♄21'15 18.66867 AU	direct	15111 May 03 23:18	6°♄49'36	
direct	15105 Apr 08 09:36	12°♄21'07	evening set	15111 Aug 03 16:50	9°♄53'05	
	15105 Jul 01 07:43	15°♄				
evening set	15105 Jul 09 22:39	15°♄29'04	conjunction	15111 Aug 19 12:49	10°♄47'33 -0°17'22	
			minimum elong	15111 Aug 19 12:49	10°♄47'33 0°17'46	
conjunction	15105 Jul 25 19:22	16°♄24'27 -0°43'26	max. Earth dist.	15111 Aug 19 20:42	10°♄48'41 20.94075 AU	
minimum elong	15105 Jul 25 19:22	16°♄24'28 0°44'11	morning rise	15111 Sep 04 09:09	11°♄42'05	
max. Earth dist.	15105 Jul 26 02:20	16°♄25'29 20.69505 AU	retrograde	15111 Dec 05 11:57	14°♄46'32	
morning rise	15105 Aug 10 15:34	17°♄19'46	opposition	15112 Feb 20 10:19	12°♄48'36 -0°16'36	
retrograde	15105 Nov 10 10:42	20°♄26'31	min. Earth dist.	15112 Feb 20 01:50	12°♄49'28 18.95616 AU	
opposition	15106 Jan 25 20:00	18°♄28'23 -0°45'59	direct	15112 May 07 08:00	10°♄50'28	

evening set	15112 Aug 06 22:10	13° <u>0</u> 53'25		minimum elong	15117 Sep 11 19:13	4° <u>0</u> 42'36	0°11'19
				behind sun begin	15117 Sep 11 14:22	4° <u>0</u> 41'56	
conjunction	15112 Aug 22 18:16	14° <u>0</u> 47'48	-0°12'39	behind sun end	15117 Sep 12 00:04	4° <u>0</u> 43'17	
minimum elong	15112 Aug 22 18:17	14° <u>0</u> 47'48	0°13'01	max. Earth dist.	15117 Sep 12 02:54	4° <u>0</u> 43'41	21.06250 AU
behind sun begin	15112 Aug 22 14:15	14° <u>0</u> 47'14		morning rise	15117 Sep 27 16:43	5° <u>0</u> 36'54	
behind sun end	15112 Aug 22 22:18	14° <u>0</u> 48'22		retrograde	15117 Dec 29 08:42	8° <u>0</u> 41'04	
max. Earth dist.	15112 Aug 23 03:30	14° <u>0</u> 49'07	20.97066 AU	opposition	15118 Mar 16 13:30	6° <u>0</u> 43'13	0°15'06
morning rise	15112 Sep 07 14:33	15° <u>0</u> 42'15		min. Earth dist.	15118 Mar 16 05:51	6° <u>0</u> 43'59	19.06518 AU
retrograde	15112 Dec 08 18:57	18° <u>0</u> 46'30		direct	15118 Jun 01 03:02	4° <u>0</u> 45'59	
opposition	15113 Feb 23 19:20	16° <u>0</u> 48'38	-0°11'20	evening set	15118 Aug 31 03:47	7° <u>0</u> 46'54	
min. Earth dist.	15113 Feb 23 10:54	16° <u>0</u> 49'29	18.98439 AU				
direct	15113 May 11 15:36	14° <u>0</u> 50'41		conjunction	15118 Sep 16 00:25	8° <u>0</u> 41'02	0°16'01
evening set	15113 Aug 11 03:25	17° <u>0</u> 53'08		minimum elong	15118 Sep 16 00:25	8° <u>0</u> 41'02	0°16'04
				behind sun begin	15118 Sep 15 23:51	8° <u>0</u> 40'57	
conjunction	15113 Aug 26 23:23	18° <u>0</u> 47'26	-0°07'54	behind sun end	15118 Sep 16 00:59	8° <u>0</u> 41'07	
minimum elong	15113 Aug 26 23:24	18° <u>0</u> 47'26	0°08'11	max. Earth dist.	15118 Sep 16 08:39	8° <u>0</u> 42'12	21.06625 AU
behind sun begin	15113 Aug 26 17:33	18° <u>0</u> 46'37		morning rise	15118 Oct 01 22:02	9° <u>0</u> 35'21	
behind sun end	15113 Aug 27 05:14	18° <u>0</u> 48'15		retrograde	15119 Jan 02 15:46	12° <u>0</u> 39'36	
max. Earth dist.	15113 Aug 27 07:40	18° <u>0</u> 48'37	20.99730 AU	opposition	15119 Mar 20 21:29	10° <u>0</u> 41'42	0°20'16
morning rise	15113 Sep 11 20:00	19° <u>0</u> 41'50		min. Earth dist.	15119 Mar 20 14:17	10° <u>0</u> 42'25	19.06605 AU
retrograde	15113 Dec 13 02:56	22° <u>0</u> 45'58		direct	15119 Jun 05 10:39	8° <u>0</u> 44'30	
opposition	15114 Feb 28 04:05	20° <u>0</u> 48'07	-0°06'02	evening set	15119 Sep 04 08:52	11° <u>0</u> 45'16	
min. Earth dist.	15114 Feb 27 19:23	20° <u>0</u> 49'00	19.00931 AU				
direct	15114 May 15 23:13	18° <u>0</u> 50'21		conjunction	15119 Sep 20 05:32	12° <u>0</u> 39'25	0°20'38
evening set	15114 Aug 15 08:16	21° <u>0</u> 52'23		minimum elong	15119 Sep 20 05:32	12° <u>0</u> 39'25	0°20'44
				max. Earth dist.	15119 Sep 20 12:01	12° <u>0</u> 40'21	21.06431 AU
conjunction	15114 Aug 31 04:29	22° <u>0</u> 46'38	-0°03'07	morning rise	15119 Oct 06 03:37	13° <u>0</u> 33'46	
minimum elong	15114 Aug 31 04:28	22° <u>0</u> 46'38	0°03'21	retrograde	15120 Jan 06 23:40	16° <u>0</u> 38'10	
behind sun begin	15114 Aug 30 21:56	22° <u>0</u> 45'43		opposition	15120 Mar 24 05:33	14° <u>0</u> 40'09	0°25'20
behind sun end	15114 Aug 31 11:00	22° <u>0</u> 47'32		min. Earth dist.	15120 Mar 23 22:59	14° <u>0</u> 40'49	19.06132 AU
max. Earth dist.	15114 Aug 31 13:55	22° <u>0</u> 47'58	21.02025 AU	direct	15120 Jun 08 16:29	12° <u>0</u> 42'56	
morning rise	15114 Sep 16 01:07	23° <u>0</u> 40'58		evening set	15120 Sep 07 13:38	15° <u>0</u> 43'36	
retrograde	15114 Dec 17 10:18	26° <u>0</u> 45'01					
opposition	15115 Mar 04 12:38	24° <u>0</u> 47'13	-0°00'43	conjunction	15120 Sep 23 10:42	16° <u>0</u> 37'47	0°25'10
min. Earth dist.	15115 Mar 04 04:07	24° <u>0</u> 48'04	19.03018 AU	minimum elong	15120 Sep 23 10:41	16° <u>0</u> 37'47	0°25'21
asc. node	15115 Apr 21 03:46	23° <u>0</u> 10'02		max. Earth dist.	15120 Sep 23 17:48	16° <u>0</u> 38'48	21.05678 AU
direct	15115 May 20 06:44	22° <u>0</u> 49'37		morning rise	15120 Oct 09 08:56	17° <u>0</u> 32'10	
evening set	15115 Aug 19 13:16	25° <u>0</u> 51'17		retrograde	15121 Jan 10 06:20	20° <u>0</u> 36'45	
				opposition	15121 Mar 28 13:32	18° <u>0</u> 38'36	0°30'17
conjunction	15115 Sep 04 09:22	26° <u>0</u> 45'28	0°01'48	min. Earth dist.	15121 Mar 28 07:11	18° <u>0</u> 39'14	19.05112 AU
minimum elong	15115 Sep 04 09:22	26° <u>0</u> 45'28	0°01'40	direct	15121 Jun 12 23:59	16° <u>0</u> 41'21	
behind sun begin	15115 Sep 04 02:47	26° <u>0</u> 44'33		evening set	15121 Sep 11 18:43	19° <u>0</u> 41'57	
behind sun end	15115 Sep 04 15:56	26° <u>0</u> 46'23					
max. Earth dist.	15115 Sep 04 17:35	26° <u>0</u> 46'38	21.03905 AU	conjunction	15121 Sep 27 15:52	20° <u>0</u> 36'10	0°29'35
morning rise	15115 Sep 20 06:22	27° <u>0</u> 39'47		minimum elong	15121 Sep 27 15:51	20° <u>0</u> 36'10	0°29'48
	15115 Nov 09 05:18	0° <u>0</u>		max. Earth dist.	15121 Sep 27 21:29	20° <u>0</u> 36'58	21.04421 AU
retrograde	15115 Dec 21 17:46	0° <u>0</u> 43'50		morning rise	15121 Oct 13 14:39	21° <u>0</u> 30'37	
	15116 Feb 03 11:57	30° <u>0</u> 8' <u>0</u>		retrograde	15122 Jan 14 14:40	24° <u>0</u> 35'26	
opposition	15116 Mar 07 20:55	28° <u>0</u> 46'02	0°04'35	opposition	15122 Apr 01 21:26	22° <u>0</u> 37'06	0°35'06
min. Earth dist.	15116 Mar 07 12:33	28° <u>0</u> 46'52	19.04681 AU	min. Earth dist.	15122 Apr 01 15:40	22° <u>0</u> 37'41	19.03635 AU
direct	15116 May 23 13:23	26° <u>0</u> 48'35		direct	15122 Jun 17 05:38	20° <u>0</u> 39'46	
evening set	15116 Aug 22 18:04	29° <u>0</u> 49'57		evening set	15122 Sep 15 23:41	23° <u>0</u> 40'24	
	15116 Aug 25 17:32	0° <u>0</u>					
conjunction	15116 Sep 07 14:25	0° <u>0</u> 44'06	0°06'36	conjunction	15122 Oct 01 21:18	24° <u>0</u> 34'42	0°33'51
minimum elong	15116 Sep 07 14:25	0° <u>0</u> 44'06	0°06'31	minimum elong	15122 Oct 01 21:18	24° <u>0</u> 34'42	0°34'10
behind sun begin	15116 Sep 07 08:14	0° <u>0</u> 43'15		max. Earth dist.	15122 Oct 02 03:45	24° <u>0</u> 35'37	21.02721 AU
behind sun end	15116 Sep 07 20:36	0° <u>0</u> 44'58		morning rise	15122 Oct 17 20:19	25° <u>0</u> 29'13	
max. Earth dist.	15116 Sep 07 23:33	0° <u>0</u> 45'24	21.05328 AU	retrograde	15123 Jan 18 21:33	28° <u>0</u> 34'18	
morning rise	15116 Sep 23 11:29	1° <u>0</u> 38'24		opposition	15123 Apr 06 05:18	26° <u>0</u> 35'49	0°39'45
retrograde	15116 Dec 25 01:11	4° <u>0</u> 42'28		min. Earth dist.	15123 Apr 05 23:31	26° <u>0</u> 36'23	19.01731 AU
opposition	15117 Mar 12 05:15	2° <u>0</u> 44'41	0°09'52	direct	15123 Jun 21 12:36	24° <u>0</u> 38'24	
min. Earth dist.	15117 Mar 11 21:10	2° <u>0</u> 45'29	19.05855 AU	evening set	15123 Sep 20 05:02	27° <u>0</u> 39'08	
direct	15117 May 27 20:58	0° <u>0</u> 47'22					
evening set	15117 Aug 26 22:55	3° <u>0</u> 48'28		conjunction	15123 Oct 06 02:46	28° <u>0</u> 33'30	0°37'58
				minimum elong	15123 Oct 06 02:45	28° <u>0</u> 33'30	0°38'21
conjunction	15117 Sep 11 19:13	4° <u>0</u> 42'36	0°11'20	max. Earth dist.	15123 Oct 06 07:52	28° <u>0</u> 34'14	21.00629 AU
				morning rise	15123 Oct 22 02:18	29° <u>0</u> 28'07	

	15123 Oct 31 18:28	0° ℳ	opposition	15130 May 04 17:33	24° ℳ 47'03	1°06'01
retrograde	15124 Jan 23 06:03	2° ℳ 33'34	min. Earth dist.	15130 May 04 14:45	24° ℳ 47'20	18.78981 AU
opposition	15124 Apr 09 13:16	0° ℳ 34'54 0°44'13	direct	15130 Jul 19 10:30	22° ℳ 49'06	
min. Earth dist.	15124 Apr 09 08:02	0° ℳ 35'25 18.99469 AU	evening set	15130 Oct 18 04:53	25° ℳ 52'29	
	15124 Apr 24 05:15	30° ℳ 5				
direct	15124 Jun 24 18:23	28° ℳ 37'25	conjunction	15130 Nov 03 05:39	26° ℳ 47'53	1°00'49
	15124 Aug 22 06:45	0° ℳ	minimum elong	15130 Nov 03 05:39	26° ℳ 47'53	1°01'34
evening set	15124 Sep 23 10:30	1° ℳ 38'19	max. Earth dist.	15130 Nov 03 09:00	26° ℳ 48'22	20.76676 AU
			morning rise	15130 Nov 19 08:21	27° ℳ 43'36	
conjunction	15124 Oct 09 08:42	2° ℳ 32'47 0°41'54		15131 Jan 05 09:54	0° ℳ	
minimum elong	15124 Oct 09 08:42	2° ℳ 32'47 0°42'20	retrograde	15131 Feb 21 02:32	0° ℳ 52'52	
max. Earth dist.	15124 Oct 09 14:44	2° ℳ 33'39 20.98190 AU		15131 Apr 10 04:42	30° ℳ	
morning rise	15124 Oct 25 08:29	3° ℳ 27'31	opposition	15131 May 09 03:26	28° ℳ 53'18	1°08'39
retrograde	15125 Jan 26 14:07	6° ℳ 33'21	min. Earth dist.	15131 May 09 00:42	28° ℳ 53'35	18.74317 AU
opposition	15125 Apr 13 21:22	4° ℳ 34'32 0°48'29	direct	15131 Jul 23 18:53	26° ℳ 55'12	
min. Earth dist.	15125 Apr 13 15:55	4° ℳ 35'05 18.96864 AU	evening set	15131 Oct 22 14:10	29° ℳ 59'11	
direct	15125 Jun 29 01:09	2° ℳ 37'00		15131 Oct 22 19:52	0° ℳ	
evening set	15125 Sep 27 16:20	5° ℳ 38'08				
			conjunction	15131 Nov 07 15:15	0° ℳ 54'47	1°03'02
conjunction	15125 Oct 13 14:45	6° ℳ 32'43 0°45'39	minimum elong	15131 Nov 07 15:14	0° ℳ 54'47	1°03'49
minimum elong	15125 Oct 13 14:44	6° ℳ 32'43 0°46'09	max. Earth dist.	15131 Nov 07 16:37	0° ℳ 54'59	20.71802 AU
max. Earth dist.	15125 Oct 13 19:27	6° ℳ 33'23 20.95428 AU	morning rise	15131 Nov 23 18:37	1° ℳ 50'44	
morning rise	15125 Oct 29 15:10	7° ℳ 27'35	retrograde	15132 Feb 25 14:11	5° ℳ 00'41	
retrograde	15126 Jan 30 22:51	10° ℳ 33'53	opposition	15132 May 12 13:56	3° ℳ 00'55	1°10'58
opposition	15126 Apr 18 05:42	8° ℳ 34'56 0°52'31	min. Earth dist.	15132 May 12 12:39	3° ℳ 01'03	18.69242 AU
min. Earth dist.	15126 Apr 18 00:56	8° ℳ 35'25 18.93948 AU	direct	15132 Jul 27 02:44	1° ℳ 02'37	
direct	15126 Jul 03 07:00	6° ℳ 37'19	evening set	15132 Oct 25 23:58	4° ℳ 07'15	
evening set	15126 Oct 01 22:32	9° ℳ 38'46				
			conjunction	15132 Nov 11 01:47	5° ℳ 03'04	1°04'56
conjunction	15126 Oct 17 21:31	10° ℳ 33'29 0°49'11	minimum elong	15132 Nov 11 01:46	5° ℳ 03'04	1°05'46
minimum elong	15126 Oct 17 21:31	10° ℳ 33'29 0°49'43	max. Earth dist.	15132 Nov 11 03:19	5° ℳ 03'18	20.66521 AU
max. Earth dist.	15126 Oct 18 03:00	10° ℳ 34'17 20.92344 AU	morning rise	15132 Nov 27 05:33	5° ℳ 59'13	
morning rise	15126 Nov 02 22:13	11° ℳ 28'30	retrograde	15133 Mar 01 03:24	9° ℳ 09'51	
retrograde	15127 Feb 04 08:17	14° ℳ 35'18	opposition	15133 May 17 00:41	7° ℳ 09'52	1°12'55
opposition	15127 Apr 22 14:02	12° ℳ 36'13 0°56'18	min. Earth dist.	15133 May 16 23:24	7° ℳ 10'00	18.63758 AU
min. Earth dist.	15127 Apr 22 09:09	12° ℳ 36'43 18.90700 AU	direct	15133 Jul 31 12:22	5° ℳ 11'20	
direct	15127 Jul 07 14:09	10° ℳ 38'33	evening set	15133 Oct 30 10:33	8° ℳ 16'37	
evening set	15127 Oct 06 05:22	13° ℳ 40'24				
			conjunction	15133 Nov 15 12:47	9° ℳ 12'40	1°06'31
conjunction	15127 Oct 22 04:35	14° ℳ 35'15 0°52'28	minimum elong	15133 Nov 15 12:47	9° ℳ 12'40	1°07'22
minimum elong	15127 Oct 22 04:34	14° ℳ 35'15 0°53'05	max. Earth dist.	15133 Nov 15 12:24	9° ℳ 12'36	20.60856 AU
max. Earth dist.	15127 Oct 22 08:35	14° ℳ 35'50 20.88941 AU	morning rise	15133 Dec 01 17:19	10° ℳ 09'03	
	15127 Oct 29 08:17	15° ℳ	retrograde	15134 Mar 05 16:01	13° ℳ 20'23	
morning rise	15127 Nov 07 05:55	15° ℳ 30'25	opposition	15134 May 21 11:58	11° ℳ 20'07	1°14'30
retrograde	15128 Feb 08 17:30	18° ℳ 37'47	min. Earth dist.	15134 May 21 12:15	11° ℳ 20'06	18.57927 AU
opposition	15128 Apr 25 22:55	16° ℳ 38'36 0°59'50	direct	15134 Aug 04 20:52	9° ℳ 21'18	
min. Earth dist.	15128 Apr 25 18:55	16° ℳ 39'00 18.87141 AU	evening set	15134 Nov 03 21:40	12° ℳ 27'17	
	15128 Jun 12 23:03	15° ℳ				
direct	15128 Jul 10 20:06	14° ℳ 40'51	conjunction	15134 Nov 20 00:39	13° ℳ 23'35	1°07'45
	15128 Aug 07 05:00	15° ℳ	minimum elong	15134 Nov 20 00:38	13° ℳ 23'35	1°08'39
evening set	15128 Oct 09 12:25	17° ℳ 43'09	max. Earth dist.	15134 Nov 20 00:31	13° ℳ 23'34	20.54875 AU
			morning rise	15134 Dec 06 05:35	14° ℳ 20'12	
conjunction	15128 Oct 25 12:14	18° ℳ 38'10 0°55'31	retrograde	15135 Mar 10 06:38	17° ℳ 32'13	
minimum elong	15128 Oct 25 12:13	18° ℳ 38'10 0°56'10	opposition	15135 May 25 23:23	15° ℳ 31'42	1°15'42
max. Earth dist.	15128 Oct 25 16:58	18° ℳ 38'51 20.85212 AU	min. Earth dist.	15135 May 25 23:29	15° ℳ 31'41	18.51810 AU
morning rise	15128 Nov 10 13:54	19° ℳ 33'30	direct	15135 Aug 09 08:04	13° ℳ 32'34	
retrograde	15129 Feb 12 04:14	22° ℳ 41'28	evening set	15135 Nov 08 09:35	16° ℳ 39'18	
opposition	15129 Apr 30 08:04	20° ℳ 42'10 1°03'05				
min. Earth dist.	15129 Apr 30 03:58	20° ℳ 42'35 18.83237 AU	conjunction	15135 Nov 24 13:00	17° ℳ 35'51	1°08'38
direct	15129 Jul 15 03:53	18° ℳ 44'20	minimum elong	15135 Nov 24 13:00	17° ℳ 35'51	1°09'33
evening set	15129 Oct 13 20:24	21° ℳ 47'09	max. Earth dist.	15135 Nov 24 11:18	17° ℳ 35'36	20.48652 AU
			morning rise	15135 Dec 10 18:40	18° ℳ 32'44	
conjunction	15129 Oct 29 20:30	22° ℳ 42'21 0°58'18	retrograde	15136 Mar 13 19:53	21° ℳ 45'28	
minimum elong	15129 Oct 29 20:30	22° ℳ 42'21 0°59'01	opposition	15136 Mar 29 11:33	19° ℳ 44'39	1°16'30
max. Earth dist.	15129 Oct 29 23:33	22° ℳ 42'47 20.81133 AU	min. Earth dist.	15136 May 29 13:03	19° ℳ 44'30	18.45505 AU
morning rise	15129 Nov 14 22:51	23° ℳ 37'52	direct	15136 Aug 12 17:07	17° ℳ 45'12	
retrograde	15130 Feb 16 14:37	26° ℳ 46'29	evening set	15136 Nov 11 21:58	20° ℳ 52'43	

conjunction	15136 Nov 28 02:10	21° \nearrow 49'32	1°09'09	retrograde	15143 Apr 14 20:41	22° \searrow 04'35	
minimum elong	15136 Nov 28 02:10	21° \nearrow 49'32	1°10'05	opposition	15143 Jun 29 15:15	20° \searrow 02'21	1°10'06
max. Earth dist.	15136 Nov 28 00:57	21° \nearrow 49'21	20.42275 AU	min. Earth dist.	15143 Jun 29 18:51	20° \searrow 01'58	18.00275 AU
morning rise	15136 Dec 14 08:19	22° \nearrow 46'40		direct	15143 Sep 12 12:44	18° \searrow 00'57	
retrograde	15137 Mar 18 12:14	26° \nearrow 00'09		evening set	15143 Dec 13 13:35	21° \searrow 15'14	
opposition	15137 Jun 03 00:01	23° \nearrow 59'04	1°16'53				
min. Earth dist.	15137 Jun 03 01:03	23° \nearrow 58'57	18.39066 AU	conjunction	15143 Dec 29 22:15	22° \searrow 14'06	1°01'51
direct	15137 Aug 17 05:39	21° \nearrow 59'18		minimum elong	15143 Dec 29 22:16	22° \searrow 14'06	1°02'47
evening set	15137 Nov 16 11:24	25° \nearrow 07'39		max. Earth dist.	15143 Dec 29 16:56	22° \searrow 13'18	19.97088 AU
				morning rise	15144 Jan 15 08:30	23° \searrow 13'14	
conjunction	15137 Dec 02 16:06	26° \nearrow 04'44	1°09'17	retrograde	15144 Apr 18 15:41	26° \searrow 32'17	
minimum elong	15137 Dec 02 16:06	26° \nearrow 04'44	1°10'14	opposition	15144 Jul 03 08:16	24° \searrow 29'55	1°07'26
max. Earth dist.	15137 Dec 02 13:28	26° \nearrow 04'21	20.35790 AU	min. Earth dist.	15144 Jul 03 13:26	24° \searrow 29'22	17.93950 AU
morning rise	15137 Dec 18 22:58	27° \nearrow 02'09		direct	15144 Sep 16 04:01	22° \searrow 28'16	
	15138 Feb 25 17:41	0° \searrow		evening set	15144 Dec 17 09:15	25° \searrow 43'36	
retrograde	15138 Mar 23 02:22	0° \searrow 16'22					
	15138 Apr 17 17:59	30° \nearrow		conjunction	15145 Jan 02 18:36	26° \searrow 42'47	0°59'15
opposition	15138 Jun 07 13:00	28° \nearrow 15'02	1°16'51	minimum elong	15145 Jan 02 18:37	26° \searrow 42'47	1°00'09
min. Earth dist.	15138 Jun 07 15:28	28° \nearrow 14'47	18.32559 AU	max. Earth dist.	15145 Jan 02 12:35	26° \searrow 41'52	19.90784 AU
direct	15138 Aug 21 15:46	26° \nearrow 14'57		morning rise	15145 Jan 19 05:25	27° \searrow 42'11	
evening set	15138 Nov 21 01:29	29° \nearrow 24'12			15145 Mar 05 01:17	0° \approx	
	15138 Dec 01 05:37	0° \searrow		retrograde	15145 Apr 23 12:59	1° \approx 02'01	
					15145 Jun 13 08:01	30° \nearrow	
conjunction	15138 Dec 07 06:58	0° \searrow 21'34	1°09'02	opposition	15145 Jul 08 01:49	28° \searrow 59'30	1°04'21
minimum elong	15138 Dec 07 06:58	0° \searrow 21'34	1°09'59	min. Earth dist.	15145 Jul 08 06:45	28° \searrow 58'58	17.87654 AU
max. Earth dist.	15138 Dec 07 04:41	0° \searrow 21'14	20.29268 AU	direct	15145 Sep 20 21:51	26° \searrow 57'33	
morning rise	15138 Dec 23 14:20	1° \searrow 19'15			15145 Dec 18 07:23	0° \approx	
retrograde	15139 Mar 27 19:57	4° \searrow 34'15		evening set	15145 Dec 22 06:01	0° \approx 13'57	
opposition	15139 Jun 12 02:31	2° \searrow 32'41	1°16'23				
min. Earth dist.	15139 Jun 12 04:22	2° \searrow 32'29	18.26024 AU	conjunction	15146 Jan 07 15:58	1° \approx 13'24	0°56'16
direct	15139 Aug 26 05:22	0° \searrow 32'18		minimum elong	15146 Jan 07 15:59	1° \approx 13'25	0°57'07
evening set	15139 Nov 25 16:24	3° \searrow 42'29		max. Earth dist.	15146 Jan 07 09:11	1° \approx 12'23	19.84498 AU
				morning rise	15146 Jan 24 03:11	2° \approx 13'05	
conjunction	15139 Dec 11 22:24	4° \searrow 40'08	1°08'23	retrograde	15146 Apr 28 09:07	5° \approx 33'38	
minimum elong	15139 Dec 11 22:24	4° \searrow 40'08	1°09'21	opposition	15146 Jul 12 20:02	3° \approx 30'57	1°00'50
max. Earth dist.	15139 Dec 11 19:00	4° \searrow 39'38	20.22735 AU	min. Earth dist.	15146 Jul 13 02:27	3° \approx 30'16	17.81396 AU
morning rise	15139 Dec 28 06:26	5° \searrow 38'06		direct	15146 Sep 25 15:22	1° \approx 28'41	
retrograde	15140 Mar 31 11:44	8° \searrow 53'55		evening set	15146 Dec 27 03:32	4° \approx 46'06	
opposition	15140 Jun 15 16:52	6° \searrow 52'08	1°15'28				
min. Earth dist.	15140 Jun 15 20:02	6° \searrow 51'48	18.19511 AU	conjunction	15147 Jan 12 14:04	5° \approx 45'51	0°52'54
direct	15140 Aug 29 16:54	4° \searrow 51'28		minimum elong	15147 Jan 12 14:04	5° \approx 45'51	0°53'45
evening set	15140 Nov 29 08:12	8° \searrow 02'38		max. Earth dist.	15147 Jan 12 06:15	5° \approx 44'40	19.78298 AU
				morning rise	15147 Jan 29 01:48	6° \approx 45'48	
conjunction	15140 Dec 15 14:59	9° \searrow 00'35	1°07'21	retrograde	15147 May 03 07:16	10° \approx 07'02	
minimum elong	15140 Dec 15 15:00	9° \searrow 00'35	1°08'18	opposition	15147 Jul 17 14:50	8° \approx 04'09	0°56'55
max. Earth dist.	15140 Dec 15 11:47	9° \searrow 00'06	20.16250 AU	min. Earth dist.	15147 Jul 17 20:59	8° \approx 03'30	17.75253 AU
morning rise	15140 Dec 31 23:33	9° \searrow 58'50		direct	15147 Sep 30 10:56	6° \approx 01'33	
retrograde	15141 Apr 05 06:43	13° \searrow 15'26		evening set	15148 Jan 01 01:40	9° \approx 19'57	
opposition	15141 Jun 20 07:34	11° \searrow 13'29	1°14'07				
min. Earth dist.	15141 Jun 20 10:07	11° \searrow 13'13	18.13046 AU	conjunction	15148 Jan 17 12:49	10° \approx 19'59	0°49'12
direct	15141 Sep 03 07:35	9° \searrow 12'34		minimum elong	15148 Jan 17 12:49	10° \approx 19'59	0°49'59
evening set	15141 Dec 04 01:03	12° \searrow 24'45		max. Earth dist.	15148 Jan 17 04:57	10° \approx 18'47	19.72230 AU
				morning rise	15148 Feb 03 00:52	11° \approx 20'11	
conjunction	15141 Dec 20 08:27	13° \searrow 23'00	1°05'54	retrograde	15148 May 07 04:32	14° \approx 42'03	
minimum elong	15141 Dec 20 08:27	13° \searrow 23'00	1°06'53	opposition	15148 Jul 21 10:20	12° \approx 38'59	0°52'37
max. Earth dist.	15141 Dec 20 04:12	13° \searrow 22'22	20.09811 AU	min. Earth dist.	15148 Jul 21 17:33	12° \approx 38'12	17.69282 AU
morning rise	15142 Jan 05 17:39	14° \searrow 21'33		direct	15148 Oct 04 05:41	10° \approx 36'02	
retrograde	15142 Apr 10 00:19	17° \searrow 38'59		evening set	15149 Jan 05 00:46	13° \approx 55'24	
opposition	15142 Jun 24 23:10	15° \searrow 36'53	1°12'20				
min. Earth dist.	15142 Jun 25 03:12	15° \searrow 36'27	18.06636 AU	conjunction	15149 Jan 21 12:22	14° \approx 55'41	0°45'09
direct	15142 Sep 07 20:38	13° \searrow 35'43		minimum elong	15149 Jan 21 12:22	14° \approx 55'41	0°45'54
evening set	15142 Dec 08 18:46	16° \searrow 348'56		max. Earth dist.	15149 Jan 21 03:25	14° \approx 54'19	19.66390 AU
					15149 Jan 22 16:26	15° \approx	
conjunction	15142 Dec 25 02:51	17° \searrow 347'30	1°04'05	morning rise	15149 Feb 07 00:55	15° \approx 56'08	
minimum elong	15142 Dec 25 02:51	17° \searrow 347'30	1°05'01	retrograde	15149 May 12 04:08	19° \approx 18'34	
max. Earth dist.	15142 Dec 24 22:26	17° \searrow 346'50	20.03434 AU	opposition	15149 Jul 26 06:06	17° \approx 15'18	0°47'57
morning rise	15143 Jan 10 12:34	18° \searrow 346'20		min. Earth dist.	15149 Jul 26 13:09	17° \approx 14'33	17.63578 AU



























































































































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evening set	15150 Jan 10 00:31	18° \approx 32'19		minimum elong	15156 Feb 25 01:28	17° \mathbb{H} 42'09	0°09'59
				behind sun begin	15156 Feb 24 20:03	17° \mathbb{H} 41'20	
conjunction	15150 Jan 26 12:42	19° \approx 32'52	0°40'48	behind sun end	15156 Feb 25 06:53	17° \mathbb{H} 42'59	
minimum elong	15150 Jan 26 12:42	19° \approx 32'52	0°41'30	max. Earth dist.	15156 Feb 24 17:38	17° \mathbb{H} 40'57	19.37115 AU
max. Earth dist.	15150 Jan 26 04:15	19° \approx 31'34	19.60833 AU	morning rise	15156 Mar 12 14:37	18° \mathbb{H} 43'45	
morning rise	15150 Feb 12 01:24	20° \approx 33'32		retrograde	15156 Jun 14 05:53	22° \mathbb{H} 08'50	
retrograde	15150 May 17 02:46	23° \approx 56'29		opposition	15156 Aug 27 15:19	20° \mathbb{H} 04'59	0°07'37
opposition	15150 Jul 31 02:35	21° \approx 53'03	0°42'57	min. Earth dist.	15156 Aug 27 21:56	20° \mathbb{H} 04'16	17.36005 AU
min. Earth dist.	15150 Jul 31 10:14	21° \approx 52'14	17.58190 AU	direct	15156 Nov 10 14:57	18° \mathbb{H} 00'07	
direct	15150 Oct 13 22:07	19° \approx 49'25		evening set	15157 Feb 12 15:41	21° \mathbb{H} 25'46	
evening set	15151 Jan 15 00:55	23° \approx 10'38					
				conjunction	15157 Mar 01 05:15	22° \mathbb{H} 27'30	0°04'01
conjunction	15151 Jan 31 13:20	24° \approx 11'24	0°36'09	minimum elong	15157 Mar 01 05:14	22° \mathbb{H} 27'30	0°04'15
minimum elong	15151 Jan 31 13:21	24° \approx 11'24	0°36'47	behind sun begin	15157 Feb 28 22:36	22° \mathbb{H} 26'30	
max. Earth dist.	15151 Jan 31 03:50	24° \approx 09'56	19.55644 AU	behind sun end	15157 Mar 01 11:52	22° \mathbb{H} 28'31	
morning rise	15151 Feb 17 02:26	25° \approx 12'17		max. Earth dist.	15157 Feb 28 20:30	22° \mathbb{H} 26'10	19.35027 AU
retrograde	15151 May 22 03:18	28° \approx 35'44		morning rise	15157 Mar 17 18:18	23° \mathbb{H} 29'11	
opposition	15151 Aug 04 23:33	26° \approx 32'07	0°37'37	retrograde	15157 Jun 19 06:12	26° \mathbb{H} 54'25	
min. Earth dist.	15151 Aug 05 07:00	26° \approx 31'18	17.53211 AU	opposition	15157 Sep 01 14:55	24° \mathbb{H} 50'37	0°01'14
direct	15151 Oct 18 19:39	24° \approx 28'10		min. Earth dist.	15157 Sep 01 22:18	24° \mathbb{H} 49'49	17.34172 AU
evening set	15152 Jan 20 01:54	27° \approx 50'14		desc. node	15157 Nov 08 20:00	22° \mathbb{H} 46'54	
				direct	15157 Nov 15 15:05	22° \mathbb{H} 45'39	
conjunction	15152 Feb 05 14:49	28° \approx 51'13	0°31'14	evening set	15158 Feb 17 19:50	26° \mathbb{H} 11'51	
minimum elong	15152 Feb 05 14:50	28° \approx 51'14	0°31'50				
max. Earth dist.	15152 Feb 05 06:24	28° \approx 49'55	19.50882 AU	conjunction	15158 Mar 06 09:24	27° \mathbb{H} 13'39	-0°01'51
morning rise	15152 Feb 22 03:55	29° \approx 52'18		minimum elong	15158 Mar 06 09:24	27° \mathbb{H} 13'39	0°01'42
	15152 Feb 24 07:04	0° \mathbb{H}		behind sun begin	15158 Mar 06 02:39	27° \mathbb{H} 12'37	
retrograde	15152 May 26 02:57	3° \mathbb{H} 16'10		behind sun end	15158 Mar 06 16:08	27° \mathbb{H} 14'41	
opposition	15152 Aug 08 20:56	1° \mathbb{H} 12'25	0°32'01	max. Earth dist.	15158 Mar 06 01:26	27° \mathbb{H} 12'26	19.33430 AU
min. Earth dist.	15152 Aug 09 04:25	1° \mathbb{H} 11'36	17.48687 AU	morning rise	15158 Mar 22 22:06	28° \mathbb{H} 15'21	
	15152 Sep 07 11:26	30° \mathbb{R}			15158 Apr 22 21:41	0° \mathbb{Y}	
direct	15152 Oct 22 16:50	29° \approx 08'12		retrograde	15158 Jun 24 08:28	1° \mathbb{Y} 40'40	
	15152 Dec 05 22:58	0° \mathbb{H}			15158 Aug 28 18:49	30° \mathbb{R}	
evening set	15153 Jan 24 03:37	2° \mathbb{H} 31'04		opposition	15158 Sep 06 14:53	29° \mathbb{H} 36'56	-0°05'10
				min. Earth dist.	15158 Sep 06 21:27	29° \mathbb{H} 36'13	17.32802 AU
conjunction	15153 Feb 09 16:41	3° \mathbb{H} 32'15	0°26'06	direct	15158 Nov 20 17:50	27° \mathbb{H} 31'53	
minimum elong	15153 Feb 09 16:42	3° \mathbb{H} 32'15	0°26'37		15159 Feb 06 11:23	0° \mathbb{Y}	
max. Earth dist.	15153 Feb 09 07:12	3° \mathbb{H} 30'47	19.46618 AU	evening set	15159 Feb 23 00:09	0° \mathbb{Y} 58'31	
morning rise	15153 Feb 26 06:05	4° \mathbb{H} 33'30					
retrograde	15153 May 31 03:36	7° \mathbb{H} 57'45		conjunction	15159 Mar 11 13:27	2° \mathbb{Y} 00'21	-0°07'35
opposition	15153 Aug 13 18:52	5° \mathbb{H} 53'54	0°26'11	minimum elong	15159 Mar 11 13:27	2° \mathbb{Y} 00'21	0°07'31
min. Earth dist.	15153 Aug 14 02:19	5° \mathbb{H} 53'05	17.44689 AU	behind sun begin	15159 Mar 11 07:20	1° \mathbb{Y} 59'25	
direct	15153 Oct 27 15:11	3° \mathbb{H} 49'26		behind sun end	15159 Mar 11 19:35	2° \mathbb{Y} 01'17	
evening set	15154 Jan 29 05:49	7° \mathbb{H} 13'05		max. Earth dist.	15159 Mar 11 04:59	1° \mathbb{Y} 59'02	19.32283 AU
				morning rise	15159 Mar 28 01:52	3° \mathbb{Y} 02'04	
conjunction	15154 Feb 14 19:16	8° \mathbb{H} 14'27	0°20'46	retrograde	15159 Jun 29 08:40	6° \mathbb{Y} 27'23	
minimum elong	15154 Feb 14 19:17	8° \mathbb{H} 14'28	0°21'13	opposition	15159 Sep 11 15:16	4° \mathbb{Y} 23'42	-0°11'33
max. Earth dist.	15154 Feb 14 11:04	8° \mathbb{H} 13'11	19.42885 AU	min. Earth dist.	15159 Sep 11 22:40	4° \mathbb{Y} 22'54	17.31892 AU
morning rise	15154 Mar 03 08:31	9° \mathbb{H} 15'50		direct	15159 Nov 25 18:42	2° \mathbb{Y} 18'34	
retrograde	15154 Jun 05 04:02	12° \mathbb{H} 40'24		evening set	15160 Feb 28 04:38	5° \mathbb{Y} 45'32	
opposition	15154 Aug 18 17:12	10° \mathbb{H} 36'31	0°20'08				
min. Earth dist.	15154 Aug 19 00:12	10° \mathbb{H} 35'45	17.41229 AU	conjunction	15160 Mar 15 17:47	6° \mathbb{Y} 47'23	-0°13'15
direct	15154 Nov 01 14:33	8° \mathbb{H} 31'53		minimum elong	15160 Mar 15 17:47	6° \mathbb{Y} 47'23	0°13'15
evening set	15155 Feb 03 08:40	11° \mathbb{H} 56'16		behind sun begin	15160 Mar 15 13:56	6° \mathbb{Y} 46'48	
				behind sun end	15160 Mar 15 21:37	6° \mathbb{Y} 47'58	
conjunction	15155 Feb 19 22:06	12° \mathbb{H} 57'46	0°15'17	max. Earth dist.	15160 Mar 15 09:39	6° \mathbb{Y} 46'07	19.31602 AU
minimum elong	15155 Feb 19 22:07	12° \mathbb{H} 57'46	0°15'40	morning rise	15160 Apr 01 05:48	7° \mathbb{Y} 49'05	
behind sun begin	15155 Feb 19 21:03	12° \mathbb{H} 57'36		retrograde	15160 Jul 03 11:00	11° \mathbb{Y} 14'19	
behind sun end	15155 Feb 19 23:11	12° \mathbb{H} 57'56		opposition	15160 Sep 15 15:29	9° \mathbb{Y} 10'41	-0°17'52
max. Earth dist.	15155 Feb 19 12:59	12° \mathbb{H} 56'21	19.39718 AU	min. Earth dist.	15160 Sep 15 21:52	9° \mathbb{Y} 09'59	17.31434 AU
morning rise	15155 Mar 08 11:28	13° \mathbb{H} 59'17		direct	15160 Nov 29 22:15	7° \mathbb{Y} 05'29	
retrograde	15155 Jun 10 04:20	17° \mathbb{H} 24'08		evening set	15161 Mar 04 09:15	10° \mathbb{Y} 32'42	
opposition	15155 Aug 23 16:05	15° \mathbb{H} 20'14	0°13'56				
min. Earth dist.	15155 Aug 23 23:19	15° \mathbb{H} 19'27	17.38351 AU	conjunction	15161 Mar 20 22:04	11° \mathbb{Y} 34'31	-0°18'50
direct	15155 Nov 06 13:41	13° \mathbb{H} 15'28		minimum elong	15161 Mar 20 22:04	11° \mathbb{Y} 34'31	0°18'56
evening set	15156 Feb 08 11:46	16° \mathbb{H} 40'31		max. Earth dist.	15161 Mar 20 13:57	11° \mathbb{Y} 33'15	19.31371 AU




































































































































morning rise	15161 Apr 06 09:36	12° Υ 36'11	direct	15168 Jan 03 13:06	10° \mathcal{B} 23'21
retrograde	15161 Jul 08 11:10	16° Υ 01'14	evening set	15168 Apr 07 08:39	13° \mathcal{B} 49'35
opposition	15161 Sep 20 16:04	13° Υ 57'41 -0°24'03			
min. Earth dist.	15161 Sep 20 23:19	13° Υ 56'53 17.31447 AU	conjunction	15168 Apr 23 17:34	14° \mathcal{B} 50'31 -0°52'14
direct	15161 Dec 04 23:36	11° Υ 52'24	minimum elong	15168 Apr 23 17:34	14° \mathcal{B} 50'30 0°52'50
evening set	15162 Mar 09 13:37	15° Υ 19'45	max. Earth dist.	15168 Apr 23 13:12	14° \mathcal{B} 49'50 19.44595 AU
				15168 Apr 26 06:19	15° \mathcal{B}
conjunction	15162 Mar 26 02:02	16° Υ 21'32 -0°24'18	morning rise	15168 May 10 00:37	15° \mathcal{B} 51'09
minimum elong	15162 Mar 26 02:02	16° Υ 21'32 0°24'28	retrograde	15168 Aug 10 08:55	19° \mathcal{B} 13'12
max. Earth dist.	15162 Mar 25 17:58	16° Υ 20'16 19.31628 AU	opposition	15168 Oct 23 16:15	17° \mathcal{B} 10'29 -1°00'16
morning rise	15162 Apr 11 13:05	17° Υ 23'07	min. Earth dist.	15168 Oct 23 18:45	17° \mathcal{B} 10'13 17.46635 AU
retrograde	15162 Jul 13 12:58	20° Υ 47'56	direct	15169 Jan 07 15:02	15° \mathcal{B} 05'34
opposition	15162 Sep 25 16:28	18° Υ 44'26 -0°30'05	evening set	15169 Apr 12 10:03	18° \mathcal{B} 31'22
min. Earth dist.	15162 Sep 25 22:26	18° Υ 43'47 17.31950 AU			
direct	15162 Dec 10 02:59	16° Υ 39'07	conjunction	15169 Apr 28 18:25	19° \mathcal{B} 32'04 -0°55'46
evening set	15163 Mar 14 17:47	20° Υ 06'30	minimum elong	15169 Apr 28 18:25	19° \mathcal{B} 32'04 0°56'25
			max. Earth dist.	15169 Apr 28 16:01	19° \mathcal{B} 31'42 19.48758 AU
conjunction	15163 Mar 31 05:49	21° Υ 08'12 -0°29'36	morning rise	15169 May 15 00:32	20° \mathcal{B} 32'29
minimum elong	15163 Mar 31 05:49	21° Υ 08'12 0°29'51	retrograde	15169 Aug 15 06:40	23° \mathcal{B} 53'54
max. Earth dist.	15163 Mar 30 22:37	21° Υ 07'05 19.32382 AU	opposition	15169 Oct 28 15:26	21° \mathcal{B} 51'28 -1°03'59
morning rise	15163 Apr 16 16:12	22° Υ 09'42	min. Earth dist.	15169 Oct 28 17:29	21° \mathcal{B} 51'15 17.51035 AU
retrograde	15163 Jul 18 13:04	25° Υ 34'12	direct	15170 Jan 12 16:59	19° \mathcal{B} 46'47
opposition	15163 Sep 30 16:55	23° Υ 30'46 -0°35'53	evening set	15170 Apr 17 10:51	23° \mathcal{B} 12'02
min. Earth dist.	15163 Sep 30 23:30	23° Υ 30'03 17.32973 AU			
direct	15163 Dec 15 04:17	21° Υ 25'25	conjunction	15170 May 03 18:18	24° \mathcal{B} 12'30 -0°58'54
evening set	15164 Mar 18 21:39	24° Υ 52'45	minimum elong	15170 May 03 18:17	24° \mathcal{B} 12'30 0°59'37
			max. Earth dist.	15170 May 03 15:37	24° \mathcal{B} 12'05 19.53385 AU
conjunction	15164 Apr 04 09:07	25° Υ 54'20 -0°34'42	morning rise	15170 May 19 23:47	25° \mathcal{B} 12'40
minimum elong	15164 Apr 04 09:07	25° Υ 54'20 0°35'02	retrograde	15170 Aug 20 03:34	28° \mathcal{B} 33'27
max. Earth dist.	15164 Apr 04 01:45	25° Υ 53'11 19.33678 AU	opposition	15170 Nov 02 14:17	26° \mathcal{B} 31'17 -1°07'16
morning rise	15164 Apr 20 19:02	26° Υ 55'43	min. Earth dist.	15170 Nov 02 15:39	26° \mathcal{B} 31'08 17.55877 AU
	15164 Jun 25 18:33	0° \mathcal{B}	direct	15171 Jan 17 17:48	24° \mathcal{B} 26'50
retrograde	15164 Jul 22 14:00	0° \mathcal{B} 19'49	evening set	15171 Apr 22 10:57	27° \mathcal{B} 51'29
	15164 Aug 18 16:24	30° $\mathcal{R}\Upsilon$			
opposition	15164 Oct 04 17:08	28° Υ 16'29 -0°41'26	conjunction	15171 May 08 17:48	28° \mathcal{B} 51'41 -1°01'39
min. Earth dist.	15164 Oct 04 22:21	28° Υ 15'55 17.34541 AU	minimum elong	15171 May 08 17:48	28° \mathcal{B} 51'41 1°02'26
direct	15164 Dec 19 07:04	26° Υ 11'06	max. Earth dist.	15171 May 08 16:46	28° \mathcal{B} 51'32 19.58407 AU
evening set	15165 Mar 24 01:08	29° Υ 38'18	morning rise	15171 May 24 22:23	29° \mathcal{B} 51'36
	15165 Mar 29 21:53	0° \mathcal{B}		15171 May 27 06:02	0° \mathcal{B}
conjunction	15165 Apr 09 12:09	0° \mathcal{B} 39'46 -0°39'32	retrograde	15171 Aug 25 00:40	3° \mathcal{B} 11'40
minimum elong	15165 Apr 09 12:08	0° \mathcal{B} 39'46 0°39'56	opposition	15171 Nov 07 12:39	1° \mathcal{B} 09'47 -1°10'05
max. Earth dist.	15165 Apr 09 06:17	0° \mathcal{B} 38'51 19.35516 AU	min. Earth dist.	15171 Nov 07 13:24	1° \mathcal{B} 09'42 17.61060 AU
morning rise	15165 Apr 25 21:13	1° \mathcal{B} 40'59		15171 Dec 06 09:46	30° $\mathcal{R}\mathcal{B}$
retrograde	15165 Jul 27 13:23	5° \mathcal{B} 04'38	direct	15172 Jan 22 18:46	29° \mathcal{B} 05'35
opposition	15165 Oct 09 17:16	3° \mathcal{B} 01'24 -0°46'41		15172 Mar 08 18:32	0° \mathcal{B}
min. Earth dist.	15165 Oct 09 22:41	3° \mathcal{B} 00'48 17.36670 AU	evening set	15172 Apr 26 10:31	2° \mathcal{B} 29'33
direct	15165 Dec 24 08:42	0° \mathcal{B} 56'04			
evening set	15166 Mar 29 04:15	4° \mathcal{B} 23'00	conjunction	15172 May 12 16:29	3° \mathcal{B} 29'29 -1°04'00
			minimum elong	15172 May 12 16:29	3° \mathcal{B} 29'29 1°04'48
conjunction	15166 Apr 14 14:30	5° \mathcal{B} 24'19 -0°44'05	max. Earth dist.	15172 May 12 15:03	3° \mathcal{B} 29'16 19.63739 AU
minimum elong	15166 Apr 14 14:29	5° \mathcal{B} 24'19 0°44'35	morning rise	15172 May 28 20:26	4° \mathcal{B} 29'08
max. Earth dist.	15166 Apr 14 08:25	5° \mathcal{B} 23'22 19.37945 AU	retrograde	15172 Aug 28 20:37	7° \mathcal{B} 48'28
morning rise	15166 Apr 30 23:01	6° \mathcal{B} 25'22	opposition	15172 Nov 11 10:45	5° \mathcal{B} 46'50 -1°12'26
retrograde	15166 Aug 01 12:37	9° \mathcal{B} 48'31	min. Earth dist.	15172 Nov 11 11:20	5° \mathcal{B} 46'46 17.66535 AU
opposition	15166 Oct 14 17:12	7° \mathcal{B} 45'25 -0°51'36	direct	15173 Jan 26 18:03	3° \mathcal{B} 42'52
min. Earth dist.	15166 Oct 14 21:07	7° \mathcal{B} 44'59 17.39406 AU	evening set	15173 May 01 09:09	7° \mathcal{B} 06'05
direct	15166 Dec 29 10:57	5° \mathcal{B} 40'09			
evening set	15167 Apr 03 06:33	9° \mathcal{B} 06'47	conjunction	15173 May 17 14:28	8° \mathcal{B} 05'45 -1°05'55
			minimum elong	15173 May 17 14:28	8° \mathcal{B} 05'45 1°06'47
conjunction	15167 Apr 19 16:19	10° \mathcal{B} 07'55 -0°48'20	max. Earth dist.	15173 May 17 14:16	8° \mathcal{B} 05'43 19.69326 AU
minimum elong	15167 Apr 19 16:18	10° \mathcal{B} 07'54 0°48'52	morning rise	15173 Jun 02 17:32	9° \mathcal{B} 05'07
max. Earth dist.	15167 Apr 19 12:15	10° \mathcal{B} 07'16 19.40973 AU	retrograde	15173 Sep 02 17:02	12° \mathcal{B} 23'40
morning rise	15167 May 05 23:56	11° \mathcal{B} 08'46	opposition	15173 Nov 16 08:19	10° \mathcal{B} 22'18 -1°14'19
retrograde	15167 Aug 06 11:14	14° \mathcal{B} 31'23	min. Earth dist.	15173 Nov 16 07:59	10° \mathcal{B} 22'20 17.72219 AU
opposition	15167 Oct 19 16:58	12° \mathcal{B} 28'27 -0°56'08	direct	15174 Jan 31 18:18	8° \mathcal{B} 18'34
min. Earth dist.	15167 Oct 19 20:35	12° \mathcal{B} 28'04 17.42731 AU	evening set	15174 May 06 07:05	11° \mathcal{B} 40'57

conjunction	15174 May 22 11:33	12°II40'20	-1°07'25	retrograde	15180 Oct 03 13:00	13°☿37'32	
minimum elong	15174 May 22 11:33	12°II40'20	1°08'17	opposition	15180 Dec 17 22:39	11°☿37'33	-1°14'16
max. Earth dist.	15174 May 22 11:13	12°II40'17	19.75104 AU	min. Earth dist.	15180 Dec 17 18:59	11°☿37'56	18.15983 AU
morning rise	15174 Jun 07 13:57	13°II39'26		direct	15181 Mar 04 18:56	9°☿35'34	
retrograde	15174 Sep 07 11:21	16°II57'10		evening set	15181 Jun 06 13:17	12°☿51'07	
opposition	15174 Nov 21 05:27	14°II56'01	-1°15'44				
min. Earth dist.	15174 Nov 21 05:15	14°II56'03	17.78094 AU	conjunction	15181 Jun 22 13:14	13°☿48'27	-1°06'04
direct	15175 Feb 05 15:54	12°II52'32		minimum elong	15181 Jun 22 13:14	13°☿48'27	1°07'01
evening set	15175 May 11 03:54	16°II14'02		max. Earth dist.	15181 Jun 22 17:42	13°☿49'08	20.19326 AU
				morning rise	15181 Jul 08 11:35	14°☿45'34	
conjunction	15175 May 27 07:46	17°II13'08	-1°08'28	retrograde	15181 Oct 08 04:06	17°☿57'29	
minimum elong	15175 May 27 07:46	17°II13'08	1°09'23	opposition	15181 Dec 22 15:12	15°☿57'46	-1°12'29
max. Earth dist.	15175 May 27 08:21	17°II13'13	19.81054 AU	min. Earth dist.	15181 Dec 22 09:42	15°☿58'20	18.22728 AU
morning rise	15175 Jun 12 09:28	18°II11'56		direct	15182 Mar 09 14:25	13°☿56'07	
retrograde	15175 Sep 12 06:49	21°II28'51		evening set	15182 Jun 11 03:32	17°☿10'40	
opposition	15175 Nov 26 01:54	19°II27'55	-1°16'39				
min. Earth dist.	15175 Nov 26 00:34	19°II28'03	17.84096 AU	conjunction	15182 Jun 27 03:02	18°☿07'45	-1°04'17
direct	15176 Feb 10 15:34	17°II24'39		minimum elong	15182 Jun 27 03:02	18°☿07'45	1°05'13
evening set	15176 May 15 00:02	20°II45'14		max. Earth dist.	15182 Jun 27 08:50	18°☿08'37	20.26099 AU
				morning rise	15182 Jul 13 00:52	19°☿04'35	
conjunction	15176 May 31 03:07	21°II44'02	-1°09'07	retrograde	15182 Oct 12 16:12	22°☿15'46	
minimum elong	15176 May 31 03:07	21°II44'02	1°10'03	opposition	15182 Dec 27 07:12	20°☿16'18	-1°10'17
max. Earth dist.	15176 May 31 03:55	21°II44'09	19.87116 AU	min. Earth dist.	15182 Dec 27 02:07	20°☿16'50	18.29515 AU
morning rise	15176 Jun 16 04:10	22°II42'33		direct	15183 Mar 14 06:04	18°☿15'01	
retrograde	15176 Sep 15 22:53	25°II58'36		evening set	15183 Jun 15 16:59	21°☿28'36	
opposition	15176 Nov 29 21:45	23°II57'52	-1°17'06				
min. Earth dist.	15176 Nov 29 20:49	23°II57'58	17.90223 AU	conjunction	15183 Jul 01 15:57	22°☿25'23	-1°02'10
direct	15177 Feb 14 11:48	21°II54'50		minimum elong	15183 Jul 01 15:58	22°☿25'24	1°03'06
evening set	15177 May 19 19:05	25°II14'26		max. Earth dist.	15183 Jul 01 21:42	22°☿26'15	20.32886 AU
				morning rise	15183 Jul 17 13:34	23°☿21'59	
conjunction	15177 Jun 04 21:31	26°II12'56	-1°09'19	retrograde	15183 Oct 17 05:59	26°☿32'28	
minimum elong	15177 Jun 04 21:31	26°II12'56	1°10'16	opposition	15183 Dec 31 22:32	24°☿33'15	-1°07'43
max. Earth dist.	15177 Jun 04 23:00	26°II13'10	19.93305 AU	min. Earth dist.	15183 Dec 31 15:56	24°☿33'56	18.36264 AU
morning rise	15177 Jun 20 21:57	27°II11'10		direct	15184 Mar 17 23:31	22°☿32'19	
	15177 Aug 20 05:05	0°☿		evening set	15184 Jun 19 05:38	25°☿44'56	
retrograde	15177 Sep 20 17:01	0°☿26'21					
	15177 Oct 22 18:53	30°♄II		conjunction	15184 Jul 05 04:13	26°☿41'29	-0°59'43
opposition	15177 Dec 04 16:57	28°II25'48	-1°17'05	minimum elong	15184 Jul 05 04:14	26°☿41'29	1°00'36
min. Earth dist.	15177 Dec 04 14:32	28°II26'03	17.96461 AU	max. Earth dist.	15184 Jul 05 11:12	26°☿42'31	20.39580 AU
direct	15178 Feb 19 10:19	26°II23'00		morning rise	15184 Jul 21 01:22	27°☿37'50	
evening set	15178 May 24 13:00	29°II41'35			15184 Sep 07 11:51	0°♄	
	15178 May 29 16:13	0°☿		retrograde	15184 Oct 20 17:09	0°♄47'37	
					15184 Dec 04 10:40	30°♄☿	
conjunction	15178 Jun 09 14:46	0°☿39'48	-1°09'07	opposition	15185 Jan 04 13:27	28°☿48'39	-1°04'48
minimum elong	15178 Jun 09 14:46	0°☿39'48	1°10'05	min. Earth dist.	15185 Jan 04 07:27	28°☿49'16	18.42892 AU
max. Earth dist.	15178 Jun 09 17:06	0°☿40'09	19.99602 AU	direct	15185 Mar 22 14:13	26°☿48'06	
morning rise	15178 Jun 25 14:35	1°☿37'44		evening set	15185 Jun 23 17:37	29°☿59'45	
retrograde	15178 Sep 25 07:21	4°☿52'05			15185 Jun 23 19:23	0°♄	
opposition	15178 Dec 09 11:37	2°☿51'42	-1°16'35				
min. Earth dist.	15178 Dec 09 09:28	2°☿51'55	18.02832 AU	conjunction	15185 Jul 09 15:41	0°♄56'02	-0°56'57
direct	15179 Feb 24 04:59	0°☿49'08		minimum elong	15185 Jul 09 15:42	0°♄56'02	0°57'50
evening set	15179 May 29 06:02	4°☿06'42		max. Earth dist.	15185 Jul 09 22:13	0°♄57'00	20.46134 AU
				morning rise	15185 Jul 25 12:40	1°♄52'09	
conjunction	15179 Jun 14 07:10	5°☿04'37	-1°08'29	retrograde	15185 Oct 25 05:23	5°♄01'17	
minimum elong	15179 Jun 14 07:10	5°☿04'37	1°09'27	opposition	15186 Jan 09 03:46	3°♄02'33	-1°01'33
max. Earth dist.	15179 Jun 14 10:06	5°☿05'03	20.06045 AU	min. Earth dist.	15186 Jan 08 20:27	3°♄03'18	18.49344 AU
morning rise	15179 Jun 30 06:30	6°☿02'16		direct	15186 Mar 27 05:43	1°♄02'19	
retrograde	15179 Sep 29 23:49	9°☿15'46		evening set	15186 Jun 28 04:41	4°♄13'01	
opposition	15179 Dec 14 05:17	7°☿15'34	-1°15'39				
min. Earth dist.	15179 Dec 14 01:25	7°☿15'59	18.09339 AU	conjunction	15186 Jul 14 02:30	5°♄09'04	-0°53'54
direct	15180 Feb 29 01:59	5°☿13'16		minimum elong	15186 Jul 14 02:30	5°♄09'04	0°54'44
evening set	15180 Jun 01 22:10	8°☿29'50		max. Earth dist.	15186 Jul 14 10:08	5°♄10'12	20.52463 AU
				morning rise	15186 Jul 29 23:07	6°♄04'59	
conjunction	15180 Jun 17 22:44	9°☿27'28	-1°07'28	retrograde	15186 Oct 29 15:42	9°♄13'28	
minimum elong	15180 Jun 17 22:44	9°☿27'28	1°08'26	opposition	15187 Jan 13 17:38	7°♄14'57	-0°58'00
max. Earth dist.	15180 Jun 18 02:48	9°☿28'05	20.12618 AU	min. Earth dist.	15187 Jan 13 11:03	7°♄15'37	18.55537 AU
morning rise	15180 Jul 03 21:28	10°☿24'50		direct	15187 Mar 31 18:58	5°♄15'02	

evening set	15187 Jul 02 15:18	8°Ω24'48	conjunction	15193 Aug 11 12:34	3°♊58'40 -0°26'14
			minimum elong	15193 Aug 11 12:34	3°♊58'41 0°26'45
conjunction	15187 Jul 18 12:40	9°Ω20'37 -0°50'35	max. Earth dist.	15193 Aug 11 20:15	3°♊59'47 20.87384 AU
minimum elong	15187 Jul 18 12:41	9°Ω20'37 0°51'22	morning rise	15193 Aug 27 08:45	4°♊53'24
max. Earth dist.	15187 Jul 18 19:27	9°Ω21'37 20.58511 AU	retrograde	15193 Nov 27 07:52	7°♊58'19
morning rise	15187 Aug 03 09:13	10°Ω16'19	opposition	15194 Feb 12 02:45	6°♊00'18 -0°26'31
retrograde	15187 Nov 03 02:51	13°Ω24'12	min. Earth dist.	15194 Feb 11 18:25	6°♊01'09 18.89293 AU
opposition	15188 Jan 18 06:41	11°Ω25'50 -0°54'09	direct	15194 Apr 30 02:23	4°♊01'47
min. Earth dist.	15188 Jan 17 23:10	11°Ω26'36 18.61419 AU	evening set	15194 Jul 30 22:29	7°♊05'50
direct	15188 Apr 04 08:53	9°Ω26'11			
evening set	15188 Jul 06 01:10	12°Ω35'04	conjunction	15194 Aug 15 18:43	8°♊00'25 -0°21'39
			minimum elong	15194 Aug 15 18:43	8°♊00'25 0°22'06
conjunction	15188 Jul 21 22:21	13°Ω30'40 -0°47'01	max. Earth dist.	15194 Aug 16 03:45	8°♊01'43 20.91116 AU
minimum elong	15188 Jul 21 22:21	13°Ω30'40 0°47'47	morning rise	15194 Aug 31 14:49	8°♊55'01
max. Earth dist.	15188 Jul 22 06:04	13°Ω31'48 20.64212 AU	retrograde	15194 Dec 01 14:47	11°♊59'38
morning rise	15188 Aug 06 18:34	14°Ω26'10	opposition	15195 Feb 16 12:26	10°♊01'41 -0°21'23
	15188 Aug 16 19:25	15°Ω	min. Earth dist.	15195 Feb 16 04:20	10°♊02'30 18.92876 AU
retrograde	15188 Nov 06 11:57	17°Ω33'28	direct	15195 May 04 11:38	8°♊03'22
opposition	15189 Jan 21 19:30	15°Ω35'15 -0°50'04	evening set	15195 Aug 04 04:23	11°♊06'48
min. Earth dist.	15189 Jan 21 12:46	15°Ω35'56 18.66935 AU			
	15189 Feb 05 12:36	15°♋Ω	conjunction	15195 Aug 20 00:24	12°♊01'16 -0°16'59
direct	15189 Apr 08 20:43	13°Ω35'51	minimum elong	15195 Aug 20 00:24	12°♊01'16 0°17'22
	15189 Jun 07 01:16	15°Ω	max. Earth dist.	15195 Aug 20 08:35	12°♊02'26 20.94557 AU
evening set	15189 Jul 10 10:18	16°Ω43'49	morning rise	15195 Sep 04 20:45	12°♊55'47
			retrograde	15195 Dec 05 23:14	16°♊00'09
conjunction	15189 Jul 26 07:06	17°Ω39'12 -0°43'13	opposition	15196 Feb 20 21:39	14°♊02'15 -0°16'10
minimum elong	15189 Jul 26 07:06	17°Ω39'13 0°43'56	min. Earth dist.	15196 Feb 20 12:54	14°♊03'08 18.96162 AU
max. Earth dist.	15189 Jul 26 13:53	17°Ω40'12 20.69548 AU	direct	15196 May 07 19:15	12°♊04'09
morning rise	15189 Aug 11 03:22	18°Ω34'31	evening set	15196 Aug 07 09:50	15°♊07'03
retrograde	15189 Nov 10 22:26	21°Ω41'17			
opposition	15190 Jan 26 07:38	19°Ω43'08 -0°45'43	conjunction	15196 Aug 23 05:59	16°♊01'25 -0°12'15
min. Earth dist.	15190 Jan 26 00:03	19°Ω43'54 18.72078 AU	minimum elong	15196 Aug 23 05:59	16°♊01'25 0°12'34
direct	15190 Apr 13 09:25	17°Ω43'56	behind sun begin	15196 Aug 23 01:42	16°♊00'49
evening set	15190 Jul 14 18:43	20°Ω51'01	behind sun end	15196 Aug 23 10:16	16°♊02'01
			max. Earth dist.	15196 Aug 23 15:23	16°♊02'46 20.97673 AU
conjunction	15190 Jul 30 15:28	21°Ω46'14 -0°39'13	morning rise	15196 Sep 08 02:17	16°♊55'51
minimum elong	15190 Jul 30 15:28	21°Ω46'14 0°39'54	retrograde	15196 Dec 09 05:49	20°♊00'03
max. Earth dist.	15190 Jul 30 23:19	21°Ω47'23 20.74500 AU	opposition	15197 Feb 24 06:45	18°♊02'13 -0°10'53
morning rise	15190 Aug 15 11:31	22°Ω41'23	min. Earth dist.	15197 Feb 23 22:15	18°♊03'04 18.99098 AU
retrograde	15190 Nov 15 06:24	25°Ω47'35	direct	15197 May 12 03:37	16°♊04'19
opposition	15191 Jan 30 19:08	23°Ω49'30 -0°41'11	evening set	15197 Aug 11 15:03	19°♊06'44
min. Earth dist.	15191 Jan 30 12:15	23°Ω50'12 18.76845 AU			
direct	15191 Apr 17 20:04	21°Ω50'29	conjunction	15197 Aug 27 11:04	20°♊01'01 -0°07'28
evening set	15191 Jul 19 02:36	24°Ω56'44	minimum elong	15197 Aug 27 11:04	20°♊01'01 0°07'45
			behind sun begin	15197 Aug 27 05:07	20°♊00'11
conjunction	15191 Aug 03 23:03	25°Ω51'45 -0°35'03	behind sun end	15197 Aug 27 17:00	20°♊01'51
minimum elong	15191 Aug 03 23:03	25°Ω51'45 0°35'40	max. Earth dist.	15197 Aug 27 19:29	20°♊02'13 21.00431 AU
max. Earth dist.	15191 Aug 04 06:03	25°Ω52'46 20.79102 AU	morning rise	15197 Sep 12 07:42	20°♊55'24
morning rise	15191 Aug 19 19:14	26°Ω46'45	retrograde	15197 Dec 13 14:32	23°♊59'29
retrograde	15191 Nov 19 15:49	29°Ω52'28	opposition	15198 Feb 28 15:33	22°♊01'42 -0°05'33
opposition	15192 Feb 04 06:07	27°Ω54'24 -0°36'27	min. Earth dist.	15198 Feb 28 06:42	22°♊02'35 19.01662 AU
min. Earth dist.	15192 Feb 03 22:24	27°Ω55'11 18.81284 AU	direct	15198 May 16 10:37	20°♊04'00
direct	15192 Apr 21 07:14	25°Ω55'32	evening set	15198 Aug 15 20:07	23°♊06'00
evening set	15192 Jul 22 09:41	29°Ω00'59			
			conjunction	15198 Aug 31 16:20	24°♊00'14 -0°02'40
conjunction	15192 Aug 07 06:06	29°Ω55'51 -0°30'43	minimum elong	15198 Aug 31 16:20	24°♊00'14 0°02'52
minimum elong	15192 Aug 07 06:06	29°Ω55'51 0°31'17	behind sun begin	15198 Aug 31 09:46	23°♊59'19
max. Earth dist.	15192 Aug 07 14:28	29°Ω57'04 20.83380 AU	behind sun end	15198 Aug 31 22:53	24°♊01'09
	15192 Aug 08 10:37	0°♊	max. Earth dist.	15198 Sep 01 01:43	24°♊01'34 21.02778 AU
morning rise	15192 Aug 23 02:06	0°♊50'41	morning rise	15198 Sep 16 12:59	24°♊54'34
retrograde	15192 Nov 22 23:11	3°♊55'59	retrograde	15198 Dec 17 20:58	27°♊58'34
opposition	15193 Feb 07 16:44	1°♊57'57 -0°31'33	opposition	15199 Mar 04 23:59	26°♊00'51 -0°00'13
min. Earth dist.	15193 Feb 07 09:18	1°♊58'42 18.85417 AU	min. Earth dist.	15199 Mar 04 15:40	26°♊01'41 19.03783 AU
	15193 Apr 20 06:57	30°♋Ω	asc. node	15199 Mar 19 03:34	25°♊27'23
direct	15193 Apr 25 17:16	29°Ω59'15	direct	15199 May 20 17:52	24°♊03'20
	15193 May 01 03:50	0°♊	evening set	15199 Aug 20 01:13	27°♊04'59
evening set	15193 Jul 26 16:26	3°♊03'58			

conjunction	15199 Sep 04 21:19	27° <u>᠓</u> 59'10	0°02'17	evening set	15205 Sep 12 06:17	20° <u>᠑</u> 55'41	
minimum elong	15199 Sep 04 21:20	27° <u>᠓</u> 59'10	0°02'08				
behind sun begin	15199 Sep 04 14:46	27° <u>᠓</u> 58'15		conjunction	15205 Sep 28 03:27	21° <u>᠑</u> 49'53	0°30'06
behind sun end	15199 Sep 05 03:55	28° <u>᠓</u> 00'05		minimum elong	15205 Sep 28 03:27	21° <u>᠑</u> 49'53	0°30'23
max. Earth dist.	15199 Sep 05 05:23	28° <u>᠓</u> 00'18	21.04671 AU	max. Earth dist.	15205 Sep 28 09:11	21° <u>᠑</u> 50'42	21.04860 AU
morning rise	15199 Sep 20 18:21	28° <u>᠓</u> 53'27		morning rise	15205 Oct 14 02:15	22° <u>᠑</u> 44'20	
	15199 Oct 11 14:15	0° <u>᠒</u>		retrograde	15206 Jan 15 01:42	25° <u>᠑</u> 49'04	
retrograde	15199 Dec 22 05:44	1° <u>᠒</u> 57'28		opposition	15206 Apr 02 08:41	23° <u>᠑</u> 50'45	0°35'41
opposition	15200 Mar 08 08:26	29° <u>᠓</u> 59'46	0°05'07	min. Earth dist.	15206 Apr 02 02:48	23° <u>᠑</u> 51'20	19.04104 AU
min. Earth dist.	15200 Mar 08 00:08	0° <u>᠒</u> 00'35	19.05436 AU	direct	15206 Jun 17 17:04	21° <u>᠑</u> 53'25	
	15200 Mar 08 06:02	30° <u>᠙</u> <u>᠓</u>		evening set	15206 Sep 16 11:14	24° <u>᠑</u> 54'01	
direct	15200 May 24 00:47	28° <u>᠓</u> 02'23					
	15200 Aug 03 07:17	0° <u>᠒</u>		conjunction	15206 Oct 02 08:49	25° <u>᠑</u> 48'17	0°34'22
evening set	15200 Aug 23 06:01	1° <u>᠑</u> 03'45		minimum elong	15206 Oct 02 08:49	25° <u>᠑</u> 48'17	0°34'42
				max. Earth dist.	15206 Oct 02 15:24	25° <u>᠑</u> 49'14	21.03227 AU
conjunction	15200 Sep 08 02:22	1° <u>᠑</u> 57'54	0°07'05	morning rise	15206 Oct 18 07:47	26° <u>᠑</u> 42'48	
minimum elong	15200 Sep 08 02:22	1° <u>᠑</u> 57'54	0°07'01	retrograde	15207 Jan 19 09:17	29° <u>᠑</u> 47'48	
behind sun begin	15200 Sep 07 20:16	1° <u>᠑</u> 57'03		opposition	15207 Apr 06 16:20	27° <u>᠑</u> 49'20	0°40'20
behind sun end	15200 Sep 08 08:28	1° <u>᠑</u> 58'45		min. Earth dist.	15207 Apr 06 10:34	27° <u>᠑</u> 49'55	19.02287 AU
max. Earth dist.	15200 Sep 08 11:11	1° <u>᠑</u> 59'09	21.06057 AU	direct	15207 Jun 22 00:03	25° <u>᠑</u> 51'57	
morning rise	15200 Sep 23 23:25	2° <u>᠑</u> 52'11		evening set	15207 Sep 20 16:31	28° <u>᠑</u> 52'38	
retrograde	15200 Dec 25 12:24	5° <u>᠑</u> 56'13					
opposition	15201 Mar 12 16:50	3° <u>᠑</u> 58'31	0°10'25	conjunction	15207 Oct 06 14:13	29° <u>᠑</u> 46'59	0°38'29
min. Earth dist.	15201 Mar 12 09:05	3° <u>᠑</u> 59'17	19.06551 AU	minimum elong	15207 Oct 06 14:13	29° <u>᠑</u> 46'59	0°38'52
direct	15201 May 28 07:32	2° <u>᠑</u> 01'16		max. Earth dist.	15207 Oct 06 19:28	29° <u>᠑</u> 47'44	21.01240 AU
evening set	15201 Aug 27 11:01	5° <u>᠑</u> 02'22			15207 Oct 10 08:54	0° <u>᠓</u>	
				morning rise	15207 Oct 22 13:44	0° <u>᠓</u> 41'35	
conjunction	15201 Sep 12 07:21	5° <u>᠑</u> 56'30	0°11'50	retrograde	15208 Jan 23 16:59	3° <u>᠓</u> 46'57	
minimum elong	15201 Sep 12 07:21	5° <u>᠑</u> 56'30	0°11'50	opposition	15208 Apr 10 00:17	1° <u>᠓</u> 48'19	0°44'47
behind sun begin	15201 Sep 12 02:43	5° <u>᠑</u> 55'51		min. Earth dist.	15208 Apr 09 18:48	1° <u>᠓</u> 48'52	19.00137 AU
behind sun end	15201 Sep 12 11:59	5° <u>᠑</u> 57'08			15208 Jun 06 01:07	30° <u>᠙</u> <u>᠒</u>	
max. Earth dist.	15201 Sep 12 14:37	5° <u>᠑</u> 57'31	21.06901 AU	direct	15208 Jun 25 05:32	29° <u>᠑</u> 50'52	
morning rise	15201 Sep 28 04:50	6° <u>᠑</u> 50'47			15208 Jul 14 04:30	0° <u>᠓</u>	
retrograde	15201 Dec 29 20:46	9° <u>᠑</u> 54'54		evening set	15208 Sep 23 21:45	2° <u>᠓</u> 51'42	
opposition	15202 Mar 17 00:58	7° <u>᠑</u> 57'08	0°15'40				
min. Earth dist.	15202 Mar 16 17:33	7° <u>᠑</u> 57'53	19.07120 AU	conjunction	15208 Oct 09 19:57	3° <u>᠓</u> 46'09	0°42'25
direct	15202 Jun 01 14:30	5° <u>᠑</u> 59'56		minimum elong	15208 Oct 09 19:57	3° <u>᠓</u> 46'09	0°42'51
evening set	15202 Aug 31 15:49	9° <u>᠑</u> 00'51		max. Earth dist.	15208 Oct 10 02:07	3° <u>᠓</u> 47'02	20.98914 AU
				morning rise	15208 Oct 25 19:42	4° <u>᠓</u> 40'52	
conjunction	15202 Sep 16 12:30	9° <u>᠑</u> 54'59	0°16'32	retrograde	15209 Jan 27 00:56	7° <u>᠓</u> 46'36	
minimum elong	15202 Sep 16 12:29	9° <u>᠑</u> 54'59	0°16'35	opposition	15209 Apr 14 08:19	5° <u>᠓</u> 47'50	0°49'02
max. Earth dist.	15202 Sep 16 20:18	9° <u>᠑</u> 56'05	21.07175 AU	min. Earth dist.	15209 Apr 14 02:49	5° <u>᠓</u> 48'24	18.97642 AU
morning rise	15202 Oct 02 10:07	10° <u>᠑</u> 49'17		direct	15209 Jun 29 12:38	3° <u>᠓</u> 50'20	
retrograde	15203 Jan 03 03:41	13° <u>᠑</u> 53'29		evening set	15209 Sep 28 03:38	6° <u>᠓</u> 51'24	
opposition	15203 Mar 21 09:03	11° <u>᠑</u> 55'38	0°20'50				
min. Earth dist.	15203 Mar 21 02:13	11° <u>᠑</u> 56'19	19.07103 AU	conjunction	15209 Oct 14 02:01	7° <u>᠓</u> 45'57	0°46'08
direct	15203 Jun 05 21:19	9° <u>᠑</u> 58'28		minimum elong	15209 Oct 14 02:01	7° <u>᠓</u> 45'57	0°46'38
evening set	15203 Sep 04 20:43	12° <u>᠑</u> 59'13		max. Earth dist.	15209 Oct 14 06:48	7° <u>᠓</u> 46'39	20.96258 AU
				morning rise	15209 Oct 30 02:24	8° <u>᠓</u> 40'47	
conjunction	15203 Sep 20 17:24	13° <u>᠑</u> 53'20	0°21'10	retrograde	15210 Jan 31 09:58	11° <u>᠓</u> 46'59	
minimum elong	15203 Sep 20 17:24	13° <u>᠑</u> 53'20	0°21'18	opposition	15210 Apr 18 16:26	9° <u>᠓</u> 48'05	0°53'03
max. Earth dist.	15203 Sep 20 23:39	13° <u>᠑</u> 54'14	21.06889 AU	min. Earth dist.	15210 Apr 18 11:29	9° <u>᠓</u> 48'35	18.94826 AU
morning rise	15203 Oct 06 15:29	14° <u>᠑</u> 47'41		direct	15210 Jul 03 18:02	7° <u>᠓</u> 50'30	
retrograde	15204 Jan 07 11:15	17° <u>᠑</u> 52'01		evening set	15210 Oct 02 09:45	10° <u>᠓</u> 51'53	
opposition	15204 Mar 24 16:59	15° <u>᠑</u> 54'02	0°25'55				
min. Earth dist.	15204 Mar 24 10:32	15° <u>᠑</u> 54'40	19.06560 AU	conjunction	15210 Oct 18 08:42	11° <u>᠓</u> 46'34	0°49'39
direct	15204 Jun 09 04:07	13° <u>᠑</u> 56'49		minimum elong	15210 Oct 18 08:42	11° <u>᠓</u> 46'34	0°50'13
evening set	15204 Sep 08 01:26	16° <u>᠑</u> 57'27		max. Earth dist.	15210 Oct 18 14:13	11° <u>᠓</u> 47'22	20.93263 AU
				morning rise	15210 Nov 03 09:22	12° <u>᠓</u> 41'32	
conjunction	15204 Sep 23 22:31	17° <u>᠑</u> 51'37	0°25'42		15210 Dec 22 01:47	15° <u>᠓</u>	
minimum elong	15204 Sep 23 22:30	17° <u>᠑</u> 51'37	0°25'53	retrograde	15211 Feb 04 18:30	15° <u>᠓</u> 48'13	
max. Earth dist.	15204 Sep 24 05:34	17° <u>᠑</u> 52'38	21.06095 AU		15211 Mar 22 17:54	15° <u>᠙</u> <u>᠓</u>	
morning rise	15204 Oct 09 20:46	18° <u>᠑</u> 46'00		opposition	15211 Apr 23 00:51	13° <u>᠓</u> 49'12	0°56'49
retrograde	15205 Jan 10 18:35	21° <u>᠑</u> 50'30		min. Earth dist.	15211 Apr 22 19:59	13° <u>᠓</u> 49'42	18.91652 AU
opposition	15205 Mar 29 00:52	19° <u>᠑</u> 52'22	0°30'52	direct	15211 Jul 08 01:09	11° <u>᠓</u> 51'34	
min. Earth dist.	15205 Mar 28 18:41	19° <u>᠑</u> 52'59	19.05534 AU	evening set	15211 Oct 06 16:26	14° <u>᠓</u> 53'19	
direct	15205 Jun 13 11:01	17° <u>᠑</u> 55'07			15211 Oct 08 15:53	15° <u>᠓</u>	

conjunction	15211 Oct 22 15:36	15°  48'08	0°52'56	retrograde	15218 Mar 06 01:26	14°  30'24	
minimum elong	15211 Oct 22 15:35	15°  48'08	0°53'32	opposition	15218 May 21 21:53	12°  30'04	1°14'51
max. Earth dist.	15211 Oct 22 19:35	15°  48'43	20.89915 AU	min. Earth dist.	15218 May 21 22:24	12°  30'01	18.58393 AU
morning rise	15211 Nov 07 16:52	16°  43'16		direct	15218 Aug 05 08:24	10°  31'10	
retrograde	15212 Feb 09 04:44	19°  45'30		evening set	15218 Nov 04 08:01	13°  37'01	
opposition	15212 Apr 26 09:40	17°  51'21	1°00'20				
min. Earth dist.	15212 Apr 26 05:36	17°  51'46	18.88127 AU	conjunction	15218 Nov 20 10:56	14°  33'16	1°08'04
direct	15212 Jul 11 07:07	15°  53'38		minimum elong	15218 Nov 20 10:56	14°  33'16	1°08'56
evening set	15212 Oct 09 23:36	18°  55'49		max. Earth dist.	15218 Nov 20 10:48	14°  33'15	20.55333 AU
				morning rise	15218 Dec 06 15:48	15°  29'51	
conjunction	15212 Oct 25 23:21	19°  50'49	0°55'58	retrograde	15219 Mar 10 15:12	18°  41'41	
minimum elong	15212 Oct 25 23:20	19°  50'48	0°56'38	opposition	15219 May 26 09:16	16°  41'07	1°16'01
max. Earth dist.	15212 Oct 26 03:57	19°  51'28	20.86196 AU	min. Earth dist.	15219 May 26 09:30	16°  41'05	18.52273 AU
morning rise	15212 Nov 11 00:56	20°  46'06		direct	15219 Aug 09 18:40	14°  41'55	
retrograde	15213 Feb 12 14:36	23°  45'56		evening set	15219 Nov 08 19:36	17°  48'32	
opposition	15213 Apr 30 18:44	21°  54'39	1°03'33				
min. Earth dist.	15213 Apr 30 14:52	21°  55'03	18.84209 AU	conjunction	15219 Nov 24 22:57	18°  45'02	1°08'54
direct	15213 Jul 15 14:45	19°  56'50		minimum elong	15219 Nov 24 22:57	18°  45'02	1°09'50
evening set	15213 Oct 14 07:31	22°  59'31		max. Earth dist.	15219 Nov 24 21:16	18°  44'47	20.49128 AU
				morning rise	15219 Dec 11 04:33	19°  41'53	
conjunction	15213 Oct 30 07:34	23°  54'41	0°58'44	retrograde	15220 Mar 14 05:02	22°  54'29	
minimum elong	15213 Oct 30 07:33	23°  54'41	0°59'26	opposition	15220 May 29 21:16	20°  53'38	1°16'47
max. Earth dist.	15213 Oct 30 10:19	23°  55'05	20.82073 AU	min. Earth dist.	15220 May 29 22:43	20°  53'29	18.46005 AU
morning rise	15213 Nov 15 09:50	24°  50'10		direct	15220 Aug 13 04:20	18°  54'09	
retrograde	15214 Feb 17 01:42	27°  58'37		evening set	15220 Nov 12 07:54	22°  40'35	
opposition	15214 May 05 04:14	25°  59'11	1°06'29				
min. Earth dist.	15214 May 05 01:37	25°  59'27	18.79877 AU	conjunction	15220 Nov 28 12:02	22°  58'22	1°09'23
direct	15214 Jul 19 21:28	24°  40'14		minimum elong	15220 Nov 28 12:02	22°  58'22	1°10'19
evening set	15214 Oct 18 15:57	27°  40'28		max. Earth dist.	15220 Nov 28 10:55	22°  58'12	20.42802 AU
				morning rise	15220 Dec 14 18:06	23°  55'28	
conjunction	15214 Nov 03 16:38	27°  59'50	1°01'13	retrograde	15221 Mar 18 20:23	27°  48'49	
minimum elong	15214 Nov 03 16:38	27°  59'50	1°01'59	opposition	15221 Jun 03 09:31	25°  47'45	1°17'08
max. Earth dist.	15214 Nov 03 19:37	28°  40'16	20.77509 AU	min. Earth dist.	15221 Jun 03 10:29	25°  47'39	18.39633 AU
morning rise	15214 Nov 19 19:13	28°  55'30		direct	15221 Aug 17 15:14	23°  47'59	
	15214 Dec 09 16:44	0°  47		evening set	15221 Nov 16 21:09	26°  46'17	
retrograde	15215 Feb 21 12:54	2°  40'36					
opposition	15215 May 09 14:00	0°  40'50	1°09'06	conjunction	15221 Dec 03 01:47	27°  43'20	1°09'29
min. Earth dist.	15215 May 09 11:40	0°  40'54	18.75085 AU	minimum elong	15221 Dec 03 01:47	27°  43'20	1°10'26
	15215 May 11 15:00	30°  40		max. Earth dist.	15221 Dec 02 23:10	27°  42'57	20.36398 AU
direct	15215 Jul 24 06:19	28°  40'52		morning rise	15221 Dec 19 08:35	28°  41'43	
	15215 Oct 01 02:14	0°  47			15222 Jan 23 05:06	0°  47	
evening set	15215 Oct 23 01:11	1°  47'10		retrograde	15222 Mar 23 11:51	1°  47'24	
					15222 May 24 03:44	30°  47	
conjunction	15215 Nov 08 02:13	2°  47'15	1°03'25	opposition	15222 Jun 07 22:31	29°  47'34	1°17'04
minimum elong	15215 Nov 08 02:12	2°  47'15	1°04'13	min. Earth dist.	15222 Jun 08 00:45	29°  47'20	18.33212 AU
max. Earth dist.	15215 Nov 08 03:09	2°  47'23	20.72504 AU	direct	15222 Aug 22 01:48	27°  47'31	
morning rise	15215 Nov 24 05:31	3°  47'02			15222 Nov 11 20:27	0°  47	
retrograde	15216 Feb 26 00:37	6°  47'11		evening set	15222 Nov 21 11:01	0°  47'32	
opposition	15216 May 13 00:22	4°  47'12	1°11'23				
min. Earth dist.	15216 May 12 23:23	4°  47'10	18.69876 AU	conjunction	15222 Dec 07 16:25	1°  47'30	1°09'12
direct	15216 Jul 27 13:58	2°  47'13		minimum elong	15222 Dec 07 16:25	1°  47'30	1°10'10
evening set	15216 Oct 26 10:41	5°  47'18		max. Earth dist.	15222 Dec 07 14:20	1°  47'29	20.29963 AU
				morning rise	15222 Dec 23 23:40	2°  47'27	
conjunction	15216 Nov 11 12:27	6°  47'13	1°05'18	retrograde	15223 Mar 28 05:01	5°  47'42	
minimum elong	15216 Nov 11 12:27	6°  47'13	1°06'07	opposition	15223 Jun 12 11:58	3°  47'41	1°16'33
max. Earth dist.	15216 Nov 11 13:43	6°  47'14	20.67097 AU	min. Earth dist.	15223 Jun 12 13:34	3°  47'41	18.26768 AU
morning rise	15216 Nov 27 16:10	7°  47'10		direct	15223 Aug 26 14:24	1°  47'40	
retrograde	15217 Mar 01 13:04	10°  47'20		evening set	15223 Nov 26 01:57	4°  47'51	
opposition	15217 May 17 10:58	8°  47'20	1°13'18				
min. Earth dist.	15217 May 17 10:04	8°  47'20	18.64281 AU	conjunction	15223 Dec 12 07:52	5°  47'48	1°08'32
direct	15217 Jul 31 23:50	6°  47'21		minimum elong	15223 Dec 12 07:52	5°  47'48	1°09'29
evening set	15217 Oct 30 21:07	9°  47'26		max. Earth dist.	15223 Dec 12 04:30	5°  47'48	20.23528 AU
				morning rise	15223 Dec 28 15:50	6°  47'46	
conjunction	15217 Nov 15 23:18	10°  47'22	1°06'51	retrograde	15224 Mar 31 21:30	10°  47'50	
minimum elong	15217 Nov 15 23:18	10°  47'22	1°07'43	opposition	15224 Jun 16 02:14	8°  47'50	1°15'37
max. Earth dist.	15217 Nov 15 22:42	10°  47'22	20.61346 AU	min. Earth dist.	15224 Jun 16 05:09	8°  47'50	18.20348 AU
morning rise	15217 Dec 02 03:46	11°  47'19		direct	15224 Aug 30 01:56	6°  47'50	

evening set	15224 Nov 29 17:36	9°  11'17"		max. Earth dist.	15231 Jan 12 15:09	6°  52'46"	19.78817 AU
				morning rise	15231 Jan 29 10:33	7°  53'51"	
conjunction	15224 Dec 16 00:21	10°  09'14"	1°07'28"	retrograde	15231 May 03 16:07	11°  14'56"	
minimum elong	15224 Dec 16 00:21	10°  09'14"	1°08'25"	opposition	15231 Jul 17 23:55	9°  11'59"	0°56'51"
max. Earth dist.	15224 Dec 15 21:21	10°  08'47"	20.17124 AU	min. Earth dist.	15231 Jul 18 06:09	9°  11'19"	17.75733 AU
morning rise	15225 Jan 01 08:51	11°  07'27"		direct	15231 Sep 30 20:32	7°  09'19"	
retrograde	15225 Apr 05 16:44	14°  24'03"		evening set	15232 Jan 01 10:32	10°  27'33"	
opposition	15225 Jun 20 16:59	12°  22'13"	1°14'14"				
min. Earth dist.	15225 Jun 20 19:24	12°  21'58"	18.13945 AU	conjunction	15232 Jan 17 21:35	11°  27'32"	0°49'07"
direct	15225 Sep 03 16:27	10°  21'26"		minimum elong	15232 Jan 17 21:35	11°  27'32"	0°49'54"
evening set	15225 Dec 04 10:31	13°  33'35"		max. Earth dist.	15232 Jan 17 13:38	11°  26'19"	19.72682 AU
				morning rise	15232 Feb 03 09:34	12°  27'41"	
conjunction	15225 Dec 20 17:47	14°  31'49"	1°06'00"		15232 Mar 24 22:38	15° 	
minimum elong	15225 Dec 20 17:47	14°  31'49"	1°06'56"	retrograde	15232 May 07 12:52	15°  49'23"	
max. Earth dist.	15225 Dec 20 13:30	14°  31'10"	20.10726 AU		15232 Jun 21 03:33	15°  R 	
morning rise	15226 Jan 06 02:55	15°  30'21"		opposition	15232 Jul 21 19:11	13°  46'14"	0°52'31"
retrograde	15226 Apr 10 09:57	18°  34'45"		min. Earth dist.	15232 Jul 22 02:36	13°  45'26"	17.69712 AU
opposition	15226 Jun 25 08:28	16°  34'47"	1°12'24"	direct	15232 Oct 04 14:45	11°  43'13"	
min. Earth dist.	15226 Jun 25 12:31	16°  34'52"	18.07553 AU		15233 Jan 04 17:21	15° 	
direct	15226 Sep 08 05:33	14°  34'44"		evening set	15233 Jan 05 09:25	15°  22'24"	
evening set	15226 Dec 09 04:15	17°  35'75"					
				conjunction	15233 Jan 21 20:57	16°  22'39"	0°45'03"
conjunction	15226 Dec 25 12:16	18°  35'28"	1°04'08"	minimum elong	15233 Jan 21 20:58	16°  22'39"	0°45'47"
minimum elong	15226 Dec 25 12:16	18°  35'28"	1°05'04"	max. Earth dist.	15233 Jan 21 12:10	16°  21'18"	19.66803 AU
max. Earth dist.	15226 Dec 25 07:53	18°  35'54"	20.04338 AU	morning rise	15233 Feb 07 09:27	17°  23'03"	
morning rise	15227 Jan 10 21:53	19°  35'16"		retrograde	15233 May 12 12:16	20°  25'20"	
retrograde	15227 Apr 15 06:28	23°  13'30"		opposition	15233 Jul 26 14:56	18°  21'59"	0°47'49"
opposition	15227 Jun 30 00:38	21°  11'21"	1°10'09"	min. Earth dist.	15233 Jul 26 21:57	18°  21'14"	17.63977 AU
min. Earth dist.	15227 Jun 30 04:19	21°  10'58"	18.01153 AU	direct	15233 Oct 09 11:39	16°  21'18'37"	
direct	15227 Sep 12 22:14	19°  10'03"		evening set	15234 Jan 10 09:01	19°  23'46"	
evening set	15227 Dec 13 22:57	22°  24'16"					
				conjunction	15234 Jan 26 21:04	20°  39'16"	0°40'40"
conjunction	15227 Dec 30 07:32	23°  23'06"	1°01'53"	minimum elong	15234 Jan 26 21:05	20°  39'16"	0°41'20"
minimum elong	15227 Dec 30 07:32	23°  23'07"	1°02'48"	max. Earth dist.	15234 Jan 26 12:42	20°  37'59"	19.61221 AU
max. Earth dist.	15227 Dec 30 01:56	23°  22'16"	19.97924 AU	morning rise	15234 Feb 12 09:42	21°  39'54"	
morning rise	15228 Jan 15 17:43	24°  22'12"		retrograde	15234 May 17 10:31	25°  02'43"	
retrograde	15228 Apr 19 00:44	27°  34'11'12"		opposition	15234 Jul 31 11:16	22°  59'13"	0°42'47"
opposition	15228 Jul 03 17:41	25°  38'53"	1°07'27"	min. Earth dist.	15234 Jul 31 18:59	22°  58'23"	17.58578 AU
min. Earth dist.	15228 Jul 03 23:03	25°  38'19"	17.94735 AU	direct	15234 Oct 14 07:21	20°  55'32"	
direct	15228 Sep 16 13:08	23°  37'16"		evening set	15235 Jan 15 09:21	24°  22'16'36"	
evening set	15228 Dec 17 18:37	26°  35'23'1"					
				conjunction	15235 Jan 31 21:43	25°  17'20"	0°35'59"
conjunction	15229 Jan 03 03:54	27°  35'13'39"	0°59'15"	minimum elong	15235 Jan 31 21:43	25°  17'20"	0°36'37"
minimum elong	15229 Jan 03 03:55	27°  35'13'39"	1°00'08"	max. Earth dist.	15235 Jan 31 12:25	25°  15'54"	19.56035 AU
max. Earth dist.	15229 Jan 02 21:44	27°  35'04'43"	19.91511 AU	morning rise	15235 Feb 17 10:44	26°  22'18'11"	
morning rise	15229 Jan 19 14:37	28°  35'10'01"		retrograde	15235 May 22 10:46	29°  22'41'32"	
	15229 Feb 08 23:34	0° 		opposition	15235 Aug 05 08:09	27°  23'37'53"	0°37'26"
retrograde	15229 Apr 23 22:17	2°  22'10'45"		min. Earth dist.	15235 Aug 05 15:24	27°  23'37'05"	17.53611 AU
opposition	15229 Jul 08 11:01	0°  22'08'14"	1°04'20"	direct	15235 Oct 19 04:59	25°  23'33'55"	
min. Earth dist.	15229 Jul 08 16:08	0°  22'07'41"	17.88321 AU	evening set	15236 Jan 20 10:10	28°  23'55'52"	
	15229 Jul 11 16:18	30°  R 					
direct	15229 Sep 21 07:56	28°  30'06'17"		conjunction	15236 Feb 05 23:02	29°  23'56'50"	0°31'03"
	15229 Nov 27 22:37	0° 		minimum elong	15236 Feb 05 23:03	29°  23'56'50"	0°31'36"
evening set	15229 Dec 22 15:13	1°  22'22'32"		max. Earth dist.	15236 Feb 05 14:43	29°  23'55'33"	19.51290 AU
					15236 Feb 06 19:32	0° 	
conjunction	15230 Jan 08 01:06	2°  22'21'58"	0°56'14"	morning rise	15236 Feb 22 12:06	0°  R 	
minimum elong	15230 Jan 08 01:06	2°  22'21'58"	0°57'06"	retrograde	15236 May 26 10:43	4°  R 	
max. Earth dist.	15230 Jan 07 18:01	2°  22'20'53"	19.85112 AU	opposition	15236 Aug 09 05:37	2°  R 	0°31'48"
morning rise	15230 Jan 24 12:16	3°  22'21'36"		min. Earth dist.	15236 Aug 09 13:03	2°  R 	17.49106 AU
retrograde	15230 Apr 28 17:33	6°  22'42'01"		direct	15236 Oct 23 01:54	0°  R 	
opposition	15230 Jul 13 05:16	4°  22'39'18"	1°00'48"	evening set	15237 Jan 24 11:56	3°  R 	
min. Earth dist.	15230 Jul 13 11:55	4°  22'38'35"	17.81958 AU				
direct	15230 Sep 26 00:30	2°  22'36'59"		conjunction	15237 Feb 10 00:58	4°  R 	0°25'54"
evening set	15230 Dec 27 12:26	5°  22'54'14"		minimum elong	15237 Feb 10 00:58	4°  R 	0°26'23"
				max. Earth dist.	15237 Feb 09 15:35	4°  R 	19.47046 AU
conjunction	15231 Jan 12 22:53	6°  22'53'57"	0°52'52"	morning rise	15237 Feb 26 14:18	5°  R 	
minimum elong	15231 Jan 12 22:54	6° 22'53'57"	0°53'40"	retrograde	15237 May 31 11:38	9° R	

opposition	15237 Aug 14 03:28	6° $\mathbf{\text{H}}$ 59'25	0°25'56	conjunction	15243 Mar 11 22:22	3° $\mathbf{\text{Y}}$ 08'14	-0°07'55
min. Earth dist.	15237 Aug 14 10:43	6° $\mathbf{\text{H}}$ 58'37	17.45123 AU	minimum elong	15243 Mar 11 22:23	3° $\mathbf{\text{Y}}$ 08'14	0°07'52
direct	15237 Oct 28 00:17	4° $\mathbf{\text{H}}$ 55'01		behind sun begin	15243 Mar 11 16:20	3° $\mathbf{\text{Y}}$ 07'18	
evening set	15238 Jan 29 14:10	8° $\mathbf{\text{H}}$ 18'40		behind sun end	15243 Mar 12 04:25	3° $\mathbf{\text{Y}}$ 09'09	
				max. Earth dist.	15243 Mar 11 13:17	3° $\mathbf{\text{Y}}$ 06'49	19.31993 AU
conjunction	15238 Feb 15 03:35	9° $\mathbf{\text{H}}$ 20'02	0°20'32	morning rise	15243 Mar 28 10:48	4° $\mathbf{\text{Y}}$ 09'59	
minimum elong	15238 Feb 15 03:35	9° $\mathbf{\text{H}}$ 20'02	0°20'58	retrograde	15243 Jun 29 18:06	7° $\mathbf{\text{Y}}$ 35'27	
max. Earth dist.	15238 Feb 14 19:27	9° $\mathbf{\text{H}}$ 18'46	19.43324 AU	opposition	15243 Sep 12 00:32	5° $\mathbf{\text{Y}}$ 31'48	-0°11'57
morning rise	15238 Mar 03 16:48	10° $\mathbf{\text{H}}$ 21'25		min. Earth dist.	15243 Sep 12 08:12	5° $\mathbf{\text{Y}}$ 30'58	17.31494 AU
retrograde	15238 Jun 05 12:56	13° $\mathbf{\text{H}}$ 46'01		direct	15243 Nov 26 03:53	3° $\mathbf{\text{Y}}$ 26'43	
opposition	15238 Aug 19 01:57	11° $\mathbf{\text{H}}$ 42'15	0°19'52	evening set	15244 Feb 28 13:35	6° $\mathbf{\text{Y}}$ 53'48	
min. Earth dist.	15238 Aug 19 09:02	11° $\mathbf{\text{H}}$ 41'28	17.41657 AU				
direct	15238 Nov 01 22:22	9° $\mathbf{\text{H}}$ 37'44		conjunction	15244 Mar 16 02:45	7° $\mathbf{\text{Y}}$ 55'40	-0°13'36
evening set	15239 Feb 03 16:59	13° $\mathbf{\text{H}}$ 02'08		minimum elong	15244 Mar 16 02:45	7° $\mathbf{\text{Y}}$ 55'40	0°13'39
				behind sun begin	15244 Mar 15 23:11	7° $\mathbf{\text{Y}}$ 55'08	
conjunction	15239 Feb 20 06:23	14° $\mathbf{\text{H}}$ 03'39	0°15'02	behind sun end	15244 Mar 16 06:19	7° $\mathbf{\text{Y}}$ 56'13	
minimum elong	15239 Feb 20 06:23	14° $\mathbf{\text{H}}$ 03'39	0°15'23	max. Earth dist.	15244 Mar 15 18:15	7° $\mathbf{\text{Y}}$ 54'21	19.31097 AU
behind sun begin	15239 Feb 20 04:42	14° $\mathbf{\text{H}}$ 03'24		morning rise	15244 Apr 01 14:47	8° $\mathbf{\text{Y}}$ 57'25	
behind sun end	15239 Feb 20 08:04	14° $\mathbf{\text{H}}$ 03'55		retrograde	15244 Jul 03 20:25	12° $\mathbf{\text{Y}}$ 22'47	
max. Earth dist.	15239 Feb 19 21:15	14° $\mathbf{\text{H}}$ 02'14	19.40124 AU	opposition	15244 Sep 16 00:56	10° $\mathbf{\text{Y}}$ 19'10	-0°18'17
morning rise	15239 Mar 08 19:44	15° $\mathbf{\text{H}}$ 05'10		min. Earth dist.	15244 Sep 16 07:35	10° $\mathbf{\text{Y}}$ 18'27	17.30827 AU
retrograde	15239 Jun 10 14:02	18° $\mathbf{\text{H}}$ 30'08		direct	15244 Nov 30 07:22	8° $\mathbf{\text{Y}}$ 13'58	
opposition	15239 Aug 24 00:57	16° $\mathbf{\text{H}}$ 26'22	0°13'39	evening set	15245 Mar 04 18:14	11° $\mathbf{\text{Y}}$ 41'17	
min. Earth dist.	15239 Aug 24 08:14	16° $\mathbf{\text{H}}$ 25'34	17.38714 AU				
direct	15239 Nov 06 22:09	14° $\mathbf{\text{H}}$ 21'43		conjunction	15245 Mar 21 07:03	12° $\mathbf{\text{Y}}$ 43'08	-0°19'13
evening set	15240 Feb 08 20:22	17° $\mathbf{\text{H}}$ 46'51		minimum elong	15245 Mar 21 07:02	12° $\mathbf{\text{Y}}$ 43'08	0°19'20
				max. Earth dist.	15245 Mar 20 22:27	12° $\mathbf{\text{Y}}$ 41'48	19.30670 AU
conjunction	15240 Feb 25 10:01	18° $\mathbf{\text{H}}$ 48'30	0°09'25	morning rise	15245 Apr 06 18:35	13° $\mathbf{\text{Y}}$ 44'50	
minimum elong	15240 Feb 25 10:01	18° $\mathbf{\text{H}}$ 48'30	0°09'42	retrograde	15245 Jul 08 20:16	17° $\mathbf{\text{Y}}$ 10'02	
behind sun begin	15240 Feb 25 04:30	18° $\mathbf{\text{H}}$ 47'40		opposition	15245 Sep 21 01:30	15° $\mathbf{\text{Y}}$ 06'26	-0°24'30
behind sun end	15240 Feb 25 15:32	18° $\mathbf{\text{H}}$ 49'21		min. Earth dist.	15245 Sep 21 08:56	15° $\mathbf{\text{Y}}$ 05'38	17.30663 AU
max. Earth dist.	15240 Feb 25 02:01	18° $\mathbf{\text{H}}$ 47'16	19.37419 AU	direct	15245 Dec 05 08:43	13° $\mathbf{\text{Y}}$ 01'08	
morning rise	15240 Mar 12 23:08	19° $\mathbf{\text{H}}$ 50'08		evening set	15246 Mar 09 22:39	16° $\mathbf{\text{Y}}$ 28'35	
retrograde	15240 Jun 14 15:34	23° $\mathbf{\text{H}}$ 15'20					
opposition	15240 Aug 28 00:14	21° $\mathbf{\text{H}}$ 11'37	0°07'18	conjunction	15246 Mar 26 11:06	17° $\mathbf{\text{Y}}$ 30'23	-0°24'42
min. Earth dist.	15240 Aug 28 07:12	21° $\mathbf{\text{H}}$ 10'51	17.36237 AU	minimum elong	15246 Mar 26 11:05	17° $\mathbf{\text{Y}}$ 30'23	0°24'54
direct	15240 Nov 10 22:18	19° $\mathbf{\text{H}}$ 06'52		max. Earth dist.	15246 Mar 26 02:53	17° $\mathbf{\text{Y}}$ 29'06	19.30774 AU
evening set	15241 Feb 13 00:26	22° $\mathbf{\text{H}}$ 32'39		morning rise	15246 Apr 11 22:10	18° $\mathbf{\text{Y}}$ 32'01	
				retrograde	15246 Jul 13 22:54	21° $\mathbf{\text{Y}}$ 56'58	
conjunction	15241 Mar 01 13:55	23° $\mathbf{\text{H}}$ 34'24	0°03'43	opposition	15246 Sep 26 01:58	19° $\mathbf{\text{Y}}$ 53'24	-0°30'32
minimum elong	15241 Mar 01 13:56	23° $\mathbf{\text{H}}$ 34'24	0°03'55	min. Earth dist.	15246 Sep 26 08:01	19° $\mathbf{\text{Y}}$ 52'44	17.31034 AU
behind sun begin	15241 Mar 01 07:16	23° $\mathbf{\text{H}}$ 33'23		direct	15246 Dec 10 12:27	17° $\mathbf{\text{Y}}$ 48'01	
behind sun end	15241 Mar 01 20:35	23° $\mathbf{\text{H}}$ 35'25		evening set	15247 Mar 15 02:44	21° $\mathbf{\text{Y}}$ 15'29	
max. Earth dist.	15241 Mar 01 04:44	23° $\mathbf{\text{H}}$ 32'58	19.35169 AU				
morning rise	15241 Mar 18 02:59	24° $\mathbf{\text{H}}$ 36'05		conjunction	15247 Mar 31 14:47	22° $\mathbf{\text{Y}}$ 17'13	-0°30'01
retrograde	15241 Jun 19 16:09	28° $\mathbf{\text{H}}$ 01'29		minimum elong	15247 Mar 31 14:46	22° $\mathbf{\text{Y}}$ 17'12	0°30'17
opposition	15241 Sep 02 00:06	25° $\mathbf{\text{H}}$ 57'47	0°00'54	max. Earth dist.	15247 Mar 31 07:22	22° $\mathbf{\text{Y}}$ 16'03	19.31416 AU
min. Earth dist.	15241 Sep 02 07:42	25° $\mathbf{\text{H}}$ 56'57	17.34217 AU	morning rise	15247 Apr 17 01:14	23° $\mathbf{\text{Y}}$ 18'45	
desc. node	15241 Oct 20 19:23	24° $\mathbf{\text{H}}$ 11'10		retrograde	15247 Jul 18 22:04	26° $\mathbf{\text{Y}}$ 43'22	
direct	15241 Nov 15 23:34	23° $\mathbf{\text{H}}$ 52'55		opposition	15247 Oct 01 02:34	24° $\mathbf{\text{Y}}$ 39'51	-0°36'21
evening set	15242 Feb 18 04:34	27° $\mathbf{\text{H}}$ 19'14		min. Earth dist.	15247 Oct 01 09:08	24° $\mathbf{\text{Y}}$ 39'08	17.31968 AU
				direct	15247 Dec 15 13:23	22° $\mathbf{\text{Y}}$ 34'24	
conjunction	15242 Mar 06 18:06	28° $\mathbf{\text{H}}$ 21'03	-0°02'10	evening set	15248 Mar 19 06:43	26° $\mathbf{\text{Y}}$ 01'48	
minimum elong	15242 Mar 06 18:06	28° $\mathbf{\text{H}}$ 21'03	0°02'02				
behind sun begin	15242 Mar 06 11:22	28° $\mathbf{\text{H}}$ 20'01		conjunction	15248 Apr 04 18:13	27° $\mathbf{\text{Y}}$ 03'26	-0°35'07
behind sun end	15242 Mar 07 00:51	28° $\mathbf{\text{H}}$ 22'05		minimum elong	15248 Apr 04 18:12	27° $\mathbf{\text{Y}}$ 03'26	0°35'27
max. Earth dist.	15242 Mar 06 09:46	28° $\mathbf{\text{H}}$ 19'46	19.33362 AU	max. Earth dist.	15248 Apr 04 10:55	27° $\mathbf{\text{Y}}$ 02'17	19.32647 AU
morning rise	15242 Mar 23 06:47	29° $\mathbf{\text{H}}$ 22'47		morning rise	15248 Apr 21 04:09	28° $\mathbf{\text{Y}}$ 04'50	
	15242 Apr 02 15:00	0° $\mathbf{\text{Y}}$			15248 May 25 17:01	0° $\mathbf{\text{B}}$	
retrograde	15242 Jun 24 17:54	2° $\mathbf{\text{Y}}$ 48'15		retrograde	15248 Jul 22 23:45	1° $\mathbf{\text{B}}$ 29'03	
opposition	15242 Sep 07 00:10	0° $\mathbf{\text{Y}}$ 44'36	-0°05'33		15248 Sep 21 19:06	30° $\mathbf{\text{R}}$ $\mathbf{\text{Y}}$	
min. Earth dist.	15242 Sep 07 07:03	0° $\mathbf{\text{Y}}$ 43'51	17.32624 AU	opposition	15248 Oct 05 02:44	29° $\mathbf{\text{Y}}$ 25'36	-0°41'54
	15242 Sep 24 09:30	30° $\mathbf{\text{R}}$ $\mathbf{\text{H}}$		min. Earth dist.	15248 Oct 05 07:48	29° $\mathbf{\text{Y}}$ 25'03	17.33498 AU
direct	15242 Nov 21 02:03	28° $\mathbf{\text{H}}$ 39'38		direct	15248 Dec 19 17:01	27° $\mathbf{\text{Y}}$ 20'09	
	15243 Jan 15 18:38	0° $\mathbf{\text{Y}}$			15249 Mar 11 03:48	0° $\mathbf{\text{B}}$	
evening set	15243 Feb 23 09:06	2° $\mathbf{\text{Y}}$ 06'22		evening set	15249 Mar 24 10:19	0° $\mathbf{\text{B}}$ 47'24	



























































































































conjunction	15249 Apr 09 21:20	1°8'48"54 -0°39'57	morning rise	15255 May 25 08:51	1°11'02"27
minimum elong	15249 Apr 09 21:19	1°8'48"54 0°40'22	retrograde	15255 Aug 25 11:53	4°11'22"43
max. Earth dist.	15249 Apr 09 15:31	1°8'47"59 19.34475 AU	opposition	15255 Nov 07 23:31	2°11'20"47 -1°10'30
morning rise	15249 Apr 26 06:26	2°8'50"09	min. Earth dist.	15255 Nov 08 00:34	2°11'20"40 17.59935 AU
retrograde	15249 Jul 27 22:14	6°8'13"56	direct	15256 Jan 23 04:56	0°11'16"33
opposition	15249 Oct 10 03:06	4°8'10"35 -0°47'09	evening set	15256 Apr 26 21:07	3°11'40"41
min. Earth dist.	15249 Oct 10 08:19	4°8'10"01 17.35645 AU			
direct	15249 Dec 24 17:59	2°8'05"11	conjunction	15256 May 13 03:07	4°11'40"40 -1°04'21
evening set	15250 Mar 29 13:25	5°8'32"12	minimum elong	15256 May 13 03:06	4°11'40"40 1°05'11
			max. Earth dist.	15256 May 13 01:25	4°11'40"24 19.62550 AU
conjunction	15250 Apr 14 23:41	6°8'33"32 -0°44'30	morning rise	15256 May 29 07:05	5°11'40"22
minimum elong	15250 Apr 14 23:41	6°8'33"32 0°44'59	retrograde	15256 Aug 29 07:49	8°11'59"54
max. Earth dist.	15250 Apr 14 17:53	6°8'32"38 19.36941 AU	opposition	15256 Nov 11 21:40	6°11'58"13 -1°12'50
morning rise	15250 May 01 08:14	7°8'34"37	min. Earth dist.	15256 Nov 11 22:26	6°11'58"08 17.65283 AU
retrograde	15250 Aug 01 22:46	10°8'57"55	direct	15257 Jan 27 04:59	4°11'54"12
opposition	15250 Oct 15 03:09	8°8'54"44 -0°52'04	evening set	15257 May 01 19:56	8°11'17"36
min. Earth dist.	15250 Oct 15 06:44	8°8'54"21 17.38427 AU			
direct	15250 Dec 29 21:22	6°8'49"26	conjunction	15257 May 18 01:19	9°11'17"19 -1°06'15
evening set	15251 Apr 03 16:03	10°8'16"09	minimum elong	15257 May 18 01:19	9°11'17"19 1°07'06
			max. Earth dist.	15257 May 18 00:59	9°11'17"16 19.68011 AU
conjunction	15251 Apr 20 01:49	11°8'17"19 -0°48'45	morning rise	15257 Jun 03 04:25	10°11'16"44
minimum elong	15251 Apr 20 01:49	11°8'17"19 0°49'18	retrograde	15257 Sep 03 03:51	13°11'35"28
max. Earth dist.	15251 Apr 19 21:56	11°8'16"43 19.40023 AU	opposition	15257 Nov 16 19:25	11°11'34"02 -1°14'41
morning rise	15251 May 06 09:29	12°8'18"12	min. Earth dist.	15257 Nov 16 19:23	11°11'34"03 17.70843 AU
	15251 Jun 29 00:56	15°8'	direct	15258 Feb 01 05:14	9°11'30"16
retrograde	15251 Aug 06 20:36	15°8'40"58	evening set	15258 May 06 17:51	12°11'52"49
	15251 Sep 15 14:23	15°8'			
opposition	15251 Oct 20 02:57	13°8'38"00 -0°56'35	conjunction	15258 May 22 22:23	13°11'52"16 -1°07'43
min. Earth dist.	15251 Oct 20 06:31	13°8'37"37 17.41802 AU	minimum elong	15258 May 22 22:23	13°11'52"16 1°08'36
direct	15252 Jan 03 22:19	11°8'32"52	max. Earth dist.	15258 May 22 21:51	13°11'52"11 19.73670 AU
evening set	15252 Apr 07 18:21	14°8'59"14	morning rise	15258 Jun 08 00:53	14°11'51"24
	15252 Apr 07 23:23	15°8'	retrograde	15258 Sep 07 22:29	18°11'09"21
conjunction	15252 Apr 24 03:18	16°8'00"11 -0°52'38	opposition	15258 Nov 21 16:37	16°11'08"08 -1°16'04
minimum elong	15252 Apr 24 03:17	16°8'00"11 0°53'14	min. Earth dist.	15258 Nov 21 16:34	16°11'08"08 17.76603 AU
max. Earth dist.	15252 Apr 23 23:05	15°8'59"32 19.43682 AU	direct	15259 Feb 06 03:37	14°11'04"33
morning rise	15252 May 10 10:24	17°8'00"53	evening set	15259 May 11 14:51	17°11'26"15
retrograde	15252 Aug 10 19:59	20°8'23"05			
opposition	15252 Oct 24 02:30	18°8'20"22 -1°00'43	conjunction	15259 May 27 18:47	18°11'25"24 -1°08'45
min. Earth dist.	15252 Oct 24 04:54	18°8'20"06 17.45721 AU	minimum elong	15259 May 27 18:47	18°11'25"24 1°09'39
direct	15253 Jan 08 00:50	16°8'15"25	max. Earth dist.	15259 May 27 19:21	18°11'25"29 19.79517 AU
evening set	15253 Apr 12 19:55	19°8'41"21	morning rise	15259 Jun 12 20:32	19°11'24"15
			retrograde	15259 Sep 12 17:13	22°11'41"21
conjunction	15253 Apr 29 04:18	20°8'42"06 -0°56'09	opposition	15259 Nov 26 12:59	20°11'40"20 -1°16'57
minimum elong	15253 Apr 29 04:18	20°8'42"06 0°56'50	min. Earth dist.	15259 Nov 26 11:52	20°11'40"27 17.82522 AU
max. Earth dist.	15253 Apr 29 01:59	20°8'41"44 19.47832 AU	direct	15260 Feb 11 02:12	18°11'36"59
morning rise	15253 May 15 10:26	21°8'42"33	evening set	15260 May 15 11:02	21°11'57"44
retrograde	15253 Aug 15 17:24	25°8'04"09			
opposition	15253 Oct 29 01:52	23°8'01"42 -1°04'26	conjunction	15260 May 31 14:11	22°11'56"36 -1°09'21
min. Earth dist.	15253 Oct 29 04:04	23°8'01"28 17.50089 AU	minimum elong	15260 May 31 14:11	22°11'56"36 1°10'16
direct	15254 Jan 13 02:12	20°8'57"00	max. Earth dist.	15260 May 31 14:54	22°11'56"42 19.85520 AU
evening set	15254 Apr 17 21:04	24°8'22"25	morning rise	15260 Jun 16 15:20	23°11'55"10
			retrograde	15260 Sep 16 10:38	27°11'11"24
conjunction	15254 May 04 04:32	25°8'22"55 -0°59'18	opposition	15260 Nov 30 08:57	25°11'10"34 -1°17'22
minimum elong	15254 May 04 04:32	25°8'22"55 1°00'01	min. Earth dist.	15260 Nov 30 07:57	25°11'10"40 17.88618 AU
max. Earth dist.	15254 May 04 01:44	25°8'22"29 19.52406 AU	direct	15261 Feb 14 23:12	23°11'07"25
morning rise	15254 May 20 10:04	26°8'23"08	evening set	15261 May 20 05:57	26°11'27"11
retrograde	15254 Aug 20 15:03	29°8'44"06			
opposition	15254 Nov 03 00:51	27°8'41"54 -1°07'42	conjunction	15261 Jun 05 08:28	27°11'25"45 -1°09'32
min. Earth dist.	15254 Nov 03 02:19	27°8'41"44 17.54859 AU	minimum elong	15261 Jun 05 08:28	27°11'25"45 1°10'29
direct	15255 Jan 18 03:39	25°8'37"25	max. Earth dist.	15261 Jun 05 10:15	27°11'26"01 19.91704 AU
evening set	15255 Apr 22 21:19	29°8'02"14	morning rise	15261 Jun 21 08:57	28°11'24"02
	15255 May 08 12:11	0°11'	retrograde	15261 Jul 20 10:00	0°11'
conjunction	15255 May 09 04:13	0°11'02"29 -1°02'02			
minimum elong	15255 May 09 04:13	0°11'02"29 1°02'48	retrograde	15261 Sep 21 03:43	1°11'39"24
max. Earth dist.	15255 May 09 03:04	0°11'02"19 19.57337 AU		15261 Nov 26 16:42	30°11'
			opposition	15261 Dec 05 04:09	29°11'38"45 -1°17'18
			min. Earth dist.	15261 Dec 05 01:35	29°11'39"01 17.94885 AU
			direct	15262 Feb 19 20:39	27°11'35"50

	15262 May 09 02:57	0°☿		15268 Aug 10 19:31	0°♄
evening set	15262 May 25 00:01	0°☿54'35	retrograde	15268 Oct 21 04:53	2°♄02'35
			opposition	15269 Jan 05 01:21	0°♄03'35 -1°04'42
conjunction	15262 Jun 10 01:50	1°☿52'51 -1°09'17	min. Earth dist.	15269 Jan 04 19:18	0°♄04'12 18.42060 AU
minimum elong	15262 Jun 10 01:50	1°☿52'51 1°10'13		15269 Jan 06 12:15	30°♄☿
max. Earth dist.	15262 Jun 10 04:22	1°☿53'14 19.98066 AU	direct	15269 Mar 23 01:30	28°☿02'57
morning rise	15262 Jun 26 01:44	2°☿50'51		15269 Jun 01 11:37	0°♄
retrograde	15262 Sep 25 19:18	6°☿05'22	evening set	15269 Jun 24 05:25	1°♄14'41
opposition	15262 Dec 09 22:45	4°☿04'53 -1°16'46			
min. Earth dist.	15262 Dec 09 20:14	4°☿05'09 18.01357 AU	conjunction	15269 Jul 10 03:33	2°♄11'00 -0°56'50
direct	15263 Feb 24 16:06	2°☿02'14	minimum elong	15269 Jul 10 03:33	2°♄11'00 0°57'41
evening set	15263 May 29 17:03	5°☿19'58	max. Earth dist.	15269 Jul 10 10:10	2°♄11'59 20.45311 AU
			morning rise	15269 Jul 26 00:35	3°♄07'09
conjunction	15263 Jun 14 18:18	6°☿17'56 -1°08'37	retrograde	15269 Oct 25 18:03	6°♄16'21
minimum elong	15263 Jun 14 18:18	6°☿17'56 1°09'34	opposition	15270 Jan 09 15:45	4°♄17'33 -1°01'24
max. Earth dist.	15263 Jun 14 21:39	6°☿18'27 20.04636 AU	min. Earth dist.	15270 Jan 09 08:26	4°♄18'18 18.48524 AU
morning rise	15263 Jun 30 17:41	7°☿15'39	direct	15270 Mar 27 17:23	2°♄17'15
retrograde	15263 Sep 30 11:13	10°☿29'19	evening set	15270 Jun 28 16:45	5°♄28'01
opposition	15263 Dec 14 16:37	8°☿29'04 -1°15'46			
min. Earth dist.	15263 Dec 14 12:18	8°☿29'31 18.08004 AU	conjunction	15270 Jul 14 14:37	6°♄24'05 -0°53'45
direct	15264 Feb 29 12:17	6°☿26'42	minimum elong	15270 Jul 14 14:37	6°♄24'05 0°54'34
evening set	15264 Jun 02 09:14	9°☿43'26	max. Earth dist.	15270 Jul 14 22:09	6°♄25'12 20.51642 AU
			morning rise	15270 Jul 30 11:17	7°♄20'01
conjunction	15264 Jun 18 09:51	10°☿41'06 -1°07'33	retrograde	15270 Oct 30 03:38	10°♄28'33
minimum elong	15264 Jun 18 09:51	10°☿41'06 1°08'30	opposition	15271 Jan 14 05:34	8°♄29'57 -0°57'48
max. Earth dist.	15264 Jun 18 14:13	10°☿41'46 20.11361 AU	min. Earth dist.	15271 Jan 13 23:09	8°♄30'36 18.54715 AU
morning rise	15264 Jul 04 08:41	11°☿38'32	direct	15271 Apr 01 06:45	6°♄29'56
retrograde	15264 Oct 04 00:51	14°☿51'24	evening set	15271 Jul 03 03:29	9°♄39'46
opposition	15264 Dec 18 10:01	12°☿51'23 -1°14'21			
min. Earth dist.	15264 Dec 18 05:54	12°☿51'49 18.14801 AU	conjunction	15271 Jul 19 00:55	10°♄35'36 -0°50'23
direct	15265 Mar 05 06:30	10°☿49'22	minimum elong	15271 Jul 19 00:56	10°♄35'36 0°51'10
evening set	15265 Jun 07 00:31	14°☿05'04	max. Earth dist.	15271 Jul 19 07:43	10°♄36'36 20.57685 AU
			morning rise	15271 Aug 03 21:31	11°♄31'19
conjunction	15265 Jun 23 00:34	15°☿02'28 -1°06'06	retrograde	15271 Nov 03 15:34	14°♄39'14
minimum elong	15265 Jun 23 00:34	15°☿02'28 1°07'02	opposition	15272 Jan 18 18:48	12°♄40'47 -0°53'56
max. Earth dist.	15265 Jun 23 05:25	15°☿03'12 20.18219 AU	min. Earth dist.	15272 Jan 18 11:20	12°♄41'32 18.60590 AU
morning rise	15265 Jul 08 22:59	15°☿59'37	direct	15272 Apr 04 21:04	10°♄41'02
retrograde	15265 Oct 08 15:49	19°☿11'42	evening set	15272 Jul 06 13:18	13°♄49'55
opposition	15265 Dec 23 02:40	17°☿11'56 -1°12'30			
min. Earth dist.	15265 Dec 22 20:49	17°☿12'32 18.21684 AU	conjunction	15272 Jul 22 10:33	14°♄45'33 -0°46'47
direct	15266 Mar 10 01:09	15°☿10'16	minimum elong	15272 Jul 22 10:33	14°♄45'33 0°47'31
evening set	15266 Jun 11 14:49	18°☿24'58	max. Earth dist.	15272 Jul 22 18:17	14°♄46'41 20.63384 AU
				15272 Jul 26 12:47	15°♄
conjunction	15266 Jun 27 14:24	19°☿22'05 -1°04'17	morning rise	15272 Aug 07 06:50	15°♄41'04
minimum elong	15266 Jun 27 14:24	19°☿22'05 1°05'13	retrograde	15272 Nov 07 00:09	18°♄48'22
max. Earth dist.	15266 Jun 27 20:21	19°☿22'58 20.25113 AU	opposition	15273 Jan 22 07:37	16°♄50'03 -0°49'47
morning rise	15266 Jul 13 12:22	20°☿18'58	min. Earth dist.	15273 Jan 22 00:57	16°♄50'43 18.66116 AU
retrograde	15266 Oct 13 04:02	23°☿30'18		15273 Mar 20 18:54	15°♄♄
opposition	15266 Dec 27 18:52	21°☿30'48 -1°10'16	direct	15273 Apr 09 09:31	14°♄50'32
min. Earth dist.	15266 Dec 27 13:32	21°☿31'21 18.28573 AU		15273 Apr 28 17:53	15°♄
direct	15267 Mar 14 17:32	19°☿29'29	evening set	15273 Jul 10 22:31	17°♄58'31
evening set	15267 Jun 16 04:30	22°☿43'11			
			conjunction	15273 Jul 26 19:24	18°♄53'56 -0°42'58
conjunction	15267 Jul 02 03:33	23°☿40'01 -1°02'08	minimum elong	15273 Jul 26 19:24	18°♄53'56 0°43'40
minimum elong	15267 Jul 02 03:33	23°☿40'01 1°03'01	max. Earth dist.	15273 Jul 27 02:24	18°♄54'57 20.68754 AU
max. Earth dist.	15267 Jul 02 09:28	23°☿40'54 20.31982 AU	morning rise	15273 Aug 11 15:44	19°♄49'15
morning rise	15267 Jul 18 01:13	24°☿36'39	retrograde	15273 Nov 11 10:33	22°♄56'00
retrograde	15267 Oct 17 17:59	27°☿47'14	opposition	15274 Jan 26 19:37	20°♄57'45 -0°45'25
opposition	15268 Jan 01 10:13	25°☿47'59 -1°07'39	min. Earth dist.	15274 Jan 26 11:55	20°♄58'31 18.71320 AU
min. Earth dist.	15268 Jan 01 03:29	25°☿48'41 18.35388 AU	direct	15274 Apr 13 21:59	18°♄58'26
direct	15268 Mar 18 10:52	23°☿47'01	evening set	15274 Jul 15 06:49	22°♄05'32
evening set	15268 Jun 19 17:23	26°☿59'44			
			conjunction	15274 Jul 31 03:38	23°♄00'45 -0°38'56
conjunction	15268 Jul 05 16:02	27°☿56'19 -0°59'38	minimum elong	15274 Jul 31 03:38	23°♄00'46 0°39'34
minimum elong	15268 Jul 05 16:02	27°☿56'19 1°00'31	max. Earth dist.	15274 Jul 31 11:46	23°♄01'57 20.73795 AU
max. Earth dist.	15268 Jul 05 22:58	27°☿57'21 20.38730 AU	morning rise	15274 Aug 15 23:47	23°♄55'55
morning rise	15268 Jul 21 13:15	28°☿52'42	retrograde	15274 Nov 15 18:19	27°♄02'07

opposition	15275 Jan 31 07:11	25° Ω 03'56	-0°40'50	direct	15281 May 12 14:17	17° η 19'56	
min. Earth dist.	15275 Jan 31 00:04	25° Ω 04'39	18.76209 AU	evening set	15281 Aug 12 03:20	20° η 22'26	
direct	15275 Apr 18 09:00	23° Ω 04'50					
evening set	15275 Jul 19 14:39	26° Ω 11'05		conjunction	15281 Aug 27 23:23	21° η 16'43	-0°07'01
				minimum elong	15281 Aug 27 23:24	21° η 16'43	0°07'15
conjunction	15275 Aug 04 11:08	27° Ω 06'07	-0°34'43	behind sun begin	15281 Aug 27 17:21	21° η 15'52	
minimum elong	15275 Aug 04 11:09	27° Ω 06'08	0°35'19	behind sun end	15281 Aug 28 05:27	21° η 17'34	
max. Earth dist.	15275 Aug 04 18:37	27° Ω 07'13	20.78549 AU	max. Earth dist.	15281 Aug 28 07:55	21° η 17'56	21.00956 AU
morning rise	15275 Aug 20 07:21	28° Ω 01'07		morning rise	15281 Sep 12 20:03	22° η 11'06	
	15275 Sep 28 20:12	0° η		retrograde	15281 Dec 14 02:50	25° η 15'13	
retrograde	15275 Nov 20 03:36	1° η 06'51		opposition	15282 Mar 01 03:25	23° η 17'33	-0°05'02
	15276 Jan 13 19:52	30° κ Ω		min. Earth dist.	15282 Feb 28 18:36	23° η 18'26	19.02212 AU
opposition	15276 Feb 04 18:02	29° Ω 08'44	-0°36'04	direct	15282 May 16 22:09	21° η 19'57	
min. Earth dist.	15276 Feb 04 09:48	29° Ω 09'33	18.80832 AU	evening set	15282 Aug 16 08:28	24° η 22'01	
direct	15276 Apr 21 19:48	27° Ω 09'49					
	15276 Jul 18 08:55	0° η		conjunction	15282 Sep 01 04:44	25° η 16'15	-0°02'11
evening set	15276 Jul 22 21:47	0° η 15'18		minimum elong	15282 Sep 01 04:43	25° η 16'15	0°02'22
				behind sun begin	15282 Aug 31 22:08	25° η 15'20	
conjunction	15276 Aug 07 18:14	1° η 10'11	-0°30'21	behind sun end	15282 Sep 01 11:17	25° η 17'10	
minimum elong	15276 Aug 07 18:14	1° η 10'11	0°30'53	max. Earth dist.	15282 Sep 01 14:02	25° η 17'34	21.03338 AU
max. Earth dist.	15276 Aug 08 03:00	1° η 11'27	20.83038 AU	morning rise	15282 Sep 17 01:24	26° η 10'34	
morning rise	15276 Aug 23 14:16	2° η 05'02		retrograde	15282 Dec 18 10:04	29° η 14'36	
retrograde	15276 Nov 23 10:44	5° η 10'21		asc. node	15283 Feb 12 12:16	28° η 05'45	
opposition	15277 Feb 08 04:38	3° η 12'18	-0°31'08	opposition	15283 Mar 05 12:06	27° η 16'59	0°00'19
min. Earth dist.	15277 Feb 07 20:43	3° η 13'06	18.85194 AU	min. Earth dist.	15283 Mar 05 04:02	27° η 17'47	19.04340 AU
direct	15277 Apr 26 05:00	1° η 13'37		direct	15283 May 21 05:38	25° η 19'33	
evening set	15277 Jul 27 04:24	4° η 18'22		evening set	15283 Aug 20 13:36	28° η 21'14	
conjunction	15277 Aug 12 00:36	5° η 13'06	-0°25'51	conjunction	15283 Sep 05 09:44	29° η 15'24	0°02'47
minimum elong	15277 Aug 12 00:37	5° η 13'06	0°26'20	minimum elong	15283 Sep 05 09:44	29° η 15'24	0°02'41
max. Earth dist.	15277 Aug 12 08:44	5° η 14'16	20.87277 AU	behind sun begin	15283 Sep 05 03:10	29° η 14'29	
morning rise	15277 Aug 27 20:51	6° η 07'49		behind sun end	15283 Sep 05 16:18	29° η 16'19	
retrograde	15277 Nov 27 19:51	9° η 12'47		max. Earth dist.	15283 Sep 05 17:41	29° η 16'31	21.05208 AU
opposition	15278 Feb 12 14:37	7° η 14'49	-0°26'05		15283 Sep 18 09:50	0° Ω	
min. Earth dist.	15278 Feb 12 05:42	7° η 15'43	18.89294 AU	morning rise	15283 Sep 21 06:45	0° Ω 09'42	
direct	15278 Apr 30 14:36	5° η 16'21		retrograde	15283 Dec 22 18:02	3° Ω 13'42	
evening set	15278 Jul 31 10:33	8° η 20'28		opposition	15284 Mar 08 20:35	1° Ω 16'04	0°05'40
				min. Earth dist.	15284 Mar 08 12:28	1° Ω 16'52	19.05944 AU
conjunction	15278 Aug 16 06:50	9° η 15'04	-0°21'15		15284 Apr 12 09:15	30° κ η	
minimum elong	15278 Aug 16 06:50	9° η 15'04	0°21'40	direct	15284 May 24 12:35	29° η 18'44	
max. Earth dist.	15278 Aug 16 16:08	9° η 16'24	20.91225 AU		15284 Jul 04 12:00	0° Ω	
morning rise	15278 Sep 01 02:59	10° η 09'41		evening set	15284 Aug 23 18:33	2° Ω 20'06	
retrograde	15278 Dec 02 02:38	13° η 14'20					
opposition	15279 Feb 17 00:09	11° η 16'28	-0°20'55	conjunction	15284 Sep 08 14:56	3° Ω 14'14	0°07'35
min. Earth dist.	15279 Feb 16 15:46	11° η 17'19	18.93081 AU	minimum elong	15284 Sep 08 14:56	3° Ω 14'14	0°07'32
direct	15279 May 04 22:10	9° η 18'14		behind sun begin	15284 Sep 08 08:56	3° Ω 13'24	
evening set	15279 Aug 04 16:31	12° η 21'45		behind sun end	15284 Sep 08 20:55	3° Ω 15'04	
				max. Earth dist.	15284 Sep 08 23:27	3° Ω 15'26	21.06524 AU
conjunction	15279 Aug 20 12:36	13° η 16'14	-0°16'33	morning rise	15284 Sep 24 12:00	4° Ω 08'30	
minimum elong	15279 Aug 20 12:36	13° η 16'14	0°16'55	retrograde	15284 Dec 26 00:50	7° Ω 12'30	
max. Earth dist.	15279 Aug 20 21:02	13° η 17'26	20.94854 AU	opposition	15285 Mar 13 04:59	5° Ω 14'50	0°10'59
morning rise	15279 Sep 05 08:59	14° η 10'45		min. Earth dist.	15285 Mar 12 21:36	5° Ω 15'34	19.06975 AU
retrograde	15279 Dec 06 11:26	17° η 15'11		direct	15285 May 28 20:21	3° Ω 17'35	
opposition	15280 Feb 21 09:30	15° η 17'24	-0°15'41	evening set	15285 Aug 27 23:28	6° Ω 18'39	
min. Earth dist.	15280 Feb 21 00:26	15° η 18'18	18.96532 AU				
direct	15280 May 08 07:06	13° η 19'23		conjunction	15285 Sep 12 19:50	7° Ω 12'45	0°12'21
evening set	15280 Aug 07 21:55	16° η 22'22		minimum elong	15285 Sep 12 19:51	7° Ω 12'45	0°12'22
				behind sun begin	15285 Sep 12 15:28	7° Ω 12'09	
conjunction	15280 Aug 23 18:06	17° η 16'45	-0°11'48	behind sun end	15285 Sep 13 00:13	7° Ω 13'22	
minimum elong	15280 Aug 23 18:06	17° η 16'45	0°12'07	max. Earth dist.	15285 Sep 13 02:49	7° Ω 13'44	21.07275 AU
behind sun begin	15280 Aug 23 13:36	17° η 16'07		morning rise	15285 Sep 28 17:21	8° Ω 07'02	
behind sun end	15280 Aug 23 22:36	17° η 17'23		retrograde	15285 Dec 30 08:45	11° Ω 11'03	
max. Earth dist.	15280 Aug 24 03:41	17° η 18'07	20.98108 AU	opposition	15286 Mar 17 13:08	9° Ω 13'17	0°16'14
morning rise	15280 Sep 08 14:27	18° η 11'11		min. Earth dist.	15286 Mar 17 05:54	9° Ω 14'00	19.07442 AU
retrograde	15280 Dec 09 18:33	21° η 15'26		direct	15286 Jun 02 02:51	7° Ω 16'03	
opposition	15281 Feb 24 18:41	19° η 17'44	-0°10'22	evening set	15286 Sep 01 04:14	10° Ω 16'53	
min. Earth dist.	15281 Feb 24 10:10	19° η 18'35	18.99583 AU				

conjunction	15286 Sep 17 00:56	11°♄10'59	0°17'03	retrograde	15293 Jan 27 13:09	9°♄00'39	
minimum elong	15286 Sep 17 00:55	11°♄10'59	0°17'09	opposition	15293 Apr 14 20:00	7°♄01'57	0°49'35
max. Earth dist.	15286 Sep 17 08:25	11°♄12'03	21.07456 AU	min. Earth dist.	15293 Apr 14 14:33	7°♄02'30	18.98271 AU
morning rise	15286 Oct 02 22:33	12°♄05'16		direct	15293 Jun 29 23:28	5°♄04'30	
retrograde	15287 Jan 03 14:52	15°♄09'20		evening set	15293 Sep 28 15:44	8°♄05'34	
opposition	15287 Mar 21 21:02	13°♄11'27	0°21'25				
min. Earth dist.	15287 Mar 21 14:29	13°♄12'06	19.07354 AU	conjunction	15293 Oct 14 14:07	9°♄00'06	0°46'38
direct	15287 Jun 06 10:21	11°♄14'12		minimum elong	15293 Oct 14 14:07	9°♄00'06	0°47'09
evening set	15287 Sep 05 09:04	14°♄14'51		max. Earth dist.	15293 Oct 14 18:58	9°♄00'48	20.96915 AU
				morning rise	15293 Oct 30 14:28	9°♄54'56	
conjunction	15287 Sep 21 05:48	15°♄08'58	0°21'41	retrograde	15294 Jan 31 22:13	13°♄01'05	
minimum elong	15287 Sep 21 05:47	15°♄08'58	0°21'50	opposition	15294 Apr 19 04:13	11°♄02'17	0°53'35
max. Earth dist.	15287 Sep 21 11:55	15°♄09'50	21.07130 AU	min. Earth dist.	15294 Apr 18 23:15	11°♄02'47	18.95499 AU
morning rise	15287 Oct 07 03:52	16°♄03'16		direct	15294 Jul 04 05:36	9°♄04'47	
retrograde	15288 Jan 07 22:58	19°♄07'28		evening set	15294 Oct 02 21:55	12°♄06'11	
opposition	15288 Mar 25 04:56	17°♄09'25	0°26'30				
min. Earth dist.	15288 Mar 24 22:25	17°♄10'04	19.06802 AU	conjunction	15294 Oct 18 20:48	13°♄00'52	0°50'08
direct	15288 Jun 09 16:32	15°♄12'08		minimum elong	15294 Oct 18 20:48	13°♄00'52	0°50'42
evening set	15288 Sep 08 13:37	18°♄12'39		max. Earth dist.	15294 Oct 19 02:18	13°♄01'39	20.93942 AU
				morning rise	15294 Nov 03 21:24	13°♄55'50	
conjunction	15288 Sep 24 10:41	19°♄06'47	0°26'13		15294 Nov 23 20:38	15°♄	
minimum elong	15288 Sep 24 10:41	19°♄06'47	0°26'27	retrograde	15295 Feb 05 07:38	17°♄02'30	
max. Earth dist.	15288 Sep 24 17:43	19°♄07'47	21.06352 AU	opposition	15295 Apr 23 12:37	15°♄03'36	0°57'21
morning rise	15288 Oct 10 08:56	20°♄01'08		min. Earth dist.	15295 Apr 23 08:01	15°♄04'04	18.92328 AU
retrograde	15289 Jan 11 05:04	23°♄05'31			15295 Apr 25 00:14	15°♄	
opposition	15289 Mar 29 12:46	21°♄07'19	0°31'27	direct	15295 Jul 08 12:31	13°♄06'04	
min. Earth dist.	15289 Mar 29 06:35	21°♄07'56	19.05819 AU		15295 Sep 15 23:40	15°♄	
direct	15289 Jun 13 23:17	19°♄10'00		evening set	15295 Oct 07 04:44	16°♄07'51	
evening set	15289 Sep 12 18:31	22°♄10'28					
				conjunction	15295 Oct 23 03:51	17°♄02'40	0°53'24
conjunction	15289 Sep 28 15:41	23°♄04'39	0°30'38	minimum elong	15295 Oct 23 03:51	17°♄02'40	0°54'02
minimum elong	15289 Sep 28 15:40	23°♄04'38	0°30'54	max. Earth dist.	15295 Oct 23 07:41	17°♄03'14	20.90578 AU
max. Earth dist.	15289 Sep 28 21:28	23°♄05'28	21.05180 AU	morning rise	15295 Nov 08 05:04	17°♄57'48	
morning rise	15289 Oct 14 14:26	23°♄59'03		retrograde	15296 Feb 09 17:05	21°♄05'03	
retrograde	15290 Jan 15 13:33	27°♄03'40		opposition	15296 Apr 26 21:28	19°♄06'01	1°00'51
opposition	15290 Apr 02 20:22	25°♄05'19	0°36'16	min. Earth dist.	15296 Apr 26 17:39	19°♄06'24	18.88762 AU
min. Earth dist.	15290 Apr 02 14:17	25°♄05'55	19.04470 AU	direct	15296 Jul 11 18:53	17°♄08'24	
direct	15290 Jun 18 05:07	23°♄07'57		evening set	15296 Oct 10 11:53	20°♄10'38	
evening set	15290 Sep 16 23:25	26°♄08'28					
				conjunction	15296 Oct 26 11:36	21°♄05'37	0°56'25
conjunction	15290 Oct 02 21:00	27°♄02'43	0°34'54	minimum elong	15296 Oct 26 11:36	21°♄05'37	0°57'05
minimum elong	15290 Oct 02 20:59	27°♄02'43	0°35'14	max. Earth dist.	15296 Oct 26 15:51	21°♄06'14	20.86783 AU
max. Earth dist.	15290 Oct 03 03:38	27°♄03'40	21.03639 AU	morning rise	15296 Nov 11 13:09	22°♄00'55	
morning rise	15290 Oct 18 19:56	27°♄57'12		retrograde	15297 Feb 13 03:31	25°♄08'45	
	15290 Nov 29 18:18	0°♄		opposition	15297 May 01 06:37	23°♄09'35	1°04'03
retrograde	15291 Jan 19 20:15	1°♄02'06		min. Earth dist.	15297 May 01 03:16	23°♄09'55	18.84736 AU
	15291 Mar 13 18:42	30°♄		direct	15297 Jul 16 02:48	21°♄11'51	
opposition	15291 Apr 07 04:08	29°♄03'38	0°40'54	evening set	15297 Oct 14 19:56	24°♄14'34	
min. Earth dist.	15291 Apr 06 22:16	29°♄04'13	19.02748 AU				
direct	15291 Jun 22 11:15	27°♄06'15		conjunction	15297 Oct 30 19:57	25°♄09'44	0°59'11
	15291 Sep 19 03:15	0°♄		minimum elong	15297 Oct 30 19:56	25°♄09'44	0°59'54
evening set	15291 Sep 21 04:33	0°♄06'52		max. Earth dist.	15297 Oct 30 22:09	25°♄10'03	20.82527 AU
				morning rise	15297 Nov 15 22:09	26°♄05'13	
conjunction	15291 Oct 07 02:15	1°♄01'11	0°39'00	retrograde	15298 Feb 17 13:52	29°♄13'40	
minimum elong	15291 Oct 07 02:14	1°♄01'11	0°39'23	opposition	15298 May 05 16:01	27°♄14'18	1°06'58
max. Earth dist.	15291 Oct 07 07:40	1°♄01'58	21.01747 AU	min. Earth dist.	15298 May 05 13:49	27°♄14'32	18.80251 AU
morning rise	15291 Oct 23 01:44	1°♄55'47		direct	15298 Jul 20 09:52	25°♄16'23	
retrograde	15292 Jan 24 05:07	5°♄01'03		evening set	15298 Oct 19 04:21	28°♄19'40	
opposition	15292 Apr 10 12:03	3°♄02'27	0°45'21				
min. Earth dist.	15292 Apr 10 06:21	3°♄03'01	19.00689 AU	conjunction	15298 Nov 04 05:01	29°♄15'01	1°01'39
direct	15292 Jun 25 17:18	1°♄05'02		minimum elong	15298 Nov 04 05:00	29°♄15'01	1°02'24
evening set	15292 Sep 24 09:55	4°♄05'50		max. Earth dist.	15298 Nov 04 07:25	29°♄15'22	20.77803 AU
					15298 Nov 17 04:24	0°♄	
conjunction	15292 Oct 10 08:05	5°♄00'16	0°42'55	morning rise	15298 Nov 20 07:34	0°♄10'41	
minimum elong	15292 Oct 10 08:05	5°♄00'16	0°43'22	retrograde	15299 Feb 22 00:49	3°♄19'45	
max. Earth dist.	15292 Oct 10 14:21	5°♄01'10	20.99506 AU	opposition	15299 May 10 01:52	1°♄20'11	1°09'33
morning rise	15292 Oct 26 07:49	5°♄54'57		min. Earth dist.	15299 May 10 00:00	1°♄20'22	18.75299 AU

	15299 Jun 15 01:35	30° π 8		max. Earth dist.	15305 Dec 04 10:39	28° π 26'30	20.36556 AU
direct	15299 Jul 24 18:33	29° π 22'03		morning rise	15305 Dec 20 19:52	29° π 24'13	
	15299 Sep 01 09:24	0° π			15305 Dec 31 09:00	0° π	
evening set	15299 Oct 23 13:18	2° π 25'52		retrograde	15306 Mar 24 22:21	2° π 38'16	
				opposition	15306 Jun 09 09:43	0° π 36'57	1°17'15
conjunction	15299 Nov 08 14:19	3° π 21'25	1°03'49	min. Earth dist.	15306 Jun 09 11:48	0° π 36'43	18.33405 AU
minimum elong	15299 Nov 08 14:18	3° π 21'25	1°04'36		15306 Jun 24 09:15	30° π 8	
max. Earth dist.	15299 Nov 08 14:49	3° π 21'30	20.72651 AU	direct	15306 Aug 23 13:25	28° π 36'51	
morning rise	15299 Nov 24 17:35	4° π 17'18			15306 Oct 20 05:58	0° π	
retrograde	15300 Feb 26 12:16	7° π 27'01		evening set	15306 Nov 22 22:26	1° π 46'00	
opposition	15300 May 14 12:07	5° π 27'11	1°11'48				
min. Earth dist.	15300 May 14 11:21	5° π 27'16	18.69961 AU	conjunction	15306 Dec 09 03:48	2° π 43'19	1°09'22
direct	15300 Jul 29 02:30	3° π 28'47		minimum elong	15306 Dec 09 03:48	2° π 43'19	1°10'18
evening set	15300 Oct 27 22:46	6° π 33'13		max. Earth dist.	15306 Dec 09 01:56	2° π 43'02	20.30192 AU
				morning rise	15306 Dec 25 10:59	3° π 40'57	
conjunction	15300 Nov 13 00:30	7° π 28'59	1°05'40	retrograde	15307 Mar 29 15:43	6° π 55'49	
minimum elong	15300 Nov 13 00:30	7° π 28'59	1°06'30	opposition	15307 Jun 13 23:13	4° π 54'18	1°16'42
max. Earth dist.	15300 Nov 13 01:29	7° π 29'08	20.67138 AU	min. Earth dist.	15307 Jun 14 00:48	4° π 54'08	18.27025 AU
morning rise	15300 Nov 29 04:10	8° π 25'05		direct	15307 Aug 28 02:21	2° π 53'59	
retrograde	15301 Mar 03 00:14	11° π 35'26		evening set	15307 Nov 27 13:14	6° π 04'05	
opposition	15301 May 18 22:29	9° π 35'20	1°13'42				
min. Earth dist.	15301 May 18 21:50	9° π 35'24	18.64292 AU	conjunction	15307 Dec 13 19:06	7° π 01'41	1°08'39
direct	15301 Aug 02 11:53	7° π 36'40		minimum elong	15307 Dec 13 19:06	7° π 01'41	1°09'36
evening set	15301 Nov 01 09:01	10° π 41'45		max. Earth dist.	15307 Dec 13 15:50	7° π 01'12	20.23808 AU
				morning rise	15307 Dec 30 03:02	7° π 59'37	
conjunction	15301 Nov 17 11:09	11° π 37'44	1°07'12	retrograde	15308 Apr 02 08:15	11° π 15'19	
minimum elong	15301 Nov 17 11:08	11° π 37'44	1°08'03	opposition	15308 Jun 17 13:30	9° π 13'39	1°15'43
max. Earth dist.	15301 Nov 17 10:23	11° π 37'37	20.61340 AU	min. Earth dist.	15308 Jun 17 16:28	9° π 13'21	18.20635 AU
morning rise	15301 Dec 03 15:34	12° π 34'04		direct	15308 Aug 31 13:56	7° π 13'06	
retrograde	15302 Mar 07 12:41	15° π 45'06		evening set	15308 Dec 01 05:00	10° π 24'12	
opposition	15302 May 23 09:25	13° π 44'44	1°15'13				
min. Earth dist.	15302 May 23 09:51	13° π 44'41	18.58384 AU	conjunction	15308 Dec 17 11:41	11° π 22'06	1°07'33
direct	15302 Aug 06 20:11	11° π 45'45		minimum elong	15308 Dec 17 11:41	11° π 22'06	1°08'28
evening set	15302 Nov 05 19:40	14° π 51'33		max. Earth dist.	15308 Dec 17 08:44	11° π 21'40	20.17409 AU
				morning rise	15309 Jan 02 20:06	12° π 20'19	
conjunction	15302 Nov 21 22:31	15° π 47'47	1°08'22	retrograde	15309 Apr 07 03:05	15° π 36'51	
minimum elong	15302 Nov 21 22:31	15° π 47'47	1°09'16	opposition	15309 Jun 22 04:08	13° π 35'03	1°14'18
max. Earth dist.	15302 Nov 21 22:26	15° π 47'46	20.55325 AU	min. Earth dist.	15309 Jun 22 06:49	13° π 34'46	18.14211 AU
morning rise	15302 Dec 08 03:19	16° π 44'21		direct	15309 Sep 05 04:02	11° π 34'16	
retrograde	15303 Mar 12 02:21	19° π 56'06		evening set	15309 Dec 05 21:58	14° π 46'24	
opposition	15303 May 27 20:42	17° π 55'28	1°16'21				
min. Earth dist.	15303 May 27 20:53	17° π 55'27	18.52282 AU	conjunction	15309 Dec 22 05:09	15° π 44'37	1°06'03
direct	15303 Aug 11 06:49	15° π 56'12		minimum elong	15309 Dec 22 05:10	15° π 44'37	1°06'59
evening set	15303 Nov 10 07:16	19° π 02'45		max. Earth dist.	15309 Dec 22 00:35	15° π 43'56	20.10959 AU
				morning rise	15310 Jan 07 14:13	16° π 43'07	
conjunction	15303 Nov 26 10:32	19° π 59'14	1°09'11	retrograde	15310 Apr 11 21:18	20° π 00'30	
minimum elong	15303 Nov 26 10:32	19° π 59'14	1°10'05	opposition	15310 Jun 26 19:46	17° π 58'32	1°12'26
max. Earth dist.	15303 Nov 26 08:54	19° π 58'59	20.49158 AU	min. Earth dist.	15310 Jun 27 00:06	17° π 58'05	18.07740 AU
morning rise	15303 Dec 12 16:05	20° π 56'03		direct	15310 Sep 09 17:19	15° π 57'29	
retrograde	15304 Mar 15 15:57	24° π 08'33		evening set	15310 Dec 10 15:36	19° π 10'40	
opposition	15304 May 31 08:34	22° π 07'39	1°17'04				
min. Earth dist.	15304 May 31 09:49	22° π 07'32	18.46067 AU	conjunction	15310 Dec 26 23:32	20° π 09'11	1°04'09
direct	15304 Aug 14 15:33	20° π 08'06		minimum elong	15310 Dec 26 23:32	20° π 09'11	1°05'04
evening set	15304 Nov 13 19:23	23° π 15'28		max. Earth dist.	15310 Dec 26 18:54	20° π 08'29	20.04462 AU
				morning rise	15311 Jan 12 09:03	21° π 07'59	
conjunction	15304 Nov 29 23:28	24° π 12'13	1°09'37	retrograde	15311 Apr 16 17:24	24° π 26'10	
minimum elong	15304 Nov 29 23:28	24° π 12'13	1°10'33	opposition	15311 Jul 01 11:58	22° π 24'02	1°10'09
max. Earth dist.	15304 Nov 29 22:32	24° π 12'05	20.42893 AU	min. Earth dist.	15311 Jul 01 15:57	22° π 23'37	18.01210 AU
morning rise	15304 Dec 16 05:28	25° π 09'18		direct	15311 Sep 14 09:19	20° π 22'42	
retrograde	15305 Mar 20 07:37	28° π 22'34		evening set	15311 Dec 15 10:24	23° π 36'55	
opposition	15305 Jun 04 20:51	26° π 21'26	1°17'22				
min. Earth dist.	15305 Jun 04 21:44	26° π 21'21	18.39757 AU	conjunction	15311 Dec 31 18:54	24° π 35'44	1°01'52
direct	15305 Aug 19 03:29	24° π 21'37		minimum elong	15311 Dec 31 18:55	24° π 35'44	1°02'46
evening set	15305 Nov 18 08:35	27° π 29'50		max. Earth dist.	15311 Dec 31 12:48	24° π 34'49	19.97911 AU
				morning rise	15312 Jan 17 05:02	25° π 34'49	
conjunction	15305 Dec 04 13:08	28° π 26'52	1°09'41	retrograde	15312 Apr 20 12:30	28° π 53'47	
minimum elong	15305 Dec 04 13:08	28° π 26'52	1°10'37	opposition	15312 Jul 05 04:54	26° π 51'27	1°07'24

min. Earth dist.	15312 Jul 05 10:34	26°  50'51	17.94653 AU	direct	15318 Oct 15 18:17	22°  07'57	
direct	15312 Sep 18 00:42	24°  49'48		evening set	15319 Jan 16 19:59	25°  29'01	
evening set	15312 Dec 19 05:57	28°  05'02					
				conjunction	15319 Feb 02 08:19	26°  29'45	0°35'43
conjunction	15313 Jan 04 15:12	29°  04'10	0°59'12	minimum elong	15319 Feb 02 08:19	26°  29'45	0°36'18
minimum elong	15313 Jan 04 15:13	29°  04'10	1°00'04	max. Earth dist.	15319 Feb 01 23:32	26°  28'24	19.56110 AU
max. Earth dist.	15313 Jan 04 08:46	29°  03'11	19.91369 AU	morning rise	15319 Feb 18 21:18	27°  30'36	
	15313 Jan 20 02:01	0°  00'00			15319 Apr 08 11:55	0°  00'00	
morning rise	15313 Jan 21 01:51	0°  03'32		retrograde	15319 May 23 21:44	0°  53'58	
retrograde	15313 Apr 25 09:25	3°  23'14			15319 Jul 09 08:28	30°  00'00	
opposition	15313 Jul 09 22:18	1°  20'42	1°04'15	opposition	15319 Aug 06 19:09	28°  50'21	0°37'06
min. Earth dist.	15313 Jul 10 03:34	1°  20'08	17.88125 AU	min. Earth dist.	15319 Aug 07 01:51	28°  49'37	17.53767 AU
	15313 Aug 13 08:42	30°  00'00		direct	15319 Oct 20 15:46	26°  46'26	
direct	15313 Sep 22 18:30	29°  18'42			15320 Jan 19 13:06	0°  00'00	
	15313 Nov 01 08:13	0°  00'00		evening set	15320 Jan 21 20:55	0°  08'23	
evening set	15313 Dec 24 02:25	2°  34'57					
				conjunction	15320 Feb 07 09:44	1°  09'21	0°30'45
conjunction	15314 Jan 09 12:13	3°  34'22	0°56'09	minimum elong	15320 Feb 07 09:44	1°  09'21	0°31'18
minimum elong	15314 Jan 09 12:13	3°  34'22	0°56'58	max. Earth dist.	15320 Feb 07 01:49	1°  08'08	19.51531 AU
max. Earth dist.	15314 Jan 09 04:51	3°  33'15	19.84877 AU	morning rise	15320 Feb 23 22:46	2°  10'24	
morning rise	15314 Jan 25 23:19	4°  34'01		retrograde	15320 May 27 21:39	5°  34'13	
retrograde	15314 Apr 30 05:10	7°  54'25		opposition	15320 Aug 10 16:33	3°  30'33	0°31'27
opposition	15314 Jul 14 16:25	5°  51'40	1°00'40	min. Earth dist.	15320 Aug 10 23:40	3°  29'46	17.49428 AU
min. Earth dist.	15314 Jul 14 23:07	5°  50'57	17.81697 AU	direct	15320 Oct 24 12:33	1°  26'25	
direct	15314 Sep 27 11:57	3°  49'20		evening set	15321 Jan 25 22:40	4°  49'14	
evening set	15314 Dec 28 23:36	7°  06'34					
				conjunction	15321 Feb 11 11:39	5°  50'23	0°25'34
conjunction	15315 Jan 14 10:01	8°  06'17	0°52'44	minimum elong	15321 Feb 11 11:40	5°  50'23	0°26'02
minimum elong	15315 Jan 14 10:01	8°  06'17	0°53'32	max. Earth dist.	15321 Feb 11 02:46	5°  49'01	19.47448 AU
max. Earth dist.	15315 Jan 14 02:19	8°  05'07	19.78546 AU	morning rise	15321 Feb 28 00:59	6°  51'37	
morning rise	15315 Jan 30 21:36	9°  06'11		retrograde	15321 Jun 01 23:00	10°  15'52	
retrograde	15315 May 05 02:51	12°  27'17		opposition	15321 Aug 15 14:32	8°  12'09	0°25'33
opposition	15315 Jul 19 10:58	10°  24'18	0°56'41	min. Earth dist.	15321 Aug 15 21:23	8°  11'24	17.45586 AU
min. Earth dist.	15315 Jul 19 17:05	10°  23'38	17.75465 AU	direct	15321 Oct 29 10:45	6°  07'51	
direct	15315 Oct 02 07:25	8°  21'36		evening set	15322 Jan 31 00:51	9°  31'29	
evening set	15316 Jan 02 21:31	11°  39'51					
				conjunction	15322 Feb 16 14:12	10°  32'49	0°20'11
conjunction	15316 Jan 19 08:31	12°  39'50	0°48'57	minimum elong	15322 Feb 16 14:12	10°  32'49	0°20'36
minimum elong	15316 Jan 19 08:31	12°  39'50	0°49'42	max. Earth dist.	15322 Feb 16 06:26	10°  31'38	19.43835 AU
max. Earth dist.	15316 Jan 19 00:34	12°  38'37	19.72429 AU	morning rise	15322 Mar 05 03:22	11°  34'11	
morning rise	15316 Feb 04 20:30	13°  40'00		retrograde	15322 Jun 06 23:56	14°  58'49	
	15316 Feb 28 11:39	15°  00'00		opposition	15322 Aug 20 13:04	12°  55'07	0°19'27
retrograde	15316 May 08 23:41	17°  01'43		min. Earth dist.	15322 Aug 20 20:05	12°  54'21	17.42199 AU
	15316 Jul 22 16:41	15°  00'00		direct	15322 Nov 03 09:38	10°  50'41	
opposition	15316 Jul 23 06:15	14°  58'32	0°52'18	evening set	15323 Feb 05 03:52	14°  15'03	
min. Earth dist.	15316 Jul 23 13:30	14°  57'46	17.69485 AU				
direct	15316 Oct 06 02:00	12°  55'30		conjunction	15323 Feb 21 17:12	15°  16'33	0°14'39
	15316 Dec 15 22:21	15°  00'00		minimum elong	15323 Feb 21 17:12	15°  16'33	0°15'00
evening set	15317 Jan 06 20:21	16°  14'43		behind sun begin	15323 Feb 21 14:56	15°  16'12	
				behind sun end	15323 Feb 21 19:28	15°  16'54	
conjunction	15317 Jan 23 07:50	17°  14'58	0°44'51	max. Earth dist.	15323 Feb 21 08:12	15°  15'10	19.40678 AU
minimum elong	15317 Jan 23 07:50	17°  14'58	0°45'33	morning rise	15323 Mar 10 06:31	16°  18'03	
max. Earth dist.	15317 Jan 22 23:19	17°  13'39	19.66613 AU	retrograde	15323 Jun 12 00:56	19°  43'00	
morning rise	15317 Feb 08 20:15	18°  15'22		opposition	15323 Aug 25 12:02	17°  39'17	0°13'13
retrograde	15317 May 13 22:52	21°  37'40		min. Earth dist.	15323 Aug 25 19:17	17°  38'30	17.39262 AU
opposition	15317 Jul 28 01:50	19°  34'19	0°47'34	direct	15323 Nov 08 08:52	15°  34'42	
min. Earth dist.	15317 Jul 28 08:28	19°  33'36	17.63839 AU	evening set	15324 Feb 10 07:16	18°  59'47	
direct	15317 Oct 10 22:49	17°  30'57					
evening set	15318 Jan 11 19:52	20°  51'07		conjunction	15324 Feb 26 20:52	20°  01'25	0°09'01
				minimum elong	15324 Feb 26 20:52	20°  01'25	0°09'16
conjunction	15318 Jan 28 07:52	21°  51'37	0°40'26	behind sun begin	15324 Feb 26 15:13	20°  00'33	
minimum elong	15318 Jan 28 07:52	21°  51'37	0°41'05	behind sun end	15324 Feb 27 02:32	20°  02'16	
max. Earth dist.	15318 Jan 27 23:43	21°  50'22	19.61145 AU	max. Earth dist.	15324 Feb 26 12:50	20°  00'10	19.37939 AU
morning rise	15318 Feb 13 20:27	22°  52'15		morning rise	15324 Mar 14 09:57	21°  03'00	
retrograde	15318 May 18 21:05	26°  15'06		retrograde	15324 Jun 16 02:41	24°  18'11	
opposition	15318 Aug 01 22:15	24°  11'36	0°42'29	opposition	15324 Aug 29 11:30	22°  14'29	0°06'51
min. Earth dist.	15318 Aug 02 05:35	24°  10'49	17.58575 AU	min. Earth dist.	15324 Aug 29 18:40	22°  23'42	17.36719 AU

direct	15324 Nov 12 10:06	20° H 19'46		max. Earth dist.	15330 Mar 27 13:39	18° Y 40'38	19.30728 AU
evening set	15325 Feb 14 11:19	23° H 45'27		morning rise	15330 Apr 13 08:41	19° Y 43'30	
				retrograde	15330 Jul 15 08:49	23° Y 08'26	
conjunction	15325 Mar 03 00:45	24° H 47'10	0°03'18	opposition	15330 Sep 27 13:03	21° Y 04'49	-0°31'04
minimum elong	15325 Mar 03 00:44	24° H 47'10	0°03'29	min. Earth dist.	15330 Sep 27 19:04	21° Y 04'10	17.30977 AU
behind sun begin	15325 Mar 02 18:03	24° H 46'09		direct	15330 Dec 11 23:43	18° Y 59'26	
behind sun end	15325 Mar 03 07:26	24° H 48'11		evening set	15331 Mar 16 13:23	22° Y 26'51	
max. Earth dist.	15325 Mar 02 15:22	24° H 45'43	19.35597 AU				
morning rise	15325 Mar 19 13:45	25° H 48'50		conjunction	15331 Apr 02 01:24	23° Y 28'34	-0°30'29
retrograde	15325 Jun 21 03:04	29° H 14'10		minimum elong	15331 Apr 02 01:23	23° Y 28'34	0°30'46
opposition	15325 Sep 03 11:17	27° H 10'28	0°00'25	max. Earth dist.	15331 Apr 01 18:07	23° Y 27'26	19.31360 AU
min. Earth dist.	15325 Sep 03 19:00	27° H 09'38	17.34588 AU	morning rise	15331 Apr 18 11:51	24° Y 30'06	
desc. node	15325 Sep 26 02:55	26° H 13'18		retrograde	15331 Jul 20 08:43	27° Y 54'44	
direct	15325 Nov 17 10:36	25° H 05'37		opposition	15331 Oct 02 13:31	25° Y 51'12	-0°36'52
evening set	15326 Feb 19 15:27	28° H 31'49		min. Earth dist.	15331 Oct 02 20:00	25° Y 50'29	17.31926 AU
				direct	15331 Dec 17 00:55	23° Y 45'46	
conjunction	15326 Mar 08 04:58	29° H 33'37	-0°02'36	evening set	15332 Mar 20 17:21	27° Y 13'10	
minimum elong	15326 Mar 08 04:57	29° H 33'37	0°02'31				
behind sun begin	15326 Mar 07 22:13	29° H 32'35		conjunction	15332 Apr 06 04:50	28° Y 14'47	-0°35'35
behind sun end	15326 Mar 08 11:41	29° H 34'38		minimum elong	15332 Apr 06 04:49	28° Y 14'47	0°35'56
max. Earth dist.	15326 Mar 07 20:32	29° H 32'19	19.33673 AU	max. Earth dist.	15332 Apr 05 21:55	28° Y 13'42	19.32625 AU
	15326 Mar 15 05:23	0° Y		morning rise	15332 Apr 22 14:45	29° Y 16'13	
morning rise	15326 Mar 24 17:36	0° Y 35'19			15332 May 04 19:35	0° H	
retrograde	15326 Jun 26 05:07	4° Y 00'44		retrograde	15332 Jul 24 10:08	2° H 40'29	
opposition	15326 Sep 08 11:22	1° Y 57'02	-0°06'02	opposition	15332 Oct 06 13:51	0° H 37'03	-0°42'25
min. Earth dist.	15326 Sep 08 18:30	1° Y 56'15	17.32874 AU	min. Earth dist.	15332 Oct 06 18:38	0° H 36'32	17.33508 AU
	15326 Nov 05 08:30	30° H			15332 Oct 20 22:59	30° H Y	
direct	15326 Nov 22 13:22	29° H 52'03		direct	15332 Dec 21 03:59	28° Y 31'39	
	15326 Dec 09 14:48	0° Y			15333 Feb 17 23:07	0° H	
evening set	15327 Feb 24 19:50	3° Y 18'40		evening set	15333 Mar 25 20:55	1° H 58'56	
conjunction	15327 Mar 13 09:05	4° Y 20'31	-0°08'22	conjunction	15333 Apr 11 07:53	3° H 00'26	-0°40'25
minimum elong	15327 Mar 13 09:05	4° Y 20'31	0°08'20	minimum elong	15333 Apr 11 07:53	3° H 00'26	0°40'50
behind sun begin	15327 Mar 13 03:09	4° Y 19'36		max. Earth dist.	15333 Apr 11 02:21	2° H 59'34	19.34517 AU
behind sun end	15327 Mar 13 15:00	4° Y 21'25		morning rise	15333 Apr 27 16:59	4° H 01'42	
max. Earth dist.	15327 Mar 12 23:49	4° Y 19'04	19.32185 AU	retrograde	15333 Jul 29 09:41	7° H 25'34	
morning rise	15327 Mar 29 21:31	5° Y 22'15		opposition	15333 Oct 11 14:13	5° H 22'18	-0°47'40
retrograde	15327 Jul 01 05:11	8° Y 47'39		min. Earth dist.	15333 Oct 11 19:11	5° H 21'46	17.35727 AU
opposition	15327 Sep 13 11:45	6° Y 43'57	-0°12'27	direct	15333 Dec 26 04:51	3° H 16'59	
min. Earth dist.	15327 Sep 13 19:33	6° Y 43'06	17.31626 AU	evening set	15334 Mar 31 00:09	6° H 44'05	
direct	15327 Nov 27 14:37	4° Y 38'50					
evening set	15328 Mar 01 00:20	8° Y 05'48		conjunction	15334 Apr 16 10:26	7° H 45'26	-0°44'57
				minimum elong	15334 Apr 16 10:25	7° H 45'26	0°45'27
conjunction	15328 Mar 17 13:29	9° Y 07'40	-0°14'04	max. Earth dist.	15334 Apr 16 04:57	7° H 44'35	19.37060 AU
minimum elong	15328 Mar 17 13:29	9° Y 07'40	0°14'07	morning rise	15334 May 02 19:00	8° H 46'33	
behind sun begin	15328 Mar 17 10:17	9° Y 07'10		retrograde	15334 Aug 03 10:09	12° H 09'58	
behind sun end	15328 Mar 17 16:40	9° Y 08'09		opposition	15334 Oct 16 14:15	10° H 06'53	-0°52'33
max. Earth dist.	15328 Mar 17 05:00	9° Y 06'20	19.31179 AU	min. Earth dist.	15334 Oct 16 17:34	10° H 06'31	17.38574 AU
morning rise	15328 Apr 03 01:29	10° Y 09'23		direct	15334 Dec 31 07:17	8° H 01'42	
retrograde	15328 Jul 05 07:13	13° Y 34'42		evening set	15335 Apr 05 02:50	11° H 28'33	
opposition	15328 Sep 17 12:00	11° Y 31'01	-0°18'48				
min. Earth dist.	15328 Sep 17 18:50	11° Y 30'16	17.30863 AU	conjunction	15335 Apr 21 12:38	12° H 29'44	-0°49'11
direct	15328 Dec 01 18:28	9° Y 25'48		minimum elong	15335 Apr 21 12:38	12° H 29'44	0°49'44
evening set	15329 Mar 06 04:57	12° Y 53'00		max. Earth dist.	15335 Apr 21 08:52	12° H 29'08	19.40188 AU
				morning rise	15335 May 07 20:21	13° H 30'39	
conjunction	15329 Mar 22 17:44	13° Y 54'51	-0°19'41		15335 Jun 02 20:46	15° H	
minimum elong	15329 Mar 22 17:43	13° Y 54'51	0°19'49	retrograde	15335 Aug 08 09:05	16° H 53'33	
max. Earth dist.	15329 Mar 22 09:04	13° Y 53'30	19.30673 AU		15335 Oct 18 00:32	15° H H	
morning rise	15329 Apr 08 05:17	14° Y 56'32		opposition	15335 Oct 21 14:15	14° H 50'43	-0°57'05
retrograde	15329 Jul 10 07:01	18° Y 21'42		min. Earth dist.	15335 Oct 21 17:46	14° H 50'20	17.41969 AU
opposition	15329 Sep 22 12:36	16° Y 18'03	-0°25'01	direct	15336 Jan 05 08:38	12° H 45'44	
min. Earth dist.	15329 Sep 22 20:04	16° Y 17'14	17.30637 AU		15336 Mar 19 12:14	15° H	
direct	15329 Dec 06 19:57	14° Y 12'43		evening set	15336 Apr 09 05:19	16° H 12'12	
evening set	15330 Mar 11 09:11	17° Y 40'05					
				conjunction	15336 Apr 25 14:16	17° H 13'12	-0°53'04
conjunction	15330 Mar 27 21:37	18° Y 41'52	-0°25'10	minimum elong	15336 Apr 25 14:16	17° H 13'12	0°53'41
minimum elong	15330 Mar 27 21:37	18° Y 41'52	0°25'22	max. Earth dist.	15336 Apr 25 10:06	17° H 12'33	19.43837 AU

morning rise	15336 May 11 21:23	18°♄13'54	direct	15343 Feb 07 15:07	15°♄18'54
retrograde	15336 Aug 12 07:49	21°♄36'16	evening set	15343 May 13 02:16	18°♄40'33
opposition	15336 Oct 25 13:51	19°♄33'39 -1°01'12			
min. Earth dist.	15336 Oct 25 16:12	19°♄33'24 17.45852 AU	conjunction	15343 May 29 06:16	19°♄39'43 -1°09'02
direct	15337 Jan 09 11:14	17°♄28'51	minimum elong	15343 May 29 06:16	19°♄39'43 1°09'56
evening set	15337 Apr 14 07:07	20°♄54'54	max. Earth dist.	15343 May 29 06:46	19°♄39'48 19.78872 AU
			morning rise	15343 Jun 14 08:05	20°♄38'35
conjunction	15337 Apr 30 15:30	21°♄55'40 -0°56'34	retrograde	15343 Sep 14 04:52	23°♄55'40
minimum elong	15337 Apr 30 15:29	21°♄55'40 0°57'15	opposition	15343 Nov 28 00:43	21°♄54'31 -1°17'15
max. Earth dist.	15337 Apr 30 13:02	21°♄55'17 19.47926 AU	min. Earth dist.	15343 Nov 27 23:42	21°♄54'37 17.81850 AU
morning rise	15337 May 16 21:39	22°♄56'09	direct	15344 Feb 12 14:44	19°♄51'02
retrograde	15337 Aug 17 05:33	26°♄17'53	evening set	15344 May 16 22:21	23°♄11'44
opposition	15337 Oct 30 13:25	24°♄15'32 -1°04'53			
min. Earth dist.	15337 Oct 30 15:46	24°♄15'17 17.50140 AU	conjunction	15344 Jun 02 01:31	24°♄10'36 -1°09'36
direct	15338 Jan 14 12:59	22°♄10'56	minimum elong	15344 Jun 02 01:31	24°♄10'36 1°10'31
evening set	15338 Apr 19 08:16	25°♄36'26	max. Earth dist.	15344 Jun 02 02:13	24°♄10'42 19.84833 AU
			morning rise	15344 Jun 18 02:44	25°♄09'11
conjunction	15338 May 05 15:45	26°♄36'57 -0°59'42	retrograde	15344 Sep 17 21:14	28°♄25'24
minimum elong	15338 May 05 15:45	26°♄36'57 1°00'25	opposition	15344 Dec 01 20:38	26°♄24'25 -1°17'37
max. Earth dist.	15338 May 05 12:44	26°♄36'29 19.52399 AU	min. Earth dist.	15344 Dec 01 19:28	26°♄24'32 17.87936 AU
morning rise	15338 May 21 21:19	27°♄37'11	direct	15345 Feb 16 11:02	24°♄21'08
	15338 Jul 06 10:06	0°♄	evening set	15345 May 21 17:20	27°♄40'52
retrograde	15338 Aug 22 03:01	0°♄58'17			
	15338 Oct 09 10:31	30°♄	conjunction	15345 Jun 06 19:54	28°♄39'26 -1°09'44
opposition	15338 Nov 04 12:32	28°♄56'08 -1°08'08	minimum elong	15345 Jun 06 19:54	28°♄39'26 1°10'39
min. Earth dist.	15338 Nov 04 14:04	28°♄55'58 17.54789 AU	max. Earth dist.	15345 Jun 06 21:57	28°♄39'45 19.91040 AU
direct	15339 Jan 19 15:02	26°♄51'43	morning rise	15345 Jun 22 20:26	29°♄37'43
	15339 Apr 19 18:18	0°♄		15345 Jun 29 03:46	0°♄
evening set	15339 Apr 24 08:43	0°♄16'36	retrograde	15345 Sep 22 15:08	2°♄53'05
			opposition	15345 Dec 06 15:50	0°♄52'18 -1°17'30
conjunction	15339 May 10 15:40	1°♄16'53 -1°02'25	min. Earth dist.	15345 Dec 06 13:07	0°♄52'35 17.94257 AU
minimum elong	15339 May 10 15:39	1°♄16'53 1°03'11		15345 Dec 28 01:43	30°♄
max. Earth dist.	15339 May 10 14:12	1°♄16'39 19.57195 AU	direct	15346 Feb 21 09:13	28°♄49'17
morning rise	15339 May 26 20:18	2°♄16'52		15346 Apr 15 14:32	0°♄
retrograde	15339 Aug 26 23:34	5°♄37'12	evening set	15346 May 26 11:21	2°♄08'01
opposition	15339 Nov 09 11:09	3°♄35'18 -1°10'55			
min. Earth dist.	15339 Nov 09 12:31	3°♄35'09 17.59722 AU	conjunction	15346 Jun 11 13:12	3°♄06'17 -1°09'26
direct	15340 Jan 24 16:21	1°♄31'05	minimum elong	15346 Jun 11 13:13	3°♄06'17 1°10'23
evening set	15340 Apr 28 08:36	4°♄55'16	max. Earth dist.	15346 Jun 11 15:54	3°♄06'42 19.97478 AU
			morning rise	15346 Jun 27 13:12	4°♄04'18
conjunction	15340 May 14 14:37	5°♄55'16 -1°04'43	retrograde	15346 Sep 27 06:01	7°♄18'49
minimum elong	15340 May 14 14:37	5°♄55'16 1°05'31	opposition	15346 Dec 11 10:30	5°♄18'16 -1°16'55
max. Earth dist.	15340 May 14 12:31	5°♄54'56 19.62263 AU	min. Earth dist.	15346 Dec 11 07:42	5°♄18'33 18.00814 AU
morning rise	15340 May 30 18:39	6°♄54'59	direct	15347 Feb 26 03:39	3°♄15'32
retrograde	15340 Aug 30 19:44	10°♄14'34	evening set	15347 May 31 04:29	6°♄33'17
opposition	15340 Nov 13 09:26	8°♄12'52 -1°13'13			
min. Earth dist.	15340 Nov 13 10:18	8°♄12'46 17.64924 AU	conjunction	15347 Jun 16 05:47	7°♄31'16 -1°08'44
direct	15341 Jan 28 16:35	6°♄08'49	minimum elong	15347 Jun 16 05:47	7°♄31'16 1°09'39
evening set	15341 May 03 07:18	9°♄32'13	max. Earth dist.	15347 Jun 16 09:28	7°♄31'50 20.04141 AU
			morning rise	15347 Jul 02 05:12	8°♄29'00
conjunction	15341 May 19 12:44	10°♄31'57 -1°06'35	retrograde	15347 Oct 01 22:39	11°♄42'42
minimum elong	15341 May 19 12:44	10°♄31'57 1°07'26	opposition	15347 Dec 16 04:17	9°♄42'25 -1°15'52
max. Earth dist.	15341 May 19 12:10	10°♄31'52 19.67579 AU	min. Earth dist.	15347 Dec 15 23:51	9°♄42'52 18.07551 AU
morning rise	15341 Jun 04 15:53	11°♄31'23	direct	15348 Mar 02 00:13	7°♄40'02
retrograde	15341 Sep 04 15:34	14°♄50'10	evening set	15348 Jun 03 20:47	10°♄56'48
opposition	15341 Nov 18 07:11	12°♄48'40 -1°15'03			
min. Earth dist.	15341 Nov 18 07:24	12°♄48'39 17.70345 AU	conjunction	15348 Jun 19 21:27	11°♄54'30 -1°07'37
direct	15342 Feb 02 16:59	10°♄44'49	minimum elong	15348 Jun 19 21:27	11°♄54'30 1°08'33
evening set	15342 May 08 05:20	14°♄07'22	max. Earth dist.	15348 Jun 20 01:56	11°♄55'10 20.10950 AU
			morning rise	15348 Jul 05 20:22	12°♄51'57
conjunction	15342 May 24 09:54	15°♄06'49 -1°08'02	retrograde	15348 Oct 05 12:41	16°♄04'53
minimum elong	15342 May 24 09:54	15°♄06'49 1°08'54	opposition	15348 Dec 19 21:46	14°♄04'52 -1°14'24
max. Earth dist.	15342 May 24 09:01	15°♄06'40 19.73114 AU	min. Earth dist.	15348 Dec 19 17:33	14°♄05'18 18.14417 AU
morning rise	15342 Jun 09 12:28	16°♄05'58	direct	15349 Mar 06 17:05	12°♄02'50
retrograde	15342 Sep 09 09:57	19°♄23'55	evening set	15349 Jun 08 12:01	15°♄18'37
opposition	15342 Nov 23 04:14	17°♄22'35 -1°16'24			
min. Earth dist.	15342 Nov 23 04:15	17°♄22'35 17.75998 AU	conjunction	15349 Jun 24 12:08	16°♄16'02 -1°06'08

minimum elong	15349 Jun 24 12:08	16°☿16'02	1°07'03	retrograde	15355 Nov 05 03:22	15°♄54'42	
max. Earth dist.	15349 Jun 24 17:15	16°☿16'48	20.17854 AU		15355 Dec 23 15:50	15°♄	
morning rise	15349 Jul 10 10:37	17°☿13'13		opposition	15356 Jan 20 06:45	13°♄56'11	-0°53'41
retrograde	15349 Oct 10 03:57	20°☿25'23		min. Earth dist.	15356 Jan 19 23:23	13°♄56'56	18.59753 AU
opposition	15349 Dec 24 14:29	18°☿25'39	-1°12'31	direct	15356 Apr 06 09:29	11°♄56'22	
min. Earth dist.	15349 Dec 24 08:41	18°☿26'15	18.21323 AU		15356 Jul 06 12:04	15°♄	
direct	15350 Mar 11 12:28	16°☿24'00		evening set	15356 Jul 08 01:23	15°♄05'20	
evening set	15350 Jun 13 02:34	19°☿38'48					
conjunction	15350 Jun 29 02:11	20°☿35'56	-1°04'17	conjunction	15356 Jul 23 22:42	16°♄00'59	-0°46'33
minimum elong	15350 Jun 29 02:12	20°☿35'56	1°05'10	minimum elong	15356 Jul 23 22:43	16°♄00'59	0°47'16
max. Earth dist.	15350 Jun 29 08:06	20°☿36'49	20.24749 AU	max. Earth dist.	15356 Jul 24 06:08	16°♄02'05	20.62520 AU
morning rise	15350 Jul 15 00:13	21°☿32'51		morning rise	15356 Aug 08 19:05	16°♄56'32	
retrograde	15350 Oct 14 16:46	24°☿44'17		retrograde	15356 Nov 08 12:05	20°♄03'53	
opposition	15350 Dec 29 06:37	22°☿44'49	-1°10'14	opposition	15357 Jan 23 19:30	18°♄05'28	-0°49'30
min. Earth dist.	15350 Dec 29 01:25	22°☿45'21	18.28197 AU	min. Earth dist.	15357 Jan 23 12:53	18°♄06'08	18.65235 AU
direct	15351 Mar 16 04:14	20°☿43'31		direct	15357 Apr 10 21:23	16°♄05'52	
evening set	15351 Jun 17 16:22	23°☿57'21		evening set	15357 Jul 12 10:21	19°♄13'53	
conjunction	15351 Jul 03 15:29	24°☿54'13	-1°02'04	conjunction	15357 Jul 28 07:21	20°♄09'19	-0°42'41
minimum elong	15351 Jul 03 15:29	24°☿54'13	1°02'58	minimum elong	15357 Jul 28 07:21	20°♄09'19	0°43'20
max. Earth dist.	15351 Jul 03 21:26	24°☿55'06	20.31583 AU	max. Earth dist.	15357 Jul 28 14:22	20°♄10'21	20.67876 AU
morning rise	15351 Jul 19 13:11	25°☿50'53		morning rise	15357 Aug 13 03:45	21°♄04'40	
retrograde	15351 Oct 19 06:35	29°☿01'34		retrograde	15357 Nov 12 22:19	24°♄11'26	
opposition	15352 Jan 02 22:10	27°☿02'22	-1°07'35	opposition	15358 Jan 28 07:26	22°♄13'05	-0°45'05
min. Earth dist.	15352 Jan 02 15:36	27°☿03'02	18.34959 AU	min. Earth dist.	15358 Jan 27 23:34	22°♄13'52	18.70460 AU
direct	15352 Mar 19 22:06	25°☿01'25		direct	15358 Apr 15 10:09	20°♄13'40	
evening set	15352 Jun 21 05:17	28°☿14'15		evening set	15358 Jul 16 18:42	23°♄20'48	
conjunction	15352 Jul 07 03:57	29°☿10'52	-0°59'33	conjunction	15358 Aug 01 15:34	24°♄16'02	-0°38'37
minimum elong	15352 Jul 07 03:58	29°☿10'52	1°00'24	minimum elong	15358 Aug 01 15:34	24°♄16'02	0°39'14
max. Earth dist.	15352 Jul 07 10:42	29°☿11'52	20.38260 AU	max. Earth dist.	15358 Aug 01 23:46	24°♄17'14	20.72974 AU
morning rise	15352 Jul 20 23:21	0°♄		morning rise	15358 Aug 17 11:46	25°♄11'13	
retrograde	15352 Jul 23 01:14	0°♄07'17		retrograde	15358 Nov 17 05:47	28°♄17'26	
opposition	15352 Oct 22 18:05	3°♄17'16		opposition	15359 Feb 01 18:51	26°♄19'09	-0°40'28
min. Earth dist.	15353 Jan 06 13:21	1°♄18'17	-1°04'34	min. Earth dist.	15359 Feb 01 11:34	26°♄19'53	18.75447 AU
direct	15353 Jan 06 07:31	1°♄18'53	18.41546 AU	direct	15359 Apr 19 20:35	24°♄19'57	
evening set	15353 Feb 10 04:42	30°♄☿		evening set	15359 Jul 21 02:32	27°♄26'14	
conjunction	15353 Jul 11 15:42	3°♄25'53	-0°56'42	conjunction	15359 Aug 05 23:06	28°♄21'18	-0°34'22
minimum elong	15353 Jul 11 15:43	3°♄25'53	0°57'32	minimum elong	15359 Aug 05 23:06	28°♄21'18	0°34'56
max. Earth dist.	15353 Jul 11 22:08	3°♄26'50	20.44745 AU	max. Earth dist.	15359 Aug 06 06:54	28°♄22'26	20.77859 AU
morning rise	15353 Jul 27 12:47	4°♄22'04		morning rise	15359 Aug 21 19:22	29°♄16'18	
retrograde	15353 Oct 27 06:17	7°♄31'22		retrograde	15359 Sep 03 23:31	0°♄	
opposition	15354 Jan 11 03:42	5°♄32'35	-1°01'14	opposition	15359 Nov 21 15:30	2°♄22'02	
min. Earth dist.	15354 Jan 10 20:36	5°♄33'18	18.47905 AU	min. Earth dist.	15360 Feb 06 05:46	0°♄23'51	-0°35'40
direct	15354 Mar 29 05:14	3°♄32'16		direct	15360 Feb 05 21:11	0°♄24'42	18.80222 AU
evening set	15354 Jun 30 04:51	6°♄43'09		evening set	15360 Feb 16 03:44	30°♄♄	
conjunction	15354 Jul 16 02:48	7°♄39'16	-0°53'35	conjunction	15360 Apr 23 07:32	28°♄24'52	
minimum elong	15354 Jul 16 02:48	7°♄39'16	0°54'22	minimum elong	15360 Jun 25 15:14	0°♄	
max. Earth dist.	15354 Jul 16 09:54	7°♄40'19	20.50964 AU	max. Earth dist.	15360 Jul 24 09:34	1°♄30'22	
morning rise	15354 Jul 31 23:33	8°♄35'13		conjunction	15360 Aug 09 06:04	2°♄25'16	-0°29'59
retrograde	15354 Oct 31 16:29	11°♄43'51		minimum elong	15360 Aug 09 06:05	2°♄25'16	0°30'30
opposition	15355 Jan 15 17:38	9°♄45'14	-0°57'36	max. Earth dist.	15360 Aug 09 15:11	2°♄26'35	20.82514 AU
min. Earth dist.	15355 Jan 15 11:26	9°♄45'52	18.53980 AU	morning rise	15360 Aug 25 02:11	3°♄20'07	
direct	15355 Apr 02 18:56	7°♄45'11		retrograde	15360 Nov 24 22:41	6°♄25'27	
evening set	15355 Jul 04 15:33	10°♄55'06		opposition	15361 Feb 09 16:24	4°♄27'21	-0°30'43
conjunction	15355 Jul 20 13:04	11°♄50'58	-0°50'11	min. Earth dist.	15361 Feb 09 08:16	4°♄28'10	18.84755 AU
minimum elong	15355 Jul 20 13:04	11°♄50'58	0°50'56	direct	15361 Apr 27 17:00	2°♄28'37	
max. Earth dist.	15355 Jul 20 19:36	11°♄51'56	20.56895 AU	evening set	15361 Jul 28 16:19	5°♄33'24	
morning rise	15355 Aug 05 09:42	12°♄46'43		conjunction	15361 Aug 13 12:37	6°♄28'08	-0°25'27
retrograde	15355 Sep 19 09:38	15°♄		minimum elong	15361 Aug 13 12:37	6°♄28'08	0°25'55
				max. Earth dist.	15361 Aug 13 21:11	6°♄29'22	20.86927 AU
				morning rise	15361 Aug 29 08:54	7°♄22'52	
				retrograde	15361 Nov 29 07:51	10°♄27'50	
				opposition	15362 Feb 14 02:18	8°♄29'50	-0°25'38

min. Earth dist.	15362 Feb 13 17:09	8° <u>0</u> 30'46	18.89026 AU	behind sun end	15367 Sep 07 04:51	0° <u>0</u> 31'25	
direct	15362 May 02 02:11	6° <u>0</u> 31'21		max. Earth dist.	15367 Sep 07 06:04	0° <u>0</u> 31'36	21.05393 AU
evening set	15362 Aug 01 22:34	9° <u>0</u> 35'29		morning rise	15367 Sep 22 19:20	1° <u>0</u> 24'48	
				retrograde	15367 Dec 24 06:09	4° <u>0</u> 28'46	
conjunction	15362 Aug 17 18:54	10° <u>0</u> 30'05	-0°20'49	opposition	15368 Mar 10 08:45	2° <u>0</u> 31'09	0°06'15
minimum elong	15362 Aug 17 18:54	10° <u>0</u> 30'05	0°21'13	min. Earth dist.	15368 Mar 10 00:36	2° <u>0</u> 31'58	19.06119 AU
max. Earth dist.	15362 Aug 18 04:32	10° <u>0</u> 31'28	20.91038 AU	direct	15368 May 26 01:20	0° <u>0</u> 33'50	
morning rise	15362 Sep 02 15:07	11° <u>0</u> 24'42		evening set	15368 Aug 25 07:00	3° <u>0</u> 35'11	
retrograde	15362 Dec 03 14:44	14° <u>0</u> 29'22					
opposition	15363 Feb 18 12:06	12° <u>0</u> 31'29	-0°20'26	conjunction	15368 Sep 10 03:25	4° <u>0</u> 29'19	0°08'07
min. Earth dist.	15363 Feb 18 03:34	12° <u>0</u> 32'20	18.92967 AU	minimum elong	15368 Sep 10 03:24	4° <u>0</u> 29'19	0°08'05
direct	15363 May 06 10:57	10° <u>0</u> 33'15		behind sun begin	15368 Sep 09 21:32	4° <u>0</u> 28'30	
evening set	15363 Aug 06 04:32	13° <u>0</u> 36'46		behind sun end	15368 Sep 10 09:16	4° <u>0</u> 30'08	
				max. Earth dist.	15368 Sep 10 11:41	4° <u>0</u> 30'29	21.06690 AU
conjunction	15363 Aug 22 00:40	14° <u>0</u> 31'15	-0°16'07	morning rise	15368 Sep 26 00:30	5° <u>0</u> 23'35	
minimum elong	15363 Aug 22 00:40	14° <u>0</u> 31'15	0°16'27	retrograde	15368 Dec 27 12:30	8° <u>0</u> 27'32	
max. Earth dist.	15363 Aug 22 09:30	14° <u>0</u> 32'31	20.94807 AU	opposition	15369 Mar 14 17:08	6° <u>0</u> 29'52	0°11'34
morning rise	15363 Sep 06 21:06	15° <u>0</u> 25'47		min. Earth dist.	15369 Mar 14 09:54	6° <u>0</u> 30'35	19.07129 AU
retrograde	15363 Dec 07 23:41	18° <u>0</u> 30'12		direct	15369 May 30 07:39	4° <u>0</u> 32'37	
opposition	15364 Feb 22 21:29	16° <u>0</u> 32'25	-0°15'10	evening set	15369 Aug 29 11:55	7° <u>0</u> 33'39	
min. Earth dist.	15364 Feb 22 12:10	16° <u>0</u> 33'21	18.96545 AU				
direct	15364 May 09 19:05	14° <u>0</u> 34'25		conjunction	15369 Sep 14 08:21	8° <u>0</u> 27'46	0°12'53
evening set	15364 Aug 09 10:10	17° <u>0</u> 37'24		minimum elong	15369 Sep 14 08:20	8° <u>0</u> 27'46	0°12'55
				behind sun begin	15369 Sep 14 04:16	8° <u>0</u> 27'11	
conjunction	15364 Aug 25 06:24	18° <u>0</u> 31'47	-0°11'20	behind sun end	15369 Sep 14 12:25	8° <u>0</u> 28'20	
minimum elong	15364 Aug 25 06:23	18° <u>0</u> 31'47	0°11'37	max. Earth dist.	15369 Sep 14 15:15	8° <u>0</u> 28'44	21.07432 AU
behind sun begin	15364 Aug 25 01:40	18° <u>0</u> 31'08		morning rise	15369 Sep 30 05:52	9° <u>0</u> 22'02	
behind sun end	15364 Aug 25 11:07	18° <u>0</u> 32'27		retrograde	15369 Dec 31 20:25	12° <u>0</u> 26'00	
max. Earth dist.	15364 Aug 25 16:07	18° <u>0</u> 33'11	20.98175 AU	opposition	15370 Mar 19 01:02	10° <u>0</u> 28'14	0°16'50
morning rise	15364 Sep 10 02:47	19° <u>0</u> 26'14		min. Earth dist.	15370 Mar 18 17:48	10° <u>0</u> 28'57	19.07609 AU
retrograde	15364 Dec 11 06:14	22° <u>0</u> 30'28		direct	15370 Jun 03 15:09	8° <u>0</u> 30'59	
opposition	15365 Feb 26 06:42	20° <u>0</u> 32'46	-0°09'51	evening set	15370 Sep 02 16:36	11° <u>0</u> 31'47	
min. Earth dist.	15365 Feb 25 22:09	20° <u>0</u> 33'38	18.99698 AU				
direct	15365 May 14 03:01	18° <u>0</u> 35'00		conjunction	15370 Sep 18 13:18	12° <u>0</u> 25'54	0°17'36
evening set	15365 Aug 13 15:37	21° <u>0</u> 37'30		minimum elong	15370 Sep 18 13:18	12° <u>0</u> 25'54	0°17'41
				max. Earth dist.	15370 Sep 18 20:53	12° <u>0</u> 26'58	21.07654 AU
conjunction	15365 Aug 29 11:43	22° <u>0</u> 31'47	-0°06'32	morning rise	15370 Oct 04 10:57	13° <u>0</u> 20'10	
minimum elong	15365 Aug 29 11:43	22° <u>0</u> 31'47	0°06'45	retrograde	15371 Jan 05 03:01	16° <u>0</u> 24'12	
behind sun begin	15365 Aug 29 05:35	22° <u>0</u> 30'56		opposition	15371 Mar 23 08:58	14° <u>0</u> 26'19	0°22'01
behind sun end	15365 Aug 29 17:52	22° <u>0</u> 32'39		min. Earth dist.	15371 Mar 23 02:26	14° <u>0</u> 26'58	19.07594 AU
max. Earth dist.	15365 Aug 29 20:20	22° <u>0</u> 33'00	21.01104 AU	direct	15371 Jun 07 21:26	12° <u>0</u> 29'04	
morning rise	15365 Sep 14 08:25	23° <u>0</u> 26'10		evening set	15371 Sep 06 21:14	15° <u>0</u> 29'42	
retrograde	15365 Dec 15 15:13	26° <u>0</u> 30'16					
opposition	15366 Mar 02 15:34	24° <u>0</u> 32'38	-0°04'29	conjunction	15371 Sep 22 17:57	16° <u>0</u> 23'48	0°22'14
min. Earth dist.	15366 Mar 02 06:36	24° <u>0</u> 33'32	19.02383 AU	minimum elong	15371 Sep 22 17:57	16° <u>0</u> 23'48	0°22'24
direct	15366 May 18 10:40	22° <u>0</u> 35'02		max. Earth dist.	15371 Sep 23 00:25	16° <u>0</u> 24'43	21.07424 AU
evening set	15366 Aug 17 20:54	25° <u>0</u> 37'07		morning rise	15371 Oct 08 16:01	17° <u>0</u> 18'06	
				retrograde	15372 Jan 09 10:38	20° <u>0</u> 22'16	
conjunction	15366 Sep 02 17:08	26° <u>0</u> 31'21	-0°01'41	opposition	15372 Mar 26 16:46	18° <u>0</u> 24'15	0°27'06
minimum elong	15366 Sep 02 17:09	26° <u>0</u> 31'21	0°01'49	min. Earth dist.	15372 Mar 26 09:59	18° <u>0</u> 24'55	19.07165 AU
behind sun begin	15366 Sep 02 10:34	26° <u>0</u> 30'25		direct	15372 Jun 11 04:07	16° <u>0</u> 26'59	
behind sun end	15366 Sep 02 23:43	26° <u>0</u> 32'16		evening set	15372 Sep 10 01:50	19° <u>0</u> 27'30	
max. Earth dist.	15366 Sep 03 02:19	26° <u>0</u> 32'38	21.03519 AU				
morning rise	15366 Sep 18 13:49	27° <u>0</u> 25'40		conjunction	15372 Sep 25 22:53	20° <u>0</u> 21'38	0°26'45
	15366 Nov 15 03:42	0° <u>0</u> 29'41		minimum elong	15372 Sep 25 22:52	20° <u>0</u> 21'38	0°26'58
retrograde	15366 Dec 19 21:26	0° <u>0</u> 29'41		max. Earth dist.	15372 Sep 26 06:12	20° <u>0</u> 22'41	21.06788 AU
asc. node	15367 Jan 07 15:11	0° <u>0</u> 21'12		morning rise	15372 Oct 11 21:06	21° <u>0</u> 15'59	
	15367 Jan 24 12:48	30° <u>0</u> 38'00		retrograde	15373 Jan 12 17:37	24° <u>0</u> 20'19	
opposition	15367 Mar 07 00:13	28° <u>0</u> 32'05	0°00'53	opposition	15373 Mar 31 00:25	22° <u>0</u> 22'11	0°32'03
min. Earth dist.	15367 Mar 06 16:14	28° <u>0</u> 32'53	19.04528 AU	min. Earth dist.	15373 Mar 30 18:06	22° <u>0</u> 22'48	19.06343 AU
direct	15367 May 22 17:36	26° <u>0</u> 34'39		direct	15373 Jun 15 10:32	20° <u>0</u> 24'55	
evening set	15367 Aug 22 02:09	29° <u>0</u> 36'21		evening set	15373 Sep 14 06:37	23° <u>0</u> 25'23	
	15367 Aug 29 01:28	0° <u>0</u> 29'36					
conjunction	15367 Sep 06 22:18	0° <u>0</u> 30'31	0°03'18	conjunction	15373 Sep 30 03:47	24° <u>0</u> 19'34	0°31'09
minimum elong	15367 Sep 06 22:19	0° <u>0</u> 30'31	0°03'12	minimum elong	15373 Sep 30 03:47	24° <u>0</u> 19'34	0°31'28
behind sun begin	15367 Sep 06 15:46	0° <u>0</u> 29'36		max. Earth dist.	15373 Sep 30 09:54	24° <u>0</u> 20'26	21.05786 AU
				morning rise	15373 Oct 16 02:31	25° <u>0</u> 13'58	

retrograde	15374 Jan 17 01:24	28°♄18'33		opposition	15380 Apr 28 09:19	20°♄21'21	1°01'20
opposition	15374 Apr 04 08:04	26°♄20'17	0°36'50	min. Earth dist.	15380 Apr 28 05:38	20°♄21'44	18.89908 AU
min. Earth dist.	15374 Apr 04 01:38	26°♄20'56	19.05161 AU	direct	15380 Jul 13 06:59	18°♄23'47	
direct	15374 Jun 19 16:19	24°♄23'00		evening set	15380 Oct 12 00:14	21°♄25'54	
evening set	15374 Sep 18 11:26	27°♄23'32					
conjunction	15374 Oct 04 08:59	28°♄17'46	0°35'25	conjunction	15380 Oct 27 23:54	22°♄20'52	0°56'52
minimum elong	15374 Oct 04 08:59	28°♄17'46	0°35'46	minimum elong	15380 Oct 27 23:53	22°♄20'52	0°57'32
max. Earth dist.	15374 Oct 04 15:53	28°♄18'45	21.04409 AU	max. Earth dist.	15380 Oct 28 03:46	22°♄21'25	20.87884 AU
morning rise	15374 Oct 20 07:53	29°♄12'14		morning rise	15380 Nov 13 01:23	23°♄16'07	
retrograde	15374 Nov 04 00:53	0°♄		retrograde	15381 Feb 14 14:47	26°♄23'47	
opposition	15375 Jan 21 08:39	2°♄17'06		opposition	15381 May 02 18:21	24°♄24'39	1°04'32
min. Earth dist.	15375 Apr 08 15:46	0°♄18'45	0°41'28	min. Earth dist.	15381 May 02 15:23	24°♄24'57	18.85787 AU
direct	15375 Apr 08 09:45	0°♄19'21	19.03601 AU	direct	15381 Jul 17 14:32	22°♄26'55	
evening set	15375 Apr 16 11:22	30°♄		evening set	15381 Oct 16 08:09	25°♄29'31	
direct	15375 Jun 23 23:02	28°♄21'28		conjunction	15381 Nov 01 08:09	26°♄24'38	0°59'36
evening set	15375 Aug 27 10:08	0°♄		minimum elong	15381 Nov 01 08:08	26°♄24'37	1°00'18
conjunction	15375 Sep 22 16:39	1°♄22'05		max. Earth dist.	15381 Nov 01 10:01	26°♄24'54	20.83525 AU
minimum elong	15375 Oct 08 14:20	2°♄16'24	0°39'30	morning rise	15381 Nov 17 10:18	27°♄20'04	
max. Earth dist.	15375 Oct 08 14:20	2°♄16'24	0°39'55	retrograde	15382 Jan 16 03:11	0°♄	
morning rise	15375 Oct 08 19:58	2°♄17'12	21.02677 AU		15382 Feb 19 01:51	0°♄28'19	
retrograde	15375 Oct 24 13:47	3°♄10'58			15382 Mar 25 14:53	30°♄	
opposition	15376 Jan 25 17:15	6°♄16'12		opposition	15382 May 07 03:47	28°♄28'57	1°07'25
min. Earth dist.	15376 Apr 11 23:41	4°♄17'43	0°45'54	min. Earth dist.	15382 May 07 01:45	28°♄29'10	18.81195 AU
direct	15376 Apr 11 17:41	4°♄18'19	19.01689 AU	direct	15382 Jul 21 22:01	26°♄31'01	
evening set	15376 Jun 27 04:38	2°♄20'24		evening set	15382 Oct 20 16:19	29°♄34'06	
conjunction	15376 Sep 25 21:56	5°♄21'12			15382 Oct 28 05:43	0°♄	
minimum elong	15376 Oct 11 20:07	6°♄15'36	0°43'25	conjunction	15382 Nov 05 16:56	0°♄29'25	1°02'03
max. Earth dist.	15376 Oct 12 02:28	6°♄16'31	21.00567 AU	minimum elong	15382 Nov 05 16:56	0°♄29'25	1°02'48
morning rise	15376 Oct 27 19:50	7°♄10'17		max. Earth dist.	15382 Nov 05 19:08	0°♄29'44	20.78702 AU
retrograde	15377 Jan 29 00:58	10°♄15'54		morning rise	15382 Nov 21 19:26	1°♄25'02	
opposition	15377 Apr 16 07:44	8°♄17'20	0°50'07	retrograde	15383 Feb 23 12:15	4°♄33'53	
min. Earth dist.	15377 Apr 16 02:15	8°♄17'53	18.99381 AU	opposition	15383 May 11 13:29	2°♄34'17	1°09'59
direct	15377 Jul 01 11:28	6°♄20'00		min. Earth dist.	15383 May 11 11:54	2°♄34'27	18.76163 AU
evening set	15377 Sep 30 03:54	9°♄21'02		direct	15383 Jul 26 06:35	0°♄36'07	
conjunction	15377 Oct 16 02:15	10°♄15'33	0°47'07	evening set	15383 Oct 25 01:12	3°♄39'45	
minimum elong	15377 Oct 16 02:15	10°♄15'33	0°47'38	conjunction	15383 Nov 10 02:10	4°♄35'15	1°04'12
max. Earth dist.	15377 Oct 16 07:06	10°♄16'15	20.98066 AU	minimum elong	15383 Nov 10 02:10	4°♄35'15	1°04'59
morning rise	15377 Nov 01 02:33	11°♄10'21		max. Earth dist.	15383 Nov 10 02:37	4°♄35'19	20.73498 AU
retrograde	15378 Feb 02 10:41	14°♄16'26		morning rise	15383 Nov 26 05:23	5°♄31'05	
opposition	15378 Apr 20 15:51	12°♄17'45	0°54'07	retrograde	15384 Feb 27 23:38	8°♄40'35	
min. Earth dist.	15378 Apr 20 10:49	12°♄18'15	18.96677 AU	opposition	15384 May 14 23:31	6°♄40'42	1°12'12
direct	15378 Jul 05 17:20	10°♄20'21		min. Earth dist.	15384 May 14 22:49	6°♄40'47	18.70802 AU
evening set	15378 Oct 04 10:10	13°♄21'42		direct	15384 Jul 29 14:35	4°♄42'16	
conjunction	15378 Oct 20 09:01	14°♄16'21	0°50'36	evening set	15384 Oct 28 10:26	7°♄46'30	
minimum elong	15378 Oct 20 09:01	14°♄16'21	0°51'11	conjunction	15384 Nov 13 12:07	8°♄42'14	1°06'01
max. Earth dist.	15378 Oct 20 14:22	14°♄17'07	20.95136 AU	minimum elong	15384 Nov 13 12:07	8°♄42'14	1°06'50
morning rise	15378 Nov 02 01:36	15°♄		max. Earth dist.	15384 Nov 13 13:07	8°♄42'23	20.67982 AU
retrograde	15378 Nov 05 09:34	15°♄11'17		morning rise	15384 Nov 29 15:44	9°♄38'17	
opposition	15379 Feb 06 18:53	18°♄17'52		retrograde	15385 Mar 03 11:25	12°♄48'26	
min. Earth dist.	15379 Apr 25 00:25	16°♄19'04	0°57'51	opposition	15385 May 19 09:50	10°♄48'18	1°14'03
direct	15379 Apr 24 20:00	16°♄19'30	18.93523 AU	min. Earth dist.	15385 May 19 09:17	10°♄48'22	18.65152 AU
evening set	15379 May 30 19:11	15°♄		direct	15385 Aug 02 23:54	8°♄49'36	
direct	15379 Jul 10 00:19	14°♄21'37		evening set	15385 Nov 01 20:32	11°♄54'31	
evening set	15379 Aug 18 02:37	15°♄		conjunction	15385 Nov 17 22:35	12°♄50'28	1°07'30
conjunction	15379 Oct 24 16:01	18°♄18'06	0°53'52	minimum elong	15385 Nov 17 22:35	12°♄50'28	1°08'22
minimum elong	15379 Oct 24 16:01	18°♄18'06	0°54'28	max. Earth dist.	15385 Nov 17 21:54	12°♄50'22	20.62220 AU
max. Earth dist.	15379 Oct 24 19:40	18°♄18'38	20.91755 AU	morning rise	15385 Dec 04 02:54	13°♄46'45	
morning rise	15379 Nov 09 17:11	19°♄13'11		retrograde	15386 Mar 07 23:32	16°♄57'36	
retrograde	15380 Feb 11 05:37	22°♄20'19		opposition	15386 May 23 20:32	14°♄57'13	1°15'32
				min. Earth dist.	15386 May 23 20:52	14°♄57'11	18.59297 AU
				direct	15386 Aug 07 08:28	12°♄58'14	
				evening set	15386 Nov 06 07:06	16°♄03'54	

conjunction	15386 Nov 22 09:52	17° \nearrow 00'05	1°08'39	retrograde	15393 Apr 07 14:20	16° \searrow 48'40	
minimum elong	15386 Nov 22 09:52	17° \nearrow 00'05	1°09'31	opposition	15393 Jun 22 14:42	14° \searrow 46'59	1°14'21
max. Earth dist.	15386 Nov 22 09:53	17° \nearrow 00'05	20.56274 AU	min. Earth dist.	15393 Jun 22 17:40	14° \searrow 46'40	18.15313 AU
morning rise	15386 Dec 08 14:35	17° \nearrow 56'36		direct	15393 Sep 05 14:38	12° \searrow 46'16	
retrograde	15387 Mar 12 12:46	21° \nearrow 08'12		evening set	15393 Dec 06 08:39	15° \searrow 58'20	
opposition	15387 May 28 07:43	19° \nearrow 07'35	1°16'37				
min. Earth dist.	15387 May 28 07:52	19° \nearrow 07'34	18.53275 AU	conjunction	15393 Dec 22 15:44	16° \searrow 56'30	1°06'05
direct	15387 Aug 11 18:15	17° \nearrow 08'21		minimum elong	15393 Dec 22 15:44	16° \searrow 56'30	1°06'58
evening set	15387 Nov 10 18:24	20° \nearrow 14'47		max. Earth dist.	15393 Dec 22 10:41	16° \searrow 55'45	20.11983 AU
				morning rise	15394 Jan 08 00:41	17° \searrow 54'59	
conjunction	15387 Nov 26 21:37	21° \nearrow 11'13	1°09'25	retrograde	15394 Apr 12 07:29	21° \searrow 12'15	
minimum elong	15387 Nov 26 21:37	21° \nearrow 11'13	1°10'19	opposition	15394 Jun 27 06:14	19° \searrow 10'21	1°12'27
max. Earth dist.	15387 Nov 26 20:05	21° \nearrow 11'00	20.50193 AU	min. Earth dist.	15394 Jun 27 10:53	19° \searrow 09'52	18.08680 AU
morning rise	15387 Dec 13 03:06	22° \nearrow 08'00		direct	15394 Sep 10 03:36	17° \searrow 09'20	
retrograde	15388 Mar 16 02:29	25° \nearrow 20'22		evening set	15394 Dec 11 02:14	20° \searrow 22'24	
opposition	15388 May 31 19:29	23° \nearrow 19'32	1°17'18				
min. Earth dist.	15388 May 31 20:33	23° \nearrow 19'25	18.47144 AU	conjunction	15394 Dec 27 10:07	21° \searrow 20'53	1°04'09
direct	15388 Aug 15 03:44	21° \nearrow 20'02		minimum elong	15394 Dec 27 10:07	21° \searrow 20'53	1°05'03
evening set	15388 Nov 14 06:30	24° \nearrow 27'18		max. Earth dist.	15394 Dec 27 05:06	21° \searrow 20'08	20.05313 AU
				morning rise	15395 Jan 12 19:33	22° \searrow 19'38	
conjunction	15388 Nov 30 10:31	25° \nearrow 24'01	1°09'50	retrograde	15395 Apr 17 04:00	25° \searrow 37'42	
minimum elong	15388 Nov 30 10:31	25° \nearrow 24'01	1°10'43	opposition	15395 Jul 01 22:18	23° \searrow 35'34	1°10'07
max. Earth dist.	15388 Nov 30 09:39	25° \nearrow 23'54	20.44011 AU	min. Earth dist.	15395 Jul 02 02:39	23° \searrow 35'06	18.01972 AU
morning rise	15388 Dec 16 16:25	26° \nearrow 21'04		direct	15395 Sep 14 20:22	21° \searrow 34'13	
retrograde	15389 Mar 20 17:29	29° \nearrow 34'12		evening set	15395 Dec 15 20:45	24° \searrow 48'16	
opposition	15389 Jun 05 07:31	27° \nearrow 33'11	1°17'34				
min. Earth dist.	15389 Jun 05 08:21	27° \nearrow 33'06	18.40915 AU	conjunction	15396 Jan 01 05:11	25° \searrow 47'04	1°01'50
direct	15389 Aug 19 14:12	25° \nearrow 33'27		minimum elong	15396 Jan 01 05:12	25° \searrow 47'04	1°02'42
evening set	15389 Nov 18 19:33	28° \nearrow 41'37		max. Earth dist.	15395 Dec 31 22:38	25° \searrow 46'04	19.98591 AU
				morning rise	15396 Jan 17 15:17	26° \searrow 46'06	
conjunction	15389 Dec 05 00:01	29° \nearrow 38'36	1°09'51		15396 Apr 07 05:48	0° \approx	
minimum elong	15389 Dec 05 00:01	29° \nearrow 38'36	1°10'46	retrograde	15396 Apr 20 21:48	0° \approx 04'55	
max. Earth dist.	15389 Dec 04 21:33	29° \nearrow 38'14	20.37751 AU		15396 May 04 15:34	30° \nearrow 3	
	15389 Dec 11 00:47	0° \searrow		opposition	15396 Jul 05 15:07	28° \searrow 02'32	1°07'21
morning rise	15389 Dec 21 06:41	0° \searrow 35'55		min. Earth dist.	15396 Jul 05 21:05	28° \searrow 01'54	17.95252 AU
retrograde	15390 Mar 25 08:57	3° \searrow 49'53		direct	15396 Sep 18 11:09	26° \searrow 00'50	
opposition	15390 Jun 09 20:24	1° \searrow 48'41	1°17'25	evening set	15396 Dec 19 16:05	29° \searrow 15'53	
min. Earth dist.	15390 Jun 09 22:19	1° \searrow 48'29	18.34627 AU		15396 Dec 31 22:33	0° \approx	
	15390 Aug 03 03:50	30° \nearrow 3					
direct	15390 Aug 24 00:32	29° \nearrow 48'42		conjunction	15397 Jan 05 01:17	0° \approx 14'58	0°59'08
	15390 Sep 13 16:59	0° \searrow		minimum elong	15397 Jan 05 01:17	0° \approx 14'58	0°59'58
evening set	15390 Nov 23 09:12	2° \searrow 57'47		max. Earth dist.	15397 Jan 04 18:41	0° \approx 13'58	19.91901 AU
				morning rise	15397 Jan 21 11:50	1° \approx 14'17	
conjunction	15390 Dec 09 14:28	3° \searrow 55'05	1°09'30	retrograde	15397 Apr 25 18:59	4° \approx 33'48	
minimum elong	15390 Dec 09 14:28	3° \searrow 55'05	1°10'25	opposition	15397 Jul 10 08:12	2° \approx 31'12	1°04'09
max. Earth dist.	15390 Dec 09 12:40	3° \searrow 54'48	20.31432 AU	min. Earth dist.	15397 Jul 10 13:43	2° \approx 30'36	17.88596 AU
morning rise	15390 Dec 25 21:34	4° \searrow 52'40		direct	15397 Sep 23 05:47	0° \approx 29'07	
retrograde	15391 Mar 30 02:11	8° \searrow 07'28		evening set	15397 Dec 24 12:20	3° \approx 45'10	
opposition	15391 Jun 14 09:50	6° \searrow 06'07	1°16'50				
min. Earth dist.	15391 Jun 14 11:28	6° \searrow 05'56	18.28268 AU	conjunction	15398 Jan 09 22:03	4° \approx 44'33	0°56'02
direct	15391 Aug 28 12:49	4° \searrow 05'55		minimum elong	15398 Jan 09 22:03	4° \approx 44'33	0°56'51
evening set	15391 Nov 28 00:05	7° \searrow 15'58		max. Earth dist.	15398 Jan 09 14:27	4° \approx 43'24	19.85306 AU
				morning rise	15398 Jan 26 09:07	5° \approx 44'09	
conjunction	15391 Dec 14 05:51	8° \searrow 13'32	1°08'45	retrograde	15398 Apr 30 13:44	9° \approx 04'22	
minimum elong	15391 Dec 14 05:51	8° \searrow 13'32	1°09'40	opposition	15398 Jul 15 02:11	7° \approx 01'31	1°00'32
max. Earth dist.	15391 Dec 14 02:23	8° \searrow 13'01	20.25043 AU	min. Earth dist.	15398 Jul 15 09:05	7° \approx 00'46	17.82088 AU
morning rise	15391 Dec 30 13:42	9° \searrow 11'26		direct	15398 Sep 27 21:57	4° \approx 59'04	
retrograde	15392 Apr 02 18:55	12° \searrow 27'04		evening set	15398 Dec 29 09:07	8° \approx 16'07	
opposition	15392 Jun 17 23:57	10° \searrow 25'32	1°15'48				
min. Earth dist.	15392 Jun 18 03:04	10° \searrow 25'13	18.21845 AU	conjunction	15399 Jan 14 19:29	9° \approx 15'47	0°52'35
direct	15392 Sep 01 00:03	8° \searrow 25'06		minimum elong	15399 Jan 14 19:30	9° \approx 15'47	0°53'21
evening set	15392 Dec 01 15:49	11° \searrow 36'09		max. Earth dist.	15399 Jan 14 11:54	9° \approx 14'37	19.78908 AU
				morning rise	15399 Jan 31 07:01	10° \approx 15'38	
conjunction	15392 Dec 17 22:25	12° \searrow 34'02	1°07'36	retrograde	15399 May 05 12:11	13° \approx 36'32	
minimum elong	15392 Dec 17 22:25	12° \searrow 34'02	1°08'32	opposition	15399 Jul 19 20:36	11° \approx 33'27	0°56'30
max. Earth dist.	15392 Dec 17 19:11	12° \searrow 33'33	20.18571 AU	min. Earth dist.	15399 Jul 20 02:46	11° \approx 32'48	17.75805 AU
morning rise	15393 Jan 03 06:43	13° \searrow 32'12		direct	15399 Oct 02 17:53	9° \approx 30'40	

evening set	15400 Jan 03 06:57	12° \approx 48'42		conjunction	15406 Feb 17 23:07	11° \mathbb{H} 40'02	0°19'53
				minimum elong	15406 Feb 17 23:07	11° \mathbb{H} 40'02	0°20'15
conjunction	15400 Jan 19 17:51	13° \approx 48'39	0°48'47	max. Earth dist.	15406 Feb 17 15:10	11° \mathbb{H} 38'49	19.44174 AU
minimum elong	15400 Jan 19 17:52	13° \approx 48'39	0°49'31	morning rise	15406 Mar 06 12:14	12° \mathbb{H} 41'24	
max. Earth dist.	15400 Jan 19 09:52	13° \approx 47'25	19.72757 AU	retrograde	15406 Jun 08 08:48	16° \mathbb{H} 06'05	
morning rise	15400 Feb 05 05:47	14° \approx 48'46		opposition	15406 Aug 21 22:21	14° \mathbb{H} 02'27	0°19'06
	15400 Feb 08 09:30	15° \approx		min. Earth dist.	15406 Aug 22 05:35	14° \mathbb{H} 01'39	17.42491 AU
retrograde	15400 May 10 08:22	18° \approx 10'18		direct	15406 Nov 04 18:20	11° \mathbb{H} 58'05	
opposition	15400 Jul 24 15:38	16° \approx 07'01	0°52'06	evening set	15407 Feb 06 12:48	15° \mathbb{H} 22'29	
min. Earth dist.	15400 Jul 24 22:58	16° \approx 06'14	17.69810 AU				
	15400 Aug 21 01:08	15° \mathbb{R}		conjunction	15407 Feb 23 02:06	16° \mathbb{H} 23'59	0°14'20
direct	15400 Oct 07 11:35	14° \approx 03'53		minimum elong	15407 Feb 23 02:06	16° \mathbb{H} 23'59	0°14'38
	15400 Nov 22 17:38	15° \approx		behind sun begin	15407 Feb 22 23:24	16° \mathbb{H} 23'34	
evening set	15401 Jan 08 05:33	17° \approx 22'55		behind sun end	15407 Feb 23 04:47	16° \mathbb{H} 24'23	
				max. Earth dist.	15407 Feb 22 16:52	16° \mathbb{H} 22'33	19.40908 AU
conjunction	15401 Jan 24 16:59	18° \approx 23'08	0°44'39	morning rise	15407 Mar 11 15:23	17° \mathbb{H} 25'29	
minimum elong	15401 Jan 24 17:00	18° \approx 23'08	0°45'20	retrograde	15407 Jun 13 10:54	20° \mathbb{H} 50'30	
max. Earth dist.	15401 Jan 24 08:43	18° \approx 21'52	19.66940 AU	opposition	15407 Aug 26 21:25	18° \mathbb{H} 46'51	0°12'49
morning rise	15401 Feb 10 05:20	19° \approx 23'30		min. Earth dist.	15407 Aug 27 04:44	18° \mathbb{H} 46'03	17.39423 AU
retrograde	15401 May 15 07:51	22° \approx 45'39		direct	15407 Nov 09 18:35	16° \mathbb{H} 42'19	
opposition	15401 Jul 29 11:14	20° \approx 42'13	0°47'20	evening set	15408 Feb 11 16:19	20° \mathbb{H} 07'26	
min. Earth dist.	15401 Jul 29 17:44	20° \approx 41'30	17.64174 AU				
direct	15401 Oct 12 08:24	18° \approx 38'47		conjunction	15408 Feb 28 05:53	21° \mathbb{H} 09'03	0°08'40
evening set	15402 Jan 13 04:49	21° \approx 58'46		minimum elong	15408 Feb 28 05:52	21° \mathbb{H} 09'03	0°08'54
				behind sun begin	15408 Feb 28 00:06	21° \mathbb{H} 08'11	
conjunction	15402 Jan 29 16:43	22° \approx 59'15	0°40'12	behind sun end	15408 Feb 28 11:38	21° \mathbb{H} 09'56	
minimum elong	15402 Jan 29 16:44	22° \approx 59'15	0°40'50	max. Earth dist.	15408 Feb 27 21:31	21° \mathbb{H} 07'46	19.38026 AU
max. Earth dist.	15402 Jan 29 08:43	22° \approx 58'01	19.61492 AU	morning rise	15408 Mar 15 18:54	22° \mathbb{H} 10'40	
morning rise	15402 Feb 15 05:16	23° \approx 59'50		retrograde	15408 Jun 17 11:59	25° \mathbb{H} 35'54	
retrograde	15402 May 20 05:41	27° \approx 22'35		opposition	15408 Aug 30 20:48	23° \mathbb{H} 32'15	0°06'26
opposition	15402 Aug 03 07:35	25° \approx 19'02	0°42'13	min. Earth dist.	15408 Aug 31 04:14	23° \mathbb{H} 31'26	17.36734 AU
min. Earth dist.	15402 Aug 03 14:50	25° \approx 18'15	17.58940 AU	direct	15408 Nov 13 18:08	21° \mathbb{H} 27'35	
direct	15402 Oct 17 03:42	23° \approx 15'21		evening set	15409 Feb 15 20:22	24° \mathbb{H} 53'17	
evening set	15403 Jan 18 04:57	26° \approx 36'18					
				conjunction	15409 Mar 04 09:45	25° \mathbb{H} 55'01	0°02'56
conjunction	15403 Feb 03 17:14	27° \approx 37'00	0°35'28	minimum elong	15409 Mar 04 09:45	25° \mathbb{H} 55'01	0°03'05
minimum elong	15403 Feb 03 17:14	27° \approx 37'00	0°36'03	behind sun begin	15409 Mar 04 03:02	25° \mathbb{H} 53'59	
max. Earth dist.	15403 Feb 03 08:43	27° \approx 35'41	19.56493 AU	behind sun end	15409 Mar 04 16:28	25° \mathbb{H} 56'02	
morning rise	15403 Feb 20 06:09	28° \approx 37'49		max. Earth dist.	15409 Mar 04 00:04	25° \mathbb{H} 53'31	19.35546 AU
	15403 Mar 16 08:27	0° \mathbb{H}		morning rise	15409 Mar 20 22:45	26° \mathbb{H} 56'42	
retrograde	15403 May 25 06:20	2° \mathbb{H} 01'08			15409 May 25 02:32	0° \mathbb{Y}	
	15403 Aug 07 05:13	30° \mathbb{R}		retrograde	15409 Jun 22 13:15	0° \mathbb{Y} 22'06	
opposition	15403 Aug 08 04:22	29° \approx 57'29	0°36'49		15409 Jul 21 07:17	30° \mathbb{R}	
min. Earth dist.	15403 Aug 08 10:52	29° \approx 56'47	17.54167 AU	opposition	15409 Sep 04 20:40	28° \mathbb{H} 18'24	-0°00'01
direct	15403 Oct 22 01:27	27° \approx 53'36		desc. node	15409 Sep 04 09:37	28° \mathbb{H} 19'37	
	15404 Jan 01 06:50	0° \mathbb{H}		min. Earth dist.	15409 Sep 05 04:24	28° \mathbb{H} 17'34	17.34473 AU
evening set	15404 Jan 23 05:47	1° \mathbb{H} 15'28		direct	15409 Nov 18 19:52	26° \mathbb{H} 13'35	
				evening set	15410 Feb 21 00:19	29° \mathbb{H} 39'48	
conjunction	15404 Feb 08 18:33	2° \mathbb{H} 16'25	0°30'29		15410 Feb 26 11:31	0° \mathbb{Y}	
minimum elong	15404 Feb 08 18:33	2° \mathbb{H} 16'25	0°31'00				
max. Earth dist.	15404 Feb 08 10:42	2° \mathbb{H} 15'12	19.51943 AU	conjunction	15410 Mar 09 13:49	0° \mathbb{Y} 41'37	-0°03'00
morning rise	15404 Feb 25 07:34	3° \mathbb{H} 17'26		minimum elong	15410 Mar 09 13:49	0° \mathbb{Y} 41'37	0°02'54
retrograde	15404 May 29 05:56	6° \mathbb{H} 41'15		behind sun begin	15410 Mar 09 07:06	0° \mathbb{Y} 40'35	
opposition	15404 Aug 12 01:50	4° \mathbb{H} 37'36	0°31'08	behind sun end	15410 Mar 09 20:32	0° \mathbb{Y} 42'38	
min. Earth dist.	15404 Aug 12 08:57	4° \mathbb{H} 36'49	17.49840 AU	max. Earth dist.	15410 Mar 09 05:15	0° \mathbb{Y} 40'17	19.33503 AU
direct	15404 Oct 25 21:54	2° \mathbb{H} 33'32		morning rise	15410 Mar 26 02:27	1° \mathbb{Y} 43'20	
evening set	15405 Jan 27 07:31	5° \mathbb{H} 56'19		retrograde	15410 Jun 27 14:13	5° \mathbb{Y} 08'48	
				opposition	15410 Sep 09 20:45	3° \mathbb{Y} 05'06	-0°06'29
conjunction	15405 Feb 12 20:26	6° \mathbb{H} 57'27	0°25'17	min. Earth dist.	15410 Sep 10 03:58	3° \mathbb{Y} 04'19	17.32653 AU
minimum elong	15405 Feb 12 20:26	6° \mathbb{H} 57'27	0°25'44	direct	15410 Nov 23 21:49	1° \mathbb{Y} 00'08	
max. Earth dist.	15405 Feb 12 11:38	6° \mathbb{H} 56'06	19.47848 AU	evening set	15411 Feb 26 04:47	4° \mathbb{Y} 26'46	
morning rise	15405 Mar 01 09:41	7° \mathbb{H} 58'40					
retrograde	15405 Jun 03 07:45	11° \mathbb{H} 22'57		conjunction	15411 Mar 14 18:00	5° \mathbb{Y} 28'37	-0°08'46
opposition	15405 Aug 16 23:44	9° \mathbb{H} 19'17	0°25'13	minimum elong	15411 Mar 14 18:00	5° \mathbb{Y} 28'37	0°08'45
min. Earth dist.	15405 Aug 17 06:32	9° \mathbb{H} 18'33	17.45962 AU	behind sun begin	15411 Mar 14 12:11	5° \mathbb{Y} 27'43	
direct	15405 Oct 30 20:41	7° \mathbb{H} 15'04		behind sun end	15411 Mar 14 23:48	5° \mathbb{Y} 29'30	
evening set	15406 Feb 01 09:50	10° \mathbb{H} 38'42		max. Earth dist.	15411 Mar 14 08:32	5° \mathbb{Y} 27'08	19.31926 AU

morning rise	15411 Mar 31 06:27	6° Υ 30'21	opposition	15417 Oct 12 23:33	6° B 30'25 -0°48'07
retrograde	15411 Jul 02 14:29	9° Υ 55'49	min. Earth dist.	15417 Oct 13 04:22	6° B 29'54 17.35592 AU
opposition	15411 Sep 14 20:57	7° Υ 52'06 -0°12'55	direct	15417 Dec 27 13:47	4° B 25'08
min. Earth dist.	15411 Sep 15 04:41	7° Υ 51'15 17.31335 AU	evening set	15418 Apr 01 08:58	7° B 52'16
direct	15411 Nov 29 00:08	5° Υ 46'58			
evening set	15412 Mar 02 09:12	9° Υ 13'56	conjunction	15418 Apr 17 19:18	8° B 53'38 -0°45'21
			minimum elong	15418 Apr 17 19:17	8° B 53'38 0°45'51
conjunction	15412 Mar 18 22:21	10° Υ 15'48 -0°14'28	max. Earth dist.	15418 Apr 17 14:01	8° B 52'48 19.36932 AU
minimum elong	15412 Mar 18 22:21	10° Υ 15'48 0°14'32	morning rise	15418 May 04 03:55	9° B 54'45
behind sun begin	15412 Mar 18 19:33	10° Υ 15'22	retrograde	15418 Aug 04 19:50	13° B 18'16
behind sun end	15412 Mar 19 01:08	10° Υ 16'14	opposition	15418 Oct 17 23:45	11° B 15'13 -0°53'00
max. Earth dist.	15412 Mar 18 13:55	10° Υ 14'30 19.30864 AU	min. Earth dist.	15418 Oct 18 03:03	11° B 14'51 17.38430 AU
morning rise	15412 Apr 04 10:20	11° Υ 17'32	direct	15419 Jan 01 16:55	9° B 10'05
retrograde	15412 Jul 06 15:58	14° Υ 42'54	evening set	15419 Apr 06 11:58	12° B 36'58
opposition	15412 Sep 18 21:16	12° Υ 39'10 -0°19'16			
min. Earth dist.	15412 Sep 19 04:03	12° Υ 38'26 17.30533 AU	conjunction	15419 Apr 22 21:45	13° B 38'10 -0°49'34
direct	15412 Dec 03 03:22	10° Υ 33'55	minimum elong	15419 Apr 22 21:45	13° B 38'10 0°50'08
evening set	15413 Mar 07 13:39	14° Υ 01'07	max. Earth dist.	15419 Apr 22 17:54	13° B 37'34 19.40017 AU
			morning rise	15419 May 09 05:30	14° B 39'06
conjunction	15413 Mar 24 02:23	15° Υ 02'58 -0°20'06		15419 May 14 23:41	15° B
minimum elong	15413 Mar 24 02:22	15° Υ 02'58 0°20'14	retrograde	15419 Aug 09 18:12	18° B 02'07
max. Earth dist.	15413 Mar 23 17:44	15° Υ 01'37 19.30334 AU	opposition	15419 Oct 22 23:49	15° B 59'18 -0°57'30
morning rise	15413 Apr 09 13:57	16° Υ 04'39	min. Earth dist.	15419 Oct 23 03:36	15° B 58'53 17.41757 AU
retrograde	15413 Jul 11 15:47	19° Υ 29'52		15419 Nov 15 18:45	15° R B
opposition	15413 Sep 23 21:48	17° Υ 26'09 -0°25'29	direct	15420 Jan 06 17:50	13° B 54'20
min. Earth dist.	15413 Sep 24 05:02	17° Υ 25'21 17.30302 AU		15420 Feb 26 05:47	15° B
direct	15413 Dec 08 05:15	15° Υ 20'47	evening set	15420 Apr 10 14:38	17° B 20'53
evening set	15414 Mar 12 17:55	18° Υ 48'08			
			conjunction	15420 Apr 26 23:36	18° B 21'53 -0°53'27
conjunction	15414 Mar 29 06:21	19° Υ 49'56 -0°25'35	minimum elong	15420 Apr 26 23:36	18° B 21'53 0°54'03
minimum elong	15414 Mar 29 06:20	19° Υ 49'56 0°25'49	max. Earth dist.	15420 Apr 26 19:20	18° B 21'13 19.43569 AU
max. Earth dist.	15414 Mar 28 22:39	19° Υ 48'44 19.30402 AU	morning rise	15420 May 13 06:45	19° B 22'37
morning rise	15414 Apr 14 17:24	20° Υ 51'33	retrograde	15420 Aug 13 18:14	22° B 45'05
retrograde	15414 Jul 16 17:59	24° Υ 16'31	opposition	15420 Oct 26 23:43	20° B 42'30 -1°01'37
opposition	15414 Sep 28 22:10	22° Υ 12'51 -0°31'32	min. Earth dist.	15420 Oct 27 02:15	20° B 42'14 17.45520 AU
min. Earth dist.	15414 Sep 29 03:58	22° Υ 12'13 17.30674 AU	direct	15421 Jan 10 20:41	18° B 37'43
direct	15414 Dec 13 08:44	20° Υ 07'25	evening set	15421 Apr 15 16:29	22° B 03'50
evening set	15415 Mar 17 22:03	23° Υ 34'49			
			conjunction	15421 May 02 00:52	23° B 04'38 -0°56'57
conjunction	15415 Apr 03 10:02	24° Υ 36'33 -0°30'54	minimum elong	15421 May 02 00:52	23° B 04'38 0°57'37
minimum elong	15415 Apr 03 10:02	24° Υ 36'33 0°31'11	max. Earth dist.	15421 May 01 22:12	23° B 04'13 19.47516 AU
max. Earth dist.	15415 Apr 03 02:51	24° Υ 35'26 19.31081 AU	morning rise	15421 May 18 07:04	24° B 05'08
morning rise	15415 Apr 19 20:32	25° Υ 38'05	retrograde	15421 Aug 18 15:47	27° B 27'00
retrograde	15415 Jul 21 17:23	29° Υ 02'45	opposition	15421 Oct 31 23:26	25° B 24'38 -1°05'18
opposition	15415 Oct 03 22:45	26° Υ 59'11 -0°37'20	min. Earth dist.	15421 Nov 01 02:10	25° B 24'21 17.49651 AU
min. Earth dist.	15415 Oct 04 04:55	26° Υ 58'30 17.31680 AU	direct	15422 Jan 15 22:08	23° B 20'03
direct	15415 Dec 18 09:43	24° Υ 53'43	evening set	15422 Apr 20 17:55	26° B 45'38
evening set	15416 Mar 22 02:03	28° Υ 21'07			
			conjunction	15422 May 07 01:26	27° B 46'11 -1°00'03
conjunction	15416 Apr 07 13:32	29° Υ 22'45 -0°35'59	minimum elong	15422 May 07 01:25	27° B 46'11 1°00'47
minimum elong	15416 Apr 07 13:31	29° Υ 22'45 0°36'21	max. Earth dist.	15422 May 06 22:07	27° B 45'40 19.51822 AU
max. Earth dist.	15416 Apr 07 06:55	29° Υ 21'43 19.32409 AU	morning rise	15422 May 23 07:03	28° B 46'27
	15416 Apr 17 11:07	0° B		15422 Jun 13 11:26	0° II
morning rise	15416 Apr 23 23:26	0° B 24'10	retrograde	15422 Aug 23 13:48	2° II 07'40
retrograde	15416 Jul 25 19:30	3° B 48'29	opposition	15422 Nov 05 22:34	0° II 05'31 -1°08'32
opposition	15416 Oct 07 23:03	1° B 45'02 -0°42'53	min. Earth dist.	15422 Nov 06 00:22	0° II 05'19 17.54125 AU
min. Earth dist.	15416 Oct 08 03:33	1° B 44'33 17.33324 AU		15422 Nov 08 01:59	30° R B
	15416 Nov 24 15:50	30° R Υ	direct	15423 Jan 21 00:09	28° B 01'06
direct	15416 Dec 22 13:01	29° Υ 39'39		15423 Mar 31 13:43	0° II
	15417 Jan 19 01:16	0° B	evening set	15423 Apr 25 18:32	1° II 26'05
evening set	15417 Mar 27 05:44	3° B 06'57			
			conjunction	15423 May 12 01:30	2° II 26'24 -1°02'46
conjunction	15417 Apr 12 16:42	4° B 08'28 -0°40'49	minimum elong	15423 May 12 01:30	2° II 26'24 1°03'31
minimum elong	15417 Apr 12 16:42	4° B 08'28 0°41'15	max. Earth dist.	15423 May 11 23:45	2° II 26'08 19.56440 AU
max. Earth dist.	15417 Apr 12 11:14	4° B 07'37 19.34365 AU	morning rise	15423 May 28 06:12	3° II 26'25
morning rise	15417 Apr 29 01:52	5° B 09'45	retrograde	15423 Aug 28 10:28	6° II 46'54
retrograde	15417 Jul 30 18:33	8° B 33'41	opposition	15423 Nov 10 21:28	4° II 44'59 -1°11'18

min. Earth dist.	15423 Nov 10 23:12	4°II44'47	17.58881 AU	max. Earth dist.	15430 Jun 13 02:45	4°☾19'02	19.96444 AU
direct	15424 Jan 26 01:46	2°II40'45		morning rise	15430 Jun 29 00:00	5°☾16'41	
evening set	15424 Apr 29 18:30	6°II05'03		retrograde	15430 Sep 28 17:57	8°☾31'26	
				opposition	15430 Dec 12 21:21	6°☾30'54	-1°17'02
conjunction	15424 May 16 00:32	7°II05'06	-1°05'03	min. Earth dist.	15430 Dec 12 18:14	6°☾31'14	17.99823 AU
minimum elong	15424 May 16 00:32	7°II05'05	1°05'51	direct	15431 Feb 27 14:02	4°☾28'13	
max. Earth dist.	15424 May 15 22:10	7°II04'44	19.61337 AU	evening set	15431 Jun 01 15:20	7°☾46'12	
morning rise	15424 Jun 01 04:37	8°II04'51					
retrograde	15424 Sep 01 06:27	11°II24'36		conjunction	15431 Jun 17 16:44	8°☾44'14	-1°08'49
opposition	15424 Nov 14 19:48	9°II22'51	-1°13'35	minimum elong	15431 Jun 17 16:44	8°☾44'14	1°09'44
min. Earth dist.	15424 Nov 14 20:49	9°II22'45	17.63921 AU	max. Earth dist.	15431 Jun 17 20:40	8°☾44'50	20.03189 AU
direct	15425 Jan 30 02:40	7°II18'47		morning rise	15431 Jul 03 16:13	9°☾42'01	
evening set	15425 May 04 17:25	10°II42'20		retrograde	15431 Oct 03 10:26	12°☾55'57	
				opposition	15431 Dec 17 15:26	10°☾55'42	-1°15'57
conjunction	15425 May 20 22:54	11°II42'07	-1°06'54	min. Earth dist.	15431 Dec 17 10:51	10°☾56'10	18.06626 AU
minimum elong	15425 May 20 22:54	11°II42'07	1°07'43	direct	15432 Mar 03 10:09	8°☾53'21	
max. Earth dist.	15425 May 20 22:13	11°II42'00	19.66509 AU	evening set	15432 Jun 05 07:46	12°☾10'20	
morning rise	15425 Jun 06 02:06	12°II41'35					
retrograde	15425 Sep 06 01:58	16°II00'32		conjunction	15432 Jun 21 08:29	13°☾08'05	-1°07'40
opposition	15425 Nov 19 17:36	13°II58'59	-1°15'23	minimum elong	15432 Jun 21 08:29	13°☾08'05	1°08'35
min. Earth dist.	15425 Nov 19 18:06	13°II58'56	17.69219 AU	max. Earth dist.	15432 Jun 21 12:58	13°☾08'46	20.10044 AU
direct	15426 Feb 04 03:10	11°II55'06		morning rise	15432 Jul 07 07:29	14°☾05'35	
evening set	15426 May 09 15:28	15°II17'48		retrograde	15432 Oct 07 00:37	17°☾18'44	
				opposition	15432 Dec 21 09:05	15°☾18'45	-1°14'26
conjunction	15426 May 25 20:06	16°II17'18	-1°08'18	min. Earth dist.	15432 Dec 21 04:45	15°☾19'12	18.13520 AU
minimum elong	15426 May 25 20:06	16°II17'18	1°09'10	direct	15433 Mar 08 04:12	13°☾16'45	
max. Earth dist.	15426 May 25 19:07	16°II17'09	19.71943 AU	evening set	15433 Jun 09 23:21	16°☾32'43	
morning rise	15426 Jun 10 22:46	17°II16'31					
retrograde	15426 Sep 10 20:33	20°II34'38		conjunction	15433 Jun 25 23:33	17°☾30'11	-1°06'08
opposition	15426 Nov 24 14:49	18°II33'15	-1°16'41	minimum elong	15433 Jun 25 23:33	17°☾30'11	1°07'02
min. Earth dist.	15426 Nov 24 14:49	18°II33'15	17.74792 AU	max. Earth dist.	15433 Jun 26 04:42	17°☾30'58	20.16955 AU
direct	15427 Feb 09 02:07	16°II29'32		morning rise	15433 Jul 11 22:05	18°☾27'25	
evening set	15427 May 14 12:31	19°II51'21		retrograde	15433 Oct 11 16:08	21°☾39'46	
				opposition	15433 Dec 26 01:53	19°☾40'02	-1°12'30
conjunction	15427 May 30 16:35	20°II50'34	-1°09'17	min. Earth dist.	15433 Dec 25 20:11	19°☾40'38	18.20415 AU
minimum elong	15427 May 30 16:35	20°II50'34	1°10'10	direct	15434 Mar 12 23:14	17°☾38'23	
max. Earth dist.	15427 May 30 17:15	20°II50'40	19.77648 AU	evening set	15434 Jun 14 14:06	20°☾53'21	
morning rise	15427 Jun 15 18:26	21°II49'29					
retrograde	15427 Sep 15 14:54	25°II06'45		conjunction	15434 Jun 30 13:47	21°☾50'32	-1°04'15
opposition	15427 Nov 29 11:18	23°II05'34	-1°17'30	minimum elong	15434 Jun 30 13:47	21°☾50'32	1°05'08
min. Earth dist.	15427 Nov 29 10:18	23°II05'40	17.80628 AU	max. Earth dist.	15434 Jun 30 19:26	21°☾51'23	20.23822 AU
direct	15428 Feb 14 00:43	21°II02'03		morning rise	15434 Jul 16 11:54	22°☾47'30	
evening set	15428 May 18 08:45	24°II22'56		retrograde	15434 Oct 16 04:30	25°☾59'04	
				opposition	15434 Dec 30 18:19	23°☾59'35	-1°10'10
conjunction	15428 Jun 03 11:58	25°II21'51	-1°09'48	min. Earth dist.	15434 Dec 30 13:14	24°☾00'07	18.27243 AU
minimum elong	15428 Jun 03 11:58	25°II21'51	1°10'42	direct	15435 Mar 17 15:48	21°☾58'16	
max. Earth dist.	15428 Jun 03 12:48	25°II21'59	19.83629 AU	evening set	15435 Jun 19 04:04	25°☾12'13	
morning rise	15428 Jun 19 13:15	26°II20'29					
retrograde	15428 Sep 19 08:27	29°II36'54		conjunction	15435 Jul 05 03:15	26°☾09'08	-1°02'00
opposition	15428 Dec 03 07:23	27°II35'54	-1°17'49	minimum elong	15435 Jul 05 03:15	26°☾09'08	1°02'51
min. Earth dist.	15428 Dec 03 05:52	27°II36'04	17.86766 AU	max. Earth dist.	15435 Jul 05 09:03	26°☾10'00	20.30591 AU
direct	15429 Feb 17 21:49	25°II32'37		morning rise	15435 Jul 21 01:00	27°☾05'50	
evening set	15429 May 23 03:43	28°II52'33			15435 Sep 25 11:38	0°♂	
				retrograde	15435 Oct 20 18:47	0°♂16'39	
conjunction	15429 Jun 08 06:22	29°II51'10	-1°09'54		15435 Nov 15 09:34	30°♂	
minimum elong	15429 Jun 08 06:22	29°II51'10	1°10'49	opposition	15436 Jan 04 09:59	28°☾17'23	-1°07'28
max. Earth dist.	15429 Jun 08 08:47	29°II51'32	19.89910 AU	min. Earth dist.	15436 Jan 04 03:37	28°☾18'02	18.33927 AU
	15429 Jun 10 16:05	0°☾		direct	15436 Mar 21 09:49	26°☾16'23	
morning rise	15429 Jun 24 06:57	0°☾49'31		evening set	15436 Jun 22 17:13	29°☾29'19	
retrograde	15429 Sep 24 01:47	4°☾05'06			15436 Jul 01 09:42	0°♂	
opposition	15429 Dec 08 02:42	2°☾04'20	-1°17'40				
min. Earth dist.	15429 Dec 07 23:43	2°☾04'38	17.93173 AU	conjunction	15436 Jul 08 15:57	0°♂25'58	-0°59'26
direct	15430 Feb 22 18:47	0°☾01'20		minimum elong	15436 Jul 08 15:57	0°♂25'58	1°00'16
evening set	15430 May 27 22:01	3°☾20'17		max. Earth dist.	15436 Jul 08 22:17	0°♂26'54	20.37182 AU
				morning rise	15436 Jul 24 13:18	1°♂22'25	
conjunction	15430 Jun 12 23:56	4°☾18'37	-1°09'34	retrograde	15436 Oct 24 05:40	4°♂32'30	
minimum elong	15430 Jun 12 23:56	4°☾18'37	1°10'28	opposition	15437 Jan 08 01:16	2°♂33'26	-1°04'25

min. Earth dist.	15437 Jan 07 19:39	2°03'40" 18.40422 AU	conjunction	15443 Aug 07 11:11	29°03'54" -0°33'58"
direct	15437 Mar 26 00:33	0°03'24"	minimum elong	15443 Aug 07 11:11	29°03'54" 0°34'31"
evening set	15437 Jun 27 05:24	3°04'43"	max. Earth dist.	15443 Aug 07 19:23	29°03'70" 20.76861 AU
				15443 Aug 14 09:05	0°00'
conjunction	15437 Jul 13 03:43	4°04'10" -0°56'33"	morning rise	15443 Aug 23 07:30	0°00'30"51"
minimum elong	15437 Jul 13 03:44	4°04'10" 0°57'20"	retrograde	15443 Nov 23 03:40	3°00'36"42"
max. Earth dist.	15437 Jul 13 09:56	4°04'15" 20.43569 AU	opposition	15444 Feb 07 17:50	1°00'38"28" -0°35'12"
morning rise	15437 Jul 29 00:53	5°03'37"15"	min. Earth dist.	15444 Feb 07 08:50	1°00'39"22" 18.79299 AU
retrograde	15437 Oct 28 18:44	8°04'46"37"		15444 Mar 26 14:40	30°08'00"
opposition	15438 Jan 12 15:43	6°04'47"43" -1°01'02"	direct	15444 Apr 24 20:07	29°03'39"27"
min. Earth dist.	15438 Jan 12 08:53	6°04'48"25" 18.46675 AU		15444 May 23 10:39	0°00'
direct	15438 Mar 30 17:16	4°04'47"16"	evening set	15444 Jul 25 21:46	2°00'45"06"
evening set	15438 Jul 01 16:54	7°04'58"12"			
			conjunction	15444 Aug 10 18:20	3°00'40"02" -0°29'33"
conjunction	15438 Jul 17 14:55	8°04'54"21" -0°53'22"	minimum elong	15444 Aug 10 18:20	3°00'40"02" 0°30'02"
minimum elong	15438 Jul 17 14:55	8°04'54"21" 0°54'08"	max. Earth dist.	15444 Aug 11 03:36	3°00'41"22" 20.81666 AU
max. Earth dist.	15438 Jul 17 21:42	8°04'55"21" 20.49689 AU	morning rise	15444 Aug 26 14:31	4°00'34"56"
morning rise	15438 Aug 02 11:45	9°04'50"20"	retrograde	15444 Nov 26 11:06	7°00'40"22"
retrograde	15438 Nov 02 04:07	12°04'59"00"	opposition	15445 Feb 11 04:26	5°00'42"17" -0°30'13"
opposition	15439 Jan 17 05:34	11°04'00"14" -0°57'21"	min. Earth dist.	15445 Feb 10 20:03	5°00'43"07" 18.83977 AU
min. Earth dist.	15439 Jan 16 23:38	11°04'00"50" 18.52665 AU	direct	15445 Apr 29 04:45	3°00'43"33"
direct	15439 Apr 04 06:38	9°04'00"01"	evening set	15445 Jul 30 04:30	6°00'48"29"
evening set	15439 Jul 06 03:36	12°04'09"59"			
			conjunction	15445 Aug 15 00:53	7°00'43"16" -0°25'00"
conjunction	15439 Jul 22 01:14	13°04'05"53" -0°49'56"	minimum elong	15445 Aug 15 00:53	7°00'43"16" 0°25'26"
minimum elong	15439 Jul 22 01:14	13°04'05"53" 0°50'40"	max. Earth dist.	15445 Aug 15 09:39	7°00'44"32" 20.86211 AU
max. Earth dist.	15439 Jul 22 07:46	13°04'06"51" 20.55560 AU	morning rise	15445 Aug 30 21:14	8°00'38"02"
morning rise	15439 Aug 06 21:58	14°04'01"39"	retrograde	15445 Nov 30 20:19	11°00'43"08"
	15439 Aug 24 12:05	15°00'	opposition	15446 Feb 15 14:29	9°00'45"10" -0°25'06"
retrograde	15439 Nov 06 15:47	17°04'09"39"	min. Earth dist.	15446 Feb 15 05:01	9°00'46"07" 18.88360 AU
opposition	15440 Jan 21 18:47	15°04'10"59" -0°53'23"	direct	15446 May 03 14:41	7°00'46"42"
min. Earth dist.	15440 Jan 21 11:31	15°04'11"44" 18.58404 AU	evening set	15446 Aug 03 10:53	10°00'51"00"
	15440 Jan 26 06:55	15°08'00"			
direct	15440 Apr 07 21:38	13°04'11"00"	conjunction	15446 Aug 19 07:15	11°00'45"39" -0°20'20"
	15440 Jun 14 18:44	15°00'	minimum elong	15446 Aug 19 07:15	11°00'45"39" 0°20'43"
evening set	15440 Jul 09 13:17	16°04'19"59"	max. Earth dist.	15446 Aug 19 16:54	11°00'47"02" 20.90417 AU
			morning rise	15446 Sep 04 03:30	12°00'40"18"
conjunction	15440 Jul 25 10:41	17°04'15"41" -0°46'15"	retrograde	15446 Dec 05 03:12	15°00'45"06"
minimum elong	15440 Jul 25 10:41	17°04'15"41" 0°46'56"	opposition	15447 Feb 20 00:16	13°00'47"16" -0°19'53"
max. Earth dist.	15440 Jul 25 18:14	17°04'16"47" 20.61179 AU	min. Earth dist.	15447 Feb 19 15:40	13°00'48"08" 18.92382 AU
morning rise	15440 Aug 10 07:10	18°04'11"14"	direct	15447 May 07 22:11	11°00'49"04"
retrograde	15440 Nov 10 00:11	21°04'18"38"	evening set	15447 Aug 07 17:01	14°00'52"45"
opposition	15441 Jan 25 07:31	19°04'20"03" -0°49'09"			
min. Earth dist.	15441 Jan 25 00:53	19°04'20"43" 18.63919 AU	conjunction	15447 Aug 23 13:12	15°00'47"16" -0°15'36"
direct	15441 Apr 12 09:44	17°04'20"17"	minimum elong	15447 Aug 23 13:13	15°00'47"16" 0°15'55"
evening set	15441 Jul 13 22:23	20°04'28"21"	behind sun begin	15447 Aug 23 12:03	15°00'47"07"
			behind sun end	15447 Aug 23 14:22	15°00'47"26"
conjunction	15441 Jul 29 19:27	21°04'23"49" -0°42'21"	max. Earth dist.	15447 Aug 23 22:05	15°00'48"33" 20.94253 AU
minimum elong	15441 Jul 29 19:27	21°04'23"49" 0°43'00"	morning rise	15447 Sep 08 09:40	16°00'41"50"
max. Earth dist.	15441 Jul 30 02:51	21°04'24"54" 20.66600 AU	retrograde	15447 Dec 09 12:15	19°00'46"23"
morning rise	15441 Aug 14 15:55	22°04'19"12"	opposition	15448 Feb 24 09:46	17°00'48"39" -0°14'36"
retrograde	15441 Nov 14 10:24	25°04'26"00"	min. Earth dist.	15448 Feb 24 00:23	17°00'49"36" 18.96011 AU
opposition	15442 Jan 29 19:20	23°04'27"32" -0°44'42"	direct	15448 May 11 07:22	15°00'50"41"
min. Earth dist.	15442 Jan 29 11:15	23°04'28"21" 18.69244 AU	evening set	15448 Aug 10 22:41	18°00'53"49"
direct	15442 Apr 16 22:35	21°04'27"59"			
evening set	15442 Jul 18 06:46	24°04'35"12"	conjunction	15448 Aug 26 18:55	19°00'48"14" -0°10'48"
			minimum elong	15448 Aug 26 18:56	19°00'48"15" 0°11'04"
conjunction	15442 Aug 03 03:42	25°04'30"29" -0°38'15"	behind sun begin	15448 Aug 26 13:59	19°00'47"33"
minimum elong	15442 Aug 03 03:42	25°04'30"29" 0°38'50"	behind sun end	15448 Aug 26 23:53	19°00'48"56"
max. Earth dist.	15442 Aug 03 12:10	25°04'31"43" 20.71824 AU	max. Earth dist.	15448 Aug 27 04:34	19°00'49"37" 20.97650 AU
morning rise	15442 Aug 18 23:58	26°04'25"41"	morning rise	15448 Sep 11 15:22	20°00'42"43"
retrograde	15442 Nov 18 18:19	29°04'33"58"	retrograde	15448 Dec 12 19:12	23°00'47"04"
opposition	15443 Feb 03 06:54	27°04'33"36" -0°40'02"	opposition	15449 Feb 27 19:05	21°00'49"25" -0°09'15"
min. Earth dist.	15443 Feb 02 23:19	27°04'34"22" 18.74374 AU	min. Earth dist.	15449 Feb 27 10:42	21°00'50"15" 18.99172 AU
direct	15443 Apr 21 08:57	25°04'34"20"	direct	15449 May 15 14:33	19°00'51"39"
evening set	15443 Jul 22 14:33	28°04'40"44"	evening set	15449 Aug 15 04:20	22°00'54"17"

conjunction	15449 Aug 31 00:29	23° <u>48</u> '36	-0°05'59	morning rise	15454 Oct 05 23:26	14° <u>43</u> '35	
minimum elong	15449 Aug 31 00:29	23° <u>48</u> '36	0°06'10	retrograde	15455 Jan 06 14:09	17° <u>44</u> '32	
behind sun begin	15449 Aug 30 18:14	23° <u>47</u> '44		opposition	15455 Mar 24 21:09	15° <u>42</u> '32	0°22'41
behind sun end	15449 Aug 31 06:44	23° <u>49</u> '29		min. Earth dist.	15455 Mar 24 14:20	15° <u>43</u> '13	19.07200 AU
max. Earth dist.	15449 Aug 31 09:00	23° <u>49</u> '49	21.00568 AU	direct	15455 Jun 09 10:38	13° <u>45</u> '11	
morning rise	15449 Sep 15 21:11	24° <u>43</u> '01		evening set	15455 Sep 08 09:46	16° <u>45</u> '46	
retrograde	15449 Dec 17 03:38	27° <u>47</u> '12					
opposition	15450 Mar 04 03:51	25° <u>49</u> '35	-0°03'52	conjunction	15455 Sep 24 06:30	17° <u>43</u> '52	0°22'49
min. Earth dist.	15450 Mar 03 19:06	25° <u>50</u> '27	19.01830 AU	minimum elong	15455 Sep 24 06:30	17° <u>43</u> '52	0°23'00
direct	15450 May 19 22:46	23° <u>51</u> '59		max. Earth dist.	15455 Sep 24 13:16	17° <u>40</u> '50	21.07120 AU
evening set	15450 Aug 19 09:44	26° <u>54</u> '09		morning rise	15455 Oct 10 04:34	18° <u>43</u> '09	
				retrograde	15456 Jan 10 22:39	21° <u>48</u> '14	
conjunction	15450 Sep 04 06:02	27° <u>48</u> '25	-0°01'06	opposition	15456 Mar 28 04:52	19° <u>40</u> '08	0°27'45
minimum elong	15450 Sep 04 06:01	27° <u>48</u> '25	0°01'14	min. Earth dist.	15456 Mar 27 21:36	19° <u>40</u> '52	19.06962 AU
behind sun begin	15450 Sep 03 23:26	27° <u>47</u> '30		direct	15456 Jun 12 16:55	17° <u>42</u> '47	
behind sun end	15450 Sep 04 12:35	27° <u>49</u> '20		evening set	15456 Sep 11 14:15	20° <u>43</u> '16	
max. Earth dist.	15450 Sep 04 14:57	27° <u>49</u> '41	21.02945 AU				
morning rise	15450 Sep 20 02:44	28° <u>42</u> '45		conjunction	15456 Sep 27 11:20	21° <u>43</u> '23	0°27'21
	15450 Oct 14 13:31	0° <u>43</u> '20		minimum elong	15456 Sep 27 11:19	21° <u>43</u> '23	0°27'36
asc. node	15450 Nov 27 01:21	1° <u>43</u> '20		max. Earth dist.	15456 Sep 27 18:53	21° <u>43</u> '28	21.06684 AU
retrograde	15450 Dec 21 10:25	1° <u>46</u> '49		morning rise	15456 Oct 13 09:34	22° <u>43</u> '43	
	15451 Mar 04 00:17	30° <u>48</u> '00		retrograde	15457 Jan 14 04:39	25° <u>43</u> '59	
opposition	15451 Mar 08 12:40	29° <u>49</u> '12	0°01'31	opposition	15457 Apr 01 12:36	23° <u>43</u> '48	0°32'42
min. Earth dist.	15451 Mar 08 04:59	29° <u>49</u> '58	19.03929 AU	min. Earth dist.	15457 Apr 01 05:56	23° <u>43</u> '28	19.06339 AU
direct	15451 May 24 06:17	27° <u>51</u> '43		direct	15457 Jun 16 22:40	21° <u>40</u> '29	
	15451 Aug 07 01:58	0° <u>43</u> '28		evening set	15457 Sep 15 19:05	24° <u>40</u> '55	
evening set	15451 Aug 23 14:51	0° <u>43</u> '28					
conjunction	15451 Sep 08 11:05	1° <u>47</u> '39	0°03'53	conjunction	15457 Oct 01 16:16	25° <u>43</u> '05	0°31'44
minimum elong	15451 Sep 08 11:05	1° <u>47</u> '39	0°03'49	minimum elong	15457 Oct 01 16:16	25° <u>43</u> '05	0°32'02
behind sun begin	15451 Sep 08 04:34	1° <u>46</u> '44		max. Earth dist.	15457 Oct 01 22:41	25° <u>43</u> '00	21.05880 AU
behind sun end	15451 Sep 08 17:35	1° <u>48</u> '33		morning rise	15457 Oct 17 14:59	26° <u>42</u> '28	
max. Earth dist.	15451 Sep 08 18:46	1° <u>48</u> '44	21.04773 AU	retrograde	15458 Jan 18 13:23	29° <u>43</u> '59	
morning rise	15451 Sep 24 08:07	2° <u>41</u> '57		opposition	15458 Apr 05 20:08	27° <u>43</u> '43	0°37'29
retrograde	15451 Dec 25 18:30	5° <u>45</u> '56		min. Earth dist.	15458 Apr 05 13:17	27° <u>43</u> '24	19.05347 AU
opposition	15452 Mar 11 21:09	3° <u>48</u> '15	0°06'53	direct	15458 Jun 21 04:55	25° <u>43</u> '24	
min. Earth dist.	15452 Mar 11 13:07	3° <u>49</u> '03	19.05483 AU	evening set	15458 Sep 19 23:59	28° <u>43</u> '55	
direct	15452 May 27 13:36	1° <u>50</u> '50		conjunction	15458 Oct 05 21:32	29° <u>43</u> '08	0°35'59
evening set	15452 Aug 26 19:46	4° <u>52</u> '12		minimum elong	15458 Oct 05 21:32	29° <u>43</u> '08	0°36'21
				max. Earth dist.	15458 Oct 06 04:39	29° <u>43</u> '09	21.04686 AU
conjunction	15452 Sep 11 16:12	5° <u>46</u> '20	0°08'42		15458 Oct 13 17:10	0° <u>43</u> '25	
minimum elong	15452 Sep 11 16:12	5° <u>46</u> '20	0°08'41	morning rise	15458 Oct 21 20:26	0° <u>43</u> '25	
behind sun begin	15452 Sep 11 10:29	5° <u>45</u> '32		retrograde	15459 Jan 22 20:21	3° <u>43</u> '25	
behind sun end	15452 Sep 11 21:56	5° <u>47</u> '08		opposition	15459 Apr 10 03:59	1° <u>43</u> '40	0°42'05
max. Earth dist.	15452 Sep 12 00:25	5° <u>47</u> '30	21.06054 AU	min. Earth dist.	15459 Apr 09 21:47	1° <u>43</u> '42	19.03956 AU
morning rise	15452 Sep 27 13:21	6° <u>40</u> '37			15459 May 25 11:25	30° <u>43</u> '25	
retrograde	15452 Dec 29 00:29	9° <u>44</u> '32		direct	15459 Jun 25 10:18	29° <u>43</u> '49	
opposition	15453 Mar 16 05:21	7° <u>46</u> '46	0°12'14		15459 Jul 25 20:01	0° <u>43</u> '25	
min. Earth dist.	15453 Mar 15 22:16	7° <u>47</u> '28	19.06508 AU	evening set	15459 Sep 24 05:06	2° <u>43</u> '25	
direct	15453 May 31 21:09	5° <u>49</u> '23					
evening set	15453 Aug 31 00:32	8° <u>50</u> '25		conjunction	15459 Oct 10 02:49	3° <u>43</u> '43	0°40'04
				minimum elong	15459 Oct 10 02:48	3° <u>43</u> '43	0°40'29
conjunction	15453 Sep 15 21:00	9° <u>44</u> '31	0°13'28	max. Earth dist.	15459 Oct 10 08:46	3° <u>43</u> '34	21.03104 AU
minimum elong	15453 Sep 15 21:00	9° <u>44</u> '31	0°13'32	morning rise	15459 Oct 26 02:15	4° <u>43</u> '17	
behind sun begin	15453 Sep 15 17:18	9° <u>44</u> '00		retrograde	15460 Jan 27 05:37	7° <u>43</u> '29	
behind sun end	15453 Sep 16 00:43	9° <u>45</u> '02		opposition	15460 Apr 13 11:56	5° <u>43</u> '04	0°46'31
max. Earth dist.	15453 Sep 16 04:04	9° <u>45</u> '31	21.06843 AU	min. Earth dist.	15460 Apr 13 05:45	5° <u>43</u> '41	19.02171 AU
morning rise	15453 Oct 01 18:33	10° <u>43</u> '47		direct	15460 Jun 28 16:45	3° <u>43</u> '48	
retrograde	15454 Jan 02 08:36	13° <u>42</u> '42		evening set	15460 Sep 27 10:36	6° <u>43</u> '36	
opposition	15454 Mar 20 13:17	11° <u>44</u> '48	0°17'30				
min. Earth dist.	15454 Mar 20 05:49	11° <u>45</u> '33	19.07070 AU	conjunction	15460 Oct 13 08:44	7° <u>43</u> '01	0°43'58
direct	15454 Jun 05 03:47	9° <u>47</u> '26		minimum elong	15460 Oct 13 08:44	7° <u>43</u> '01	0°44'26
evening set	15454 Sep 04 05:06	12° <u>48</u> '13		max. Earth dist.	15460 Oct 13 15:13	7° <u>43</u> '57	21.01094 AU
				morning rise	15460 Oct 29 08:26	8° <u>43</u> '41	
conjunction	15454 Sep 20 01:48	13° <u>42</u> '18	0°18'11	retrograde	15461 Jan 30 13:48	11° <u>43</u> '17	
minimum elong	15454 Sep 20 01:48	13° <u>42</u> '18	0°18'19	opposition	15461 Apr 17 19:55	9° <u>43</u> '48	0°50'43
max. Earth dist.	15454 Sep 20 09:35	13° <u>43</u> '25	21.07176 AU	min. Earth dist.	15461 Apr 17 14:35	9° <u>43</u> '20	18.99941 AU

direct	15461 Jul 02 22:38	7° $\overline{\text{M}}$ 35'33		evening set	15467 Oct 26 13:44	4° $\overline{\text{X}}$ 56'07	
evening set	15461 Oct 01 16:36	10° $\overline{\text{M}}$ 36'37					
conjunction	15461 Oct 17 14:57	11° $\overline{\text{M}}$ 31'07	0°47'39	conjunction	15467 Nov 11 14:40	5° $\overline{\text{X}}$ 51'37	1°04'36
minimum elong	15461 Oct 17 14:57	11° $\overline{\text{M}}$ 31'07	0°48'11	minimum elong	15467 Nov 11 14:40	5° $\overline{\text{X}}$ 51'37	1°05'23
max. Earth dist.	15461 Oct 17 19:52	11° $\overline{\text{M}}$ 31'50	20.98640 AU	max. Earth dist.	15467 Nov 11 15:05	5° $\overline{\text{X}}$ 51'41	20.73714 AU
morning rise	15461 Nov 02 15:13	12° $\overline{\text{M}}$ 25'55		morning rise	15467 Nov 27 17:50	6° $\overline{\text{X}}$ 47'26	
	15461 Dec 29 16:29	15° $\overline{\text{M}}$		retrograde	15468 Feb 29 12:10	9° $\overline{\text{X}}$ 56'54	
retrograde	15462 Feb 03 23:21	15° $\overline{\text{M}}$ 32'00		opposition	15468 May 16 11:43	7° $\overline{\text{X}}$ 57'03	1°12'38
	15462 Mar 12 22:42	15° $\overline{\text{R}}$ $\overline{\text{M}}$		min. Earth dist.	15468 May 16 10:53	7° $\overline{\text{X}}$ 57'08	18.71034 AU
opposition	15462 Apr 22 04:13	13° $\overline{\text{M}}$ 33'25	0°54'42	direct	15468 Jul 31 03:15	5° $\overline{\text{X}}$ 58'37	
min. Earth dist.	15462 Apr 21 23:18	13° $\overline{\text{M}}$ 33'55	18.97251 AU	evening set	15468 Oct 29 22:59	9° $\overline{\text{X}}$ 02'52	
direct	15462 Jul 07 05:08	11° $\overline{\text{M}}$ 36'07		conjunction	15468 Nov 15 00:37	9° $\overline{\text{X}}$ 58'35	1°06'24
evening set	15462 Oct 05 22:53	14° $\overline{\text{M}}$ 37'31		minimum elong	15468 Nov 15 00:36	9° $\overline{\text{X}}$ 58'35	1°07'13
	15462 Oct 12 13:40	15° $\overline{\text{M}}$		max. Earth dist.	15468 Nov 15 01:36	9° $\overline{\text{X}}$ 58'43	20.68237 AU
conjunction	15462 Oct 21 21:41	15° $\overline{\text{M}}$ 32'09	0°51'08	morning rise	15468 Dec 01 04:09	10° $\overline{\text{X}}$ 54'37	
minimum elong	15462 Oct 21 21:41	15° $\overline{\text{M}}$ 32'09	0°51'42	retrograde	15469 Mar 04 23:07	14° $\overline{\text{X}}$ 04'43	
max. Earth dist.	15462 Oct 22 02:52	15° $\overline{\text{M}}$ 32'54	20.95689 AU	opposition	15469 May 20 21:51	12° $\overline{\text{X}}$ 04'38	1°14'27
morning rise	15462 Nov 06 22:11	16° $\overline{\text{M}}$ 27'05		min. Earth dist.	15469 May 20 21:17	12° $\overline{\text{X}}$ 04'41	18.65442 AU
retrograde	15463 Feb 08 08:39	19° $\overline{\text{M}}$ 33'41		direct	15469 Aug 04 12:12	10° $\overline{\text{X}}$ 05'56	
opposition	15463 Apr 26 12:52	17° $\overline{\text{M}}$ 34'59	0°58'25	evening set	15469 Nov 03 09:01	13° $\overline{\text{X}}$ 10'51	
min. Earth dist.	15463 Apr 26 08:48	17° $\overline{\text{M}}$ 35'23	18.94045 AU	conjunction	15469 Nov 19 11:02	14° $\overline{\text{X}}$ 06'47	1°07'51
direct	15463 Jul 11 12:15	15° $\overline{\text{M}}$ 37'37		minimum elong	15469 Nov 19 11:01	14° $\overline{\text{X}}$ 06'47	1°08'41
evening set	15463 Oct 10 05:49	18° $\overline{\text{M}}$ 39'22		max. Earth dist.	15469 Nov 19 10:27	14° $\overline{\text{X}}$ 06'42	20.62550 AU
conjunction	15463 Oct 26 04:53	19° $\overline{\text{M}}$ 34'09	0°54'22	morning rise	15469 Dec 05 15:17	15° $\overline{\text{X}}$ 03'03	
minimum elong	15463 Oct 26 04:53	19° $\overline{\text{M}}$ 34'09	0°55'00	retrograde	15470 Mar 09 11:54	18° $\overline{\text{X}}$ 13'51	
max. Earth dist.	15463 Oct 26 08:13	19° $\overline{\text{M}}$ 34'38	20.92231 AU	opposition	15470 May 25 08:37	16° $\overline{\text{X}}$ 13'30	1°15'54
morning rise	15463 Nov 11 06:00	20° $\overline{\text{M}}$ 29'14		min. Earth dist.	15470 May 25 08:41	16° $\overline{\text{X}}$ 13'30	18.59670 AU
retrograde	15464 Feb 12 18:21	23° $\overline{\text{M}}$ 36'22		direct	15470 Aug 08 20:34	14° $\overline{\text{X}}$ 14'33	
opposition	15464 Apr 29 21:42	21° $\overline{\text{M}}$ 37'29	1°01'53	evening set	15470 Nov 07 19:25	17° $\overline{\text{X}}$ 20'10	
min. Earth dist.	15464 Apr 29 18:17	21° $\overline{\text{M}}$ 37'50	18.90334 AU	conjunction	15470 Nov 23 22:09	18° $\overline{\text{X}}$ 16'21	1°08'57
direct	15464 Jul 14 19:07	19° $\overline{\text{M}}$ 39'59		minimum elong	15470 Nov 23 22:09	18° $\overline{\text{X}}$ 16'21	1°09'49
evening set	15464 Oct 13 13:03	22° $\overline{\text{M}}$ 42'08		max. Earth dist.	15470 Nov 23 22:20	18° $\overline{\text{X}}$ 16'23	20.56689 AU
conjunction	15464 Oct 29 12:42	23° $\overline{\text{M}}$ 37'05	0°57'21	morning rise	15470 Dec 10 02:48	19° $\overline{\text{X}}$ 12'51	
minimum elong	15464 Oct 29 12:42	23° $\overline{\text{M}}$ 37'05	0°58'01	retrograde	15471 Mar 14 00:49	22° $\overline{\text{X}}$ 24'24	
max. Earth dist.	15464 Oct 29 16:07	23° $\overline{\text{M}}$ 37'35	20.88253 AU	opposition	15471 May 29 19:50	20° $\overline{\text{X}}$ 23'49	1°16'56
morning rise	15464 Nov 14 14:10	24° $\overline{\text{M}}$ 32'20		min. Earth dist.	15471 May 29 19:53	20° $\overline{\text{X}}$ 23'49	18.53734 AU
retrograde	15465 Feb 16 04:11	27° $\overline{\text{M}}$ 40'00		direct	15471 Aug 13 06:34	18° $\overline{\text{X}}$ 24'37	
opposition	15465 May 04 06:49	25° $\overline{\text{M}}$ 40'56	1°05'03	evening set	15471 Nov 12 06:51	21° $\overline{\text{X}}$ 31'01	
min. Earth dist.	15465 May 04 04:13	25° $\overline{\text{M}}$ 41'12	18.86101 AU	conjunction	15471 Nov 28 10:01	22° $\overline{\text{X}}$ 27'27	1°09'41
direct	15465 Jul 19 03:16	23° $\overline{\text{M}}$ 43'15		minimum elong	15471 Nov 28 10:01	22° $\overline{\text{X}}$ 27'27	1°10'33
evening set	15465 Oct 17 20:53	26° $\overline{\text{M}}$ 45'51		max. Earth dist.	15471 Nov 28 08:39	22° $\overline{\text{X}}$ 27'15	20.50697 AU
conjunction	15465 Nov 02 20:50	27° $\overline{\text{M}}$ 40'58	1°00'04	morning rise	15471 Dec 14 15:27	23° $\overline{\text{X}}$ 24'13	
minimum elong	15465 Nov 02 20:50	27° $\overline{\text{M}}$ 40'58	1°00'47	retrograde	15472 Mar 17 14:52	26° $\overline{\text{X}}$ 36'31	
max. Earth dist.	15465 Nov 02 22:24	27° $\overline{\text{M}}$ 41'11	20.83793 AU	opposition	15472 Jun 02 07:32	24° $\overline{\text{X}}$ 35'43	1°17'35
morning rise	15465 Nov 18 22:56	28° $\overline{\text{M}}$ 36'23		min. Earth dist.	15472 Jun 02 08:25	24° $\overline{\text{X}}$ 35'38	18.47689 AU
	15465 Dec 15 09:34	0° $\overline{\text{X}}$		direct	15472 Aug 16 15:28	22° $\overline{\text{X}}$ 36'16	
retrograde	15466 Feb 20 14:28	1° $\overline{\text{X}}$ 44'38		evening set	15472 Nov 15 18:55	25° $\overline{\text{X}}$ 43'30	
	15466 May 02 15:05	30° $\overline{\text{R}}$ $\overline{\text{M}}$		conjunction	15472 Dec 01 22:54	26° $\overline{\text{X}}$ 40'12	1°10'03
opposition	15466 May 08 16:05	29° $\overline{\text{M}}$ 45'18	1°07'55	minimum elong	15472 Dec 01 22:54	26° $\overline{\text{X}}$ 40'12	1°10'57
min. Earth dist.	15466 May 08 14:11	29° $\overline{\text{M}}$ 45'30	18.81427 AU	max. Earth dist.	15472 Dec 01 22:11	26° $\overline{\text{X}}$ 40'06	20.44592 AU
direct	15466 Jul 23 10:44	27° $\overline{\text{M}}$ 47'23		morning rise	15472 Dec 18 04:45	27° $\overline{\text{X}}$ 37'13	
	15466 Oct 06 19:05	0° $\overline{\text{X}}$			15473 Feb 05 03:03	0° $\overline{\text{Z}}$	
evening set	15466 Oct 22 05:02	0° $\overline{\text{X}}$ 50'29		retrograde	15473 Mar 22 05:56	0° $\overline{\text{Z}}$ 50'18	
conjunction	15466 Nov 07 05:36	1° $\overline{\text{X}}$ 45'47	1°02'29		15473 May 07 12:16	30° $\overline{\text{R}}$ $\overline{\text{X}}$	
minimum elong	15466 Nov 07 05:36	1° $\overline{\text{X}}$ 45'47	1°03'14	opposition	15473 Jun 06 19:46	28° $\overline{\text{X}}$ 49'20	1°17'48
max. Earth dist.	15466 Nov 07 07:34	1° $\overline{\text{X}}$ 46'04	20.78918 AU	min. Earth dist.	15473 Jun 06 20:38	28° $\overline{\text{X}}$ 49'15	18.41524 AU
morning rise	15466 Nov 23 08:03	2° $\overline{\text{X}}$ 41'24		direct	15473 Aug 21 02:47	26° $\overline{\text{X}}$ 49'39	
retrograde	15467 Feb 25 00:31	5° $\overline{\text{X}}$ 50'13		evening set	15473 Nov 20 07:59	29° $\overline{\text{X}}$ 57'46	
opposition	15467 May 13 01:45	3° $\overline{\text{X}}$ 50'39	1°10'27		15473 Nov 20 23:29	0° $\overline{\text{Z}}$	
min. Earth dist.	15467 May 13 00:18	3° $\overline{\text{X}}$ 50'48	18.76374 AU	conjunction	15473 Dec 06 12:23	0° $\overline{\text{Z}}$ 54'44	1°10'02
direct	15467 Jul 27 19:18	1° $\overline{\text{X}}$ 52'30		minimum elong	15473 Dec 06 12:23	0° $\overline{\text{Z}}$ 54'44	1°10'57

max. Earth dist.	15473 Dec 06 10:01	0°354'23	20.38379 AU	direct	15480 Sep 19 23:56	27°315'55	
morning rise	15473 Dec 22 18:59	1°352'02			15480 Dec 12 07:14	0°3	
retrograde	15474 Mar 26 21:21	5°305'57		evening set	15480 Dec 21 04:22	0°330'55	
opposition	15474 Jun 11 08:42	3°304'48	1°17'36				
min. Earth dist.	15474 Jun 11 10:39	3°304'36	18.35261 AU	conjunction	15481 Jan 06 13:32	1°330'00	0°59'01
direct	15474 Aug 25 13:00	1°304'53		minimum elong	15481 Jan 06 13:32	1°330'00	0°59'50
evening set	15474 Nov 24 21:49	4°313'56		max. Earth dist.	15481 Jan 06 06:51	1°328'59	19.91870 AU
				morning rise	15481 Jan 23 00:02	2°329'18	
conjunction	15474 Dec 11 03:03	5°311'11	1°09'39	retrograde	15481 Apr 27 06:54	5°348'46	
minimum elong	15474 Dec 11 03:03	5°311'12	1°10'33	opposition	15481 Jul 11 20:25	3°346'07	1°04'00
max. Earth dist.	15474 Dec 11 01:12	5°310'55	20.32060 AU	min. Earth dist.	15481 Jul 12 01:58	3°345'31	17.88549 AU
morning rise	15474 Dec 27 10:04	6°308'46		direct	15481 Sep 24 17:20	1°344'00	
retrograde	15475 Mar 31 14:18	9°323'30		evening set	15481 Dec 26 00:21	5°300'01	
opposition	15475 Jun 15 22:11	7°322'12	1°16'58				
min. Earth dist.	15475 Jun 16 00:08	7°322'00	18.28876 AU	conjunction	15482 Jan 11 09:59	5°359'22	0°55'53
direct	15475 Aug 30 01:32	5°322'03		minimum elong	15482 Jan 11 10:00	5°359'22	0°56'40
evening set	15475 Nov 29 12:45	8°332'03		max. Earth dist.	15482 Jan 11 02:20	5°358'13	19.85251 AU
				morning rise	15482 Jan 27 21:01	6°358'58	
conjunction	15475 Dec 15 18:28	9°329'37	1°08'51	retrograde	15482 May 02 02:26	10°319'10	
minimum elong	15475 Dec 15 18:28	9°329'37	1°09'46	opposition	15482 Jul 16 14:20	8°316'16	1°00'20
max. Earth dist.	15475 Dec 15 14:44	9°329'03	20.25609 AU	min. Earth dist.	15482 Jul 16 21:07	8°315'32	17.82037 AU
morning rise	15476 Jan 01 02:16	10°327'29		direct	15482 Sep 29 10:17	6°313'48	
retrograde	15476 Apr 04 07:17	13°343'04		evening set	15482 Dec 30 21:07	9°330'49	
opposition	15476 Jun 19 12:27	11°341'34	1°15'54				
min. Earth dist.	15476 Jun 19 15:53	11°341'12	18.22356 AU	conjunction	15483 Jan 16 07:26	10°330'29	0°52'23
direct	15476 Sep 02 13:34	9°341'08		minimum elong	15483 Jan 16 07:27	10°330'29	0°53'09
evening set	15476 Dec 03 04:34	12°352'09		max. Earth dist.	15483 Jan 16 00:01	10°329'21	19.78867 AU
				morning rise	15483 Feb 01 18:54	11°330'20	
conjunction	15476 Dec 19 11:06	13°350'00	1°07'41	retrograde	15483 May 06 23:52	14°351'13	
minimum elong	15476 Dec 19 11:06	13°350'00	1°08'34	opposition	15483 Jul 21 08:34	12°348'07	0°56'15
max. Earth dist.	15476 Dec 19 07:29	13°349'28	20.19010 AU	min. Earth dist.	15483 Jul 21 14:33	12°347'29	17.75786 AU
morning rise	15477 Jan 04 19:19	14°348'09		direct	15483 Oct 04 05:21	10°345'19	
retrograde	15477 Apr 09 01:35	18°304'32		evening set	15484 Jan 04 18:49	14°303'21	
opposition	15477 Jun 24 03:08	16°302'51	1°14'24		15484 Jan 20 08:10	15°3	
min. Earth dist.	15477 Jun 24 06:33	16°302'30	18.15678 AU				
direct	15477 Sep 07 03:27	14°302'08		conjunction	15484 Jan 21 05:39	15°303'17	0°48'33
evening set	15477 Dec 07 21:24	17°314'08		minimum elong	15484 Jan 21 05:39	15°303'17	0°49'14
				max. Earth dist.	15484 Jan 20 21:42	15°302'04	19.72762 AU
conjunction	15477 Dec 24 04:25	18°312'18	1°06'06	morning rise	15484 Feb 06 17:32	16°303'24	
minimum elong	15477 Dec 24 04:25	18°312'18	1°07'00	retrograde	15484 May 10 20:26	19°324'57	
max. Earth dist.	15477 Dec 23 22:51	18°311'27	20.12272 AU	opposition	15484 Jul 25 03:38	17°321'40	0°51'48
morning rise	15478 Jan 09 13:20	19°310'44		min. Earth dist.	15484 Jul 25 10:43	17°320'55	17.69849 AU
retrograde	15478 Apr 13 19:55	22°327'56		direct	15484 Oct 07 23:32	15°318'34	
opposition	15478 Jun 28 18:43	20°326'01	1°12'27	evening set	15485 Jan 08 17:18	18°337'35	
min. Earth dist.	15478 Jun 28 23:38	20°325'30	18.08892 AU				
direct	15478 Sep 11 17:10	18°324'58		conjunction	15485 Jan 25 04:40	19°337'48	0°44'22
evening set	15478 Dec 12 14:43	21°337'57		minimum elong	15485 Jan 25 04:40	19°337'48	0°45'01
				max. Earth dist.	15485 Jan 24 20:41	19°336'34	19.67011 AU
conjunction	15478 Dec 28 22:35	22°336'25	1°04'08	morning rise	15485 Feb 10 16:55	20°338'09	
minimum elong	15478 Dec 28 22:35	22°336'25	1°04'59	retrograde	15485 May 15 19:24	24°300'20	
max. Earth dist.	15478 Dec 28 17:15	22°335'37	20.05458 AU	opposition	15485 Jul 29 23:07	21°356'55	0°46'59
morning rise	15479 Jan 14 07:58	23°335'09		min. Earth dist.	15485 Jul 30 05:17	21°356'15	17.64285 AU
retrograde	15479 Apr 18 15:22	26°353'08		direct	15485 Oct 12 20:19	19°353'32	
opposition	15479 Jul 03 10:43	24°350'58	1°10'04	evening set	15486 Jan 13 16:36	23°313'32	
min. Earth dist.	15479 Jul 03 15:20	24°350'29	18.02052 AU				
direct	15479 Sep 16 08:46	22°349'35		conjunction	15486 Jan 30 04:26	24°314'00	0°39'53
evening set	15479 Dec 17 09:13	26°303'34		minimum elong	15486 Jan 30 04:26	24°314'00	0°40'29
				max. Earth dist.	15486 Jan 29 20:30	24°312'47	19.61646 AU
conjunction	15480 Jan 02 17:36	27°302'20	1°01'46	morning rise	15486 Feb 15 16:56	25°314'36	
minimum elong	15480 Jan 02 17:36	27°302'20	1°02'37	retrograde	15486 May 20 17:23	28°337'23	
max. Earth dist.	15480 Jan 02 10:41	27°301'17	19.98625 AU	opposition	15486 Aug 03 19:27	26°333'52	0°41'50
morning rise	15480 Jan 19 03:40	28°301'21		min. Earth dist.	15486 Aug 04 02:30	26°333'07	17.59130 AU
	15480 Feb 25 15:04	0°3		direct	15486 Oct 17 15:22	24°330'15	
retrograde	15480 Apr 22 10:24	1°320'05		evening set	15487 Jan 18 16:36	27°351'13	
	15480 Jun 20 04:41	30°3					
opposition	15480 Jul 07 03:19	29°317'41	1°07'15	conjunction	15487 Feb 04 04:52	28°351'55	0°35'07
min. Earth dist.	15480 Jul 07 09:26	29°317'02	17.95248 AU	minimum elong	15487 Feb 04 04:52	28°351'55	0°35'39



























































































































max. Earth dist.	15487 Feb 03 20:36	28° \approx 50'39	19.56715 AU	behind sun begin	15493 Mar 04 14:34	27° $\cancel{\text{H}}$ 08'35	
morning rise	15487 Feb 20 17:45	29° \approx 52'45		behind sun end	15493 Mar 05 04:02	27° $\cancel{\text{H}}$ 10'38	
	15487 Feb 22 18:06	0° $\cancel{\text{H}}$		max. Earth dist.	15493 Mar 04 11:31	27° $\cancel{\text{H}}$ 08'06	19.35239 AU
retrograde	15487 May 25 18:14	3° $\cancel{\text{H}}$ 16'05		morning rise	15493 Mar 21 10:17	28° $\cancel{\text{H}}$ 11'17	
opposition	15487 Aug 08 16:15	1° $\cancel{\text{H}}$ 12'31	0°36'24		15493 Apr 22 19:52	0° $\cancel{\text{Y}}$	
min. Earth dist.	15487 Aug 08 22:36	1° $\cancel{\text{H}}$ 11'50	17.54401 AU	retrograde	15493 Jun 23 00:05	1° $\cancel{\text{Y}}$ 36'38	
	15487 Sep 07 10:33	30° $\cancel{\text{R}}$ \approx		desc. node	15493 Aug 03 18:05	0° $\cancel{\text{Y}}$ 51'38	
direct	15487 Oct 22 13:06	29° \approx 08'42			15493 Aug 25 21:49	30° $\cancel{\text{R}}$ $\cancel{\text{H}}$	
	15487 Dec 05 12:38	0° $\cancel{\text{H}}$		opposition	15493 Sep 05 08:35	29° $\cancel{\text{H}}$ 32'49	-0°00'36
evening set	15488 Jan 23 17:34	2° $\cancel{\text{H}}$ 30'36		min. Earth dist.	15493 Sep 05 16:23	29° $\cancel{\text{H}}$ 31'58	17.34115 AU
				direct	15493 Nov 19 08:03	27° $\cancel{\text{H}}$ 27'53	
conjunction	15488 Feb 09 06:16	3° $\cancel{\text{H}}$ 31'32	0°30'06		15494 Feb 06 06:51	0° $\cancel{\text{Y}}$	
minimum elong	15488 Feb 09 06:16	3° $\cancel{\text{H}}$ 31'32	0°30'35	evening set	15494 Feb 21 11:56	0° $\cancel{\text{Y}}$ 54'00	
max. Earth dist.	15488 Feb 08 22:23	3° $\cancel{\text{H}}$ 30'19	19.52183 AU				
morning rise	15488 Feb 25 19:13	4° $\cancel{\text{H}}$ 32'33		conjunction	15494 Mar 10 01:26	1° $\cancel{\text{Y}}$ 55'48	-0°03'32
retrograde	15488 May 29 18:05	7° $\cancel{\text{H}}$ 56'24		minimum elong	15494 Mar 10 01:25	1° $\cancel{\text{Y}}$ 55'48	0°03'28
opposition	15488 Aug 12 13:40	5° $\cancel{\text{H}}$ 52'49	0°30'40	behind sun begin	15494 Mar 09 18:43	1° $\cancel{\text{Y}}$ 54'47	
min. Earth dist.	15488 Aug 12 20:58	5° $\cancel{\text{H}}$ 52'01	17.50066 AU	behind sun end	15494 Mar 10 08:06	1° $\cancel{\text{Y}}$ 56'49	
direct	15488 Oct 26 09:40	3° $\cancel{\text{H}}$ 48'48		max. Earth dist.	15494 Mar 09 16:52	1° $\cancel{\text{Y}}$ 54'29	19.33105 AU
evening set	15489 Jan 27 19:22	7° $\cancel{\text{H}}$ 11'36		morning rise	15494 Mar 26 14:01	2° $\cancel{\text{Y}}$ 57'31	
				retrograde	15494 Jun 28 01:51	6° $\cancel{\text{Y}}$ 22'56	
conjunction	15489 Feb 13 08:14	8° $\cancel{\text{H}}$ 12'44	0°24'51	opposition	15494 Sep 10 08:31	4° $\cancel{\text{Y}}$ 19'06	-0°07'05
minimum elong	15489 Feb 13 08:15	8° $\cancel{\text{H}}$ 12'44	0°25'16	min. Earth dist.	15494 Sep 10 15:55	4° $\cancel{\text{Y}}$ 18'17	17.32228 AU
max. Earth dist.	15489 Feb 12 23:26	8° $\cancel{\text{H}}$ 11'22	19.48049 AU	direct	15494 Nov 24 10:16	2° $\cancel{\text{Y}}$ 14'00	
morning rise	15489 Mar 01 21:26	9° $\cancel{\text{H}}$ 13'56		evening set	15495 Feb 26 16:15	5° $\cancel{\text{Y}}$ 40'32	
retrograde	15489 Jun 03 19:45	12° $\cancel{\text{H}}$ 38'15					
opposition	15489 Aug 17 11:42	10° $\cancel{\text{H}}$ 34'37	0°24'43	conjunction	15495 Mar 15 05:27	6° $\cancel{\text{Y}}$ 42'23	-0°09'18
min. Earth dist.	15489 Aug 17 18:39	10° $\cancel{\text{H}}$ 33'51	17.46119 AU	minimum elong	15495 Mar 15 05:27	6° $\cancel{\text{Y}}$ 42'23	0°09'19
direct	15489 Oct 31 08:15	8° $\cancel{\text{H}}$ 30'25		behind sun begin	15495 Mar 14 23:48	6° $\cancel{\text{Y}}$ 41'31	
evening set	15490 Feb 01 21:35	11° $\cancel{\text{H}}$ 54'02		behind sun end	15495 Mar 15 11:05	6° $\cancel{\text{Y}}$ 43'15	
				max. Earth dist.	15495 Mar 14 20:02	6° $\cancel{\text{Y}}$ 40'55	19.31484 AU
conjunction	15490 Feb 18 10:49	12° $\cancel{\text{H}}$ 55'21	0°19'26	morning rise	15495 Mar 31 17:55	7° $\cancel{\text{Y}}$ 44'07	
minimum elong	15490 Feb 18 10:49	12° $\cancel{\text{H}}$ 55'21	0°19'47	retrograde	15495 Jul 03 01:51	11° $\cancel{\text{Y}}$ 09'32	
max. Earth dist.	15490 Feb 18 02:40	12° $\cancel{\text{H}}$ 54'06	19.44273 AU	opposition	15495 Sep 15 08:44	9° $\cancel{\text{Y}}$ 05'40	-0°13'32
morning rise	15490 Mar 06 23:54	13° $\cancel{\text{H}}$ 56'43		min. Earth dist.	15495 Sep 15 16:23	9° $\cancel{\text{Y}}$ 04'50	17.30886 AU
retrograde	15490 Jun 08 20:46	17° $\cancel{\text{H}}$ 21'24		direct	15495 Nov 29 11:41	7° $\cancel{\text{Y}}$ 00'25	
opposition	15490 Aug 22 10:25	15° $\cancel{\text{H}}$ 17'44	0°18'35	evening set	15496 Mar 02 20:33	10° $\cancel{\text{Y}}$ 27'19	
min. Earth dist.	15490 Aug 22 17:59	15° $\cancel{\text{H}}$ 16'54	17.42524 AU				
direct	15490 Nov 05 06:53	13° $\cancel{\text{H}}$ 13'22		conjunction	15496 Mar 19 09:40	11° $\cancel{\text{Y}}$ 29'11	-0°15'01
evening set	15491 Feb 07 00:40	16° $\cancel{\text{H}}$ 37'42		minimum elong	15496 Mar 19 09:40	11° $\cancel{\text{Y}}$ 29'11	0°15'07
				behind sun begin	15496 Mar 19 07:32	11° $\cancel{\text{Y}}$ 28'51	
conjunction	15491 Feb 23 13:55	17° $\cancel{\text{H}}$ 39'11	0°13'51	behind sun end	15496 Mar 19 11:48	11° $\cancel{\text{Y}}$ 29'30	
minimum elong	15491 Feb 23 13:55	17° $\cancel{\text{H}}$ 39'11	0°14'08	max. Earth dist.	15496 Mar 19 01:33	11° $\cancel{\text{Y}}$ 27'55	19.30420 AU
behind sun begin	15491 Feb 23 10:46	17° $\cancel{\text{H}}$ 38'42		morning rise	15496 Apr 04 21:38	12° $\cancel{\text{Y}}$ 30'54	
behind sun end	15491 Feb 23 17:05	17° $\cancel{\text{H}}$ 39'40		retrograde	15496 Jul 07 03:30	15° $\cancel{\text{Y}}$ 56'14	
max. Earth dist.	15491 Feb 23 04:28	17° $\cancel{\text{H}}$ 37'43	19.40869 AU	opposition	15496 Sep 19 08:55	13° $\cancel{\text{Y}}$ 52'23	-0°19'53
morning rise	15491 Mar 12 03:10	18° $\cancel{\text{H}}$ 40'41		min. Earth dist.	15496 Sep 19 15:37	13° $\cancel{\text{Y}}$ 51'39	17.30110 AU
retrograde	15491 Jun 13 22:05	22° $\cancel{\text{H}}$ 05'40		direct	15496 Dec 03 15:09	11° $\cancel{\text{Y}}$ 47'02	
opposition	15491 Aug 27 09:22	20° $\cancel{\text{H}}$ 01'57	0°12'17	evening set	15497 Mar 08 00:58	15° $\cancel{\text{Y}}$ 14'11	
min. Earth dist.	15491 Aug 27 16:53	20° $\cancel{\text{H}}$ 01'07	17.39312 AU				
direct	15491 Nov 10 06:35	17° $\cancel{\text{H}}$ 57'22		conjunction	15497 Mar 24 13:39	16° $\cancel{\text{Y}}$ 16'02	-0°20'39
evening set	15492 Feb 12 04:06	21° $\cancel{\text{H}}$ 22'24		minimum elong	15497 Mar 24 13:39	16° $\cancel{\text{Y}}$ 16'02	0°20'49
				max. Earth dist.	15497 Mar 24 05:18	16° $\cancel{\text{Y}}$ 14'43	19.29949 AU
conjunction	15492 Feb 28 17:37	22° $\cancel{\text{H}}$ 24'01	0°08'10	morning rise	15497 Apr 10 01:15	17° $\cancel{\text{Y}}$ 17'43	
minimum elong	15492 Feb 28 17:38	22° $\cancel{\text{H}}$ 24'01	0°08'23	retrograde	15497 Jul 12 03:06	20° $\cancel{\text{Y}}$ 42'55	
behind sun begin	15492 Feb 28 11:43	22° $\cancel{\text{H}}$ 23'07		opposition	15497 Sep 24 09:27	18° $\cancel{\text{Y}}$ 39'06	-0°26'06
behind sun end	15492 Feb 28 23:32	22° $\cancel{\text{H}}$ 24'55		min. Earth dist.	15497 Sep 24 16:19	18° $\cancel{\text{Y}}$ 38'21	17.29970 AU
max. Earth dist.	15492 Feb 28 09:02	22° $\cancel{\text{H}}$ 22'41	19.37845 AU	direct	15497 Dec 08 16:37	16° $\cancel{\text{Y}}$ 33'41	
morning rise	15492 Mar 16 06:37	23° $\cancel{\text{H}}$ 25'36		evening set	15498 Mar 13 05:01	20° $\cancel{\text{Y}}$ 01'00	
retrograde	15492 Jun 17 23:36	26° $\cancel{\text{H}}$ 50'48					
opposition	15492 Aug 31 08:50	24° $\cancel{\text{H}}$ 47'03	0°05'52	conjunction	15498 Mar 29 17:28	21° $\cancel{\text{Y}}$ 02'48	-0°26'09
min. Earth dist.	15492 Aug 31 16:33	24° $\cancel{\text{H}}$ 46'12	17.36486 AU	minimum elong	15498 Mar 29 17:27	21° $\cancel{\text{Y}}$ 02'48	0°26'22
direct	15492 Nov 14 07:21	22° $\cancel{\text{H}}$ 42'17		max. Earth dist.	15498 Mar 29 10:21	21° $\cancel{\text{Y}}$ 01'41	19.30131 AU
evening set	15493 Feb 16 07:58	26° $\cancel{\text{H}}$ 07'54		morning rise	15498 Apr 15 04:31	22° $\cancel{\text{Y}}$ 04'26	
				retrograde	15498 Jul 17 04:55	25° $\cancel{\text{Y}}$ 29'25	
conjunction	15493 Mar 04 21:17	27° $\cancel{\text{H}}$ 09'37	0°02'25	opposition	15498 Sep 29 09:53	23° $\cancel{\text{Y}}$ 25'43	-0°32'09
minimum elong	15493 Mar 04 21:18	27° $\cancel{\text{H}}$ 09'37	0°02'34	min. Earth dist.	15498 Sep 29 15:15	23° $\cancel{\text{Y}}$ 25'07	17.30476 AU



























































































































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evening set	15499 Mar 18 09:15	24° Υ 47'41	minimum elong	15505 May 03 12:29	24° \mathcal{B} 19'27	0°58'05
			max. Earth dist.	15505 May 03 09:40	24° \mathcal{B} 19'01	19.47774 AU
conjunction	15499 Apr 03 21:13	25° Υ 49'25 -0°31'27	morning rise	15505 May 19 18:42	25° \mathcal{B} 19'58	
minimum elong	15499 Apr 03 21:12	25° Υ 49'25 0°31'46	retrograde	15505 Aug 20 03:53	28° \mathcal{B} 41'52	
max. Earth dist.	15499 Apr 03 14:27	25° Υ 48'21 19.30964 AU	opposition	15505 Nov 02 11:19	26° \mathcal{B} 39'33	-1°05'49
morning rise	15499 Apr 20 07:43	26° Υ 50'57	min. Earth dist.	15505 Nov 02 14:07	26° \mathcal{B} 39'15	17.49879 AU
	15499 Jun 28 11:05	0° \mathcal{B}	direct	15506 Jan 17 09:20	24° \mathcal{B} 35'01	
retrograde	15499 Jul 22 04:44	0° \mathcal{B} 15'41	evening set	15506 Apr 22 05:30	28° \mathcal{B} 00'35	
	15499 Aug 15 07:24	30° $\mathcal{R}\Upsilon$				
opposition	15499 Oct 04 10:23	28° Υ 12'07 -0°37'57	conjunction	15506 May 08 13:03	29° \mathcal{B} 01'09	-1°00'30
min. Earth dist.	15499 Oct 04 16:03	28° Υ 11'30 17.31648 AU	minimum elong	15506 May 08 13:02	29° \mathcal{B} 01'09	1°01'13
direct	15499 Dec 18 21:27	26° Υ 06'44	max. Earth dist.	15506 May 08 09:33	29° \mathcal{B} 00'36	19.52010 AU
evening set	15500 Mar 23 13:14	29° Υ 34'10	morning rise	15506 May 24 18:41	0° \mathcal{I} 01'25	
	15500 Mar 30 12:25	0° \mathcal{B}		15506 May 24 09:25	0° \mathcal{I}	
			retrograde	15506 Aug 25 01:54	3° \mathcal{I} 22'38	
conjunction	15500 Apr 09 00:45	0° \mathcal{B} 35'48 -0°36'32	opposition	15506 Nov 07 10:31	1° \mathcal{I} 20'30	-1°09'01
minimum elong	15500 Apr 09 00:44	0° \mathcal{B} 35'48 0°36'54	min. Earth dist.	15506 Nov 07 12:16	1° \mathcal{I} 20'18	17.54270 AU
max. Earth dist.	15500 Apr 08 18:46	0° \mathcal{B} 34'52 19.32465 AU		15506 Dec 11 10:51	30° $\mathcal{R}\mathcal{B}$	
morning rise	15500 Apr 25 10:40	1° \mathcal{B} 37'14	direct	15507 Jan 22 12:20	29° \mathcal{B} 16'05	
retrograde	15500 Jul 27 06:41	5° \mathcal{B} 01'38		15507 Mar 04 14:26	0° \mathcal{I}	
opposition	15500 Oct 09 10:48	2° \mathcal{B} 58'16 -0°43'29	evening set	15507 Apr 27 06:07	2° \mathcal{I} 41'03	
min. Earth dist.	15500 Oct 09 14:52	2° \mathcal{B} 57'49 17.33454 AU				
direct	15500 Dec 24 00:37	0° \mathcal{B} 52'59	conjunction	15507 May 13 13:06	3° \mathcal{I} 41'21	-1°03'11
evening set	15501 Mar 28 16:52	4° \mathcal{B} 20'20	minimum elong	15507 May 13 13:06	3° \mathcal{I} 41'21	1°03'57
			max. Earth dist.	15507 May 13 11:10	3° \mathcal{I} 41'03	19.56543 AU
conjunction	15501 Apr 14 03:49	5° \mathcal{B} 21'51 -0°41'21	morning rise	15507 May 29 17:48	4° \mathcal{I} 41'22	
minimum elong	15501 Apr 14 03:49	5° \mathcal{B} 21'51 0°41'47	retrograde	15507 Aug 29 21:48	8° \mathcal{I} 01'50	
max. Earth dist.	15501 Apr 13 22:48	5° \mathcal{B} 21'04 19.34563 AU	opposition	15507 Nov 12 09:17	5° \mathcal{I} 59'54	-1°11'45
morning rise	15501 Apr 30 13:01	6° \mathcal{B} 23'09	min. Earth dist.	15507 Nov 12 11:09	5° \mathcal{I} 59'42	17.58947 AU
retrograde	15501 Aug 01 06:29	9° \mathcal{B} 47'12	direct	15508 Jan 27 13:27	3° \mathcal{I} 55'38	
opposition	15501 Oct 14 11:21	7° \mathcal{B} 44'02 -0°48'42	evening set	15508 May 01 06:04	7° \mathcal{I} 19'53	
min. Earth dist.	15501 Oct 14 15:52	7° \mathcal{B} 43'33 17.35842 AU				
direct	15501 Dec 29 01:10	5° \mathcal{B} 38'53	conjunction	15508 May 17 12:09	8° \mathcal{I} 19'55	-1°05'26
evening set	15502 Apr 02 20:21	9° \mathcal{B} 06'05	minimum elong	15508 May 17 12:08	8° \mathcal{I} 19'55	1°06'13
			max. Earth dist.	15508 May 17 09:37	8° \mathcal{I} 19'32	19.61372 AU
conjunction	15502 Apr 19 06:40	10° \mathcal{B} 07'27 -0°45'52	morning rise	15508 Jun 02 16:16	9° \mathcal{I} 19'40	
minimum elong	15502 Apr 19 06:39	10° \mathcal{B} 07'27 0°46'23	retrograde	15508 Sep 02 18:18	12° \mathcal{I} 39'22	
max. Earth dist.	15502 Apr 19 01:47	10° \mathcal{B} 06'41 19.37220 AU	opposition	15508 Nov 16 07:35	10° \mathcal{I} 37'35	-1°14'00
morning rise	15502 May 05 15:16	11° \mathcal{B} 08'35	min. Earth dist.	15508 Nov 16 08:33	10° \mathcal{I} 37'29	17.63929 AU
retrograde	15502 Aug 06 07:54	14° \mathcal{B} 32'12	direct	15509 Jan 31 14:38	8° \mathcal{I} 33'28	
opposition	15502 Oct 19 11:30	12° \mathcal{B} 29'16 -0°53'34	evening set	15509 May 06 04:46	11° \mathcal{I} 56'55	
min. Earth dist.	15502 Oct 19 14:37	12° \mathcal{B} 28'55 17.38743 AU				
direct	15503 Jan 03 04:07	10° \mathcal{B} 24'15	conjunction	15509 May 22 10:17	12° \mathcal{I} 56'41	-1°07'15
evening set	15503 Apr 07 23:27	13° \mathcal{B} 51'12	minimum elong	15509 May 22 10:17	12° \mathcal{I} 56'41	1°08'05
			max. Earth dist.	15509 May 22 09:37	12° \mathcal{I} 56'35	19.66499 AU
conjunction	15503 Apr 24 09:13	14° \mathcal{B} 52'24 -0°50'05	morning rise	15509 Jun 07 13:33	13° \mathcal{I} 56'10	
minimum elong	15503 Apr 24 09:12	14° \mathcal{B} 52'24 0°50'38	retrograde	15509 Sep 07 13:21	17° \mathcal{I} 15'03	
max. Earth dist.	15503 Apr 24 05:25	14° \mathcal{B} 51'49 19.40339 AU	opposition	15509 Nov 21 05:21	15° \mathcal{I} 13'25	-1°15'46
	15503 Apr 26 09:39	15° \mathcal{B}	min. Earth dist.	15509 Nov 21 05:53	15° \mathcal{I} 13'22	17.69199 AU
morning rise	15503 May 10 16:58	15° \mathcal{B} 53'21	direct	15510 Feb 05 14:51	13° \mathcal{I} 09'28	
retrograde	15503 Aug 11 06:46	19° \mathcal{B} 16'27	evening set	15510 May 11 02:51	16° \mathcal{I} 32'04	
opposition	15503 Oct 24 11:46	17° \mathcal{B} 13'44 -0°58'04				
min. Earth dist.	15503 Oct 24 15:27	17° \mathcal{B} 13'20 17.42081 AU	conjunction	15510 May 27 07:30	17° \mathcal{I} 31'33	-1°08'38
direct	15504 Jan 08 04:56	15° \mathcal{B} 08'53	minimum elong	15510 May 27 07:30	17° \mathcal{I} 31'33	1°09'28
evening set	15504 Apr 12 02:08	18° \mathcal{B} 35'28	max. Earth dist.	15510 May 27 06:34	17° \mathcal{I} 31'25	19.71926 AU
			morning rise	15510 Jun 12 10:13	18° \mathcal{I} 30'45	
conjunction	15504 Apr 28 11:05	19° \mathcal{B} 36'29 -0°53'56	retrograde	15510 Sep 12 08:04	21° \mathcal{I} 48'48	
minimum elong	15504 Apr 28 11:04	19° \mathcal{B} 36'29 0°54'34	opposition	15510 Nov 26 02:22	19° \mathcal{I} 47'21	-1°17'02
max. Earth dist.	15504 Apr 28 06:51	19° \mathcal{B} 35'49 19.43876 AU	min. Earth dist.	15510 Nov 26 02:10	19° \mathcal{I} 47'22	17.74793 AU
morning rise	15504 May 14 18:12	20° \mathcal{B} 37'13	direct	15511 Feb 10 13:37	17° \mathcal{I} 43'34	
retrograde	15504 Aug 15 06:25	23° \mathcal{B} 59'45	evening set	15511 May 15 23:53	21° \mathcal{I} 05'18	
opposition	15504 Oct 28 11:38	21° \mathcal{B} 57'14 -1°02'09				
min. Earth dist.	15504 Oct 28 14:03	21° \mathcal{B} 56'58 17.45808 AU	conjunction	15511 Jun 01 03:58	22° \mathcal{I} 04'30	-1°09'34
direct	15505 Jan 12 08:07	19° \mathcal{B} 52'32	minimum elong	15511 Jun 01 03:58	22° \mathcal{I} 04'30	1°10'26
evening set	15505 Apr 17 04:07	23° \mathcal{B} 18'40	max. Earth dist.	15511 Jun 01 04:53	22° \mathcal{I} 04'38	19.77677 AU
			morning rise	15511 Jun 17 05:51	23° \mathcal{I} 03'24	

retrograde	15511 Sep 17 02:29	26° Π 20'36	evening set	15518 Jun 16 02:04	22° \mathfrak{D} 07'52
opposition	15511 Nov 30 22:59	24° Π 19'21 -1°17'48			
min. Earth dist.	15511 Nov 30 21:47	24° Π 19'29 17.80698 AU	conjunction	15518 Jul 02 01:46	23° \mathfrak{D} 05'04 -1°04'15
direct	15512 Feb 15 12:43	22° Π 15'48	minimum elong	15518 Jul 02 01:47	23° \mathfrak{D} 05'04 1°05'06
evening set	15512 May 19 20:01	25° Π 36'37	max. Earth dist.	15518 Jul 02 07:05	23° \mathfrak{D} 05'52 20.23935 AU
			morning rise	15518 Jul 17 23:57	24° \mathfrak{D} 02'03
conjunction	15512 Jun 04 23:15	26° Π 35'31 -1°10'03	retrograde	15518 Oct 17 17:41	27° \mathfrak{D} 13'42
minimum elong	15512 Jun 04 23:14	26° Π 35'31 1°10'56	opposition	15519 Jan 01 06:22	25° \mathfrak{D} 14'17 -1°10'09
max. Earth dist.	15512 Jun 05 00:16	26° Π 35'40 19.83744 AU	min. Earth dist.	15519 Jan 01 01:32	25° \mathfrak{D} 14'47 18.27295 AU
morning rise	15512 Jun 21 00:34	27° Π 34'09	direct	15519 Mar 19 02:54	23° \mathfrak{D} 13'01
	15512 Aug 08 01:35	0° \mathfrak{D}	evening set	15519 Jun 20 16:08	26° \mathfrak{D} 27'03
retrograde	15512 Sep 20 19:40	0° \mathfrak{D} 50'32			
	15512 Nov 05 01:42	30° \mathfrak{R} Π	conjunction	15519 Jul 06 15:23	27° \mathfrak{D} 23'59 -1°01'58
opposition	15512 Dec 04 19:01	28° Π 49'30 -1°18'04	minimum elong	15519 Jul 06 15:24	27° \mathfrak{D} 23'59 1°02'48
min. Earth dist.	15512 Dec 04 17:09	28° Π 49'42 17.86930 AU	max. Earth dist.	15519 Jul 06 20:58	27° \mathfrak{D} 24'49 20.30573 AU
direct	15513 Feb 19 09:11	26° Π 46'13	morning rise	15519 Jul 22 13:11	28° \mathfrak{D} 20'42
	15513 May 22 22:01	0° \mathfrak{D}		15519 Aug 22 11:20	0° \mathfrak{Q}
evening set	15513 May 24 15:08	0° \mathfrak{D} 06'06	retrograde	15519 Oct 22 07:20	1° \mathfrak{Q} 31'36
				15519 Dec 25 15:29	30° \mathfrak{R} \mathfrak{D}
conjunction	15513 Jun 09 17:50	1° \mathfrak{D} 04'43 -1°10'06	opposition	15520 Jan 05 22:10	29° \mathfrak{D} 32'24 -1°07'24
minimum elong	15513 Jun 09 17:50	1° \mathfrak{D} 04'43 1°10'59	min. Earth dist.	15520 Jan 05 16:06	29° \mathfrak{D} 33'01 18.33836 AU
max. Earth dist.	15513 Jun 09 20:34	1° \mathfrak{D} 05'08 19.90121 AU	direct	15520 Mar 22 21:01	27° \mathfrak{D} 31'26
morning rise	15513 Jun 25 18:27	2° \mathfrak{D} 03'04		15520 Jun 11 02:56	0° \mathfrak{Q}
retrograde	15513 Sep 25 13:24	5° \mathfrak{D} 18'37	evening set	15520 Jun 24 05:14	0° \mathfrak{Q} 44'27
opposition	15513 Dec 09 14:15	3° \mathfrak{D} 17'52 -1°17'52			
min. Earth dist.	15513 Dec 09 11:13	3° \mathfrak{D} 18'11 17.93424 AU	conjunction	15520 Jul 10 04:02	1° \mathfrak{Q} 41'07 -0°59'21
direct	15514 Feb 24 06:53	1° \mathfrak{D} 14'54	minimum elong	15520 Jul 10 04:02	1° \mathfrak{Q} 41'07 1°00'08
evening set	15514 May 29 09:29	4° \mathfrak{D} 33'51	max. Earth dist.	15520 Jul 10 09:58	1° \mathfrak{Q} 42'00 20.37016 AU
			morning rise	15520 Jul 26 01:28	2° \mathfrak{Q} 37'35
conjunction	15514 Jun 14 11:28	5° \mathfrak{D} 32'11 -1°09'44	retrograde	15520 Oct 25 19:05	5° \mathfrak{Q} 47'45
minimum elong	15514 Jun 14 11:28	5° \mathfrak{D} 32'11 1°10'38	opposition	15521 Jan 09 13:29	3° \mathfrak{Q} 48'43 -1°04'18
max. Earth dist.	15514 Jun 14 14:22	5° \mathfrak{D} 32'37 19.96728 AU	min. Earth dist.	15521 Jan 09 08:07	3° \mathfrak{Q} 49'16 18.40180 AU
morning rise	15514 Jun 30 11:37	6° \mathfrak{D} 30'15	direct	15521 Mar 27 12:36	1° \mathfrak{Q} 48'02
retrograde	15514 Sep 30 05:17	9° \mathfrak{D} 45'00	evening set	15521 Jun 28 17:34	5° \mathfrak{Q} 00'02
opposition	15514 Dec 14 09:06	7° \mathfrak{D} 44'32 -1°17'11			
min. Earth dist.	15514 Dec 14 05:54	7° \mathfrak{D} 44'52 18.00124 AU	conjunction	15521 Jul 14 15:58	5° \mathfrak{Q} 56'26 -0°56'25
direct	15515 Mar 01 01:33	5° \mathfrak{D} 41'54	minimum elong	15521 Jul 14 15:59	5° \mathfrak{Q} 56'26 0°57'12
evening set	15515 Jun 03 02:52	8° \mathfrak{D} 59'54	max. Earth dist.	15521 Jul 14 21:57	5° \mathfrak{Q} 57'19 20.43257 AU
			morning rise	15521 Jul 30 13:11	6° \mathfrak{Q} 52'40
conjunction	15515 Jun 19 04:19	9° \mathfrak{D} 57'57 -1°08'56	retrograde	15521 Oct 30 07:05	10° \mathfrak{Q} 02'06
minimum elong	15515 Jun 19 04:19	9° \mathfrak{D} 57'57 1°09'50	opposition	15522 Jan 14 03:46	8° \mathfrak{Q} 03'12 -1°00'52
max. Earth dist.	15515 Jun 19 08:27	9° \mathfrak{D} 58'34 20.03495 AU	min. Earth dist.	15522 Jan 13 21:12	8° \mathfrak{Q} 03'52 18.46299 AU
morning rise	15515 Jul 05 03:50	10° \mathfrak{D} 55'44	direct	15522 Apr 01 04:57	6° \mathfrak{Q} 02'45
retrograde	15515 Oct 04 22:02	14° \mathfrak{D} 09'41	evening set	15522 Jul 03 05:03	9° \mathfrak{Q} 13'44
opposition	15515 Dec 19 03:13	12° \mathfrak{D} 09'31 -1°16'04			
min. Earth dist.	15515 Dec 18 22:48	12° \mathfrak{D} 09'58 18.06926 AU	conjunction	15522 Jul 19 03:08	10° \mathfrak{Q} 09'54 -0°53'12
direct	15516 Mar 04 21:56	10° \mathfrak{D} 07'15	minimum elong	15522 Jul 19 03:08	10° \mathfrak{Q} 09'54 0°53'57
evening set	15516 Jun 06 19:31	13° \mathfrak{D} 24'16	max. Earth dist.	15522 Jul 19 09:36	10° \mathfrak{Q} 10'51 20.49263 AU
			morning rise	15522 Aug 04 00:04	11° \mathfrak{Q} 05'55
conjunction	15516 Jun 22 20:16	14° \mathfrak{D} 22'01 -1°07'45	retrograde	15522 Nov 03 17:00	14° \mathfrak{Q} 14'38
minimum elong	15516 Jun 22 20:16	14° \mathfrak{D} 22'01 1°08'39	opposition	15523 Jan 18 17:43	12° \mathfrak{Q} 15'50 -0°57'08
max. Earth dist.	15516 Jun 23 00:38	14° \mathfrak{D} 22'41 20.10329 AU	min. Earth dist.	15523 Jan 18 11:54	12° \mathfrak{Q} 16'25 18.52202 AU
morning rise	15516 Jul 08 19:20	15° \mathfrak{D} 19'32	direct	15523 Apr 05 19:05	10° \mathfrak{Q} 15'36
retrograde	15516 Oct 08 12:54	18° \mathfrak{D} 32'43	evening set	15523 Jul 07 15:36	13° \mathfrak{Q} 25'35
opposition	15516 Dec 22 20:58	16° \mathfrak{D} 32'49 -1°14'30			
min. Earth dist.	15516 Dec 22 16:46	16° \mathfrak{D} 33'15 18.13780 AU	conjunction	15523 Jul 23 13:18	14° \mathfrak{Q} 21'31 -0°49'43
direct	15517 Mar 09 15:18	14° \mathfrak{D} 30'53	minimum elong	15523 Jul 23 13:19	14° \mathfrak{Q} 21'31 0°50'26
evening set	15517 Jun 11 11:06	17° \mathfrak{D} 46'55	max. Earth dist.	15523 Jul 23 19:52	14° \mathfrak{Q} 22'29 20.55073 AU
				15523 Aug 03 10:47	15° \mathfrak{Q}
conjunction	15517 Jun 27 11:23	18° \mathfrak{D} 44'24 -1°06'11	morning rise	15523 Aug 08 10:05	15° \mathfrak{Q} 17'18
minimum elong	15517 Jun 27 11:23	18° \mathfrak{D} 44'24 1°07'04	retrograde	15523 Nov 08 03:48	18° \mathfrak{Q} 25'21
max. Earth dist.	15517 Jun 27 16:30	18° \mathfrak{D} 45'10 20.17176 AU	opposition	15524 Jan 23 06:52	16° \mathfrak{Q} 26'38 -0°53'07
morning rise	15517 Jul 13 09:59	19° \mathfrak{D} 41'39	min. Earth dist.	15524 Jan 22 23:33	16° \mathfrak{Q} 27'22 18.57914 AU
retrograde	15517 Oct 13 04:09	22° \mathfrak{D} 54'03		15524 Mar 02 21:22	15° \mathfrak{R} \mathfrak{Q}
opposition	15517 Dec 27 13:57	20° \mathfrak{D} 54'25 -1°12'31	direct	15524 Apr 09 09:52	14° \mathfrak{Q} 26'36
min. Earth dist.	15517 Dec 27 08:31	20° \mathfrak{D} 54'58 18.20588 AU		15524 May 15 21:49	15° \mathfrak{Q}
direct	15518 Mar 14 10:35	18° \mathfrak{D} 52'50	evening set	15524 Jul 11 01:24	17° \mathfrak{Q} 35'38

conjunction	15524 Jul 26 22:49	18° Ω 31'20	-0°46'00	retrograde	15530 Dec 06 15:43	17° Π 01'00	
minimum elong	15524 Jul 26 22:50	18° Ω 31'20	0°46'40	opposition	15531 Feb 21 12:27	15° Π 03'08	-0°19'21
max. Earth dist.	15524 Jul 27 06:19	18° Ω 32'26	20.60700 AU	min. Earth dist.	15531 Feb 21 04:09	15° Π 03'58	18.92170 AU
morning rise	15524 Aug 11 19:22	19° Ω 26'55		direct	15531 May 09 11:09	13° Π 04'54	
retrograde	15524 Nov 11 12:18	22° Ω 34'20		evening set	15531 Aug 09 05:26	16° Π 08'36	
opposition	15525 Jan 26 19:30	20° Ω 35'43	-0°48'51				
min. Earth dist.	15525 Jan 26 12:44	20° Ω 36'24	18.63472 AU	conjunction	15531 Aug 25 01:41	17° Π 03'08	-0°15'06
direct	15525 Apr 13 21:41	18° Ω 35'55		minimum elong	15531 Aug 25 01:41	17° Π 03'08	0°15'24
evening set	15525 Jul 15 10:25	21° Ω 44'02		behind sun begin	15531 Aug 24 23:38	17° Π 02'51	
				behind sun end	15531 Aug 25 03:43	17° Π 03'25	
conjunction	15525 Jul 31 07:34	22° Ω 39'31	-0°42'03	max. Earth dist.	15531 Aug 25 10:27	17° Π 04'23	20.94008 AU
minimum elong	15525 Jul 31 07:34	22° Ω 39'31	0°42'40	morning rise	15531 Sep 09 22:09	17° Π 57'41	
max. Earth dist.	15525 Jul 31 15:06	22° Ω 40'37	20.66187 AU	retrograde	15531 Dec 11 00:49	21° Π 02'15	
morning rise	15525 Aug 16 04:05	23° Ω 34'54		opposition	15532 Feb 25 22:01	19° Π 04'28	-0°14'02
retrograde	15525 Nov 15 22:40	26° Ω 41'45		min. Earth dist.	15532 Feb 25 12:52	19° Π 05'23	18.95726 AU
opposition	15526 Jan 31 07:24	24° Ω 43'14	-0°44'21	direct	15532 May 12 20:04	17° Π 06'27	
min. Earth dist.	15526 Jan 30 23:06	24° Ω 44'04	18.68870 AU	evening set	15532 Aug 12 11:19	20° Π 09'37	
direct	15526 Apr 18 10:30	22° Ω 43'41					
evening set	15526 Jul 19 18:51	25° Ω 50'56		conjunction	15532 Aug 28 07:36	21° Π 04'02	-0°10'17
				minimum elong	15532 Aug 28 07:36	21° Π 04'02	0°10'31
conjunction	15526 Aug 04 15:48	26° Ω 46'13	-0°37'55	behind sun begin	15532 Aug 28 02:26	21° Π 03'19	
minimum elong	15526 Aug 04 15:48	26° Ω 46'13	0°38'29	behind sun end	15532 Aug 28 12:46	21° Π 04'46	
max. Earth dist.	15526 Aug 05 00:18	26° Ω 47'27	20.71493 AU	max. Earth dist.	15532 Aug 28 16:50	21° Π 05'21	20.97315 AU
morning rise	15526 Aug 20 12:07	27° Ω 41'26		morning rise	15532 Sep 13 04:04	21° Π 58'31	
	15526 Oct 07 12:02	0° Π		retrograde	15532 Dec 14 07:18	25° Π 02'51	
retrograde	15526 Nov 20 06:07	0° Π 47'45		opposition	15533 Mar 01 07:15	23° Π 05'09	-0°08'39
	15527 Jan 04 14:34	30° κ Ω		min. Earth dist.	15533 Feb 28 23:16	23° Π 05'57	18.98785 AU
opposition	15527 Feb 04 18:54	28° Ω 49'23	-0°39'39	direct	15533 May 17 03:40	21° Π 07'19	
min. Earth dist.	15527 Feb 04 11:12	28° Ω 50'09	18.74083 AU	evening set	15533 Aug 16 16:58	24° Π 09'58	
direct	15527 Apr 22 20:43	26° Ω 50'05					
evening set	15527 Jul 24 02:43	29° Ω 56'31		conjunction	15533 Sep 01 13:12	25° Π 04'18	-0°05'27
	15527 Jul 25 03:08	0° Π		minimum elong	15533 Sep 01 13:12	25° Π 04'18	0°05'38
				behind sun begin	15533 Sep 01 06:53	25° Π 03'25	
conjunction	15527 Aug 08 23:25	0° Π 51'38	-0°33'36	behind sun end	15533 Sep 01 19:31	25° Π 05'11	
minimum elong	15527 Aug 08 23:25	0° Π 51'38	0°34'07	max. Earth dist.	15533 Sep 01 21:18	25° Π 05'27	21.00118 AU
max. Earth dist.	15527 Aug 09 07:47	0° Π 52'50	20.76611 AU	morning rise	15533 Sep 17 09:56	25° Π 58'42	
morning rise	15527 Aug 24 19:46	1° Π 46'41		retrograde	15533 Dec 18 16:03	29° Π 02'53	
retrograde	15527 Nov 24 16:13	4° Π 52'32		opposition	15534 Mar 05 16:11	27° Π 05'11	-0°03'15
opposition	15528 Feb 09 05:51	2° Π 54'18	-0°34'46	min. Earth dist.	15534 Mar 05 07:38	27° Π 06'03	19.01316 AU
min. Earth dist.	15528 Feb 08 20:47	2° Π 55'13	18.79078 AU	direct	15534 May 21 12:06	25° Π 07'30	
direct	15528 Apr 26 07:44	0° Π 55'17		evening set	15534 Aug 20 22:18	28° Π 09'41	
evening set	15528 Jul 27 09:53	4° Π 00'57					
				conjunction	15534 Sep 05 18:36	29° Π 03'57	-0°00'31
conjunction	15528 Aug 12 06:30	4° Π 55'54	-0°29'09	minimum elong	15534 Sep 05 18:37	29° Π 03'57	0°00'37
minimum elong	15528 Aug 12 06:31	4° Π 55'54	0°29'36	behind sun begin	15534 Sep 05 12:03	29° Π 03'02	
max. Earth dist.	15528 Aug 12 15:49	4° Π 57'14	20.81471 AU	behind sun end	15534 Sep 06 01:10	29° Π 04'52	
morning rise	15528 Aug 28 02:46	5° Π 50'48		max. Earth dist.	15534 Sep 06 03:04	29° Π 05'08	21.02370 AU
retrograde	15528 Nov 27 23:21	8° Π 56'15		morning rise	15534 Sep 21 15:22	29° Π 58'18	
opposition	15529 Feb 12 16:32	6° Π 58'09	-0°29'45		15534 Sep 22 03:31	0° Ω	
min. Earth dist.	15529 Feb 12 08:15	6° Π 58'59	18.83793 AU	asc. node	15534 Oct 15 06:11	1° Ω 13'08	
direct	15529 Apr 30 16:58	4° Π 59'25		retrograde	15534 Dec 22 21:56	3° Ω 02'21	
evening set	15529 Jul 31 16:49	8° Π 04'22		opposition	15535 Mar 10 00:57	1° Ω 04'38	0°02'09
				min. Earth dist.	15535 Mar 09 17:31	1° Ω 05'23	19.03303 AU
conjunction	15529 Aug 16 13:15	8° Π 59'09	-0°24'33		15535 Apr 07 13:18	30° κ Π	
minimum elong	15529 Aug 16 13:15	8° Π 59'09	0°24'58	direct	15535 May 25 18:49	29° Π 07'03	
max. Earth dist.	15529 Aug 16 22:05	9° Π 00'26	20.86034 AU		15535 Jul 11 09:35	0° Ω	
morning rise	15529 Sep 01 09:38	9° Π 53'56		evening set	15535 Aug 25 03:25	2° Ω 08'48	
retrograde	15529 Dec 02 08:49	12° Π 59'02					
opposition	15530 Feb 17 02:29	11° Π 01'03	-0°24'36	conjunction	15535 Sep 09 23:43	3° Ω 03'00	0°04'27
min. Earth dist.	15530 Feb 16 17:13	11° Π 01'59	18.88178 AU	minimum elong	15535 Sep 09 23:43	3° Ω 03'00	0°04'24
direct	15530 May 05 02:39	9° Π 02'34		behind sun begin	15535 Sep 09 17:15	3° Ω 02'06	
evening set	15530 Aug 04 23:19	12° Π 06'53		behind sun end	15535 Sep 10 06:11	3° Ω 03'54	
				max. Earth dist.	15535 Sep 10 07:10	3° Ω 04'03	21.04112 AU
conjunction	15530 Aug 20 19:43	13° Π 01'32	-0°19'52	morning rise	15535 Sep 25 20:47	3° Ω 57'19	
minimum elong	15530 Aug 20 19:43	13° Π 01'32	0°20'13	retrograde	15535 Dec 27 06:15	7° Ω 01'16	
max. Earth dist.	15530 Aug 21 05:14	13° Π 02'54	20.90224 AU	opposition	15536 Mar 13 09:19	5° Ω 03'29	0°07'32
morning rise	15530 Sep 05 16:02	13° Π 56'12		min. Earth dist.	15536 Mar 13 01:19	5° Ω 04'17	19.04800 AU

direct	15536 May 29 02:54	3° <u>♂</u> 05'58		evening set	15542 Sep 21 12:18	29° <u>♂</u> 54'54	
evening set	15536 Aug 28 08:08	6° <u>♂</u> 07'21			15542 Sep 23 00:42	0° <u>♂</u>	
conjunction	15536 Sep 13 04:39	7° <u>♂</u> 01'30	0°09'17	conjunction	15542 Oct 07 09:49	0° <u>♂</u> 49'08	0°36'34
minimum elong	15536 Sep 13 04:38	7° <u>♂</u> 01'30	0°09'18	minimum elong	15542 Oct 07 09:49	0° <u>♂</u> 49'08	0°36'56
behind sun begin	15536 Sep 12 23:05	7° <u>♂</u> 00'44		max. Earth dist.	15542 Oct 07 17:12	0° <u>♂</u> 50'12	21.04797 AU
behind sun end	15536 Sep 13 10:11	7° <u>♂</u> 02'17		morning rise	15542 Oct 23 08:44	1° <u>♂</u> 43'37	
max. Earth dist.	15536 Sep 13 12:43	7° <u>♂</u> 02'39	21.05369 AU	retrograde	15543 Jan 24 09:00	4° <u>♂</u> 48'29	
morning rise	15536 Sep 29 01:50	7° <u>♂</u> 55'48		opposition	15543 Apr 11 16:06	2° <u>♂</u> 50'14	0°42'43
retrograde	15536 Dec 30 12:10	10° <u>♂</u> 59'42		min. Earth dist.	15543 Apr 11 09:46	2° <u>♂</u> 50'52	19.04137 AU
opposition	15537 Mar 17 17:30	9° <u>♂</u> 01'51	0°12'53	direct	15543 Jun 26 22:36	0° <u>♂</u> 53'02	
min. Earth dist.	15537 Mar 17 10:26	9° <u>♂</u> 02'33	19.05839 AU	evening set	15543 Sep 25 17:36	3° <u>♂</u> 53'43	
direct	15537 Jun 02 08:40	7° <u>♂</u> 04'23					
evening set	15537 Sep 01 12:54	10° <u>♂</u> 05'27		conjunction	15543 Oct 11 15:18	4° <u>♂</u> 48'02	0°40'38
				minimum elong	15543 Oct 11 15:18	4° <u>♂</u> 48'02	0°41'04
conjunction	15537 Sep 17 09:23	10° <u>♂</u> 59'34	0°14'04	max. Earth dist.	15543 Oct 11 21:28	4° <u>♂</u> 48'54	21.03346 AU
minimum elong	15537 Sep 17 09:23	10° <u>♂</u> 59'34	0°14'09	morning rise	15543 Oct 27 14:43	5° <u>♂</u> 42'35	
behind sun begin	15537 Sep 17 06:07	10° <u>♂</u> 59'07		retrograde	15544 Jan 28 18:27	8° <u>♂</u> 47'49	
behind sun end	15537 Sep 17 12:39	11° <u>♂</u> 00'01		opposition	15544 Apr 14 24:00	6° <u>♂</u> 49'29	0°47'08
max. Earth dist.	15537 Sep 17 16:37	11° <u>♂</u> 00'35	21.06206 AU	min. Earth dist.	15544 Apr 14 17:37	6° <u>♂</u> 50'07	19.02469 AU
morning rise	15537 Oct 03 06:55	11° <u>♂</u> 53'51		direct	15544 Jun 30 04:31	4° <u>♂</u> 52'17	
retrograde	15538 Jan 03 19:55	14° <u>♂</u> 57'46		evening set	15544 Sep 28 23:09	7° <u>♂</u> 53'08	
opposition	15538 Mar 22 01:17	12° <u>♂</u> 59'50	0°18'10				
min. Earth dist.	15538 Mar 21 17:37	13° <u>♂</u> 00'36	19.06484 AU	conjunction	15544 Oct 14 21:16	8° <u>♂</u> 47'32	0°44'31
direct	15538 Jun 06 16:11	11° <u>♂</u> 02'24		minimum elong	15544 Oct 14 21:16	8° <u>♂</u> 47'32	0°45'00
evening set	15538 Sep 05 17:29	14° <u>♂</u> 03'15		max. Earth dist.	15544 Oct 15 03:42	8° <u>♂</u> 48'28	21.01433 AU
				morning rise	15544 Oct 30 20:56	9° <u>♂</u> 42'12	
conjunction	15538 Sep 21 14:11	14° <u>♂</u> 57'22	0°18'47	retrograde	15545 Feb 01 01:58	12° <u>♂</u> 47'49	
minimum elong	15538 Sep 21 14:11	14° <u>♂</u> 57'22	0°18'56	opposition	15545 Apr 19 08:09	10° <u>♂</u> 49'24	0°51'20
max. Earth dist.	15538 Sep 21 22:10	14° <u>♂</u> 58'30	21.06654 AU	min. Earth dist.	15545 Apr 19 02:50	10° <u>♂</u> 49'56	19.00312 AU
morning rise	15538 Oct 07 11:50	15° <u>♂</u> 51'38		direct	15545 Jul 04 11:06	8° <u>♂</u> 52'11	
retrograde	15539 Jan 08 02:29	18° <u>♂</u> 55'38		evening set	15545 Oct 03 05:14	11° <u>♂</u> 53'16	
opposition	15539 Mar 26 09:11	16° <u>♂</u> 57'38	0°23'20				
min. Earth dist.	15539 Mar 26 02:13	16° <u>♂</u> 58'20	19.06753 AU	conjunction	15545 Oct 19 03:32	12° <u>♂</u> 47'46	0°48'12
direct	15539 Jun 10 21:49	15° <u>♂</u> 00'16		minimum elong	15545 Oct 19 03:31	12° <u>♂</u> 47'46	0°48'44
evening set	15539 Sep 09 21:59	18° <u>♂</u> 00'55		max. Earth dist.	15545 Oct 19 08:23	12° <u>♂</u> 48'28	20.99026 AU
				morning rise	15545 Nov 04 03:42	13° <u>♂</u> 42'33	
conjunction	15539 Sep 25 18:46	18° <u>♂</u> 55'02	0°23'25		15545 Nov 28 15:55	15° <u>♂</u>	
minimum elong	15539 Sep 25 18:45	18° <u>♂</u> 55'02	0°23'38	retrograde	15546 Feb 05 12:08	16° <u>♂</u> 48'36	
max. Earth dist.	15539 Sep 26 01:57	18° <u>♂</u> 56'03	21.06751 AU		15546 Apr 19 13:33	15° <u>♂</u> 48'36	
morning rise	15539 Oct 11 16:49	19° <u>♂</u> 49'21		opposition	15546 Apr 23 16:25	14° <u>♂</u> 50'03	0°55'17
retrograde	15540 Jan 12 10:27	22° <u>♂</u> 53'29		min. Earth dist.	15546 Apr 23 11:25	14° <u>♂</u> 50'34	18.97648 AU
opposition	15540 Mar 29 16:54	20° <u>♂</u> 55'24	0°28'25	direct	15546 Jul 08 17:51	12° <u>♂</u> 52'46	
min. Earth dist.	15540 Mar 29 09:20	20° <u>♂</u> 56'10	19.06673 AU		15546 Sep 20 18:14	15° <u>♂</u>	
direct	15540 Jun 14 04:16	18° <u>♂</u> 58'05		evening set	15546 Oct 07 11:40	15° <u>♂</u> 54'08	
evening set	15540 Sep 13 02:36	21° <u>♂</u> 58'39					
				conjunction	15546 Oct 23 10:26	16° <u>♂</u> 48'46	0°51'39
conjunction	15540 Sep 28 23:41	22° <u>♂</u> 52'47	0°27'56	minimum elong	15546 Oct 23 10:25	16° <u>♂</u> 48'46	0°52'15
minimum elong	15540 Sep 28 23:40	22° <u>♂</u> 52'47	0°28'11	max. Earth dist.	15546 Oct 23 15:20	16° <u>♂</u> 49'28	20.96085 AU
max. Earth dist.	15540 Sep 29 07:33	22° <u>♂</u> 53'55	21.06478 AU	morning rise	15546 Nov 08 10:53	17° <u>♂</u> 43'40	
morning rise	15540 Oct 14 21:56	23° <u>♂</u> 47'08		retrograde	15547 Feb 09 19:59	20° <u>♂</u> 50'11	
retrograde	15541 Jan 15 17:19	26° <u>♂</u> 51'27		opposition	15547 Apr 28 01:04	18° <u>♂</u> 51'29	0°59'00
opposition	15541 Apr 03 00:30	24° <u>♂</u> 53'19	0°33'21	min. Earth dist.	15547 Apr 27 21:09	18° <u>♂</u> 51'52	18.94438 AU
min. Earth dist.	15541 Apr 02 17:43	24° <u>♂</u> 54'00	19.06216 AU	direct	15547 Jul 13 00:36	16° <u>♂</u> 54'05	
direct	15541 Jun 18 10:19	22° <u>♂</u> 56'03		evening set	15547 Oct 11 18:26	19° <u>♂</u> 55'45	
evening set	15541 Sep 17 07:26	25° <u>♂</u> 56'36					
				conjunction	15547 Oct 27 17:30	20° <u>♂</u> 50'31	0°54'53
conjunction	15541 Oct 03 04:39	26° <u>♂</u> 50'47	0°32'19	minimum elong	15547 Oct 27 17:30	20° <u>♂</u> 50'30	0°55'30
minimum elong	15541 Oct 03 04:38	26° <u>♂</u> 50'46	0°32'39	max. Earth dist.	15547 Oct 27 20:42	20° <u>♂</u> 50'58	20.92619 AU
max. Earth dist.	15541 Oct 03 11:27	26° <u>♂</u> 51'45	21.05840 AU	morning rise	15547 Nov 12 18:35	21° <u>♂</u> 45'34	
morning rise	15541 Oct 19 03:21	27° <u>♂</u> 45'11		retrograde	15548 Feb 14 06:42	24° <u>♂</u> 52'34	
	15541 Dec 05 12:55	0° <u>♂</u>		opposition	15548 May 01 09:52	22° <u>♂</u> 53'39	1°02'26
retrograde	15542 Jan 20 01:54	0° <u>♂</u> 49'45		min. Earth dist.	15548 May 01 06:25	22° <u>♂</u> 54'00	18.90715 AU
	15542 Mar 07 22:59	30° <u>♂</u> 49'45		direct	15548 Jul 16 08:06	20° <u>♂</u> 56'05	
opposition	15542 Apr 07 08:12	28° <u>♂</u> 51'33	0°38'07	evening set	15548 Oct 15 01:38	23° <u>♂</u> 58'07	
min. Earth dist.	15542 Apr 07 01:03	28° <u>♂</u> 52'16	19.05385 AU				
direct	15542 Jun 22 16:00	26° <u>♂</u> 54'19		conjunction	15548 Oct 31 01:15	24° <u>♂</u> 53'02	0°57'50

minimum elong	15548 Oct 31 01:15	24°  53'02	0°58'31	opposition	15555 May 31 07:23	21°  37'19	1°17'14
max. Earth dist.	15548 Oct 31 04:35	24°  53'31	20.88642 AU	min. Earth dist.	15555 May 31 07:17	21°  37'19	18.54938 AU
morning rise	15548 Nov 16 02:40	25°  48'15		direct	15555 Aug 14 18:10	19°  38'13	
retrograde	15549 Feb 17 15:12	28°  55'44		evening set	15555 Nov 13 18:37	22°  44'34	
opposition	15549 May 05 18:44	26°  56'36	1°05'35				
min. Earth dist.	15549 May 05 16:16	26°  56'51	18.86507 AU	conjunction	15555 Nov 29 21:45	23°  40'58	1°09'56
direct	15549 Jul 20 15:19	24°  58'50		minimum elong	15555 Nov 29 21:45	23°  40'58	1°10'49
evening set	15549 Oct 19 09:19	28°  50'18		max. Earth dist.	15555 Nov 29 20:33	23°  40'47	20.51963 AU
				morning rise	15555 Dec 16 03:08	24°  37'42	
conjunction	15549 Nov 04 09:15	28°  56'22	1°00'32	retrograde	15556 Mar 19 02:39	27°  49'56	
minimum elong	15549 Nov 04 09:15	28°  56'22	1°01'14	opposition	15556 Jun 03 19:08	25°  49'17	1°17'50
max. Earth dist.	15549 Nov 04 11:00	28°  56'38	20.84234 AU	min. Earth dist.	15556 Jun 03 19:46	25°  49'13	18.49006 AU
morning rise	15549 Nov 20 11:19	29°  51'46		direct	15556 Aug 18 03:42	23°  49'59	
	15549 Nov 22 21:58	0°  57		evening set	15556 Nov 17 06:44	26°  57'11	
retrograde	15550 Feb 22 02:11	2°  59'48					
opposition	15550 May 10 03:59	1°  00'25	1°08'25	conjunction	15556 Dec 03 10:38	27°  53'52	1°10'16
min. Earth dist.	15550 May 10 01:55	1°  00'38	18.81912 AU	minimum elong	15556 Dec 03 10:38	27°  53'52	1°11'09
	15550 Jun 05 03:41	30°  58		max. Earth dist.	15556 Dec 03 09:58	27°  53'46	20.45949 AU
direct	15550 Jul 24 23:11	29°  50'26		morning rise	15556 Dec 19 16:24	28°  50'51	
	15550 Sep 11 00:52	0°  57			15557 Jan 09 18:11	0°  58	
evening set	15550 Oct 23 17:12	2°  05'22		retrograde	15557 Mar 23 17:23	2°  03'53	
				opposition	15557 Jun 08 07:17	0°  03'06	1°18'01
conjunction	15550 Nov 08 17:44	3°  00'38	1°02'55	min. Earth dist.	15557 Jun 08 08:10	0°  03'01	18.42908 AU
minimum elong	15550 Nov 08 17:44	3°  00'38	1°03'40		15557 Jun 09 13:11	30°  58	
max. Earth dist.	15550 Nov 08 19:58	3°  00'58	20.79455 AU	direct	15557 Aug 22 14:11	28°  03'36	
morning rise	15550 Nov 24 20:08	3°  56'13			15557 Oct 30 22:32	0°  58	
retrograde	15551 Feb 26 12:13	7°  04'51		evening set	15557 Nov 21 19:51	1°  58	
opposition	15551 May 14 13:34	5°  05'13	1°10'54				
min. Earth dist.	15551 May 14 12:02	5°  05'23	18.76977 AU	conjunction	15557 Dec 08 00:12	2°  08'38	1°10'13
direct	15551 Jul 29 07:08	3°  07'01		minimum elong	15557 Dec 08 00:12	2°  08'38	1°11'07
evening set	15551 Oct 28 01:53	6°  10'30		max. Earth dist.	15557 Dec 07 21:45	2°  08'17	20.39777 AU
				morning rise	15557 Dec 24 06:43	3°  05'54	
conjunction	15551 Nov 13 02:46	7°  05'58	1°05'00	retrograde	15558 Mar 28 09:06	6°  19'47	
minimum elong	15551 Nov 13 02:46	7°  05'58	1°05'46	opposition	15558 Jun 12 20:16	4°  18'49	1°17'46
max. Earth dist.	15551 Nov 13 03:32	7°  06'04	20.74385 AU	min. Earth dist.	15558 Jun 12 22:14	4°  18'37	18.36654 AU
morning rise	15551 Nov 29 05:52	8°  01'45		direct	15558 Aug 27 00:47	2°  19'05	
retrograde	15552 Mar 01 23:37	11°  01'10		evening set	15558 Nov 26 09:38	5°  28'07	
opposition	15552 May 17 23:19	9°  11'10	1°13'03				
min. Earth dist.	15552 May 17 22:13	9°  11'16	18.71783 AU	conjunction	15558 Dec 12 14:46	6°  25'21	1°09'47
direct	15552 Aug 01 15:14	7°  12'42		minimum elong	15558 Dec 12 14:46	6°  25'21	1°10'41
evening set	15552 Oct 31 11:00	10°  16'50		max. Earth dist.	15558 Dec 12 12:43	6°  25'02	20.33426 AU
				morning rise	15558 Dec 28 21:43	7°  22'53	
conjunction	15552 Nov 16 12:34	11°  12'31	1°06'45	retrograde	15559 Apr 02 02:03	10°  37'36	
minimum elong	15552 Nov 16 12:34	11°  12'31	1°07'34	opposition	15559 Jun 17 09:50	8°  36'28	1°17'06
max. Earth dist.	15552 Nov 16 13:50	11°  12'41	20.69060 AU	min. Earth dist.	15559 Jun 17 12:01	8°  36'14	18.30201 AU
morning rise	15552 Dec 02 16:03	12°  08'30		direct	15559 Aug 31 13:07	6°  36'27	
retrograde	15553 Mar 06 11:15	15°  18'28		evening set	15559 Dec 01 00:38	9°  46'26	
opposition	15553 May 22 09:32	13°  18'23	1°14'50				
min. Earth dist.	15553 May 22 08:47	13°  18'28	18.66346 AU	conjunction	15559 Dec 17 06:16	10°  43'57	1°08'58
direct	15553 Aug 05 23:58	11°  19'43		minimum elong	15559 Dec 17 06:16	10°  43'57	1°09'51
evening set	15553 Nov 04 20:51	14°  24'31		max. Earth dist.	15559 Dec 17 02:08	10°  43'20	20.26878 AU
				morning rise	15560 Jan 02 13:59	11°  41'47	
conjunction	15553 Nov 20 22:47	15°  20'25	1°08'10	retrograde	15560 Apr 05 18:50	14°  57'18	
minimum elong	15553 Nov 20 22:47	15°  20'25	1°09'01	opposition	15560 Jun 20 23:57	12°  55'56	1°16'00
max. Earth dist.	15553 Nov 20 22:33	15°  20'23	20.63529 AU	min. Earth dist.	15560 Jun 21 03:35	12°  55'34	18.23561 AU
morning rise	15553 Dec 07 02:58	16°  21'39		direct	15560 Sep 04 00:41	10°  55'37	
retrograde	15554 Mar 10 23:33	19°  27'21		evening set	15560 Dec 04 16:19	14°  06'34	
opposition	15554 May 26 20:13	17°  27'03	1°16'14				
min. Earth dist.	15554 May 26 19:56	17°  27'05	18.60728 AU	conjunction	15560 Dec 20 22:48	15°  04'23	1°07'45
direct	15554 Aug 10 08:39	15°  28'10		minimum elong	15560 Dec 20 22:48	15°  04'23	1°08'38
evening set	15554 Nov 09 07:18	18°  33'43		max. Earth dist.	15560 Dec 20 18:50	15°  03'47	20.20148 AU
				morning rise	15561 Jan 06 06:56	16°  02'30	
conjunction	15554 Nov 25 09:58	19°  29'52	1°09'14	retrograde	15561 Apr 10 13:41	19°  18'48	
minimum elong	15554 Nov 25 09:58	19°  29'52	1°10'05	opposition	15561 Jun 25 14:41	17°  17'12	1°14'27
max. Earth dist.	15554 Nov 25 10:21	19°  29'55	20.57820 AU	min. Earth dist.	15561 Jun 25 18:22	17°  16'48	18.16747 AU
morning rise	15554 Dec 11 14:33	20°  26'20		direct	15561 Sep 08 15:19	15°  16'33	
retrograde	15555 Mar 15 12:37	23°  37'47		evening set	15561 Dec 09 08:52	18°  28'26	

conjunction	15561 Dec 25 15:49	19°  26'33	1°06'08	minimum elong	15568 Jan 22 16:12	16°  14'49	0°49'01
minimum elong	15561 Dec 25 15:49	19°  26'33	1°07'00	max. Earth dist.	15568 Jan 22 08:16	16°  13'36	19.73698 AU
max. Earth dist.	15561 Dec 25 09:59	19°  25'40	20.13283 AU	morning rise	15568 Feb 08 04:01	17°  14'53	
morning rise	15562 Jan 11 00:40	20°  24'57		retrograde	15568 May 12 06:28	20°  36'15	
retrograde	15562 Apr 15 06:45	23°  42'02		opposition	15568 Jul 26 14:11	18°  32'58	0°51'33
opposition	15562 Jun 30 06:07	21°  40'09	1°12'28	min. Earth dist.	15568 Jul 26 21:11	18°  32'13	17.70811 AU
min. Earth dist.	15562 Jun 30 11:12	21°  39'37	18.09848 AU	direct	15568 Oct 09 10:07	16°  29'52	
direct	15562 Sep 13 04:14	19°  39'08		evening set	15569 Jan 10 03:47	19°  48'43	
evening set	15562 Dec 14 02:08	22°  51'59					
conjunction	15562 Dec 30 09:56	23°  50'24	1°04'08	conjunction	15569 Jan 26 15:07	20°  48'53	0°44'08
minimum elong	15562 Dec 30 09:56	23°  50'25	1°04'59	minimum elong	15569 Jan 26 15:07	20°  48'53	0°44'45
max. Earth dist.	15562 Dec 30 04:32	23°  49'36	20.06372 AU	max. Earth dist.	15569 Jan 26 07:22	20°  47'42	19.68000 AU
morning rise	15563 Jan 15 19:14	24°  49'06		morning rise	15569 Feb 12 03:18	21°  49'12	
retrograde	15563 Apr 20 02:52	28°  06'55		retrograde	15569 May 17 06:03	25°  11'13	
opposition	15563 Jul 04 21:52	26°  04'46	1°10'02	opposition	15569 Jul 31 09:42	23°  07'50	0°46'42
min. Earth dist.	15563 Jul 05 02:42	26°  04'16	18.02934 AU	min. Earth dist.	15569 Jul 31 15:45	23°  07'11	17.65291 AU
direct	15563 Sep 17 20:42	24°  03'23		direct	15569 Oct 14 06:38	21°  04'30	
evening set	15563 Dec 18 20:26	27°  17'13		evening set	15570 Jan 15 02:53	24°  24'21	
conjunction	15564 Jan 04 04:45	28°  15'56	1°01'43	conjunction	15570 Jan 31 14:40	25°  24'46	0°39'36
minimum elong	15564 Jan 04 04:45	28°  15'56	1°02'33	minimum elong	15570 Jan 31 14:40	25°  24'46	0°40'11
max. Earth dist.	15564 Jan 03 21:46	28°  14'53	19.99486 AU	max. Earth dist.	15570 Jan 31 06:46	25°  23'33	19.62665 AU
morning rise	15564 Jan 20 14:44	29°  14'55		morning rise	15570 Feb 17 03:09	26°  25'19	
	15564 Feb 02 17:30	0° 		retrograde	15570 May 22 03:51	29°  47'59	
retrograde	15564 Apr 23 20:32	2°  33'29		opposition	15570 Aug 05 06:01	27°  44'31	0°41'31
opposition	15564 Jul 08 14:24	0°  31'03	1°07'10	min. Earth dist.	15570 Aug 05 13:09	27°  43'45	17.60143 AU
min. Earth dist.	15564 Jul 08 20:35	0°  30'24	17.96093 AU	direct	15570 Oct 19 01:47	25°  40'59	
	15564 Jul 20 21:29	30° 		evening set	15571 Jan 20 02:59	29°  01'49	
direct	15564 Sep 21 11:19	28°  29'16			15571 Feb 04 23:05	0° 	
	15564 Nov 20 10:58	0° 		conjunction	15571 Feb 05 15:11	0°  02'29	0°34'49
evening set	15564 Dec 22 15:22	1°  44'06		minimum elong	15571 Feb 05 15:12	0°  02'29	0°35'20
conjunction	15565 Jan 08 00:26	2°  43'07	0°58'56	max. Earth dist.	15571 Feb 05 06:59	0°  01'13	19.57709 AU
minimum elong	15565 Jan 08 00:27	2°  43'07	0°59'43	morning rise	15571 Feb 22 04:01	1°  03'16	
max. Earth dist.	15565 Jan 07 17:57	2°  42'08	19.92707 AU	retrograde	15571 May 27 04:36	4°  26'31	
morning rise	15565 Jan 24 10:49	3°  42'22		opposition	15571 Aug 10 02:41	2°  23'01	0°36'02
retrograde	15565 Apr 28 17:23	7°  01'39		min. Earth dist.	15571 Aug 10 09:11	2°  22'18	17.55358 AU
opposition	15565 Jul 13 07:19	4°  58'59	1°03'52	direct	15571 Oct 23 23:39	0°  19'16	
min. Earth dist.	15565 Jul 13 12:53	4°  58'23	17.89389 AU	evening set	15572 Jan 25 03:58	3°  41'04	
direct	15565 Sep 26 05:23	2°  56'50		conjunction	15572 Feb 10 16:34	4°  41'58	0°29'46
evening set	15565 Dec 27 11:18	6°  12'39		minimum elong	15572 Feb 10 16:35	4°  41'58	0°30'13
conjunction	15566 Jan 12 20:50	7°  11'58	0°55'46	max. Earth dist.	15572 Feb 10 08:21	4°  40'42	19.53085 AU
minimum elong	15566 Jan 12 20:51	7°  11'58	0°56'32	morning rise	15572 Feb 27 05:29	5°  42'57	
max. Earth dist.	15566 Jan 12 13:13	7°  10'49	19.86102 AU	retrograde	15572 May 31 03:51	9°  06'44	
morning rise	15566 Jan 29 07:48	8°  11'30		opposition	15572 Aug 14 00:14	7°  03'12	0°30'17
retrograde	15566 May 03 12:09	11°  31'30		min. Earth dist.	15572 Aug 14 07:51	7°  02'22	17.50899 AU
opposition	15566 Jul 18 01:05	9°  28'35	1°00'09	direct	15572 Oct 27 20:17	4°  59'15	
min. Earth dist.	15566 Jul 18 07:49	9°  27'52	17.82906 AU	evening set	15573 Jan 29 05:37	8°  21'57	
direct	15566 Sep 30 21:20	7°  26'05		conjunction	15573 Feb 14 18:25	9°  23'03	0°24'30
evening set	15567 Jan 01 07:49	10°  42'55		minimum elong	15573 Feb 14 18:25	9°  23'03	0°24'54
conjunction	15567 Jan 17 18:05	11°  42'31	0°52'13	max. Earth dist.	15573 Feb 14 09:18	9°  21'39	19.48793 AU
minimum elong	15567 Jan 17 18:05	11°  42'31	0°52'56	morning rise	15573 Mar 03 07:33	10°  24'13	
max. Earth dist.	15567 Jan 17 10:54	11°  41'26	19.79755 AU	retrograde	15573 Jun 05 05:48	13°  48'29	
morning rise	15567 Feb 03 05:28	12°  42'20		opposition	15573 Aug 18 22:14	11°  44'53	0°24'18
	15567 Mar 19 16:52	15° 		min. Earth dist.	15573 Aug 19 05:22	11°  44'07	17.46769 AU
retrograde	15567 May 08 10:22	16°  03'01		direct	15573 Nov 01 19:39	9°  40'44	
	15567 Jun 28 10:05	15° 		evening set	15574 Feb 03 07:53	13°  04'16	
opposition	15567 Jul 22 19:17	13°  59'54	0°56'03	conjunction	15574 Feb 19 21:02	14°  05'34	0°19'02
min. Earth dist.	15567 Jul 23 01:10	13°  59'16	17.76696 AU	minimum elong	15574 Feb 19 21:03	14°  05'34	0°19'22
direct	15567 Oct 05 16:46	11°  57'06		max. Earth dist.	15574 Feb 19 12:19	14°  04'13	19.44822 AU
	15568 Jan 02 00:33	15° 		morning rise	15574 Mar 08 10:05	15°  06'54	
evening set	15568 Jan 06 05:27	15°  14'55		retrograde	15574 Jun 10 06:06	18°  31'32	
conjunction	15568 Jan 22 16:11	16°  14'49	0°48'20	opposition	15574 Aug 23 20:48	16°  27'53	0°18'08
				min. Earth dist.	15574 Aug 24 04:45	16°  27'01	17.42972 AU

direct	15574 Nov 06 17:20	14° H 23'32		conjunction	15580 Mar 20 18:54	12° Y 38'33	-0°15'30
evening set	15575 Feb 08 10:46	17° H 47'48		minimum elong	15580 Mar 20 18:54	12° Y 38'33	0°15'37
				behind sun begin	15580 Mar 20 17:39	12° Y 38'21	
conjunction	15575 Feb 24 24:00	18° H 49'16	0°13'26	behind sun end	15580 Mar 20 20:10	12° Y 38'44	
minimum elong	15575 Feb 24 24:00	18° H 49'16	0°13'42	max. Earth dist.	15580 Mar 20 10:52	12° Y 37'18	19.30138 AU
behind sun begin	15575 Feb 24 20:29	18° H 48'43		morning rise	15580 Apr 06 06:51	13° Y 40'16	
behind sun end	15575 Feb 25 03:31	18° H 49'48		retrograde	15580 Jul 08 12:30	17° Y 05'37	
max. Earth dist.	15575 Feb 24 14:05	18° H 47'44	19.41216 AU	opposition	15580 Sep 20 18:42	15° Y 01'43	-0°20'26
morning rise	15575 Mar 13 13:14	19° H 50'44		min. Earth dist.	15580 Sep 21 01:17	15° Y 00'59	17.29820 AU
retrograde	15575 Jun 15 08:33	23° H 15'41		direct	15580 Dec 05 00:25	12° Y 56'19	
opposition	15575 Aug 28 19:43	21° H 11'58	0°11'48	evening set	15581 Mar 09 10:01	16° Y 23'26	
min. Earth dist.	15575 Aug 29 03:24	21° H 11'07	17.39557 AU				
direct	15575 Nov 11 17:46	19° H 07'23		conjunction	15581 Mar 25 22:40	17° Y 25'16	-0°21'08
evening set	15576 Feb 13 14:02	22° H 32'21		minimum elong	15581 Mar 25 22:40	17° Y 25'16	0°21'18
				max. Earth dist.	15581 Mar 25 14:23	17° Y 23'59	19.29657 AU
conjunction	15576 Mar 01 03:31	23° H 33'57	0°07'44	morning rise	15581 Apr 11 10:16	18° Y 26'58	
minimum elong	15576 Mar 01 03:30	23° H 33'57	0°07'56	retrograde	15581 Jul 13 12:36	21° Y 52'12	
behind sun begin	15576 Feb 29 21:29	23° H 33'02		opposition	15581 Sep 25 19:11	19° Y 48'21	-0°26'39
behind sun end	15576 Mar 01 09:32	23° H 34'52		min. Earth dist.	15581 Sep 26 01:46	19° Y 47'38	17.29683 AU
max. Earth dist.	15576 Feb 29 18:29	23° H 32'33	19.37996 AU	direct	15581 Dec 10 02:31	17° Y 42'54	
morning rise	15576 Mar 17 16:28	24° H 35'32		evening set	15582 Mar 14 14:11	21° Y 10'12	
retrograde	15576 Jun 19 09:06	28° H 00'42					
opposition	15576 Sep 01 19:00	25° H 56'56	0°05'22	conjunction	15582 Mar 31 02:37	22° Y 12'00	-0°26'37
min. Earth dist.	15576 Sep 02 03:00	25° H 56'03	17.36551 AU	minimum elong	15582 Mar 31 02:37	22° Y 12'00	0°26'52
direct	15576 Nov 15 16:47	23° H 52'09		max. Earth dist.	15582 Mar 30 19:45	22° Y 10'56	19.29855 AU
evening set	15577 Feb 17 17:45	27° H 17'42		morning rise	15582 Apr 16 13:39	23° Y 13'38	
				retrograde	15582 Jul 18 14:23	26° Y 38'41	
conjunction	15577 Mar 06 07:04	28° H 19'25	0°01'57	opposition	15582 Sep 30 19:30	24° Y 34'56	-0°32'41
minimum elong	15577 Mar 06 07:04	28° H 19'25	0°02'04	min. Earth dist.	15582 Oct 01 00:46	24° Y 34'21	17.30210 AU
behind sun begin	15577 Mar 06 00:19	28° H 18'23		direct	15582 Dec 15 05:33	22° Y 29'30	
behind sun end	15577 Mar 06 13:49	28° H 20'26		evening set	15583 Mar 19 18:28	25° Y 56'55	
max. Earth dist.	15577 Mar 05 20:58	28° H 17'51	19.35231 AU				
morning rise	15577 Mar 22 20:02	29° H 21'05		conjunction	15583 Apr 05 06:24	26° Y 58'39	-0°31'55
	15577 Apr 02 16:20	0° Y		minimum elong	15583 Apr 05 06:24	26° Y 58'39	0°32'14
retrograde	15577 Jun 24 10:53	2° Y 46'25		max. Earth dist.	15583 Apr 04 23:40	26° Y 57'36	19.30709 AU
desc. node	15577 Jul 07 15:08	2° Y 41'37		morning rise	15583 Apr 21 16:56	28° Y 00'13	
opposition	15577 Sep 06 18:36	0° Y 42'34	-0°01'07		15583 May 27 19:55	0° H	
min. Earth dist.	15577 Sep 07 02:26	0° Y 41'42	17.34038 AU	retrograde	15583 Jul 23 14:21	1° H 25'00	
	15577 Sep 23 07:45	30° R H			15583 Sep 20 20:28	30° R Y	
direct	15577 Nov 20 18:21	28° H 37'35		opposition	15583 Oct 05 20:07	29° Y 21'25	-0°38'29
	15578 Jan 16 05:08	0° Y		min. Earth dist.	15583 Oct 06 01:41	29° Y 20'49	17.31389 AU
evening set	15578 Feb 22 21:25	2° Y 03'39		direct	15583 Dec 20 06:46	27° Y 16'02	
					15584 Mar 11 19:30	0° H	
conjunction	15578 Mar 11 10:53	3° Y 05'27	-0°04'00	evening set	15584 Mar 23 22:27	0° H 43'29	
minimum elong	15578 Mar 11 10:53	3° Y 05'27	0°03'57				
behind sun begin	15578 Mar 11 04:13	3° Y 04'26		conjunction	15584 Apr 09 09:57	1° H 45'08	-0°37'00
behind sun end	15578 Mar 11 17:32	3° Y 06'28		minimum elong	15584 Apr 09 09:56	1° H 45'08	0°37'23
max. Earth dist.	15578 Mar 11 02:10	3° Y 04'06	19.32969 AU	max. Earth dist.	15584 Apr 09 04:10	1° H 44'14	19.32193 AU
morning rise	15578 Mar 27 23:30	4° Y 07'10		morning rise	15584 Apr 25 19:50	2° H 46'35	
retrograde	15578 Jun 29 11:10	7° Y 32'35		retrograde	15584 Jul 27 16:37	6° H 11'04	
opposition	15578 Sep 11 18:29	5° Y 28'41	-0°07'37	opposition	15584 Oct 09 20:35	4° H 07'41	-0°44'00
min. Earth dist.	15578 Sep 12 02:01	5° Y 27'52	17.32038 AU	min. Earth dist.	15584 Oct 10 00:43	4° H 07'14	17.33156 AU
direct	15578 Nov 25 19:27	3° Y 23'33		direct	15584 Dec 24 09:59	2° H 02'24	
evening set	15579 Feb 28 01:39	6° Y 50'03		evening set	15585 Mar 29 02:21	5° H 29'48	
conjunction	15579 Mar 16 14:49	7° Y 51'53	-0°09'47	conjunction	15585 Apr 14 13:16	6° H 31'19	-0°41'49
minimum elong	15579 Mar 16 14:48	7° Y 51'53	0°09'49	minimum elong	15585 Apr 14 13:16	6° H 31'19	0°42'16
behind sun begin	15579 Mar 16 09:20	7° Y 51'03		max. Earth dist.	15585 Apr 14 08:02	6° H 30'30	19.34229 AU
behind sun end	15579 Mar 16 20:17	7° Y 52'43		morning rise	15585 Apr 30 22:28	7° H 32'38	
max. Earth dist.	15579 Mar 16 05:15	7° Y 50'24	19.31254 AU	retrograde	15585 Aug 01 16:05	10° H 56'46	
morning rise	15579 Apr 02 03:17	8° Y 53'38		opposition	15585 Oct 14 21:10	8° H 53'34	-0°49'13
retrograde	15579 Jul 04 11:45	12° Y 19'03		min. Earth dist.	15585 Oct 15 01:53	8° H 53'04	17.35463 AU
opposition	15579 Sep 16 18:27	10° Y 15'07	-0°14'04	direct	15585 Dec 29 11:01	6° H 48'24	
min. Earth dist.	15579 Sep 17 02:00	10° Y 14'18	17.30625 AU	evening set	15586 Apr 03 05:53	10° H 15'38	
direct	15579 Nov 30 21:45	8° Y 09'50					
evening set	15580 Mar 04 05:48	11° Y 36'41		conjunction	15586 Apr 19 16:13	11° H 17'01	-0°46'20
				minimum elong	15586 Apr 19 16:13	11° H 17'01	0°46'50

max. Earth dist.	15586 Apr 19 11:13	11° 8 16'14	19.36779 AU	opposition	15592 Nov 16 17:53	11° II 47'27	-1°14'23
morning rise	15586 May 06 00:50	12° 8 18'10		min. Earth dist.	15592 Nov 16 18:37	11° II 47'22	17.62897 AU
	15586 Jun 28 11:10	15° 8		direct	15593 Feb 01 00:27	9° II 43'16	
retrograde	15586 Aug 06 17:35	15° 8 41'52		evening set	15593 May 06 14:44	13° II 06'49	
	15586 Sep 15 20:47	15° 8					
opposition	15586 Oct 19 21:32	13° 8 38'53	-0°54'05	conjunction	15593 May 22 20:18	14° II 06'37	-1°07'35
min. Earth dist.	15586 Oct 20 00:52	13° 8 38'31	17.38236 AU	minimum elong	15593 May 22 20:18	14° II 06'37	1°08'23
direct	15587 Jan 03 14:14	11° 8 33'50		max. Earth dist.	15593 May 22 20:01	14° II 06'34	19.65496 AU
evening set	15587 Apr 08 09:09	15° 8 00'49		morning rise	15593 Jun 07 23:37	15° II 06'08	
	15587 Apr 08 03:50	15° 8		retrograde	15593 Sep 07 23:51	18° II 25'08	
				opposition	15593 Nov 21 15:36	16° II 23'26	-1°16'07
conjunction	15587 Apr 24 18:54	16° 8 02'02	-0°50'32	min. Earth dist.	15593 Nov 21 15:56	16° II 23'24	17.68246 AU
minimum elong	15587 Apr 24 18:53	16° 8 02'02	0°51'07	direct	15594 Feb 06 00:52	14° II 19'26	
max. Earth dist.	15587 Apr 24 14:45	16° 8 01'23	19.39758 AU	evening set	15594 May 11 12:50	17° II 42'10	
morning rise	15587 May 11 02:40	17° 8 03'00					
retrograde	15587 Aug 11 16:15	20° 8 26'11		conjunction	15594 May 27 17:32	18° II 41'41	-1°08'55
opposition	15587 Oct 24 21:49	18° 8 23'24	-0°58'34	minimum elong	15594 May 27 17:32	18° II 41'41	1°09'46
min. Earth dist.	15587 Oct 25 01:49	18° 8 22'58	17.41429 AU	max. Earth dist.	15594 May 27 17:00	18° II 41'36	19.71031 AU
direct	15588 Jan 08 15:26	16° 8 18'29		morning rise	15594 Jun 12 20:19	19° II 40'55	
evening set	15588 Apr 12 11:57	19° 8 45'07		retrograde	15594 Sep 12 18:29	22° II 59'07	
				opposition	15594 Nov 26 12:46	20° II 57'37	-1°17'20
conjunction	15588 Apr 28 20:56	20° 8 46'08	-0°54'22	min. Earth dist.	15594 Nov 26 12:02	20° II 57'42	17.73970 AU
minimum elong	15588 Apr 28 20:55	20° 8 46'08	0°54'59	direct	15595 Feb 11 00:04	18° II 53'50	
max. Earth dist.	15588 Apr 28 16:32	20° 8 45'27	19.43152 AU	evening set	15595 May 16 09:53	22° II 15'43	
morning rise	15588 May 15 04:05	21° 8 46'54					
retrograde	15588 Aug 15 16:26	25° 8 09'31		conjunction	15595 Jun 01 14:00	23° II 14'57	-1°09'49
opposition	15588 Oct 28 21:50	23° 8 06'55	-1°02'38	minimum elong	15595 Jun 01 14:00	23° II 14'57	1°10'41
min. Earth dist.	15588 Oct 29 00:26	23° 8 06'38	17.45015 AU	max. Earth dist.	15595 Jun 01 15:27	23° II 15'10	19.76928 AU
direct	15589 Jan 12 18:20	21° 8 02'09		morning rise	15595 Jun 17 15:55	24° II 13'54	
evening set	15589 Apr 17 13:53	24° 8 28'19		retrograde	15595 Sep 17 12:42	27° II 31'16	
				opposition	15595 Dec 01 09:26	25° II 30'02	-1°18'04
conjunction	15589 May 03 22:19	25° 8 29'08	-0°57'51	min. Earth dist.	15595 Dec 01 07:51	25° II 30'12	17.80030 AU
minimum elong	15589 May 03 22:18	25° 8 29'08	0°58'31	direct	15596 Feb 15 22:31	23° II 26'32	
max. Earth dist.	15589 May 03 19:17	25° 8 28'40	19.46916 AU	evening set	15596 May 20 06:12	26° II 47'31	
morning rise	15589 May 20 04:35	26° 8 29'40					
retrograde	15589 Aug 20 14:03	29° 8 51'40		conjunction	15596 Jun 05 09:29	27° II 46'27	-1°10'16
opposition	15589 Nov 02 21:37	27° 8 49'16	-1°06'17	minimum elong	15596 Jun 05 09:29	27° II 46'27	1°11'08
min. Earth dist.	15589 Nov 03 00:40	27° 8 48'56	17.48962 AU	max. Earth dist.	15596 Jun 05 10:51	27° II 46'40	19.83155 AU
direct	15590 Jan 17 19:38	25° 8 44'38		morning rise	15596 Jun 21 10:53	28° II 45'07	
evening set	15590 Apr 22 15:26	29° 8 10'16			15596 Jul 13 10:47	0° III	
	15590 May 06 01:29	0° II		retrograde	15596 Sep 21 06:37	2° III 01'42	
				opposition	15596 Dec 05 05:31	0° III 00'43	-1°18'18
conjunction	15590 May 08 23:01	0° II 10'51	-1°00'55	min. Earth dist.	15596 Dec 05 03:11	0° III 00'58	17.86409 AU
minimum elong	15590 May 08 23:01	0° II 10'51	1°01'38		15596 Dec 05 12:23	30° 8 II	
max. Earth dist.	15590 May 08 19:29	0° II 10'18	19.51044 AU	direct	15597 Feb 19 19:35	27° II 57'31	
morning rise	15590 May 25 04:42	1° II 11'09			15597 May 02 02:43	0° III	
retrograde	15590 Aug 25 12:15	4° II 32'28		evening set	15597 May 25 01:21	1° III 17'35	
opposition	15590 Nov 07 20:43	2° II 30'14	-1°09'28				
min. Earth dist.	15590 Nov 07 22:33	2° II 30'02	17.53264 AU	conjunction	15597 Jun 10 04:09	2° III 16'15	-1°10'17
direct	15591 Jan 22 21:47	0° II 25'44		minimum elong	15597 Jun 10 04:09	2° III 16'15	1°11'10
evening set	15591 Apr 27 16:06	3° II 50'46		max. Earth dist.	15597 Jun 10 07:14	2° III 16'43	19.89658 AU
				morning rise	15597 Jun 26 04:51	3° III 14'38	
conjunction	15591 May 13 23:08	4° II 51'07	-1°03'34	retrograde	15597 Sep 26 00:15	6° III 30'23	
minimum elong	15591 May 13 23:07	4° II 51'07	1°04'19	opposition	15597 Dec 10 01:00	4° III 29'43	-1°18'03
max. Earth dist.	15591 May 13 21:13	4° II 50'49	19.55511 AU	min. Earth dist.	15597 Dec 09 21:46	4° III 30'03	17.93000 AU
morning rise	15591 May 30 03:54	5° II 51'09		direct	15598 Feb 24 16:21	2° III 26'50	
retrograde	15591 Aug 30 08:43	9° II 11'44		evening set	15598 May 29 19:58	5° III 45'58	
opposition	15591 Nov 12 19:37	7° II 09'41	-1°12'10				
min. Earth dist.	15591 Nov 12 21:34	7° II 09'28	17.57901 AU	conjunction	15598 Jun 14 21:59	6° III 44'20	-1°09'52
direct	15592 Jan 27 23:18	5° II 05'21		minimum elong	15598 Jun 14 21:59	6° III 44'20	1°10'45
evening set	15592 May 01 15:54	8° II 29'40		max. Earth dist.	15598 Jun 15 00:56	6° III 44'47	19.96332 AU
				morning rise	15598 Jun 30 22:12	7° III 42'26	
conjunction	15592 May 17 22:02	9° II 29'44	-1°05'48	retrograde	15598 Sep 30 16:55	10° III 57'23	
minimum elong	15592 May 17 22:01	9° II 29'44	1°06'36	opposition	15598 Dec 14 19:53	8° III 56'59	-1°17'20
max. Earth dist.	15592 May 17 19:44	9° II 29'23	19.60326 AU	min. Earth dist.	15598 Dec 14 16:29	8° III 57'21	17.99743 AU
morning rise	15592 Jun 03 02:13	10° II 29'31		direct	15599 Mar 01 11:48	6° III 54'27	
retrograde	15592 Sep 03 04:40	13° II 49'20		evening set	15599 Jun 03 13:35	10° III 12'37	

conjunction	15599 Jun 19 15:06	11°☾10'42 -1°09'03
minimum elong	15599 Jun 19 15:06	11°☾10'42 1°09'56
max. Earth dist.	15599 Jun 19 19:18	11°☾11'20 20.03118 AU
morning rise	15599 Jul 05 14:40	12°☾08'31
retrograde	15599 Oct 05 09:44	15°☾22'39
opposition	15599 Dec 19 14:16	13°☾22'32 -1°16'10
min. Earth dist.	15599 Dec 19 09:52	13°☾23'00 18.06541 AU
direct	15600 Mar 05 08:02	11°☾20'20
evening set	15600 Jun 07 06:20	14°☾37'30

conjunction	15600 Jun 23 07:08	15°☾35'17 -1°07'50
minimum elong	15600 Jun 23 07:08	15°☾35'17 1°08'41
max. Earth dist.	15600 Jun 23 11:18	15°☾35'55 20.09923 AU
morning rise	15600 Jul 09 06:16	16°☾32'50
retrograde	15600 Oct 09 00:27	19°☾46'10
opposition	15600 Dec 23 08:10	17°☾46'18 -1°14'34
min. Earth dist.	15600 Dec 23 03:57	17°☾46'44 18.13346 AU
direct	15601 Mar 10 02:05	15°☾44'25
evening set	15601 Jun 11 22:13	19°☾00'34

conjunction	15601 Jun 27 22:34	19°☾58'04 -1°06'13
minimum elong	15601 Jun 27 22:34	19°☾58'04 1°07'04
max. Earth dist.	15601 Jun 28 03:33	19°☾58'50 20.16702 AU
morning rise	15601 Jul 13 21:12	20°☾55'21
retrograde	15601 Oct 13 16:11	24°☾07'52
opposition	15601 Dec 28 01:09	22°☾08'14 -1°12'32
min. Earth dist.	15601 Dec 27 19:59	22°☾08'46 18.20070 AU