

retrograde	4100 Jan 24 02:39	15° Ω 09'25			4106 Mar 14 06:36	0° \mathcal{Z}	
opposition	4100 Mar 31 23:24	11° Ω 44'57	2°19'37	retrograde	4106 Apr 09 02:13	0° \mathcal{Z} 34'04	
min. Earth dist.	4100 Mar 31 21:05	11° Ω 45'25	8.29080 AU		4106 May 05 05:04	30° \mathcal{R} \mathcal{A}	
direct	4100 Jun 08 14:50	8° Ω 16'26		opposition	4106 Jun 17 00:45	27° \mathcal{A} 15'53	1°53'16
evening set	4100 Sep 22 19:25	16° Ω 17'59		min. Earth dist.	4106 Jun 17 01:52	27° \mathcal{A} 15'40	8.85011 AU
				direct	4106 Aug 26 21:01	23° \mathcal{A} 53'32	
conjunction	4100 Oct 10 11:48	18° Ω 30'58	1°59'31		4106 Nov 27 21:42	0° \mathcal{Z}	
minimum elong	4100 Oct 10 11:46	18° Ω 30'57	1°59'31	evening set	4106 Dec 08 14:35	1° \mathcal{Z} 13'58	
max. Earth dist.	4100 Oct 10 14:10	18° Ω 31'42	10.33436 AU				
morning rise	4100 Oct 28 00:03	20° Ω 42'42		conjunction	4106 Dec 25 11:38	3° \mathcal{Z} 14'31	1°22'14
retrograde	4101 Feb 06 09:56	28° Ω 23'45		minimum elong	4106 Dec 25 11:40	3° \mathcal{Z} 14'31	1°22'13
opposition	4101 Apr 14 10:57	25° Ω 00'37	2°34'24	max. Earth dist.	4106 Dec 25 09:34	3° \mathcal{Z} 13'54	10.88269 AU
min. Earth dist.	4101 Apr 14 09:13	25° Ω 00'58	8.38251 AU	morning rise	4107 Jan 11 05:41	5° \mathcal{Z} 14'12	
direct	4101 Jun 22 13:14	21° Ω 32'52		retrograde	4107 Apr 21 02:13	12° \mathcal{Z} 19'37	
evening set	4101 Oct 06 17:19	29° Ω 28'41		opposition	4107 Jun 29 11:18	9° \mathcal{Z} 01'50	1°27'36
	4101 Oct 10 23:08	0° \mathcal{M}		min. Earth dist.	4107 Jun 29 13:46	9° \mathcal{Z} 01'22	8.91203 AU
conjunction	4101 Oct 24 05:32	1° \mathcal{M} 39'10	2°08'19	direct	4107 Sep 08 09:01	5° \mathcal{Z} 40'30	
minimum elong	4101 Oct 24 05:31	1° \mathcal{M} 39'10	2°08'20	evening set	4107 Dec 20 11:33	12° \mathcal{Z} 55'26	
max. Earth dist.	4101 Oct 24 07:17	1° \mathcal{M} 39'43	10.43028 AU	conjunction	4108 Jan 06 06:50	14° \mathcal{Z} 54'53	0°59'54
morning rise	4101 Nov 10 13:22	3° \mathcal{M} 48'21		minimum elong	4108 Jan 06 06:52	14° \mathcal{Z} 54'53	0°59'54
retrograde	4102 Feb 19 09:10	11° \mathcal{M} 21'46		max. Earth dist.	4108 Jan 06 03:21	14° \mathcal{Z} 53'50	10.93604 AU
opposition	4102 Apr 27 17:52	7° \mathcal{M} 59'58	2°40'53	morning rise	4108 Jan 23 00:00	16° \mathcal{Z} 53'42	
min. Earth dist.	4102 Apr 27 17:08	8° \mathcal{M} 00'06	8.48169 AU	retrograde	4108 May 02 01:16	23° \mathcal{Z} 57'17	
direct	4102 Jul 06 07:47	4° \mathcal{M} 33'09		opposition	4108 Jul 10 19:39	20° \mathcal{Z} 39'36	0°58'38
evening set	4102 Oct 20 05:54	12° \mathcal{M} 22'14		min. Earth dist.	4108 Jul 10 22:29	20° \mathcal{Z} 39'05	8.95605 AU
conjunction	4102 Nov 06 14:07	14° \mathcal{M} 30'16	2°10'29	direct	4108 Sep 19 18:57	17° \mathcal{Z} 19'06	
minimum elong	4102 Nov 06 14:07	14° \mathcal{M} 30'16	2°10'30	evening set	4108 Dec 31 04:12	24° \mathcal{Z} 29'35	
max. Earth dist.	4102 Nov 06 14:37	14° \mathcal{M} 30'25	10.53115 AU	conjunction	4109 Jan 16 22:17	26° \mathcal{Z} 28'18	0°35'19
	4102 Nov 10 14:07	15° \mathcal{M}		minimum elong	4109 Jan 16 22:19	26° \mathcal{Z} 28'18	0°35'19
morning rise	4102 Nov 23 18:02	16° \mathcal{M} 37'00		max. Earth dist.	4109 Jan 16 18:44	26° \mathcal{Z} 27'15	10.97088 AU
retrograde	4103 Mar 04 02:39	24° \mathcal{M} 03'04		morning rise	4109 Feb 02 14:54	28° \mathcal{Z} 26'35	
opposition	4103 May 10 20:14	20° \mathcal{M} 42'27	2°39'16		4109 Feb 16 07:56	0° \approx	
min. Earth dist.	4103 May 10 20:08	20° \mathcal{M} 42'28	8.58307 AU	retrograde	4109 May 14 00:42	5° \approx 29'43	
direct	4103 Jul 19 20:29	17° \mathcal{M} 16'44		opposition	4109 Jul 23 02:29	2° \approx 11'52	0°27'33
evening set	4103 Nov 02 08:52	24° \mathcal{M} 58'27		min. Earth dist.	4109 Jul 23 04:52	2° \approx 11'25	8.98109 AU
conjunction	4103 Nov 19 13:28	27° \mathcal{M} 04'11	2°06'17		4109 Aug 24 12:33	30° \mathcal{R} \mathcal{Z}	
minimum elong	4103 Nov 19 13:29	27° \mathcal{M} 04'11	2°06'17	direct	4109 Oct 01 23:37	28° \mathcal{Z} 52'03	
max. Earth dist.	4103 Nov 19 13:02	27° \mathcal{M} 04'03	10.63176 AU	evening set	4109 Nov 08 13:46	0° \approx	
morning rise	4103 Dec 06 14:01	29° \mathcal{M} 08'40			4110 Jan 11 18:20	5° \approx 59'14	
	4103 Dec 13 18:47	0° \mathcal{A}		conjunction	4110 Jan 28 11:33	7° \approx 57'31	0°09'27
retrograde	4104 Mar 15 14:27	6° \mathcal{A} 28'00		minimum elong	4110 Jan 28 11:34	7° \approx 57'31	0°09'28
opposition	4104 May 22 17:54	3° \mathcal{A} 08'23	2°30'11	behind sun begin	4110 Jan 28 05:42	7° \approx 55'47	
min. Earth dist.	4104 May 22 17:47	3° \mathcal{A} 08'25	8.68151 AU	behind sun end	4110 Jan 28 17:25	7° \approx 59'14	
	4104 Jul 14 00:25	30° \mathcal{R} \mathcal{M}		max. Earth dist.	4110 Jan 28 08:38	7° \approx 56'40	10.98628 AU
direct	4104 Aug 01 02:57	29° \mathcal{M} 43'49		morning rise	4110 Feb 14 03:48	9° \approx 55'34	
	4104 Aug 19 03:18	0° \mathcal{A}			4110 Apr 05 21:49	15° \approx	
evening set	4104 Nov 14 02:38	7° \mathcal{A} 18'01		retrograde	4110 May 26 00:26	16° \approx 59'39	
conjunction	4104 Dec 01 04:16	9° \mathcal{A} 21'42	1°56'19	desc. node	4110 Jun 12 09:15	16° \approx 44'57	
minimum elong	4104 Dec 01 04:18	9° \mathcal{A} 21'43	1°56'19		4110 Jul 17 03:52	15° \mathcal{R} \approx	
max. Earth dist.	4104 Dec 01 03:45	9° \mathcal{A} 21'33	10.72708 AU	opposition	4110 Aug 04 08:39	13° \approx 41'21	-0°04'31
morning rise	4104 Dec 18 02:00	11° \mathcal{A} 24'15		min. Earth dist.	4110 Aug 04 10:58	13° \approx 40'56	8.98658 AU
retrograde	4105 Mar 27 21:37	18° \mathcal{A} 37'43		direct	4110 Oct 14 01:28	10° \approx 22'01	
opposition	4105 Jun 04 11:12	15° \mathcal{A} 18'55	2°14'30		4111 Jan 01 05:17	15° \approx	
min. Earth dist.	4105 Jun 04 11:17	15° \mathcal{A} 18'54	8.77210 AU	evening set	4111 Jan 23 07:22	17° \approx 27'12	
direct	4105 Aug 14 03:47	11° \mathcal{A} 55'29		conjunction	4111 Feb 08 23:50	19° \approx 25'19	-0°16'51
evening set	4105 Nov 26 12:04	19° \mathcal{A} 22'26		minimum elong	4111 Feb 08 23:49	19° \approx 25'19	0°16'51
conjunction	4105 Dec 13 11:16	21° \mathcal{A} 24'23	1°41'20	max. Earth dist.	4111 Feb 08 20:35	19° \approx 24'22	10.98203 AU
minimum elong	4105 Dec 13 11:18	21° \mathcal{A} 24'24	1°41'20	morning rise	4111 Feb 25 16:12	21° \approx 23'28	
max. Earth dist.	4105 Dec 13 10:29	21° \mathcal{A} 24'09	10.81218 AU	retrograde	4111 Jun 07 03:03	28° \approx 29'54	
morning rise	4105 Dec 30 06:49	23° \mathcal{A} 25'18		opposition	4111 Aug 16 15:19	25° \approx 10'57	-0°36'26
				min. Earth dist.	4111 Aug 16 18:04	25° \approx 10'26	8.97269 AU

direct	4111 Oct 26 01:51	21° \approx 51'52	conjunction	4118 May 02 15:02	12° \approx 58'13 -2°10'41
evening set	4112 Feb 03 20:32	28° \approx 56'19	minimum elong	4118 May 02 15:03	12° \approx 58'13 2°10'42
	4112 Feb 12 20:58	0° \approx	max. Earth dist.	4118 May 02 15:19	12° \approx 58'18 10.50850 AU
			morning rise	4118 May 19 20:37	15° \approx 06'01
conjunction	4112 Feb 20 12:32	0° \approx 54'37 -0°42'26		4118 May 19 00:53	15° \approx
minimum elong	4112 Feb 20 12:31	0° \approx 54'36 0°42'27	retrograde	4118 Sep 02 19:40	22° \approx 57'19
max. Earth dist.	4112 Feb 20 08:49	0° \approx 53'30 10.95855 AU	opposition	4118 Nov 11 12:58	19° \approx 30'36 -2°40'08
morning rise	4112 Mar 08 05:29	2° \approx 53'11	min. Earth dist.	4118 Nov 11 12:15	19° \approx 30'45 8.46099 AU
retrograde	4112 Jun 18 05:43	10° \approx 03'19	direct	4119 Jan 18 03:08	16° \approx 08'27
opposition	4112 Aug 27 23:00	6° \approx 43'28 -1°07'02	evening set	4119 Apr 28 16:49	23° \approx 41'39
min. Earth dist.	4112 Aug 28 01:54	6° \approx 42'56 8.94006 AU			
direct	4112 Nov 06 01:32	3° \approx 24'26	conjunction	4119 May 15 22:11	25° \approx 50'33 -2°06'48
evening set	4113 Feb 14 11:30	10° \approx 29'34	minimum elong	4119 May 15 22:13	25° \approx 50'33 2°06'49
			max. Earth dist.	4119 May 15 23:48	25° \approx 51'03 10.41170 AU
conjunction	4113 Mar 03 03:34	12° \approx 28'21 -1°06'28	morning rise	4119 Jun 02 07:52	28° \approx 00'50
minimum elong	4113 Mar 03 03:32	12° \approx 28'20 1°06'28		4119 Jun 18 22:35	0° \approx
max. Earth dist.	4113 Mar 03 00:24	12° \approx 27'24 10.91671 AU	retrograde	4119 Sep 16 16:02	5° \approx 59'14
morning rise	4113 Mar 19 21:18	14° \approx 27'38	opposition	4119 Nov 24 22:28	2° \approx 31'37 -2°31'29
retrograde	4113 Jun 30 13:46	21° \approx 42'45	min. Earth dist.	4119 Nov 24 20:40	2° \approx 31'59 8.36629 AU
opposition	4113 Sep 09 08:18	18° \approx 21'51 -1°35'10		4119 Dec 30 21:43	30° \approx
min. Earth dist.	4113 Sep 09 10:26	18° \approx 21'27 8.88980 AU	direct	4120 Jan 31 03:36	29° \approx 08'30
direct	4113 Nov 18 03:19	15° \approx 02'42		4120 Mar 01 22:53	0° \approx
evening set	4114 Feb 26 05:32	22° \approx 09'50	evening set	4120 May 11 04:45	6° \approx 48'45
conjunction	4114 Mar 14 22:12	24° \approx 09'27 -1°27'59	conjunction	4120 May 28 14:40	9° \approx 00'13 -1°56'17
minimum elong	4114 Mar 14 22:10	24° \approx 09'26 1°27'59	minimum elong	4120 May 28 14:42	9° \approx 00'13 1°56'18
max. Earth dist.	4114 Mar 14 20:13	24° \approx 08'51 10.85797 AU	max. Earth dist.	4120 May 28 16:48	9° \approx 00'53 10.32064 AU
morning rise	4114 Mar 31 17:01	26° \approx 09'47	morning rise	4120 Jun 15 04:50	11° \approx 13'03
	4114 May 06 03:36	0° \approx	retrograde	4120 Sep 29 18:02	19° \approx 17'28
retrograde	4114 Jul 13 04:30	3° \approx 30'59	opposition	4120 Dec 07 12:30	15° \approx 49'12 -2°14'36
opposition	4114 Sep 21 20:31	0° \approx 08'55 -1°59'43	min. Earth dist.	4120 Dec 07 10:14	15° \approx 49'39 8.27974 AU
min. Earth dist.	4114 Sep 21 21:39	0° \approx 08'42 8.82368 AU	direct	4121 Feb 12 09:55	12° \approx 25'03
	4114 Sep 23 19:51	30° \approx	evening set	4121 May 25 01:24	20° \approx 12'17
direct	4114 Nov 30 04:54	26° \approx 49'31			
	4115 Feb 01 04:19	0° \approx	conjunction	4121 Jun 11 15:57	22° \approx 26'14 -1°39'18
evening set	4115 Mar 10 03:59	3° \approx 59'51	minimum elong	4121 Jun 11 16:01	22° \approx 26'15 1°39'19
			max. Earth dist.	4121 Jun 11 18:16	22° \approx 26'59 10.24034 AU
conjunction	4115 Mar 26 21:39	6° \approx 00'40 -1°46'01	morning rise	4121 Jun 29 10:35	24° \approx 41'29
minimum elong	4115 Mar 26 21:37	6° \approx 00'39 1°46'01		4121 Aug 16 07:55	0° \approx
max. Earth dist.	4115 Mar 26 20:03	6° \approx 00'11 10.78457 AU	retrograde	4121 Oct 13 23:37	2° \approx 50'27
morning rise	4115 Apr 12 18:13	8° \approx 02'23		4121 Dec 13 08:44	30° \approx
retrograde	4115 Jul 25 22:43	15° \approx 30'34	opposition	4121 Dec 21 06:27	29° \approx 21'49 -1°49'57
opposition	4115 Oct 04 12:16	12° \approx 07'18 -2°19'32	min. Earth dist.	4121 Dec 21 04:10	29° \approx 22'16 8.20632 AU
min. Earth dist.	4115 Oct 04 13:02	12° \approx 07'09 8.74424 AU	direct	4122 Feb 25 23:31	25° \approx 56'37
direct	4115 Dec 12 08:56	8° \approx 47'26		4122 May 06 11:21	0° \approx
evening set	4116 Mar 21 08:14	16° \approx 02'12	evening set	4122 Jun 08 06:15	3° \approx 50'24
conjunction	4116 Apr 07 03:35	18° \approx 04'32 -1°59'42	conjunction	4122 Jun 26 01:21	6° \approx 06'37 -1°16'32
minimum elong	4116 Apr 07 03:33	18° \approx 04'32 1°59'41	minimum elong	4122 Jun 26 01:24	6° \approx 06'38 1°16'33
max. Earth dist.	4116 Apr 07 01:44	18° \approx 03'58 10.69941 AU	max. Earth dist.	4122 Jun 26 04:03	6° \approx 07'29 10.17551 AU
morning rise	4116 Apr 24 02:37	20° \approx 08'00	morning rise	4122 Jul 13 23:58	8° \approx 23'55
retrograde	4116 Aug 06 23:23	27° \approx 43'44	retrograde	4122 Oct 28 06:26	16° \approx 35'38
opposition	4116 Oct 16 07:54	24° \approx 19'16 -2°33'30	opposition	4123 Jan 04 03:28	13° \approx 06'52 -1°18'39
min. Earth dist.	4116 Oct 16 08:50	24° \approx 19'05 8.65467 AU	min. Earth dist.	4123 Jan 04 01:06	13° \approx 07'21 8.15041 AU
direct	4116 Dec 23 17:56	20° \approx 58'44	direct	4123 Mar 11 19:53	9° \approx 40'40
evening set	4117 Apr 02 19:13	28° \approx 18'57	evening set	4123 Jun 22 18:12	17° \approx 40'10
	4117 Apr 16 13:55	0° \approx			
conjunction	4117 Apr 19 17:07	0° \approx 23'11 -2°08'09	conjunction	4123 Jul 10 17:14	19° \approx 58'11 -0°49'07
minimum elong	4117 Apr 19 17:06	0° \approx 23'11 2°08'09	minimum elong	4123 Jul 10 17:16	19° \approx 58'11 0°49'08
max. Earth dist.	4117 Apr 19 15:55	0° \approx 22'49 10.60601 AU	max. Earth dist.	4123 Jul 10 20:24	19° \approx 59'12 10.12985 AU
morning rise	4117 May 06 19:10	2° \approx 28'42	morning rise	4123 Jul 28 18:50	22° \approx 16'58
retrograde	4117 Aug 20 06:35	10° \approx 12'16		4123 Oct 19 08:09	0° \approx
opposition	4117 Oct 29 08:05	6° \approx 46'38 -2°40'38	retrograde	4123 Nov 11 14:41	0° \approx 29'27
min. Earth dist.	4117 Oct 29 08:31	6° \approx 46'33 8.55876 AU		4123 Dec 04 23:38	30° \approx
direct	4118 Jan 05 07:20	3° \approx 25'20	opposition	4124 Jan 18 02:31	27° \approx 00'49 -0°42'24
evening set	4118 Apr 15 13:45	10° \approx 51'46	min. Earth dist.	4124 Jan 17 23:54	27° \approx 01'21 8.11510 AU
			direct	4124 Mar 24 20:16	23° \approx 33'42

	4124 Jun 23 07:59	0°♎	evening set	4130 Oct 01 06:41	24°♎13'04	
evening set	4124 Jul 06 11:41	1°♎37'44				
conjunction	4124 Jul 24 13:27	3°♎56'53 -0°18'38	conjunction	4130 Oct 18 20:39	26°♎24'39 2°05'23	
minimum elong	4124 Jul 24 13:28	3°♎56'53 0°18'38	minimum elong	4130 Oct 18 20:37	26°♎24'38 2°05'24	
max. Earth dist.	4124 Jul 24 17:05	3°♎58'03 10.10564 AU	max. Earth dist.	4130 Oct 18 20:46	26°♎24'41 10.38790 AU	
morning rise	4124 Aug 11 16:33	6°♎16'26	morning rise	4130 Nov 05 06:32	28°♎34'58	
retrograde	4124 Nov 24 22:49	14°♎27'42		4130 Nov 17 00:22	0°♎	
opposition	4125 Jan 31 02:23	10°♎59'26 -0°03'26	retrograde	4131 Feb 14 06:48	6°♎11'48	
min. Earth dist.	4125 Jan 30 23:23	11°♎00'03 8.10187 AU	opposition	4131 Apr 22 13:02	2°♎49'25 2°39'09	
asc. node	4125 Mar 04 23:39	8°♎33'38	min. Earth dist.	4131 Apr 22 12:14	2°♎49'35 8.43648 AU	
direct	4125 Apr 07 23:54	7°♎31'34		4131 Jun 03 13:14	30°♎	
	4125 Jul 16 04:53	15°♎	direct	4131 Jun 30 23:37	29°♎22'08	
evening set	4125 Jul 21 08:26	15°♎38'46		4131 Jul 28 05:22	0°♎	
			evening set	4131 Oct 14 23:21	7°♎14'20	
conjunction	4125 Aug 08 11:28	17°♎58'16 0°13'06	conjunction	4131 Nov 01 09:22	9°♎23'27 2°10'22	
minimum elong	4125 Aug 08 11:27	17°♎58'15 0°13'05	minimum elong	4131 Nov 01 09:21	9°♎23'27 2°10'22	
behind sun begin	4125 Aug 08 07:13	17°♎56'54	max. Earth dist.	4131 Nov 01 09:40	9°♎23'32 10.48376 AU	
behind sun end	4125 Aug 08 15:41	17°♎59'37	morning rise	4131 Nov 18 14:57	11°♎31'15	
max. Earth dist.	4125 Aug 08 15:04	17°♎59'25 10.10350 AU		4131 Dec 19 03:15	15°♎	
morning rise	4125 Aug 26 14:30	20°♎17'48	retrograde	4132 Feb 27 04:01	19°♎00'35	
retrograde	4125 Dec 09 05:12	28°♎26'09	opposition	4132 May 04 17:23	15°♎39'15 2°40'56	
opposition	4126 Feb 14 02:07	24°♎58'30 0°35'46	min. Earth dist.	4132 May 04 16:43	15°♎39'23 8.53410 AU	
min. Earth dist.	4126 Feb 13 23:18	24°♎59'05 8.11062 AU		4132 May 13 03:16	15°♎	
direct	4126 Apr 22 05:44	21°♎30'05	direct	4132 Jul 13 13:56	12°♎12'50	
evening set	4126 Aug 05 06:07	29°♎39'01		4132 Sep 10 22:20	15°♎	
	4126 Aug 08 00:27	0°♎	evening set	4132 Oct 27 06:12	19°♎57'49	
conjunction	4126 Aug 23 08:49	1°♎58'06 0°43'55	conjunction	4132 Nov 13 12:31	22°♎04'36 2°08'49	
minimum elong	4126 Aug 23 08:47	1°♎58'06 0°43'55	minimum elong	4132 Nov 13 12:32	22°♎04'36 2°08'49	
max. Earth dist.	4126 Aug 23 11:47	1°♎59'04 10.12286 AU	max. Earth dist.	4132 Nov 13 12:54	22°♎04'43 10.58190 AU	
morning rise	4126 Sep 10 10:18	4°♎16'51	morning rise	4132 Nov 30 14:22	24°♎10'04	
retrograde	4126 Dec 23 07:31	12°♎20'52		4133 Jan 27 12:13	0°♎	
opposition	4127 Feb 28 00:44	8°♎54'06 1°12'39	retrograde	4133 Mar 10 18:38	1°♎32'21	
min. Earth dist.	4127 Feb 27 22:34	8°♎54'33 8.14071 AU		4133 Apr 23 02:55	30°♎	
direct	4127 May 06 12:58	5°♎25'24	opposition	4133 May 17 16:59	28°♎11'57 2°34'56	
evening set	4127 Aug 20 02:33	13°♎34'27	min. Earth dist.	4133 May 17 17:13	28°♎11'54 8.63148 AU	
			direct	4133 Jul 26 22:04	24°♎46'30	
conjunction	4127 Sep 07 03:23	15°♎52'24 1°12'01		4133 Oct 19 06:27	0°♎	
minimum elong	4127 Sep 07 03:20	15°♎52'23 1°12'01	evening set	4133 Nov 09 03:44	2°♎23'59	
max. Earth dist.	4127 Sep 07 05:27	15°♎53'04 10.16313 AU				
morning rise	4127 Sep 25 01:55	18°♎09'39	conjunction	4133 Nov 26 06:44	4°♎28'37 2°01'13	
retrograde	4128 Jan 06 04:50	26°♎08'02	minimum elong	4133 Nov 26 06:45	4°♎28'37 2°01'13	
opposition	4128 Mar 12 21:12	22°♎42'20 1°44'58	max. Earth dist.	4133 Nov 26 06:08	4°♎28'26 10.67753 AU	
min. Earth dist.	4128 Mar 12 19:52	22°♎42'36 8.19133 AU	morning rise	4133 Dec 13 05:37	6°♎32'02	
direct	4128 May 19 19:21	19°♎13'36	retrograde	4134 Mar 23 02:11	13°♎47'59	
evening set	4128 Sep 02 18:56	27°♎20'54	opposition	4134 May 30 11:51	10°♎28'25 2°21'57	
			min. Earth dist.	4134 May 30 12:55	10°♎28'12 8.72407 AU	
conjunction	4128 Sep 20 16:41	29°♎37'05 1°35'42	direct	4134 Aug 09 01:12	7°♎03'58	
minimum elong	4128 Sep 20 16:38	29°♎37'04 1°35'43	evening set	4134 Nov 21 16:35	14°♎34'07	
max. Earth dist.	4128 Sep 20 17:45	29°♎37'26 10.22296 AU				
	4128 Sep 23 16:30	0°♎	conjunction	4134 Dec 08 16:44	16°♎36'50 1°48'16	
morning rise	4128 Oct 08 11:23	1°♎52'19	minimum elong	4134 Dec 08 16:46	16°♎36'51 1°48'16	
retrograde	4129 Jan 18 20:32	9°♎44'04	max. Earth dist.	4134 Dec 08 15:07	16°♎36'21 10.76637 AU	
opposition	4129 Mar 26 14:40	6°♎19'27 2°10'52	morning rise	4134 Dec 25 13:20	18°♎38'30	
min. Earth dist.	4129 Mar 26 13:55	6°♎19'36 8.26022 AU	retrograde	4135 Apr 04 06:44	25°♎49'11	
direct	4129 Jun 03 00:06	2°♎50'58	opposition	4135 Jun 12 02:46	22°♎30'16 2°02'56	
evening set	4129 Sep 17 04:47	10°♎54'41	min. Earth dist.	4135 Jun 12 03:55	22°♎30'03 8.80780 AU	
			direct	4135 Aug 21 22:36	19°♎06'55	
conjunction	4129 Oct 04 22:46	13°♎08'41 1°53'45	evening set	4135 Dec 03 21:34	26°♎30'06	
minimum elong	4129 Oct 04 22:43	13°♎08'40 1°53'45				
max. Earth dist.	4129 Oct 04 23:04	13°♎08'47 10.29933 AU	conjunction	4135 Dec 20 19:29	28°♎31'16 1°30'48	
morning rise	4129 Oct 22 13:08	15°♎21'32	minimum elong	4135 Dec 20 19:31	28°♎31'17 1°30'48	
retrograde	4130 Feb 01 05:18	23°♎05'58	max. Earth dist.	4135 Dec 20 17:49	28°♎30'46 10.84461 AU	
opposition	4130 Apr 09 04:09	19°♎42'29 2°29'07		4136 Jan 02 03:43	0°♎	
min. Earth dist.	4130 Apr 09 03:25	19°♎42'38 8.34352 AU	morning rise	4136 Jan 06 14:17	0°♎31'30	
direct	4130 Jun 17 02:02	16°♎14'30	retrograde	4136 Apr 15 08:00	7°♎38'09	




























































































































opposition	4136 Jun 23 14:10	4°♄19'41	1°39'01	max. Earth dist.	4142 Feb 26 09:22	7°♄39'23	10.96093 AU
min. Earth dist.	4136 Jun 23 14:47	4°♄19'34	8.87921 AU	morning rise	4142 Mar 15 03:49	9°♄38'25	
direct	4136 Sep 02 13:24	0°♄57'26		retrograde	4142 Jun 25 13:35	16°♄50'03	
evening set	4136 Dec 14 20:15	8°♄14'28		opposition	4142 Sep 04 06:51	13°♄30'10	-1°23'05
				min. Earth dist.	4142 Sep 04 07:54	13°♄29'58	8.94032 AU
conjunction	4136 Dec 31 16:27	10°♄14'21	1°09'45	direct	4142 Nov 13 05:14	10°♄11'43	
minimum elong	4136 Dec 31 16:29	10°♄14'22	1°09'45	evening set	4143 Feb 21 10:44	17°♄16'39	
max. Earth dist.	4136 Dec 31 15:25	10°♄14'03	10.90905 AU				
morning rise	4137 Jan 17 09:56	12°♄13'31		conjunction	4143 Mar 10 02:47	19°♄15'30	-1°18'49
retrograde	4137 Apr 27 08:04	19°♄17'26		minimum elong	4143 Mar 10 02:45	19°♄15'30	1°18'49
opposition	4137 Jul 05 22:43	15°♄59'17	1°11'20	max. Earth dist.	4143 Mar 10 00:40	19°♄14'52	10.91461 AU
min. Earth dist.	4137 Jul 05 23:36	15°♄59'07	8.93551 AU	morning rise	4143 Mar 26 20:58	21°♄14'59	
direct	4137 Sep 14 23:02	12°♄38'02		retrograde	4143 Jul 07 23:38	28°♄32'02	
evening set	4137 Dec 26 14:09	19°♄49'55		opposition	4143 Sep 16 17:06	25°♄11'13	-1°49'13
				min. Earth dist.	4143 Sep 16 18:34	25°♄10'57	8.88570 AU
conjunction	4138 Jan 12 08:51	21°♄48'52	0°46'03	direct	4143 Nov 25 05:13	21°♄52'41	
minimum elong	4138 Jan 12 08:53	21°♄48'53	0°46'03	evening set	4144 Mar 04 06:17	29°♄00'08	
max. Earth dist.	4138 Jan 12 07:20	21°♄48'25	10.95714 AU		4144 Mar 12 15:42	0°♄	
morning rise	4138 Jan 29 01:34	23°♄47'17					
	4138 Apr 07 12:18	0°♄		conjunction	4144 Mar 20 23:10	0°♄59'58	-1°38'24
retrograde	4138 May 09 06:34	0°♄49'52		minimum elong	4144 Mar 20 23:07	0°♄59'57	1°38'24
	4138 Jun 10 14:55	30°♄		max. Earth dist.	4144 Mar 20 21:25	0°♄59'26	10.85157 AU
opposition	4138 Jul 18 05:31	27°♄31'50	0°41'04	morning rise	4144 Apr 06 18:50	3°♄00'38	
min. Earth dist.	4138 Jul 18 07:09	27°♄31'32	8.97455 AU	retrograde	4144 Jul 19 13:32	10°♄24'07	
direct	4138 Sep 27 03:20	24°♄11'29		opposition	4144 Sep 28 06:15	7°♄02'11	-2°11'08
	4138 Dec 26 13:28	0°♄		min. Earth dist.	4144 Sep 28 07:25	7°♄01'58	8.81518 AU
evening set	4139 Jan 07 04:39	1°♄19'23		direct	4144 Dec 06 08:50	3°♄43'19	
				evening set	4145 Mar 16 06:57	10°♄54'32	
conjunction	4139 Jan 23 22:04	3°♄17'41	0°20'39				
minimum elong	4139 Jan 23 22:05	3°♄17'41	0°20'40	conjunction	4145 Apr 02 01:20	12°♄55'43	-1°54'03
max. Earth dist.	4139 Jan 23 19:39	3°♄16'58	10.98709 AU	minimum elong	4145 Apr 02 01:18	12°♄55'42	1°54'03
morning rise	4139 Feb 09 14:29	5°♄15'40		max. Earth dist.	4145 Apr 02 00:17	12°♄55'24	10.77352 AU
retrograde	4139 May 21 03:56	12°♄18'26		morning rise	4145 Apr 18 22:53	14°♄57'54	
opposition	4139 Jul 30 11:19	9°♄00'15	0°09'21	retrograde	4145 Aug 01 11:37	22°♄28'35	
min. Earth dist.	4139 Jul 30 13:16	8°♄59'53	8.99492 AU	opposition	4145 Oct 10 22:53	19°♄05'28	-2°27'45
direct	4139 Oct 09 06:37	5°♄40'39		min. Earth dist.	4145 Oct 10 23:30	19°♄05'21	8.73073 AU
desc. node	4139 Nov 17 09:55	6°♄54'16		direct	4145 Dec 18 15:10	15°♄46'04	
evening set	4140 Jan 18 17:15	12°♄45'50		evening set	4146 Mar 28 13:49	23°♄02'11	
conjunction	4140 Feb 04 09:52	14°♄43'48	-0°05'34	conjunction	4146 Apr 14 10:20	25°♄05'05	-2°04'54
minimum elong	4140 Feb 04 09:51	14°♄43'48	0°05'33	minimum elong	4146 Apr 14 10:18	25°♄05'05	2°04'53
behind sun begin	4140 Feb 04 03:08	14°♄41'49		max. Earth dist.	4146 Apr 14 09:21	25°♄04'47	10.68299 AU
behind sun end	4140 Feb 04 16:35	14°♄45'46		morning rise	4146 May 01 10:31	27°♄09'10	
max. Earth dist.	4140 Feb 04 07:37	14°♄43'10	10.99788 AU		4146 May 26 09:42	0°♄	
	4140 Feb 06 16:30	15°♄		retrograde	4146 Aug 14 15:51	4°♄47'36	
morning rise	4140 Feb 21 02:12	16°♄41'41		opposition	4146 Oct 23 20:00	1°♄23'17	-2°38'01
retrograde	4140 Jun 01 04:47	23°♄46'03		min. Earth dist.	4146 Oct 23 20:21	1°♄23'13	8.63552 AU
opposition	4140 Aug 10 16:49	20°♄27'30	-0°22'40		4146 Nov 11 10:23	30°♄	
min. Earth dist.	4140 Aug 10 18:05	20°♄27'16	8.99596 AU	direct	4146 Dec 31 00:04	28°♄03'07	
direct	4140 Oct 20 07:44	17°♄08'30			4147 Feb 16 20:44	0°♄	
evening set	4141 Jan 29 05:25	24°♄12'14		evening set	4147 Apr 10 03:50	5°♄25'10	
conjunction	4141 Feb 14 21:37	26°♄10'11	-0°31'25	conjunction	4147 Apr 27 03:13	7°♄30'08	-2°10'10
minimum elong	4141 Feb 14 21:36	26°♄10'11	0°31'26	minimum elong	4147 Apr 27 03:13	7°♄30'08	2°10'09
max. Earth dist.	4141 Feb 14 20:14	26°♄09'47	10.98907 AU	max. Earth dist.	4147 Apr 27 01:45	7°♄29'41	10.58410 AU
morning rise	4141 Mar 03 14:07	28°♄08'17		morning rise	4147 May 14 06:52	9°♄36'27	
	4141 Mar 20 02:47	0°♄			4147 Jul 04 11:33	15°♄	
retrograde	4141 Jun 13 07:20	5°♄15'38		retrograde	4147 Aug 28 01:10	17°♄22'46	
opposition	4141 Aug 22 23:02	1°♄56'30	-0°53'51		4147 Oct 23 05:59	15°♄	
min. Earth dist.	4141 Aug 22 23:50	1°♄56'21	8.97753 AU	opposition	4147 Nov 05 21:49	13°♄57'14	-2°41'04
	4141 Sep 19 22:57	30°♄		min. Earth dist.	4147 Nov 05 22:24	13°♄57'07	8.53438 AU
direct	4141 Nov 01 05:48	28°♄37'54		direct	4148 Jan 12 15:39	10°♄36'07	
	4141 Dec 12 08:22	0°♄			4148 Mar 26 09:59	15°♄	
evening set	4142 Feb 09 18:49	5°♄41'34		evening set	4148 Apr 22 02:02	18°♄04'49	
conjunction	4142 Feb 26 10:46	7°♄39'48	-0°56'10	conjunction	4148 May 09 05:07	20°♄12'10	-2°09'16
minimum elong	4142 Feb 26 10:44	7°♄39'48	0°56'11	minimum elong	4148 May 09 05:08	20°♄12'11	2°09'16

max. Earth dist.	4148 May 09 03:43	20°♄11'44	10.48209 AU	max. Earth dist.	4154 Aug 01 21:45	11°♈38'46	10.09023 AU
morning rise	4148 May 26 12:47	22°♄20'56		morning rise	4154 Aug 19 23:26	13°♈58'02	
	4148 Aug 23 17:29	0°♄		asc. node	4154 Aug 24 19:50	14°♈34'37	
retrograde	4148 Sep 09 16:39	0°♄14'46			4154 Aug 28 05:40	15°♈	
	4148 Sep 26 17:00	30°♄		retrograde	4154 Dec 02 21:47	22°♈08'16	
opposition	4148 Nov 18 04:09	26°♄48'06	-2°36'14	opposition	4155 Feb 07 21:49	18°♈39'44	0°17'23
min. Earth dist.	4148 Nov 18 04:46	26°♄47'59	8.43275 AU	min. Earth dist.	4155 Feb 07 20:16	18°♈40'03	8.09043 AU
direct	4149 Jan 24 13:31	23°♄25'51		direct	4155 Apr 15 22:58	15°♈10'55	
	4149 Apr 26 22:04	0°♄		evening set	4155 Jul 29 14:58	23°♈19'36	
evening set	4149 May 05 08:45	1°♄01'37					
				conjunction	4155 Aug 16 17:59	25°♈39'07	0°29'34
conjunction	4149 May 22 16:15	3°♄11'33	-2°01'50	minimum elong	4155 Aug 16 17:58	25°♈39'06	0°29'34
minimum elong	4149 May 22 16:18	3°♄11'34	2°01'51	max. Earth dist.	4155 Aug 16 19:49	25°♈39'42	10.09664 AU
max. Earth dist.	4149 May 22 15:49	3°♄11'25	10.38242 AU	morning rise	4155 Sep 03 20:39	27°♈58'30	
morning rise	4149 Jun 09 04:15	5°♄22'53			4155 Sep 20 07:41	0°♄	
retrograde	4149 Sep 23 14:10	13°♄23'26		retrograde	4155 Dec 17 00:56	6°♄05'09	
opposition	4149 Dec 01 15:11	9°♄55'48	-2°23'14	opposition	4156 Feb 21 21:07	2°♄37'20	0°55'40
min. Earth dist.	4149 Dec 01 15:11	9°♄55'48	8.33609 AU	min. Earth dist.	4156 Feb 21 19:14	2°♄37'43	8.10907 AU
direct	4150 Feb 06 17:09	6°♄32'19			4156 Mar 29 02:49	30°♄	
evening set	4150 May 19 00:04	14°♄15'15		direct	4156 Apr 29 06:33	29°♈08'06	
					4156 May 30 06:00	0°♄	
conjunction	4150 Jun 05 12:24	16°♄27'47	-1°47'53	evening set	4156 Aug 12 12:13	7°♄17'40	
minimum elong	4150 Jun 05 12:27	16°♄27'48	1°47'53				
max. Earth dist.	4150 Jun 05 13:27	16°♄28'07	10.29045 AU	conjunction	4156 Aug 30 14:07	9°♄36'23	0°59'11
morning rise	4150 Jun 23 04:49	18°♄41'40		minimum elong	4156 Aug 30 14:05	9°♄36'23	0°59'11
retrograde	4150 Oct 07 16:24	26°♄47'44		max. Earth dist.	4156 Aug 30 16:18	9°♄37'05	10.12689 AU
opposition	4150 Dec 15 06:25	23°♄19'18	-2°02'14	morning rise	4156 Sep 17 14:24	11°♄54'36	
min. Earth dist.	4150 Dec 15 05:16	23°♄19'32	8.24966 AU	retrograde	4156 Dec 30 00:32	19°♄56'12	
direct	4151 Feb 20 03:13	19°♄54'35		opposition	4157 Mar 06 18:44	16°♄29'20	1°30'25
evening set	4151 Jun 02 00:08	27°♄44'27		min. Earth dist.	4157 Mar 06 16:24	16°♄29'49	8.15091 AU
				direct	4157 May 13 13:01	13°♄00'00	
conjunction	4151 Jun 19 17:14	29°♄59'29	-1°27'47	evening set	4157 Aug 27 06:39	21°♄08'36	
minimum elong	4151 Jun 19 17:18	29°♄59'30	1°27'48				
	4151 Jun 19 18:52	0°♄		conjunction	4157 Sep 14 06:09	23°♄25'51	1°25'08
max. Earth dist.	4151 Jun 19 19:06	0°♄00'04	10.21126 AU	minimum elong	4157 Sep 14 06:06	23°♄25'50	1°25'08
morning rise	4151 Jul 07 13:52	2°♄15'40		max. Earth dist.	4157 Sep 14 08:41	23°♄26'39	10.17923 AU
retrograde	4151 Oct 21 22:11	10°♄25'37		morning rise	4157 Oct 02 02:53	25°♄42'14	
opposition	4151 Dec 29 01:05	6°♄56'41	-1°34'00		4157 Nov 08 09:23	0°♄	
min. Earth dist.	4151 Dec 28 23:20	6°♄57'02	8.17828 AU	retrograde	4158 Jan 12 19:56	3°♄37'35	
direct	4152 Mar 04 18:51	3°♄30'44		opposition	4158 Mar 20 13:38	0°♄11'52	1°59'31
evening set	4152 Jun 15 08:06	11°♄27'00		min. Earth dist.	4158 Mar 20 11:09	0°♄12'22	8.21347 AU
					4158 Mar 23 00:04	30°♄	
conjunction	4152 Jul 03 05:26	13°♄44'10	-1°02'28	direct	4158 May 27 18:06	26°♄42'46	
minimum elong	4152 Jul 03 05:28	13°♄44'10	1°02'29		4158 Jul 30 02:32	0°♄	
max. Earth dist.	4152 Jul 03 07:30	13°♄44'50	10.14927 AU	evening set	4158 Sep 10 19:55	4°♄48'37	
morning rise	4152 Jul 21 05:34	16°♄02'14					
retrograde	4152 Nov 04 06:46	24°♄14'12		conjunction	4158 Sep 28 16:01	7°♄03'51	1°45'57
opposition	4153 Jan 10 22:40	20°♄45'06	-0°59'56	minimum elong	4158 Sep 28 15:58	7°♄03'50	1°45'58
min. Earth dist.	4153 Jan 10 20:47	20°♄45'29	8.12607 AU	max. Earth dist.	4158 Sep 28 18:36	7°♄04'40	10.25052 AU
direct	4153 Mar 18 15:10	17°♄18'00		morning rise	4158 Oct 16 08:29	9°♄17'58	
evening set	4153 Jun 29 22:23	25°♄19'44		retrograde	4159 Jan 26 08:46	17°♄06'15	
				opposition	4159 Apr 03 05:09	13°♄41'49	2°21'28
conjunction	4153 Jul 17 22:57	27°♄38'26	-0°33'16	min. Earth dist.	4159 Apr 03 03:17	13°♄42'12	8.29294 AU
minimum elong	4153 Jul 17 22:59	27°♄38'27	0°33'17	direct	4159 Jun 10 20:54	10°♄13'16	
max. Earth dist.	4153 Jul 18 00:56	27°♄39'04	10.10810 AU	evening set	4159 Sep 25 02:03	18°♄14'44	
morning rise	4153 Aug 05 01:29	29°♄57'45					
	4153 Aug 05 08:37	0°♈		conjunction	4159 Oct 12 18:05	20°♄27'35	2°00'39
retrograde	4153 Nov 18 15:18	8°♈09'49		minimum elong	4159 Oct 12 18:03	20°♄27'34	2°00'40
opposition	4154 Jan 24 22:00	4°♈40'51	-0°22'00	max. Earth dist.	4159 Oct 12 19:59	20°♄28'11	10.33653 AU
min. Earth dist.	4154 Jan 24 20:21	4°♈41'12	8.09618 AU	morning rise	4159 Oct 30 06:01	22°♄39'13	
direct	4154 Apr 01 17:12	1°♈12'47			4160 Jan 20 12:16	0°♄	
evening set	4154 Jul 14 17:28	9°♈18'45		retrograde	4160 Feb 08 14:33	0°♄20'00	
					4160 Feb 27 18:55	30°♄	
conjunction	4154 Aug 01 19:59	11°♈38'15	-0°01'59	opposition	4160 Apr 15 16:35	26°♄56'55	2°35'23
minimum elong	4154 Aug 01 20:00	11°♈38'16	0°01'59	min. Earth dist.	4160 Apr 15 15:30	26°♄57'08	8.38478 AU
behind sun begin	4154 Aug 01 12:39	11°♈35'55		direct	4160 Jun 23 20:03	23°♄29'08	
behind sun end	4154 Aug 02 03:22	11°♈40'37			4160 Sep 26 05:02	0°♄	

evening set	4160 Oct 07 23:32	1° M 24'50		conjunction	4167 Jan 07 10:39	16° 3 48'05	0°57'05
				minimum elong	4167 Jan 07 10:40	16° 3 48'05	0°57'05
conjunction	4160 Oct 25 11:22	3° M 35'12	2°08'45	max. Earth dist.	4167 Jan 07 07:48	16° 3 47'14	10.94111 AU
minimum elong	4160 Oct 25 11:21	3° M 35'12	2°08'46	morning rise	4167 Jan 24 03:47	18° 3 46'50	
max. Earth dist.	4160 Oct 25 12:16	3° M 35'29	10.43256 AU	retrograde	4167 May 04 05:59	25° 3 50'12	
morning rise	4160 Nov 11 19:00	5° M 44'17		opposition	4167 Jul 13 00:25	22° 3 32'33	0°55'03
retrograde	4161 Feb 20 14:21	13° M 17'30		min. Earth dist.	4167 Jul 13 02:19	22° 3 32'12	8.96124 AU
opposition	4161 Apr 28 23:28	9° M 55'43	2°40'58	direct	4167 Sep 21 23:35	19° 3 12'11	
min. Earth dist.	4161 Apr 28 22:51	9° M 55'50	8.48403 AU	evening set	4168 Jan 02 07:42	26° 3 22'11	
direct	4161 Jul 07 13:45	6° M 28'56					
evening set	4161 Oct 21 11:29	14° M 17'48		conjunction	4168 Jan 19 01:48	28° 3 20'49	0°32'19
	4161 Oct 27 05:50	15° M		minimum elong	4168 Jan 19 01:49	28° 3 20'50	0°32'20
				max. Earth dist.	4168 Jan 18 23:19	28° 3 20'05	10.97617 AU
conjunction	4161 Nov 07 19:27	16° M 25'45	2°10'11		4168 Feb 02 01:02	0° ≈	
minimum elong	4161 Nov 07 19:27	16° M 25'45	2°10'12	morning rise	4168 Feb 04 18:16	0° ≈ 19'02	
max. Earth dist.	4161 Nov 07 19:38	16° M 25'49	10.53352 AU	retrograde	4168 May 15 04:50	7° ≈ 22'00	
morning rise	4161 Nov 24 23:13	18° M 32'24		opposition	4168 Jul 24 07:08	4° ≈ 04'11	0°23'50
retrograde	4162 Mar 05 07:08	25° M 58'19		min. Earth dist.	4168 Jul 24 09:00	4° ≈ 03'50	8.98635 AU
opposition	4162 May 12 01:39	22° M 37'43	2°38'29	direct	4168 Oct 03 03:50	0° ≈ 44'30	
min. Earth dist.	4162 May 12 00:56	22° M 37'51	8.58543 AU	evening set	4169 Jan 12 21:40	7° ≈ 51'15	
direct	4162 Jul 21 02:37	19° M 12'03					
evening set	4162 Nov 03 14:03	26° M 53'33		conjunction	4169 Jan 29 14:47	9° ≈ 49'27	0°06'25
				minimum elong	4169 Jan 29 14:47	9° ≈ 49'27	0°06'26
conjunction	4162 Nov 20 18:35	28° M 59'13	2°05'19	behind sun begin	4169 Jan 29 08:12	9° ≈ 47'31	
minimum elong	4162 Nov 20 18:36	28° M 59'13	2°05'19	behind sun end	4169 Jan 29 21:22	9° ≈ 51'23	
max. Earth dist.	4162 Nov 20 18:46	28° M 59'17	10.63419 AU	max. Earth dist.	4169 Jan 29 12:01	9° ≈ 48'40	10.99150 AU
	4162 Nov 29 00:54	0° ✗		morning rise	4169 Feb 15 07:02	11° ≈ 47'26	
morning rise	4162 Dec 07 18:55	1° ✗ 03'39			4169 Mar 16 20:09	15° ≈	
retrograde	4163 Mar 17 19:04	8° ✗ 22'51		desc. node	4169 Apr 30 22:46	18° ≈ 17'32	
opposition	4163 May 24 23:12	5° ✗ 03'16	2°28'36	retrograde	4169 May 27 05:09	18° ≈ 51'23	
min. Earth dist.	4163 May 24 22:29	5° ✗ 03'25	8.68391 AU	opposition	4169 Aug 05 13:08	15° ≈ 33'08	-0°08'14
direct	4163 Aug 03 09:14	1° ✗ 38'48		min. Earth dist.	4169 Aug 05 15:47	15° ≈ 32'39	8.99169 AU
evening set	4163 Nov 16 07:30	9° ✗ 12'45			4169 Aug 13 00:51	15° ≈ R	
				direct	4169 Oct 15 05:27	12° ≈ 13'54	
conjunction	4163 Dec 03 09:05	11° ✗ 16'23	1°54'44		4169 Dec 14 00:02	15° ≈	
minimum elong	4163 Dec 03 09:07	11° ✗ 16'23	1°54'44	evening set	4170 Jan 24 10:33	19° ≈ 18'42	
max. Earth dist.	4163 Dec 03 09:26	11° ✗ 16'29	10.72968 AU				
morning rise	4163 Dec 20 06:36	13° ✗ 18'51		conjunction	4170 Feb 10 02:52	21° ≈ 16'45	-0°19'49
retrograde	4164 Mar 29 03:55	20° ✗ 32'13		minimum elong	4170 Feb 10 02:52	21° ≈ 16'45	0°19'49
opposition	4164 Jun 05 16:36	17° ✗ 13'29	2°12'13	max. Earth dist.	4170 Feb 09 23:07	21° ≈ 15'39	10.98697 AU
min. Earth dist.	4164 Jun 05 16:37	17° ✗ 13'29	8.77487 AU	morning rise	4170 Feb 26 19:22	23° ≈ 14'51	
direct	4164 Aug 15 07:56	13° ✗ 50'10			4170 May 18 11:32	0° ✗	
evening set	4164 Nov 27 16:37	21° ✗ 16'48		retrograde	4170 Jun 08 05:16	0° ✗ 21'10	
					4170 Jun 29 05:22	30° ≈ R	
conjunction	4164 Dec 14 15:39	23° ✗ 18'42	1°39'14	opposition	4170 Aug 17 19:33	27° ≈ 02'14	-0°39'59
minimum elong	4164 Dec 14 15:41	23° ✗ 18'43	1°39'14	min. Earth dist.	4170 Aug 17 22:33	27° ≈ 01'41	8.97741 AU
max. Earth dist.	4164 Dec 14 15:05	23° ✗ 18'32	10.81538 AU	direct	4170 Oct 27 05:08	23° ≈ 43'15	
morning rise	4164 Dec 31 11:09	25° ✗ 19'35			4171 Jan 29 02:52	0° ✗	
	4165 Feb 14 05:09	0° 3		evening set	4171 Feb 04 23:32	0° ✗ 47'24	
retrograde	4165 Apr 10 05:56	2° 3 28'12					
	4165 Jun 07 01:59	30° R ✗		conjunction	4171 Feb 21 15:31	2° ✗ 45'37	-0°45'14
opposition	4165 Jun 18 06:07	29° ✗ 10'04	1°50'24	minimum elong	4171 Feb 21 15:30	2° ✗ 45'36	0°45'15
min. Earth dist.	4165 Jun 18 07:24	29° ✗ 09'49	8.85380 AU	max. Earth dist.	4171 Feb 21 12:08	2° ✗ 44'36	10.96295 AU
direct	4165 Aug 28 01:39	25° ✗ 47'49		morning rise	4171 Mar 10 08:28	4° ✗ 44'07	
	4165 Nov 11 09:04	0° 3		retrograde	4171 Jun 20 09:32	11° ✗ 54'13	
evening set	4165 Dec 09 18:49	3° 3 07'53		opposition	4171 Aug 30 03:01	8° ✗ 34'22	-1°10'17
				min. Earth dist.	4171 Aug 30 05:23	8° ✗ 33'55	8.94415 AU
conjunction	4165 Dec 26 15:42	5° 3 08'20	1°19'42	direct	4171 Nov 08 06:43	5° ✗ 15'25	
minimum elong	4165 Dec 26 15:44	5° 3 08'21	1°19'42	evening set	4172 Feb 16 14:21	12° ✗ 20'15	
max. Earth dist.	4165 Dec 26 13:25	5° 3 07'40	10.88696 AU				
morning rise	4166 Jan 12 09:49	7° 3 07'59		conjunction	4172 Mar 04 06:30	14° ✗ 18'59	-1°08'58
retrograde	4166 Apr 22 05:53	14° 3 13'13		minimum elong	4172 Mar 04 06:28	14° ✗ 18'58	1°08'59
opposition	4166 Jun 30 16:18	10° 3 55'28	1°24'18	max. Earth dist.	4172 Mar 04 04:14	14° ✗ 18'18	10.92041 AU
min. Earth dist.	4166 Jun 30 18:22	10° 3 55'05	8.91673 AU	morning rise	4172 Mar 21 00:09	16° ✗ 18'12	
direct	4166 Sep 09 15:33	7° 3 34'12		retrograde	4172 Jul 01 18:39	23° ✗ 33'17	
evening set	4166 Dec 21 15:22	14° 3 48'42		opposition	4172 Sep 10 12:12	20° ✗ 12'22	-1°38'01
				min. Earth dist.	4172 Sep 10 13:39	20° ✗ 12'06	8.89317 AU

direct	4172 Nov 19 06:20	16° K 53'18	evening set	4179 May 13 07:53	8° II 38'22
evening set	4173 Feb 27 08:24	24° K 00'09			
conjunction	4173 Mar 16 01:03	25° K 59'43 -1°30'05	conjunction	4179 May 30 17:59	10° II 49'55 -1°54'49
minimum elong	4173 Mar 16 01:01	25° K 59'43 1°30'05	minimum elong	4179 May 30 18:02	10° II 49'56 1°54'50
max. Earth dist.	4173 Mar 15 23:00	25° K 59'06 10.86092 AU	max. Earth dist.	4179 May 30 18:55	10° II 50'13 10.31846 AU
morning rise	4173 Apr 01 19:56	28° K 00'02	morning rise	4179 Jun 17 08:32	13° II 02'51
	4173 Apr 19 09:11	0° Y	retrograde	4179 Oct 01 21:03	21° II 07'17
retrograde	4173 Jul 14 07:36	5° Y 21'11	opposition	4179 Dec 09 15:25	17° II 39'00 -2°12'26
opposition	4173 Sep 23 00:14	1° Y 59'06 -2°02'01	min. Earth dist.	4179 Dec 09 14:05	17° II 39'16 8.27709 AU
min. Earth dist.	4173 Sep 23 01:34	1° Y 58'51 8.82627 AU	direct	4180 Feb 14 13:16	14° II 14'44
	4173 Oct 21 05:27	30° R K	evening set	4180 May 26 04:45	22° II 02'12
direct	4173 Dec 01 07:25	28° K 39'43	conjunction	4180 Jun 12 19:37	24° II 16'17 -1°37'18
	4174 Jan 10 07:25	0° Y	minimum elong	4180 Jun 12 19:40	24° II 16'18 1°37'18
evening set	4174 Mar 11 06:53	5° Y 49'53	max. Earth dist.	4180 Jun 12 21:09	24° II 16'46 10.23738 AU
conjunction	4174 Mar 28 00:30	7° Y 50'39 -1°47'39	morning rise	4180 Jun 30 14:36	26° II 31'38
minimum elong	4174 Mar 28 00:27	7° Y 50'38 1°47'39		4180 Jul 30 01:46	0° S
max. Earth dist.	4174 Mar 27 22:09	7° Y 49'56 10.78673 AU	retrograde	4180 Oct 15 01:33	4° S 40'38
morning rise	4174 Apr 13 21:14	9° Y 52'21	opposition	4180 Dec 22 09:15	1° S 11'59 -1°47'09
retrograde	4174 Jul 27 02:18	17° Y 20'29	min. Earth dist.	4180 Dec 22 07:39	1° S 12'18 8.20296 AU
opposition	4174 Oct 05 15:48	13° Y 57'12 -2°21'11		4181 Jan 06 12:18	30° R II
min. Earth dist.	4174 Oct 05 17:14	13° Y 56'56 8.74602 AU	direct	4181 Feb 27 03:25	27° II 46'41
direct	4174 Dec 13 12:22	10° Y 37'19		4181 Apr 18 06:35	0° S
evening set	4175 Mar 23 11:04	17° Y 51'57	evening set	4181 Jun 09 09:49	5° S 40'46
conjunction	4175 Apr 09 06:30	19° Y 54'16 -2°00'46	conjunction	4181 Jun 27 05:18	7° S 57'08 -1°14'04
minimum elong	4175 Apr 09 06:28	19° Y 54'16 2°00'45	minimum elong	4181 Jun 27 05:21	7° S 57'09 1°14'05
max. Earth dist.	4175 Apr 09 04:31	19° Y 53'40 10.70078 AU	max. Earth dist.	4181 Jun 27 07:54	7° S 57'58 10.17190 AU
morning rise	4175 Apr 26 05:40	21° Y 57'44	morning rise	4181 Jul 15 04:07	10° S 14'32
retrograde	4175 Aug 09 02:19	29° Y 33'27	retrograde	4181 Oct 29 09:34	18° S 26'22
opposition	4175 Oct 18 11:18	26° Y 08'57 -2°34'26	opposition	4182 Jan 05 06:21	14° S 57'35 -1°15'20
min. Earth dist.	4175 Oct 18 12:26	26° Y 08'44 8.65565 AU	min. Earth dist.	4182 Jan 05 03:59	14° S 58'04 8.14656 AU
direct	4175 Dec 25 21:08	22° Y 48'24	direct	4182 Mar 12 22:27	11° S 31'19
	4176 Apr 02 17:41	0° S	evening set	4182 Jun 23 22:02	19° S 31'10
evening set	4176 Apr 03 21:59	0° S 08'31	conjunction	4182 Jul 11 21:23	21° S 49'19 -0°46'19
conjunction	4176 Apr 20 20:08	2° S 12'46 -2°08'36	minimum elong	4182 Jul 11 21:25	21° S 49'20 0°46'19
minimum elong	4176 Apr 20 20:08	2° S 12'46 2°08'36	max. Earth dist.	4182 Jul 12 01:01	21° S 50'29 10.12593 AU
max. Earth dist.	4176 Apr 20 19:34	2° S 12'35 10.60653 AU	morning rise	4182 Jul 29 23:03	24° S 08'13
morning rise	4176 May 07 22:17	4° S 18'17		4182 Sep 21 12:03	0° J
retrograde	4176 Aug 21 09:12	12° S 01'52	retrograde	4182 Nov 12 19:06	2° J 20'53
opposition	4176 Oct 30 11:14	8° S 36'10 -2°40'48		4183 Jan 05 04:35	30° R S
min. Earth dist.	4176 Oct 30 11:16	8° S 36'10 8.55886 AU	opposition	4183 Jan 19 05:34	28° S 52'14 -0°38'46
direct	4177 Jan 06 11:12	5° S 14'51	min. Earth dist.	4183 Jan 19 02:31	28° S 52'51 8.11121 AU
evening set	4177 Apr 16 16:43	12° S 41'14	direct	4183 Mar 26 23:04	25° S 25'05
conjunction	4177 May 03 18:15	14° S 47'44 -2°10'30		4183 Jun 09 09:11	0° J
minimum elong	4177 May 03 18:16	14° S 47'44 2°10'30	evening set	4183 Jul 08 16:00	3° J 29'33
max. Earth dist.	4177 May 03 18:41	14° S 47'52 10.50810 AU	conjunction	4183 Jul 26 17:58	5° J 48'48 -0°15'39
	4177 May 05 09:40	15° S	minimum elong	4183 Jul 26 17:59	5° J 48'48 0°15'40
morning rise	4177 May 20 23:58	16° S 55'35	behind sun begin	4183 Jul 26 17:07	5° J 48'32
retrograde	4177 Sep 03 24:00	24° S 46'52	behind sun end	4183 Jul 26 18:51	5° J 49'05
opposition	4177 Nov 12 15:53	21° S 20'06 -2°39'30	max. Earth dist.	4183 Jul 26 22:04	5° J 50'07 10.10202 AU
min. Earth dist.	4177 Nov 12 14:58	21° S 20'17 8.46011 AU	morning rise	4183 Aug 13 21:03	8° J 08'26
direct	4178 Jan 19 05:19	17° S 57'54		4183 Oct 19 11:56	15° J
evening set	4178 Apr 29 19:55	25° S 31'08	retrograde	4183 Nov 27 03:14	16° J 19'52
conjunction	4178 May 17 01:28	27° S 40'06 -2°05'58		4184 Jan 05 02:19	15° R J
minimum elong	4178 May 17 01:29	27° S 40'06 2°05'59	asc. node	4184 Jan 30 04:11	13° J 06'42
max. Earth dist.	4178 May 17 02:18	27° S 40'22 10.41037 AU	opposition	4184 Feb 02 05:40	12° J 51'37 0°00'19
morning rise	4178 Jun 03 11:24	29° S 50'28	min. Earth dist.	4184 Feb 02 02:26	12° J 52'17 8.09869 AU
	4178 Jun 04 18:28	0° II	direct	4184 Apr 09 03:20	9° J 23'43
retrograde	4178 Sep 17 20:31	7° II 48'51		4184 Jul 01 20:37	15° J
opposition	4178 Nov 26 01:23	4° II 21'13 -2°30'03	evening set	4184 Jul 22 13:15	17° J 31'21
min. Earth dist.	4178 Nov 26 00:02	4° II 21'29 8.36448 AU	conjunction	4184 Aug 09 16:17	19° J 50'54 0°16'05
direct	4179 Feb 01 05:15	0° II 57'59	minimum elong	4184 Aug 09 16:16	19° J 50'54 0°16'04
			max. Earth dist.	4184 Aug 09 19:56	19° J 52'05 10.10101 AU

morning rise	4184 Aug 27 19:14	22°♏10'28		retrograde	4191 Feb 28 08:30	20°♍53'16	
	4184 Nov 21 22:32	0°♐		opposition	4191 May 06 21:45	17°♍32'01	2°40'29
retrograde	4184 Dec 10 09:05	0°♐18'51		min. Earth dist.	4191 May 06 21:37	17°♍32'03	8.53498 AU
	4184 Dec 28 19:50	30°♐♏			4191 Jun 12 11:22	15°♐♍	
opposition	4185 Feb 15 05:43	26°♏51'15	0°39'24	direct	4191 Jul 15 17:35	14°♍05'39	
min. Earth dist.	4185 Feb 15 03:09	26°♏51'47	8.10894 AU		4191 Aug 17 19:02	15°♍	
direct	4185 Apr 23 09:37	23°♏22'47		evening set	4191 Oct 29 10:42	21°♍50'37	
	4185 Jul 25 01:41	0°♐					
evening set	4185 Aug 06 11:06	1°♐31'59		conjunction	4191 Nov 15 16:45	23°♍57'21	2°08'07
				minimum elong	4191 Nov 15 16:46	23°♍57'21	2°08'08
conjunction	4185 Aug 24 13:36	3°♐51'04	0°46'43	max. Earth dist.	4191 Nov 15 16:40	23°♍57'20	10.58279 AU
minimum elong	4185 Aug 24 13:34	3°♐51'03	0°46'43	morning rise	4191 Dec 02 18:29	26°♍02'48	
max. Earth dist.	4185 Aug 24 16:03	3°♐51'51	10.12195 AU		4192 Jan 07 09:46	0°♐	
morning rise	4185 Sep 11 14:56	6°♐09'47		retrograde	4192 Mar 11 21:47	3°♐25'03	
retrograde	4185 Dec 24 11:28	14°♐13'43		opposition	4192 May 18 21:33	0°♐04'44	2°33'41
opposition	4186 Mar 01 04:29	10°♐46'59	1°15'56	min. Earth dist.	4192 May 18 22:13	0°♐04'37	8.63242 AU
min. Earth dist.	4186 Mar 01 02:54	10°♐47'19	8.14050 AU		4192 May 19 22:03	30°♐♍	
direct	4186 May 07 16:23	7°♐18'14		direct	4192 Jul 28 03:33	26°♍39'20	
evening set	4186 Aug 21 07:30	15°♐27'26			4192 Oct 01 23:50	0°♐	
				evening set	4192 Nov 10 08:04	4°♐16'46	
conjunction	4186 Sep 08 08:03	17°♐45'20	1°14'27				
minimum elong	4186 Sep 08 08:00	17°♐45'19	1°14'27	conjunction	4192 Nov 27 10:50	6°♐21'20	1°59'53
max. Earth dist.	4186 Sep 08 09:16	17°♐45'44	10.16334 AU	minimum elong	4192 Nov 27 10:52	6°♐21'21	1°59'54
morning rise	4186 Sep 26 06:28	20°♐02'33		max. Earth dist.	4192 Nov 27 09:43	6°♐21'00	10.67853 AU
retrograde	4187 Jan 07 09:04	28°♐00'48		morning rise	4192 Dec 14 09:42	8°♐24'44	
opposition	4187 Mar 15 00:57	24°♐35'08	1°47'42	retrograde	4193 Mar 24 06:30	15°♐40'42	
min. Earth dist.	4187 Mar 15 00:02	24°♐35'20	8.19189 AU	opposition	4193 May 31 16:34	12°♐21'09	2°19'58
direct	4187 May 21 23:44	21°♐06'24		min. Earth dist.	4193 May 31 17:15	12°♐21'02	8.72508 AU
evening set	4187 Sep 04 23:49	29°♐13'49		direct	4193 Aug 10 06:40	8°♐56'48	
	4187 Sep 11 02:42	0°♑		evening set	4193 Nov 22 20:36	16°♐26'46	
conjunction	4187 Sep 22 21:18	1°♑29'57	1°37'38	conjunction	4193 Dec 09 20:43	18°♐29'29	1°46'23
minimum elong	4187 Sep 22 21:15	1°♑29'56	1°37'38	minimum elong	4193 Dec 09 20:45	18°♐29'30	1°46'23
max. Earth dist.	4187 Sep 22 21:46	1°♑30'06	10.22365 AU	max. Earth dist.	4193 Dec 09 19:33	18°♐29'08	10.76745 AU
morning rise	4187 Oct 10 15:49	3°♑45'07		morning rise	4193 Dec 26 17:16	20°♐31'08	
retrograde	4188 Jan 20 23:33	11°♑36'45		retrograde	4194 Apr 05 10:48	27°♐41'49	
opposition	4188 Mar 27 18:27	8°♑12'12	2°12'54	opposition	4194 Jun 13 07:30	24°♐22'54	2°00'20
min. Earth dist.	4188 Mar 27 17:32	8°♑12'23	8.26102 AU	min. Earth dist.	4194 Jun 13 07:50	24°♐22'50	8.80880 AU
direct	4188 Jun 04 05:31	4°♑43'45		direct	4194 Aug 23 03:21	20°♐59'37	
evening set	4188 Sep 18 09:33	12°♑47'34		evening set	4194 Dec 05 01:28	28°♐22'37	
					4194 Dec 18 16:23	0°♑	
conjunction	4188 Oct 06 03:19	15°♑01'29	1°55'05	conjunction	4194 Dec 21 23:25	0°♑23'46	1°28'28
minimum elong	4188 Oct 06 03:17	15°♑01'28	1°55'05	minimum elong	4194 Dec 21 23:28	0°♑23'46	1°28'28
max. Earth dist.	4188 Oct 06 03:48	15°♑01'38	10.30013 AU	max. Earth dist.	4194 Dec 21 22:44	0°♑23'33	10.84565 AU
morning rise	4188 Oct 23 17:22	17°♑14'15		morning rise	4195 Jan 07 18:06	2°♑23'59	
retrograde	4189 Feb 02 08:20	24°♑58'40		retrograde	4195 Apr 17 13:00	9°♑30'37	
opposition	4189 Apr 10 08:06	21°♑35'14	2°30'22	opposition	4195 Jun 25 18:56	6°♑12'10	1°35'55
min. Earth dist.	4189 Apr 10 06:51	21°♑35'29	8.34434 AU	min. Earth dist.	4195 Jun 25 19:18	6°♑12'06	8.88018 AU
direct	4189 Jun 18 07:11	18°♑07'18		direct	4195 Sep 04 18:12	2°♑49'58	
evening set	4189 Oct 02 11:17	26°♑05'54		evening set	4195 Dec 17 00:03	10°♑06'46	
conjunction	4189 Oct 20 01:05	28°♑17'26	2°06'03				
minimum elong	4189 Oct 20 01:03	28°♑17'25	2°06'04	conjunction	4196 Jan 02 20:10	12°♑06'39	1°07'03
max. Earth dist.	4189 Oct 20 01:56	28°♑17'42	10.38874 AU	minimum elong	4196 Jan 02 20:12	12°♑06'40	1°07'04
	4189 Nov 02 16:57	0°♒		max. Earth dist.	4196 Jan 02 19:21	12°♑06'24	10.91006 AU
morning rise	4189 Nov 06 10:36	0°♒27'40		morning rise	4196 Jan 19 13:36	14°♑05'47	
retrograde	4190 Feb 15 12:09	8°♒04'29		retrograde	4196 Apr 28 12:39	21°♑09'42	
opposition	4190 Apr 23 17:12	4°♒42'10	2°39'33	opposition	4196 Jul 07 03:38	17°♑51'32	1°07'53
min. Earth dist.	4190 Apr 23 16:16	4°♒42'21	8.43733 AU	min. Earth dist.	4196 Jul 07 04:48	17°♑51'19	8.93654 AU
direct	4190 Jul 02 02:40	1°♒14'57		direct	4196 Sep 16 02:41	14°♑30'20	
evening set	4190 Oct 16 03:52	9°♒07'08		evening set	4196 Dec 27 17:43	21°♑41'58	
conjunction	4190 Nov 02 13:42	11°♒16'13	2°10'20	conjunction	4197 Jan 13 12:16	23°♑40'53	0°43'07
minimum elong	4190 Nov 02 13:41	11°♒16'13	2°10'21	minimum elong	4197 Jan 13 12:18	23°♑40'54	0°43'08
max. Earth dist.	4190 Nov 02 14:21	11°♒16'25	10.48462 AU	max. Earth dist.	4197 Jan 13 10:23	23°♑40'20	10.95822 AU
morning rise	4190 Nov 19 19:00	13°♒23'58		morning rise	4197 Jan 30 05:06	25°♑39'18	
	4190 Dec 03 05:30	15°♒			4197 Mar 12 22:22	0°♒	

retrograde	4197 May 10 09:26	2°  41'55		minimum elong	4203 Mar 24 02:07	2°  50'46	1°40'15
	4197 Jul 11 06:21	30°  23'50		max. Earth dist.	4203 Mar 24 01:25	2°  50'33	10.85238 AU
opposition	4197 Jul 19 10:17	29°  23'50	0°37'24	morning rise	4203 Apr 09 21:47	4°  51'26	
min. Earth dist.	4197 Jul 19 11:51	29°  23'32	8.97565 AU	retrograde	4203 Jul 22 18:38	12°  15'00	
direct	4197 Sep 28 08:22	26°  03'30		opposition	4203 Oct 01 09:56	8°  53'01	-2°13'05
	4197 Dec 10 00:11	0° 		min. Earth dist.	4203 Oct 01 10:13	8°  52'58	8.81617 AU
evening set	4198 Jan 08 08:00	3°  11'11		direct	4203 Dec 09 12:46	5°  34'12	
				evening set	4204 Mar 18 09:54	12°  45'16	
conjunction	4198 Jan 25 01:25	5°  09'27	0°17'37				
minimum elong	4198 Jan 25 01:25	5°  09'27	0°17'38	conjunction	4204 Apr 04 04:21	14°  46'27	-1°55'22
max. Earth dist.	4198 Jan 24 23:21	5°  08'50	10.98820 AU	minimum elong	4204 Apr 04 04:19	14°  46'26	1°55'22
morning rise	4198 Feb 10 17:51	7°  07'25		max. Earth dist.	4204 Apr 04 03:46	14°  46'16	10.77472 AU
retrograde	4198 May 22 08:34	14°  10'13		morning rise	4204 Apr 21 02:00	16°  48'38	
opposition	4198 Jul 31 15:46	10°  51'59	0°05'37	retrograde	4204 Aug 03 15:50	24°  19'18	
min. Earth dist.	4198 Jul 31 16:52	10°  51'47	8.99600 AU	opposition	4204 Oct 13 02:25	20°  56'10	-2°29'00
desc. node	4198 Oct 05 19:20	7°  33'29		min. Earth dist.	4204 Oct 13 02:40	20°  56'07	8.73231 AU
direct	4198 Oct 10 11:41	7°  32'25		direct	4204 Dec 20 16:50	17°  36'47	
evening set	4199 Jan 19 20:27	14°  37'22		evening set	4205 Mar 30 16:50	24°  52'46	
	4199 Jan 23 02:12	15° 					
conjunction	4199 Feb 05 13:07	16°  35'18	-0°08'34	conjunction	4205 Apr 16 13:22	26°  55'39	-2°05'37
minimum elong	4199 Feb 05 13:07	16°  35'18	0°08'34	minimum elong	4205 Apr 16 13:21	26°  55'39	2°05'36
behind sun begin	4199 Feb 05 07:00	16°  33'31		max. Earth dist.	4205 Apr 16 11:53	26°  55'12	10.68490 AU
behind sun end	4199 Feb 05 19:14	16°  37'06		morning rise	4205 May 03 13:49	28°  59'44	
max. Earth dist.	4199 Feb 05 11:56	16°  34'58	10.99890 AU		4205 May 12 01:42	0° 	
morning rise	4199 Feb 22 05:22	18°  33'10		retrograde	4205 Aug 16 18:25	6°  38'03	
retrograde	4199 Jun 03 08:45	25°  37'35		opposition	4205 Oct 25 23:20	3°  13'43	-2°38'30
opposition	4199 Aug 12 21:13	22°  18'58	-0°26'19	min. Earth dist.	4205 Oct 26 00:10	3°  13'33	8.63769 AU
min. Earth dist.	4199 Aug 12 21:45	22°  18'52	8.99691 AU		4205 Dec 22 02:22	30°  1'00	
direct	4199 Oct 22 10:57	19°  00'01		direct	4206 Jan 02 03:27	29°  53'33	
evening set	4200 Jan 31 08:31	26°  03'32			4206 Jan 13 03:22	0° 	
				evening set	4206 Apr 12 06:47	7°  15'27	
conjunction	4200 Feb 17 00:39	28°  01'27	-0°34'19	conjunction	4206 Apr 29 06:18	9°  20'25	-2°10'15
minimum elong	4200 Feb 17 00:38	28°  01'27	0°34'20	minimum elong	4206 Apr 29 06:18	9°  20'26	2°10'15
max. Earth dist.	4200 Feb 16 23:30	28°  01'07	10.98996 AU	max. Earth dist.	4206 Apr 29 04:31	9°  19'52	10.58643 AU
morning rise	4200 Mar 05 17:09	29°  59'32		morning rise	4206 May 16 10:11	11°  26'44	
	4200 Mar 05 18:46	0° 			4206 Jun 16 20:23	15° 	
retrograde	4200 Jun 15 11:52	7°  06'57		retrograde	4206 Aug 30 04:03	19°  12'54	
opposition	4200 Aug 25 03:22	3°  47'46	-0°57'16	opposition	4206 Nov 08 00:56	15°  47'24	-2°40'45
min. Earth dist.	4200 Aug 25 04:15	3°  47'36	8.97840 AU	min. Earth dist.	4206 Nov 08 02:00	15°  47'11	8.53671 AU
direct	4200 Nov 03 09:53	0°  29'10			4206 Nov 18 06:30	15° 	
evening set	4201 Feb 11 21:54	7°  32'40		direct	4207 Jan 14 19:07	12°  26'16	
					4207 Mar 10 17:36	15° 	
conjunction	4201 Feb 28 13:43	9°  30'53	-0°58'49	evening set	4207 Apr 25 04:56	19°  54'50	
minimum elong	4201 Feb 28 13:42	9°  30'52	0°58'50				
max. Earth dist.	4201 Feb 28 11:51	9°  30'19	10.96178 AU	conjunction	4207 May 12 08:19	22°  02'13	-2°08'41
morning rise	4201 Mar 17 06:56	11°  29'29		minimum elong	4207 May 12 08:20	22°  02'13	2°08'42
retrograde	4201 Jun 27 16:55	18°  41'09		max. Earth dist.	4207 May 12 07:20	22°  01'54	10.48436 AU
opposition	4201 Sep 06 10:55	15°  21'14	-1°26'08	morning rise	4207 May 29 16:09	24°  11'00	
min. Earth dist.	4201 Sep 06 12:19	15°  20'59	8.94116 AU		4207 Jul 24 08:26	0° 	
direct	4201 Nov 15 08:10	12°  02'46		retrograde	4207 Sep 12 19:53	2°  04'40	
evening set	4202 Feb 23 13:42	19°  07'35			4207 Nov 03 10:49	30° 	
				opposition	4207 Nov 21 07:05	28°  38'02	-2°35'07
conjunction	4202 Mar 12 05:47	21°  06'25	-1°21'06	min. Earth dist.	4207 Nov 21 07:36	28°  37'56	8.43487 AU
minimum elong	4202 Mar 12 05:45	21°  06'24	1°21'07	direct	4208 Jan 27 16:20	25°  15'48	
max. Earth dist.	4202 Mar 12 03:58	21°  05'52	10.91540 AU		4208 Apr 13 03:28	0° 	
morning rise	4202 Mar 29 00:01	23°  05'53		evening set	4208 May 07 11:45	2°  51'29	
	4202 Jun 18 10:41	0° 					
retrograde	4202 Jul 10 01:58	0°  23'01		conjunction	4208 May 24 19:38	5°  01'27	-2°00'38
	4202 Aug 01 00:23	30°  1'00		minimum elong	4208 May 24 19:40	5°  01'28	2°00'39
opposition	4202 Sep 18 20:56	27°  02'08	-1°51'46	max. Earth dist.	4208 May 24 19:44	5°  01'29	10.38434 AU
min. Earth dist.	4202 Sep 18 22:00	27°  01'56	8.88650 AU	morning rise	4208 Jun 11 07:47	7°  12'49	
direct	4202 Nov 27 09:31	23°  43'36		retrograde	4208 Sep 25 17:01	15°  13'12	
	4203 Feb 28 02:04	0° 		opposition	4208 Dec 03 17:56	11°  45'35	-2°21'21
evening set	4203 Mar 07 09:10	0°  50'58		min. Earth dist.	4208 Dec 03 17:31	11°  45'40	8.33777 AU
				direct	4209 Feb 08 20:20	8°  22'08	
conjunction	4203 Mar 24 02:10	2°  50'47	-1°40'16	evening set	4209 May 21 03:19	16°  05'02	

conjunction	4209 Jun 07 15:55	18° Π 17'38	-1°46'05	conjunction	4215 Sep 02 18:03	11° Π 26'29	1°01'45
minimum elong	4209 Jun 07 15:58	18° Π 17'39	1°46'06	minimum elong	4215 Sep 02 18:01	11° Π 26'28	1°01'45
max. Earth dist.	4209 Jun 07 16:48	18° Π 17'55	10.29190 AU	max. Earth dist.	4215 Sep 02 20:37	11° Π 27'18	10.12770 AU
morning rise	4209 Jun 25 08:32	20° Π 31'32		morning rise	4215 Sep 20 18:02	13° Π 44'37	
retrograde	4209 Oct 09 19:46	28° Π 37'26		retrograde	4216 Jan 02 04:36	21° Π 46'04	
opposition	4209 Dec 17 09:05	25° Π 09'03	-1°59'39	opposition	4216 Mar 08 21:21	18° Π 19'15	1°33'21
min. Earth dist.	4209 Dec 17 07:57	25° Π 09'17	8.25086 AU	min. Earth dist.	4216 Mar 08 19:04	18° Π 19'43	8.15175 AU
direct	4210 Feb 22 05:31	21° Π 44'21		direct	4216 May 15 15:32	14° Π 49'54	
evening set	4210 Jun 04 03:33	29° Π 34'14		evening set	4216 Aug 29 10:38	22° Π 58'38	
	4210 Jun 07 13:30	0° \mathfrak{C}					
conjunction	4210 Jun 21 20:49	1° \mathfrak{C} 49'19	-1°25'29	conjunction	4216 Sep 16 09:54	25° Π 15'48	1°27'16
minimum elong	4210 Jun 21 20:52	1° \mathfrak{C} 49'20	1°25'31	minimum elong	4216 Sep 16 09:51	25° Π 15'47	1°27'16
max. Earth dist.	4210 Jun 21 21:47	1° \mathfrak{C} 49'38	10.21232 AU	max. Earth dist.	4216 Sep 16 12:23	25° Π 16'35	10.18005 AU
morning rise	4210 Jul 09 17:42	4° \mathfrak{C} 05'34		morning rise	4216 Oct 04 06:18	27° Π 32'06	
retrograde	4210 Oct 24 02:21	12° \mathfrak{C} 15'19		retrograde	4216 Oct 24 15:36	0° \mathfrak{A}	
opposition	4210 Dec 31 03:49	8° \mathfrak{C} 46'28	-1°30'52	opposition	4217 Jan 14 22:44	5° \mathfrak{A} 27'19	
min. Earth dist.	4210 Dec 31 02:41	8° \mathfrak{C} 46'42	8.17917 AU	opposition	4217 Mar 22 16:23	2° \mathfrak{A} 01'38	2°01'51
direct	4211 Mar 07 20:29	5° \mathfrak{C} 20'30		min. Earth dist.	4217 Mar 22 14:31	2° \mathfrak{A} 02'01	8.21435 AU
evening set	4211 Jun 18 11:38	13° \mathfrak{C} 16'52		direct	4217 Apr 18 09:06	30° \mathfrak{R} Π	
				direct	4217 May 29 21:23	28° Π 32'31	
conjunction	4211 Jul 06 09:06	15° \mathfrak{C} 34'03	-0°59'47	evening set	4217 Jul 10 01:25	0° \mathfrak{A}	
minimum elong	4211 Jul 06 09:09	15° \mathfrak{C} 34'04	0°59'48	evening set	4217 Sep 12 23:35	6° \mathfrak{A} 38'25	
max. Earth dist.	4211 Jul 06 10:03	15° \mathfrak{C} 34'21	10.15012 AU	conjunction	4217 Sep 30 19:20	8° \mathfrak{A} 53'33	1°47'32
morning rise	4211 Jul 24 09:32	17° \mathfrak{C} 52'10		minimum elong	4217 Sep 30 19:18	8° \mathfrak{A} 53'32	1°47'33
retrograde	4211 Nov 07 10:30	26° \mathfrak{C} 03'57		max. Earth dist.	4217 Sep 30 21:16	8° \mathfrak{A} 54'09	10.25135 AU
opposition	4212 Jan 14 01:23	22° \mathfrak{C} 34'56	-0°56'25	morning rise	4217 Oct 18 11:33	11° \mathfrak{A} 07'36	
min. Earth dist.	4212 Jan 14 00:22	22° \mathfrak{C} 35'09	8.12681 AU	retrograde	4218 Jan 28 10:59	18° \mathfrak{A} 55'45	
direct	4212 Mar 20 18:34	19° \mathfrak{C} 07'49		opposition	4218 Apr 05 07:54	15° \mathfrak{A} 31'22	2°23'04
evening set	4212 Jul 02 02:11	27° \mathfrak{C} 09'43		min. Earth dist.	4218 Apr 05 06:45	15° \mathfrak{A} 31'35	8.29385 AU
				direct	4218 Jun 13 00:14	12° \mathfrak{A} 02'46	
conjunction	4212 Jul 20 02:53	29° \mathfrak{C} 28'26	-0°30'21	evening set	4218 Sep 27 05:26	20° \mathfrak{A} 04'13	
minimum elong	4212 Jul 20 02:54	29° \mathfrak{C} 28'26	0°30'22				
max. Earth dist.	4212 Jul 20 03:59	29° \mathfrak{C} 28'47	10.10882 AU	conjunction	4218 Oct 14 21:08	22° \mathfrak{A} 17'00	2°01'37
	4212 Jul 24 04:41	0° \mathfrak{Q}		minimum elong	4218 Oct 14 21:06	22° \mathfrak{A} 16'59	2°01'38
morning rise	4212 Aug 07 05:33	1° \mathfrak{Q} 47'46		max. Earth dist.	4218 Oct 14 22:03	22° \mathfrak{A} 17'17	10.33738 AU
retrograde	4212 Nov 20 17:23	9° \mathfrak{Q} 59'39		morning rise	4218 Nov 01 08:56	24° \mathfrak{A} 28'33	
opposition	4213 Jan 27 00:37	6° \mathfrak{Q} 30'46	-0°18'19	retrograde	4218 Dec 23 00:14	0° \mathfrak{M}	
min. Earth dist.	4213 Jan 26 23:29	6° \mathfrak{Q} 31'00	8.09687 AU	retrograde	4219 Feb 10 16:55	2° \mathfrak{M} 09'12	
direct	4213 Apr 03 21:19	3° \mathfrak{Q} 02'41			4219 Apr 02 23:06	30° \mathfrak{R} \mathfrak{A}	
evening set	4213 Jul 16 21:21	11° \mathfrak{Q} 08'49		opposition	4219 Apr 18 19:11	28° \mathfrak{A} 46'08	2°36'10
asc. node	4213 Jul 22 11:00	11° \mathfrak{Q} 51'20		min. Earth dist.	4219 Apr 18 18:16	28° \mathfrak{A} 46'19	8.38565 AU
				direct	4219 Jun 26 22:58	25° \mathfrak{A} 18'20	
conjunction	4213 Aug 03 23:59	13° \mathfrak{Q} 28'21	0°01'05	evening set	4219 Sep 13 04:22	0° \mathfrak{M}	
minimum elong	4213 Aug 03 23:59	13° \mathfrak{Q} 28'21	0°01'05	evening set	4219 Oct 11 02:34	3° \mathfrak{M} 13'58	
behind sun begin	4213 Aug 03 16:38	13° \mathfrak{Q} 26'00					
behind sun end	4213 Aug 04 07:20	13° \mathfrak{Q} 30'42		conjunction	4219 Oct 28 14:11	5° \mathfrak{M} 24'17	2°09'03
max. Earth dist.	4213 Aug 04 01:33	13° \mathfrak{Q} 28'47	10.09092 AU	minimum elong	4219 Oct 28 14:10	5° \mathfrak{M} 24'16	2°09'04
	4213 Aug 15 20:19	15° \mathfrak{Q}		max. Earth dist.	4219 Oct 28 14:43	5° \mathfrak{M} 24'27	10.43336 AU
morning rise	4213 Aug 22 03:22	15° \mathfrak{Q} 48'05		morning rise	4219 Nov 14 21:40	7° \mathfrak{M} 33'18	
retrograde	4213 Dec 04 23:43	23° \mathfrak{Q} 58'11			4220 Feb 12 20:09	15° \mathfrak{M}	
opposition	4214 Feb 10 00:27	20° \mathfrak{Q} 29'44	0°21'02	retrograde	4220 Feb 23 15:46	15° \mathfrak{M} 06'25	
min. Earth dist.	4214 Feb 09 22:46	20° \mathfrak{Q} 30'04	8.09117 AU		4220 Mar 05 13:22	15° \mathfrak{R} \mathfrak{M}	
direct	4214 Apr 18 02:26	17° \mathfrak{Q} 00'56		opposition	4220 May 01 02:04	11° \mathfrak{M} 44'37	2°40'56
evening set	4214 Jul 31 18:51	25° \mathfrak{Q} 09'43		min. Earth dist.	4220 May 01 00:56	11° \mathfrak{M} 44'50	8.48475 AU
				direct	4220 Jul 09 17:42	8° \mathfrak{M} 17'51	
conjunction	4214 Aug 18 21:54	27° \mathfrak{Q} 29'14	0°32'25		4220 Oct 14 07:10	15° \mathfrak{M}	
minimum elong	4214 Aug 18 21:53	27° \mathfrak{Q} 29'13	0°32'25	evening set	4220 Oct 23 14:05	16° \mathfrak{M} 06'36	
max. Earth dist.	4214 Aug 19 00:09	27° \mathfrak{Q} 29'57	10.09740 AU				
morning rise	4214 Sep 06 00:22	29° \mathfrak{Q} 48'34		conjunction	4220 Nov 09 21:56	18° \mathfrak{M} 14'30	2°09'50
	4214 Sep 07 12:38	0° \mathfrak{P}		minimum elong	4220 Nov 09 21:56	18° \mathfrak{M} 14'30	2°09'51
retrograde	4214 Dec 19 04:03	7° \mathfrak{P} 55'06		max. Earth dist.	4220 Nov 09 22:43	18° \mathfrak{M} 14'44	10.53419 AU
opposition	4215 Feb 23 23:44	4° \mathfrak{P} 27'20	0°59'04	morning rise	4220 Nov 27 01:29	20° \mathfrak{M} 21'06	
min. Earth dist.	4215 Feb 23 21:30	4° \mathfrak{P} 27'47	8.10987 AU	retrograde	4221 Mar 07 09:30	27° \mathfrak{M} 46'59	
direct	4215 May 02 08:42	0° \mathfrak{P} 58'06		opposition	4221 May 14 04:17	24° \mathfrak{M} 26'21	2°37'41
evening set	4215 Aug 15 16:12	9° \mathfrak{P} 07'47		min. Earth dist.	4221 May 14 03:01	24° \mathfrak{M} 26'36	8.58599 AU
				direct	4221 Jul 23 05:58	21° \mathfrak{M} 00'43	































































































evening set	4221 Nov 05 16:19	28° \mathbb{M} 42'03		conjunction	4228 Feb 01 15:57	11° \approx 36'04	0°03'35
	4221 Nov 16 09:13	0° \mathbb{A}		minimum elong	4228 Feb 01 15:58	11° \approx 36'04	0°03'36
				behind sun begin	4228 Feb 01 09:02	11° \approx 34'02	
conjunction	4221 Nov 22 20:48	0° \mathbb{A} 47'42	2°04'21	behind sun end	4228 Feb 01 22:53	11° \approx 38'05	
minimum elong	4221 Nov 22 20:50	0° \mathbb{A} 47'42	2°04'21	max. Earth dist.	4228 Feb 01 12:45	11° \approx 35'09	10.99465 AU
max. Earth dist.	4221 Nov 22 21:48	0° \mathbb{A} 48'00	10.63476 AU	morning rise	4228 Feb 18 08:18	13° \approx 34'01	
morning rise	4221 Dec 09 20:57	2° \mathbb{A} 52'05			4228 Mar 01 23:09	15° \approx	
retrograde	4222 Mar 19 22:36	10° \mathbb{A} 11'16		desc. node	4228 Mar 23 06:02	17° \approx 11'44	
opposition	4222 May 27 01:50	6° \mathbb{A} 51'41	2°27'04	retrograde	4228 May 29 05:52	20° \approx 37'55	
min. Earth dist.	4222 May 27 01:17	6° \mathbb{A} 51'47	8.68443 AU	opposition	4228 Aug 07 15:37	17° \approx 19'41	-0°11'41
direct	4222 Aug 05 10:46	3° \mathbb{A} 27'14		min. Earth dist.	4228 Aug 07 18:25	17° \approx 19'10	8.99488 AU
evening set	4222 Nov 18 09:38	11° \mathbb{A} 01'01			4228 Sep 11 13:10	15° \mathbb{R} \approx	
				direct	4228 Oct 17 07:04	14° \approx 00'31	
conjunction	4222 Dec 05 11:05	13° \mathbb{A} 04'38	1°53'13		4228 Nov 21 08:07	15° \approx	
minimum elong	4222 Dec 05 11:07	13° \mathbb{A} 04'39	1°53'12	evening set	4229 Jan 26 11:43	21° \approx 05'05	
max. Earth dist.	4222 Dec 05 11:24	13° \mathbb{A} 04'44	10.73026 AU				
morning rise	4222 Dec 22 08:34	15° \mathbb{A} 07'07		conjunction	4229 Feb 12 04:02	23° \approx 03'05	-0°22'35
retrograde	4223 Apr 01 05:09	22° \mathbb{A} 20'26		minimum elong	4229 Feb 12 04:01	23° \approx 03'04	0°22'35
opposition	4223 Jun 08 19:18	19° \mathbb{A} 01'42	2°10'02	max. Earth dist.	4229 Feb 12 00:34	23° \approx 02'03	10.99007 AU
min. Earth dist.	4223 Jun 08 19:44	19° \mathbb{A} 01'38	8.77552 AU	morning rise	4229 Feb 28 20:33	25° \approx 01'08	
direct	4223 Aug 18 10:07	15° \mathbb{A} 38'25			4229 Apr 19 08:26	0° \mathbb{H}	
evening set	4223 Nov 30 18:36	23° \mathbb{A} 04'55		retrograde	4229 Jun 10 07:06	2° \mathbb{H} 07'29	
					4229 Aug 03 11:17	30° \mathbb{R} \approx	
conjunction	4223 Dec 17 17:26	25° \mathbb{A} 06'46	1°37'14	opposition	4229 Aug 19 21:48	28° \approx 48'33	-0°43'16
minimum elong	4223 Dec 17 17:28	25° \mathbb{A} 06'47	1°37'14	min. Earth dist.	4229 Aug 20 00:11	28° \approx 48'06	8.98041 AU
max. Earth dist.	4223 Dec 17 16:31	25° \mathbb{A} 06'30	10.81627 AU	direct	4229 Oct 29 08:32	25° \approx 29'39	
morning rise	4224 Jan 03 13:00	27° \mathbb{A} 07'40			4230 Jan 14 23:00	0° \mathbb{H}	
	4224 Jan 29 05:37	0° \mathbb{B}		evening set	4230 Feb 07 00:42	2° \mathbb{H} 33'35	
retrograde	4224 Apr 12 07:48	4° \mathbb{B} 16'17					
opposition	4224 Jun 20 08:53	0° \mathbb{B} 58'09	1°47'42	conjunction	4230 Feb 23 16:45	4° \mathbb{H} 31'46	-0°47'49
min. Earth dist.	4224 Jun 20 09:51	0° \mathbb{B} 57'58	8.85499 AU	minimum elong	4230 Feb 23 16:44	4° \mathbb{H} 31'45	0°47'50
	4224 Jul 03 10:09	30° \mathbb{R} \mathbb{A}		max. Earth dist.	4230 Feb 23 14:14	4° \mathbb{H} 31'01	10.96573 AU
direct	4224 Aug 30 05:44	27° \mathbb{A} 35'56		morning rise	4230 Mar 12 09:36	6° \mathbb{H} 30'14	
	4224 Oct 24 20:12	0° \mathbb{B}		retrograde	4230 Jun 22 12:26	13° \mathbb{H} 40'21	
evening set	4224 Dec 11 20:33	4° \mathbb{B} 55'47		opposition	4230 Sep 01 05:06	10° \mathbb{H} 20'31	-1°13'17
				min. Earth dist.	4230 Sep 01 06:45	10° \mathbb{H} 20'12	8.94676 AU
conjunction	4224 Dec 28 17:24	6° \mathbb{B} 56'13	1°17'19	direct	4230 Nov 10 07:47	7° \mathbb{H} 01'41	
minimum elong	4224 Dec 28 17:26	6° \mathbb{B} 56'14	1°17'19	evening set	4231 Feb 18 15:35	14° \mathbb{H} 06'19	
max. Earth dist.	4224 Dec 28 15:43	6° \mathbb{B} 55'43	10.88864 AU				
morning rise	4225 Jan 14 11:33	8° \mathbb{B} 55'50		conjunction	4231 Mar 07 07:41	16° \mathbb{H} 05'01	-1°11'17
retrograde	4225 Apr 24 08:30	16° \mathbb{B} 01'02		minimum elong	4231 Mar 07 07:39	16° \mathbb{H} 05'00	1°11'17
opposition	4225 Jul 02 18:59	12° \mathbb{B} 43'14	1°21'12	max. Earth dist.	4231 Mar 07 05:36	16° \mathbb{H} 04'23	10.92278 AU
min. Earth dist.	4225 Jul 02 19:57	12° \mathbb{B} 43'03	8.91883 AU	morning rise	4231 Mar 24 01:19	18° \mathbb{H} 04'13	
direct	4225 Sep 11 18:09	9° \mathbb{B} 22'03		retrograde	4231 Jul 04 20:33	25° \mathbb{H} 19'20	
evening set	4225 Dec 23 16:53	16° \mathbb{B} 36'13		opposition	4231 Sep 13 14:23	21° \mathbb{H} 58'27	-1°40'37
				min. Earth dist.	4231 Sep 13 15:51	21° \mathbb{H} 58'10	8.89537 AU
conjunction	4226 Jan 09 12:14	18° \mathbb{B} 35'33	0°54'26	direct	4231 Nov 22 07:28	18° \mathbb{H} 39'27	
minimum elong	4226 Jan 09 12:16	18° \mathbb{B} 35'34	0°54'27	evening set	4232 Mar 01 09:38	25° \mathbb{H} 46'10	
max. Earth dist.	4226 Jan 09 10:38	18° \mathbb{B} 35'05	10.94366 AU				
morning rise	4226 Jan 26 05:17	20° \mathbb{B} 34'17		conjunction	4232 Mar 18 02:11	27° \mathbb{H} 45'42	-1°32'01
retrograde	4226 May 06 07:47	27° \mathbb{B} 37'33		minimum elong	4232 Mar 18 02:08	27° \mathbb{H} 45'41	1°32'01
opposition	4226 Jul 15 02:58	24° \mathbb{B} 19'53	0°51'42	max. Earth dist.	4232 Mar 17 23:31	27° \mathbb{H} 44'54	10.86294 AU
min. Earth dist.	4226 Jul 15 04:16	24° \mathbb{B} 19'38	8.96404 AU	morning rise	4232 Apr 03 21:13	29° \mathbb{H} 45'59	
direct	4226 Sep 24 01:46	20° \mathbb{B} 59'34			4232 Apr 05 20:59	0° \mathbb{Y}	
evening set	4227 Jan 04 09:10	28° \mathbb{B} 09'16		retrograde	4232 Jul 16 09:45	7° \mathbb{Y} 07'11	
	4227 Jan 20 00:47	0° \approx		opposition	4232 Sep 25 02:21	3° \mathbb{Y} 45'08	-2°04'06
				min. Earth dist.	4232 Sep 25 04:14	3° \mathbb{Y} 44'47	8.82814 AU
conjunction	4227 Jan 21 03:12	0° \approx 07'50	0°29'31	direct	4232 Dec 03 09:16	0° \mathbb{Y} 25'48	
minimum elong	4227 Jan 21 03:13	0° \approx 07'51	0°29'32	evening set	4233 Mar 13 08:10	7° \mathbb{Y} 35'50	
max. Earth dist.	4227 Jan 21 01:05	0° \approx 07'13	10.97917 AU				
morning rise	4227 Feb 06 19:37	2° \approx 06'00		conjunction	4233 Mar 30 01:50	9° \mathbb{Y} 36'35	-1°49'06
retrograde	4227 May 18 07:38	9° \approx 08'53		minimum elong	4233 Mar 30 01:48	9° \mathbb{Y} 36'34	1°49'06
opposition	4227 Jul 27 09:39	5° \approx 51'05	0°20'22	max. Earth dist.	4233 Mar 29 23:26	9° \mathbb{Y} 35'52	10.78841 AU
min. Earth dist.	4227 Jul 27 11:45	5° \approx 50'41	8.98945 AU	morning rise	4233 Apr 15 22:42	11° \mathbb{Y} 38'18	
direct	4227 Oct 06 05:41	2° \approx 31'28		retrograde	4233 Jul 29 03:11	19° \mathbb{Y} 06'27	
evening set	4228 Jan 15 23:01	9° \approx 37'56		opposition	4233 Oct 07 17:37	15° \mathbb{Y} 43'10	-2°22'39
				min. Earth dist.	4233 Oct 07 19:10	15° \mathbb{Y} 42'53	8.74753 AU

direct	4233 Dec 15 13:49	12°♊23'19		direct	4240 Mar 01 04:06	29°♊32'07	
evening set	4234 Mar 25 12:20	19°♊37'53			4240 Mar 23 13:22	0°♊	
				evening set	4240 Jun 11 11:19	7°♊26'17	
conjunction	4234 Apr 11 07:57	21°♊40'12 -2°01'41					
minimum elong	4234 Apr 11 07:56	21°♊40'12 2°01'40		conjunction	4240 Jun 29 07:08	9°♊42'42 -1°11'43	
max. Earth dist.	4234 Apr 11 06:44	21°♊39'50 10.70206 AU		minimum elong	4240 Jun 29 07:11	9°♊42'43 1°11'43	
morning rise	4234 Apr 28 07:08	23°♊43'39		max. Earth dist.	4240 Jun 29 10:07	9°♊43'40 10.17097 AU	
	4234 Jul 01 19:14	0°♊		morning rise	4240 Jul 17 06:03	12°♊00'10	
retrograde	4234 Aug 11 03:54	1°♊19'24		retrograde	4240 Oct 31 11:12	20°♊11'52	
	4234 Sep 21 06:26	30°♊		opposition	4241 Jan 07 06:59	16°♊43'02 -1°12'13	
opposition	4234 Oct 20 12:59	27°♊54'53 -2°35'12		min. Earth dist.	4241 Jan 07 04:21	16°♊43'35 8.14542 AU	
min. Earth dist.	4234 Oct 20 13:31	27°♊54'46 8.65677 AU		direct	4241 Mar 14 23:32	13°♊16'43	
direct	4234 Dec 27 23:31	24°♊34'22		evening set	4241 Jun 25 23:41	21°♊16'43	
	4235 Mar 21 16:25	0°♊					
evening set	4235 Apr 06 23:16	1°♊54'23		conjunction	4241 Jul 13 23:12	23°♊34'55 -0°43'41	
				minimum elong	4241 Jul 13 23:14	23°♊34'55 0°43'42	
conjunction	4235 Apr 23 21:34	3°♊58'40 -2°08'56		max. Earth dist.	4241 Jul 14 02:50	23°♊36'05 10.12472 AU	
minimum elong	4235 Apr 23 21:34	3°♊58'40 2°08'56		morning rise	4241 Aug 01 00:53	25°♊53'51	
max. Earth dist.	4235 Apr 23 21:23	3°♊58'36 10.60744 AU			4241 Sep 05 01:09	0°♊	
morning rise	4235 May 10 23:47	6°♊04'12		retrograde	4241 Nov 14 20:05	4°♊06'24	
retrograde	4235 Aug 24 12:14	13°♊47'46		opposition	4242 Jan 21 06:15	0°♊37'45 -0°35'23	
opposition	4235 Nov 02 12:46	10°♊22'03 -2°40'49		min. Earth dist.	4242 Jan 21 03:15	0°♊38'22 8.10995 AU	
min. Earth dist.	4235 Nov 02 12:24	10°♊22'08 8.55961 AU			4242 Jan 28 23:31	30°♊	
direct	4236 Jan 09 11:46	7°♊00'45		direct	4242 Mar 28 23:45	27°♊10'33	
evening set	4236 Apr 18 18:07	14°♊27'04			4242 May 25 01:16	0°♊	
	4236 Apr 23 05:44	15°♊		evening set	4242 Jul 10 17:47	5°♊15'13	
conjunction	4236 May 05 19:47	16°♊33'35 -2°10'14		conjunction	4242 Jul 28 19:46	7°♊34'30 -0°12'54	
minimum elong	4236 May 05 19:47	16°♊33'35 2°10'14		minimum elong	4242 Jul 28 19:47	7°♊34'30 0°12'55	
max. Earth dist.	4236 May 05 19:34	16°♊33'31 10.50869 AU		behind sun begin	4242 Jul 28 15:25	7°♊33'07	
morning rise	4236 May 23 01:44	18°♊41'29		behind sun end	4242 Jul 29 00:09	7°♊35'54	
retrograde	4236 Sep 06 02:18	26°♊32'40		max. Earth dist.	4242 Jul 28 23:22	7°♊35'39 10.10089 AU	
opposition	4236 Nov 14 17:11	23°♊05'54 -2°38'46		morning rise	4242 Aug 15 22:54	9°♊54'09	
min. Earth dist.	4236 Nov 14 16:42	23°♊06'00 8.46050 AU			4242 Sep 29 20:40	15°♊	
direct	4237 Jan 21 05:29	19°♊43'39		retrograde	4242 Nov 29 04:42	18°♊05'31	
evening set	4237 May 01 21:21	27°♊16'54		asc. node	4242 Dec 30 05:46	17°♊13'39	
					4243 Jan 30 15:46	15°♊	
conjunction	4237 May 19 03:03	29°♊25'53 -2°05'05		opposition	4243 Feb 04 06:27	14°♊37'18 0°03'45	
minimum elong	4237 May 19 03:05	29°♊25'54 2°05'06		min. Earth dist.	4243 Feb 04 03:46	14°♊37'51 8.09781 AU	
max. Earth dist.	4237 May 19 02:55	29°♊25'51 10.41062 AU		direct	4243 Apr 12 03:32	11°♊09'20	
	4237 May 23 15:45	0°♊			4243 Jun 18 21:16	15°♊	
morning rise	4237 Jun 05 13:19	1°♊36'18		evening set	4243 Jul 25 15:14	19°♊17'11	
retrograde	4237 Sep 19 20:54	9°♊34'33					
opposition	4237 Nov 28 02:32	6°♊06'55 -2°28'35		conjunction	4243 Aug 12 18:10	21°♊36'45 0°18'47	
min. Earth dist.	4237 Nov 28 01:59	6°♊07'02 8.36448 AU		minimum elong	4243 Aug 12 18:09	21°♊36'45 0°18'47	
direct	4238 Feb 03 07:18	2°♊43'38		max. Earth dist.	4243 Aug 12 20:57	21°♊37'39 10.10055 AU	
evening set	4238 May 15 09:12	10°♊24'01		morning rise	4243 Aug 30 21:09	23°♊56'19	
					4243 Oct 25 19:56	0°♊	
conjunction	4238 Jun 01 19:34	12°♊35'38 -1°53'22		retrograde	4243 Dec 13 10:41	2°♊04'35	
minimum elong	4238 Jun 01 19:37	12°♊35'39 1°53'23			4244 Jan 31 22:14	30°♊	
max. Earth dist.	4238 Jun 01 20:08	12°♊35'49 10.31832 AU		opposition	4244 Feb 18 06:34	28°♊37'01 0°42'41	
morning rise	4238 Jun 19 10:23	14°♊48'37		min. Earth dist.	4244 Feb 18 04:38	28°♊37'25 8.10910 AU	
retrograde	4238 Oct 03 21:39	22°♊52'55		direct	4244 Apr 25 10:25	25°♊08'30	
opposition	4238 Dec 11 16:23	19°♊24'37 -2°10'18			4244 Jul 11 23:25	0°♊	
min. Earth dist.	4238 Dec 11 15:30	19°♊24'48 8.27671 AU		evening set	4244 Aug 08 13:11	3°♊17'51	
direct	4239 Feb 16 14:45	16°♊00'17					
evening set	4239 May 29 06:05	23°♊47'45		conjunction	4244 Aug 26 15:29	5°♊36'52 0°49'14	
				minimum elong	4244 Aug 26 15:27	5°♊36'51 0°49'14	
conjunction	4239 Jun 15 21:20	26°♊01'54 -1°35'20		max. Earth dist.	4244 Aug 26 17:17	5°♊37'27 10.12278 AU	
minimum elong	4239 Jun 15 21:23	26°♊01'55 1°35'21		morning rise	4244 Sep 13 16:45	7°♊55'32	
max. Earth dist.	4239 Jun 15 23:10	26°♊02'30 10.23685 AU		retrograde	4244 Dec 26 12:15	15°♊59'13	
morning rise	4239 Jul 03 16:30	28°♊17'19		opposition	4245 Mar 03 05:17	12°♊32'31 1°18'52	
	4239 Jul 17 16:33	0°♊		min. Earth dist.	4245 Mar 03 03:51	12°♊32'49 8.14203 AU	
retrograde	4239 Oct 18 02:55	6°♊26'11		direct	4245 May 09 18:44	9°♊03'44	
opposition	4239 Dec 25 10:00	2°♊57'29 -1°44'27		evening set	4245 Aug 23 09:19	17°♊12'55	
min. Earth dist.	4239 Dec 25 08:15	2°♊57'51 8.20219 AU					
	4240 Feb 07 15:12	30°♊		conjunction	4245 Sep 10 09:41	19°♊30'42 1°16'36	

minimum elong	4245 Sep 10 09:38	19° $\overline{\text{m}}$ 30'41	1°16'36	max. Earth dist.	4251 Nov 30 10:43	8° $\overline{\text{z}}$ 05'41	10.67791 AU
max. Earth dist.	4245 Sep 10 10:45	19° $\overline{\text{m}}$ 31'03	10.16531 AU	morning rise	4251 Dec 17 10:32	10° $\overline{\text{z}}$ 09'24	
morning rise	4245 Sep 28 07:54	21° $\overline{\text{m}}$ 47'49		retrograde	4252 Mar 26 07:27	17° $\overline{\text{z}}$ 25'32	
retrograde	4246 Jan 09 08:15	29° $\overline{\text{m}}$ 45'49		opposition	4252 Jun 02 18:01	14° $\overline{\text{z}}$ 06'02	2°18'04
opposition	4246 Mar 17 01:37	26° $\overline{\text{m}}$ 20'10	1°50'05	min. Earth dist.	4252 Jun 02 18:00	14° $\overline{\text{z}}$ 06'02	8.72408 AU
min. Earth dist.	4246 Mar 17 00:23	26° $\overline{\text{m}}$ 20'25	8.19416 AU	direct	4252 Aug 12 08:10	10° $\overline{\text{z}}$ 41'46	
direct	4246 May 24 02:11	22° $\overline{\text{m}}$ 51'25		evening set	4252 Nov 24 21:25	18° $\overline{\text{z}}$ 11'46	
	4246 Aug 30 02:57	0° $\underline{\text{u}}$					
evening set	4246 Sep 07 01:20	0° $\underline{\text{u}}$ 58'46		conjunction	4252 Dec 11 21:35	20° $\overline{\text{z}}$ 14'30	1°44'36
				minimum elong	4252 Dec 11 21:37	20° $\overline{\text{z}}$ 14'31	1°44'35
conjunction	4246 Sep 24 22:42	3° $\underline{\text{u}}$ 14'47	1°39'19	max. Earth dist.	4252 Dec 11 21:16	20° $\overline{\text{z}}$ 14'24	10.76621 AU
minimum elong	4246 Sep 24 22:39	3° $\underline{\text{u}}$ 14'46	1°39'19	morning rise	4252 Dec 28 18:01	22° $\overline{\text{z}}$ 16'11	
max. Earth dist.	4246 Sep 24 23:31	3° $\underline{\text{u}}$ 15'03	10.22594 AU	retrograde	4253 Apr 07 13:23	29° $\overline{\text{z}}$ 27'05	
morning rise	4246 Oct 12 16:55	5° $\underline{\text{u}}$ 29'50		opposition	4253 Jun 15 09:12	26° $\overline{\text{z}}$ 08'12	1°57'52
retrograde	4247 Jan 22 23:58	13° $\underline{\text{u}}$ 21'18		min. Earth dist.	4253 Jun 15 09:22	26° $\overline{\text{z}}$ 08'10	8.80723 AU
opposition	4247 Mar 30 19:03	9° $\underline{\text{u}}$ 56'46	2°14'38	direct	4253 Aug 25 04:56	22° $\overline{\text{z}}$ 45'00	
min. Earth dist.	4247 Mar 30 17:44	9° $\underline{\text{u}}$ 57'02	8.26321 AU		4253 Dec 05 23:07	0° $\overline{\text{z}}$	
direct	4247 Jun 07 06:17	6° $\underline{\text{u}}$ 28'20		evening set	4253 Dec 07 02:24	0° $\overline{\text{z}}$ 08'01	
evening set	4247 Sep 21 10:58	14° $\underline{\text{u}}$ 32'04					
				conjunction	4253 Dec 24 00:19	2° $\overline{\text{z}}$ 09'12	1°26'16
conjunction	4247 Oct 09 04:35	16° $\underline{\text{u}}$ 45'56	1°56'11	minimum elong	4253 Dec 24 00:21	2° $\overline{\text{z}}$ 09'13	1°26'15
minimum elong	4247 Oct 09 04:33	16° $\underline{\text{u}}$ 45'55	1°56'12	max. Earth dist.	4253 Dec 23 23:50	2° $\overline{\text{z}}$ 09'03	10.84389 AU
max. Earth dist.	4247 Oct 09 05:35	16° $\underline{\text{u}}$ 46'15	10.30207 AU	morning rise	4254 Jan 09 19:00	4° $\overline{\text{z}}$ 09'28	
morning rise	4247 Oct 26 18:16	18° $\underline{\text{u}}$ 58'35		retrograde	4254 Apr 19 14:46	11° $\overline{\text{z}}$ 16'18	
retrograde	4248 Feb 05 10:06	26° $\underline{\text{u}}$ 42'52		opposition	4254 Jun 27 20:49	7° $\overline{\text{z}}$ 57'52	1°33'00
opposition	4248 Apr 12 08:45	23° $\underline{\text{u}}$ 19'29	2°31'22	min. Earth dist.	4254 Jun 27 21:42	7° $\overline{\text{z}}$ 57'42	8.87819 AU
min. Earth dist.	4248 Apr 12 07:42	23° $\underline{\text{u}}$ 19'42	8.34600 AU	direct	4254 Sep 06 18:18	4° $\overline{\text{z}}$ 35'42	
direct	4248 Jun 20 06:52	19° $\underline{\text{u}}$ 51'36		evening set	4254 Dec 19 01:06	11° $\overline{\text{z}}$ 52'33	
evening set	4248 Oct 04 12:32	27° $\underline{\text{u}}$ 50'10					
	4248 Oct 21 20:54	0° $\overline{\text{m}}$		conjunction	4255 Jan 04 21:05	13° $\overline{\text{z}}$ 52'28	1°04'32
				minimum elong	4255 Jan 04 21:07	13° $\overline{\text{z}}$ 52'28	1°04'32
conjunction	4248 Oct 22 02:07	0° $\overline{\text{m}}$ 01'38	2°06'33	max. Earth dist.	4255 Jan 04 19:40	13° $\overline{\text{z}}$ 52'02	10.90793 AU
minimum elong	4248 Oct 22 02:06	0° $\overline{\text{m}}$ 01'38	2°06'34	morning rise	4255 Jan 21 14:39	15° $\overline{\text{z}}$ 51'40	
max. Earth dist.	4248 Oct 22 02:57	0° $\overline{\text{m}}$ 01'54	10.39005 AU	retrograde	4255 May 01 12:57	22° $\overline{\text{z}}$ 55'48	
morning rise	4248 Nov 08 11:20	2° $\overline{\text{m}}$ 11'49		opposition	4255 Jul 10 05:45	19° $\overline{\text{z}}$ 37'37	1°04'39
retrograde	4249 Feb 17 13:03	9° $\overline{\text{m}}$ 48'35		min. Earth dist.	4255 Jul 10 07:01	19° $\overline{\text{z}}$ 37'23	8.93427 AU
opposition	4249 Apr 25 18:06	6° $\overline{\text{m}}$ 26'20	2°39'47	direct	4255 Sep 19 04:56	16° $\overline{\text{z}}$ 16'26	
min. Earth dist.	4249 Apr 25 17:51	6° $\overline{\text{m}}$ 26'23	8.43836 AU	evening set	4255 Dec 30 18:43	23° $\overline{\text{z}}$ 28'07	
direct	4249 Jul 04 03:26	2° $\overline{\text{m}}$ 59'10					
evening set	4249 Oct 18 04:55	10° $\overline{\text{m}}$ 51'21		conjunction	4256 Jan 16 13:14	25° $\overline{\text{z}}$ 27'04	0°40'23
				minimum elong	4256 Jan 16 13:16	25° $\overline{\text{z}}$ 27'04	0°40'24
conjunction	4249 Nov 04 14:29	13° $\overline{\text{m}}$ 00'24	2°10'13	max. Earth dist.	4256 Jan 16 11:34	25° $\overline{\text{z}}$ 26'34	10.95590 AU
minimum elong	4249 Nov 04 14:29	13° $\overline{\text{m}}$ 00'23	2°10'14	morning rise	4256 Feb 02 06:08	27° $\overline{\text{z}}$ 25'31	
max. Earth dist.	4249 Nov 04 14:25	13° $\overline{\text{m}}$ 00'22	10.48529 AU		4256 Feb 25 10:56	0° \approx	
	4249 Nov 20 17:03	15° $\overline{\text{m}}$		retrograde	4256 May 12 12:12	4° \approx 28'24	
morning rise	4249 Nov 21 19:42	15° $\overline{\text{m}}$ 08'08		opposition	4256 Jul 21 12:33	1° \approx 10'15	0°33'58
retrograde	4250 Mar 02 08:39	22° $\overline{\text{m}}$ 37'28		min. Earth dist.	4256 Jul 21 13:20	1° \approx 10'07	8.97326 AU
opposition	4250 May 08 22:47	19° $\overline{\text{m}}$ 16'17	2°39'58		4256 Aug 06 15:01	30° $\overline{\text{R}}$ $\overline{\text{z}}$	
min. Earth dist.	4250 May 08 23:12	19° $\overline{\text{m}}$ 16'12	8.53536 AU	direct	4256 Sep 30 11:29	27° $\overline{\text{z}}$ 49'58	
direct	4250 Jul 17 19:24	15° $\overline{\text{m}}$ 49'58			4256 Nov 22 03:01	0° \approx	
evening set	4250 Oct 31 11:44	23° $\overline{\text{m}}$ 35'00		evening set	4257 Jan 10 09:04	4° \approx 57'37	
conjunction	4250 Nov 17 17:35	25° $\overline{\text{m}}$ 41'42	2°07'23	conjunction	4257 Jan 27 02:35	6° \approx 55'56	0°14'47
minimum elong	4250 Nov 17 17:36	25° $\overline{\text{m}}$ 41'42	2°07'24	minimum elong	4257 Jan 27 02:35	6° \approx 55'56	0°14'48
max. Earth dist.	4250 Nov 17 16:40	25° $\overline{\text{m}}$ 41'25	10.58282 AU	behind sun begin	4257 Jan 26 23:36	6° \approx 55'03	
morning rise	4250 Dec 04 19:18	27° $\overline{\text{m}}$ 47'09		behind sun end	4257 Jan 27 05:34	6° \approx 56'48	
	4250 Dec 23 19:22	0° $\overline{\text{z}}$		max. Earth dist.	4257 Jan 27 01:33	6° \approx 55'38	10.98582 AU
retrograde	4251 Mar 14 22:42	5° $\overline{\text{z}}$ 09'30		morning rise	4257 Feb 12 18:57	8° \approx 53'57	
opposition	4251 May 21 22:41	1° $\overline{\text{z}}$ 49'14	2°32'27		4257 Apr 20 07:29	15° \approx	
min. Earth dist.	4251 May 21 23:10	1° $\overline{\text{z}}$ 49'09	8.63210 AU	retrograde	4257 May 24 10:36	15° \approx 56'59	
	4251 Jun 15 19:42	30° $\overline{\text{R}}$ $\overline{\text{m}}$			4257 Jun 28 07:34	15° $\overline{\text{R}}$ \approx	
direct	4251 Jul 31 04:53	28° $\overline{\text{m}}$ 23'55		opposition	4257 Aug 02 18:03	12° \approx 38'40	0°02'08
	4251 Sep 13 18:13	0° $\overline{\text{z}}$		min. Earth dist.	4257 Aug 02 18:23	12° \approx 38'37	8.99360 AU
evening set	4251 Nov 13 09:00	6° $\overline{\text{z}}$ 01'24		desc. node	4257 Aug 27 20:44	10° \approx 52'49	
				direct	4257 Oct 12 12:45	9° \approx 19'08	
conjunction	4251 Nov 30 11:44	8° $\overline{\text{z}}$ 06'00	1°58'36		4258 Jan 09 13:26	15° \approx	
minimum elong	4251 Nov 30 11:45	8° $\overline{\text{z}}$ 06'00	1°58'36	evening set	4258 Jan 21 21:40	16° \approx 24'05	

conjunction	4258 Feb 07 14:19	18° \approx 22'02 -0°11'24	minimum elong	4264 Apr 17 15:01	28° Υ 42'42 2°06'13
minimum elong	4258 Feb 07 14:19	18° \approx 22'02 0°11'23	max. Earth dist.	4264 Apr 17 13:40	28° Υ 42'17 10.68655 AU
behind sun begin	4258 Feb 07 09:10	18° \approx 20'32		4264 Apr 28 04:29	0° \mathcal{B}
behind sun end	4258 Feb 07 19:28	18° \approx 23'33	morning rise	4264 May 04 15:42	0° \mathcal{B} 46'48
max. Earth dist.	4258 Feb 07 13:35	18° \approx 21'49 10.99653 AU	retrograde	4264 Aug 17 20:23	8° \mathcal{B} 24'59
morning rise	4258 Feb 24 06:34	20° \approx 19'56	opposition	4264 Oct 27 01:20	5° \mathcal{B} 00'38 -2°38'52
retrograde	4258 Jun 05 11:20	27° \approx 24'35	min. Earth dist.	4264 Oct 27 02:16	5° \mathcal{B} 00'27 8.64012 AU
opposition	4258 Aug 14 23:37	24° \approx 05'54 -0°29'43	direct	4265 Jan 03 05:26	1° \mathcal{B} 40'27
min. Earth dist.	4258 Aug 15 00:13	24° \approx 05'48 8.99463 AU	evening set	4265 Apr 13 08:22	9° \mathcal{B} 02'08
direct	4258 Oct 24 12:59	20° \approx 46'56			
evening set	4259 Feb 02 09:52	27° \approx 50'28	conjunction	4265 Apr 30 08:06	11° \mathcal{B} 07'05 -2°10'14
			minimum elong	4265 Apr 30 08:06	11° \mathcal{B} 07'05 2°10'14
conjunction	4259 Feb 19 01:51	29° \approx 48'23 -0°37'02	max. Earth dist.	4265 Apr 30 07:10	11° \mathcal{B} 06'48 10.58946 AU
minimum elong	4259 Feb 19 01:50	29° \approx 48'23 0°37'02	morning rise	4265 May 17 12:05	13° \mathcal{B} 13'23
max. Earth dist.	4259 Feb 19 00:20	29° \approx 47'56 10.98779 AU		4265 Jun 01 14:00	15° \mathcal{B}
	4259 Feb 20 16:59	0° \mathcal{H}	retrograde	4265 Aug 31 05:19	20° \mathcal{B} 59'18
morning rise	4259 Mar 07 18:28	1° \mathcal{H} 46'30	opposition	4265 Nov 09 02:30	17° \mathcal{B} 33'46 -2°40'20
retrograde	4259 Jun 17 13:40	8° \mathcal{H} 54'07	min. Earth dist.	4265 Nov 09 03:07	17° \mathcal{B} 33'39 8.54028 AU
opposition	4259 Aug 27 05:51	5° \mathcal{H} 34'52 -1°00'27		4265 Dec 16 14:22	15° \mathcal{R} \mathcal{B}
min. Earth dist.	4259 Aug 27 06:59	5° \mathcal{H} 34'40 8.97642 AU	direct	4266 Jan 15 20:58	14° \mathcal{B} 12'40
direct	4259 Nov 05 11:13	2° \mathcal{H} 16'15		4266 Feb 14 16:09	15° \mathcal{B}
evening set	4260 Feb 13 23:13	9° \mathcal{H} 19'44	evening set	4266 Apr 26 06:25	21° \mathcal{B} 40'59
conjunction	4260 Mar 01 15:02	11° \mathcal{H} 17'57 -1°01'18	conjunction	4266 May 13 10:04	23° \mathcal{B} 48'20 -2°08'04
minimum elong	4260 Mar 01 15:00	11° \mathcal{H} 17'56 1°01'18	minimum elong	4266 May 13 10:05	23° \mathcal{B} 48'21 2°08'04
max. Earth dist.	4260 Mar 01 13:27	11° \mathcal{H} 17'29 10.95998 AU	max. Earth dist.	4266 May 13 09:51	23° \mathcal{B} 48'16 10.48826 AU
morning rise	4260 Mar 18 08:19	13° \mathcal{H} 16'35	morning rise	4266 May 30 17:58	25° \mathcal{B} 57'05
retrograde	4260 Jun 28 18:02	20° \mathcal{H} 28'28		4266 Jul 05 16:26	0° \mathcal{I}
opposition	4260 Sep 07 13:19	17° \mathcal{H} 08'27 -1°28'58	retrograde	4266 Sep 13 20:55	3° \mathcal{I} 50'27
min. Earth dist.	4260 Sep 07 14:15	17° \mathcal{H} 08'16 8.93962 AU	opposition	4266 Nov 22 08:24	0° \mathcal{I} 23'50 -2°33'56
direct	4260 Nov 16 11:06	13° \mathcal{H} 49'57	min. Earth dist.	4266 Nov 22 08:16	0° \mathcal{I} 23'52 8.43905 AU
evening set	4261 Feb 24 15:04	20° \mathcal{H} 54'45		4266 Nov 27 09:41	30° \mathcal{R} \mathcal{B}
			direct	4267 Jan 28 18:15	27° \mathcal{B} 01'39
conjunction	4261 Mar 13 07:17	22° \mathcal{H} 53'36 -1°23'14		4267 Mar 28 21:54	0° \mathcal{I}
minimum elong	4261 Mar 13 07:14	22° \mathcal{H} 53'35 1°23'15	evening set	4267 May 09 13:08	4° \mathcal{I} 37'02
max. Earth dist.	4261 Mar 13 06:36	22° \mathcal{H} 53'24 10.91403 AU			
morning rise	4261 Mar 30 01:28	24° \mathcal{H} 53'04	conjunction	4267 May 26 21:13	6° \mathcal{I} 47'00 -1°59'24
	4261 May 19 12:17	0° Υ	minimum elong	4267 May 26 21:15	6° \mathcal{I} 47'01 1°59'25
retrograde	4261 Jul 11 05:22	2° Υ 10'23	max. Earth dist.	4267 May 26 21:17	6° \mathcal{I} 47'01 10.38869 AU
	4261 Sep 03 21:48	30° \mathcal{R} \mathcal{H}	morning rise	4267 Jun 13 09:33	8° \mathcal{I} 58'20
opposition	4261 Sep 19 23:10	28° \mathcal{H} 49'24 -1°54'08	retrograde	4267 Sep 27 19:28	16° \mathcal{I} 58'21
min. Earth dist.	4261 Sep 19 23:16	28° \mathcal{H} 49'23 8.88544 AU	opposition	4267 Dec 05 18:58	13° \mathcal{I} 30'48 -2°19'28
direct	4261 Nov 28 11:54	25° \mathcal{H} 30'52	min. Earth dist.	4267 Dec 05 18:27	13° \mathcal{I} 30'54 8.34219 AU
	4262 Feb 12 22:32	0° Υ	direct	4268 Feb 10 20:15	10° \mathcal{I} 07'24
evening set	4262 Mar 08 10:40	2° Υ 38'10	evening set	4268 May 22 04:46	17° \mathcal{I} 50'03
conjunction	4262 Mar 25 03:42	4° Υ 38'00 -1°41'57	conjunction	4268 Jun 08 17:29	20° \mathcal{I} 02'38 -1°44'19
minimum elong	4262 Mar 25 03:39	4° Υ 37'59 1°41'57	minimum elong	4268 Jun 08 17:32	20° \mathcal{I} 02'39 1°44'20
max. Earth dist.	4262 Mar 25 03:30	4° Υ 37'56 10.85157 AU	max. Earth dist.	4268 Jun 08 17:24	20° \mathcal{I} 02'36 10.29639 AU
morning rise	4262 Apr 10 23:20	6° Υ 38'40	morning rise	4268 Jun 26 10:22	22° \mathcal{I} 16'32
retrograde	4262 Jul 23 21:10	14° Υ 02'19		4268 Sep 20 10:36	0° \mathcal{O}
opposition	4262 Oct 02 12:09	10° Υ 40'17 -2°14'52	retrograde	4268 Oct 10 21:40	0° \mathcal{O} 21'58
min. Earth dist.	4262 Oct 02 12:00	10° Υ 40'19 8.81583 AU		4268 Oct 31 07:33	30° \mathcal{R} \mathcal{I}
direct	4262 Dec 10 13:04	7° Υ 21'28	opposition	4268 Dec 18 09:45	26° \mathcal{I} 53'42 -1°57'10
evening set	4263 Mar 20 11:29	14° Υ 32'29	min. Earth dist.	4268 Dec 18 09:20	26° \mathcal{I} 53'47 8.25526 AU
			direct	4269 Feb 23 05:45	23° \mathcal{I} 29'01
conjunction	4263 Apr 06 05:54	16° Υ 33'39 -1°56'33		4269 May 25 12:50	0° \mathcal{O}
minimum elong	4263 Apr 06 05:52	16° Υ 33'38 1°56'33	evening set	4269 Jun 05 04:53	1° \mathcal{O} 18'45
max. Earth dist.	4263 Apr 06 05:07	16° Υ 33'24 10.77491 AU			
morning rise	4263 Apr 23 03:44	18° Υ 35'51	conjunction	4269 Jun 22 22:16	3° \mathcal{O} 33'47 -1°23'17
retrograde	4263 Aug 05 17:28	26° Υ 06'33	minimum elong	4269 Jun 22 22:19	3° \mathcal{O} 33'48 1°23'18
opposition	4263 Oct 15 04:40	22° Υ 43'22 -2°30'06	max. Earth dist.	4269 Jun 22 22:10	3° \mathcal{O} 33'46 10.21673 AU
min. Earth dist.	4263 Oct 15 05:04	22° Υ 43'18 8.73319 AU	morning rise	4269 Jul 10 19:24	5° \mathcal{O} 50'01
direct	4263 Dec 22 19:12	19° Υ 23'58	retrograde	4269 Oct 25 02:42	13° \mathcal{O} 59'19
evening set	4264 Mar 31 18:24	26° Υ 39'50	opposition	4270 Jan 01 04:16	10° \mathcal{O} 30'36 -1°27'55
			min. Earth dist.	4270 Jan 01 03:58	10° \mathcal{O} 30'40 8.18342 AU
conjunction	4264 Apr 17 15:02	28° Υ 42'42 -2°06'13	direct	4270 Mar 08 22:11	7° \mathcal{O} 04'41

evening set	4270 Jun 19 12:44	15°♄00'53		evening set	4276 Sep 14 00:04	8°♄20'51	
conjunction	4270 Jul 07 10:22	17°♄18'03 -0°57'16		conjunction	4276 Oct 01 19:31	10°♄35'55 1°48'53	
minimum elong	4270 Jul 07 10:24	17°♄18'04 0°57'17		minimum elong	4276 Oct 01 19:28	10°♄35'54 1°48'53	
max. Earth dist.	4270 Jul 07 10:51	17°♄18'12 10.15431 AU		max. Earth dist.	4276 Oct 01 20:19	10°♄36'10 10.25177 AU	
morning rise	4270 Jul 25 10:56	19°♄36'08		morning rise	4276 Oct 19 11:35	12°♄49'54	
retrograde	4270 Nov 08 09:26	27°♄47'31		retrograde	4277 Jan 29 10:25	20°♄37'59	
opposition	4271 Jan 15 01:34	24°♄18'38 -0°53'10		opposition	4277 Apr 06 07:34	17°♄13'36 2°24'23	
min. Earth dist.	4271 Jan 15 00:53	24°♄18'46 8.13079 AU		min. Earth dist.	4277 Apr 06 06:37	17°♄13'47 8.29393 AU	
direct	4271 Mar 22 19:51	20°♄51'34		direct	4277 Jun 14 00:39	13°♄44'58	
evening set	4271 Jul 04 03:16	28°♄53'20		evening set	4277 Sep 28 05:35	21°♄46'28	
	4271 Jul 12 20:36	0°♄					
conjunction	4271 Jul 22 04:09	1°♄12'02 -0°27'40		conjunction	4277 Oct 15 21:06	23°♄59'12 2°02'23	
minimum elong	4271 Jul 22 04:11	1°♄12'03 0°27'41		minimum elong	4277 Oct 15 21:04	23°♄59'11 2°02'24	
max. Earth dist.	4271 Jul 22 05:19	1°♄12'25 10.11265 AU		max. Earth dist.	4277 Oct 15 21:38	23°♄59'22 10.33703 AU	
morning rise	4271 Aug 09 06:50	3°♄31'19		morning rise	4277 Nov 02 08:44	26°♄10'43	
retrograde	4271 Nov 22 17:28	11°♄42'50			4277 Dec 05 15:28	0°♄	
opposition	4272 Jan 29 00:30	8°♄14'04 -0°14'57		retrograde	4278 Feb 11 15:28	3°♄51'21	
min. Earth dist.	4272 Jan 28 23:13	8°♄14'20 8.10042 AU		opposition	4278 Apr 19 18:48	0°♄28'15 2°36'46	
direct	4272 Apr 04 21:11	4°♄46'03		min. Earth dist.	4278 Apr 19 17:29	0°♄28'31 8.38492 AU	
asc. node	4272 Jun 21 02:07	9°♄38'42			4278 Apr 25 17:18	30°♄	
evening set	4272 Jul 17 22:25	12°♄52'07		direct	4278 Jun 28 00:09	27°♄00'26	
	4272 Aug 03 13:15	15°♄			4278 Aug 28 01:13	0°♄	
				evening set	4278 Oct 12 02:30	4°♄56'06	
conjunction	4272 Aug 05 01:11	15°♄11'37 0°03'49		conjunction	4278 Oct 29 14:05	7°♄06'23 2°09'14	
minimum elong	4272 Aug 05 01:10	15°♄11'37 0°03'49		minimum elong	4278 Oct 29 14:04	7°♄06'23 2°09'15	
behind sun begin	4272 Aug 04 17:54	15°♄09'17		max. Earth dist.	4278 Oct 29 15:02	7°♄06'41 10.43225 AU	
behind sun end	4272 Aug 05 08:26	15°♄13'56		morning rise	4278 Nov 15 21:20	9°♄15'23	
max. Earth dist.	4272 Aug 05 03:03	15°♄12'11 10.09421 AU			4279 Jan 10 02:49	15°♄	
morning rise	4272 Aug 23 04:24	17°♄31'17		retrograde	4279 Feb 24 15:34	16°♄48'32	
retrograde	4272 Dec 06 00:38	25°♄41'05			4279 Apr 12 12:25	15°♄	
opposition	4273 Feb 11 00:13	22°♄12'43 0°24'19		opposition	4279 May 03 01:47	13°♄26'42 2°40'48	
min. Earth dist.	4273 Feb 10 22:19	22°♄13'07 8.09415 AU		min. Earth dist.	4279 May 03 00:24	13°♄26'58 8.48323 AU	
direct	4273 Apr 19 02:02	18°♄43'58		direct	4279 Jul 11 17:48	9°♄59'54	
evening set	4273 Aug 01 19:46	26°♄52'44			4279 Oct 01 06:51	15°♄	
				evening set	4279 Oct 25 13:57	17°♄48'41	
conjunction	4273 Aug 19 22:47	29°♄12'12 0°34'58		conjunction	4279 Nov 11 21:45	19°♄56'35 2°09'26	
minimum elong	4273 Aug 19 22:45	29°♄12'11 0°34'58		minimum elong	4279 Nov 11 21:45	19°♄56'35 2°09'26	
max. Earth dist.	4273 Aug 20 01:06	29°♄12'57 10.10006 AU		max. Earth dist.	4279 Nov 11 23:00	19°♄56'59 10.53235 AU	
	4273 Aug 26 02:50	0°♄		morning rise	4279 Nov 29 01:03	22°♄03'10	
morning rise	4273 Sep 07 01:00	1°♄31'28		retrograde	4280 Mar 08 10:29	29°♄29'07	
retrograde	4273 Dec 20 04:38	9°♄37'46		opposition	4280 May 15 04:14	26°♄08'28 2°36'50	
opposition	4274 Feb 24 23:28	6°♄10'05 1°02'05		min. Earth dist.	4280 May 15 03:20	26°♄08'38 8.58384 AU	
min. Earth dist.	4274 Feb 24 21:34	6°♄10'28 8.11223 AU		direct	4280 Jul 24 04:19	22°♄42'48	
direct	4274 May 03 08:47	2°♄40'53			4280 Nov 03 07:14	0°♄	
evening set	4274 Aug 16 17:02	10°♄50'36		evening set	4280 Nov 06 16:07	0°♄24'10	
conjunction	4274 Sep 03 18:43	13°♄09'13 1°04'01		conjunction	4280 Nov 23 20:27	2°♄29'50 2°03'22	
minimum elong	4274 Sep 03 18:40	13°♄09'12 1°04'01		minimum elong	4280 Nov 23 20:28	2°♄29'51 2°03'23	
max. Earth dist.	4274 Sep 03 20:41	13°♄09'51 10.12971 AU		max. Earth dist.	4280 Nov 23 21:17	2°♄30'06 10.63240 AU	
morning rise	4274 Sep 21 18:30	15°♄27'17		morning rise	4280 Dec 10 20:32	4°♄34'15	
retrograde	4275 Jan 03 04:06	23°♄28'33		retrograde	4281 Mar 20 21:35	11°♄53'31	
opposition	4275 Mar 10 21:00	20°♄01'49 1°35'56		opposition	4281 May 28 02:00	8°♄33'55 2°25'33	
min. Earth dist.	4275 Mar 10 19:36	20°♄02'06 8.15343 AU		min. Earth dist.	4281 May 28 02:04	8°♄33'54 8.68193 AU	
direct	4275 May 17 15:35	16°♄32'28		direct	4281 Aug 06 10:46	5°♄09'25	
evening set	4275 Aug 31 11:22	24°♄41'15		evening set	4281 Nov 19 09:21	12°♄43'17	
conjunction	4275 Sep 18 10:21	26°♄58'21 1°29'07		conjunction	4281 Dec 06 10:40	14°♄46'55 1°51'43	
minimum elong	4275 Sep 18 10:18	26°♄58'20 1°29'07		minimum elong	4281 Dec 06 10:42	14°♄46'55 1°51'43	
max. Earth dist.	4275 Sep 18 11:42	26°♄58'46 10.18129 AU		max. Earth dist.	4281 Dec 06 10:17	14°♄46'48 10.72768 AU	
morning rise	4275 Oct 06 06:36	29°♄14'35		morning rise	4281 Dec 23 08:15	16°♄49'26	
	4275 Oct 12 08:44	0°♄		retrograde	4282 Apr 02 04:26	24°♄02'56	
retrograde	4276 Jan 16 22:40	7°♄09'39		opposition	4282 Jun 09 19:35	20°♄44'09 2°07'56	
opposition	4276 Mar 23 16:04	3°♄44'02 2°03'50		min. Earth dist.	4282 Jun 09 19:54	20°♄44'06 8.77291 AU	
min. Earth dist.	4276 Mar 23 15:04	3°♄44'15 8.21523 AU		direct	4282 Aug 19 11:47	17°♄20'50	
direct	4276 May 30 21:03	0°♄14'53					

evening set	4282 Dec 01 18:20	24°  47'24		min. Earth dist.	4288 Aug 21 00:08	0°  31'11	8.98233 AU
					4288 Aug 28 01:15	30°  R \approx	
conjunction	4282 Dec 18 17:10	26°  49'18	1°35'18	direct	4288 Oct 30 08:40	27° \approx 12'40	
minimum elong	4282 Dec 18 17:12	26°  49'18	1°35'18		4288 Dec 29 02:29	0°  H	
max. Earth dist.	4282 Dec 18 16:27	26°  49'05	10.81377 AU	evening set	4289 Feb 08 00:36	4°  H16'27	
morning rise	4283 Jan 04 12:46	28°  45'0'13					
	4283 Jan 14 13:01	0°  B		conjunction	4289 Feb 24 16:39	6°  H14'36	-0°50'16
retrograde	4283 Apr 14 08:13	5°  B59'01		minimum elong	4289 Feb 24 16:37	6°  H14'35	0°50'17
opposition	4283 Jun 22 09:20	2°  B40'50	1°45'06	max. Earth dist.	4289 Feb 24 14:37	6°  H14'00	10.96780 AU
min. Earth dist.	4283 Jun 22 09:24	2°  B40'49	8.85263 AU	morning rise	4289 Mar 13 09:27	8°  H13'03	
	4283 Aug 02 17:07	30°  R \nearrow		retrograde	4289 Jun 23 13:07	15°  H23'14	
direct	4283 Sep 01 05:47	29°  41'18'40		opposition	4289 Sep 02 05:58	12°  H03'27	-1°16'08
	4283 Sep 30 10:01	0°  B		min. Earth dist.	4289 Sep 02 07:28	12°  H03'10	8.94902 AU
evening set	4283 Dec 13 20:17	6°  B38'30		direct	4289 Nov 11 07:36	8°  H44'43	
				evening set	4290 Feb 19 15:35	15°  H49'15	
conjunction	4283 Dec 30 17:14	8°  B38'58	1°15'02				
minimum elong	4283 Dec 30 17:16	8°  B38'59	1°15'02	conjunction	4290 Mar 08 07:34	17°  H47'54	-1°13'26
max. Earth dist.	4283 Dec 30 16:46	8°  B38'50	10.88670 AU	minimum elong	4290 Mar 08 07:32	17°  H47'53	1°13'27
morning rise	4284 Jan 16 11:17	10°  B38'38		max. Earth dist.	4290 Mar 08 05:01	17°  H47'08	10.92518 AU
retrograde	4284 Apr 25 09:04	17°  B44'00		morning rise	4290 Mar 25 01:18	19°  H47'05	
opposition	4284 Jul 03 19:47	14°  B26'10	1°18'13	retrograde	4290 Jul 05 21:30	27°  H02'15	
min. Earth dist.	4284 Jul 03 19:57	14°  B26'08	8.91734 AU	opposition	4290 Sep 14 15:15	23°  H41'25	-1°43'02
direct	4284 Sep 12 18:39	11°  B05'00		min. Earth dist.	4290 Sep 14 17:07	23°  H41'04	8.89792 AU
evening set	4284 Dec 24 16:38	18°  B19'06		direct	4290 Nov 23 07:31	20°  H22'31	
				evening set	4291 Mar 03 09:33	27°  H29'05	
conjunction	4285 Jan 10 11:59	20°  B18'27	0°51'53				
minimum elong	4285 Jan 10 12:00	20°  B18'27	0°51'54	conjunction	4291 Mar 20 02:04	29°  H28'35	-1°33'48
max. Earth dist.	4285 Jan 10 11:10	20°  B18'12	10.94282 AU	minimum elong	4291 Mar 20 02:02	29°  H28'34	1°33'47
morning rise	4285 Jan 27 05:02	22°  B17'11		max. Earth dist.	4291 Mar 19 23:29	29°  H27'48	10.86561 AU
retrograde	4285 May 07 09:11	29°  B20'34			4291 Mar 24 10:38	0°  Y	
opposition	4285 Jul 16 03:54	26°  B02'52	0°48'29	morning rise	4291 Apr 05 21:11	1°  Y28'51	
min. Earth dist.	4285 Jul 16 05:12	26°  B02'37	8.96379 AU	retrograde	4291 Jul 18 09:13	8°  Y50'04	
direct	4285 Sep 25 02:04	22°  B42'35		opposition	4291 Sep 27 03:04	5°  Y28'03	-2°06'00
evening set	4286 Jan 05 09:00	29°  B52'08		min. Earth dist.	4291 Sep 27 04:49	5°  Y27'43	8.83094 AU
	4286 Jan 06 12:03	0° \approx		direct	4291 Dec 05 09:41	2°  Y08'48	
				evening set	4292 Mar 14 08:01	9°  Y18'41	
conjunction	4286 Jan 22 02:55	1° \approx 50'42	0°26'50				
minimum elong	4286 Jan 22 02:55	1° \approx 50'42	0°26'51	conjunction	4292 Mar 31 01:50	11°  Y19'25	-1°50'26
max. Earth dist.	4286 Jan 22 00:36	1° \approx 50'01	10.97947 AU	minimum elong	4292 Mar 31 01:48	11°  Y19'24	1°50'25
morning rise	4286 Feb 07 19:28	3° \approx 48'53		max. Earth dist.	4292 Mar 31 00:21	11°  Y18'57	10.79127 AU
retrograde	4286 May 19 06:39	10° \approx 51'48		morning rise	4292 Apr 16 22:41	13°  Y21'05	
opposition	4286 Jul 28 10:33	7° \approx 33'59	0°17'02	retrograde	4292 Jul 30 03:38	20°  Y49'13	
min. Earth dist.	4286 Jul 28 12:42	7° \approx 33'35	8.99021 AU	opposition	4292 Oct 08 17:58	17°  Y25'57	-2°23'57
direct	4286 Oct 07 05:38	4° \approx 14'25		min. Earth dist.	4292 Oct 08 18:49	17°  Y25'47	8.75050 AU
evening set	4287 Jan 16 22:49	11° \approx 20'45		direct	4292 Dec 16 15:15	14°  Y06'10	
				evening set	4293 Mar 26 12:13	21°  Y20'32	
conjunction	4287 Feb 02 15:43	13° \approx 18'51	0°00'50				
minimum elong	4287 Feb 02 15:43	13° \approx 18'51	0°00'51	conjunction	4293 Apr 12 07:57	23°  Y22'51	-2°02'29
behind sun begin	4287 Feb 02 08:44	13° \approx 16'49		minimum elong	4293 Apr 12 07:56	23°  Y22'51	2°02'28
behind sun end	4287 Feb 02 22:41	13° \approx 20'54		max. Earth dist.	4293 Apr 12 07:14	23°  Y22'38	10.70501 AU
max. Earth dist.	4287 Feb 02 12:46	13° \approx 18'03	10.99579 AU	morning rise	4293 Apr 29 07:09	25°  Y26'17	
desc. node	4287 Feb 14 05:48	14° \approx 41'06			4293 Jun 10 18:00	0°  B	
	4287 Feb 16 22:23	15° \approx		retrograde	4293 Aug 12 05:42	3°  B01'54	
morning rise	4287 Feb 19 08:07	15° \approx 16'48			4293 Oct 16 15:14	30°  R Υ	
retrograde	4287 May 31 06:30	22° \approx 20'49		opposition	4293 Oct 21 13:03	29°  Y37'24	-2°35'50
opposition	4287 Aug 09 16:34	19° \approx 02'34	-0°14'58	min. Earth dist.	4293 Oct 21 13:09	29°  Y37'23	8.65976 AU
min. Earth dist.	4287 Aug 09 18:36	19° \approx 02'12	8.99633 AU	direct	4293 Dec 28 22:08	26°  Y16'57	
direct	4287 Oct 19 08:57	15° \approx 43'30			4294 Mar 06 16:18	0°  B	
evening set	4288 Jan 28 11:26	22° \approx 47'54		evening set	4294 Apr 07 23:04	3°  B36'46	
conjunction	4288 Feb 14 03:48	24° \approx 45'52	-0°25'13	conjunction	4294 Apr 24 21:23	5°  B41'00	-2°09'11
minimum elong	4288 Feb 14 03:47	24° \approx 45'52	0°25'13	minimum elong	4294 Apr 24 21:23	5°  B41'00	2°09'11
max. Earth dist.	4288 Feb 14 01:34	24° \approx 45'13	10.99176 AU	max. Earth dist.	4294 Apr 24 20:41	5°  B40'47	10.61042 AU
morning rise	4288 Mar 01 20:15	26° \approx 43'55		morning rise	4294 May 11 23:46	7°  B46'32	
	4288 Mar 31 23:22	0°  H			4294 Aug 01 01:44	15°  B	
retrograde	4288 Jun 11 08:43	3°  H50'22		retrograde	4294 Aug 25 12:06	15°  B29'53	
opposition	4288 Aug 20 22:45	0°  H31'27	-0°46'24		4294 Sep 19 00:57	15°  R \mathcal{B}	

opposition	4294 Nov 03 12:39	12° 8 04'12 -2°40'45	direct	4301 Mar 30 21:21	28° 5 49'25
min. Earth dist.	4294 Nov 03 12:38	12° 8 04'13 8.56257 AU		4301 May 05 22:17	0° 0
direct	4295 Jan 10 10:56	8° 8 42'54	evening set	4301 Jul 12 16:52	6° 0 54'10
	4295 Apr 11 03:13	15° 8			
evening set	4295 Apr 20 17:45	16° 8 09'02	conjunction	4301 Jul 30 18:47	9° 0 13'27 -0°10'23
			minimum elong	4301 Jul 30 18:48	9° 0 13'27 0°10'24
conjunction	4295 May 07 19:29	18° 8 15'32 -2°09'53	behind sun begin	4301 Jul 30 13:06	9° 0 11'37
minimum elong	4295 May 07 19:30	18° 8 15'32 2°09'54	behind sun end	4301 Jul 31 00:31	9° 0 15'16
max. Earth dist.	4295 May 07 18:35	18° 8 15'15 10.51168 AU	max. Earth dist.	4301 Jul 30 21:11	9° 0 14'12 10.10070 AU
morning rise	4295 May 25 01:43	20° 8 23'25	morning rise	4301 Aug 17 22:01	11° 0 33'07
retrograde	4295 Sep 08 00:44	28° 8 14'20		4301 Sep 15 18:28	15° 0
opposition	4295 Nov 16 16:46	24° 8 47'35 -2°37'58	retrograde	4301 Dec 01 03:28	19° 0 44'18
min. Earth dist.	4295 Nov 16 17:00	24° 8 47'33 8.46339 AU	asc. node	4301 Dec 02 00:17	19° 0 44'15
direct	4296 Jan 23 06:05	21° 8 25'18	opposition	4302 Feb 06 04:36	16° 0 16'06 0°06'53
evening set	4296 May 02 20:48	28° 8 58'19	min. Earth dist.	4302 Feb 06 02:41	16° 0 16'30 8.09749 AU
	4296 May 11 03:54	0° 0		4302 Feb 21 23:56	15° 0
			direct	4302 Apr 14 02:34	12° 0 48'04
conjunction	4296 May 20 02:45	1° 0 07'20 -2°04'11		4302 Jun 03 04:28	15° 0
minimum elong	4296 May 20 02:47	1° 0 07'20 2°04'12	evening set	4302 Jul 27 14:17	20° 0 56'04
max. Earth dist.	4296 May 20 02:32	1° 0 07'16 10.41343 AU			
morning rise	4296 Jun 06 13:15	3° 0 17'45	conjunction	4302 Aug 14 17:11	23° 0 15'37 0°21'15
retrograde	4296 Sep 20 20:14	11° 0 15'40	minimum elong	4302 Aug 14 17:10	23° 0 15'37 0°21'15
opposition	4296 Nov 29 01:42	7° 0 48'02 -2°27'07	max. Earth dist.	4302 Aug 14 19:19	23° 0 16'18 10.10022 AU
min. Earth dist.	4296 Nov 29 01:29	7° 0 48'04 8.36707 AU	morning rise	4302 Sep 01 20:11	25° 0 35'10
direct	4297 Feb 04 06:30	4° 0 24'42		4302 Oct 09 19:42	0° 0
evening set	4297 May 16 08:30	12° 0 04'52	retrograde	4302 Dec 15 08:08	3° 0 43'21
			opposition	4303 Feb 20 04:42	0° 0 15'49 0°45'39
conjunction	4297 Jun 02 19:10	14° 0 16'29 -1°51'57	min. Earth dist.	4303 Feb 20 02:52	0° 0 16'12 8.10893 AU
minimum elong	4297 Jun 02 19:13	14° 0 16'30 1°51'58		4303 Feb 23 09:51	30° 0
max. Earth dist.	4297 Jun 02 20:12	14° 0 16'49 10.32067 AU	direct	4303 Apr 28 10:16	26° 0 47'16
morning rise	4297 Jun 20 10:04	16° 0 29'28		4303 Jun 29 01:12	0° 0
retrograde	4297 Oct 04 20:41	24° 0 33'26	evening set	4303 Aug 11 12:26	4° 0 56'47
opposition	4297 Dec 12 15:09	21° 0 05'06 -2°08'14			
min. Earth dist.	4297 Dec 12 14:00	21° 0 05'20 8.27876 AU	conjunction	4303 Aug 29 14:43	7° 0 15'46 0°51'30
direct	4298 Feb 17 13:59	17° 0 40'42	minimum elong	4303 Aug 29 14:41	7° 0 15'45 0°51'30
evening set	4298 May 30 05:13	25° 0 27'59	max. Earth dist.	4303 Aug 29 16:42	7° 0 16'24 10.12291 AU
			morning rise	4303 Sep 16 15:49	9° 0 34'23
conjunction	4298 Jun 16 20:43	27° 0 42'09 -1°33'28	retrograde	4303 Dec 29 09:20	17° 0 37'57
minimum elong	4298 Jun 16 20:47	27° 0 42'10 1°33'30	opposition	4304 Mar 05 03:24	14° 0 11'17 1°21'29
max. Earth dist.	4298 Jun 16 22:53	27° 0 42'51 10.23860 AU	min. Earth dist.	4304 Mar 05 01:27	14° 0 11'41 8.14261 AU
morning rise	4298 Jul 04 15:57	29° 0 57'33	direct	4304 May 11 17:59	10° 0 42'29
	4298 Jul 04 23:48	0° 0	evening set	4304 Aug 25 08:34	18° 0 51'42
retrograde	4298 Oct 19 01:29	8° 0 06'07			
opposition	4298 Dec 26 08:31	4° 0 37'22 -1°41'53	conjunction	4304 Sep 12 08:52	21° 0 09'26 1°18'32
min. Earth dist.	4298 Dec 26 06:29	4° 0 37'47 8.20360 AU	minimum elong	4304 Sep 12 08:49	21° 0 09'25 1°18'32
direct	4299 Mar 03 03:12	1° 0 11'56	max. Earth dist.	4304 Sep 12 10:37	21° 0 10'00 10.16632 AU
evening set	4299 Jun 13 10:23	9° 0 05'57	morning rise	4304 Sep 30 06:46	23° 0 26'27
				4304 Dec 02 19:06	0° 0
conjunction	4299 Jul 01 06:21	11° 0 22'23 -1°09'30	retrograde	4305 Jan 11 06:56	1° 0 24'18
minimum elong	4299 Jul 01 06:24	11° 0 22'24 1°09'31		4305 Feb 20 08:29	30° 0
max. Earth dist.	4299 Jul 01 08:52	11° 0 23'12 10.17205 AU	opposition	4305 Mar 18 23:49	27° 0 58'39 1°52'13
morning rise	4299 Jul 19 05:23	13° 0 39'51	min. Earth dist.	4305 Mar 18 22:09	27° 0 58'59 8.19548 AU
retrograde	4299 Nov 02 09:37	21° 0 51'15	direct	4305 May 25 23:40	24° 0 29'54
opposition	4300 Jan 09 05:17	18° 0 22'24 -1°09'18		4305 Aug 18 04:43	0° 0
min. Earth dist.	4300 Jan 09 03:01	18° 0 22'52 8.14611 AU	evening set	4305 Sep 09 00:19	2° 0 37'10
direct	4300 Mar 16 21:37	14° 0 55'58			
evening set	4300 Jun 27 22:49	22° 0 55'56	conjunction	4305 Sep 26 21:34	4° 0 53'09 1°40'47
			minimum elong	4305 Sep 26 21:31	4° 0 53'08 1°40'48
conjunction	4300 Jul 15 22:20	25° 0 14'08 -0°41'15	max. Earth dist.	4305 Sep 26 22:54	4° 0 53'34 10.22732 AU
minimum elong	4300 Jul 15 22:22	25° 0 14'09 0°41'15	morning rise	4305 Oct 14 15:27	7° 0 08'06
max. Earth dist.	4300 Jul 16 00:51	25° 0 14'57 10.12508 AU	retrograde	4306 Jan 24 23:17	14° 0 59'25
morning rise	4300 Aug 03 00:09	27° 0 33'04	opposition	4306 Apr 01 17:16	11° 0 34'55 2°16'09
	4300 Aug 23 02:22	0° 0	min. Earth dist.	4306 Apr 01 16:11	11° 0 35'08 8.26452 AU
retrograde	4300 Nov 16 19:12	5° 0 45'23	direct	4306 Jun 09 04:01	8° 0 06'29
opposition	4301 Jan 23 04:24	2° 0 16'44 -0°32'17	evening set	4306 Sep 23 09:53	16° 0 10'14
min. Earth dist.	4301 Jan 23 02:16	2° 0 17'10 8.10998 AU			
	4301 Feb 22 14:13	30° 0	conjunction	4306 Oct 11 03:18	18° 0 24'02 1°57'08

minimum elong	4306 Oct 11 03:15	18° <u>♄</u> 24'01	1°57'09	max. Earth dist.	4312 Dec 25 22:06	3° <u>♄</u> 49'36	10.84045 AU
max. Earth dist.	4306 Oct 11 04:02	18° <u>♄</u> 24'16	10.30311 AU	morning rise	4313 Jan 11 17:59	5° <u>♄</u> 50'17	
morning rise	4306 Oct 28 16:45	20° <u>♄</u> 36'38		retrograde	4313 Apr 21 13:18	12° <u>♄</u> 57'26	
retrograde	4307 Feb 07 08:10	28° <u>♄</u> 20'49		opposition	4313 Jun 29 20:40	9° <u>♄</u> 38'59	1°30'14
opposition	4307 Apr 15 07:00	24° <u>♄</u> 57'31	2°32'12	min. Earth dist.	4313 Jun 29 21:49	9° <u>♄</u> 38'47	8.87450 AU
min. Earth dist.	4307 Apr 15 06:49	24° <u>♄</u> 57'33	8.34676 AU	direct	4313 Sep 08 18:39	6° <u>♄</u> 16'50	
direct	4307 Jun 23 05:33	21° <u>♄</u> 29'39		evening set	4313 Dec 21 00:10	13° <u>♄</u> 33'52	
evening set	4307 Oct 07 11:22	29° <u>♄</u> 28'18					
	4307 Oct 11 17:58	0° <u>♄</u>		conjunction	4314 Jan 06 20:09	15° <u>♄</u> 33'50	1°02'08
				minimum elong	4314 Jan 06 20:11	15° <u>♄</u> 33'51	1°02'08
conjunction	4307 Oct 25 00:40	1° <u>♄</u> 39'43	2°06'56	max. Earth dist.	4314 Jan 06 18:36	15° <u>♄</u> 33'22	10.90406 AU
minimum elong	4307 Oct 25 00:39	1° <u>♄</u> 39'43	2°06'57	morning rise	4314 Jan 23 13:51	17° <u>♄</u> 33'07	
max. Earth dist.	4307 Oct 25 00:28	1° <u>♄</u> 39'40	10.39037 AU	retrograde	4314 May 03 13:25	24° <u>♄</u> 37'36	
morning rise	4307 Nov 11 09:47	3° <u>♄</u> 49'52		opposition	4314 Jul 12 05:47	21° <u>♄</u> 19'22	1°01'34
retrograde	4308 Feb 20 10:49	11° <u>♄</u> 26'40		min. Earth dist.	4314 Jul 12 06:28	21° <u>♄</u> 19'14	8.93016 AU
opposition	4308 Apr 27 16:34	8° <u>♄</u> 04'31	2°39'54	direct	4314 Sep 21 05:33	17° <u>♄</u> 58'11	
min. Earth dist.	4308 Apr 27 16:54	8° <u>♄</u> 04'27	8.43832 AU	evening set	4315 Jan 01 17:56	25° <u>♄</u> 10'00	
direct	4308 Jul 06 02:29	4° <u>♄</u> 37'23					
evening set	4308 Oct 20 03:31	12° <u>♄</u> 29'41		conjunction	4315 Jan 18 12:34	27° <u>♄</u> 09'01	0°37'47
				minimum elong	4315 Jan 18 12:35	27° <u>♄</u> 09'01	0°37'48
conjunction	4308 Nov 06 12:52	14° <u>♄</u> 38'43	2°10'01	max. Earth dist.	4315 Jan 18 11:48	27° <u>♄</u> 08'47	10.95165 AU
minimum elong	4308 Nov 06 12:52	14° <u>♄</u> 38'43	2°10'02	morning rise	4315 Feb 04 05:24	29° <u>♄</u> 07'32	
max. Earth dist.	4308 Nov 06 11:58	14° <u>♄</u> 38'26	10.48480 AU		4315 Feb 11 19:49	0° <u>♄</u>	
	4308 Nov 09 09:16	15° <u>♄</u>		retrograde	4315 May 15 12:12	6° <u>♄</u> 10'46	
morning rise	4308 Nov 23 18:03	16° <u>♄</u> 46'27		opposition	4315 Jul 24 12:53	2° <u>♄</u> 52'32	0°30'43
retrograde	4309 Mar 04 07:09	24° <u>♄</u> 15'56		min. Earth dist.	4315 Jul 24 12:57	2° <u>♄</u> 52'31	8.96884 AU
opposition	4309 May 10 21:24	20° <u>♄</u> 54'48	2°39'23		4315 Sep 09 07:24	30° <u>♄</u>	
min. Earth dist.	4309 May 10 21:38	20° <u>♄</u> 54'46	8.53445 AU	direct	4315 Oct 03 10:39	29° <u>♄</u> 32'15	
direct	4309 Jul 19 17:53	17° <u>♄</u> 28'35			4315 Oct 27 07:19	0° <u>♄</u>	
evening set	4309 Nov 02 10:15	25° <u>♄</u> 13'44		evening set	4316 Jan 13 08:30	6° <u>♄</u> 40'02	
conjunction	4309 Nov 19 16:05	27° <u>♄</u> 20'28	2°06'38	conjunction	4316 Jan 30 02:02	8° <u>♄</u> 38'23	0°12'06
minimum elong	4309 Nov 19 16:06	27° <u>♄</u> 20'28	2°06'38	minimum elong	4316 Jan 30 02:02	8° <u>♄</u> 38'23	0°12'07
max. Earth dist.	4309 Nov 19 15:12	27° <u>♄</u> 20'12	10.58151 AU	behind sun begin	4316 Jan 29 21:13	8° <u>♄</u> 36'58	
morning rise	4309 Dec 06 17:44	29° <u>♄</u> 25'57		behind sun end	4316 Jan 30 06:51	8° <u>♄</u> 39'48	
	4309 Dec 11 11:20	0° <u>♄</u>		max. Earth dist.	4316 Jan 30 01:36	8° <u>♄</u> 38'15	10.98135 AU
retrograde	4310 Mar 16 21:04	6° <u>♄</u> 48'31		morning rise	4316 Feb 15 18:24	10° <u>♄</u> 36'28	
opposition	4310 May 23 21:27	3° <u>♄</u> 28'18	2°31'12		4316 Mar 29 02:59	15° <u>♄</u>	
min. Earth dist.	4310 May 23 21:22	3° <u>♄</u> 28'19	8.63033 AU	retrograde	4316 May 26 11:56	17° <u>♄</u> 39'51	
direct	4310 Aug 02 04:14	0° <u>♄</u> 03'05		desc. node	4316 Jul 22 00:01	15° <u>♄</u> 21'46	
evening set	4310 Nov 15 07:37	7° <u>♄</u> 40'43			4316 Jul 27 01:24	15° <u>♄</u>	
				opposition	4316 Aug 04 18:42	14° <u>♄</u> 21'27	-0°01'10
conjunction	4310 Dec 02 10:25	9° <u>♄</u> 45'22	1°57'20	min. Earth dist.	4316 Aug 04 19:05	14° <u>♄</u> 21'23	8.98914 AU
minimum elong	4310 Dec 02 10:27	9° <u>♄</u> 45'22	1°57'20	direct	4316 Oct 14 13:03	11° <u>♄</u> 01'52	
max. Earth dist.	4310 Dec 02 10:06	9° <u>♄</u> 45'16	10.67579 AU		4316 Dec 26 06:22	15° <u>♄</u>	
morning rise	4310 Dec 19 09:05	11° <u>♄</u> 48'49		evening set	4317 Jan 23 21:18	18° <u>♄</u> 06'56	
retrograde	4311 Mar 29 07:34	19° <u>♄</u> 05'13					
opposition	4311 Jun 05 17:12	15° <u>♄</u> 45'46	2°16'14	conjunction	4317 Feb 09 13:53	20° <u>♄</u> 04'56	-0°14'04
min. Earth dist.	4311 Jun 05 17:11	15° <u>♄</u> 45'46	8.72149 AU	minimum elong	4317 Feb 09 13:52	20° <u>♄</u> 04'56	0°14'03
direct	4311 Aug 15 06:59	12° <u>♄</u> 21'35		behind sun begin	4317 Feb 09 10:15	20° <u>♄</u> 03'53	
evening set	4311 Nov 27 20:11	19° <u>♄</u> 51'45		behind sun end	4317 Feb 09 17:30	20° <u>♄</u> 06'00	
				max. Earth dist.	4317 Feb 09 12:44	20° <u>♄</u> 04'36	10.99209 AU
conjunction	4311 Dec 14 20:19	21° <u>♄</u> 54'33	1°42'52	morning rise	4317 Feb 26 06:17	22° <u>♄</u> 02'54	
minimum elong	4311 Dec 14 20:22	21° <u>♄</u> 54'34	1°42'52	retrograde	4317 Jun 07 11:32	29° <u>♄</u> 07'52	
max. Earth dist.	4311 Dec 14 20:08	21° <u>♄</u> 54'30	10.76332 AU	opposition	4317 Aug 17 00:24	25° <u>♄</u> 49'05	-0°32'56
morning rise	4311 Dec 31 16:43	23° <u>♄</u> 56'18		min. Earth dist.	4317 Aug 17 01:24	25° <u>♄</u> 48'54	8.99027 AU
	4312 Mar 04 02:28	0° <u>♄</u>		direct	4317 Oct 26 12:25	22° <u>♄</u> 30'02	
retrograde	4312 Apr 09 13:15	1° <u>♄</u> 07'30		evening set	4318 Feb 04 09:40	29° <u>♄</u> 33'43	
	4312 May 16 18:44	30° <u>♄</u>			4318 Feb 08 03:47	0° <u>♄</u>	
opposition	4312 Jun 17 08:50	27° <u>♄</u> 48'38	1°55'31	conjunction	4318 Feb 21 01:39	1° <u>♄</u> 31'40	-0°39'35
min. Earth dist.	4312 Jun 17 09:32	27° <u>♄</u> 48'30	8.80401 AU	minimum elong	4318 Feb 21 01:37	1° <u>♄</u> 31'40	0°39'35
direct	4312 Aug 27 02:34	24° <u>♄</u> 25'30		max. Earth dist.	4318 Feb 21 00:10	1° <u>♄</u> 31'14	10.98349 AU
	4312 Nov 23 05:17	0° <u>♄</u>		morning rise	4318 Mar 09 18:21	3° <u>♄</u> 29'50	
evening set	4312 Dec 09 01:20	1° <u>♄</u> 48'41		retrograde	4318 Jun 19 12:56	10° <u>♄</u> 37'48	
				opposition	4318 Aug 29 06:44	7° <u>♄</u> 18'25	-1°03'28
conjunction	4312 Dec 25 23:10	3° <u>♄</u> 49'55	1°24'09	min. Earth dist.	4318 Aug 29 07:27	7° <u>♄</u> 18'17	8.97224 AU
minimum elong	4312 Dec 25 23:12	3° <u>♄</u> 49'56	1°24'09				

direct	4318 Nov 07 12:26	3°♄59'43	conjunction	4325 May 15 11:07	25°♄32'43 -2°07'22
evening set	4319 Feb 15 23:09	11°♄03'20	minimum elong	4325 May 15 11:09	25°♄32'44 2°07'22
			max. Earth dist.	4325 May 15 10:59	25°♄32'41 10.49086 AU
conjunction	4319 Mar 04 15:05	13°♄01'35 -1°03'37	morning rise	4325 Jun 01 19:12	27°♄41'28
minimum elong	4319 Mar 04 15:03	13°♄01'35 1°03'37		4325 Jun 21 09:42	0°♄
max. Earth dist.	4319 Mar 04 14:31	13°♄01'25 10.95589 AU	retrograde	4325 Sep 15 23:12	5°♄34'35
morning rise	4319 Mar 21 08:20	15°♄00'16	opposition	4325 Nov 24 09:06	2°♄08'01 -2°32'41
retrograde	4319 Jul 01 20:29	22°♄12'30	min. Earth dist.	4325 Nov 24 08:47	2°♄08'05 8.44221 AU
opposition	4319 Sep 10 14:24	18°♄52'19 -1°31'38		4325 Dec 23 17:08	30°♄
min. Earth dist.	4319 Sep 10 14:21	18°♄52'20 8.93575 AU	direct	4326 Jan 30 17:29	28°♄45'52
direct	4319 Nov 19 12:20	15°♄33'47		4326 Mar 09 01:38	0°♄
evening set	4320 Feb 27 15:11	22°♄38'38	evening set	4326 May 11 13:56	6°♄21'04
conjunction	4320 Mar 15 07:28	24°♄37'32 -1°25'14	conjunction	4326 May 28 22:06	8°♄31'01 -1°58'07
minimum elong	4320 Mar 15 07:26	24°♄37'31 1°25'14	minimum elong	4326 May 28 22:09	8°♄31'01 1°58'08
max. Earth dist.	4320 Mar 15 07:30	24°♄37'32 10.91033 AU	max. Earth dist.	4326 May 28 21:32	8°♄30'50 10.39235 AU
morning rise	4320 Apr 01 01:42	26°♄37'04	morning rise	4326 Jun 15 10:43	10°♄42'22
	4320 May 02 00:38	0°♄	retrograde	4326 Sep 29 20:19	18°♄42'02
retrograde	4320 Jul 13 06:44	3°♄54'39	opposition	4326 Dec 07 19:27	15°♄14'35 -2°17'32
opposition	4320 Sep 22 00:23	0°♄33'33 -1°56'20	min. Earth dist.	4326 Dec 07 19:26	15°♄14'35 8.34621 AU
min. Earth dist.	4320 Sep 21 24:00	0°♄33'38 8.88207 AU	direct	4327 Feb 12 20:50	11°♄51'13
	4320 Sep 29 12:21	30°♄	evening set	4327 May 25 05:29	19°♄33'41
direct	4320 Nov 30 11:23	27°♄14'58			
	4321 Jan 28 00:49	0°♄	conjunction	4327 Jun 11 18:24	21°♄46'15 -1°42'31
evening set	4321 Mar 10 11:08	4°♄22'22	minimum elong	4327 Jun 11 18:27	21°♄46'16 1°42'32
			max. Earth dist.	4327 Jun 11 17:43	21°♄46'02 10.30081 AU
conjunction	4321 Mar 27 04:07	6°♄22'13 -1°43'31	morning rise	4327 Jun 29 11:35	24°♄00'08
minimum elong	4321 Mar 27 04:05	6°♄22'12 1°43'31		4327 Aug 24 23:08	0°♄
max. Earth dist.	4321 Mar 27 03:36	6°♄22'03 10.84850 AU	retrograde	4327 Oct 13 20:58	2°♄05'10
morning rise	4321 Apr 12 23:56	8°♄22'56		4327 Dec 03 17:28	30°♄
retrograde	4321 Jul 25 21:50	15°♄46'49	opposition	4327 Dec 21 09:53	28°♄37'02 -1°54'39
opposition	4321 Oct 04 13:24	12°♄24'42 -2°16'30	min. Earth dist.	4327 Dec 21 10:04	28°♄37'00 8.25989 AU
min. Earth dist.	4321 Oct 04 13:31	12°♄24'41 8.81321 AU	direct	4328 Feb 26 07:01	25°♄12'24
direct	4321 Dec 12 14:09	9°♄05'48		4328 May 12 17:39	0°♄
evening set	4322 Mar 22 12:05	16°♄16'55	evening set	4328 Jun 07 05:30	3°♄01'56
conjunction	4322 Apr 08 06:32	18°♄18'07 -1°57'37	conjunction	4328 Jun 24 23:10	5°♄16'59 -1°21'05
minimum elong	4322 Apr 08 06:30	18°♄18'06 1°57'37	minimum elong	4328 Jun 24 23:12	5°♄16'59 1°21'05
max. Earth dist.	4322 Apr 08 05:45	18°♄17'52 10.77281 AU	max. Earth dist.	4328 Jun 24 23:06	5°♄16'57 10.22160 AU
morning rise	4322 Apr 25 04:33	20°♄20'22	morning rise	4328 Jul 12 20:27	7°♄33'09
retrograde	4322 Aug 07 18:48	27°♄51'14	retrograde	4328 Oct 27 01:59	15°♄42'02
opposition	4322 Oct 17 06:01	24°♄28'00 -2°31'04	opposition	4329 Jan 03 04:04	12°♄13'27 -1°24'57
min. Earth dist.	4322 Oct 17 06:22	24°♄27'56 8.73176 AU	min. Earth dist.	4329 Jan 03 03:47	12°♄13'30 8.18838 AU
direct	4322 Dec 24 20:01	21°♄08'34	direct	4329 Mar 10 22:33	8°♄47'36
evening set	4323 Apr 03 19:03	28°♄24'26	evening set	4329 Jun 21 13:09	16°♄43'34
	4323 Apr 16 22:28	0°♄			
conjunction	4323 Apr 20 15:53	0°♄27'21 -2°06'43	conjunction	4329 Jul 09 11:02	19°♄00'43 -0°54'46
minimum elong	4323 Apr 20 15:53	0°♄27'21 2°06'43	minimum elong	4329 Jul 09 11:04	19°♄00'43 0°54'47
max. Earth dist.	4323 Apr 20 15:37	0°♄27'16 10.68587 AU	max. Earth dist.	4329 Jul 09 12:01	19°♄01'02 10.15938 AU
morning rise	4323 May 07 16:38	2°♄31'28	morning rise	4329 Jul 27 11:35	21°♄18'44
retrograde	4323 Aug 20 20:51	10°♄09'44	retrograde	4329 Nov 10 09:36	29°♄29'42
opposition	4323 Oct 30 02:33	6°♄45'19 -2°39'06	opposition	4330 Jan 17 01:02	26°♄00'55 -0°49'56
min. Earth dist.	4323 Oct 30 02:41	6°♄45'18 8.64036 AU	min. Earth dist.	4330 Jan 16 23:57	26°♄01'08 8.13590 AU
direct	4324 Jan 06 07:03	3°♄25'09	direct	4330 Mar 24 19:10	22°♄33'56
evening set	4324 Apr 15 09:12	10°♄46'45		4330 Jul 01 10:21	0°♄
			evening set	4330 Jul 06 03:33	0°♄35'29
conjunction	4324 May 02 09:11	12°♄51'44 -2°10'08	conjunction	4330 Jul 24 04:35	2°♄54'08 -0°25'02
minimum elong	4324 May 02 09:12	12°♄51'44 2°10'09	minimum elong	4330 Jul 24 04:36	2°♄54'09 0°25'02
max. Earth dist.	4324 May 02 09:24	12°♄51'48 10.59054 AU	max. Earth dist.	4330 Jul 24 06:10	2°♄54'39 10.11780 AU
morning rise	4324 May 19 13:15	14°♄58'01	morning rise	4330 Aug 11 07:10	5°♄13'20
	4324 May 19 19:47	15°♄	retrograde	4330 Nov 24 17:37	13°♄24'25
retrograde	4324 Sep 02 06:33	22°♄43'50	opposition	4331 Jan 30 23:40	9°♄55'46 -0°11'38
opposition	4324 Nov 11 03:23	19°♄18'17 -2°39'50	min. Earth dist.	4331 Jan 30 22:11	9°♄56'04 8.10555 AU
min. Earth dist.	4324 Nov 11 03:04	19°♄18'21 8.54222 AU	direct	4331 Apr 07 20:45	6°♄27'49
direct	4325 Jan 17 22:02	15°♄57'12	asc. node	4331 May 23 09:00	8°♄18'12
evening set	4325 Apr 28 07:20	23°♄25'21	evening set	4331 Jul 20 22:37	14°♄33'42


























































































































	4331 Jul 24 09:30	15°♈		evening set	4337 Oct 14 00:49	6°♐33'57	
conjunction	4331 Aug 08 01:21	16°♈53'07	0°06'26	conjunction	4337 Oct 31 12:17	8°♐44'12	2°09'20
minimum elong	4331 Aug 08 01:20	16°♈53'07	0°06'25	minimum elong	4337 Oct 31 12:16	8°♐44'12	2°09'21
behind sun begin	4331 Aug 07 18:26	16°♈50'54		max. Earth dist.	4337 Oct 31 13:29	8°♐44'34	10.43264 AU
behind sun end	4331 Aug 08 08:14	16°♈55'19		morning rise	4337 Nov 17 19:18	10°♐53'07	
max. Earth dist.	4331 Aug 08 03:04	16°♈53'39	10.09927 AU		4337 Dec 24 09:55	15°♐	
morning rise	4331 Aug 26 04:27	19°♈12'41		retrograde	4338 Feb 26 14:31	18°♐26'11	
retrograde	4331 Dec 08 23:46	27°♈22'02		opposition	4338 May 04 23:51	15°♐04'18	2°40'35
opposition	4332 Feb 13 23:09	23°♈53'48	0°27'30	min. Earth dist.	4338 May 04 23:06	15°♐04'27	8.48305 AU
min. Earth dist.	4332 Feb 13 21:41	23°♈54'06	8.09907 AU		4338 May 05 21:43	15°♐	
direct	4332 Apr 21 01:13	20°♈25'07		direct	4338 Jul 13 14:38	11°♐37'27	
evening set	4332 Aug 03 19:46	28°♈33'43			4338 Sep 17 06:36	15°♐	
	4332 Aug 15 02:01	0°♐		evening set	4338 Oct 27 12:10	19°♐26'10	
conjunction	4332 Aug 21 22:34	0°♐53'04	0°37'26	conjunction	4338 Nov 13 19:46	21°♐34'03	2°08'58
minimum elong	4332 Aug 21 22:32	0°♐53'03	0°37'26	minimum elong	4338 Nov 13 19:46	21°♐34'03	2°08'58
max. Earth dist.	4332 Aug 22 00:01	0°♐53'32	10.10480 AU	max. Earth dist.	4338 Nov 13 20:25	21°♐34'15	10.53156 AU
morning rise	4332 Sep 09 00:38	3°♐12'12		morning rise	4338 Nov 30 22:58	23°♐40'37	
retrograde	4332 Dec 22 03:27	11°♐18'05			4339 Feb 03 17:59	0°♐	
opposition	4333 Feb 26 22:12	7°♐50'32	1°04'58	retrograde	4339 Mar 11 07:14	1°♐06'32	
min. Earth dist.	4333 Feb 26 21:13	7°♐50'45	8.11679 AU		4339 Apr 16 13:31	30°♐	
direct	4333 May 05 07:31	4°♐21'22		opposition	4339 May 18 02:19	27°♐45'50	2°35'56
evening set	4333 Aug 18 16:41	12°♐30'55		min. Earth dist.	4339 May 18 02:15	27°♐45'51	8.58251 AU
				direct	4339 Jul 27 03:20	24°♐20'06	
conjunction	4333 Sep 05 18:04	14°♐49'25	1°06'10		4339 Oct 23 04:58	0°♐	
minimum elong	4333 Sep 05 18:01	14°♐49'24	1°06'10	evening set	4339 Nov 09 14:10	2°♐01'29	
max. Earth dist.	4333 Sep 05 18:50	14°♐49'40	10.13398 AU				
morning rise	4333 Sep 23 17:44	17°♐07'21		conjunction	4339 Nov 26 18:18	4°♐07'08	2°02'23
retrograde	4334 Jan 05 02:50	25°♐08'15		minimum elong	4339 Nov 26 18:20	4°♐07'09	2°02'23
opposition	4334 Mar 12 19:30	21°♐41'36	1°38'20	max. Earth dist.	4339 Nov 26 18:08	4°♐07'05	10.63053 AU
min. Earth dist.	4334 Mar 12 18:51	21°♐41'44	8.15746 AU	morning rise	4339 Dec 13 18:25	6°♐11'34	
direct	4334 May 19 14:18	18°♐12'16		retrograde	4340 Mar 22 19:12	13°♐30'56	
evening set	4334 Sep 02 10:39	26°♐20'54		opposition	4340 May 30 00:17	10°♐11'16	2°24'02
				min. Earth dist.	4340 May 30 00:26	10°♐11'14	8.67958 AU
conjunction	4334 Sep 20 09:24	28°♐37'52	1°30'50	direct	4340 Aug 08 09:57	6°♐46'44	
minimum elong	4334 Sep 20 09:21	28°♐37'51	1°30'51	evening set	4340 Nov 21 07:08	14°♐20'36	
max. Earth dist.	4334 Sep 20 09:47	28°♐38'00	10.18490 AU				
	4334 Oct 01 02:32	0°♐		conjunction	4340 Dec 08 08:25	16°♐24'17	1°50'15
morning rise	4334 Oct 08 05:31	0°♐54'00		minimum elong	4340 Dec 08 08:27	16°♐24'17	1°50'15
retrograde	4335 Jan 18 20:12	8°♐48'45		max. Earth dist.	4340 Dec 08 07:53	16°♐24'07	10.72490 AU
opposition	4335 Mar 26 14:18	5°♐23'11	2°05'40	morning rise	4340 Dec 25 06:03	18°♐26'50	
min. Earth dist.	4335 Mar 26 13:30	5°♐23'21	8.21843 AU	retrograde	4341 Apr 04 02:44	25°♐40'30	
direct	4335 Jun 02 21:08	1°♐54'02		opposition	4341 Jun 11 17:57	22°♐21'39	2°05'53
evening set	4335 Sep 16 23:05	9°♐59'51		min. Earth dist.	4341 Jun 11 17:38	22°♐21'43	8.76969 AU
				direct	4341 Aug 21 10:01	18°♐58'20	
conjunction	4335 Oct 04 18:21	12°♐14'48	1°50'06	evening set	4341 Dec 03 16:08	26°♐24'58	
minimum elong	4335 Oct 04 18:18	12°♐14'47	1°50'06				
max. Earth dist.	4335 Oct 04 18:51	12°♐14'58	10.25442 AU	conjunction	4341 Dec 20 15:06	28°♐26'56	1°33'25
morning rise	4335 Oct 22 10:10	14°♐28'41		minimum elong	4341 Dec 20 15:08	28°♐26'56	1°33'25
retrograde	4336 Feb 01 07:18	22°♐16'32		max. Earth dist.	4341 Dec 20 15:08	28°♐26'56	10.81026 AU
opposition	4336 Apr 08 05:39	18°♐52'09	2°25'33		4342 Jan 02 12:35	0°♐	
min. Earth dist.	4336 Apr 08 04:23	18°♐52'24	8.29605 AU	morning rise	4342 Jan 06 10:39	0°♐27'54	
direct	4336 Jun 16 00:15	15°♐23'31		retrograde	4342 Apr 16 06:50	7°♐36'58	
evening set	4336 Sep 30 04:13	23°♐24'51		opposition	4342 Jun 24 07:54	4°♐18'43	1°42'36
				min. Earth dist.	4342 Jun 24 07:34	4°♐18'47	8.84882 AU
conjunction	4336 Oct 17 19:38	25°♐37'30	2°03'03	direct	4342 Sep 03 04:25	0°♐56'33	
minimum elong	4336 Oct 17 19:36	25°♐37'29	2°03'04	evening set	4342 Dec 15 18:18	8°♐16'32	
max. Earth dist.	4336 Oct 17 20:35	25°♐37'48	10.33858 AU				
morning rise	4336 Nov 04 06:56	27°♐48'55		conjunction	4343 Jan 01 15:16	10°♐17'04	1°12'50
	4336 Nov 22 13:13	0°♐		minimum elong	4343 Jan 01 15:19	10°♐17'05	1°12'50
retrograde	4337 Feb 13 13:54	5°♐29'25		max. Earth dist.	4343 Jan 01 15:19	10°♐17'05	10.88286 AU
opposition	4337 Apr 21 16:52	2°♐06'16	2°37'15	morning rise	4343 Jan 18 09:19	12°♐16'47	
min. Earth dist.	4337 Apr 21 15:30	2°♐06'33	8.38591 AU	retrograde	4343 Apr 28 08:45	19°♐22'27	
	4337 May 20 04:53	30°♐		opposition	4343 Jul 06 18:49	16°♐04'36	1°15'22
direct	4337 Jun 29 22:00	28°♐38'26		min. Earth dist.	4343 Jul 06 19:12	16°♐04'32	8.91356 AU
	4337 Aug 09 05:05	0°♐		direct	4343 Sep 15 16:18	12°♐43'27	

evening set	4343 Dec 27 14:49	19° ♁ 57'40	opposition	4349 Sep 16 15:17	25° ♁ 23'03 -1°45'21
			min. Earth dist.	4349 Sep 16 17:02	25° ♁ 22'43 8.89751 AU
conjunction	4344 Jan 13 10:03	21° ♁ 57'05 0°49'27	direct	4349 Nov 25 07:01	22° ♁ 04'13
minimum elong	4344 Jan 13 10:05	21° ♁ 57'05 0°49'28	evening set	4350 Mar 05 08:51	29° ♁ 10'53
max. Earth dist.	4344 Jan 13 08:58	21° ♁ 56'45 10.93934 AU		4350 Mar 12 06:45	0° ♁
morning rise	4344 Jan 30 03:15	23° ♁ 55'54			
	4344 Apr 04 14:37	0° ♁	conjunction	4350 Mar 22 01:30	1° ♁ 10'24 -1°35'29
retrograde	4344 May 09 06:59	0° ♁ 59'34	minimum elong	4350 Mar 22 01:28	1° ♁ 10'23 1°35'29
	4344 Jun 13 18:58	30° ♁ 3	max. Earth dist.	4350 Mar 21 23:55	1° ♁ 09'55 10.86542 AU
opposition	4344 Jul 18 03:14	27° ♁ 41'50 0°45'24	morning rise	4350 Apr 07 20:35	3° ♁ 10'41
min. Earth dist.	4344 Jul 18 04:38	27° ♁ 41'34 8.96069 AU	retrograde	4350 Jul 20 09:48	10° ♁ 32'08
direct	4344 Sep 27 00:26	24° ♁ 21'33	opposition	4350 Sep 29 03:09	7° ♁ 10'07 -2°07'49
	4344 Dec 24 21:52	0° ♁	min. Earth dist.	4350 Sep 29 04:00	7° ♁ 09'58 8.83106 AU
evening set	4345 Jan 07 07:20	1° ♁ 31'14	direct	4350 Dec 07 10:27	3° ♁ 50'57
			evening set	4351 Mar 17 07:31	11° ♁ 00'50
conjunction	4345 Jan 24 01:14	3° ♁ 29'50 0°24'16			
minimum elong	4345 Jan 24 01:15	3° ♁ 29'50 0°24'17	conjunction	4351 Apr 03 01:26	13° ♁ 01'35 -1°51'40
max. Earth dist.	4345 Jan 23 23:03	3° ♁ 29'11 10.97680 AU	minimum elong	4351 Apr 03 01:24	13° ♁ 01'34 1°51'40
morning rise	4345 Feb 09 17:55	5° ♁ 28'04	max. Earth dist.	4351 Apr 03 00:44	13° ♁ 01'22 10.79165 AU
retrograde	4345 May 21 06:01	12° ♁ 31'17	morning rise	4351 Apr 19 22:18	15° ♁ 03'17
opposition	4345 Jul 30 09:53	9° ♁ 13'25 0°13'52	retrograde	4351 Aug 02 05:28	22° ♁ 31'32
min. Earth dist.	4345 Jul 30 11:24	9° ♁ 13'09 8.98787 AU	opposition	4351 Oct 11 18:08	19° ♁ 08'16 -2°25'09
direct	4345 Oct 09 06:09	5° ♁ 53'53	min. Earth dist.	4351 Oct 11 18:20	19° ♁ 08'14 8.75127 AU
desc. node	4346 Jan 09 17:33	11° ♁ 57'31	direct	4351 Dec 19 13:47	15° ♁ 48'34
evening set	4346 Jan 18 21:17	13° ♁ 00'19	evening set	4352 Mar 28 11:52	23° ♁ 02'52
conjunction	4346 Feb 04 14:17	14° ♁ 58'28 -0°01'51	conjunction	4352 Apr 14 07:38	25° ♁ 05'11 -2°03'12
minimum elong	4346 Feb 04 14:17	14° ♁ 58'28 0°01'50	minimum elong	4352 Apr 14 07:37	25° ♁ 05'10 2°03'12
behind sun begin	4346 Feb 04 07:18	14° ♁ 56'25	max. Earth dist.	4352 Apr 14 06:41	25° ♁ 04'53 10.70612 AU
behind sun end	4346 Feb 04 21:16	15° ♁ 00'31	morning rise	4352 May 01 07:02	27° ♁ 08'38
	4346 Feb 04 19:34	15° ♁		4352 May 26 10:26	0° ♁
max. Earth dist.	4346 Feb 04 12:23	14° ♁ 57'58 10.99372 AU	retrograde	4352 Aug 14 05:15	4° ♁ 44'14
morning rise	4346 Feb 21 06:39	16° ♁ 56'27	opposition	4352 Oct 23 13:09	1° ♁ 19'45 -2°36'22
retrograde	4346 Jun 02 06:31	24° ♁ 00'44	min. Earth dist.	4352 Oct 23 13:26	1° ♁ 19'42 8.66125 AU
opposition	4346 Aug 11 16:07	20° ♁ 42'30 -0°18'07		4352 Nov 10 08:00	30° ♁ 17
min. Earth dist.	4346 Aug 11 17:11	20° ♁ 42'18 8.99447 AU	direct	4352 Dec 30 21:37	27° ♁ 59'19
direct	4346 Oct 21 07:19	17° ♁ 23'31		4353 Feb 17 16:10	0° ♁
evening set	4347 Jan 30 10:08	24° ♁ 27'59	evening set	4353 Apr 09 22:47	5° ♁ 19'02
conjunction	4347 Feb 16 02:30	26° ♁ 26'00 -0°27'45	conjunction	4353 Apr 26 21:09	7° ♁ 23'17 -2°09'21
minimum elong	4347 Feb 16 02:29	26° ♁ 26'00 0°27'45	minimum elong	4353 Apr 26 21:09	7° ♁ 23'17 2°09'21
max. Earth dist.	4347 Feb 16 00:59	26° ♁ 25'33 10.99009 AU	max. Earth dist.	4353 Apr 26 20:00	7° ♁ 22'56 10.61229 AU
morning rise	4347 Mar 04 18:54	28° ♁ 24'04	morning rise	4353 May 13 23:46	9° ♁ 28'48
	4347 Mar 18 21:39	0° ♁		4353 Jul 06 01:27	15° ♁
retrograde	4347 Jun 14 08:35	5° ♁ 30'50	retrograde	4353 Aug 27 11:34	17° ♁ 12'02
opposition	4347 Aug 23 22:36	2° ♁ 11'57 -0°49'24		4353 Oct 20 08:31	15° ♁ 8
min. Earth dist.	4347 Aug 23 23:45	2° ♁ 11'44 8.98090 AU	opposition	4353 Nov 05 12:32	13° ♁ 46'21 -2°40'34
	4347 Sep 25 10:00	30° ♁ 8	min. Earth dist.	4353 Nov 05 12:59	13° ♁ 46'16 8.56481 AU
direct	4347 Nov 02 07:27	28° ♁ 53'15	direct	4354 Jan 12 11:20	10° ♁ 25'02
	4347 Dec 09 07:12	0° ♁		4354 Mar 29 02:06	15° ♁ 8
evening set	4348 Feb 10 23:35	5° ♁ 57'09	evening set	4354 Apr 22 17:19	17° ♁ 50'59
conjunction	4348 Feb 27 15:32	7° ♁ 55'19 -0°52'37	conjunction	4354 May 09 19:15	19° ♁ 57'29 -2°09'28
minimum elong	4348 Feb 27 15:30	7° ♁ 55'19 0°52'37	minimum elong	4354 May 09 19:16	19° ♁ 57'29 2°09'29
max. Earth dist.	4348 Feb 27 13:12	7° ♁ 54'38 10.96662 AU	max. Earth dist.	4354 May 09 18:46	19° ♁ 57'19 10.51430 AU
morning rise	4348 Mar 15 08:29	9° ♁ 53'49	morning rise	4354 May 27 01:39	22° ♁ 05'21
retrograde	4348 Jun 25 13:42	17° ♁ 04'17	retrograde	4354 Sep 10 00:27	29° ♁ 56'02
opposition	4348 Sep 04 05:58	13° ♁ 44'33 -1°18'51	opposition	4354 Nov 18 16:24	26° ♁ 29'17 -2°37'05
min. Earth dist.	4348 Sep 04 07:48	13° ♁ 44'12 8.94811 AU	min. Earth dist.	4354 Nov 18 16:31	26° ♁ 29'15 8.46635 AU
direct	4348 Nov 13 06:45	10° ♁ 25'53	direct	4355 Jan 25 05:46	23° ♁ 06'58
evening set	4349 Feb 21 14:46	17° ♁ 30'32		4355 Apr 30 09:45	0° ♁
			evening set	4355 May 05 20:12	0° ♁ 39'43
conjunction	4349 Mar 10 06:44	19° ♁ 29'12 -1°15'30	conjunction	4355 May 23 02:27	2° ♁ 48'42 -2°03'12
minimum elong	4349 Mar 10 06:42	19° ♁ 29'11 1°15'31	minimum elong	4355 May 23 02:29	2° ♁ 48'43 2°03'13
max. Earth dist.	4349 Mar 10 04:10	19° ♁ 28'26 10.92450 AU	max. Earth dist.	4355 May 23 03:06	2° ♁ 48'54 10.41666 AU
morning rise	4349 Mar 27 00:36	21° ♁ 28'26	morning rise	4355 Jun 09 13:03	4° ♁ 59'06
retrograde	4349 Jul 07 20:12	28° ♁ 43'51			

retrograde	4355 Sep 23 19:09	12°♊56'40	morning rise	4361 Sep 02 17:55	27°♏10'54
opposition	4355 Dec 02 00:53	9°♊28'59 -2°25'34		4361 Sep 26 00:08	0°♏
min. Earth dist.	4355 Dec 02 00:05	9°♊29'09 8.37055 AU	retrograde	4361 Dec 16 04:55	5°♏18'49
direct	4356 Feb 07 06:30	6°♊05'38	opposition	4362 Feb 21 01:38	1°♏51'19 0°48'27
evening set	4356 May 18 07:51	13°♊45'29	min. Earth dist.	4362 Feb 20 23:21	1°♏51'47 8.11126 AU
				4362 Mar 16 22:39	30°♏♏
conjunction	4356 Jun 04 18:45	15°♊57'05 -1°50'28	direct	4362 Apr 29 07:06	28°♏22'47
minimum elong	4356 Jun 04 18:47	15°♊57'06 1°50'29		4362 Jun 11 03:20	0°♏
max. Earth dist.	4356 Jun 04 20:08	15°♊57'31 10.32431 AU	evening set	4362 Aug 12 10:12	6°♏32'12
morning rise	4356 Jun 22 09:44	18°♊10'01			
retrograde	4356 Oct 06 19:19	26°♊13'30	conjunction	4362 Aug 30 12:29	8°♏51'09 0°53'37
opposition	4356 Dec 14 13:48	22°♊45'09 -2°06'06	minimum elong	4362 Aug 30 12:27	8°♏51'09 0°53'38
min. Earth dist.	4356 Dec 14 12:19	22°♊45'27 8.28251 AU	max. Earth dist.	4362 Aug 30 15:06	8°♏52'00 10.12517 AU
direct	4357 Feb 19 12:54	19°♊20'43	morning rise	4362 Sep 17 13:20	11°♏09'41
evening set	4357 Jun 01 04:20	27°♊07'38	retrograde	4362 Dec 30 07:10	19°♏13'03
			opposition	4363 Mar 07 00:11	15°♏46'24 1°23'56
conjunction	4357 Jun 18 19:56	29°♊21'46 -1°31'33	min. Earth dist.	4363 Mar 06 21:59	15°♏46'51 8.14495 AU
minimum elong	4357 Jun 18 19:59	29°♊21'47 1°31'35	direct	4363 May 13 14:11	12°♏17'38
max. Earth dist.	4357 Jun 18 21:33	29°♊22'17 10.24243 AU	evening set	4363 Aug 27 06:16	20°♏26'48
	4357 Jun 23 19:53	0°♌			
morning rise	4357 Jul 06 15:18	1°♌37'07	conjunction	4363 Sep 14 06:26	22°♏44'28 1°20'19
retrograde	4357 Oct 21 00:40	9°♌45'08	minimum elong	4363 Sep 14 06:23	22°♏44'27 1°20'19
opposition	4357 Dec 28 06:50	6°♌16'23 -1°39'17	max. Earth dist.	4363 Sep 14 08:32	22°♏45'08 10.16881 AU
min. Earth dist.	4357 Dec 28 05:08	6°♌16'43 8.20741 AU	morning rise	4363 Oct 02 04:04	25°♏01'23
direct	4358 Mar 05 00:52	2°♌50'51		4363 Nov 15 07:57	0°♌
evening set	4358 Jun 15 09:06	10°♌44'31	retrograde	4364 Jan 13 04:20	2°♌58'59
				4364 Mar 14 09:25	30°♏♏
conjunction	4358 Jul 03 05:06	13°♌00'54 -1°07'16	opposition	4364 Mar 19 20:37	29°♏33'23 1°54'10
minimum elong	4358 Jul 03 05:09	13°♌00'55 1°07'17	min. Earth dist.	4364 Mar 19 19:17	29°♏33'39 8.19815 AU
max. Earth dist.	4358 Jul 03 06:31	13°♌01'22 10.17587 AU	direct	4364 May 26 20:49	26°♏04'39
morning rise	4358 Jul 21 04:21	15°♌18'19		4364 Aug 04 12:25	0°♌
retrograde	4358 Nov 04 08:14	23°♌29'09	evening set	4364 Sep 09 21:43	4°♌11'49
opposition	4359 Jan 11 03:12	20°♌00'18 -1°06'23			
min. Earth dist.	4359 Jan 11 01:46	20°♌00'36 8.14977 AU	conjunction	4364 Sep 27 18:41	6°♌27'40 1°42'08
direct	4359 Mar 18 19:44	16°♌33'47	minimum elong	4364 Sep 27 18:38	6°♌27'39 1°42'08
evening set	4359 Jun 29 21:18	24°♌33'28	max. Earth dist.	4364 Sep 27 19:34	6°♌27'57 10.22997 AU
			morning rise	4364 Oct 15 12:20	8°♌42'32
conjunction	4359 Jul 17 20:52	26°♌51'36 -0°38'50	retrograde	4365 Jan 25 19:22	16°♌33'38
minimum elong	4359 Jul 17 20:54	26°♌51'36 0°38'50	opposition	4365 Apr 02 13:59	13°♌09'12 2°17'30
max. Earth dist.	4359 Jul 17 22:21	26°♌52'05 10.12862 AU	min. Earth dist.	4365 Apr 02 13:43	13°♌09'15 8.26704 AU
morning rise	4359 Aug 04 22:50	29°♌10'29	direct	4365 Jun 10 01:11	9°♌40'47
	4359 Aug 11 13:18	0°♏	evening set	4365 Sep 24 06:58	17°♌44'26
retrograde	4359 Nov 18 16:10	7°♏22'14			
opposition	4360 Jan 25 01:49	3°♏53'36 -0°29'13	conjunction	4365 Oct 12 00:06	19°♌58'08 1°57'58
min. Earth dist.	4360 Jan 25 00:23	3°♏53'54 8.11326 AU	minimum elong	4365 Oct 12 00:03	19°♌58'08 1°57'58
direct	4360 Mar 31 20:42	0°♏26'13	max. Earth dist.	4365 Oct 11 23:43	19°♌58'01 10.30520 AU
evening set	4360 Jul 13 15:03	8°♏30'46	morning rise	4365 Oct 29 13:27	22°♌10'41
			retrograde	4366 Feb 08 04:37	29°♌54'45
conjunction	4360 Jul 31 17:02	10°♏49'58 -0°07'57	opposition	4366 Apr 16 03:34	26°♌31'31 2°32'54
minimum elong	4360 Jul 31 17:03	10°♏49'58 0°07'56	min. Earth dist.	4366 Apr 16 04:01	26°♌31'26 8.34836 AU
behind sun begin	4360 Jul 31 10:30	10°♏47'53	direct	4366 Jun 24 02:18	23°♌03'41
behind sun end	4360 Jul 31 23:35	10°♏52'04		4366 Sep 29 18:45	0°♏
max. Earth dist.	4360 Jul 31 18:57	10°♏50'34 10.10374 AU	evening set	4366 Oct 08 08:15	1°♏02'20
morning rise	4360 Aug 18 20:15	13°♏09'33			
	4360 Sep 02 18:07	15°♏	conjunction	4366 Oct 25 21:21	3°♏13'43 2°07'14
asc. node	4360 Nov 03 14:51	20°♏36'30	minimum elong	4366 Oct 25 21:20	3°♏13'43 2°07'14
retrograde	4360 Dec 01 23:04	21°♏20'20	max. Earth dist.	4366 Oct 25 20:10	3°♏13'21 10.39127 AU
opposition	4361 Feb 07 01:44	17°♏52'10 0°09'54	morning rise	4366 Nov 12 06:24	5°♏23'50
min. Earth dist.	4361 Feb 06 23:54	17°♏52'32 8.10025 AU	retrograde	4367 Feb 21 07:03	13°♏00'39
	4361 Mar 20 09:17	15°♏♏	opposition	4367 Apr 29 13:09	9°♏38'33 2°39'56
direct	4361 Apr 15 00:56	14°♏24'06	min. Earth dist.	4367 Apr 29 13:25	9°♏38'30 8.43848 AU
	4361 May 10 13:17	15°♏	direct	4367 Jul 07 23:36	6°♏11'30
evening set	4361 Jul 28 12:07	22°♏31'57	evening set	4367 Oct 22 00:18	14°♏03'54
				4367 Oct 29 14:58	15°♏
conjunction	4361 Aug 15 15:04	24°♏51'27 0°23'37			
minimum elong	4361 Aug 15 15:03	24°♏51'26 0°23'37	conjunction	4367 Nov 08 09:35	16°♏12'55 2°09'46
max. Earth dist.	4361 Aug 15 17:28	24°♏52'13 10.10273 AU	minimum elong	4367 Nov 08 09:35	16°♏12'55 2°09'47

max. Earth dist.	4367 Nov 08 08:38	16° \mathbb{M} 12'37	10.48418 AU	retrograde	4374 May 16 12:06	7° \approx 50'38	
morning rise	4367 Nov 25 14:37	18° \mathbb{M} 20'40		opposition	4374 Jul 25 12:12	4° \approx 32'18	0°27'32
retrograde	4368 Mar 05 03:18	25° \mathbb{M} 50'19		min. Earth dist.	4374 Jul 25 12:24	4° \approx 32'16	8.96173 AU
opposition	4368 May 11 18:13	22° \mathbb{M} 29'15	2°38'46	direct	4374 Oct 04 09:35	1° \approx 11'57	
min. Earth dist.	4368 May 11 18:08	22° \mathbb{M} 29'16	8.53305 AU	evening set	4375 Jan 14 07:07	8° \approx 20'03	
direct	4368 Jul 20 15:43	19° \mathbb{M} 03'07					
evening set	4368 Nov 03 07:03	26° \mathbb{M} 48'25		conjunction	4375 Jan 31 00:33	10° \approx 18'30	0°09'28
				minimum elong	4375 Jan 31 00:34	10° \approx 18'30	0°09'29
conjunction	4368 Nov 20 12:54	28° \mathbb{M} 55'12	2°05'51	behind sun begin	4375 Jan 30 18:42	10° \approx 16'47	
minimum elong	4368 Nov 20 12:55	28° \mathbb{M} 55'12	2°05'52	behind sun end	4375 Jan 31 06:25	10° \approx 20'13	
max. Earth dist.	4368 Nov 20 12:31	28° \mathbb{M} 55'05	10.57939 AU	max. Earth dist.	4375 Jan 30 23:46	10° \approx 18'17	10.97419 AU
	4368 Nov 29 07:08	0° \mathbb{X}		morning rise	4375 Feb 16 17:03	12° \approx 16'42	
morning rise	4368 Dec 07 14:23	1° \mathbb{X} 00'42			4375 Mar 13 08:57	15° \approx	
retrograde	4369 Mar 17 19:50	8° \mathbb{X} 23'34		retrograde	4375 May 28 11:13	19° \approx 20'34	
opposition	4369 May 24 18:36	5° \mathbb{X} 03'25	2°29'57	desc. node	4375 Jun 15 22:09	19° \approx 03'59	
min. Earth dist.	4369 May 24 18:42	5° \mathbb{X} 03'23	8.62747 AU	opposition	4375 Aug 06 18:34	16° \approx 02'03	-0°04'24
direct	4369 Aug 03 00:10	1° \mathbb{X} 38'15		min. Earth dist.	4375 Aug 06 19:16	16° \approx 01'55	8.98203 AU
evening set	4369 Nov 16 04:39	9° \mathbb{X} 16'08			4375 Aug 20 22:39	15° \mathbb{R} \approx	
				direct	4375 Oct 16 11:20	12° \approx 42'23	
conjunction	4369 Dec 03 07:25	11° \mathbb{X} 20'51	1°56'04		4375 Dec 09 14:58	15° \approx	
minimum elong	4369 Dec 03 07:27	11° \mathbb{X} 20'52	1°56'04	evening set	4376 Jan 25 20:09	19° \approx 47'44	
max. Earth dist.	4369 Dec 03 07:03	11° \mathbb{X} 20'45	10.67227 AU				
morning rise	4369 Dec 20 06:02	13° \mathbb{X} 24'23		conjunction	4376 Feb 11 12:42	21° \approx 45'49	-0°16'40
retrograde	4370 Mar 30 05:22	20° \mathbb{X} 41'06		minimum elong	4376 Feb 11 12:42	21° \approx 45'49	0°16'40
opposition	4370 Jun 06 14:45	17° \mathbb{X} 21'43	2°14'25	max. Earth dist.	4376 Feb 11 11:29	21° \approx 45'28	10.98508 AU
min. Earth dist.	4370 Jun 06 15:35	17° \mathbb{X} 21'33	8.71735 AU	morning rise	4376 Feb 28 05:15	23° \approx 43'54	
direct	4370 Aug 16 02:52	13° \mathbb{X} 57'34			4376 May 07 15:29	0° \mathbb{H}	
evening set	4370 Nov 28 17:33	21° \mathbb{X} 28'03		retrograde	4376 Jun 08 10:30	0° \mathbb{H} 49'22	
					4376 Jul 10 21:12	30° \mathbb{R} \approx	
conjunction	4370 Dec 15 17:34	23° \mathbb{X} 30'57	1°41'10	opposition	4376 Aug 18 00:32	27° \approx 30'25	-0°36'05
minimum elong	4370 Dec 15 17:36	23° \mathbb{X} 30'57	1°41'10	min. Earth dist.	4376 Aug 18 01:08	27° \approx 30'19	8.98344 AU
max. Earth dist.	4370 Dec 15 16:27	23° \mathbb{X} 30'36	10.75860 AU	direct	4376 Oct 27 12:57	24° \approx 11'17	
morning rise	4371 Jan 01 14:04	25° \mathbb{X} 32'47			4377 Jan 25 09:06	0° \mathbb{H}	
	4371 Feb 12 11:12	0° \mathbb{Z}		evening set	4377 Feb 05 08:52	1° \mathbb{H} 15'14	
retrograde	4371 Apr 11 09:42	2° \mathbb{Z} 44'24					
	4371 Jun 11 15:58	30° \mathbb{R} \mathbb{X}		conjunction	4377 Feb 22 00:58	3° \mathbb{H} 13'17	-0°42'04
opposition	4371 Jun 19 06:49	29° \mathbb{X} 25'33	1°53'12	minimum elong	4377 Feb 22 00:56	3° \mathbb{H} 13'16	0°42'05
min. Earth dist.	4371 Jun 19 07:56	29° \mathbb{X} 25'21	8.79878 AU	max. Earth dist.	4377 Feb 22 00:27	3° \mathbb{H} 13'08	10.97681 AU
direct	4371 Aug 29 01:09	26° \mathbb{X} 02'25		morning rise	4377 Mar 10 17:40	5° \mathbb{H} 11'31	
	4371 Nov 09 17:03	0° \mathbb{Z}		retrograde	4377 Jun 20 14:23	12° \mathbb{H} 19'57	
evening set	4371 Dec 10 22:54	3° \mathbb{Z} 25'58		opposition	4377 Aug 30 07:00	9° \mathbb{H} 00'24	-1°06'24
				min. Earth dist.	4377 Aug 30 06:43	9° \mathbb{H} 00'28	8.96582 AU
conjunction	4371 Dec 27 20:42	5° \mathbb{Z} 27'17	1°22'05	direct	4377 Nov 08 12:59	5° \mathbb{H} 41'39	
minimum elong	4371 Dec 27 20:45	5° \mathbb{Z} 27'18	1°22'06	evening set	4378 Feb 16 22:44	12° \mathbb{H} 45'29	
max. Earth dist.	4371 Dec 27 19:16	5° \mathbb{Z} 26'51	10.83478 AU				
morning rise	4372 Jan 13 15:38	7° \mathbb{Z} 27'45		conjunction	4378 Mar 05 14:44	14° \mathbb{H} 43'49	-1°05'53
retrograde	4372 Apr 22 12:27	14° \mathbb{Z} 35'23		minimum elong	4378 Mar 05 14:42	14° \mathbb{H} 43'49	1°05'53
opposition	4372 Jun 30 19:07	11° \mathbb{Z} 16'54	1°27'31	max. Earth dist.	4378 Mar 05 14:57	14° \mathbb{H} 43'53	10.94970 AU
min. Earth dist.	4372 Jun 30 19:47	11° \mathbb{Z} 16'47	8.86842 AU	morning rise	4378 Mar 22 07:57	16° \mathbb{H} 42'35	
direct	4372 Sep 09 17:19	7° \mathbb{Z} 54'46		retrograde	4378 Jul 02 21:01	23° \mathbb{H} 55'13	
evening set	4372 Dec 21 21:55	15° \mathbb{Z} 12'06		opposition	4378 Sep 11 15:03	20° \mathbb{H} 34'54	-1°34'13
				min. Earth dist.	4378 Sep 11 14:28	20° \mathbb{H} 35'01	8.92994 AU
conjunction	4373 Jan 07 18:03	17° \mathbb{Z} 12'11	0°59'47	direct	4378 Nov 20 11:06	17° \mathbb{H} 16'19	
minimum elong	4373 Jan 07 18:05	17° \mathbb{Z} 12'12	0°59'47	evening set	4379 Feb 28 15:04	24° \mathbb{H} 21'23	
max. Earth dist.	4373 Jan 07 17:13	17° \mathbb{Z} 11'56	10.89765 AU				
morning rise	4373 Jan 24 11:45	19° \mathbb{Z} 11'34		conjunction	4379 Mar 17 07:17	26° \mathbb{H} 20'20	-1°27'10
retrograde	4373 May 04 12:16	26° \mathbb{Z} 16'33		minimum elong	4379 Mar 17 07:15	26° \mathbb{H} 20'19	1°27'10
opposition	4373 Jul 13 04:37	22° \mathbb{Z} 58'13	0°58'34	max. Earth dist.	4379 Mar 17 07:11	26° \mathbb{H} 20'18	10.90492 AU
min. Earth dist.	4373 Jul 13 04:40	22° \mathbb{Z} 58'13	8.92342 AU	morning rise	4379 Apr 03 01:39	28° \mathbb{H} 19'56	
direct	4373 Sep 22 03:24	19° \mathbb{Z} 37'02			4379 Apr 17 16:16	0° \mathbb{Y}	
evening set	4374 Jan 02 16:08	26° \mathbb{Z} 49'10		retrograde	4379 Jul 15 07:38	5° \mathbb{Y} 37'54	
				opposition	4379 Sep 24 01:19	2° \mathbb{Y} 16'41	-1°58'28
conjunction	4374 Jan 19 10:50	28° \mathbb{Z} 48'17	0°35'14	min. Earth dist.	4379 Sep 24 01:06	2° \mathbb{Y} 16'44	8.87717 AU
minimum elong	4374 Jan 19 10:51	28° \mathbb{Z} 48'17	0°35'15		4379 Oct 27 13:32	30° \mathbb{R} \mathbb{H}	
max. Earth dist.	4374 Jan 19 10:39	28° \mathbb{Z} 48'14	10.94468 AU	direct	4379 Dec 02 11:50	28° \mathbb{H} 58'01	
	4374 Jan 29 11:58	0° \approx			4380 Jan 06 15:04	0° \mathbb{Y}	
morning rise	4374 Feb 05 03:39	0° \approx 46'54		evening set	4380 Mar 11 11:19	6° \mathbb{Y} 05'36	

conjunction	4380 Mar 28 04:20	8° Υ 05'31	-1°45'02		4386 Aug 06 23:47	0° \mathfrak{D}
minimum elong	4380 Mar 28 04:18	8° Υ 05'31	1°45'01	retrograde	4386 Oct 14 21:12	3° \mathfrak{D} 47'50
max. Earth dist.	4380 Mar 28 03:45	8° Υ 05'21	10.84415 AU	opposition	4386 Dec 22 09:44	0° \mathfrak{D} 19'48 -1°52'05
morning rise	4380 Apr 14 00:21	10° Υ 06'19		min. Earth dist.	4386 Dec 22 09:41	0° \mathfrak{D} 19'48 8.26552 AU
retrograde	4380 Jul 26 22:33	17° Υ 30'29			4386 Dec 26 12:14	30° \mathfrak{R} II
opposition	4380 Oct 05 14:19	14° Υ 08'17	-2°18'03	direct	4387 Feb 27 06:49	26° \mathfrak{II} 55'14
min. Earth dist.	4380 Oct 05 14:26	14° Υ 08'15	8.80948 AU		4387 Apr 28 04:17	0° \mathfrak{D}
direct	4380 Dec 13 14:31	10° Υ 49'19		evening set	4387 Jun 09 05:41	4° \mathfrak{D} 44'27
evening set	4381 Mar 23 12:26	18° Υ 00'36				
conjunction	4381 Apr 09 07:05	20° Υ 01'51	-1°58'37	conjunction	4387 Jun 26 23:38	6° \mathfrak{D} 59'27 -1°18'51
minimum elong	4381 Apr 09 07:04	20° Υ 01'51	1°58'37	minimum elong	4387 Jun 26 23:41	6° \mathfrak{D} 59'28 1°18'52
max. Earth dist.	4381 Apr 09 07:16	20° Υ 01'54	10.76971 AU	max. Earth dist.	4387 Jun 27 00:18	6° \mathfrak{D} 59'40 10.22748 AU
morning rise	4381 Apr 26 05:11	22° Υ 04'10		morning rise	4387 Jul 14 20:58	9° \mathfrak{D} 15'35
retrograde	4381 Aug 08 18:52	29° Υ 35'16		retrograde	4387 Oct 29 01:59	17° \mathfrak{D} 23'57
opposition	4381 Oct 18 06:56	26° Υ 11'57	-2°31'57	opposition	4388 Jan 05 03:26	13° \mathfrak{D} 55'28 -1°21'59
min. Earth dist.	4381 Oct 18 06:28	26° Υ 12'02	8.72942 AU	min. Earth dist.	4388 Jan 05 02:39	13° \mathfrak{D} 55'37 8.19441 AU
direct	4381 Dec 25 21:24	22° Υ 52'30		direct	4388 Mar 11 22:12	10° \mathfrak{D} 29'42
	4382 Apr 03 15:10	0° \mathfrak{B}		evening set	4388 Jun 22 13:12	18° \mathfrak{D} 25'22
evening set	4382 Apr 04 19:33	0° \mathfrak{B} 08'29		conjunction	4388 Jul 10 11:12	20° \mathfrak{D} 42'27 -0°52'16
conjunction	4382 Apr 21 16:36	2° \mathfrak{B} 11'27	-2°07'10	minimum elong	4388 Jul 10 11:14	20° \mathfrak{D} 42'27 0°52'17
minimum elong	4382 Apr 21 16:36	2° \mathfrak{B} 11'27	2°07'09	max. Earth dist.	4388 Jul 10 12:24	20° \mathfrak{D} 42'50 10.16548 AU
max. Earth dist.	4382 Apr 21 17:32	2° \mathfrak{B} 11'44	10.68434 AU	morning rise	4388 Jul 28 11:44	23° \mathfrak{D} 00'22
morning rise	4382 May 08 17:25	4° \mathfrak{B} 15'37			4388 Oct 05 18:51	0° \mathfrak{Q}
retrograde	4382 Aug 21 23:08	11° \mathfrak{B} 54'01		retrograde	4388 Nov 11 08:49	1° \mathfrak{Q} 10'48
opposition	4382 Oct 31 03:29	8° \mathfrak{B} 29'33	-2°39'16		4388 Dec 18 04:42	30° \mathfrak{R} \mathfrak{D}
min. Earth dist.	4382 Oct 31 02:33	8° \mathfrak{B} 29'44	8.63985 AU	opposition	4389 Jan 18 00:00	27° \mathfrak{D} 42'09 -0°46'43
direct	4383 Jan 07 07:31	5° \mathfrak{B} 09'24		min. Earth dist.	4389 Jan 17 22:50	27° \mathfrak{D} 42'23 8.14202 AU
evening set	4383 Apr 17 09:54	12° \mathfrak{B} 30'59		direct	4389 Mar 25 18:43	24° \mathfrak{D} 15'15
					4389 Jun 18 12:11	0° \mathfrak{Q}
conjunction	4383 May 04 10:02	14° \mathfrak{B} 36'00	-2°09'59	evening set	4389 Jul 07 03:20	2° \mathfrak{Q} 16'29
minimum elong	4383 May 04 10:03	14° \mathfrak{B} 36'00	2°09'59	conjunction	4389 Jul 25 04:20	4° \mathfrak{Q} 35'03 -0°22'25
max. Earth dist.	4383 May 04 10:39	14° \mathfrak{B} 36'11	10.59113 AU	minimum elong	4389 Jul 25 04:20	4° \mathfrak{Q} 35'03 0°22'26
	4383 May 07 15:50	15° \mathfrak{B}		max. Earth dist.	4389 Jul 25 05:24	4° \mathfrak{Q} 35'24 10.12392 AU
morning rise	4383 May 21 14:19	16° \mathfrak{B} 42'20		morning rise	4389 Aug 12 06:53	6° \mathfrak{Q} 54'08
retrograde	4383 Sep 04 08:43	24° \mathfrak{B} 28'02			4389 Nov 16 11:42	15° \mathfrak{Q}
opposition	4383 Nov 13 04:12	21° \mathfrak{B} 02'31	-2°39'14	retrograde	4389 Nov 25 16:18	15° \mathfrak{Q} 04'41
min. Earth dist.	4383 Nov 13 03:31	21° \mathfrak{B} 02'39	8.54392 AU		4389 Dec 04 21:20	15° \mathfrak{R} \mathfrak{Q}
direct	4384 Jan 19 21:22	17° \mathfrak{B} 41'26		opposition	4390 Jan 31 22:21	11° \mathfrak{Q} 36'11 -0°08'23
evening set	4384 Apr 29 08:06	25° \mathfrak{B} 09'28		min. Earth dist.	4390 Jan 31 21:24	11° \mathfrak{Q} 36'22 8.11161 AU
conjunction	4384 May 16 12:00	27° \mathfrak{B} 16'49	-2°06'36	direct	4390 Apr 08 18:58	8° \mathfrak{Q} 08'17
minimum elong	4384 May 16 12:01	27° \mathfrak{B} 16'50	2°06'36	asc. node	4390 Apr 23 01:57	8° \mathfrak{Q} 19'38
max. Earth dist.	4384 May 16 11:28	27° \mathfrak{B} 16'40	10.49359 AU		4390 Jul 12 00:37	15° \mathfrak{Q}
morning rise	4384 Jun 02 20:24	29° \mathfrak{B} 25'35		evening set	4390 Jul 21 22:06	16° \mathfrak{Q} 13'52
	4384 Jun 07 14:01	0° \mathfrak{II}		conjunction	4390 Aug 09 00:41	18° \mathfrak{Q} 33'10 0°08'59
retrograde	4384 Sep 16 23:25	7° \mathfrak{II} 18'24		minimum elong	4390 Aug 09 00:41	18° \mathfrak{Q} 33'10 0°08'59
opposition	4384 Nov 25 09:41	3° \mathfrak{II} 51'54	-2°31'22	behind sun begin	4390 Aug 08 18:27	18° \mathfrak{Q} 31'11
min. Earth dist.	4384 Nov 25 09:46	3° \mathfrak{II} 51'53	8.44576 AU	behind sun end	4390 Aug 09 06:55	18° \mathfrak{Q} 35'10
direct	4385 Jan 31 18:23	0° \mathfrak{II} 29'46		max. Earth dist.	4390 Aug 09 01:20	18° \mathfrak{Q} 33'22 10.10522 AU
evening set	4385 May 12 14:31	8° \mathfrak{II} 04'46		morning rise	4390 Aug 27 03:47	20° \mathfrak{Q} 52'38
conjunction	4385 May 29 22:52	10° \mathfrak{II} 14'42	-1°56'47	retrograde	4390 Dec 09 22:55	29° \mathfrak{Q} 01'27
minimum elong	4385 May 29 22:54	10° \mathfrak{II} 14'43	1°56'48	opposition	4391 Feb 14 21:30	25° \mathfrak{Q} 33'22 0°30'37
max. Earth dist.	4385 May 29 22:10	10° \mathfrak{II} 14'29	10.39664 AU	min. Earth dist.	4391 Feb 14 20:57	25° \mathfrak{Q} 33'28 8.10487 AU
morning rise	4385 Jun 16 11:45	12° \mathfrak{II} 26'02		direct	4391 Apr 22 23:31	22° \mathfrak{Q} 04'42
retrograde	4385 Sep 30 19:33	20° \mathfrak{II} 25'20			4391 Aug 04 01:35	0° \mathfrak{P}
opposition	4385 Dec 08 19:42	16° \mathfrak{II} 57'58	-2°15'32	evening set	4391 Aug 05 19:03	0° \mathfrak{P} 13'03
min. Earth dist.	4385 Dec 08 19:59	16° \mathfrak{II} 57'55	8.35103 AU	conjunction	4391 Aug 23 21:39	2° \mathfrak{P} 32'16 0°39'49
direct	4386 Feb 13 21:53	13° \mathfrak{II} 34'39		minimum elong	4391 Aug 23 21:37	2° \mathfrak{P} 32'16 0°39'49
evening set	4386 May 26 05:48	21° \mathfrak{II} 16'50		max. Earth dist.	4391 Aug 23 21:52	2° \mathfrak{P} 32'21 10.11034 AU
conjunction	4386 Jun 12 19:01	23° \mathfrak{II} 29'23	-1°40'41	morning rise	4391 Sep 10 23:40	4° \mathfrak{P} 51'17
minimum elong	4386 Jun 12 19:04	23° \mathfrak{II} 29'24	1°40'43	retrograde	4391 Dec 24 01:30	12° \mathfrak{P} 56'40
max. Earth dist.	4386 Jun 12 18:52	23° \mathfrak{II} 29'20	10.30612 AU	opposition	4392 Feb 28 20:12	9° \mathfrak{P} 29'15 1°07'45
morning rise	4386 Jun 30 12:21	25° \mathfrak{II} 43'15		min. Earth dist.	4392 Feb 28 19:51	9° \mathfrak{P} 29'19 8.12206 AU
				direct	4392 May 06 06:50	6° \mathfrak{P} 00'06

evening set	4392 Aug 19 15:35	14°  09'25		evening set	4398 Oct 09 05:24	0° 	
					4398 Nov 10 11:21	3°  36'46	
conjunction	4392 Sep 06 16:47	16°  27'47	1°08'14	conjunction	4398 Nov 27 15:27	5°  42'26	2°01'21
minimum elong	4392 Sep 06 16:44	16°  27'46	1°08'14	minimum elong	4398 Nov 27 15:28	5°  42'26	2°01'21
max. Earth dist.	4392 Sep 06 16:53	16°  27'49	10.13888 AU	max. Earth dist.	4398 Nov 27 14:56	5°  42'16	10.62844 AU
morning rise	4392 Sep 24 16:16	18°  45'36		morning rise	4398 Dec 14 15:33	7°  46'53	
retrograde	4393 Jan 05 23:26	26°  46'05		retrograde	4399 Mar 24 16:10	15°  40'21	
opposition	4393 Mar 13 17:15	23°  19'31	1°40'39	opposition	4399 May 31 21:48	11°  46'37	2°22'30
min. Earth dist.	4393 Mar 13 16:35	23°  19'39	8.16199 AU	min. Earth dist.	4399 May 31 21:24	11°  46'42	8.67683 AU
direct	4393 May 20 14:11	19°  50'13		direct	4399 Aug 10 07:43	8°  22'04	
evening set	4393 Sep 03 09:05	27°  58'36		evening set	4399 Nov 23 04:12	15°  45'00	
	4393 Sep 19 07:28	0° 					
conjunction	4393 Sep 21 07:43	0°  15'27	1°32'29	conjunction	4399 Dec 10 05:33	17°  59'43	1°48'46
minimum elong	4393 Sep 21 07:40	0°  15'26	1°32'29	minimum elong	4399 Dec 10 05:35	17°  59'44	1°48'46
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morning rise	4393 Oct 09 03:35	2°  31'27		morning rise	4399 Dec 27 03:05	20°  40'19	
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opposition	4394 Mar 27 11:49	7°  00'20	2°07'24	opposition	4400 Jun 12 15:44	23°  45'19	2°03'49
min. Earth dist.	4394 Mar 27 10:45	7°  00'33	8.22198 AU	min. Earth dist.	4400 Jun 12 15:09	23°  45'26	8.76583 AU
direct	4394 Jun 03 19:23	3°  31'12		direct	4400 Aug 22 07:55	20°  34'00	
evening set	4394 Sep 17 21:17	11°  36'48		evening set	4400 Dec 04 13:19	28°  40'45	
conjunction	4394 Oct 05 16:27	13°  25'14	1°51'14	conjunction	4400 Dec 21 12:19	0°  02'47	1°31'33
minimum elong	4394 Oct 05 16:24	13°  25'13	1°51'15	minimum elong	4400 Dec 21 12:21	0°  02'48	1°31'33
max. Earth dist.	4394 Oct 05 17:16	13°  25'16	10.25737 AU		4400 Dec 21 03:07	0° 	
morning rise	4394 Oct 23 07:57	16°  05'25		max. Earth dist.	4400 Dec 21 12:42	0°  02'54	10.80603 AU
retrograde	4395 Feb 02 05:53	23°  25'00		morning rise	4401 Jan 07 07:50	2°  03'49	
opposition	4395 Apr 10 03:02	20°  28'38	2°26'38	retrograde	4401 Apr 17 05:45	9°  13'10	
min. Earth dist.	4395 Apr 10 01:55	20°  28'51	8.29840 AU	opposition	4401 Jun 25 05:54	5°  54'55	1°40'06
direct	4395 Jun 17 20:44	16°  25'59		min. Earth dist.	4401 Jun 25 06:02	5°  54'53	8.84421 AU
evening set	4395 Oct 02 02:10	25°  01'08		direct	4401 Sep 04 01:02	2°  32'44	
conjunction	4395 Oct 19 17:24	27°  13'43	2°03'39	evening set	4401 Dec 16 15:45	9°  52'56	
minimum elong	4395 Oct 19 17:22	27°  13'43	2°03'40	conjunction	4402 Jan 02 12:38	11°  53'32	1°10'38
max. Earth dist.	4395 Oct 19 18:21	27°  14'01	10.34026 AU	minimum elong	4402 Jan 02 12:40	11°  53'33	1°10'39
morning rise	4395 Nov 06 04:25	29°  25'03		max. Earth dist.	4402 Jan 02 12:10	11°  53'24	10.87804 AU
	4395 Nov 10 22:26	0° 		morning rise	4402 Jan 19 06:48	13°  53'22	
retrograde	4396 Feb 15 11:42	7°  05'21		retrograde	4402 Apr 29 05:38	20°  59'22	
opposition	4396 Apr 22 14:21	3°  42'12	2°37'38	opposition	4402 Jul 07 17:09	17°  41'30	1°12'33
min. Earth dist.	4396 Apr 22 13:43	3°  42'19	8.38698 AU	min. Earth dist.	4402 Jul 07 17:54	17°  41'22	8.90863 AU
direct	4396 Jun 30 19:11	0° 		direct	4402 Sep 16 14:01	14°  30'22	
evening set	4396 Oct 14 22:22	8°  09'41		evening set	4402 Dec 28 12:26	21°  34'51	
conjunction	4396 Nov 01 09:36	10°  19'53	2°09'22	conjunction	4403 Jan 14 07:38	23°  34'19	0°47'02
minimum elong	4396 Nov 01 09:35	10°  19'53	2°09'22	minimum elong	4403 Jan 14 07:39	23°  34'20	0°47'03
max. Earth dist.	4396 Nov 01 10:04	10°  19'02	10.43303 AU	max. Earth dist.	4403 Jan 14 06:22	23°  33'57	10.93450 AU
morning rise	4396 Nov 18 16:29	12°  28'46		morning rise	4403 Jan 31 00:56	25°  33'13	
	4396 Dec 10 02:55	15° 			4403 Mar 14 18:19	0° 	
retrograde	4397 Feb 27 10:38	20°  10'44		retrograde	4403 May 11 05:32	2°  37'19	
opposition	4397 May 05 21:18	16°  13'50	2°40'18		4403 Jul 10 22:31	30° 	
min. Earth dist.	4397 May 05 21:21	16°  13'49	8.48286 AU	opposition	4403 Jul 20 01:51	29°  19'33	0°42'21
	4397 May 27 23:56	15° 		min. Earth dist.	4403 Jul 20 02:38	29°  19'24	8.95605 AU
direct	4397 Jul 14 13:10	13°  12'55		direct	4403 Sep 28 23:55	25°  59'18	
	4397 Aug 30 07:14	15° 			4403 Dec 11 07:19	0° 	
evening set	4397 Oct 28 09:31	21°  10'13'35		evening set	4404 Jan 09 05:07	3°  09'11	
conjunction	4397 Nov 14 16:56	23°  10'25	2°08'27	conjunction	4404 Jan 25 23:06	5°  07'52	0°21'43
minimum elong	4397 Nov 14 16:56	23°  10'25	2°08'27	minimum elong	4404 Jan 25 23:07	5°  07'52	0°21'44
max. Earth dist.	4397 Nov 14 16:29	23°  10'17	10.53071 AU	max. Earth dist.	4404 Jan 25 22:00	5°  07'32	10.97251 AU
morning rise	4397 Dec 01 20:10	25°  15'59		morning rise	4404 Feb 11 15:46	7°  06'10	
	4398 Jan 14 13:40	0° 		retrograde	4404 May 22 05:23	14°  09'46	
retrograde	4398 Mar 12 04:10	2°  41'54		opposition	4404 Jul 31 08:44	10°  05'52	0°10'43
	4398 May 10 14:27	30° 		min. Earth dist.	4404 Jul 31 09:15	10°  05'146	8.98391 AU
opposition	4398 May 18 23:41	29°  11'10	2°35'00	direct	4404 Oct 10 04:01	7°  32'22	
min. Earth dist.	4398 May 18 23:47	29°  11'09	8.58104 AU	desc. node	4404 Dec 04 15:32	9°  05'14	
direct	4398 Jul 28 01:18	25°  15'53'23		evening set	4405 Jan 19 19:19	14° 08'58	



























































































































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			minimum elong	4411 Apr 16 07:21	26°♏47'42 2°03'52
conjunction	4405 Feb 05 12:23	16°♊37'10 -0°04'26	max. Earth dist.	4411 Apr 16 06:06	26°♏47'19 10.70506 AU
minimum elong	4405 Feb 05 12:23	16°♊37'10 0°04'25	morning rise	4411 May 03 07:01	28°♏51'13
behind sun begin	4405 Feb 05 05:31	16°♊35'10		4411 May 13 00:53	0°♏
behind sun end	4405 Feb 05 19:14	16°♊39'11	retrograde	4411 Aug 16 05:38	6°♏26'57
max. Earth dist.	4405 Feb 05 11:19	16°♊36'53 10.99004 AU	opposition	4411 Oct 25 13:26	3°♏02'27 -2°36'50
morning rise	4405 Feb 22 04:42	18°♊35'14	min. Earth dist.	4411 Oct 25 14:04	3°♏02'20 8.66056 AU
retrograde	4405 Jun 03 06:00	25°♊39'53		4411 Dec 14 07:38	30°♏♏
opposition	4405 Aug 12 15:11	22°♊21'37 -0°21'14	direct	4412 Jan 01 22:06	29°♏41'59
min. Earth dist.	4405 Aug 12 16:03	22°♊21'27 8.99103 AU		4412 Jan 20 08:54	0°♏
direct	4405 Oct 22 05:38	19°♊02'39	evening set	4412 Apr 10 22:41	7°♏01'45
evening set	4406 Jan 31 08:30	26°♊07'20			
			conjunction	4412 Apr 27 21:17	9°♏06'01 -2°09'26
conjunction	4406 Feb 17 00:46	28°♊05'24 -0°30'14	minimum elong	4412 Apr 27 21:17	9°♏06'01 2°09'26
minimum elong	4406 Feb 17 00:45	28°♊05'23 0°30'14	max. Earth dist.	4412 Apr 27 20:35	9°♏05'48 10.61198 AU
max. Earth dist.	4406 Feb 16 22:58	28°♊04'52 10.98683 AU	morning rise	4412 May 15 00:04	11°♏11'36
morning rise	4406 Mar 05 17:15	0°♏03'32		4412 Jun 18 01:28	15°♏
	4406 Mar 05 05:06	0°♏	retrograde	4412 Aug 28 11:36	18°♏54'49
retrograde	4406 Jun 15 08:16	7°♏10'39	opposition	4412 Nov 06 12:37	15°♏29'07 -2°40'19
opposition	4406 Aug 24 21:59	3°♏51'47 -0°52'21	min. Earth dist.	4412 Nov 06 12:52	15°♏29'04 8.56491 AU
min. Earth dist.	4406 Aug 24 23:33	3°♏51'29 8.97786 AU		4412 Nov 12 18:54	15°♏♏
direct	4406 Nov 03 05:36	0°♏33'07	direct	4413 Jan 13 11:15	12°♏07'47
evening set	4407 Feb 11 22:12	7°♏37'13		4413 Mar 12 23:13	15°♏
			evening set	4413 Apr 23 17:20	19°♏33'41
conjunction	4407 Feb 28 14:04	9°♏35'26 -0°54'55			
minimum elong	4407 Feb 28 14:02	9°♏35'25 0°54'55	conjunction	4413 May 10 19:33	21°♏40'13 -2°08'59
max. Earth dist.	4407 Feb 28 11:37	9°♏34'42 10.96375 AU	minimum elong	4413 May 10 19:34	21°♏40'13 2°08'59
morning rise	4407 Mar 17 07:08	11°♏34'00	max. Earth dist.	4413 May 10 20:02	21°♏40'22 10.51476 AU
retrograde	4407 Jun 27 11:46	18°♏44'51	morning rise	4413 May 28 02:02	23°♏48'06
opposition	4407 Sep 06 05:37	15°♏25'06 -1°21'31		4413 Jul 28 06:45	0°♏
min. Earth dist.	4407 Sep 06 07:17	15°♏24'47 8.94547 AU	retrograde	4413 Sep 11 00:05	1°♏38'41
direct	4407 Nov 15 05:38	12°♏06'30		4413 Oct 26 12:32	30°♏♏
evening set	4408 Feb 23 13:34	19°♏11'20	opposition	4413 Nov 19 16:21	28°♏11'53 -2°36'07
			min. Earth dist.	4413 Nov 19 15:41	28°♏12'01 8.46723 AU
conjunction	4408 Mar 11 05:40	21°♏10'04 -1°17'32	direct	4414 Jan 26 06:19	24°♏49'34
minimum elong	4408 Mar 11 05:37	21°♏10'03 1°17'32		4414 Apr 16 19:02	0°♏
max. Earth dist.	4408 Mar 11 03:58	21°♏09'33 10.92198 AU	evening set	4414 May 06 20:13	2°♏22'10
morning rise	4408 Mar 27 23:32	23°♏09'20			
	4408 Jun 16 05:20	0°♏	conjunction	4414 May 24 02:41	4°♏31'12 -2°02'08
retrograde	4408 Jul 08 21:06	0°♏25'09	minimum elong	4414 May 24 02:43	4°♏31'12 2°02'09
	4408 Jul 31 18:33	30°♏♏	max. Earth dist.	4414 May 24 03:43	4°♏31'31 10.41793 AU
opposition	4408 Sep 17 15:03	27°♏04'19 -1°47'37	morning rise	4414 Jun 10 13:26	6°♏41'36
min. Earth dist.	4408 Sep 17 15:58	27°♏04'09 8.89520 AU	retrograde	4414 Sep 24 19:26	14°♏38'57
direct	4408 Nov 26 07:41	23°♏45'33	opposition	4414 Dec 03 00:40	11°♏11'13 -2°23'54
	4409 Feb 26 19:46	0°♏	min. Earth dist.	4414 Dec 02 23:27	11°♏11'28 8.37221 AU
evening set	4409 Mar 06 08:03	0°♏52'22	direct	4415 Feb 08 06:01	7°♏47'50
			evening set	4415 May 20 07:56	15°♏27'29
conjunction	4409 Mar 23 00:48	2°♏51'57 -1°37'08			
minimum elong	4409 Mar 23 00:45	2°♏51'56 1°37'08	conjunction	4415 Jun 06 18:59	17°♏39'05 -1°48'52
max. Earth dist.	4409 Mar 22 23:59	2°♏51'42 10.86321 AU	minimum elong	4415 Jun 06 19:02	17°♏39'06 1°48'53
morning rise	4409 Apr 08 19:52	4°♏52'17	max. Earth dist.	4415 Jun 06 19:50	17°♏39'21 10.32637 AU
retrograde	4409 Jul 21 11:03	12°♏14'02	morning rise	4415 Jun 24 10:15	19°♏52'03
opposition	4409 Sep 30 03:05	8°♏52'01 -2°09'34	retrograde	4415 Oct 08 20:16	27°♏55'08
min. Earth dist.	4409 Sep 30 03:19	8°♏51'58 8.82909 AU	opposition	4415 Dec 16 13:17	24°♏26'46 -2°03'49
direct	4409 Dec 08 08:32	5°♏32'53	min. Earth dist.	4415 Dec 16 12:09	24°♏27'00 8.28487 AU
evening set	4410 Mar 18 07:03	12°♏42'55	direct	4416 Feb 21 11:27	21°♏02'15
			evening set	4416 Jun 02 04:18	28°♏48'59
conjunction	4410 Apr 04 00:56	14°♏43'42 -1°52'51		4416 Jun 11 13:48	0°♏
minimum elong	4410 Apr 04 00:55	14°♏43'41 1°52'51			
max. Earth dist.	4410 Apr 03 24:00	14°♏43'24 10.78991 AU	conjunction	4416 Jun 19 20:01	1°♏03'06 -1°29'32
morning rise	4410 Apr 20 21:57	16°♏45'26	minimum elong	4416 Jun 19 20:04	1°♏03'07 1°29'33
retrograde	4410 Aug 03 05:09	24°♏13'55	max. Earth dist.	4416 Jun 19 20:43	1°♏03'19 10.24513 AU
opposition	4410 Oct 12 18:22	20°♏50'40 -2°26'18	morning rise	4416 Jul 07 15:41	3°♏18'26
min. Earth dist.	4410 Oct 12 18:44	20°♏50'35 8.74984 AU	retrograde	4416 Oct 21 23:49	11°♏25'58
direct	4410 Dec 20 13:07	17°♏30'57	opposition	4416 Dec 29 06:01	7°♏57'13 -1°36'32
evening set	4411 Mar 30 11:34	24°♏45'21	min. Earth dist.	4416 Dec 29 05:02	7°♏57'25 8.21030 AU

direct	4417 Mar 06 01:02	4°♊31'37			4423 Apr 05 09:22	30°♋♊	
evening set	4417 Jun 16 08:43	12°♊25'03		direct	4423 May 28 18:28	27°♋41'16	
					4423 Jul 20 03:11	0°♊	
conjunction	4417 Jul 04 04:52	14°♊41'24 -1°04'55		evening set	4423 Sep 11 19:47	5°♊48'15	
minimum elong	4417 Jul 04 04:55	14°♊41'25 1°04'56					
max. Earth dist.	4417 Jul 04 05:49	14°♊41'42 10.17900 AU		conjunction	4423 Sep 29 16:25	8°♊03'59 1°43'28	
morning rise	4417 Jul 22 04:17	16°♊58'46		minimum elong	4423 Sep 29 16:22	8°♊03'58 1°43'29	
retrograde	4417 Nov 05 05:47	25°♊09'07		max. Earth dist.	4423 Sep 29 16:30	8°♊04'00 10.23418 AU	
opposition	4418 Jan 12 01:59	21°♊40'16 -1°03'19		morning rise	4423 Oct 17 09:56	10°♊18'43	
min. Earth dist.	4418 Jan 12 00:56	21°♊40'29 8.15302 AU		retrograde	4424 Jan 27 16:29	18°♊09'27	
direct	4418 Mar 19 20:12	18°♊13'40		opposition	4424 Apr 03 11:08	14°♊45'05 2°18'50	
evening set	4418 Jun 30 20:36	26°♊13'05		min. Earth dist.	4424 Apr 03 11:08	14°♊45'05 8.27148 AU	
				direct	4424 Jun 10 22:46	11°♊16'42	
conjunction	4418 Jul 18 20:23	28°♊31'12 -0°36'18		evening set	4424 Sep 25 04:28	19°♊20'04	
minimum elong	4418 Jul 18 20:25	28°♊31'12 0°36'19					
max. Earth dist.	4418 Jul 18 22:01	28°♊31'43 10.13199 AU		conjunction	4424 Oct 12 21:21	21°♊33'40 1°58'47	
	4418 Jul 30 08:49	0°♊		minimum elong	4424 Oct 12 21:19	21°♊33'39 1°58'47	
morning rise	4418 Aug 05 22:23	0°♊50'00		max. Earth dist.	4424 Oct 12 20:30	21°♊33'23 10.30954 AU	
retrograde	4418 Nov 19 13:32	9°♊01'18		morning rise	4424 Oct 30 10:33	23°♊46'05	
opposition	4419 Jan 26 00:08	5°♊32'39 -0°26'02			4424 Dec 30 00:27	0°♊	
min. Earth dist.	4419 Jan 25 22:31	5°♊32'59 8.11662 AU		retrograde	4425 Feb 09 00:16	1°♊29'51	
direct	4419 Apr 02 19:38	2°♊05'14			4425 Mar 22 21:28	30°♋♊	
evening set	4419 Jul 15 14:08	10°♊09'31		opposition	4425 Apr 17 00:26	28°♊06'40 2°33'33	
				min. Earth dist.	4425 Apr 17 00:37	28°♊06'38 8.35242 AU	
conjunction	4419 Aug 02 16:16	12°♊28'42 -0°05'24		direct	4425 Jun 25 00:44	24°♊38'53	
minimum elong	4419 Aug 02 16:17	12°♊28'42 0°05'24			4425 Sep 17 00:11	0°♊	
behind sun begin	4419 Aug 02 09:12	12°♊26'26		evening set	4425 Oct 09 05:16	2°♊37'17	
behind sun end	4419 Aug 02 23:22	12°♊30'57					
max. Earth dist.	4419 Aug 02 18:38	12°♊29'25 10.10708 AU		conjunction	4425 Oct 26 18:17	4°♊48'34 2°07'29	
morning rise	4419 Aug 20 19:22	14°♊48'12		minimum elong	4425 Oct 26 18:15	4°♊48'34 2°07'30	
	4419 Aug 22 08:50	15°♊		max. Earth dist.	4425 Oct 26 17:15	4°♊48'15 10.39481 AU	
asc. node	4419 Oct 05 22:27	20°♊00'36		morning rise	4425 Nov 13 03:08	6°♊58'36	
retrograde	4419 Dec 03 21:45	22°♊58'33		retrograde	4426 Feb 22 03:11	14°♊35'14	
opposition	4420 Feb 08 23:42	19°♊30'23 0°13'02		opposition	4426 Apr 30 09:50	11°♊13'11 2°39'55	
min. Earth dist.	4420 Feb 08 21:30	19°♊30'50 8.10349 AU		min. Earth dist.	4426 Apr 30 09:50	11°♊13'11 8.44134 AU	
direct	4420 Apr 15 22:43	16°♊02'19		direct	4426 Jul 08 21:13	7°♊46'12	
evening set	4420 Jul 29 10:56	24°♊09'59			4426 Oct 17 14:03	15°♊	
				evening set	4426 Oct 22 21:07	15°♊38'26	
conjunction	4420 Aug 16 13:51	26°♊29'24 0°26'03					
minimum elong	4420 Aug 16 13:50	26°♊29'24 0°26'03		conjunction	4426 Nov 09 06:21	17°♊47'24 2°09'29	
max. Earth dist.	4420 Aug 16 16:39	26°♊30'18 10.10590 AU		minimum elong	4426 Nov 09 06:21	17°♊47'24 2°09'29	
morning rise	4420 Sep 03 16:28	28°♊48'46		max. Earth dist.	4426 Nov 09 05:49	17°♊47'14 10.48627 AU	
	4420 Sep 13 05:13	0°♊		morning rise	4426 Nov 26 11:07	19°♊55'04	
retrograde	4420 Dec 17 03:29	6°♊56'20		retrograde	4427 Mar 07 01:18	27°♊24'41	
opposition	4421 Feb 21 23:21	3°♊28'53 0°51'21		opposition	4427 May 13 14:59	24°♊03'40 2°38'05	
min. Earth dist.	4421 Feb 21 21:01	3°♊29'22 8.11440 AU		min. Earth dist.	4427 May 13 15:17	24°♊03'36 8.53430 AU	
direct	4421 Apr 30 05:02	0°♊00'22		direct	4427 Jul 22 11:20	20°♊37'36	
evening set	4421 Aug 13 08:45	8°♊09'40		evening set	4427 Nov 05 03:45	28°♊22'51	
					4427 Nov 18 09:30	0°♊	
conjunction	4421 Aug 31 10:53	10°♊28'32 0°55'49					
minimum elong	4421 Aug 31 10:50	10°♊28'31 0°55'49		conjunction	4427 Nov 22 09:29	0°♊29'37 2°05'03	
max. Earth dist.	4421 Aug 31 13:27	10°♊29'22 10.12833 AU		minimum elong	4427 Nov 22 09:30	0°♊29'37 2°05'03	
morning rise	4421 Sep 18 11:32	12°♊46'58		max. Earth dist.	4427 Nov 22 08:49	0°♊29'25 10.57979 AU	
retrograde	4421 Dec 31 04:50	20°♊50'02		morning rise	4427 Dec 09 10:50	2°♊35'07	
opposition	4422 Mar 07 21:46	17°♊23'30 1°26'26		retrograde	4428 Mar 18 16:29	9°♊58'01	
min. Earth dist.	4422 Mar 07 20:03	17°♊23'51 8.14826 AU		opposition	4428 May 25 15:37	6°♊37'56 2°28'39	
direct	4422 May 14 12:08	13°♊54'45		min. Earth dist.	4428 May 25 16:35	6°♊37'44 8.62705 AU	
evening set	4422 Aug 28 04:38	22°♊03'49		direct	4428 Aug 03 20:08	3°♊12'49	
				evening set	4428 Nov 17 01:16	10°♊50'45	
conjunction	4422 Sep 15 04:32	24°♊21'22 1°22'08					
minimum elong	4422 Sep 15 04:29	24°♊21'21 1°22'08		conjunction	4428 Dec 04 03:53	12°♊55'29 1°54'46	
max. Earth dist.	4422 Sep 15 06:01	24°♊21'51 10.17235 AU		minimum elong	4428 Dec 04 03:55	12°♊55'29 1°54'46	
morning rise	4422 Oct 03 02:00	26°♊38'11		max. Earth dist.	4428 Dec 04 02:30	12°♊55'03 10.67099 AU	
	4422 Oct 31 10:18	0°♊		morning rise	4428 Dec 21 02:35	14°♊59'03	
retrograde	4423 Jan 14 01:24	4°♊35'29		retrograde	4429 Mar 31 01:26	22°♊15'58	
opposition	4423 Mar 21 18:02	1°♊09'59 1°56'08		opposition	4429 Jun 07 11:56	18°♊56'37 2°12'34	
min. Earth dist.	4423 Mar 21 17:20	1°♊10'07 8.20208 AU		min. Earth dist.	4429 Jun 07 13:19	18°♊56'21 8.71524 AU	

direct	4429 Aug 17 01:03	15° \mathbb{A} 32'30			4435 Apr 14 23:31	0° \mathbb{H}
evening set	4429 Nov 29 14:19	23° \mathbb{A} 03'08		retrograde	4435 Jun 10 11:19	2° \mathbb{H} 29'37
					4435 Aug 08 18:44	30° \mathbb{R} \approx
conjunction	4429 Dec 16 14:18	25° \mathbb{A} 06'04	1°39'27	opposition	4435 Aug 20 00:14	29° \approx 10'32 -0°39'11
minimum elong	4429 Dec 16 14:20	25° \mathbb{A} 06'05	1°39'27	min. Earth dist.	4435 Aug 19 23:58	29° \approx 10'34 8.97436 AU
max. Earth dist.	4429 Dec 16 12:27	25° \mathbb{A} 05'31	10.75566 AU	direct	4435 Oct 29 12:27	25° \approx 51'20
morning rise	4430 Jan 02 10:53	27° \mathbb{A} 07'59			4436 Jan 11 15:38	0° \mathbb{H}
	4430 Jan 27 22:03	0° \mathbb{B}		evening set	4436 Feb 07 07:47	2° \mathbb{H} 55'41
retrograde	4430 Apr 12 07:29	4° \mathbb{B} 19'53				
opposition	4430 Jun 20 04:13	1° \mathbb{B} 01'02	1°50'53	conjunction	4436 Feb 23 23:59	4° \mathbb{H} 53'51 -0°44'32
min. Earth dist.	4430 Jun 20 05:04	1° \mathbb{B} 00'53	8.79497 AU	minimum elong	4436 Feb 23 23:58	4° \mathbb{H} 53'51 0°44'32
	4430 Jul 03 19:39	30° \mathbb{R} \mathbb{A}		max. Earth dist.	4436 Feb 24 00:15	4° \mathbb{H} 53'56 10.96758 AU
direct	4430 Aug 29 22:56	27° \mathbb{A} 37'56		morning rise	4436 Mar 11 16:41	6° \mathbb{H} 52'14
	4430 Oct 24 00:04	0° \mathbb{B}		retrograde	4436 Jun 21 14:45	14° \mathbb{H} 01'18
evening set	4430 Dec 11 19:51	5° \mathbb{B} 01'41		opposition	4436 Aug 31 07:05	10° \mathbb{H} 41'37 -1°09'18
				min. Earth dist.	4436 Aug 31 06:25	10° \mathbb{H} 41'44 8.95657 AU
conjunction	4430 Dec 28 17:45	7° \mathbb{B} 03'06	1°20'01	direct	4436 Nov 09 11:24	7° \mathbb{H} 22'46
minimum elong	4430 Dec 28 17:47	7° \mathbb{B} 03'07	1°20'02	evening set	4437 Feb 17 22:14	14° \mathbb{H} 27'05
max. Earth dist.	4430 Dec 28 16:40	7° \mathbb{B} 02'46	10.83020 AU			
morning rise	4431 Jan 14 12:39	9° \mathbb{B} 03'39		conjunction	4437 Mar 06 14:11	16° \mathbb{H} 25'32 -1°08'07
retrograde	4431 Apr 24 10:06	16° \mathbb{B} 11'41		minimum elong	4437 Mar 06 14:09	16° \mathbb{H} 25'31 1°08'07
opposition	4431 Jul 02 17:01	12° \mathbb{B} 53'09	1°24'49	max. Earth dist.	4437 Mar 06 14:08	16° \mathbb{H} 25'31 10.94047 AU
min. Earth dist.	4431 Jul 02 17:16	12° \mathbb{B} 53'06	8.86301 AU	morning rise	4437 Mar 23 07:32	18° \mathbb{H} 24'26
direct	4431 Sep 11 14:25	9° \mathbb{B} 31'01		retrograde	4437 Jul 03 21:58	25° \mathbb{H} 37'43
evening set	4431 Dec 23 19:07	16° \mathbb{B} 48'36		opposition	4437 Sep 12 15:36	22° \mathbb{H} 17'16 -1°36'47
				min. Earth dist.	4437 Sep 12 15:20	22° \mathbb{H} 17'19 8.92086 AU
conjunction	4432 Jan 09 15:19	18° \mathbb{B} 48'47	0°57'27	direct	4437 Nov 21 11:07	18° \mathbb{H} 58'34
minimum elong	4432 Jan 09 15:21	18° \mathbb{B} 48'48	0°57'27	evening set	4438 Mar 01 15:00	26° \mathbb{H} 04'07
max. Earth dist.	4432 Jan 09 14:57	18° \mathbb{B} 48'40	10.89157 AU			
morning rise	4432 Jan 26 09:00	20° \mathbb{B} 48'17		conjunction	4438 Mar 18 07:11	28° \mathbb{H} 03'11 -1°29'04
retrograde	4432 May 05 11:35	27° \mathbb{B} 53'44		minimum elong	4438 Mar 18 07:09	28° \mathbb{H} 03'11 1°29'03
opposition	4432 Jul 14 03:01	24° \mathbb{B} 35'21	0°55'35	max. Earth dist.	4438 Mar 18 06:51	28° \mathbb{H} 03'05 10.89605 AU
min. Earth dist.	4432 Jul 14 03:20	24° \mathbb{B} 35'17	8.91666 AU		4438 Apr 03 15:42	0° \mathbb{Y}
direct	4432 Sep 23 01:14	21° \mathbb{B} 14'07		morning rise	4438 Apr 04 01:44	0° \mathbb{Y} 02'57
evening set	4433 Jan 03 13:48	28° \mathbb{B} 26'34		retrograde	4438 Jul 16 08:05	7° \mathbb{Y} 21'32
	4433 Jan 16 17:58	0° \approx		opposition	4438 Sep 25 02:18	4° \mathbb{Y} 00'12 -2°00'34
				min. Earth dist.	4438 Sep 25 02:09	4° \mathbb{Y} 00'13 8.86864 AU
conjunction	4433 Jan 20 08:27	0° \approx 25'47	0°32'44	direct	4438 Dec 03 11:38	0° \mathbb{Y} 41'26
minimum elong	4433 Jan 20 08:28	0° \approx 25'48	0°32'44	evening set	4439 Mar 13 11:37	7° \mathbb{Y} 49'29
max. Earth dist.	4433 Jan 20 07:42	0° \approx 25'34	10.93736 AU			
morning rise	4433 Feb 06 01:24	2° \approx 24'32		conjunction	4439 Mar 30 04:49	9° \mathbb{Y} 49'32 -1°46'30
retrograde	4433 May 17 10:34	9° \approx 28'45		minimum elong	4439 Mar 30 04:46	9° \mathbb{Y} 49'31 1°46'30
opposition	4433 Jul 26 10:58	6° \approx 10'21	0°24'24	max. Earth dist.	4439 Mar 30 05:06	9° \mathbb{Y} 49'37 10.83600 AU
min. Earth dist.	4433 Jul 26 11:51	6° \approx 10'11	8.95392 AU	morning rise	4439 Apr 16 00:55	11° \mathbb{Y} 50'28
direct	4433 Oct 05 06:54	2° \approx 49'55		retrograde	4439 Jul 28 23:25	19° \mathbb{Y} 15'15
evening set	4434 Jan 15 05:12	9° \approx 58'25		opposition	4439 Oct 07 15:34	15° \mathbb{Y} 52'54 -2°19'34
				min. Earth dist.	4439 Oct 07 14:55	15° \mathbb{Y} 53'02 8.80187 AU
conjunction	4434 Jan 31 22:36	11° \approx 56'58	0°06'53	direct	4439 Dec 15 16:06	12° \mathbb{Y} 33'53
minimum elong	4434 Jan 31 22:36	11° \approx 56'58	0°06'54	evening set	4440 Mar 24 13:13	19° \mathbb{Y} 45'35
behind sun begin	4434 Jan 31 16:06	11° \approx 55'03				
behind sun end	4434 Feb 01 05:07	11° \approx 58'53		conjunction	4440 Apr 10 08:06	21° \mathbb{Y} 46'59 -1°59'35
max. Earth dist.	4434 Jan 31 21:17	11° \approx 56'36	10.96596 AU	minimum elong	4440 Apr 10 08:05	21° \mathbb{Y} 46'59 1°59'35
morning rise	4434 Feb 17 15:15	13° \approx 55'17		max. Earth dist.	4440 Apr 10 09:24	21° \mathbb{Y} 47'23 10.76261 AU
	4434 Feb 27 01:08	15° \approx		morning rise	4440 Apr 27 06:17	23° \mathbb{Y} 49'26
desc. node	4434 May 10 09:12	20° \approx 41'46			4440 Jun 29 23:16	0° \mathbb{B}
retrograde	4434 May 29 09:13	20° \approx 59'45		retrograde	4440 Aug 09 22:05	1° \mathbb{B} 21'03
opposition	4434 Aug 07 17:49	17° \approx 41'05	-0°07'35		4440 Sep 20 14:24	30° \mathbb{R} \mathbb{Y}
min. Earth dist.	4434 Aug 07 18:22	17° \approx 40'59	8.97344 AU	opposition	4440 Oct 19 08:24	27° \mathbb{Y} 57'38 -2°32'48
	4434 Sep 18 21:35	15° \mathbb{R} \approx		min. Earth dist.	4440 Oct 19 06:59	27° \mathbb{Y} 57'54 8.72306 AU
direct	4434 Oct 17 10:52	14° \approx 21'21		direct	4440 Dec 26 22:16	24° \mathbb{Y} 38'10
	4434 Nov 14 13:51	15° \approx			4441 Mar 20 10:40	0° \mathbb{B}
evening set	4435 Jan 26 18:34	21° \approx 27'06		evening set	4441 Apr 05 20:50	1° \mathbb{B} 54'30
conjunction	4435 Feb 12 11:13	23° \approx 25'19	-0°19'15	conjunction	4441 Apr 22 18:00	3° \mathbb{B} 57'35 -2°07'33
minimum elong	4435 Feb 12 11:12	23° \approx 25'19	0°19'15	minimum elong	4441 Apr 22 17:59	3° \mathbb{B} 57'34 2°07'33
max. Earth dist.	4435 Feb 12 10:38	23° \approx 25'09	10.97620 AU	max. Earth dist.	4441 Apr 22 19:15	3° \mathbb{B} 57'58 10.67878 AU
morning rise	4435 Mar 01 03:45	25° \approx 23'31		morning rise	4441 May 09 19:00	6° \mathbb{B} 01'53

retrograde	4441 Aug 23 01:57	13° 8 40'39			4448 Jan 13 07:15	30° R 8	
opposition	4441 Nov 01 05:15	10° 8 16'10 -2°39'23		opposition	4448 Jan 20 00:29	29° 8 27'11 -0°43'18	
min. Earth dist.	4441 Nov 01 03:56	10° 8 16'25 8.63532 AU		min. Earth dist.	4448 Jan 19 23:51	29° 8 27'19 8.14892 AU	
direct	4442 Jan 08 07:13	6° 8 55'59		direct	4448 Mar 26 18:45	26° 8 00'20	
evening set	4442 Apr 18 11:33	14° 8 17'51			4448 Jun 03 20:02	0° 8	
	4442 Apr 24 06:12	15° 8		evening set	4448 Jul 08 04:46	4° 8 01'12	
conjunction	4442 May 05 11:47	16° 8 22'58 -2°09'45		conjunction	4448 Jul 26 05:42	6° 8 19'38 -0°19'39	
minimum elong	4442 May 05 11:47	16° 8 22'58 2°09'45		minimum elong	4448 Jul 26 05:43	6° 8 19'38 0°19'39	
max. Earth dist.	4442 May 05 12:18	16° 8 23'07 10.58780 AU		max. Earth dist.	4448 Jul 26 05:46	6° 8 19'39 10.13122 AU	
morning rise	4442 May 22 16:23	18° 8 29'24		morning rise	4448 Aug 13 08:19	8° 8 38'36	
retrograde	4442 Sep 05 10:09	26° 8 15'19			4448 Oct 12 05:35	15° 8	
opposition	4442 Nov 14 06:11	22° 8 49'46 -2°38'34		retrograde	4448 Nov 26 17:07	16° 8 48'26	
min. Earth dist.	4442 Nov 14 05:36	22° 8 49'53 8.54194 AU			4449 Jan 11 17:29	15° R 8	
direct	4443 Jan 20 23:33	19° 8 28'40		opposition	4449 Feb 01 22:28	13° 8 20'03 -0°04'56	
evening set	4443 May 01 09:55	26° 8 56'49		min. Earth dist.	4449 Feb 01 22:13	13° 8 20'06 8.11920 AU	
				asc. node	4449 Mar 21 20:23	10° 8 12'12	
conjunction	4443 May 18 14:04	29° 8 04'15 -2°05'44		direct	4449 Apr 09 19:43	9° 8 52'12	
minimum elong	4443 May 18 14:06	29° 8 04'16 2°05'45			4449 Jun 28 10:24	15° 8	
max. Earth dist.	4443 May 18 14:01	29° 8 04'14 10.49303 AU		evening set	4449 Jul 22 22:59	17° 8 57'22	
	4443 May 26 01:20	0° II					
morning rise	4443 Jun 04 22:47	1° II 13'05		conjunction	4449 Aug 10 01:30	20° 8 16'30 0°11'42	
retrograde	4443 Sep 19 01:01	9° II 05'52		minimum elong	4449 Aug 10 01:29	20° 8 16'30 0°11'42	
opposition	4443 Nov 27 11:31	5° II 39'22 -2°29'55		behind sun begin	4449 Aug 09 20:24	20° 8 14'52	
min. Earth dist.	4443 Nov 27 11:32	5° II 39'22 8.44650 AU		behind sun end	4449 Aug 10 06:35	20° 8 18'07	
direct	4444 Feb 02 20:39	2° II 17'13		max. Earth dist.	4449 Aug 10 01:25	20° 8 16'29 10.11302 AU	
evening set	4444 May 13 16:29	9° II 52'10		morning rise	4449 Aug 28 04:35	22° 8 35'49	
					4449 Nov 12 13:07	0° II	
conjunction	4444 May 31 01:11	12° II 02'09 -1°55'20		retrograde	4449 Dec 10 21:40	0° II 43'55	
minimum elong	4444 May 31 01:13	12° II 02'09 1°55'21			4450 Jan 08 08:33	30° R 8	
max. Earth dist.	4444 May 31 01:29	12° II 02'14 10.39852 AU		opposition	4450 Feb 15 21:06	27° 8 15'57 0°33'53	
morning rise	4444 Jun 17 14:13	14° II 13'30		min. Earth dist.	4450 Feb 15 20:53	27° 8 16'00 8.11277 AU	
retrograde	4444 Oct 01 21:42	22° II 12'32		direct	4450 Apr 24 01:15	23° 8 47'20	
opposition	4444 Dec 09 21:13	18° II 45'13 -2°13'22			4450 Jul 22 04:33	0° II	
min. Earth dist.	4444 Dec 09 20:55	18° II 45'16 8.35393 AU		evening set	4450 Aug 06 19:31	1° II 55'14	
direct	4445 Feb 14 23:20	15° II 21'55					
evening set	4445 May 27 07:45	23° II 03'56		conjunction	4450 Aug 24 22:03	4° II 14'17 0°42'19	
				minimum elong	4450 Aug 24 22:01	4° II 14'17 0°42'19	
conjunction	4445 Jun 13 21:16	25° II 16'30 -1°38'43		max. Earth dist.	4450 Aug 24 22:02	4° II 14'17 10.11821 AU	
minimum elong	4445 Jun 13 21:19	25° II 16'31 1°38'44		morning rise	4450 Sep 11 23:54	6° II 33'07	
max. Earth dist.	4445 Jun 13 22:03	25° II 16'45 10.30989 AU		retrograde	4450 Dec 24 23:08	14° II 37'49	
morning rise	4445 Jul 01 14:41	27° II 30'20		opposition	4451 Mar 01 19:14	11° II 10'30 1°10'38	
	4445 Jul 22 11:41	0° 8		min. Earth dist.	4451 Mar 01 18:43	11° II 10'36 8.12980 AU	
retrograde	4445 Oct 15 22:35	5° 8 34'31		direct	4451 May 08 07:18	7° II 41'25	
opposition	4445 Dec 23 10:59	2° 8 06'33 -1°49'20		evening set	4451 Aug 21 15:34	15° II 50'17	
min. Earth dist.	4445 Dec 23 10:12	2° 8 06'42 8.27011 AU					
	4446 Jan 20 17:44	30° R II		conjunction	4451 Sep 08 16:41	18° II 08'28 1°10'22	
direct	4446 Feb 28 08:41	28° II 42'03		minimum elong	4451 Sep 08 16:38	18° II 08'27 1°10'22	
	4446 Apr 07 08:10	0° 8		max. Earth dist.	4451 Sep 08 17:04	18° II 08'36 10.14635 AU	
evening set	4446 Jun 10 07:30	6° 8 30'59		morning rise	4451 Sep 26 15:51	20° II 26'04	
				retrograde	4452 Jan 07 21:59	28° II 25'57	
conjunction	4446 Jun 28 01:39	8° 8 45'58 -1°16'27		opposition	4452 Mar 14 15:56	24° II 59'28 1°43'01	
minimum elong	4446 Jun 28 01:41	8° 8 45'59 1°16'28		min. Earth dist.	4452 Mar 14 14:58	24° II 59'40 8.16910 AU	
max. Earth dist.	4446 Jun 28 02:35	8° 8 46'16 10.23278 AU		direct	4452 May 21 12:53	21° II 30'14	
morning rise	4446 Jul 15 23:06	11° 8 02'02		evening set	4452 Sep 04 08:25	29° II 38'08	
retrograde	4446 Oct 30 03:14	19° 8 09'52			4452 Sep 07 06:02	0° 8	
opposition	4447 Jan 06 04:22	15° 8 41'29 -1°18'47					
min. Earth dist.	4447 Jan 06 03:23	15° 8 41'41 8.20031 AU		conjunction	4452 Sep 22 06:54	1° 8 54'50 1°34'09	
direct	4447 Mar 13 23:02	12° 8 15'46		minimum elong	4452 Sep 22 06:51	1° 8 54'49 1°34'09	
evening set	4447 Jun 24 14:58	20° 8 11'06		max. Earth dist.	4452 Sep 22 07:42	1° 8 55'06 10.19558 AU	
				morning rise	4452 Oct 10 02:23	4° 8 10'38	
conjunction	4447 Jul 12 13:02	22° 8 28'07 -0°49'36		retrograde	4453 Jan 20 16:06	12° 8 04'34	
minimum elong	4447 Jul 12 13:04	22° 8 28'07 0°49'36		opposition	4453 Mar 28 10:10	8° 8 39'05 2°09'08	
max. Earth dist.	4447 Jul 12 13:35	22° 8 28'17 10.17195 AU		min. Earth dist.	4453 Mar 28 09:24	8° 8 39'14 8.22808 AU	
morning rise	4447 Jul 30 13:40	24° 8 45'57		direct	4453 Jun 04 17:06	5° 8 09'59	
	4447 Sep 15 08:12	0° 8		evening set	4453 Sep 18 20:09	13° 8 15'10	
retrograde	4447 Nov 13 10:06	2° 8 55'42					

conjunction	4453 Oct 06 15:05	15° Ω 29'53	1°52'22	conjunction	4459 Dec 23 09:37	1° Υ 39'21	1°29'37
minimum elong	4453 Oct 06 15:02	15° Ω 29'52	1°52'23	minimum elong	4459 Dec 23 09:39	1° Υ 39'22	1°29'37
max. Earth dist.	4453 Oct 06 15:35	15° Ω 30'03	10.26281 AU	max. Earth dist.	4459 Dec 23 09:17	1° Υ 39'15	10.80134 AU
morning rise	4453 Oct 24 06:18	17° Ω 43'30		morning rise	4460 Jan 09 05:14	3° Υ 40'30	
retrograde	4454 Feb 03 03:37	25° Ω 30'38		retrograde	4460 Apr 18 02:25	10° Υ 50'12	
opposition	4454 Apr 11 01:03	22° Ω 06'18	2°27'41	opposition	4460 Jun 26 04:10	7° Υ 31'54	1°37'32
min. Earth dist.	4454 Apr 11 00:52	22° Ω 06'21	8.30317 AU	min. Earth dist.	4460 Jun 26 04:53	7° Υ 31'46	8.83890 AU
direct	4454 Jun 18 19:33	18° Ω 37'39		direct	4460 Sep 04 22:47	4° Υ 09'41	
evening set	4454 Oct 03 00:36	26° Ω 38'31		evening set	4460 Dec 17 13:15	11° Υ 30'11	
conjunction	4454 Oct 20 15:33	28° Ω 50'58	2°04'13	conjunction	4461 Jan 03 10:07	13° Υ 30'52	1°08'23
minimum elong	4454 Oct 20 15:31	28° Ω 50'57	2°04'13	minimum elong	4461 Jan 03 10:09	13° Υ 30'53	1°08'24
max. Earth dist.	4454 Oct 20 15:24	28° Ω 50'55	10.34419 AU	max. Earth dist.	4461 Jan 03 09:06	13° Υ 30'34	10.87221 AU
	4454 Oct 29 18:49	0° \mathcal{M}		morning rise	4461 Jan 20 04:28	15° Υ 30'48	
morning rise	4454 Nov 07 02:25	1° \mathcal{M} 02'11		retrograde	4461 Apr 30 04:29	22° Υ 37'18	
retrograde	4455 Feb 16 08:37	8° \mathcal{M} 42'09		opposition	4461 Jul 08 15:40	19° Υ 19'22	1°09'38
opposition	4455 Apr 24 12:12	5° \mathcal{M} 19'03	2°37'58	min. Earth dist.	4461 Jul 08 16:08	19° Υ 19'17	8.90234 AU
min. Earth dist.	4455 Apr 24 12:30	5° \mathcal{M} 18'59	8.39013 AU	direct	4461 Sep 17 13:29	15° Υ 58'13	
direct	4455 Jul 02 17:58	1° \mathcal{M} 51'08		evening set	4461 Dec 29 10:15	23° Υ 13'02	
evening set	4455 Oct 16 20:19	9° \mathcal{M} 46'17		conjunction	4462 Jan 15 05:33	25° Υ 12'38	0°44'33
conjunction	4455 Nov 03 07:17	11° \mathcal{M} 56'23	2°09'21	minimum elong	4462 Jan 15 05:34	25° Υ 12'39	0°44'34
minimum elong	4455 Nov 03 07:16	11° \mathcal{M} 56'23	2°09'21	max. Earth dist.	4462 Jan 15 04:55	25° Υ 12'27	10.92794 AU
max. Earth dist.	4455 Nov 03 06:30	11° \mathcal{M} 56'09	10.43526 AU	morning rise	4462 Jan 31 22:52	27° Υ 11'39	
morning rise	4455 Nov 20 14:06	14° \mathcal{M} 05'12			4462 Feb 26 07:04	0° \approx	
	4455 Nov 28 03:07	15° \mathcal{M}		retrograde	4462 May 12 04:48	4° \approx 16'16	
retrograde	4456 Feb 29 07:47	21° \mathcal{M} 38'00		opposition	4462 Jul 21 00:48	0° \approx 58'27	0°39'14
opposition	4456 May 06 19:00	18° \mathcal{M} 16'05	2°39'56	min. Earth dist.	4462 Jul 21 00:42	0° \approx 58'28	8.94932 AU
min. Earth dist.	4456 May 06 19:14	18° \mathcal{M} 16'02	8.48423 AU		4462 Aug 03 07:56	30° \mathcal{R} Υ	
	4456 Jun 30 21:31	15° \mathcal{R} \mathcal{M}		direct	4462 Sep 29 21:42	27° Υ 38'14	
direct	4456 Jul 15 11:27	14° \mathcal{M} 49'09			4462 Nov 24 00:31	0° \approx	
	4456 Jul 30 00:37	15° \mathcal{M}		evening set	4463 Jan 10 03:18	4° \approx 48'26	
evening set	4456 Oct 29 07:02	22° \mathcal{M} 37'39		conjunction	4463 Jan 26 21:22	6° \approx 47'13	0°19'07
conjunction	4456 Nov 15 14:22	24° \mathcal{M} 45'28	2°07'53	minimum elong	4463 Jan 26 21:23	6° \approx 47'13	0°19'08
minimum elong	4456 Nov 15 14:22	24° \mathcal{M} 45'28	2°07'53	max. Earth dist.	4463 Jan 26 21:14	6° \approx 47'11	10.96587 AU
max. Earth dist.	4456 Nov 15 13:32	24° \mathcal{M} 45'13	10.53118 AU	morning rise	4463 Feb 12 13:59	8° \approx 44'53	
morning rise	4456 Dec 02 17:32	26° \mathcal{M} 52'00			4463 Apr 22 09:29	15° \approx	
	4456 Dec 30 01:46	0° \mathcal{J}		retrograde	4463 May 24 04:59	15° \approx 49'48	
retrograde	4457 Mar 13 00:57	4° \mathcal{J} 17'53			4463 Jun 25 15:13	15° \mathcal{R} \approx	
opposition	4457 May 19 21:15	0° \mathcal{J} 57'07	2°33'59	opposition	4463 Aug 02 08:16	12° \approx 31'49	0°07'29
min. Earth dist.	4457 May 19 21:02	0° \mathcal{J} 57'09	8.58056 AU	min. Earth dist.	4463 Aug 02 08:29	12° \approx 31'47	8.97748 AU
	4457 Jun 01 07:17	30° \mathcal{R} \mathcal{M}		direct	4463 Oct 12 02:40	9° \approx 12'20	
direct	4457 Jul 28 23:35	27° \mathcal{M} 31'19		desc. node	4463 Oct 29 12:16	9° \approx 27'11	
	4457 Sep 22 20:34	0° \mathcal{J}			4464 Jan 10 03:40	15° \approx	
evening set	4457 Nov 11 08:39	5° \mathcal{J} 12'39		evening set	4464 Jan 21 17:54	16° \approx 19'14	
conjunction	4457 Nov 28 12:48	7° \mathcal{J} 18'20	2°00'17	conjunction	4464 Feb 07 10:54	18° \approx 17'32	-0°07'03
minimum elong	4457 Nov 28 12:50	7° \mathcal{J} 18'21	2°00'17	minimum elong	4464 Feb 07 10:53	18° \approx 17'32	0°07'03
max. Earth dist.	4457 Nov 28 12:38	7° \mathcal{J} 18'17	10.62707 AU	behind sun begin	4464 Feb 07 04:25	18° \approx 15'38	
morning rise	4457 Dec 15 12:47	9° \mathcal{J} 22'48		behind sun end	4464 Feb 07 17:22	18° \approx 19'26	
retrograde	4458 Mar 25 14:26	16° \mathcal{J} 42'23		max. Earth dist.	4464 Feb 07 09:48	18° \approx 17'13	10.98390 AU
opposition	4458 Jun 01 19:27	13° \mathcal{J} 22'37	2°20'53	morning rise	4464 Feb 24 03:20	20° \approx 15'41	
min. Earth dist.	4458 Jun 01 19:05	13° \mathcal{J} 22'41	8.67449 AU	retrograde	4464 Jun 04 06:27	27° \approx 20'50	
direct	4458 Aug 11 05:34	9° \mathcal{J} 58'03		opposition	4464 Aug 13 15:05	24° \approx 02'31	-0°24'26
evening set	4458 Nov 24 01:30	17° \mathcal{J} 32'03		min. Earth dist.	4464 Aug 13 16:14	24° \approx 02'18	8.98520 AU
				direct	4464 Oct 23 04:16	20° \approx 43'33	
conjunction	4458 Dec 11 02:52	19° \mathcal{J} 35'49	1°47'14	evening set	4465 Feb 01 07:30	27° \approx 48'32	
minimum elong	4458 Dec 11 02:54	19° \mathcal{J} 35'50	1°47'14	conjunction	4465 Feb 17 23:41	29° \approx 46'40	-0°32'47
max. Earth dist.	4458 Dec 11 03:07	19° \mathcal{J} 35'54	10.71845 AU	minimum elong	4465 Feb 17 23:40	29° \approx 46'40	0°32'48
morning rise	4458 Dec 28 00:17	21° \mathcal{J} 38'27		max. Earth dist.	4465 Feb 17 21:41	29° \approx 46'04	10.98123 AU
retrograde	4459 Apr 06 23:09	28° \mathcal{J} 52'36			4465 Feb 19 20:33	0° \mathcal{H}	
opposition	4459 Jun 14 13:42	25° \mathcal{J} 33'40	2°01'41	morning rise	4465 Mar 06 16:19	1° \mathcal{H} 44'54	
min. Earth dist.	4459 Jun 14 13:49	22° \mathcal{J} 33'39	8.76184 AU	retrograde	4465 Jun 16 06:58	8° \mathcal{H} 52'31	
direct	4459 Aug 24 04:17	22° \mathcal{J} 10'20		opposition	4465 Aug 25 22:07	5° \mathcal{H} 33'35	-0°55'23
evening set	4459 Dec 06 10:43	29° \mathcal{J} 37'15		min. Earth dist.	4465 Aug 25 23:34	5° \mathcal{H} 33'19	8.97252 AU
	4459 Dec 09 15:20	0° Υ					

direct	4465 Nov 04 05:10	2°  14'56		4472 Feb 20 00:18	15° 
evening set	4466 Feb 12 21:33	9°  19'22	evening set	4472 Apr 24 18:47	21°  19'35
conjunction	4466 Mar 01 13:30	11°  17'39 -0°57'17	conjunction	4472 May 11 21:14	23°  26'10 -2°08'24
minimum elong	4466 Mar 01 13:28	11°  17'39 0°57'17	minimum elong	4472 May 11 21:15	23°  26'11 2°08'25
max. Earth dist.	4466 Mar 01 11:53	11°  17'10 10.95858 AU	max. Earth dist.	4472 May 11 22:07	23°  26'27 10.51477 AU
morning rise	4466 Mar 18 06:32	13°  16'17	morning rise	4472 May 29 03:53	25°  34'06
retrograde	4466 Jun 28 13:01	20°  27'41		4472 Jul 08 04:45	0° 
opposition	4466 Sep 07 06:10	17°  07'53 -1°24'15	retrograde	4472 Sep 12 02:55	3°  12'43'35
min. Earth dist.	4466 Sep 07 06:51	17°  07'45 8.94057 AU	opposition	4472 Nov 20 17:41	29°  35'46 -2°35'01
direct	4466 Nov 16 06:49	13°  49'18		4472 Nov 20 06:21	30° 
evening set	4467 Feb 24 13:18	20°  54'25	min. Earth dist.	4472 Nov 20 16:34	29°  35'59 8.46785 AU
			direct	4473 Jan 27 06:38	26°  35'26
conjunction	4467 Mar 13 05:29	22°  53'13 -1°19'36		4473 Apr 01 03:35	0° 
minimum elong	4467 Mar 13 05:27	22°  53'12 1°19'36	evening set	4473 May 07 21:43	4°  12'07'57
max. Earth dist.	4467 Mar 13 04:45	22°  53'00 10.91727 AU			
morning rise	4467 Mar 29 23:19	24°  52'35	conjunction	4473 May 25 04:19	6°  17'00 -2°00'58
	4467 May 19 13:49	0° 	minimum elong	4473 May 25 04:21	6°  17'00 2°00'59
retrograde	4467 Jul 10 23:06	2°  08'52	max. Earth dist.	4473 May 25 04:53	6°  17'11 10.41920 AU
	4467 Sep 03 06:19	30° 	morning rise	4473 Jun 11 15:20	8°  12'27'26
opposition	4467 Sep 19 15:57	28°  48'00 -1°49'56	retrograde	4473 Sep 25 21:39	16°  12'43'32
min. Earth dist.	4467 Sep 19 16:08	28°  47'58 8.89082 AU	opposition	4473 Dec 04 01:52	12°  15'64'9 -2°22'06
direct	4467 Nov 28 06:34	25°  29'17	min. Earth dist.	4473 Dec 04 00:58	12°  15'70'0 8.37404 AU
	4468 Feb 13 02:33	0° 	direct	4474 Feb 09 06:29	9°  13'33'23
evening set	4468 Mar 07 08:22	2°  09'36'22	evening set	4474 May 21 09:21	17°  12'53
conjunction	4468 Mar 24 01:06	4°  09'36'00 -1°38'49	conjunction	4474 Jun 07 20:35	19°  12'43'30 -1°47'09
minimum elong	4468 Mar 24 01:03	4°  09'35'59 1°38'49	minimum elong	4474 Jun 07 20:38	19°  12'43'30 1°47'10
max. Earth dist.	4468 Mar 24 00:12	4°  09'35'44 10.85911 AU	max. Earth dist.	4474 Jun 07 20:55	19°  12'43'36 10.32887 AU
morning rise	4468 Apr 09 20:17	6°  09'36'25	morning rise	4474 Jun 25 12:11	21°  12'37'27
retrograde	4468 Jul 22 11:59	13°  09'58'34	retrograde	4474 Oct 09 20:23	29°  12'40'10
opposition	4468 Oct 01 04:13	10°  09'36'32 -2°11'21	opposition	4474 Dec 17 14:11	26°  11'49 -2°01'23
min. Earth dist.	4468 Oct 01 04:34	10°  09'36'28 8.82539 AU	min. Earth dist.	4474 Dec 17 13:36	26°  11'55 8.28785 AU
direct	4468 Dec 09 08:51	7°  09'17'24	direct	4475 Feb 22 13:37	22°  12'47'14
evening set	4469 Mar 19 07:45	14°  09'27'42		4475 May 30 16:32	0° 
			evening set	4475 Jun 04 05:33	0°  12'33'45
conjunction	4469 Apr 05 01:39	16°  09'28'32 -1°54'03	conjunction	4475 Jun 21 21:33	2°  12'47'51 -1°27'22
minimum elong	4469 Apr 05 01:37	16°  09'28'31 1°54'03	minimum elong	4475 Jun 21 21:36	2°  12'47'52 1°27'23
max. Earth dist.	4469 Apr 05 00:20	16°  09'28'08 10.78663 AU	max. Earth dist.	4475 Jun 21 22:11	2°  12'48'03 10.24863 AU
morning rise	4469 Apr 21 22:52	18°  09'30'21	morning rise	4475 Jul 09 17:26	5°  12'03'10
retrograde	4469 Aug 04 06:44	25°  09'59'09	retrograde	4475 Oct 23 23:21	13°  12'10'13
opposition	4469 Oct 13 19:47	22°  09'35'52 -2°27'27	opposition	4475 Dec 31 06:27	9°  12'41'28 -1°33'36
min. Earth dist.	4469 Oct 13 20:26	22°  09'35'45 8.74704 AU	min. Earth dist.	4475 Dec 31 05:40	9°  12'41'38 8.21413 AU
direct	4469 Dec 21 14:17	19°  09'16'09	direct	4476 Mar 07 02:20	6°  12'15'50
evening set	4470 Mar 31 12:28	26°  09'30'43	evening set	4476 Jun 17 09:43	14°  12'08'58
conjunction	4470 Apr 17 08:26	28°  09'33'08 -2°04'31	conjunction	4476 Jul 05 06:07	16°  12'25'17 -1°02'26
minimum elong	4470 Apr 17 08:25	28°  09'33'07 2°04'31	minimum elong	4476 Jul 05 06:10	16°  12'25'18 1°02'26
max. Earth dist.	4470 Apr 17 07:49	28°  09'32'57 10.70276 AU	max. Earth dist.	4476 Jul 05 07:35	16°  12'25'45 10.18313 AU
	4470 Apr 29 06:02	0° 	morning rise	4476 Jul 23 05:35	18°  12'42'35
morning rise	4470 May 04 08:13	0°  12'36'42	retrograde	4476 Nov 06 05:54	26°  12'52'24
retrograde	4470 Aug 17 06:47	8°  12'40	opposition	4477 Jan 13 01:55	23°  12'23'33 -1°00'05
opposition	4470 Oct 26 14:57	4°  12'48'07 -2°37'16	min. Earth dist.	4477 Jan 13 00:29	23°  12'23'51 8.15736 AU
min. Earth dist.	4470 Oct 26 15:08	4°  12'48'05 8.65882 AU	direct	4477 Mar 20 20:24	19°  12'26'56
direct	4471 Jan 02 23:17	1°  12'27'39	evening set	4477 Jul 01 21:15	27°  12'26'01
evening set	4471 Apr 12 23:53	8°  12'47'30		4477 Jul 18 01:32	0° 
conjunction	4471 Apr 29 22:46	10°  12'35'51 -2°09'29	conjunction	4477 Jul 19 21:12	0°  12'14'03 -0°33'38
minimum elong	4471 Apr 29 22:46	10°  12'35'51 2°09'29	minimum elong	4477 Jul 19 21:13	0°  12'14'04 0°33'39
max. Earth dist.	4471 Apr 29 23:08	10°  12'35'58 10.61080 AU	max. Earth dist.	4477 Jul 19 23:26	0°  12'14'47 10.13647 AU
morning rise	4471 May 17 01:39	12°  12'35'7'27	morning rise	4477 Aug 06 23:08	2°  12'32'47
	4471 Jun 03 13:01	15° 	retrograde	4477 Nov 20 13:43	10°  12'43'31
retrograde	4471 Aug 30 13:04	20°  12'34'0'46	opposition	4478 Jan 26 23:36	7°  12'14'53 -0°22'40
opposition	4471 Nov 08 14:01	17°  12'31'5'01 -2°40'00	min. Earth dist.	4478 Jan 26 21:36	7°  12'15'17 8.12118 AU
min. Earth dist.	4471 Nov 08 13:26	17°  12'31'5'08 8.56435 AU	direct	4478 Apr 03 19:24	3°  12'47'26
	4471 Dec 10 07:34	15° 	evening set	4478 Jul 16 14:27	11°  12'51'25
direct	4472 Jan 15 13:14	13°  12'31'53'41			

conjunction	4478 Aug 03 16:37	14°♏10'30	-0°02'43	direct	4484 Jun 25 22:30	26°♑16'17	
minimum elong	4478 Aug 03 16:38	14°♏10'30	0°02'43		4484 Sep 02 14:18	0°♐	
behind sun begin	4478 Aug 03 09:18	14°♏08'10		evening set	4484 Oct 10 03:06	4°♐14'20	
behind sun end	4478 Aug 03 23:58	14°♏12'50					
max. Earth dist.	4478 Aug 03 18:59	14°♏11'13	10.11163 AU	conjunction	4484 Oct 27 16:01	6°♐25'31	2°07'43
	4478 Aug 10 02:06	15°♏		minimum elong	4484 Oct 27 16:00	6°♐25'31	2°07'44
morning rise	4478 Aug 21 19:37	16°♏29'54		max. Earth dist.	4484 Oct 27 15:28	6°♐25'21	10.39891 AU
asc. node	4478 Sep 04 16:25	18°♏12'39		morning rise	4484 Nov 14 00:35	8°♐35'25	
retrograde	4478 Dec 04 21:01	24°♏39'42			4485 Jan 17 08:51	15°♐	
opposition	4479 Feb 09 22:44	21°♏11'34	0°16'19	retrograde	4485 Feb 23 01:50	16°♐11'46	
min. Earth dist.	4479 Feb 09 20:48	21°♏11'58	8.10797 AU		4485 Apr 01 09:27	15°♐	
direct	4479 Apr 17 22:24	17°♏43'29		opposition	4485 May 01 07:23	12°♐49'46	2°39'50
evening set	4479 Jul 31 10:59	25°♏50'54		min. Earth dist.	4485 May 01 07:47	12°♐49'41	8.44489 AU
				direct	4485 Jul 09 17:35	9°♐22'49	
conjunction	4479 Aug 18 13:45	28°♏10'13	0°28'35		4485 Oct 04 16:50	15°♐	
minimum elong	4479 Aug 18 13:44	28°♏10'13	0°28'36	evening set	4485 Oct 23 18:41	17°♐14'47	
max. Earth dist.	4479 Aug 18 15:51	28°♏10'53	10.11023 AU				
	4479 Sep 01 19:20	0°♐		conjunction	4485 Nov 10 03:46	19°♐23'42	2°09'08
morning rise	4479 Sep 05 16:14	0°♐29'28		minimum elong	4485 Nov 10 03:46	19°♐23'42	2°09'09
retrograde	4479 Dec 19 02:06	8°♐36'33		max. Earth dist.	4485 Nov 10 02:50	19°♐23'25	10.48911 AU
opposition	4480 Feb 23 22:02	5°♐09'10	0°54'21	morning rise	4485 Nov 27 08:24	21°♐31'18	
min. Earth dist.	4480 Feb 23 20:30	5°♐09'29	8.11861 AU	retrograde	4486 Mar 07 22:14	29°♐00'42	
direct	4480 May 01 03:35	1°♐40'39		opposition	4486 May 14 12:27	25°♐39'45	2°37'19
evening set	4480 Aug 14 08:23	9°♐49'45		min. Earth dist.	4486 May 14 13:43	25°♐39'30	8.53636 AU
				direct	4486 Jul 23 08:44	22°♐13'42	
conjunction	4480 Sep 01 10:14	12°♐08'30	0°58'04	evening set	4486 Nov 06 01:07	29°♐58'50	
minimum elong	4480 Sep 01 10:12	12°♐08'29	0°58'04		4486 Nov 06 04:58	0°♑	
max. Earth dist.	4480 Sep 01 11:42	12°♐08'58	10.13239 AU				
morning rise	4480 Sep 19 10:46	14°♐26'49		conjunction	4486 Nov 23 06:39	2°♑05'34	2°04'10
retrograde	4481 Jan 01 03:37	22°♐29'30		minimum elong	4486 Nov 23 06:41	2°♑05'34	2°04'10
opposition	4481 Mar 08 20:13	19°♐03'03	1°29'00	max. Earth dist.	4486 Nov 23 04:49	2°♑05'00	10.58097 AU
min. Earth dist.	4481 Mar 08 19:16	19°♐03'14	8.15229 AU	morning rise	4486 Dec 10 08:02	4°♑11'03	
direct	4481 May 15 10:43	15°♐34'19		retrograde	4487 Mar 20 12:46	11°♑33'56	
evening set	4481 Aug 29 03:50	23°♐43'13		opposition	4487 May 27 13:13	8°♑13'53	2°27'16
				min. Earth dist.	4487 May 27 14:43	8°♑13'36	8.62736 AU
conjunction	4481 Sep 16 03:29	26°♐00'40	1°23'59	direct	4487 Aug 05 19:04	4°♑48'48	
minimum elong	4481 Sep 16 03:26	26°♐00'39	1°23'59	evening set	4487 Nov 18 22:25	12°♑26'42	
max. Earth dist.	4481 Sep 16 04:04	26°♐00'52	10.17634 AU				
morning rise	4481 Oct 04 00:51	28°♐17'23		conjunction	4487 Dec 06 00:57	14°♑31'26	1°53'24
	4481 Oct 17 23:17	0°♑		minimum elong	4487 Dec 06 00:59	14°♑31'27	1°53'24
retrograde	4482 Jan 14 23:20	6°♑14'20		max. Earth dist.	4487 Dec 05 22:49	14°♑30'47	10.67039 AU
opposition	4482 Mar 22 16:11	2°♑48'55	1°58'08	morning rise	4487 Dec 22 23:42	16°♑35'01	
min. Earth dist.	4482 Mar 22 15:34	2°♑49'02	8.20623 AU	retrograde	4488 Mar 31 23:13	23°♑52'06	
	4482 May 02 06:35	30°♐		opposition	4488 Jun 08 09:40	20°♑32'44	2°10'37
direct	4482 May 29 17:51	29°♐20'14		min. Earth dist.	4488 Jun 08 10:47	20°♑32'32	8.71370 AU
	4482 Jun 26 03:06	0°♑		direct	4488 Aug 17 22:36	17°♑08'40	
evening set	4482 Sep 12 18:42	7°♑27'02		evening set	4488 Nov 30 11:29	24°♑39'22	
conjunction	4482 Sep 30 15:08	9°♑42'38	1°44'50	conjunction	4488 Dec 17 11:34	26°♑42'22	1°37'40
minimum elong	4482 Sep 30 15:05	9°♑42'37	1°44'51	minimum elong	4488 Dec 17 11:36	26°♑42'22	1°37'39
max. Earth dist.	4482 Sep 30 15:07	9°♑42'38	10.23850 AU	max. Earth dist.	4488 Dec 17 09:58	26°♑41'52	10.75322 AU
morning rise	4482 Oct 18 08:27	11°♑57'16		morning rise	4489 Jan 03 08:07	28°♑44'19	
retrograde	4483 Jan 28 12:56	19°♑47'38			4489 Jan 14 03:30	0°♒	
opposition	4483 Apr 05 09:01	16°♑23'19	2°20'11	retrograde	4489 Apr 13 05:17	5°♒56'29	
min. Earth dist.	4483 Apr 05 08:32	16°♑23'25	8.27602 AU	opposition	4489 Jun 21 02:09	2°♒37'38	1°48'28
direct	4483 Jun 12 22:48	12°♑54'58		min. Earth dist.	4489 Jun 21 02:41	2°♒37'32	8.79154 AU
evening set	4483 Sep 27 02:54	20°♑58'03			4489 Jul 30 22:41	30°♐	
				direct	4489 Aug 30 20:33	29°♑14'34	
conjunction	4483 Oct 14 19:39	23°♑11'30	1°59'35		4489 Sep 30 08:59	0°♒	
minimum elong	4483 Oct 14 19:37	23°♑11'29	1°59'36	evening set	4489 Dec 12 17:16	6°♒38'29	
max. Earth dist.	4483 Oct 14 19:18	23°♑11'23	10.31415 AU				
morning rise	4483 Nov 01 08:32	25°♑23'47		conjunction	4489 Dec 29 15:16	8°♒39'59	1°17'52
	4483 Dec 12 09:40	0°♐		minimum elong	4489 Dec 29 15:19	8°♒40'00	1°17'53
retrograde	4484 Feb 10 21:52	3°♐07'11		max. Earth dist.	4489 Dec 29 14:33	8°♒39'46	10.82590 AU
	4484 Apr 14 14:00	30°♐		morning rise	4490 Jan 15 10:08	10°♒40'36	
opposition	4484 Apr 17 22:09	29°♑44'02	2°34'11	retrograde	4490 Apr 25 09:25	17°♒49'01	
min. Earth dist.	4484 Apr 17 21:58	29°♑44'04	8.35690 AU	opposition	4490 Jul 03 15:28	14°♒30'29	1°22'01

min. Earth dist.	4490 Jul 03 16:08	14° \mathfrak{Z} 30'21	8.85778 AU	opposition	4496 Sep 13 16:58	24° \mathfrak{H} 01'46	-1°39'24
direct	4490 Sep 12 12:27	11° \mathfrak{Z} 08'22		min. Earth dist.	4496 Sep 13 16:56	24° \mathfrak{H} 01'47	8.91036 AU
evening set	4490 Dec 24 16:53	18° \mathfrak{Z} 26'12		direct	4496 Nov 22 11:13	20° \mathfrak{H} 42'59	
				evening set	4497 Mar 02 15:38	27° \mathfrak{H} 49'07	
conjunction	4491 Jan 10 13:02	20° \mathfrak{Z} 26'29	0°55'02				
minimum elong	4491 Jan 10 13:03	20° \mathfrak{Z} 26'30	0°55'02	conjunction	4497 Mar 19 07:57	29° \mathfrak{H} 48'20	-1°31'00
max. Earth dist.	4491 Jan 10 12:07	20° \mathfrak{Z} 26'13	10.88556 AU	minimum elong	4497 Mar 19 07:55	29° \mathfrak{H} 48'19	1°31'00
morning rise	4491 Jan 27 06:48	22° \mathfrak{Z} 26'05		max. Earth dist.	4497 Mar 19 08:11	29° \mathfrak{H} 48'24	10.88553 AU
retrograde	4491 May 07 09:58	29° \mathfrak{Z} 32'01			4497 Mar 20 22:50	0° \mathfrak{Y}	
opposition	4491 Jul 16 02:01	26° \mathfrak{Z} 13'35	0°52'31	morning rise	4497 Apr 05 02:33	1° \mathfrak{Y} 48'15	
min. Earth dist.	4491 Jul 16 03:03	26° \mathfrak{Z} 13'24	8.90989 AU	retrograde	4497 Jul 17 09:35	9° \mathfrak{Y} 07'38	
direct	4491 Sep 24 22:28	22° \mathfrak{Z} 52'20		opposition	4497 Sep 26 04:03	5° \mathfrak{Y} 46'07	-2°02'42
	4492 Jan 04 18:19	0° \mathfrak{A}		min. Earth dist.	4497 Sep 26 03:16	5° \mathfrak{Y} 46'16	8.85827 AU
evening set	4492 Jan 05 11:56	0° \mathfrak{A} 05'08		direct	4497 Dec 04 13:59	2° \mathfrak{Y} 27'17	
				evening set	4498 Mar 14 12:48	9° \mathfrak{Y} 35'54	
conjunction	4492 Jan 22 06:33	2° \mathfrak{A} 04'28	0°30'08				
minimum elong	4492 Jan 22 06:34	2° \mathfrak{A} 04'28	0°30'09	conjunction	4498 Mar 31 06:11	11° \mathfrak{Y} 36'07	-1°47'59
max. Earth dist.	4492 Jan 22 05:06	2° \mathfrak{A} 04'02	10.92994 AU	minimum elong	4498 Mar 31 06:09	11° \mathfrak{Y} 36'07	1°47'59
morning rise	4492 Feb 07 23:41	4° \mathfrak{A} 03'21		max. Earth dist.	4498 Mar 31 07:29	11° \mathfrak{Y} 36'31	10.82576 AU
retrograde	4492 May 18 09:00	11° \mathfrak{A} 08'09		morning rise	4498 Apr 17 02:18	13° \mathfrak{Y} 37'12	
opposition	4492 Jul 27 10:19	7° \mathfrak{A} 49'39	0°21'09	retrograde	4498 Jul 30 03:36	21° \mathfrak{Y} 02'45	
min. Earth dist.	4492 Jul 27 11:15	7° \mathfrak{A} 49'28	8.94586 AU	opposition	4498 Oct 08 17:51	17° \mathfrak{Y} 40'15	-2°21'07
direct	4492 Oct 06 06:38	4° \mathfrak{A} 29'10		min. Earth dist.	4498 Oct 08 16:17	17° \mathfrak{Y} 40'33	8.79198 AU
evening set	4493 Jan 16 03:43	11° \mathfrak{A} 38'05		direct	4498 Dec 16 17:08	14° \mathfrak{Y} 21'09	
				evening set	4499 Mar 26 15:00	21° \mathfrak{Y} 33'23	
conjunction	4493 Feb 01 21:12	13° \mathfrak{A} 36'46	0°04'14				
minimum elong	4493 Feb 01 21:13	13° \mathfrak{A} 36'46	0°04'14	conjunction	4499 Apr 12 10:00	23° \mathfrak{Y} 34'57	-2°00'32
behind sun begin	4493 Feb 01 14:21	13° \mathfrak{A} 34'45		minimum elong	4499 Apr 12 09:58	23° \mathfrak{Y} 34'56	2°00'32
behind sun end	4493 Feb 02 04:06	13° \mathfrak{A} 38'48		max. Earth dist.	4499 Apr 12 11:30	23° \mathfrak{Y} 35'24	10.75308 AU
max. Earth dist.	4493 Feb 01 20:18	13° \mathfrak{A} 36'31	10.95732 AU	morning rise	4499 Apr 29 08:22	25° \mathfrak{Y} 37'34	
	4493 Feb 13 13:40	15° \mathfrak{A}			4499 Jun 08 23:41	0° \mathfrak{B}	
morning rise	4493 Feb 18 13:55	15° \mathfrak{A} 35'13		retrograde	4499 Aug 12 01:34	3° \mathfrak{B} 09'51	
desc. node	4493 Apr 02 17:30	20° \mathfrak{A} 03'36			4499 Oct 18 11:27	30° \mathfrak{R} \mathfrak{Y}	
retrograde	4493 May 30 10:10	22° \mathfrak{A} 40'20		opposition	4499 Oct 21 11:07	29° \mathfrak{Y} 46'19	-2°33'38
opposition	4493 Aug 08 17:35	19° \mathfrak{A} 21'33	-0°10'52	min. Earth dist.	4499 Oct 21 09:29	29° \mathfrak{Y} 46'38	8.71408 AU
min. Earth dist.	4493 Aug 08 17:30	19° \mathfrak{A} 21'34	8.96426 AU	direct	4499 Dec 28 22:57	26° \mathfrak{Y} 26'45	
direct	4493 Oct 18 10:43	16° \mathfrak{A} 01'46			4500 Mar 05 07:32	0° \mathfrak{B}	
evening set	4494 Jan 27 17:36	23° \mathfrak{A} 08'00		evening set	4500 Apr 07 23:15	3° \mathfrak{B} 43'38	
conjunction	4494 Feb 13 10:21	25° \mathfrak{A} 06'20	-0°21'54	conjunction	4500 Apr 24 20:32	5° \mathfrak{B} 46'52	-2°07'54
minimum elong	4494 Feb 13 10:20	25° \mathfrak{A} 06'20	0°21'54	minimum elong	4500 Apr 24 20:31	5° \mathfrak{B} 46'52	2°07'54
max. Earth dist.	4494 Feb 13 10:29	25° \mathfrak{A} 06'23	10.96655 AU	max. Earth dist.	4500 Apr 24 21:27	5° \mathfrak{B} 47'09	10.67043 AU
morning rise	4494 Mar 02 02:50	27° \mathfrak{A} 04'41		morning rise	4500 May 11 21:51	7° \mathfrak{B} 51'20	
	4494 Mar 28 16:58	0° \mathfrak{H}			4500 Jul 31 09:06	15° \mathfrak{B}	
retrograde	4494 Jun 11 11:51	4° \mathfrak{H} 11'30		retrograde	4500 Aug 25 04:30	15° \mathfrak{B} 30'40	
opposition	4494 Aug 21 00:36	0° \mathfrak{H} 52'16	-0°42'23		4500 Sep 19 03:56	15° \mathfrak{R} \mathfrak{B}	
min. Earth dist.	4494 Aug 21 00:01	0° \mathfrak{H} 52'23	8.96436 AU	opposition	4500 Nov 03 08:17	12° \mathfrak{B} 06'05	-2°39'26
	4494 Sep 01 21:33	30° \mathfrak{R} \mathfrak{A}		min. Earth dist.	4500 Nov 03 07:11	12° \mathfrak{B} 06'18	8.62776 AU
direct	4494 Oct 30 11:07	27° \mathfrak{A} 33'01		direct	4501 Jan 10 10:27	8° \mathfrak{B} 45'50	
	4494 Dec 25 06:04	0° \mathfrak{H}			4501 Apr 11 01:12	15° \mathfrak{B}	
evening set	4495 Feb 08 07:24	4° \mathfrak{H} 37'53		evening set	4501 Apr 20 14:25	16° \mathfrak{B} 08'10	
conjunction	4495 Feb 24 23:33	6° \mathfrak{H} 36'12	-0°47'03	conjunction	4501 May 07 14:54	18° \mathfrak{B} 13'26	-2°09'26
minimum elong	4495 Feb 24 23:32	6° \mathfrak{H} 36'11	0°47'03	minimum elong	4501 May 07 14:54	18° \mathfrak{B} 13'27	2°09'27
max. Earth dist.	4495 Feb 24 23:40	6° \mathfrak{H} 36'14	10.95731 AU	max. Earth dist.	4501 May 07 15:47	18° \mathfrak{B} 13'43	10.58124 AU
morning rise	4495 Mar 13 16:21	8° \mathfrak{H} 34'44		morning rise	4501 May 24 19:48	20° \mathfrak{B} 20'03	
retrograde	4495 Jun 23 16:18	15° \mathfrak{H} 44'33		retrograde	4501 Sep 07 14:10	28° \mathfrak{B} 06'22	
opposition	4495 Sep 02 08:03	12° \mathfrak{H} 24'44	-1°12'16	opposition	4501 Nov 16 09:33	24° \mathfrak{B} 40'46	-2°37'47
min. Earth dist.	4495 Sep 02 07:48	12° \mathfrak{H} 24'47	8.94618 AU	min. Earth dist.	4501 Nov 16 08:43	24° \mathfrak{B} 40'56	8.53655 AU
direct	4495 Nov 11 11:21	9° \mathfrak{H} 05'48		direct	4502 Jan 23 02:18	21° \mathfrak{B} 19'36	
evening set	4496 Feb 19 22:22	16° \mathfrak{H} 10'40		evening set	4502 May 03 13:09	28° \mathfrak{B} 48'04	
					4502 May 13 06:52	0° \mathfrak{I}	
conjunction	4496 Mar 07 14:17	18° \mathfrak{H} 09'15	-1°10'23				
minimum elong	4496 Mar 07 14:15	18° \mathfrak{H} 09'15	1°10'23	conjunction	4502 May 20 17:41	0° \mathfrak{I} 55'38	-2°04'46
max. Earth dist.	4496 Mar 07 13:48	18° \mathfrak{H} 09'06	10.92996 AU	minimum elong	4502 May 20 17:43	0° \mathfrak{I} 55'39	2°04'47
morning rise	4496 Mar 24 07:51	20° \mathfrak{H} 08'19		max. Earth dist.	4502 May 20 18:59	0° \mathfrak{I} 56'02	10.48894 AU
retrograde	4496 Jul 04 22:50	27° \mathfrak{H} 22'22		morning rise	4502 Jun 07 02:37	3° \mathfrak{I} 04'36	

retrograde	4502 Sep 21 04:47	10° Π 57'33		behind sun end	4508 Aug 12 07:47	22° Ω 06'38	
opposition	4502 Nov 29 14:57	7° Π 31'00	-2°28'20	max. Earth dist.	4508 Aug 12 05:18	22° Ω 05'50	10.11983 AU
min. Earth dist.	4502 Nov 29 14:02	7° Π 31'11	8.44381 AU	morning rise	4508 Aug 30 07:55	24° Ω 24'54	
direct	4503 Feb 05 00:00	4° Π 08'48			4508 Oct 19 19:07	0° \mathbb{N}	
evening set	4503 May 16 20:11	11° Π 43'55		retrograde	4508 Dec 12 22:45	2° \mathbb{N} 32'22	
					4509 Feb 06 13:20	30° \mathbb{R} Ω	
conjunction	4503 Jun 03 05:15	13° Π 53'59	-1°53'44	opposition	4509 Feb 17 23:05	29° Ω 04'30	0°37'25
minimum elong	4503 Jun 03 05:18	13° Π 54'00	1°53'45	min. Earth dist.	4509 Feb 17 22:26	29° Ω 04'38	8.11999 AU
max. Earth dist.	4503 Jun 03 06:40	13° Π 54'26	10.39712 AU	direct	4509 Apr 26 03:39	25° Ω 35'58	
morning rise	4503 Jun 20 18:28	16° Π 05'24			4509 Jul 08 09:54	0° \mathbb{N}	
retrograde	4503 Oct 05 01:02	24° Π 04'22		evening set	4509 Aug 08 22:36	3° \mathbb{N} 43'27	
opposition	4503 Dec 13 00:29	20° Π 37'02	-2°11'02				
min. Earth dist.	4503 Dec 12 23:19	20° Π 37'16	8.35374 AU	conjunction	4509 Aug 27 01:07	6° \mathbb{N} 02'22	0°45'01
direct	4504 Feb 18 03:06	17° Π 13'43		minimum elong	4509 Aug 27 01:05	6° \mathbb{N} 02'21	0°45'02
evening set	4504 May 29 11:41	24° Π 55'45		max. Earth dist.	4509 Aug 27 01:41	6° \mathbb{N} 02'33	10.12575 AU
				morning rise	4509 Sep 14 02:41	8° \mathbb{N} 21'00	
conjunction	4504 Jun 16 01:26	27° Π 08'22	-1°36'33	retrograde	4509 Dec 27 01:37	16° \mathbb{N} 25'03	
minimum elong	4504 Jun 16 01:29	27° Π 08'23	1°36'34	opposition	4510 Mar 03 20:45	12° \mathbb{N} 57'50	1°13'46
max. Earth dist.	4504 Jun 16 02:24	27° Π 08'40	10.31078 AU	min. Earth dist.	4510 Mar 03 19:56	12° \mathbb{N} 58'00	8.13757 AU
morning rise	4504 Jul 03 19:04	29° Π 22'14		direct	4510 May 10 08:39	9° \mathbb{N} 28'49	
	4504 Jul 08 21:49	0° \mathfrak{S}		evening set	4510 Aug 23 18:15	17° \mathbb{N} 37'15	
retrograde	4504 Oct 18 02:40	7° \mathfrak{S} 26'10					
opposition	4504 Dec 25 14:12	3° \mathfrak{S} 58'13	-1°46'21	conjunction	4510 Sep 10 19:13	19° \mathbb{N} 55'16	1°12'41
min. Earth dist.	4504 Dec 25 13:12	3° \mathfrak{S} 58'26	8.27196 AU	minimum elong	4510 Sep 10 19:10	19° \mathbb{N} 55'16	1°12'41
direct	4505 Mar 02 10:56	0° \mathfrak{S} 33'43		max. Earth dist.	4510 Sep 10 19:52	19° \mathbb{N} 55'29	10.15421 AU
evening set	4505 Jun 12 11:26	8° \mathfrak{S} 22'33		morning rise	4510 Sep 28 18:02	22° \mathbb{N} 12'40	
					4510 Dec 26 09:45	0° \mathfrak{L}	
conjunction	4505 Jun 30 05:43	10° \mathfrak{S} 37'32	-1°13'51	retrograde	4511 Jan 09 23:49	0° \mathfrak{L} 11'53	
minimum elong	4505 Jun 30 05:45	10° \mathfrak{S} 37'33	1°13'52		4511 Jan 24 13:45	30° \mathbb{R} \mathbb{N}	
max. Earth dist.	4505 Jun 30 06:07	10° \mathfrak{S} 37'40	10.23559 AU	opposition	4511 Mar 17 17:06	26° \mathbb{N} 45'31	1°45'35
morning rise	4505 Jul 18 03:25	12° \mathfrak{S} 53'37		min. Earth dist.	4511 Mar 17 16:29	26° \mathbb{N} 45'39	8.17698 AU
retrograde	4505 Nov 01 07:41	21° \mathfrak{S} 01'02		direct	4511 May 24 14:27	23° \mathbb{N} 16'21	
opposition	4506 Jan 08 07:26	17° \mathfrak{S} 32'44	-1°15'20		4511 Aug 27 01:46	0° \mathfrak{L}	
min. Earth dist.	4506 Jan 08 06:53	17° \mathfrak{S} 32'51	8.20392 AU	evening set	4511 Sep 07 10:34	1° \mathfrak{L} 23'50	
direct	4506 Mar 16 01:41	14° \mathfrak{S} 07'00					
evening set	4506 Jun 26 18:56	22° \mathfrak{S} 02'11		conjunction	4511 Sep 25 08:44	3° \mathfrak{L} 40'19	1°35'57
				minimum elong	4511 Sep 25 08:40	3° \mathfrak{L} 40'18	1°35'58
conjunction	4506 Jul 14 17:05	24° \mathfrak{S} 19'09	-0°46'43	max. Earth dist.	4511 Sep 25 09:05	3° \mathfrak{L} 40'26	10.20332 AU
minimum elong	4506 Jul 14 17:07	24° \mathfrak{S} 19'09	0°46'43	morning rise	4511 Oct 13 03:53	5° \mathfrak{L} 55'55	
max. Earth dist.	4506 Jul 14 16:56	24° \mathfrak{S} 19'06	10.17640 AU	retrograde	4512 Jan 23 16:24	13° \mathfrak{L} 49'13	
morning rise	4506 Aug 01 17:57	26° \mathfrak{S} 36'57		opposition	4512 Mar 30 10:58	10° \mathfrak{L} 23'52	2°11'00
	4506 Aug 30 06:21	0° Ω		min. Earth dist.	4512 Mar 30 11:03	10° \mathfrak{L} 23'51	8.23568 AU
retrograde	4506 Nov 15 12:56	4° Ω 46'08		direct	4512 Jun 06 18:59	6° \mathfrak{L} 54'50	
opposition	4507 Jan 22 03:13	1° Ω 17'44	-0°39'35	evening set	4512 Sep 20 21:35	14° \mathfrak{L} 59'35	
min. Earth dist.	4507 Jan 22 03:08	1° Ω 17'45	8.15405 AU				
	4507 Feb 07 09:28	30° \mathbb{R} \mathfrak{S}		conjunction	4512 Oct 08 16:09	17° \mathfrak{L} 14'05	1°53'35
direct	4507 Mar 29 22:49	27° \mathfrak{S} 50'53		minimum elong	4512 Oct 08 16:06	17° \mathfrak{L} 14'05	1°53'36
	4507 May 18 08:54	0° Ω		max. Earth dist.	4512 Oct 08 15:37	17° \mathfrak{L} 13'55	10.27008 AU
evening set	4507 Jul 11 08:36	5° Ω 51'32		morning rise	4512 Oct 26 07:09	19° \mathfrak{L} 27'31	
				retrograde	4513 Feb 05 03:19	27° \mathfrak{L} 14'06	
conjunction	4507 Jul 29 09:37	8° Ω 09'53	-0°16'38	opposition	4513 Apr 13 01:25	23° \mathfrak{L} 49'53	2°28'47
minimum elong	4507 Jul 29 09:38	8° Ω 09'53	0°16'38	min. Earth dist.	4513 Apr 13 01:58	23° \mathfrak{L} 49'46	8.31010 AU
max. Earth dist.	4507 Jul 29 09:27	8° Ω 09'50	10.13701 AU	direct	4513 Jun 20 20:30	20° \mathfrak{L} 21'16	
morning rise	4507 Aug 16 12:17	10° Ω 28'45		evening set	4513 Oct 05 01:21	28° \mathfrak{L} 21'41	
	4507 Sep 24 17:16	15° Ω			4513 Oct 18 04:12	0° \mathbb{M}	
retrograde	4507 Nov 29 18:17	18° Ω 37'57					
opposition	4508 Feb 05 00:51	15° Ω 09'42	-0°01'11	conjunction	4513 Oct 22 15:59	0° \mathbb{M} 33'58	2°04'48
min. Earth dist.	4508 Feb 05 00:36	15° Ω 09'45	8.12552 AU	minimum elong	4513 Oct 22 15:57	0° \mathbb{M} 33'58	2°04'49
	4508 Feb 07 00:11	15° \mathbb{R} Ω		max. Earth dist.	4513 Oct 22 14:49	0° \mathbb{M} 33'36	10.35056 AU
asc. node	4508 Feb 16 14:18	14° Ω 13'31		morning rise	4513 Nov 09 02:43	2° \mathbb{M} 45'02	
direct	4508 Apr 12 00:09	11° Ω 41'54		retrograde	4514 Feb 18 07:53	10° \mathbb{M} 24'32	
	4508 Jun 13 06:56	15° Ω		opposition	4514 Apr 26 12:06	7° \mathbb{M} 01'29	2°38'18
evening set	4508 Jul 25 02:27	19° Ω 46'43		min. Earth dist.	4514 Apr 26 12:34	7° \mathbb{M} 01'24	8.39591 AU
				direct	4514 Jul 04 18:50	3° \mathbb{M} 33'37	
conjunction	4508 Aug 12 05:00	22° Ω 05'45	0°14'39	evening set	4514 Oct 18 20:26	11° \mathbb{M} 28'22	
minimum elong	4508 Aug 12 04:59	22° Ω 05'45	0°14'39				
behind sun begin	4508 Aug 12 02:11	22° Ω 04'51		conjunction	4514 Nov 05 07:13	13° \mathbb{M} 38'20	2°09'19

minimum elong	4514 Nov 05 07:12	13° \mathbb{M} 38'20	2°09'19	minimum elong	4521 Jan 17 04:26	26° \mathfrak{Z} 53'33	0°41'58
max. Earth dist.	4514 Nov 05 06:07	13° \mathbb{M} 37'59	10.44030 AU	max. Earth dist.	4521 Jan 17 04:21	26° \mathfrak{Z} 53'32	10.92272 AU
	4514 Nov 16 05:13	15° \mathbb{M}		morning rise	4521 Feb 02 21:41	28° \mathfrak{Z} 52'38	
morning rise	4514 Nov 22 13:50	15° \mathbb{M} 47'01			4521 Feb 12 15:56	0° \approx	
retrograde	4515 Mar 03 06:17	23° \mathbb{M} 19'28		retrograde	4521 May 14 05:11	5° \approx 57'41	
opposition	4515 May 09 18:37	19° \mathbb{M} 57'34	2°39'30	opposition	4521 Jul 23 00:41	2° \approx 39'47	0°35'58
min. Earth dist.	4515 May 09 18:30	19° \mathbb{M} 57'36	8.48848 AU	min. Earth dist.	4521 Jul 23 00:35	2° \approx 39'49	8.94351 AU
direct	4515 Jul 18 12:30	16° \mathbb{M} 30'41			4521 Sep 02 14:21	30° \mathfrak{R} \mathfrak{Z}	
evening set	4515 Nov 01 06:32	24° \mathbb{M} 18'49		direct	4521 Oct 01 21:11	29° \mathfrak{Z} 19'33	
					4521 Oct 30 17:33	0° \approx	
conjunction	4515 Nov 18 13:48	26° \mathbb{M} 26'33	2°07'15	evening set	4522 Jan 12 02:25	6° \approx 30'02	
minimum elong	4515 Nov 18 13:49	26° \mathbb{M} 26'33	2°07'15				
max. Earth dist.	4515 Nov 18 13:25	26° \mathbb{M} 26'25	10.53461 AU	conjunction	4522 Jan 28 20:26	8° \approx 28'55	0°16'24
morning rise	4515 Dec 05 16:44	28° \mathbb{M} 32'59		minimum elong	4522 Jan 28 20:27	8° \approx 28'55	0°16'24
	4515 Dec 17 21:31	0° \mathfrak{Z}		max. Earth dist.	4522 Jan 28 20:06	8° \approx 28'49	10.95969 AU
retrograde	4516 Mar 15 00:38	5° \mathfrak{Z} 58'39		morning rise	4522 Feb 14 13:09	10° \approx 27'26	
opposition	4516 May 21 20:42	2° \mathfrak{Z} 37'52	2°32'51		4522 Mar 30 12:23	15° \approx	
min. Earth dist.	4516 May 21 20:35	2° \mathfrak{Z} 37'54	8.58312 AU	retrograde	4522 May 26 05:49	17° \approx 32'03	
	4516 Jun 29 15:29	30° \mathfrak{R} \mathbb{M}			4522 Jul 24 22:24	15° \mathfrak{R} \approx	
direct	4516 Jul 30 23:19	29° \mathbb{M} 12'06		opposition	4522 Aug 04 08:43	14° \approx 14'02	0°04'08
	4516 Aug 31 00:19	0° \mathfrak{Z}		min. Earth dist.	4522 Aug 04 09:23	14° \approx 13'54	8.97109 AU
evening set	4516 Nov 13 07:41	6° \mathfrak{Z} 53'09		desc. node	4522 Sep 22 00:54	11° \approx 17'51	
				direct	4522 Oct 14 01:48	10° \approx 54'31	
conjunction	4516 Nov 30 11:48	8° \mathfrak{Z} 58'48	1°59'06		4522 Dec 27 01:09	15° \approx	
minimum elong	4516 Nov 30 11:49	8° \mathfrak{Z} 58'48	1°59'06	evening set	4523 Jan 23 17:18	18° \approx 01'42	
max. Earth dist.	4516 Nov 30 11:39	8° \mathfrak{Z} 58'45	10.62874 AU				
morning rise	4516 Dec 17 11:38	11° \mathfrak{Z} 03'12		conjunction	4523 Feb 09 10:13	20° \approx 00'04	-0°09'47
retrograde	4517 Mar 27 14:11	18° \mathfrak{Z} 22'40		minimum elong	4523 Feb 09 10:12	20° \approx 00'04	0°09'47
opposition	4517 Jun 03 18:47	15° \mathfrak{Z} 02'54	2°19'08	behind sun begin	4523 Feb 09 04:27	19° \approx 58'22	
min. Earth dist.	4517 Jun 03 19:12	15° \mathfrak{Z} 02'49	8.67523 AU	behind sun end	4523 Feb 09 15:58	20° \approx 01'45	
direct	4517 Aug 13 03:15	11° \mathfrak{Z} 38'19		max. Earth dist.	4523 Feb 09 08:46	19° \approx 59'39	10.97745 AU
evening set	4517 Nov 26 00:23	19° \mathfrak{Z} 12'11		morning rise	4523 Feb 26 02:49	21° \approx 58'21	
				retrograde	4523 Jun 07 05:20	29° \approx 04'01	
conjunction	4517 Dec 13 01:36	21° \mathfrak{Z} 15'56	1°45'34	opposition	4523 Aug 16 15:56	25° \approx 45'36	-0°27'44
minimum elong	4517 Dec 13 01:38	21° \mathfrak{Z} 15'57	1°45'34	min. Earth dist.	4523 Aug 16 17:00	25° \approx 45'24	8.97874 AU
max. Earth dist.	4517 Dec 13 00:57	21° \mathfrak{Z} 15'44	10.71825 AU	direct	4523 Oct 26 04:17	22° \approx 26'36	
morning rise	4517 Dec 29 23:04	23° \mathfrak{Z} 18'35		evening set	4524 Feb 04 07:17	29° \approx 31'54	
	4518 Mar 14 18:36	0° \mathfrak{Z}			4524 Feb 08 07:28	0° \mathfrak{H}	
retrograde	4518 Apr 08 20:48	0° \mathfrak{Z} 32'44					
	4518 May 04 08:15	30° \mathfrak{R} \mathfrak{Z}		conjunction	4524 Feb 20 23:34	1° \mathfrak{H} 30'06	-0°35'25
opposition	4518 Jun 16 13:00	27° \mathfrak{Z} 13'47	1°59'24	minimum elong	4524 Feb 20 23:32	1° \mathfrak{H} 30'06	0°35'26
min. Earth dist.	4518 Jun 16 13:54	27° \mathfrak{Z} 13'37	8.76072 AU	max. Earth dist.	4524 Feb 20 22:08	1° \mathfrak{H} 29'41	10.97469 AU
direct	4518 Aug 26 04:12	23° \mathfrak{Z} 50'24		morning rise	4524 Mar 08 16:13	3° \mathfrak{H} 28'26	
	4518 Nov 27 06:58	0° \mathfrak{Z}		retrograde	4524 Jun 18 09:00	10° \mathfrak{H} 36'38	
evening set	4518 Dec 08 09:25	1° \mathfrak{Z} 17'20		opposition	4524 Aug 27 23:11	7° \mathfrak{H} 17'35	-0°58'30
				min. Earth dist.	4524 Aug 27 23:51	7° \mathfrak{H} 17'28	8.96590 AU
conjunction	4518 Dec 25 08:13	3° \mathfrak{Z} 19'26	1°27'33	direct	4524 Nov 06 06:55	3° \mathfrak{H} 58'55	
minimum elong	4518 Dec 25 08:15	3° \mathfrak{Z} 19'27	1°27'34	evening set	4525 Feb 14 21:48	11° \mathfrak{H} 03'41	
max. Earth dist.	4518 Dec 25 06:59	3° \mathfrak{Z} 19'04	10.79932 AU				
morning rise	4519 Jan 11 03:56	5° \mathfrak{Z} 20'37		conjunction	4525 Mar 03 13:51	13° \mathfrak{H} 02'05	-0°59'43
retrograde	4519 Apr 21 01:35	12° \mathfrak{Z} 30'30		minimum elong	4525 Mar 03 13:49	13° \mathfrak{H} 02'04	0°59'43
opposition	4519 Jun 29 03:37	9° \mathfrak{Z} 12'09	1°34'49	max. Earth dist.	4525 Mar 03 13:08	13° \mathfrak{H} 01'52	10.95178 AU
min. Earth dist.	4519 Jun 29 04:11	9° \mathfrak{Z} 12'02	8.83599 AU	morning rise	4525 Mar 20 06:51	15° \mathfrak{H} 00'49	
direct	4519 Sep 07 23:20	5° \mathfrak{Z} 49'56		retrograde	4525 Jun 30 15:31	22° \mathfrak{H} 12'49	
evening set	4519 Dec 20 11:47	13° \mathfrak{Z} 10'28		opposition	4525 Sep 09 07:44	18° \mathfrak{H} 52'55	-1°27'04
				min. Earth dist.	4525 Sep 09 07:48	18° \mathfrak{H} 52'55	8.93367 AU
conjunction	4520 Jan 06 08:44	15° \mathfrak{Z} 11'14	1°06'01	direct	4525 Nov 18 06:33	15° \mathfrak{H} 34'22	
minimum elong	4520 Jan 06 08:46	15° \mathfrak{Z} 11'14	1°06'02	evening set	4526 Feb 26 14:09	22° \mathfrak{H} 39'52	
max. Earth dist.	4520 Jan 06 07:59	15° \mathfrak{Z} 11'00	10.86849 AU				
morning rise	4520 Jan 23 03:06	17° \mathfrak{Z} 11'13		conjunction	4526 Mar 15 06:17	24° \mathfrak{H} 38'46	-1°21'44
retrograde	4520 May 02 04:07	24° \mathfrak{Z} 18'02		minimum elong	4526 Mar 15 06:15	24° \mathfrak{H} 38'45	1°21'43
opposition	4520 Jul 10 15:16	21° \mathfrak{Z} 00'01	1°06'35	max. Earth dist.	4526 Mar 15 05:29	24° \mathfrak{H} 38'32	10.91026 AU
min. Earth dist.	4520 Jul 10 15:11	21° \mathfrak{Z} 00'02	8.89779 AU	morning rise	4526 Apr 01 00:12	26° \mathfrak{H} 38'15	
direct	4520 Sep 19 12:06	17° \mathfrak{Z} 38'53			4526 May 01 18:12	0° \mathfrak{Y}	
evening set	4520 Dec 31 09:00	24° \mathfrak{Z} 53'52		retrograde	4526 Jul 13 01:01	3° \mathfrak{Y} 55'11	
				opposition	4526 Sep 21 18:07	0° \mathfrak{Y} 34'15	-1°52'19
conjunction	4521 Jan 17 04:24	26° \mathfrak{Z} 53'32	0°41'58	min. Earth dist.	4526 Sep 21 18:28	0° \mathfrak{Y} 34'11	8.88383 AU

	4526 Sep 29 09:55	30° RH	direct	4533 Feb 11 11:05	11° II 25'36
direct	4526 Nov 30 07:32	27° H 15'31	evening set	4533 May 23 13:27	19° II 05'14
	4527 Jan 27 19:53	0° Y			
evening set	4527 Mar 10 09:47	4° Y 23'03	conjunction	4533 Jun 10 01:01	21° II 16'55 -1°45'13
			minimum elong	4533 Jun 10 01:04	21° II 16'56 1°45'14
conjunction	4527 Mar 27 02:31	6° Y 22'48 -1°40'32	max. Earth dist.	4533 Jun 10 01:51	21° II 17'11 10.32824 AU
minimum elong	4527 Mar 27 02:28	6° Y 22'47 1°40'31	morning rise	4533 Jun 27 16:52	23° II 29'58
max. Earth dist.	4527 Mar 27 01:12	6° Y 22'25 10.85218 AU		4533 Aug 30 07:10	0° E
morning rise	4527 Apr 12 21:56	8° Y 23'21	retrograde	4533 Oct 11 23:58	1° E 32'34
retrograde	4527 Jul 25 15:07	15° Y 46'07		4533 Nov 24 05:23	30° RII
opposition	4527 Oct 04 06:48	12° Y 24'03 -2°13'11	opposition	4533 Dec 19 17:52	28° II 04'12 -1°58'39
min. Earth dist.	4527 Oct 04 07:29	12° Y 23'55 8.81860 AU	min. Earth dist.	4533 Dec 19 17:04	28° II 04'22 8.28807 AU
direct	4527 Dec 12 10:30	9° Y 04'54	direct	4534 Feb 24 17:32	24° II 39'36
evening set	4528 Mar 21 09:43	16° Y 15'39		4534 May 17 03:07	0° E
			evening set	4534 Jun 06 09:43	2° E 26'05
conjunction	4528 Apr 07 03:47	18° Y 16'37 -1°55'16			
minimum elong	4528 Apr 07 03:45	18° Y 16'36 1°55'16	conjunction	4534 Jun 24 02:05	4° E 40'15 -1°24'56
max. Earth dist.	4528 Apr 07 02:54	18° Y 16'21 10.77999 AU	minimum elong	4534 Jun 24 02:08	4° E 40'16 1°24'56
morning rise	4528 Apr 24 01:09	20° Y 18'35	max. Earth dist.	4534 Jun 24 03:39	4° E 40'45 10.24969 AU
retrograde	4528 Aug 06 09:16	27° Y 47'58	morning rise	4534 Jul 11 22:07	6° E 55'36
opposition	4528 Oct 15 22:41	24° Y 24'38 -2°28'37	retrograde	4534 Oct 26 03:37	15° E 02'21
min. Earth dist.	4528 Oct 15 22:59	24° Y 24'34 8.74065 AU	opposition	4535 Jan 02 09:50	11° E 33'36 -1°30'20
direct	4528 Dec 23 16:46	21° Y 04'55	min. Earth dist.	4535 Jan 02 08:25	11° E 33'54 8.21599 AU
evening set	4529 Apr 02 14:57	28° Y 19'55	direct	4535 Mar 10 05:56	8° E 07'55
	4529 Apr 16 09:37	0° E	evening set	4535 Jun 20 13:59	16° E 00'57
conjunction	4529 Apr 19 11:11	0° E 22'28 -2°05'09	conjunction	4535 Jul 08 10:38	18° E 17'16 -0°59'38
minimum elong	4529 Apr 19 11:10	0° E 22'28 2°05'09	minimum elong	4535 Jul 08 10:40	18° E 17'17 0°59'38
max. Earth dist.	4529 Apr 19 11:39	0° E 22'36 10.69663 AU	max. Earth dist.	4535 Jul 08 12:43	18° E 17'56 10.18572 AU
morning rise	4529 May 06 11:02	2° E 26'09	morning rise	4535 Jul 26 10:07	20° E 34'32
retrograde	4529 Aug 19 10:31	10° E 02'40	retrograde	4535 Nov 09 09:13	28° E 43'53
opposition	4529 Oct 28 18:12	6° E 38'04 -2°37'41	opposition	4536 Jan 16 04:53	25° E 15'03 -0°56'27
min. Earth dist.	4529 Oct 28 17:28	6° E 38'12 8.65315 AU	min. Earth dist.	4536 Jan 16 03:00	25° E 15'26 8.16064 AU
direct	4530 Jan 05 02:39	3° E 17'37	direct	4536 Mar 23 00:02	21° E 48'23
evening set	4530 Apr 15 02:56	10° E 37'49	evening set	4536 Jul 04 01:18	29° E 47'15
				4536 Jul 05 17:42	0° E
conjunction	4530 May 02 02:02	12° E 42'18 -2°09'29	conjunction	4536 Jul 22 01:18	2° E 05'15 -0°30'38
minimum elong	4530 May 02 02:02	12° E 42'18 2°09'29	minimum elong	4536 Jul 22 01:19	2° E 05'15 0°30'39
max. Earth dist.	4530 May 02 02:54	12° E 42'34 10.60561 AU	max. Earth dist.	4536 Jul 22 03:28	2° E 05'57 10.14039 AU
morning rise	4530 May 19 05:07	14° E 48'04	morning rise	4536 Aug 09 03:13	4° E 23'52
	4530 May 20 20:50	15° E	retrograde	4536 Nov 22 16:24	12° E 34'03
retrograde	4530 Sep 01 18:49	22° E 31'46	opposition	4537 Jan 29 02:14	9° E 05'26 -0°18'54
opposition	4530 Nov 10 17:36	19° E 06'00 -2°39'35	min. Earth dist.	4537 Jan 29 00:24	9° E 05'49 8.12567 AU
min. Earth dist.	4530 Nov 10 16:33	19° E 06'12 8.55978 AU	direct	4537 Apr 05 22:18	5° E 37'56
direct	4531 Jan 17 14:49	15° E 44'38	evening set	4537 Jul 18 18:05	13° E 41'36
evening set	4531 Apr 27 22:22	23° E 10'52		4537 Jul 29 00:03	15° E
conjunction	4531 May 15 01:00	25° E 17'34 -2°07'44	asc. node	4537 Aug 01 12:34	15° E 27'12
minimum elong	4531 May 15 01:01	25° E 17'34 2°07'45			
max. Earth dist.	4531 May 15 01:31	25° E 17'44 10.51090 AU	conjunction	4537 Aug 05 20:08	16° E 00'35 0°00'22
morning rise	4531 Jun 01 08:01	27° E 25'39	minimum elong	4537 Aug 05 20:09	16° E 00'35 0°00'23
	4531 Jun 23 08:45	0° II	behind sun begin	4537 Aug 05 12:50	15° E 58'15
retrograde	4531 Sep 15 07:11	5° II 16'21	behind sun end	4537 Aug 06 03:29	16° E 02'55
opposition	4531 Nov 23 21:27	1° II 49'32 -2°33'47	max. Earth dist.	4537 Aug 05 21:46	16° E 01'02 10.11663 AU
min. Earth dist.	4531 Nov 23 20:36	1° II 49'42 8.46469 AU	morning rise	4537 Aug 23 23:08	18° E 19'51
	4531 Dec 18 09:54	30° RE	retrograde	4537 Dec 06 23:23	26° E 29'01
direct	4532 Jan 30 09:45	28° E 27'09	opposition	4538 Feb 12 00:54	23° E 00'56 0°19'58
	4532 Mar 12 09:42	0° II	min. Earth dist.	4538 Feb 11 23:38	23° E 01'11 8.11338 AU
evening set	4532 May 10 01:40	5° II 59'56	direct	4538 Apr 20 00:30	19° E 32'47
			evening set	4538 Aug 02 14:15	27° E 39'51
conjunction	4532 May 27 08:29	8° II 09'05 -1°59'38			
minimum elong	4532 May 27 08:31	8° II 09'06 1°59'39	conjunction	4538 Aug 20 16:50	29° E 59'01 0°31'25
max. Earth dist.	4532 May 27 08:47	8° II 09'10 10.41687 AU	minimum elong	4538 Aug 20 16:49	29° E 59'01 0°31'26
morning rise	4532 Jun 13 19:53	10° II 19'38		4538 Aug 20 19:52	0° E
retrograde	4532 Sep 28 00:48	18° II 16'46	max. Earth dist.	4538 Aug 20 17:53	29° E 59'22 10.11597 AU
opposition	4532 Dec 06 05:40	14° II 49'05 -2°20'04	morning rise	4538 Sep 07 19:15	2° E 18'08
min. Earth dist.	4532 Dec 06 05:07	14° II 49'11 8.37252 AU	retrograde	4538 Dec 21 04:08	10° E 24'31

opposition	4539 Feb 25 23:38	6° \mathring{M} 57'12	0°57'41	retrograde	4545 Mar 09 20:19	0° \mathring{A} 41'00	
min. Earth dist.	4539 Feb 25 22:43	6° \mathring{M} 57'23	8.12460 AU		4545 Apr 06 22:04	30° \mathring{R} \mathring{M}	
direct	4539 May 04 06:21	3° \mathring{M} 28'38		opposition	4545 May 16 11:42	27° \mathring{M} 20'07	2°36'28
evening set	4539 Aug 17 11:06	11° \mathring{M} 37'24		min. Earth dist.	4545 May 16 13:32	27° \mathring{M} 19'46	8.54147 AU
				direct	4545 Jul 25 09:18	23° \mathring{M} 54'06	
conjunction	4539 Sep 04 12:45	13° \mathring{M} 55'58	1°00'34		4545 Oct 25 00:50	0° \mathring{A}	
minimum elong	4539 Sep 04 12:42	13° \mathring{M} 55'57	1°00'35	evening set	4545 Nov 08 00:11	1° \mathring{A} 38'52	
max. Earth dist.	4539 Sep 04 13:30	13° \mathring{M} 56'13	10.13852 AU				
morning rise	4539 Sep 22 13:06	16° \mathring{M} 14'07		conjunction	4545 Nov 25 05:34	3° \mathring{A} 45'30	2°03'13
retrograde	4540 Jan 04 03:36	24° \mathring{M} 16'09		minimum elong	4545 Nov 25 05:35	3° \mathring{A} 45'30	2°03'13
opposition	4540 Mar 10 21:22	20° \mathring{M} 49'46	1°31'49	max. Earth dist.	4545 Nov 25 02:52	3° \mathring{A} 44'40	10.58507 AU
min. Earth dist.	4540 Mar 10 20:27	20° \mathring{M} 49'57	8.15857 AU	morning rise	4545 Dec 12 06:55	5° \mathring{A} 50'54	
direct	4540 May 17 14:04	17° \mathring{M} 21'03		retrograde	4546 Mar 22 11:35	13° \mathring{A} 13'34	
evening set	4540 Aug 31 05:51	25° \mathring{M} 29'34		opposition	4546 May 29 12:17	9° \mathring{A} 53'34	2°25'46
				min. Earth dist.	4546 May 29 13:42	9° \mathring{A} 53'17	8.63033 AU
conjunction	4540 Sep 18 05:20	27° \mathring{M} 46'51	1°26'01	direct	4546 Aug 07 18:26	6° \mathring{A} 28'33	
minimum elong	4540 Sep 18 05:17	27° \mathring{M} 46'50	1°26'02	evening set	4546 Nov 20 21:07	14° \mathring{A} 06'13	
max. Earth dist.	4540 Sep 18 05:59	27° \mathring{M} 47'03	10.18270 AU				
	4540 Oct 05 15:42	0° \mathring{A}		conjunction	4546 Dec 07 23:39	16° \mathring{A} 10'55	1°51'56
morning rise	4540 Oct 06 02:25	0° \mathring{A} 03'22		minimum elong	4546 Dec 07 23:41	16° \mathring{A} 10'56	1°51'56
retrograde	4541 Jan 16 22:46	7° \mathring{A} 59'46		max. Earth dist.	4546 Dec 07 21:36	16° \mathring{A} 10'18	10.67221 AU
opposition	4541 Mar 24 16:56	4° \mathring{A} 34'25	2°00'19	morning rise	4546 Dec 24 22:17	18° \mathring{A} 14'29	
min. Earth dist.	4541 Mar 24 15:47	4° \mathring{A} 34'39	8.21272 AU	retrograde	4547 Apr 03 22:00	25° \mathring{A} 31'33	
direct	4541 May 31 20:03	1° \mathring{A} 05'48		opposition	4547 Jun 11 08:51	22° \mathring{A} 12'14	2°08'31
evening set	4541 Sep 14 20:14	9° \mathring{A} 12'10		min. Earth dist.	4547 Jun 11 09:48	22° \mathring{A} 12'03	8.71427 AU
				direct	4547 Aug 20 22:12	18° \mathring{A} 48'14	
conjunction	4541 Oct 02 16:32	11° \mathring{A} 27'36	1°46'18	evening set	4547 Dec 03 10:06	26° \mathring{A} 18'52	
minimum elong	4541 Oct 02 16:29	11° \mathring{A} 27'35	1°46'19				
max. Earth dist.	4541 Oct 02 17:12	11° \mathring{A} 27'49	10.24517 AU	conjunction	4547 Dec 20 10:13	28° \mathring{A} 21'52	1°35'45
morning rise	4541 Oct 20 09:28	13° \mathring{A} 42'01		minimum elong	4547 Dec 20 10:16	28° \mathring{A} 21'53	1°35'45
retrograde	4542 Jan 30 13:26	21° \mathring{A} 31'50		max. Earth dist.	4547 Dec 20 08:52	28° \mathring{A} 21'28	10.75263 AU
opposition	4542 Apr 07 09:21	18° \mathring{A} 07'35	2°21'37		4548 Jan 02 22:43	0° \mathring{B}	
min. Earth dist.	4542 Apr 07 08:32	18° \mathring{A} 07'44	8.28292 AU	morning rise	4548 Jan 06 06:41	0° \mathring{B} 23'51	
direct	4542 Jun 14 22:53	14° \mathring{A} 39'17		retrograde	4548 Apr 15 05:37	7° \mathring{B} 36'12	
evening set	4542 Sep 29 03:54	22° \mathring{A} 41'51		opposition	4548 Jun 23 01:32	4° \mathring{B} 17'23	1°45'53
				min. Earth dist.	4548 Jun 23 02:39	4° \mathring{B} 17'10	8.78970 AU
conjunction	4542 Oct 16 20:27	24° \mathring{A} 55'08	2°00'27	direct	4548 Sep 01 19:06	0° \mathring{B} 54'23	
minimum elong	4542 Oct 16 20:25	24° \mathring{A} 55'07	2°00'28	evening set	4548 Dec 14 16:03	8° \mathring{B} 18'24	
max. Earth dist.	4542 Oct 16 20:38	24° \mathring{A} 55'11	10.32126 AU				
morning rise	4542 Nov 03 08:58	27° \mathring{A} 07'13		conjunction	4548 Dec 31 14:00	10° \mathring{B} 19'58	1°15'36
	4542 Nov 27 18:07	0° \mathring{M}		minimum elong	4548 Dec 31 14:03	10° \mathring{B} 19'58	1°15'37
retrograde	4543 Feb 12 22:42	4° \mathring{M} 50'01		max. Earth dist.	4548 Dec 31 12:33	10° \mathring{B} 19'31	10.82288 AU
opposition	4543 Apr 20 22:13	1° \mathring{M} 26'54	2°34'51	morning rise	4549 Jan 17 08:56	12° \mathring{B} 20'39	
min. Earth dist.	4543 Apr 20 22:23	1° \mathring{M} 26'52	8.36408 AU	retrograde	4549 Apr 27 08:43	19° \mathring{B} 29'24	
	4543 May 09 16:40	30° \mathring{R} \mathring{A}		opposition	4549 Jul 05 15:11	16° \mathring{B} 10'53	1°19'03
direct	4543 Jun 28 22:04	27° \mathring{A} 59'11		min. Earth dist.	4549 Jul 05 16:50	16° \mathring{B} 10'34	8.85358 AU
	4543 Aug 17 07:55	0° \mathring{M}		direct	4549 Sep 14 10:40	12° \mathring{B} 48'48	
evening set	4543 Oct 13 03:21	5° \mathring{M} 56'39		evening set	4549 Dec 26 15:57	20° \mathring{B} 06'55	
conjunction	4543 Oct 30 15:58	8° \mathring{M} 07'40	2°07'57	conjunction	4550 Jan 12 12:01	22° \mathring{B} 07'16	0°52'29
minimum elong	4543 Oct 30 15:57	8° \mathring{M} 07'40	2°07'57	minimum elong	4550 Jan 12 12:03	22° \mathring{B} 07'17	0°52'30
max. Earth dist.	4543 Oct 30 15:04	8° \mathring{M} 07'23	10.40590 AU	max. Earth dist.	4550 Jan 12 10:04	22° \mathring{B} 06'41	10.88023 AU
morning rise	4543 Nov 17 00:16	10° \mathring{M} 17'24		morning rise	4550 Jan 29 05:57	24° \mathring{B} 07'00	
	4543 Dec 29 17:08	15° \mathring{M}			4550 Mar 31 22:31	0° \mathring{A}	
retrograde	4544 Feb 26 00:12	17° \mathring{M} 53'11		retrograde	4550 May 09 09:20	1° \mathring{A} 13'26	
	4544 Apr 27 04:47	15° \mathring{R} \mathring{M}			4550 Jun 17 21:50	30° \mathring{R} \mathring{B}	
opposition	4544 May 03 07:04	14° \mathring{M} 31'14	2°39'43	opposition	4550 Jul 18 02:09	27° \mathring{B} 54'59	0°49'16
min. Earth dist.	4544 May 03 08:21	14° \mathring{M} 30'59	8.45150 AU	min. Earth dist.	4550 Jul 18 03:29	27° \mathring{B} 54'44	8.90345 AU
direct	4544 Jul 11 18:23	11° \mathring{M} 04'18		direct	4550 Sep 26 23:17	24° \mathring{B} 33'44	
	4544 Sep 20 21:49	15° \mathring{M}			4550 Dec 22 18:39	0° \mathring{A}	
evening set	4544 Oct 25 18:15	18° \mathring{M} 55'46		evening set	4551 Jan 07 11:16	1° \mathring{A} 46'56	
conjunction	4544 Nov 12 03:04	21° \mathring{M} 04'32	2°08'46	conjunction	4551 Jan 24 05:57	3° \mathring{A} 46'23	0°27'24
minimum elong	4544 Nov 12 03:04	21° \mathring{M} 04'32	2°08'45	minimum elong	4551 Jan 24 05:58	3° \mathring{A} 46'23	0°27'25
max. Earth dist.	4544 Nov 12 00:57	21° \mathring{M} 03'52	10.49503 AU	max. Earth dist.	4551 Jan 24 04:33	3° \mathring{A} 45'58	10.92248 AU
morning rise	4544 Nov 29 07:38	23° \mathring{M} 12'01		morning rise	4551 Feb 09 23:09	5° \mathring{A} 45'23	
	4545 Feb 10 03:43	0° \mathring{A}		retrograde	4551 May 21 10:33	12° \mathring{A} 50'51	

opposition	4551 Jul 30 10:58	9° \approx 32'17	0°17'45	retrograde	4557 Aug 01 08:18	22° Υ 55'29	
min. Earth dist.	4551 Jul 30 11:22	9° \approx 32'12	8.93742 AU	opposition	4557 Oct 10 22:17	19° Υ 32'49	-2°22'42
direct	4551 Oct 09 06:42	6° \approx 11'48		min. Earth dist.	4557 Oct 10 20:29	19° Υ 33'09	8.77945 AU
evening set	4552 Jan 19 03:28	13° \approx 21'11		direct	4557 Dec 18 19:24	16° Υ 13'35	
	4552 Feb 02 01:59	15° \approx		evening set	4558 Mar 28 18:52	23° Υ 26'32	
conjunction	4552 Feb 04 21:06	15° \approx 20'01	0°01'24	conjunction	4558 Apr 14 13:56	25° Υ 28'17	-2°01'31
minimum elong	4552 Feb 04 21:07	15° \approx 20'01	0°01'24	minimum elong	4558 Apr 14 13:55	25° Υ 28'16	2°01'31
behind sun begin	4552 Feb 04 14:07	15° \approx 17'57		max. Earth dist.	4558 Apr 14 15:04	25° Υ 28'37	10.74095 AU
behind sun end	4552 Feb 05 04:06	15° \approx 22'04		morning rise	4558 May 01 12:38	27° Υ 31'07	
max. Earth dist.	4552 Feb 04 20:50	15° \approx 19'57	10.94796 AU		4558 May 23 05:58	0° \mathcal{B}	
morning rise	4552 Feb 21 13:48	17° \approx 18'37		retrograde	4558 Aug 14 06:29	5° \mathcal{B} 04'14	
desc. node	4552 Feb 24 07:06	17° \approx 37'35		opposition	4558 Oct 23 16:11	1° \mathcal{B} 40'32	-2°34'29
retrograde	4552 Jun 01 11:33	24° \approx 24'30		min. Earth dist.	4558 Oct 23 14:49	1° \mathcal{B} 40'48	8.70250 AU
opposition	4552 Aug 10 18:47	21° \approx 05'37	-0°14'18		4558 Nov 15 15:19	30° $\mathcal{R}\Upsilon$	
min. Earth dist.	4552 Aug 10 18:32	21° \approx 05'40	8.95409 AU	direct	4558 Dec 31 03:39	28° Υ 20'49	
direct	4552 Oct 20 10:19	17° \approx 45'48			4559 Feb 13 06:29	0° \mathcal{B}	
evening set	4553 Jan 29 18:02	24° \approx 52'36		evening set	4559 Apr 10 03:50	5° \mathcal{B} 38'21	
conjunction	4553 Feb 15 10:45	26° \approx 51'06	-0°24'41	conjunction	4559 Apr 27 01:22	7° \mathcal{B} 41'48	-2°08'13
minimum elong	4553 Feb 15 10:44	26° \approx 51'06	0°24'41	minimum elong	4559 Apr 27 01:22	7° \mathcal{B} 41'48	2°08'14
max. Earth dist.	4553 Feb 15 10:38	26° \approx 51'04	10.95563 AU	max. Earth dist.	4559 Apr 27 02:37	7° \mathcal{B} 42'11	10.65955 AU
morning rise	4553 Mar 04 03:20	28° \approx 49'36		morning rise	4559 May 14 03:02	9° \mathcal{B} 46'30	
	4553 Mar 14 09:10	0° \mathcal{H}			4559 Jul 02 21:51	15° \mathcal{B}	
retrograde	4553 Jun 13 14:48	5° \mathcal{H} 57'16		retrograde	4559 Aug 27 10:36	17° \mathcal{B} 26'31	
opposition	4553 Aug 23 02:27	2° \mathcal{H} 37'56	-0°45'44		4559 Oct 23 19:49	15° $\mathcal{R}\mathcal{B}$	
min. Earth dist.	4553 Aug 23 02:24	2° \mathcal{H} 37'57	8.95287 AU	opposition	4559 Nov 05 13:41	14° \mathcal{B} 01'48	-2°39'26
	4553 Oct 03 00:57	30° $\mathcal{R}\approx$		min. Earth dist.	4559 Nov 05 12:23	14° \mathcal{B} 02'03	8.61770 AU
direct	4553 Nov 01 12:10	29° \approx 18'36		direct	4560 Jan 12 15:11	10° \mathcal{B} 41'25	
	4553 Nov 30 11:54	0° \mathcal{H}			4560 Mar 25 22:30	15° \mathcal{B}	
evening set	4554 Feb 10 08:28	6° \mathcal{H} 24'07		evening set	4560 Apr 21 19:39	18° \mathcal{B} 04'21	
conjunction	4554 Feb 27 00:33	8° \mathcal{H} 22'35	-0°49'41	conjunction	4560 May 08 20:32	20° \mathcal{B} 09'49	-2°09'04
minimum elong	4554 Feb 27 00:32	8° \mathcal{H} 22'35	0°49'42	minimum elong	4560 May 08 20:33	20° \mathcal{B} 09'49	2°09'05
max. Earth dist.	4554 Feb 27 00:02	8° \mathcal{H} 22'26	10.94531 AU	max. Earth dist.	4560 May 08 22:37	20° \mathcal{B} 10'28	10.57213 AU
morning rise	4554 Mar 15 17:32	10° \mathcal{H} 21'19		morning rise	4560 May 26 01:40	22° \mathcal{B} 16'37	
retrograde	4554 Jun 25 18:06	17° \mathcal{H} 32'03			4560 Aug 31 13:12	0° \mathcal{I}	
opposition	4554 Sep 04 10:38	14° \mathcal{H} 12'04	-1°15'23	retrograde	4560 Sep 08 19:57	0° \mathcal{I} 03'30	
min. Earth dist.	4554 Sep 04 10:41	14° \mathcal{H} 12'04	8.93385 AU		4560 Sep 17 03:32	30° $\mathcal{R}\mathcal{B}$	
direct	4554 Nov 13 12:15	10° \mathcal{H} 53'02		opposition	4560 Nov 17 15:17	26° \mathcal{B} 37'47	-2°36'54
evening set	4555 Feb 21 23:58	17° \mathcal{H} 58'36		min. Earth dist.	4560 Nov 17 13:29	26° \mathcal{B} 38'08	8.52861 AU
conjunction	4555 Mar 10 16:00	19° \mathcal{H} 57'22	-1°12'46	direct	4561 Jan 24 08:01	23° \mathcal{B} 16'32	
minimum elong	4555 Mar 10 15:58	19° \mathcal{H} 57'21	1°12'47		4561 Apr 28 12:30	0° \mathcal{I}	
max. Earth dist.	4555 Mar 10 15:54	19° \mathcal{H} 57'20	10.91732 AU	evening set	4561 May 04 18:57	0° \mathcal{I} 45'28	
morning rise	4555 Mar 27 09:40	21° \mathcal{H} 56'37		conjunction	4561 May 21 23:52	2° \mathcal{I} 53'13	-2°03'41
retrograde	4555 Jul 08 01:39	29° \mathcal{H} 11'39		minimum elong	4561 May 21 23:54	2° \mathcal{I} 53'14	2°03'41
opposition	4555 Sep 16 20:08	25° \mathcal{H} 50'52	-1°42'09	max. Earth dist.	4561 May 22 02:26	2° \mathcal{I} 54'01	10.48235 AU
min. Earth dist.	4555 Sep 16 19:30	25° \mathcal{H} 50'59	8.89757 AU	morning rise	4561 Jun 08 09:01	5° \mathcal{I} 02'20	
direct	4555 Nov 25 14:38	22° \mathcal{H} 31'57		retrograde	4561 Sep 22 11:26	12° \mathcal{I} 55'39	
evening set	4556 Mar 04 18:01	29° \mathcal{H} 38'48		opposition	4561 Nov 30 20:58	9° \mathcal{I} 29'00	-2°26'34
	4556 Mar 07 17:54	0° Υ		min. Earth dist.	4561 Nov 30 18:56	9° \mathcal{I} 29'24	8.43879 AU
conjunction	4556 Mar 21 10:32	1° Υ 38'14	-1°33'01	direct	4562 Feb 06 05:48	6° \mathcal{I} 06'44	
minimum elong	4556 Mar 21 10:30	1° Υ 38'13	1°33'01	evening set	4562 May 18 02:33	13° \mathcal{I} 42'06	
max. Earth dist.	4556 Mar 21 11:42	1° Υ 38'35	10.87257 AU	conjunction	4562 Jun 04 11:55	15° \mathcal{I} 52'19	-1°51'58
morning rise	4556 Apr 07 05:10	3° Υ 38'20		minimum elong	4562 Jun 04 11:58	15° \mathcal{I} 52'19	1°51'58
retrograde	4556 Jul 19 15:31	10° Υ 58'39		max. Earth dist.	4562 Jun 04 13:48	15° \mathcal{I} 52'54	10.39376 AU
opposition	4556 Sep 28 07:43	7° Υ 36'58	-2°04'56	morning rise	4562 Jun 22 01:30	18° \mathcal{I} 03'52	
min. Earth dist.	4556 Sep 28 06:09	7° Υ 37'15	8.84537 AU	retrograde	4562 Oct 06 08:40	26° \mathcal{I} 02'50	
direct	4556 Dec 06 16:38	4° Υ 18'01		opposition	4562 Dec 14 06:35	22° \mathcal{I} 35'27	-2°08'27
evening set	4557 Mar 16 15:59	11° Υ 27'20		min. Earth dist.	4562 Dec 14 05:04	22° \mathcal{I} 35'45	8.35195 AU
conjunction	4557 Apr 02 09:27	13° Υ 27'45	-1°49'32	direct	4563 Feb 19 08:01	19° \mathcal{I} 12'04	
minimum elong	4557 Apr 02 09:25	13° Υ 27'44	1°49'32	evening set	4563 May 31 18:25	26° \mathcal{I} 54'11	
max. Earth dist.	4557 Apr 02 10:58	13° Υ 28'12	10.81294 AU	conjunction	4563 Jun 18 08:24	29° \mathcal{I} 06'52	-1°34'11
morning rise	4557 Apr 19 05:43	15° Υ 29'03		minimum elong	4563 Jun 18 08:27	29° \mathcal{I} 06'53	1°34'11

max. Earth dist.	4563 Jun 18 09:04	29° Π 07'05	10.31049 AU	min. Earth dist.	4569 Mar 05 00:29	14° Π 51'53	8.14635 AU
	4563 Jun 25 08:21	0° \mathfrak{D}		direct	4569 May 11 13:34	11° Π 22'53	
morning rise	4563 Jul 06 02:24	1° \mathfrak{D} 20'50		evening set	4569 Aug 24 23:38	19° Π 30'52	
retrograde	4563 Oct 20 09:52	9° \mathfrak{D} 24'30					
opposition	4563 Dec 27 20:15	5° \mathfrak{D} 56'35	-1°43'05	conjunction	4569 Sep 12 00:15	21° Π 48'40	1°15'11
min. Earth dist.	4563 Dec 27 19:32	5° \mathfrak{D} 56'43	8.27295 AU	minimum elong	4569 Sep 12 00:12	21° Π 48'39	1°15'11
direct	4564 Mar 03 16:53	2° \mathfrak{D} 32'01		max. Earth dist.	4569 Sep 12 00:15	21° Π 48'40	10.16319 AU
evening set	4564 Jun 13 18:13	10° \mathfrak{D} 20'50		morning rise	4569 Sep 29 22:48	24° Π 05'51	
					4569 Nov 23 16:07	0° \mathfrak{D}	
conjunction	4564 Jul 01 12:42	12° \mathfrak{D} 35'50	-1°11'00	retrograde	4570 Jan 11 03:14	2° \mathfrak{D} 04'20	
minimum elong	4564 Jul 01 12:44	12° \mathfrak{D} 35'51	1°11'00		4570 Mar 01 15:31	30° \mathfrak{R} Π	
max. Earth dist.	4564 Jul 01 12:53	12° \mathfrak{D} 35'53	10.23783 AU	opposition	4570 Mar 18 20:49	28° Π 38'09	1°48'20
morning rise	4564 Jul 19 10:41	14° \mathfrak{D} 51'55		min. Earth dist.	4570 Mar 18 21:03	28° Π 38'06	8.18612 AU
retrograde	4564 Nov 02 12:46	22° \mathfrak{D} 58'56		direct	4570 May 25 18:44	25° Π 09'03	
opposition	4565 Jan 09 13:17	19° \mathfrak{D} 30'42	-1°11'34		4570 Aug 12 01:11	0° \mathfrak{D}	
min. Earth dist.	4565 Jan 09 12:58	19° \mathfrak{D} 30'46	8.20725 AU	evening set	4570 Sep 08 15:24	3° \mathfrak{D} 16'05	
direct	4565 Mar 17 09:03	16° \mathfrak{D} 04'58					
evening set	4565 Jun 28 01:37	23° \mathfrak{D} 59'59		conjunction	4570 Sep 26 13:08	5° \mathfrak{D} 32'21	1°37'53
				minimum elong	4570 Sep 26 13:05	5° \mathfrak{D} 32'20	1°37'54
conjunction	4565 Jul 16 00:01	26° \mathfrak{D} 16'55	-0°43'32	max. Earth dist.	4570 Sep 26 12:18	5° \mathfrak{D} 32'05	10.21239 AU
minimum elong	4565 Jul 16 00:03	26° \mathfrak{D} 16'56	0°43'33	morning rise	4570 Oct 14 08:02	7° \mathfrak{D} 47'43	
max. Earth dist.	4565 Jul 16 00:11	26° \mathfrak{D} 16'59	10.18078 AU	retrograde	4571 Jan 24 19:17	15° \mathfrak{D} 40'18	
morning rise	4565 Aug 03 01:00	28° \mathfrak{D} 34'40		opposition	4571 Apr 01 14:10	12° \mathfrak{D} 15'07	2°12'59
	4565 Aug 14 13:57	0° \mathfrak{Q}		min. Earth dist.	4571 Apr 01 14:52	12° \mathfrak{D} 14'59	8.24468 AU
retrograde	4565 Nov 16 17:36	6° \mathfrak{Q} 43'20		direct	4571 Jun 08 22:59	8° \mathfrak{D} 46'10	
opposition	4566 Jan 23 08:43	3° \mathfrak{Q} 15'02	-0°35'32	evening set	4571 Sep 23 01:37	16° \mathfrak{D} 50'25	
min. Earth dist.	4566 Jan 23 08:24	3° \mathfrak{Q} 15'06	8.15934 AU				
	4566 Mar 16 15:16	30° \mathfrak{R} \mathfrak{D}		conjunction	4571 Oct 10 19:49	19° \mathfrak{D} 04'43	1°54'52
direct	4566 Mar 31 05:16	29° \mathfrak{D} 48'12		minimum elong	4571 Oct 10 19:46	19° \mathfrak{D} 04'42	1°54'53
	4566 Apr 14 17:28	0° \mathfrak{Q}		max. Earth dist.	4571 Oct 10 18:26	19° \mathfrak{D} 04'17	10.27878 AU
evening set	4566 Jul 12 15:12	7° \mathfrak{Q} 48'35		morning rise	4571 Oct 28 10:33	21° \mathfrak{D} 17'56	
				retrograde	4572 Feb 07 05:11	29° \mathfrak{D} 03'52	
conjunction	4566 Jul 30 16:23	10° \mathfrak{Q} 06'52	-0°13'21	opposition	4572 Apr 14 04:09	25° \mathfrak{D} 39'46	2°29'56
minimum elong	4566 Jul 30 16:24	10° \mathfrak{Q} 06'52	0°13'21	min. Earth dist.	4572 Apr 14 04:40	25° \mathfrak{D} 39'40	8.31848 AU
behind sun begin	4566 Jul 30 12:22	10° \mathfrak{Q} 05'35		direct	4572 Jun 22 00:51	22° \mathfrak{D} 11'15	
behind sun end	4566 Jul 30 20:26	10° \mathfrak{Q} 08'10			4572 Oct 04 16:14	0° \mathfrak{M}	
max. Earth dist.	4566 Jul 30 16:57	10° \mathfrak{Q} 07'03	10.14312 AU	evening set	4572 Oct 06 04:31	0° \mathfrak{M} 11'09	
morning rise	4566 Aug 17 18:59	12° \mathfrak{Q} 25'37					
	4566 Sep 08 00:30	15° \mathfrak{Q}		conjunction	4572 Oct 23 18:56	2° \mathfrak{M} 23'15	2°05'24
retrograde	4566 Nov 30 23:36	20° \mathfrak{Q} 34'12		minimum elong	4572 Oct 23 18:55	2° \mathfrak{M} 23'14	2°05'25
asc. node	4567 Jan 09 02:48	19° \mathfrak{Q} 14'07		max. Earth dist.	4572 Oct 23 17:42	2° \mathfrak{M} 22'51	10.35843 AU
opposition	4567 Feb 06 05:54	17° \mathfrak{Q} 06'03	0°02'53	morning rise	4572 Nov 10 05:23	4° \mathfrak{M} 34'07	
min. Earth dist.	4567 Feb 06 05:06	17° \mathfrak{Q} 06'13	8.13235 AU	retrograde	4573 Feb 19 08:57	12° \mathfrak{M} 13'05	
	4567 Mar 05 20:05	15° \mathfrak{R} \mathfrak{Q}		opposition	4573 Apr 27 14:22	8° \mathfrak{M} 50'06	2°38'36
direct	4567 Apr 14 05:19	13° \mathfrak{Q} 38'19		min. Earth dist.	4573 Apr 27 14:34	8° \mathfrak{M} 50'04	8.40318 AU
	4567 May 23 04:47	15° \mathfrak{Q}		direct	4573 Jul 05 22:50	5° \mathfrak{M} 22'19	
evening set	4567 Jul 27 08:50	21° \mathfrak{Q} 42'48		evening set	4573 Oct 19 22:59	13° \mathfrak{M} 16'33	
					4573 Nov 02 21:13	15° \mathfrak{M}	
conjunction	4567 Aug 14 11:22	24° \mathfrak{Q} 01'42	0°17'51				
minimum elong	4567 Aug 14 11:21	24° \mathfrak{Q} 01'41	0°17'51	conjunction	4573 Nov 06 09:38	15° \mathfrak{M} 26'22	2°09'14
max. Earth dist.	4567 Aug 14 12:18	24° \mathfrak{Q} 01'59	10.12725 AU	minimum elong	4573 Nov 06 09:37	15° \mathfrak{M} 26'22	2°09'14
morning rise	4567 Sep 01 14:01	26° \mathfrak{Q} 20'40		max. Earth dist.	4573 Nov 06 08:51	15° \mathfrak{M} 26'07	10.44687 AU
	4567 Oct 02 11:20	0° \mathfrak{M}		morning rise	4573 Nov 23 15:54	17° \mathfrak{M} 34'53	
retrograde	4567 Dec 15 04:27	4° \mathfrak{M} 27'27		retrograde	4574 Mar 04 08:55	25° \mathfrak{M} 06'52	
opposition	4568 Feb 20 03:43	0° \mathfrak{M} 59'44	0°41'16	opposition	4574 May 10 20:31	21° \mathfrak{M} 45'02	2°38'59
min. Earth dist.	4568 Feb 20 02:47	0° \mathfrak{M} 59'55	8.12796 AU	min. Earth dist.	4574 May 10 20:37	21° \mathfrak{M} 45'01	8.49425 AU
	4568 Mar 03 11:13	30° \mathfrak{R} \mathfrak{Q}		direct	4574 Jul 19 14:08	18° \mathfrak{M} 18'11	
direct	4568 Apr 27 08:27	27° \mathfrak{Q} 31'17		evening set	4574 Nov 02 08:29	26° \mathfrak{M} 05'52	
	4568 Jun 19 23:22	0° \mathfrak{M}					
evening set	4568 Aug 10 04:32	5° \mathfrak{M} 38'22		conjunction	4574 Nov 19 15:35	28° \mathfrak{M} 13'29	2°06'32
				minimum elong	4574 Nov 19 15:36	28° \mathfrak{M} 13'29	2°06'32
conjunction	4568 Aug 28 06:50	7° \mathfrak{M} 57'05	0°47'57	max. Earth dist.	4574 Nov 19 15:06	28° \mathfrak{M} 13'20	10.53955 AU
minimum elong	4568 Aug 28 06:48	7° \mathfrak{M} 57'05	0°47'58		4574 Dec 04 01:09	0° \mathfrak{J}	
max. Earth dist.	4568 Aug 28 07:31	7° \mathfrak{M} 57'18	10.13415 AU	morning rise	4574 Dec 06 18:15	0° \mathfrak{J} 19'47	
morning rise	4568 Sep 15 08:05	10° \mathfrak{M} 15'31		retrograde	4575 Mar 17 02:31	7° \mathfrak{J} 45'05	
retrograde	4568 Dec 28 05:57	18° \mathfrak{M} 18'50		opposition	4575 May 23 22:29	4° \mathfrak{J} 24'20	2°31'35
opposition	4569 Mar 05 00:58	14° \mathfrak{M} 51'48	1°17'10	min. Earth dist.	4575 May 23 23:11	4° \mathfrak{J} 24'12	8.58720 AU

direct	4575 Aug 02 00:11	0°♄58'35		desc. node	4581 Aug 11 23:33	15°♄31'20	
evening set	4575 Nov 15 09:00	8°♄39'14			4581 Aug 19 05:04	15°♄	
				direct	4581 Oct 15 03:32	12°♄40'45	
conjunction	4575 Dec 02 12:53	10°♄44'47	1°57'47		4581 Dec 08 14:51	15°♄	
minimum elong	4575 Dec 02 12:55	10°♄44'48	1°57'47	evening set	4582 Jan 24 18:26	19°♄48'14	
max. Earth dist.	4575 Dec 02 11:49	10°♄44'28	10.63190 AU				
morning rise	4575 Dec 19 12:41	12°♄49'09		conjunction	4582 Feb 10 11:23	21°♄46'41	-0°12'41
retrograde	4576 Mar 28 13:36	20°♄08'23		minimum elong	4582 Feb 10 11:22	21°♄46'41	0°12'41
opposition	4576 Jun 04 20:18	16°♄48'36	2°17'12	behind sun begin	4582 Feb 10 06:51	21°♄45'21	
min. Earth dist.	4576 Jun 04 21:28	16°♄48'23	8.67748 AU	behind sun end	4582 Feb 10 15:53	21°♄48'01	
direct	4576 Aug 14 06:00	13°♄24'00		max. Earth dist.	4582 Feb 10 10:20	21°♄46'23	10.97084 AU
evening set	4576 Nov 27 01:16	20°♄57'35		morning rise	4582 Feb 27 04:01	23°♄45'03	
					4582 May 06 23:00	0°♄	
conjunction	4576 Dec 14 02:21	23°♄01'17	1°43'45	retrograde	4582 Jun 08 08:22	0°♄51'18	
minimum elong	4576 Dec 14 02:23	23°♄01'18	1°43'45		4582 Jul 11 09:20	30°♄	
max. Earth dist.	4576 Dec 14 00:43	23°♄00'47	10.71953 AU	opposition	4582 Aug 17 18:27	27°♄32'45	-0°31'15
morning rise	4576 Dec 30 23:53	25°♄03'55		min. Earth dist.	4582 Aug 17 18:45	27°♄32'41	8.97194 AU
	4577 Feb 16 06:02	0°♄		direct	4582 Oct 27 07:40	24°♄13'43	
retrograde	4577 Apr 09 21:52	2°♄17'59			4583 Jan 24 18:53	0°♄	
	4577 Jun 03 23:53	30°♄		evening set	4583 Feb 05 08:47	1°♄19'18	
opposition	4577 Jun 17 14:17	28°♄58'59	1°56'54				
min. Earth dist.	4577 Jun 17 15:11	28°♄58'49	8.76098 AU	conjunction	4583 Feb 22 01:11	3°♄17'37	-0°38'14
direct	4577 Aug 27 06:20	25°♄35'35		minimum elong	4583 Feb 22 01:09	3°♄17'37	0°38'14
	4577 Nov 12 05:05	0°♄		max. Earth dist.	4583 Feb 22 00:45	3°♄17'30	10.96775 AU
evening set	4577 Dec 09 09:59	3°♄02'20		morning rise	4583 Mar 10 17:48	5°♄16'04	
				retrograde	4583 Jun 20 12:30	12°♄24'48	
conjunction	4577 Dec 26 08:49	5°♄04'27	1°25'19	opposition	4583 Aug 30 02:05	9°♄05'39	-1°01'50
minimum elong	4577 Dec 26 08:52	5°♄04'28	1°25'20	min. Earth dist.	4583 Aug 30 02:08	9°♄05'39	8.95885 AU
max. Earth dist.	4577 Dec 26 07:35	5°♄04'05	10.79859 AU	direct	4583 Nov 08 07:57	5°♄46'58	
morning rise	4578 Jan 12 04:31	7°♄05'38		evening set	4584 Feb 16 23:50	12°♄52'06	
retrograde	4578 Apr 22 02:36	14°♄15'35					
opposition	4578 Jun 30 04:57	10°♄57'09	1°31'52	conjunction	4584 Mar 04 15:53	14°♄50'35	-1°02'18
min. Earth dist.	4578 Jun 30 05:03	10°♄57'08	8.83419 AU	minimum elong	4584 Mar 04 15:51	14°♄50'35	1°02'18
direct	4578 Sep 09 00:16	7°♄34'56		max. Earth dist.	4584 Mar 04 15:14	14°♄50'24	10.94452 AU
evening set	4578 Dec 21 12:12	14°♄55'23		morning rise	4584 Mar 21 08:58	16°♄49'26	
				retrograde	4584 Jul 01 19:03	24°♄02'03	
conjunction	4579 Jan 07 09:13	16°♄56'11	1°03'27	opposition	4584 Sep 10 11:04	20°♄42'06	-1°30'03
minimum elong	4579 Jan 07 09:15	16°♄56'12	1°03'28	min. Earth dist.	4584 Sep 10 11:24	20°♄42'02	8.92627 AU
max. Earth dist.	4579 Jan 07 09:01	16°♄56'07	10.86575 AU	direct	4584 Nov 19 08:46	17°♄23'30	
morning rise	4579 Jan 24 03:30	18°♄56'13		evening set	4585 Feb 27 16:45	24°♄29'28	
retrograde	4579 May 04 05:32	26°♄03'16					
opposition	4579 Jul 12 16:51	22°♄45'10	1°03'18	conjunction	4585 Mar 16 08:49	26°♄28'29	-1°23'58
min. Earth dist.	4579 Jul 12 16:53	22°♄45'10	8.89409 AU	minimum elong	4585 Mar 16 08:47	26°♄28'28	1°23'58
direct	4579 Sep 21 13:32	19°♄24'00		max. Earth dist.	4585 Mar 16 07:25	26°♄28'04	10.90267 AU
evening set	4580 Jan 02 09:35	26°♄39'03		morning rise	4585 Apr 02 02:56	28°♄28'06	
					4585 Apr 15 11:49	0°♄	
conjunction	4580 Jan 19 04:58	28°♄38'47	0°39'11	retrograde	4585 Jul 14 05:14	5°♄45'42	
minimum elong	4580 Jan 19 04:59	28°♄38'48	0°39'11	opposition	4585 Sep 22 22:00	2°♄24'44	-1°54'50
max. Earth dist.	4580 Jan 19 04:36	28°♄38'41	10.91821 AU	min. Earth dist.	4585 Sep 22 22:46	2°♄24'35	8.87614 AU
	4580 Jan 30 13:22	0°♄			4585 Oct 28 23:45	30°♄	
morning rise	4580 Feb 04 22:18	0°♄37'57		direct	4585 Dec 01 10:24	29°♄05'59	
retrograde	4580 May 15 07:13	7°♄43'20			4586 Jan 03 05:19	0°♄	
opposition	4580 Jul 24 02:29	4°♄25'22	0°32'28	evening set	4586 Mar 11 12:54	6°♄14'02	
min. Earth dist.	4580 Jul 24 03:03	4°♄25'16	8.93826 AU				
direct	4580 Oct 02 21:30	1°♄05'05		conjunction	4586 Mar 28 05:44	8°♄13'54	-1°42'20
evening set	4581 Jan 13 03:17	8°♄15'46		minimum elong	4586 Mar 28 05:42	8°♄13'54	1°42'19
				max. Earth dist.	4586 Mar 28 04:45	8°♄13'37	10.84437 AU
conjunction	4581 Jan 29 21:13	10°♄14'43	0°13'30	morning rise	4586 Apr 14 01:17	10°♄14'37	
minimum elong	4581 Jan 29 21:14	10°♄14'44	0°13'31	retrograde	4586 Jul 26 18:48	17°♄38'08	
behind sun begin	4581 Jan 29 17:13	10°♄13'33		opposition	4586 Oct 05 11:12	14°♄15'59	-2°15'05
behind sun end	4581 Jan 30 01:15	10°♄15'54		min. Earth dist.	4586 Oct 05 11:33	14°♄15'55	8.81079 AU
max. Earth dist.	4581 Jan 29 20:09	10°♄14'25	10.95384 AU	direct	4586 Dec 13 14:17	10°♄56'51	
morning rise	4581 Feb 15 14:06	12°♄13'21		evening set	4587 Mar 23 13:25	18°♄08'08	
	4581 Mar 12 17:12	15°♄					
retrograde	4581 May 27 06:21	19°♄18'26		conjunction	4587 Apr 09 07:46	20°♄09'16	-1°56'32
opposition	4581 Aug 05 10:51	16°♄00'19	0°00'33	minimum elong	4587 Apr 09 07:44	20°♄09'15	1°56'32
min. Earth dist.	4581 Aug 05 11:41	16°♄00'09	8.96477 AU	max. Earth dist.	4587 Apr 09 07:51	20°♄09'17	10.77213 AU

morning rise	4587 Apr 26 05:14	22° Υ 11'22	retrograde	4593 Oct 27 10:02	17° Θ 01'47
retrograde	4587 Aug 08 15:30	29° Υ 41'30	opposition	4594 Jan 03 16:02	13° Θ 33'01 -1°26'44
opposition	4587 Oct 18 03:31	26° Υ 18'07 -2°29'48	min. Earth dist.	4594 Jan 03 14:10	13° Θ 33'23 8.21533 AU
min. Earth dist.	4587 Oct 18 03:00	26° Υ 18'13 8.73290 AU	direct	4594 Mar 11 12:25	10° Θ 07'16
direct	4587 Dec 25 21:14	22° Υ 58'25	evening set	4594 Jun 21 21:14	18° Θ 00'21
	4588 Apr 01 20:38	0° \mathcal{B}			
evening set	4588 Apr 03 19:27	0° \mathcal{B} 13'57	conjunction	4594 Jul 09 18:04	20° Θ 16'44 -0°56'33
			minimum elong	4594 Jul 09 18:07	20° Θ 16'45 0°56'33
conjunction	4588 Apr 20 15:53	2° \mathcal{B} 16'41 -2°05'47	max. Earth dist.	4594 Jul 09 19:55	20° Θ 17'19 10.18595 AU
minimum elong	4588 Apr 20 15:52	2° \mathcal{B} 16'40 2°05'48	morning rise	4594 Jul 27 17:45	22° Θ 34'02
max. Earth dist.	4588 Apr 20 16:40	2° \mathcal{B} 16'55 10.68897 AU		4594 Oct 13 05:58	0° \mathcal{O}
morning rise	4588 May 07 15:55	4° \mathcal{B} 20'33	retrograde	4594 Nov 10 16:10	0° \mathcal{O} 43'03
retrograde	4588 Aug 20 17:51	11° \mathcal{B} 57'43		4594 Dec 09 03:28	30° $\mathcal{R}\Theta$
opposition	4588 Oct 29 23:31	8° \mathcal{B} 33'05 -2°38'04	opposition	4595 Jan 17 10:53	27° Θ 14'13 -0°52'27
min. Earth dist.	4588 Oct 29 22:26	8° \mathcal{B} 33'18 8.64575 AU	min. Earth dist.	4595 Jan 17 09:14	27° Θ 14'33 8.16167 AU
direct	4589 Jan 06 05:50	5° \mathcal{B} 12'38	direct	4595 Mar 25 05:17	23° Θ 47'27
evening set	4589 Apr 16 08:06	12° \mathcal{B} 33'23		4595 Jun 21 22:36	0° \mathcal{O}
			evening set	4595 Jul 06 08:34	1° \mathcal{O} 46'17
conjunction	4589 May 03 07:21	14° \mathcal{B} 38'01 -2°09'26	conjunction	4595 Jul 24 08:37	4° \mathcal{O} 04'16 -0°27'21
minimum elong	4589 May 03 07:21	14° \mathcal{B} 38'01 2°09'27	minimum elong	4595 Jul 24 08:38	4° \mathcal{O} 04'17 0°27'21
max. Earth dist.	4589 May 03 07:47	14° \mathcal{B} 38'09 10.59857 AU	max. Earth dist.	4595 Jul 24 09:56	4° \mathcal{O} 04'42 10.14224 AU
	4589 May 06 06:41	15° \mathcal{B}	morning rise	4595 Aug 11 10:40	6° \mathcal{O} 22'53
morning rise	4589 May 20 10:47	16° \mathcal{B} 43'58	retrograde	4595 Nov 24 23:09	14° \mathcal{O} 32'33
retrograde	4589 Sep 03 00:53	24° \mathcal{B} 28'15	opposition	4596 Jan 31 08:01	11° \mathcal{O} 03'58 -0°14'46
opposition	4589 Nov 11 23:30	21° \mathcal{B} 02'27 -2°39'06	min. Earth dist.	4596 Jan 31 06:49	11° \mathcal{O} 04'12 8.12826 AU
min. Earth dist.	4589 Nov 11 22:42	21° \mathcal{B} 02'36 8.55318 AU	direct	4596 Apr 07 04:18	7° \mathcal{O} 36'21
direct	4590 Jan 18 19:50	17° \mathcal{B} 41'04	asc. node	4596 Jun 23 12:37	12° \mathcal{O} 29'15
evening set	4590 Apr 29 04:02	25° \mathcal{B} 07'47		4596 Jul 14 17:34	15° \mathcal{O}
			evening set	4596 Jul 20 01:02	15° \mathcal{O} 39'52
conjunction	4590 May 16 06:57	27° \mathcal{B} 14'40 -2°06'58	conjunction	4596 Aug 07 03:05	17° \mathcal{O} 58'46 0°03'44
minimum elong	4590 May 16 06:58	27° \mathcal{B} 14'40 2°06'59	minimum elong	4596 Aug 07 03:04	17° \mathcal{O} 58'46 0°03'44
max. Earth dist.	4590 May 16 07:17	27° \mathcal{B} 14'46 10.50490 AU	behind sun begin	4596 Aug 06 19:47	17° \mathcal{O} 56'27
morning rise	4590 Jun 02 14:24	29° \mathcal{B} 22'55	behind sun end	4596 Aug 07 10:20	18° \mathcal{O} 01'05
	4590 Jun 07 17:06	0° \mathcal{I}	max. Earth dist.	4596 Aug 07 03:57	17° \mathcal{O} 59'01 10.11993 AU
retrograde	4590 Sep 16 13:25	7° \mathcal{I} 14'04	morning rise	4596 Aug 25 06:05	20° \mathcal{O} 17'58
opposition	4590 Nov 25 03:38	3° \mathcal{I} 47'13 -2°32'24	retrograde	4596 Dec 08 04:38	28° \mathcal{O} 26'32
min. Earth dist.	4590 Nov 25 03:03	3° \mathcal{I} 47'20 8.45929 AU	opposition	4597 Feb 13 06:18	24° \mathcal{O} 58'28 0°24'00
direct	4591 Jan 31 15:58	0° \mathcal{I} 24'47	min. Earth dist.	4597 Feb 13 05:24	24° \mathcal{O} 58'39 8.11733 AU
evening set	4591 May 12 07:55	7° \mathcal{I} 57'59	direct	4597 Apr 21 07:45	21° \mathcal{O} 30'13
conjunction	4591 May 29 15:11	10° \mathcal{I} 07'19 -1°58'10	evening set	4597 Aug 03 20:51	29° \mathcal{O} 37'04
minimum elong	4591 May 29 15:13	10° \mathcal{I} 07'19 1°58'11		4597 Aug 06 21:24	0° \mathcal{O}
max. Earth dist.	4591 May 29 16:02	10° \mathcal{I} 07'35 10.41217 AU			
morning rise	4591 Jun 16 02:53	12° \mathcal{I} 18'01	conjunction	4597 Aug 21 23:23	1° \mathcal{O} 56'06 0°34'33
retrograde	4591 Sep 30 07:52	20° \mathcal{I} 15'25	minimum elong	4597 Aug 21 23:22	1° \mathcal{O} 56'06 0°34'33
opposition	4591 Dec 08 11:52	16° \mathcal{I} 47'43 -2°17'50	max. Earth dist.	4597 Aug 22 00:14	1° \mathcal{O} 56'22 10.12048 AU
min. Earth dist.	4591 Dec 08 11:03	16° \mathcal{I} 47'53 8.36854 AU	morning rise	4597 Sep 09 01:42	4° \mathcal{O} 15'04
direct	4592 Feb 13 16:55	13° \mathcal{I} 24'11	retrograde	4597 Dec 22 07:27	12° \mathcal{O} 20'50
evening set	4592 May 24 20:08	21° \mathcal{I} 04'08	opposition	4598 Feb 27 04:32	8° \mathcal{O} 53'31 1°01'22
			min. Earth dist.	4598 Feb 27 03:26	8° \mathcal{O} 53'45 8.12960 AU
conjunction	4592 Jun 11 08:09	23° \mathcal{I} 15'58 -1°43'06	direct	4598 May 05 13:34	5° \mathcal{O} 24'55
minimum elong	4592 Jun 11 08:11	23° \mathcal{I} 15'59 1°43'07	evening set	4598 Aug 18 17:16	13° \mathcal{O} 33'21
max. Earth dist.	4592 Jun 11 09:58	23° \mathcal{I} 16'32 10.32504 AU			
morning rise	4592 Jun 29 00:12	25° \mathcal{I} 29'07	conjunction	4598 Sep 05 18:50	15° \mathcal{O} 51'46 1°03'20
	4592 Aug 07 23:52	0° Θ	minimum elong	4598 Sep 05 18:48	15° \mathcal{O} 51'45 1°03'20
retrograde	4592 Oct 13 07:01	3° Θ 31'48	max. Earth dist.	4598 Sep 05 19:55	15° \mathcal{O} 52'07 10.14389 AU
opposition	4592 Dec 21 00:08	0° Θ 03'25 -1°55'39	morning rise	4598 Sep 23 18:54	18° \mathcal{O} 09'44
min. Earth dist.	4592 Dec 20 22:33	0° Θ 03'44 8.28570 AU	retrograde	4599 Jan 05 07:21	26° \mathcal{O} 11'10
	4592 Dec 21 17:09	30° $\mathcal{R}\mathcal{I}$	opposition	4599 Mar 13 01:52	22° \mathcal{O} 44'48 1°34'57
direct	4593 Feb 25 23:52	26° \mathcal{I} 38'46	min. Earth dist.	4599 Mar 13 00:28	22° \mathcal{O} 45'05 8.16427 AU
	4593 Apr 29 18:32	0° Θ	direct	4599 May 19 18:59	19° \mathcal{O} 16'05
evening set	4593 Jun 07 16:39	4° Θ 25'27	evening set	4599 Sep 02 11:27	27° \mathcal{O} 24'12
conjunction	4593 Jun 25 09:22	6° Θ 39'43 -1°22'15	conjunction	4599 Sep 20 10:44	29° \mathcal{O} 41'18 1°28'15
minimum elong	4593 Jun 25 09:25	6° Θ 39'44 1°22'15	minimum elong	4599 Sep 20 10:41	29° \mathcal{O} 41'17 1°28'16
max. Earth dist.	4593 Jun 25 11:31	6° Θ 40'24 10.24818 AU	max. Earth dist.	4599 Sep 20 12:04	29° \mathcal{O} 41'44 10.18868 AU
morning rise	4593 Jul 13 05:35	8° Θ 55'08			

	4599 Sep 22 21:07	0°♑	
morning rise	4599 Oct 08 07:24	1°♑57'37	
retrograde	4600 Jan 19 03:45	9°♑53'27	
opposition	4600 Mar 26 21:05	6°♑28'08	2°02'42
min. Earth dist.	4600 Mar 26 19:43	6°♑28'24	8.21901 AU
direct	4600 Jun 02 23:49	2°♑59'32	
evening set	4600 Sep 17 01:14	11°♑05'29	
conjunction	4600 Oct 04 21:16	13°♑20'45	1°47'56
minimum elong	4600 Oct 04 21:13	13°♑20'44	1°47'56
max. Earth dist.	4600 Oct 04 22:22	13°♑21'06	10.25178 AU
morning rise	4600 Oct 22 13:49	15°♑34'58	
retrograde	4601 Feb 01 17:36	23°♑24'11	
opposition	4601 Apr 09 13:09	20°♑00'01	2°23'12
min. Earth dist.	4601 Apr 09 12:40	20°♑00'06	8.28996 AU
direct	4601 Jun 17 03:00	16°♑31'46	
evening set	4601 Oct 01 08:20	24°♑33'51	
conjunction	4601 Oct 19 00:32	26°♑46'55	2°01'24
minimum elong	4601 Oct 19 00:30	26°♑46'55	2°01'24
max. Earth dist.	4601 Oct 19 00:28	26°♑46'54	10.32875 AU
morning rise	4601 Nov 05 12:45	28°♑58'49	
	4601 Nov 13 21:09	0°♑	