

direct	16100 Mar 01 19:01	6°☾21'42		max. Earth dist.	16106 Jul 01 05:47	22°☾16'48	32.64968 AU
evening set	16100 Jun 02 06:24	8°☾22'50		morning rise	16106 Jul 14 23:09	22°☾46'12	
				retrograde	16106 Oct 11 05:57	24°☾36'10	
conjunction	16100 Jun 16 00:19	8°☾53'38	7°24'06	min. Earth dist.	16106 Dec 27 11:27	23°☾19'47	30.74855 AU
minimum elong	16100 Jun 16 00:36	8°☾53'39	7°23'22	opposition	16106 Dec 28 19:23	23°☾17'42	4°01'23
max. Earth dist.	16100 Jun 16 20:38	8°☾55'32	31.65618 AU	direct	16107 Mar 19 01:38	21°☾57'46	
morning rise	16100 Jun 29 17:36	9°☾24'20		evening set	16107 Jun 17 00:39	23°☾48'32	
retrograde	16100 Sep 27 23:04	11°☾23'04					
opposition	16100 Dec 14 19:47	10°☾02'47	7°36'30	conjunction	16107 Jul 02 06:35	24°☾20'58	3°29'42
min. Earth dist.	16100 Dec 13 23:20	10°☾04'10	29.74414 AU	minimum elong	16107 Jul 02 06:43	24°☾20'59	3°28'59
direct	16101 Mar 04 11:15	8°☾40'54		max. Earth dist.	16107 Jul 03 16:34	24°☾24'01	32.84277 AU
evening set	16101 Jun 04 12:48	10°☾40'25		morning rise	16107 Jul 17 11:22	24°☾53'18	
				retrograde	16107 Oct 13 12:39	26°☾42'04	
conjunction	16101 Jun 18 13:57	11°☾11'38	6°51'10	min. Earth dist.	16107 Dec 29 19:36	25°☾26'08	30.94395 AU
minimum elong	16101 Jun 18 14:13	11°☾11'40	6°50'25	opposition	16107 Dec 31 04:58	25°☾23'58	3°25'29
max. Earth dist.	16101 Jun 19 12:58	11°☾13'47	31.80268 AU	direct	16108 Mar 20 11:21	24°☾04'25	
morning rise	16101 Jul 02 14:02	11°☾42'47		evening set	16108 Jun 18 06:10	25°☾53'59	
retrograde	16101 Sep 30 09:28	13°☾39'55					
min. Earth dist.	16101 Dec 16 11:55	12°☾21'22	29.89171 AU	conjunction	16108 Jul 03 14:56	26°☾26'24	2°56'08
opposition	16101 Dec 17 09:34	12°☾19'56	7°01'04	minimum elong	16108 Jul 03 15:02	26°☾26'25	2°55'26
direct	16102 Mar 07 03:43	10°☾58'21		max. Earth dist.	16108 Jul 05 02:58	26°☾29'36	33.04288 AU
evening set	16102 Jun 06 19:05	12°☾56'15		morning rise	16108 Jul 18 22:16	26°☾58'44	
				retrograde	16108 Oct 14 18:38	28°☾46'21	
conjunction	16102 Jun 21 02:29	13°☾27'50	6°17'56	min. Earth dist.	16108 Dec 31 02:50	27°☾30'52	31.14596 AU
minimum elong	16102 Jun 21 02:43	13°☾27'52	6°17'12	opposition	16109 Jan 01 13:46	27°☾28'38	2°49'46
max. Earth dist.	16102 Jun 22 02:15	13°☾30'03	31.95653 AU	direct	16109 Mar 22 22:44	26°☾09'29	
morning rise	16102 Jul 05 09:04	13°☾59'21		evening set	16109 Jun 20 11:44	27°☾57'53	
retrograde	16102 Oct 02 21:54	15°☾54'55					
opposition	16102 Dec 19 22:31	14°☾35'13	6°25'22	conjunction	16109 Jul 05 22:28	28°☾30'16	2°22'45
min. Earth dist.	16102 Dec 18 22:15	14°☾36'49	30.04697 AU	minimum elong	16109 Jul 05 22:34	28°☾30'16	2°22'03
direct	16103 Mar 09 19:58	13°☾13'55		max. Earth dist.	16109 Jul 07 11:20	28°☾33'31	33.24900 AU
evening set	16103 Jun 09 01:12	15°☾10'17		morning rise	16109 Jul 21 08:05	29°☾02'32	
					16109 Aug 21 00:55	0°♂	
conjunction	16103 Jun 23 14:31	15°☾42'10	5°44'28	retrograde	16109 Oct 17 02:14	0°♂49'04	
minimum elong	16103 Jun 23 14:44	15°☾42'12	5°43'43		16109 Dec 16 01:08	30°♂☾	
max. Earth dist.	16103 Jun 24 17:17	15°☾44'38	32.11788 AU	min. Earth dist.	16110 Jan 02 09:12	29°☾34'04	31.35402 AU
morning rise	16103 Jul 08 02:39	16°☾13'58		opposition	16110 Jan 03 22:04	29°☾31'43	2°14'18
retrograde	16103 Oct 05 06:49	18°☾08'02		direct	16110 Mar 25 07:16	28°☾12'59	
min. Earth dist.	16103 Dec 21 09:37	16°☾50'16	30.21001 AU	evening set	16110 Jun 22 16:51	0°♂00'17	
opposition	16103 Dec 22 10:44	16°☾48'36	5°49'28		16110 Jun 22 13:31	0°♂	
direct	16104 Mar 11 11:14	15°☾27'37					
evening set	16104 Jun 10 07:22	17°☾22'29		conjunction	16110 Jul 08 05:23	0°♂32'33	1°49'36
				minimum elong	16110 Jul 08 05:27	0°♂32'34	1°48'56
conjunction	16104 Jun 25 01:39	17°☾54'36	5°10'50	max. Earth dist.	16110 Jul 09 20:32	0°♂35'59	33.46047 AU
minimum elong	16104 Jun 25 01:51	17°☾54'37	5°10'07	morning rise	16110 Jul 23 16:26	1°♂04'43	
max. Earth dist.	16104 Jun 26 05:27	17°☾57'08	32.28706 AU	retrograde	16110 Oct 19 06:53	2°♂50'14	
morning rise	16104 Jul 09 18:57	18°☾26'37		min. Earth dist.	16111 Jan 04 16:25	1°♂35'38	31.56707 AU
retrograde	16104 Oct 06 15:53	20°☾19'15		opposition	16111 Jan 06 05:46	1°♂33'16	1°39'09
opposition	16104 Dec 23 22:15	19°☾00'06	5°13'27	direct	16111 Mar 27 17:07	0°♂14'56	
min. Earth dist.	16104 Dec 22 18:05	19°☾01'58	30.38122 AU	evening set	16111 Jun 24 22:09	2°♂01'11	
direct	16105 Mar 14 01:32	17°☾39'27					
evening set	16105 Jun 12 13:13	19°☾32'52		conjunction	16111 Jul 10 11:38	2°♂33'18	1°16'45
				minimum elong	16111 Jul 10 11:40	2°♂33'18	1°16'05
conjunction	16105 Jun 27 12:02	20°☾05'09	4°37'07	max. Earth dist.	16111 Jul 12 02:49	2°♂36'42	33.67640 AU
minimum elong	16105 Jun 27 12:13	20°☾05'10	4°36'23	morning rise	16111 Jul 25 23:56	3°♂05'19	
max. Earth dist.	16105 Jun 28 18:36	20°☾07'55	32.46423 AU	retrograde	16111 Oct 21 13:26	4°♂49'51	
morning rise	16105 Jul 12 09:39	20°☾37'20		min. Earth dist.	16112 Jan 06 21:10	3°♂35'44	31.78453 AU
retrograde	16105 Oct 08 22:32	22°☾28'36		opposition	16112 Jan 08 12:34	3°♂33'15	1°04'21
min. Earth dist.	16105 Dec 25 03:56	21°☾11'42	30.56081 AU	direct	16112 Mar 29 02:46	2°♂15'18	
opposition	16105 Dec 26 09:17	21°☾09'47	4°37'24	evening set	16112 Jun 26 03:13	4°♂00'33	
direct	16106 Mar 16 13:40	19°☾49'28					
evening set	16106 Jun 14 19:01	21°☾41'32		conjunction	16112 Jul 11 17:25	4°♂32'29	0°44'14
				minimum elong	16112 Jul 11 17:27	4°♂32'30	0°43'36
conjunction	16106 Jun 29 21:42	22°☾13'55	4°03'23	max. Earth dist.	16112 Jul 13 10:40	4°♂36'02	33.89615 AU
minimum elong	16106 Jun 29 21:51	22°☾13'56	4°02'41	morning rise	16112 Jul 27 06:10	5°♂04'19	

retrograde	16112 Oct 22 17:23	6°♊47'54		min. Earth dist.	16119 Jan 19 20:16	16°♊50'59	33.40636 AU
min. Earth dist.	16113 Jan 08 03:35	5°♊34'08	32.00573 AU	opposition	16119 Jan 21 19:37	16°♊48'07	-2°45'50
opposition	16113 Jan 09 19:03	5°♊31'39	0°29'58	direct	16119 Apr 12 20:02	15°♊32'39	
direct	16113 Mar 31 11:47	4°♊14'06		evening set	16119 Jul 10 07:35	17°♊11'59	
evening set	16113 Jun 28 08:02	5°♊58'22					
				conjunction	16119 Jul 25 13:48	17°♊41'39	-2°51'05
conjunction	16113 Jul 13 22:16	6°♊30'05	0°12'08	minimum elong	16119 Jul 25 13:43	17°♊41'39	2°51'38
minimum elong	16113 Jul 13 22:17	6°♊30'05	0°11'29	max. Earth dist.	16119 Jul 27 14:36	17°♊45'38	35.52864 AU
behind sun begin	16113 Jul 13 17:37	6°♊29'42		morning rise	16119 Aug 09 18:41	18°♊11'13	
behind sun end	16113 Jul 14 02:57	6°♊30'28		retrograde	16119 Nov 05 01:35	19°♊49'27	
max. Earth dist.	16113 Jul 15 15:41	6°♊33'37	34.11928 AU	min. Earth dist.	16120 Jan 21 22:11	18°♊38'20	33.65328 AU
morning rise	16113 Jul 29 11:14	7°♊01'41		opposition	16120 Jan 23 21:31	18°♊35'28	-3°16'26
retrograde	16113 Oct 24 19:58	8°♊44'22		direct	16120 Apr 13 23:22	17°♊20'24	
desc. node	16113 Nov 29 18:38	8°♊25'43		evening set	16120 Jul 11 10:46	18°♊59'05	
min. Earth dist.	16114 Jan 10 07:16	7°♊31'04	32.23025 AU				
opposition	16114 Jan 12 00:44	7°♊28'28	-0°03'58	conjunction	16120 Jul 26 14:13	19°♊28'19	-3°19'45
direct	16114 Apr 02 20:10	6°♊11'17		minimum elong	16120 Jul 26 14:07	19°♊28'19	3°20'16
evening set	16114 Jun 30 12:40	7°♊54'37		max. Earth dist.	16120 Jul 28 15:04	19°♊32'17	35.77634 AU
				morning rise	16120 Aug 10 16:34	19°♊57'28	
conjunction	16114 Jul 16 02:36	8°♊26'04	-0°19'40	retrograde	16120 Nov 06 01:00	21°♊35'06	
minimum elong	16114 Jul 16 02:35	8°♊26'04	0°20'17	min. Earth dist.	16121 Jan 22 21:36	20°♊24'27	33.90329 AU
max. Earth dist.	16114 Jul 17 21:26	8°♊29'42	34.34542 AU	opposition	16121 Jan 24 22:53	20°♊21'29	-3°46'24
morning rise	16114 Jul 31 15:14	8°♊57'24		direct	16121 Apr 16 04:02	19°♊06'48	
retrograde	16114 Oct 26 20:47	10°♊39'14		evening set	16121 Jul 13 13:34	20°♊44'52	
min. Earth dist.	16115 Jan 12 12:01	9°♊26'15	32.45810 AU				
opposition	16115 Jan 14 05:48	9°♊23'39	-0°37'26	conjunction	16121 Jul 28 14:01	21°♊13'40	-3°47'49
direct	16115 Apr 05 02:12	8°♊06'49		minimum elong	16121 Jul 28 13:54	21°♊13'39	3°48'21
evening set	16115 Jul 02 16:55	9°♊49'14		max. Earth dist.	16121 Jul 30 16:27	21°♊17'43	36.02653 AU
				morning rise	16121 Aug 12 13:22	21°♊42'23	
conjunction	16115 Jul 18 06:12	10°♊20'24	-0°50'56	retrograde	16121 Nov 07 23:19	23°♊19'29	
minimum elong	16115 Jul 18 06:10	10°♊20'23	0°51'34	min. Earth dist.	16122 Jan 24 22:28	22°♊09'10	34.15571 AU
max. Earth dist.	16115 Jul 20 01:53	10°♊24'04	34.57478 AU	opposition	16122 Jan 26 23:55	22°♊06'13	-4°15'43
morning rise	16115 Aug 02 18:05	10°♊51'26		direct	16122 Apr 18 06:44	20°♊51'55	
retrograde	16115 Oct 28 21:17	12°♊32'26		evening set	16122 Jul 15 16:14	22°♊29'23	
min. Earth dist.	16116 Jan 14 15:05	11°♊19'50	32.68919 AU				
opposition	16116 Jan 16 10:07	11°♊17'10	-1°10'22	conjunction	16122 Jul 30 13:26	22°♊57'44	-4°15'18
direct	16116 Apr 06 08:10	10°♊00'40		minimum elong	16122 Jul 30 13:19	22°♊57'43	4°15'48
evening set	16116 Jul 03 21:03	11°♊42'14		max. Earth dist.	16122 Aug 01 16:17	23°♊01'48	36.27866 AU
				morning rise	16122 Aug 14 09:27	23°♊25'59	
conjunction	16116 Jul 19 09:00	12°♊13'04	-1°21'45	retrograde	16122 Nov 09 20:03	25°♊02'34	
minimum elong	16116 Jul 19 08:57	12°♊13'03	1°22'20	min. Earth dist.	16123 Jan 26 21:51	23°♊52'39	34.40960 AU
max. Earth dist.	16116 Jul 21 05:29	12°♊16'47	34.80733 AU	opposition	16123 Jan 29 00:08	23°♊49'40	-4°44'22
morning rise	16116 Aug 03 19:49	12°♊43'47		direct	16123 Apr 20 09:20	22°♊35'44	
retrograde	16116 Oct 29 23:08	14°♊24'01		evening set	16123 Jul 17 18:48	24°♊12'40	
min. Earth dist.	16117 Jan 15 17:26	13°♊11'47	32.92414 AU				
opposition	16117 Jan 17 13:53	13°♊09'03	-1°42'46	conjunction	16123 Aug 01 12:17	24°♊40'31	-4°42'10
direct	16117 Apr 08 11:58	11°♊52'53		minimum elong	16123 Aug 01 12:09	24°♊40'30	4°42'40
evening set	16117 Jul 06 00:47	13°♊33'39		max. Earth dist.	16123 Aug 03 15:17	24°♊44'34	36.53173 AU
				morning rise	16123 Aug 16 04:52	25°♊08'18	
conjunction	16117 Jul 21 11:18	14°♊04'06	-1°52'04	retrograde	16123 Nov 11 17:55	26°♊44'26	
minimum elong	16117 Jul 21 11:14	14°♊04'06	1°52'39	min. Earth dist.	16124 Jan 28 21:10	25°♊34'51	34.66438 AU
max. Earth dist.	16117 Jul 23 09:47	14°♊07'58	35.04381 AU	opposition	16124 Jan 31 00:04	25°♊31'51	-5°12'22
morning rise	16117 Aug 05 20:23	14°♊34'28		direct	16124 Apr 21 08:51	24°♊18'17	
	16117 Aug 19 11:18	15°♊		evening set	16124 Jul 18 21:03	25°♊54'42	
retrograde	16117 Oct 31 23:47	16°♊13'59					
min. Earth dist.	16118 Jan 17 19:54	15°♊02'06	33.16314 AU	conjunction	16124 Aug 02 10:46	26°♊22'04	-5°08'27
opposition	16118 Jan 19 17:06	14°♊59'20	-2°14'36	minimum elong	16124 Aug 02 10:38	26°♊22'03	5°08'55
	16118 Jan 19 06:12	15°♊		max. Earth dist.	16124 Aug 04 14:49	26°♊26'10	36.78521 AU
direct	16118 Apr 10 17:14	13°♊43'31		morning rise	16124 Aug 16 23:18	26°♊49'21	
	16118 Jun 25 13:48	15°♊		retrograde	16124 Nov 12 14:47	28°♊25'03	
evening set	16118 Jul 08 04:18	15°♊23'32		min. Earth dist.	16125 Jan 29 20:49	27°♊15'45	34.91919 AU
				opposition	16125 Jan 31 23:28	27°♊12'47	-5°39'41
conjunction	16118 Jul 23 12:42	15°♊53'36	-2°21'51	direct	16125 Apr 23 09:09	25°♊59'33	
minimum elong	16118 Jul 23 12:37	15°♊53'36	2°22'24	evening set	16125 Jul 20 23:15	27°♊35'29	
max. Earth dist.	16118 Jul 25 11:24	15°♊57'27	35.28429 AU				
morning rise	16118 Aug 07 20:01	16°♊23'35		conjunction	16125 Aug 04 08:38	28°♊02'20	-5°34'06
retrograde	16118 Nov 03 02:28	18°♊02'26		minimum elong	16125 Aug 04 08:29	28°♊02'19	5°34'34

max. Earth dist.	16125 Aug 06 11:57	28°06'22	37.03847 AU	retrograde	16131 Nov 24 05:42	9°03'34"20	
morning rise	16125 Aug 18 17:12	28°02'29"07		min. Earth dist.	16132 Feb 10 23:30	8°00'27"05	36.70038 AU
	16125 Oct 27 21:09	0°00'00"		opposition	16132 Feb 13 05:00	8°00'24"03	-8°32'08
retrograde	16125 Nov 14 13:21	0°00'04"24		direct	16132 May 04 22:25	7°00'13"02	
	16125 Dec 02 09:04	30°00'00"		evening set	16132 Aug 02 05:40	8°00'46"18	
min. Earth dist.	16126 Jan 31 18:25	28°02'55"28	35.17381 AU				
opposition	16126 Feb 02 22:22	28°02'52"26	-6°06'20	conjunction	16132 Aug 15 03:34	9°00'09"19	-8°16'19
direct	16126 Apr 25 07:25	27°02'39"33		minimum elong	16132 Aug 15 03:25	9°00'09"19	8°16'40
evening set	16126 Jul 23 00:54	29°02'15"00		max. Earth dist.	16132 Aug 17 09:37	9°00'13"22	38.80834 AU
				morning rise	16132 Aug 28 00:58	9°00'32"19	
conjunction	16126 Aug 06 06:03	29°02'41"20	-5°59'09	retrograde	16132 Nov 25 01:26	11°00'05"26	
minimum elong	16126 Aug 06 05:54	29°02'41"20	5°59'35	min. Earth dist.	16133 Feb 11 17:30	9°00'58"33	36.95656 AU
max. Earth dist.	16126 Aug 08 10:37	29°02'45"26	37.29123 AU	opposition	16133 Feb 14 00:27	9°00'55"28	-8°54'02
	16126 Aug 16 06:40	0°00'00"		direct	16133 May 06 17:10	8°00'44"47	
morning rise	16126 Aug 20 10:09	0°00'07"36		evening set	16133 Aug 04 05:27	10°00'17"47	
retrograde	16126 Nov 16 09:22	1°00'42"29					
min. Earth dist.	16127 Feb 02 17:43	0°00'33"46	35.42783 AU	conjunction	16133 Aug 16 21:38	10°00'40"15	-8°36'59
opposition	16127 Feb 04 20:49	0°00'30"49	-6°32'20	minimum elong	16133 Aug 16 21:28	10°00'40"15	8°37'18
	16127 Feb 27 16:40	30°00'00"		max. Earth dist.	16133 Aug 19 05:01	10°00'44"22	39.06261 AU
direct	16127 Apr 27 08:13	29°02'18"14		morning rise	16133 Aug 29 13:10	11°00'02"41	
	16127 Jun 22 15:14	0°00'00"		retrograde	16133 Nov 26 19:05	12°00'35"37	
evening set	16127 Jul 25 02:32	0°00'53"15		min. Earth dist.	16134 Feb 13 13:24	11°00'28"59	37.21255 AU
				opposition	16134 Feb 15 19:40	11°00'25"56	-9°15'17
conjunction	16127 Aug 08 02:56	1°00'19"03	-6°23'34	direct	16134 May 08 13:52	10°00'15"36	
minimum elong	16127 Aug 08 02:46	1°00'19"02	6°23'59	evening set	16134 Aug 06 05:03	11°00'48"23	
max. Earth dist.	16127 Aug 10 06:44	1°00'23"03	37.54341 AU				
morning rise	16127 Aug 22 02:30	1°00'44"47		conjunction	16134 Aug 18 15:13	12°00'10"17	-8°57'01
retrograde	16127 Nov 18 05:18	3°00'19"17		minimum elong	16134 Aug 18 15:03	12°00'10"16	8°57'19
min. Earth dist.	16128 Feb 04 14:12	2°00'10"54	35.68140 AU	max. Earth dist.	16134 Aug 20 22:02	12°00'14"20	39.31638 AU
opposition	16128 Feb 06 18:26	2°00'07"53	-6°57'39	morning rise	16134 Aug 31 00:48	12°00'32"08	
direct	16128 Apr 28 08:42	0°00'55"36		retrograde	16134 Nov 28 12:01	14°00'04"53	
evening set	16128 Jul 26 03:45	2°00'30"12		min. Earth dist.	16135 Feb 15 07:16	12°00'58"36	37.46758 AU
				opposition	16135 Feb 17 14:17	12°00'55"32	-9°35'52
conjunction	16128 Aug 08 23:17	2°00'55"28	-6°47'23	direct	16135 May 10 10:26	11°00'45"31	
minimum elong	16128 Aug 08 23:08	2°00'55"27	6°47'47	evening set	16135 Aug 08 04:32	13°00'18"06	
max. Earth dist.	16128 Aug 11 04:03	2°00'59"31	37.79525 AU				
morning rise	16128 Aug 22 18:02	3°00'20"40		conjunction	16135 Aug 20 08:30	13°00'39"25	-9°16'28
retrograde	16128 Nov 18 23:48	4°00'54"49		minimum elong	16135 Aug 20 08:20	13°00'39"24	9°16'44
min. Earth dist.	16129 Feb 05 11:48	3°00'46"40	35.93513 AU	max. Earth dist.	16135 Aug 22 15:29	13°00'43"27	39.56877 AU
opposition	16129 Feb 07 15:54	3°00'43"41	-7°22'18	morning rise	16135 Sep 01 12:03	14°00'00"42	
direct	16129 Apr 30 07:40	2°00'31"42		retrograde	16135 Nov 30 03:36	15°00'33"18	
evening set	16129 Jul 28 04:33	4°00'05"55		min. Earth dist.	16136 Feb 17 01:56	14°00'27"16	37.72115 AU
				opposition	16136 Feb 19 08:35	14°00'24"14	-9°55'49
conjunction	16129 Aug 10 19:02	4°00'30"37	-7°10'34	direct	16136 May 11 05:51	13°00'14"32	
minimum elong	16129 Aug 10 18:52	4°00'30"36	7°10'57	evening set	16136 Aug 09 03:48	14°00'46"55	
max. Earth dist.	16129 Aug 13 00:18	4°00'34"41	38.04747 AU				
morning rise	16129 Aug 24 08:38	4°00'55"16		conjunction	16136 Aug 21 01:33	15°00'07"39	-9°35'19
retrograde	16129 Nov 20 16:25	6°00'29"06		minimum elong	16136 Aug 21 01:24	15°00'07"38	9°35'35
min. Earth dist.	16130 Feb 07 07:52	5°00'21"16	36.18935 AU	max. Earth dist.	16136 Aug 23 08:48	15°00'11"41	39.81944 AU
opposition	16130 Feb 09 12:45	5°00'18"15	-7°46'15	morning rise	16136 Sep 01 22:41	15°00'28"21	
direct	16130 May 02 07:03	4°00'06"34		retrograde	16136 Nov 30 17:33	17°00'00"50	
evening set	16130 Jul 30 05:13	5°00'40"26		min. Earth dist.	16137 Feb 17 20:16	15°00'55"02	37.97253 AU
				opposition	16137 Feb 20 02:36	15°00'52"02	-10°15'09
conjunction	16130 Aug 12 14:17	6°00'04"35	-7°33'07	direct	16137 May 13 02:29	14°00'42"38	
minimum elong	16130 Aug 12 14:07	6°00'04"34	7°33'29	evening set	16137 Aug 11 02:50	16°00'14"49	
max. Earth dist.	16130 Aug 14 19:37	6°00'08"37	38.30033 AU				
morning rise	16130 Aug 25 22:46	6°00'28"41		conjunction	16137 Aug 22 17:59	16°00'34"58	-9°53'35
retrograde	16130 Nov 22 11:44	8°00'02"15		minimum elong	16137 Aug 22 17:49	16°00'34"58	9°53'49
min. Earth dist.	16131 Feb 09 03:16	6°00'54"44	36.44455 AU	max. Earth dist.	16137 Aug 25 00:11	16°00'38"54	40.06765 AU
opposition	16131 Feb 11 09:01	6°00'51"40	-8°09'32	morning rise	16137 Sep 03 08:51	16°00'55"06	
direct	16131 May 04 02:23	5°00'40"19		retrograde	16137 Dec 02 11:14	18°00'27"27	
evening set	16131 Aug 01 05:31	7°00'13"52		min. Earth dist.	16138 Feb 19 13:26	17°00'21"55	38.22143 AU
				opposition	16138 Feb 21 20:14	17°00'18"54	-10°33'52
conjunction	16131 Aug 14 09:16	7°00'37"28	-7°55'02	direct	16138 May 14 18:42	16°00'09"47	
minimum elong	16131 Aug 14 09:06	7°00'37"27	7°55'23	evening set	16138 Aug 13 01:36	17°00'41"47	
max. Earth dist.	16131 Aug 16 15:52	7°00'41"34	38.55411 AU				
morning rise	16131 Aug 27 12:10	8°00'01"00		conjunction	16138 Aug 24 10:21	18°00'01"21	-10°11'17

minimum elong	16138 Aug 24 10:12	18° <u>01</u> '20	10°11'31	evening set	16145 Aug 24 09:45	27° <u>00</u> '23'12	
max. Earth dist.	16138 Aug 26 17:13	18° <u>05</u> '18	40.31320 AU				
morning rise	16138 Sep 04 18:35	18° <u>20</u> '53		conjunction	16145 Sep 02 17:04	27° <u>00</u> '38'37	-11°59'32
retrograde	16138 Dec 04 02:42	19° <u>00</u> '53'07		minimum elong	16145 Sep 02 16:58	27° <u>00</u> '38'36	11°59'38
min. Earth dist.	16139 Feb 21 07:56	18° <u>00</u> '47'43	38.46745 AU	max. Earth dist.	16145 Sep 04 23:48	27° <u>00</u> '42'24	41.97880 AU
opposition	16139 Feb 23 13:22	18° <u>00</u> '44'48	-10°51'59	morning rise	16145 Sep 12 00:10	27° <u>00</u> '54'02	
direct	16139 May 16 12:39	17° <u>00</u> '35'56		retrograde	16145 Dec 13 05:33	29° <u>00</u> '25'47	
evening set	16139 Aug 15 00:18	19° <u>00</u> '07'45		min. Earth dist.	16146 Mar 02 21:37	28° <u>00</u> '21'52	40.14072 AU
				opposition	16146 Mar 05 03:16	28° <u>00</u> '19'01	-12°42'09
conjunction	16139 Aug 26 02:12	19° <u>00</u> '26'43	-10°28'25	direct	16146 May 26 07:14	27° <u>00</u> '11'54	
minimum elong	16139 Aug 26 02:04	19° <u>00</u> '26'43	10°28'37	evening set	16146 Aug 26 06:42	28° <u>00</u> '42'58	
max. Earth dist.	16139 Aug 28 07:46	19° <u>00</u> '30'34	40.55598 AU				
morning rise	16139 Sep 06 03:48	19° <u>00</u> '45'41		conjunction	16146 Sep 04 06:30	28° <u>00</u> '57'49	-12°12'47
retrograde	16139 Dec 05 19:06	21° <u>00</u> '17'46		minimum elong	16146 Sep 04 06:23	28° <u>00</u> '57'48	12°12'53
min. Earth dist.	16140 Feb 22 23:50	20° <u>00</u> '12'38	38.71080 AU	max. Earth dist.	16146 Sep 06 12:29	29° <u>00</u> '01'32	42.21156 AU
opposition	16140 Feb 25 06:07	20° <u>00</u> '09'40	-11°09'30	morning rise	16146 Sep 13 06:07	29° <u>00</u> '12'38	
direct	16140 May 17 05:30	19° <u>00</u> '01'03			16146 Oct 14 09:04	0° <u>00</u> '	
evening set	16140 Aug 15 22:26	20° <u>00</u> '32'41		retrograde	16146 Dec 14 17:53	0° <u>00</u> '44'24	
					16147 Feb 16 23:36	30° <u>00</u> ' <u>R</u> '	
conjunction	16140 Aug 26 17:34	20° <u>00</u> '51'04	-10°45'00	min. Earth dist.	16147 Mar 04 11:14	29° <u>00</u> '40'45	40.37404 AU
minimum elong	16140 Aug 26 17:26	20° <u>00</u> '51'04	10°45'13	opposition	16147 Mar 06 17:25	29° <u>00</u> '37'53	-12°55'35
max. Earth dist.	16140 Aug 28 23:47	20° <u>00</u> '54'56	40.79625 AU	direct	16147 May 27 22:35	28° <u>00</u> '31'02	
morning rise	16140 Sep 06 12:24	21° <u>00</u> '09'26			16147 Aug 26 20:09	0° <u>00</u> '	
retrograde	16140 Dec 06 09:55	22° <u>00</u> '41'25		evening set	16147 Aug 28 03:24	0° <u>00</u> '42'07	
min. Earth dist.	16141 Feb 23 17:11	21° <u>00</u> '36'24	38.95206 AU				
opposition	16141 Feb 25 22:38	21° <u>00</u> '33'30	-11°26'26	conjunction	16147 Sep 05 19:39	0° <u>00</u> '16'22	-12°25'32
direct	16141 May 18 23:07	20° <u>00</u> '25'07		minimum elong	16147 Sep 05 19:33	0° <u>00</u> '16'22	12°25'37
evening set	16141 Aug 17 20:28	21° <u>00</u> '56'36		max. Earth dist.	16147 Sep 08 01:28	0° <u>00</u> '20'04	42.44194 AU
				morning rise	16147 Sep 14 11:51	0° <u>00</u> '30'36	
conjunction	16141 Aug 28 08:37	22° <u>00</u> '14'23	-11°01'02	retrograde	16147 Dec 16 06:16	2° <u>00</u> '02'25	
minimum elong	16141 Aug 28 08:29	22° <u>00</u> '14'23	11°01'12	min. Earth dist.	16148 Mar 05 02:04	0° <u>00</u> '58'58	40.60485 AU
max. Earth dist.	16141 Aug 30 14:38	22° <u>00</u> '18'13	41.03486 AU	opposition	16148 Mar 07 07:36	0° <u>00</u> '56'09	-13°08'28
morning rise	16141 Sep 07 20:24	22° <u>00</u> '32'09			16148 Apr 29 00:29	30° <u>00</u> ' <u>R</u> '	
retrograde	16141 Dec 07 22:04	24° <u>00</u> '04'02		direct	16148 May 28 13:33	29° <u>00</u> '49'35	
min. Earth dist.	16142 Feb 25 08:42	22° <u>00</u> '59'15	39.19182 AU		16148 Jun 26 14:16	0° <u>00</u> '	
opposition	16142 Feb 27 14:36	22° <u>00</u> '56'20	-11°42'45	evening set	16148 Aug 28 23:54	1° <u>00</u> '20'40	
direct	16142 May 20 17:48	21° <u>00</u> '48'10					
evening set	16142 Aug 19 18:07	23° <u>00</u> '19'31		conjunction	16148 Sep 06 08:32	1° <u>00</u> '34'19	-12°37'48
				minimum elong	16148 Sep 06 08:25	1° <u>00</u> '34'19	12°37'51
conjunction	16142 Aug 29 23:09	23° <u>00</u> '36'43	-11°16'30	max. Earth dist.	16148 Sep 08 14:24	1° <u>00</u> '38'00	42.66956 AU
minimum elong	16142 Aug 29 23:01	23° <u>00</u> '36'42	11°16'39	morning rise	16148 Sep 14 16:57	1° <u>00</u> '47'58	
max. Earth dist.	16142 Sep 01 04:54	23° <u>00</u> '40'30	41.27223 AU	retrograde	16148 Dec 16 17:04	3° <u>00</u> '19'51	
morning rise	16142 Sep 09 04:03	23° <u>00</u> '53'54		min. Earth dist.	16149 Mar 06 16:38	2° <u>00</u> '16'36	40.83238 AU
retrograde	16142 Dec 09 11:25	25° <u>00</u> '25'42		opposition	16149 Mar 08 21:29	2° <u>00</u> '13'49	-13°20'51
min. Earth dist.	16143 Feb 27 00:05	24° <u>00</u> '21'08	39.43068 AU	direct	16149 May 30 05:46	1° <u>00</u> '07'30	
opposition	16143 Mar 01 06:17	24° <u>00</u> '18'13	-11°58'29	evening set	16149 Aug 30 20:24	2° <u>00</u> '38'36	
direct	16143 May 22 10:29	23° <u>00</u> '10'17					
evening set	16143 Aug 21 15:35	24° <u>00</u> '41'33		conjunction	16149 Sep 07 21:09	2° <u>00</u> '51'40	-12°49'34
				minimum elong	16149 Sep 07 21:04	2° <u>00</u> '51'40	12°49'36
conjunction	16143 Aug 31 13:33	24° <u>00</u> '58'08	-11°31'23	max. Earth dist.	16149 Sep 10 01:36	2° <u>00</u> '55'14	42.89373 AU
minimum elong	16143 Aug 31 13:25	24° <u>00</u> '58'08	11°31'31	morning rise	16149 Sep 15 21:55	3° <u>00</u> '04'44	
max. Earth dist.	16143 Sep 02 20:15	25° <u>00</u> '01'59	41.50879 AU	retrograde	16149 Dec 18 07:05	4° <u>00</u> '36'40	
morning rise	16143 Sep 10 11:09	25° <u>00</u> '14'44		min. Earth dist.	16150 Mar 08 06:04	3° <u>00</u> '33'38	41.05639 AU
retrograde	16143 Dec 11 00:08	26° <u>00</u> '46'30		opposition	16150 Mar 10 11:02	3° <u>00</u> '30'52	-13°32'44
min. Earth dist.	16144 Feb 28 15:49	25° <u>00</u> '42'07	39.66851 AU	direct	16150 May 31 18:37	2° <u>00</u> '24'48	
opposition	16144 Mar 01 21:31	25° <u>00</u> '39'14	-12°13'37	evening set	16150 Sep 01 16:39	3° <u>00</u> '55'55	
direct	16144 May 23 03:27	24° <u>00</u> '31'34					
evening set	16144 Aug 22 12:55	26° <u>00</u> '02'44		conjunction	16150 Sep 09 09:39	4° <u>00</u> '08'23	-13°00'52
				minimum elong	16150 Sep 09 09:33	4° <u>00</u> '08'23	13°00'53
conjunction	16144 Sep 01 03:28	26° <u>00</u> '18'45	-11°45'44	max. Earth dist.	16150 Sep 11 14:31	4° <u>00</u> '11'58	43.11413 AU
minimum elong	16144 Sep 01 03:20	26° <u>00</u> '18'44	11°45'51	morning rise	16150 Sep 17 02:30	4° <u>00</u> '20'52	
max. Earth dist.	16144 Sep 03 09:13	26° <u>00</u> '22'30	41.74441 AU	retrograde	16150 Dec 19 20:44	5° <u>00</u> '52'52	
morning rise	16144 Sep 10 17:55	26° <u>00</u> '34'45		min. Earth dist.	16151 Mar 09 20:59	4° <u>00</u> '49'57	41.27633 AU
retrograde	16144 Dec 11 15:54	28° <u>00</u> '06'30		opposition	16151 Mar 12 00:25	4° <u>00</u> '47'16	-13°44'08
min. Earth dist.	16145 Mar 01 05:42	27° <u>00</u> '02'24	39.90536 AU	direct	16151 Jun 02 07:10	3° <u>00</u> '41'26	
opposition	16145 Mar 03 12:29	26° <u>00</u> '59'29	-12°28'10	evening set	16151 Sep 03 12:55	5° <u>00</u> '12'35	
direct	16145 May 24 16:34	25° <u>00</u> '52'05					

conjunction	16151 Sep 10 21:47	5° <u>♁</u> 24'27	-13°11'43	direct	16158 Jun 10 21:33	12° <u>♁</u> 18'36	
minimum elong	16151 Sep 10 21:42	5° <u>♁</u> 24'27	13°11'43	evening set	16158 Sep 14 06:19	13° <u>♁</u> 50'18	
max. Earth dist.	16151 Sep 13 01:09	5° <u>♁</u> 27'54	43.33059 AU				
morning rise	16151 Sep 18 06:36	5° <u>♁</u> 36'20		conjunction	16158 Sep 19 02:51	13° <u>♁</u> 57'53	-14°14'54
retrograde	16151 Dec 21 09:49	7° <u>♁</u> 08'23		minimum elong	16158 Sep 19 02:49	13° <u>♁</u> 57'53	14°14'47
min. Earth dist.	16152 Mar 10 09:26	6° <u>♁</u> 05'40	41.49234 AU	max. Earth dist.	16158 Sep 21 04:47	14° <u>♁</u> 01'08	44.77034 AU
opposition	16152 Mar 12 13:17	6° <u>♁</u> 02'59	-13°55'03	morning rise	16158 Sep 23 23:22	14° <u>♁</u> 05'28	
direct	16152 Jun 02 18:38	4° <u>♁</u> 57'21		retrograde	16158 Dec 29 10:38	15° <u>♁</u> 38'25	
evening set	16152 Sep 04 08:49	6° <u>♁</u> 28'31		min. Earth dist.	16159 Mar 19 23:03	14° <u>♁</u> 36'50	42.93276 AU
				opposition	16159 Mar 22 00:39	14° <u>♁</u> 34'19	-14°58'10
conjunction	16152 Sep 11 09:36	6° <u>♁</u> 39'48	-13°22'07	direct	16159 Jun 12 09:59	13° <u>♁</u> 30'09	
minimum elong	16152 Sep 11 09:31	6° <u>♁</u> 39'47	13°22'06	evening set	16159 Sep 16 01:52	15° <u>♁</u> 02'02	
max. Earth dist.	16152 Sep 13 12:53	6° <u>♁</u> 43'13	43.54334 AU				
morning rise	16152 Sep 18 10:22	6° <u>♁</u> 51'04		conjunction	16159 Sep 20 12:54	15° <u>♁</u> 08'59	-14°22'10
retrograde	16152 Dec 21 19:50	8° <u>♁</u> 23'12		minimum elong	16159 Sep 20 12:52	15° <u>♁</u> 08'58	14°22'03
min. Earth dist.	16153 Mar 11 23:24	7° <u>♁</u> 20'35	41.70506 AU	max. Earth dist.	16159 Sep 22 13:50	15° <u>♁</u> 12'09	44.96629 AU
opposition	16153 Mar 14 02:08	7° <u>♁</u> 17'58	-14°05'30	morning rise	16159 Sep 24 23:58	15° <u>♁</u> 15'55	
direct	16153 Jun 04 09:00	6° <u>♁</u> 12'33		retrograde	16159 Dec 30 19:15	16° <u>♁</u> 49'05	
evening set	16153 Sep 06 04:35	7° <u>♁</u> 43'44		min. Earth dist.	16160 Mar 20 10:39	15° <u>♁</u> 47'39	43.12820 AU
				opposition	16160 Mar 22 11:38	15° <u>♁</u> 45'10	-15°05'22
conjunction	16153 Sep 12 21:04	7° <u>♁</u> 54'25	-13°32'03	direct	16160 Jun 12 22:27	14° <u>♁</u> 41'13	
minimum elong	16153 Sep 12 21:00	7° <u>♁</u> 54'24	13°32'02	evening set	16160 Sep 16 21:52	16° <u>♁</u> 13'19	
max. Earth dist.	16153 Sep 15 00:19	7° <u>♁</u> 57'50	43.75320 AU				
morning rise	16153 Sep 19 13:27	8° <u>♁</u> 05'05		conjunction	16160 Sep 20 22:59	16° <u>♁</u> 19'36	-14°29'01
retrograde	16153 Dec 23 03:28	9° <u>♁</u> 37'17		minimum elong	16160 Sep 20 22:59	16° <u>♁</u> 19'36	14°28'53
min. Earth dist.	16154 Mar 13 11:52	8° <u>♁</u> 34'51	41.91498 AU	max. Earth dist.	16160 Sep 23 00:15	16° <u>♁</u> 22'47	45.15877 AU
opposition	16154 Mar 15 14:31	8° <u>♁</u> 32'14	-14°15'28	morning rise	16160 Sep 25 00:06	16° <u>♁</u> 25'52	
direct	16154 Jun 06 00:42	7° <u>♁</u> 27'00		retrograde	16160 Dec 31 03:37	17° <u>♁</u> 59'17	
evening set	16154 Sep 08 00:14	8° <u>♁</u> 58'15		min. Earth dist.	16161 Mar 21 22:47	16° <u>♁</u> 57'58	43.31967 AU
				opposition	16161 Mar 23 22:30	16° <u>♁</u> 55'34	-15°12'09
conjunction	16154 Sep 14 08:15	9° <u>♁</u> 08'19	-13°41'32	direct	16161 Jun 14 11:58	15° <u>♁</u> 51'49	
minimum elong	16154 Sep 14 08:11	9° <u>♁</u> 08'19	13°41'29	evening set	16161 Sep 18 18:08	17° <u>♁</u> 24'10	
max. Earth dist.	16154 Sep 16 10:36	9° <u>♁</u> 11'40	43.96061 AU				
morning rise	16154 Sep 20 16:18	9° <u>♁</u> 18'23		conjunction	16161 Sep 22 08:42	17° <u>♁</u> 29'44	-14°35'30
retrograde	16154 Dec 24 14:33	10° <u>♁</u> 50'41		minimum elong	16161 Sep 22 08:41	17° <u>♁</u> 29'44	14°35'21
min. Earth dist.	16155 Mar 14 23:38	9° <u>♁</u> 48'26	42.12284 AU	max. Earth dist.	16161 Sep 24 08:10	17° <u>♁</u> 32'47	45.34709 AU
opposition	16155 Mar 17 02:32	9° <u>♁</u> 45'49	-14°24'57	morning rise	16161 Sep 25 23:18	17° <u>♁</u> 35'18	
direct	16155 Jun 07 13:32	8° <u>♁</u> 40'47		retrograde	16162 Jan 01 15:03	19° <u>♁</u> 09'01	
evening set	16155 Sep 09 19:52	10° <u>♁</u> 12'07		min. Earth dist.	16162 Mar 23 09:13	18° <u>♁</u> 07'52	43.50675 AU
				opposition	16162 Mar 25 09:05	18° <u>♁</u> 05'28	-15°18'34
conjunction	16155 Sep 15 19:21	10° <u>♁</u> 21'34	-13°50'33	direct	16162 Jun 15 21:46	17° <u>♁</u> 01'55	
minimum elong	16155 Sep 15 19:18	10° <u>♁</u> 21'34	13°50'30	evening set	16162 Sep 20 15:12	18° <u>♁</u> 34'34	
max. Earth dist.	16155 Sep 17 22:29	10° <u>♁</u> 24'56	44.16611 AU				
morning rise	16155 Sep 21 18:47	10° <u>♁</u> 31'02		conjunction	16162 Sep 23 18:28	18° <u>♁</u> 39'23	-14°41'37
retrograde	16155 Dec 26 00:50	12° <u>♁</u> 03'28		minimum elong	16162 Sep 23 18:29	18° <u>♁</u> 39'23	14°41'27
min. Earth dist.	16156 Mar 15 12:36	11° <u>♁</u> 01'20	42.32866 AU	morning rise	16162 Sep 26 21:48	18° <u>♁</u> 44'12	
opposition	16156 Mar 17 14:28	10° <u>♁</u> 58'46	-14°33'57	max. Earth dist.	16162 Sep 25 17:48	18° <u>♁</u> 42'24	45.53072 AU
direct	16156 Jun 08 03:07	9° <u>♁</u> 53'57		retrograde	16163 Jan 03 01:24	20° <u>♁</u> 18'15	
evening set	16156 Sep 10 15:19	11° <u>♁</u> 25'23		min. Earth dist.	16163 Mar 24 21:33	19° <u>♁</u> 17'09	43.68894 AU
				opposition	16163 Mar 26 19:27	19° <u>♁</u> 14'52	-15°24'35
conjunction	16156 Sep 16 05:57	11° <u>♁</u> 34'12	-13°59'06	direct	16163 Jun 17 07:40	18° <u>♁</u> 11'29	
minimum elong	16156 Sep 16 05:54	11° <u>♁</u> 34'12	13°59'02	evening set	16163 Sep 22 13:24	19° <u>♁</u> 44'30	
max. Earth dist.	16156 Sep 18 07:55	11° <u>♁</u> 37'30	44.36974 AU				
morning rise	16156 Sep 21 20:37	11° <u>♁</u> 43'04		conjunction	16163 Sep 25 04:02	19° <u>♁</u> 48'30	-14°47'22
retrograde	16156 Dec 26 13:54	13° <u>♁</u> 15'38		minimum elong	16163 Sep 25 04:01	19° <u>♁</u> 48'30	14°47'11
min. Earth dist.	16157 Mar 16 23:22	12° <u>♁</u> 13'44	42.53250 AU	morning rise	16163 Sep 27 18:40	19° <u>♁</u> 52'30	
opposition	16157 Mar 19 02:06	12° <u>♁</u> 11'08	-14°42'29	max. Earth dist.	16163 Sep 27 02:05	19° <u>♁</u> 51'26	45.70962 AU
direct	16157 Jun 09 12:31	11° <u>♁</u> 06'32		retrograde	16164 Jan 04 10:09	21° <u>♁</u> 26'56	
evening set	16157 Sep 12 10:44	12° <u>♁</u> 38'06		min. Earth dist.	16164 Mar 25 07:48	20° <u>♁</u> 25'59	43.86628 AU
				opposition	16164 Mar 27 05:37	20° <u>♁</u> 23'42	-15°30'15
conjunction	16157 Sep 17 16:30	12° <u>♁</u> 46'18	-14°07'13	direct	16164 Jun 17 17:24	19° <u>♁</u> 20'29	
minimum elong	16157 Sep 17 16:27	12° <u>♁</u> 46'18	14°07'09	evening set	16164 Sep 23 13:24	20° <u>♁</u> 54'01	
max. Earth dist.	16157 Sep 19 18:57	12° <u>♁</u> 49'36	44.57122 AU				
morning rise	16157 Sep 22 22:16	12° <u>♁</u> 54'32		conjunction	16164 Sep 25 13:07	20° <u>♁</u> 57'03	-14°52'46
retrograde	16157 Dec 28 02:33	14° <u>♁</u> 27'17		minimum elong	16164 Sep 25 13:08	20° <u>♁</u> 57'03	14°52'35
min. Earth dist.	16158 Mar 18 12:02	13° <u>♁</u> 25'29	42.73408 AU	morning rise	16164 Sep 27 12:55	21° <u>♁</u> 00'05	
opposition	16158 Mar 20 13:32	13° <u>♁</u> 22'59	-14°50'33	max. Earth dist.	16164 Sep 27 10:16	20° <u>♁</u> 59'55	45.88383 AU

retrograde	16165 Jan 04 18:39	22° <u>♁</u> 35'05		max. Earth dist.	16172 Oct 06 01:39	29° <u>♁</u> 51'19	47.16541 AU
min. Earth dist.	16165 Mar 26 18:50	21° <u>♁</u> 34'12	44.03937 AU		16172 Oct 11 22:32	0° <u>♁</u>	
opposition	16165 Mar 28 15:42	21° <u>♁</u> 31'58	-15°35'33	retrograde	16173 Jan 13 11:50	1° <u>♁</u> 24'02	
direct	16165 Jun 19 03:39	20° <u>♁</u> 28'54		min. Earth dist.	16173 Apr 05 00:14	0° <u>♁</u> 24'06	45.31309 AU
evening set	16165 Sep 25 19:04	22° <u>♁</u> 03'19		opposition	16173 Apr 06 16:20	0° <u>♁</u> 22'09	-16°04'24
					16173 Apr 26 01:35	30° <u>♁</u>	
conjunction	16165 Sep 26 22:11	22° <u>♁</u> 05'02	-14°57'49	direct	16173 Jun 28 08:58	29° <u>♁</u> 20'26	
minimum elong	16165 Sep 26 22:11	22° <u>♁</u> 05'02	14°57'37		16173 Aug 27 22:45	0° <u>♁</u>	
morning rise	16165 Sep 28 01:21	22° <u>♁</u> 06'46					
max. Earth dist.	16165 Sep 28 19:30	22° <u>♁</u> 07'55	46.05420 AU	conjunction	16173 Oct 05 15:34	0° <u>♁</u> 53'40	-15°25'12
retrograde	16166 Jan 06 00:48	23° <u>♁</u> 42'40		minimum elong	16173 Oct 05 15:39	0° <u>♁</u> 53'40	15°24'53
min. Earth dist.	16166 Mar 28 05:19	22° <u>♁</u> 41'53	44.20876 AU	max. Earth dist.	16173 Oct 07 07:56	0° <u>♁</u> 56'09	47.31045 AU
opposition	16166 Mar 30 01:21	22° <u>♁</u> 39'41	-15°40'28	retrograde	16174 Jan 14 21:48	2° <u>♁</u> 28'40	
direct	16166 Jun 20 16:32	21° <u>♁</u> 36'46		min. Earth dist.	16174 Apr 06 08:29	1° <u>♁</u> 28'53	45.45610 AU
				opposition	16174 Apr 08 00:34	1° <u>♁</u> 26'56	-16°06'28
conjunction	16166 Sep 28 06:53	23° <u>♁</u> 12'29	-15°02'30	direct	16174 Jun 29 14:43	0° <u>♁</u> 25'22	
minimum elong	16166 Sep 28 06:54	23° <u>♁</u> 12'29	15°02'17				
max. Earth dist.	16166 Sep 30 02:43	23° <u>♁</u> 15'15	46.22128 AU	conjunction	16174 Oct 06 23:14	1° <u>♁</u> 58'17	-15°27'09
retrograde	16167 Jan 07 10:44	24° <u>♁</u> 49'44		minimum elong	16174 Oct 06 23:17	1° <u>♁</u> 58'17	15°26'50
min. Earth dist.	16167 Mar 29 14:31	23° <u>♁</u> 49'05	44.37519 AU	max. Earth dist.	16174 Oct 08 14:36	2° <u>♁</u> 00'42	47.45055 AU
opposition	16167 Mar 31 10:50	23° <u>♁</u> 46'53	-15°45'00	retrograde	16175 Jan 16 06:49	3° <u>♁</u> 32'59	
direct	16167 Jun 22 02:16	22° <u>♁</u> 44'07		min. Earth dist.	16175 Apr 07 18:29	2° <u>♁</u> 33'13	45.59407 AU
				opposition	16175 Apr 09 08:53	2° <u>♁</u> 31'22	-16°08'13
conjunction	16167 Sep 29 15:28	24° <u>♁</u> 19'26	-15°06'48	direct	16175 Jun 30 20:06	1° <u>♁</u> 29'56	
minimum elong	16167 Sep 29 15:28	24° <u>♁</u> 19'26	15°06'33				
max. Earth dist.	16167 Oct 01 11:51	24° <u>♁</u> 22'13	46.38556 AU	conjunction	16175 Oct 08 06:46	3° <u>♁</u> 02'31	-15°28'48
retrograde	16168 Jan 08 21:20	25° <u>♁</u> 56'19		minimum elong	16175 Oct 08 06:51	3° <u>♁</u> 02'31	15°28'28
min. Earth dist.	16168 Mar 30 01:12	24° <u>♁</u> 55'45	44.53889 AU	max. Earth dist.	16175 Oct 09 21:40	3° <u>♁</u> 04'54	47.58565 AU
opposition	16168 Mar 31 20:14	24° <u>♁</u> 53'38	-15°49'09	retrograde	16176 Jan 17 10:47	4° <u>♁</u> 36'54	
direct	16168 Jun 22 10:50	23° <u>♁</u> 51'02		min. Earth dist.	16176 Apr 08 03:15	3° <u>♁</u> 37'12	45.72682 AU
				opposition	16176 Apr 09 16:56	3° <u>♁</u> 35'23	-16°09'41
conjunction	16168 Sep 29 23:51	25° <u>♁</u> 25'58	-15°10'44	direct	16176 Jul 01 07:02	2° <u>♁</u> 34'03	
minimum elong	16168 Sep 29 23:53	25° <u>♁</u> 25'58	15°10'30				
max. Earth dist.	16168 Oct 01 19:22	25° <u>♁</u> 28'41	46.54743 AU	conjunction	16176 Oct 08 14:02	4° <u>♁</u> 06'18	-15°30'11
retrograde	16169 Jan 09 05:55	27° <u>♁</u> 02'30		minimum elong	16176 Oct 08 14:05	4° <u>♁</u> 06'18	15°29'50
min. Earth dist.	16169 Mar 31 09:42	26° <u>♁</u> 02'07	44.70003 AU	max. Earth dist.	16176 Oct 10 03:03	4° <u>♁</u> 08'34	47.71585 AU
opposition	16169 Apr 02 05:19	25° <u>♁</u> 59'58	-15°52'55	retrograde	16177 Jan 17 16:18	5° <u>♁</u> 40'21	
direct	16169 Jun 23 18:03	24° <u>♁</u> 57'33		min. Earth dist.	16177 Apr 09 11:38	4° <u>♁</u> 40'43	45.85510 AU
				opposition	16177 Apr 11 00:50	4° <u>♁</u> 38'56	-16°10'51
conjunction	16169 Oct 01 07:56	26° <u>♁</u> 32'07	-15°14'19	direct	16177 Jul 02 16:53	3° <u>♁</u> 37'42	
minimum elong	16169 Oct 01 07:59	26° <u>♁</u> 32'08	15°14'02				
max. Earth dist.	16169 Oct 03 02:56	26° <u>♁</u> 34'48	46.70662 AU	conjunction	16177 Oct 09 21:08	5° <u>♁</u> 09'36	-15°31'16
retrograde	16170 Jan 10 13:13	28° <u>♁</u> 08'20		minimum elong	16177 Oct 09 21:14	5° <u>♁</u> 09'37	15°30'55
min. Earth dist.	16170 Apr 01 19:45	27° <u>♁</u> 08'03	44.85848 AU	max. Earth dist.	16177 Oct 11 10:34	5° <u>♁</u> 11'53	47.84181 AU
opposition	16170 Apr 03 14:22	27° <u>♁</u> 05'58	-15°56'19	retrograde	16178 Jan 18 23:22	6° <u>♁</u> 43'21	
direct	16170 Jun 25 03:00	26° <u>♁</u> 03'44		min. Earth dist.	16178 Apr 10 20:55	5° <u>♁</u> 43'43	45.97934 AU
				opposition	16178 Apr 12 08:35	5° <u>♁</u> 42'00	-16°11'43
conjunction	16170 Oct 02 16:07	27° <u>♁</u> 37'58	-15°17'32	direct	16178 Jul 04 03:09	4° <u>♁</u> 40'52	
minimum elong	16170 Oct 02 16:10	27° <u>♁</u> 37'58	15°17'16				
max. Earth dist.	16170 Oct 04 11:17	27° <u>♁</u> 40'39	46.86303 AU	conjunction	16178 Oct 11 04:06	6° <u>♁</u> 12'26	-15°32'03
retrograde	16171 Jan 11 17:58	29° <u>♁</u> 13'51		minimum elong	16178 Oct 11 04:10	6° <u>♁</u> 12'26	15°31'41
min. Earth dist.	16171 Apr 03 05:06	28° <u>♁</u> 13'42	45.01369 AU	max. Earth dist.	16178 Oct 12 16:11	6° <u>♁</u> 14'37	47.96426 AU
opposition	16171 Apr 04 23:01	28° <u>♁</u> 11'39	-15°59'21	retrograde	16179 Jan 20 07:46	7° <u>♁</u> 45'52	
direct	16171 Jun 26 14:26	27° <u>♁</u> 09'35		min. Earth dist.	16179 Apr 12 03:46	6° <u>♁</u> 46'21	46.10033 AU
				opposition	16179 Apr 13 15:56	6° <u>♁</u> 44'37	-16°12'16
conjunction	16171 Oct 04 00:01	28° <u>♁</u> 43'29	-15°20'24	direct	16179 Jul 05 09:50	5° <u>♁</u> 43'34	
minimum elong	16171 Oct 04 00:04	28° <u>♁</u> 43'29	15°20'07				
max. Earth dist.	16171 Oct 05 17:36	28° <u>♁</u> 46'04	47.01611 AU	conjunction	16179 Oct 12 10:53	7° <u>♁</u> 14'50	-15°32'32
	16171 Dec 02 14:48	0° <u>♁</u>		minimum elong	16179 Oct 12 10:59	7° <u>♁</u> 14'50	15°32'10
retrograde	16172 Jan 13 02:51	0° <u>♁</u> 19'05		max. Earth dist.	16179 Oct 13 22:36	7° <u>♁</u> 16'59	48.08364 AU
	16172 Feb 24 18:27	30° <u>♁</u>		retrograde	16180 Jan 21 15:10	8° <u>♁</u> 47'59	
min. Earth dist.	16172 Apr 03 13:47	29° <u>♁</u> 19'05	45.16547 AU	opposition	16180 Apr 13 23:28	7° <u>♁</u> 46'49	-16°12'30
opposition	16172 Apr 05 07:42	29° <u>♁</u> 17'03	-16°02'03	min. Earth dist.	16180 Apr 12 12:37	7° <u>♁</u> 48'29	46.21852 AU
direct	16172 Jun 26 23:09	28° <u>♁</u> 15'09		direct	16180 Jul 05 15:42	6° <u>♁</u> 45'54	
conjunction	16172 Oct 04 07:48	29° <u>♁</u> 48'43	-15°22'57	conjunction	16180 Oct 12 17:31	8° <u>♁</u> 16'51	-15°32'42
minimum elong	16172 Oct 04 07:51	29° <u>♁</u> 48'44	15°22'40	minimum elong	16180 Oct 12 17:36	8° <u>♁</u> 16'52	15°32'18

max. Earth dist.	16180 Oct 14 05:20	8° <del>ℳ</del> 19'01	48.20048 AU	conjunction	16188 Oct 20 19:45	16° <del>ℳ</del> 25'03	-15°23'51
retrograde	16181 Jan 21 19:20	9° <del>ℳ</del> 49'44		minimum elong	16188 Oct 20 19:53	16° <del>ℳ</del> 25'04	15°23'23
min. Earth dist.	16181 Apr 13 19:56	8° <del>ℳ</del> 50'20	46.33396 AU	max. Earth dist.	16188 Oct 22 00:19	16° <del>ℳ</del> 26'45	49.00777 AU
opposition	16181 Apr 15 06:45	8° <del>ℳ</del> 48'40	-16°12'25	retrograde	16189 Jan 30 00:05	17° <del>ℳ</del> 56'16	
direct	16181 Jul 06 23:02	7° <del>ℳ</del> 47'52		min. Earth dist.	16189 Apr 22 08:44	16° <del>ℳ</del> 57'26	47.12285 AU
				opposition	16189 Apr 23 13:14	16° <del>ℳ</del> 56'06	-16°01'26
conjunction	16181 Oct 14 00:01	9° <del>ℳ</del> 18'34	-15°32'33	direct	16189 Jul 15 07:40	15° <del>ℳ</del> 56'14	
minimum elong	16181 Oct 14 00:07	9° <del>ℳ</del> 18'34	15°32'10				
max. Earth dist.	16181 Oct 15 10:27	9° <del>ℳ</del> 20'38	48.31460 AU	conjunction	16189 Oct 22 01:39	17° <del>ℳ</del> 25'08	-15°21'38
retrograde	16182 Jan 23 01:48	10° <del>ℳ</del> 51'12		minimum elong	16189 Oct 22 01:46	17° <del>ℳ</del> 25'08	15°21'09
min. Earth dist.	16182 Apr 15 03:16	9° <del>ℳ</del> 51'54	46.44673 AU	max. Earth dist.	16189 Oct 23 05:33	17° <del>ℳ</del> 26'47	49.08772 AU
opposition	16182 Apr 16 13:48	9° <del>ℳ</del> 50'15	-16°12'01	retrograde	16190 Jan 31 07:14	18° <del>ℳ</del> 56'08	
direct	16182 Jul 08 06:09	8° <del>ℳ</del> 49'34		opposition	16190 Apr 24 19:32	17° <del>ℳ</del> 56'02	-15°58'56
				min. Earth dist.	16190 Apr 23 16:54	17° <del>ℳ</del> 57'17	47.20045 AU
conjunction	16182 Oct 15 06:33	10° <del>ℳ</del> 20'01	-15°32'07	direct	16190 Jul 16 12:32	16° <del>ℳ</del> 56'15	
minimum elong	16182 Oct 15 06:39	10° <del>ℳ</del> 20'01	15°31'42				
max. Earth dist.	16182 Oct 16 17:22	10° <del>ℳ</del> 22'06	48.42588 AU	conjunction	16190 Oct 23 07:29	18° <del>ℳ</del> 24'55	-15°19'09
retrograde	16183 Jan 24 07:38	11° <del>ℳ</del> 52'26		minimum elong	16190 Oct 23 07:38	18° <del>ℳ</del> 24'56	15°18'40
min. Earth dist.	16183 Apr 16 11:42	10° <del>ℳ</del> 53'11	46.55630 AU	max. Earth dist.	16190 Oct 24 11:08	18° <del>ℳ</del> 26'33	49.16383 AU
opposition	16183 Apr 17 20:53	10° <del>ℳ</del> 51'36	-16°11'18	retrograde	16191 Feb 01 11:29	19° <del>ℳ</del> 55'43	
direct	16183 Jul 09 15:34	9° <del>ℳ</del> 51'04		min. Earth dist.	16191 Apr 24 23:06	18° <del>ℳ</del> 56'55	47.27431 AU
				opposition	16191 Apr 26 01:41	18° <del>ℳ</del> 55'40	-15°56'09
conjunction	16183 Oct 16 12:49	11° <del>ℳ</del> 21'16	-15°31'23	direct	16191 Jul 17 17:08	17° <del>ℳ</del> 55'57	
minimum elong	16183 Oct 16 12:55	11° <del>ℳ</del> 21'16	15°30'58				
max. Earth dist.	16183 Oct 17 22:17	11° <del>ℳ</del> 23'16	48.53395 AU	conjunction	16191 Oct 24 12:58	19° <del>ℳ</del> 24'27	-15°16'25
retrograde	16184 Jan 25 16:06	12° <del>ℳ</del> 53'28		minimum elong	16191 Oct 24 13:05	19° <del>ℳ</del> 24'27	15°15'54
min. Earth dist.	16184 Apr 16 18:22	11° <del>ℳ</del> 54'22	46.66241 AU	max. Earth dist.	16191 Oct 25 15:06	19° <del>ℳ</del> 25'59	49.23646 AU
opposition	16184 Apr 18 03:47	11° <del>ℳ</del> 52'47	-16°10'18	retrograde	16192 Feb 02 16:09	20° <del>ℳ</del> 55'03	
direct	16184 Jul 09 21:17	10° <del>ℳ</del> 52'23		min. Earth dist.	16192 Apr 25 05:48	19° <del>ℳ</del> 56'17	47.34505 AU
				opposition	16192 Apr 26 07:50	19° <del>ℳ</del> 55'04	-15°53'06
conjunction	16184 Oct 16 19:07	12° <del>ℳ</del> 22'21	-15°30'23	direct	16192 Jul 17 22:29	18° <del>ℳ</del> 55'26	
minimum elong	16184 Oct 16 19:14	12° <del>ℳ</del> 22'22	15°29'56				
max. Earth dist.	16184 Oct 18 04:04	12° <del>ℳ</del> 24'19	48.63822 AU	conjunction	16192 Oct 24 18:36	20° <del>ℳ</del> 23'43	-15°13'24
retrograde	16185 Jan 26 01:09	13° <del>ℳ</del> 54'22		minimum elong	16192 Oct 24 18:44	20° <del>ℳ</del> 23'44	15°12'55
min. Earth dist.	16185 Apr 18 03:03	12° <del>ℳ</del> 55'18	46.76453 AU	max. Earth dist.	16192 Oct 25 21:10	20° <del>ℳ</del> 25'17	49.30612 AU
opposition	16185 Apr 19 10:44	12° <del>ℳ</del> 53'48	-16°09'02	retrograde	16193 Feb 02 19:33	21° <del>ℳ</del> 54'10	
direct	16185 Jul 11 01:11	11° <del>ℳ</del> 53'32		opposition	16193 Apr 27 13:52	20° <del>ℳ</del> 54'15	-15°49'47
				min. Earth dist.	16193 Apr 26 12:56	20° <del>ℳ</del> 55'25	47.41272 AU
conjunction	16185 Oct 18 01:24	13° <del>ℳ</del> 23'18	-15°29'07	direct	16193 Jul 19 07:26	19° <del>ℳ</del> 54'41	
minimum elong	16185 Oct 18 01:30	13° <del>ℳ</del> 23'19	15°28'40				
max. Earth dist.	16185 Oct 19 09:48	13° <del>ℳ</del> 25'14	48.73828 AU	conjunction	16193 Oct 26 00:01	21° <del>ℳ</del> 22'48	-15°10'08
retrograde	16186 Jan 27 05:43	14° <del>ℳ</del> 55'07		minimum elong	16193 Oct 26 00:09	21° <del>ℳ</del> 22'48	15°09'37
min. Earth dist.	16186 Apr 19 10:17	13° <del>ℳ</del> 56'09	46.86187 AU	max. Earth dist.	16193 Oct 27 01:14	21° <del>ℳ</del> 24'17	49.37289 AU
opposition	16186 Apr 20 17:28	13° <del>ℳ</del> 54'40	-16°07'30	retrograde	16194 Feb 04 02:31	22° <del>ℳ</del> 53'05	
direct	16186 Jul 12 08:08	12° <del>ℳ</del> 54'32		opposition	16194 Apr 28 19:43	21° <del>ℳ</del> 53'15	-15°46'11
				min. Earth dist.	16194 Apr 27 18:30	21° <del>ℳ</del> 54'26	47.47739 AU
conjunction	16186 Oct 19 07:36	14° <del>ℳ</del> 24'06	-15°27'36	direct	16194 Jul 20 14:29	20° <del>ℳ</del> 53'46	
minimum elong	16186 Oct 19 07:44	14° <del>ℳ</del> 24'06	15°27'08				
max. Earth dist.	16186 Oct 20 14:00	14° <del>ℳ</del> 25'54	48.83329 AU	conjunction	16194 Oct 27 05:26	22° <del>ℳ</del> 21'43	-15°06'37
	16186 Nov 14 04:10	15° <del>ℳ</del>		minimum elong	16194 Oct 27 05:35	22° <del>ℳ</del> 21'43	15°06'06
retrograde	16187 Jan 28 10:34	15° <del>ℳ</del> 55'43		max. Earth dist.	16194 Oct 28 06:15	22° <del>ℳ</del> 23'10	49.43643 AU
	16187 Apr 17 22:13	15° <del>ℳ</del> 55'43		retrograde	16195 Feb 05 11:41	23° <del>ℳ</del> 51'51	
min. Earth dist.	16187 Apr 20 17:59	14° <del>ℳ</del> 56'48	46.95410 AU	min. Earth dist.	16195 Apr 29 02:01	22° <del>ℳ</del> 53'12	47.53875 AU
opposition	16187 Apr 22 00:06	14° <del>ℳ</del> 55'23	-16°05'43	opposition	16195 Apr 30 01:34	22° <del>ℳ</del> 52'06	-15°42'20
direct	16187 Jul 13 15:41	13° <del>ℳ</del> 55'21		direct	16195 Jul 21 18:43	21° <del>ℳ</del> 52'42	
	16187 Oct 02 23:36	15° <del>ℳ</del>					
conjunction	16187 Oct 20 13:52	15° <del>ℳ</del> 24'42	-15°25'51	conjunction	16195 Oct 28 10:53	23° <del>ℳ</del> 20'30	-15°02'50
minimum elong	16187 Oct 20 13:59	15° <del>ℳ</del> 24'43	15°25'23	minimum elong	16195 Oct 28 11:02	23° <del>ℳ</del> 20'30	15°02'17
max. Earth dist.	16187 Oct 21 20:12	15° <del>ℳ</del> 26'30	48.92308 AU	max. Earth dist.	16195 Oct 29 11:18	23° <del>ℳ</del> 21'55	49.49668 AU
retrograde	16188 Jan 29 15:50	16° <del>ℳ</del> 56'07		retrograde	16196 Feb 06 17:01	24° <del>ℳ</del> 50'29	
min. Earth dist.	16188 Apr 21 02:21	15° <del>ℳ</del> 57'13	47.04093 AU	min. Earth dist.	16196 Apr 29 07:50	23° <del>ℳ</del> 51'55	47.59642 AU
opposition	16188 Apr 22 06:47	15° <del>ℳ</del> 55'52	-16°03'42	opposition	16196 Apr 30 07:23	23° <del>ℳ</del> 50'49	-15°38'14
	16188 Jun 24 14:19	15° <del>ℳ</del> 55'52		direct	16196 Jul 21 22:32	22° <del>ℳ</del> 51'31	
direct	16188 Jul 14 01:30	14° <del>ℳ</del> 55'56		evening set	16196 Oct 27 17:07	24° <del>ℳ</del> 17'49	
	16188 Aug 02 03:17	15° <del>ℳ</del>					
				conjunction	16196 Oct 28 16:03	24° <del>ℳ</del> 19'09	-14°58'49
				minimum elong	16196 Oct 28 16:12	24° <del>ℳ</del> 19'10	14°58'17

morning rise	16196 Oct 29 15:20	24° $\mathcal{M}$ 20'31		min. Earth dist.	16203 May 08 06:37	0° $\mathcal{J}$ 38'28	47.86425 AU
max. Earth dist.	16196 Oct 29 14:51	24° $\mathcal{M}$ 20'29	49.55298 AU		16203 Jun 14 14:56	30° $\mathcal{R}\mathcal{M}$	
retrograde	16197 Feb 06 21:39	25° $\mathcal{M}$ 49'01		direct	16203 Jul 30 15:36	29° $\mathcal{M}$ 38'45	
opposition	16197 May 01 13:14	24° $\mathcal{M}$ 49'25	-15°33'53		16203 Sep 13 13:58	0° $\mathcal{J}$	
min. Earth dist.	16197 Apr 30 14:54	24° $\mathcal{M}$ 50'28	47.64999 AU	evening set	16203 Nov 01 20:00	0° $\mathcal{J}$ 59'26	
direct	16197 Jul 23 03:36	23° $\mathcal{M}$ 50'12					
evening set	16197 Oct 28 02:37	25° $\mathcal{M}$ 15'13		conjunction	16203 Nov 06 04:31	1° $\mathcal{J}$ 05'27	-14°24'42
				minimum elong	16203 Nov 06 04:42	1° $\mathcal{J}$ 05'28	14°24'07
conjunction	16197 Oct 29 21:33	25° $\mathcal{M}$ 17'43	-14°54'35	max. Earth dist.	16203 Nov 06 20:36	1° $\mathcal{J}$ 06'23	49.80952 AU
minimum elong	16197 Oct 29 21:43	25° $\mathcal{M}$ 17'43	14°54'01	morning rise	16203 Nov 10 13:33	1° $\mathcal{J}$ 11'31	
morning rise	16197 Oct 31 16:51	25° $\mathcal{M}$ 20'14		retrograde	16204 Feb 15 07:38	2° $\mathcal{J}$ 34'27	
max. Earth dist.	16197 Oct 30 20:23	25° $\mathcal{M}$ 19'03	49.60481 AU	min. Earth dist.	16204 May 08 11:44	1° $\mathcal{J}$ 35'52	47.88503 AU
retrograde	16198 Feb 08 00:13	26° $\mathcal{M}$ 47'27		opposition	16204 May 09 03:47	1° $\mathcal{J}$ 35'07	-14°57'25
opposition	16198 May 02 18:51	25° $\mathcal{M}$ 47'55	-15°29'19	direct	16204 Jul 30 22:02	0° $\mathcal{J}$ 36'10	
min. Earth dist.	16198 May 01 22:03	25° $\mathcal{M}$ 48'53	47.69864 AU	evening set	16204 Nov 01 16:48	1° $\mathcal{J}$ 56'19	
direct	16198 Jul 24 12:04	24° $\mathcal{M}$ 48'46					
evening set	16198 Oct 28 18:14	26° $\mathcal{M}$ 12'51		conjunction	16204 Nov 06 09:20	2° $\mathcal{J}$ 02'47	-14°18'57
				minimum elong	16204 Nov 06 09:29	2° $\mathcal{J}$ 02'47	14°18'20
conjunction	16198 Oct 31 02:55	26° $\mathcal{M}$ 16'09	-14°50'07	max. Earth dist.	16204 Nov 07 01:02	2° $\mathcal{J}$ 03'41	49.82953 AU
minimum elong	16198 Oct 31 03:03	26° $\mathcal{M}$ 16'09	14°49'34	morning rise	16204 Nov 11 02:22	2° $\mathcal{J}$ 09'18	
max. Earth dist.	16198 Oct 31 23:40	26° $\mathcal{M}$ 17'21	49.65157 AU	retrograde	16205 Feb 15 15:33	3° $\mathcal{J}$ 31'42	
morning rise	16198 Nov 02 11:57	26° $\mathcal{M}$ 19'28		opposition	16205 May 10 09:08	2° $\mathcal{J}$ 32'24	-14°51'17
retrograde	16199 Feb 09 06:41	27° $\mathcal{M}$ 45'45		min. Earth dist.	16205 May 09 18:36	2° $\mathcal{J}$ 33'05	47.90273 AU
min. Earth dist.	16199 May 03 03:59	26° $\mathcal{M}$ 47'14	47.74197 AU	direct	16205 Aug 01 02:40	1° $\mathcal{J}$ 33'31	
opposition	16199 May 04 00:30	26° $\mathcal{M}$ 46'17	-15°24'33	evening set	16205 Nov 02 14:10	2° $\mathcal{J}$ 53'08	
direct	16199 Jul 25 18:02	25° $\mathcal{M}$ 47'11					
evening set	16199 Oct 29 12:00	27° $\mathcal{M}$ 10'28		conjunction	16205 Nov 07 14:17	3° $\mathcal{J}$ 00'02	-14°12'57
				minimum elong	16205 Nov 07 14:27	3° $\mathcal{J}$ 00'02	14°12'21
conjunction	16199 Nov 01 08:10	27° $\mathcal{M}$ 14'25	-14°45'28	max. Earth dist.	16205 Nov 08 05:43	3° $\mathcal{J}$ 00'55	49.84669 AU
minimum elong	16199 Nov 01 08:20	27° $\mathcal{M}$ 14'26	14°44'54	morning rise	16205 Nov 12 14:55	3° $\mathcal{J}$ 06'58	
max. Earth dist.	16199 Nov 02 04:01	27° $\mathcal{M}$ 15'34	49.69274 AU	retrograde	16206 Feb 16 21:19	4° $\mathcal{J}$ 28'53	
morning rise	16199 Nov 04 04:45	27° $\mathcal{M}$ 18'24		opposition	16206 May 11 14:07	3° $\mathcal{J}$ 29'38	-14°44'54
retrograde	16200 Feb 10 13:43	28° $\mathcal{M}$ 43'54		min. Earth dist.	16206 May 10 23:24	3° $\mathcal{J}$ 30'19	47.91740 AU
min. Earth dist.	16200 May 04 11:53	27° $\mathcal{M}$ 45'20	47.77971 AU	direct	16206 Aug 02 04:59	2° $\mathcal{J}$ 30'47	
opposition	16200 May 05 06:17	27° $\mathcal{M}$ 44'28	-15°19'34	evening set	16206 Nov 03 11:32	3° $\mathcal{J}$ 49'55	
direct	16200 Jul 26 23:53	26° $\mathcal{M}$ 45'25					
evening set	16200 Oct 30 07:10	28° $\mathcal{M}$ 07'58		conjunction	16206 Nov 08 19:04	3° $\mathcal{J}$ 57'15	-14°06'42
				minimum elong	16206 Nov 08 19:14	3° $\mathcal{J}$ 57'16	14°06'05
conjunction	16200 Nov 02 13:28	28° $\mathcal{M}$ 12'30	-14°40'36	max. Earth dist.	16206 Nov 09 09:00	3° $\mathcal{J}$ 58'03	49.86078 AU
minimum elong	16200 Nov 02 13:37	28° $\mathcal{M}$ 12'31	14°40'02	morning rise	16206 Nov 14 03:12	4° $\mathcal{J}$ 04'36	
max. Earth dist.	16200 Nov 03 08:36	28° $\mathcal{M}$ 13'36	49.72865 AU	retrograde	16207 Feb 18 02:13	5° $\mathcal{J}$ 26'03	
morning rise	16200 Nov 05 20:09	28° $\mathcal{M}$ 17'03		opposition	16207 May 12 19:20	4° $\mathcal{J}$ 26'51	-14°38'17
retrograde	16201 Feb 11 18:42	29° $\mathcal{M}$ 41'51		min. Earth dist.	16207 May 12 05:39	4° $\mathcal{J}$ 27'29	47.92904 AU
opposition	16201 May 06 11:43	28° $\mathcal{M}$ 42'26	-15°14'22	direct	16207 Aug 03 08:51	3° $\mathcal{J}$ 28'03	
min. Earth dist.	16201 May 05 17:37	28° $\mathcal{M}$ 43'17	47.81223 AU	evening set	16207 Nov 04 09:02	4° $\mathcal{J}$ 46'44	
direct	16201 Jul 28 04:03	27° $\mathcal{M}$ 43'25					
evening set	16201 Oct 31 02:54	29° $\mathcal{M}$ 05'18		conjunction	16207 Nov 09 23:51	4° $\mathcal{J}$ 54'28	-14°00'14
				minimum elong	16207 Nov 10 00:01	4° $\mathcal{J}$ 54'29	13°59'38
conjunction	16201 Nov 03 18:30	29° $\mathcal{M}$ 10'22	-14°35'32	max. Earth dist.	16207 Nov 10 14:09	4° $\mathcal{J}$ 55'18	49.87165 AU
minimum elong	16201 Nov 03 18:40	29° $\mathcal{M}$ 10'22	14°34'57	morning rise	16207 Nov 15 15:12	5° $\mathcal{J}$ 02'14	
max. Earth dist.	16201 Nov 04 11:47	29° $\mathcal{M}$ 11'22	49.75959 AU	retrograde	16208 Feb 19 03:33	6° $\mathcal{J}$ 23'14	
morning rise	16201 Nov 07 10:35	29° $\mathcal{M}$ 15'27		min. Earth dist.	16208 May 12 11:48	5° $\mathcal{J}$ 24'40	47.93713 AU
	16201 Dec 11 16:36	0° $\mathcal{J}$		opposition	16208 May 13 00:31	5° $\mathcal{J}$ 24'05	-14°31'26
retrograde	16202 Feb 12 23:25	0° $\mathcal{J}$ 39'34		direct	16208 Aug 03 16:26	4° $\mathcal{J}$ 25'21	
	16202 Apr 19 13:55	30° $\mathcal{R}\mathcal{M}$		evening set	16208 Nov 04 06:55	5° $\mathcal{J}$ 43'36	
opposition	16202 May 07 17:11	29° $\mathcal{M}$ 40'11	-15°08'57				
min. Earth dist.	16202 May 07 00:15	29° $\mathcal{M}$ 40'58	47.84025 AU	conjunction	16208 Nov 10 04:39	5° $\mathcal{J}$ 51'44	-13°53'32
direct	16202 Jul 29 07:53	28° $\mathcal{M}$ 41'11		minimum elong	16208 Nov 10 04:49	5° $\mathcal{J}$ 51'44	13°52'55
	16202 Oct 30 04:53	0° $\mathcal{J}$		max. Earth dist.	16208 Nov 10 17:19	5° $\mathcal{J}$ 52'28	49.87895 AU
evening set	16202 Oct 31 23:14	0° $\mathcal{J}$ 02'26		morning rise	16208 Nov 16 03:01	5° $\mathcal{J}$ 59'54	
				retrograde	16209 Feb 19 09:30	7° $\mathcal{J}$ 20'28	
conjunction	16202 Nov 04 23:36	0° $\mathcal{J}$ 08'00	-14°30'14	opposition	16209 May 14 05:31	6° $\mathcal{J}$ 21'22	-14°24'20
minimum elong	16202 Nov 04 23:45	0° $\mathcal{J}$ 08'01	14°29'38	min. Earth dist.	16209 May 13 16:56	6° $\mathcal{J}$ 21'57	47.94142 AU
max. Earth dist.	16202 Nov 05 17:04	0° $\mathcal{J}$ 09'01	49.78630 AU	direct	16209 Aug 04 22:04	5° $\mathcal{J}$ 22'41	
morning rise	16202 Nov 09 00:22	0° $\mathcal{J}$ 13'35		evening set	16209 Nov 05 04:50	6° $\mathcal{J}$ 40'31	
retrograde	16203 Feb 14 02:04	1° $\mathcal{J}$ 37'06					
opposition	16203 May 08 22:29	0° $\mathcal{J}$ 37'44	-15°03'19	conjunction	16209 Nov 11 09:31	6° $\mathcal{J}$ 49'02	-13°46'38



minimum elong	16209 Nov 11 09:41	6°♂49'02	13°46'01	evening set	16216 Nov 09 18:43	13°♂17'26	
max. Earth dist.	16209 Nov 11 21:26	6°♂49'43	49.88194 AU				
morning rise	16209 Nov 17 14:50	6°♂57'36		conjunction	16216 Nov 17 19:12	13°♂28'25	-12°52'40
retrograde	16210 Feb 20 17:10	8°♂17'45		minimum elong	16216 Nov 17 19:23	13°♂28'25	12°52'01
opposition	16210 May 15 10:41	7°♂18'41	-14°17'03	max. Earth dist.	16216 Nov 18 00:01	13°♂28'41	49.76861 AU
min. Earth dist.	16210 May 15 00:15	7°♂19'10	47.94108 AU	morning rise	16216 Nov 25 20:38	13°♂39'27	
direct	16210 Aug 06 03:35	6°♂20'03		retrograde	16217 Feb 27 05:15	14°♂56'52	
evening set	16210 Nov 06 03:11	7°♂37'28		opposition	16217 May 21 21:40	13°♂57'45	-13°20'13
				min. Earth dist.	16217 May 21 17:05	13°♂57'58	47.80519 AU
conjunction	16210 Nov 12 14:30	7°♂46'21	-13°39'31	direct	16217 Aug 12 10:34	12°♂59'02	
minimum elong	16210 Nov 12 14:41	7°♂46'22	13°38'53	evening set	16217 Nov 10 17:33	14°♂13'46	
max. Earth dist.	16210 Nov 13 01:41	7°♂47'00	49.88013 AU				
morning rise	16210 Nov 19 02:25	7°♂55'18		conjunction	16217 Nov 19 00:01	14°♂25'05	-12°44'06
retrograde	16211 Feb 21 22:55	9°♂15'02		minimum elong	16217 Nov 19 00:11	14°♂25'05	12°43'25
opposition	16211 May 16 15:40	8°♂16'01	-14°09'33	max. Earth dist.	16217 Nov 19 05:08	14°♂25'22	49.73758 AU
min. Earth dist.	16211 May 16 05:29	8°♂16'29	47.93553 AU	morning rise	16217 Nov 27 07:15	14°♂36'27	
direct	16211 Aug 07 06:44	7°♂17'23		retrograde	16218 Feb 28 06:47	15°♂53'32	
evening set	16211 Nov 07 01:35	8°♂34'24		opposition	16218 May 23 02:35	14°♂54'24	-13°11'11
				min. Earth dist.	16218 May 22 22:37	14°♂54'35	47.77147 AU
conjunction	16211 Nov 13 19:23	8°♂43'40	-13°32'13	direct	16218 Aug 13 16:41	13°♂55'41	
minimum elong	16211 Nov 13 19:32	8°♂43'40	13°31'35	evening set	16218 Nov 11 16:33	15°♂10'06	
max. Earth dist.	16211 Nov 14 04:22	8°♂44'11	49.87296 AU				
morning rise	16211 Nov 20 13:56	8°♂52'58		conjunction	16218 Nov 20 04:39	15°♂21'45	-12°35'17
retrograde	16212 Feb 23 04:28	10°♂12'17		minimum elong	16218 Nov 20 04:50	15°♂21'46	12°34'38
opposition	16212 May 16 20:52	9°♂13'16	-14°01'51	max. Earth dist.	16218 Nov 20 08:21	15°♂21'58	49.70363 AU
min. Earth dist.	16212 May 16 12:12	9°♂13'40	47.92471 AU	morning rise	16218 Nov 28 17:43	15°♂33'27	
direct	16212 Aug 07 08:24	8°♂14'39		retrograde	16219 Mar 01 11:12	16°♂50'14	
evening set	16212 Nov 07 00:01	9°♂31'15		opposition	16219 May 24 07:26	15°♂51'06	-13°01'56
				min. Earth dist.	16219 May 24 03:28	15°♂51'17	47.73481 AU
conjunction	16212 Nov 14 00:17	9°♂40'53	-13°24'44	direct	16219 Aug 14 22:05	14°♂52'24	
minimum elong	16212 Nov 14 00:28	9°♂40'54	13°24'05	evening set	16219 Nov 12 15:34	16°♂06'32	
max. Earth dist.	16212 Nov 14 09:14	9°♂41'24	49.86055 AU				
morning rise	16212 Nov 21 01:11	9°♂50'32		conjunction	16219 Nov 21 09:26	16°♂18'30	-12°26'16
retrograde	16213 Feb 23 06:48	11°♂09'28		minimum elong	16219 Nov 21 09:37	16°♂18'30	12°25'35
opposition	16213 May 18 01:58	10°♂10'26	-13°53'58	max. Earth dist.	16219 Nov 21 12:41	16°♂18'41	49.66651 AU
min. Earth dist.	16213 May 17 18:33	10°♂10'46	47.90862 AU	morning rise	16219 Nov 30 04:16	16°♂30'31	
direct	16213 Aug 08 15:10	9°♂11'48		retrograde	16220 Mar 01 18:11	17°♂47'02	
evening set	16213 Nov 07 22:42	10°♂27'59		opposition	16220 May 24 12:31	16°♂47'54	-12°52'27
				min. Earth dist.	16220 May 24 10:16	16°♂48'01	47.69483 AU
conjunction	16213 Nov 15 05:06	10°♂37'58	-13°17'02	direct	16220 Aug 15 03:34	15°♂49'13	
minimum elong	16213 Nov 15 05:16	10°♂37'58	13°16'23	evening set	16220 Nov 12 14:45	17°♂03'04	
max. Earth dist.	16213 Nov 15 12:17	10°♂38'22	49.84331 AU				
morning rise	16213 Nov 22 12:16	10°♂47'59		conjunction	16220 Nov 21 14:14	17°♂15'21	-12°17'01
retrograde	16214 Feb 24 10:21	12°♂06'30		minimum elong	16220 Nov 21 14:24	17°♂15'22	12°16'21
opposition	16214 May 19 06:47	11°♂07'26	-13°45'52	max. Earth dist.	16220 Nov 21 17:07	17°♂15'31	49.62598 AU
min. Earth dist.	16214 May 18 23:39	11°♂07'46	47.88810 AU	morning rise	16220 Nov 30 14:35	17°♂27'43	
direct	16214 Aug 09 21:57	10°♂08'47		retrograde	16221 Mar 03 00:06	18°♂43'57	
evening set	16214 Nov 08 21:17	11°♂24'35		opposition	16221 May 25 17:28	17°♂44'51	-12°42'44
				min. Earth dist.	16221 May 25 15:12	17°♂44'57	47.65100 AU
conjunction	16214 Nov 16 09:54	11°♂34'54	-13°09'08	direct	16221 Aug 16 07:05	16°♂46'10	
minimum elong	16214 Nov 16 10:05	11°♂34'54	13°08'29	evening set	16221 Nov 13 14:13	17°♂59'45	
max. Earth dist.	16214 Nov 16 16:25	11°♂35'16	49.82177 AU				
morning rise	16214 Nov 23 23:18	11°♂45'16		conjunction	16221 Nov 22 19:07	18°♂12'22	-12°07'34
retrograde	16215 Feb 25 16:50	13°♂03'24		minimum elong	16221 Nov 22 19:18	18°♂12'23	12°06'53
opposition	16215 May 20 11:50	12°♂04'19	-13°37'33	max. Earth dist.	16221 Nov 22 20:02	18°♂12'25	49.58119 AU
min. Earth dist.	16215 May 20 06:24	12°♂04'34	47.86365 AU	morning rise	16221 Dec 02 01:09	18°♂25'03	
direct	16215 Aug 11 04:38	11°♂05'38		retrograde	16222 Mar 04 06:49	19°♂41'01	
evening set	16215 Nov 09 19:56	12°♂21'03		opposition	16222 May 26 22:24	18°♂41'56	-12°32'50
				min. Earth dist.	16222 May 26 21:48	18°♂41'58	47.60270 AU
conjunction	16215 Nov 17 14:33	12°♂31'42	-13°01'01	direct	16222 Aug 17 08:39	17°♂43'16	
minimum elong	16215 Nov 17 14:43	12°♂31'43	13°00'21	evening set	16222 Nov 14 13:47	18°♂56'37	
max. Earth dist.	16215 Nov 17 20:50	12°♂32'04	49.79678 AU				
morning rise	16215 Nov 25 09:53	12°♂42'25		conjunction	16222 Nov 24 00:15	19°♂09'33	-11°57'55
retrograde	16216 Feb 26 23:25	14°♂00'10		minimum elong	16222 Nov 24 00:25	19°♂09'34	11°57'15
opposition	16216 May 20 16:45	13°♂01'04	-13°29'00	max. Earth dist.	16222 Nov 24 01:00	19°♂09'36	49.53154 AU
min. Earth dist.	16216 May 20 10:59	13°♂01'20	47.83587 AU	morning rise	16222 Dec 03 11:37	19°♂22'32	
direct	16216 Aug 11 07:53	12°♂02'22		retrograde	16223 Mar 05 10:02	20°♂38'17	

opposition	16223 May 28 03:31	19°♂39'11	-12°22'43	max. Earth dist.	16229 Nov 30 05:05	25°♂51'32	49.04908 AU
min. Earth dist.	16223 May 28 04:09	19°♂39'10	47.54912 AU	morning rise	16229 Dec 11 10:49	26°♂07'00	
direct	16223 Aug 18 14:24	18°♂40'30		retrograde	16230 Mar 11 23:18	27°♂21'12	
evening set	16223 Nov 15 13:31	19°♂53'38		opposition	16230 Jun 03 15:16	26°♂21'47	-11°06'10
				min. Earth dist.	16230 Jun 03 22:24	26°♂21'27	47.04338 AU
conjunction	16223 Nov 25 05:09	20°♂06'52	-11°48'05	direct	16230 Aug 25 03:21	25°♂22'45	
minimum elong	16223 Nov 25 05:20	20°♂06'52	11°47'24	evening set	16230 Nov 20 14:09	26°♂34'23	
max. Earth dist.	16223 Nov 25 03:57	20°♂06'48	49.47656 AU				
morning rise	16223 Dec 04 21:53	20°♂20'09		conjunction	16230 Dec 01 16:51	26°♂49'40	-10°33'34
retrograde	16224 Mar 05 14:36	21°♂35'40		minimum elong	16230 Dec 01 17:02	26°♂49'41	10°32'51
opposition	16224 May 28 08:39	20°♂36'33	-12°12'25	max. Earth dist.	16230 Dec 01 10:04	26°♂49'17	48.96588 AU
min. Earth dist.	16224 May 28 09:48	20°♂36'30	47.49014 AU	morning rise	16230 Dec 12 20:43	27°♂05'03	
direct	16224 Aug 18 20:02	19°♂37'50		retrograde	16231 Mar 13 05:48	28°♂19'05	
evening set	16224 Nov 15 13:17	20°♂50'44		opposition	16231 Jun 04 20:28	27°♂19'37	-10°54'19
				min. Earth dist.	16231 Jun 05 03:11	27°♂19'18	46.95731 AU
conjunction	16224 Nov 25 10:15	21°♂04'16	-11°38'04	direct	16231 Aug 26 07:58	26°♂20'32	
minimum elong	16224 Nov 25 10:25	21°♂04'16	11°37'22	evening set	16231 Nov 21 14:35	27°♂32'01	
max. Earth dist.	16224 Nov 25 07:55	21°♂04'07	49.41604 AU				
morning rise	16224 Dec 05 08:20	21°♂17'52		conjunction	16231 Dec 02 21:54	27°♂47'36	-10°22'02
retrograde	16225 Mar 06 21:00	22°♂33'08		minimum elong	16231 Dec 02 22:03	27°♂47'36	10°21'21
opposition	16225 May 29 13:45	21°♂33'59	-12°01'55	max. Earth dist.	16231 Dec 02 13:30	27°♂47'07	48.87953 AU
min. Earth dist.	16225 May 29 16:58	21°♂33'50	47.42577 AU	morning rise	16231 Dec 14 06:39	28°♂03'16	
direct	16225 Aug 20 03:04	20°♂35'14		retrograde	16232 Mar 13 14:23	29°♂17'08	
evening set	16225 Nov 16 13:16	21°♂47'52		opposition	16232 Jun 05 01:53	28°♂17'38	-10°42'15
				min. Earth dist.	16232 Jun 05 10:01	28°♂17'15	46.86806 AU
conjunction	16225 Nov 26 15:24	22°♂01'43	-11°27'50	direct	16232 Aug 26 09:30	27°♂18'30	
minimum elong	16225 Nov 26 15:35	22°♂01'43	11°27'09	evening set	16232 Nov 21 15:16	28°♂29'51	
max. Earth dist.	16225 Nov 26 12:28	22°♂01'32	49.35054 AU				
morning rise	16225 Dec 06 18:33	22°♂15'37		conjunction	16232 Dec 03 03:21	28°♂45'43	-10°10'18
retrograde	16226 Mar 08 04:40	23°♂30'39		minimum elong	16232 Dec 03 03:31	28°♂45'43	10°09'35
opposition	16226 May 30 18:45	22°♂31'27	-11°51'12	max. Earth dist.	16232 Dec 02 19:13	28°♂45'14	48.78978 AU
min. Earth dist.	16226 May 30 22:03	22°♂31'18	47.35659 AU	morning rise	16232 Dec 14 16:37	29°♂01'40	
direct	16226 Aug 21 06:15	21°♂32'38			16233 Feb 04 05:05	0°♂	
evening set	16226 Nov 17 13:12	22°♂45'03		retrograde	16233 Mar 14 18:50	0°♂15'24	
					16233 Apr 22 21:30	30°♂♂	
conjunction	16226 Nov 27 20:19	22°♂59'11	-11°17'25	opposition	16233 Jun 06 07:10	29°♂15'51	-10°29'57
minimum elong	16226 Nov 27 20:28	22°♂59'12	11°16'43	min. Earth dist.	16233 Jun 06 16:06	29°♂15'26	46.77505 AU
max. Earth dist.	16226 Nov 27 15:32	22°♂58'55	49.28044 AU	direct	16233 Aug 27 13:51	28°♂16'40	
morning rise	16226 Dec 08 04:41	23°♂13'24		evening set	16233 Nov 22 16:18	29°♂27'53	
retrograde	16227 Mar 09 11:48	24°♂28'11					
opposition	16227 May 31 23:52	23°♂28'57	-11°40'17	conjunction	16233 Dec 04 08:47	29°♂44'02	-9°58'20
min. Earth dist.	16227 Jun 01 04:39	23°♂28'43	47.28332 AU	minimum elong	16233 Dec 04 08:56	29°♂44'02	9°57'38
direct	16227 Aug 22 08:10	22°♂30'05		max. Earth dist.	16233 Dec 03 22:51	29°♂43'27	48.69605 AU
evening set	16227 Nov 18 13:14	23°♂42'16			16233 Dec 15 22:03	0°♂	
				morning rise	16233 Dec 16 02:41	0°♂00'16	
conjunction	16227 Nov 29 01:28	23°♂56'42	-11°06'47	retrograde	16234 Mar 15 23:56	1°♂13'52	
minimum elong	16227 Nov 29 01:38	23°♂56'43	11°06'06	opposition	16234 Jun 07 12:34	0°♂14'16	-10°17'26
max. Earth dist.	16227 Nov 28 20:53	23°♂56'26	49.20657 AU	min. Earth dist.	16234 Jun 07 22:09	0°♂13'49	46.67777 AU
morning rise	16227 Dec 09 14:44	24°♂11'12			16234 Jun 20 08:05	30°♂♂	
retrograde	16228 Mar 09 13:37	25°♂25'47		direct	16234 Aug 28 18:39	29°♂15'02	
opposition	16228 Jun 01 05:00	24°♂26'28	-11°29'09		16234 Nov 03 15:47	0°♂	
min. Earth dist.	16228 Jun 01 10:22	24°♂26'13	47.20643 AU	evening set	16234 Nov 23 17:21	0°♂26'09	
direct	16228 Aug 22 14:30	23°♂27'33					
evening set	16228 Nov 18 13:25	24°♂39'33		conjunction	16234 Dec 05 14:21	0°♂42'34	-9°46'11
				minimum elong	16234 Dec 05 14:31	0°♂42'34	9°45'28
conjunction	16228 Nov 29 06:26	24°♂54'16	-10°55'56	max. Earth dist.	16234 Dec 05 03:23	0°♂41'55	48.59749 AU
minimum elong	16228 Nov 29 06:36	24°♂54'16	10°55'13	morning rise	16234 Dec 17 12:44	0°♂59'04	
max. Earth dist.	16228 Nov 29 00:26	24°♂53'55	49.12942 AU	retrograde	16235 Mar 17 04:46	2°♂12'34	
morning rise	16228 Dec 10 00:42	25°♂09'03		opposition	16235 Jun 08 18:13	1°♂12'54	-10°04'43
retrograde	16229 Mar 10 16:58	26°♂23'26		min. Earth dist.	16235 Jun 09 05:44	1°♂12'22	46.57539 AU
opposition	16229 Jun 02 10:07	25°♂24'04	-11°17'46	direct	16235 Aug 30 02:57	0°♂13'35	
min. Earth dist.	16229 Jun 02 15:37	25°♂23'49	47.12645 AU	evening set	16235 Nov 24 18:45	1°♂24'35	
direct	16229 Aug 23 20:49	24°♂25'05					
evening set	16229 Nov 19 13:41	25°♂36'54		conjunction	16235 Dec 06 20:08	1°♂41'16	-9°33'50
				minimum elong	16235 Dec 06 20:17	1°♂41'17	9°33'07
conjunction	16229 Nov 30 11:38	25°♂51'55	-10°44'52	max. Earth dist.	16235 Dec 06 08:25	1°♂40'35	48.49384 AU
minimum elong	16229 Nov 30 11:48	25°♂51'55	10°44'10	morning rise	16235 Dec 18 22:48	1°♂58'04	

retrograde	16236 Mar 17 12:09	3°31'27	minimum elong	16242 Dec 13 13:42	8°36'12	8°00'44
opposition	16236 Jun 08 23:49	2°31'42 -9°51'47	max. Earth dist.	16242 Dec 12 19:53	8°35'09	47.64611 AU
min. Earth dist.	16236 Jun 09 11:32	2°31'08 46.46772 AU	morning rise	16242 Dec 26 20:38	8°35'51	
direct	16236 Aug 30 08:23	1°31'27	retrograde	16243 Mar 25 09:51	10°30'743	
evening set	16236 Nov 24 20:14	2°32'309	opposition	16243 Jun 16 16:39	9°30'715	-8°15'02
max. Earth dist.	16236 Dec 06 11:56	2°33'19 48.38479 AU	min. Earth dist.	16243 Jun 17 10:13	9°30'625	45.59880 AU
			direct	16243 Sep 06 19:22	8°30'706	
conjunction	16236 Dec 07 01:49	2°34'08 -9°21'16	evening set	16243 Dec 01 10:33	9°31'736	
minimum elong	16236 Dec 07 01:59	2°34'08 9°20'34				
morning rise	16236 Dec 19 08:59	2°35'11	conjunction	16243 Dec 14 19:47	9°33'625	-7°47'20
retrograde	16237 Mar 18 21:03	4°31'027	minimum elong	16243 Dec 14 19:56	9°33'625	7°46'37
opposition	16237 Jun 10 05:34	3°31'036 -9°38'39	max. Earth dist.	16243 Dec 14 00:39	9°33'517	47.51281 AU
min. Earth dist.	16237 Jun 10 19:11	3°30'958 46.35485 AU	morning rise	16243 Dec 28 06:42	9°35'520	
direct	16237 Aug 31 10:57	2°31'105	retrograde	16244 Mar 25 16:56	11°30'813	
evening set	16237 Nov 25 21:50	3°32'151	opposition	16244 Jun 16 22:50	10°30'740	-8°00'15
			min. Earth dist.	16244 Jun 17 16:46	10°30'648	45.46291 AU
conjunction	16237 Dec 08 07:46	3°33'06 -9°08'31	direct	16244 Sep 06 23:49	9°30'725	
minimum elong	16237 Dec 08 07:55	3°33'06 9°07'48	evening set	16244 Dec 01 13:17	10°31'757	
max. Earth dist.	16237 Dec 07 17:42	3°33'816 48.27073 AU	max. Earth dist.	16244 Dec 14 06:34	10°33'551	47.37649 AU
morning rise	16237 Dec 20 19:00	3°35'626				
retrograde	16238 Mar 20 01:23	5°30'934	conjunction	16244 Dec 15 02:14	10°33'701	-7°32'59
opposition	16238 Jun 11 11:09	4°30'937 -9°25'18	minimum elong	16244 Dec 15 02:22	10°33'701	7°32'17
min. Earth dist.	16238 Jun 12 01:29	4°30'856 46.23718 AU	morning rise	16244 Dec 28 16:47	10°35'612	
direct	16238 Sep 01 17:14	3°30'959	retrograde	16245 Mar 26 21:52	12°30'907	
evening set	16238 Nov 26 23:39	4°32'040	opposition	16245 Jun 18 05:15	11°30'829	-7°45'14
			min. Earth dist.	16245 Jun 19 00:44	11°30'733	45.32372 AU
conjunction	16238 Dec 09 13:33	4°33'810 -8°55'33	direct	16245 Sep 08 08:35	10°30'809	
minimum elong	16238 Dec 09 13:43	4°33'810 8°54'51	evening set	16245 Dec 02 16:28	11°31'843	
max. Earth dist.	16238 Dec 08 21:53	4°33'715 48.15235 AU				
morning rise	16238 Dec 22 05:01	4°35'546	conjunction	16245 Dec 16 08:56	11°33'803	-7°18'25
retrograde	16239 Mar 21 05:55	6°30'848	minimum elong	16245 Dec 16 09:05	11°33'803	7°17'43
opposition	16239 Jun 12 16:54	5°30'844 -9°11'44	max. Earth dist.	16245 Dec 15 12:48	11°33'651	47.23673 AU
min. Earth dist.	16239 Jun 13 07:43	5°30'802 46.11563 AU	morning rise	16245 Dec 30 02:55	11°35'729	
direct	16239 Sep 02 23:01	4°30'859	retrograde	16246 Mar 28 05:51	13°31'027	
evening set	16239 Nov 28 01:20	5°31'935	opposition	16246 Jun 19 11:32	12°30'944	-7°29'58
			min. Earth dist.	16246 Jun 20 07:06	12°30'847	45.18074 AU
conjunction	16239 Dec 10 19:21	5°33'721 -8°42'22	direct	16246 Sep 09 15:16	11°30'918	
minimum elong	16239 Dec 10 19:29	5°33'722 8°41'39	evening set	16246 Dec 03 19:58	12°31'955	
max. Earth dist.	16239 Dec 10 03:05	5°33'624 48.03018 AU				
morning rise	16239 Dec 23 14:51	5°35'513	conjunction	16246 Dec 17 15:44	12°33'930	-7°03'38
retrograde	16240 Mar 21 11:35	7°30'812	minimum elong	16246 Dec 17 15:51	12°33'931	7°02'57
opposition	16240 Jun 12 22:50	6°30'801 -8°57'55	max. Earth dist.	16246 Dec 16 17:31	12°33'811	47.09267 AU
min. Earth dist.	16240 Jun 13 15:10	6°30'714 45.99061 AU	morning rise	16246 Dec 31 13:16	12°35'912	
direct	16240 Sep 03 06:22	5°30'809	retrograde	16247 Mar 29 17:24	14°31'213	
evening set	16240 Nov 28 03:23	6°31'842	opposition	16247 Jun 20 18:17	13°31'124	-7°14'29
max. Earth dist.	16240 Dec 10 08:51	6°33'545 47.90495 AU	min. Earth dist.	16247 Jun 21 15:48	13°31'022	45.03326 AU
			direct	16247 Sep 10 17:51	12°31'051	
conjunction	16240 Dec 11 01:22	6°33'643 -8°28'57	evening set	16247 Dec 04 23:28	13°32'132	
minimum elong	16240 Dec 11 01:31	6°33'644 8°28'16				
morning rise	16240 Dec 24 00:46	6°35'451	conjunction	16247 Dec 18 22:44	13°34'122	-6°48'38
retrograde	16241 Mar 22 18:29	8°30'746	minimum elong	16247 Dec 18 22:51	13°34'122	6°47'57
opposition	16241 Jun 14 04:32	7°30'729 -8°43'52	max. Earth dist.	16247 Dec 18 00:22	13°34'002	46.94385 AU
min. Earth dist.	16241 Jun 14 20:28	7°30'644 45.86269 AU	morning rise	16248 Jan 01 23:27	14°30'119	
direct	16241 Sep 04 11:58	6°30'731	retrograde	16248 Mar 30 00:40	15°31'423	
evening set	16241 Nov 29 05:38	7°31'801	opposition	16248 Jun 21 01:07	14°31'326	-6°58'46
			min. Earth dist.	16248 Jun 21 23:10	14°31'223	44.88073 AU
conjunction	16241 Dec 12 07:23	7°33'619 -8°15'19	direct	16248 Sep 11 00:10	13°31'245	
minimum elong	16241 Dec 12 07:31	7°33'619 8°14'36	evening set	16248 Dec 05 03:31	14°32'330	
max. Earth dist.	16241 Dec 11 13:16	7°33'515 47.77685 AU	max. Earth dist.	16248 Dec 18 05:29	14°34'207	46.79003 AU
morning rise	16241 Dec 25 10:49	7°35'442				
retrograde	16242 Mar 24 03:46	9°30'736	conjunction	16248 Dec 19 05:52	14°34'334	-6°33'26
opposition	16242 Jun 15 10:33	8°30'713 -8°29'35	minimum elong	16248 Dec 19 05:59	14°34'335	6°32'44
min. Earth dist.	16242 Jun 16 03:53	8°30'624 45.73210 AU	morning rise	16249 Jan 02 09:59	15°30'346	
direct	16242 Sep 05 14:52	7°30'709	retrograde	16249 Mar 31 07:39	16°31'652	
evening set	16242 Nov 30 07:53	8°31'738	opposition	16249 Jun 22 07:54	15°31'547	-6°42'50
			min. Earth dist.	16249 Jun 23 07:02	15°31'440	44.72338 AU
conjunction	16242 Dec 13 13:34	8°33'612 -8°01'26	direct	16249 Sep 12 05:45	14°31'456	

evening set	16249 Dec 06 07:37	15° <del>3</del> 25'45		opposition	16256 Jun 29 11:57	22° <del>3</del> 40'50	-4°44'26
max. Earth dist.	16249 Dec 19 11:56	15° <del>3</del> 44'33	46.63134 AU	min. Earth dist.	16256 Jun 30 15:35	22° <del>3</del> 39'28	43.52433 AU
				direct	16256 Sep 19 08:35	21° <del>3</del> 38'45	
conjunction	16249 Dec 20 13:12	15° <del>3</del> 46'04	-6°18'00	evening set	16256 Dec 12 19:25	22° <del>3</del> 50'28	
minimum elong	16249 Dec 20 13:20	15° <del>3</del> 46'05	6°17'19				
morning rise	16250 Jan 03 20:24	16° <del>3</del> 06'31		conjunction	16256 Dec 27 19:49	23° <del>3</del> 12'25	-4°23'31
retrograde	16250 Apr 01 12:54	17° <del>3</del> 19'40		minimum elong	16256 Dec 27 19:54	23° <del>3</del> 12'25	4°22'50
opposition	16250 Jun 23 14:59	16° <del>3</del> 18'25	-6°26'40	max. Earth dist.	16256 Dec 26 12:54	23° <del>3</del> 10'31	45.42882 AU
min. Earth dist.	16250 Jun 24 15:45	16° <del>3</del> 17'13	44.56140 AU	morning rise	16257 Jan 11 22:01	23° <del>3</del> 34'29	
direct	16250 Sep 13 14:41	15° <del>3</del> 17'24		retrograde	16257 Apr 09 02:04	24° <del>3</del> 48'34	
evening set	16250 Dec 07 11:52	16° <del>3</del> 28'16		opposition	16257 Jun 30 20:02	23° <del>3</del> 46'09	-4°26'31
				min. Earth dist.	16257 Jul 02 01:28	23° <del>3</del> 44'41	43.34229 AU
conjunction	16250 Dec 21 20:28	16° <del>3</del> 48'50	-6°02'21	direct	16257 Sep 20 14:44	22° <del>3</del> 43'55	
minimum elong	16250 Dec 21 20:35	16° <del>3</del> 48'50	6°01'39	evening set	16257 Dec 14 01:49	23° <del>3</del> 55'52	
max. Earth dist.	16250 Dec 20 18:36	16° <del>3</del> 47'16	46.46850 AU	max. Earth dist.	16257 Dec 27 21:47	24° <del>3</del> 16'08	45.24595 AU
morning rise	16251 Jan 05 06:39	17° <del>3</del> 09'30					
retrograde	16251 Apr 02 19:39	18° <del>3</del> 22'44		conjunction	16257 Dec 29 04:36	24° <del>3</del> 18'02	-4°06'13
opposition	16251 Jun 24 22:03	17° <del>3</del> 21'19	-6°10'15	minimum elong	16257 Dec 29 04:41	24° <del>3</del> 18'03	4°05'33
min. Earth dist.	16251 Jun 25 22:37	17° <del>3</del> 20'07	44.39561 AU	morning rise	16258 Jan 13 08:53	24° <del>3</del> 40'20	
direct	16251 Sep 14 22:50	16° <del>3</del> 20'06		retrograde	16258 Apr 10 11:55	25° <del>3</del> 54'39	
evening set	16251 Dec 08 16:29	17° <del>3</del> 31'04		opposition	16258 Jul 02 04:20	24° <del>3</del> 52'05	-4°08'21
max. Earth dist.	16251 Dec 22 00:25	17° <del>3</del> 50'12	46.30199 AU	min. Earth dist.	16258 Jul 03 09:55	24° <del>3</del> 50'37	43.15674 AU
				direct	16258 Sep 21 21:46	23° <del>3</del> 49'41	
conjunction	16251 Dec 23 03:54	17° <del>3</del> 51'51	-5°46'28	evening set	16258 Dec 15 08:40	25° <del>3</del> 01'54	
minimum elong	16251 Dec 23 04:01	17° <del>3</del> 51'52	5°45'47	max. Earth dist.	16258 Dec 29 04:37	25° <del>3</del> 22'16	45.05920 AU
morning rise	16252 Jan 06 17:08	18° <del>3</del> 12'46					
retrograde	16252 Apr 03 05:37	19° <del>3</del> 26'06		conjunction	16258 Dec 30 13:22	25° <del>3</del> 24'17	-3°48'41
opposition	16252 Jun 25 05:22	18° <del>3</del> 24'29	-5°53'36	minimum elong	16258 Dec 30 13:26	25° <del>3</del> 24'18	3°48'01
min. Earth dist.	16252 Jun 26 07:36	18° <del>3</del> 23'12	44.22659 AU	morning rise	16259 Jan 14 19:53	25° <del>3</del> 46'49	
direct	16252 Sep 15 04:48	17° <del>3</del> 23'06		retrograde	16259 Apr 11 23:54	27° <del>3</del> 01'23	
evening set	16252 Dec 08 21:12	18° <del>3</del> 34'09		opposition	16259 Jul 03 12:58	25° <del>3</del> 58'39	-3°49'56
max. Earth dist.	16252 Dec 22 08:28	18° <del>3</del> 53'32	46.13248 AU	min. Earth dist.	16259 Jul 04 19:54	25° <del>3</del> 57'06	42.96708 AU
				direct	16259 Sep 23 03:20	24° <del>3</del> 56'04	
conjunction	16252 Dec 23 11:37	18° <del>3</del> 55'11	-5°30'21	evening set	16259 Dec 16 15:53	26° <del>3</del> 08'33	
minimum elong	16252 Dec 23 11:43	18° <del>3</del> 55'11	5°29'39				
morning rise	16253 Jan 07 03:31	19° <del>3</del> 16'20		conjunction	16259 Dec 31 22:42	26° <del>3</del> 31'10	-3°30'56
retrograde	16253 Apr 04 15:05	20° <del>3</del> 29'45		minimum elong	16259 Dec 31 22:46	26° <del>3</del> 31'10	3°30'17
opposition	16253 Jun 26 12:46	19° <del>3</del> 27'58	-5°36'41	max. Earth dist.	16259 Dec 30 13:12	26° <del>3</del> 29'05	44.86788 AU
min. Earth dist.	16253 Jun 27 15:00	19° <del>3</del> 26'41	44.05467 AU	morning rise	16260 Jan 16 07:04	26° <del>3</del> 53'54	
direct	16253 Sep 16 10:16	18° <del>3</del> 26'24		retrograde	16260 Apr 12 08:40	28° <del>3</del> 08'44	
evening set	16253 Dec 10 02:24	19° <del>3</del> 37'35		opposition	16260 Jul 03 21:51	27° <del>3</del> 05'49	-3°31'17
				min. Earth dist.	16260 Jul 05 06:11	27° <del>3</del> 04'12	42.77268 AU
conjunction	16253 Dec 24 19:21	19° <del>3</del> 58'50	-5°14'00	direct	16260 Sep 23 12:50	26° <del>3</del> 03'03	
minimum elong	16253 Dec 24 19:27	19° <del>3</del> 58'51	5°13'20	evening set	16260 Dec 16 23:30	27° <del>3</del> 15'48	
max. Earth dist.	16253 Dec 23 14:34	19° <del>3</del> 57'06	45.96027 AU	max. Earth dist.	16260 Dec 30 21:28	27° <del>3</del> 36'28	44.67191 AU
morning rise	16254 Jan 08 14:06	20° <del>3</del> 20'13					
retrograde	16254 Apr 06 01:23	21° <del>3</del> 33'45		conjunction	16261 Jan 01 08:10	27° <del>3</del> 38'38	-3°12'57
opposition	16254 Jun 27 20:12	20° <del>3</del> 31'48	-5°19'32	minimum elong	16261 Jan 01 08:14	27° <del>3</del> 38'39	3°12'18
min. Earth dist.	16254 Jun 28 23:07	20° <del>3</del> 30'29	43.88031 AU	morning rise	16261 Jan 16 18:27	28° <del>3</del> 01'36	
direct	16254 Sep 17 14:56	19° <del>3</del> 30'03		retrograde	16261 Apr 13 17:47	29° <del>3</del> 16'41	
evening set	16254 Dec 11 07:45	20° <del>3</del> 41'24		opposition	16261 Jul 05 06:50	28° <del>3</del> 13'34	-3°12'23
max. Earth dist.	16254 Dec 24 22:21	21° <del>3</del> 01'07	45.78555 AU	min. Earth dist.	16261 Jul 06 15:27	28° <del>3</del> 11'56	42.57364 AU
				direct	16261 Sep 24 22:05	27° <del>3</del> 10'35	
conjunction	16254 Dec 26 03:22	21° <del>3</del> 02'53	-4°57'25	evening set	16261 Dec 18 07:31	28° <del>3</del> 23'37	
minimum elong	16254 Dec 26 03:28	21° <del>3</del> 02'54	4°56'43	max. Earth dist.	16262 Jan 01 05:19	28° <del>3</del> 44'22	44.47121 AU
morning rise	16255 Jan 10 00:37	21° <del>3</del> 24'30					
retrograde	16255 Apr 07 07:33	22° <del>3</del> 38'11		conjunction	16262 Jan 02 17:49	28° <del>3</del> 46'40	-2°54'45
opposition	16255 Jun 29 04:04	21° <del>3</del> 36'04	-5°02'07	minimum elong	16262 Jan 02 17:53	28° <del>3</del> 46'40	2°54'06
min. Earth dist.	16255 Jun 30 07:55	21° <del>3</del> 34'42	43.70351 AU	morning rise	16262 Jan 18 05:50	29° <del>3</del> 09'50	
direct	16255 Sep 18 23:47	20° <del>3</del> 34'09			16262 Feb 26 12:35	0° <del>≈</del>	
evening set	16255 Dec 12 13:19	21° <del>3</del> 45'40		retrograde	16262 Apr 15 03:50	0° <del>≈</del> 25'12	
max. Earth dist.	16255 Dec 26 06:05	22° <del>3</del> 05'35	45.60855 AU		16262 Jun 02 19:59	30° <del>≈</del>	
				opposition	16262 Jul 06 16:04	29° <del>3</del> 21'52	-2°53'15
conjunction	16255 Dec 27 11:26	22° <del>3</del> 07'23	-4°40'35	min. Earth dist.	16262 Jul 08 02:40	29° <del>3</del> 20'07	42.37025 AU
minimum elong	16255 Dec 27 11:31	22° <del>3</del> 07'24	4°39'55	direct	16262 Sep 26 07:16	28° <del>3</del> 18'39	
morning rise	16256 Jan 11 11:10	22° <del>3</del> 29'14		evening set	16262 Dec 19 15:43	29° <del>3</del> 31'59	
retrograde	16256 Apr 07 14:56	23° <del>3</del> 43'06		max. Earth dist.	16263 Jan 02 15:18	29° <del>3</del> 52'56	44.26654 AU

conjunction	16263 Jan 04 03:45	29° $\text{Z}$ 55'14	-2°36'19	opposition	16269 Jul 14 15:10	7° $\text{Z}$ 36'42	-0°32'11
minimum elong	16263 Jan 04 03:48	29° $\text{Z}$ 55'14	2°35'40	min. Earth dist.	16269 Jul 16 05:43	7° $\text{Z}$ 34'42	40.87185 AU
	16263 Jan 07 07:15	0° $\text{Z}$		direct	16269 Oct 03 21:54	6° $\text{Z}$ 31'44	
morning rise	16263 Jan 19 17:12	0° $\text{Z}$ 18'36		evening set	16269 Dec 27 12:55	7° $\text{Z}$ 47'53	
retrograde	16263 Apr 16 15:25	1° $\text{Z}$ 34'16		max. Earth dist.	16270 Jan 10 14:16	8° $\text{Z}$ 09'43	42.76256 AU
opposition	16263 Jul 08 01:29	0° $\text{Z}$ 30'43	-2°33'51				
min. Earth dist.	16263 Jul 09 12:01	0° $\text{Z}$ 28'58	42.16323 AU	conjunction	16270 Jan 12 07:40	8° $\text{Z}$ 12'25	-0°20'46
	16263 Aug 03 08:41	30° $\text{R}$ $\text{Z}$		minimum elong	16270 Jan 12 07:40	8° $\text{Z}$ 12'25	0°20'10
direct	16263 Sep 27 15:09	29° $\text{Z}$ 27'15		morning rise	16270 Jan 28 03:39	8° $\text{Z}$ 37'05	
	16263 Nov 20 09:22	0° $\text{Z}$		retrograde	16270 Apr 25 04:31	9° $\text{Z}$ 55'33	
evening set	16263 Dec 21 00:19	0° $\text{Z}$ 40'54		opposition	16270 Jul 16 02:25	8° $\text{Z}$ 50'19	-0°11'03
max. Earth dist.	16264 Jan 03 23:18	1° $\text{Z}$ 01'55	44.05850 AU	min. Earth dist.	16270 Jul 17 17:31	8° $\text{Z}$ 48'17	40.64930 AU
				direct	16270 Oct 05 07:02	7° $\text{Z}$ 45'06	
conjunction	16264 Jan 05 13:37	1° $\text{Z}$ 04'21	-2°17'39	evening set	16270 Dec 29 00:53	9° $\text{Z}$ 01'47	
minimum elong	16264 Jan 05 13:40	1° $\text{Z}$ 04'21	2°17'00	max. Earth dist.	16271 Jan 12 01:01	9° $\text{Z}$ 23'40	42.53870 AU
morning rise	16264 Jan 21 04:41	1° $\text{Z}$ 27'55					
retrograde	16264 Apr 17 05:31	2° $\text{Z}$ 43'54		conjunction	16271 Jan 13 19:46	9° $\text{Z}$ 26'29	-0°00'28
opposition	16264 Jul 08 11:09	1° $\text{Z}$ 40'06	-2°14'12	minimum elong	16271 Jan 13 19:46	9° $\text{Z}$ 26'29	0°00'06
min. Earth dist.	16264 Jul 09 22:55	1° $\text{Z}$ 38'17	41.95326 AU	behind sun begin	16271 Jan 13 13:34	9° $\text{Z}$ 26'06	
direct	16264 Sep 27 20:26	0° $\text{Z}$ 36'23		behind sun end	16271 Jan 14 01:59	9° $\text{Z}$ 26'51	
evening set	16264 Dec 21 09:18	1° $\text{Z}$ 50'24		asc. node	16271 Jan 22 09:03	9° $\text{Z}$ 39'58	
max. Earth dist.	16265 Jan 04 09:40	2° $\text{Z}$ 11'35	43.84757 AU	morning rise	16271 Jan 29 16:07	9° $\text{Z}$ 51'17	
				retrograde	16271 Apr 26 19:53	11° $\text{Z}$ 10'16	
conjunction	16265 Jan 06 00:02	2° $\text{Z}$ 14'02	-1°58'44	opposition	16271 Jul 17 14:02	10° $\text{Z}$ 04'48	0°10'20
minimum elong	16265 Jan 06 00:05	2° $\text{Z}$ 14'02	1°58'07	min. Earth dist.	16271 Jul 19 05:43	10° $\text{Z}$ 02'43	40.42376 AU
morning rise	16265 Jan 21 16:12	2° $\text{Z}$ 37'47		direct	16271 Oct 06 16:13	8° $\text{Z}$ 59'18	
retrograde	16265 Apr 18 15:45	3° $\text{Z}$ 54'07		evening set	16271 Dec 30 13:18	10° $\text{Z}$ 16'32	
opposition	16265 Jul 09 20:56	2° $\text{Z}$ 50'05	-1°54'18	max. Earth dist.	16272 Jan 13 12:19	10° $\text{Z}$ 38'28	42.31126 AU
min. Earth dist.	16265 Jul 11 09:18	2° $\text{Z}$ 48'13	41.74069 AU				
direct	16265 Sep 29 06:18	1° $\text{Z}$ 46'06		conjunction	16272 Jan 15 08:18	10° $\text{Z}$ 41'23	0°20'02
evening set	16265 Dec 22 18:47	3° $\text{Z}$ 00'29		minimum elong	16272 Jan 15 08:18	10° $\text{Z}$ 41'23	0°20'37
max. Earth dist.	16266 Jan 05 19:27	3° $\text{Z}$ 21'48	43.63442 AU	morning rise	16272 Jan 31 04:39	11° $\text{Z}$ 06'21	
				retrograde	16272 Apr 27 07:17	12° $\text{Z}$ 25'51	
conjunction	16266 Jan 07 10:34	3° $\text{Z}$ 24'19	-1°39'36	opposition	16272 Jul 18 02:09	11° $\text{Z}$ 20'07	0°31'58
minimum elong	16266 Jan 07 10:36	3° $\text{Z}$ 24'19	1°38'59	min. Earth dist.	16272 Jul 19 19:30	11° $\text{Z}$ 17'56	40.19446 AU
morning rise	16266 Jan 23 03:55	3° $\text{Z}$ 48'15		direct	16272 Oct 07 05:23	10° $\text{Z}$ 14'20	
retrograde	16266 Apr 20 01:36	5° $\text{Z}$ 04'56		evening set	16272 Dec 31 02:23	11° $\text{Z}$ 32'07	
opposition	16266 Jul 11 07:00	4° $\text{Z}$ 00'40	-1°34'09	max. Earth dist.	16273 Jan 14 00:58	11° $\text{Z}$ 54'09	42.08009 AU
min. Earth dist.	16266 Jul 12 19:21	3° $\text{Z}$ 58'48	41.52618 AU				
direct	16266 Sep 30 17:24	2° $\text{Z}$ 56'26		conjunction	16273 Jan 15 21:21	11° $\text{Z}$ 57'07	0°40'44
evening set	16266 Dec 24 04:32	4° $\text{Z}$ 11'13		minimum elong	16273 Jan 15 21:21	11° $\text{Z}$ 57'07	0°41'17
max. Earth dist.	16267 Jan 07 05:03	4° $\text{Z}$ 32'38	43.41921 AU	morning rise	16273 Jan 31 17:31	12° $\text{Z}$ 22'13	
				retrograde	16273 Apr 28 19:11	13° $\text{Z}$ 42'16	
conjunction	16267 Jan 08 21:15	4° $\text{Z}$ 35'14	-1°20'14	opposition	16273 Jul 19 14:16	12° $\text{Z}$ 36'14	0°53'49
minimum elong	16267 Jan 08 21:16	4° $\text{Z}$ 35'14	1°19'38	min. Earth dist.	16273 Jul 21 07:40	12° $\text{Z}$ 34'02	39.96150 AU
morning rise	16267 Jan 24 15:31	4° $\text{Z}$ 59'22		direct	16273 Oct 08 18:36	11° $\text{Z}$ 30'08	
retrograde	16267 Apr 21 11:49	6° $\text{Z}$ 16'27		evening set	16274 Jan 01 16:03	12° $\text{Z}$ 48'30	
opposition	16267 Jul 12 17:33	5° $\text{Z}$ 11'55	-1°13'45	max. Earth dist.	16274 Jan 15 12:04	13° $\text{Z}$ 10'31	41.84523 AU
min. Earth dist.	16267 Jul 14 07:14	5° $\text{Z}$ 09'58	41.30982 AU				
direct	16267 Oct 02 04:18	4° $\text{Z}$ 07'27		conjunction	16274 Jan 17 10:36	13° $\text{Z}$ 13'38	1°01'38
evening set	16267 Dec 25 14:46	5° $\text{Z}$ 22'39		minimum elong	16274 Jan 17 10:34	13° $\text{Z}$ 13'38	1°02'12
max. Earth dist.	16268 Jan 08 16:34	5° $\text{Z}$ 44'16	43.20235 AU	morning rise	16274 Feb 02 06:31	13° $\text{Z}$ 38'53	
				retrograde	16274 Apr 30 10:07	14° $\text{Z}$ 59'30	
conjunction	16268 Jan 10 08:25	5° $\text{Z}$ 46'51	-1°00'38	opposition	16274 Jul 21 02:58	13° $\text{Z}$ 53'10	1°15'55
minimum elong	16268 Jan 10 08:26	5° $\text{Z}$ 46'51	1°00'01	min. Earth dist.	16274 Jul 22 22:10	13° $\text{Z}$ 50'51	39.72523 AU
morning rise	16268 Jan 26 03:24	6° $\text{Z}$ 11'10		direct	16274 Oct 10 04:37	12° $\text{Z}$ 46'44	
retrograde	16268 Apr 21 23:09	7° $\text{Z}$ 28'40		evening set	16275 Jan 03 05:58	14° $\text{Z}$ 05'42	
opposition	16268 Jul 13 04:08	6° $\text{Z}$ 23'55	-0°53'06	max. Earth dist.	16275 Jan 17 01:49	14° $\text{Z}$ 27'50	41.60724 AU
min. Earth dist.	16268 Jul 14 17:18	6° $\text{Z}$ 21'59	41.09180 AU				
direct	16268 Oct 02 14:33	5° $\text{Z}$ 19'12		conjunction	16275 Jan 19 00:09	14° $\text{Z}$ 30'57	1°22'46
evening set	16268 Dec 26 01:38	6° $\text{Z}$ 34'51		minimum elong	16275 Jan 19 00:07	14° $\text{Z}$ 30'57	1°23'18
max. Earth dist.	16269 Jan 09 02:17	6° $\text{Z}$ 56'31	42.98363 AU	morning rise	16275 Feb 03 19:21	14° $\text{Z}$ 56'19	
					16275 Feb 06 03:42	15° $\text{Z}$	
conjunction	16269 Jan 10 19:47	6° $\text{Z}$ 59'13	-0°40'49	retrograde	16275 May 02 00:15	16° $\text{Z}$ 17'33	
minimum elong	16269 Jan 10 19:48	6° $\text{Z}$ 59'13	0°40'13	opposition	16275 Jul 22 15:57	15° $\text{Z}$ 08'53	1°38'14
morning rise	16269 Jan 26 15:33	7° $\text{Z}$ 23'43		min. Earth dist.	16275 Jul 24 11:09	15° $\text{Z}$ 08'34	39.48616 AU
retrograde	16269 Apr 23 14:14	8° $\text{Z}$ 41'41			16275 Jul 31 03:10	15° $\text{R}$	

direct	16275 Oct 11 17:01	14° $\approx$ 04'07		morning rise	16282 Feb 12 19:01	24° $\approx$ 24'34	
	16275 Dec 20 05:55	15° $\approx$		retrograde	16282 May 11 21:38	25° $\approx$ 51'09	
evening set	16276 Jan 04 20:43	15° $\approx$ 23'44		opposition	16282 Jul 31 21:18	24° $\approx$ 42'18	4°20'14
max. Earth dist.	16276 Jan 18 14:18	15° $\approx$ 45'51	41.36684 AU	min. Earth dist.	16282 Aug 02 19:44	24° $\approx$ 39'43	37.77987 AU
				direct	16282 Oct 20 10:43	23° $\approx$ 33'14	
conjunction	16276 Jan 20 14:02	15° $\approx$ 49'06	1°44'05	evening set	16283 Jan 14 21:39	24° $\approx$ 58'35	
minimum elong	16276 Jan 20 14:00	15° $\approx$ 49'05	1°44'37	max. Earth dist.	16283 Jan 28 00:15	25° $\approx$ 20'48	39.65243 AU
morning rise	16276 Feb 05 08:38	16° $\approx$ 14'34					
retrograde	16276 May 02 17:46	17° $\approx$ 36'25		conjunction	16283 Jan 30 03:10	25° $\approx$ 24'26	4°18'20
opposition	16276 Jul 23 05:09	16° $\approx$ 29'26	2°00'47	minimum elong	16283 Jan 30 03:04	25° $\approx$ 24'26	4°18'47
min. Earth dist.	16276 Jul 25 01:06	16° $\approx$ 27'04	39.24517 AU	morning rise	16283 Feb 14 09:29	25° $\approx$ 50'23	
direct	16276 Oct 12 03:31	15° $\approx$ 22'20		retrograde	16283 May 13 18:43	27° $\approx$ 17'54	
evening set	16277 Jan 05 11:57	16° $\approx$ 42'37		opposition	16283 Aug 02 13:37	26° $\approx$ 08'45	4°44'04
max. Earth dist.	16277 Jan 19 04:15	17° $\approx$ 04'49	41.12448 AU	min. Earth dist.	16283 Aug 04 12:15	26° $\approx$ 06'08	37.53253 AU
				direct	16283 Oct 22 02:16	24° $\approx$ 59'21	
conjunction	16277 Jan 21 04:26	17° $\approx$ 08'06	2°05'36	evening set	16284 Jan 16 18:07	26° $\approx$ 25'42	
minimum elong	16277 Jan 21 04:23	17° $\approx$ 08'06	2°06'08	max. Earth dist.	16284 Jan 29 16:41	26° $\approx$ 47'49	39.40289 AU
morning rise	16277 Feb 05 21:55	17° $\approx$ 33'41					
retrograde	16277 May 04 09:26	18° $\approx$ 56'12		conjunction	16284 Jan 31 20:53	26° $\approx$ 51'35	4°40'57
opposition	16277 Jul 24 18:53	17° $\approx$ 48'53	2°23'32	minimum elong	16284 Jan 31 20:46	26° $\approx$ 51'34	4°41'23
min. Earth dist.	16277 Jul 26 15:44	17° $\approx$ 46'27	39.00257 AU	morning rise	16284 Feb 16 00:20	27° $\approx$ 17'32	
direct	16277 Oct 13 16:58	16° $\approx$ 41'26		retrograde	16284 May 14 14:05	28° $\approx$ 46'02	
evening set	16278 Jan 07 03:49	18° $\approx$ 02'27		opposition	16284 Aug 03 06:28	27° $\approx$ 36'33	5°08'04
max. Earth dist.	16278 Jan 20 18:43	18° $\approx$ 24'42	40.88088 AU	min. Earth dist.	16284 Aug 05 06:45	27° $\approx$ 33'49	37.28304 AU
				direct	16284 Oct 22 18:26	26° $\approx$ 26'47	
conjunction	16278 Jan 22 19:04	18° $\approx$ 28'02	2°27'19	evening set	16285 Jan 17 15:24	27° $\approx$ 54'10	
minimum elong	16278 Jan 22 19:01	18° $\approx$ 28'01	2°27'50	max. Earth dist.	16285 Jan 30 10:52	28° $\approx$ 16'14	39.15116 AU
morning rise	16278 Feb 07 11:20	18° $\approx$ 53'42					
retrograde	16278 May 06 00:22	20° $\approx$ 16'56		conjunction	16285 Feb 01 15:12	28° $\approx$ 20'02	5°03'42
opposition	16278 Jul 26 08:48	19° $\approx$ 09'18	2°46'30	minimum elong	16285 Feb 01 15:05	28° $\approx$ 20'01	5°04'08
min. Earth dist.	16278 Jul 28 05:10	19° $\approx$ 06'53	38.75908 AU	morning rise	16285 Feb 16 15:29	28° $\approx$ 45'58	
direct	16278 Oct 15 07:02	18° $\approx$ 01'31			16285 Apr 11 19:43	0° $\approx$	
evening set	16279 Jan 08 20:22	19° $\approx$ 23'18		retrograde	16285 May 16 07:16	0° $\approx$ 15'28	
max. Earth dist.	16279 Jan 22 08:33	19° $\approx$ 45'31	40.63641 AU		16285 Jun 20 05:36	30° $\approx$	
				opposition	16285 Aug 04 23:47	29° $\approx$ 05'38	5°32'11
conjunction	16279 Jan 24 10:07	19° $\approx$ 48'57	2°49'12	min. Earth dist.	16285 Aug 06 23:47	29° $\approx$ 02'54	37.03132 AU
minimum elong	16279 Jan 24 10:03	19° $\approx$ 48'57	2°49'43	direct	16285 Oct 24 12:08	27° $\approx$ 55'29	
morning rise	16279 Feb 09 00:57	20° $\approx$ 14'43		evening set	16286 Jan 19 13:32	29° $\approx$ 23'55	
retrograde	16279 May 07 15:19	21° $\approx$ 38'42		max. Earth dist.	16286 Feb 01 03:35	29° $\approx$ 45'47	38.89712 AU
opposition	16279 Jul 27 23:21	20° $\approx$ 30'46	3°09'40				
min. Earth dist.	16279 Jul 29 20:55	20° $\approx$ 28'15	38.51506 AU	conjunction	16286 Feb 03 09:49	29° $\approx$ 49'45	5°26'33
direct	16279 Oct 16 20:18	19° $\approx$ 22'39		minimum elong	16286 Feb 03 09:41	29° $\approx$ 49'45	5°26'57
evening set	16280 Jan 10 13:25	20° $\approx$ 45'14			16286 Feb 09 06:05	0° $\approx$	
max. Earth dist.	16280 Jan 24 00:49	21° $\approx$ 07'34	40.39151 AU	morning rise	16286 Feb 18 06:46	0° $\approx$ 15'39	
				retrograde	16286 May 18 02:22	1° $\approx$ 46'12	
conjunction	16280 Jan 26 01:40	21° $\approx$ 10'58	3°11'16	opposition	16286 Aug 06 17:40	0° $\approx$ 35'59	5°56'26
minimum elong	16280 Jan 26 01:35	21° $\approx$ 10'58	3°11'45	min. Earth dist.	16286 Aug 08 19:11	0° $\approx$ 33'09	36.77767 AU
morning rise	16280 Feb 10 14:39	21° $\approx$ 36'47			16286 Sep 03 04:09	30° $\approx$	
retrograde	16280 May 08 07:28	23° $\approx$ 01'36		direct	16286 Oct 26 03:23	29° $\approx$ 25'26	
opposition	16280 Jul 28 14:13	21° $\approx$ 53'22	3°33'01		16286 Dec 16 16:39	0° $\approx$	
min. Earth dist.	16280 Jul 30 11:12	21° $\approx$ 50'52	38.27062 AU	evening set	16287 Jan 21 12:22	0° $\approx$ 54'58	
direct	16280 Oct 17 09:20	20° $\approx$ 44'55		max. Earth dist.	16287 Feb 02 23:17	1° $\approx$ 16'46	38.64131 AU
evening set	16281 Jan 11 07:29	22° $\approx$ 08'23					
max. Earth dist.	16281 Jan 24 15:18	22° $\approx$ 30'38	40.14612 AU	conjunction	16287 Feb 05 05:08	1° $\approx$ 20'44	5°49'29
				minimum elong	16287 Feb 05 05:00	1° $\approx$ 20'44	5°49'53
conjunction	16281 Jan 26 17:39	22° $\approx$ 34'10	3°33'28	morning rise	16287 Feb 19 22:10	1° $\approx$ 46'34	
minimum elong	16281 Jan 26 17:34	22° $\approx$ 34'10	3°33'57	retrograde	16287 May 19 21:48	3° $\approx$ 18'12	
morning rise	16281 Feb 11 04:49	23° $\approx$ 00'03		opposition	16287 Aug 08 12:00	2° $\approx$ 07'36	6°20'48
retrograde	16281 May 10 02:50	24° $\approx$ 25'44		min. Earth dist.	16287 Aug 10 13:26	2° $\approx$ 04'45	36.52261 AU
opposition	16281 Jul 30 05:27	23° $\approx$ 17'11	3°56'32	direct	16287 Oct 27 19:35	0° $\approx$ 56'37	
min. Earth dist.	16281 Aug 01 03:28	23° $\approx$ 14'38	38.02576 AU	evening set	16288 Jan 23 12:09	2° $\approx$ 27'17	
direct	16281 Oct 18 20:08	22° $\approx$ 08'26		max. Earth dist.	16288 Feb 04 17:37	2° $\approx$ 48'53	38.38441 AU
evening set	16282 Jan 13 02:10	23° $\approx$ 32'49					
max. Earth dist.	16282 Jan 26 08:04	23° $\approx$ 55'05	39.89989 AU	conjunction	16288 Feb 07 00:46	2° $\approx$ 52'59	6°12'30
				minimum elong	16288 Feb 07 00:37	2° $\approx$ 52'58	6°12'52
conjunction	16282 Jan 28 10:16	23° $\approx$ 58'38	3°55'50	morning rise	16288 Feb 21 13:54	3° $\approx$ 18'44	
minimum elong	16282 Jan 28 10:10	23° $\approx$ 58'38	3°56'17	retrograde	16288 May 20 20:36	4° $\approx$ 51'29	

opposition	16288 Aug 09 06:49	3° <del>✕</del> 40'28	6°45'13	minimum elong	16295 Feb 18 11:42	14° <del>✕</del> 18'07	8°53'30
min. Earth dist.	16288 Aug 11 08:53	3° <del>✕</del> 37'34	36.26690 AU	morning rise	16295 Mar 03 10:12	14° <del>✕</del> 42'29	
direct	16288 Oct 28 11:28	2° <del>✕</del> 29'03		retrograde	16295 Jun 02 19:28	16° <del>✕</del> 24'46	
evening set	16289 Jan 24 12:47	4° <del>✕</del> 00'55		opposition	16295 Aug 21 11:09	15° <del>✕</del> 10'59	9°36'02
max. Earth dist.	16289 Feb 05 13:46	4° <del>✕</del> 22'21	38.12686 AU	min. Earth dist.	16295 Aug 23 14:01	15° <del>✕</del> 07'53	34.49927 AU
				direct	16295 Nov 09 05:05	13° <del>✕</del> 56'36	
conjunction	16289 Feb 07 21:10	4° <del>✕</del> 26'30	6°35'33	evening set	16296 Feb 07 21:39	15° <del>✕</del> 38'39	
minimum elong	16289 Feb 07 21:00	4° <del>✕</del> 26'29	6°35'55	max. Earth dist.	16296 Feb 18 04:13	15° <del>✕</del> 58'09	36.34909 AU
morning rise	16289 Feb 22 05:45	4° <del>✕</del> 52'08					
retrograde	16289 May 22 18:51	6° <del>✕</del> 26'03		conjunction	16296 Feb 20 12:57	16° <del>✕</del> 02'40	9°15'50
opposition	16289 Aug 11 02:08	5° <del>✕</del> 14'37	7°09'43	minimum elong	16296 Feb 20 12:45	16° <del>✕</del> 02'39	9°16'03
min. Earth dist.	16289 Aug 13 04:50	5° <del>✕</del> 11'40	36.01098 AU	morning rise	16296 Mar 04 04:01	16° <del>✕</del> 26'42	
direct	16289 Oct 30 06:25	4° <del>✕</del> 02'45		retrograde	16296 Jun 03 22:43	18° <del>✕</del> 10'36	
evening set	16290 Jan 26 14:26	5° <del>✕</del> 35'53		opposition	16296 Aug 22 11:07	16° <del>✕</del> 56'25	10°00'03
max. Earth dist.	16290 Feb 07 10:40	5° <del>✕</del> 57'09	37.86955 AU	min. Earth dist.	16296 Aug 24 14:51	16° <del>✕</del> 53'15	34.25080 AU
				direct	16296 Nov 10 03:43	15° <del>✕</del> 41'37	
conjunction	16290 Feb 09 18:01	6° <del>✕</del> 01'20	6°58'37	evening set	16297 Feb 09 07:04	17° <del>✕</del> 25'24	
minimum elong	16290 Feb 09 17:52	6° <del>✕</del> 01'19	6°58'57	max. Earth dist.	16297 Feb 19 05:52	17° <del>✕</del> 44'29	36.09853 AU
morning rise	16290 Feb 23 21:51	6° <del>✕</del> 26'50					
retrograde	16290 May 24 19:09	8° <del>✕</del> 01'58		conjunction	16297 Feb 21 14:45	17° <del>✕</del> 49'03	9°38'14
opposition	16290 Aug 12 22:01	6° <del>✕</del> 50'07	7°34'13	minimum elong	16297 Feb 21 14:31	17° <del>✕</del> 49'02	9°38'26
min. Earth dist.	16290 Aug 15 00:03	6° <del>✕</del> 47'11	35.75574 AU	morning rise	16297 Mar 05 22:12	18° <del>✕</del> 12'42	
direct	16290 Nov 01 02:02	5° <del>✕</del> 37'49		retrograde	16297 Jun 06 03:24	19° <del>✕</del> 58'16	
evening set	16291 Jan 28 16:50	7° <del>✕</del> 12'15		opposition	16297 Aug 24 11:34	18° <del>✕</del> 43'42	10°23'53
max. Earth dist.	16291 Feb 09 07:09	7° <del>✕</del> 33'16	37.61291 AU	min. Earth dist.	16297 Aug 26 14:48	18° <del>✕</del> 40'32	34.00268 AU
				direct	16297 Nov 12 03:50	17° <del>✕</del> 28'27	
conjunction	16291 Feb 11 15:20	7° <del>✕</del> 37'33	7°21'41	evening set	16298 Feb 11 17:33	19° <del>✕</del> 14'01	
minimum elong	16291 Feb 11 15:09	7° <del>✕</del> 37'32	7°22'01	max. Earth dist.	16298 Feb 21 07:13	19° <del>✕</del> 32'32	35.84820 AU
morning rise	16291 Feb 25 14:04	8° <del>✕</del> 02'53					
retrograde	16291 May 26 17:03	9° <del>✕</del> 39'19		conjunction	16298 Feb 23 17:14	19° <del>✕</del> 37'15	10°00'25
opposition	16291 Aug 14 18:41	8° <del>✕</del> 27'03	7°58'43	minimum elong	16298 Feb 23 17:01	19° <del>✕</del> 37'14	10°00'36
min. Earth dist.	16291 Aug 16 21:44	8° <del>✕</del> 24'02	35.50156 AU	morning rise	16298 Mar 07 16:43	20° <del>✕</del> 00'29	
direct	16291 Nov 02 21:16	7° <del>✕</del> 14'19		retrograde	16298 Jun 08 07:04	21° <del>✕</del> 47'46	
evening set	16292 Jan 30 20:24	8° <del>✕</del> 50'08		opposition	16298 Aug 26 13:00	20° <del>✕</del> 32'46	10°47'29
max. Earth dist.	16292 Feb 11 06:15	9° <del>✕</del> 10'59	37.35758 AU	min. Earth dist.	16298 Aug 28 17:22	20° <del>✕</del> 29'31	33.75509 AU
				direct	16298 Nov 14 03:33	19° <del>✕</del> 17'05	
conjunction	16292 Feb 13 13:32	9° <del>✕</del> 15'14	7°44'42	evening set	16299 Feb 14 05:05	21° <del>✕</del> 04'29	
minimum elong	16292 Feb 13 13:22	9° <del>✕</del> 15'13	7°45'00	max. Earth dist.	16299 Feb 23 11:12	21° <del>✕</del> 22'33	35.59871 AU
morning rise	16292 Feb 27 06:38	9° <del>✕</del> 40'22					
retrograde	16292 May 27 15:03	11° <del>✕</del> 18'08		conjunction	16299 Feb 25 20:22	21° <del>✕</del> 27'15	10°22'22
opposition	16292 Aug 15 15:43	10° <del>✕</del> 05'29	8°23'11	minimum elong	16299 Feb 25 20:08	21° <del>✕</del> 27'13	10°22'32
min. Earth dist.	16292 Aug 17 17:49	10° <del>✕</del> 02'30	35.24888 AU	morning rise	16299 Mar 09 11:13	21° <del>✕</del> 50'00	
direct	16292 Nov 03 18:16	8° <del>✕</del> 52'20		retrograde	16299 Jun 10 11:22	23° <del>✕</del> 39'04	
evening set	16293 Feb 01 01:07	10° <del>✕</del> 29'36		opposition	16299 Aug 28 14:59	22° <del>✕</del> 23'39	11°10'50
max. Earth dist.	16293 Feb 12 03:45	10° <del>✕</del> 50'06	37.10374 AU	min. Earth dist.	16299 Aug 30 18:33	22° <del>✕</del> 20'25	33.50860 AU
				direct	16299 Nov 16 05:27	21° <del>✕</del> 07'29	
conjunction	16293 Feb 14 12:17	10° <del>✕</del> 54'29	8°07'40	evening set	16300 Feb 16 18:04	22° <del>✕</del> 56'47	
minimum elong	16293 Feb 14 12:06	10° <del>✕</del> 54'28	8°07'58	max. Earth dist.	16300 Feb 25 13:53	23° <del>✕</del> 14'12	35.35056 AU
morning rise	16293 Feb 27 23:39	11° <del>✕</del> 19'24					
retrograde	16293 May 29 15:36	12° <del>✕</del> 58'36		conjunction	16300 Feb 28 00:16	23° <del>✕</del> 19'02	10°44'00
opposition	16293 Aug 17 13:34	11° <del>✕</del> 45'34	8°47'35	minimum elong	16300 Feb 28 00:03	23° <del>✕</del> 19'00	10°44'09
min. Earth dist.	16293 Aug 19 16:29	11° <del>✕</del> 42'30	34.99783 AU	morning rise	16300 Mar 11 06:16	23° <del>✕</del> 41'15	
direct	16293 Nov 05 12:16	10° <del>✕</del> 31'59		retrograde	16300 Jun 12 16:38	25° <del>✕</del> 32'11	
evening set	16294 Feb 03 06:42	12° <del>✕</del> 10'47		opposition	16300 Aug 30 17:35	24° <del>✕</del> 16'18	11°33'50
max. Earth dist.	16294 Feb 14 04:07	12° <del>✕</del> 31'04	36.85128 AU	min. Earth dist.	16300 Sep 01 21:59	24° <del>✕</del> 13'00	33.26397 AU
				direct	16300 Nov 18 04:45	22° <del>✕</del> 59'39	
conjunction	16294 Feb 16 11:46	12° <del>✕</del> 35'25	8°30'31	evening set	16301 Feb 19 08:10	24° <del>✕</del> 50'56	
minimum elong	16294 Feb 16 11:34	12° <del>✕</del> 35'24	8°30'47	max. Earth dist.	16301 Feb 27 19:39	25° <del>✕</del> 07'49	35.10449 AU
morning rise	16294 Mar 01 16:38	13° <del>✕</del> 00'04					
retrograde	16294 May 31 15:37	14° <del>✕</del> 40'46		conjunction	16301 Mar 02 05:03	25° <del>✕</del> 12'36	11°05'17
opposition	16294 Aug 19 12:03	13° <del>✕</del> 27'22	9°11'52	minimum elong	16301 Mar 02 04:49	25° <del>✕</del> 12'35	11°05'25
min. Earth dist.	16294 Aug 21 14:38	13° <del>✕</del> 24'18	34.74803 AU	morning rise	16301 Mar 13 01:22	25° <del>✕</del> 34'15	
direct	16294 Nov 07 08:44	12° <del>✕</del> 13'24		retrograde	16301 Jun 14 20:21	27° <del>✕</del> 27'05	
evening set	16295 Feb 05 13:40	13° <del>✕</del> 53'47		opposition	16301 Sep 01 21:01	26° <del>✕</del> 10'46	11°56'27
max. Earth dist.	16295 Feb 16 03:29	14° <del>✕</del> 13'40	36.59996 AU	min. Earth dist.	16301 Sep 04 00:47	26° <del>✕</del> 07'29	33.02178 AU
				direct	16301 Nov 20 07:04	24° <del>✕</del> 53'39	
conjunction	16295 Feb 18 11:54	14° <del>✕</del> 18'08	8°53'15	evening set	16302 Feb 21 23:31	26° <del>✕</del> 46'57	

max. Earth dist.	16302 Mar 02 00:31	27° $\text{H}$ 03'07	34.86136 AU	morning rise	16308 Mar 23 21:53	9° $\text{Y}$ 36'50	
				retrograde	16308 Jun 29 16:05	11° $\text{Y}$ 45'04	
conjunction	16302 Mar 04 10:14	27° $\text{H}$ 07'59	11°26'10	opposition	16308 Sep 15 18:27	10° $\text{Y}$ 25'55	14°18'17
minimum elong	16302 Mar 04 10:00	27° $\text{H}$ 07'58	11°26'16	min. Earth dist.	16308 Sep 17 18:14	10° $\text{Y}$ 22'45	31.44858 AU
morning rise	16302 Mar 14 20:38	27° $\text{H}$ 29'01		direct	16308 Dec 03 18:19	9° $\text{Y}$ 05'43	
retrograde	16302 Jun 17 03:49	29° $\text{H}$ 23'49		evening set	16309 Mar 12 01:38	11° $\text{Y}$ 15'32	
opposition	16302 Sep 04 01:09	28° $\text{H}$ 07'03	12°18'37	max. Earth dist.	16309 Mar 16 16:47	11° $\text{Y}$ 25'30	33.28654 AU
min. Earth dist.	16302 Sep 06 04:29	28° $\text{H}$ 03'46	32.78304 AU				
direct	16302 Nov 22 08:11	26° $\text{H}$ 49'26		conjunction	16309 Mar 18 22:31	11° $\text{Y}$ 30'20	13°35'27
evening set	16303 Feb 24 16:05	28° $\text{H}$ 44'52		minimum elong	16309 Mar 18 22:18	11° $\text{Y}$ 30'19	13°35'23
max. Earth dist.	16303 Mar 04 07:30	29° $\text{H}$ 00'23	34.62185 AU	morning rise	16309 Mar 25 19:00	11° $\text{Y}$ 45'04	
				retrograde	16309 Jul 02 05:03	13° $\text{Y}$ 55'47	
conjunction	16303 Mar 06 16:24	29° $\text{H}$ 05'13	11°46'33	opposition	16309 Sep 18 04:18	12° $\text{Y}$ 36'16	14°35'26
minimum elong	16303 Mar 06 16:10	29° $\text{H}$ 05'12	11°46'39	min. Earth dist.	16309 Sep 20 03:59	12° $\text{Y}$ 33'05	31.24265 AU
morning rise	16303 Mar 16 16:12	29° $\text{H}$ 25'33		direct	16309 Dec 06 01:05	11° $\text{Y}$ 15'39	
	16303 Apr 03 05:59	0° $\text{Y}$		evening set	16310 Mar 15 04:32	13° $\text{Y}$ 28'08	
retrograde	16303 Jun 19 10:17	1° $\text{Y}$ 22'24		max. Earth dist.	16310 Mar 19 06:15	13° $\text{Y}$ 36'57	33.08040 AU
opposition	16303 Sep 06 06:04	0° $\text{Y}$ 05'12	12°40'16				
min. Earth dist.	16303 Sep 08 09:19	0° $\text{Y}$ 01'54	32.54831 AU	conjunction	16310 Mar 21 10:31	13° $\text{Y}$ 41'41	13°50'50
	16303 Sep 09 14:50	30° $\text{H}$		minimum elong	16310 Mar 21 10:21	13° $\text{Y}$ 41'41	13°50'44
direct	16303 Nov 24 10:15	28° $\text{H}$ 47'06		morning rise	16310 Mar 27 16:02	13° $\text{Y}$ 55'13	
	16304 Feb 04 10:56	0° $\text{Y}$		retrograde	16310 Jul 04 15:58	16° $\text{Y}$ 08'29	
evening set	16304 Feb 27 10:09	0° $\text{Y}$ 44'44		opposition	16310 Sep 20 15:00	14° $\text{Y}$ 48'35	14°51'37
max. Earth dist.	16304 Mar 05 15:05	0° $\text{Y}$ 59'31	34.38689 AU	min. Earth dist.	16310 Sep 22 14:00	14° $\text{Y}$ 45'25	31.04115 AU
				direct	16310 Dec 08 10:27	13° $\text{Y}$ 27'33	
conjunction	16304 Mar 07 23:16	1° $\text{Y}$ 04'20	12°06'25	evening set	16311 Mar 18 09:17	15° $\text{Y}$ 42'46	
minimum elong	16304 Mar 07 23:03	1° $\text{Y}$ 04'19	12°06'28	max. Earth dist.	16311 Mar 21 19:09	15° $\text{Y}$ 50'14	32.87919 AU
morning rise	16304 Mar 17 11:59	1° $\text{Y}$ 23'55					
retrograde	16304 Jun 20 20:31	3° $\text{Y}$ 22'53		conjunction	16311 Mar 23 23:18	15° $\text{Y}$ 55'00	14°05'16
opposition	16304 Sep 07 11:41	2° $\text{Y}$ 05'15	13°01'19	minimum elong	16311 Mar 23 23:06	15° $\text{Y}$ 54'59	14°05'09
min. Earth dist.	16304 Sep 09 13:35	2° $\text{Y}$ 02'02	32.31837 AU	morning rise	16311 Mar 29 12:57	16° $\text{Y}$ 07'12	
direct	16304 Nov 25 15:48	0° $\text{Y}$ 46'42		retrograde	16311 Jul 07 06:19	18° $\text{Y}$ 23'05	
evening set	16305 Mar 01 05:26	2° $\text{Y}$ 46'36		opposition	16311 Sep 23 02:15	17° $\text{Y}$ 02'48	15°06'45
max. Earth dist.	16305 Mar 07 22:53	3° $\text{Y}$ 00'32	34.15674 AU	min. Earth dist.	16311 Sep 25 00:16	16° $\text{Y}$ 59'41	30.84474 AU
				direct	16311 Dec 10 20:12	15° $\text{Y}$ 41'20	
conjunction	16305 Mar 10 07:01	3° $\text{Y}$ 05'24	12°25'40	evening set	16312 Mar 20 15:53	17° $\text{Y}$ 59'24	
minimum elong	16305 Mar 10 06:47	3° $\text{Y}$ 05'23	12°25'42	max. Earth dist.	16312 Mar 23 09:55	18° $\text{Y}$ 05'28	32.68326 AU
morning rise	16305 Mar 19 08:08	3° $\text{Y}$ 24'10					
retrograde	16305 Jun 23 06:39	5° $\text{Y}$ 25'20		conjunction	16312 Mar 25 13:00	18° $\text{Y}$ 10'10	14°18'40
opposition	16305 Sep 09 18:12	4° $\text{Y}$ 07'18	13°21'43	minimum elong	16312 Mar 25 12:51	18° $\text{Y}$ 10'09	14°18'31
min. Earth dist.	16305 Sep 11 20:20	4° $\text{Y}$ 04'02	32.09345 AU	morning rise	16312 Mar 30 09:45	18° $\text{Y}$ 20'55	
direct	16305 Nov 27 21:15	2° $\text{Y}$ 48'19		retrograde	16312 Jul 08 19:33	20° $\text{Y}$ 39'31	
evening set	16306 Mar 04 02:15	4° $\text{Y}$ 50'35		opposition	16312 Sep 24 14:29	19° $\text{Y}$ 18'51	15°20'46
max. Earth dist.	16306 Mar 10 09:06	5° $\text{Y}$ 03'44	33.93193 AU	min. Earth dist.	16312 Sep 26 12:22	19° $\text{Y}$ 15'44	30.65378 AU
				direct	16312 Dec 12 06:13	17° $\text{Y}$ 56'59	
conjunction	16306 Mar 12 15:35	5° $\text{Y}$ 08'30	12°44'15	evening set	16313 Mar 24 00:41	20° $\text{Y}$ 18'00	
minimum elong	16306 Mar 12 15:22	5° $\text{Y}$ 08'29	12°44'15	max. Earth dist.	16313 Mar 26 01:21	20° $\text{Y}$ 22'31	32.49344 AU
morning rise	16306 Mar 21 04:23	5° $\text{Y}$ 26'22					
retrograde	16306 Jun 25 17:29	7° $\text{Y}$ 29'49		conjunction	16313 Mar 28 03:16	20° $\text{Y}$ 27'09	14°30'59
opposition	16306 Sep 12 01:25	6° $\text{Y}$ 11'24	13°41'22	minimum elong	16313 Mar 28 03:07	20° $\text{Y}$ 27'08	14°30'48
min. Earth dist.	16306 Sep 14 01:51	6° $\text{Y}$ 08'14	31.87375 AU	morning rise	16313 Apr 01 05:31	20° $\text{Y}$ 36'16	
direct	16306 Nov 30 04:40	4° $\text{Y}$ 52'01		retrograde	16313 Jul 11 11:32	22° $\text{Y}$ 57'42	
evening set	16307 Mar 07 00:19	6° $\text{Y}$ 56'44		opposition	16313 Sep 27 03:13	21° $\text{Y}$ 36'41	15°33'35
max. Earth dist.	16307 Mar 12 18:04	7° $\text{Y}$ 08'51	33.71217 AU	min. Earth dist.	16313 Sep 28 23:17	21° $\text{Y}$ 33'40	30.46915 AU
				direct	16313 Dec 14 19:30	20° $\text{Y}$ 14'24	
conjunction	16307 Mar 15 00:52	7° $\text{Y}$ 13'41	13°02'06	evening set	16314 Mar 27 12:22	22° $\text{Y}$ 38'36	
minimum elong	16307 Mar 15 00:38	7° $\text{Y}$ 13'39	13°02'05	max. Earth dist.	16314 Mar 28 17:07	22° $\text{Y}$ 41'17	32.31034 AU
morning rise	16307 Mar 23 00:59	7° $\text{Y}$ 30'35					
retrograde	16307 Jun 28 04:31	9° $\text{Y}$ 36'24		conjunction	16314 Mar 30 18:16	22° $\text{Y}$ 45'53	14°42'07
opposition	16307 Sep 14 09:37	8° $\text{Y}$ 17'37	14°00'15	minimum elong	16314 Mar 30 18:10	22° $\text{Y}$ 45'52	14°41'54
min. Earth dist.	16307 Sep 16 10:29	8° $\text{Y}$ 14'24	31.65895 AU	morning rise	16314 Apr 02 23:57	22° $\text{Y}$ 53'08	
direct	16307 Dec 02 10:04	6° $\text{Y}$ 57'50		retrograde	16314 Jul 14 03:07	25° $\text{Y}$ 17'38	
evening set	16308 Mar 09 00:13	9° $\text{Y}$ 05'03		opposition	16314 Sep 29 16:53	23° $\text{Y}$ 56'15	15°45'06
max. Earth dist.	16308 Mar 14 06:13	9° $\text{Y}$ 16'14	33.49712 AU	min. Earth dist.	16314 Oct 01 12:42	23° $\text{Y}$ 53'14	30.29160 AU
				direct	16314 Dec 17 08:08	22° $\text{Y}$ 33'35	
conjunction	16308 Mar 16 11:20	9° $\text{Y}$ 20'58	13°19'12	evening set	16315 Mar 31 05:09	25° $\text{Y}$ 01'22	
minimum elong	16308 Mar 16 11:08	9° $\text{Y}$ 20'57	13°19'08	max. Earth dist.	16315 Mar 31 11:00	25° $\text{Y}$ 01'55	32.13502 AU



conjunction	16315 Apr 02 09:55	25° $\Upsilon$ 06'20	14°51'59	direct	16323 Jan 05 14:07	12° $\delta$ 06'54	
minimum elong	16315 Apr 02 09:48	25° $\Upsilon$ 06'19	14°51'45	max. Earth dist.	16323 Apr 21 05:11	14° $\delta$ 44'35	31.06112 AU
morning rise	16315 Apr 04 14:27	25° $\Upsilon$ 11'17					
retrograde	16315 Jul 16 20:05	27° $\Upsilon$ 39'13		conjunction	16323 Apr 22 14:03	14° $\delta$ 47'50	15°17'41
opposition	16315 Oct 02 07:07	26° $\Upsilon$ 17'30	15°55'13	minimum elong	16323 Apr 22 14:09	14° $\delta$ 47'50	15°17'16
min. Earth dist.	16315 Oct 04 00:34	26° $\Upsilon$ 14'39	30.12190 AU		16323 Apr 27 17:38	15° $\delta$	
direct	16315 Dec 19 23:20	24° $\Upsilon$ 54'29		retrograde	16323 Aug 06 01:51	17° $\delta$ 27'47	
max. Earth dist.	16316 Apr 02 04:04	27° $\Upsilon$ 24'05	31.96803 AU	opposition	16323 Oct 22 00:35	16° $\delta$ 04'33	16°18'06
				min. Earth dist.	16323 Oct 23 06:22	16° $\delta$ 02'26	29.08867 AU
conjunction	16316 Apr 04 02:17	27° $\Upsilon$ 28'28	15°00'30		16323 Dec 04 05:17	15° $\kappa$ $\delta$	
minimum elong	16316 Apr 04 02:13	27° $\Upsilon$ 28'27	15°00'14	direct	16324 Jan 08 08:13	14° $\delta$ 39'46	
	16316 Jul 06 13:52	0° $\delta$			16324 Feb 11 22:01	15° $\delta$	
retrograde	16316 Jul 18 13:31	0° $\delta$ 02'27		max. Earth dist.	16324 Apr 23 03:51	17° $\delta$ 18'15	30.96800 AU
	16316 Jul 30 13:22	30° $\kappa$ $\Upsilon$					
opposition	16316 Oct 03 22:05	28° $\Upsilon$ 40'26	16°03'52	conjunction	16324 Apr 24 10:51	17° $\delta$ 21'19	15°13'39
min. Earth dist.	16316 Oct 05 14:52	28° $\Upsilon$ 37'37	29.96084 AU	minimum elong	16324 Apr 24 10:59	17° $\delta$ 21'20	15°13'11
direct	16316 Dec 21 12:23	27° $\Upsilon$ 17'06		retrograde	16324 Aug 07 22:27	20° $\delta$ 01'45	
max. Earth dist.	16317 Apr 05 00:07	29° $\Upsilon$ 48'08	31.81027 AU	opposition	16324 Oct 23 19:53	18° $\delta$ 38'23	16°13'04
				min. Earth dist.	16324 Oct 24 22:56	18° $\delta$ 36'28	28.99943 AU
conjunction	16317 Apr 06 19:25	29° $\Upsilon$ 52'16	15°07'37	direct	16325 Jan 10 04:31	17° $\delta$ 13'26	
minimum elong	16317 Apr 06 19:21	29° $\Upsilon$ 52'16	15°07'21	max. Earth dist.	16325 Apr 26 02:33	19° $\delta$ 52'35	30.88428 AU
	16317 Apr 10 04:26	0° $\delta$					
retrograde	16317 Jul 21 08:03	2° $\delta$ 27'18		conjunction	16325 Apr 27 07:54	19° $\delta$ 55'30	15°07'54
opposition	16317 Oct 06 13:48	1° $\delta$ 05'03	16°10'58	minimum elong	16325 Apr 27 08:04	19° $\delta$ 55'31	15°07'26
min. Earth dist.	16317 Oct 08 04:16	1° $\delta$ 02'22	29.80894 AU	retrograde	16325 Aug 10 17:49	22° $\delta$ 36'18	
	16317 Nov 20 03:42	30° $\kappa$ $\Upsilon$		opposition	16325 Oct 26 15:45	21° $\delta$ 12'49	16°06'12
direct	16317 Dec 24 04:18	29° $\Upsilon$ 41'26		min. Earth dist.	16325 Oct 27 17:56	21° $\delta$ 10'57	28.91967 AU
	16318 Jan 26 11:27	0° $\delta$		direct	16326 Jan 13 00:27	19° $\delta$ 47'43	
max. Earth dist.	16318 Apr 07 18:24	2° $\delta$ 13'39	31.66215 AU	evening set	16326 Apr 29 23:54	22° $\delta$ 29'41	
				max. Earth dist.	16326 Apr 29 02:27	22° $\delta$ 27'33	30.81067 AU
conjunction	16318 Apr 09 12:51	2° $\delta$ 17'44	15°13'14				
minimum elong	16318 Apr 09 12:50	2° $\delta$ 17'44	15°12'56	conjunction	16326 Apr 30 04:59	22° $\delta$ 30'11	15°00'25
retrograde	16318 Jul 24 02:23	4° $\delta$ 53'48		minimum elong	16326 Apr 30 05:10	22° $\delta$ 30'12	14°59'55
opposition	16318 Oct 09 06:10	3° $\delta$ 31'19	16°16'26	evening rise	16326 Apr 30 10:26	22° $\delta$ 30'43	
min. Earth dist.	16318 Oct 10 19:18	3° $\delta$ 28'43	29.66660 AU	retrograde	16326 Aug 13 14:24	25° $\delta$ 11'15	
direct	16318 Dec 26 18:36	2° $\delta$ 07'27		opposition	16326 Oct 29 11:41	23° $\delta$ 47'39	15°57'28
max. Earth dist.	16319 Apr 10 15:44	4° $\delta$ 41'02	31.52369 AU	min. Earth dist.	16326 Oct 30 11:00	23° $\delta$ 45'59	28.84986 AU
				direct	16327 Jan 15 23:01	22° $\delta$ 22'26	
conjunction	16319 Apr 12 07:16	4° $\delta$ 44'52	15°17'20	evening set	16327 Apr 30 18:50	24° $\delta$ 59'40	
minimum elong	16319 Apr 12 07:15	4° $\delta$ 44'52	15°17'01	max. Earth dist.	16327 May 02 01:19	25° $\delta$ 02'42	30.74752 AU
retrograde	16319 Jul 26 20:12	7° $\delta$ 21'52					
opposition	16319 Oct 11 23:04	5° $\delta$ 59'13	16°20'14	conjunction	16327 May 03 02:16	25° $\delta$ 05'11	14°51'13
min. Earth dist.	16319 Oct 13 10:34	5° $\delta$ 56'43	29.53346 AU	minimum elong	16327 May 03 02:30	25° $\delta$ 05'12	14°50'43
direct	16319 Dec 29 10:56	4° $\delta$ 35'09		morning rise	16327 May 05 10:10	25° $\delta$ 10'44	
max. Earth dist.	16320 Apr 12 11:28	7° $\delta$ 09'49	31.39467 AU	retrograde	16327 Aug 16 10:39	27° $\delta$ 46'25	
				opposition	16327 Nov 01 07:45	26° $\delta$ 22'43	15°46'50
conjunction	16320 Apr 14 02:09	7° $\delta$ 13'35	15°19'51	min. Earth dist.	16327 Nov 02 05:44	26° $\delta$ 21'10	28.79075 AU
minimum elong	16320 Apr 14 02:10	7° $\delta$ 13'35	15°19'29	direct	16328 Jan 18 18:43	24° $\delta$ 57'24	
retrograde	16320 Jul 28 16:51	9° $\delta$ 51'28		evening set	16328 May 01 14:03	27° $\delta$ 32'13	
opposition	16320 Oct 13 16:35	8° $\delta$ 28'39	16°22'20				
min. Earth dist.	16320 Oct 15 02:16	8° $\delta$ 26'17	29.40936 AU	conjunction	16328 May 04 23:43	27° $\delta$ 40'21	14°40'16
direct	16320 Dec 31 02:38	7° $\delta$ 04'24		minimum elong	16328 May 04 23:57	27° $\delta$ 40'22	14°39'43
max. Earth dist.	16321 Apr 15 09:30	9° $\delta$ 40'14	31.27455 AU	max. Earth dist.	16328 May 04 02:14	27° $\delta$ 38'12	30.69565 AU
				morning rise	16328 May 08 09:48	27° $\delta$ 48'31	
conjunction	16321 Apr 16 21:40	9° $\delta$ 43'46	15°20'46		16328 Jul 14 06:21	0° $\Pi$	
minimum elong	16321 Apr 16 21:43	9° $\delta$ 43'46	15°20'23	retrograde	16328 Aug 18 07:21	0° $\Pi$ 21'38	
retrograde	16321 Jul 31 10:48	12° $\delta$ 22'26			16328 Sep 23 04:37	30° $\kappa$ $\delta$	
opposition	16321 Oct 16 10:49	10° $\delta$ 59'29	16°22'42	opposition	16328 Nov 03 04:00	28° $\delta$ 57'53	15°34'20
min. Earth dist.	16321 Oct 17 19:35	10° $\delta$ 57'10	29.29378 AU	min. Earth dist.	16328 Nov 03 23:11	28° $\delta$ 56'32	28.74282 AU
direct	16322 Jan 02 18:42	9° $\delta$ 35'03		direct	16329 Jan 20 17:32	27° $\delta$ 32'31	
max. Earth dist.	16322 Apr 18 06:44	12° $\delta$ 11'49	31.16342 AU		16329 May 01 08:40	0° $\Pi$	
				evening set	16329 May 03 13:08	0° $\Pi$ 05'13	
conjunction	16322 Apr 19 17:36	12° $\delta$ 15'14	15°20'03				
minimum elong	16322 Apr 19 17:41	12° $\delta$ 15'15	15°19'38	conjunction	16329 May 07 20:52	0° $\Pi$ 15'33	14°27'34
retrograde	16322 Aug 03 06:46	14° $\delta$ 54'37		minimum elong	16329 May 07 21:09	0° $\Pi$ 15'34	14°27'01
opposition	16322 Oct 19 05:23	13° $\delta$ 31'31	16°21'18	max. Earth dist.	16329 May 07 01:01	0° $\Pi$ 13'34	30.65557 AU
min. Earth dist.	16322 Oct 20 11:48	13° $\delta$ 29'22	29.18692 AU	morning rise	16329 May 12 05:05	0° $\Pi$ 25'55	

retrograde	16329 Aug 21 04:08	2°II56'49		minimum elong	16336 May 25 22:53	18°II15'59	12°12'35
opposition	16329 Nov 06 00:22	1°II33'03	15°19'56	max. Earth dist.	16336 May 25 20:37	18°II15'46	30.70463 AU
min. Earth dist.	16329 Nov 06 17:12	1°II31'52	28.70686 AU	morning rise	16336 Jun 04 05:48	18°II37'55	
direct	16330 Jan 23 14:25	0°II07'40		retrograde	16336 Sep 07 17:44	20°II54'44	
evening set	16330 May 05 14:24	2°II38'23		opposition	16336 Nov 23 20:32	19°II31'54	12°50'47
				min. Earth dist.	16336 Nov 23 22:09	19°II31'48	28.77475 AU
conjunction	16330 May 10 18:14	2°II50'42	14°13'08	direct	16337 Feb 10 15:46	18°II07'23	
minimum elong	16330 May 10 18:31	2°II50'44	14°12'33	evening set	16337 May 18 21:02	20°II24'39	
max. Earth dist.	16330 May 10 02:10	2°II49'06	30.62787 AU				
morning rise	16330 May 15 22:26	3°II03'04		conjunction	16337 May 28 18:01	20°II47'52	11°48'22
retrograde	16330 Aug 23 23:32	5°II31'52		minimum elong	16337 May 28 18:24	20°II47'54	11°47'42
opposition	16330 Nov 08 20:42	4°II08'10	15°03'40	max. Earth dist.	16337 May 28 18:30	20°II47'55	30.75400 AU
min. Earth dist.	16330 Nov 09 11:07	4°II07'08	28.68298 AU	morning rise	16337 Jun 07 15:01	21°II11'07	
direct	16331 Jan 26 12:04	2°II42'49		retrograde	16337 Sep 10 11:17	23°II25'57	
evening set	16331 May 07 16:50	5°II11'35		opposition	16337 Nov 26 15:32	22°II03'18	12°23'30
				min. Earth dist.	16337 Nov 26 14:14	22°II03'23	28.82570 AU
conjunction	16331 May 13 15:21	5°II25'46	13°57'00	direct	16338 Feb 13 13:55	20°II38'57	
minimum elong	16331 May 13 15:41	5°II25'48	13°56'25	evening set	16338 May 21 02:52	22°II54'16	
max. Earth dist.	16331 May 13 00:54	5°II24'20	30.61257 AU				
morning rise	16331 May 19 14:22	5°II40'00		conjunction	16338 May 31 13:04	23°II18'41	11°22'18
retrograde	16331 Aug 26 21:09	8°II06'45		minimum elong	16338 May 31 13:26	23°II18'43	11°21'39
opposition	16331 Nov 11 16:59	6°II43'08	14°45'36	max. Earth dist.	16338 May 31 15:29	23°II18'55	30.81323 AU
min. Earth dist.	16331 Nov 12 04:38	6°II42'19	28.67117 AU	morning rise	16338 Jun 10 23:17	23°II43'07	
direct	16332 Jan 29 08:48	5°II17'52		retrograde	16338 Sep 13 03:56	25°II55'59	
evening set	16332 May 08 20:11	7°II44'44		opposition	16338 Nov 29 10:05	24°II33'30	11°54'58
				min. Earth dist.	16338 Nov 29 07:15	24°II33'42	28.88673 AU
conjunction	16332 May 15 12:32	8°II00'40	13°39'15	direct	16339 Feb 16 08:56	23°II09'20	
minimum elong	16332 May 15 12:52	8°II00'42	13°38'38	evening set	16339 May 23 08:56	25°II22'44	
max. Earth dist.	16332 May 15 01:44	7°II59'35	30.60916 AU				
morning rise	16332 May 22 05:11	8°II16'38		conjunction	16339 Jun 03 07:41	25°II48'15	10°55'08
retrograde	16332 Aug 28 15:49	10°II41'23		minimum elong	16339 Jun 03 08:04	25°II48'17	10°54'27
opposition	16332 Nov 13 13:15	9°II17'54	14°25'48	max. Earth dist.	16339 Jun 03 13:02	25°II48'46	30.88267 AU
min. Earth dist.	16332 Nov 13 23:20	9°II17'11	28.67076 AU	morning rise	16339 Jun 14 06:11	26°II13'46	
direct	16333 Jan 31 05:18	7°II52'46		retrograde	16339 Sep 15 20:14	28°II24'41	
evening set	16333 May 11 00:18	10°II17'42		opposition	16339 Dec 02 04:10	27°II02'24	11°25'17
				min. Earth dist.	16339 Dec 01 22:48	27°II02'46	28.95783 AU
conjunction	16333 May 18 09:23	10°II35'17	13°19'55	direct	16340 Feb 19 06:34	25°II38'25	
minimum elong	16333 May 18 09:45	10°II35'19	13°19'18	evening set	16340 May 24 15:02	27°II49'54	
max. Earth dist.	16333 May 18 00:15	10°II34'23	30.61721 AU				
morning rise	16333 May 25 18:52	10°II52'54		conjunction	16340 Jun 05 01:29	28°II16'26	10°26'55
retrograde	16333 Aug 31 11:57	13°II15'39		minimum elong	16340 Jun 05 01:50	28°II16'28	10°26'15
opposition	16333 Nov 16 09:21	11°II52'19	14°04'20	max. Earth dist.	16340 Jun 05 08:24	28°II17'06	30.96233 AU
min. Earth dist.	16333 Nov 16 16:20	11°II51'50	28.68140 AU	morning rise	16340 Jun 16 11:50	28°II42'57	
direct	16334 Feb 03 02:36	10°II27'19			16340 Jul 23 13:57	0°☾	
evening set	16334 May 13 04:44	12°II50'21		retrograde	16340 Sep 17 13:11	0°☾51'56	
					16340 Nov 15 07:16	30°RII	
conjunction	16334 May 21 06:02	13°II09'29	12°59'05	opposition	16340 Dec 03 21:45	29°II29'50	10°54'32
minimum elong	16334 May 21 06:23	13°II09'31	12°58'27	min. Earth dist.	16340 Dec 03 13:59	29°II30'23	29.03963 AU
max. Earth dist.	16334 May 20 23:59	13°II08'53	30.63604 AU	direct	16341 Feb 21 02:34	28°II06'04	
morning rise	16334 May 29 07:31	13°II28'38			16341 May 19 22:26	0°☾	
retrograde	16334 Sep 03 05:47	15°II49'25		evening set	16341 May 26 21:07	0°☾15'40	
opposition	16334 Nov 19 05:26	14°II26'15	13°41'17				
min. Earth dist.	16334 Nov 19 11:14	14°II25'50	28.70246 AU	conjunction	16341 Jun 07 18:48	0°☾43'08	9°57'45
direct	16335 Feb 05 22:47	13°II01'24		minimum elong	16341 Jun 07 19:10	0°☾43'10	9°57'04
evening set	16335 May 15 09:58	15°II22'31		max. Earth dist.	16341 Jun 08 05:18	0°☾44'08	31.05287 AU
				morning rise	16341 Jun 19 16:00	1°☾10'33	
conjunction	16335 May 24 02:26	15°II43'06	12°36'50	retrograde	16341 Sep 20 03:09	3°☾17'40	
minimum elong	16335 May 24 02:48	15°II43'08	12°36'11	opposition	16341 Dec 06 14:52	1°☾55'47	10°22'47
max. Earth dist.	16335 May 23 22:08	15°II42'40	30.66534 AU	min. Earth dist.	16341 Dec 06 04:58	1°☾56'28	29.13240 AU
morning rise	16335 Jun 01 19:09	16°II03'42		direct	16342 Feb 23 22:22	0°☾32'16	
retrograde	16335 Sep 06 01:20	18°II22'30		evening set	16342 May 29 03:15	2°☾40'01	
opposition	16335 Nov 22 00:58	16°II59'30	13°16'45				
min. Earth dist.	16335 Nov 22 03:42	16°II59'18	28.73363 AU	conjunction	16342 Jun 10 11:14	3°☾08'18	9°27'43
direct	16336 Feb 08 19:34	15°II34'48		minimum elong	16342 Jun 10 11:34	3°☾08'20	9°27'02
evening set	16336 May 16 15:21	17°II54'00		max. Earth dist.	16342 Jun 10 23:16	3°☾09'28	31.15452 AU
				morning rise	16342 Jun 22 18:57	3°☾36'34	
conjunction	16336 May 25 22:31	18°II15'57	12°13'14	retrograde	16342 Sep 22 19:27	5°☾41'50	

opposition	16342 Dec 09 07:20	4°☾20'13	9°50'09	max. Earth dist.	16349 Jun 27 16:06	19°☾24'06	32.13970 AU
min. Earth dist.	16342 Dec 08 18:18	4°☾21'07	29.23648 AU	morning rise	16349 Jul 11 02:11	19°☾53'28	
direct	16343 Feb 26 16:54	2°☾56'58		retrograde	16349 Oct 08 04:53	21°☾47'26	
evening set	16343 May 31 09:27	5°☾02'56		min. Earth dist.	16349 Dec 24 07:40	20°☾29'51	30.23310 AU
				opposition	16349 Dec 25 10:09	20°☾28'06	5°45'50
conjunction	16343 Jun 13 03:20	5°☾31'59	8°56'53	direct	16350 Mar 15 07:18	19°☾07'13	
minimum elong	16343 Jun 13 03:40	5°☾32'01	8°56'12	evening set	16350 Jun 14 05:33	21°☾01'58	
max. Earth dist.	16343 Jun 13 18:59	5°☾33'29	31.26726 AU				
morning rise	16343 Jun 25 20:31	6°☾00'59		conjunction	16350 Jun 29 00:34	21°☾34'07	5°07'28
retrograde	16343 Sep 25 08:55	8°☾04'29		minimum elong	16350 Jun 29 00:46	21°☾34'08	5°06'49
opposition	16343 Dec 11 23:13	6°☾43'09	9°16'43	max. Earth dist.	16350 Jun 30 05:39	21°☾36'46	32.31129 AU
min. Earth dist.	16343 Dec 11 08:41	6°☾44'09	29.35147 AU	morning rise	16350 Jul 13 18:20	22°☾06'10	
direct	16344 Feb 29 11:26	5°☾20'13		retrograde	16350 Oct 10 13:17	23°☾58'44	
evening set	16344 Jun 01 15:50	7°☾24'26		opposition	16350 Dec 27 21:44	22°☾39'43	5°09'52
				min. Earth dist.	16350 Dec 26 18:03	22°☾41'32	30.40579 AU
conjunction	16344 Jun 14 18:36	7°☾54'09	8°25'23	direct	16351 Mar 17 21:44	21°☾19'10	
minimum elong	16344 Jun 14 18:55	7°☾54'11	8°24'43	evening set	16351 Jun 16 11:46	23°☾12'31	
max. Earth dist.	16344 Jun 15 11:40	7°☾55'47	31.39067 AU				
morning rise	16344 Jun 27 20:52	8°☾23'50		conjunction	16351 Jul 01 11:02	23°☾44'49	4°33'48
retrograde	16344 Sep 26 22:58	10°☾25'36		minimum elong	16351 Jul 01 11:13	23°☾44'50	4°33'09
opposition	16344 Dec 13 14:31	9°☾04'36	8°42'38	max. Earth dist.	16351 Jul 02 16:40	23°☾47'30	32.48908 AU
min. Earth dist.	16344 Dec 12 20:40	9°☾05'48	29.47692 AU	morning rise	16351 Jul 16 09:20	24°☾17'01	
direct	16345 Mar 03 04:54	7°☾41'59		retrograde	16351 Oct 12 23:29	26°☾08'13	
evening set	16345 Jun 03 21:56	9°☾44'31		min. Earth dist.	16351 Dec 29 02:38	24°☾51'28	30.58505 AU
				opposition	16351 Dec 30 08:30	24°☾49'31	4°33'53
conjunction	16345 Jun 17 09:11	10°☾14'50	7°53'18	direct	16352 Mar 19 10:57	23°☾29'18	
minimum elong	16345 Jun 17 09:30	10°☾14'51	7°52'37	evening set	16352 Jun 17 17:36	25°☾21'17	
max. Earth dist.	16345 Jun 18 05:24	10°☾16'44	31.52391 AU				
morning rise	16345 Jun 30 19:39	10°☾45'05		conjunction	16352 Jul 02 20:52	25°☾53'42	4°00'08
retrograde	16345 Sep 29 09:57	12°☾45'11		minimum elong	16352 Jul 02 21:01	25°☾53'42	3°59'31
min. Earth dist.	16345 Dec 15 10:28	11°☾25'48	29.61198 AU	max. Earth dist.	16352 Jul 04 05:14	25°☾56'36	32.67324 AU
opposition	16345 Dec 16 05:23	11°☾24'31	8°07'59	morning rise	16352 Jul 17 22:45	26°☾25'59	
direct	16346 Mar 05 20:43	10°☾02'16		retrograde	16352 Oct 14 06:47	28°☾15'53	
evening set	16346 Jun 06 04:20	12°☾03'08		opposition	16352 Dec 31 18:47	26°☾57'30	3°57'58
				min. Earth dist.	16352 Dec 30 12:06	26°☾59'29	30.77091 AU
conjunction	16346 Jun 19 23:11	12°☾33'58	7°20'43	direct	16353 Mar 22 00:36	25°☾37'38	
minimum elong	16346 Jun 19 23:28	12°☾33'59	7°20'04	evening set	16353 Jun 19 23:13	27°☾28'18	
max. Earth dist.	16346 Jun 20 20:49	12°☾36'00	31.66626 AU				
morning rise	16346 Jul 03 17:17	13°☾04'43		conjunction	16353 Jul 05 05:34	28°☾00'45	3°26'32
retrograde	16346 Oct 01 22:36	15°☾03'12		minimum elong	16353 Jul 05 05:42	28°☾00'45	3°25'55
opposition	16346 Dec 18 19:20	13°☾42'53	7°32'52	max. Earth dist.	16353 Jul 06 14:44	28°☾03'42	32.86401 AU
min. Earth dist.	16346 Dec 17 21:41	13°☾44'20	29.75579 AU	morning rise	16353 Jul 20 10:49	28°☾33'05	
direct	16347 Mar 08 12:42	12°☾20'58			16353 Sep 09 10:26	0°♂	
evening set	16347 Jun 08 10:45	14°☾20'15		retrograde	16353 Oct 16 14:32	0°♂21'45	
					16353 Nov 23 16:11	30°♂☾	
conjunction	16347 Jun 22 12:38	14°☾51'31	6°47'46	min. Earth dist.	16354 Jan 01 18:40	29°☾05'50	30.96379 AU
minimum elong	16347 Jun 22 12:54	14°☾51'32	6°47'06	opposition	16354 Jan 03 04:12	29°☾03'40	3°22'09
max. Earth dist.	16347 Jun 23 12:23	14°☾53'43	31.81672 AU	direct	16354 Mar 24 12:28	27°☾44'09	
morning rise	16347 Jul 06 13:39	15°☾22'42		evening set	16354 Jun 22 04:43	29°☾33'35	
retrograde	16347 Oct 04 08:39	17°☾19'38			16354 Jul 04 17:58	0°♂	
min. Earth dist.	16347 Dec 20 10:16	16°☾01'09	29.90768 AU				
opposition	16347 Dec 21 08:59	15°☾59'38	6°57'25	conjunction	16354 Jul 07 13:49	0°♂06'01	2°53'04
direct	16348 Mar 10 02:24	14°☾38'04		minimum elong	16354 Jul 07 13:56	0°♂06'01	2°52'27
evening set	16348 Jun 09 17:05	16°☾35'48		max. Earth dist.	16354 Jul 09 01:40	0°♂09'11	33.06165 AU
				morning rise	16354 Jul 22 21:35	0°♂38'20	
conjunction	16348 Jun 24 01:19	17°☾07'25	6°14'31	retrograde	16354 Oct 18 19:07	2°♂25'50	
minimum elong	16348 Jun 24 01:33	17°☾07'26	6°13'52	min. Earth dist.	16355 Jan 04 02:39	1°♂10'18	31.16390 AU
max. Earth dist.	16348 Jun 25 02:55	17°☾09'48	31.97477 AU	opposition	16355 Jan 05 12:57	1°♂08'06	2°46'32
morning rise	16348 Jul 08 08:30	17°☾38'58			16355 Feb 27 15:21	30°♂☾	
retrograde	16348 Oct 05 18:24	19°☾34'23		direct	16355 Mar 26 23:13	29°☾48'57	
opposition	16348 Dec 22 21:53	18°☾14'44	6°21'42		16355 Apr 22 17:56	0°♂	
min. Earth dist.	16348 Dec 21 21:01	18°☾16'23	30.06685 AU	evening set	16355 Jun 24 10:09	1°♂37'12	
direct	16349 Mar 12 18:36	16°☾53'31					
evening set	16349 Jun 11 23:28	18°☾49'43		conjunction	16355 Jul 09 21:20	2°♂09'35	2°19'45
				minimum elong	16355 Jul 09 21:25	2°♂09'35	2°19'09
conjunction	16349 Jun 26 13:17	19°☾21'38	5°41'04	max. Earth dist.	16355 Jul 11 10:11	2°♂12'50	33.26639 AU
minimum elong	16349 Jun 26 13:30	19°☾21'40	5°40'24	morning rise	16355 Jul 25 07:13	2°♂41'50	

retrograde	16355 Oct 21 00:52	4°♏28'14		opposition	16362 Jan 19 08:44	14°♏55'35	-1°12'58
min. Earth dist.	16356 Jan 06 08:10	3°♏13'14	31.37104 AU	direct	16362 Apr 10 04:48	13°♏39'14	
opposition	16356 Jan 07 21:02	3°♏10'52	2°11'10		16362 Jun 26 20:43	15°♏	
direct	16356 Mar 28 09:25	1°♏52'07		evening set	16362 Jul 07 19:21	15°♏20'49	
evening set	16356 Jun 25 15:20	3°♏39'16					
				conjunction	16362 Jul 23 07:24	15°♏51'37	-1°24'09
conjunction	16356 Jul 11 04:02	4°♏11'32	1°46'42	minimum elong	16362 Jul 23 07:21	15°♏51'36	1°24'39
minimum elong	16356 Jul 11 04:05	4°♏11'32	1°46'06	max. Earth dist.	16362 Jul 25 04:13	15°♏55'21	34.84316 AU
max. Earth dist.	16356 Jul 12 18:52	4°♏14'56	33.47770 AU	morning rise	16362 Aug 07 18:12	16°♏22'18	
morning rise	16356 Jul 26 15:28	4°♏43'42		retrograde	16362 Nov 03 01:49	18°♏02'32	
retrograde	16356 Oct 22 05:00	6°♏29'04		min. Earth dist.	16363 Jan 19 15:27	16°♏50'29	32.96054 AU
min. Earth dist.	16357 Jan 07 14:34	5°♏14'29	31.58487 AU	opposition	16363 Jan 21 12:20	16°♏47'44	-1°45'15
opposition	16357 Jan 09 04:36	5°♏12'04	1°36'05	direct	16363 Apr 12 11:13	15°♏31'43	
direct	16357 Mar 30 16:49	3°♏53'44		evening set	16363 Jul 09 23:25	17°♏12'30	
evening set	16357 Jun 27 20:20	5°♏39'50					
				conjunction	16363 Jul 25 09:53	17°♏42'57	-1°54'21
conjunction	16357 Jul 13 10:11	6°♏11'57	1°13'55	minimum elong	16363 Jul 25 09:49	17°♏42'56	1°54'51
minimum elong	16357 Jul 13 10:14	6°♏11'57	1°13'20	max. Earth dist.	16363 Jul 27 07:54	17°♏46'45	35.08023 AU
max. Earth dist.	16357 Jul 15 02:43	6°♏15'28	33.69517 AU	morning rise	16363 Aug 09 19:04	18°♏13'17	
morning rise	16357 Jul 28 22:37	6°♏43'58		retrograde	16363 Nov 05 00:42	19°♏52'46	
retrograde	16357 Oct 24 08:27	8°♏28'21		min. Earth dist.	16364 Jan 21 18:45	18°♏41'01	33.19916 AU
min. Earth dist.	16358 Jan 09 19:45	7°♏14'16	31.80443 AU	opposition	16364 Jan 23 15:40	18°♏38'17	-2°16'58
opposition	16358 Jan 11 11:19	7°♏11'46	1°01'23	direct	16364 Apr 13 16:25	17°♏22'37	
direct	16358 Apr 02 01:43	5°♏53'50		evening set	16364 Jul 11 03:03	19°♏02'36	
evening set	16358 Jun 30 01:17	7°♏38'56					
				conjunction	16364 Jul 26 11:34	19°♏32'40	-2°24'02
conjunction	16358 Jul 15 15:35	8°♏10'52	0°41'29	minimum elong	16364 Jul 26 11:30	19°♏32'39	2°24'31
minimum elong	16358 Jul 15 15:37	8°♏10'52	0°40'55	max. Earth dist.	16364 Jul 28 10:09	19°♏36'30	35.31919 AU
max. Earth dist.	16358 Jul 17 08:53	8°♏14'25	33.91770 AU	morning rise	16364 Aug 10 18:45	20°♏02'37	
morning rise	16358 Jul 31 04:43	8°♏42'41		retrograde	16364 Nov 05 23:01	21°♏41'24	
retrograde	16358 Oct 26 13:55	10°♏26'11		min. Earth dist.	16365 Jan 22 20:13	20°♏30'00	33.43973 AU
min. Earth dist.	16359 Jan 12 00:25	9°♏12'32	32.02899 AU	opposition	16365 Jan 24 18:13	20°♏27'13	-2°48'05
opposition	16359 Jan 13 17:33	9°♏09'58	0°27'05	direct	16365 Apr 15 21:44	19°♏11'51	
direct	16359 Apr 04 06:58	7°♏52'26		evening set	16365 Jul 13 06:32	20°♏51'07	
evening set	16359 Jul 02 06:00	9°♏36'37					
				conjunction	16365 Jul 28 12:35	21°♏20'45	-2°53'11
conjunction	16359 Jul 17 20:32	10°♏08'18	0°09'27	minimum elong	16365 Jul 28 12:30	21°♏20'45	2°53'39
minimum elong	16359 Jul 17 20:33	10°♏08'18	0°08'54	max. Earth dist.	16365 Jul 30 11:47	21°♏24'37	35.56013 AU
behind sun begin	16359 Jul 17 15:01	10°♏07'52		morning rise	16365 Aug 12 17:35	21°♏50'18	
behind sun end	16359 Jul 18 02:05	10°♏08'45		retrograde	16365 Nov 07 22:53	23°♏28'26	
max. Earth dist.	16359 Jul 19 15:45	10°♏12'00	34.14453 AU	min. Earth dist.	16366 Jan 24 21:01	22°♏17'22	33.68289 AU
morning rise	16359 Aug 02 09:35	10°♏39'54		opposition	16366 Jan 26 20:07	22°♏14'32	-3°18'36
retrograde	16359 Oct 28 16:29	12°♏22'31		direct	16366 Apr 17 23:31	20°♏59'29	
desc. node	16359 Nov 03 03:13	12°♏22'04		evening set	16366 Jul 15 09:35	22°♏38'03	
min. Earth dist.	16360 Jan 14 05:43	11°♏09'16	32.25749 AU				
opposition	16360 Jan 15 23:10	11°♏06'41	-0°06'46	conjunction	16366 Jul 30 13:08	23°♏07'16	-3°21'46
direct	16360 Apr 05 14:18	9°♏49'34		minimum elong	16366 Jul 30 13:02	23°♏07'15	3°22'13
evening set	16360 Jul 03 10:45	11°♏32'50		max. Earth dist.	16366 Aug 01 13:57	23°♏11'13	35.80369 AU
				morning rise	16366 Aug 14 15:19	23°♏36'23	
conjunction	16360 Jul 19 00:44	12°♏04'16	-0°22'15	retrograde	16366 Nov 09 20:57	25°♏13'55	
minimum elong	16360 Jul 19 00:43	12°♏04'15	0°22'47	min. Earth dist.	16367 Jan 26 22:00	24°♏03'09	33.92877 AU
max. Earth dist.	16360 Jul 20 19:51	12°♏07'55	34.37480 AU	opposition	16367 Jan 28 21:30	24°♏00'18	-3°48'29
morning rise	16360 Aug 03 13:34	12°♏35'35		direct	16367 Apr 20 03:04	22°♏45'35	
retrograde	16360 Oct 29 21:43	14°♏17'22		evening set	16367 Jul 17 12:32	24°♏23'31	
min. Earth dist.	16361 Jan 15 08:49	13°♏04'35	32.48939 AU				
opposition	16361 Jan 17 04:12	13°♏01'54	-0°40'07	conjunction	16367 Aug 01 12:52	24°♏52'16	-3°49'46
direct	16361 Apr 07 21:25	11°♏45'10		minimum elong	16367 Aug 01 12:45	24°♏52'16	3°50'12
evening set	16361 Jul 05 15:01	13°♏27'34		max. Earth dist.	16367 Aug 03 13:37	24°♏56'12	36.05001 AU
				morning rise	16367 Aug 16 12:12	25°♏20'56	
conjunction	16361 Jul 21 04:21	13°♏58'42	-0°53'26	retrograde	16367 Nov 11 21:40	26°♏57'55	
minimum elong	16361 Jul 21 04:19	13°♏58'42	0°53'58	min. Earth dist.	16368 Jan 28 20:49	25°♏47'33	34.17771 AU
max. Earth dist.	16361 Jul 23 01:26	14°♏02'30	34.60786 AU	opposition	16368 Jan 30 22:15	25°♏44'36	-4°17'43
morning rise	16361 Aug 05 16:16	14°♏29'44		direct	16368 Apr 21 03:42	24°♏30'14	
	16361 Aug 21 17:17	15°♏		evening set	16368 Jul 18 15:05	26°♏07'35	
retrograde	16361 Nov 01 00:13	16°♏10'43					
	16362 Jan 16 09:08	15°♏♏		conjunction	16368 Aug 02 12:13	26°♏35'53	-4°17'10
min. Earth dist.	16362 Jan 17 13:31	14°♏58'15	32.72391 AU	minimum elong	16368 Aug 02 12:06	26°♏35'52	4°17'35

max. Earth dist.	16368 Aug 04 14:57	26°039'56	36.29923 AU	retrograde	16374 Nov 22 23:52	8°00'31"50	
morning rise	16368 Aug 17 08:08	27°004'05		min. Earth dist.	16375 Feb 09 08:46	7°00'23"52	35.96267 AU
retrograde	16368 Nov 12 19:41	28°040'34		opposition	16375 Feb 11 13:40	7°00'20"50	-7°23'31
min. Earth dist.	16369 Jan 29 21:17	27°030'30	34.42945 AU	direct	16375 May 04 01:17	6°00'08"59	
opposition	16369 Jan 31 22:38	27°027'34	-4°46'17	evening set	16375 Aug 01 02:57	7°00'43"15	
direct	16369 Apr 23 05:02	26°013'35					
evening set	16369 Jul 20 17:22	27°050'23		conjunction	16375 Aug 14 17:20	8°00'07"57	-7°11'42
				minimum elong	16375 Aug 14 17:10	8°00'07"56	7°12'01
conjunction	16369 Aug 04 10:49	28°018'12	-4°43'57	max. Earth dist.	16375 Aug 16 22:40	8°00'12"00	38.07488 AU
minimum elong	16369 Aug 04 10:41	28°018'11	4°44'21	morning rise	16375 Aug 28 06:49	8°00'32"35	
max. Earth dist.	16369 Aug 06 13:29	28°022'13	36.55095 AU	retrograde	16375 Nov 24 18:28	10°00'06"29	
morning rise	16369 Aug 19 03:16	28°045'56		min. Earth dist.	16376 Feb 11 06:41	8°00'58"43	36.21642 AU
	16369 Oct 06 04:35	0°00'		opposition	16376 Feb 13 10:39	8°00'55"45	-7°47'23
retrograde	16369 Nov 14 17:27	0°00'21"56		direct	16376 May 04 23:57	7°00'44"13	
	16369 Dec 25 07:39	30°00'00"		evening set	16376 Aug 02 03:46	9°00'18"07	
min. Earth dist.	16370 Jan 31 19:09	29°012'19	34.68341 AU				
opposition	16370 Feb 02 22:17	29°009'18	-5°14'10	conjunction	16376 Aug 15 12:46	9°00'42"16	-7°34'11
direct	16370 Apr 25 07:13	27°055'40		minimum elong	16376 Aug 15 12:37	9°00'42"15	7°34'29
evening set	16370 Jul 22 19:31	29°031'59		max. Earth dist.	16376 Aug 17 17:22	9°00'46"14	38.32633 AU
				morning rise	16376 Aug 28 21:03	10°00'06"21	
conjunction	16370 Aug 06 09:05	29°059'19	-5°10'07	retrograde	16376 Nov 25 12:31	11°00'39"56	
minimum elong	16370 Aug 06 08:57	29°059'18	5°10'31	min. Earth dist.	16377 Feb 12 02:00	10°00'32"29	36.46910 AU
	16370 Aug 06 17:50	0°00'		opposition	16377 Feb 14 06:58	10°00'29"28	-8°10'36
max. Earth dist.	16370 Aug 08 13:02	0°00'03"24	36.80435 AU	direct	16377 May 06 23:38	9°00'18"13	
morning rise	16370 Aug 20 21:39	0°00'26"34		evening set	16377 Aug 04 04:04	10°00'51"47	
retrograde	16370 Nov 16 13:52	2°00'02"08					
min. Earth dist.	16371 Feb 02 18:26	0°00'52"50	34.93894 AU	conjunction	16377 Aug 17 07:36	11°00'15"22	-7°56'03
opposition	16371 Feb 04 21:28	0°00'49"50	-5°41'23	minimum elong	16377 Aug 17 07:26	11°00'15"21	7°56'19
	16371 Mar 15 18:58	30°00'00"		max. Earth dist.	16377 Aug 19 12:53	11°00'19"22	38.57679 AU
direct	16371 Apr 27 08:10	29°036'36		morning rise	16377 Aug 30 10:31	11°00'38"53	
	16371 Jun 07 16:02	0°00'		retrograde	16377 Nov 27 05:37	13°00'12"12	
evening set	16371 Jul 24 21:27	1°00'12"27		min. Earth dist.	16378 Feb 13 22:08	12°00'04"58	36.72122 AU
				opposition	16378 Feb 16 02:56	12°00'01"59	-8°33'09
conjunction	16371 Aug 08 06:54	1°00'39"16	-5°35'41	direct	16378 May 08 21:34	10°00'51"00	
minimum elong	16371 Aug 08 06:45	1°00'39"15	5°36'03	evening set	16378 Aug 06 04:10	12°00'24"15	
max. Earth dist.	16371 Aug 10 11:08	1°00'43"21	37.05893 AU				
morning rise	16371 Aug 22 15:16	2°00'06"01		conjunction	16378 Aug 19 02:06	12°00'47"15	-8°17'17
retrograde	16371 Nov 18 09:16	3°00'41"12		minimum elong	16378 Aug 19 01:56	12°00'47"14	8°17'33
min. Earth dist.	16372 Feb 04 16:31	2°00'32"16	35.19520 AU	max. Earth dist.	16378 Aug 21 07:49	12°00'51"16	38.82695 AU
opposition	16372 Feb 06 20:14	2°00'29"15	-6°07'56	morning rise	16378 Aug 31 23:14	13°00'10"13	
direct	16372 Apr 28 09:08	1°00'16"23		retrograde	16378 Nov 28 20:37	14°00'43"16	
evening set	16372 Jul 25 23:08	2°00'51"48		min. Earth dist.	16379 Feb 15 17:05	13°00'36"18	36.97317 AU
				opposition	16379 Feb 17 22:14	13°00'33"18	-8°55'02
conjunction	16372 Aug 09 04:01	3°00'18"06	-6°00'36	direct	16379 May 10 19:45	12°00'22"36	
minimum elong	16372 Aug 09 03:53	3°00'18"05	6°00'58	evening set	16379 Aug 08 04:05	13°00'55"33	
max. Earth dist.	16372 Aug 11 08:20	3°00'22"10	37.31377 AU				
morning rise	16372 Aug 23 08:09	3°00'44"21		conjunction	16379 Aug 20 20:01	14°00'17"59	-8°37'55
retrograde	16372 Nov 19 06:10	5°00'19"11		minimum elong	16379 Aug 20 19:51	14°00'17"58	8°38'09
min. Earth dist.	16373 Feb 05 14:18	4°00'10"36	35.45172 AU	max. Earth dist.	16379 Aug 23 01:30	14°00'21"57	39.07720 AU
opposition	16373 Feb 07 18:36	4°00'07"34	-6°33'48	morning rise	16379 Sep 02 11:30	14°00'40"23	
direct	16373 Apr 30 06:57	2°00'55"03		retrograde	16379 Nov 30 14:10	16°00'13"13	
evening set	16373 Jul 28 00:35	4°00'30"04		min. Earth dist.	16380 Feb 17 11:08	15°00'06"32	37.22561 AU
				opposition	16380 Feb 19 17:18	15°00'03"30	-9°16'14
conjunction	16373 Aug 11 00:59	4°00'55"50	-6°24'55	direct	16380 May 11 14:24	13°00'53"05	
minimum elong	16373 Aug 11 00:49	4°00'55"49	6°25'16	evening set	16380 Aug 09 03:26	15°00'25"46	
max. Earth dist.	16373 Aug 13 06:16	4°00'59"57	37.56846 AU				
morning rise	16373 Aug 25 00:19	5°00'21"33		conjunction	16380 Aug 21 13:32	15°00'47"38	-8°57'55
retrograde	16373 Nov 21 02:05	6°00'56"04		minimum elong	16380 Aug 21 13:22	15°00'47"37	8°58'09
min. Earth dist.	16374 Feb 07 12:31	5°00'47"45	35.70766 AU	max. Earth dist.	16380 Aug 23 20:28	15°00'51"41	39.32795 AU
opposition	16374 Feb 09 16:21	5°00'44"46	-6°58'59	morning rise	16380 Sep 02 22:54	16°00'09"27	
direct	16374 May 02 05:12	4°00'32"36		retrograde	16380 Dec 01 07:12	17°00'42"06	
evening set	16374 Jul 30 02:00	6°00'07"13		min. Earth dist.	16381 Feb 18 06:12	16°00'35"39	37.47836 AU
				opposition	16381 Feb 20 11:58	16°00'32"39	-9°36'47
conjunction	16374 Aug 12 21:21	6°00'32"28	-6°48'37	direct	16381 May 13 08:56	15°00'22"33	
minimum elong	16374 Aug 12 21:12	6°00'32"27	6°48'57	evening set	16381 Aug 11 02:51	16°00'55"00	
max. Earth dist.	16374 Aug 15 01:41	6°00'36"29	37.82228 AU				
morning rise	16374 Aug 26 16:01	6°00'57"38		conjunction	16381 Aug 23 06:38	17°00'16"16	-9°17'18

minimum elong	16381 Aug 23 06:29	17° <u>16</u> '16	9°17'30	evening set	16388 Aug 22 15:53	26° <u>15</u> '51	
max. Earth dist.	16381 Aug 25 12:54	17° <u>16</u> '20'15	39.57895 AU				
morning rise	16381 Sep 04 10:00	17° <u>16</u> '37'31		conjunction	16388 Sep 01 21:00	27° <u>16</u> '12'02	-11°16'34
retrograde	16381 Dec 03 01:30	19° <u>16</u> '10'00		minimum elong	16388 Sep 01 20:51	27° <u>16</u> '12'02	11°16'40
min. Earth dist.	16382 Feb 19 22:47	18° <u>16</u> '03'53	37.73122 AU	max. Earth dist.	16388 Sep 04 02:26	27° <u>16</u> '15'48	41.29846 AU
opposition	16382 Feb 22 05:55	18° <u>16</u> '00'50	-9°56'39	morning rise	16388 Sep 12 01:49	27° <u>16</u> '29'13	
direct	16382 May 15 01:52	16° <u>16</u> '51'01		retrograde	16388 Dec 12 11:25	29° <u>16</u> '01'01	
evening set	16382 Aug 13 01:50	18° <u>16</u> '23'16		min. Earth dist.	16389 Mar 01 21:20	27° <u>16</u> '56'33	39.45632 AU
				opposition	16389 Mar 04 03:17	27° <u>16</u> '53'39	-11°58'31
conjunction	16382 Aug 24 23:27	18° <u>16</u> '43'58	-9°36'04	direct	16389 May 25 05:03	26° <u>16</u> '45'49	
minimum elong	16382 Aug 24 23:18	18° <u>16</u> '43'58	9°36'16	evening set	16389 Aug 24 13:24	28° <u>16</u> '17'05	
max. Earth dist.	16382 Aug 27 06:48	18° <u>16</u> '48'00	39.82973 AU				
morning rise	16382 Sep 05 20:34	19° <u>16</u> '04'39		conjunction	16389 Sep 03 11:25	28° <u>16</u> '33'42	-11°31'25
retrograde	16382 Dec 04 17:38	20° <u>16</u> '36'59		minimum elong	16389 Sep 03 11:18	28° <u>16</u> '33'41	11°31'30
min. Earth dist.	16383 Feb 21 17:27	19° <u>16</u> '31'05	37.98362 AU	max. Earth dist.	16389 Sep 05 17:02	28° <u>16</u> '37'27	41.53358 AU
opposition	16383 Feb 23 23:47	19° <u>16</u> '28'05	-10°15'53	morning rise	16389 Sep 13 09:14	28° <u>16</u> '50'17	
direct	16383 May 16 21:03	18° <u>16</u> '18'35			16389 Nov 01 21:18	0° <u>16</u> '	
evening set	16383 Aug 15 00:41	19° <u>16</u> '50'39		retrograde	16389 Dec 14 00:17	0° <u>16</u> '22'02	
					16390 Jan 26 06:56	30° <u>16</u> '	
conjunction	16383 Aug 26 15:49	20° <u>16</u> '10'47	-9°54'14	min. Earth dist.	16390 Mar 03 13:32	29° <u>16</u> '17'42	39.69212 AU
minimum elong	16383 Aug 26 15:40	20° <u>16</u> '10'46	9°54'25	opposition	16390 Mar 05 18:34	29° <u>16</u> '14'52	-12°13'36
max. Earth dist.	16383 Aug 28 22:45	20° <u>16</u> '14'46	40.07980 AU	direct	16390 May 26 22:10	28° <u>16</u> '07'16	
morning rise	16383 Sep 07 06:27	20° <u>16</u> '30'52		evening set	16390 Aug 26 10:45	29° <u>16</u> '38'27	
retrograde	16383 Dec 06 08:33	22° <u>16</u> '03'05					
min. Earth dist.	16384 Feb 23 10:12	20° <u>16</u> '57'29	38.23490 AU	conjunction	16390 Sep 05 01:32	29° <u>16</u> '54'28	-11°45'44
opposition	16384 Feb 25 17:11	20° <u>16</u> '54'28	-10°34'29	minimum elong	16390 Sep 05 01:24	29° <u>16</u> '54'27	11°45'48
direct	16384 May 17 16:43	19° <u>16</u> '45'16		max. Earth dist.	16390 Sep 07 07:04	29° <u>16</u> '58'12	41.76653 AU
evening set	16384 Aug 15 23:18	21° <u>16</u> '17'11			16390 Sep 08 09:03	0° <u>16</u> '	
				morning rise	16390 Sep 14 15:59	0° <u>16</u> '10'27	
conjunction	16384 Aug 27 07:51	21° <u>16</u> '36'43	-10°11'49	retrograde	16390 Dec 15 11:10	1° <u>16</u> '42'10	
minimum elong	16384 Aug 27 07:42	21° <u>16</u> '36'43	10°12'00	min. Earth dist.	16391 Mar 05 04:29	0° <u>16</u> '38'03	39.92583 AU
max. Earth dist.	16384 Aug 29 14:47	21° <u>16</u> '40'41	40.32842 AU	opposition	16391 Mar 07 09:33	0° <u>16</u> '35'13	-12°28'08
morning rise	16384 Sep 07 16:06	21° <u>16</u> '56'14			16391 Apr 05 07:11	30° <u>16</u> '	
retrograde	16384 Dec 06 23:57	23° <u>16</u> '28'21		direct	16391 May 28 16:17	29° <u>16</u> '27'52	
min. Earth dist.	16385 Feb 24 03:29	22° <u>16</u> '23'00	38.48465 AU		16391 Jul 19 01:34	0° <u>16</u> '	
opposition	16385 Feb 26 10:19	22° <u>16</u> '20'00	-10°52'28	evening set	16391 Aug 28 07:45	0° <u>16</u> '58'58	
direct	16385 May 19 10:29	21° <u>16</u> '11'06					
evening set	16385 Aug 17 21:40	22° <u>16</u> '42'52		conjunction	16391 Sep 06 15:04	1° <u>16</u> '14'23	-11°59'31
				minimum elong	16391 Sep 06 14:57	1° <u>16</u> '14'23	11°59'34
conjunction	16385 Aug 28 23:39	23° <u>16</u> '01'49	-10°28'50	max. Earth dist.	16391 Sep 08 20:04	1° <u>16</u> '18'04	41.99770 AU
minimum elong	16385 Aug 28 23:30	23° <u>16</u> '01'48	10°28'58	morning rise	16391 Sep 15 22:18	1° <u>16</u> '29'48	
max. Earth dist.	16385 Aug 31 06:58	23° <u>16</u> '05'47	40.57518 AU	retrograde	16391 Dec 17 00:57	3° <u>16</u> '01'30	
morning rise	16385 Sep 09 01:06	23° <u>16</u> '20'45		min. Earth dist.	16392 Mar 05 18:40	1° <u>16</u> '57'37	40.15820 AU
retrograde	16385 Dec 08 13:07	24° <u>16</u> '52'47		opposition	16392 Mar 08 00:16	1° <u>16</u> '54'46	-12°42'06
min. Earth dist.	16386 Feb 25 20:53	23° <u>16</u> '47'39	38.73198 AU	direct	16392 May 29 06:58	0° <u>16</u> '47'40	
opposition	16386 Feb 28 03:04	23° <u>16</u> '44'42	-11°09'50	evening set	16392 Aug 29 04:31	2° <u>16</u> '18'43	
direct	16386 May 21 05:35	22° <u>16</u> '36'06					
evening set	16386 Aug 19 20:02	24° <u>16</u> '07'43		conjunction	16392 Sep 07 04:32	2° <u>16</u> '33'32	-12°12'45
				minimum elong	16392 Sep 07 04:24	2° <u>16</u> '33'32	12°12'47
conjunction	16386 Aug 30 15:04	24° <u>16</u> '26'05	-10°45'17	max. Earth dist.	16392 Sep 09 10:32	2° <u>16</u> '37'16	42.22769 AU
minimum elong	16386 Aug 30 14:54	24° <u>16</u> '26'04	10°45'25	morning rise	16392 Sep 16 04:14	2° <u>16</u> '48'22	
max. Earth dist.	16386 Sep 01 21:02	24° <u>16</u> '29'56	40.81926 AU	retrograde	16392 Dec 17 14:02	4° <u>16</u> '20'05	
morning rise	16386 Sep 10 09:53	24° <u>16</u> '44'26		min. Earth dist.	16393 Mar 07 09:47	3° <u>16</u> '16'23	40.38924 AU
retrograde	16386 Dec 10 05:47	26° <u>16</u> '16'22		opposition	16393 Mar 09 14:37	3° <u>16</u> '13'35	-12°55'30
min. Earth dist.	16387 Feb 27 12:46	25° <u>16</u> '11'30	38.97655 AU	direct	16393 May 30 21:57	2° <u>16</u> '06'44	
opposition	16387 Mar 01 19:23	25° <u>16</u> '08'33	-11°26'38	evening set	16393 Aug 31 01:10	3° <u>16</u> '37'45	
direct	16387 May 22 20:45	24° <u>16</u> '00'13					
evening set	16387 Aug 21 18:05	25° <u>16</u> '31'43		conjunction	16393 Sep 08 17:31	3° <u>16</u> '52'00	-12°25'28
				minimum elong	16393 Sep 08 17:25	3° <u>16</u> '52'00	12°25'29
conjunction	16387 Sep 01 06:19	25° <u>16</u> '49'30	-11°01'12	max. Earth dist.	16393 Sep 10 22:26	3° <u>16</u> '55'38	42.45643 AU
minimum elong	16387 Sep 01 06:11	25° <u>16</u> '49'29	11°01'18	morning rise	16393 Sep 17 09:46	4° <u>16</u> '06'15	
max. Earth dist.	16387 Sep 03 12:56	25° <u>16</u> '53'22	41.06039 AU	retrograde	16393 Dec 19 05:45	5° <u>16</u> '37'59	
morning rise	16387 Sep 11 18:10	26° <u>16</u> '07'16		min. Earth dist.	16394 Mar 08 22:49	4° <u>16</u> '34'33	40.61885 AU
retrograde	16387 Dec 11 21:09	27° <u>16</u> '39'08		opposition	16394 Mar 11 04:35	4° <u>16</u> '31'43	-13°08'21
min. Earth dist.	16388 Feb 29 06:21	26° <u>16</u> '34'25	39.21797 AU	direct	16394 Jun 01 09:19	3° <u>16</u> '25'08	
opposition	16388 Mar 02 11:37	26° <u>16</u> '31'33	-11°42'51	evening set	16394 Sep 01 21:30	4° <u>16</u> '56'10	
direct	16388 May 23 12:43	25° <u>16</u> '23'29					

conjunction	16394 Sep 10 06:20	5° <u>♂</u> 09'49	-12°37'40	direct	16401 Jun 10 06:37	12° <u>♂</u> 16'57	
minimum elong	16394 Sep 10 06:13	5° <u>♂</u> 09'49	12°37'39	evening set	16401 Sep 12 17:05	13° <u>♂</u> 48'15	
max. Earth dist.	16394 Sep 12 11:53	5° <u>♂</u> 13'28	42.68349 AU				
morning rise	16394 Sep 18 15:01	5° <u>♂</u> 23'29		conjunction	16401 Sep 18 17:19	13° <u>♂</u> 57'45	-13°49'50
retrograde	16394 Dec 20 19:03	6° <u>♂</u> 55'16		minimum elong	16401 Sep 18 17:15	13° <u>♂</u> 57'45	13°49'45
min. Earth dist.	16395 Mar 10 13:40	5° <u>♂</u> 52'00	40.84663 AU	max. Earth dist.	16401 Sep 20 18:42	14° <u>♂</u> 01'00	44.18787 AU
opposition	16395 Mar 12 18:21	5° <u>♂</u> 49'15	-13°20'39	morning rise	16401 Sep 24 17:34	14° <u>♂</u> 07'15	
direct	16395 Jun 02 21:58	4° <u>♂</u> 42'56		retrograde	16401 Dec 29 02:08	15° <u>♂</u> 39'37	
evening set	16395 Sep 03 17:52	6° <u>♂</u> 13'58		min. Earth dist.	16402 Mar 19 10:25	14° <u>♂</u> 37'30	42.34846 AU
				opposition	16402 Mar 21 11:26	14° <u>♂</u> 34'59	-14°33'12
conjunction	16395 Sep 11 18:55	6° <u>♂</u> 27'03	-12°49'21	direct	16402 Jun 11 19:52	13° <u>♂</u> 30'13	
minimum elong	16395 Sep 11 18:49	6° <u>♂</u> 27'02	12°49'21	evening set	16402 Sep 14 12:40	15° <u>♂</u> 01'34	
max. Earth dist.	16395 Sep 14 00:02	6° <u>♂</u> 30'39	42.90865 AU				
morning rise	16395 Sep 19 19:48	6° <u>♂</u> 40'07		conjunction	16402 Sep 20 04:11	15° <u>♂</u> 10'28	-13°58'25
retrograde	16395 Dec 22 04:58	8° <u>♂</u> 11'58		minimum elong	16402 Sep 20 04:08	15° <u>♂</u> 10'28	13°58'18
min. Earth dist.	16396 Mar 11 02:50	7° <u>♂</u> 08'57	41.07206 AU	max. Earth dist.	16402 Sep 22 05:42	15° <u>♂</u> 13'43	44.38738 AU
opposition	16396 Mar 13 07:50	7° <u>♂</u> 06'11	-13°32'27	morning rise	16402 Sep 25 19:38	15° <u>♂</u> 19'21	
direct	16396 Jun 03 14:03	6° <u>♂</u> 00'08		retrograde	16402 Dec 30 08:48	16° <u>♂</u> 51'49	
evening set	16396 Sep 04 13:50	7° <u>♂</u> 31'12		min. Earth dist.	16403 Mar 20 22:30	15° <u>♂</u> 49'49	42.54763 AU
				opposition	16403 Mar 22 23:02	15° <u>♂</u> 47'20	-14°41'45
conjunction	16396 Sep 12 07:04	7° <u>♂</u> 43'42	-13°00'33	direct	16403 Jun 13 11:21	14° <u>♂</u> 42'44	
minimum elong	16396 Sep 12 06:58	7° <u>♂</u> 43'41	13°00'31	evening set	16403 Sep 16 08:07	16° <u>♂</u> 14'11	
max. Earth dist.	16396 Sep 14 11:34	7° <u>♂</u> 47'14	43.13116 AU				
morning rise	16396 Sep 20 00:16	7° <u>♂</u> 56'10		conjunction	16403 Sep 21 14:39	16° <u>♂</u> 22'27	-14°06'34
retrograde	16396 Dec 22 15:55	9° <u>♂</u> 28'06		minimum elong	16403 Sep 21 14:36	16° <u>♂</u> 22'27	14°06'26
min. Earth dist.	16397 Mar 12 16:33	8° <u>♂</u> 25'17	41.29471 AU	max. Earth dist.	16403 Sep 23 14:55	16° <u>♂</u> 25'36	44.58403 AU
opposition	16397 Mar 14 21:07	8° <u>♂</u> 22'33	-13°43'43	morning rise	16403 Sep 26 21:13	16° <u>♂</u> 30'43	
direct	16397 Jun 05 04:46	7° <u>♂</u> 16'45		retrograde	16403 Dec 31 19:38	18° <u>♂</u> 03'19	
evening set	16397 Sep 06 09:54	8° <u>♂</u> 47'52		min. Earth dist.	16404 Mar 21 09:29	17° <u>♂</u> 01'29	42.74439 AU
				opposition	16404 Mar 23 10:29	16° <u>♂</u> 59'00	-14°49'52
conjunction	16397 Sep 13 19:17	8° <u>♂</u> 59'46	-13°11'17	direct	16404 Jun 13 23:16	15° <u>♂</u> 54'34	
minimum elong	16397 Sep 13 19:12	8° <u>♂</u> 59'46	13°11'15	evening set	16404 Sep 17 03:29	17° <u>♂</u> 26'08	
max. Earth dist.	16397 Sep 16 00:01	9° <u>♂</u> 03'19	43.35060 AU				
morning rise	16397 Sep 21 04:29	9° <u>♂</u> 11'39		conjunction	16404 Sep 22 00:56	17° <u>♂</u> 33'46	-14°14'16
retrograde	16397 Dec 24 02:09	10° <u>♂</u> 43'40		minimum elong	16404 Sep 22 00:54	17° <u>♂</u> 33'46	14°14'08
min. Earth dist.	16398 Mar 14 06:39	9° <u>♂</u> 41'00	41.51377 AU	max. Earth dist.	16404 Sep 24 02:00	17° <u>♂</u> 36'58	44.77843 AU
opposition	16398 Mar 16 09:58	9° <u>♂</u> 38'21	-13°54'31	morning rise	16404 Sep 26 22:21	17° <u>♂</u> 41'25	
direct	16398 Jun 06 20:04	8° <u>♂</u> 32'47		retrograde	16405 Jan 01 06:03	19° <u>♂</u> 14'11	
evening set	16398 Sep 08 05:56	10° <u>♂</u> 03'56		min. Earth dist.	16405 Mar 22 21:58	18° <u>♂</u> 12'27	42.93886 AU
				opposition	16405 Mar 24 21:43	18° <u>♂</u> 10'02	-14°57'31
conjunction	16398 Sep 15 07:10	10° <u>♂</u> 15'14	-13°21'34	direct	16405 Jun 15 11:21	17° <u>♂</u> 05'47	
minimum elong	16398 Sep 15 07:05	10° <u>♂</u> 15'14	13°21'30	evening set	16405 Sep 18 23:06	18° <u>♂</u> 37'31	
max. Earth dist.	16398 Sep 17 10:13	10° <u>♂</u> 18'40	43.56626 AU				
morning rise	16398 Sep 22 08:23	10° <u>♂</u> 26'33		conjunction	16405 Sep 23 11:01	18° <u>♂</u> 44'30	-14°21'33
retrograde	16398 Dec 25 15:32	11° <u>♂</u> 58'39		minimum elong	16405 Sep 23 10:58	18° <u>♂</u> 44'30	14°21'24
min. Earth dist.	16399 Mar 15 19:05	10° <u>♂</u> 56'12	41.72888 AU	max. Earth dist.	16405 Sep 25 11:02	18° <u>♂</u> 47'37	44.97074 AU
opposition	16399 Mar 17 22:43	10° <u>♂</u> 53'32	-14°04'51	morning rise	16405 Sep 27 22:54	18° <u>♂</u> 51'29	
direct	16399 Jun 08 08:03	9° <u>♂</u> 48'12		retrograde	16406 Jan 02 16:49	20° <u>♂</u> 24'28	
evening set	16399 Sep 10 01:39	11° <u>♂</u> 19'24		min. Earth dist.	16406 Mar 24 07:57	19° <u>♂</u> 22'56	43.13110 AU
				opposition	16406 Mar 26 08:25	19° <u>♂</u> 20'30	-15°04'44
conjunction	16399 Sep 16 18:48	11° <u>♂</u> 30'06	-13°31'25	direct	16406 Jun 16 20:35	18° <u>♂</u> 16'27	
minimum elong	16399 Sep 16 18:44	11° <u>♂</u> 30'06	13°31'22	evening set	16406 Sep 20 18:48	19° <u>♂</u> 48'23	
max. Earth dist.	16399 Sep 18 22:09	11° <u>♂</u> 33'31	43.77770 AU				
morning rise	16399 Sep 23 11:52	11° <u>♂</u> 40'49		conjunction	16406 Sep 24 20:54	19° <u>♂</u> 54'43	-14°28'25
retrograde	16399 Dec 27 04:30	13° <u>♂</u> 13'00		minimum elong	16406 Sep 24 20:53	19° <u>♂</u> 54'43	14°28'15
min. Earth dist.	16400 Mar 16 09:24	12° <u>♂</u> 10'38	41.93959 AU	max. Earth dist.	16406 Sep 26 20:55	19° <u>♂</u> 57'49	45.16072 AU
opposition	16400 Mar 18 11:21	12° <u>♂</u> 08'04	-14°14'45	morning rise	16406 Sep 28 23:03	20° <u>♂</u> 01'03	
direct	16400 Jun 08 19:44	11° <u>♂</u> 02'57		retrograde	16407 Jan 04 03:04	21° <u>♂</u> 34'16	
evening set	16400 Sep 10 21:32	12° <u>♂</u> 34'11		min. Earth dist.	16407 Mar 25 19:46	20° <u>♂</u> 32'52	43.32096 AU
				opposition	16407 Mar 27 19:14	20° <u>♂</u> 30'28	-15°11'30
conjunction	16400 Sep 17 06:15	12° <u>♂</u> 44'17	-13°40'50	direct	16407 Jun 18 06:14	19° <u>♂</u> 26'39	
minimum elong	16400 Sep 17 06:11	12° <u>♂</u> 44'17	13°40'45	evening set	16407 Sep 22 14:45	20° <u>♂</u> 58'50	
max. Earth dist.	16400 Sep 19 08:12	12° <u>♂</u> 47'36	43.98489 AU				
morning rise	16400 Sep 23 14:54	12° <u>♂</u> 54'24		conjunction	16407 Sep 26 06:31	21° <u>♂</u> 04'28	-14°34'51
retrograde	16400 Dec 27 16:33	14° <u>♂</u> 26'40		minimum elong	16407 Sep 26 06:29	21° <u>♂</u> 04'28	14°34'41
min. Earth dist.	16401 Mar 17 21:23	13° <u>♂</u> 24'28	42.14594 AU	max. Earth dist.	16407 Sep 28 06:27	21° <u>♂</u> 07'33	45.34826 AU
opposition	16401 Mar 19 23:27	13° <u>♂</u> 21'54	-14°24'11	morning rise	16407 Sep 29 22:16	21° <u>♂</u> 10'07	

retrograde	16408 Jan 05 10:21	22° <u>♂</u> 43'38		min. Earth dist.	16415 Apr 04 08:21	29° <u>♂</u> 37'30	44.70350 AU
min. Earth dist.	16408 Mar 26 06:33	21° <u>♂</u> 42'24	43.50794 AU	opposition	16415 Apr 06 01:52	29° <u>♂</u> 35'28	-15°51'50
opposition	16408 Mar 28 05:45	21° <u>♂</u> 40'02	-15°17'51	direct	16415 Jun 27 18:56	28° <u>♂</u> 33'03	
direct	16408 Jun 18 18:31	20° <u>♂</u> 36'24			16415 Sep 30 03:14	0° <u>♂</u>	
evening set	16408 Sep 23 11:16	22° <u>♂</u> 08'54					
				conjunction	16415 Oct 05 05:47	0° <u>♂</u> 07'38	-15°13'17
conjunction	16408 Sep 26 15:58	22° <u>♂</u> 13'49	-14°40'54	minimum elong	16415 Oct 05 05:49	0° <u>♂</u> 07'38	15°13'01
minimum elong	16408 Sep 26 15:57	22° <u>♂</u> 13'49	14°40'44	max. Earth dist.	16415 Oct 06 23:29	0° <u>♂</u> 10'14	46.70852 AU
morning rise	16408 Sep 29 20:42	22° <u>♂</u> 18'44		retrograde	16416 Jan 14 08:41	1° <u>♂</u> 43'49	
max. Earth dist.	16408 Sep 28 14:40	22° <u>♂</u> 16'49	45.53275 AU	min. Earth dist.	16416 Apr 04 16:40	0° <u>♂</u> 43'32	44.85841 AU
retrograde	16409 Jan 05 19:56	23° <u>♂</u> 52'36		opposition	16416 Apr 06 10:48	0° <u>♂</u> 41'27	-15°55'16
min. Earth dist.	16409 Mar 27 17:03	22° <u>♂</u> 51'33	43.69178 AU		16416 May 14 22:05	30° <u>♂</u> <u>♂</u>	
opposition	16409 Mar 29 16:00	22° <u>♂</u> 49'12	-15°23'48	direct	16416 Jun 28 03:43	29° <u>♂</u> 39'11	
direct	16409 Jun 20 05:24	21° <u>♂</u> 45'47			16416 Aug 10 03:31	0° <u>♂</u>	
evening set	16409 Sep 25 08:45	23° <u>♂</u> 18'40					
				conjunction	16416 Oct 05 13:51	1° <u>♂</u> 13'23	-15°16'32
conjunction	16409 Sep 28 01:24	23° <u>♂</u> 22'47	-14°46'34	minimum elong	16416 Oct 05 13:53	1° <u>♂</u> 13'23	15°16'16
minimum elong	16409 Sep 28 01:22	23° <u>♂</u> 22'47	14°46'22	max. Earth dist.	16416 Oct 07 07:48	1° <u>♂</u> 15'59	46.86149 AU
morning rise	16409 Sep 30 18:02	23° <u>♂</u> 26'55		retrograde	16417 Jan 14 19:07	2° <u>♂</u> 49'13	
max. Earth dist.	16409 Sep 30 00:29	23° <u>♂</u> 25'48	45.71378 AU	min. Earth dist.	16417 Apr 06 02:45	1° <u>♂</u> 48'58	45.01073 AU
retrograde	16410 Jan 07 05:36	25° <u>♂</u> 01'12		opposition	16417 Apr 07 19:32	1° <u>♂</u> 46'59	-15°58'20
min. Earth dist.	16410 Mar 29 04:44	24° <u>♂</u> 00'15	43.87168 AU	direct	16417 Jun 29 10:28	0° <u>♂</u> 44'51	
opposition	16410 Mar 31 02:09	23° <u>♂</u> 57'59	-15°29'22				
direct	16410 Jun 21 17:01	22° <u>♂</u> 54'47		conjunction	16417 Oct 06 21:46	2° <u>♂</u> 18'41	-15°19'25
evening set	16410 Sep 27 07:58	24° <u>♂</u> 28'10		minimum elong	16417 Oct 06 21:49	2° <u>♂</u> 18'41	15°19'08
				max. Earth dist.	16417 Oct 08 15:13	2° <u>♂</u> 21'15	47.01211 AU
conjunction	16410 Sep 29 10:32	24° <u>♂</u> 31'23	-14°51'53	retrograde	16418 Jan 16 02:29	3° <u>♂</u> 54'10	
minimum elong	16410 Sep 29 10:33	24° <u>♂</u> 31'23	14°51'40	min. Earth dist.	16418 Apr 07 10:59	2° <u>♂</u> 54'04	45.16045 AU
morning rise	16410 Oct 01 13:10	24° <u>♂</u> 34'36		opposition	16418 Apr 09 04:03	2° <u>♂</u> 52'04	-16°01'01
max. Earth dist.	16410 Oct 01 07:55	24° <u>♂</u> 34'16	45.89072 AU	direct	16418 Jun 30 17:14	1° <u>♂</u> 50'06	
retrograde	16411 Jan 08 17:37	26° <u>♂</u> 09'26					
min. Earth dist.	16411 Mar 30 14:27	25° <u>♂</u> 08'40	44.04721 AU	conjunction	16418 Oct 08 05:22	3° <u>♂</u> 23'35	-15°21'58
opposition	16411 Apr 01 12:02	25° <u>♂</u> 06'24	-15°34'33	minimum elong	16418 Oct 08 05:24	3° <u>♂</u> 23'35	15°21'40
direct	16411 Jun 23 00:39	24° <u>♂</u> 03'23		max. Earth dist.	16418 Oct 09 21:51	3° <u>♂</u> 26'05	47.16010 AU
evening set	16411 Sep 29 11:18	25° <u>♂</u> 37'33		retrograde	16419 Jan 17 09:07	4° <u>♂</u> 58'45	
				min. Earth dist.	16419 Apr 08 20:02	3° <u>♂</u> 58'46	45.30759 AU
conjunction	16411 Sep 30 19:39	25° <u>♂</u> 39'35	-14°56'50	opposition	16419 Apr 10 12:31	3° <u>♂</u> 56'48	-16°03'22
minimum elong	16411 Sep 30 19:39	25° <u>♂</u> 39'35	14°56'36	direct	16419 Jul 02 02:28	2° <u>♂</u> 54'58	
morning rise	16411 Oct 02 04:01	25° <u>♂</u> 41'38					
max. Earth dist.	16411 Oct 02 16:35	25° <u>♂</u> 42'26	46.06306 AU	conjunction	16419 Oct 09 13:02	4° <u>♂</u> 28'08	-15°24'10
retrograde	16412 Jan 10 03:06	27° <u>♂</u> 17'16		minimum elong	16419 Oct 09 13:06	4° <u>♂</u> 28'08	15°23'51
min. Earth dist.	16412 Mar 31 02:06	26° <u>♂</u> 16'34	44.21806 AU	max. Earth dist.	16419 Oct 11 06:04	4° <u>♂</u> 30'40	47.30545 AU
opposition	16412 Apr 01 21:57	26° <u>♂</u> 14'24	-15°39'24	retrograde	16420 Jan 18 13:37	6° <u>♂</u> 03'00	
direct	16412 Jun 23 09:12	25° <u>♂</u> 11'34		min. Earth dist.	16420 Apr 09 05:17	5° <u>♂</u> 03'06	45.45172 AU
				opposition	16420 Apr 10 20:50	5° <u>♂</u> 01'11	-16°05'21
conjunction	16412 Oct 01 04:32	26° <u>♂</u> 47'22	-15°01'28	direct	16420 Jul 02 14:08	3° <u>♂</u> 59'31	
minimum elong	16412 Oct 01 04:33	26° <u>♂</u> 47'22	15°01'14				
max. Earth dist.	16412 Oct 03 00:47	26° <u>♂</u> 50'09	46.23077 AU	conjunction	16420 Oct 09 20:22	5° <u>♂</u> 32'21	-15°26'02
retrograde	16413 Jan 10 08:58	28° <u>♂</u> 24'40		minimum elong	16420 Oct 09 20:25	5° <u>♂</u> 32'21	15°25'43
min. Earth dist.	16413 Apr 01 12:01	27° <u>♂</u> 24'05	44.38401 AU	max. Earth dist.	16420 Oct 11 11:46	5° <u>♂</u> 34'46	47.44768 AU
opposition	16413 Apr 03 07:28	27° <u>♂</u> 21'56	-15°43'54	retrograde	16421 Jan 18 22:42	7° <u>♂</u> 06'56	
direct	16413 Jun 24 20:25	26° <u>♂</u> 19'15		min. Earth dist.	16421 Apr 10 13:12	6° <u>♂</u> 07'11	45.59249 AU
				opposition	16421 Apr 12 04:56	6° <u>♂</u> 05'15	-16°07'01
conjunction	16413 Oct 02 13:12	27° <u>♂</u> 54'39	-15°05'45	direct	16421 Jul 03 22:14	5° <u>♂</u> 03'45	
minimum elong	16413 Oct 02 13:13	27° <u>♂</u> 54'39	15°05'29				
max. Earth dist.	16413 Oct 04 07:52	27° <u>♂</u> 57'20	46.39376 AU	conjunction	16421 Oct 11 03:49	6° <u>♂</u> 36'17	-15°27'36
retrograde	16414 Jan 11 16:04	29° <u>♂</u> 31'34		minimum elong	16421 Oct 11 03:53	6° <u>♂</u> 36'17	15°27'15
min. Earth dist.	16414 Apr 02 21:53	28° <u>♂</u> 31'04	44.54564 AU	max. Earth dist.	16421 Oct 12 19:11	6° <u>♂</u> 38'41	47.58617 AU
opposition	16414 Apr 04 16:41	28° <u>♂</u> 28'57	-15°48'03	retrograde	16422 Jan 20 07:50	8° <u>♂</u> 10'35	
direct	16414 Jun 26 07:06	27° <u>♂</u> 26'25		min. Earth dist.	16422 Apr 11 23:09	7° <u>♂</u> 10'52	45.72921 AU
				opposition	16422 Apr 13 12:56	7° <u>♂</u> 09'03	-16°08'21
conjunction	16414 Oct 03 21:44	29° <u>♂</u> 01'24	-15°09'42	direct	16422 Jul 05 06:01	6° <u>♂</u> 07'42	
minimum elong	16414 Oct 03 21:45	29° <u>♂</u> 01'24	15°09'27				
max. Earth dist.	16414 Oct 05 16:46	29° <u>♂</u> 04'06	46.55278 AU	conjunction	16422 Oct 12 11:11	7° <u>♂</u> 39'55	-15°28'51
	16414 Nov 14 18:34	0° <u>♂</u>		minimum elong	16422 Oct 12 11:14	7° <u>♂</u> 39'55	15°28'30
retrograde	16415 Jan 12 22:49	0° <u>♂</u> 37'57		max. Earth dist.	16422 Oct 14 01:32	7° <u>♂</u> 42'15	47.72049 AU
	16415 Mar 15 16:55	30° <u>♂</u> <u>♂</u> <u>♂</u>		retrograde	16423 Jan 21 15:02	9° <u>♂</u> 13'56	



min. Earth dist.	16423 Apr 13 07:08	8° <del>ℳ</del> 14'22	45.86132 AU	max. Earth dist.	16430 Oct 22 00:28	15° <del>ℳ</del> 58'58	48.63262 AU
opposition	16423 Apr 14 20:50	8° <del>ℳ</del> 12'33	-16°09'24	retrograde	16431 Jan 29 17:37	17° <del>ℳ</del> 29'03	
direct	16423 Jul 06 12:30	7° <del>ℳ</del> 11'20		min. Earth dist.	16431 Apr 21 23:06	16° <del>ℳ</del> 30'00	46.75779 AU
				opposition	16431 Apr 23 07:03	16° <del>ℳ</del> 28'29	-16°07'33
conjunction	16423 Oct 13 18:16	8° <del>ℳ</del> 43'16	-15°29'50	direct	16431 Jul 15 01:46	15° <del>ℳ</del> 28'11	
minimum elong	16423 Oct 13 18:21	8° <del>ℳ</del> 43'16	15°29'29				
max. Earth dist.	16423 Oct 15 07:11	8° <del>ℳ</del> 45'31	47.84990 AU	conjunction	16431 Oct 21 22:58	16° <del>ℳ</del> 57'57	-15°27'40
retrograde	16424 Jan 22 21:58	10° <del>ℳ</del> 17'00		minimum elong	16431 Oct 21 23:03	16° <del>ℳ</del> 57'58	15°27'15
min. Earth dist.	16424 Apr 13 16:22	9° <del>ℳ</del> 17'29	45.98844 AU	max. Earth dist.	16431 Oct 23 06:49	16° <del>ℳ</del> 59'51	48.73124 AU
opposition	16424 Apr 15 04:46	9° <del>ℳ</del> 15'44	-16°10'10	retrograde	16432 Jan 31 01:48	18° <del>ℳ</del> 29'44	
direct	16424 Jul 06 19:12	8° <del>ℳ</del> 14'40		min. Earth dist.	16432 Apr 22 07:36	17° <del>ℳ</del> 30'43	46.85457 AU
				opposition	16432 Apr 23 13:52	17° <del>ℳ</del> 29'17	-16°06'00
conjunction	16424 Oct 14 01:31	9° <del>ℳ</del> 46'18	-15°30'32	direct	16432 Jul 15 09:24	16° <del>ℳ</del> 29'07	
minimum elong	16424 Oct 14 01:35	9° <del>ℳ</del> 46'18	15°30'10				
max. Earth dist.	16424 Oct 15 14:13	9° <del>ℳ</del> 48'31	47.97424 AU	conjunction	16432 Oct 22 05:05	17° <del>ℳ</del> 58'40	-15°26'07
retrograde	16425 Jan 23 02:37	11° <del>ℳ</del> 19'45		minimum elong	16432 Oct 22 05:13	17° <del>ℳ</del> 58'40	15°25'41
min. Earth dist.	16425 Apr 15 01:17	10° <del>ℳ</del> 20'16	46.11022 AU	max. Earth dist.	16432 Oct 23 12:03	18° <del>ℳ</del> 00'30	48.82659 AU
opposition	16425 Apr 16 12:20	10° <del>ℳ</del> 18'35	-16°10'40	retrograde	16433 Jan 31 09:04	19° <del>ℳ</del> 30'15	
direct	16425 Jul 08 05:22	9° <del>ℳ</del> 17'37		opposition	16433 Apr 24 20:18	18° <del>ℳ</del> 29'55	-16°04'10
				min. Earth dist.	16433 Apr 23 13:51	18° <del>ℳ</del> 31'22	46.94772 AU
conjunction	16425 Oct 15 08:27	10° <del>ℳ</del> 48'57	-15°30'59	direct	16433 Jul 16 13:44	17° <del>ℳ</del> 29'53	
minimum elong	16425 Oct 15 08:32	10° <del>ℳ</del> 48'57	15°30'37				
max. Earth dist.	16425 Oct 16 19:11	10° <del>ℳ</del> 51'03	48.09348 AU	conjunction	16433 Oct 23 11:06	18° <del>ℳ</del> 59'14	-15°24'18
retrograde	16426 Jan 24 09:57	12° <del>ℳ</del> 22'08		minimum elong	16433 Oct 23 11:12	18° <del>ℳ</del> 59'15	15°23'52
min. Earth dist.	16426 Apr 16 08:57	11° <del>ℳ</del> 22'44	46.22716 AU	max. Earth dist.	16433 Oct 24 16:47	19° <del>ℳ</del> 01'00	48.91797 AU
opposition	16426 Apr 17 19:47	11° <del>ℳ</del> 21'04	-16°10'53	retrograde	16434 Feb 01 16:20	20° <del>ℳ</del> 30'38	
direct	16426 Jul 09 13:46	10° <del>ℳ</del> 20'12		min. Earth dist.	16434 Apr 24 21:59	19° <del>ℳ</del> 31'47	47.03676 AU
				opposition	16434 Apr 26 02:55	19° <del>ℳ</del> 30'25	-16°02'04
conjunction	16426 Oct 16 15:11	11° <del>ℳ</del> 51'14	-15°31'09	direct	16434 Jul 17 16:57	18° <del>ℳ</del> 30'30	
minimum elong	16426 Oct 16 15:16	11° <del>ℳ</del> 51'14	15°30'45				
max. Earth dist.	16426 Oct 18 01:53	11° <del>ℳ</del> 53'19	48.20806 AU	conjunction	16434 Oct 24 17:06	19° <del>ℳ</del> 59'40	-15°22'15
retrograde	16427 Jan 25 18:14	13° <del>ℳ</del> 24'09		minimum elong	16434 Oct 24 17:14	19° <del>ℳ</del> 59'41	15°21'48
min. Earth dist.	16427 Apr 17 18:02	12° <del>ℳ</del> 24'45	46.33976 AU	max. Earth dist.	16434 Oct 25 22:43	20° <del>ℳ</del> 01'25	49.00499 AU
opposition	16427 Apr 19 03:13	12° <del>ℳ</del> 23'09	-16°10'49	retrograde	16435 Feb 02 19:47	21° <del>ℳ</del> 30'53	
direct	16427 Jul 10 21:28	11° <del>ℳ</del> 22'24		min. Earth dist.	16435 Apr 26 05:29	20° <del>ℳ</del> 32'04	47.12093 AU
				opposition	16435 Apr 27 09:25	20° <del>ℳ</del> 30'45	-15°59'43
conjunction	16427 Oct 17 21:49	12° <del>ℳ</del> 53'08	-15°31'02	direct	16435 Jul 19 00:29	19° <del>ℳ</del> 30'56	
minimum elong	16427 Oct 17 21:54	12° <del>ℳ</del> 53'09	15°30'39				
max. Earth dist.	16427 Oct 19 07:38	12° <del>ℳ</del> 55'10	48.31889 AU	conjunction	16435 Oct 25 23:01	20° <del>ℳ</del> 59'55	-15°19'57
retrograde	16428 Jan 27 01:55	14° <del>ℳ</del> 25'47		minimum elong	16435 Oct 25 23:08	20° <del>ℳ</del> 59'55	15°19'29
min. Earth dist.	16428 Apr 18 00:54	13° <del>ℳ</del> 26'30	46.44883 AU	max. Earth dist.	16435 Oct 27 02:33	21° <del>ℳ</del> 01'32	49.08700 AU
opposition	16428 Apr 19 10:20	13° <del>ℳ</del> 24'54	-16°10'27	retrograde	16436 Feb 04 01:00	22° <del>ℳ</del> 30'57	
direct	16428 Jul 11 02:10	12° <del>ℳ</del> 24'15		opposition	16436 Apr 27 15:49	21° <del>ℳ</del> 30'54	-15°57'09
				min. Earth dist.	16436 Apr 26 12:26	21° <del>ℳ</del> 32'12	47.19999 AU
conjunction	16428 Oct 18 04:12	13° <del>ℳ</del> 54'43	-15°30'38	direct	16436 Jul 19 08:05	20° <del>ℳ</del> 31'10	
minimum elong	16428 Oct 18 04:18	13° <del>ℳ</del> 54'44	15°30'13				
max. Earth dist.	16428 Oct 19 13:06	13° <del>ℳ</del> 56'41	48.42637 AU	conjunction	16436 Oct 26 04:58	21° <del>ℳ</del> 59'56	-15°17'25
	16428 Dec 07 12:34	15° <del>ℳ</del>		minimum elong	16436 Oct 26 05:06	21° <del>ℳ</del> 59'56	15°16'58
retrograde	16429 Jan 27 08:11	15° <del>ℳ</del> 27'07		max. Earth dist.	16436 Oct 27 08:08	22° <del>ℳ</del> 01'32	49.16364 AU
	16429 Mar 20 11:53	15° <del>ℳ</del>		retrograde	16437 Feb 04 07:18	23° <del>ℳ</del> 30'47	
min. Earth dist.	16429 Apr 19 09:02	14° <del>ℳ</del> 27'52	46.55482 AU	opposition	16437 Apr 28 22:12	22° <del>ℳ</del> 30'48	-15°54'20
opposition	16429 Apr 20 17:26	14° <del>ℳ</del> 26'20	-16°09'47	min. Earth dist.	16437 Apr 27 20:50	22° <del>ℳ</del> 32'00	47.27348 AU
direct	16429 Jul 12 08:31	13° <del>ℳ</del> 25'48		direct	16437 Jul 20 17:27	21° <del>ℳ</del> 31'08	
conjunction	16429 Oct 19 10:39	14° <del>ℳ</del> 56'01	-15°29'56	conjunction	16437 Oct 27 10:47	22° <del>ℳ</del> 59'40	-15°14'40
minimum elong	16429 Oct 19 10:45	14° <del>ℳ</del> 56'01	15°29'31	minimum elong	16437 Oct 27 10:54	22° <del>ℳ</del> 59'41	15°14'11
max. Earth dist.	16429 Oct 20 19:52	14° <del>ℳ</del> 58'00	48.53094 AU	max. Earth dist.	16437 Oct 28 12:28	23° <del>ℳ</del> 01'11	49.23500 AU
	16429 Oct 22 05:14	15° <del>ℳ</del>		retrograde	16438 Feb 05 15:26	24° <del>ℳ</del> 30'18	
retrograde	16430 Jan 28 10:39	16° <del>ℳ</del> 28'11		min. Earth dist.	16438 Apr 29 02:55	23° <del>ℳ</del> 31'34	47.34180 AU
min. Earth dist.	16430 Apr 20 16:26	15° <del>ℳ</del> 29'01	46.65774 AU	opposition	16438 Apr 30 04:13	23° <del>ℳ</del> 30'23	-15°51'19
opposition	16430 Apr 22 00:13	15° <del>ℳ</del> 27'30	-16°08'49	direct	16438 Jul 21 22:31	22° <del>ℳ</del> 30'45	
	16430 May 17 00:22	15° <del>ℳ</del>					
direct	16430 Jul 13 18:06	14° <del>ℳ</del> 27'05		conjunction	16438 Oct 28 16:24	23° <del>ℳ</del> 59'05	-15°11'42
	16430 Sep 07 12:14	15° <del>ℳ</del>		minimum elong	16438 Oct 28 16:32	23° <del>ℳ</del> 59'06	15°11'13
				max. Earth dist.	16438 Oct 29 16:55	24° <del>ℳ</del> 00'31	49.30143 AU
conjunction	16430 Oct 20 16:53	15° <del>ℳ</del> 57'05	-15°28'57	retrograde	16439 Feb 06 22:04	25° <del>ℳ</del> 29'31	
minimum elong	16430 Oct 20 16:59	15° <del>ℳ</del> 57'06	15°28'31	min. Earth dist.	16439 Apr 30 10:43	24° <del>ℳ</del> 30'44	47.40571 AU

opposition	16439 May 01 10:25	24° $\mathcal{M}$ 29'37	-15°48'02	retrograde	16446 Feb 13 07:52	2° $\mathcal{J}$ 17'23	
direct	16439 Jul 23 02:38	23° $\mathcal{M}$ 30'03		min. Earth dist.	16446 May 07 06:35	1° $\mathcal{J}$ 18'50	47.76048 AU
				opposition	16446 May 08 02:14	1° $\mathcal{J}$ 17'55	-15°17'53
conjunction	16439 Oct 29 21:54	24° $\mathcal{M}$ 58'10	-15°08'29	direct	16446 Jul 29 18:26	0° $\mathcal{J}$ 18'49	
minimum elong	16439 Oct 29 22:02	24° $\mathcal{M}$ 58'10	15°07'59	evening set	16446 Nov 02 01:04	1° $\mathcal{J}$ 41'14	
max. Earth dist.	16439 Oct 30 22:34	24° $\mathcal{M}$ 59'36	49.36387 AU				
retrograde	16440 Feb 08 00:09	26° $\mathcal{M}$ 28'23		conjunction	16446 Nov 05 10:32	1° $\mathcal{J}$ 45'57	-14°38'56
opposition	16440 May 01 16:23	25° $\mathcal{M}$ 28'32	-15°44'30	minimum elong	16446 Nov 05 10:40	1° $\mathcal{J}$ 45'57	14°38'23
min. Earth dist.	16440 Apr 30 17:05	25° $\mathcal{M}$ 29'37	47.46576 AU	max. Earth dist.	16446 Nov 06 06:10	1° $\mathcal{J}$ 47'05	49.71135 AU
direct	16440 Jul 23 09:46	24° $\mathcal{M}$ 29'00		morning rise	16446 Nov 08 20:22	1° $\mathcal{J}$ 50'41	
				retrograde	16447 Feb 14 13:06	3° $\mathcal{J}$ 15'18	
conjunction	16440 Oct 30 03:17	25° $\mathcal{M}$ 56'55	-15°05'01	opposition	16447 May 09 07:50	2° $\mathcal{J}$ 15'55	-15°12'36
minimum elong	16440 Oct 30 03:24	25° $\mathcal{M}$ 56'56	15°04'32	min. Earth dist.	16447 May 08 13:57	2° $\mathcal{J}$ 16'45	47.79651 AU
max. Earth dist.	16440 Oct 31 02:14	25° $\mathcal{M}$ 58'16	49.42283 AU	direct	16447 Jul 31 02:46	1° $\mathcal{J}$ 16'54	
retrograde	16441 Feb 08 04:16	27° $\mathcal{M}$ 26'58		evening set	16447 Nov 02 21:10	2° $\mathcal{J}$ 38'42	
opposition	16441 May 02 22:06	26° $\mathcal{M}$ 27'09	-15°40'43				
min. Earth dist.	16441 May 01 23:03	26° $\mathcal{M}$ 28'14	47.52267 AU	conjunction	16447 Nov 06 15:38	2° $\mathcal{J}$ 43'56	-14°33'46
direct	16441 Jul 24 16:18	25° $\mathcal{M}$ 27'40		minimum elong	16447 Nov 06 15:48	2° $\mathcal{J}$ 43'56	14°33'14
				max. Earth dist.	16447 Nov 07 09:55	2° $\mathcal{J}$ 44'59	49.74577 AU
conjunction	16441 Oct 31 08:42	26° $\mathcal{M}$ 55'25	-15°01'17	morning rise	16447 Nov 10 10:33	2° $\mathcal{J}$ 49'12	
minimum elong	16441 Oct 31 08:51	26° $\mathcal{M}$ 55'26	15°00'47	retrograde	16448 Feb 15 21:07	4° $\mathcal{J}$ 13'12	
max. Earth dist.	16441 Nov 01 07:55	26° $\mathcal{M}$ 56'46	49.47873 AU	opposition	16448 May 09 13:17	3° $\mathcal{J}$ 13'53	-15°07'06
retrograde	16442 Feb 09 09:50	28° $\mathcal{M}$ 25'19		min. Earth dist.	16448 May 08 19:34	3° $\mathcal{J}$ 14'43	47.82749 AU
min. Earth dist.	16442 May 03 06:18	27° $\mathcal{M}$ 26'34	47.57652 AU	direct	16448 Jul 31 07:07	2° $\mathcal{J}$ 14'56	
opposition	16442 May 04 03:56	27° $\mathcal{M}$ 25'33	-15°36'40	evening set	16448 Nov 02 17:47	3° $\mathcal{J}$ 36'09	
direct	16442 Jul 25 23:57	26° $\mathcal{M}$ 26'08					
evening set	16442 Oct 31 06:29	27° $\mathcal{M}$ 51'53		conjunction	16448 Nov 06 20:50	3° $\mathcal{J}$ 41'52	-14°28'24
				minimum elong	16448 Nov 06 20:59	3° $\mathcal{J}$ 41'53	14°27'51
conjunction	16442 Nov 01 13:51	27° $\mathcal{M}$ 53'42	-14°57'19	max. Earth dist.	16448 Nov 07 13:34	3° $\mathcal{J}$ 42'50	49.77482 AU
minimum elong	16442 Nov 01 13:59	27° $\mathcal{M}$ 53'43	14°56'48	morning rise	16448 Nov 11 00:20	3° $\mathcal{J}$ 47'37	
morning rise	16442 Nov 02 21:31	27° $\mathcal{M}$ 55'33		retrograde	16449 Feb 16 04:51	5° $\mathcal{J}$ 11'03	
max. Earth dist.	16442 Nov 02 12:13	27° $\mathcal{M}$ 55'01	49.53182 AU	opposition	16449 May 10 18:40	4° $\mathcal{J}$ 11'47	-15°01'24
retrograde	16443 Feb 10 16:13	29° $\mathcal{M}$ 23'28		min. Earth dist.	16449 May 10 02:59	4° $\mathcal{J}$ 12'31	47.85312 AU
min. Earth dist.	16443 May 04 11:28	28° $\mathcal{M}$ 24'48	47.62747 AU	direct	16449 Aug 01 09:29	3° $\mathcal{J}$ 12'52	
opposition	16443 May 05 09:35	28° $\mathcal{M}$ 23'46	-15°32'21	evening set	16449 Nov 03 14:56	4° $\mathcal{J}$ 33'32	
direct	16443 Jul 27 05:01	27° $\mathcal{M}$ 24'25					
evening set	16443 Oct 31 19:08	28° $\mathcal{M}$ 49'05		conjunction	16449 Nov 08 02:03	4° $\mathcal{J}$ 39'42	-14°22'51
				minimum elong	16449 Nov 08 02:13	4° $\mathcal{J}$ 39'43	14°22'18
conjunction	16443 Nov 02 19:01	28° $\mathcal{M}$ 51'52	-14°53'05	max. Earth dist.	16449 Nov 08 18:27	4° $\mathcal{J}$ 40'39	49.79867 AU
minimum elong	16443 Nov 02 19:11	28° $\mathcal{M}$ 51'52	14°52'34	morning rise	16449 Nov 12 13:37	4° $\mathcal{J}$ 45'54	
morning rise	16443 Nov 04 19:17	28° $\mathcal{M}$ 54'40		retrograde	16450 Feb 17 07:14	6° $\mathcal{J}$ 08'47	
max. Earth dist.	16443 Nov 03 16:27	28° $\mathcal{M}$ 53'06	49.58190 AU	min. Earth dist.	16450 May 11 08:57	5° $\mathcal{J}$ 10'14	47.87348 AU
	16443 Dec 28 06:12	0° $\mathcal{J}$		opposition	16450 May 12 00:00	5° $\mathcal{J}$ 09'32	-14°55'29
retrograde	16444 Feb 11 23:28	0° $\mathcal{J}$ 21'30		direct	16450 Aug 02 15:28	4° $\mathcal{J}$ 10'40	
	16444 Mar 29 14:57	30° $\mathcal{R}\mathcal{M}$		evening set	16450 Nov 04 12:02	5° $\mathcal{J}$ 30'46	
opposition	16444 May 05 15:16	29° $\mathcal{M}$ 21'52	-15°27'46				
min. Earth dist.	16444 May 04 18:31	29° $\mathcal{M}$ 22'50	47.67543 AU	conjunction	16450 Nov 09 06:52	5° $\mathcal{J}$ 37'23	-14°17'04
direct	16444 Jul 27 07:56	28° $\mathcal{M}$ 22'36		minimum elong	16450 Nov 09 07:01	5° $\mathcal{J}$ 37'24	14°16'31
evening set	16444 Oct 31 11:36	29° $\mathcal{M}$ 46'25		max. Earth dist.	16450 Nov 09 21:17	5° $\mathcal{J}$ 38'13	49.81761 AU
				morning rise	16450 Nov 14 02:13	5° $\mathcal{J}$ 44'02	
conjunction	16444 Nov 03 00:14	29° $\mathcal{M}$ 49'56	-14°48'36	retrograde	16451 Feb 18 10:02	7° $\mathcal{J}$ 06'22	
minimum elong	16444 Nov 03 00:22	29° $\mathcal{M}$ 49'56	14°48'04	opposition	16451 May 13 05:20	6° $\mathcal{J}$ 07'08	-14°49'21
max. Earth dist.	16444 Nov 03 21:49	29° $\mathcal{M}$ 51'11	49.62892 AU	min. Earth dist.	16451 May 12 14:54	6° $\mathcal{J}$ 07'48	47.88941 AU
morning rise	16444 Nov 05 13:12	29° $\mathcal{M}$ 53'28		direct	16451 Aug 03 21:20	5° $\mathcal{J}$ 08'16	
	16444 Nov 10 06:06	0° $\mathcal{J}$		evening set	16451 Nov 05 09:28	6° $\mathcal{J}$ 27'52	
retrograde	16445 Feb 12 02:46	1° $\mathcal{J}$ 19'27					
opposition	16445 May 06 20:48	0° $\mathcal{J}$ 19'54	-15°22'57	conjunction	16451 Nov 10 11:50	6° $\mathcal{J}$ 34'54	-14°11'05
min. Earth dist.	16445 May 06 00:34	0° $\mathcal{J}$ 20'51	47.71987 AU	minimum elong	16451 Nov 10 12:00	6° $\mathcal{J}$ 34'55	14°10'32
	16445 May 25 00:35	30° $\mathcal{R}\mathcal{M}$		max. Earth dist.	16451 Nov 11 02:22	6° $\mathcal{J}$ 35'45	49.83235 AU
direct	16445 Jul 28 13:02	29° $\mathcal{M}$ 20'43		morning rise	16451 Nov 15 14:42	6° $\mathcal{J}$ 41'58	
	16445 Sep 28 17:40	0° $\mathcal{J}$		retrograde	16452 Feb 19 14:24	8° $\mathcal{J}$ 03'48	
evening set	16445 Nov 01 05:47	0° $\mathcal{J}$ 43'48		opposition	16452 May 13 10:34	7° $\mathcal{J}$ 04'35	-14°43'00
				min. Earth dist.	16452 May 12 21:41	7° $\mathcal{J}$ 05'10	47.90143 AU
conjunction	16445 Nov 04 05:19	0° $\mathcal{J}$ 47'57	-14°43'52	direct	16452 Aug 04 05:04	6° $\mathcal{J}$ 05'44	
minimum elong	16445 Nov 04 05:29	0° $\mathcal{J}$ 47'57	14°43'20	evening set	16452 Nov 05 07:07	7° $\mathcal{J}$ 24'49	
max. Earth dist.	16445 Nov 05 01:08	0° $\mathcal{J}$ 49'06	49.67224 AU				
morning rise	16445 Nov 07 05:16	0° $\mathcal{J}$ 52'07		conjunction	16452 Nov 10 16:40	7° $\mathcal{J}$ 32'15	-14°04'52

minimum elong	16452 Nov 10 16:50	7° $\nearrow$ 32'16	14°04'18	evening set	16459 Nov 10 18:16	14° $\nearrow$ 01'54	
max. Earth dist.	16452 Nov 11 06:11	7° $\nearrow$ 33'02	49.84364 AU				
morning rise	16452 Nov 16 02:46	7° $\nearrow$ 39'45		conjunction	16459 Nov 18 02:17	14° $\nearrow$ 11'58	-13°14'58
retrograde	16453 Feb 19 20:44	9° $\nearrow$ 01'04		minimum elong	16459 Nov 18 02:27	14° $\nearrow$ 11'58	13°14'22
opposition	16453 May 14 15:39	8° $\nearrow$ 01'52	-14°36'24	max. Earth dist.	16459 Nov 18 10:45	14° $\nearrow$ 12'27	49.83079 AU
min. Earth dist.	16453 May 14 02:20	8° $\nearrow$ 02'29	47.91012 AU	morning rise	16459 Nov 25 10:57	14° $\nearrow$ 22'04	
direct	16453 Aug 05 10:38	7° $\nearrow$ 03'02		retrograde	16460 Feb 27 10:27	15° $\nearrow$ 40'31	
evening set	16453 Nov 06 04:46	8° $\nearrow$ 21'39		opposition	16460 May 21 03:11	14° $\nearrow$ 41'30	-13°43'41
				min. Earth dist.	16460 May 20 19:59	14° $\nearrow$ 41'50	47.87672 AU
conjunction	16453 Nov 11 21:25	8° $\nearrow$ 29'29	-13°58'26	direct	16460 Aug 11 17:39	13° $\nearrow$ 42'52	
minimum elong	16453 Nov 11 21:34	8° $\nearrow$ 29'29	13°57'51	evening set	16460 Nov 10 17:09	14° $\nearrow$ 58'39	
max. Earth dist.	16453 Nov 12 09:54	8° $\nearrow$ 30'12	49.85164 AU				
morning rise	16453 Nov 17 14:41	8° $\nearrow$ 37'22		conjunction	16460 Nov 18 07:11	15° $\nearrow$ 09'04	-13°07'00
retrograde	16454 Feb 21 04:15	9° $\nearrow$ 58'13		minimum elong	16460 Nov 18 07:21	15° $\nearrow$ 09'05	13°06'24
opposition	16454 May 15 20:47	8° $\nearrow$ 59'03	-14°29'34	max. Earth dist.	16460 Nov 18 13:21	15° $\nearrow$ 09'25	49.81166 AU
min. Earth dist.	16454 May 15 08:58	8° $\nearrow$ 59'35	47.91576 AU	morning rise	16460 Nov 25 22:04	15° $\nearrow$ 19'31	
direct	16454 Aug 06 13:31	8° $\nearrow$ 00'15		retrograde	16461 Feb 27 14:23	16° $\nearrow$ 37'36	
evening set	16454 Nov 07 02:44	9° $\nearrow$ 18'23		opposition	16461 May 22 08:16	15° $\nearrow$ 38'35	-13°35'19
				min. Earth dist.	16461 May 22 02:15	15° $\nearrow$ 38'52	47.85370 AU
conjunction	16454 Nov 13 02:17	9° $\nearrow$ 26'37	-13°51'45	direct	16461 Aug 12 21:47	14° $\nearrow$ 39'57	
minimum elong	16454 Nov 13 02:28	9° $\nearrow$ 26'38	13°51'10	evening set	16461 Nov 11 16:00	15° $\nearrow$ 55'23	
max. Earth dist.	16454 Nov 13 15:04	9° $\nearrow$ 27'21	49.85681 AU				
morning rise	16454 Nov 19 02:23	9° $\nearrow$ 34'53		conjunction	16461 Nov 19 12:08	16° $\nearrow$ 06'08	-12°58'51
retrograde	16455 Feb 22 08:04	10° $\nearrow$ 55'17		minimum elong	16461 Nov 19 12:18	16° $\nearrow$ 06'08	12°58'14
opposition	16455 May 17 01:53	9° $\nearrow$ 56'08	-14°22'30	max. Earth dist.	16461 Nov 19 17:53	16° $\nearrow$ 06'27	49.78691 AU
min. Earth dist.	16455 May 16 14:10	9° $\nearrow$ 56'41	47.91840 AU	morning rise	16461 Nov 27 09:01	16° $\nearrow$ 16'55	
direct	16455 Aug 07 16:15	8° $\nearrow$ 57'22		retrograde	16462 Feb 28 17:45	17° $\nearrow$ 34'39	
evening set	16455 Nov 08 00:37	10° $\nearrow$ 15'04		opposition	16462 May 23 13:20	16° $\nearrow$ 35'37	-13°26'45
				min. Earth dist.	16462 May 23 09:04	16° $\nearrow$ 35'49	47.82513 AU
conjunction	16455 Nov 14 06:53	10° $\nearrow$ 23'41	-13°44'50	direct	16462 Aug 14 05:17	15° $\nearrow$ 36'57	
minimum elong	16455 Nov 14 07:02	10° $\nearrow$ 23'42	13°44'15	evening set	16462 Nov 12 15:06	16° $\nearrow$ 52'03	
max. Earth dist.	16455 Nov 14 18:02	10° $\nearrow$ 24'20	49.85902 AU				
morning rise	16455 Nov 20 13:49	10° $\nearrow$ 32'20		conjunction	16462 Nov 20 17:01	17° $\nearrow$ 03'07	-12°50'30
retrograde	16456 Feb 23 12:52	11° $\nearrow$ 52'19		minimum elong	16462 Nov 20 17:11	17° $\nearrow$ 03'07	12°49'54
opposition	16456 May 17 07:00	10° $\nearrow$ 53'11	-14°15'10	max. Earth dist.	16462 Nov 20 21:24	17° $\nearrow$ 03'22	49.75713 AU
min. Earth dist.	16456 May 16 19:46	10° $\nearrow$ 53'42	47.91808 AU	morning rise	16462 Nov 28 19:45	17° $\nearrow$ 14'14	
direct	16456 Aug 07 20:23	9° $\nearrow$ 54'27		retrograde	16463 Mar 01 23:32	18° $\nearrow$ 31'37	
evening set	16456 Nov 07 22:48	11° $\nearrow$ 11'44		opposition	16463 May 24 18:18	17° $\nearrow$ 32'34	-13°17'59
				min. Earth dist.	16463 May 24 14:01	17° $\nearrow$ 32'46	47.79183 AU
conjunction	16456 Nov 14 11:46	11° $\nearrow$ 20'44	-13°37'41	direct	16463 Aug 15 10:42	16° $\nearrow$ 33'53	
minimum elong	16456 Nov 14 11:57	11° $\nearrow$ 20'44	13°37'06	evening set	16463 Nov 13 14:00	17° $\nearrow$ 48'38	
max. Earth dist.	16456 Nov 14 22:58	11° $\nearrow$ 21'22	49.85799 AU				
morning rise	16456 Nov 21 01:22	11° $\nearrow$ 29'45		conjunction	16463 Nov 21 21:43	18° $\nearrow$ 00'01	-12°41'58
retrograde	16457 Feb 23 15:26	12° $\nearrow$ 49'20		minimum elong	16463 Nov 21 21:54	18° $\nearrow$ 00'02	12°41'20
opposition	16457 May 18 11:58	11° $\nearrow$ 50'14	-14°07'37	max. Earth dist.	16463 Nov 22 00:52	18° $\nearrow$ 00'12	49.72276 AU
min. Earth dist.	16457 May 18 02:13	11° $\nearrow$ 50'41	47.91423 AU	morning rise	16463 Nov 30 06:23	18° $\nearrow$ 11'29	
direct	16457 Aug 09 04:40	10° $\nearrow$ 51'32		retrograde	16464 Mar 02 06:36	19° $\nearrow$ 28'32	
evening set	16457 Nov 08 21:12	12° $\nearrow$ 08'26		opposition	16464 May 24 23:23	18° $\nearrow$ 29'27	-13°09'00
				min. Earth dist.	16464 May 24 20:52	18° $\nearrow$ 29'34	47.75437 AU
conjunction	16457 Nov 15 16:35	12° $\nearrow$ 17'47	-13°30'19	direct	16464 Aug 15 14:29	17° $\nearrow$ 30'45	
minimum elong	16457 Nov 15 16:44	12° $\nearrow$ 17'47	13°29'44	evening set	16464 Nov 13 13:11	18° $\nearrow$ 45'10	
max. Earth dist.	16457 Nov 16 02:40	12° $\nearrow$ 18'21	49.85342 AU				
morning rise	16457 Nov 22 12:37	12° $\nearrow$ 27'11		conjunction	16464 Nov 22 02:39	18° $\nearrow$ 56'53	-12°33'12
retrograde	16458 Feb 24 21:57	13° $\nearrow$ 46'22		minimum elong	16464 Nov 22 02:49	18° $\nearrow$ 56'54	12°32'36
opposition	16458 May 19 16:58	12° $\nearrow$ 47'18	-13°59'51	max. Earth dist.	16464 Nov 22 05:54	18° $\nearrow$ 57'05	49.68461 AU
min. Earth dist.	16458 May 19 07:13	12° $\nearrow$ 47'45	47.90651 AU	morning rise	16464 Nov 30 16:54	19° $\nearrow$ 08'41	
direct	16458 Aug 10 10:13	11° $\nearrow$ 48'38		retrograde	16465 Mar 03 10:48	20° $\nearrow$ 25'24	
evening set	16458 Nov 09 19:31	13° $\nearrow$ 05'09		opposition	16465 May 26 04:10	19° $\nearrow$ 26'18	-12°59'48
				min. Earth dist.	16465 May 26 01:52	19° $\nearrow$ 26'25	47.71323 AU
conjunction	16458 Nov 16 21:16	13° $\nearrow$ 14'51	-13°22'44	direct	16465 Aug 16 17:30	18° $\nearrow$ 27'35	
minimum elong	16458 Nov 16 21:27	13° $\nearrow$ 14'52	13°22'09	evening set	16465 Nov 14 12:27	19° $\nearrow$ 41'42	
max. Earth dist.	16458 Nov 17 06:06	13° $\nearrow$ 15'22	49.84450 AU				
morning rise	16458 Nov 23 23:48	13° $\nearrow$ 24'37		conjunction	16465 Nov 23 07:23	19° $\nearrow$ 53'45	-12°24'13
retrograde	16459 Feb 26 06:32	14° $\nearrow$ 43'26		minimum elong	16465 Nov 23 07:34	19° $\nearrow$ 53'45	12°23'36
opposition	16459 May 20 22:11	13° $\nearrow$ 44'24	-13°51'52	max. Earth dist.	16465 Nov 23 08:52	19° $\nearrow$ 53'50	49.64305 AU
min. Earth dist.	16459 May 20 14:23	13° $\nearrow$ 44'46	47.89424 AU	morning rise	16465 Dec 02 03:21	20° $\nearrow$ 05'51	
direct	16459 Aug 11 13:05	12° $\nearrow$ 45'45		retrograde	16466 Mar 04 15:49	21° $\nearrow$ 22'17	

opposition	16466 May 27 09:09	20° $\nearrow$ 23'10	-12°50'22	max. Earth dist.	16472 Nov 29 13:45	26° $\nearrow$ 34'22	49.25614 AU
min. Earth dist.	16466 May 27 07:26	20° $\nearrow$ 23'15	47.66898 AU	morning rise	16472 Dec 10 03:08	26° $\nearrow$ 48'52	
direct	16466 Aug 17 20:48	19° $\nearrow$ 24'26		retrograde	16473 Mar 11 03:47	28° $\nearrow$ 03'41	
evening set	16466 Nov 15 11:31	20° $\nearrow$ 38'16		opposition	16473 Jun 02 20:33	27° $\nearrow$ 04'28	-11°38'03
				min. Earth dist.	16473 Jun 03 00:43	27° $\nearrow$ 04'17	47.25905 AU
conjunction	16466 Nov 24 12:07	20° $\nearrow$ 50'38	-12°15'01	direct	16473 Aug 24 09:06	26° $\nearrow$ 05'37	
minimum elong	16466 Nov 24 12:17	20° $\nearrow$ 50'39	12°14'25	evening set	16473 Nov 20 10:09	27° $\nearrow$ 17'52	
max. Earth dist.	16466 Nov 24 13:44	20° $\nearrow$ 50'43	49.59837 AU				
morning rise	16466 Dec 03 13:37	21° $\nearrow$ 03'03		conjunction	16473 Nov 30 23:11	27° $\nearrow$ 32'21	-11°04'37
retrograde	16467 Mar 05 18:27	22° $\nearrow$ 19'13		minimum elong	16473 Nov 30 23:21	27° $\nearrow$ 32'22	11°04'00
opposition	16467 May 28 14:14	21° $\nearrow$ 20'06	-12°40'42	max. Earth dist.	16473 Nov 30 17:19	27° $\nearrow$ 32'01	49.18241 AU
min. Earth dist.	16467 May 28 13:39	21° $\nearrow$ 20'07	47.62159 AU	morning rise	16473 Dec 11 13:27	27° $\nearrow$ 46'55	
direct	16467 Aug 19 04:28	20° $\nearrow$ 21'21		retrograde	16474 Mar 12 11:21	29° $\nearrow$ 01'31	
evening set	16467 Nov 16 10:59	21° $\nearrow$ 34'56		opposition	16474 Jun 04 01:53	28° $\nearrow$ 02'14	-11°26'54
				min. Earth dist.	16474 Jun 04 08:10	28° $\nearrow$ 01'57	47.18148 AU
conjunction	16467 Nov 25 16:57	21° $\nearrow$ 47'36	-12°05'36	direct	16474 Aug 25 14:22	27° $\nearrow$ 03'19	
minimum elong	16467 Nov 25 17:08	21° $\nearrow$ 47'36	12°04'59	evening set	16474 Nov 21 10:20	28° $\nearrow$ 15'20	
max. Earth dist.	16467 Nov 25 17:43	21° $\nearrow$ 47'38	49.55081 AU				
morning rise	16467 Dec 04 23:52	22° $\nearrow$ 00'20		conjunction	16474 Dec 02 04:19	28° $\nearrow$ 30'07	-10°53'46
retrograde	16468 Mar 06 00:35	23° $\nearrow$ 16'15		minimum elong	16474 Dec 02 04:29	28° $\nearrow$ 30'07	10°53'08
opposition	16468 May 28 19:05	22° $\nearrow$ 17'07	-12°30'48	max. Earth dist.	16474 Dec 01 22:22	28° $\nearrow$ 29'46	49.10372 AU
min. Earth dist.	16468 May 28 18:17	22° $\nearrow$ 17'09	47.57123 AU	morning rise	16474 Dec 12 23:20	28° $\nearrow$ 44'58	
direct	16468 Aug 19 10:24	21° $\nearrow$ 18'22		retrograde	16475 Mar 13 17:37	29° $\nearrow$ 59'20	
evening set	16468 Nov 16 10:23	22° $\nearrow$ 31'42		opposition	16475 Jun 05 07:06	28° $\nearrow$ 59'59	-11°15'32
				min. Earth dist.	16475 Jun 05 13:37	28° $\nearrow$ 59'41	47.09915 AU
conjunction	16468 Nov 25 21:47	22° $\nearrow$ 44'41	-11°55'57	direct	16475 Aug 26 17:51	28° $\nearrow$ 00'59	
minimum elong	16468 Nov 25 21:56	22° $\nearrow$ 44'42	11°55'20	evening set	16475 Nov 22 10:47	29° $\nearrow$ 12'48	
max. Earth dist.	16468 Nov 25 21:21	22° $\nearrow$ 44'40	49.50000 AU				
morning rise	16468 Dec 05 10:15	22° $\nearrow$ 57'45		conjunction	16475 Dec 03 09:26	29° $\nearrow$ 27'52	-10°42'43
retrograde	16469 Mar 07 10:11	24° $\nearrow$ 13'25		minimum elong	16475 Dec 03 09:36	29° $\nearrow$ 27'52	10°42'06
opposition	16469 May 30 00:10	23° $\nearrow$ 14'17	-12°20'40	max. Earth dist.	16475 Dec 03 01:30	29° $\nearrow$ 27'24	49.02061 AU
min. Earth dist.	16469 May 30 01:05	23° $\nearrow$ 14'15	47.51752 AU	morning rise	16475 Dec 14 09:27	29° $\nearrow$ 43'00	
direct	16469 Aug 20 12:53	22° $\nearrow$ 15'32			16475 Dec 27 03:37	0° $\overline{\text{B}}$	
evening set	16469 Nov 17 09:58	23° $\nearrow$ 28'38		retrograde	16476 Mar 13 23:47	0° $\overline{\text{B}}$ 57'09	
					16476 Jun 03 11:12	30° $\text{R}$ $\nearrow$	
conjunction	16469 Nov 27 02:43	23° $\nearrow$ 41'56	-11°46'05	opposition	16476 Jun 05 12:13	29° $\nearrow$ 57'43	-11°03'57
minimum elong	16469 Nov 27 02:53	23° $\nearrow$ 41'56	11°45'27	min. Earth dist.	16476 Jun 05 19:46	29° $\nearrow$ 57'22	47.01288 AU
max. Earth dist.	16469 Nov 27 02:21	23° $\nearrow$ 41'55	49.44573 AU	direct	16476 Aug 26 20:14	28° $\nearrow$ 58'37	
morning rise	16469 Dec 06 20:22	23° $\nearrow$ 55'18			16476 Nov 14 20:23	0° $\overline{\text{B}}$	
retrograde	16470 Mar 08 15:14	25° $\nearrow$ 10'45		evening set	16476 Nov 22 11:12	0° $\overline{\text{B}}$ 10'15	
opposition	16470 May 31 05:09	24° $\nearrow$ 11'37	-12°10'19				
min. Earth dist.	16470 May 31 06:15	24° $\nearrow$ 11'34	47.45998 AU	conjunction	16476 Dec 03 14:44	0° $\overline{\text{B}}$ 25'36	-10°31'26
direct	16470 Aug 21 16:21	23° $\nearrow$ 12'52		minimum elong	16476 Dec 03 14:54	0° $\overline{\text{B}}$ 25'36	10°30'48
evening set	16470 Nov 18 09:48	24° $\nearrow$ 25'44		max. Earth dist.	16476 Dec 03 06:46	0° $\overline{\text{B}}$ 25'08	48.93371 AU
				morning rise	16476 Dec 14 19:25	0° $\overline{\text{B}}$ 41'01	
conjunction	16470 Nov 28 07:38	24° $\nearrow$ 39'21	-11°36'00	retrograde	16477 Mar 15 02:24	1° $\overline{\text{B}}$ 54'59	
minimum elong	16470 Nov 28 07:47	24° $\nearrow$ 39'21	11°35'22	opposition	16477 Jun 06 17:29	0° $\overline{\text{B}}$ 55'27	-10°52'09
max. Earth dist.	16470 Nov 28 05:20	24° $\nearrow$ 39'13	49.38742 AU	min. Earth dist.	16477 Jun 07 02:07	0° $\overline{\text{B}}$ 55'03	46.92302 AU
morning rise	16470 Dec 08 06:38	24° $\nearrow$ 53'01			16477 Aug 09 13:32	30° $\text{R}$ $\nearrow$	
retrograde	16471 Mar 09 19:44	26° $\nearrow$ 08'14		direct	16477 Aug 28 03:20	29° $\nearrow$ 56'17	
opposition	16471 Jun 01 10:18	25° $\nearrow$ 09'06	-11°59'46		16477 Sep 15 15:13	0° $\overline{\text{B}}$	
min. Earth dist.	16471 Jun 01 12:33	25° $\nearrow$ 09'00	47.39822 AU	evening set	16477 Nov 23 11:49	1° $\overline{\text{B}}$ 07'44	
direct	16471 Aug 22 19:32	24° $\nearrow$ 10'20					
evening set	16471 Nov 19 09:38	25° $\nearrow$ 23'01		conjunction	16477 Dec 04 19:53	1° $\overline{\text{B}}$ 23'21	-10°19'57
				minimum elong	16477 Dec 04 20:02	1° $\overline{\text{B}}$ 23'21	10°19'19
conjunction	16471 Nov 29 12:44	25° $\nearrow$ 36'55	-11°25'44	max. Earth dist.	16477 Dec 04 11:03	1° $\overline{\text{B}}$ 22'50	48.84365 AU
minimum elong	16471 Nov 29 12:55	25° $\nearrow$ 36'56	11°25'07	morning rise	16477 Dec 16 05:13	1° $\overline{\text{B}}$ 39'03	
max. Earth dist.	16471 Nov 29 10:07	25° $\nearrow$ 36'46	49.32437 AU	retrograde	16478 Mar 16 06:33	2° $\overline{\text{B}}$ 52'51	
morning rise	16471 Dec 09 16:53	25° $\nearrow$ 50'53		opposition	16478 Jun 07 22:40	1° $\overline{\text{B}}$ 53'15	-10°40'07
retrograde	16472 Mar 09 22:17	27° $\nearrow$ 05'55		min. Earth dist.	16478 Jun 08 07:06	1° $\overline{\text{B}}$ 52'51	46.83020 AU
opposition	16472 Jun 01 15:32	26° $\nearrow$ 06'45	-11°49'00	direct	16478 Aug 29 10:20	0° $\overline{\text{B}}$ 53'59	
min. Earth dist.	16472 Jun 01 19:28	26° $\nearrow$ 06'34	47.33131 AU	evening set	16478 Nov 24 12:30	2° $\overline{\text{B}}$ 05'16	
direct	16472 Aug 23 03:10	25° $\nearrow$ 07'57					
evening set	16472 Nov 19 09:55	26° $\nearrow$ 20'25		conjunction	16478 Dec 06 01:08	2° $\overline{\text{B}}$ 21'11	-10°08'14
				minimum elong	16478 Dec 06 01:18	2° $\overline{\text{B}}$ 21'11	10°07'36
conjunction	16472 Nov 29 17:58	26° $\nearrow$ 34'36	-11°15'16	max. Earth dist.	16478 Dec 05 15:13	2° $\overline{\text{B}}$ 20'36	48.75064 AU
minimum elong	16472 Nov 29 18:08	26° $\nearrow$ 34'37	11°14'38	morning rise	16478 Dec 17 15:10	2° $\overline{\text{B}}$ 37'10	

retrograde	16479 Mar 17 14:48	3° $\overline{3}$ 50'49	minimum elong	16485 Dec 12 17:07	9° $\overline{3}$ 12'28	8°39'23
opposition	16479 Jun 09 04:05	2° $\overline{3}$ 51'08 -10°27'50	max. Earth dist.	16485 Dec 12 00:17	9° $\overline{3}$ 11'29	48.00542 AU
min. Earth dist.	16479 Jun 09 14:00	2° $\overline{3}$ 50'40 46.73464 AU	morning rise	16485 Dec 25 13:04	9° $\overline{3}$ 30'23	
direct	16479 Aug 30 15:03	1° $\overline{3}$ 51'49	retrograde	16486 Mar 24 13:38	10° $\overline{3}$ 43'27	
evening set	16479 Nov 25 13:15	3° $\overline{3}$ 02'57	opposition	16486 Jun 15 19:41	9° $\overline{3}$ 43'22	-8°55'28
			min. Earth dist.	16486 Jun 16 11:36	9° $\overline{3}$ 42'37	45.96606 AU
conjunction	16479 Dec 07 06:31	3° $\overline{3}$ 19'08 -9°56'17	direct	16486 Sep 05 22:10	8° $\overline{3}$ 43'34	
minimum elong	16479 Dec 07 06:40	3° $\overline{3}$ 19'09 9°55'39	evening set	16486 Dec 01 00:36	9° $\overline{3}$ 54'14	
max. Earth dist.	16479 Dec 06 20:51	3° $\overline{3}$ 18'35 48.65503 AU				
morning rise	16479 Dec 19 00:57	3° $\overline{3}$ 35'25	conjunction	16486 Dec 13 23:11	10° $\overline{3}$ 12'19	-8°26'35
retrograde	16480 Mar 17 21:08	4° $\overline{3}$ 48'55	minimum elong	16486 Dec 13 23:19	10° $\overline{3}$ 12'20	8°25'58
opposition	16480 Jun 09 09:27	3° $\overline{3}$ 49'12 -10°15'19	max. Earth dist.	16486 Dec 13 06:13	10° $\overline{3}$ 11'20	47.88047 AU
min. Earth dist.	16480 Jun 09 19:11	3° $\overline{3}$ 48'44 46.63627 AU	morning rise	16486 Dec 26 23:07	10° $\overline{3}$ 30'30	
direct	16480 Aug 30 18:54	2° $\overline{3}$ 49'48	retrograde	16487 Mar 25 18:15	11° $\overline{3}$ 43'31	
evening set	16480 Nov 25 14:23	4° $\overline{3}$ 00'50	opposition	16487 Jun 17 01:44	10° $\overline{3}$ 43'19	-8°41'24
			min. Earth dist.	16487 Jun 17 18:53	10° $\overline{3}$ 42'30	45.83755 AU
conjunction	16480 Dec 07 11:56	4° $\overline{3}$ 17'18 -9°44'07	direct	16487 Sep 07 04:58	9° $\overline{3}$ 43'24	
minimum elong	16480 Dec 07 12:05	4° $\overline{3}$ 17'18 9°43'29	evening set	16487 Dec 02 02:57	10° $\overline{3}$ 54'02	
max. Earth dist.	16480 Dec 07 00:35	4° $\overline{3}$ 16'38 48.55655 AU	max. Earth dist.	16487 Dec 14 11:10	11° $\overline{3}$ 11'18	47.75119 AU
morning rise	16480 Dec 19 10:58	4° $\overline{3}$ 33'51				
retrograde	16481 Mar 19 03:49	5° $\overline{3}$ 47'14	conjunction	16487 Dec 15 05:18	11° $\overline{3}$ 12'22	-8°12'56
opposition	16481 Jun 10 14:49	4° $\overline{3}$ 47'28 -10°02'34	minimum elong	16487 Dec 15 05:27	11° $\overline{3}$ 12'22	8°12'18
min. Earth dist.	16481 Jun 11 01:34	4° $\overline{3}$ 46'58 46.53503 AU	morning rise	16487 Dec 28 09:10	11° $\overline{3}$ 30'49	
direct	16481 Aug 31 21:52	3° $\overline{3}$ 48'02	retrograde	16488 Mar 25 22:25	12° $\overline{3}$ 43'46	
evening set	16481 Nov 26 15:30	4° $\overline{3}$ 58'59	opposition	16488 Jun 17 07:45	11° $\overline{3}$ 43'27	-8°27'07
			min. Earth dist.	16488 Jun 18 01:04	11° $\overline{3}$ 42'38	45.70503 AU
conjunction	16481 Dec 08 17:33	5° $\overline{3}$ 15'43 -9°31'43	direct	16488 Sep 07 13:10	10° $\overline{3}$ 43'25	
minimum elong	16481 Dec 08 17:42	5° $\overline{3}$ 15'44 9°31'05	evening set	16488 Dec 02 05:29	11° $\overline{3}$ 54'00	
max. Earth dist.	16481 Dec 08 06:11	5° $\overline{3}$ 15'03 48.45491 AU				
morning rise	16481 Dec 20 20:52	5° $\overline{3}$ 32'33	conjunction	16488 Dec 15 11:34	12° $\overline{3}$ 12'36	-7°59'04
retrograde	16482 Mar 20 07:22	6° $\overline{3}$ 45'51	minimum elong	16488 Dec 15 11:42	12° $\overline{3}$ 12'37	7°58'27
opposition	16482 Jun 11 20:27	5° $\overline{3}$ 46'02 -9°49'35	max. Earth dist.	16488 Dec 14 16:07	12° $\overline{3}$ 11'27	47.61793 AU
min. Earth dist.	16482 Jun 12 08:20	5° $\overline{3}$ 45'28 46.43033 AU	morning rise	16488 Dec 28 19:16	12° $\overline{3}$ 31'19	
direct	16482 Sep 02 04:42	4° $\overline{3}$ 46'32	retrograde	16489 Mar 27 06:26	13° $\overline{3}$ 44'15	
evening set	16482 Nov 27 16:51	5° $\overline{3}$ 57'25	opposition	16489 Jun 18 13:53	12° $\overline{3}$ 43'48	-8°12'36
			min. Earth dist.	16489 Jun 19 08:55	12° $\overline{3}$ 42'54	45.56891 AU
conjunction	16482 Dec 09 23:05	6° $\overline{3}$ 14'26 -9°19'06	direct	16489 Sep 08 20:02	11° $\overline{3}$ 43'39	
minimum elong	16482 Dec 09 23:14	6° $\overline{3}$ 14'27 9°18'28	evening set	16489 Dec 03 08:09	12° $\overline{3}$ 54'12	
max. Earth dist.	16482 Dec 09 10:38	6° $\overline{3}$ 13'42 48.34969 AU				
morning rise	16482 Dec 22 06:43	6° $\overline{3}$ 31'32	conjunction	16489 Dec 16 17:59	13° $\overline{3}$ 13'04	-7°44'58
retrograde	16483 Mar 21 13:23	7° $\overline{3}$ 44'47	minimum elong	16489 Dec 16 18:08	13° $\overline{3}$ 13'04	7°44'20
opposition	16483 Jun 13 02:05	6° $\overline{3}$ 44'55 -9°36'22	max. Earth dist.	16489 Dec 15 22:43	13° $\overline{3}$ 11'55	47.48147 AU
min. Earth dist.	16483 Jun 13 14:05	6° $\overline{3}$ 44'21 46.32172 AU	morning rise	16489 Dec 30 05:13	13° $\overline{3}$ 32'01	
direct	16483 Sep 03 10:26	5° $\overline{3}$ 45'22	retrograde	16490 Mar 28 14:52	14° $\overline{3}$ 44'57	
evening set	16483 Nov 28 18:32	6° $\overline{3}$ 56'12	opposition	16490 Jun 19 20:07	13° $\overline{3}$ 44'23	-7°57'50
			min. Earth dist.	16490 Jun 20 14:49	13° $\overline{3}$ 43'29	45.42973 AU
conjunction	16483 Dec 11 04:56	7° $\overline{3}$ 13'29 -9°06'17	direct	16490 Sep 10 00:32	12° $\overline{3}$ 44'06	
minimum elong	16483 Dec 11 05:05	7° $\overline{3}$ 13'29 9°05'38	evening set	16490 Dec 04 10:58	13° $\overline{3}$ 54'39	
max. Earth dist.	16483 Dec 10 14:59	7° $\overline{3}$ 12'40 48.23999 AU	max. Earth dist.	16490 Dec 17 03:19	14° $\overline{3}$ 12'31	47.34208 AU
morning rise	16483 Dec 23 16:52	7° $\overline{3}$ 30'51				
retrograde	16484 Mar 21 21:41	8° $\overline{3}$ 44'03	conjunction	16490 Dec 18 00:14	14° $\overline{3}$ 13'46	-7°30'39
opposition	16484 Jun 13 07:51	7° $\overline{3}$ 44'07 -9°22'57	minimum elong	16490 Dec 18 00:21	14° $\overline{3}$ 13'46	7°30'02
min. Earth dist.	16484 Jun 13 22:02	7° $\overline{3}$ 43'27 46.20838 AU	morning rise	16490 Dec 31 15:14	14° $\overline{3}$ 32'59	
direct	16484 Sep 03 15:48	6° $\overline{3}$ 44'31	retrograde	16491 Mar 29 23:42	15° $\overline{3}$ 45'54	
evening set	16484 Nov 28 20:25	7° $\overline{3}$ 55'17	opposition	16491 Jun 21 02:32	14° $\overline{3}$ 45'13	-7°42'49
			min. Earth dist.	16491 Jun 21 22:22	14° $\overline{3}$ 44'16	45.28786 AU
conjunction	16484 Dec 11 11:03	8° $\overline{3}$ 12'50 -8°53'15	direct	16491 Sep 11 03:56	13° $\overline{3}$ 44'48	
minimum elong	16484 Dec 11 11:12	8° $\overline{3}$ 12'51 8°52'38	evening set	16491 Dec 05 14:00	14° $\overline{3}$ 55'23	
max. Earth dist.	16484 Dec 10 20:41	8° $\overline{3}$ 12'00 48.12536 AU	max. Earth dist.	16491 Dec 18 10:08	15° $\overline{3}$ 13'31	47.19994 AU
morning rise	16484 Dec 24 02:57	8° $\overline{3}$ 30'29				
retrograde	16485 Mar 23 05:26	9° $\overline{3}$ 43'37	conjunction	16491 Dec 19 06:55	15° $\overline{3}$ 14'45	-7°16'05
opposition	16485 Jun 14 13:41	8° $\overline{3}$ 43'37 -9°09'19	minimum elong	16491 Dec 19 07:03	15° $\overline{3}$ 14'45	7°15'28
min. Earth dist.	16485 Jun 15 04:13	8° $\overline{3}$ 42'56 46.08978 AU	morning rise	16492 Jan 02 01:18	15° $\overline{3}$ 34'13	
direct	16485 Sep 04 19:53	7° $\overline{3}$ 43'56	retrograde	16492 Mar 30 04:35	16° $\overline{3}$ 47'08	
evening set	16485 Nov 29 22:30	8° $\overline{3}$ 54'39	opposition	16492 Jun 21 08:57	15° $\overline{3}$ 46'20	-7°27'33
			min. Earth dist.	16492 Jun 22 05:29	15° $\overline{3}$ 45'21	45.14319 AU
conjunction	16485 Dec 12 16:58	9° $\overline{3}$ 12'28 -8°40'01	direct	16492 Sep 11 10:25	14° $\overline{3}$ 45'48	

evening set	16492 Dec 05 17:24	15° $\overline{3}$ 56'26	opposition	16499 Jun 29 10:37	23° $\overline{3}$ 04'57	-5°34'05
			min. Earth dist.	16499 Jun 30 14:13	23° $\overline{3}$ 03'36	44.02505 AU
conjunction	16492 Dec 19 13:38	16° $\overline{3}$ 16'03	-7°01'18	direct	16499 Sep 19 09:25	22° $\overline{3}$ 03'24
minimum elong	16492 Dec 19 13:45	16° $\overline{3}$ 16'03	7°00'41	evening set	16499 Dec 13 00:31	23° $\overline{3}$ 14'40
max. Earth dist.	16492 Dec 18 15:47	16° $\overline{3}$ 14'45	47.05516 AU			
morning rise	16493 Jan 02 11:30	16° $\overline{3}$ 35'46		conjunction	16499 Dec 27 17:52	23° $\overline{3}$ 35'58
retrograde	16493 Mar 31 10:28	17° $\overline{3}$ 48'43		minimum elong	16499 Dec 27 17:57	23° $\overline{3}$ 35'59
opposition	16493 Jun 22 15:29	16° $\overline{3}$ 47'49	-7°12'03	max. Earth dist.	16499 Dec 26 13:04	23° $\overline{3}$ 34'13
min. Earth dist.	16493 Jun 23 12:01	16° $\overline{3}$ 46'50	44.99579 AU	morning rise	16500 Jan 11 12:43	23° $\overline{3}$ 57'23
direct	16493 Sep 12 16:59	15° $\overline{3}$ 47'10		retrograde	16500 Apr 08 20:20	25° $\overline{3}$ 11'00
evening set	16493 Dec 06 20:52	16° $\overline{3}$ 57'50		opposition	16500 Jun 30 18:05	24° $\overline{3}$ 09'04
				min. Earth dist.	16500 Jul 01 21:37	24° $\overline{3}$ 07'43
conjunction	16493 Dec 20 20:24	17° $\overline{3}$ 17'42	-6°46'17	direct	16500 Sep 20 16:42	23° $\overline{3}$ 07'19
minimum elong	16493 Dec 20 20:32	17° $\overline{3}$ 17'43	6°45'40	evening set	16500 Dec 14 06:08	24° $\overline{3}$ 18'44
max. Earth dist.	16493 Dec 19 21:32	17° $\overline{3}$ 16'20	46.90725 AU	max. Earth dist.	16500 Dec 27 19:12	24° $\overline{3}$ 38'23
morning rise	16494 Jan 03 21:36	17° $\overline{3}$ 37'41				
retrograde	16494 Apr 01 17:57	18° $\overline{3}$ 50'42		conjunction	16500 Dec 29 01:53	24° $\overline{3}$ 40'16
opposition	16494 Jun 23 22:21	17° $\overline{3}$ 49'41	-6°56'18	minimum elong	16500 Dec 29 01:59	24° $\overline{3}$ 40'16
min. Earth dist.	16494 Jun 24 20:39	17° $\overline{3}$ 48'36	44.84513 AU	morning rise	16501 Jan 12 23:28	25° $\overline{3}$ 01'55
direct	16494 Sep 14 00:31	16° $\overline{3}$ 48'55		retrograde	16501 Apr 10 07:08	26° $\overline{3}$ 15'40
evening set	16494 Dec 08 00:44	17° $\overline{3}$ 59'40		opposition	16501 Jul 02 01:56	25° $\overline{3}$ 13'33
max. Earth dist.	16494 Dec 21 04:37	18° $\overline{3}$ 18'24	46.75596 AU	min. Earth dist.	16501 Jul 03 07:00	25° $\overline{3}$ 12'07
				direct	16501 Sep 21 21:42	24° $\overline{3}$ 11'36
conjunction	16494 Dec 22 03:34	18° $\overline{3}$ 19'46	-6°31'02	evening set	16501 Dec 15 11:43	25° $\overline{3}$ 23'11
minimum elong	16494 Dec 22 03:41	18° $\overline{3}$ 19'46	6°30'24	max. Earth dist.	16501 Dec 29 03:34	25° $\overline{3}$ 43'04
morning rise	16495 Jan 05 07:53	18° $\overline{3}$ 40'00				
retrograde	16495 Apr 03 02:26	19° $\overline{3}$ 53'06		conjunction	16501 Dec 30 10:05	25° $\overline{3}$ 44'56
opposition	16495 Jun 25 05:11	18° $\overline{3}$ 51'58	-6°40'19	minimum elong	16501 Dec 30 10:10	25° $\overline{3}$ 44'57
min. Earth dist.	16495 Jun 26 03:32	18° $\overline{3}$ 50'53	44.69072 AU	morning rise	16502 Jan 14 09:56	26° $\overline{3}$ 06'49
direct	16495 Sep 15 07:00	17° $\overline{3}$ 51'04		retrograde	16502 Apr 11 15:39	27° $\overline{3}$ 20'44
evening set	16495 Dec 09 05:00	19° $\overline{3}$ 01'54		opposition	16502 Jul 03 09:57	26° $\overline{3}$ 18'26
max. Earth dist.	16495 Dec 22 09:39	19° $\overline{3}$ 20'45	46.60045 AU	min. Earth dist.	16502 Jul 04 15:19	26° $\overline{3}$ 16'58
				direct	16502 Sep 23 04:56	25° $\overline{3}$ 16'17
conjunction	16495 Dec 23 10:48	19° $\overline{3}$ 22'15	-6°15'33	evening set	16502 Dec 16 17:51	26° $\overline{3}$ 28'04
minimum elong	16495 Dec 23 10:55	19° $\overline{3}$ 22'16	6°14'57	max. Earth dist.	16502 Dec 30 10:48	26° $\overline{3}$ 48'06
morning rise	16496 Jan 06 18:24	19° $\overline{3}$ 42'44				
retrograde	16496 Apr 03 13:57	20° $\overline{3}$ 55'55		conjunction	16502 Dec 31 18:26	26° $\overline{3}$ 50'03
opposition	16496 Jun 25 12:19	19° $\overline{3}$ 54'40	-6°24'06	minimum elong	16502 Dec 31 18:31	26° $\overline{3}$ 50'03
min. Earth dist.	16496 Jun 26 12:22	19° $\overline{3}$ 53'30	44.53182 AU	morning rise	16503 Jan 15 20:45	27° $\overline{3}$ 12'09
direct	16496 Sep 15 10:00	18° $\overline{3}$ 53'37		retrograde	16503 Apr 13 00:36	28° $\overline{3}$ 26'15
evening set	16496 Dec 09 09:31	20° $\overline{3}$ 04'34		opposition	16503 Jul 04 18:01	27° $\overline{3}$ 23'46
				min. Earth dist.	16503 Jul 05 23:33	27° $\overline{3}$ 22'18
conjunction	16496 Dec 23 18:28	20° $\overline{3}$ 25'10	-5°59'52	direct	16503 Sep 24 12:10	26° $\overline{3}$ 21'26
minimum elong	16496 Dec 23 18:34	20° $\overline{3}$ 25'10	5°59'15	evening set	16503 Dec 18 00:12	27° $\overline{3}$ 33'26
max. Earth dist.	16496 Dec 22 16:55	20° $\overline{3}$ 23'37	46.44002 AU	max. Earth dist.	16503 Dec 31 18:41	27° $\overline{3}$ 53'39
morning rise	16497 Jan 07 04:53	20° $\overline{3}$ 45'52				
retrograde	16497 Apr 04 21:51	21° $\overline{3}$ 59'09		conjunction	16504 Jan 02 03:04	27° $\overline{3}$ 55'39
opposition	16497 Jun 26 19:32	20° $\overline{3}$ 57'45	-6°07'40	minimum elong	16504 Jan 02 03:08	27° $\overline{3}$ 55'39
min. Earth dist.	16497 Jun 27 20:42	20° $\overline{3}$ 56'31	44.36775 AU	morning rise	16504 Jan 17 07:34	28° $\overline{3}$ 17'59
direct	16497 Sep 16 16:47	19° $\overline{3}$ 56'33		retrograde	16504 Apr 13 08:30	29° $\overline{3}$ 32'18
evening set	16497 Dec 10 14:23	21° $\overline{3}$ 07'36		opposition	16504 Jul 05 02:28	28° $\overline{3}$ 29'38
max. Earth dist.	16497 Dec 23 22:56	21° $\overline{3}$ 26'47	46.27457 AU	min. Earth dist.	16504 Jul 06 09:22	28° $\overline{3}$ 28'06
				direct	16504 Sep 24 21:08	27° $\overline{3}$ 27'08
conjunction	16497 Dec 25 02:07	21° $\overline{3}$ 28'26	-5°43'58	evening set	16504 Dec 18 06:56	28° $\overline{3}$ 39'22
minimum elong	16497 Dec 25 02:14	21° $\overline{3}$ 28'26	5°43'22	max. Earth dist.	16505 Jan 01 03:34	28° $\overline{3}$ 59'47
morning rise	16498 Jan 08 15:34	21° $\overline{3}$ 49'23				
retrograde	16498 Apr 06 04:29	23° $\overline{3}$ 02'45		conjunction	16505 Jan 02 11:56	29° $\overline{3}$ 01'48
opposition	16498 Jun 28 02:57	22° $\overline{3}$ 01'11	-5°50'59	minimum elong	16505 Jan 02 12:00	29° $\overline{3}$ 01'48
min. Earth dist.	16498 Jun 29 04:42	21° $\overline{3}$ 59'56	44.19876 AU	morning rise	16505 Jan 17 18:27	29° $\overline{3}$ 24'21
direct	16498 Sep 18 00:21	20° $\overline{3}$ 59'49			16505 Feb 13 08:35	0° $\approx$
evening set	16498 Dec 11 19:16	22° $\overline{3}$ 10'58		retrograde	16505 Apr 14 17:23	0° $\approx$ 38'56
max. Earth dist.	16498 Dec 25 05:13	22° $\overline{3}$ 30'18	46.10410 AU		16505 Jun 15 23:38	30° $\overline{R}$ $\overline{3}$
				opposition	16505 Jul 06 10:52	29° $\overline{3}$ 36'06
conjunction	16498 Dec 26 09:50	22° $\overline{3}$ 32'02	-5°27'50	min. Earth dist.	16505 Jul 07 17:22	29° $\overline{3}$ 34'34
minimum elong	16498 Dec 26 09:56	22° $\overline{3}$ 32'03	5°27'14	direct	16505 Sep 26 06:02	28° $\overline{3}$ 33'24
morning rise	16499 Jan 10 02:05	22° $\overline{3}$ 53'13		evening set	16505 Dec 19 14:05	29° $\overline{3}$ 45'55
retrograde	16499 Apr 07 11:33	24° $\overline{3}$ 06'43			16505 Dec 29 03:11	0° $\approx$

max. Earth dist.	16506 Jan 02 10:51	0°06'27	44.81801 AU	retrograde	16512 Apr 22 23:25	8°43'39	
				opposition	16512 Jul 14 05:26	7°39'21	-1°31'28
conjunction	16506 Jan 03 20:54	0°08'34	-3°28'28	min. Earth dist.	16512 Jul 15 18:28	7°37'27	41.48561 AU
minimum elong	16506 Jan 03 20:58	0°08'34	3°27'54	direct	16512 Oct 03 16:38	6°35'05	
morning rise	16506 Jan 19 05:31	0°31'20		evening set	16512 Dec 27 03:21	7°49'57	
retrograde	16506 Apr 16 06:55	1°46'12		max. Earth dist.	16513 Jan 10 03:12	8°11'22	43.37769 AU
opposition	16506 Jul 07 19:44	0°43'12	-3°28'43				
min. Earth dist.	16506 Jul 09 03:42	0°41'35	42.72354 AU	conjunction	16513 Jan 11 20:00	8°13'59	-1°17'39
	16506 Aug 16 07:07	30°03'		minimum elong	16513 Jan 11 20:01	8°13'59	1°17'08
direct	16506 Sep 27 10:49	29°34'20		morning rise	16513 Jan 27 14:16	8°38'09	
	16506 Nov 07 21:15	0°		retrograde	16513 Apr 24 14:01	9°55'19	
evening set	16506 Dec 20 21:23	0°53'08		opposition	16513 Jul 15 15:48	8°50'44	-1°11'03
max. Earth dist.	16507 Jan 03 20:28	1°13'53	44.62400 AU	min. Earth dist.	16513 Jul 17 05:39	8°48'47	41.26687 AU
				direct	16513 Oct 04 23:37	7°46'11	
conjunction	16507 Jan 05 06:13	1°16'00	-3°10'28	evening set	16513 Dec 28 13:42	9°01'28	
minimum elong	16507 Jan 05 06:17	1°16'00	3°09'55	max. Earth dist.	16514 Jan 11 14:08	9°23'01	43.15795 AU
morning rise	16507 Jan 20 16:29	1°38'59					
retrograde	16507 Apr 17 18:23	2°54'08		conjunction	16514 Jan 13 07:13	9°25'41	-0°58'03
opposition	16507 Jul 09 04:47	1°50'58	-3°09'47	minimum elong	16514 Jan 13 07:14	9°25'41	0°57'31
min. Earth dist.	16507 Jul 10 13:08	1°49'20	42.52721 AU	morning rise	16514 Jan 29 02:07	9°50'00	
direct	16507 Sep 28 17:29	0°47'55		retrograde	16514 Apr 26 01:44	11°07'34	
evening set	16507 Dec 22 05:27	2°01'03		opposition	16514 Jul 17 02:37	10°02'44	-0°50'23
max. Earth dist.	16508 Jan 05 04:25	2°21'54	44.42659 AU	min. Earth dist.	16514 Jul 18 17:21	10°00'43	41.04587 AU
				direct	16514 Oct 06 09:44	8°57'53	
conjunction	16508 Jan 06 15:50	2°24'07	-2°52'14	evening set	16514 Dec 30 00:26	10°13'36	
minimum elong	16508 Jan 06 15:53	2°24'07	2°51'41	max. Earth dist.	16515 Jan 13 01:12	10°35'18	42.93633 AU
morning rise	16508 Jan 22 03:56	2°47'19					
retrograde	16508 Apr 18 05:54	4°02'46		conjunction	16515 Jan 14 18:34	10°37'59	-0°38'13
opposition	16508 Jul 09 13:53	2°59'25	-2°50'37	minimum elong	16515 Jan 14 18:35	10°37'59	0°37'43
min. Earth dist.	16508 Jul 10 23:13	2°57'44	42.32725 AU	morning rise	16515 Jan 30 14:06	11°02'29	
direct	16508 Sep 29 00:48	1°56'10		retrograde	16515 Apr 27 12:01	12°20'29	
evening set	16508 Dec 22 13:52	3°09'38		opposition	16515 Jul 18 13:33	11°15'22	-0°29'28
max. Earth dist.	16509 Jan 05 13:16	3°30'36	44.22497 AU	min. Earth dist.	16515 Jul 20 03:59	11°13'22	40.82322 AU
				direct	16515 Oct 07 21:56	10°10'15	
conjunction	16509 Jan 07 01:51	3°32'55	-2°33'47	evening set	16515 Dec 31 11:51	11°26'26	
minimum elong	16509 Jan 07 01:54	3°32'55	2°33'14	max. Earth dist.	16516 Jan 14 11:33	11°48'11	42.71296 AU
morning rise	16509 Jan 22 15:23	3°56'19					
retrograde	16509 Apr 19 14:11	5°12'05		conjunction	16516 Jan 16 06:20	11°50'59	-0°18'10
opposition	16509 Jul 10 23:30	4°08'32	-2°31'12	minimum elong	16516 Jan 16 06:21	11°50'59	0°17'40
min. Earth dist.	16509 Jul 12 10:28	4°06'45	42.12290 AU	morning rise	16516 Feb 01 02:20	12°15'39	
direct	16509 Sep 30 12:16	3°05'03		retrograde	16516 Apr 27 23:57	13°34'07	
evening set	16509 Dec 23 22:34	4°18'51		opposition	16516 Jul 19 00:50	12°28'44	-0°08'19
max. Earth dist.	16510 Jan 06 22:49	4°39'58	44.01904 AU	min. Earth dist.	16516 Jul 20 16:39	12°26'39	40.59908 AU
				direct	16516 Oct 08 08:37	11°23'21	
conjunction	16510 Jan 08 11:58	4°42'20	-2°15'05	asc. node	16516 Dec 09 10:50	12°07'40	
minimum elong	16510 Jan 08 12:01	4°42'20	2°14'32	evening set	16516 Dec 31 23:38	12°40'02	
morning rise	16510 Jan 24 02:52	5°05'56		max. Earth dist.	16517 Jan 15 00:18	13°01'58	42.48819 AU
retrograde	16510 Apr 20 23:18	6°22'02					
opposition	16510 Jul 12 09:15	5°18'14	-2°11'32	conjunction	16517 Jan 16 18:31	13°04'45	0°02'12
min. Earth dist.	16510 Jul 13 20:12	5°16'28	41.91426 AU	minimum elong	16517 Jan 16 18:31	13°04'45	0°02'41
direct	16510 Oct 01 23:07	4°14'31		behind sun begin	16517 Jan 16 12:05	13°04'21	
evening set	16510 Dec 25 07:49	5°28'39		behind sun end	16517 Jan 17 00:58	13°05'09	
max. Earth dist.	16511 Jan 08 07:12	5°49'50	43.80880 AU	morning rise	16517 Feb 01 14:36	13°29'35	
				retrograde	16517 Apr 29 12:46	14°48'33	
conjunction	16511 Jan 09 22:23	5°52'20	-1°56'10	opposition	16517 Jul 20 12:27	13°42'56	0°13'05
minimum elong	16511 Jan 09 22:25	5°52'20	1°55'39	min. Earth dist.	16517 Jul 22 03:47	13°40'51	40.37354 AU
morning rise	16511 Jan 25 14:38	6°16'07		direct	16517 Oct 09 18:53	12°37'16	
retrograde	16511 Apr 22 11:22	7°32'34		evening set	16518 Jan 02 11:57	13°54'31	
opposition	16511 Jul 13 19:15	6°28'31	-1°51'37	max. Earth dist.	16518 Jan 16 11:04	14°16'29	42.26197 AU
min. Earth dist.	16511 Jul 15 08:09	6°26'38	41.70167 AU				
direct	16511 Oct 03 07:31	5°24'32		conjunction	16518 Jan 18 06:45	14°19'23	0°22'39
evening set	16511 Dec 26 17:18	6°39'01		minimum elong	16518 Jan 18 06:44	14°19'23	0°23'09
max. Earth dist.	16512 Jan 09 18:01	7°00'22	43.59483 AU	morning rise	16518 Feb 03 03:01	14°44'21	
					16518 Feb 13 11:30	15°	
conjunction	16512 Jan 11 09:10	7°02'53	-1°37'02	retrograde	16518 May 01 04:48	16°03'54	
minimum elong	16512 Jan 11 09:12	7°02'53	1°36'29		16518 Jul 20 11:01	15°00'	
morning rise	16512 Jan 27 02:22	7°26'52		opposition	16518 Jul 22 00:29	14°58'01	0°34'43

min. Earth dist.	16518 Jul 23 16:52	14° $\approx$ 55'53	40.14655 AU	minimum elong	16525 Jan 27 09:29	23° $\approx$ 29'36	2°52'15
direct	16518 Oct 11 03:22	13° $\approx$ 52'07		morning rise	16525 Feb 12 00:03	23° $\approx$ 55'23	
	16518 Dec 28 13:05	15° $\approx$		retrograde	16525 May 10 18:24	25° $\approx$ 19'36	
evening set	16519 Jan 04 00:53	15° $\approx$ 09'57		opposition	16525 Jul 30 22:42	24° $\approx$ 11'43	3°12'26
max. Earth dist.	16519 Jan 17 23:55	15° $\approx$ 32'03	42.03386 AU	min. Earth dist.	16525 Aug 01 20:20	24° $\approx$ 09'12	38.47913 AU
				direct	16525 Oct 19 15:50	23° $\approx$ 03'38	
conjunction	16519 Jan 19 19:41	15° $\approx$ 34'57	0°43'21	evening set	16526 Jan 13 13:19	24° $\approx$ 26'26	
minimum elong	16519 Jan 19 19:40	15° $\approx$ 34'57	0°43'50	max. Earth dist.	16526 Jan 26 22:42	24° $\approx$ 48'39	40.35387 AU
morning rise	16519 Feb 04 15:38	16° $\approx$ 00'05					
retrograde	16519 May 02 19:31	17° $\approx$ 20'12		conjunction	16526 Jan 29 01:06	24° $\approx$ 52'11	3°13'53
opposition	16519 Jul 23 12:48	16° $\approx$ 14'05	0°56'35	minimum elong	16526 Jan 29 01:02	24° $\approx$ 52'10	3°14'17
min. Earth dist.	16519 Jul 25 05:56	16° $\approx$ 11'54	39.91745 AU	morning rise	16526 Feb 13 13:47	25° $\approx$ 18'01	
direct	16519 Oct 12 14:37	15° $\approx$ 07'55		retrograde	16526 May 12 11:20	26° $\approx$ 43'01	
evening set	16520 Jan 05 14:33	16° $\approx$ 26'24		opposition	16526 Aug 01 13:48	25° $\approx$ 34'46	3°35'48
max. Earth dist.	16520 Jan 19 12:16	16° $\approx$ 48'33	41.80340 AU	min. Earth dist.	16526 Aug 03 12:30	25° $\approx$ 32'12	38.23121 AU
				direct	16526 Oct 21 07:27	24° $\approx$ 26'20	
conjunction	16520 Jan 21 08:58	16° $\approx$ 51'33	1°04'16	evening set	16527 Jan 15 07:24	25° $\approx$ 49'58	
minimum elong	16520 Jan 21 08:56	16° $\approx$ 51'33	1°04'45	max. Earth dist.	16527 Jan 28 15:01	26° $\approx$ 12'14	40.10475 AU
morning rise	16520 Feb 06 04:39	17° $\approx$ 16'48					
retrograde	16520 May 03 11:29	18° $\approx$ 37'33		conjunction	16527 Jan 30 17:16	26° $\approx$ 15'46	3°36'07
opposition	16520 Jul 24 01:27	17° $\approx$ 31'11	1°18'41	minimum elong	16527 Jan 30 17:11	26° $\approx$ 15'46	3°36'30
min. Earth dist.	16520 Jul 25 18:52	17° $\approx$ 28'58	39.68567 AU	morning rise	16527 Feb 15 03:55	26° $\approx$ 41'39	
direct	16520 Oct 13 02:23	16° $\approx$ 24'45		retrograde	16527 May 14 04:01	28° $\approx$ 07'29	
evening set	16521 Jan 06 04:53	17° $\approx$ 43'53		opposition	16527 Aug 03 05:04	26° $\approx$ 58'53	3°59'20
max. Earth dist.	16521 Jan 20 00:28	18° $\approx$ 06'03	41.56962 AU	min. Earth dist.	16527 Aug 05 03:10	26° $\approx$ 56'20	37.98255 AU
				direct	16527 Oct 22 23:24	25° $\approx$ 50'04	
conjunction	16521 Jan 21 22:41	18° $\approx$ 09'10	1°25'24	evening set	16528 Jan 17 02:18	27° $\approx$ 14'35	
minimum elong	16521 Jan 21 22:39	18° $\approx$ 09'10	1°25'51	max. Earth dist.	16528 Jan 30 06:10	27° $\approx$ 36'46	39.85487 AU
morning rise	16521 Feb 06 17:44	18° $\approx$ 34'33					
retrograde	16521 May 05 00:52	19° $\approx$ 55'57		conjunction	16528 Feb 01 09:50	27° $\approx$ 40'26	3°58'29
opposition	16521 Jul 25 14:38	18° $\approx$ 49'19	1°41'00	minimum elong	16528 Feb 01 09:44	27° $\approx$ 40'25	3°58'51
min. Earth dist.	16521 Jul 27 09:54	18° $\approx$ 47'00	39.45048 AU	morning rise	16528 Feb 16 18:17	28° $\approx$ 06'22	
direct	16521 Oct 14 15:10	17° $\approx$ 42'36		retrograde	16528 May 14 20:16	29° $\approx$ 33'04	
evening set	16522 Jan 07 19:44	19° $\approx$ 02'24		opposition	16528 Aug 03 21:02	28° $\approx$ 24'07	4°23'02
max. Earth dist.	16522 Jan 21 14:30	19° $\approx$ 24'39	41.33242 AU	min. Earth dist.	16528 Aug 05 20:24	28° $\approx$ 21'28	37.73346 AU
				direct	16528 Oct 23 13:32	27° $\approx$ 14'56	
conjunction	16522 Jan 23 12:54	19° $\approx$ 27'48	1°46'43	evening set	16529 Jan 17 21:45	28° $\approx$ 40'22	
minimum elong	16522 Jan 23 12:51	19° $\approx$ 27'48	1°47'10	max. Earth dist.	16529 Jan 30 23:59	29° $\approx$ 02'35	39.60465 AU
morning rise	16522 Feb 08 07:03	19° $\approx$ 53'19					
retrograde	16522 May 06 14:25	21° $\approx$ 15'22		conjunction	16529 Feb 02 02:56	29° $\approx$ 06'14	4°20'59
opposition	16522 Jul 27 04:07	20° $\approx$ 08'27	2°03'32	minimum elong	16529 Feb 02 02:50	29° $\approx$ 06'14	4°21'21
min. Earth dist.	16522 Jul 28 23:17	20° $\approx$ 06'07	39.21187 AU	morning rise	16529 Feb 17 08:39	29° $\approx$ 32'11	
direct	16522 Oct 16 04:37	19° $\approx$ 01'25			16529 Mar 06 17:03	0° $\approx$	
evening set	16523 Jan 09 11:13	20° $\approx$ 21'55		retrograde	16529 May 16 13:11	0° $\approx$ 59'48	
max. Earth dist.	16523 Jan 23 02:46	20° $\approx$ 44'07	41.09177 AU		16529 Jul 29 12:22	30° $\approx$	
				opposition	16529 Aug 05 13:21	29° $\approx$ 50'31	4°46'53
conjunction	16523 Jan 25 03:17	20° $\approx$ 47'26	2°08'14	min. Earth dist.	16529 Aug 07 12:12	29° $\approx$ 47'53	37.48418 AU
minimum elong	16523 Jan 25 03:14	20° $\approx$ 47'26	2°08'40	direct	16529 Oct 25 04:24	28° $\approx$ 40'59	
morning rise	16523 Feb 09 20:35	21° $\approx$ 13'02			16530 Jan 15 07:38	0° $\approx$	
retrograde	16523 May 08 07:55	22° $\approx$ 35'48		evening set	16530 Jan 19 18:12	0° $\approx$ 07'24	
opposition	16523 Jul 28 18:01	21° $\approx$ 28'34	2°26'18	max. Earth dist.	16530 Feb 01 16:11	0° $\approx$ 29'30	39.35435 AU
min. Earth dist.	16523 Jul 30 14:49	21° $\approx$ 26'08	38.97010 AU				
direct	16523 Oct 17 14:21	20° $\approx$ 21'12		conjunction	16530 Feb 03 20:25	0° $\approx$ 33'16	4°43'36
evening set	16524 Jan 11 03:18	21° $\approx$ 42'26		minimum elong	16530 Feb 03 20:18	0° $\approx$ 33'15	4°43'57
max. Earth dist.	16524 Jan 24 17:49	22° $\approx$ 04'42	40.84802 AU	morning rise	16530 Feb 18 23:27	0° $\approx$ 59'12	
				retrograde	16530 May 18 10:13	2° $\approx$ 27'49	
conjunction	16524 Jan 26 18:19	22° $\approx$ 08'02	2°29'56	opposition	16530 Aug 07 06:12	1° $\approx$ 18'11	5°10'51
minimum elong	16524 Jan 26 18:16	22° $\approx$ 08'02	2°30'21	min. Earth dist.	16530 Aug 09 05:42	1° $\approx$ 15'30	37.23494 AU
morning rise	16524 Feb 11 10:12	22° $\approx$ 33'44		direct	16530 Oct 26 16:34	0° $\approx$ 08'17	
retrograde	16524 May 08 23:38	23° $\approx$ 57'13		evening set	16531 Jan 21 15:16	1° $\approx$ 35'44	
opposition	16524 Jul 29 08:08	22° $\approx$ 49'39	2°49'16	max. Earth dist.	16531 Feb 03 10:25	1° $\approx$ 57'49	39.10365 AU
min. Earth dist.	16524 Jul 31 05:18	22° $\approx$ 47'11	38.72556 AU				
direct	16524 Oct 18 02:57	21° $\approx$ 41'56		conjunction	16531 Feb 05 14:34	2° $\approx$ 01'36	5°06'19
evening set	16525 Jan 11 20:07	23° $\approx$ 03'56		minimum elong	16531 Feb 05 14:27	2° $\approx$ 01'35	5°06'40
max. Earth dist.	16525 Jan 25 07:51	23° $\approx$ 26'10	40.60189 AU	morning rise	16531 Feb 20 14:21	2° $\approx$ 27'31	
				retrograde	16531 May 20 06:07	3° $\approx$ 57'09	
conjunction	16525 Jan 27 09:33	23° $\approx$ 29'37	2°51'50	opposition	16531 Aug 08 23:38	2° $\approx$ 47'12	5°34'58



min. Earth dist.	16531 Aug 10 23:41	2° <del>✕</del> 44'27	36.98511 AU	morning rise	16538 Mar 02 06:34	13° <del>✕</del> 23'53	
direct	16531 Oct 28 08:20	1° <del>✕</del> 36'56		retrograde	16538 May 31 16:34	15° <del>✕</del> 01'55	
evening set	16532 Jan 23 13:31	3° <del>✕</del> 05'29		opposition	16538 Aug 19 16:44	13° <del>✕</del> 49'12	8°25'47
max. Earth dist.	16532 Feb 05 04:40	3° <del>✕</del> 27'27	38.85219 AU	min. Earth dist.	16538 Aug 21 20:21	13° <del>✕</del> 46'07	35.20321 AU
				direct	16538 Nov 07 16:12	12° <del>✕</del> 35'58	
conjunction	16532 Feb 07 09:20	3° <del>✕</del> 31'18	5°29'08	evening set	16539 Feb 05 02:28	14° <del>✕</del> 13'27	
minimum elong	16532 Feb 07 09:12	3° <del>✕</del> 31'18	5°29'27	max. Earth dist.	16539 Feb 16 04:34	14° <del>✕</del> 33'56	37.05604 AU
morning rise	16532 Feb 22 05:42	3° <del>✕</del> 57'12					
retrograde	16532 May 21 04:27	5° <del>✕</del> 27'53		conjunction	16539 Feb 18 12:57	14° <del>✕</del> 38'19	8°10'06
opposition	16532 Aug 09 17:22	4° <del>✕</del> 17'35	5°59'10	minimum elong	16539 Feb 18 12:45	14° <del>✕</del> 38'18	8°10'20
min. Earth dist.	16532 Aug 11 17:30	4° <del>✕</del> 14'49	36.73434 AU	morning rise	16539 Mar 03 23:28	15° <del>✕</del> 03'13	
direct	16532 Oct 29 01:52	3° <del>✕</del> 06'57		retrograde	16539 Jun 02 18:52	16° <del>✕</del> 42'38	
evening set	16533 Jan 24 12:37	4° <del>✕</del> 36'39		opposition	16539 Aug 21 14:33	15° <del>✕</del> 29'30	8°50'12
max. Earth dist.	16533 Feb 05 22:39	4° <del>✕</del> 58'25	38.59919 AU	min. Earth dist.	16539 Aug 23 17:25	15° <del>✕</del> 26'26	34.94833 AU
				direct	16539 Nov 09 14:15	14° <del>✕</del> 15'49	
conjunction	16533 Feb 08 04:42	5° <del>✕</del> 02'25	5°52'02	evening set	16540 Feb 07 08:18	15° <del>✕</del> 54'49	
minimum elong	16533 Feb 08 04:34	5° <del>✕</del> 02'24	5°52'21	max. Earth dist.	16540 Feb 18 03:15	16° <del>✕</del> 14'57	36.79980 AU
morning rise	16533 Feb 22 21:17	5° <del>✕</del> 28'14					
retrograde	16533 May 23 02:04	7° <del>✕</del> 00'03		conjunction	16540 Feb 20 12:28	16° <del>✕</del> 19'25	8°32'58
opposition	16533 Aug 11 11:59	5° <del>✕</del> 49'23	6°23'29	minimum elong	16540 Feb 20 12:16	16° <del>✕</del> 19'25	8°33'09
min. Earth dist.	16533 Aug 13 13:41	5° <del>✕</del> 46'31	36.48196 AU	morning rise	16540 Mar 04 16:40	16° <del>✕</del> 44'04	
direct	16533 Oct 30 19:33	4° <del>✕</del> 38'21		retrograde	16540 Jun 03 19:34	18° <del>✕</del> 24'58	
evening set	16534 Jan 26 12:27	6° <del>✕</del> 09'13		opposition	16540 Aug 22 13:02	17° <del>✕</del> 11'24	9°14'30
max. Earth dist.	16534 Feb 07 18:42	6° <del>✕</del> 30'54	38.34452 AU	min. Earth dist.	16540 Aug 24 16:51	17° <del>✕</del> 08'16	34.69523 AU
				direct	16540 Nov 10 11:11	15° <del>✕</del> 57'17	
conjunction	16534 Feb 10 00:35	6° <del>✕</del> 34'55	6°15'00	evening set	16541 Feb 08 15:08	17° <del>✕</del> 37'52	
minimum elong	16534 Feb 10 00:26	6° <del>✕</del> 34'54	6°15'17	max. Earth dist.	16541 Feb 19 04:32	17° <del>✕</del> 57'44	36.54567 AU
morning rise	16534 Feb 24 12:58	7° <del>✕</del> 00'39					
retrograde	16534 May 24 21:42	8° <del>✕</del> 33'36		conjunction	16541 Feb 21 12:40	18° <del>✕</del> 02'10	8°55'42
opposition	16534 Aug 13 07:02	7° <del>✕</del> 22'34	6°47'52	minimum elong	16541 Feb 21 12:27	18° <del>✕</del> 02'09	8°55'53
min. Earth dist.	16534 Aug 15 08:18	7° <del>✕</del> 19'42	36.22790 AU	morning rise	16541 Mar 06 09:59	18° <del>✕</del> 26'30	
direct	16534 Nov 01 14:43	6° <del>✕</del> 11'08		retrograde	16541 Jun 05 19:34	20° <del>✕</del> 08'57	
evening set	16535 Jan 28 13:28	7° <del>✕</del> 43'12		opposition	16541 Aug 24 12:12	18° <del>✕</del> 55'00	9°38'40
max. Earth dist.	16535 Feb 09 13:24	8° <del>✕</del> 04'36	38.08811 AU	min. Earth dist.	16541 Aug 26 14:49	18° <del>✕</del> 51'54	34.44447 AU
				direct	16541 Nov 12 09:53	17° <del>✕</del> 40'28	
conjunction	16535 Feb 11 21:06	8° <del>✕</del> 08'47	6°38'01	evening set	16542 Feb 10 23:03	19° <del>✕</del> 22'41	
minimum elong	16535 Feb 11 20:56	8° <del>✕</del> 08'46	6°38'19	max. Earth dist.	16542 Feb 21 04:18	19° <del>✕</del> 42'06	36.29398 AU
morning rise	16535 Feb 26 05:11	8° <del>✕</del> 34'26					
retrograde	16535 May 26 18:56	10° <del>✕</del> 08'34		conjunction	16542 Feb 23 13:20	19° <del>✕</del> 46'39	9°18'15
opposition	16535 Aug 15 02:35	8° <del>✕</del> 57'07	7°12'19	minimum elong	16542 Feb 23 13:08	19° <del>✕</del> 46'38	9°18'24
min. Earth dist.	16535 Aug 17 05:20	8° <del>✕</del> 54'09	35.97243 AU	morning rise	16542 Mar 08 03:38	20° <del>✕</del> 10'39	
direct	16535 Nov 03 07:36	7° <del>✕</del> 45'15		retrograde	16542 Jun 07 21:53	21° <del>✕</del> 54'44	
evening set	16536 Jan 30 15:17	9° <del>✕</del> 18'35		opposition	16542 Aug 26 12:09	20° <del>✕</del> 40'23	10°02'38
max. Earth dist.	16536 Feb 11 10:58	9° <del>✕</del> 39'51	37.83037 AU	min. Earth dist.	16542 Aug 28 15:17	20° <del>✕</del> 37'14	34.19635 AU
				direct	16542 Nov 14 05:49	19° <del>✕</del> 25'26	
conjunction	16536 Feb 13 18:20	9° <del>✕</del> 44'02	7°01'04	evening set	16543 Feb 13 08:11	21° <del>✕</del> 09'22	
minimum elong	16536 Feb 13 18:11	9° <del>✕</del> 44'02	7°01'20	max. Earth dist.	16543 Feb 23 07:08	21° <del>✕</del> 28'28	36.04475 AU
morning rise	16536 Feb 27 21:27	10° <del>✕</del> 09'32					
retrograde	16536 May 27 16:10	11° <del>✕</del> 44'55		conjunction	16543 Feb 25 15:05	21° <del>✕</del> 32'59	9°40'35
opposition	16536 Aug 15 22:45	10° <del>✕</del> 33'03	7°36'49	minimum elong	16543 Feb 25 14:51	21° <del>✕</del> 32'58	9°40'44
min. Earth dist.	16536 Aug 18 01:28	10° <del>✕</del> 30'04	35.71595 AU	morning rise	16543 Mar 09 21:37	21° <del>✕</del> 56'36	
direct	16536 Nov 04 01:56	9° <del>✕</del> 20'45		retrograde	16543 Jun 10 00:05	23° <del>✕</del> 42'23	
evening set	16537 Jan 31 18:05	10° <del>✕</del> 55'24		opposition	16543 Aug 28 12:38	22° <del>✕</del> 27'39	10°26'23
max. Earth dist.	16537 Feb 12 07:21	11° <del>✕</del> 16'22	37.57198 AU	min. Earth dist.	16543 Aug 30 15:21	22° <del>✕</del> 24'31	33.95059 AU
				direct	16543 Nov 16 03:37	21° <del>✕</del> 12'17	
conjunction	16537 Feb 14 15:51	11° <del>✕</del> 20'41	7°24'07	evening set	16544 Feb 15 18:47	22° <del>✕</del> 58'03	
minimum elong	16537 Feb 14 15:40	11° <del>✕</del> 20'40	7°24'23	max. Earth dist.	16544 Feb 25 08:57	23° <del>✕</del> 16'38	35.79779 AU
morning rise	16537 Feb 28 13:56	11° <del>✕</del> 46'00					
retrograde	16537 May 29 16:37	13° <del>✕</del> 22'41		conjunction	16544 Feb 27 17:30	23° <del>✕</del> 21'14	10°02'41
opposition	16537 Aug 17 19:25	12° <del>✕</del> 10'24	8°01'19	minimum elong	16544 Feb 27 17:17	23° <del>✕</del> 21'13	10°02'49
min. Earth dist.	16537 Aug 19 22:31	12° <del>✕</del> 07'22	35.45935 AU	morning rise	16544 Mar 10 16:05	23° <del>✕</del> 44'26	
direct	16537 Nov 05 19:27	10° <del>✕</del> 57'38		retrograde	16544 Jun 11 05:40	25° <del>✕</del> 31'58	
evening set	16538 Feb 02 21:44	12° <del>✕</del> 33'40		opposition	16544 Aug 29 13:56	24° <del>✕</del> 16'52	10°49'52
max. Earth dist.	16538 Feb 14 05:30	12° <del>✕</del> 54'24	37.31356 AU	min. Earth dist.	16544 Aug 31 16:42	24° <del>✕</del> 13'42	33.70697 AU
				direct	16544 Nov 17 01:57	23° <del>✕</del> 01'05	
conjunction	16538 Feb 16 14:09	12° <del>✕</del> 58'45	7°47'08	evening set	16545 Feb 17 06:21	24° <del>✕</del> 48'43	
minimum elong	16538 Feb 16 13:58	12° <del>✕</del> 58'44	7°47'22	max. Earth dist.	16545 Feb 26 12:10	25° <del>✕</del> 06'48	35.55243 AU

conjunction	16545 Feb 28 20:42	25° $\mathbf{\text{X}}$ 11'27	10°24'30	opposition	16551 Sep 12 20:21	7° $\mathbf{\text{Y}}$ 54'31	13°23'17
minimum elong	16545 Feb 28 20:27	25° $\mathbf{\text{X}}$ 11'25	10°24'37	min. Earth dist.	16551 Sep 14 22:19	7° $\mathbf{\text{Y}}$ 51'15	32.05639 AU
morning rise	16545 Mar 12 10:40	25° $\mathbf{\text{X}}$ 34'10		direct	16551 Nov 30 23:23	6° $\mathbf{\text{Y}}$ 35'28	
retrograde	16545 Jun 13 10:56	27° $\mathbf{\text{X}}$ 23'33		evening set	16552 Mar 06 04:59	8° $\mathbf{\text{Y}}$ 37'57	
opposition	16545 Aug 31 16:08	26° $\mathbf{\text{X}}$ 08'02	11°13'04	max. Earth dist.	16552 Mar 12 10:21	8° $\mathbf{\text{Y}}$ 50'57	33.89362 AU
min. Earth dist.	16545 Sep 02 19:28	26° $\mathbf{\text{X}}$ 04'49	33.46484 AU				
direct	16545 Nov 19 02:43	24° $\mathbf{\text{X}}$ 51'50		conjunction	16552 Mar 14 17:24	8° $\mathbf{\text{Y}}$ 55'47	12°45'39
evening set	16546 Feb 19 19:29	26° $\mathbf{\text{X}}$ 41'24		minimum elong	16552 Mar 14 17:12	8° $\mathbf{\text{Y}}$ 55'45	12°45'37
max. Earth dist.	16546 Feb 28 16:22	26° $\mathbf{\text{X}}$ 58'56	35.30863 AU	morning rise	16552 Mar 23 05:16	9° $\mathbf{\text{Y}}$ 13'35	
				retrograde	16552 Jun 27 16:29	11° $\mathbf{\text{Y}}$ 17'17	
conjunction	16546 Mar 03 00:45	27° $\mathbf{\text{X}}$ 03'37	10°46'00	opposition	16552 Sep 14 03:51	9° $\mathbf{\text{Y}}$ 58'44	13°42'53
minimum elong	16546 Mar 03 00:32	27° $\mathbf{\text{X}}$ 03'35	10°46'05	min. Earth dist.	16552 Sep 16 05:22	9° $\mathbf{\text{Y}}$ 55'28	31.83469 AU
morning rise	16546 Mar 14 05:41	27° $\mathbf{\text{X}}$ 25'49		direct	16552 Dec 02 04:15	8° $\mathbf{\text{Y}}$ 39'13	
retrograde	16546 Jun 15 18:13	29° $\mathbf{\text{X}}$ 17'03		evening set	16553 Mar 09 03:14	10° $\mathbf{\text{Y}}$ 44'06	
opposition	16546 Sep 02 18:53	28° $\mathbf{\text{X}}$ 01'08	11°35'55	max. Earth dist.	16553 Mar 14 20:21	10° $\mathbf{\text{Y}}$ 56'10	33.67222 AU
min. Earth dist.	16546 Sep 04 21:28	27° $\mathbf{\text{X}}$ 57'57	33.22423 AU				
direct	16546 Nov 21 04:45	26° $\mathbf{\text{X}}$ 44'29		conjunction	16553 Mar 17 02:41	11° $\mathbf{\text{Y}}$ 00'58	13°03'26
evening set	16547 Feb 22 09:45	28° $\mathbf{\text{X}}$ 36'03		minimum elong	16553 Mar 17 02:27	11° $\mathbf{\text{Y}}$ 00'56	13°03'23
max. Earth dist.	16547 Mar 02 20:20	28° $\mathbf{\text{X}}$ 52'54	35.06616 AU	morning rise	16553 Mar 25 01:41	11° $\mathbf{\text{Y}}$ 17'48	
				retrograde	16553 Jun 30 04:10	13° $\mathbf{\text{Y}}$ 23'50	
conjunction	16547 Mar 05 05:37	28° $\mathbf{\text{X}}$ 57'41	11°07'09	opposition	16553 Sep 16 12:02	12° $\mathbf{\text{Y}}$ 04'52	14°01'40
minimum elong	16547 Mar 05 05:22	28° $\mathbf{\text{X}}$ 57'40	11°07'13	min. Earth dist.	16553 Sep 18 12:04	12° $\mathbf{\text{Y}}$ 01'41	31.61876 AU
morning rise	16547 Mar 16 01:08	29° $\mathbf{\text{X}}$ 19'19		direct	16553 Dec 04 11:15	10° $\mathbf{\text{Y}}$ 44'55	
	16547 Apr 06 10:45	0° $\mathbf{\text{Y}}$		evening set	16554 Mar 12 02:55	12° $\mathbf{\text{Y}}$ 52'17	
retrograde	16547 Jun 18 00:46	1° $\mathbf{\text{Y}}$ 12'29		max. Earth dist.	16554 Mar 17 07:22	13° $\mathbf{\text{Y}}$ 03'20	33.45673 AU
	16547 Sep 02 09:39	30° $\mathbf{\text{X}}$					
opposition	16547 Sep 04 22:37	29° $\mathbf{\text{X}}$ 56'08	11°58'24	conjunction	16554 Mar 19 13:01	13° $\mathbf{\text{Y}}$ 08'07	13°20'25
min. Earth dist.	16547 Sep 07 02:15	29° $\mathbf{\text{X}}$ 52'52	32.98513 AU	minimum elong	16554 Mar 19 12:49	13° $\mathbf{\text{Y}}$ 08'06	13°20'20
direct	16547 Nov 23 06:54	28° $\mathbf{\text{X}}$ 39'01		morning rise	16554 Mar 26 22:38	13° $\mathbf{\text{Y}}$ 23'55	
	16548 Feb 08 05:35	0° $\mathbf{\text{Y}}$		retrograde	16554 Jul 02 15:42	15° $\mathbf{\text{Y}}$ 32'21	
evening set	16548 Feb 25 01:26	0° $\mathbf{\text{Y}}$ 32'38		opposition	16554 Sep 18 21:06	14° $\mathbf{\text{Y}}$ 13'00	14°19'34
max. Earth dist.	16548 Mar 04 03:00	0° $\mathbf{\text{Y}}$ 48'53	34.82548 AU	min. Earth dist.	16554 Sep 20 21:02	14° $\mathbf{\text{Y}}$ 09'49	31.40893 AU
				direct	16554 Dec 06 18:53	12° $\mathbf{\text{Y}}$ 52'38	
conjunction	16548 Mar 06 11:19	0° $\mathbf{\text{Y}}$ 53'38	11°27'54	evening set	16555 Mar 15 04:16	15° $\mathbf{\text{Y}}$ 02'36	
minimum elong	16548 Mar 06 11:06	0° $\mathbf{\text{Y}}$ 53'37	11°27'56	max. Earth dist.	16555 Mar 19 20:07	15° $\mathbf{\text{Y}}$ 12'38	33.24771 AU
morning rise	16548 Mar 16 20:40	1° $\mathbf{\text{Y}}$ 14'37					
retrograde	16548 Jun 19 08:37	3° $\mathbf{\text{Y}}$ 09'45		conjunction	16555 Mar 22 00:11	15° $\mathbf{\text{Y}}$ 17'18	13°36'31
opposition	16548 Sep 06 02:51	1° $\mathbf{\text{Y}}$ 52'59	12°20'27	minimum elong	16555 Mar 21 23:57	15° $\mathbf{\text{Y}}$ 17'17	13°36'25
min. Earth dist.	16548 Sep 08 05:28	1° $\mathbf{\text{Y}}$ 49'45	32.74807 AU	morning rise	16555 Mar 28 19:36	15° $\mathbf{\text{Y}}$ 31'59	
direct	16548 Nov 24 12:01	0° $\mathbf{\text{Y}}$ 35'23		retrograde	16555 Jul 05 05:26	17° $\mathbf{\text{Y}}$ 42'54	
evening set	16549 Feb 26 18:20	2° $\mathbf{\text{Y}}$ 31'07		opposition	16555 Sep 21 06:52	16° $\mathbf{\text{Y}}$ 23'13	14°36'31
max. Earth dist.	16549 Mar 06 08:17	2° $\mathbf{\text{Y}}$ 46'32	34.58714 AU	min. Earth dist.	16555 Sep 23 04:53	16° $\mathbf{\text{Y}}$ 20'08	31.20537 AU
				direct	16555 Dec 09 04:47	15° $\mathbf{\text{Y}}$ 02'28	
conjunction	16549 Mar 08 17:38	2° $\mathbf{\text{Y}}$ 51'25	11°48'11	evening set	16556 Mar 17 07:02	17° $\mathbf{\text{Y}}$ 15'07	
minimum elong	16549 Mar 08 17:23	2° $\mathbf{\text{Y}}$ 51'24	11°48'13	max. Earth dist.	16556 Mar 21 08:13	17° $\mathbf{\text{Y}}$ 23'55	33.04484 AU
morning rise	16549 Mar 18 16:34	3° $\mathbf{\text{Y}}$ 11'42					
retrograde	16549 Jun 21 16:35	5° $\mathbf{\text{Y}}$ 08'53		conjunction	16556 Mar 23 12:07	17° $\mathbf{\text{Y}}$ 28'37	13°51'41
opposition	16549 Sep 08 08:00	3° $\mathbf{\text{Y}}$ 51'40	12°41'59	minimum elong	16556 Mar 23 11:56	17° $\mathbf{\text{Y}}$ 28'36	13°51'34
min. Earth dist.	16549 Sep 10 11:15	3° $\mathbf{\text{Y}}$ 48'22	32.51383 AU	morning rise	16556 Mar 29 16:49	17° $\mathbf{\text{Y}}$ 42'04	
direct	16549 Nov 26 14:35	2° $\mathbf{\text{Y}}$ 33'35		retrograde	16556 Jul 06 19:07	19° $\mathbf{\text{Y}}$ 55'35	
evening set	16550 Mar 01 12:25	4° $\mathbf{\text{Y}}$ 31'29		opposition	16556 Sep 22 17:34	18° $\mathbf{\text{Y}}$ 35'33	14°52'27
max. Earth dist.	16550 Mar 08 16:48	4° $\mathbf{\text{Y}}$ 46'13	34.35189 AU	min. Earth dist.	16556 Sep 24 15:48	18° $\mathbf{\text{Y}}$ 32'27	31.00784 AU
				direct	16556 Dec 10 12:54	17° $\mathbf{\text{Y}}$ 14'28	
conjunction	16550 Mar 11 00:44	4° $\mathbf{\text{Y}}$ 51'02	12°07'57	evening set	16557 Mar 20 11:39	19° $\mathbf{\text{Y}}$ 29'52	
minimum elong	16550 Mar 11 00:31	4° $\mathbf{\text{Y}}$ 51'01	12°07'57	max. Earth dist.	16557 Mar 23 23:06	19° $\mathbf{\text{Y}}$ 37'29	32.84801 AU
morning rise	16550 Mar 20 12:28	5° $\mathbf{\text{Y}}$ 10'33					
retrograde	16550 Jun 23 22:44	7° $\mathbf{\text{Y}}$ 09'51		conjunction	16557 Mar 26 01:01	19° $\mathbf{\text{Y}}$ 42'03	14°05'52
opposition	16550 Sep 10 13:52	5° $\mathbf{\text{Y}}$ 52'10	13°02'58	minimum elong	16557 Mar 26 00:49	19° $\mathbf{\text{Y}}$ 42'02	14°05'43
min. Earth dist.	16550 Sep 12 16:10	5° $\mathbf{\text{Y}}$ 48'54	32.28295 AU	morning rise	16557 Mar 31 13:55	19° $\mathbf{\text{Y}}$ 54'12	
direct	16550 Nov 28 19:50	4° $\mathbf{\text{Y}}$ 33'37		retrograde	16557 Jul 09 10:16	22° $\mathbf{\text{Y}}$ 10'21	
evening set	16551 Mar 04 08:04	6° $\mathbf{\text{Y}}$ 33'45		opposition	16557 Sep 25 05:01	20° $\mathbf{\text{Y}}$ 50'02	15°07'18
max. Earth dist.	16551 Mar 11 00:18	6° $\mathbf{\text{Y}}$ 47'35	34.12050 AU	min. Earth dist.	16557 Sep 27 01:41	20° $\mathbf{\text{Y}}$ 47'00	30.81601 AU
				direct	16557 Dec 13 00:19	19° $\mathbf{\text{Y}}$ 28'35	
conjunction	16551 Mar 13 08:36	6° $\mathbf{\text{Y}}$ 52'29	12°27'08	evening set	16558 Mar 23 17:57	21° $\mathbf{\text{Y}}$ 46'51	
minimum elong	16551 Mar 13 08:21	6° $\mathbf{\text{Y}}$ 52'27	12°27'07	max. Earth dist.	16558 Mar 26 12:22	21° $\mathbf{\text{Y}}$ 52'58	32.65686 AU
morning rise	16551 Mar 22 08:46	7° $\mathbf{\text{Y}}$ 11'11					
retrograde	16551 Jun 26 07:50	9° $\mathbf{\text{Y}}$ 12'38		conjunction	16558 Mar 28 14:34	21° $\mathbf{\text{Y}}$ 57'36	14°19'00

minimum elong	16558 Mar 28 14:25	21° $\Upsilon$ 57'35	14°18'49	conjunction	16565 Apr 14 10:39	8° $\mathcal{B}$ 37'00	15°16'19
morning rise	16558 Apr 02 10:54	22° $\Upsilon$ 08'19		minimum elong	16565 Apr 14 10:37	8° $\mathcal{B}$ 37'00	15°15'59
retrograde	16558 Jul 12 01:49	24° $\Upsilon$ 27'13		retrograde	16565 Jul 28 22:18	11° $\mathcal{B}$ 14'09	
opposition	16558 Sep 27 17:22	23° $\Upsilon$ 06'34	15°21'01	opposition	16565 Oct 14 03:23	9° $\mathcal{B}$ 51'25	16°19'08
min. Earth dist.	16558 Sep 29 13:56	23° $\Upsilon$ 03'32	30.62971 AU	min. Earth dist.	16565 Oct 15 15:34	9° $\mathcal{B}$ 48'53	29.50954 AU
direct	16558 Dec 15 09:58	21° $\Upsilon$ 44'46		direct	16565 Dec 31 12:56	8° $\mathcal{B}$ 27'16	
evening set	16559 Mar 27 02:43	24° $\Upsilon$ 06'01		max. Earth dist.	16566 Apr 15 15:43	11° $\mathcal{B}$ 02'03	31.36995 AU
max. Earth dist.	16559 Mar 29 04:53	24° $\Upsilon$ 10'41	32.47127 AU				
conjunction	16559 Mar 31 05:17	24° $\Upsilon$ 15'11	14°31'02	conjunction	16566 Apr 17 05:33	11° $\mathcal{B}$ 05'43	15°18'42
minimum elong	16559 Mar 31 05:07	24° $\Upsilon$ 15'10	14°30'50	minimum elong	16566 Apr 17 05:35	11° $\mathcal{B}$ 05'43	15°18'20
morning rise	16559 Apr 04 07:29	24° $\Upsilon$ 24'18		retrograde	16566 Jul 31 18:13	13° $\mathcal{B}$ 43'41	
retrograde	16559 Jul 14 15:49	26° $\Upsilon$ 46'02		opposition	16566 Oct 16 20:57	12° $\mathcal{B}$ 20'44	16°21'05
opposition	16559 Sep 30 06:25	25° $\Upsilon$ 25'05	15°33'33	min. Earth dist.	16566 Oct 18 06:19	12° $\mathcal{B}$ 18'23	29.38390 AU
min. Earth dist.	16559 Oct 02 01:53	25° $\Upsilon$ 22'07	30.44882 AU	direct	16567 Jan 03 08:25	10° $\mathcal{B}$ 56'21	
direct	16559 Dec 17 22:23	24° $\Upsilon$ 02'56		max. Earth dist.	16567 Apr 18 12:16	13° $\mathcal{B}$ 32'07	31.24928 AU
evening set	16560 Mar 29 14:14	26° $\Upsilon$ 27'20		conjunction	16567 Apr 20 00:59	13° $\mathcal{B}$ 35'42	15°19'26
max. Earth dist.	16560 Mar 30 20:13	26° $\Upsilon$ 30'08	32.29156 AU	minimum elong	16567 Apr 20 01:01	13° $\mathcal{B}$ 35'42	15°19'04
conjunction	16560 Apr 01 20:33	26° $\Upsilon$ 34'40	14°41'54		16567 May 27 20:13	15° $\mathcal{B}$	
minimum elong	16560 Apr 01 20:26	26° $\Upsilon$ 34'40	14°41'41	retrograde	16567 Aug 03 13:44	16° $\mathcal{B}$ 14'25	
morning rise	16560 Apr 05 02:38	26° $\Upsilon$ 41'59			16567 Oct 14 11:08	15° $\mathcal{B}$	
retrograde	16560 Jul 16 08:26	29° $\Upsilon$ 06'44		opposition	16567 Oct 19 15:02	14° $\mathcal{B}$ 51'17	16°21'13
opposition	16560 Oct 01 20:16	27° $\Upsilon$ 45'28	15°44'47	min. Earth dist.	16567 Oct 20 23:17	14° $\mathcal{B}$ 49'00	29.26869 AU
min. Earth dist.	16560 Oct 03 14:46	27° $\Upsilon$ 42'33	30.27392 AU	direct	16568 Jan 06 01:28	13° $\mathcal{B}$ 26'42	
direct	16560 Dec 19 09:59	26° $\Upsilon$ 22'57			16568 Mar 23 13:44	15° $\mathcal{B}$	
evening set	16561 Apr 02 06:20	28° $\Upsilon$ 50'52		max. Earth dist.	16568 Apr 20 11:32	16° $\mathcal{B}$ 03'35	31.13935 AU
max. Earth dist.	16561 Apr 02 13:59	28° $\Upsilon$ 51'35	32.11809 AU	conjunction	16568 Apr 21 20:57	16° $\mathcal{B}$ 06'52	15°18'30
conjunction	16561 Apr 04 12:30	28° $\Upsilon$ 55'58	14°51'33	minimum elong	16568 Apr 21 21:03	16° $\mathcal{B}$ 06'53	15°18'06
minimum elong	16561 Apr 04 12:23	28° $\Upsilon$ 55'57	14°51'19	retrograde	16568 Aug 05 10:08	18° $\mathcal{B}$ 46'15	
morning rise	16561 Apr 06 18:25	29° $\Upsilon$ 01'04		opposition	16568 Oct 21 09:40	17° $\mathcal{B}$ 23'00	16°19'33
	16561 May 03 15:21	0° $\mathcal{B}$		min. Earth dist.	16568 Oct 22 15:27	17° $\mathcal{B}$ 20'53	29.16374 AU
retrograde	16561 Jul 18 23:52	1° $\mathcal{B}$ 29'11		direct	16569 Jan 07 20:42	15° $\mathcal{B}$ 58'16	
opposition	16561 Oct 04 10:56	0° $\mathcal{B}$ 07'36	15°54'41	max. Earth dist.	16569 Apr 23 08:40	18° $\mathcal{B}$ 35'58	31.03988 AU
min. Earth dist.	16561 Oct 06 04:48	0° $\mathcal{B}$ 04'43	30.10533 AU	conjunction	16569 Apr 24 17:04	18° $\mathcal{B}$ 39'10	15°15'51
	16561 Oct 09 01:06	30° $\mathcal{R}\Upsilon$		minimum elong	16569 Apr 24 17:10	18° $\mathcal{B}$ 39'10	15°15'27
direct	16561 Dec 21 22:11	28° $\Upsilon$ 44'44		retrograde	16569 Aug 08 07:55	21° $\mathcal{B}$ 19'09	
	16562 Mar 01 20:00	0° $\mathcal{B}$		opposition	16569 Oct 24 04:45	19° $\mathcal{B}$ 55'47	16°16'02
max. Earth dist.	16562 Apr 05 07:33	1° $\mathcal{B}$ 14'38	31.95166 AU	min. Earth dist.	16569 Oct 25 08:55	19° $\mathcal{B}$ 53'47	29.06889 AU
evening set	16562 Apr 06 17:41	1° $\mathcal{B}$ 17'52		direct	16570 Jan 10 15:05	18° $\mathcal{B}$ 30'55	
conjunction	16562 Apr 07 05:08	1° $\mathcal{B}$ 18'58	14°59'53	max. Earth dist.	16570 Apr 26 08:40	21° $\mathcal{B}$ 09'34	30.95046 AU
minimum elong	16562 Apr 07 05:03	1° $\mathcal{B}$ 18'57	14°59'37	conjunction	16570 Apr 27 13:54	21° $\mathcal{B}$ 12'27	15°11'30
evening rise	16562 Apr 07 16:27	1° $\mathcal{B}$ 20'02		minimum elong	16570 Apr 27 14:03	21° $\mathcal{B}$ 12'28	15°11'04
retrograde	16562 Jul 21 17:00	3° $\mathcal{B}$ 53'16		retrograde	16570 Aug 11 02:54	23° $\mathcal{B}$ 52'56	
opposition	16562 Oct 07 01:58	2° $\mathcal{B}$ 31'22	16°03'09	opposition	16570 Oct 27 00:08	22° $\mathcal{B}$ 29'29	16°10'40
min. Earth dist.	16562 Oct 08 18:02	2° $\mathcal{B}$ 28'35	29.94393 AU	min. Earth dist.	16570 Oct 28 02:41	22° $\mathcal{B}$ 27'36	28.98355 AU
direct	16562 Dec 24 13:04	1° $\mathcal{B}$ 08'09		direct	16571 Jan 13 10:41	21° $\mathcal{B}$ 04'31	
max. Earth dist.	16563 Apr 08 02:21	3° $\mathcal{B}$ 39'19	31.79274 AU	max. Earth dist.	16571 Apr 29 06:41	23° $\mathcal{B}$ 43'46	30.87085 AU
conjunction	16563 Apr 09 22:30	3° $\mathcal{B}$ 43'32	15°06'50	conjunction	16571 Apr 30 10:56	23° $\mathcal{B}$ 46'34	15°05'27
minimum elong	16563 Apr 09 22:25	3° $\mathcal{B}$ 43'32	15°06'33	minimum elong	16571 Apr 30 11:06	23° $\mathcal{B}$ 46'35	15°05'00
retrograde	16563 Jul 24 09:16	6° $\mathcal{B}$ 18'51		retrograde	16571 Aug 14 00:28	26° $\mathcal{B}$ 27'26	
opposition	16563 Oct 09 17:55	4° $\mathcal{B}$ 56'39	16°10'06	opposition	16571 Oct 29 19:56	25° $\mathcal{B}$ 03'55	16°03'27
min. Earth dist.	16563 Oct 11 09:30	4° $\mathcal{B}$ 53'54	29.79023 AU	min. Earth dist.	16571 Oct 30 20:22	25° $\mathcal{B}$ 02'11	28.90775 AU
direct	16563 Dec 27 04:16	3° $\mathcal{B}$ 33'06		direct	16572 Jan 16 06:21	23° $\mathcal{B}$ 38'50	
max. Earth dist.	16564 Apr 09 22:08	6° $\mathcal{B}$ 05'32	31.64232 AU	evening set	16572 May 01 01:44	26° $\mathcal{B}$ 18'18	
conjunction	16564 Apr 11 16:17	6° $\mathcal{B}$ 09'35	15°12'20	max. Earth dist.	16572 May 01 06:53	26° $\mathcal{B}$ 18'49	30.80086 AU
minimum elong	16564 Apr 11 16:15	6° $\mathcal{B}$ 09'35	15°12'01	conjunction	16572 May 02 08:12	26° $\mathcal{B}$ 21'19	14°57'40
retrograde	16564 Jul 26 04:04	8° $\mathcal{B}$ 45'51		minimum elong	16572 May 02 08:24	26° $\mathcal{B}$ 21'21	14°57'12
opposition	16564 Oct 11 10:16	7° $\mathcal{B}$ 23'22	16°15'27	morning rise	16572 May 03 15:03	26° $\mathcal{B}$ 24'23	
min. Earth dist.	16564 Oct 12 23:13	7° $\mathcal{B}$ 20'47	29.64516 AU	retrograde	16572 Aug 15 19:55	29° $\mathcal{B}$ 02'28	
direct	16564 Dec 28 21:12	5° $\mathcal{B}$ 59'30		opposition	16572 Oct 31 16:05	27° $\mathcal{B}$ 38'53	15°54'24
max. Earth dist.	16565 Apr 12 17:52	8° $\mathcal{B}$ 33'03	31.50106 AU	min. Earth dist.	16572 Nov 01 15:17	27° $\mathcal{B}$ 37'14	28.84130 AU
				direct	16573 Jan 18 01:55	26° $\mathcal{B}$ 13'44	

evening set	16573 May 02 13:51	28° <b>8</b> 50'10		max. Earth dist.	16579 May 21 04:44	14° <b>II</b> 26'07	30.60705 AU
max. Earth dist.	16573 May 04 05:38	28° <b>8</b> 54'08	30.74080 AU	morning rise	16579 May 29 01:25	14° <b>II</b> 44'51	
				retrograde	16579 Sep 03 13:11	17° <b>II</b> 07'12	
conjunction	16573 May 05 05:32	28° <b>8</b> 56'31	14°48'11	opposition	16579 Nov 19 13:40	15° <b>II</b> 43'45	14°00'05
minimum elong	16573 May 05 05:45	28° <b>8</b> 56'32	14°47'43	min. Earth dist.	16579 Nov 19 20:31	15° <b>II</b> 43'16	28.67089 AU
morning rise	16573 May 07 21:40	29° <b>8</b> 02'54		direct	16580 Feb 06 07:15	14° <b>II</b> 18'39	
	16573 Jun 01 12:10	0° <b>II</b>		evening set	16580 May 15 04:58	16° <b>II</b> 41'14	
retrograde	16573 Aug 18 16:50	1° <b>II</b> 37'50					
opposition	16573 Nov 03 12:13	0° <b>II</b> 14'12	15°43'29	conjunction	16580 May 23 09:07	17° <b>II</b> 00'39	12°55'00
min. Earth dist.	16573 Nov 04 08:39	0° <b>II</b> 12'44	28.78461 AU	minimum elong	16580 May 23 09:27	17° <b>II</b> 00'41	12°54'25
	16573 Nov 11 20:52	30° <b>R</b> 8		max. Earth dist.	16580 May 23 02:50	17° <b>II</b> 00'01	30.62685 AU
direct	16574 Jan 20 22:30	28° <b>8</b> 48'58		morning rise	16580 May 31 13:35	17° <b>II</b> 20'05	
	16574 Mar 28 06:01	0° <b>II</b>		retrograde	16580 Sep 05 09:49	19° <b>II</b> 40'29	
evening set	16574 May 04 11:10	1° <b>II</b> 23'11		opposition	16580 Nov 21 09:27	18° <b>II</b> 17'11	13°36'50
max. Earth dist.	16574 May 07 05:43	1° <b>II</b> 29'49	30.69073 AU	min. Earth dist.	16580 Nov 21 13:47	18° <b>II</b> 16'52	28.69388 AU
				direct	16581 Feb 08 04:17	16° <b>II</b> 52'14	
conjunction	16574 May 08 03:05	1° <b>II</b> 31'57	14°37'00	evening set	16581 May 17 09:59	19° <b>II</b> 12'56	
minimum elong	16574 May 08 03:19	1° <b>II</b> 31'58	14°36'29				
morning rise	16574 May 11 19:24	1° <b>II</b> 40'45		conjunction	16581 May 26 05:20	19° <b>II</b> 33'47	12°32'33
retrograde	16574 Aug 21 11:16	4° <b>II</b> 13'20		minimum elong	16581 May 26 05:42	19° <b>II</b> 33'49	12°31'59
opposition	16574 Nov 06 08:39	2° <b>II</b> 49'40	15°30'44	max. Earth dist.	16581 May 26 02:53	19° <b>II</b> 33'32	30.65893 AU
min. Earth dist.	16574 Nov 07 04:03	2° <b>II</b> 48'17	28.73782 AU	morning rise	16581 Jun 04 00:47	19° <b>II</b> 54'39	
direct	16575 Jan 23 19:14	1° <b>II</b> 24'23		retrograde	16581 Sep 08 03:36	22° <b>II</b> 13'04	
evening set	16575 May 06 11:41	3° <b>II</b> 56'36		opposition	16581 Nov 24 04:54	20° <b>II</b> 49'58	13°12'04
max. Earth dist.	16575 May 10 05:18	4° <b>II</b> 05'31	30.65113 AU	min. Earth dist.	16581 Nov 24 07:10	20° <b>II</b> 49'49	28.72860 AU
				direct	16582 Feb 11 02:01	19° <b>II</b> 25'14	
conjunction	16575 May 11 00:32	4° <b>II</b> 07'27	14°24'06	evening set	16582 May 19 15:22	21° <b>II</b> 44'01	
minimum elong	16575 May 11 00:49	4° <b>II</b> 07'28	14°23'36				
morning rise	16575 May 15 13:51	4° <b>II</b> 18'20		conjunction	16582 May 29 01:05	22° <b>II</b> 06'13	12°08'44
retrograde	16575 Aug 24 08:08	6° <b>II</b> 48'47		minimum elong	16582 May 29 01:27	22° <b>II</b> 06'15	12°08'08
opposition	16575 Nov 09 04:53	5° <b>II</b> 25'06	15°16'10	max. Earth dist.	16582 May 29 00:04	22° <b>II</b> 06'07	30.70258 AU
min. Earth dist.	16575 Nov 09 21:14	5° <b>II</b> 23'57	28.70140 AU	morning rise	16582 Jun 07 11:03	22° <b>II</b> 28'26	
direct	16576 Jan 26 17:15	3° <b>II</b> 59'47		retrograde	16582 Sep 10 23:05	24° <b>II</b> 44'54	
evening set	16576 May 07 13:38	6° <b>II</b> 30'04		opposition	16582 Nov 27 00:05	23° <b>II</b> 22'01	12°45'52
				min. Earth dist.	16582 Nov 26 23:33	23° <b>II</b> 22'03	28.77453 AU
conjunction	16576 May 12 21:55	6° <b>II</b> 42'50	14°09'32	direct	16583 Feb 13 22:19	21° <b>II</b> 57'29	
minimum elong	16576 May 12 22:13	6° <b>II</b> 42'51	14°09'00	evening set	16583 May 21 21:00	24° <b>II</b> 14'22	
max. Earth dist.	16576 May 12 05:02	6° <b>II</b> 41'09	30.62231 AU				
morning rise	16576 May 18 06:38	6° <b>II</b> 55'39		conjunction	16583 May 31 20:37	24° <b>II</b> 37'51	11°43'38
retrograde	16576 Aug 26 02:45	9° <b>II</b> 24'03		minimum elong	16583 May 31 21:00	24° <b>II</b> 37'53	11°43'03
opposition	16576 Nov 11 01:21	8° <b>II</b> 00'22	14°59'47	max. Earth dist.	16583 May 31 23:05	24° <b>II</b> 38'05	30.75702 AU
min. Earth dist.	16576 Nov 11 16:22	7° <b>II</b> 59'18	28.67598 AU	morning rise	16583 Jun 10 20:08	25° <b>II</b> 01'19	
direct	16577 Jan 28 13:11	6° <b>II</b> 35'02		retrograde	16583 Sep 13 16:26	27° <b>II</b> 15'50	
evening set	16577 May 09 16:34	9° <b>II</b> 03'23		opposition	16583 Nov 29 19:03	25° <b>II</b> 53'10	12°18'20
				min. Earth dist.	16583 Nov 29 17:07	25° <b>II</b> 53'18	28.83087 AU
conjunction	16577 May 15 19:00	9° <b>II</b> 17'56	13°53'18	direct	16584 Feb 16 18:53	24° <b>II</b> 28'52	
minimum elong	16577 May 15 19:19	9° <b>II</b> 17'58	13°52'46	evening set	16584 May 23 03:02	26° <b>II</b> 43'51	
max. Earth dist.	16577 May 15 05:14	9° <b>II</b> 16'34	30.60508 AU				
morning rise	16577 May 21 21:49	9° <b>II</b> 32'34		conjunction	16584 Jun 02 15:33	27° <b>II</b> 08'30	11°17'22
retrograde	16577 Aug 28 22:37	11° <b>II</b> 58'56		minimum elong	16584 Jun 02 15:55	27° <b>II</b> 08'32	11°16'46
opposition	16577 Nov 13 21:34	10° <b>II</b> 35'17	14°41'37	max. Earth dist.	16584 Jun 02 19:18	27° <b>II</b> 08'52	30.82182 AU
min. Earth dist.	16577 Nov 14 09:22	10° <b>II</b> 34'27	28.66206 AU	morning rise	16584 Jun 13 04:07	27° <b>II</b> 33'07	
direct	16578 Jan 31 12:31	9° <b>II</b> 09'59		retrograde	16584 Sep 15 10:40	29° <b>II</b> 45'42	
evening set	16578 May 11 20:11	11° <b>II</b> 36'24		opposition	16584 Dec 01 13:32	28° <b>II</b> 23'16	11°49'35
				min. Earth dist.	16584 Dec 01 08:29	28° <b>II</b> 23'38	28.89734 AU
conjunction	16578 May 18 15:59	11° <b>II</b> 52'40	13°35'26	direct	16585 Feb 18 14:58	26° <b>II</b> 59'12	
minimum elong	16578 May 18 16:18	11° <b>II</b> 52'42	13°34'53	evening set	16585 May 25 09:00	29° <b>II</b> 12'17	
max. Earth dist.	16578 May 18 04:17	11° <b>II</b> 51'30	30.59977 AU				
morning rise	16578 May 25 12:11	12° <b>II</b> 08'59		conjunction	16585 Jun 05 10:02	29° <b>II</b> 38'00	10°50'00
retrograde	16578 Aug 31 17:54	14° <b>II</b> 33'21		minimum elong	16585 Jun 05 10:25	29° <b>II</b> 38'03	10°49'24
opposition	16578 Nov 16 17:40	13° <b>II</b> 09'46	14°21'42	max. Earth dist.	16585 Jun 05 16:46	29° <b>II</b> 38'40	30.89641 AU
min. Earth dist.	16578 Nov 17 03:31	13° <b>II</b> 09'04	28.66033 AU		16585 Jun 14 20:20	0° <b>0</b>	
direct	16579 Feb 03 09:23	11° <b>II</b> 44'32		morning rise	16585 Jun 16 10:52	0° <b>0</b> 03'43	
evening set	16579 May 14 00:30	14° <b>II</b> 09'03		retrograde	16585 Sep 18 01:07	2° <b>0</b> 14'22	
				opposition	16585 Dec 04 07:44	0° <b>0</b> 52'11	11°19'42
conjunction	16579 May 21 12:50	14° <b>II</b> 26'55	13°15'59	min. Earth dist.	16585 Dec 04 01:42	0° <b>0</b> 52'36	28.97342 AU
minimum elong	16579 May 21 13:11	14° <b>II</b> 26'57	13°15'26		16586 Jan 07 03:51	30° <b>R</b> II	

direct	16586 Feb 21 10:13	29°12'28"20	morning rise	16592 Jul 05 20:59	16°05'53"24	
	16586 Apr 06 07:44	0°00'00"00	retrograde	16592 Oct 03 23:52	18°05'51"35	
evening set	16586 May 27 15:26	1°05'39"32	opposition	16592 Dec 20 22:29	17°05'31"11	7°27'05
			min. Earth dist.	16592 Dec 20 01:06	17°05'32"38	29.77458 AU
conjunction	16586 Jun 08 04:02	2°05'06"15 10°21'38	direct	16593 Mar 10 15:56	16°05'09"14	
minimum elong	16586 Jun 08 04:23	2°05'06"17 10°21'02	evening set	16593 Jun 10 11:42	18°05'08"11	
max. Earth dist.	16586 Jun 08 12:16	2°05'07"03 30.98058 AU				
morning rise	16586 Jun 19 16:27	2°05'32"56	conjunction	16593 Jun 24 14:43	18°05'39"30	6°42'21
retrograde	16586 Sep 20 17:29	4°05'41"41	minimum elong	16593 Jun 24 14:59	18°05'39"32	6°41'46
opposition	16586 Dec 07 01:09	3°05'19"43 10°48'48	max. Earth dist.	16593 Jun 25 14:34	18°05'41"43	31.83681 AU
min. Earth dist.	16586 Dec 06 16:10	3°05'20"21 29.05888 AU	morning rise	16593 Jul 08 17:01	19°05'10"45	
direct	16587 Feb 24 05:59	1°05'56"06	retrograde	16593 Oct 06 12:19	21°05'07"24	
evening set	16587 May 29 21:47	4°05'05"26	min. Earth dist.	16593 Dec 22 11:24	19°05'48"59	29.92852 AU
			opposition	16593 Dec 23 11:47	19°05'47"22	6°51'38
conjunction	16587 Jun 10 21:27	4°05'33"04 9°52'21	direct	16594 Mar 13 07:05	18°05'25"47	
minimum elong	16587 Jun 10 21:49	4°05'33"06 9°51'46	evening set	16594 Jun 12 17:55	20°05'23"12	
max. Earth dist.	16587 Jun 11 08:07	4°05'34"05 31.07395 AU				
morning rise	16587 Jun 22 20:46	5°05'00"39	conjunction	16594 Jun 27 03:19	20°05'54"53	6°09'06
retrograde	16587 Sep 23 07:20	7°05'07"31	minimum elong	16594 Jun 27 03:33	20°05'54"54	6°08'32
opposition	16587 Dec 09 18:20	5°05'45"47 10°16'57	max. Earth dist.	16594 Jun 28 06:12	20°05'57"22	31.99755 AU
min. Earth dist.	16587 Dec 09 08:10	5°05'46"29 29.15373 AU	morning rise	16594 Jul 11 11:37	21°05'26"29	
direct	16588 Feb 26 22:57	4°05'22"24	retrograde	16594 Oct 08 21:58	23°05'21"39	
evening set	16588 May 31 04:06	6°05'29"53	min. Earth dist.	16594 Dec 24 23:16	22°05'03"40	30.09108 AU
			opposition	16594 Dec 26 00:30	22°05'01"59	6°15'55
conjunction	16588 Jun 12 14:02	6°05'58"19 9°22'15	direct	16595 Mar 15 21:55	20°05'40"48	
minimum elong	16588 Jun 12 14:21	6°05'58"21 9°21'40	evening set	16595 Jun 15 00:16	22°05'36"46	
max. Earth dist.	16588 Jun 13 02:57	6°05'59"33 31.17673 AU				
morning rise	16588 Jun 24 23:28	7°05'26"43	conjunction	16595 Jun 29 15:06	23°05'08"44	5°35'39
retrograde	16588 Sep 24 20:46	9°05'31"45	minimum elong	16595 Jun 29 15:19	23°05'08"45	5°35'04
opposition	16588 Dec 11 10:47	8°05'10"15 9°44'17	max. Earth dist.	16595 Jun 30 18:55	23°05'11"17	32.16638 AU
min. Earth dist.	16588 Dec 10 21:48	8°05'11"08 29.25794 AU	morning rise	16595 Jul 14 05:00	23°05'40"36	
direct	16589 Feb 28 19:19	6°05'47"06	retrograde	16595 Oct 11 09:15	25°05'34"21	
evening set	16589 Jun 02 10:29	8°05'52"45	min. Earth dist.	16595 Dec 27 08:37	24°05'16"55	30.26146 AU
			opposition	16595 Dec 28 12:35	24°05'15"04	5°40'02
conjunction	16589 Jun 15 05:58	9°05'21"56 8°51'25	direct	16596 Mar 17 12:13	22°05'54"17	
minimum elong	16589 Jun 15 06:18	9°05'21"58 8°50'50	evening set	16596 Jun 16 06:19	24°05'48"49	
max. Earth dist.	16589 Jun 15 20:48	9°05'23"21 31.28886 AU				
morning rise	16589 Jun 28 01:01	9°05'51"04	conjunction	16596 Jul 01 02:09	25°05'21"01	5°02'03
retrograde	16589 Sep 27 10:08	11°05'54"17	minimum elong	16596 Jul 01 02:20	25°05'21"02	5°01'30
min. Earth dist.	16589 Dec 13 11:48	10°05'34"01 29.37197 AU	max. Earth dist.	16596 Jul 02 08:21	25°05'23"46	32.34230 AU
opposition	16589 Dec 14 02:33	10°05'33"01 9°10'52	morning rise	16596 Jul 15 20:52	25°05'53"06	
direct	16590 Mar 03 12:02	9°05'10"07	retrograde	16596 Oct 12 17:11	27°05'45"29	
evening set	16590 Jun 04 16:49	11°05'14"00	min. Earth dist.	16596 Dec 28 19:30	26°05'28"28	30.43887 AU
			opposition	16596 Dec 30 00:10	26°05'26"35	5°04'06
conjunction	16590 Jun 17 21:19	11°05'43"50 8°19'56	direct	16597 Mar 20 00:09	25°05'06"11	
minimum elong	16590 Jun 17 21:37	11°05'43"52 8°19'20	evening set	16597 Jun 18 12:30	26°05'59"22	
max. Earth dist.	16590 Jun 18 15:02	11°05'45"31 31.41086 AU				
morning rise	16590 Jul 01 01:03	12°05'13"37	conjunction	16597 Jul 03 12:39	27°05'31"42	4°28'25
retrograde	16590 Sep 29 22:33	14°05'15"05	minimum elong	16597 Jul 03 12:50	27°05'31"43	4°27'52
opposition	16590 Dec 16 17:49	12°05'54"05 8°36'48	max. Earth dist.	16597 Jul 04 20:03	27°05'34"33	32.52472 AU
min. Earth dist.	16590 Dec 16 00:46	12°05'55"14 29.49590 AU	morning rise	16597 Jul 18 11:38	28°05'03"57	
direct	16591 Mar 06 06:16	11°05'31"27	retrograde	16597 Oct 15 00:32	29°05'55"01	
evening set	16591 Jun 06 23:11	13°05'33"38	min. Earth dist.	16597 Dec 31 04:03	28°05'38"30	30.62244 AU
			opposition	16598 Jan 01 10:48	28°05'36"29	4°28'09
conjunction	16591 Jun 20 11:45	14°05'04"02 7°47'52	direct	16598 Mar 22 13:42	27°05'16"28	
minimum elong	16591 Jun 20 12:03	14°05'04"03 7°47'16	evening set	16598 Jun 20 18:40	29°05'08"20	
max. Earth dist.	16591 Jun 21 07:01	14°05'05"51 31.54279 AU				
morning rise	16591 Jul 03 23:45	14°05'34"22	conjunction	16598 Jul 05 22:28	29°05'40"46	3°54'48
retrograde	16591 Oct 02 12:09	16°05'34"10	minimum elong	16598 Jul 05 22:37	29°05'40"47	3°54'16
opposition	16591 Dec 19 08:28	15°05'13"27 8°02'10	max. Earth dist.	16598 Jul 07 07:08	29°05'43"42	32.71275 AU
min. Earth dist.	16591 Dec 18 12:45	15°05'14"47 29.63021 AU		16598 Jul 14 21:06	0°00'00"00	
direct	16592 Mar 07 22:31	13°05'51"08	morning rise	16598 Jul 21 01:11	0°00'13"06	
evening set	16592 Jun 08 05:25	15°05'51"40	retrograde	16598 Oct 17 08:05	2°00'02"55	
			opposition	16599 Jan 03 21:04	0°00'44"44	3°52'18
conjunction	16592 Jun 22 01:41	16°05'22"34 7°15'18	min. Earth dist.	16599 Jan 02 13:12	0°00'46"48	30.81177 AU
minimum elong	16592 Jun 22 01:58	16°05'22"36 7°14'43		16599 Feb 03 08:44	30°00'00"00	
max. Earth dist.	16592 Jun 23 00:22	16°05'24"41 31.68494 AU	direct	16599 Mar 24 23:20	29°05'25"05	

	16599 May 12 00:39	0°♄	
evening set	16599 Jun 23 00:30	1°♄15'41	
conjunction	16599 Jul 08 07:33	1°♄48'09	3°21'16
minimum elong	16599 Jul 08 07:40	1°♄48'09	3°20'44
max. Earth dist.	16599 Jul 09 17:54	1°♄51'13	32.90610 AU
morning rise	16599 Jul 23 13:13	2°♄20'30	
retrograde	16599 Oct 19 14:21	4°♄09'07	
min. Earth dist.	16600 Jan 04 21:30	2°♄53'24	31.00623 AU
opposition	16600 Jan 06 06:35	2°♄51'16	3°16'35
direct	16600 Mar 27 11:10	1°♄31'59	
evening set	16600 Jun 25 06:21	3°♄21'20	
conjunction	16600 Jul 10 15:49	3°♄53'47	2°47'53
minimum elong	16600 Jul 10 15:55	3°♄53'47	2°47'22
max. Earth dist.	16600 Jul 12 02:40	3°♄56'52	33.10433 AU
morning rise	16600 Jul 26 00:11	4°♄26'07	
retrograde	16600 Oct 21 22:10	6°♄13'34	
min. Earth dist.	16601 Jan 07 04:28	4°♄58'16	31.20594 AU
opposition	16601 Jan 08 15:19	4°♄56'02	2°41'05
direct	16601 Mar 29 21:26	3°♄37'05	
evening set	16601 Jun 27 11:45	5°♄25'15	
conjunction	16601 Jul 12 23:28	5°♄57'37	2°14'42
minimum elong	16601 Jul 12 23:33	5°♄57'38	2°14'11
max. Earth dist.	16601 Jul 14 12:39	6°♄00'53	33.30754 AU
morning rise	16601 Jul 28 09:42	6°♄29'53	
retrograde	16601 Oct 24 03:48	8°♄16'12	
opposition	16602 Jan 10 23:26	6°♄58'59	2°05'50
min. Earth dist.	16602 Jan 09 12:01	7°♄01'15	31.41071 AU