

direct	4100 Feb 03 09:38	10°II59'22			4105 Apr 26 01:38	30°RML	
	4100 Jun 07 06:28	0°☾		opposition	4105 May 17 04:06	27°ML26'13	1°18'59
evening set	4100 Jun 09 16:17	0°☾33'56		min. Earth dist.	4105 May 18 06:10	27°ML17'52	4.46262 AU
				direct	4105 Jul 18 22:03	22°ML24'21	
conjunction	4100 Jun 23 08:09	3°☾47'27 -0°28'09			4105 Oct 03 15:22	0°☿	
minimum elong	4100 Jun 23 08:11	3°☾47'28 0°28'09		evening set	4105 Nov 21 21:28	9°☿51'45	
max. Earth dist.	4100 Jun 25 16:21	4°☾20'40 6.02124 AU		max. Earth dist.	4105 Dec 02 19:36	12°☿14'15	6.43596 AU
morning rise	4100 Jul 07 02:13	7°☾01'50					
retrograde	4100 Nov 13 17:55	26°☾49'50		conjunction	4105 Dec 04 17:14	12°☿39'09	0°45'53
min. Earth dist.	4101 Jan 10 20:15	21°☾57'16 4.08748 AU		minimum elong	4105 Dec 04 17:16	12°☿39'10	0°45'53
opposition	4101 Jan 12 08:04	21°☾45'04 -0°15'54		morning rise	4105 Dec 17 10:42	15°☿25'34	
direct	4101 Mar 11 22:57	16°☾46'29			4106 Mar 08 07:33	0°☿	
asc. node	4101 May 11 20:58	22°☾19'32		retrograde	4106 Apr 17 09:30	2°☿23'54	
	4101 Jun 20 15:07	0°♂			4106 May 27 22:12	30°R☿	
evening set	4101 Jul 16 09:45	5°♂43'05		opposition	4106 Jun 17 07:21	27°☿31'51	0°49'52
				min. Earth dist.	4106 Jun 18 18:56	27°☿20'31	4.39308 AU
conjunction	4101 Jul 30 03:13	8°♂50'48 0°07'04		direct	4106 Aug 18 20:49	22°☿31'21	
minimum elong	4101 Jul 30 03:11	8°♂50'47 0°07'04			4106 Nov 02 03:27	0°☿	
behind sun begin	4101 Jul 29 19:30	8°♂46'25		evening set	4106 Dec 22 13:57	10°☿18'47	
behind sun end	4101 Jul 30 10:53	8°♂55'09		max. Earth dist.	4107 Jan 02 03:37	12°☿40'11	6.33451 AU
max. Earth dist.	4101 Aug 01 07:35	9°♂20'41 6.16283 AU					
morning rise	4101 Aug 12 20:49	11°♂58'18		conjunction	4107 Jan 04 07:13	13°☿09'05	0°19'38
	4101 Aug 26 09:57	15°♂		minimum elong	4107 Jan 04 07:13	13°☿09'05	0°19'39
	4101 Nov 28 00:03	0°♏		morning rise	4107 Jan 16 22:56	15°☿58'54	
retrograde	4101 Dec 17 01:00	0°♏35'16			4107 Mar 30 23:28	0°♏	
	4102 Jan 04 22:16	30°R♏		retrograde	4107 May 20 06:01	3°♏41'48	
opposition	4102 Feb 14 19:52	25°♏32'34 0°34'59			4107 Jul 10 18:38	30°R☿	
min. Earth dist.	4102 Feb 13 16:38	25°♏41'44 4.23944 AU		opposition	4107 Jul 20 02:19	28°☿49'19	0°05'11
direct	4102 Apr 15 15:42	20°♏31'34		min. Earth dist.	4107 Jul 21 15:04	28°☿37'34	4.26518 AU
	4102 Jul 09 04:52	0°♏		desc. node	4107 Aug 30 18:20	24°☿28'09	
evening set	4102 Aug 20 06:01	8°♏46'21		direct	4107 Sep 19 21:05	23°☿50'54	
					4107 Nov 25 03:12	0°♏	
conjunction	4102 Sep 02 19:28	11°♏45'52 0°38'15		evening set	4108 Jan 23 08:34	12°♏13'28	
minimum elong	4102 Sep 02 19:26	11°♏45'51 0°38'14		max. Earth dist.	4108 Feb 03 04:17	14°♏43'12	6.19020 AU
max. Earth dist.	4102 Sep 04 00:03	12°♏01'39 6.31267 AU			4108 Feb 04 09:19	15°♏	
morning rise	4102 Sep 16 07:47	14°♏44'31					
	4102 Dec 09 12:30	0°♏		conjunction	4108 Feb 05 01:44	15°♏09'30 -0°13'30	
retrograde	4103 Jan 17 07:08	2°♏18'17		minimum elong	4108 Feb 05 01:44	15°♏09'29	0°13'30
	4103 Feb 24 22:37	30°R♏		behind sun begin	4108 Feb 04 21:07	15°♏06'50	
opposition	4103 Mar 18 09:23	27°♏19'03 1°11'49		behind sun end	4108 Feb 05 06:20	15°♏12'09	
min. Earth dist.	4103 Mar 17 23:31	27°♏22'19 4.37523 AU		morning rise	4108 Feb 17 18:59	18°♏05'50	
direct	4103 May 18 13:33	22°♏16'42			4108 Apr 14 08:39	0°♏	
	4103 Aug 03 04:37	0°♏		retrograde	4108 Jun 23 10:38	6°♏54'28	
evening set	4103 Sep 22 02:01	9°♏58'59		opposition	4108 Aug 23 01:12	1°♏59'54 -0°44'11	
				min. Earth dist.	4108 Aug 24 01:47	1°♏51'57	4.11421 AU
conjunction	4103 Oct 05 09:08	12°♏51'19 0°56'47			4108 Sep 07 22:50	30°R♏	
minimum elong	4103 Oct 05 09:07	12°♏51'18 0°56'47		direct	4108 Oct 22 11:16	27°♏03'54	
max. Earth dist.	4103 Oct 05 10:16	12°♏51'56 6.42422 AU			4108 Dec 05 02:20	0°♏	
morning rise	4103 Oct 18 13:42	15°♏42'20		evening set	4109 Feb 24 23:29	16°♏08'51	
	4104 Jan 05 19:56	0°ML					
retrograde	4104 Feb 16 08:58	2°ML35'46		conjunction	4109 Mar 09 19:47	19°♏12'18 -0°43'39	
	4104 Mar 29 02:59	30°R♏		minimum elong	4109 Mar 09 19:45	19°♏12'17	0°43'39
opposition	4104 Apr 16 20:15	27°♏40'06 1°27'00		max. Earth dist.	4109 Mar 08 22:20	18°♏59'30	6.04570 AU
min. Earth dist.	4104 Apr 17 04:36	27°♏37'23 4.45630 AU		morning rise	4109 Mar 22 17:21	22°♏16'44	
direct	4104 Jun 18 00:39	22°♏37'35			4109 Apr 25 12:30	0°♏	
	4104 Sep 01 13:09	0°ML		retrograde	4109 Jul 30 21:17	12°♏14'40	
evening set	4104 Oct 22 09:00	10°ML03'16		opposition	4109 Sep 29 01:18	7°♏16'52 -1°21'01	
max. Earth dist.	4104 Nov 03 06:48	12°ML36'53 6.46865 AU		min. Earth dist.	4109 Sep 29 05:44	7°♏15'25	3.98953 AU
				direct	4109 Nov 27 02:00	2°♏22'47	
conjunction	4104 Nov 04 09:28	12°ML51'15 0°59'15		evening set	4110 Apr 01 17:35	22°♏02'18	
minimum elong	4104 Nov 04 09:28	12°ML51'15 0°59'15					
	4104 Nov 14 08:30	15°ML		conjunction	4110 Apr 14 19:55	25°♏12'43 -0°58'57	
morning rise	4104 Nov 17 07:22	15°ML38'00		minimum elong	4110 Apr 14 19:55	25°♏12'43	0°58'58
	4105 Feb 06 01:16	0°☿		max. Earth dist.	4110 Apr 15 06:34	25°♏19'10	5.95234 AU
retrograde	4105 Mar 17 10:49	2°☿19'20		morning rise	4110 Apr 28 01:02	28°♏24'42	

	4110 May 04 15:55	0°♄		max. Earth dist.	4115 Oct 09 14:08	17°♌09'41	6.43149 AU
	4110 Jul 17 08:32	15°♄		morning rise	4115 Oct 22 21:49	20°♌02'11	
retrograde	4110 Sep 07 06:55	19°♄05'44			4115 Dec 11 23:42	0°♌	
	4110 Oct 30 02:34	15°♄		retrograde	4116 Feb 20 14:22	6°♌53'11	
min. Earth dist.	4110 Nov 05 06:18	14°♄10'40	3.93905 AU	opposition	4116 Apr 21 01:22	1°♌57'54	1°27'11
opposition	4110 Nov 06 01:47	14°♄04'08	-1°27'30	min. Earth dist.	4116 Apr 21 12:45	1°♌54'12	4.45930 AU
direct	4111 Jan 03 02:10	9°♄10'09			4116 May 06 15:11	30°♌♌	
	4111 Mar 05 06:08	15°♄		direct	4116 Jun 22 08:39	26°♌55'24	
evening set	4111 May 09 01:48	28°♄59'49			4116 Aug 08 05:02	0°♌	
	4111 May 13 05:53	0°♌		evening set	4116 Oct 26 15:41	14°♌20'50	
					4116 Oct 29 16:47	15°♌	
conjunction	4111 May 22 12:10	2°♌14'10	-0°51'19	max. Earth dist.	4116 Nov 07 11:08	16°♌53'16	6.46715 AU
minimum elong	4111 May 22 12:12	2°♌14'11	0°51'20				
max. Earth dist.	4111 May 24 06:05	2°♌39'29	5.94922 AU	conjunction	4116 Nov 08 15:34	17°♌08'37	0°58'14
morning rise	4111 Jun 05 01:32	5°♌29'59		minimum elong	4116 Nov 08 15:34	17°♌08'37	0°58'15
retrograde	4111 Oct 14 21:52	26°♌03'11		morning rise	4116 Nov 21 12:37	19°♌55'08	
min. Earth dist.	4111 Dec 12 02:17	21°♌10'12	3.98423 AU		4117 Jan 11 10:20	0°♌	
opposition	4111 Dec 13 11:45	20°♌58'49	-0°58'42	retrograde	4117 Mar 21 15:55	6°♌37'22	
direct	4112 Feb 09 10:57	16°♌02'47		opposition	4117 May 21 10:52	1°♌44'25	1°16'01
	4112 May 21 12:25	0°♌		min. Earth dist.	4117 May 22 13:25	1°♌35'55	4.45679 AU
evening set	4112 Jun 14 17:04	5°♌32'53			4117 Jun 04 08:06	30°♌♌	
				direct	4117 Jul 23 03:47	26°♌42'42	
conjunction	4112 Jun 28 09:37	8°♌45'55	-0°23'38		4117 Sep 09 18:53	0°♌	
minimum elong	4112 Jun 28 09:38	8°♌45'56	0°23'39	evening set	4117 Nov 26 03:44	14°♌11'43	
max. Earth dist.	4112 Jun 30 19:06	9°♌19'44	6.03787 AU	max. Earth dist.	4117 Dec 07 00:26	16°♌33'50	6.42608 AU
morning rise	4112 Jul 12 03:54	11°♌59'38					
	4112 Oct 17 06:56	0°♌		conjunction	4117 Dec 08 22:55	16°♌59'16	0°42'50
retrograde	4112 Nov 18 10:26	1°♌38'56		minimum elong	4117 Dec 08 22:57	16°♌59'17	0°42'50
	4112 Dec 20 06:09	30°♌♌		morning rise	4117 Dec 21 15:59	19°♌45'55	
opposition	4113 Jan 16 23:54	26°♌34'26	-0°08'44		4118 Feb 10 14:09	0°♌	
min. Earth dist.	4113 Jan 15 12:49	26°♌46'21	4.10581 AU	retrograde	4118 Apr 21 21:11	6°♌48'25	
direct	4113 Mar 16 17:31	21°♌35'33		opposition	4118 Jun 21 18:18	1°♌56'22	0°44'19
asc. node	4113 Mar 23 16:22	21°♌40'25		min. Earth dist.	4118 Jun 23 07:21	1°♌44'33	4.37937 AU
	4113 Jun 01 22:50	0°♌			4118 Jul 07 09:05	30°♌♌	
evening set	4113 Jul 21 05:52	10°♌27'09		direct	4118 Aug 23 07:12	26°♌56'03	
					4118 Oct 08 15:14	0°♌	
conjunction	4113 Aug 03 22:55	13°♌33'55	0°11'44	evening set	4118 Dec 26 22:08	14°♌46'58	
minimum elong	4113 Aug 03 22:54	13°♌33'55	0°11'44	max. Earth dist.	4119 Jan 06 10:40	17°♌08'20	6.31779 AU
behind sun begin	4113 Aug 03 17:08	13°♌30'39					
behind sun end	4113 Aug 04 04:40	13°♌37'10		conjunction	4119 Jan 08 15:10	17°♌37'50	0°15'14
max. Earth dist.	4113 Aug 05 23:15	14°♌01'23	6.18126 AU	minimum elong	4119 Jan 08 15:11	17°♌37'50	0°15'15
	4113 Aug 10 06:31	15°♌		behind sun begin	4119 Jan 08 12:22	17°♌36'16	
morning rise	4113 Aug 17 16:17	16°♌40'27		behind sun end	4119 Jan 08 17:59	17°♌39'25	
	4113 Oct 23 04:34	0°♌		morning rise	4119 Jan 21 07:00	20°♌28'20	
retrograde	4113 Dec 21 09:58	5°♌09'12			4119 Mar 07 17:23	0°♌	
min. Earth dist.	4114 Feb 18 04:42	0°♌15'17	4.25649 AU	retrograde	4119 May 24 22:38	8°♌18'36	
opposition	4114 Feb 19 05:30	0°♌06'57	0°41'02	desc. node	4119 Jul 10 19:06	5°♌10'51	
	4114 Feb 20 02:09	30°♌♌		opposition	4119 Jul 24 19:18	3°♌25'49	-0°01'45
direct	4114 Apr 20 05:19	25°♌05'42		min. Earth dist.	4119 Jul 26 06:26	3°♌14'34	4.24625 AU
	4114 Jun 17 15:55	0°♌			4119 Aug 23 10:27	30°♌♌	
evening set	4114 Aug 24 20:29	13°♌16'40		direct	4119 Sep 24 09:35	28°♌27'39	
					4119 Oct 26 05:50	0°♌	
conjunction	4114 Sep 07 09:24	16°♌15'18	0°41'36		4120 Jan 19 11:39	15°♌	
minimum elong	4114 Sep 07 09:22	16°♌15'17	0°41'36	evening set	4120 Jan 27 21:15	16°♌55'16	
max. Earth dist.	4114 Sep 08 11:37	16°♌29'45	6.32729 AU	max. Earth dist.	4120 Feb 07 20:44	19°♌27'48	6.17057 AU
morning rise	4114 Sep 20 20:37	19°♌12'56					
	4114 Nov 13 12:21	0°♌		conjunction	4120 Feb 09 14:43	19°♌52'12	-0°18'07
retrograde	4115 Jan 21 12:08	6°♌40'58		minimum elong	4120 Feb 09 14:42	19°♌52'11	0°18'07
opposition	4115 Mar 22 15:08	1°♌42'18	1°15'12	morning rise	4120 Feb 22 08:13	22°♌49'29	
min. Earth dist.	4115 Mar 22 07:09	1°♌44'56	4.38657 AU		4120 Mar 25 12:31	0°♌	
	4115 Apr 04 19:46	30°♌♌		retrograde	4120 Jun 28 12:23	11°♌47'27	
direct	4115 May 22 22:06	26°♌39'56		opposition	4120 Aug 28 01:14	6°♌52'29	-0°50'28
	4115 Jul 10 07:11	0°♌		min. Earth dist.	4120 Aug 29 00:32	6°♌44'56	4.09528 AU
evening set	4115 Sep 26 11:58	14°♌20'08		direct	4120 Oct 27 07:44	1°♌56'46	
				evening set	4121 Mar 01 18:56	21°♌06'57	
conjunction	4115 Oct 09 18:01	17°♌11'47	0°58'03				
minimum elong	4115 Oct 09 18:00	17°♌11'47	0°58'02	conjunction	4121 Mar 14 15:46	24°♌11'23	-0°46'54

minimum elong	4121 Mar 14 15:44	24° ♋ 11'22	0°46'54	minimum elong	4126 Sep 12 01:08	20° ♏ 48'56	0°44'50
max. Earth dist.	4121 Mar 13 20:51	24° ♋ 00'04	6.02909 AU	max. Earth dist.	4126 Sep 12 23:22	21° ♏ 01'07	6.34645 AU
morning rise	4121 Mar 27 14:20	27° ♋ 16'57		morning rise	4126 Sep 25 11:30	23° ♏ 45'23	
	4121 Apr 08 02:47	0° ♏			4126 Oct 25 02:45	0° ♏	
retrograde	4121 Aug 05 02:37	17° ♏ 22'52		retrograde	4127 Jan 25 17:38	11° ♏ 06'04	
opposition	4121 Oct 04 06:10	12° ♏ 24'32	-1°24'00	opposition	4127 Mar 26 22:28	6° ♏ 07'52	1°18'15
min. Earth dist.	4121 Oct 04 06:35	12° ♏ 24'23	3.97711 AU	min. Earth dist.	4127 Mar 26 16:45	6° ♏ 09'45	4.40339 AU
direct	4121 Dec 02 01:58	7° ♏ 30'32		direct	4127 May 27 09:36	1° ♏ 05'26	
evening set	4122 Apr 06 19:33	27° ♏ 13'24		evening set	4127 Sep 30 21:55	18° ♏ 41'26	
	4122 Apr 18 06:26	0° ♏					
conjunction	4122 Apr 19 22:58	0° ♏ 24'38	-0°59'19	conjunction	4127 Oct 14 03:06	21° ♏ 32'11	0°59'02
minimum elong	4122 Apr 19 22:58	0° ♏ 24'38	0°59'18	minimum elong	4127 Oct 14 03:05	21° ♏ 32'11	0°59'02
max. Earth dist.	4122 Apr 20 14:16	0° ♏ 33'56	5.94528 AU	max. Earth dist.	4127 Oct 13 21:18	21° ♏ 29'03	6.44482 AU
morning rise	4122 May 03 05:10	3° ♏ 37'27		morning rise	4127 Oct 27 05:37	24° ♏ 21'37	
	4122 Jun 22 17:58	15° ♏			4127 Nov 23 07:52	0° ♏	
retrograde	4122 Sep 12 13:48	24° ♏ 21'08		retrograde	4128 Feb 24 16:36	11° ♏ 08'18	
min. Earth dist.	4122 Nov 10 10:13	19° ♏ 26'11	3.93814 AU	opposition	4128 Apr 25 05:56	6° ♏ 13'25	1°26'55
opposition	4122 Nov 11 07:31	19° ♏ 19'00	-1°25'26	min. Earth dist.	4128 Apr 25 18:55	6° ♏ 09'13	4.46838 AU
	4122 Dec 20 19:32	15° ♏		direct	4128 Jun 26 15:21	1° ♏ 11'03	
direct	4123 Jan 08 07:06	14° ♏ 24'48			4128 Oct 13 21:56	15° ♏	
	4123 Jan 26 17:49	15° ♏		evening set	4128 Oct 30 21:02	18° ♏ 34'13	
	4123 Apr 26 09:02	0° ♏		max. Earth dist.	4128 Nov 11 11:17	21° ♏ 03'54	6.47115 AU
evening set	4123 May 14 07:07	4° ♏ 14'07					
conjunction	4123 May 27 18:42	7° ♏ 28'44	-0°48'26	conjunction	4128 Nov 12 19:53	21° ♏ 21'30	0°56'58
minimum elong	4123 May 27 18:44	7° ♏ 28'46	0°48'26	minimum elong	4128 Nov 12 19:54	21° ♏ 21'30	0°56'58
max. Earth dist.	4123 May 29 16:50	7° ♏ 56'31	5.95457 AU	morning rise	4128 Nov 25 16:17	24° ♏ 07'35	
morning rise	4123 Jun 10 09:01	10° ♏ 44'45			4128 Dec 23 22:23	0° ♏	
	4123 Sep 22 12:08	0° ♏		retrograde	4129 Mar 25 20:49	10° ♏ 49'16	
retrograde	4123 Oct 20 00:53	1° ♏ 13'33		opposition	4129 May 25 15:39	5° ♏ 56'32	1°12'45
	4123 Nov 16 07:20	30° ♏		min. Earth dist.	4129 May 26 21:07	5° ♏ 47'06	4.45535 AU
min. Earth dist.	4123 Dec 17 02:48	26° ♏ 20'49	3.99524 AU	direct	4129 Jul 27 10:31	0° ♏ 54'54	
opposition	4123 Dec 18 13:24	26° ♏ 09'03	-0°52'29	evening set	4129 Nov 30 06:49	18° ♏ 24'19	
direct	4124 Feb 14 13:32	21° ♏ 12'41		max. Earth dist.	4129 Dec 11 01:20	20° ♏ 45'29	6.41912 AU
	4124 May 02 07:39	0° ♏					
evening set	4124 Jun 19 21:33	10° ♏ 39'05		conjunction	4129 Dec 13 01:39	21° ♏ 11'58	0°39'40
conjunction	4124 Jul 03 14:24	13° ♏ 51'35	-0°18'49	minimum elong	4129 Dec 13 01:40	21° ♏ 11'59	0°39'40
minimum elong	4124 Jul 03 14:25	13° ♏ 51'36	0°18'49	morning rise	4129 Dec 25 18:14	23° ♏ 58'44	
max. Earth dist.	4124 Jul 05 22:50	14° ♏ 24'39	6.05338 AU		4130 Jan 23 06:01	0° ♏	
morning rise	4124 Jul 17 09:06	17° ♏ 04'41		retrograde	4130 Apr 26 03:33	11° ♏ 04'57	
	4124 Sep 16 18:29	0° ♏		opposition	4130 Jun 26 02:12	6° ♏ 12'51	0°38'43
retrograde	4124 Nov 23 03:54	6° ♏ 35'23		min. Earth dist.	4130 Jun 27 15:20	6° ♏ 01'01	4.36713 AU
min. Earth dist.	4125 Jan 20 08:00	1° ♏ 42'51	4.12427 AU	direct	4130 Aug 27 12:13	1° ♏ 12'46	
opposition	4125 Jan 21 18:41	1° ♏ 31'03	-0°01'16	evening set	4130 Dec 31 02:53	19° ♏ 07'03	
asc. node	4125 Jan 31 08:00	0° ♏ 14'08		max. Earth dist.	4131 Jan 10 15:27	21° ♏ 28'59	6.30104 AU
	4125 Feb 02 03:32	30° ♏					
direct	4125 Mar 21 15:42	26° ♏ 31'49		conjunction	4131 Jan 12 19:45	21° ♏ 58'30	0°10'54
	4125 May 08 03:02	0° ♏		minimum elong	4131 Jan 12 19:46	21° ♏ 58'30	0°10'55
	4125 Jul 24 20:51	15° ♏		behind sun begin	4131 Jan 12 13:41	21° ♏ 55'06	
evening set	4125 Jul 26 05:23	15° ♏ 18'17		behind sun end	4131 Jan 13 01:51	22° ♏ 01'55	
conjunction	4125 Aug 08 22:15	18° ♏ 24'02	0°16'31	morning rise	4131 Jan 25 11:34	24° ♏ 49'41	
minimum elong	4125 Aug 08 22:14	18° ♏ 24'02	0°16'30		4131 Feb 18 01:33	0° ♏	
max. Earth dist.	4125 Aug 10 21:31	18° ♏ 50'47	6.20152 AU	desc. node	4131 May 22 17:58	12° ♏ 43'29	
morning rise	4125 Aug 22 14:51	21° ♏ 29'23		retrograde	4131 May 29 14:26	12° ♏ 47'53	
	4125 Oct 01 13:01	0° ♏		opposition	4131 Jul 29 09:25	7° ♏ 54'56	-0°08'28
retrograde	4125 Dec 25 22:00	9° ♏ 48'55		min. Earth dist.	4131 Jul 30 21:19	7° ♏ 43'26	4.22577 AU
opposition	4126 Feb 23 17:45	4° ♏ 47'10	0°47'00	direct	4131 Sep 28 21:05	2° ♏ 57'02	
min. Earth dist.	4126 Feb 22 18:42	4° ♏ 54'53	4.27693 AU		4132 Jan 03 04:35	15° ♏	
	4126 Apr 12 19:06	30° ♏		evening set	4132 Feb 01 07:24	21° ♏ 30'43	
direct	4126 Apr 24 22:05	29° ♏ 45'47		max. Earth dist.	4132 Feb 12 07:22	24° ♏ 04'20	6.14797 AU
	4126 May 07 03:10	0° ♏					
evening set	4126 Aug 29 13:17	17° ♏ 51'28		conjunction	4132 Feb 14 01:08	24° ♏ 28'43	-0°22'30
conjunction	4126 Sep 12 01:10	20° ♏ 48'57	0°44'49	minimum elong	4132 Feb 14 01:07	24° ♏ 28'42	0°22'29
				morning rise	4132 Feb 26 19:15	27° ♏ 27'11	
					4132 Mar 08 20:37	0° ♏	
				retrograde	4132 Jul 03 10:33	16° ♏ 35'55	
				opposition	4132 Sep 01 22:52	11° ♏ 40'36	-0°56'18
				min. Earth dist.	4132 Sep 02 19:20	11° ♏ 33'57	4.07246 AU

direct	4132 Oct 31 23:17	6° H 45'08	minimum elong	4138 Sep 16 17:16	25° M 24'03	0°47'47
evening set	4133 Mar 06 13:13	26° H 02'34	max. Earth dist.	4138 Sep 17 11:59	25° M 34'17	6.36574 AU
			morning rise	4138 Sep 30 02:24	28° M 19'13	
conjunction	4133 Mar 19 10:53	29° H 08'18 -0°49'46		4138 Oct 07 21:21	0° A	
minimum elong	4133 Mar 19 10:52	29° H 08'17 0°49'46	retrograde	4139 Jan 30 00:20	15° A 32'42	
max. Earth dist.	4133 Mar 18 20:05	28° H 59'24 6.00812 AU	opposition	4139 Mar 31 06:23	10° A 34'58	1°20'52
	4133 Mar 23 00:51	0° Y	min. Earth dist.	4139 Mar 31 03:36	10° A 35'53	4.41883 AU
morning rise	4133 Apr 01 10:23	2° Y 15'15	direct	4139 May 31 22:16	5° A 32'28	
retrograde	4133 Aug 10 10:43	22° Y 31'16	evening set	4139 Oct 05 08:34	23° A 04'46	
opposition	4133 Oct 09 10:49	17° Y 32'25 -1°26'21				
min. Earth dist.	4133 Oct 09 09:06	17° Y 32'59 3.96012 AU	conjunction	4139 Oct 18 12:41	25° A 54'43	0°59'43
direct	4133 Dec 07 02:52	12° Y 38'30	minimum elong	4139 Oct 18 12:40	25° A 54'43	0°59'43
	4134 Apr 01 17:42	0° B	max. Earth dist.	4139 Oct 18 01:40	25° A 48'47	6.45506 AU
evening set	4134 Apr 11 22:04	2° B 26'41	morning rise	4139 Oct 31 14:19	28° A 43'22	
				4139 Nov 06 14:08	0° M	
conjunction	4134 Apr 25 02:49	5° B 39'04 -0°59'11		4140 Feb 11 23:30	15° M	
minimum elong	4134 Apr 25 02:49	5° B 39'04 0°59'11	retrograde	4140 Feb 28 21:50	15° M 26'58	
max. Earth dist.	4134 Apr 25 23:31	5° B 51'40 5.93403 AU		4140 Mar 16 18:34	15° R M	
morning rise	4134 May 08 10:20	8° B 53'01	opposition	4140 Apr 29 12:12	10° M 32'25	1°26'13
	4134 Jun 03 09:40	15° B	min. Earth dist.	4140 Apr 30 04:04	10° M 27'17	4.47295 AU
retrograde	4134 Sep 17 22:48	29° B 40'44	direct	4140 Jul 01 00:22	5° M 30'02	
opposition	4134 Nov 16 14:21	24° B 38'11 -1°22'41		4140 Sep 26 10:40	15° M	
min. Earth dist.	4134 Nov 15 14:07	24° B 46'23 3.93420 AU	evening set	4140 Nov 04 03:46	22° M 52'22	
direct	4135 Jan 13 11:06	19° B 43'50	max. Earth dist.	4140 Nov 15 15:45	25° M 20'54	6.46969 AU
	4135 Apr 07 14:54	0° I				
evening set	4135 May 19 14:50	9° I 33'58	conjunction	4140 Nov 17 02:04	25° M 39'26	0°55'22
			minimum elong	4140 Nov 17 02:05	25° M 39'27	0°55'21
conjunction	4135 Jun 02 03:23	12° I 48'55 -0°45'06	morning rise	4140 Nov 29 21:37	28° M 25'18	
minimum elong	4135 Jun 02 03:25	12° I 48'57 0°45'06		4140 Dec 07 07:03	0° J	
max. Earth dist.	4135 Jun 04 03:41	13° I 17'58 5.95815 AU	retrograde	4141 Mar 30 02:53	15° J 08'21	
morning rise	4135 Jun 15 18:54	16° I 05'15	opposition	4141 May 29 23:38	10° J 15'47	1°09'00
	4135 Aug 19 14:18	0° E	min. Earth dist.	4141 May 31 06:20	10° J 05'58	4.44794 AU
retrograde	4135 Oct 25 03:42	6° E 29'53	direct	4141 Jul 31 17:57	5° J 14'21	
min. Earth dist.	4135 Dec 22 04:11	1° E 37'31 4.00579 AU	evening set	4141 Dec 04 13:38	22° J 45'57	
opposition	4135 Dec 23 16:34	1° E 25'07 -0°45'47	max. Earth dist.	4141 Dec 15 05:12	25° J 06'00	6.40622 AU
	4136 Jan 03 06:18	30° R I				
direct	4136 Feb 19 18:01	26° I 28'17	conjunction	4141 Dec 17 07:54	25° J 33'54	0°36'10
	4136 Apr 06 19:34	0° E	minimum elong	4141 Dec 17 07:55	25° J 33'55	0°36'11
evening set	4136 Jun 25 04:07	15° E 50'57	morning rise	4141 Dec 30 00:19	28° J 21'05	
				4142 Jan 06 14:10	0° Z	
conjunction	4136 Jul 08 21:31	19° E 02'53 -0°13'47	retrograde	4142 Apr 30 17:46	15° Z 33'02	
minimum elong	4136 Jul 08 21:32	19° E 02'53 0°13'47	opposition	4142 Jun 30 15:22	10° Z 40'56	0°32'37
behind sun begin	4136 Jul 08 17:18	19° E 00'25	min. Earth dist.	4142 Jul 02 06:03	10° Z 28'35	4.34931 AU
behind sun end	4136 Jul 09 01:47	19° E 05'21	direct	4142 Sep 01 00:12	5° Z 41'03	
max. Earth dist.	4136 Jul 11 07:28	19° E 36'42 6.06998 AU	evening set	4143 Jan 04 13:00	23° Z 40'24	
morning rise	4136 Jul 22 16:14	22° E 15'13	max. Earth dist.	4143 Jan 15 01:42	26° Z 03'05	6.27974 AU
	4136 Aug 26 13:32	0° O				
retrograde	4136 Nov 28 00:28	11° O 36'26	conjunction	4143 Jan 17 05:58	26° Z 32'43	0°06'17
asc. node	4136 Dec 10 01:20	11° O 21'50	minimum elong	4143 Jan 17 05:58	26° Z 32'42	0°06'16
min. Earth dist.	4137 Jan 25 05:24	6° O 43'39 4.14466 AU	behind sun begin	4143 Jan 16 22:25	26° Z 28'27	
opposition	4137 Jan 26 15:03	6° O 32'14 0°06'16	behind sun end	4143 Jan 17 13:30	26° Z 36'58	
direct	4137 Mar 26 16:22	1° O 32'35	morning rise	4143 Jan 29 21:55	29° Z 24'49	
	4137 Jul 07 11:15	15° O		4143 Feb 01 12:25	0° X	
evening set	4137 Jul 31 06:01	20° O 12'49	desc. node	4143 Apr 01 02:30	11° X 50'00	
				4143 Apr 23 07:28	15° X	
conjunction	4137 Aug 13 22:21	23° O 17'22 0°21'13	retrograde	4143 Jun 03 10:47	17° X 32'31	
minimum elong	4137 Aug 13 22:19	23° O 17'21 0°21'12		4143 Jul 15 03:43	15° R X	
max. Earth dist.	4137 Aug 15 19:27	23° O 42'45 6.22361 AU	opposition	4143 Aug 03 06:06	12° X 39'19	-0°15'34
morning rise	4137 Aug 27 14:20	26° O 21'25	min. Earth dist.	4143 Aug 04 15:54	12° X 28'28	4.20246 AU
	4137 Sep 13 04:02	0° M	direct	4143 Oct 03 12:16	7° X 41'47	
retrograde	4137 Dec 30 08:05	14° M 31'00		4143 Dec 14 16:20	15° X	
min. Earth dist.	4138 Feb 27 08:57	9° M 36'51 4.29854 AU	evening set	4144 Feb 06 00:08	26° X 22'18	
opposition	4138 Feb 28 06:43	9° M 29'34 0°52'42	max. Earth dist.	4144 Feb 17 03:37	28° X 58'46	6.12466 AU
direct	4138 Apr 29 15:26	4° M 27'54				
evening set	4138 Sep 03 06:18	22° M 27'48	conjunction	4144 Feb 18 18:14	29° X 21'26	-0°27'01
			minimum elong	4144 Feb 18 18:12	29° X 21'25	0°27'00
conjunction	4138 Sep 16 17:17	25° M 24'04 0°47'48		4144 Feb 21 11:56	0° H	

morning rise	4144 Mar 02 12:56	2° ♋ 21'09	opposition	4150 Mar 04 16:14	14° ♎ 03'04	0°57'52
retrograde	4144 Jul 08 18:29	21° ♋ 41'02	min. Earth dist.	4150 Mar 03 21:58	14° ♎ 09'10	4.32028 AU
opposition	4144 Sep 07 03:59	16° ♋ 45'18 -1°02'06	direct	4150 May 04 06:53	9° ♎ 01'13	
min. Earth dist.	4144 Sep 07 22:20	16° ♋ 39'19 4.05114 AU	evening set	4150 Sep 07 19:38	26° ♎ 55'48	
direct	4144 Nov 06 00:17	11° ♋ 50'10				
	4145 Mar 06 10:14	0° ♎	conjunction	4150 Sep 21 05:43	29° ♎ 50'59	0°50'23
evening set	4145 Mar 11 14:08	1° ♎ 13'55	minimum elong	4150 Sep 21 05:42	29° ♎ 50'58	0°50'23
				4150 Sep 21 22:16	0° ♎	
conjunction	4145 Mar 24 12:45	4° ♎ 20'49 -0°52'25	max. Earth dist.	4150 Sep 21 20:08	29° ♎ 58'50	6.38314 AU
minimum elong	4145 Mar 24 12:43	4° ♎ 20'49 0°52'25	morning rise	4150 Oct 04 13:46	2° ♎ 45'00	
max. Earth dist.	4145 Mar 24 02:59	4° ♎ 14'56 5.99101 AU	retrograde	4151 Feb 03 03:22	19° ♎ 52'31	
morning rise	4145 Apr 06 13:16	7° ♎ 29'01	opposition	4151 Apr 04 11:35	14° ♎ 55'17	1°22'59
retrograde	4145 Aug 15 22:13	27° ♎ 52'59	min. Earth dist.	4151 Apr 04 11:13	14° ♎ 55'24	4.43102 AU
opposition	4145 Oct 14 20:56	22° ♎ 53'40 -1°28'05	direct	4151 Jun 05 06:23	9° ♎ 52'44	
min. Earth dist.	4145 Oct 14 15:14	22° ♎ 55'34 3.94961 AU	evening set	4151 Oct 09 16:25	27° ♎ 22'39	
direct	4145 Dec 12 08:01	17° ♎ 59'57		4151 Oct 21 21:23	0° ♎	
	4146 Mar 14 14:20	0° ♎				
evening set	4146 Apr 17 05:51	7° ♎ 50'44	conjunction	4151 Oct 22 19:41	0° ♎ 12'01	1°00'04
			minimum elong	4151 Oct 22 19:40	0° ♎ 12'01	1°00'04
conjunction	4146 Apr 30 11:35	11° ♎ 03'46 -0°58'35	max. Earth dist.	4151 Oct 22 05:04	0° ♎ 04'08	6.46115 AU
minimum elong	4146 Apr 30 11:36	11° ♎ 03'46 0°58'36	morning rise	4151 Nov 04 20:17	3° ♎ 00'04	
max. Earth dist.	4146 May 01 12:21	11° ♎ 18'50 5.93116 AU		4152 Jan 06 18:36	15° ♎	
morning rise	4146 May 13 20:26	14° ♎ 18'26	retrograde	4152 Mar 04 01:42	19° ♎ 42'14	
	4146 May 16 17:26	15° ♎		4152 May 02 04:02	15° ♎	
	4146 Jul 27 00:47	0° ♎	opposition	4152 May 03 17:00	14° ♎ 48'06	1°25'07
retrograde	4146 Sep 23 07:48	5° ♎ 06'08	min. Earth dist.	4152 May 04 11:49	14° ♎ 42'03	4.47274 AU
opposition	4146 Nov 21 23:22	0° ♎ 03'08 -1°19'09	direct	4152 Jul 05 07:27	9° ♎ 45'50	
min. Earth dist.	4146 Nov 20 19:52	0° ♎ 12'27 3.93955 AU		4152 Sep 05 19:47	15° ♎	
	4146 Nov 22 08:38	30° ♎	evening set	4152 Nov 08 09:38	27° ♎ 08'58	
direct	4147 Jan 18 19:47	25° ♎ 08'32	max. Earth dist.	4152 Nov 19 16:21	29° ♎ 35'01	6.46307 AU
	4147 Mar 15 04:28	0° ♎				
evening set	4147 May 24 23:51	14° ♎ 55'50	conjunction	4152 Nov 21 07:11	29° ♎ 56'02	0°53'30
			minimum elong	4152 Nov 21 07:12	29° ♎ 56'03	0°53'30
conjunction	4147 Jun 07 13:28	18° ♎ 10'39 -0°41'25		4152 Nov 21 14:31	0° ♎	
minimum elong	4147 Jun 07 13:30	18° ♎ 10'40 0°41'25	morning rise	4152 Dec 04 02:20	2° ♎ 42'00	
max. Earth dist.	4147 Jun 09 17:59	18° ♎ 42'07 5.97125 AU	retrograde	4153 Apr 03 11:12	19° ♎ 28'09	
morning rise	4147 Jun 21 05:35	21° ♎ 26'39	opposition	4153 Jun 03 07:44	14° ♎ 25'17	1°04'56
	4147 Jul 28 21:18	0° ♎	min. Earth dist.	4153 Jun 04 16:28	14° ♎ 25'17	4.43545 AU
retrograde	4147 Oct 30 06:30	11° ♎ 43'15	direct	4153 Aug 05 01:47	9° ♎ 34'26	
min. Earth dist.	4147 Dec 27 06:34	6° ♎ 50'45 4.02491 AU	evening set	4153 Dec 08 20:41	27° ♎ 09'54	
opposition	4147 Dec 28 18:53	6° ♎ 38'22 -0°38'48	max. Earth dist.	4153 Dec 19 12:00	29° ♎ 30'22	6.38883 AU
direct	4148 Feb 24 23:28	1° ♎ 41'10				
evening set	4148 Jun 30 08:51	20° ♎ 57'13	conjunction	4153 Dec 21 14:50	29° ♎ 58'26	0°32'28
			minimum elong	4153 Dec 21 14:52	29° ♎ 58'27	0°32'29
conjunction	4148 Jul 14 02:19	24° ♎ 08'07 -0°08'46		4153 Dec 21 17:40	0° ♎	
minimum elong	4148 Jul 14 02:20	24° ♎ 08'07 0°08'45	morning rise	4154 Jan 03 06:57	2° ♎ 46'14	
behind sun begin	4148 Jul 13 19:07	24° ♎ 03'58	retrograde	4154 May 05 07:47	20° ♎ 05'27	
behind sun end	4148 Jul 14 09:32	24° ♎ 12'17	opposition	4154 Jul 05 05:59	15° ♎ 13'18	0°26'18
max. Earth dist.	4148 Jul 16 11:56	24° ♎ 41'32 6.09311 AU	min. Earth dist.	4154 Jul 06 20:05	15° ♎ 01'09	4.32816 AU
morning rise	4148 Jul 27 20:59	27° ♎ 19'19	direct	4154 Sep 05 11:10	10° ♎ 13'46	
	4148 Aug 08 15:16	0° ♎	evening set	4155 Jan 09 00:50	28° ♎ 19'09	
asc. node	4148 Oct 19 18:29	13° ♎ 30'28		4155 Jan 16 10:40	0° ♎	
	4148 Nov 02 03:43	15° ♎	max. Earth dist.	4155 Jan 19 14:14	0° ♎ 43'03	6.25652 AU
retrograde	4148 Dec 02 15:01	16° ♎ 29'10				
	4149 Jan 01 21:22	15° ♎	conjunction	4155 Jan 21 17:41	1° ♎ 12'22	0°01'33
min. Earth dist.	4149 Jan 29 22:45	11° ♎ 36'31 4.16942 AU	minimum elong	4155 Jan 21 17:41	1° ♎ 12'23	0°01'33
opposition	4149 Jan 31 08:01	11° ♎ 25'15 0°13'30	behind sun begin	4155 Jan 21 09:43	1° ♎ 07'51	
direct	4149 Mar 31 13:02	6° ♎ 25'16	behind sun end	4155 Jan 22 01:40	1° ♎ 16'54	
	4149 Jun 18 12:24	15° ♎	morning rise	4155 Feb 03 09:59	4° ♎ 05'33	
evening set	4149 Aug 05 03:10	24° ♎ 58'25	desc. node	4155 Feb 08 10:34	5° ♎ 13'40	
				4155 Mar 27 11:30	15° ♎	
conjunction	4149 Aug 18 18:51	28° ♎ 01'38 0°25'37	retrograde	4155 Jun 08 12:00	22° ♎ 23'30	
minimum elong	4149 Aug 18 18:49	28° ♎ 01'37 0°25'38	opposition	4155 Aug 08 05:14	17° ♎ 30'01	-0°22'41
max. Earth dist.	4149 Aug 20 11:46	28° ♎ 24'33 6.24790 AU	min. Earth dist.	4155 Aug 09 13:42	17° ♎ 19'34	4.17879 AU
	4149 Aug 27 14:28	0° ♎		4155 Aug 28 14:17	15° ♎	
morning rise	4149 Sep 01 09:58	1° ♎ 04'15	direct	4155 Oct 08 07:37	12° ♎ 32'48	
retrograde	4150 Jan 03 17:21	19° ♎ 03'58		4155 Nov 17 09:26	15° ♎	

	4156 Feb 05 01:29	0° \mathbb{H}		conjunction	4161 Aug 23 13:33	2° \mathbb{H} 41'04	0°29'50
evening set	4156 Feb 10 18:59	1° \mathbb{H} 20'02		minimum elong	4161 Aug 23 13:31	2° \mathbb{H} 41'03	0°29'50
max. Earth dist.	4156 Feb 22 03:06	3° \mathbb{H} 59'56	6.10277 AU	max. Earth dist.	4161 Aug 25 04:00	3° \mathbb{H} 02'30	6.26879 AU
				morning rise	4161 Sep 06 03:45	5° \mathbb{H} 42'25	
conjunction	4156 Feb 23 13:39	4° \mathbb{H} 20'18	-0°31'22	retrograde	4162 Jan 08 00:01	23° \mathbb{H} 33'40	
minimum elong	4156 Feb 23 13:37	4° \mathbb{H} 20'17	0°31'22	min. Earth dist.	4162 Mar 08 08:15	18° \mathbb{H} 38'49	4.33820 AU
morning rise	4156 Mar 07 08:56	7° \mathbb{H} 21'14		opposition	4162 Mar 09 00:49	18° \mathbb{H} 33'18	1°02'40
retrograde	4156 Jul 14 02:13	26° \mathbb{H} 51'11		direct	4162 May 08 18:45	13° \mathbb{H} 31'19	
opposition	4156 Sep 12 10:26	21° \mathbb{H} 55'00	-1°07'28		4162 Sep 06 00:13	0° \mathbb{H}	
min. Earth dist.	4156 Sep 13 01:02	21° \mathbb{H} 50'14	4.03331 AU	evening set	4162 Sep 12 08:32	1° \mathbb{H} 21'51	
direct	4156 Nov 11 00:39	17° \mathbb{H} 00'10					
	4157 Feb 16 21:27	0° \mathbb{Y}		conjunction	4162 Sep 25 17:36	4° \mathbb{H} 16'05	0°52'41
evening set	4157 Mar 16 16:30	6° \mathbb{Y} 28'40		minimum elong	4162 Sep 25 17:34	4° \mathbb{H} 16'04	0°52'41
				max. Earth dist.	4162 Sep 26 02:41	4° \mathbb{H} 21'01	6.39679 AU
conjunction	4157 Mar 29 15:48	9° \mathbb{Y} 36'29	-0°54'40	morning rise	4162 Oct 09 00:40	7° \mathbb{H} 09'09	
minimum elong	4157 Mar 29 15:47	9° \mathbb{Y} 36'28	0°54'39	retrograde	4163 Feb 07 09:13	24° \mathbb{H} 11'57	
max. Earth dist.	4157 Mar 29 10:20	9° \mathbb{Y} 33'11	5.97873 AU	opposition	4163 Apr 08 17:16	19° \mathbb{H} 15'15	1°24'39
morning rise	4157 Apr 11 17:28	12° \mathbb{Y} 45'42		min. Earth dist.	4163 Apr 08 20:40	19° \mathbb{H} 14'09	4.43966 AU
	4157 Jul 06 07:27	0° \mathbb{Z}		direct	4163 Jun 09 16:19	14° \mathbb{H} 12'42	
retrograde	4157 Aug 21 08:01	3° \mathbb{Z} 15'10			4163 Oct 06 02:13	0° \mathbb{M}	
	4157 Oct 06 21:28	30° \mathbb{R} \mathbb{Y}		evening set	4163 Oct 14 00:51	1° \mathbb{M} 41'14	
opposition	4157 Oct 20 06:39	28° \mathbb{Y} 15'13	-1°29'03	max. Earth dist.	4163 Oct 26 08:45	4° \mathbb{M} 20'10	6.46407 AU
min. Earth dist.	4157 Oct 19 21:02	28° \mathbb{Y} 18'25	3.94429 AU				
direct	4157 Dec 17 15:00	23° \mathbb{Y} 21'26		conjunction	4163 Oct 27 03:19	4° \mathbb{M} 30'10	1°00'05
	4158 Feb 21 09:48	0° \mathbb{Z}		minimum elong	4163 Oct 27 03:19	4° \mathbb{M} 30'10	1°00'05
evening set	4158 Apr 22 12:40	13° \mathbb{Z} 12'39		morning rise	4163 Nov 09 03:05	7° \mathbb{M} 17'47	
	4158 Apr 29 21:55	15° \mathbb{Z}			4163 Dec 16 21:57	15° \mathbb{M}	
				retrograde	4164 Mar 08 06:36	23° \mathbb{M} 59'29	
conjunction	4158 May 05 19:40	16° \mathbb{Z} 26'07	-0°57'30	opposition	4164 May 07 23:08	19° \mathbb{M} 05'41	1°23'32
minimum elong	4158 May 05 19:41	16° \mathbb{Z} 26'08	0°57'30	min. Earth dist.	4164 May 08 19:40	18° \mathbb{M} 59'04	4.47006 AU
max. Earth dist.	4158 May 07 02:37	16° \mathbb{Z} 44'56	5.93324 AU		4164 Jun 14 09:52	15° \mathbb{R} \mathbb{M}	
morning rise	4158 May 19 05:28	19° \mathbb{Z} 41'09		direct	4164 Jul 09 13:57	14° \mathbb{M} 03'32	
	4158 Jul 03 13:29	0° \mathbb{I}			4164 Aug 03 23:24	15° \mathbb{M}	
retrograde	4158 Sep 28 16:11	10° \mathbb{I} 26'31			4164 Nov 05 19:42	0° \mathbb{X}	
min. Earth dist.	4158 Nov 26 01:25	5° \mathbb{I} 32'50	3.94876 AU	evening set	4164 Nov 12 16:28	1° \mathbb{X} 28'04	
opposition	4158 Nov 27 06:09	5° \mathbb{I} 23'05	-1°14'59	max. Earth dist.	4164 Nov 23 21:26	3° \mathbb{X} 53'29	6.45505 AU
direct	4159 Jan 24 03:15	0° \mathbb{I} 28'11					
evening set	4159 May 30 06:48	20° \mathbb{I} 11'26		conjunction	4164 Nov 25 13:31	4° \mathbb{X} 15'14	0°51'18
				minimum elong	4164 Nov 25 13:32	4° \mathbb{X} 15'15	0°51'18
conjunction	4159 Jun 12 21:08	23° \mathbb{I} 25'53	-0°37'27	morning rise	4164 Dec 08 08:00	7° \mathbb{X} 01'18	
minimum elong	4159 Jun 12 21:10	23° \mathbb{I} 25'54	0°37'27	retrograde	4165 Apr 07 20:50	23° \mathbb{X} 51'04	
max. Earth dist.	4159 Jun 15 03:24	23° \mathbb{I} 58'15	5.98645 AU	opposition	4165 Jun 07 17:46	18° \mathbb{X} 58'53	1°00'26
morning rise	4159 Jun 26 14:01	26° \mathbb{I} 41'26		min. Earth dist.	4165 Jun 09 03:45	18° \mathbb{X} 48'03	4.42263 AU
	4159 Jul 10 17:55	0° \mathbb{E}		direct	4165 Aug 09 11:02	13° \mathbb{X} 57'55	
retrograde	4159 Nov 04 04:08	16° \mathbb{E} 49'10			4165 Dec 05 19:18	0° \mathbb{Z}	
min. Earth dist.	4160 Jan 01 04:35	11° \mathbb{E} 56'59	4.04443 AU	evening set	4165 Dec 13 05:15	1° \mathbb{Z} 37'09	
opposition	4160 Jan 02 17:51	11° \mathbb{E} 44'17	-0°31'40	max. Earth dist.	4165 Dec 23 18:23	3° \mathbb{Z} 57'02	6.37227 AU
direct	4160 Mar 01 00:10	6° \mathbb{E} 46'40					
evening set	4160 Jul 05 11:10	25° \mathbb{E} 56'28		conjunction	4165 Dec 25 22:58	4° \mathbb{Z} 26'12	0°28'32
				minimum elong	4165 Dec 25 22:59	4° \mathbb{Z} 26'13	0°28'31
conjunction	4160 Jul 19 04:40	29° \mathbb{E} 06'23	-0°03'46	morning rise	4166 Jan 07 15:06	7° \mathbb{Z} 14'38	
minimum elong	4160 Jul 19 04:39	29° \mathbb{E} 06'22	0°03'46	retrograde	4166 May 10 00:58	24° \mathbb{Z} 40'59	
behind sun begin	4160 Jul 18 20:22	29° \mathbb{E} 01'36		opposition	4166 Jul 09 22:19	19° \mathbb{Z} 48'47	0°19'43
behind sun end	4160 Jul 19 12:56	29° \mathbb{E} 11'08		min. Earth dist.	4166 Jul 11 12:00	19° \mathbb{Z} 36'46	4.30901 AU
max. Earth dist.	4160 Jul 21 11:41	29° \mathbb{E} 38'07	6.11520 AU	direct	4166 Sep 10 00:40	14° \mathbb{Z} 49'36	
	4160 Jul 23 01:36	0° \mathbb{O}		desc. node	4166 Dec 18 18:17	27° \mathbb{Z} 19'11	
morning rise	4160 Aug 01 23:09	2° \mathbb{O} 16'26			4166 Dec 31 03:53	0° \mathbb{A}	
asc. node	4160 Aug 29 17:41	8° \mathbb{O} 26'30		evening set	4167 Jan 13 13:36	3° \mathbb{A} 00'16	
	4160 Oct 02 11:49	15° \mathbb{O}		max. Earth dist.	4167 Jan 24 06:15	5° \mathbb{A} 26'38	6.23662 AU
retrograde	4160 Dec 07 05:56	21° \mathbb{O} 15'48					
opposition	4161 Feb 04 22:58	16° \mathbb{O} 12'13	0°20'32	conjunction	4167 Jan 26 06:40	5° \mathbb{A} 54'21	-0°03'20
min. Earth dist.	4161 Feb 03 16:21	16° \mathbb{O} 22'34	4.19177 AU	minimum elong	4167 Jan 26 06:39	5° \mathbb{A} 54'21	0°03'19
	4161 Feb 13 22:42	15° \mathbb{R} \mathbb{O}		behind sun begin	4167 Jan 25 22:43	5° \mathbb{A} 49'49	
direct	4161 Apr 05 09:40	11° \mathbb{O} 11'53		behind sun end	4167 Jan 26 14:35	5° \mathbb{A} 58'52	
	4161 May 25 17:53	15° \mathbb{O}		morning rise	4167 Feb 07 23:01	8° \mathbb{A} 48'25	
evening set	4161 Aug 09 22:21	29° \mathbb{O} 38'59			4167 Mar 07 23:04	15° \mathbb{A}	
	4161 Aug 11 12:15	0° \mathbb{H}		retrograde	4167 Jun 13 12:09	27° \mathbb{A} 15'23	

opposition	4167 Aug 13 04:47	22° \approx 21'40	-0°29'38	direct	4173 Apr 10 00:14	15° Ω 50'56	
min. Earth dist.	4167 Aug 14 10:49	22° \approx 12'00	4.15978 AU		4173 Jul 26 04:10	0° Π	
direct	4167 Oct 13 02:01	17° \approx 24'55		evening set	4173 Aug 14 14:49	4° Π 13'28	
	4168 Jan 18 22:28	0° X					
evening set	4168 Feb 15 13:43	6° X 17'10		conjunction	4173 Aug 28 05:13	7° Π 14'32	0°33'42
max. Earth dist.	4168 Feb 27 01:07	8° X 59'39	6.08627 AU	minimum elong	4173 Aug 28 05:11	7° Π 14'31	0°33'42
				max. Earth dist.	4173 Aug 29 14:27	7° Π 33'00	6.28559 AU
conjunction	4168 Feb 28 08:36	9° X 18'17	-0°35'28	morning rise	4173 Sep 10 18:45	10° Π 14'51	
minimum elong	4168 Feb 28 08:34	9° X 18'16	0°35'29	retrograde	4174 Jan 12 07:00	27° Π 59'17	
morning rise	4168 Mar 12 04:38	12° X 20'13		opposition	4174 Mar 13 07:33	22° Π 59'25	1°06'57
	4168 Jun 13 14:26	0° Υ		min. Earth dist.	4174 Mar 12 18:23	23° Π 03'48	4.35199 AU
retrograde	4168 Jul 19 07:43	1° Υ 58'23		direct	4174 May 13 06:04	17° Π 57'14	
	4168 Aug 24 05:03	30° R X			4174 Aug 20 09:08	0° Ω	
opposition	4168 Sep 17 15:36	27° X 01'40	-1°12'13	evening set	4174 Sep 16 19:33	5° Ω 45'00	
min. Earth dist.	4168 Sep 18 02:28	26° X 58'06	4.02089 AU				
direct	4168 Nov 16 01:41	22° X 07'05		conjunction	4174 Sep 30 03:55	8° Ω 38'32	0°54'37
	4169 Jan 28 06:47	0° Υ		minimum elong	4174 Sep 30 03:54	8° Ω 38'31	0°54'38
evening set	4169 Mar 21 16:46	11° Υ 38'25		max. Earth dist.	4174 Sep 30 10:30	8° Ω 42'07	6.40666 AU
				morning rise	4174 Oct 13 09:53	11° Ω 30'48	
conjunction	4169 Apr 03 17:02	14° Υ 46'57	-0°56'24	retrograde	4175 Feb 11 12:31	28° Ω 30'05	
minimum elong	4169 Apr 03 17:01	14° Υ 46'56	0°56'24	opposition	4175 Apr 12 22:13	23° Ω 33'49	1°25'49
max. Earth dist.	4169 Apr 03 17:52	14° Υ 47'28	5.97164 AU	min. Earth dist.	4175 Apr 13 03:00	23° Ω 32'15	4.44533 AU
morning rise	4169 Apr 16 19:28	17° Υ 56'52		direct	4175 Jun 13 22:41	18° Ω 31'17	
	4169 Jun 10 00:02	0° B			4175 Sep 19 10:31	0° Π	
retrograde	4169 Aug 26 16:09	8° B 29'40		evening set	4175 Oct 18 08:27	5° Π 59'01	
opposition	4169 Oct 25 12:52	3° B 29'14	-1°29'12	max. Earth dist.	4175 Oct 30 11:59	8° Π 35'41	6.46516 AU
min. Earth dist.	4169 Oct 25 01:00	3° B 33'12	3.94351 AU				
	4169 Nov 23 16:40	30° R Υ		conjunction	4175 Oct 31 09:59	8° Π 47'33	0°59'44
direct	4169 Dec 22 19:41	28° Υ 35'27		minimum elong	4175 Oct 31 09:59	8° Π 47'33	0°59'44
	4170 Jan 20 17:54	0° B		morning rise	4175 Nov 13 08:59	11° Π 34'50	
	4170 Apr 13 07:15	15° B			4175 Nov 29 13:41	15° Π	
evening set	4170 Apr 27 16:16	18° B 25'42		retrograde	4176 Mar 12 13:02	28° Π 16'28	
				opposition	4176 May 12 05:18	23° Π 22'57	1°21'29
conjunction	4170 May 11 00:08	21° B 39'22	-0°55'57	min. Earth dist.	4176 May 13 04:28	23° Π 15'30	4.46661 AU
minimum elong	4170 May 11 00:10	21° B 39'23	0°55'57	direct	4176 Jul 13 22:07	18° Π 20'54	
max. Earth dist.	4170 May 12 09:50	21° B 59'48	5.93858 AU		4176 Oct 20 06:42	0° X	
morning rise	4170 May 24 11:07	24° B 54'38		evening set	4176 Nov 16 22:48	5° X 46'35	
	4170 Jun 15 01:05	0° Π		max. Earth dist.	4176 Nov 28 00:37	8° X 10'37	6.44716 AU
retrograde	4170 Oct 03 17:00	15° Π 36'18					
min. Earth dist.	4170 Dec 01 00:49	10° Π 43'06	3.95980 AU	conjunction	4176 Nov 29 19:16	8° X 33'49	0°48'49
opposition	4170 Dec 02 07:53	10° Π 32'34	-1°10'21	minimum elong	4176 Nov 29 19:17	8° X 33'50	0°48'50
direct	4171 Jan 29 04:18	5° Π 37'21		morning rise	4176 Dec 12 13:19	11° X 20'00	
evening set	4171 Jun 04 09:19	25° Π 16'25		retrograde	4177 Apr 12 05:44	28° X 13'05	
				opposition	4177 Jun 12 03:23	23° X 20'53	0°55'34
conjunction	4171 Jun 18 00:19	28° Π 30'26	-0°33'21	min. Earth dist.	4177 Jun 13 13:37	23° X 09'58	4.41074 AU
minimum elong	4171 Jun 18 00:21	28° Π 30'27	0°33'20	direct	4177 Aug 13 18:45	18° X 20'02	
max. Earth dist.	4171 Jun 20 06:38	29° Π 02'42	6.00200 AU		4177 Nov 19 04:58	0° B	
	4171 Jun 24 07:12	0° B		evening set	4177 Dec 17 12:47	6° B 02'22	
morning rise	4171 Jul 01 17:44	1° B 45'28		max. Earth dist.	4177 Dec 28 03:00	8° B 23'19	6.35711 AU
retrograde	4171 Nov 08 22:52	21° B 44'49					
min. Earth dist.	4172 Jan 06 00:38	16° B 52'12	4.06260 AU	conjunction	4177 Dec 30 06:20	8° B 51'54	0°24'26
opposition	4172 Jan 07 12:29	16° B 39'59	-0°24'36	minimum elong	4177 Dec 30 06:21	8° B 51'55	0°24'26
direct	4172 Mar 05 23:09	11° B 41'57		morning rise	4178 Jan 11 22:11	11° B 40'51	
	4172 Jul 06 23:57	0° Ω		retrograde	4178 May 14 16:43	29° B 13'44	
evening set	4172 Jul 10 09:08	0° Ω 46'18		opposition	4178 Jul 14 13:47	24° B 21'23	0°13'01
asc. node	4172 Jul 11 06:58	0° Ω 58'46		min. Earth dist.	4178 Jul 16 03:23	24° B 09'22	4.29117 AU
				direct	4178 Sep 14 13:14	19° B 22'29	
conjunction	4172 Jul 24 02:46	3° Ω 55'22	0°01'11	desc. node	4178 Oct 28 14:58	22° B 13'34	
minimum elong	4172 Jul 24 02:44	3° Ω 55'21	0°01'10		4178 Dec 13 23:49	0° \approx	
behind sun begin	4172 Jul 23 18:21	3° Ω 50'34		evening set	4179 Jan 18 01:02	7° \approx 37'47	
behind sun end	4172 Jul 24 11:07	4° Ω 00'09		max. Earth dist.	4179 Jan 28 17:52	10° \approx 04'57	6.21726 AU
max. Earth dist.	4172 Jul 26 09:09	4° Ω 26'36	6.13453 AU				
morning rise	4172 Aug 06 20:52	7° Ω 04'24		conjunction	4179 Jan 30 18:00	10° \approx 32'38	-0°08'02
	4172 Sep 12 05:34	15° Ω		minimum elong	4179 Jan 30 18:00	10° \approx 32'38	0°08'01
retrograde	4172 Dec 11 16:50	25° Ω 54'41		behind sun begin	4179 Jan 30 10:51	10° \approx 28'32	
min. Earth dist.	4173 Feb 08 04:59	21° Ω 01'27	4.21056 AU	behind sun end	4179 Jan 31 01:09	10° \approx 36'43	
opposition	4173 Feb 09 10:23	20° Ω 51'32	0°27'08	morning rise	4179 Feb 12 10:49	13° \approx 27'38	

	4179 Feb 19 05:02	15°♊	retrograde	4184 Dec 16 06:21	0°♏40'16	
	4179 May 12 15:39	0°♋		4185 Jan 05 10:51	30°♎	
retrograde	4179 Jun 18 11:05	2°♋03'40	min. Earth dist.	4185 Feb 12 21:05	25°♎46'51	4.23053 AU
	4179 Jul 25 13:05	30°♎	opposition	4185 Feb 14 00:44	25°♎37'32	0°33'47
opposition	4179 Aug 18 03:03	27°♎09'32 -0°36'23	direct	4185 Apr 14 18:59	20°♎36'42	
min. Earth dist.	4179 Aug 19 06:46	27°♎00'35 4.14014 AU		4185 Jul 07 18:40	0°♏	
direct	4179 Oct 17 19:27	22°♎13'02	evening set	4185 Aug 19 09:45	8°♏54'06	
	4179 Dec 30 20:50	0°♋				
evening set	4180 Feb 20 07:17	11°♋10'45	conjunction	4185 Sep 01 23:36	11°♏54'05	0°37'30
max. Earth dist.	4180 Mar 03 00:08	13°♋57'01 6.06813 AU	minimum elong	4185 Sep 01 23:34	11°♏54'04	0°37'29
			max. Earth dist.	4185 Sep 03 07:25	12°♏11'42	6.30517 AU
conjunction	4180 Mar 04 02:50	14°♋12'53 -0°39'20	morning rise	4185 Sep 15 12:01	14°♏53'09	
minimum elong	4180 Mar 04 02:48	14°♋12'52 0°39'19		4185 Dec 07 04:24	0°♎	
morning rise	4180 Mar 16 23:23	17°♋15'52	retrograde	4186 Jan 16 14:39	2°♎29'45	
	4180 May 15 04:11	0°♑		4186 Feb 25 22:53	30°♎	
retrograde	4180 Jul 24 14:02	7°♑02'52	opposition	4186 Mar 17 16:32	27°♏30'27	1°10'57
opposition	4180 Sep 22 19:45	2°♑05'42 -1°16'27	min. Earth dist.	4186 Mar 17 04:43	27°♏34'22	4.36993 AU
min. Earth dist.	4180 Sep 23 04:32	2°♑02'50 4.00602 AU	direct	4186 May 17 18:31	22°♏28'17	
	4180 Oct 09 07:13	30°♎		4186 Aug 01 06:53	0°♎	
direct	4180 Nov 21 01:51	27°♎11'21	evening set	4186 Sep 21 08:03	10°♎11'37	
	4181 Jan 01 23:08	0°♑				
evening set	4181 Mar 26 17:11	16°♑46'46	conjunction	4186 Oct 04 15:14	13°♎04'07	0°56'19
			minimum elong	4186 Oct 04 15:12	13°♎04'06	0°56'19
conjunction	4181 Apr 08 18:16	19°♑56'11 -0°57'44	max. Earth dist.	4186 Oct 04 17:06	13°♎05'08	6.42174 AU
minimum elong	4181 Apr 08 18:15	19°♑56'11 0°57'45	morning rise	4186 Oct 17 20:15	15°♎55'23	
max. Earth dist.	4181 Apr 08 22:17	19°♑58'37 5.96130 AU		4187 Jan 03 06:11	0°♎	
morning rise	4181 Apr 21 21:59	23°♑07'08	retrograde	4187 Feb 15 17:42	2°♎49'30	
	4181 May 21 08:59	0°♎		4187 Mar 31 09:41	30°♎	
retrograde	4181 Aug 31 23:00	13°♎44'29	opposition	4187 Apr 17 03:57	27°♎53'40	1°26'33
opposition	4181 Oct 30 19:09	8°♎43'33 -1°28'42	min. Earth dist.	4187 Apr 17 11:44	27°♎51'08	4.45678 AU
min. Earth dist.	4181 Oct 30 03:28	8°♎48'48 3.93909 AU	direct	4187 Jun 18 08:25	22°♎51'09	
direct	4181 Dec 27 22:14	3°♎49'41		4187 Aug 31 12:36	0°♎	
	4182 Mar 26 06:56	15°♎	evening set	4187 Oct 22 15:21	10°♎16'03	
evening set	4182 May 02 21:08	23°♎40'41				
			conjunction	4187 Nov 04 16:09	13°♎04'00	0°59'08
conjunction	4182 May 16 06:11	26°♎54'49 -0°53'58	minimum elong	4187 Nov 04 16:09	13°♎04'01	0°59'08
minimum elong	4182 May 16 06:12	26°♎54'50 0°53'59	max. Earth dist.	4187 Nov 03 16:04	12°♎51'02	6.47214 AU
max. Earth dist.	4182 May 17 19:32	27°♎17'26 5.94046 AU		4187 Nov 13 15:38	15°♎	
morning rise	4182 May 29 18:13	0°♐10'29	morning rise	4187 Nov 17 14:08	15°♎50'40	
	4182 May 29 00:46	0°♐		4188 Feb 04 15:35	0°♐	
retrograde	4182 Oct 08 21:22	20°♐49'51	retrograde	4188 Mar 16 15:33	2°♐30'31	
min. Earth dist.	4182 Dec 06 03:37	15°♐56'38 3.96760 AU		4188 Apr 27 00:04	30°♎	
opposition	4182 Dec 07 11:25	15°♐45'49 -1°05'09	opposition	4188 May 16 10:10	27°♎37'15	1°19'04
direct	4183 Feb 03 09:03	10°♐50'16	min. Earth dist.	4188 May 17 10:17	27°♎29'31	4.46874 AU
	4183 Jun 07 17:33	0°♑	direct	4188 Jul 18 02:56	22°♎35'20	
evening set	4183 Jun 09 14:31	0°♑26'27		4188 Oct 01 22:12	0°♐	
			evening set	4188 Nov 21 02:43	10°♐00'24	
conjunction	4183 Jun 23 06:22	3°♑40'14 -0°28'54	max. Earth dist.	4188 Dec 02 02:01	12°♐23'15	6.44416 AU
minimum elong	4183 Jun 23 06:23	3°♑40'15 0°28'54				
max. Earth dist.	4183 Jun 25 15:12	4°♑13'52 6.01506 AU	conjunction	4188 Dec 03 22:30	12°♐47'29	0°46'10
morning rise	4183 Jul 07 00:13	6°♑54'52	minimum elong	4188 Dec 03 22:31	12°♐47'30	0°46'10
retrograde	4183 Nov 13 20:39	26°♑46'26	morning rise	4188 Dec 16 16:01	15°♐33'36	
min. Earth dist.	4184 Jan 10 21:28	21°♑54'03 4.07946 AU		4189 Mar 06 16:11	0°♑	
opposition	4184 Jan 12 09:32	21°♑41'47 -0°17'11	retrograde	4189 Apr 16 13:09	2°♑28'50	
direct	4184 Mar 10 22:30	16°♑43'26		4189 May 27 19:08	30°♎	
asc. node	4184 May 20 20:54	24°♑01'18	opposition	4189 Jun 16 10:33	27°♐36'43	0°50'35
	4184 Jun 19 17:43	0°♎	min. Earth dist.	4189 Jun 17 23:00	27°♐25'06	4.40242 AU
evening set	4184 Jul 15 10:39	5°♎42'57	direct	4189 Aug 18 02:08	22°♐36'03	
				4189 Oct 31 23:11	0°♑	
conjunction	4184 Jul 29 04:01	8°♎51'05 0°06'11	evening set	4189 Dec 21 16:55	10°♑20'26	
minimum elong	4184 Jul 29 03:59	8°♎51'04 0°06'11	max. Earth dist.	4190 Jan 01 04:42	12°♑40'30	6.34395 AU
behind sun begin	4184 Jul 28 20:05	8°♎46'34				
behind sun end	4184 Jul 29 11:54	8°♎55'35	conjunction	4190 Jan 03 10:10	13°♑10'21	0°20'22
max. Earth dist.	4184 Jul 31 07:30	9°♎20'32 6.15376 AU	minimum elong	4190 Jan 03 10:10	13°♑10'22	0°20'22
morning rise	4184 Aug 11 21:58	11°♎59'08	morning rise	4190 Jan 16 01:59	15°♑59'48	
	4184 Aug 25 08:45	15°♎		4190 Mar 30 06:11	0°♊	
	4184 Nov 25 22:19	0°♏	retrograde	4190 May 19 04:21	3°♊38'59	

	4190 Jul 09 08:50	30° κ 3				4195 Dec 22 18:17	30° κ 3	
opposition	4190 Jul 19 01:43	28°34'25 0°06'29		min. Earth dist.		4196 Jan 15 19:45	26°35'59"53	4.09659 AU
min. Earth dist.	4190 Jul 20 14:44	28°33'34 4.27375 AU		opposition		4196 Jan 17 08:04	26°34'731	-0°09'37
desc. node	4190 Sep 09 14:30	23°35'548		direct		4196 Mar 16 00:20	21°34'4841	
direct	4190 Sep 18 21:12	23°34'743		asc. node		4196 Mar 29 16:38	22°30'730	
	4190 Nov 24 13:23	0° \approx				4196 May 30 23:43	0° Ω	
evening set	4191 Jan 22 09:06	12° \approx 07'57		evening set		4196 Jul 20 13:27	10° Ω 42'50	
max. Earth dist.	4191 Feb 02 04:17	14° \approx 37'05	6.19697 AU					
	4191 Feb 03 19:56	15° \approx		conjunction		4196 Aug 03 06:45	13° Ω 49'58	0°11'08
				minimum elong		4196 Aug 03 06:44	13° Ω 49'57	0°11'09
conjunction	4191 Feb 04 02:21	15° \approx 03'41 -0°12'31		behind sun begin		4196 Aug 03 00:37	13° Ω 46'29	
minimum elong	4191 Feb 04 02:20	15° \approx 03'41 0°12'31		behind sun end		4196 Aug 03 12:50	13° Ω 53'24	
behind sun begin	4191 Feb 03 21:04	15° \approx 00'39		max. Earth dist.		4196 Aug 05 10:04	14° Ω 19'11	6.17429 AU
behind sun end	4191 Feb 04 07:36	15° \approx 06'43				4196 Aug 08 09:49	15° Ω	
morning rise	4191 Feb 16 19:19	17° \approx 59'38		morning rise		4196 Aug 17 00:03	16° Ω 56'49	
	4191 Apr 15 01:34	0° \mathcal{H}				4196 Oct 20 16:39	0° \mathcal{H}	
retrograde	4191 Jun 23 08:18	6° \mathcal{H} 45'21		retrograde		4196 Dec 20 21:08	5° \mathcal{H} 27'58	
opposition	4191 Aug 22 22:11	1° \mathcal{H} 50'54 -0°42'43		opposition		4197 Feb 18 16:02	0° \mathcal{H} 25'32	0°40'13
min. Earth dist.	4191 Aug 24 01:28	1° \mathcal{H} 42'05 4.11832 AU		min. Earth dist.		4197 Feb 17 13:58	0° \mathcal{H} 34'18	4.25212 AU
	4191 Sep 06 13:20	30° κ \approx				4197 Feb 21 20:05	30° κ Ω	
direct	4191 Oct 22 10:42	26° \approx 54'40		direct		4197 Apr 19 14:59	25° Ω 24'24	
	4191 Dec 06 05:59	0° \mathcal{H}				4197 Jun 14 23:13	0° \mathcal{H}	
evening set	4192 Feb 24 22:28	15° \mathcal{H} 59'00		evening set		4197 Aug 24 05:32	13° \mathcal{H} 35'49	
conjunction	4192 Mar 08 18:33	19° \mathcal{H} 02'20 -0°42'48		conjunction		4197 Sep 06 18:23	16° \mathcal{H} 34'33	0°41'05
minimum elong	4192 Mar 08 18:31	19° \mathcal{H} 02'19 0°42'48		minimum elong		4197 Sep 06 18:21	16° \mathcal{H} 34'32	0°41'05
max. Earth dist.	4192 Mar 07 17:12	18° \mathcal{H} 47'13 6.04661 AU		max. Earth dist.		4197 Sep 07 21:55	16° \mathcal{H} 49'43	6.32565 AU
morning rise	4192 Mar 21 16:07	22° \mathcal{H} 06'41		morning rise		4197 Sep 20 05:55	19° \mathcal{H} 32'19	
	4192 Apr 25 05:53	0° \mathcal{Y}				4197 Nov 11 00:58	0° \mathcal{L}	
retrograde	4192 Jul 29 17:21	12° \mathcal{Y} 04'06		retrograde		4198 Jan 20 22:02	7° \mathcal{L} 00'45	
opposition	4192 Sep 27 21:59	7° \mathcal{Y} 06'26 -1°20'05		opposition		4198 Mar 22 01:52	2° \mathcal{L} 01'50	1°14'34
min. Earth dist.	4192 Sep 28 03:09	7° \mathcal{Y} 04'44 3.98696 AU		min. Earth dist.		4198 Mar 21 16:41	2° \mathcal{L} 04'52	4.38767 AU
direct	4192 Nov 25 22:27	2° \mathcal{Y} 12'12				4198 Apr 06 22:28	30° κ \mathcal{H}	
evening set	4193 Mar 31 16:49	21° \mathcal{Y} 53'39		direct		4198 May 22 08:24	26° \mathcal{H} 59'28	
						4198 Jul 07 03:21	0° \mathcal{L}	
conjunction	4193 Apr 13 19:05	25° \mathcal{Y} 04'16 -0°58'37		evening set		4198 Sep 25 20:38	14° \mathcal{L} 38'28	
minimum elong	4193 Apr 13 19:04	25° \mathcal{Y} 04'16 0°58'37						
max. Earth dist.	4193 Apr 14 04:04	25° \mathcal{Y} 09'44 5.94661 AU		conjunction		4198 Oct 09 02:58	17° \mathcal{L} 30'03	0°57'42
morning rise	4193 Apr 26 23:56	28° \mathcal{Y} 16'26		minimum elong		4198 Oct 09 02:57	17° \mathcal{L} 30'02	0°57'42
	4193 May 04 04:29	0° \mathcal{B}		max. Earth dist.		4198 Oct 09 02:10	17° \mathcal{L} 29'37	6.43523 AU
	4193 Jul 17 00:56	15° \mathcal{B}		morning rise		4198 Oct 22 06:44	20° \mathcal{L} 20'19	
retrograde	4193 Sep 06 07:29	19° \mathcal{B} 00'10				4198 Dec 09 16:37	0° \mathcal{M}	
	4193 Oct 28 09:35	15° κ \mathcal{B}		retrograde		4199 Feb 19 22:14	7° \mathcal{M} 10'00	
min. Earth dist.	4193 Nov 04 07:34	14° \mathcal{B} 04'38 3.93046 AU		opposition		4199 Apr 21 10:31	2° \mathcal{M} 14'35	1°26'50
opposition	4193 Nov 05 01:18	13° \mathcal{B} 58'40 -1°27'31		min. Earth dist.		4199 Apr 21 20:24	2° \mathcal{M} 11'23	4.46515 AU
direct	4194 Jan 02 02:19	9° \mathcal{B} 04'40				4199 May 09 09:22	30° κ \mathcal{L}	
	4194 Mar 04 16:35	15° \mathcal{B}		direct		4199 Jun 22 17:14	27° \mathcal{L} 12'08	
evening set	4194 May 08 03:12	28° \mathcal{B} 58'09				4199 Aug 06 07:52	0° \mathcal{M}	
	4194 May 12 09:46	0° \mathcal{I}		evening set		4199 Oct 26 23:21	14° \mathcal{M} 35'16	
						4199 Oct 28 21:38	15° \mathcal{M}	
conjunction	4194 May 21 13:35	2° \mathcal{I} 12'58 -0°51'33						
minimum elong	4194 May 21 13:37	2° \mathcal{I} 12'59 0°51'34		conjunction		4199 Nov 08 23:08	17° \mathcal{M} 22'46	0°58'11
max. Earth dist.	4194 May 23 07:54	2° \mathcal{I} 38'34 5.93884 AU		minimum elong		4199 Nov 08 23:09	17° \mathcal{M} 22'46	0°58'12
morning rise	4194 Jun 04 02:48	5° \mathcal{I} 29'15		max. Earth dist.		4199 Nov 07 18:15	17° \mathcal{M} 07'12	6.47458 AU
retrograde	4194 Oct 14 03:29	26° \mathcal{I} 07'04		morning rise		4199 Nov 21 20:28	20° \mathcal{M} 09'04	
min. Earth dist.	4194 Dec 11 05:57	21° \mathcal{I} 14'17 3.97327 AU				4200 Jan 10 12:22	0° \mathcal{J}	
opposition	4194 Dec 12 15:51	21° \mathcal{I} 02'45 -0°59'24		retrograde		4200 Mar 21 23:15	6° \mathcal{J} 48'51	
direct	4195 Feb 08 13:17	16° \mathcal{I} 06'51		opposition		4200 May 21 17:31	1° \mathcal{J} 55'51	1°16'11
	4195 May 21 04:34	0° \mathcal{D}		min. Earth dist.		4200 May 22 20:49	1° \mathcal{J} 47'06	4.46513 AU
evening set	4195 Jun 14 21:52	5° \mathcal{D} 40'49				4200 Jun 06 04:57	30° κ \mathcal{M}	
				direct		4200 Jul 23 12:11	26° \mathcal{M} 54'02	
conjunction	4195 Jun 28 14:14	8° \mathcal{D} 54'19 -0°24'11				4200 Sep 08 14:48	0° \mathcal{J}	
minimum elong	4195 Jun 28 14:16	8° \mathcal{D} 54'19 0°24'12		evening set		4200 Nov 26 09:18	14° \mathcal{J} 20'24	
max. Earth dist.	4195 Jun 30 23:21	9° \mathcal{D} 27'59 6.02726 AU		max. Earth dist.		4200 Dec 07 06:15	16° \mathcal{J} 42'19	6.43469 AU
morning rise	4195 Jul 12 08:45	12° \mathcal{D} 08'34						
	4195 Oct 15 11:58	0° Ω		conjunction		4200 Dec 09 04:42	17° \mathcal{J} 07'41	0°43'11
retrograde	4195 Nov 18 17:59	1° Ω 52'13		minimum elong		4200 Dec 09 04:44	17° \mathcal{J} 07'41	0°43'11

morning rise	4200 Dec 21 21:44	19° ♄ 54'00	morning rise	4206 Jun 10 14:28	10° ♊ 55'04
	4201 Feb 10 04:23	0° ♄		4206 Sep 20 08:16	0° ♄
retrograde	4201 Apr 21 23:09	6° ♄ 53'36	retrograde	4206 Oct 20 07:50	1° ♄ 27'05
opposition	4201 Jun 21 21:41	2° ♄ 01'30 0°45'06		4206 Nov 19 02:40	30° ♊
min. Earth dist.	4201 Jun 23 10:17	1° ♄ 49'50 4.38766 AU	min. Earth dist.	4206 Dec 17 09:13	26° ♊ 34'40 3.98843 AU
	4201 Jul 08 06:25	30° ♊	opposition	4206 Dec 18 20:55	26° ♊ 22'30 -0°53'07
direct	4201 Aug 23 10:18	27° ♄ 01'04	direct	4207 Feb 14 20:18	21° ♊ 26'11
	4201 Oct 08 04:35	0° ♄		4207 May 02 09:21	0° ♄
evening set	4201 Dec 27 01:52	14° ♄ 49'47	evening set	4207 Jun 21 04:51	10° ♄ 54'31
max. Earth dist.	4202 Jan 06 13:48	17° ♄ 10'33 6.32498 AU			
			conjunction	4207 Jul 04 21:47	14° ♄ 07'15 -0°19'20
conjunction	4202 Jan 08 18:56	17° ♄ 40'22 0°15'58	minimum elong	4207 Jul 04 21:48	14° ♄ 07'16 0°19'20
minimum elong	4202 Jan 08 18:57	17° ♄ 40'22 0°15'59	max. Earth dist.	4207 Jul 07 08:26	14° ♄ 41'41 6.04815 AU
behind sun begin	4202 Jan 08 17:32	17° ♄ 39'35	morning rise	4207 Jul 18 16:17	17° ♄ 20'33
behind sun end	4202 Jan 08 20:21	17° ♄ 41'10		4207 Sep 16 11:43	0° ♊
morning rise	4202 Jan 21 10:44	20° ♄ 30'35	retrograde	4207 Nov 24 14:12	6° ♊ 53'13
	4202 Mar 07 18:20	0° ♄	min. Earth dist.	4208 Jan 21 17:17	2° ♊ 00'37 4.12066 AU
retrograde	4202 May 25 00:31	8° ♄ 18'13	opposition	4208 Jan 23 04:21	1° ♊ 48'42 -0°02'08
desc. node	4202 Jul 20 21:59	3° ♄ 55'34		4208 Feb 05 20:14	30° ♊
opposition	4202 Jul 24 20:04	3° ♄ 25'32 -0°00'29	asc. node	4208 Feb 08 06:27	29° ♄ 41'56
min. Earth dist.	4202 Jul 26 09:35	3° ♄ 13'32 4.25159 AU	direct	4208 Mar 22 01:01	26° ♄ 49'30
	4202 Aug 23 09:59	30° ♊		4208 May 06 06:49	0° ♊
direct	4202 Sep 24 12:35	28° ♄ 27'11		4208 Jul 23 21:02	15° ♊
	4202 Oct 26 10:18	0° ♄	evening set	4208 Jul 26 13:35	15° ♊ 36'17
	4203 Jan 19 16:19	15° ♄			
evening set	4203 Jan 27 23:34	16° ♄ 53'52	conjunction	4208 Aug 09 06:22	18° ♊ 42'06 0°15'54
max. Earth dist.	4203 Feb 07 19:40	19° ♄ 24'22 6.17345 AU	minimum elong	4208 Aug 09 06:21	18° ♊ 42'05 0°15'54
			max. Earth dist.	4208 Aug 11 06:51	19° ♊ 09'32 6.19931 AU
conjunction	4203 Feb 09 17:01	19° ♄ 50'41 -0°17'13	morning rise	4208 Aug 22 23:08	21° ♊ 47'34
minimum elong	4203 Feb 09 17:00	19° ♄ 50'41 0°17'13		4208 Sep 30 08:05	0° ♊
morning rise	4203 Feb 22 10:34	22° ♄ 47'51	retrograde	4208 Dec 26 06:09	10° ♊ 07'49
	4203 Mar 26 18:20	0° ♊	min. Earth dist.	4209 Feb 23 03:24	5° ♊ 14'01 4.27588 AU
retrograde	4203 Jun 29 10:55	11° ♊ 44'33	opposition	4209 Feb 24 03:50	5° ♊ 05'49 0°46'09
opposition	4203 Aug 29 00:41	6° ♊ 49'45 -0°49'11	direct	4209 Apr 25 07:12	0° ♊ 04'24
min. Earth dist.	4203 Aug 30 00:37	6° ♊ 41'59 4.09543 AU	evening set	4209 Aug 29 21:25	18° ♊ 09'37
direct	4203 Oct 28 06:59	1° ♊ 53'54			
evening set	4204 Mar 01 21:00	21° ♊ 05'10	conjunction	4209 Sep 12 09:27	21° ♊ 07'07 0°44'17
			minimum elong	4209 Sep 12 09:25	21° ♊ 07'06 0°44'18
conjunction	4204 Mar 14 17:50	24° ♊ 09'42 -0°46'12	max. Earth dist.	4209 Sep 13 08:53	21° ♊ 19'59 6.34635 AU
minimum elong	4204 Mar 14 17:48	24° ♊ 09'41 0°46'11	morning rise	4209 Sep 25 19:48	24° ♊ 03'34
max. Earth dist.	4204 Mar 13 21:32	23° ♊ 57'33 6.02656 AU		4209 Oct 23 23:02	0° ♊
morning rise	4204 Mar 27 16:13	27° ♊ 15'20	retrograde	4210 Jan 26 03:31	11° ♊ 24'27
	4204 Apr 08 07:16	0° ♊	opposition	4210 Mar 27 08:22	6° ♊ 26'05 1°17'37
retrograde	4204 Aug 05 05:39	17° ♊ 22'24	min. Earth dist.	4210 Mar 27 02:26	6° ♊ 28'02 4.40381 AU
opposition	4204 Oct 04 07:06	12° ♊ 24'17 -1°23'18	direct	4210 May 27 19:39	1° ♊ 23'39
min. Earth dist.	4204 Oct 04 09:39	12° ♊ 23'27 3.97197 AU	evening set	4210 Oct 01 06:10	18° ♊ 59'01
direct	4204 Dec 02 04:02	7° ♊ 30'16			
evening set	4205 Apr 06 22:54	27° ♊ 15'59	conjunction	4210 Oct 14 11:27	21° ♊ 49'47 0°58'44
	4205 Apr 18 05:05	0° ♊	minimum elong	4210 Oct 14 11:26	21° ♊ 49'47 0°58'43
			max. Earth dist.	4210 Oct 14 04:57	21° ♊ 46'17 6.44549 AU
conjunction	4205 Apr 20 02:21	0° ♊ 27'33 -0°59'05	morning rise	4210 Oct 27 14:20	24° ♊ 39'17
minimum elong	4205 Apr 20 02:21	0° ♊ 27'33 0°59'04		4210 Nov 22 05:29	0° ♊
max. Earth dist.	4205 Apr 20 17:05	0° ♊ 36'31 5.93835 AU	retrograde	4211 Feb 25 01:59	11° ♊ 25'54
morning rise	4205 May 03 08:27	3° ♊ 40'40	opposition	4211 Apr 26 15:09	6° ♊ 30'52 1°26'40
	4205 Jun 22 12:14	15° ♊	min. Earth dist.	4211 Apr 27 04:12	6° ♊ 26'38 4.46920 AU
retrograde	4205 Sep 12 19:00	24° ♊ 27'18	direct	4211 Jun 28 00:39	1° ♊ 28'23
opposition	4205 Nov 11 11:37	19° ♊ 25'23 -1°25'32		4211 Oct 13 21:15	15° ♊
min. Earth dist.	4205 Nov 10 14:17	19° ♊ 32'34 3.93042 AU	evening set	4211 Nov 01 05:28	18° ♊ 51'12
	4205 Dec 22 18:41	15° ♊	max. Earth dist.	4211 Nov 12 21:37	21° ♊ 21'46 6.47214 AU
direct	4206 Jan 08 09:39	14° ♊ 31'20			
	4206 Jan 25 02:00	15° ♊	conjunction	4211 Nov 14 04:43	21° ♊ 38'32 0°56'58
	4206 Apr 25 22:52	0° ♊	minimum elong	4211 Nov 14 04:43	21° ♊ 38'33 0°56'58
evening set	4206 May 14 12:48	4° ♊ 23'47	morning rise	4211 Nov 27 01:10	24° ♊ 24'39
				4211 Dec 23 21:13	0° ♊
conjunction	4206 May 28 00:06	7° ♊ 38'41 -0°48'40	retrograde	4212 Mar 26 04:24	11° ♊ 06'01
minimum elong	4206 May 28 00:08	7° ♊ 38'43 0°48'40	opposition	4212 May 26 00:09	6° ♊ 13'13 1°12'58
max. Earth dist.	4206 May 29 21:08	8° ♊ 05'52 5.94689 AU	min. Earth dist.	4212 May 27 04:56	6° ♊ 04'01 4.45645 AU

direct	4212 Jul 27 18:21	1°♏11'34		morning rise	4218 Jun 16 00:21	16°♐15'03	
evening set	4212 Nov 30 15:40	18°♏40'46			4218 Aug 18 21:32	0°♑	
max. Earth dist.	4212 Dec 11 09:20	21°♏01'27	6.42032 AU	retrograde	4218 Oct 25 10:56	6°♑39'47	
				min. Earth dist.	4218 Dec 22 11:40	1°♑47'13	4.00589 AU
conjunction	4212 Dec 13 10:31	21°♏28'25	0°39'59	opposition	4218 Dec 23 23:17	1°♑35'04	-0°46'31
minimum elong	4212 Dec 13 10:33	21°♏28'25	0°39'59		4219 Jan 04 19:41	30°♑♐	
morning rise	4212 Dec 26 03:24	24°♏15'13		direct	4219 Feb 20 01:18	26°♐38'23	
	4213 Jan 22 06:50	0°♑			4219 Apr 06 21:03	0°♑	
retrograde	4213 Apr 26 12:52	11°♑20'53		evening set	4219 Jun 26 09:27	16°♑00'40	
opposition	4213 Jun 26 10:11	6°♑28'48	0°39'22				
min. Earth dist.	4213 Jun 28 00:24	6°♑16'37	4.36839 AU	conjunction	4219 Jul 10 02:35	19°♑12'32	-0°14'24
direct	4213 Aug 27 21:36	1°♑28'36		minimum elong	4219 Jul 10 02:36	19°♑12'33	0°14'24
evening set	4213 Dec 31 11:50	19°♑22'50		behind sun begin	4219 Jul 09 23:02	19°♑10'28	
max. Earth dist.	4214 Jan 10 23:58	21°♑44'26	6.30237 AU	behind sun end	4219 Jul 10 06:10	19°♑14'37	
				max. Earth dist.	4219 Jul 12 12:44	19°♑46'28	6.06937 AU
conjunction	4214 Jan 13 04:57	22°♑14'19	0°11'27	morning rise	4219 Jul 23 21:16	22°♑24'52	
minimum elong	4214 Jan 13 04:57	22°♑14'19	0°11'27		4219 Aug 26 23:47	0°♒	
behind sun begin	4214 Jan 12 23:08	22°♑11'03		retrograde	4219 Nov 29 05:52	11°♒46'54	
behind sun end	4214 Jan 13 10:47	22°♑17'35		asc. node	4219 Dec 19 01:46	11°♒07'52	
morning rise	4214 Jan 25 20:50	25°♑05'28		min. Earth dist.	4220 Jan 26 11:19	6°♒54'26	4.14351 AU
	4214 Feb 17 05:22	0°♑		opposition	4220 Jan 27 22:02	6°♒42'39	0°05'14
retrograde	4214 May 29 20:35	13°♑02'46		direct	4220 Mar 26 21:51	1°♒43'07	
desc. node	4214 May 30 05:47	13°♑02'45			4220 Jul 06 20:57	15°♒	
opposition	4214 Jul 29 16:28	8°♑09'52	-0°07'33	evening set	4220 Jul 31 11:21	20°♒23'25	
min. Earth dist.	4214 Jul 31 03:44	7°♑58'34	4.22733 AU				
direct	4214 Sep 29 03:40	3°♑11'53		conjunction	4220 Aug 14 03:39	23°♒28'02	0°20'30
	4215 Jan 02 09:14	15°♑		minimum elong	4220 Aug 14 03:38	23°♒28'01	0°20'30
evening set	4215 Feb 01 16:24	21°♑45'34		max. Earth dist.	4220 Aug 16 00:20	23°♒53'12	6.22193 AU
max. Earth dist.	4215 Feb 12 16:17	24°♑19'04	6.14967 AU	morning rise	4220 Aug 27 19:40	26°♒32'11	
					4220 Sep 12 13:15	0°♑	
conjunction	4215 Feb 14 10:07	24°♑43'29	-0°21'52	retrograde	4220 Dec 30 16:44	14°♑43'01	
minimum elong	4215 Feb 14 10:06	24°♑43'28	0°21'51	opposition	4221 Feb 28 14:25	9°♑41'32	0°51'45
morning rise	4215 Feb 27 04:09	27°♑41'51		min. Earth dist.	4221 Feb 27 17:19	9°♑48'36	4.29637 AU
	4215 Mar 09 03:57	0°♑		direct	4221 Apr 29 23:26	4°♑39'57	
retrograde	4215 Jul 04 18:33	16°♑49'29		evening set	4221 Sep 03 12:12	22°♑40'14	
opposition	4215 Sep 03 05:40	11°♑54'15	-0°55'23				
min. Earth dist.	4215 Sep 04 03:20	11°♑47'13	4.07416 AU	conjunction	4221 Sep 16 23:23	25°♑36'41	0°47'14
direct	4215 Nov 02 08:03	6°♑58'44		minimum elong	4221 Sep 16 23:21	25°♑36'40	0°47'14
evening set	4216 Mar 06 21:29	26°♑15'55		max. Earth dist.	4221 Sep 17 18:48	25°♑47'19	6.36312 AU
				morning rise	4221 Sep 30 08:43	28°♑32'03	
conjunction	4216 Mar 19 19:07	29°♑21'32	-0°49'15		4221 Oct 07 03:35	0°♒	
minimum elong	4216 Mar 19 19:05	29°♑21'31	0°49'16	retrograde	4222 Jan 30 07:41	15°♒46'54	
max. Earth dist.	4216 Mar 19 03:51	29°♑12'22	6.00982 AU	opposition	4222 Mar 31 14:30	10°♒49'03	1°20'16
	4216 Mar 22 11:06	0°♑		min. Earth dist.	4222 Mar 31 10:51	10°♒50'15	4.41603 AU
morning rise	4216 Apr 01 18:27	2°♑28'20		direct	4222 Jun 01 04:44	5°♒46'35	
retrograde	4216 Aug 10 16:40	22°♑43'08		evening set	4222 Oct 05 15:41	23°♒19'40	
opposition	4216 Oct 09 17:12	17°♑44'26	-1°25'48				
min. Earth dist.	4216 Oct 09 15:26	17°♑45'01	3.96186 AU	conjunction	4222 Oct 18 20:06	26°♒09'50	0°59'26
direct	4216 Dec 07 09:01	12°♑50'35		minimum elong	4222 Oct 18 20:05	26°♒09'49	0°59'27
	4217 Apr 01 05:27	0°♑		max. Earth dist.	4222 Oct 18 10:04	26°♒04'25	6.45231 AU
evening set	4217 Apr 12 05:34	2°♑38'20		morning rise	4222 Oct 31 21:57	28°♒58'42	
					4222 Nov 05 16:53	0°♒	
conjunction	4217 Apr 25 09:54	5°♑50'29	-0°59'01		4223 Feb 07 17:19	15°♒	
minimum elong	4217 Apr 25 09:54	5°♑50'30	0°59'02	retrograde	4223 Mar 01 06:55	15°♒43'27	
max. Earth dist.	4217 Apr 26 04:52	6°♑02'02	5.93552 AU		4223 Mar 22 18:42	15°♒♑	
morning rise	4217 May 08 17:14	9°♑04'16		opposition	4223 Apr 30 20:49	10°♒48'53	1°26'03
	4217 Jun 02 20:51	15°♑		min. Earth dist.	4223 May 01 12:44	10°♒43'45	4.47034 AU
retrograde	4217 Sep 18 03:41	29°♑51'12		direct	4223 Jul 02 08:50	5°♒46'33	
opposition	4217 Nov 16 20:34	24°♑48'44	-1°22'47		4223 Sep 26 06:21	15°♒	
min. Earth dist.	4217 Nov 15 20:11	24°♑56'59	3.93523 AU	evening set	4223 Nov 05 12:25	23°♒09'48	
direct	4218 Jan 13 18:13	19°♑54'26		max. Earth dist.	4223 Nov 16 23:27	25°♒37'55	6.46737 AU
	4218 Apr 07 01:41	0°♒					
evening set	4218 May 19 20:55	9°♒44'06		conjunction	4223 Nov 18 10:51	25°♒57'03	0°55'24
				minimum elong	4223 Nov 18 10:52	25°♒57'04	0°55'24
conjunction	4218 Jun 02 09:20	12°♒58'56	-0°45'24	morning rise	4223 Dec 01 06:50	28°♒43'09	
minimum elong	4218 Jun 02 09:22	12°♒58'57	0°45'24		4223 Dec 07 06:31	0°♑	
max. Earth dist.	4218 Jun 04 10:43	13°♒28'39	5.95879 AU	retrograde	4224 Mar 30 12:56	15°♑26'59	

opposition	4224 May 30 08:42	10° ♊ 34'24	1°09'17			4230 Mar 15 08:06	0° ♊	
min. Earth dist.	4224 May 31 15:26	10° ♊ 24'34	4.44624 AU	evening set		4230 May 25 00:56	14° ♊ 54'21	
direct	4224 Aug 01 02:57	5° ♊ 32'56						
evening set	4224 Dec 04 23:20	23° ♊ 05'21		conjunction		4230 Jun 07 14:04	18° ♊ 08'55	-0°41'53
max. Earth dist.	4224 Dec 15 16:46	25° ♊ 26'23	6.40554 AU	minimum elong		4230 Jun 07 14:06	18° ♊ 08'56	0°41'53
				max. Earth dist.		4230 Jun 09 16:53	18° ♊ 39'21	5.97219 AU
conjunction	4224 Dec 17 17:58	25° ♊ 53'27	0°36'29	morning rise		4230 Jun 21 06:00	21° ♊ 24'44	
minimum elong	4224 Dec 17 18:00	25° ♊ 53'28	0°36'30			4230 Jul 29 01:07	0° ♋	
morning rise	4224 Dec 30 10:25	28° ♊ 40'43		retrograde		4230 Oct 30 07:06	11° ♋ 41'42	
	4225 Jan 05 12:00	0° ♋		min. Earth dist.		4230 Dec 27 08:10	6° ♋ 49'24	4.02325 AU
retrograde	4225 May 01 02:08	15° ♋ 52'38		opposition		4230 Dec 28 20:49	6° ♋ 36'54	-0°39'50
opposition	4225 Jul 01 00:19	11° ♋ 00'36	0°33'16	direct		4231 Feb 25 00:04	1° ♋ 39'48	
min. Earth dist.	4225 Jul 02 13:57	10° ♋ 48'36	4.35011 AU	evening set		4231 Jul 01 09:43	20° ♋ 56'28	
direct	4225 Sep 01 08:38	6° ♋ 00'48						
evening set	4226 Jan 04 23:22	24° ♋ 00'10		conjunction		4231 Jul 15 03:03	24° ♋ 07'31	-0°09'34
max. Earth dist.	4226 Jan 15 12:01	26° ♋ 22'48	6.28217 AU	minimum elong		4231 Jul 15 03:03	24° ♋ 07'31	0°09'34
				behind sun begin		4231 Jul 14 20:10	24° ♋ 03'32	
conjunction	4226 Jan 17 16:16	26° ♋ 52'25	0°06'49	behind sun end		4231 Jul 15 09:56	24° ♋ 11'29	
minimum elong	4226 Jan 17 16:17	26° ♋ 52'25	0°06'49	max. Earth dist.		4231 Jul 17 11:00	24° ♋ 40'01	6.08912 AU
behind sun begin	4226 Jan 17 08:51	26° ♋ 48'14		morning rise		4231 Jul 28 21:40	27° ♋ 18'53	
behind sun end	4226 Jan 17 23:42	26° ♋ 56'36				4231 Aug 09 16:27	0° ♌	
morning rise	4226 Jan 30 08:23	29° ♋ 44'28		asc. node		4231 Oct 30 08:58	14° ♌ 38'28	
	4226 Jan 31 11:58	0° ♌				4231 Nov 02 23:00	15° ♌	
desc. node	4226 Apr 08 08:59	13° ♌ 14'02		retrograde		4231 Dec 03 19:58	16° ♌ 31'17	
	4226 Apr 21 03:34	15° ♌				4232 Jan 03 10:14	15° ♌ 00'	
retrograde	4226 Jun 03 20:00	17° ♌ 50'45		min. Earth dist.		4232 Jan 31 03:45	11° ♌ 38'14	4.16355 AU
	4226 Jul 18 03:48	15° ♌		opposition		4232 Feb 01 11:53	11° ♌ 27'20	0°12'15
opposition	4226 Aug 03 14:19	12° ♌ 57'38	-0°14'39	direct		4232 Mar 31 17:03	6° ♌ 27'25	
min. Earth dist.	4226 Aug 05 00:26	12° ♌ 46'41	4.20661 AU			4232 Jun 18 08:30	15° ♌	
direct	4226 Oct 03 22:20	8° ♌ 00'02		evening set		4232 Aug 05 05:44	25° ♌ 02'25	
	4226 Dec 13 10:10	15° ♌						
evening set	4227 Feb 06 09:30	26° ♌ 39'17		conjunction		4232 Aug 18 21:41	28° ♌ 06'02	0°24'49
max. Earth dist.	4227 Feb 17 13:34	29° ♌ 15'51	6.13043 AU	minimum elong		4232 Aug 18 21:39	28° ♌ 06'02	0°24'49
				max. Earth dist.		4232 Aug 20 16:01	28° ♌ 29'47	6.24079 AU
conjunction	4227 Feb 19 03:38	29° ♌ 38'09	-0°26'21			4232 Aug 27 09:06	0° ♍	
minimum elong	4227 Feb 19 03:36	29° ♌ 38'09	0°26'20	morning rise		4232 Sep 01 12:57	1° ♍ 09'03	
	4227 Feb 20 16:54	0° ♍		retrograde		4233 Jan 03 23:09	19° ♍ 11'54	
morning rise	4227 Mar 03 22:07	2° ♍ 37'34		opposition		4233 Mar 04 22:20	14° ♍ 10'55	0°56'52
retrograde	4227 Jul 09 23:37	21° ♍ 54'17		min. Earth dist.		4233 Mar 04 02:45	14° ♍ 17'27	4.31275 AU
opposition	4227 Sep 08 10:06	16° ♍ 58'39	-1°01'07	direct		4233 May 04 10:19	9° ♍ 09'09	
min. Earth dist.	4227 Sep 09 04:04	16° ♍ 52'48	4.05831 AU	evening set		4233 Sep 08 00:52	27° ♍ 05'54	
direct	4227 Nov 07 06:44	12° ♍ 03'29						
	4228 Mar 05 22:54	0° ♎		conjunction		4233 Sep 21 11:08	0° ♎ 01'29	0°49'49
evening set	4228 Mar 11 21:06	1° ♎ 24'36		minimum elong		4233 Sep 21 11:06	0° ♎ 01'28	0°49'48
						4233 Sep 21 08:25	0° ♎	
conjunction	4228 Mar 24 19:16	4° ♎ 31'00	-0°51'53	max. Earth dist.		4233 Sep 22 01:31	0° ♎ 09'20	6.37590 AU
minimum elong	4228 Mar 24 19:14	4° ♎ 30'59	0°51'52	morning rise		4233 Oct 04 19:35	2° ♎ 55'57	
max. Earth dist.	4228 Mar 24 08:08	4° ♎ 24'18	5.99872 AU	retrograde		4234 Feb 03 13:27	20° ♎ 06'09	
morning rise	4228 Apr 06 19:33	7° ♎ 38'41		opposition		4234 Apr 04 19:54	15° ♎ 08'49	1°22'23
retrograde	4228 Aug 15 23:44	27° ♎ 58'50		min. Earth dist.		4234 Apr 04 19:43	15° ♎ 08'53	4.42460 AU
opposition	4228 Oct 15 00:25	22° ♎ 59'33	-1°27'30	direct		4234 Jun 05 14:21	10° ♎ 06'18	
min. Earth dist.	4228 Oct 14 19:06	23° ♎ 01'19	3.95679 AU	evening set		4234 Oct 10 00:05	27° ♎ 37'56	
direct	4228 Dec 12 13:37	18° ♎ 05'42				4234 Oct 21 00:26	0° ♏	
	4229 Mar 14 11:04	0° ♏						
evening set	4229 Apr 17 09:19	7° ♏ 53'48		conjunction		4234 Oct 23 03:43	0° ♏ 27'39	0°59'47
				minimum elong		4234 Oct 23 03:43	0° ♏ 27'38	0°59'47
conjunction	4229 Apr 30 14:50	11° ♏ 06'23	-0°58'29	max. Earth dist.		4234 Oct 22 14:14	0° ♏ 20'23	6.45606 AU
minimum elong	4229 Apr 30 14:51	11° ♏ 06'23	0°58'29	morning rise		4234 Nov 05 04:42	3° ♏ 16'02	
max. Earth dist.	4229 May 01 15:44	11° ♏ 21'31	5.93702 AU			4235 Jan 05 07:10	15° ♏	
morning rise	4229 May 13 23:04	14° ♏ 20'32		retrograde		4235 Mar 05 10:55	19° ♏ 59'46	
	4229 May 16 16:40	15° ♏		opposition		4235 May 05 02:16	15° ♏ 05'30	1°24'57
	4229 Jul 27 01:32	0° ♐				4235 May 05 19:20	15° ♏	
retrograde	4229 Sep 23 10:07	5° ♐ 05'49		min. Earth dist.		4235 May 05 19:37	14° ♏ 59'54	4.46942 AU
min. Earth dist.	4229 Nov 20 23:30	0° ♐ 11'38	3.94321 AU	direct		4235 Jul 06 14:59	10° ♐ 03'14	
opposition	4229 Nov 22 01:12	0° ♐ 02'56	-1°19'25			4235 Sep 05 05:33	15° ♐	
	4229 Nov 22 09:53	30° ♐ 08'		evening set		4235 Nov 09 19:01	27° ♐ 27'15	
direct	4230 Jan 18 23:08	25° ♐ 08'22		max. Earth dist.		4235 Nov 21 04:18	29° ♐ 54'40	6.46190 AU

	4235 Nov 21 14:08	0°♌		max. Earth dist.	4241 May 06 23:47	16°♏39'00	5.93515 AU
				morning rise	4241 May 19 05:31	19°♏36'54	
conjunction	4235 Nov 22 16:52	0°♌14'28	0°53'32		4241 Jul 03 21:48	0°♐	
minimum elong	4235 Nov 22 16:53	0°♌14'29	0°53'31	retrograde	4241 Sep 28 14:51	10°♐21'56	
morning rise	4235 Dec 05 12:08	3°♌00'33		min. Earth dist.	4241 Nov 26 01:31	5°♐28'23	3.94766 AU
retrograde	4236 Apr 03 20:44	19°♌46'46		opposition	4241 Nov 27 06:09	5°♐18'41	-1°15'26
opposition	4236 Jun 03 17:09	14°♌54'21	1°05'12	direct	4242 Jan 24 02:22	0°♐23'51	
min. Earth dist.	4236 Jun 05 01:11	14°♌44'08	4.43651 AU	evening set	4242 May 30 06:46	20°♐07'57	
direct	4236 Aug 05 11:21	9°♌53'06					
evening set	4236 Dec 09 06:27	27°♌28'10		conjunction	4242 Jun 12 20:51	23°♐22'27	-0°38'00
max. Earth dist.	4236 Dec 19 21:18	29°♌48'18	6.39205 AU	minimum elong	4242 Jun 12 20:53	23°♐22'29	0°38'01
	4236 Dec 20 18:29	0°♍		max. Earth dist.	4242 Jun 15 01:15	23°♐53'46	5.98247 AU
				morning rise	4242 Jun 26 13:29	26°♐38'07	
conjunction	4236 Dec 22 00:35	0°♍16'37	0°32'48		4242 Jul 10 22:43	0°♑	
minimum elong	4236 Dec 22 00:37	0°♍16'37	0°32'49	retrograde	4242 Nov 04 07:03	16°♑48'35	
morning rise	4237 Jan 03 16:59	3°♍04'21		min. Earth dist.	4243 Jan 01 08:12	11°♑56'01	4.03797 AU
retrograde	4237 May 05 16:25	20°♍22'04		opposition	4243 Jan 02 20:09	11°♑43'46	-0°32'45
opposition	4237 Jul 05 14:10	15°♍29'54	0°26'59	direct	4243 Mar 02 02:49	6°♑46'16	
min. Earth dist.	4237 Jul 07 03:54	15°♍17'52	4.33339 AU	evening set	4243 Jul 06 12:38	25°♑58'27	
direct	4237 Sep 05 20:19	10°♍30'18					
evening set	4238 Jan 09 09:29	28°♍34'04		conjunction	4243 Jul 20 06:17	29°♑08'48	-0°04'34
	4238 Jan 15 17:22	0°♎		minimum elong	4243 Jul 20 06:17	29°♑08'48	0°04'35
max. Earth dist.	4238 Jan 20 00:24	0°♎58'33	6.26342 AU	behind sun begin	4243 Jul 19 22:04	29°♑04'04	
				behind sun end	4243 Jul 20 14:29	29°♑13'31	
conjunction	4238 Jan 22 02:33	1°♎27'04	0°02'09	max. Earth dist.	4243 Jul 22 14:50	29°♑41'29	6.10707 AU
minimum elong	4238 Jan 22 02:31	1°♎27'04	0°02'09		4243 Jul 23 22:52	0°♒	
behind sun begin	4238 Jan 21 18:33	1°♎22'33		morning rise	4243 Aug 03 00:46	2°♒19'17	
behind sun end	4238 Jan 22 10:30	1°♎31'34		asc. node	4243 Sep 08 22:03	10°♒24'32	
morning rise	4238 Feb 03 18:36	4°♎19'54			4243 Oct 03 02:45	15°♒	
desc. node	4238 Feb 16 01:44	7°♎05'19		retrograde	4243 Dec 08 11:57	21°♒22'35	
	4238 Mar 26 15:06	15°♎		min. Earth dist.	4244 Feb 04 20:37	16°♒29'44	4.18306 AU
retrograde	4238 Jun 08 16:40	22°♎34'41		opposition	4244 Feb 06 04:19	16°♒19'01	0°19'22
opposition	4238 Aug 08 10:43	17°♎41'19	-0°21'37		4244 Feb 16 01:00	15°♒♌	
min. Earth dist.	4238 Aug 09 19:09	17°♎30'54	4.18696 AU	direct	4244 Apr 05 12:31	11°♒18'53	
	4238 Aug 30 13:25	15°♒♎			4244 May 25 00:09	15°♒	
direct	4238 Oct 08 13:56	12°♎44'05		evening set	4244 Aug 10 02:59	29°♒48'45	
	4238 Nov 16 02:30	15°♎			4244 Aug 10 23:14	0°♓	
	4239 Feb 04 16:35	0°♈					
evening set	4239 Feb 11 01:29	1°♈28'45		conjunction	4244 Aug 23 18:12	2°♓51'15	0°29'06
max. Earth dist.	4239 Feb 22 07:45	4°♈07'19	6.11134 AU	minimum elong	4244 Aug 23 18:11	2°♓51'15	0°29'06
				max. Earth dist.	4244 Aug 25 08:27	3°♓12'37	6.26042 AU
conjunction	4239 Feb 23 19:48	4°♈28'32	-0°30'38	morning rise	4244 Sep 06 08:49	5°♓53'07	
minimum elong	4239 Feb 23 19:46	4°♈28'32	0°30'39	retrograde	4245 Jan 08 09:39	23°♓47'44	
morning rise	4239 Mar 08 14:59	7°♈29'02		opposition	4245 Mar 09 09:01	18°♓47'16	1°01'47
retrograde	4239 Jul 15 03:51	26°♈55'08		min. Earth dist.	4245 Mar 08 16:13	18°♓52'52	4.33124 AU
opposition	4239 Sep 13 13:00	21°♈59'00	-1°06'24	direct	4245 May 09 02:10	13°♓45'22	
min. Earth dist.	4239 Sep 14 04:05	21°♈54'05	4.04137 AU		4245 Sep 05 02:00	0°♈	
direct	4239 Nov 12 05:08	17°♈04'04		evening set	4245 Sep 12 15:31	1°♈37'35	
	4240 Feb 17 21:08	0°♉					
evening set	4240 Mar 16 19:37	6°♉29'58		conjunction	4245 Sep 26 00:58	4°♈32'09	0°52'11
				minimum elong	4245 Sep 26 00:57	4°♈32'08	0°52'11
conjunction	4240 Mar 29 18:48	9°♉37'22	-0°54'07	max. Earth dist.	4245 Sep 26 13:33	4°♈39'00	6.39218 AU
minimum elong	4240 Mar 29 18:47	9°♉37'21	0°54'07	morning rise	4245 Oct 09 08:12	7°♈25'30	
max. Earth dist.	4240 Mar 29 13:20	9°♉34'04	5.98557 AU	retrograde	4246 Feb 07 17:48	24°♈29'45	
morning rise	4240 Apr 11 19:57	12°♉46'05		opposition	4246 Apr 09 02:33	19°♈32'53	1°24'08
	4240 Jul 06 14:05	0°♊		min. Earth dist.	4246 Apr 09 03:31	19°♈32'34	4.43793 AU
retrograde	4240 Aug 21 08:49	3°♊12'34		direct	4246 Jun 09 23:26	14°♈30'24	
	4240 Oct 06 13:29	30°♊♉			4246 Oct 05 00:55	0°♊	
opposition	4240 Oct 20 07:02	28°♉12'48	-1°28'33	evening set	4246 Oct 14 09:06	1°♊58'47	
min. Earth dist.	4240 Oct 19 23:21	28°♉15'22	3.94902 AU				
direct	4240 Dec 17 17:10	23°♉19'02		conjunction	4246 Oct 27 11:39	4°♊47'43	0°59'52
	4241 Feb 21 17:47	0°♋		minimum elong	4246 Oct 27 11:39	4°♊47'43	0°59'52
evening set	4241 Apr 22 13:25	13°♋08'54		max. Earth dist.	4246 Oct 26 18:38	4°♊38'33	6.46556 AU
	4241 Apr 30 04:48	15°♋		morning rise	4246 Nov 09 11:43	7°♊35'23	
					4246 Dec 15 18:03	15°♊	
conjunction	4241 May 05 19:55	16°♋22'05	-0°57'29	retrograde	4247 Mar 09 15:58	24°♊16'14	
minimum elong	4241 May 05 19:56	16°♋22'06	0°57'29	opposition	4247 May 09 07:46	19°♊22'19	1°23'26

min. Earth dist.	4247 May 10 03:57	19°♄15'49	4.47451 AU		4253 Jan 21 20:50	0°♄	
	4247 Jun 19 20:20	15°♄			4253 Apr 13 15:06	15°♄	
direct	4247 Jul 10 23:36	14°♄20'07		evening set	4253 Apr 27 17:18	18°♄22'11	
	4247 Aug 01 05:05	15°♄					
	4247 Nov 05 23:26	0°♄		conjunction	4253 May 11 01:09	21°♄36'16	-0°56'03
evening set	4247 Nov 14 00:00	1°♄42'42		minimum elong	4253 May 11 01:10	21°♄36'17	0°56'02
max. Earth dist.	4247 Nov 25 05:33	4°♄08'11	6.46208 AU	max. Earth dist.	4253 May 12 09:29	21°♄55'56	5.92928 AU
				morning rise	4253 May 24 11:56	24°♄51'55	
conjunction	4247 Nov 26 21:09	4°♄29'37	0°51'27		4253 Jun 15 05:15	0°♄	
minimum elong	4247 Nov 26 21:11	4°♄29'38	0°51'27	retrograde	4253 Oct 03 21:28	15°♄38'05	
morning rise	4247 Dec 09 15:48	7°♄15'27		min. Earth dist.	4253 Dec 01 05:05	10°♄44'36	3.94856 AU
retrograde	4248 Apr 08 01:52	24°♄02'29		opposition	4253 Dec 02 11:01	10°♄34'26	-1°10'55
opposition	4248 Jun 07 23:46	19°♄10'07	1°00'53	direct	4254 Jan 29 07:19	5°♄39'18	
min. Earth dist.	4248 Jun 09 08:39	18°♄59'38	4.43166 AU	evening set	4254 Jun 04 13:35	25°♄22'47	
direct	4248 Aug 09 17:06	14°♄08'58					
	4248 Dec 05 09:35	0°♄		conjunction	4254 Jun 18 04:42	28°♄37'24	-0°33'49
evening set	4248 Dec 13 10:39	1°♄45'05		minimum elong	4254 Jun 18 04:44	28°♄37'25	0°33'49
max. Earth dist.	4248 Dec 24 01:23	4°♄05'27	6.38249 AU	max. Earth dist.	4254 Jun 20 12:45	29°♄10'47	5.99014 AU
					4254 Jun 23 23:26	0°♄	
conjunction	4248 Dec 26 04:30	4°♄33'44	0°29'05	morning rise	4254 Jul 01 22:04	1°♄53'01	
minimum elong	4248 Dec 26 04:31	4°♄33'45	0°29'05	retrograde	4254 Nov 09 08:06	21°♄57'28	
morning rise	4249 Jan 07 20:27	7°♄21'43		min. Earth dist.	4255 Jan 06 07:16	17°♄05'15	4.05142 AU
retrograde	4249 May 10 02:39	24°♄44'05		opposition	4255 Jan 07 20:23	16°♄52'37	-0°25'26
opposition	4249 Jul 10 00:36	19°♄51'51	0°20'47	direct	4255 Mar 07 04:46	11°♄54'44	
min. Earth dist.	4249 Jul 11 15:11	19°♄39'33	4.31937 AU		4255 Jul 07 03:26	0°♄	
direct	4249 Sep 10 04:43	14°♄52'27		evening set	4255 Jul 11 17:12	1°♄02'40	
desc. node	4249 Dec 29 00:40	29°♄30'33		asc. node	4255 Jul 18 23:03	2°♄42'32	
	4249 Dec 31 06:22	0°♄					
evening set	4250 Jan 13 16:21	2°♄59'56		conjunction	4255 Jul 25 10:43	4°♄12'11	0°00'36
max. Earth dist.	4250 Jan 24 05:57	5°♄24'17	6.24588 AU	minimum elong	4255 Jul 25 10:43	4°♄12'10	0°00'35
				behind sun begin	4255 Jul 25 02:20	4°♄07'23	
conjunction	4250 Jan 26 09:13	5°♄53'34	-0°02'27	behind sun end	4255 Jul 25 19:06	4°♄16'58	
minimum elong	4250 Jan 26 09:12	5°♄53'34	0°02'26	max. Earth dist.	4255 Jul 27 17:27	4°♄43'41	6.12489 AU
behind sun begin	4250 Jan 26 01:14	5°♄49'02		morning rise	4255 Aug 08 05:11	7°♄21'46	
behind sun end	4250 Jan 26 17:11	5°♄58'06			4255 Sep 12 01:58	15°♄	
morning rise	4250 Feb 08 01:39	8°♄47'14		retrograde	4255 Dec 13 04:12	26°♄15'40	
	4250 Mar 08 05:28	15°♄		opposition	4256 Feb 10 21:36	21°♄12'19	0°26'22
retrograde	4250 Jun 13 10:21	27°♄10'24		min. Earth dist.	4256 Feb 09 15:14	21°♄22'35	4.20319 AU
opposition	4250 Aug 13 03:30	22°♄16'41	-0°28'13	direct	4256 Apr 10 10:35	16°♄11'46	
min. Earth dist.	4250 Aug 14 10:45	22°♄06'36	4.16686 AU		4256 Jul 24 20:32	0°♄	
direct	4250 Oct 13 02:16	17°♄19'37		evening set	4256 Aug 15 01:06	4°♄36'01	
	4251 Jan 19 10:47	0°♄					
evening set	4251 Feb 15 13:56	6°♄10'09		conjunction	4256 Aug 28 15:48	7°♄37'22	0°33'12
max. Earth dist.	4251 Feb 27 00:16	8°♄51'46	6.09049 AU	minimum elong	4256 Aug 28 15:46	7°♄37'21	0°33'12
				max. Earth dist.	4256 Aug 30 04:44	7°♄57'55	6.28115 AU
conjunction	4251 Feb 28 08:53	9°♄11'03	-0°34'35	morning rise	4256 Sep 11 05:19	10°♄37'53	
minimum elong	4251 Feb 28 08:52	9°♄11'02	0°34'35	retrograde	4257 Jan 12 19:17	28°♄23'40	
morning rise	4251 Mar 13 04:34	12°♄12'41		opposition	4257 Mar 13 20:02	23°♄23'39	1°06'19
	4251 Jun 15 23:47	0°♄		min. Earth dist.	4257 Mar 13 04:48	23°♄28'43	4.35053 AU
retrograde	4251 Jul 20 06:00	1°♄48'58		direct	4257 May 13 17:05	18°♄21'36	
	4251 Aug 23 13:55	30°♄			4257 Aug 18 20:00	0°♄	
opposition	4251 Sep 18 12:55	26°♄52'26	-1°11'05	evening set	4257 Sep 17 06:28	6°♄08'57	
min. Earth dist.	4251 Sep 19 02:30	26°♄48'00	4.02158 AU				
direct	4251 Nov 17 00:26	21°♄57'43		conjunction	4257 Sep 30 14:46	9°♄02'27	0°54'15
	4252 Jan 30 01:00	0°♄		minimum elong	4257 Sep 30 14:45	9°♄02'26	0°54'16
evening set	4252 Mar 21 16:19	11°♄29'46		max. Earth dist.	4257 Sep 30 22:00	9°♄06'22	6.40817 AU
				morning rise	4257 Oct 13 21:03	11°♄54'44	
conjunction	4252 Apr 03 16:19	14°♄38'21	-0°55'54	retrograde	4258 Feb 12 00:46	28°♄53'23	
minimum elong	4252 Apr 03 16:18	14°♄38'20	0°55'54	opposition	4258 Apr 13 10:00	23°♄56'57	1°25'24
max. Earth dist.	4252 Apr 03 13:11	14°♄36'27	5.96863 AU	min. Earth dist.	4258 Apr 13 14:25	23°♄55'31	4.44947 AU
morning rise	4252 Apr 16 18:46	17°♄48'23		direct	4258 Jun 14 11:04	18°♄54'25	
	4252 Jun 10 15:20	0°♄			4258 Sep 18 00:03	0°♄	
retrograde	4252 Aug 26 14:37	8°♄22'37		evening set	4258 Oct 18 18:21	6°♄20'15	
opposition	4252 Oct 25 11:35	3°♄22'21	-1°28'57				
min. Earth dist.	4252 Oct 25 00:10	3°♄26'10	3.93695 AU	conjunction	4258 Oct 31 20:10	9°♄08'37	0°59'36
	4252 Nov 22 10:07	30°♄		minimum elong	4258 Oct 31 20:10	9°♄08'37	0°59'36
direct	4252 Dec 22 17:19	28°♄28'32		max. Earth dist.	4258 Oct 31 00:22	8°♄57'58	6.47160 AU

morning rise	4258 Nov 13 19:09	11°♄55'40		opposition	4264 Oct 30 22:31	8°♄48'30	-1°28'35
	4258 Nov 28 08:24	15°♄		min. Earth dist.	4264 Oct 30 08:28	8°♄53'13	3.93141 AU
retrograde	4259 Mar 13 20:40	28°♄35'06		direct	4264 Dec 28 02:09	3°♄54'40	
opposition	4259 May 13 14:31	23°♄41'29	1°21'27		4265 Mar 25 22:51	15°♄	
min. Earth dist.	4259 May 14 12:07	23°♄34'32	4.47480 AU	evening set	4265 May 03 02:28	23°♄49'08	
direct	4259 Jul 15 06:21	18°♄39'25					
	4259 Oct 20 05:33	0°♄		conjunction	4265 May 16 11:30	27°♄03'39	-0°54'06
evening set	4259 Nov 18 07:00	6°♄02'21		minimum elong	4265 May 16 11:32	27°♄03'40	0°54'06
max. Earth dist.	4259 Nov 29 09:17	8°♄26'21	6.45648 AU	max. Earth dist.	4265 May 18 01:23	27°♄26'39	5.93178 AU
					4265 May 28 14:45	0°♄	
conjunction	4259 Dec 01 03:26	8°♄49'15	0°49'01	morning rise	4265 May 29 23:27	0°♄19'42	
minimum elong	4259 Dec 01 03:28	8°♄49'15	0°49'02	retrograde	4265 Oct 09 05:38	21°♄02'43	
morning rise	4259 Dec 13 21:33	11°♄35'05		min. Earth dist.	4265 Dec 06 10:04	16°♄09'48	3.95914 AU
retrograde	4260 Apr 12 12:25	28°♄25'02		opposition	4265 Dec 07 18:37	15°♄58'45	-1°05'39
opposition	4260 Jun 12 09:34	23°♄32'52	0°56'06	direct	4266 Feb 03 14:44	11°♄03'19	
min. Earth dist.	4260 Jun 13 20:55	23°♄21'35	4.42036 AU		4266 Jun 06 22:32	0°♄	
direct	4260 Aug 14 02:55	18°♄31'55		evening set	4266 Jun 09 22:27	0°♄42'21	
	4260 Nov 18 15:21	0°♄					
evening set	4260 Dec 17 18:31	6°♄11'21		conjunction	4266 Jun 23 14:03	3°♄56'24	-0°29'20
max. Earth dist.	4260 Dec 28 06:45	8°♄30'55	6.36620 AU	minimum elong	4266 Jun 23 14:04	3°♄56'25	0°29'20
				max. Earth dist.	4266 Jun 25 22:31	4°♄29'53	6.00754 AU
conjunction	4260 Dec 30 12:04	9°♄00'32	0°25'01	morning rise	4266 Jul 07 08:02	7°♄11'24	
minimum elong	4260 Dec 30 12:05	9°♄00'32	0°25'01	retrograde	4266 Nov 14 05:56	27°♄05'52	
morning rise	4261 Jan 12 04:01	11°♄49'08		min. Earth dist.	4267 Jan 11 06:39	22°♄13'39	4.07351 AU
retrograde	4261 May 14 18:45	29°♄18'47		opposition	4267 Jan 12 19:47	22°♄01'00	-0°17'58
opposition	4261 Jul 14 16:30	24°♄26'24	0°14'07	direct	4267 Mar 12 08:05	17°♄02'37	
min. Earth dist.	4261 Jul 16 06:26	24°♄14'17	4.29903 AU	asc. node	4267 May 28 09:47	25°♄29'43	
direct	4261 Sep 14 16:19	19°♄27'17			4267 Jun 19 13:35	0°♄	
desc. node	4261 Nov 07 07:17	23°♄34'24		evening set	4267 Jul 16 19:56	6°♄03'21	
	4261 Dec 13 20:23	0°♄					
evening set	4262 Jan 18 04:42	7°♄40'40		conjunction	4267 Jul 30 13:27	9°♄11'41	0°05'38
max. Earth dist.	4262 Jan 28 21:03	10°♄07'17	6.22315 AU	minimum elong	4267 Jul 30 13:27	9°♄11'40	0°05'38
				behind sun begin	4267 Jul 30 05:25	9°♄07'06	
conjunction	4262 Jan 30 21:47	10°♄35'16	-0°07'12	behind sun end	4267 Jul 30 21:28	9°♄16'14	
minimum elong	4262 Jan 30 21:47	10°♄35'16	0°07'11	max. Earth dist.	4267 Aug 01 19:40	9°♄42'43	6.14976 AU
behind sun begin	4262 Jan 30 14:25	10°♄31'04		morning rise	4267 Aug 13 07:17	12°♄19'52	
behind sun end	4262 Jan 31 05:08	10°♄39'29			4267 Aug 25 04:31	15°♄	
morning rise	4262 Feb 12 14:22	13°♄29'58			4267 Nov 22 07:20	0°♄	
	4262 Feb 19 04:46	15°♄		retrograde	4267 Dec 17 18:08	1°♄02'17	
	4262 May 12 16:20	0°♄			4268 Jan 11 22:20	30°♄	
retrograde	4262 Jun 18 12:30	2°♄03'36		min. Earth dist.	4268 Feb 14 07:49	26°♄08'54	4.22826 AU
	4262 Jul 25 13:49	30°♄		opposition	4268 Feb 15 12:16	25°♄59'19	0°32'58
opposition	4262 Aug 18 03:30	27°♄09'38	-0°35'05	direct	4268 Apr 15 06:01	20°♄58'29	
min. Earth dist.	4262 Aug 19 09:49	26°♄59'51	4.14339 AU		4268 Jul 06 07:13	0°♄	
direct	4262 Oct 17 21:50	22°♄12'58		evening set	4268 Aug 19 19:40	9°♄15'41	
	4262 Dec 30 23:32	0°♄					
evening set	4263 Feb 20 09:55	11°♄10'31		conjunction	4268 Sep 02 09:25	12°♄15'41	0°36'59
max. Earth dist.	4263 Mar 03 22:43	13°♄54'26	6.06832 AU	minimum elong	4268 Sep 02 09:23	12°♄15'40	0°36'58
				max. Earth dist.	4268 Sep 03 17:30	12°♄33'26	6.30419 AU
conjunction	4263 Mar 05 05:17	14°♄12'36	-0°38'33	morning rise	4268 Sep 15 22:05	15°♄14'49	
minimum elong	4263 Mar 05 05:15	14°♄12'35	0°38'32		4268 Dec 04 14:45	0°♄	
morning rise	4263 Mar 18 01:54	17°♄15'35		retrograde	4269 Jan 17 01:10	2°♄51'43	
	4263 May 16 07:02	0°♄			4269 Mar 01 12:48	30°♄	
retrograde	4263 Jul 25 14:03	7°♄02'26		opposition	4269 Mar 18 04:00	27°♄52'09	1°10'17
opposition	4263 Sep 23 20:15	2°♄05'26	-1°15'34	min. Earth dist.	4269 Mar 17 15:42	27°♄56'14	4.36994 AU
min. Earth dist.	4263 Sep 24 05:39	2°♄02'21	4.00307 AU	direct	4269 May 18 05:43	22°♄49'54	
	4263 Oct 10 07:07	30°♄			4269 Jul 30 15:52	0°♄	
direct	4263 Nov 22 02:05	27°♄10'58		evening set	4269 Sep 21 17:42	10°♄32'35	
	4264 Jan 03 01:05	0°♄					
evening set	4264 Mar 26 20:18	16°♄48'32		conjunction	4269 Oct 05 01:11	13°♄25'07	0°55'57
				minimum elong	4269 Oct 05 01:09	13°♄25'06	0°55'57
conjunction	4264 Apr 08 21:24	19°♄58'12	-0°57'22	max. Earth dist.	4269 Oct 05 05:06	13°♄27'14	6.42253 AU
minimum elong	4264 Apr 08 21:23	19°♄58'12	0°57'22	morning rise	4269 Oct 18 06:12	16°♄16'22	
max. Earth dist.	4264 Apr 09 00:28	20°♄00'04	5.95572 AU		4269 Dec 31 22:24	0°♄	
morning rise	4264 Apr 22 00:54	23°♄09'21		retrograde	4270 Feb 16 03:39	3°♄10'19	
	4264 May 21 06:44	0°♄			4270 Apr 03 18:17	30°♄	
retrograde	4264 Sep 01 03:54	13°♄49'19		opposition	4270 Apr 17 14:42	28°♄14'21	1°26'11

min. Earth dist.	4270 Apr 17 21:37	28° Ω 12'06	4.45799 AU	retrograde	4275 Jul 31 02:27	12° Υ 20'13	
direct	4270 Jun 18 18:14	23° Ω 11'50		opposition	4275 Sep 29 05:54	7° Υ 22'43	-1°19'26
	4270 Aug 29 22:25	0° \mathbb{M}		min. Earth dist.	4275 Sep 29 12:24	7° Υ 20'34	3.98809 AU
evening set	4270 Oct 23 01:12	10° \mathbb{M} 36'07		direct	4275 Nov 27 08:18	2° Υ 28'30	
max. Earth dist.	4270 Nov 04 00:49	13° \mathbb{M} 10'29	6.47356 AU	evening set	4276 Apr 01 01:54	22° Υ 09'50	
conjunction	4270 Nov 05 02:02	13° \mathbb{M} 24'03	0°59'02	conjunction	4276 Apr 14 04:01	25° Υ 20'21	-0°58'21
minimum elong	4270 Nov 05 02:02	13° \mathbb{M} 24'04	0°59'02	minimum elong	4276 Apr 14 04:00	25° Υ 20'21	0°58'20
	4270 Nov 12 12:22	15° \mathbb{M}		max. Earth dist.	4276 Apr 14 12:42	25° Υ 25'38	5.94758 AU
morning rise	4270 Nov 18 00:23	16° \mathbb{M} 10'46		morning rise	4276 Apr 27 08:40	28° Υ 32'24	
	4271 Feb 02 07:49	0° \mathbb{X}			4276 May 03 10:26	0° \mathcal{B}	
retrograde	4271 Mar 18 03:00	2° \mathbb{X} 50'14			4276 Jul 15 15:08	15° \mathcal{B}	
	4271 May 01 07:19	30° $\mathbb{R}\mathbb{M}$		retrograde	4276 Sep 06 14:58	19° \mathcal{B} 15'23	
opposition	4271 May 17 20:16	27° \mathbb{M} 56'55	1°19'07		4276 Oct 30 15:46	15° $\mathbb{R}\mathcal{B}$	
min. Earth dist.	4271 May 18 21:20	27° \mathbb{M} 48'52	4.47018 AU	opposition	4276 Nov 05 09:04	14° \mathcal{B} 14'05	-1°27'24
direct	4271 Jul 19 14:00	22° \mathbb{M} 54'54		min. Earth dist.	4276 Nov 04 15:10	14° \mathcal{B} 20'05	3.93133 AU
	4271 Oct 01 10:48	0° \mathbb{X}		direct	4277 Jan 02 09:29	9° \mathcal{B} 20'11	
evening set	4271 Nov 22 12:35	10° \mathbb{X} 19'38			4277 Mar 03 13:25	15° \mathcal{B}	
max. Earth dist.	4271 Dec 03 12:22	12° \mathbb{X} 42'39	6.44557 AU	evening set	4277 May 08 11:27	29° \mathcal{B} 13'26	
					4277 May 11 16:42	0° \mathbb{I}	
conjunction	4271 Dec 05 08:40	13° \mathbb{X} 06'46	0°46'22	conjunction	4277 May 21 21:24	2° \mathbb{I} 28'04	-0°51'41
minimum elong	4271 Dec 05 08:42	13° \mathbb{X} 06'47	0°46'22	minimum elong	4277 May 21 21:25	2° \mathbb{I} 28'05	0°51'42
morning rise	4271 Dec 18 02:17	15° \mathbb{X} 52'53		max. Earth dist.	4277 May 23 14:04	2° \mathbb{I} 52'42	5.93938 AU
	4272 Mar 04 11:02	0° \mathcal{B}		morning rise	4277 Jun 04 10:27	5° \mathbb{I} 44'14	
retrograde	4272 Apr 16 21:38	2° \mathcal{B} 47'35		retrograde	4277 Oct 14 10:25	26° \mathbb{I} 21'59	
	4272 May 30 23:12	30° $\mathbb{R}\mathbb{X}$		opposition	4277 Dec 12 23:56	21° \mathbb{I} 17'43	-0°59'53
opposition	4272 Jun 16 19:45	27° \mathbb{X} 55'27	0°51'04	min. Earth dist.	4277 Dec 11 13:44	21° \mathbb{I} 29'21	3.97339 AU
min. Earth dist.	4272 Jun 18 07:22	27° \mathbb{X} 44'05	4.40388 AU	direct	4278 Feb 08 21:55	16° \mathbb{I} 21'53	
direct	4272 Aug 18 10:09	22° \mathbb{X} 54'44			4278 May 20 09:19	0° \mathcal{B}	
	4272 Oct 30 14:22	0° \mathcal{B}		evening set	4278 Jun 15 05:00	5° \mathcal{B} 55'34	
evening set	4272 Dec 22 03:02	10° \mathcal{B} 39'03					
max. Earth dist.	4273 Jan 01 15:15	12° \mathcal{B} 59'17	6.34544 AU	conjunction	4278 Jun 28 21:19	9° \mathcal{B} 09'00	-0°24'40
conjunction	4273 Jan 03 20:23	13° \mathcal{B} 28'57	0°20'49	minimum elong	4278 Jun 28 21:20	9° \mathcal{B} 09'01	0°24'41
minimum elong	4273 Jan 03 20:24	13° \mathcal{B} 28'58	0°20'49	max. Earth dist.	4278 Jul 01 07:35	9° \mathcal{B} 43'24	6.02709 AU
morning rise	4273 Jan 16 12:17	16° \mathcal{B} 18'23		morning rise	4278 Jul 12 15:27	12° \mathcal{B} 23'09	
	4273 Mar 28 12:13	0° \approx			4278 Oct 13 11:40	0° \mathcal{Q}	
retrograde	4273 May 19 14:23	3° \approx 56'49		retrograde	4278 Nov 19 03:10	2° \mathcal{Q} 07'24	
	4273 Jul 12 02:58	30° $\mathbb{R}\mathcal{B}$			4278 Dec 25 11:31	30° $\mathbb{R}\mathcal{B}$	
opposition	4273 Jul 19 10:19	29° \mathcal{B} 04'22	0°07'17	min. Earth dist.	4279 Jan 16 04:44	27° \mathcal{B} 14'57	4.09605 AU
min. Earth dist.	4273 Jul 21 00:42	28° \mathcal{B} 52'06	4.27519 AU	opposition	4279 Jan 17 16:44	27° \mathcal{B} 02'43	-0°10'30
desc. node	4273 Sep 16 15:40	24° \mathcal{B} 06'16		direct	4279 Mar 17 08:51	22° \mathcal{B} 04'01	
direct	4273 Sep 19 07:09	24° \mathcal{B} 05'37		asc. node	4279 Apr 07 00:27	22° \mathcal{B} 46'22	
	4273 Nov 23 04:21	0° \approx			4279 May 30 22:42	0° \mathcal{Q}	
evening set	4274 Jan 22 19:14	12° \approx 25'55		evening set	4279 Jul 21 20:26	10° \mathcal{Q} 57'56	
	4274 Feb 02 23:01	15° \approx					
max. Earth dist.	4274 Feb 02 12:36	14° \approx 53'59	6.19830 AU	conjunction	4279 Aug 04 13:33	14° \mathcal{Q} 05'04	0°10'30
conjunction	4274 Feb 04 12:29	15° \approx 21'38	-0°11'56	minimum elong	4279 Aug 04 13:33	14° \mathcal{Q} 05'03	0°10'30
minimum elong	4274 Feb 04 12:29	15° \approx 21'38	0°11'56	behind sun begin	4279 Aug 04 07:06	14° \mathcal{Q} 01'24	
behind sun begin	4274 Feb 04 06:52	15° \approx 18'24		behind sun end	4279 Aug 04 19:59	14° \mathcal{Q} 08'42	
behind sun end	4274 Feb 04 18:05	15° \approx 24'51		max. Earth dist.	4279 Aug 06 16:55	14° \mathcal{Q} 34'18	6.17323 AU
morning rise	4274 Feb 17 05:35	18° \approx 17'34			4279 Aug 08 14:06	15° \mathcal{Q}	
	4274 Apr 13 19:58	0° \mathbb{X}		morning rise	4279 Aug 18 07:00	17° \mathcal{Q} 12'00	
retrograde	4274 Jun 23 15:06	7° \mathbb{X} 02'21		retrograde	4279 Oct 20 09:42	0° \mathbb{M}	
opposition	4274 Aug 23 06:06	2° \mathbb{X} 08'01	-0°41'49	min. Earth dist.	4279 Dec 22 04:22	5° \mathbb{M} 44'03	
min. Earth dist.	4274 Aug 24 08:48	1° \mathbb{X} 59'22	4.11963 AU	opposition	4280 Feb 18 21:59	0° \mathbb{M} 50'35	4.25070 AU
	4274 Sep 09 07:34	30° $\mathbb{R}\approx$			4280 Feb 20 00:53	0° \mathbb{M} 41'31	0°39'17
direct	4274 Oct 22 18:14	27° \approx 11'45		direct	4280 Feb 25 04:50	30° $\mathbb{R}\mathcal{Q}$	
	4274 Dec 04 09:47	0° \mathbb{X}			4280 Apr 19 22:40	25° \mathcal{Q} 40'27	
evening set	4275 Feb 25 08:15	16° \mathbb{X} 16'12		evening set	4280 Jun 13 11:28	0° \mathbb{M}	
max. Earth dist.	4275 Mar 09 03:18	19° \mathbb{X} 04'32	6.04790 AU		4280 Aug 24 12:48	13° \mathbb{M} 52'00	
conjunction	4275 Mar 10 04:18	19° \mathbb{X} 19'27	-0°42'16	conjunction	4280 Sep 07 01:49	16° \mathbb{M} 50'50	0°40'30
minimum elong	4275 Mar 10 04:16	19° \mathbb{X} 19'26	0°42'15	minimum elong	4280 Sep 07 01:47	16° \mathbb{M} 50'49	0°40'30
morning rise	4275 Mar 23 01:38	22° \mathbb{X} 23'40		max. Earth dist.	4280 Sep 08 05:58	17° \mathbb{M} 06'22	6.32400 AU
	4275 Apr 25 08:03	0° Υ		morning rise	4280 Sep 20 13:23	19° \mathbb{M} 48'43	
					4280 Nov 09 18:37	0° \mathcal{Q}	

retrograde	4281 Jan 21 07:53	7°♏18'11			4286 Mar 24 15:00	0°♏	
opposition	4281 Mar 22 11:20	2°♏19'12	1°13'52	retrograde	4286 Jun 28 20:20	12°♏03'03	
min. Earth dist.	4281 Mar 22 02:11	2°♏22'14	4.38576 AU	opposition	4286 Aug 28 09:14	7°♏08'19	-0°48'17
	4281 Apr 09 18:22	30°♏16'55		min. Earth dist.	4286 Aug 29 09:55	7°♏00'19	4.10072 AU
direct	4281 May 22 17:36	27°♏16'55		direct	4286 Oct 27 17:59	2°♏12'24	
	4281 Jul 05 01:53	0°♏		evening set	4287 Mar 02 06:24	21°♏21'45	
evening set	4281 Sep 26 04:40	14°♏56'13		max. Earth dist.	4287 Mar 14 06:33	24°♏13'39	6.03289 AU
conjunction	4281 Oct 09 11:08	17°♏47'57	0°57'21	conjunction	4287 Mar 15 03:05	24°♏25'55	-0°45'38
minimum elong	4281 Oct 09 11:07	17°♏47'56	0°57'21	minimum elong	4287 Mar 15 03:03	24°♏25'54	0°45'39
max. Earth dist.	4281 Oct 09 09:37	17°♏47'08	6.43308 AU	morning rise	4287 Mar 28 01:14	27°♏31'09	
morning rise	4281 Oct 22 15:18	20°♏38'26			4287 Apr 07 13:31	0°♏	
	4281 Dec 08 07:39	0°♏		retrograde	4287 Aug 05 10:33	17°♏34'48	
retrograde	4282 Feb 20 08:22	7°♏29'07		opposition	4287 Oct 04 13:26	12°♏36'45	-1°22'36
opposition	4282 Apr 21 20:15	2°♏33'34	1°26'32	min. Earth dist.	4287 Oct 04 15:43	12°♏36'00	3.97887 AU
min. Earth dist.	4282 Apr 22 06:09	2°♏30'22	4.46294 AU	direct	4287 Dec 02 10:45	7°♏42'42	
	4282 May 12 14:02	30°♏16'55		evening set	4288 Apr 06 05:29	27°♏25'44	
direct	4282 Jun 23 02:33	27°♏31'04			4288 Apr 16 19:56	0°♏	
	4282 Aug 03 22:39	0°♏		conjunction	4288 Apr 19 08:26	0°♏36'47	-0°58'49
evening set	4282 Oct 27 08:31	14°♏54'50		minimum elong	4288 Apr 19 08:26	0°♏36'47	0°58'49
	4282 Oct 27 18:10	15°♏		max. Earth dist.	4288 Apr 19 21:17	0°♏44'36	5.94480 AU
max. Earth dist.	4282 Nov 08 05:29	17°♏27'52	6.47253 AU	morning rise	4288 May 02 14:15	3°♏49'26	
conjunction	4282 Nov 09 08:44	17°♏42'34	0°58'07		4288 Jun 21 02:29	15°♏	
minimum elong	4282 Nov 09 08:45	17°♏42'34	0°58'08	retrograde	4288 Sep 11 21:30	24°♏33'09	
morning rise	4282 Nov 22 06:09	20°♏29'01		opposition	4288 Nov 10 15:52	19°♏31'16	-1°25'29
	4283 Jan 08 23:46	0°♏		min. Earth dist.	4288 Nov 09 19:08	19°♏38'15	3.93539 AU
retrograde	4283 Mar 22 08:37	7°♏09'30			4288 Dec 23 19:51	15°♏	
opposition	4283 May 22 03:22	2°♏16'27	1°16'18	direct	4289 Jan 07 15:39	14°♏37'10	
min. Earth dist.	4283 May 23 05:53	2°♏07'58	4.46341 AU		4289 Jan 22 11:47	15°♏	
	4283 Jun 09 13:53	30°♏16'55		evening set	4289 Apr 24 19:28	0°♏	
direct	4283 Jul 23 21:03	27°♏14'39			4289 May 13 16:26	4°♏27'45	
	4283 Sep 06 04:06	0°♏		conjunction	4289 May 27 03:31	7°♏42'22	-0°48'55
evening set	4283 Nov 26 19:50	14°♏41'44		minimum elong	4289 May 27 03:33	7°♏42'23	0°48'55
max. Earth dist.	4283 Dec 07 16:11	17°♏03'23	6.43350 AU	max. Earth dist.	4289 May 29 00:45	8°♏09'40	5.94987 AU
conjunction	4283 Dec 09 15:17	17°♏29'07	0°43'24	morning rise	4289 Jun 09 17:19	10°♏58'23	
minimum elong	4283 Dec 09 15:19	17°♏29'07	0°43'24		4289 Sep 18 23:39	0°♏	
morning rise	4283 Dec 22 08:40	20°♏15'35		retrograde	4289 Oct 19 12:06	1°♏29'47	
	4284 Feb 08 13:50	0°♏			4289 Nov 18 17:44	30°♏16'55	
retrograde	4284 Apr 21 10:52	7°♏15'26		min. Earth dist.	4289 Dec 16 14:27	26°♏36'58	3.98902 AU
opposition	4284 Jun 21 07:57	2°♏23'22	0°45'36	opposition	4289 Dec 18 00:42	26°♏25'19	-0°53'52
min. Earth dist.	4284 Jun 22 21:13	2°♏11'29	4.38726 AU	direct	4290 Feb 14 00:43	21°♏29'07	
	4284 Jul 10 21:03	30°♏16'55			4290 May 01 06:52	0°♏	
direct	4284 Aug 22 21:35	27°♏22'54		evening set	4290 Jun 20 07:24	10°♏57'14	
	4284 Oct 04 13:59	0°♏		conjunction	4290 Jul 04 00:01	14°♏09'56	-0°20'00
evening set	4284 Dec 26 12:57	15°♏11'57		minimum elong	4290 Jul 04 00:02	14°♏09'57	0°20'01
max. Earth dist.	4285 Jan 06 01:20	17°♏32'55	6.32568 AU	max. Earth dist.	4290 Jul 06 09:38	14°♏43'45	6.04621 AU
conjunction	4285 Jan 08 06:17	18°♏02'37	0°16'24	morning rise	4290 Jul 17 18:31	17°♏23'18	
minimum elong	4285 Jan 08 06:17	18°♏02'37	0°16'25		4290 Sep 15 06:23	0°♏	
morning rise	4285 Jan 20 22:10	20°♏52'50		retrograde	4290 Nov 23 17:49	6°♏57'42	
	4285 Mar 05 06:57	0°♏		min. Earth dist.	4291 Jan 20 21:27	2°♏05'19	4.11672 AU
retrograde	4285 May 24 09:08	8°♏39'46		opposition	4291 Jan 22 09:07	1°♏53'12	-0°03'15
opposition	4285 Jul 24 05:46	3°♏47'07	0°00'18		4291 Feb 05 15:39	30°♏16'55	
min. Earth dist.	4285 Jul 25 17:57	3°♏35'33	4.25385 AU	asc. node	4291 Feb 16 02:26	28°♏47'22	
desc. node	4285 Jul 26 15:21	3°♏28'42		direct	4291 Mar 22 03:55	26°♏54'07	
	4285 Aug 26 23:01	30°♏16'55			4291 May 05 19:49	0°♏	
direct	4285 Sep 23 21:48	28°♏48'46		evening set	4291 Jul 23 13:55	15°♏	
	4285 Oct 21 19:34	0°♏			4291 Jul 26 17:02	15°♏42'15	
	4286 Jan 17 14:01	15°♏		conjunction	4291 Aug 09 09:54	18°♏48'20	0°15'08
evening set	4286 Jan 27 10:43	17°♏14'55		minimum elong	4291 Aug 09 09:53	18°♏48'20	0°15'07
max. Earth dist.	4286 Feb 07 07:42	19°♏45'47	6.17730 AU	behind sun begin	4291 Aug 09 07:26	18°♏46'57	
conjunction	4286 Feb 09 04:07	20°♏11'34	-0°16'38	behind sun end	4291 Aug 09 12:19	18°♏49'43	
minimum elong	4286 Feb 09 04:05	20°♏11'33	0°16'39	max. Earth dist.	4291 Aug 11 09:43	19°♏15'26	6.19382 AU
morning rise	4286 Feb 21 21:34	23°♏08'31		morning rise	4291 Aug 23 02:46	21°♏54'06	

	4291 Sep 29 21:13	0°♎		conjunction	4298 Feb 13 18:43	24°♊58'15 -0°21'13
retrograde	4291 Dec 26 14:34	10°♎17'15		minimum elong	4298 Feb 13 18:42	24°♊58'15 0°21'12
min. Earth dist.	4292 Feb 23 11:01	5°♎23'10	4.26942 AU	morning rise	4298 Feb 26 12:33	27°♊56'14
opposition	4292 Feb 24 10:43	5°♎15'13	0°45'08		4298 Mar 07 11:33	0°♋
direct	4292 Apr 24 13:43	0°♎13'55		retrograde	4298 Jul 03 22:21	17°♋00'09
evening set	4292 Aug 29 03:02	18°♎21'05		opposition	4298 Sep 02 10:38	12°♋05'04 -0°54'21
				min. Earth dist.	4298 Sep 03 08:17	11°♋58'02 4.08229 AU
conjunction	4292 Sep 11 15:20	21°♎18'59	0°43'41	direct	4298 Nov 01 13:34	7°♋09'29
minimum elong	4292 Sep 11 15:18	21°♎18'58	0°43'41	evening set	4299 Mar 07 03:21	26°♋24'01
max. Earth dist.	4292 Sep 12 15:44	21°♎32'23	6.33947 AU	max. Earth dist.	4299 Mar 19 07:30	29°♋18'54 6.01737 AU
morning rise	4292 Sep 25 02:00	24°♎15'52				
	4292 Oct 22 03:55	0°♏		conjunction	4299 Mar 20 00:34	29°♋29'09 -0°48'40
retrograde	4293 Jan 25 11:55	11°♏39'33		minimum elong	4299 Mar 20 00:33	29°♋29'08 0°48'40
opposition	4293 Mar 26 17:07	6°♏41'04	1°16'57		4299 Mar 22 03:58	0°♐
min. Earth dist.	4293 Mar 26 09:59	6°♏43'25	4.39727 AU	morning rise	4299 Apr 01 23:40	2°♐35'28
direct	4293 May 27 02:08	1°♏38'43		retrograde	4299 Aug 10 17:34	22°♐46'51
evening set	4293 Sep 30 14:12	19°♏15'57		opposition	4299 Oct 09 19:40	17°♐48'14 -1°25'07
				min. Earth dist.	4299 Oct 09 18:51	17°♐48'31 3.96782 AU
conjunction	4293 Oct 13 19:49	22°♏07'05	0°58'23	direct	4299 Dec 07 13:30	12°♐54'17
minimum elong	4293 Oct 13 19:48	22°♏07'04	0°58'23		4300 Apr 01 05:12	0°♑
max. Earth dist.	4293 Oct 13 14:57	22°♏04'27	6.43997 AU	evening set	4300 Apr 12 08:26	2°♑40'08
morning rise	4293 Oct 26 22:57	24°♏56'56				
	4293 Nov 20 02:20	0°♒		conjunction	4300 Apr 25 12:37	5°♑51'59 -0°58'50
retrograde	4294 Feb 24 12:53	11°♒45'28		minimum elong	4300 Apr 25 12:37	5°♑51'59 0°58'50
opposition	4294 Apr 26 01:18	6°♒50'24	1°26'24	max. Earth dist.	4300 Apr 26 07:15	6°♑03'18 5.93939 AU
min. Earth dist.	4294 Apr 26 13:52	6°♒46'20	4.46501 AU	morning rise	4300 May 08 19:26	9°♑05'23
direct	4294 Jun 27 10:20	1°♒48'01			4300 Jun 02 21:31	15°♑
	4294 Oct 11 14:45	15°♒		retrograde	4300 Sep 18 06:14	29°♑50'52
evening set	4294 Oct 31 15:27	19°♒11'58		opposition	4300 Nov 16 22:04	24°♑48'34 -1°22'56
max. Earth dist.	4294 Nov 12 07:34	21°♒42'38	6.46960 AU	min. Earth dist.	4300 Nov 15 23:35	24°♑56'09 3.93639 AU
				direct	4301 Jan 13 20:59	19°♑54'17
conjunction	4294 Nov 13 14:52	21°♒59'31	0°56'54		4301 Apr 07 04:06	0°♒
minimum elong	4294 Nov 13 14:53	21°♒59'32	0°56'54	evening set	4301 May 19 22:30	9°♒43'52
morning rise	4294 Nov 26 11:45	24°♒45'52				
	4294 Dec 21 13:11	0°♓		conjunction	4301 Jun 02 10:29	12°♒58'37 -0°45'46
retrograde	4295 Mar 26 15:48	11°♓27'55		minimum elong	4301 Jun 02 10:31	12°♒58'38 0°45'46
opposition	4295 May 26 10:47	6°♓35'05	1°13'04	max. Earth dist.	4301 Jun 04 09:34	13°♒26'57 5.95693 AU
min. Earth dist.	4295 May 27 15:03	6°♓26'02	4.45581 AU	morning rise	4301 Jun 16 01:24	16°♒14'45
direct	4295 Jul 28 04:51	1°♓33'25			4301 Aug 18 21:39	0°♔
evening set	4295 Dec 01 02:26	19°♓02'48		retrograde	4301 Oct 25 12:31	6°♔40'58
max. Earth dist.	4295 Dec 11 22:33	21°♓24'42	6.42179 AU	min. Earth dist.	4301 Dec 22 14:02	1°♔48'34 4.00137 AU
				opposition	4301 Dec 24 01:57	1°♔36'20 -0°47'24
conjunction	4295 Dec 13 21:37	21°♓50'29	0°40'11		4302 Jan 05 02:38	30°♕♒
minimum elong	4295 Dec 13 21:39	21°♓50'30	0°40'12	direct	4302 Feb 20 02:21	26°♒39'44
morning rise	4295 Dec 26 14:29	24°♓37'16			4302 Apr 06 18:37	0°♔
	4296 Jan 20 22:51	0°♚		evening set	4302 Jun 26 11:40	16°♔03'50
retrograde	4296 Apr 25 21:42	11°♚42'06				
opposition	4296 Jun 25 20:01	6°♚50'02	0°39'51	conjunction	4302 Jul 10 04:44	19°♔15'58 -0°15'07
min. Earth dist.	4296 Jun 27 08:56	6°♚38'16	4.37200 AU	minimum elong	4302 Jul 10 04:45	19°♔15'59 0°15'07
direct	4296 Aug 27 07:12	1°♚49'53		behind sun begin	4302 Jul 10 02:13	19°♔14'30
evening set	4296 Dec 30 22:20	19°♚43'00		behind sun end	4302 Jul 10 07:17	19°♔17'27
max. Earth dist.	4297 Jan 10 10:24	22°♚04'27	6.30786 AU	max. Earth dist.	4302 Jul 12 13:39	19°♔49'15 6.06270 AU
				morning rise	4302 Jul 23 23:23	22°♔28'37
conjunction	4297 Jan 12 15:20	22°♚34'16	0°11'56		4302 Aug 26 17:19	0°♌
minimum elong	4297 Jan 12 15:21	22°♚34'16	0°11'56	retrograde	4302 Nov 29 12:49	11°♌54'12
behind sun begin	4297 Jan 12 09:47	22°♚31'09		asc. node	4302 Dec 27 16:21	10°♌36'17
behind sun end	4297 Jan 12 20:55	22°♚37'23		min. Earth dist.	4303 Jan 26 17:53	7°♌01'24 4.13540 AU
morning rise	4297 Jan 25 07:21	25°♚25'14		opposition	4303 Jan 28 03:41	6°♌49'55 0°04'08
	4297 Feb 15 03:27	0°♍		direct	4303 Mar 28 03:30	1°♌50'28
retrograde	4297 May 29 05:03	13°♍20'06			4303 Jul 07 08:06	15°♌
desc. node	4297 Jun 05 04:57	13°♍15'28		evening set	4303 Aug 01 16:10	20°♌33'26
opposition	4297 Jul 29 00:23	8°♍27'14	-0°06'41			
min. Earth dist.	4297 Jul 30 12:13	8°♍15'45	4.23424 AU	conjunction	4303 Aug 15 08:44	23°♌38'32 0°19'47
direct	4297 Sep 28 13:50	3°♍29'10		minimum elong	4303 Aug 15 08:43	23°♌38'31 0°19'47
	4297 Dec 31 11:42	15°♍		max. Earth dist.	4303 Aug 17 07:16	24°♌04'46 6.21332 AU
evening set	4298 Feb 01 00:58	22°♍00'40		morning rise	4303 Aug 29 00:56	26°♌43'09
max. Earth dist.	4298 Feb 12 00:49	24°♍33'51	6.15748 AU		4303 Sep 12 21:36	0°♎

retrograde	4304 Jan 01 01:00	14°♎57'32			4309 Dec 13 15:22	15°♏	
opposition	4304 Feb 29 22:48	9°♎55'59	0°50'51	evening set	4310 Feb 06 11:32	26°♏36'25	
min. Earth dist.	4304 Feb 28 24:00	10°♎03'36	4.28836 AU	max. Earth dist.	4310 Feb 17 12:16	29°♏10'49	6.13807 AU
direct	4304 Apr 30 05:10	4°♎54'31					
evening set	4304 Sep 03 20:04	22°♎57'04		conjunction	4310 Feb 19 05:24	29°♏34'52	-0°25'27
				minimum elong	4310 Feb 19 05:22	29°♏34'52	0°25'27
conjunction	4304 Sep 17 07:22	25°♎53'52	0°46'42		4310 Feb 21 00:19	0°♐	
minimum elong	4304 Sep 17 07:20	25°♎53'51	0°46'42	morning rise	4310 Mar 03 23:50	2°♐33'54	
max. Earth dist.	4304 Sep 18 03:31	26°♎04'55	6.35672 AU	retrograde	4310 Jul 09 21:47	21°♐47'28	
morning rise	4304 Sep 30 17:03	28°♎49'37		opposition	4310 Sep 08 08:13	16°♐51'57	-0°59'51
	4304 Oct 06 03:05	0°♑		min. Earth dist.	4310 Sep 09 04:05	16°♐45'28	4.06260 AU
retrograde	4305 Jan 30 19:44	16°♑06'40		direct	4310 Nov 07 06:44	11°♐56'32	
opposition	4305 Apr 01 01:04	11°♑08'43	1°19'41		4311 Mar 07 11:30	0°♑	
min. Earth dist.	4305 Mar 31 20:59	11°♑10'04	4.41197 AU	evening set	4311 Mar 12 21:02	1°♑17'08	
direct	4305 Jun 01 15:12	6°♑06'19					
evening set	4305 Oct 06 01:07	23°♑40'01		conjunction	4311 Mar 25 19:14	4°♑23'28	-0°51'15
				minimum elong	4311 Mar 25 19:12	4°♑23'27	0°51'14
conjunction	4305 Oct 19 05:50	26°♑30'20	0°59'09	max. Earth dist.	4311 Mar 25 06:36	4°♑15'51	5.99933 AU
minimum elong	4305 Oct 19 05:49	26°♑30'20	0°59'10	morning rise	4311 Apr 07 19:10	7°♑31'00	
max. Earth dist.	4305 Oct 18 22:02	26°♑26'08	6.45118 AU	retrograde	4311 Aug 16 23:33	27°♑51'06	
morning rise	4305 Nov 01 07:56	29°♑19'21		opposition	4311 Oct 15 22:44	22°♑52'04	-1°26'59
	4305 Nov 04 12:02	0°♒		min. Earth dist.	4311 Oct 15 19:51	22°♑53'01	3.95344 AU
	4306 Feb 03 09:51	15°♒		direct	4311 Dec 13 12:19	17°♑58'12	
retrograde	4306 Mar 01 16:31	16°♒04'11			4312 Mar 14 22:24	0°♒	
	4306 Mar 27 23:00	15°♒♒		evening set	4312 Apr 17 09:48	7°♒48'38	
opposition	4306 May 01 07:18	11°♒09'26	1°25'50				
min. Earth dist.	4306 May 01 21:11	11°♒04'57	4.47236 AU	conjunction	4312 Apr 30 15:02	11°♒01'28	-0°58'25
direct	4306 Jul 02 18:09	6°♒07'04		minimum elong	4312 Apr 30 15:03	11°♒01'28	0°58'25
	4306 Sep 24 20:49	15°♒		max. Earth dist.	4312 May 01 12:19	11°♒14'25	5.92997 AU
evening set	4306 Nov 05 22:01	23°♒29'08		morning rise	4312 May 13 23:21	14°♒15'57	
max. Earth dist.	4306 Nov 17 11:54	25°♒58'33	6.47259 AU		4312 May 17 00:24	15°♒	
					4312 Jul 27 07:48	0°♓	
conjunction	4306 Nov 18 20:39	26°♒16'14	0°55'25	retrograde	4312 Sep 23 11:38	5°♓04'48	
minimum elong	4306 Nov 18 20:40	26°♒16'15	0°55'25	min. Earth dist.	4312 Nov 21 00:57	0°♓10'49	3.93320 AU
morning rise	4306 Dec 01 16:38	29°♒02'09		opposition	4312 Nov 22 02:43	0°♓02'06	-1°19'49
	4306 Dec 06 04:53	0°♓			4312 Nov 22 08:56	30°♓	
retrograde	4307 Mar 31 20:45	15°♓43'48		direct	4313 Jan 18 22:49	25°♓07'37	
opposition	4307 May 31 17:14	10°♓51'09	1°09'32		4313 Mar 15 09:13	0°♓	
min. Earth dist.	4307 Jun 01 23:14	10°♓41'34	4.45416 AU	evening set	4313 May 25 04:14	14°♓58'04	
direct	4307 Aug 02 12:38	5°♓49'39					
evening set	4307 Dec 06 07:19	23°♓19'13		conjunction	4313 Jun 07 17:23	18°♓13'12	-0°42'18
max. Earth dist.	4307 Dec 16 23:49	25°♓39'27	6.41544 AU	minimum elong	4313 Jun 07 17:25	18°♓13'13	0°42'18
				max. Earth dist.	4313 Jun 09 19:28	18°♓43'18	5.96038 AU
conjunction	4307 Dec 19 01:50	26°♓06'54	0°36'53	morning rise	4313 Jun 21 09:13	21°♓29'36	
minimum elong	4307 Dec 19 01:51	26°♓06'55	0°36'54		4313 Jul 28 16:18	0°♔	
morning rise	4307 Dec 31 18:27	28°♓53'48		retrograde	4313 Oct 30 15:18	11°♔52'05	
	4308 Jan 05 20:10	0°♕		min. Earth dist.	4313 Dec 27 15:30	6°♔59'35	4.01081 AU
retrograde	4308 May 01 07:02	16°♕01'57		opposition	4313 Dec 29 03:31	6°♔47'18	-0°40'40
opposition	4308 Jul 01 05:29	11°♕09'48	0°34'06	direct	4314 Feb 25 06:12	1°♔50'20	
min. Earth dist.	4308 Jul 02 19:22	10°♕57'43	4.36109 AU	evening set	4314 Jul 01 16:52	21°♔11'24	
direct	4308 Sep 01 15:38	6°♕09'46					
evening set	4309 Jan 05 04:14	24°♕05'37		conjunction	4314 Jul 15 10:24	24°♔23'04	-0°10'08
max. Earth dist.	4309 Jan 15 17:14	26°♕28'00	6.29315 AU	minimum elong	4314 Jul 15 10:24	24°♔23'04	0°10'09
				behind sun begin	4314 Jul 15 03:45	24°♔19'13	
conjunction	4309 Jan 17 21:16	26°♕57'24	0°07'34	behind sun end	4314 Jul 15 17:03	24°♔26'55	
minimum elong	4309 Jan 17 21:17	26°♕57'25	0°07'34	max. Earth dist.	4314 Jul 17 21:08	24°♔57'15	6.07733 AU
behind sun begin	4309 Jan 17 14:02	26°♕53'20		morning rise	4314 Jul 29 05:07	27°♔35'02	
behind sun end	4309 Jan 18 04:31	27°♕01'29			4314 Aug 08 18:32	0°♕	
morning rise	4309 Jan 30 13:08	29°♕48'57			4314 Oct 30 23:45	15°♕	
	4309 Jan 31 08:49	0°♖		asc. node	4314 Nov 06 00:49	15°♕34'58	
desc. node	4309 Apr 18 04:25	14°♖37'34		retrograde	4314 Dec 04 07:32	16°♕52'07	
	4309 Apr 21 02:48	15°♖			4315 Jan 07 08:50	15°♕♑	
retrograde	4309 Jun 03 19:43	17°♖50'50		opposition	4315 Feb 01 22:48	11°♕48'05	0°11'28
	4309 Jul 18 05:12	15°♕♖		min. Earth dist.	4315 Jan 31 12:46	11°♕59'37	4.15354 AU
opposition	4309 Aug 03 15:13	12°♖57'45	-0°13'20	direct	4315 Apr 02 01:31	6°♕48'18	
min. Earth dist.	4309 Aug 05 02:18	12°♖46'30	4.21654 AU		4315 Jun 17 19:01	15°♕	
direct	4309 Oct 04 00:29	7°♖59'57		evening set	4315 Aug 06 16:22	25°♕26'08	

conjunction	4315 Aug 20 08:18	28°♎30'07	0°24'18	retrograde	4321 Jun 08 18:19	22°♊37'44	
minimum elong	4315 Aug 20 08:17	28°♎30'06	0°24'18	opposition	4321 Aug 08 12:30	17°♊44'22	-0°20'22
max. Earth dist.	4315 Aug 22 03:23	28°♎54'19	6.23327 AU	min. Earth dist.	4321 Aug 09 22:11	17°♊33'32	4.19331 AU
	4315 Aug 27 00:26	0°♎			4321 Aug 31 02:47	15°♊	
morning rise	4315 Sep 02 23:55	1°♎33'33		direct	4321 Oct 08 16:59	12°♊46'50	
retrograde	4316 Jan 05 13:27	19°♎38'56			4321 Nov 15 20:31	15°♊	
opposition	4316 Mar 05 11:42	14°♎37'46	0°56'14		4322 Feb 04 17:23	0°♋	
min. Earth dist.	4316 Mar 04 15:31	14°♎44'31	4.30807 AU	evening set	4322 Feb 11 04:44	1°♋30'06	
direct	4316 May 04 23:35	9°♎36'03		max. Earth dist.	4322 Feb 22 10:00	4°♋07'53	6.11491 AU
evening set	4316 Sep 08 12:52	27°♎33'27					
	4316 Sep 19 18:00	0°♏		conjunction	4322 Feb 23 23:10	4°♋29'44	-0°29'49
				minimum elong	4322 Feb 23 23:09	4°♋29'44	0°29'49
conjunction	4316 Sep 21 23:24	0°♏29'10	0°49'26	morning rise	4322 Mar 08 18:04	7°♋29'59	
minimum elong	4316 Sep 21 23:23	0°♏29'09	0°49'25	retrograde	4322 Jul 15 05:09	26°♋54'29	
max. Earth dist.	4316 Sep 22 17:31	0°♏39'04	6.37443 AU	opposition	4322 Sep 13 13:35	21°♋58'33	-1°05'19
morning rise	4316 Oct 05 07:52	3°♏23'43		min. Earth dist.	4322 Sep 14 07:09	21°♋52'49	4.04164 AU
retrograde	4317 Feb 04 01:38	20°♏34'09		direct	4322 Nov 12 06:53	17°♋03'30	
opposition	4317 Apr 05 09:17	15°♏36'39	1°21'56		4323 Feb 17 23:57	0°♌	
min. Earth dist.	4317 Apr 05 06:43	15°♏37'30	4.42623 AU	evening set	4323 Mar 17 22:31	6°♌30'16	
direct	4317 Jun 06 02:09	10°♏34'12					
evening set	4317 Oct 10 11:58	28°♏04'33		conjunction	4323 Mar 30 21:27	9°♌37'44	-0°53'36
	4317 Oct 19 11:10	0°♍		minimum elong	4323 Mar 30 21:25	9°♌37'43	0°53'36
				max. Earth dist.	4323 Mar 30 12:11	9°♌32'08	5.98249 AU
conjunction	4317 Oct 23 15:35	0°♍54'05	0°59'35	morning rise	4323 Apr 12 22:38	12°♌46'34	
minimum elong	4317 Oct 23 15:35	0°♍54'05	0°59'35		4323 Jul 07 11:57	0°♍	
max. Earth dist.	4317 Oct 23 03:17	0°♍47'28	6.46067 AU	retrograde	4323 Aug 22 10:39	3°♍14'28	
morning rise	4317 Nov 05 16:45	3°♍42'21			4323 Oct 07 22:30	30°♍	
	4318 Jan 03 02:31	15°♍		opposition	4323 Oct 21 09:07	28°♌14'53	-1°28'13
retrograde	4318 Mar 05 23:09	20°♍24'22		min. Earth dist.	4323 Oct 21 01:41	28°♌17'21	3.94291 AU
opposition	4318 May 05 14:02	15°♍30'01	1°24'47	direct	4323 Dec 18 18:27	23°♌21'05	
min. Earth dist.	4318 May 06 07:18	15°♍24'27	4.47640 AU		4324 Feb 22 14:21	0°♍	
	4318 May 09 11:16	15°♍		evening set	4324 Apr 22 17:50	13°♍14'06	
direct	4318 Jul 07 04:08	10°♍27'43			4324 Apr 30 00:23	15°♍	
	4318 Sep 03 00:08	15°♍					
evening set	4318 Nov 10 05:16	27°♍49'06		conjunction	4324 May 06 00:21	16°♍27'39	-0°57'29
	4318 Nov 20 08:32	0°♎		minimum elong	4324 May 06 00:22	16°♍27'39	0°57'28
max. Earth dist.	4318 Nov 21 14:48	0°♎16'20	6.47068 AU	max. Earth dist.	4324 May 07 03:38	16°♍44'16	5.92701 AU
				morning rise	4324 May 19 09:43	19°♍42'47	
conjunction	4318 Nov 23 03:13	0°♎36'00	0°53'36		4324 Jul 03 11:56	0°♎	
minimum elong	4318 Nov 23 03:14	0°♎36'01	0°53'36	retrograde	4324 Sep 28 22:04	10°♎31'35	
morning rise	4318 Dec 05 22:34	3°♎21'46		min. Earth dist.	4324 Nov 26 08:28	5°♎37'46	3.93839 AU
retrograde	4319 Apr 05 04:17	20°♎04'57		opposition	4324 Nov 27 12:07	5°♎28'24	-1°15'50
opposition	4319 Jun 05 01:48	15°♎12'27	1°05'31	direct	4325 Jan 24 08:32	0°♎33'39	
min. Earth dist.	4319 Jun 06 09:01	15°♎02'28	4.44642 AU	evening set	4325 May 30 13:57	20°♎21'19	
direct	4319 Aug 06 20:01	10°♎11'04					
evening set	4319 Dec 10 14:18	27°♎42'55		conjunction	4325 Jun 13 04:03	23°♎36'15	-0°38'23
max. Earth dist.	4319 Dec 21 06:21	0°♏03'20	6.40242 AU	minimum elong	4325 Jun 13 04:05	23°♎36'16	0°38'23
	4319 Dec 21 00:18	0°♏		max. Earth dist.	4325 Jun 15 10:09	24°♎08'38	5.97327 AU
				morning rise	4325 Jun 26 20:36	26°♎52'20	
conjunction	4319 Dec 23 08:32	0°♏30'58	0°33'14		4325 Jul 10 04:30	0°♏	
minimum elong	4319 Dec 23 08:34	0°♏30'59	0°33'15	retrograde	4325 Nov 04 17:33	17°♏06'31	
morning rise	4320 Jan 05 00:45	3°♏18'16		min. Earth dist.	4326 Jan 01 16:34	12°♏14'22	4.02995 AU
retrograde	4320 May 05 20:54	20°♏32'16		opposition	4326 Jan 03 05:57	12°♏01'38	-0°33'30
opposition	4320 Jul 05 19:14	15°♏40'07	0°27'53	direct	4326 Mar 02 10:53	7°♏04'15	
min. Earth dist.	4320 Jul 07 09:58	15°♏27'47	4.34335 AU	evening set	4326 Jul 06 22:14	26°♏18'39	
direct	4320 Sep 06 02:57	10°♏40'22					
evening set	4321 Jan 09 14:53	28°♏41'12		conjunction	4326 Jul 20 15:40	29°♏29'13	-0°05'06
	4321 Jan 15 10:25	0°♐		minimum elong	4326 Jul 20 15:40	29°♏29'13	0°05'07
max. Earth dist.	4321 Jan 20 02:45	1°♐03'42	6.27201 AU	behind sun begin	4326 Jul 20 07:33	29°♏24'32	
				behind sun end	4326 Jul 20 23:48	29°♏33'54	
conjunction	4321 Jan 22 07:44	1°♐33'48	0°02'55		4326 Jul 22 20:50	0°♑	
minimum elong	4321 Jan 22 07:44	1°♐33'47	0°02'56	max. Earth dist.	4326 Jul 23 00:24	0°♑02'04	6.10071 AU
behind sun begin	4321 Jan 21 23:47	1°♐29'18		morning rise	4326 Aug 03 10:21	2°♑40'02	
behind sun end	4321 Jan 22 15:41	1°♐38'17		asc. node	4326 Sep 15 09:45	11°♑59'39	
morning rise	4321 Feb 03 23:56	4°♐26'17			4326 Oct 01 10:18	15°♑	
desc. node	4321 Feb 25 11:11	9°♐11'32		retrograde	4326 Dec 08 23:30	21°♑45'38	
	4321 Mar 26 09:17	15°♐		min. Earth dist.	4327 Feb 05 07:55	16°♑52'47	4.17861 AU

opposition	4327 Feb 06 16:20	16°♏41'48	0°18'35	conjunction	4333 Jan 26 20:04	6°♊13'56	-0°01'54
	4327 Feb 19 11:42	15°♏♏		minimum elong	4333 Jan 26 20:05	6°♊13'56	0°01'53
direct	4327 Apr 07 00:21	11°♏41'36		behind sun begin	4333 Jan 26 12:06	6°♊09'24	
	4327 May 23 15:33	15°♏		behind sun end	4333 Jan 27 04:04	6°♊18'28	
	4327 Aug 10 15:54	0°♐		morning rise	4333 Feb 08 12:25	9°♊07'32	
evening set	4327 Aug 11 13:38	0°♐12'04			4333 Mar 07 02:02	15°♊	
				retrograde	4333 Jun 13 20:28	27°♊29'55	
conjunction	4327 Aug 25 05:04	3°♐14'42	0°28'34	opposition	4333 Aug 13 12:23	22°♊36'21	-0°27'21
minimum elong	4327 Aug 25 05:02	3°♐14'41	0°28'34	min. Earth dist.	4333 Aug 14 20:55	22°♊25'53	4.16814 AU
max. Earth dist.	4327 Aug 26 22:19	3°♐37'46	6.25797 AU	direct	4333 Oct 13 12:07	17°♊39'17	
morning rise	4327 Sep 07 19:35	6°♐16'38			4334 Jan 18 08:44	0°♋	
retrograde	4328 Jan 09 21:40	24°♐11'57		evening set	4334 Feb 16 00:35	6°♋29'58	
opposition	4328 Mar 09 21:29	19°♐11'17	1°01'05	max. Earth dist.	4334 Feb 27 08:38	9°♋10'17	6.09150 AU
min. Earth dist.	4328 Mar 09 03:16	19°♐17'21	4.33036 AU				
direct	4328 May 09 13:32	14°♐09'24		conjunction	4334 Feb 28 19:23	9°♋30'49	-0°34'01
	4328 Sep 03 16:39	0°♑		minimum elong	4334 Feb 28 19:21	9°♋30'48	0°34'01
evening set	4328 Sep 13 02:28	2°♑01'09		morning rise	4334 Mar 13 15:09	12°♋32'25	
					4334 Jun 13 09:30	0°♌	
conjunction	4328 Sep 26 11:51	4°♑55'42	0°51'47	retrograde	4334 Jul 20 13:25	2°♌07'53	
minimum elong	4328 Sep 26 11:49	4°♑55'41	0°51'47		4334 Aug 26 23:48	30°♌♋	
max. Earth dist.	4328 Sep 26 23:57	5°♑02'17	6.39243 AU	opposition	4334 Sep 18 21:26	27°♌11'29	-1°10'21
morning rise	4328 Oct 09 19:22	7°♑49'06		min. Earth dist.	4334 Sep 19 10:31	27°♌07'12	4.02240 AU
retrograde	4329 Feb 08 06:33	24°♑53'20		direct	4334 Nov 17 08:56	22°♌16'45	
opposition	4329 Apr 09 14:42	19°♑56'18	1°23'40		4335 Jan 28 19:08	0°♌	
min. Earth dist.	4329 Apr 09 15:58	19°♑55'53	4.43893 AU	evening set	4335 Mar 23 02:25	11°♌48'58	
direct	4329 Jun 10 11:56	14°♑53'45					
	4329 Oct 03 16:14	0°♍		conjunction	4335 Apr 05 02:21	14°♌57'28	-0°55'32
evening set	4329 Oct 14 19:41	2°♍21'28		minimum elong	4335 Apr 05 02:20	14°♌57'27	0°55'32
				max. Earth dist.	4335 Apr 04 23:52	14°♌55'58	5.96934 AU
conjunction	4329 Oct 27 22:35	5°♍10'26	0°59'40	morning rise	4335 Apr 18 04:29	18°♌07'22	
minimum elong	4329 Oct 27 22:35	5°♍10'26	0°59'40		4335 Jun 10 09:55	0°♎	
max. Earth dist.	4329 Oct 27 07:00	5°♍02'03	6.46705 AU	retrograde	4335 Aug 28 00:33	8°♎41'07	
morning rise	4329 Nov 09 22:41	7°♍58'05		opposition	4335 Oct 26 20:28	3°♎40'58	-1°28'39
	4329 Dec 14 05:53	15°♍		min. Earth dist.	4335 Oct 26 10:15	3°♎44'23	3.93742 AU
retrograde	4330 Mar 10 02:07	24°♍38'36			4335 Nov 27 04:41	30°♎♌	
opposition	4330 May 09 18:52	19°♍44'35	1°23'21	direct	4335 Dec 24 03:42	28°♌47'10	
min. Earth dist.	4330 May 10 13:55	19°♍38'27	4.47627 AU		4336 Jan 19 22:35	0°♎	
	4330 Jun 27 10:14	15°♎♍			4336 Apr 12 17:02	15°♎	
direct	4330 Jul 11 09:00	14°♍42'23		evening set	4336 Apr 28 02:43	18°♎40'45	
	4330 Jul 25 11:29	15°♍					
	4330 Nov 04 16:45	0°♏		conjunction	4336 May 11 10:22	21°♎54'44	-0°56'03
evening set	4330 Nov 14 10:49	2°♏04'29		minimum elong	4336 May 11 10:23	21°♎54'45	0°56'02
max. Earth dist.	4330 Nov 25 16:28	4°♏29'58	6.46397 AU	max. Earth dist.	4336 May 12 18:58	22°♎14'33	5.92952 AU
				morning rise	4336 May 24 20:56	25°♎10'16	
conjunction	4330 Nov 27 08:03	4°♏51'24	0°51'32		4336 Jun 14 06:24	0°♐	
minimum elong	4330 Nov 27 08:04	4°♏51'25	0°51'33	retrograde	4336 Oct 04 06:19	15°♐56'14	
morning rise	4330 Dec 10 02:53	7°♏37'13		opposition	4336 Dec 02 20:09	10°♐52'41	-1°11'12
retrograde	4331 Apr 09 13:30	24°♏23'41		min. Earth dist.	4336 Dec 01 13:43	11°♐03'00	3.94868 AU
opposition	4331 Jun 09 10:04	19°♏31'23	1°01'13	direct	4337 Jan 29 15:38	5°♐57'41	
min. Earth dist.	4331 Jun 10 20:03	19°♏20'33	4.43349 AU	evening set	4337 Jun 04 22:20	25°♐40'55	
direct	4331 Aug 11 04:22	14°♏30'11					
	4331 Dec 05 05:20	0°♑		conjunction	4337 Jun 18 13:02	28°♐55'23	-0°34'11
evening set	4331 Dec 14 21:25	2°♑06'05		minimum elong	4337 Jun 18 13:04	28°♐55'24	0°34'11
max. Earth dist.	4331 Dec 25 10:46	4°♑25'39	6.38414 AU	max. Earth dist.	4337 Jun 20 19:37	29°♐27'54	5.98998 AU
					4337 Jun 23 01:32	0°♒	
conjunction	4331 Dec 27 15:22	4°♑54'44	0°29'26	morning rise	4337 Jul 02 06:20	2°♒10'56	
minimum elong	4331 Dec 27 15:23	4°♑54'44	0°29'26	retrograde	4337 Nov 09 16:30	22°♒15'46	
morning rise	4332 Jan 09 07:32	7°♑42'43		min. Earth dist.	4338 Jan 06 16:41	17°♒23'36	4.05098 AU
retrograde	4332 May 10 12:15	25°♑04'27		opposition	4338 Jan 08 06:00	17°♒10'52	-0°26'10
opposition	4332 Jul 10 10:04	20°♑12'14	0°21'29	direct	4338 Mar 07 14:37	12°♒13'02	
min. Earth dist.	4332 Jul 12 00:18	20°♑00'02	4.32091 AU		4338 Jul 06 03:56	0°♒	
direct	4332 Sep 10 13:30	15°♑12'46		evening set	4338 Jul 12 01:14	1°♒20'39	
	4332 Dec 30 03:55	0°♓					
desc. node	4333 Jan 04 20:42	1°♓15'31		conjunction	4338 Jul 25 18:48	4°♒30'10	-0°00'01
evening set	4333 Jan 14 03:01	3°♓20'17		minimum elong	4338 Jul 25 18:49	4°♒30'10	0°00'01
max. Earth dist.	4333 Jan 24 17:38	5°♓45'07	6.24729 AU	behind sun begin	4338 Jul 25 12:41	4°♒26'39	
				behind sun end	4338 Jul 26 00:58	4°♒33'40	

asc. node	4338 Jul 25 20:18	4°♌30'57		max. Earth dist.	4345 Jan 29 08:04	10°♏29'34	6.22517 AU
max. Earth dist.	4338 Jul 28 03:09	5°♌02'36	6.12432 AU				
morning rise	4338 Aug 08 13:02	7°♌39'43		conjunction	4345 Jan 31 09:46	10°♏58'05	-0°06'41
	4338 Sep 10 22:59	15°♌		minimum elong	4345 Jan 31 09:45	10°♏58'05	0°06'40
retrograde	4338 Dec 13 14:31	26°♌34'17		behind sun begin	4345 Jan 31 02:16	10°♏53'49	
min. Earth dist.	4339 Feb 10 01:04	21°♌41'12	4.20244 AU	behind sun end	4345 Jan 31 17:14	11°♏02'21	
opposition	4339 Feb 11 07:38	21°♌30'52	0°25'28	morning rise	4345 Feb 13 02:29	13°♏52'44	
direct	4339 Apr 11 19:53	16°♌30'25			4345 Feb 18 00:40	15°♏	
	4339 Jul 24 17:58	0°♍			4345 May 09 21:43	0°♏	
evening set	4339 Aug 16 09:20	4°♍54'25		retrograde	4345 Jun 18 20:57	2°♏25'01	
					4345 Jul 29 07:36	30°♏	
conjunction	4339 Aug 29 23:57	7°♍55'48	0°32'37	opposition	4345 Aug 18 13:18	27°♏31'06	-0°34'15
minimum elong	4339 Aug 29 23:55	7°♍55'47	0°32'36	min. Earth dist.	4345 Aug 19 18:24	27°♏21'43	4.14689 AU
max. Earth dist.	4339 Aug 31 12:21	8°♍16'03	6.28004 AU	direct	4345 Oct 18 07:31	22°♏34'25	
morning rise	4339 Sep 12 13:45	10°♍56'27			4345 Dec 29 13:26	0°♏	
retrograde	4340 Jan 14 04:46	28°♍43'02		evening set	4346 Feb 20 21:03	11°♏30'56	
opposition	4340 Mar 14 06:18	23°♍42'51	1°05'34	max. Earth dist.	4346 Mar 04 10:59	14°♏15'20	6.07317 AU
min. Earth dist.	4340 Mar 13 14:54	23°♍47'58	4.34918 AU				
direct	4340 May 14 02:45	18°♍40'46		conjunction	4346 Mar 05 16:23	14°♏32'47	-0°38'00
	4340 Aug 17 14:03	0°♎		minimum elong	4346 Mar 05 16:21	14°♏32'46	0°37'59
evening set	4340 Sep 17 15:02	6°♎28'09		morning rise	4346 Mar 18 12:43	17°♏35'27	
					4346 May 15 00:13	0°♏	
conjunction	4340 Sep 30 23:39	9°♎21'47	0°53'50	retrograde	4346 Jul 25 23:03	7°♏19'40	
minimum elong	4340 Sep 30 23:38	9°♎21'46	0°53'51	opposition	4346 Sep 24 04:43	2°♏22'46	-1°14'47
max. Earth dist.	4340 Oct 01 08:33	9°♎26'37	6.40673 AU	min. Earth dist.	4346 Sep 24 15:10	2°♏19'20	4.00886 AU
morning rise	4340 Oct 14 05:58	12°♎14'11			4346 Oct 13 03:09	30°♏	
retrograde	4341 Feb 12 10:41	29°♎13'36		direct	4346 Nov 22 13:08	27°♏28'16	
opposition	4341 Apr 13 20:24	24°♎17'03	1°24'59		4347 Jan 01 04:30	0°♏	
min. Earth dist.	4341 Apr 14 00:03	24°♎15'52	4.44794 AU	evening set	4347 Mar 28 05:06	17°♏03'36	
direct	4341 Jun 14 20:11	19°♎14'32					
	4341 Sep 16 15:50	0°♏		conjunction	4347 Apr 10 05:55	20°♏12'52	-0°57'00
evening set	4341 Oct 19 03:54	6°♏40'37		minimum elong	4347 Apr 10 05:54	20°♏12'51	0°57'01
max. Earth dist.	4341 Oct 31 08:50	9°♏17'50	6.47002 AU	max. Earth dist.	4347 Apr 10 08:23	20°♏14'22	5.96181 AU
				morning rise	4347 Apr 23 09:08	23°♏23'35	
conjunction	4341 Nov 01 05:48	9°♏29'07	0°59'27		4347 May 21 14:32	0°♏	
minimum elong	4341 Nov 01 05:48	9°♏29'07	0°59'26	retrograde	4347 Sep 02 08:55	14°♏00'29	
morning rise	4341 Nov 14 05:13	12°♏16'22		opposition	4347 Nov 01 04:51	8°♏59'47	-1°28'18
	4341 Nov 27 02:34	15°♏		min. Earth dist.	4347 Oct 31 14:43	9°♏04'31	3.93711 AU
retrograde	4342 Mar 14 08:52	28°♏56'24		direct	4347 Dec 29 08:38	4°♏05'59	
opposition	4342 May 14 01:06	24°♏02'42	1°21'27		4348 Mar 25 10:48	15°♏	
min. Earth dist.	4342 May 14 23:32	23°♏55'30	4.47323 AU	evening set	4348 May 03 08:35	23°♏58'17	
direct	4342 Jul 15 17:27	19°♏00'33					
	4342 Oct 18 20:05	0°♐		conjunction	4348 May 16 17:06	27°♏12'23	-0°54'10
evening set	4342 Nov 18 17:30	6°♐24'03		minimum elong	4348 May 16 17:08	27°♏12'24	0°54'11
max. Earth dist.	4342 Nov 29 20:45	8°♐48'32	6.45510 AU	max. Earth dist.	4348 May 18 04:40	27°♏33'57	5.93616 AU
					4348 May 28 06:07	0°♐	
conjunction	4342 Dec 01 14:21	9°♐11'06	0°49'09	morning rise	4348 May 30 04:45	0°♐28'05	
minimum elong	4342 Dec 01 14:22	9°♐11'07	0°49'09	retrograde	4348 Oct 09 09:17	21°♐09'36	
morning rise	4342 Dec 14 08:36	11°♐57'05		opposition	4348 Dec 07 23:40	16°♐05'42	-1°06'08
retrograde	4343 Apr 13 22:30	28°♐47'24		min. Earth dist.	4348 Dec 06 15:43	16°♐16'34	3.96147 AU
opposition	4343 Jun 13 20:10	23°♐55'10	0°56'29	direct	4349 Feb 03 20:58	11°♐10'19	
min. Earth dist.	4343 Jun 15 06:24	23°♐44'15	4.41944 AU		4349 Jun 06 16:00	0°♑	
direct	4343 Aug 15 12:00	18°♐54'12		evening set	4349 Jun 10 02:31	0°♑48'35	
	4343 Nov 18 05:22	0°♑					
evening set	4343 Dec 19 06:04	6°♑34'11		conjunction	4349 Jun 23 18:00	4°♑02'33	-0°29'52
max. Earth dist.	4343 Dec 29 19:13	8°♑54'15	6.36603 AU	minimum elong	4349 Jun 23 18:02	4°♑02'34	0°29'52
				max. Earth dist.	4349 Jun 26 02:41	4°♑36'10	6.00771 AU
conjunction	4343 Dec 31 23:44	9°♑23'26	0°25'23	morning rise	4349 Jul 07 11:33	7°♑17'24	
minimum elong	4343 Dec 31 23:45	9°♑23'27	0°25'23	retrograde	4349 Nov 14 12:27	27°♑12'46	
morning rise	4344 Jan 13 15:48	12°♑12'06		min. Earth dist.	4350 Jan 11 13:09	22°♑20'21	4.07157 AU
retrograde	4344 May 15 06:47	29°♑41'32		opposition	4350 Jan 13 01:26	22°♑08'00	-0°18'57
opposition	4344 Jul 15 03:14	24°♑49'15	0°14'47	direct	4350 Mar 12 13:24	17°♑09'48	
min. Earth dist.	4344 Jul 16 17:55	24°♑36'54	4.29984 AU	asc. node	4350 Jun 05 17:40	27°♑12'51	
direct	4344 Sep 15 04:10	19°♑50'09			4350 Jun 19 03:45	0°♒	
desc. node	4344 Nov 13 17:45	24°♑50'57		evening set	4350 Jul 17 00:09	6°♒11'14	
	4344 Dec 12 10:29	0°♒					
evening set	4345 Jan 18 16:38	8°♒03'30		conjunction	4350 Jul 30 17:30	9°♒19'42	0°04'54

minimum elong	4350 Jul 30 17:30	9°Ω19'42	0°04'54	max. Earth dist.	4356 Jan 03 03:28	13°♄22'59	6.34927 AU
behind sun begin	4350 Jul 30 09:21	9°Ω15'03					
behind sun end	4350 Jul 31 01:39	9°Ω24'21		conjunction	4356 Jan 05 08:02	13°♄52'18	0°21'11
max. Earth dist.	4350 Aug 01 22:55	9°Ω50'18	6.14582 AU	minimum elong	4356 Jan 05 08:02	13°♄52'18	0°21'12
morning rise	4350 Aug 13 11:33	12°Ω28'09		morning rise	4356 Jan 17 23:56	16°♄41'35	
	4350 Aug 24 17:29	15°Ω			4356 Mar 26 10:19	0°♄	
	4350 Nov 20 11:07	0°♄		retrograde	4356 May 19 22:20	4°♄18'09	
retrograde	4350 Dec 18 00:16	1°♄13'00			4356 Jul 15 08:05	30°♄♄	
	4351 Jan 14 09:04	30°♄♄		opposition	4356 Jul 19 19:42	29°♄25'41	0°08'00
opposition	4351 Feb 15 19:19	26°Ω09'59	0°31'57	min. Earth dist.	4356 Jul 21 08:43	29°♄13'51	4.28086 AU
min. Earth dist.	4351 Feb 14 14:16	26°Ω19'47	4.22300 AU	direct	4356 Sep 19 16:30	24°♄26'54	
direct	4351 Apr 16 11:11	21°Ω09'16		desc. node	4356 Sep 23 05:23	24°♄28'03	
	4351 Jul 06 12:24	0°♄			4356 Nov 21 12:09	0°♄	
evening set	4351 Aug 21 01:35	9°♄28'13		evening set	4357 Jan 23 05:29	12°♄45'23	
					4357 Feb 01 23:54	15°♄	
conjunction	4351 Sep 03 15:36	12°♄28'34	0°36'20	max. Earth dist.	4357 Feb 02 23:29	15°♄13'36	6.20531 AU
minimum elong	4351 Sep 03 15:34	12°♄28'33	0°36'20				
max. Earth dist.	4351 Sep 05 00:17	12°♄46'41	6.29822 AU	conjunction	4357 Feb 04 22:39	15°♄40'48	-0°11'21
morning rise	4351 Sep 17 04:23	15°♄28'03		minimum elong	4357 Feb 04 22:39	15°♄40'48	0°11'22
	4351 Dec 03 22:20	0°♄		behind sun begin	4357 Feb 04 16:45	15°♄37'25	
retrograde	4352 Jan 18 11:16	3°♄07'38		behind sun end	4357 Feb 05 04:33	15°♄44'11	
	4352 Mar 04 02:31	30°♄♄		morning rise	4357 Feb 17 15:38	18°♄36'23	
opposition	4352 Mar 18 13:00	28°♄08'03	1°09'33		4357 Apr 12 14:57	0°♄	
min. Earth dist.	4352 Mar 18 00:39	28°♄12'09	4.36379 AU	retrograde	4357 Jun 23 22:41	7°♄17'54	
direct	4352 May 18 13:44	23°♄05'56		opposition	4357 Aug 23 13:06	2°♄23'38	-0°40'52
	4352 Jul 29 08:29	0°♄		min. Earth dist.	4357 Aug 24 17:02	2°♄14'36	4.12734 AU
evening set	4352 Sep 22 01:57	10°♄50'26			4357 Sep 11 21:06	30°♄♄	
				direct	4357 Oct 23 04:07	27°♄27'15	
conjunction	4352 Oct 05 09:36	13°♄43'19	0°55'33		4357 Dec 02 16:59	0°♄	
minimum elong	4352 Oct 05 09:34	13°♄43'18	0°55'33	evening set	4358 Feb 25 16:00	16°♄29'06	
max. Earth dist.	4352 Oct 05 13:21	13°♄45'21	6.41668 AU	max. Earth dist.	4358 Mar 09 09:43	19°♄16'22	6.05558 AU
morning rise	4352 Oct 18 15:04	16°♄34'58					
	4352 Dec 29 19:11	0°♄		conjunction	4358 Mar 10 11:53	19°♄31'56	-0°41'40
retrograde	4353 Feb 16 14:53	3°♄31'06		minimum elong	4358 Mar 10 11:51	19°♄31'55	0°41'39
	4353 Apr 07 00:20	30°♄♄		morning rise	4358 Mar 23 09:00	22°♄35'43	
opposition	4353 Apr 18 01:15	28°♄35'02	1°25'49		4358 Apr 24 18:32	0°♄	
min. Earth dist.	4353 Apr 18 07:40	28°♄32'56	4.45306 AU	retrograde	4358 Jul 31 05:14	12°♄28'29	
direct	4353 Jun 19 03:41	23°♄32'32		opposition	4358 Sep 29 10:02	7°♄31'05	-1°18'38
	4353 Aug 28 04:42	0°♄		min. Earth dist.	4358 Sep 29 16:41	7°♄28'54	3.99508 AU
evening set	4353 Oct 23 11:18	10°♄58'13		direct	4358 Nov 27 12:47	2°♄36'47	
				evening set	4359 Apr 02 06:45	22°♄15'46	
conjunction	4353 Nov 05 12:35	13°♄46'27	0°58'53				
minimum elong	4353 Nov 05 12:35	13°♄46'28	0°58'54	conjunction	4359 Apr 15 08:26	25°♄25'51	-0°58'01
max. Earth dist.	4353 Nov 04 13:51	13°♄34'13	6.47004 AU	minimum elong	4359 Apr 15 08:26	25°♄25'51	0°58'01
	4353 Nov 11 05:06	15°♄		max. Earth dist.	4359 Apr 15 14:50	25°♄29'44	5.95304 AU
morning rise	4353 Nov 18 11:03	16°♄33'24		morning rise	4359 Apr 28 12:48	28°♄37'28	
	4354 Jan 30 16:55	0°♄			4359 May 04 06:16	0°♄	
retrograde	4354 Mar 18 13:48	3°♄13'56			4359 Jul 16 09:05	15°♄	
	4354 May 05 02:57	30°♄♄		retrograde	4359 Sep 07 16:18	19°♄18'08	
opposition	4354 May 18 07:24	28°♄20'34	1°19'06		4359 Nov 01 02:52	15°♄♄	
min. Earth dist.	4354 May 19 07:07	28°♄12'57	4.46836 AU	opposition	4359 Nov 06 11:39	14°♄16'53	-1°27'17
direct	4354 Jul 19 24:00	23°♄18'37		min. Earth dist.	4359 Nov 05 18:51	14°♄22'32	3.93438 AU
	4354 Sep 29 13:16	0°♄		direct	4360 Jan 03 13:50	9°♄22'55	
evening set	4354 Nov 23 00:10	10°♄43'53			4360 Mar 03 11:17	15°♄	
max. Earth dist.	4354 Dec 03 23:59	13°♄06'58	6.44562 AU	evening set	4360 May 08 14:08	29°♄15'17	
					4360 May 11 16:20	0°♄	
conjunction	4354 Dec 05 20:17	13°♄31'04	0°46'29				
minimum elong	4354 Dec 05 20:19	13°♄31'05	0°46'29	conjunction	4360 May 21 23:57	2°♄29'47	-0°51'53
morning rise	4354 Dec 18 14:14	16°♄17'17		minimum elong	4360 May 21 23:59	2°♄29'48	0°51'54
	4355 Mar 02 17:45	0°♄		max. Earth dist.	4360 May 23 16:30	2°♄54'20	5.93981 AU
retrograde	4355 Apr 18 09:50	3°♄11'40		morning rise	4360 Jun 04 12:32	5°♄45'44	
	4355 Jun 04 20:17	30°♄♄		retrograde	4360 Oct 14 14:30	26°♄23'53	
opposition	4355 Jun 18 06:45	28°♄19'31	0°51'24	min. Earth dist.	4360 Dec 11 18:23	21°♄30'49	3.97104 AU
min. Earth dist.	4355 Jun 19 18:40	28°♄08'04	4.40584 AU	opposition	4360 Dec 13 03:02	21°♄19'43	-1°00'34
direct	4355 Aug 19 22:21	23°♄18'46		direct	4361 Feb 09 01:13	16°♄23'58	
	4355 Oct 29 18:06	0°♄			4361 May 20 07:11	0°♄	
evening set	4355 Dec 23 14:29	11°♄02'28		evening set	4361 Jun 15 07:43	5°♄58'41	

conjunction	4361 Jun 28 23:43	9°☾12'14	-0°25'18			4366 Sep 03 13:45	0°♈	
minimum elong	4361 Jun 28 23:45	9°☾12'15	0°25'18	evening set		4366 Nov 27 05:34	15°♈00'39	
max. Earth dist.	4361 Jul 01 08:35	9°☾45'49	6.02207 AU	max. Earth dist.		4366 Dec 08 04:32	17°♈23'24	6.44199 AU
morning rise	4361 Jul 12 17:55	12°☾26'38						
	4361 Oct 12 18:53	0°♏		conjunction		4366 Dec 10 01:15	17°♈47'46	0°43'40
retrograde	4361 Nov 19 07:31	2°♏13'42		minimum elong		4366 Dec 10 01:16	17°♈47'47	0°43'39
	4361 Dec 26 15:38	30°♏☾		morning rise		4366 Dec 22 18:29	20°♈33'54	
min. Earth dist.	4362 Jan 16 09:22	27°☾21'27	4.08911 AU			4367 Feb 07 09:32	0°♊	
opposition	4362 Jan 17 21:59	27°☾08'59	-0°11'33	retrograde		4367 Apr 22 16:36	7°♊30'29	
direct	4362 Mar 17 12:04	22°☾10'23		opposition		4367 Jun 22 15:29	2°♊38'23	0°46'12
asc. node	4362 Apr 15 08:11	23°☾31'33		min. Earth dist.		4367 Jun 24 03:36	2°♊26'53	4.39789 AU
	4362 May 30 11:16	0°♏				4367 Jul 14 11:37	30°♏♈	
evening set	4362 Jul 22 01:03	11°♏06'43		direct		4367 Aug 24 05:50	27°♈37'53	
						4367 Oct 03 19:50	0°♊	
conjunction	4362 Aug 04 18:17	14°♏14'15	0°09'47	evening set		4367 Dec 27 20:11	15°♊23'24	
minimum elong	4362 Aug 04 18:17	14°♏14'15	0°09'47	max. Earth dist.		4368 Jan 07 07:43	17°♊43'34	6.33743 AU
behind sun begin	4362 Aug 04 11:31	14°♏10'24						
behind sun end	4362 Aug 05 01:03	14°♏18'06		conjunction		4368 Jan 09 13:17	18°♊13'32	0°17'02
max. Earth dist.	4362 Aug 06 21:24	14°♏43'24	6.16517 AU	minimum elong		4368 Jan 09 13:18	18°♊13'33	0°17'03
	4362 Aug 08 02:29	15°♏		morning rise		4368 Jan 22 05:11	21°♊03'16	
morning rise	4362 Aug 18 11:51	17°♏21'37				4368 Mar 04 19:09	0°♌	
	4362 Oct 19 11:34	0°♐		retrograde		4368 May 24 12:41	8°♌45'44	
retrograde	4362 Dec 22 14:27	5°♐57'21		opposition		4368 Jul 24 09:17	3°♌53'05	0°01'27
min. Earth dist.	4363 Feb 19 06:46	1°♐03'41	4.24232 AU	min. Earth dist.		4368 Jul 25 22:52	3°♌41'04	4.26549 AU
opposition	4363 Feb 20 09:14	0°♐54'46	0°38'21	desc. node		4368 Aug 05 04:17	2°♌23'52	
	4363 Feb 27 04:57	30°♏♏				4368 Aug 28 08:14	30°♏♊	
direct	4363 Apr 21 06:29	25°♏53'49		direct		4368 Sep 24 04:20	28°♊54'31	
	4363 Jun 13 03:38	0°♐				4368 Oct 20 21:30	0°♌	
evening set	4363 Aug 25 20:22	14°♐07'54				4369 Jan 17 13:20	15°♌	
				evening set		4369 Jan 27 14:24	17°♌17'05	
conjunction	4363 Sep 08 09:39	17°♐07'11	0°39'56	max. Earth dist.		4369 Feb 07 09:45	19°♌46'38	6.18765 AU
minimum elong	4363 Sep 08 09:37	17°♐07'10	0°39'56					
max. Earth dist.	4363 Sep 09 15:26	17°♐23'37	6.31623 AU	conjunction		4369 Feb 09 07:48	20°♌13'17	-0°15'46
morning rise	4363 Sep 21 21:33	20°♐05'32		minimum elong		4369 Feb 09 07:47	20°♌13'16	0°15'46
	4363 Nov 09 10:56	0°♑		behind sun begin		4369 Feb 09 05:47	20°♌12'07	
retrograde	4364 Jan 22 18:08	7°♑37'54		behind sun end		4369 Feb 09 09:48	20°♌14'26	
opposition	4364 Mar 22 21:59	2°♑38'48	1°13'14	morning rise		4369 Feb 22 01:02	23°♌09'43	
min. Earth dist.	4364 Mar 22 11:05	2°♑42'24	4.37960 AU			4369 Mar 24 17:58	0°♒	
	4364 Apr 13 01:50	30°♏♐		retrograde		4369 Jun 28 18:24	11°♒59'58	
direct	4364 May 23 02:02	27°♐36'37		opposition		4369 Aug 28 08:37	7°♒05'23	-0°46'56
	4364 Jul 02 13:48	0°♑		min. Earth dist.		4369 Aug 29 10:23	6°♒57'02	4.10870 AU
evening set	4364 Sep 26 14:37	15°♑17'26		direct		4369 Oct 27 18:12	2°♒09'18	
				evening set		4370 Mar 02 07:22	21°♒16'43	
conjunction	4364 Oct 09 21:19	18°♑09'25	0°57'01	max. Earth dist.		4370 Mar 14 03:57	24°♒06'21	6.03753 AU
minimum elong	4364 Oct 09 21:18	18°♑09'25	0°57'00					
max. Earth dist.	4364 Oct 09 22:15	18°♑09'55	6.42951 AU	conjunction		4370 Mar 15 03:44	24°♒20'34	-0°44'53
morning rise	4364 Oct 23 01:40	21°♑00'08		minimum elong		4370 Mar 15 03:42	24°♒20'33	0°44'53
	4364 Dec 06 16:50	0°♌		morning rise		4370 Mar 28 01:41	27°♒25'29	
retrograde	4365 Feb 20 20:23	7°♌51'53				4370 Apr 07 23:54	0°♑	
opposition	4365 Apr 22 07:57	2°♌56'16	1°26'14	retrograde		4370 Aug 05 08:26	17°♑27'26	
min. Earth dist.	4365 Apr 22 16:44	2°♌53'25	4.46233 AU	opposition		4370 Oct 04 11:26	12°♑29'32	-1°21'48
	4365 May 16 13:47	30°♏♑		min. Earth dist.		4370 Oct 04 15:50	12°♑28'05	3.97929 AU
direct	4365 Jun 23 14:14	27°♑53'53		direct		4370 Dec 02 10:17	7°♑35'21	
	4365 Jul 31 21:48	0°♌		evening set		4371 Apr 07 05:14	27°♑19'19	
	4365 Oct 26 10:57	15°♌				4371 Apr 18 06:03	0°♒	
evening set	4365 Oct 27 19:20	15°♌17'17						
				conjunction		4371 Apr 20 08:10	0°♒30'30	-0°58'35
conjunction	4365 Nov 09 19:38	18°♌04'58	0°58'03	minimum elong		4371 Apr 20 08:10	0°♒30'30	0°58'34
minimum elong	4365 Nov 09 19:38	18°♌04'58	0°58'04	max. Earth dist.		4371 Apr 20 19:38	0°♒37'28	5.94116 AU
max. Earth dist.	4365 Nov 08 17:05	17°♌50'40	6.47513 AU	morning rise		4371 May 03 13:38	3°♒43'13	
morning rise	4365 Nov 22 17:23	20°♌51'25				4371 Jun 22 12:32	15°♒	
	4366 Jan 07 09:24	0°♈		retrograde		4371 Sep 12 23:36	24°♒29'05	
retrograde	4366 Mar 22 19:05	7°♈30'44		opposition		4371 Nov 11 15:54	19°♒27'27	-1°25'39
opposition	4366 May 22 13:56	2°♈37'34	1°16'24	min. Earth dist.		4371 Nov 10 21:10	19°♒33'46	3.92794 AU
min. Earth dist.	4366 May 23 15:30	2°♈29'23	4.46911 AU			4371 Dec 23 14:26	15°♒♒	
	4366 Jun 13 04:33	30°♏♌		direct		4372 Jan 08 15:39	14°♒33'25	
direct	4366 Jul 24 08:10	27°♌35'43				4372 Jan 24 16:11	15°♒	

	4372 Apr 24 22:29	0°♂	conjunction	4377 Nov 14 02:52	22°♂25'06	0°56'52
evening set	4372 May 13 18:18	4°♂27'43	minimum elong	4377 Nov 14 02:52	22°♂25'06	0°56'53
			morning rise	4377 Nov 26 23:43	25°♂11'10	
conjunction	4372 May 27 05:09	7°♂42'46 -0°49'15		4377 Dec 20 00:07	0°♂	
minimum elong	4372 May 27 05:10	7°♂42'48 0°49'15	retrograde	4378 Mar 27 01:37	11°♂50'30	
max. Earth dist.	4372 May 28 23:52	8°♂08'37 5.93930 AU	opposition	4378 May 26 21:32	6°♂57'35	1°13'13
morning rise	4372 Jun 09 19:03	10°♂59'19	min. Earth dist.	4378 May 28 01:22	6°♂48'41	4.46520 AU
	4372 Sep 18 04:55	0°♂	direct	4378 Jul 28 17:00	1°♂55'52	
retrograde	4372 Oct 19 16:30	1°♂35'49	evening set	4378 Dec 01 12:15	19°♂21'59	
	4372 Nov 19 23:44	30°♂♂	max. Earth dist.	4378 Dec 12 07:04	21°♂42'53	6.43238 AU
min. Earth dist.	4372 Dec 16 18:13	26°♂43'19 3.97663 AU				
opposition	4372 Dec 18 05:08	26°♂31'25 -0°54'41	conjunction	4378 Dec 14 07:18	22°♂09'14	0°40'30
direct	4373 Feb 14 02:42	21°♂35'20	minimum elong	4378 Dec 14 07:20	22°♂09'15	0°40'31
	4373 Apr 30 18:19	0°♂	morning rise	4378 Dec 27 00:19	24°♂55'38	
evening set	4373 Jun 20 12:59	11°♂08'18		4379 Jan 19 22:20	0°♂	
			retrograde	4379 Apr 27 04:34	11°♂56'39	
conjunction	4373 Jul 04 05:41	14°♂21'38 -0°20'35	opposition	4379 Jun 27 03:13	7°♂04'31	0°40'33
minimum elong	4373 Jul 04 05:42	14°♂21'39 0°20'36	min. Earth dist.	4379 Jun 28 16:35	6°♂52'37	4.38299 AU
max. Earth dist.	4373 Jul 06 15:25	14°♂55'39 6.03333 AU	direct	4379 Aug 28 16:13	2°♂04'09	
morning rise	4373 Jul 18 00:12	17°♂35'38	evening set	4380 Jan 01 05:09	19°♂53'49	
	4373 Sep 14 03:10	0°♂	max. Earth dist.	4380 Jan 11 17:31	22°♂15'01	6.31843 AU
retrograde	4373 Nov 24 05:05	7°♂15'33				
min. Earth dist.	4374 Jan 21 07:13	2°♂23'02 4.10453 AU	conjunction	4380 Jan 13 22:17	22°♂44'40	0°12'35
opposition	4374 Jan 22 18:44	2°♂10'57 -0°04'08	minimum elong	4380 Jan 13 22:18	22°♂44'40	0°12'36
	4374 Feb 08 10:20	30°♂♂	behind sun begin	4380 Jan 13 17:07	22°♂41'47	
asc. node	4374 Feb 23 02:21	28°♂26'42	behind sun end	4380 Jan 14 03:29	22°♂47'34	
direct	4374 Mar 22 13:08	27°♂11'58	morning rise	4380 Jan 26 14:03	25°♂35'08	
	4374 May 03 18:13	0°♂		4380 Feb 15 16:58	0°♂	
	4374 Jul 22 09:11	15°♂	retrograde	4380 May 29 07:11	13°♂25'56	
evening set	4374 Jul 27 02:31	16°♂03'51	desc. node	4380 Jun 14 12:38	13°♂01'24	
			opposition	4380 Jul 29 03:41	8°♂33'07	-0°05'30
conjunction	4374 Aug 09 19:37	19°♂10'30 0°14'35	min. Earth dist.	4380 Jul 30 16:23	8°♂21'22	4.24355 AU
minimum elong	4374 Aug 09 19:36	19°♂10'29 0°14'34	direct	4380 Sep 28 18:09	3°♂34'52	
behind sun begin	4374 Aug 09 16:18	19°♂08'37		4380 Dec 31 08:32	15°♂	
behind sun end	4374 Aug 09 22:54	19°♂12'22	evening set	4381 Feb 01 05:15	22°♂03'46	
max. Earth dist.	4374 Aug 11 22:30	19°♂39'24 6.18340 AU	max. Earth dist.	4381 Feb 12 02:00	24°♂34'56	6.16452 AU
morning rise	4374 Aug 23 12:40	22°♂16'49				
	4374 Sep 28 07:39	0°♂	conjunction	4381 Feb 13 22:46	25°♂00'59	-0°20'22
retrograde	4374 Dec 27 03:06	10°♂43'37	minimum elong	4381 Feb 13 22:45	25°♂00'58	0°20'21
opposition	4375 Feb 24 23:35	5°♂41'24 0°44'27	morning rise	4381 Feb 26 16:36	27°♂58'37	
min. Earth dist.	4375 Feb 23 21:34	5°♂50'08 4.26157 AU		4381 Mar 07 11:44	0°♂	
direct	4375 Apr 26 00:17	0°♂40'10	retrograde	4381 Jul 03 23:23	16°♂59'41	
evening set	4375 Aug 30 15:21	18°♂49'07	opposition	4381 Sep 02 11:21	12°♂04'40	-0°53'08
			min. Earth dist.	4381 Sep 03 10:58	11°♂57'00	4.08614 AU
conjunction	4375 Sep 13 03:41	21°♂47'14 0°43'15	direct	4381 Nov 01 16:07	7°♂08'50	
minimum elong	4375 Sep 13 03:39	21°♂47'13 0°43'16	evening set	4382 Mar 07 05:52	26°♂22'56	
max. Earth dist.	4375 Sep 14 05:27	22°♂01'25 6.33475 AU	max. Earth dist.	4382 Mar 19 08:38	29°♂16'56	6.01779 AU
morning rise	4375 Sep 26 14:36	24°♂44'23				
	4375 Oct 21 08:03	0°♂	conjunction	4382 Mar 20 03:09	29°♂28'02	-0°48'01
retrograde	4376 Jan 27 03:09	12°♂09'19	minimum elong	4382 Mar 20 03:07	29°♂28'01	0°48'01
opposition	4376 Mar 27 07:23	7°♂10'41 1°16'28		4382 Mar 22 08:23	0°♂	
min. Earth dist.	4376 Mar 26 23:40	7°♂13'13 4.39574 AU	morning rise	4382 Apr 02 01:56	2°♂34'15	
direct	4376 May 27 16:58	2°♂08'20	retrograde	4382 Aug 10 19:50	22°♂45'31	
evening set	4376 Oct 01 03:03	19°♂45'08	opposition	4382 Oct 09 20:35	17°♂47'10	-1°24'31
			min. Earth dist.	4382 Oct 09 21:55	17°♂46'44	3.96467 AU
conjunction	4376 Oct 14 08:50	22°♂36'15 0°58'08	direct	4382 Dec 07 14:37	12°♂53'11	
minimum elong	4376 Oct 14 08:49	22°♂36'14 0°58'08		4383 Apr 01 06:51	0°♂	
max. Earth dist.	4376 Oct 14 06:22	22°♂34'55 6.44167 AU	evening set	4383 Apr 12 11:36	2°♂41'14	
morning rise	4376 Oct 27 12:06	25°♂26'04				
	4376 Nov 18 06:27	0°♂	conjunction	4383 Apr 25 15:31	5°♂53'18	-0°58'41
retrograde	4377 Feb 25 00:44	12°♂13'42	minimum elong	4383 Apr 25 15:31	5°♂53'18	0°58'42
opposition	4377 Apr 26 14:37	7°♂18'25 1°26'09	max. Earth dist.	4383 Apr 26 06:48	6°♂02'37	5.93307 AU
min. Earth dist.	4377 Apr 27 01:13	7°♂14'59 4.46971 AU	morning rise	4383 May 08 22:24	9°♂07'00	
direct	4377 Jun 27 22:54	2°♂15'59		4383 Jun 02 20:29	15°♂	
	4377 Oct 09 22:56	15°♂	retrograde	4383 Sep 18 09:58	29°♂55'36	
evening set	4377 Nov 01 03:20	19°♂37'49	min. Earth dist.	4383 Nov 16 03:10	25°♂01'10	3.92776 AU
max. Earth dist.	4377 Nov 12 21:51	22°♂09'28 6.47701 AU	opposition	4383 Nov 17 01:57	24°♂53'29	-1°23'10

direct	4384 Jan 13 23:18	19°♄59'16		max. Earth dist.	4389 Nov 16 22:37	26°♄21'48	6.47465 AU
	4384 Apr 05 19:44	0°♄					
evening set	4384 May 19 04:09	9°♄52'42		conjunction	4389 Nov 18 07:46	26°♄39'40	0°55'25
				minimum elong	4389 Nov 18 07:47	26°♄39'41	0°55'25
conjunction	4384 Jun 01 16:09	13°♄07'55	-0°46'06	morning rise	4389 Dec 01 03:58	29°♄25'36	
minimum elong	4384 Jun 01 16:11	13°♄07'56	0°46'06		4389 Dec 03 20:16	0°♄	
max. Earth dist.	4384 Jun 03 15:10	13°♄36'17	5.94728 AU	retrograde	4390 Mar 31 07:16	16°♄06'41	
morning rise	4384 Jun 15 06:56	16°♄24'29		opposition	4390 May 31 03:58	11°♄13'58	1°09'43
	4384 Aug 17 00:37	0°♄		min. Earth dist.	4390 Jun 01 09:25	11°♄04'33	4.45630 AU
retrograde	4384 Oct 24 22:11	6°♄55'07		direct	4390 Aug 01 22:16	6°♄12'23	
min. Earth dist.	4384 Dec 21 22:52	2°♄02'34	3.99173 AU	evening set	4390 Dec 05 18:09	23°♄41'32	
opposition	4384 Dec 23 10:17	1°♄50'29	-0°48'09	max. Earth dist.	4390 Dec 16 11:57	26°♄02'22	6.41757 AU
	4385 Jan 06 07:11	30°♄					
direct	4385 Feb 19 10:29	26°♄54'01		conjunction	4390 Dec 18 12:55	26°♄29'14	0°37'10
	4385 Apr 04 06:15	0°♄		minimum elong	4390 Dec 18 12:56	26°♄29'14	0°37'11
evening set	4385 Jun 25 20:11	16°♄21'20		morning rise	4390 Dec 31 05:32	29°♄16'04	
					4391 Jan 03 14:16	0°♄	
conjunction	4385 Jul 09 13:19	19°♄33'53	-0°15'40	retrograde	4391 May 01 17:11	16°♄23'28	
minimum elong	4385 Jul 09 13:20	19°♄33'54	0°15'39	opposition	4391 Jul 01 15:22	11°♄31'24	0°34'42
behind sun begin	4385 Jul 09 12:08	19°♄33'12		min. Earth dist.	4391 Jul 03 05:50	11°♄19'09	4.36307 AU
behind sun end	4385 Jul 09 14:32	19°♄34'36		direct	4391 Sep 02 01:52	6°♄31'20	
max. Earth dist.	4385 Jul 12 00:58	20°♄08'49	6.05413 AU	evening set	4392 Jan 05 15:03	24°♄26'57	
morning rise	4385 Jul 23 07:58	22°♄46'57		max. Earth dist.	4392 Jan 16 02:08	26°♄48'15	6.29486 AU
	4385 Aug 24 13:29	0°♄					
retrograde	4385 Nov 29 00:18	12°♄15'50		conjunction	4392 Jan 18 08:03	27°♄18'43	0°08'05
asc. node	4386 Jan 02 11:07	10°♄21'04		minimum elong	4392 Jan 18 08:03	27°♄18'43	0°08'04
min. Earth dist.	4386 Jan 26 03:27	7°♄23'34	4.12870 AU	behind sun begin	4392 Jan 18 00:56	27°♄14'43	
opposition	4386 Jan 27 15:08	7°♄11'27	0°03'18	behind sun end	4392 Jan 18 15:10	27°♄22'42	
direct	4386 Mar 27 12:58	2°♄12'06			4392 Jan 30 05:56	0°♄	
	4386 Jul 04 23:42	15°♄		morning rise	4392 Jan 31 00:09	0°♄10'15	
evening set	4386 Aug 01 02:47	20°♄56'34			4392 Apr 17 20:08	15°♄	
				desc. node	4392 Apr 24 01:47	15°♄46'00	
conjunction	4386 Aug 14 19:15	24°♄01'51	0°19'13	retrograde	4392 Jun 03 05:36	18°♄11'21	
minimum elong	4386 Aug 14 19:14	24°♄01'51	0°19'13		4392 Jul 20 12:06	15°♄	
max. Earth dist.	4386 Aug 16 18:10	24°♄28'21	6.20871 AU	opposition	4392 Aug 03 00:25	13°♄18'19	-0°12'30
morning rise	4386 Aug 28 11:42	27°♄06'45		min. Earth dist.	4392 Aug 04 11:46	13°♄06'58	4.21789 AU
	4386 Sep 10 12:39	0°♄		direct	4392 Oct 03 09:54	8°♄20'24	
retrograde	4386 Dec 31 14:18	15°♄22'41			4392 Dec 11 03:18	15°♄	
opposition	4387 Mar 01 11:40	10°♄20'54	0°50'06	evening set	4393 Feb 05 22:10	26°♄56'56	
min. Earth dist.	4387 Feb 28 12:40	10°♄28'37	4.28571 AU	max. Earth dist.	4393 Feb 16 23:36	29°♄31'39	6.13914 AU
direct	4387 Apr 30 18:24	5°♄19'24					
evening set	4387 Sep 04 07:11	23°♄21'59		conjunction	4393 Feb 18 16:14	29°♄55'24	-0°24'52
				minimum elong	4393 Feb 18 16:12	29°♄55'24	0°24'52
conjunction	4387 Sep 17 18:46	26°♄18'54	0°46'14		4393 Feb 19 00:05	0°♄	
minimum elong	4387 Sep 17 18:44	26°♄18'53	0°46'14	morning rise	4393 Mar 03 10:28	2°♄54'20	
max. Earth dist.	4387 Sep 18 17:43	26°♄31'28	6.35583 AU	retrograde	4393 Jul 09 07:07	22°♄07'04	
morning rise	4387 Oct 01 04:28	29°♄14'42		opposition	4393 Sep 07 16:58	17°♄11'42	-0°59'02
	4387 Oct 04 16:01	0°♄		min. Earth dist.	4393 Sep 08 13:53	17°♄04'54	4.06343 AU
retrograde	4388 Jan 31 07:13	16°♄32'01		direct	4393 Nov 06 16:05	12°♄16'18	
opposition	4388 Mar 31 13:41	11°♄33'54	1°19'08		4394 Mar 05 12:22	0°♄	
min. Earth dist.	4388 Mar 31 07:56	11°♄35'47	4.41237 AU	evening set	4394 Mar 12 07:34	1°♄37'03	
direct	4388 Jun 01 02:15	6°♄31'30					
evening set	4388 Oct 05 12:14	24°♄04'33		conjunction	4394 Mar 25 05:29	4°♄43'17	-0°50'48
				minimum elong	4394 Mar 25 05:28	4°♄43'16	0°50'47
conjunction	4388 Oct 18 16:57	26°♄54'50	0°58'53	max. Earth dist.	4394 Mar 24 14:48	4°♄34'26	5.99981 AU
minimum elong	4388 Oct 18 16:57	26°♄54'50	0°58'54	morning rise	4394 Apr 07 05:27	7°♄50'47	
max. Earth dist.	4388 Oct 18 09:08	26°♄50'38	6.45252 AU	retrograde	4394 Aug 16 07:22	28°♄10'17	
morning rise	4388 Oct 31 19:19	29°♄43'52		opposition	4394 Oct 15 07:38	23°♄11'21	-1°26'31
	4388 Nov 02 01:29	0°♄		min. Earth dist.	4394 Oct 15 04:09	23°♄12'30	3.95362 AU
retrograde	4389 Jan 29 04:28	15°♄		direct	4394 Dec 12 21:27	18°♄17'28	
	4389 Mar 01 05:30	16°♄28'25			4395 Mar 13 21:02	0°♄	
	4389 Apr 01 04:30	15°♄		evening set	4395 Apr 17 19:40	8°♄08'00	
opposition	4389 Apr 30 19:15	11°♄33'36	1°25'37				
min. Earth dist.	4389 May 01 09:41	11°♄28'56	4.47421 AU	conjunction	4395 May 01 00:50	11°♄20'46	-0°58'17
direct	4389 Jul 02 06:52	6°♄31'13		minimum elong	4395 May 01 00:50	11°♄20'46	0°58'18
	4389 Sep 22 03:34	15°♄		max. Earth dist.	4395 May 01 22:47	11°♄34'08	5.93001 AU
evening set	4389 Nov 05 08:54	23°♄52'33		morning rise	4395 May 14 08:45	14°♄35'06	

	4395 May 16 02:01	15°♄	opposition	4401 May 05 00:37	15°♍50'46	1°24'39
	4395 Jul 25 18:00	0°♊	min. Earth dist.	4401 May 05 16:48	15°♍45'32	4.47525 AU
retrograde	4395 Sep 23 21:18	5°♊23'53		4401 May 11 14:45	15°♍	
min. Earth dist.	4395 Nov 21 11:27	0°♊29'36	3.93300 AU	4401 Jul 06 12:41	10°♍48'26	
opposition	4395 Nov 22 12:15	0°♊21'12	-1°19'55	4401 Aug 30 23:36	15°♍	
	4395 Nov 25 03:00	30°♋♄	evening set	4401 Nov 09 15:45	28°♍10'13	
direct	4396 Jan 19 09:36	25°♋26'45		4401 Nov 18 03:53	0°♌	
	4396 Mar 12 19:14	0°♊	max. Earth dist.	4401 Nov 21 01:24	0°♌37'33	6.46964 AU
evening set	4396 May 24 13:37	15°♊17'06				
			conjunction	4401 Nov 22 13:51	0°♌57'15	0°53'39
conjunction	4396 Jun 07 02:34	18°♊32'08	-0°42'33	4401 Nov 22 13:52	0°♌57'16	0°53'39
minimum elong	4396 Jun 07 02:36	18°♊32'10	0°42'33	4401 Dec 05 09:29	3°♌43'09	
max. Earth dist.	4396 Jun 09 05:30	19°♊02'45	5.95998 AU	4402 Apr 04 16:34	20°♌26'41	
morning rise	4396 Jun 20 18:11	21°♊48'27		4402 Jun 04 12:29	15°♌34'12	1°05'47
	4396 Jul 26 13:48	0°♎	min. Earth dist.	4402 Jun 05 20:40	15°♌23'55	4.44551 AU
retrograde	4396 Oct 30 00:54	12°♎11'07		4402 Aug 06 07:21	10°♌32'46	
min. Earth dist.	4396 Dec 27 00:34	7°♎18'55	4.01039 AU	4402 Dec 10 01:40	28°♌05'14	
opposition	4396 Dec 28 13:27	7°♎06'22	-0°41'16	4402 Dec 18 19:05	0°♏	
direct	4397 Feb 24 15:28	2°♎09'29		4402 Dec 20 16:50	0°♏25'10	6.40174 AU
evening set	4397 Jul 01 01:48	21°♎30'15				
			conjunction	4402 Dec 22 20:05	0°♏53'23	0°33'33
conjunction	4397 Jul 14 18:59	24°♎41'48	-0°10'40	4402 Dec 22 20:07	0°♏53'24	0°33'33
minimum elong	4397 Jul 14 19:00	24°♎41'49	0°10'40	4403 Jan 04 12:34	3°♏40'48	
behind sun begin	4397 Jul 14 12:36	24°♎38'06		4403 May 06 07:46	20°♏54'52	
behind sun end	4397 Jul 15 01:23	24°♎45'31		4403 Jul 06 05:50	16°♏02'46	0°28'29
max. Earth dist.	4397 Jul 17 04:36	25°♎15'22	6.07675 AU	4403 Jul 07 19:50	15°♏50'38	4.34325 AU
morning rise	4397 Jul 28 13:43	27°♎53'47		4403 Sep 06 12:38	11°♏02'59	
	4397 Aug 06 18:00	0°♏	evening set	4404 Jan 10 02:49	29°♏04'18	
	4397 Oct 27 10:13	15°♏		4404 Jan 14 05:37	0°♐	
asc. node	4397 Nov 11 18:38	16°♏24'24	max. Earth dist.	4404 Jan 20 16:26	1°♐27'43	6.27283 AU
retrograde	4397 Dec 03 17:13	17°♏11'27				
	4398 Jan 09 18:37	15°♋♏	conjunction	4404 Jan 22 19:53	1°♐56'56	0°03'24
min. Earth dist.	4398 Jan 30 23:16	12°♏18'49	4.15286 AU	4404 Jan 22 19:54	1°♐56'56	0°03'25
opposition	4398 Feb 01 09:15	12°♏07'16	0°10'36	4404 Jan 22 11:59	1°♐52'28	
direct	4398 Apr 01 12:13	7°♏07'30		4404 Jan 23 03:49	2°♐01'25	
	4398 Jun 15 10:52	15°♏	morning rise	4404 Feb 04 12:00	4°♐49'25	
evening set	4398 Aug 06 00:54	25°♏45'01	desc. node	4404 Mar 02 22:17	10°♐50'39	
				4404 Mar 23 19:31	15°♐	
conjunction	4398 Aug 19 17:02	28°♏49'03	0°23'43	4404 Jun 08 05:44	23°♐00'10	
minimum elong	4398 Aug 19 17:00	28°♏49'02	0°23'43	4404 Aug 07 22:51	18°♐06'58	-0°19'34
max. Earth dist.	4398 Aug 21 14:08	29°♏14'24	6.23255 AU	4404 Aug 09 09:09	17°♐55'57	4.19533 AU
	4398 Aug 24 23:20	0°♐		4404 Sep 03 04:55	15°♐	
morning rise	4398 Sep 02 08:31	1°♐52'31	direct	4404 Oct 08 04:09	13°♐09'30	
retrograde	4399 Jan 04 23:45	19°♐58'31		4404 Nov 11 19:39	15°♐	
opposition	4399 Mar 05 22:17	14°♐57'15	0°55'26	4405 Feb 02 14:21	0°♑	
min. Earth dist.	4399 Mar 05 01:14	15°♐04'16	4.30730 AU	4405 Feb 10 16:37	1°♑52'25	
direct	4399 May 05 08:54	9°♐55'34		4405 Feb 21 20:25	4°♑29'18	6.11811 AU
evening set	4399 Sep 08 21:57	27°♐52'47				
	4399 Sep 18 15:32	0°♑	conjunction	4405 Feb 23 10:53	4°♑51'55	-0°29'16
			minimum elong	4405 Feb 23 10:52	4°♑51'54	0°29'16
conjunction	4399 Sep 22 08:26	0°♑48'33	0°48'57	4405 Mar 08 05:53	7°♑52'02	
minimum elong	4399 Sep 22 08:24	0°♑48'32	0°48'56	4405 Jul 14 12:50	27°♑14'38	
max. Earth dist.	4399 Sep 23 01:29	0°♑57'52	6.37346 AU	4405 Sep 12 22:45	22°♑18'48	-1°04'31
morning rise	4399 Oct 05 17:14	3°♑43'14		4405 Sep 13 15:25	22°♑13'21	4.04603 AU
retrograde	4400 Feb 04 13:09	20°♑54'18		4405 Nov 11 16:28	17°♑23'44	
opposition	4400 Apr 04 20:03	15°♑56'39	1°21'25	4406 Feb 15 23:28	0°♒	
min. Earth dist.	4400 Apr 04 18:01	15°♑57'19	4.42513 AU	4406 Mar 17 08:45	6°♒49'04	
direct	4400 Jun 05 13:01	10°♑54'09				
evening set	4400 Oct 09 21:26	28°♑24'35		4406 Mar 30 07:34	9°♒56'13	-0°53'10
	4400 Oct 17 07:26	0°♒	conjunction	4406 Mar 30 07:32	9°♒56'12	0°53'10
			minimum elong	4406 Mar 29 23:25	9°♒51'18	5.98777 AU
conjunction	4400 Oct 23 01:25	1°♒14'16	0°59'21	4406 Apr 12 08:19	13°♒04'39	
minimum elong	4400 Oct 23 01:25	1°♒14'16	0°59'21	4406 Jul 04 20:45	0°♓	
max. Earth dist.	4400 Oct 22 14:31	1°♒08'24	6.45950 AU	4406 Aug 21 18:57	3°♓29'51	
morning rise	4400 Nov 05 02:41	4°♒02'39	retrograde	4406 Oct 09 06:59	30°♒♒	
	4400 Dec 31 09:35	15°♒	opposition	4406 Oct 20 16:49	28°♒30'22	-1°27'45
retrograde	4401 Mar 05 09:02	20°♒45'13	min. Earth dist.	4406 Oct 20 10:41	28°♒32'25	3.94839 AU

direct	4406 Dec 18 04:32	23° Υ 36'34		conjunction	4412 Oct 27 08:34	5° \mathbb{M} 32'18	0°59'28
	4407 Feb 20 14:23	0° \mathcal{B}		minimum elong	4412 Oct 27 08:34	5° \mathbb{M} 32'18	0°59'27
evening set	4407 Apr 23 01:30	13° \mathcal{B} 27'28		max. Earth dist.	4412 Oct 26 16:30	5° \mathbb{M} 23'39	6.46279 AU
	4407 Apr 29 10:08	15° \mathcal{B}		morning rise	4412 Nov 09 09:09	8° \mathbb{M} 20'17	
					4412 Dec 11 17:41	15° \mathbb{M}	
conjunction	4407 May 06 07:40	16° \mathcal{B} 40'38	-0°57'24	retrograde	4413 Mar 09 15:17	25° \mathbb{M} 02'10	
minimum elong	4407 May 06 07:41	16° \mathcal{B} 40'38	0°57'24	opposition	4413 May 09 06:16	20° \mathbb{M} 08'04	1°23'14
max. Earth dist.	4407 May 07 10:23	16° \mathcal{B} 56'52	5.93195 AU	min. Earth dist.	4413 May 10 01:33	20° \mathbb{M} 01'51	4.47332 AU
morning rise	4407 May 19 16:45	19° \mathcal{B} 55'23		direct	4413 Jul 10 20:31	15° \mathbb{M} 05'50	
	4407 Jul 02 19:57	0° \mathbb{I}			4413 Nov 02 06:06	0° \mathcal{Z}	
retrograde	4407 Sep 29 03:09	10° \mathbb{I} 42'01		evening set	4413 Nov 13 22:05	2° \mathcal{Z} 28'43	
opposition	4407 Nov 27 18:11	5° \mathbb{I} 38'58	-1°16'04	max. Earth dist.	4413 Nov 25 05:42	4° \mathcal{Z} 55'14	6.46265 AU
min. Earth dist.	4407 Nov 26 14:29	5° \mathbb{I} 48'20	3.94213 AU				
direct	4408 Jan 24 14:04	0° \mathbb{I} 44'18		conjunction	4413 Nov 26 19:43	5° \mathcal{Z} 15'48	0°51'34
evening set	4408 May 29 19:26	20° \mathbb{I} 30'38		minimum elong	4413 Nov 26 19:44	5° \mathcal{Z} 15'49	0°51'35
				morning rise	4413 Dec 09 14:41	8° \mathcal{Z} 01'45	
conjunction	4408 Jun 12 09:04	23° \mathbb{I} 45'19	-0°38'46	retrograde	4414 Apr 09 00:07	24° \mathcal{Z} 48'20	
minimum elong	4408 Jun 12 09:06	23° \mathbb{I} 45'20	0°38'47	opposition	4414 Jun 08 21:19	19° \mathcal{Z} 55'57	1°01'27
max. Earth dist.	4408 Jun 14 12:35	24° \mathbb{I} 16'10	5.97513 AU	min. Earth dist.	4414 Jun 10 05:39	19° \mathcal{Z} 45'38	4.43404 AU
morning rise	4408 Jun 26 01:26	27° \mathbb{I} 01'12		direct	4414 Aug 10 14:14	14° \mathcal{Z} 54'45	
	4408 Jul 08 18:00	0° \mathcal{E}			4414 Dec 02 19:37	0° \mathcal{Z}	
retrograde	4408 Nov 03 22:36	17° \mathcal{E} 15'22		evening set	4414 Dec 14 09:22	2° \mathcal{Z} 30'26	
min. Earth dist.	4408 Dec 31 23:05	12° \mathcal{E} 23'06	4.02967 AU	max. Earth dist.	4414 Dec 25 00:03	4° \mathcal{Z} 50'39	6.38663 AU
opposition	4409 Jan 02 11:52	12° \mathcal{E} 10'33	-0°34'21				
direct	4409 Mar 01 17:19	7° \mathcal{E} 13'15		conjunction	4414 Dec 27 03:23	5° \mathcal{Z} 19'02	0°29'44
evening set	4409 Jul 06 02:46	26° \mathcal{E} 27'47		minimum elong	4414 Dec 27 03:24	5° \mathcal{Z} 19'03	0°29'44
				morning rise	4415 Jan 08 19:38	8° \mathcal{Z} 06'58	
conjunction	4409 Jul 19 20:15	29° \mathcal{E} 38'26	-0°05'46	retrograde	4415 May 10 23:32	25° \mathcal{Z} 27'21	
minimum elong	4409 Jul 19 20:16	29° \mathcal{E} 38'26	0°05'47	opposition	4415 Jul 10 20:34	20° \mathcal{Z} 35'09	0°22'04
behind sun begin	4409 Jul 19 12:16	29° \mathcal{E} 33'49		min. Earth dist.	4415 Jul 12 11:17	20° \mathcal{Z} 22'48	4.32522 AU
behind sun end	4409 Jul 20 04:17	29° \mathcal{E} 43'03		direct	4415 Sep 11 01:34	15° \mathcal{Z} 35'38	
	4409 Jul 21 09:29	0° \mathcal{O}			4415 Dec 28 23:10	0° \approx	
max. Earth dist.	4409 Jul 22 05:44	0° \mathcal{O} 11'44	6.09851 AU	desc. node	4416 Jan 11 07:45	2° \approx 57'33	
morning rise	4409 Aug 02 14:42	2° \mathcal{O} 49'18		evening set	4416 Jan 14 14:04	3° \approx 41'42	
asc. node	4409 Sep 22 12:17	13° \mathcal{O} 41'18		max. Earth dist.	4416 Jan 25 03:47	6° \approx 05'51	6.25311 AU
	4409 Sep 29 16:16	15° \mathcal{O}					
retrograde	4409 Dec 08 07:29	21° \mathcal{O} 56'42		conjunction	4416 Jan 27 07:08	6° \approx 35'07	-0°01'23
opposition	4410 Feb 05 23:27	16° \mathcal{O} 52'55	0°17'33	minimum elong	4416 Jan 27 07:07	6° \approx 35'07	0°01'22
min. Earth dist.	4410 Feb 04 15:11	17° \mathcal{O} 03'51	4.17484 AU	behind sun begin	4416 Jan 26 23:08	6° \approx 30'35	
	4410 Feb 20 06:05	15° \mathcal{R} \mathcal{O}		behind sun end	4416 Jan 27 15:06	6° \approx 39'39	
direct	4410 Apr 06 06:07	11° \mathcal{O} 52'54		morning rise	4416 Feb 08 23:31	9° \approx 28'29	
	4410 May 21 10:32	15° \mathcal{O}			4416 Mar 04 22:44	15° \approx	
	4410 Aug 08 23:13	0° \mathbb{P}		retrograde	4416 Jun 13 02:52	27° \approx 48'04	
evening set	4410 Aug 10 19:27	0° \mathbb{P} 24'34		opposition	4416 Aug 12 20:37	22° \approx 54'29	-0°26'28
				min. Earth dist.	4416 Aug 14 04:08	22° \approx 44'20	4.17519 AU
conjunction	4410 Aug 24 10:51	3° \mathbb{P} 27'28	0°27'54	direct	4416 Oct 12 20:54	17° \approx 57'18	
minimum elong	4410 Aug 24 10:49	3° \mathbb{P} 27'27	0°27'54		4417 Jan 16 11:20	0° \mathcal{H}	
max. Earth dist.	4410 Aug 26 03:09	3° \mathbb{P} 50'00	6.25291 AU	evening set	4417 Feb 15 09:41	6° \mathcal{H} 45'39	
morning rise	4410 Sep 07 01:44	6° \mathbb{P} 29'45		max. Earth dist.	4417 Feb 26 18:21	9° \mathcal{H} 26'00	6.09915 AU
retrograde	4411 Jan 09 06:18	24° \mathbb{P} 27'33					
min. Earth dist.	4411 Mar 09 11:50	19° \mathbb{P} 32'54	4.32467 AU	conjunction	4417 Feb 28 04:24	9° \mathcal{H} 46'06	-0°33'25
opposition	4411 Mar 10 06:10	19° \mathbb{P} 26'47	1°00'16	minimum elong	4417 Feb 28 04:22	9° \mathcal{H} 46'05	0°33'25
direct	4411 May 09 20:52	14° \mathbb{P} 24'56		morning rise	4417 Mar 12 23:50	12° \mathcal{H} 47'15	
	4411 Sep 02 16:16	0° \mathcal{L}			4417 Jun 10 22:10	0° Υ	
evening set	4411 Sep 13 10:14	2° \mathcal{L} 18'26		retrograde	4417 Jul 19 19:28	2° Υ 19'01	
					4417 Aug 27 22:18	30° \mathcal{R} \mathcal{H}	
conjunction	4411 Sep 26 20:01	5° \mathcal{L} 13'21	0°51'18	opposition	4417 Sep 18 03:02	27° \mathcal{H} 22'42	-1°09'28
minimum elong	4411 Sep 26 19:59	5° \mathcal{L} 13'20	0°51'19	min. Earth dist.	4417 Sep 18 17:47	27° \mathcal{H} 17'53	4.02985 AU
max. Earth dist.	4411 Sep 27 09:55	5° \mathcal{L} 20'55	6.38677 AU	direct	4417 Nov 16 17:30	22° \mathcal{H} 27'51	
morning rise	4411 Oct 10 03:39	8° \mathcal{L} 07'05			4418 Jan 27 04:51	0° Υ	
retrograde	4412 Feb 08 17:01	25° \mathcal{L} 13'30		evening set	4418 Mar 22 08:36	11° Υ 57'28	
opposition	4412 Apr 09 01:00	20° \mathcal{L} 16'24	1°23'12				
min. Earth dist.	4412 Apr 09 01:15	20° \mathcal{L} 16'20	4.43375 AU	conjunction	4418 Apr 04 08:13	15° Υ 05'32	-0°55'07
direct	4412 Jun 09 20:20	15° \mathcal{L} 13'58		minimum elong	4418 Apr 04 08:12	15° Υ 05'31	0°55'07
	4412 Oct 01 08:50	0° \mathbb{M}		max. Earth dist.	4418 Apr 04 03:56	15° Υ 02'56	5.97579 AU
evening set	4412 Oct 14 05:34	2° \mathbb{M} 43'05		morning rise	4418 Apr 17 10:05	18° Υ 14'59	
					4418 Jun 09 02:05	0° \mathcal{B}	

retrograde	4418 Aug 27 02:26	8°♄45'39		evening set	4424 Oct 18 14:55	7°♎04'28	
opposition	4418 Oct 25 23:52	3°♄45'38	-1°28'18				
min. Earth dist.	4418 Oct 25 13:57	3°♄48'56	3.94223 AU	conjunction	4424 Oct 31 17:09	9°♎53'06	0°59'18
	4418 Nov 27 06:41	30°♄		minimum elong	4424 Oct 31 17:09	9°♎53'06	0°59'18
direct	4418 Dec 23 07:15	28°♄51'49		max. Earth dist.	4424 Oct 30 23:45	9°♎43'44	6.46976 AU
	4419 Jan 18 06:32	0°♄		morning rise	4424 Nov 13 16:38	12°♎40'25	
	4419 Apr 12 15:13	15°♄			4424 Nov 24 16:08	15°♎	
evening set	4419 Apr 28 06:22	18°♄43'50		retrograde	4425 Mar 13 19:36	29°♎20'20	
				opposition	4425 May 13 12:42	24°♎26'36	1°21'25
conjunction	4419 May 11 13:34	21°♄57'29	-0°56'05	min. Earth dist.	4425 May 14 09:10	24°♎20'01	4.47629 AU
minimum elong	4419 May 11 13:35	21°♄57'30	0°56'05	direct	4425 Jul 15 04:25	19°♎24'34	
max. Earth dist.	4419 May 12 19:33	22°♄15'43	5.93202 AU		4425 Oct 16 07:28	0°♄	
morning rise	4419 May 24 23:50	25°♄12'45		evening set	4425 Nov 18 04:32	6°♄46'43	
	4419 Jun 14 05:05	0°♄		max. Earth dist.	4425 Nov 29 08:19	9°♄11'21	6.46140 AU
retrograde	4419 Oct 04 08:21	15°♄58'07					
opposition	4419 Dec 02 23:09	10°♄54'38	-1°11'40	conjunction	4425 Dec 01 01:18	9°♄33'34	0°49'18
min. Earth dist.	4419 Dec 01 17:46	11°♄04'36	3.94838 AU	minimum elong	4425 Dec 01 01:19	9°♄33'34	0°49'18
direct	4420 Jan 29 19:53	5°♄59'37		morning rise	4425 Dec 13 19:47	12°♄19'22	
evening set	4420 Jun 04 00:58	25°♄43'12		retrograde	4426 Apr 13 08:27	29°♄07'15	
				opposition	4426 Jun 13 05:43	24°♄14'59	0°56'55
conjunction	4420 Jun 17 15:37	28°♄57'45	-0°34'42	min. Earth dist.	4426 Jun 14 15:59	24°♄04'03	4.42850 AU
minimum elong	4420 Jun 17 15:39	28°♄57'46	0°34'42	direct	4426 Aug 14 23:28	19°♄13'59	
max. Earth dist.	4420 Jun 19 22:21	29°♄30'24	5.98701 AU		4426 Nov 16 02:40	0°♄	
	4420 Jun 22 00:01	0°♄		evening set	4426 Dec 18 14:55	6°♄50'52	
morning rise	4420 Jul 01 08:31	2°♄13'19		max. Earth dist.	4426 Dec 29 04:43	9°♄10'55	6.37717 AU
retrograde	4420 Nov 08 22:19	22°♄20'14					
min. Earth dist.	4421 Jan 05 22:13	17°♄27'50	4.04568 AU	conjunction	4426 Dec 31 08:40	9°♄39'42	0°25'53
opposition	4421 Jan 07 10:40	17°♄15'25	-0°27'10	minimum elong	4426 Dec 31 08:41	9°♄39'42	0°25'53
direct	4421 Mar 06 18:37	12°♄17'44		morning rise	4427 Jan 13 00:36	12°♄27'53	
	4421 Jul 04 20:29	0°♄		retrograde	4427 May 15 10:10	29°♄53'02	
evening set	4421 Jul 11 05:12	1°♄27'18		opposition	4427 Jul 15 08:44	25°♄00'42	0°15'46
				min. Earth dist.	4427 Jul 16 22:28	24°♄48'40	4.31222 AU
conjunction	4421 Jul 24 22:36	4°♄37'06	-0°00'45	direct	4427 Sep 15 10:28	20°♄01'30	
minimum elong	4421 Jul 24 22:38	4°♄37'06	0°00'46	desc. node	4427 Nov 23 05:02	26°♄31'29	
behind sun begin	4421 Jul 24 14:15	4°♄32'18			4427 Dec 11 22:13	0°♄	
behind sun end	4421 Jul 25 07:01	4°♄41'55		evening set	4428 Jan 18 22:09	8°♄10'52	
max. Earth dist.	4421 Jul 27 06:06	5°♄09'06	6.11707 AU	max. Earth dist.	4428 Jan 29 13:13	10°♄36'18	6.23756 AU
asc. node	4421 Aug 02 04:45	6°♄31'13					
morning rise	4421 Aug 07 17:05	7°♄47'04		conjunction	4428 Jan 31 15:07	11°♄04'52	-0°05'52
	4421 Sep 09 11:15	15°♄		minimum elong	4428 Jan 31 15:06	11°♄04'52	0°05'51
retrograde	4421 Dec 12 21:15	26°♄45'14		behind sun begin	4428 Jan 31 07:29	11°♄00'32	
min. Earth dist.	4422 Feb 09 07:39	21°♄52'21	4.19421 AU	behind sun end	4428 Jan 31 22:44	11°♄09'13	
opposition	4422 Feb 10 14:58	21°♄41'45	0°24'28	morning rise	4428 Feb 13 07:37	13°♄58'56	
direct	4422 Apr 11 01:04	16°♄41'25			4428 Feb 17 19:16	15°♄	
	4422 Jul 22 23:42	0°♄			4428 May 08 16:54	0°♄	
evening set	4422 Aug 15 15:53	5°♄08'07		retrograde	4428 Jun 17 22:14	2°♄26'16	
					4428 Jul 28 12:59	30°♄	
conjunction	4422 Aug 29 06:48	8°♄09'58	0°31'59	opposition	4428 Aug 17 14:27	27°♄32'25	-0°32'54
minimum elong	4422 Aug 29 06:46	8°♄09'57	0°31'59	min. Earth dist.	4428 Aug 18 21:49	27°♄22'19	4.15786 AU
max. Earth dist.	4422 Aug 30 20:20	8°♄30'53	6.27176 AU	direct	4428 Oct 17 12:04	22°♄35'31	
morning rise	4422 Sep 11 20:45	11°♄11'04			4428 Dec 28 16:28	0°♄	
retrograde	4423 Jan 13 16:14	29°♄01'04		evening set	4429 Feb 19 22:52	11°♄28'47	
opposition	4423 Mar 14 16:25	24°♄00'52	1°04'51	max. Earth dist.	4429 Mar 03 09:36	14°♄10'58	6.08155 AU
min. Earth dist.	4423 Mar 14 00:35	24°♄06'08	4.34167 AU				
direct	4423 May 14 11:38	18°♄58'59		conjunction	4429 Mar 04 18:02	14°♄30'10	-0°37'09
	4423 Aug 16 07:30	0°♄		minimum elong	4429 Mar 04 18:00	14°♄30'09	0°37'09
evening set	4423 Sep 18 00:32	6°♄48'31		morning rise	4429 Mar 17 14:10	17°♄32'22	
					4429 May 14 11:27	0°♄	
conjunction	4423 Oct 01 09:18	9°♄42'30	0°53'26	retrograde	4429 Jul 24 19:54	7°♄13'03	
minimum elong	4423 Oct 01 09:17	9°♄42'29	0°53'27	opposition	4429 Sep 23 02:36	2°♄16'20	-1°13'44
max. Earth dist.	4423 Oct 01 19:00	9°♄47'46	6.40084 AU	min. Earth dist.	4429 Sep 23 14:16	2°♄12'31	4.01365 AU
morning rise	4423 Oct 14 16:03	12°♄35'17			4429 Oct 11 03:04	30°♄	
retrograde	4424 Feb 12 22:52	29°♄36'45		direct	4429 Nov 21 11:18	27°♄21'42	
opposition	4424 Apr 13 08:13	24°♄40'07	1°24'36		4430 Jan 01 02:02	0°♄	
min. Earth dist.	4424 Apr 13 10:41	24°♄39'19	4.44449 AU	evening set	4430 Mar 27 04:39	16°♄56'15	
direct	4424 Jun 14 06:53	19°♄37'44					
	4424 Sep 14 01:34	0°♄		conjunction	4430 Apr 09 05:09	20°♄05'21	-0°56'35

minimum elong	4430 Apr 09 05:08	20° Υ 05'20	0°56'35	morning rise	4435 Oct 19 04:11	17° Ω 03'50	
max. Earth dist.	4430 Apr 09 04:08	20° Υ 04'44	5.96248 AU		4435 Dec 26 20:47	0° \mathbb{M}	
morning rise	4430 Apr 22 08:06	23° Υ 15'54		retrograde	4436 Feb 17 04:48	4° \mathbb{M} 00'04	
	4430 May 21 03:00	0° \mathcal{B}			4436 Apr 10 09:36	30° \mathcal{R} Ω	
retrograde	4430 Sep 01 07:07	13° \mathcal{B} 53'04		opposition	4436 Apr 17 15:19	29° Ω 03'50	1°25'29
opposition	4430 Oct 31 03:07	8° \mathcal{B} 52'32	-1°28'11	min. Earth dist.	4436 Apr 17 20:37	29° Ω 02'06	4.45482 AU
min. Earth dist.	4430 Oct 30 15:00	8° \mathcal{B} 56'36	3.93322 AU	direct	4436 Jun 18 18:19	24° Ω 01'22	
direct	4430 Dec 28 07:51	3° \mathcal{B} 58'40			4436 Aug 24 20:07	0° \mathbb{M}	
	4431 Mar 25 21:44	15° \mathcal{B}		evening set	4436 Oct 22 23:55	11° \mathbb{M} 25'38	
evening set	4431 May 03 08:25	23° \mathcal{B} 53'24		max. Earth dist.	4436 Nov 04 03:11	14° \mathbb{M} 01'53	6.47492 AU
conjunction	4431 May 16 16:59	27° \mathcal{B} 07'50	-0°54'23	conjunction	4436 Nov 05 01:11	14° \mathbb{M} 13'43	0°58'47
minimum elong	4431 May 16 17:01	27° \mathcal{B} 07'51	0°54'23	minimum elong	4436 Nov 05 01:12	14° \mathbb{M} 13'43	0°58'47
max. Earth dist.	4431 May 18 03:52	27° \mathcal{B} 29'02	5.92840 AU		4436 Nov 08 15:15	15° \mathbb{M}	
	4431 May 28 12:52	0° \mathbb{I}		morning rise	4436 Nov 17 23:56	17° \mathbb{M} 00'31	
morning rise	4431 May 30 04:21	0° \mathbb{I} 23'49			4437 Jan 26 23:56	0° \mathcal{X}	
retrograde	4431 Oct 09 13:41	21° \mathbb{I} 09'25		retrograde	4437 Mar 18 01:23	3° \mathcal{X} 39'09	
min. Earth dist.	4431 Dec 06 19:03	16° \mathbb{I} 16'04	3.95065 AU		4437 May 08 01:07	30° \mathcal{R} \mathbb{M}	
opposition	4431 Dec 08 01:37	16° \mathbb{I} 05'41	-1°06'53	opposition	4437 May 17 19:38	28° \mathbb{M} 45'36	1°19'07
direct	4432 Feb 03 21:56	11° \mathbb{I} 10'23		min. Earth dist.	4437 May 18 18:30	28° \mathbb{M} 38'16	4.47592 AU
	4432 Jun 05 11:43	0° \mathcal{E}		direct	4437 Jul 19 13:00	23° \mathbb{M} 43'34	
evening set	4432 Jun 09 05:44	0° \mathcal{E} 53'10			4437 Sep 26 15:04	0° \mathcal{X}	
conjunction	4432 Jun 22 21:06	4° \mathcal{E} 07'43	-0°30'29	evening set	4437 Nov 22 11:01	11° \mathcal{X} 06'00	
minimum elong	4432 Jun 22 21:08	4° \mathcal{E} 07'44	0°30'29	max. Earth dist.	4437 Dec 03 13:12	13° \mathcal{X} 29'58	6.45536 AU
max. Earth dist.	4432 Jun 25 04:40	4° \mathcal{E} 40'46	5.99488 AU	conjunction	4437 Dec 05 07:21	13° \mathcal{X} 52'52	0°46'41
morning rise	4432 Jul 06 14:54	7° \mathcal{E} 23'15		minimum elong	4437 Dec 05 07:23	13° \mathcal{X} 52'52	0°46'41
retrograde	4432 Nov 13 19:15	27° \mathcal{E} 24'20		morning rise	4437 Dec 18 01:09	16° \mathcal{X} 38'40	
min. Earth dist.	4433 Jan 10 18:58	22° \mathcal{E} 32'15	4.05823 AU		4438 Feb 27 18:32	0° \mathcal{Z}	
opposition	4433 Jan 12 08:25	22° \mathcal{E} 19'29	-0°19'58	retrograde	4438 Apr 17 16:39	3° \mathcal{Z} 29'31	
direct	4433 Mar 11 17:35	17° \mathcal{E} 21'23			4438 Jun 06 16:11	30° \mathcal{R} \mathcal{X}	
asc. node	4433 Jun 12 09:53	28° \mathcal{E} 58'03		opposition	4438 Jun 17 15:29	28° \mathcal{X} 37'19	0°51'56
	4433 Jun 17 07:09	0° Ω		min. Earth dist.	4438 Jun 19 02:30	28° \mathcal{X} 26'10	4.41705 AU
evening set	4433 Jul 16 07:31	6° Ω 27'18		direct	4438 Aug 19 07:55	23° \mathcal{X} 36'31	
conjunction	4433 Jul 30 01:06	9° Ω 36'26	0°04'15		4438 Oct 27 12:26	0° \mathcal{Z}	
minimum elong	4433 Jul 30 01:05	9° Ω 36'25	0°04'16	evening set	4438 Dec 22 22:48	11° \mathcal{Z} 16'35	
behind sun begin	4433 Jul 29 16:51	9° Ω 31'43		max. Earth dist.	4439 Jan 02 10:37	13° \mathcal{Z} 36'08	6.36101 AU
behind sun end	4433 Jul 30 09:19	9° Ω 41'08		conjunction	4439 Jan 04 16:08	14° \mathcal{Z} 05'54	0°21'45
max. Earth dist.	4433 Aug 01 07:39	10° Ω 07'47	6.13331 AU	minimum elong	4439 Jan 04 16:09	14° \mathcal{Z} 05'55	0°21'46
morning rise	4433 Aug 12 19:16	12° Ω 45'31		morning rise	4439 Jan 17 08:05	16° \mathcal{Z} 54'43	
	4433 Aug 22 17:27	15° Ω			4439 Mar 25 13:21	0° \approx	
	4433 Nov 15 22:56	0° \mathbb{P}		retrograde	4439 May 20 03:24	4° \approx 26'59	
retrograde	4433 Dec 17 13:31	1° \mathbb{P} 35'09			4439 Jul 16 16:47	30° \mathcal{R} \mathcal{Z}	
	4434 Jan 17 21:16	30° \mathcal{R} Ω		opposition	4439 Jul 20 00:38	29° \mathcal{Z} 34'32	0°09'04
min. Earth dist.	4434 Feb 14 01:29	26° Ω 41'53	4.21228 AU	min. Earth dist.	4439 Jul 21 15:09	29° \mathcal{Z} 22'13	4.29213 AU
opposition	4434 Feb 15 06:53	26° Ω 31'57	0°31'08	direct	4439 Sep 20 00:16	24° \mathcal{Z} 35'32	
direct	4434 Apr 15 22:11	21° Ω 31'17		desc. node	4439 Oct 02 16:07	24° \mathcal{Z} 50'26	
	4434 Jul 03 20:42	0° \mathbb{P}			4439 Nov 20 23:17	0° \approx	
evening set	4434 Aug 20 12:35	9° \mathbb{P} 53'03		evening set	4440 Jan 23 10:25	12° \approx 50'37	
conjunction	4434 Sep 03 02:50	12° \mathbb{P} 53'50	0°35'50		4440 Feb 01 20:19	15° \approx	
minimum elong	4434 Sep 03 02:48	12° \mathbb{P} 53'49	0°35'50	max. Earth dist.	4440 Feb 03 02:52	15° \approx 17'34	6.21516 AU
max. Earth dist.	4434 Sep 04 14:09	13° \mathbb{P} 13'25	6.29008 AU	conjunction	4440 Feb 05 03:38	15° \approx 45'36	-0°10'32
morning rise	4434 Sep 16 15:55	15° \mathbb{P} 53'46		minimum elong	4440 Feb 05 03:37	15° \approx 45'36	0°10'32
	4434 Nov 30 00:09	0° Ω		behind sun begin	4440 Feb 04 21:20	15° \approx 42'00	
retrograde	4435 Jan 18 00:06	3° Ω 35'49		behind sun end	4440 Feb 05 09:54	15° \approx 49'11	
	4435 Mar 08 10:04	30° \mathcal{R} \mathbb{P}		morning rise	4440 Feb 17 20:26	18° \approx 40'43	
opposition	4435 Mar 19 02:42	28° \mathbb{P} 35'58	1°08'59		4440 Apr 11 13:42	0° \mathcal{H}	
min. Earth dist.	4435 Mar 18 12:09	28° \mathbb{P} 40'48	4.35873 AU	retrograde	4440 Jun 22 22:25	7° \mathcal{H} 18'18	
direct	4435 May 19 01:41	23° \mathbb{P} 33'52		opposition	4440 Aug 22 14:11	2° \mathcal{H} 24'08	-0°39'33
	4435 Jul 27 01:57	0° Ω		min. Earth dist.	4440 Aug 23 19:01	2° \mathcal{H} 14'50	4.13490 AU
evening set	4435 Sep 22 14:46	11° Ω 19'06			4440 Sep 11 00:16	30° \mathcal{R} \approx	
conjunction	4435 Oct 05 22:36	14° Ω 12'05	0°55'14	direct	4440 Oct 22 05:50	27° \approx 27'35	
minimum elong	4435 Oct 05 22:34	14° Ω 12'04	0°55'14		4440 Dec 01 19:42	0° \mathcal{H}	
max. Earth dist.	4435 Oct 06 04:59	14° Ω 15'33	6.41514 AU	evening set	4441 Feb 24 18:34	16° \mathcal{H} 27'39	
				max. Earth dist.	4441 Mar 08 09:11	19° \mathcal{H} 12'56	6.06000 AU




























































































































conjunction	4441 Mar 09 14:13	19° X 30'12	-0°40'53	minimum elong	4446 Sep 07 20:21	17° P 31'34	0°39'24
minimum elong	4441 Mar 09 14:11	19° X 30'11	0°40'53	max. Earth dist.	4446 Sep 09 02:53	17° P 48'26	6.31350 AU
morning rise	4441 Mar 22 11:10	22° X 33'42		morning rise	4446 Sep 21 08:30	20° P 30'06	
	4441 Apr 24 01:05	0° Y			4446 Nov 06 15:15	0° A	
retrograde	4441 Jul 30 05:22	12° Y 24'49		retrograde	4447 Jan 22 07:30	8° A 03'16	
opposition	4441 Sep 28 09:42	7° Y 27'36	-1°17'45	opposition	4447 Mar 23 10:33	3° A 03'59	1°12'35
min. Earth dist.	4441 Sep 28 18:34	7° Y 24'41	3.99560 AU	min. Earth dist.	4447 Mar 22 23:42	3° A 07'34	4.37865 AU
direct	4441 Nov 26 14:09	2° Y 33'10			4447 Apr 17 11:42	30° R P	
evening set	4442 Apr 01 08:22	22° Y 13'06		direct	4447 May 23 15:24	28° P 01'44	
					4447 Jun 29 04:14	0° A	
conjunction	4442 Apr 14 10:03	25° Y 23'17	-0°57'42	evening set	4447 Sep 27 01:31	15° A 42'08	
minimum elong	4442 Apr 14 10:03	25° Y 23'17	0°57'42				
max. Earth dist.	4442 Apr 14 15:06	25° Y 26'22	5.94985 AU	conjunction	4447 Oct 10 08:26	18° A 34'10	0°56'40
morning rise	4442 Apr 27 14:07	28° Y 34'58		minimum elong	4447 Oct 10 08:24	18° A 34'09	0°56'39
	4442 May 03 11:36	0° X		max. Earth dist.	4447 Oct 10 10:48	18° A 35'26	6.42993 AU
	4442 Jul 15 13:46	15° X		morning rise	4447 Oct 23 12:56	21° A 24'55	
retrograde	4442 Sep 06 19:39	19° X 17'29			4447 Dec 04 22:09	0° M	
	4442 Oct 31 03:09	15° X		retrograde	4448 Feb 21 07:01	8° M 16'29	
opposition	4442 Nov 05 13:15	14° X 16'32	-1°27'17	opposition	4448 Apr 21 19:47	3° M 20'41	1°25'53
min. Earth dist.	4442 Nov 04 22:07	14° X 21'36	3.92790 AU	min. Earth dist.	4448 Apr 22 03:20	3° M 18'14	4.46374 AU
direct	4443 Jan 02 15:01	9° X 22'40			4448 May 20 02:59	30° R A	
	4443 Mar 03 12:05	15° X		direct	4448 Jun 23 00:56	28° A 18'13	
evening set	4443 May 08 17:33	29° X 18'23			4448 Jul 27 07:52	0° M	
	4443 May 11 14:26	0° I			4448 Oct 24 01:17	15° M	
				evening set	4448 Oct 27 06:04	15° M 40'51	
conjunction	4443 May 22 03:07	2° I 33'15	-0°52'07	max. Earth dist.	4448 Nov 08 05:12	18° M 14'52	6.47728 AU
minimum elong	4443 May 22 03:09	2° I 33'16	0°52'08				
max. Earth dist.	4443 May 23 17:16	2° I 56'24	5.93087 AU	conjunction	4448 Nov 09 06:34	18° M 28'31	0°57'58
morning rise	4443 Jun 04 15:49	5° I 49'40		minimum elong	4448 Nov 09 06:34	18° M 28'31	0°57'58
retrograde	4443 Oct 14 19:52	26° I 32'11		morning rise	4448 Nov 22 04:24	21° M 14'55	
min. Earth dist.	4443 Dec 11 23:07	21° I 39'31	3.96092 AU		4449 Jan 04 16:51	0° J	
opposition	4443 Dec 13 08:35	21° I 28'08	-1°01'18	retrograde	4449 Mar 22 05:47	7° J 53'33	
direct	4444 Feb 09 04:49	16° I 32'32		opposition	4449 May 22 00:42	3° J 00'21	1°16'27
	4444 May 18 16:52	0° E		min. Earth dist.	4449 May 23 02:23	2° J 52'07	4.47159 AU
evening set	4444 Jun 14 14:13	6° E 11'12			4449 Jun 16 05:34	30° R M	
				direct	4449 Jul 23 19:30	27° M 58'27	
conjunction	4444 Jun 28 06:17	9° E 25'15	-0°25'51		4449 Aug 30 12:05	0° J	
minimum elong	4444 Jun 28 06:19	9° E 25'16	0°25'52	evening set	4449 Nov 26 16:10	15° J 22'39	
max. Earth dist.	4444 Jun 30 15:48	9° E 59'19	6.01206 AU	max. Earth dist.	4449 Dec 07 13:31	17° J 44'28	6.44449 AU
morning rise	4444 Jul 12 00:24	12° E 40'07					
	4444 Oct 09 16:54	0° O		conjunction	4449 Dec 09 11:53	18° J 09'42	0°43'52
retrograde	4444 Nov 18 18:34	2° O 31'30		minimum elong	4449 Dec 09 11:54	18° J 09'43	0°43'52
	4444 Dec 28 15:27	30° R E		morning rise	4449 Dec 22 05:27	20° J 55'50	
min. Earth dist.	4445 Jan 15 19:13	27° E 39'09	4.08016 AU		4450 Feb 04 20:38	0° Z	
opposition	4445 Jan 17 07:44	27° E 26'43	-0°12'28	retrograde	4450 Apr 22 02:56	7° Z 51'31	
direct	4445 Mar 16 21:42	22° E 28'14		opposition	4450 Jun 22 01:09	2° Z 59'22	0°46'43
asc. node	4445 Apr 21 18:33	24° E 32'21		min. Earth dist.	4450 Jun 23 13:46	2° Z 47'42	4.40022 AU
	4445 May 28 02:58	0° O			4450 Jul 17 05:23	30° R J	
evening set	4445 Jul 21 10:13	11° O 27'05		direct	4450 Aug 23 16:06	27° J 58'43	
					4450 Sep 30 00:34	0° Z	
conjunction	4445 Aug 04 03:36	14° O 35'00	0°09'10	evening set	4450 Dec 27 06:28	15° Z 43'49	
minimum elong	4445 Aug 04 03:35	14° O 35'00	0°09'09	max. Earth dist.	4451 Jan 06 18:51	18° Z 04'19	6.33954 AU
behind sun begin	4445 Aug 03 20:33	14° O 31'00					
behind sun end	4445 Aug 04 10:36	14° O 38'59		conjunction	4451 Jan 08 23:52	18° Z 33'57	0°17'30
	4445 Aug 05 23:22	15° O		minimum elong	4451 Jan 08 23:53	18° Z 33'58	0°17'31
max. Earth dist.	4445 Aug 06 09:37	15° O 05'51	6.15802 AU	morning rise	4451 Jan 21 15:41	21° Z 23'37	
morning rise	4445 Aug 17 21:14	17° O 42'44			4451 Mar 03 11:52	0° \approx	
	4445 Oct 16 16:14	0° P		retrograde	4451 May 24 20:57	9° \approx 05'02	
retrograde	4445 Dec 22 01:34	6° P 20'59		opposition	4451 Jul 24 17:58	4° \approx 12'28	0°02'17
opposition	4446 Feb 19 21:09	1° P 18'13	0°37'30	min. Earth dist.	4451 Jul 26 07:41	4° \approx 00'25	4.26738 AU
min. Earth dist.	4446 Feb 18 16:34	1° P 27'51	4.23738 AU	desc. node	4451 Aug 12 09:31	1° \approx 54'44	
	4446 Mar 01 16:32	30° R O			4451 Sep 02 02:53	30° R Z	
direct	4446 Apr 20 16:29	26° O 17'18		direct	4451 Sep 24 12:50	29° Z 13'50	
	4446 Jun 09 18:59	0° P			4451 Oct 16 22:30	0° \approx	
evening set	4446 Aug 25 07:05	14° P 32'10			4452 Jan 16 13:18	15° \approx	
				evening set	4452 Jan 28 00:42	17° \approx 36'14	
conjunction	4446 Sep 07 20:23	17° P 31'35	0°39'24	max. Earth dist.	4452 Feb 07 18:34	20° \approx 04'55	6.18916 AU





























































































































conjunction	4452 Feb 09 18:00	20° \approx 32'21	-0°15'10	minimum elong	4457 Aug 09 03:57	19° Ω 28'26	0°13'57
minimum elong	4452 Feb 09 17:59	20° \approx 32'21	0°15'09	behind sun begin	4457 Aug 08 23:57	19° Ω 26'10	
behind sun begin	4452 Feb 09 15:00	20° \approx 30'37		behind sun end	4457 Aug 09 07:58	19° Ω 30'43	
behind sun end	4452 Feb 09 20:58	20° \approx 34'04		max. Earth dist.	4457 Aug 11 06:02	19° Ω 56'53	6.18269 AU
morning rise	4452 Feb 22 11:22	23° \approx 28'46		morning rise	4457 Aug 22 21:08	22° Ω 34'49	
	4452 Mar 22 16:41	0° \mathcal{H}			4457 Sep 26 04:27	0° \mathfrak{M}	
retrograde	4452 Jun 28 03:33	12° \mathcal{H} 18'04		retrograde	4457 Dec 26 13:49	11° \mathfrak{M} 02'20	
opposition	4452 Aug 27 16:45	7° \mathcal{H} 23'32	-0°46'02	min. Earth dist.	4458 Feb 23 08:30	6° \mathfrak{M} 08'35	4.26086 AU
min. Earth dist.	4452 Aug 28 19:22	7° \mathcal{H} 14'54	4.10967 AU	opposition	4458 Feb 24 10:05	5° \mathfrak{M} 59'59	0°43'34
direct	4452 Oct 27 03:27	2° \mathcal{H} 27'18		direct	4458 Apr 25 11:20	0° \mathfrak{M} 58'46	
evening set	4453 Mar 01 17:16	21° \mathcal{H} 34'53		evening set	4458 Aug 29 23:56	19° \mathfrak{M} 07'29	
conjunction	4453 Mar 14 13:45	24° \mathcal{H} 38'44	-0°44'21	conjunction	4458 Sep 12 12:32	22° \mathfrak{M} 05'43	0°42'43
minimum elong	4453 Mar 14 13:43	24° \mathcal{H} 38'43	0°44'21	minimum elong	4458 Sep 12 12:30	22° \mathfrak{M} 05'42	0°42'43
max. Earth dist.	4453 Mar 13 14:12	24° \mathcal{H} 24'40	6.03807 AU	max. Earth dist.	4458 Sep 13 16:16	22° \mathfrak{M} 20'59	6.33407 AU
morning rise	4453 Mar 27 11:29	27° \mathcal{H} 43'34		morning rise	4458 Sep 25 23:28	25° \mathfrak{M} 02'56	
	4453 Apr 06 02:48	0° \mathcal{Y}			4458 Oct 19 04:53	0° $\underline{\Omega}$	
retrograde	4453 Aug 04 17:07	17° \mathcal{Y} 44'45		retrograde	4459 Jan 26 12:33	12° $\underline{\Omega}$ 28'27	
opposition	4453 Oct 03 19:37	12° \mathcal{Y} 47'01	-1°21'10	opposition	4459 Mar 27 17:42	7° $\underline{\Omega}$ 29'42	1°15'49
min. Earth dist.	4453 Oct 04 00:49	12° \mathcal{Y} 45'19	3.97949 AU	min. Earth dist.	4459 Mar 27 08:45	7° $\underline{\Omega}$ 32'39	4.39507 AU
direct	4453 Dec 01 18:47	7° \mathcal{Y} 52'51		direct	4459 May 28 01:35	2° $\underline{\Omega}$ 27'24	
evening set	4454 Apr 06 14:55	27° \mathcal{Y} 37'01		evening set	4459 Oct 01 12:15	20° $\underline{\Omega}$ 04'11	
	4454 Apr 16 10:30	0° \mathcal{B}					
conjunction	4454 Apr 19 17:31	0° \mathcal{B} 48'06	-0°58'20	conjunction	4459 Oct 14 18:05	22° $\underline{\Omega}$ 55'22	0°57'48
minimum elong	4454 Apr 19 17:31	0° \mathcal{B} 48'06	0°58'19	minimum elong	4459 Oct 14 18:04	22° $\underline{\Omega}$ 55'22	0°57'48
max. Earth dist.	4454 Apr 20 03:01	0° \mathcal{B} 53'53	5.94096 AU	max. Earth dist.	4459 Oct 14 15:02	22° $\underline{\Omega}$ 53'43	6.44100 AU
morning rise	4454 May 02 22:57	4° \mathcal{B} 00'46		morning rise	4459 Oct 27 21:39	25° $\underline{\Omega}$ 45'19	
	4454 Jun 20 10:49	15° \mathcal{B}			4459 Nov 17 02:10	0° \mathfrak{M}	
retrograde	4454 Sep 12 07:02	24° \mathcal{B} 46'26		retrograde	4460 Feb 25 12:35	12° \mathfrak{M} 33'27	
min. Earth dist.	4454 Nov 10 05:04	19° \mathcal{B} 51'26	3.92744 AU	opposition	4460 Apr 26 01:05	7° \mathfrak{M} 38'08	1°25'52
opposition	4454 Nov 11 00:35	19° \mathcal{B} 44'52	-1°25'35	min. Earth dist.	4460 Apr 26 12:25	7° \mathfrak{M} 34'27	4.46899 AU
	4454 Dec 29 15:29	15° $\mathcal{R}\mathcal{B}$		direct	4460 Jun 27 09:49	2° \mathfrak{M} 35'41	
direct	4455 Jan 08 00:07	14° \mathcal{B} 50'50		evening set	4460 Oct 07 17:06	15° \mathfrak{M}	
	4455 Jan 17 09:04	15° \mathcal{B}		max. Earth dist.	4460 Oct 31 12:59	19° \mathfrak{M} 57'42	
	4455 Apr 24 01:33	0° \mathfrak{I}			4460 Nov 12 07:32	22° \mathfrak{M} 29'22	6.47620 AU
evening set	4455 May 14 03:28	4° \mathfrak{I} 45'18		conjunction	4460 Nov 13 12:47	22° \mathfrak{M} 45'07	0°56'50
conjunction	4455 May 27 14:12	8° \mathfrak{I} 00'18	-0°49'24	minimum elong	4460 Nov 13 12:48	22° \mathfrak{M} 45'08	0°56'50
minimum elong	4455 May 27 14:14	8° \mathfrak{I} 00'19	0°49'24	morning rise	4460 Nov 26 09:55	25° \mathfrak{M} 31'20	
max. Earth dist.	4455 May 29 09:18	8° \mathfrak{I} 26'23	5.93873 AU		4460 Dec 17 18:36	0° \mathcal{J}	
morning rise	4455 Jun 10 03:44	11° \mathfrak{I} 16'44		retrograde	4461 Mar 26 11:50	12° \mathcal{J} 11'05	
	4455 Sep 15 16:25	0° \mathfrak{E}		opposition	4461 May 26 07:42	7° \mathcal{J} 18'07	1°13'22
retrograde	4455 Oct 20 02:19	1° \mathfrak{E} 53'33		min. Earth dist.	4461 May 27 10:53	7° \mathcal{J} 09'24	4.46445 AU
	4455 Nov 23 06:58	30° $\mathcal{R}\mathfrak{I}$		direct	4461 Jul 28 01:39	2° \mathcal{J} 16'21	
min. Earth dist.	4455 Dec 17 04:35	27° \mathfrak{I} 00'46	3.97589 AU	evening set	4461 Nov 30 22:49	19° \mathcal{J} 43'01	
opposition	4455 Dec 18 14:40	26° \mathfrak{I} 49'10	-0°55'11	max. Earth dist.	4461 Dec 11 19:07	22° \mathcal{J} 04'41	6.43181 AU
direct	4456 Feb 14 13:17	21° \mathfrak{I} 53'08		conjunction	4461 Dec 13 18:10	22° \mathcal{J} 30'24	0°40'45
	4456 Apr 28 14:46	0° \mathfrak{E}		minimum elong	4461 Dec 13 18:11	22° \mathcal{J} 30'24	0°40'46
evening set	4456 Jun 19 21:46	11° \mathfrak{E} 26'01		morning rise	4461 Dec 26 11:14	25° \mathcal{J} 16'52	
conjunction	4456 Jul 03 14:20	14° \mathfrak{E} 39'19	-0°21'04		4462 Jan 17 15:51	0° \mathcal{B}	
minimum elong	4456 Jul 03 14:21	14° \mathfrak{E} 39'20	0°21'04	retrograde	4462 Apr 26 15:08	12° \mathcal{B} 18'01	
max. Earth dist.	4456 Jul 06 01:31	15° \mathfrak{E} 14'10	6.03250 AU	opposition	4462 Jun 26 13:15	7° \mathcal{B} 25'59	0°41'05
morning rise	4456 Jul 17 08:41	17° \mathfrak{E} 53'17		min. Earth dist.	4462 Jun 28 03:00	7° \mathcal{B} 13'58	4.38272 AU
	4456 Sep 11 20:34	0° Ω		direct	4462 Aug 28 02:18	2° \mathcal{B} 25'39	
retrograde	4456 Nov 23 14:27	7° Ω 33'43		evening set	4462 Dec 31 16:31	20° \mathcal{B} 15'54	
min. Earth dist.	4457 Jan 20 16:06	2° Ω 41'35	4.10380 AU	max. Earth dist.	4463 Jan 11 03:26	22° \mathcal{B} 36'20	6.31855 AU
opposition	4457 Jan 22 04:48	2° Ω 29'06	-0°04'58	conjunction	4463 Jan 13 09:39	23° \mathcal{B} 06'47	0°13'03
	4457 Feb 10 09:28	30° $\mathcal{R}\mathfrak{E}$		minimum elong	4463 Jan 13 09:39	23° \mathcal{B} 06'48	0°13'04
asc. node	4457 Feb 28 23:42	28° \mathfrak{E} 14'21		behind sun begin	4463 Jan 13 04:47	23° \mathcal{B} 04'04	
direct	4457 Mar 21 21:59	27° \mathfrak{E} 30'13		behind sun end	4463 Jan 13 14:32	23° \mathcal{B} 09'31	
	4457 Apr 30 16:08	0° Ω		morning rise	4463 Jan 26 01:41	25° \mathcal{B} 57'21	
	4457 Jul 20 09:39	15° Ω			4463 Feb 13 11:04	0° \approx	
evening set	4457 Jul 26 11:05	16° Ω 21'50		retrograde	4463 May 29 18:02	13° \approx 47'54	
conjunction	4457 Aug 09 03:59	19° Ω 28'27	0°13'58	desc. node	4463 Jun 21 06:52	13° \approx 00'53	
				opposition	4463 Jul 29 13:42	8° \approx 55'11	-0°04'42





























































































































min. Earth dist.	4463 Jul 31 02:14	8° \approx 43'28	4.24438 AU	conjunction	4469 Aug 14 00:21	24° Ω 12'51	0°18'31
direct	4463 Sep 29 04:15	3° \approx 56'54		minimum elong	4469 Aug 14 00:20	24° Ω 12'51	0°18'30
	4463 Dec 30 00:53	15° \approx		max. Earth dist.	4469 Aug 16 00:45	24° Ω 40'13	6.20481 AU
evening set	4464 Feb 01 16:38	22° \approx 26'00		morning rise	4469 Aug 27 16:43	27° Ω 17'56	
max. Earth dist.	4464 Feb 12 14:54	24° \approx 57'55	6.16634 AU		4469 Sep 08 21:03	0° \mathbb{M}	
				retrograde	4469 Dec 30 22:34	15° \mathbb{M} 36'02	
conjunction	4464 Feb 14 10:22	25° \approx 23'12	-0°19'48	opposition	4470 Feb 28 19:33	10° \mathbb{M} 34'12	0°49'10
minimum elong	4464 Feb 14 10:21	25° \approx 23'11	0°19'47	min. Earth dist.	4470 Feb 27 19:52	10° \mathbb{M} 42'09	4.28088 AU
morning rise	4464 Feb 27 04:01	28° \approx 20'44		direct	4470 Apr 30 00:15	5° \mathbb{M} 32'49	
	4464 Mar 05 08:32	0° \mathbb{H}		evening set	4470 Sep 03 14:00	23° \mathbb{M} 36'47	
retrograde	4464 Jul 03 09:17	17° \mathbb{H} 20'35					
opposition	4464 Sep 01 20:44	12° \mathbb{H} 25'44	-0°52'17	conjunction	4470 Sep 17 01:37	26° \mathbb{M} 33'59	0°45'41
min. Earth dist.	4464 Sep 02 20:42	12° \mathbb{H} 17'58	4.08921 AU	minimum elong	4470 Sep 17 01:35	26° \mathbb{M} 33'58	0°45'40
direct	4464 Nov 01 02:00	7° \mathbb{H} 29'59		max. Earth dist.	4470 Sep 17 23:31	26° \mathbb{M} 45'59	6.35045 AU
evening set	4465 Mar 06 16:37	26° \mathbb{H} 43'14		morning rise	4470 Sep 30 11:46	29° \mathbb{M} 30'09	
					4470 Oct 02 18:43	0° Ω	
conjunction	4465 Mar 19 13:35	29° \mathbb{H} 48'04	-0°47'31	retrograde	4471 Jan 30 18:03	16° Ω 49'42	
minimum elong	4465 Mar 19 13:33	29° \mathbb{H} 48'03	0°47'31	opposition	4471 Mar 31 23:15	11° Ω 51'27	1°18'33
max. Earth dist.	4465 Mar 18 17:41	29° \mathbb{H} 36'08	6.02182 AU	min. Earth dist.	4471 Mar 31 17:52	11° Ω 53'13	4.40699 AU
	4465 Mar 20 09:29	0° \mathbb{Y}		direct	4471 Jun 01 11:12	6° Ω 49'03	
morning rise	4465 Apr 01 12:20	2° \mathbb{Y} 54'02		evening set	4471 Oct 05 20:57	24° Ω 23'34	
retrograde	4465 Aug 10 02:07	23° \mathbb{Y} 03'01					
opposition	4465 Oct 09 04:35	18° \mathbb{Y} 04'44	-1°23'55	conjunction	4471 Oct 19 02:07	27° Ω 14'11	0°58'36
min. Earth dist.	4465 Oct 09 05:13	18° \mathbb{Y} 04'32	3.96938 AU	minimum elong	4471 Oct 19 02:07	27° Ω 14'11	0°58'36
direct	4465 Dec 06 23:37	13° \mathbb{Y} 10'45		max. Earth dist.	4471 Oct 18 20:17	27° Ω 11'02	6.44770 AU
	4466 Mar 30 12:32	0° \mathbb{Z}			4471 Oct 31 22:05	0° \mathbb{M}	
evening set	4466 Apr 11 20:05	2° \mathbb{Z} 57'00		morning rise	4471 Nov 01 04:37	0° \mathbb{M} 03'30	
					4472 Jan 26 00:00	15° \mathbb{M}	
conjunction	4466 Apr 24 23:48	6° \mathbb{Z} 08'42	-0°58'29	retrograde	4472 Feb 29 15:41	16° \mathbb{M} 49'40	
minimum elong	4466 Apr 24 23:48	6° \mathbb{Z} 08'42	0°58'30		4472 Apr 04 08:15	15° \mathbb{R} \mathbb{M}	
max. Earth dist.	4466 Apr 25 15:56	6° \mathbb{Z} 18'32	5.93802 AU	opposition	4472 Apr 30 05:52	11° \mathbb{M} 54'44	1°25'24
morning rise	4466 May 08 06:09	9° \mathbb{Z} 21'58		min. Earth dist.	4472 Apr 30 18:42	11° \mathbb{M} 50'35	4.47041 AU
	4466 Jun 01 02:37	15° \mathbb{Z}		direct	4472 Jul 01 15:01	6° \mathbb{M} 52'22	
	4466 Sep 08 13:39	0° \mathbb{I}			4472 Sep 19 13:23	15° \mathbb{M}	
retrograde	4466 Sep 17 16:32	0° \mathbb{I} 08'15		evening set	4472 Nov 04 19:30	24° \mathbb{M} 14'43	
	4466 Sep 26 18:04	30° \mathbb{R} \mathbb{Z}		max. Earth dist.	4472 Nov 16 10:03	26° \mathbb{M} 44'29	6.47231 AU
min. Earth dist.	4466 Nov 15 11:15	25° \mathbb{Z} 13'25	3.93210 AU				
opposition	4466 Nov 16 08:40	25° \mathbb{Z} 06'11	-1°23'11	conjunction	4472 Nov 17 18:30	27° \mathbb{M} 02'00	0°55'24
direct	4467 Jan 13 07:56	20° \mathbb{Z} 12'00		minimum elong	4472 Nov 17 18:31	27° \mathbb{M} 02'00	0°55'23
	4467 Apr 05 03:48	0° \mathbb{I}		morning rise	4472 Nov 30 15:01	29° \mathbb{M} 48'07	
evening set	4467 May 19 10:08	10° \mathbb{I} 03'38			4472 Dec 01 13:13	0° \mathbb{Z}	
				retrograde	4473 Mar 30 19:56	16° \mathbb{Z} 29'44	
conjunction	4467 Jun 01 21:47	13° \mathbb{I} 18'32	-0°46'21	opposition	4473 May 30 15:06	11° \mathbb{Z} 37'00	1°09'53
minimum elong	4467 Jun 01 21:49	13° \mathbb{I} 18'33	0°46'21	min. Earth dist.	4473 May 31 20:51	11° \mathbb{Z} 27'29	4.45556 AU
max. Earth dist.	4467 Jun 03 20:28	13° \mathbb{I} 46'40	5.95030 AU	direct	4473 Aug 01 10:01	6° \mathbb{Z} 35'23	
morning rise	4467 Jun 15 12:16	16° \mathbb{I} 34'48		evening set	4473 Dec 05 05:37	24° \mathbb{Z} 04'41	
	4467 Aug 16 08:00	0° \mathbb{E}		max. Earth dist.	4473 Dec 15 23:27	26° \mathbb{Z} 25'30	6.41856 AU
retrograde	4467 Oct 25 03:09	7° \mathbb{E} 04'32					
min. Earth dist.	4467 Dec 22 04:26	2° \mathbb{E} 12'08	3.99309 AU	conjunction	4473 Dec 18 00:34	26° \mathbb{Z} 52'25	0°37'24
opposition	4467 Dec 23 16:08	2° \mathbb{E} 00'00	-0°48'51	minimum elong	4473 Dec 18 00:35	26° \mathbb{Z} 52'26	0°37'25
	4468 Jan 07 19:49	30° \mathbb{R} \mathbb{I}		morning rise	4473 Dec 30 17:25	29° \mathbb{Z} 39'18	
direct	4468 Feb 19 15:44	27° \mathbb{I} 03'38			4474 Jan 01 07:24	0° \mathbb{Z}	
	4468 Apr 02 07:26	0° \mathbb{E}		retrograde	4474 May 01 03:29	16° \mathbb{Z} 45'55	
evening set	4468 Jun 25 00:55	16° \mathbb{E} 30'22		opposition	4474 Jul 01 01:51	11° \mathbb{Z} 53'49	0°35'12
				min. Earth dist.	4474 Jul 02 15:08	11° \mathbb{Z} 41'55	4.36591 AU
conjunction	4468 Jul 08 17:41	19° \mathbb{E} 42'49	-0°16'17	direct	4474 Sep 01 11:50	6° \mathbb{Z} 53'41	
minimum elong	4468 Jul 08 17:42	19° \mathbb{E} 42'50	0°16'17	evening set	4475 Jan 05 02:15	24° \mathbb{Z} 48'25	
max. Earth dist.	4468 Jul 11 03:05	20° \mathbb{E} 16'27	6.05348 AU	max. Earth dist.	4475 Jan 15 15:21	27° \mathbb{Z} 10'39	6.29948 AU
morning rise	4468 Jul 22 12:16	22° \mathbb{E} 55'52					
	4468 Aug 23 00:45	0° Ω		conjunction	4475 Jan 17 19:23	27° \mathbb{Z} 40'01	0°08'32
retrograde	4468 Nov 28 06:30	12° Ω 25'54		minimum elong	4475 Jan 17 19:23	27° \mathbb{Z} 40'01	0°08'32
asc. node	4469 Jan 09 15:14	9° Ω 37'11		behind sun begin	4475 Jan 17 12:25	27° \mathbb{Z} 36'06	
min. Earth dist.	4469 Jan 25 10:40	7° Ω 33'22	4.12622 AU	behind sun end	4475 Jan 18 02:22	27° \mathbb{Z} 43'56	
opposition	4469 Jan 26 21:41	7° Ω 21'28	0°02'16		4475 Jan 28 03:33	0° \approx	
direct	4469 Mar 26 19:41	2° Ω 22'11		morning rise	4475 Jan 30 11:20	0° \approx 31'20	
	4469 Jul 03 08:45	15° Ω			4475 Apr 15 19:33	15° \approx	
evening set	4469 Jul 31 07:40	21° Ω 07'21		desc. node	4475 Apr 30 16:45	16° \approx 45'27	

retrograde	4475 Jun 03 14:41	18° \approx 30'11		min. Earth dist.	4481 Jan 30 05:15	12° Ω 26'28	4.14554 AU
	4475 Jul 23 11:08	15° \approx		opposition	4481 Jan 31 15:11	12° Ω 14'57	0°09'30
opposition	4475 Aug 03 09:21	13° \approx 37'13	-0°11'40	direct	4481 Mar 31 16:25	7° Ω 15'23	
min. Earth dist.	4475 Aug 04 21:11	13° \approx 25'44	4.22408 AU		4481 Jun 13 20:12	15° Ω	
direct	4475 Oct 03 20:17	8° \approx 39'17		evening set	4481 Aug 05 05:55	25° Ω 55'21	
	4475 Dec 09 19:36	15° \approx					
evening set	4476 Feb 06 07:55	27° \approx 13'47		conjunction	4481 Aug 18 22:02	28° Ω 59'49	0°23'00
max. Earth dist.	4476 Feb 17 07:32	29° \approx 47'14	6.14631 AU	minimum elong	4481 Aug 18 22:01	28° Ω 59'48	0°23'01
	4476 Feb 18 05:23	0° \approx		max. Earth dist.	4481 Aug 20 18:27	29° Ω 24'49	6.22421 AU
					4481 Aug 23 09:00	0° \approx	
conjunction	4476 Feb 19 01:45	0° \approx 11'53	-0°24'16	morning rise	4481 Sep 01 13:56	2° \approx 03'48	
minimum elong	4476 Feb 19 01:44	0° \approx 11'53	0°24'16	retrograde	4482 Jan 04 08:42	20° \approx 13'31	
morning rise	4476 Mar 02 20:02	3° \approx 10'29		min. Earth dist.	4482 Mar 04 09:26	15° \approx 19'21	4.29893 AU
retrograde	4476 Jul 08 11:27	22° \approx 19'46		opposition	4482 Mar 05 06:57	15° \approx 12'09	0°54'35
opposition	4476 Sep 06 23:09	17° \approx 24'26	-0°58'06	direct	4482 May 04 15:44	10° \approx 10'36	
min. Earth dist.	4476 Sep 07 19:39	17° \approx 17'46	4.07101 AU	evening set	4482 Sep 08 05:51	28° \approx 10'25	
direct	4476 Nov 05 23:22	12° \approx 28'55			4482 Sep 16 14:55	0° \approx	
	4477 Mar 04 01:56	0° \approx					
evening set	4477 Mar 11 14:34	1° \approx 47'10		conjunction	4482 Sep 21 16:46	1° \approx 06'39	0°48'27
				minimum elong	4482 Sep 21 16:44	1° \approx 06'38	0°48'27
conjunction	4477 Mar 24 12:22	4° \approx 52'59	-0°50'17	max. Earth dist.	4482 Sep 22 12:17	1° \approx 17'20	6.36606 AU
minimum elong	4477 Mar 24 12:20	4° \approx 52'58	0°50'16	morning rise	4482 Oct 05 01:43	4° \approx 01'45	
max. Earth dist.	4477 Mar 23 22:02	4° \approx 44'22	6.00711 AU	retrograde	4483 Feb 04 00:22	21° \approx 15'34	
morning rise	4477 Apr 06 11:50	7° \approx 59'58		opposition	4483 Apr 05 06:52	16° \approx 17'54	1°20'55
retrograde	4477 Aug 15 11:46	28° \approx 16'04		min. Earth dist.	4483 Apr 05 03:19	16° \approx 19'04	4.41946 AU
opposition	4477 Oct 14 11:31	23° \approx 17'16	-1°25'57	direct	4483 Jun 05 21:41	11° \approx 15'36	
min. Earth dist.	4477 Oct 14 09:57	23° \approx 17'47	3.95974 AU	evening set	4483 Oct 10 07:52	28° \approx 47'32	
direct	4477 Dec 12 03:55	18° \approx 23'21			4483 Oct 15 23:02	0° \approx	
	4478 Mar 12 17:19	0° \approx					
evening set	4478 Apr 16 23:45	8° \approx 11'47		conjunction	4483 Oct 23 11:55	1° \approx 37'26	0°59'07
				minimum elong	4483 Oct 23 11:55	1° \approx 37'26	0°59'08
conjunction	4478 Apr 30 04:30	11° \approx 24'11	-0°58'10	max. Earth dist.	4483 Oct 23 01:30	1° \approx 31'49	6.45635 AU
minimum elong	4478 Apr 30 04:31	11° \approx 24'11	0°58'11	morning rise	4483 Nov 05 13:37	4° \approx 26'05	
max. Earth dist.	4478 May 01 00:42	11° \approx 36'28	5.93424 AU		4483 Dec 29 10:42	15° \approx	
morning rise	4478 May 13 12:08	14° \approx 38'10		retrograde	4484 Mar 04 22:17	21° \approx 09'35	
	4478 May 15 00:19	15° \approx		opposition	4484 May 04 12:26	16° \approx 15'04	1°24'31
	4478 Jul 24 15:50	0° \approx		min. Earth dist.	4484 May 05 04:05	16° \approx 10'01	4.47515 AU
retrograde	4478 Sep 22 23:02	5° \approx 25'19			4484 May 14 07:25	15° \approx	
opposition	4478 Nov 21 14:53	0° \approx 22'48	-1°20'09	direct	4484 Jul 06 00:36	11° \approx 12'49	
min. Earth dist.	4478 Nov 20 14:18	0° \approx 31'06	3.93489 AU		4484 Aug 27 11:34	15° \approx	
	4478 Nov 24 10:33	30° \approx		evening set	4484 Nov 09 02:41	28° \approx 34'12	
direct	4479 Jan 18 11:35	25° \approx 28'25			4484 Nov 15 18:31	0° \approx	
	4479 Mar 12 18:37	0° \approx		max. Earth dist.	4484 Nov 20 15:25	1° \approx 03'02	6.47292 AU
evening set	4479 May 24 16:07	15° \approx 18'22					
				conjunction	4484 Nov 22 01:06	1° \approx 21'13	0°53'43
conjunction	4479 Jun 07 04:39	18° \approx 33'17	-0°42'58	minimum elong	4484 Nov 22 01:07	1° \approx 21'13	0°53'43
minimum elong	4479 Jun 07 04:41	18° \approx 33'18	0°42'58	morning rise	4484 Dec 04 20:47	4° \approx 07'02	
max. Earth dist.	4479 Jun 09 04:45	19° \approx 02'13	5.95919 AU	retrograde	4485 Apr 04 01:41	20° \approx 49'09	
morning rise	4479 Jun 20 20:04	21° \approx 49'31		opposition	4485 Jun 03 22:51	15° \approx 56'35	1°06'04
	4479 Jul 26 13:13	0° \approx		min. Earth dist.	4485 Jun 05 04:49	15° \approx 47'00	4.45215 AU
retrograde	4479 Oct 30 03:56	12° \approx 13'24		direct	4485 Aug 05 16:53	10° \approx 55'12	
min. Earth dist.	4479 Dec 27 04:55	7° \approx 20'59	4.00689 AU	evening set	4485 Dec 09 11:38	28° \approx 25'14	
opposition	4479 Dec 28 16:54	7° \approx 08'43	-0°42'12		4485 Dec 16 17:02	0° \approx	
direct	4480 Feb 24 19:16	2° \approx 11'55		max. Earth dist.	4485 Dec 20 04:23	0° \approx 45'45	6.41135 AU
evening set	4480 Jun 30 04:31	21° \approx 34'09					
				conjunction	4485 Dec 22 06:00	1° \approx 13'02	0°33'57
conjunction	4480 Jul 13 21:48	24° \approx 45'59	-0°11'23	minimum elong	4485 Dec 22 06:02	1° \approx 13'03	0°33'57
minimum elong	4480 Jul 13 21:49	24° \approx 46'00	0°11'23	morning rise	4486 Jan 03 22:28	4° \approx 00'04	
behind sun begin	4480 Jul 13 15:48	24° \approx 42'30		retrograde	4486 May 05 15:00	21° \approx 10'22	
behind sun end	4480 Jul 14 03:49	24° \approx 49'29		opposition	4486 Jul 05 13:04	16° \approx 18'15	0°29'18
max. Earth dist.	4480 Jul 16 08:07	25° \approx 20'00	6.07102 AU	min. Earth dist.	4486 Jul 07 03:35	16° \approx 05'58	4.35507 AU
morning rise	4480 Jul 27 16:19	27° \approx 58'12		direct	4486 Sep 05 22:18	11° \approx 18'23	
	4480 Aug 05 12:34	0° \approx		evening set	4487 Jan 09 09:42	29° \approx 15'42	
	4480 Oct 25 13:54	15° \approx			4487 Jan 12 16:31	0° \approx	
asc. node	4480 Nov 19 10:59	17° \approx 00'59		max. Earth dist.	4487 Jan 19 21:47	1° \approx 37'51	6.28576 AU
retrograde	4480 Dec 03 00:26	17° \approx 19'05					
	4481 Jan 10 04:15	15° \approx		conjunction	4487 Jan 22 02:39	2° \approx 07'47	0°04'09

minimum elong	4487 Jan 22 02:38	2° \approx 07'46	0°04'10	max. Earth dist.	4492 Jul 21 09:54	0° Ω 20'07	6.08483 AU
behind sun begin	4487 Jan 21 18:47	2° \approx 03'21		morning rise	4492 Aug 01 19:25	2° Ω 58'27	
behind sun end	4487 Jan 22 10:29	2° \approx 12'11			4492 Sep 27 19:02	15° Ω	
morning rise	4487 Feb 03 18:41	4° \approx 59'40		asc. node	4492 Sep 30 03:48	15° Ω 25'18	
desc. node	4487 Mar 12 12:22	12° \approx 54'18		retrograde	4492 Dec 07 15:56	22° Ω 11'26	
	4487 Mar 23 08:21	15° \approx		min. Earth dist.	4493 Feb 03 22:28	17° Ω 18'53	4.16191 AU
retrograde	4487 Jun 08 06:01	23° \approx 05'12		opposition	4493 Feb 05 08:07	17° Ω 07'28	0°16'32
opposition	4487 Aug 08 01:25	18° \approx 11'57	-0°18'15		4493 Feb 21 13:49	15° \mathbb{R} Ω	
min. Earth dist.	4487 Aug 09 11:25	18° \approx 01'01	4.20827 AU	direct	4493 Apr 05 12:18	12° Ω 07'31	
	4487 Sep 04 04:06	15° \mathbb{R} \approx			4493 May 18 17:42	15° Ω	
direct	4487 Oct 08 08:09	13° \approx 14'16			4493 Aug 06 22:33	0° \mathbb{P}	
	4487 Nov 11 06:45	15° \approx		evening set	4493 Aug 10 03:57	0° \mathbb{P} 43'03	
	4488 Feb 02 15:35	0° \mathbb{X}					
evening set	4488 Feb 10 19:25	1° \mathbb{X} 53'01		conjunction	4493 Aug 23 19:42	3° \mathbb{P} 46'32	0°27'17
max. Earth dist.	4488 Feb 21 22:32	4° \mathbb{X} 29'02	6.12971 AU	minimum elong	4493 Aug 23 19:40	3° \mathbb{P} 46'32	0°27'16
				max. Earth dist.	4493 Aug 25 14:21	4° \mathbb{P} 10'28	6.24194 AU
conjunction	4488 Feb 23 13:35	4° \mathbb{X} 51'55	-0°28'22	morning rise	4493 Sep 06 10:45	6° \mathbb{P} 49'23	
minimum elong	4488 Feb 23 13:34	4° \mathbb{X} 51'55	0°28'23	retrograde	4494 Jan 08 19:42	24° \mathbb{P} 50'57	
morning rise	4488 Mar 07 08:11	7° \mathbb{X} 51'23		opposition	4494 Mar 09 18:22	19° \mathbb{P} 50'00	0°59'33
retrograde	4488 Jul 13 11:37	27° \mathbb{X} 09'08		min. Earth dist.	4494 Mar 08 22:58	19° \mathbb{P} 56'29	4.31631 AU
opposition	4488 Sep 11 21:09	22° \mathbb{X} 13'25	-1°03'15	direct	4494 May 09 08:00	14° \mathbb{P} 48'14	
min. Earth dist.	4488 Sep 12 16:41	22° \mathbb{X} 07'03	4.05486 AU		4494 Aug 31 04:34	0° $\underline{\Omega}$	
direct	4488 Nov 10 18:11	17° \mathbb{X} 18'07		evening set	4494 Sep 12 21:44	2° $\underline{\Omega}$ 43'37	
	4489 Feb 15 12:34	0° \mathbb{Y}					
evening set	4489 Mar 16 08:09	6° \mathbb{Y} 40'58		conjunction	4494 Sep 26 07:40	5° $\underline{\Omega}$ 38'49	0°50'54
				minimum elong	4494 Sep 26 07:38	5° $\underline{\Omega}$ 38'48	0°50'54
conjunction	4489 Mar 29 06:39	9° \mathbb{Y} 47'45	-0°52'33	max. Earth dist.	4494 Sep 26 23:09	5° $\underline{\Omega}$ 47'16	6.38152 AU
minimum elong	4489 Mar 29 06:38	9° \mathbb{Y} 47'44	0°52'33	morning rise	4494 Oct 09 15:42	8° $\underline{\Omega}$ 32'53	
max. Earth dist.	4489 Mar 28 18:39	9° \mathbb{Y} 40'30	5.99283 AU	retrograde	4495 Feb 08 06:16	25° $\underline{\Omega}$ 40'41	
morning rise	4489 Apr 11 07:12	12° \mathbb{Y} 55'50		opposition	4495 Apr 09 14:28	20° $\underline{\Omega}$ 43'22	1°22'46
	4489 Jul 05 00:54	0° \mathbb{Z}		min. Earth dist.	4495 Apr 09 13:14	20° $\underline{\Omega}$ 43'46	4.43184 AU
retrograde	4489 Aug 20 14:38	3° \mathbb{Z} 19'00		direct	4495 Jun 10 09:05	15° $\underline{\Omega}$ 40'56	
	4489 Oct 06 17:48	30° \mathbb{R} \mathbb{Y}			4495 Sep 29 17:35	0° \mathbb{M}	
opposition	4489 Oct 19 13:28	28° \mathbb{Y} 19'43	-1°27'17	evening set	4495 Oct 14 17:52	3° \mathbb{M} 09'51	
min. Earth dist.	4489 Oct 19 08:36	28° \mathbb{Y} 21'20	3.94905 AU				
direct	4489 Dec 17 00:55	23° \mathbb{Y} 25'50		conjunction	4495 Oct 27 21:09	5° \mathbb{M} 59'05	0°59'17
	4490 Feb 20 11:58	0° \mathbb{Z}		minimum elong	4495 Oct 27 21:09	5° \mathbb{M} 59'05	0°59'16
evening set	4490 Apr 21 23:44	13° \mathbb{Z} 17'27		max. Earth dist.	4495 Oct 27 08:41	5° \mathbb{M} 52'23	6.46449 AU
	4490 Apr 29 00:43	15° \mathbb{Z}		morning rise	4495 Nov 09 21:43	8° \mathbb{M} 47'01	
					4495 Dec 09 23:57	15° \mathbb{M}	
conjunction	4490 May 05 05:35	16° \mathbb{Z} 30'39	-0°57'26	retrograde	4496 Mar 09 02:36	25° \mathbb{M} 28'00	
minimum elong	4490 May 05 05:36	16° \mathbb{Z} 30'40	0°57'26	opposition	4496 May 08 18:51	20° \mathbb{M} 33'47	1°23'08
max. Earth dist.	4490 May 06 04:53	16° \mathbb{Z} 44'50	5.92817 AU	min. Earth dist.	4496 May 09 12:15	20° \mathbb{M} 28'11	4.47828 AU
morning rise	4490 May 18 14:26	19° \mathbb{Z} 45'29		direct	4496 Jul 10 08:53	15° \mathbb{M} 31'37	
	4490 Jul 02 11:00	0° \mathbb{I}			4496 Oct 30 19:38	0° \mathbb{Z}	
retrograde	4490 Sep 28 02:27	10° \mathbb{I} 34'35		evening set	4496 Nov 13 09:35	2° \mathbb{Z} 52'23	
opposition	4490 Nov 26 17:08	5° \mathbb{I} 31'40	-1°16'40	max. Earth dist.	4496 Nov 24 17:24	5° \mathbb{Z} 18'47	6.47049 AU
min. Earth dist.	4490 Nov 25 15:05	5° \mathbb{I} 40'29	3.93412 AU				
direct	4491 Jan 23 13:33	0° \mathbb{I} 36'59		conjunction	4496 Nov 26 07:07	5° \mathbb{Z} 39'10	0°51'41
evening set	4491 May 29 19:32	20° \mathbb{I} 27'01		minimum elong	4496 Nov 26 07:08	5° \mathbb{Z} 39'11	0°51'42
				morning rise	4496 Dec 09 02:19	8° \mathbb{Z} 24'53	
conjunction	4491 Jun 12 09:17	23° \mathbb{I} 42'14	-0°39'22	retrograde	4497 Apr 08 10:17	25° \mathbb{Z} 08'36	
minimum elong	4491 Jun 12 09:19	23° \mathbb{I} 42'15	0°39'23	opposition	4497 Jun 08 07:15	20° \mathbb{Z} 16'10	1°01'49
max. Earth dist.	4491 Jun 14 13:08	24° \mathbb{I} 13'21	5.96402 AU	min. Earth dist.	4497 Jun 09 15:47	20° \mathbb{Z} 05'47	4.44411 AU
morning rise	4491 Jun 26 01:30	26° \mathbb{I} 58'37		direct	4497 Aug 10 02:08	15° \mathbb{Z} 14'54	
	4491 Jul 08 21:42	0° \mathbb{O}			4497 Nov 30 20:25	0° \mathbb{Z}	
retrograde	4491 Nov 04 04:26	17° \mathbb{O} 18'12		evening set	4497 Dec 13 18:22	2° \mathbb{Z} 47'15	
min. Earth dist.	4492 Jan 01 03:20	12° \mathbb{O} 25'48	4.01669 AU	max. Earth dist.	4497 Dec 24 09:33	5° \mathbb{Z} 07'20	6.39819 AU
opposition	4492 Jan 02 15:38	12° \mathbb{O} 13'25	-0°35'28				
direct	4492 Feb 29 19:17	7° \mathbb{O} 16'15		conjunction	4497 Dec 26 12:30	5° \mathbb{Z} 35'25	0°30'12
evening set	4492 Jul 05 07:09	26° \mathbb{O} 35'31		minimum elong	4497 Dec 26 12:32	5° \mathbb{Z} 35'26	0°30'12
				morning rise	4498 Jan 08 04:39	8° \mathbb{Z} 22'52	
conjunction	4492 Jul 19 00:37	29° \mathbb{O} 46'49	-0°06'31	retrograde	4498 May 10 03:25	25° \mathbb{Z} 39'02	
minimum elong	4492 Jul 19 00:37	29° \mathbb{O} 46'50	0°06'32	opposition	4498 Jul 10 02:24	20° \mathbb{Z} 46'50	0°23'01
behind sun begin	4492 Jul 18 16:46	29° \mathbb{O} 42'17		min. Earth dist.	4498 Jul 11 16:19	20° \mathbb{Z} 34'44	4.33749 AU
behind sun end	4492 Jul 19 08:29	29° \mathbb{O} 51'22		direct	4498 Sep 10 07:58	15° \mathbb{Z} 47'15	
	4492 Jul 19 23:18	0° Ω			4498 Dec 27 13:25	0° \approx	

evening set	4499 Jan 13 19:54	3°  49'32	conjunction	4504 Jul 25 05:32	4°  52'10 -0°01'29
desc. node	4499 Jan 20 02:15	5°  14'32	minimum elong	4504 Jul 25 05:31	4°  52'09 0°01'29
max. Earth dist.	4499 Jan 24 09:10	6°  13'02 6.26507 AU	behind sun begin	4504 Jul 24 21:08	4°  47'19
			behind sun end	4504 Jul 25 13:55	4°  56'59
conjunction	4499 Jan 26 12:48	6°  42'24 -0°00'33	max. Earth dist.	4504 Jul 27 14:23	5°  25'02 6.10783 AU
minimum elong	4499 Jan 26 12:48	6°  42'24 0°00'33	morning rise	4504 Aug 07 23:58	8°  02'34
behind sun begin	4499 Jan 26 04:50	6°  37'54	asc. node	4504 Aug 10 13:34	8°  23'46
behind sun end	4499 Jan 26 20:46	6°  46'55		4504 Sep 08 10:52	15°  0
morning rise	4499 Feb 08 05:01	9°  35'13	retrograde	4504 Dec 13 08:32	27°  04'17
	4499 Mar 04 17:13	15°  0	min. Earth dist.	4505 Feb 09 17:28	22°  01'20 4.18679 AU
retrograde	4499 Jun 13 04:56	27°  50'15	opposition	4505 Feb 11 01:05	22°  00'38 0°23'28
opposition	4499 Aug 12 22:24	22°  56'46 -0°25'07	direct	4505 Apr 11 11:04	17°  00'22
min. Earth dist.	4499 Aug 14 08:10	22°  45'54 4.18567 AU		4505 Jul 21 18:11	0°  0
direct	4499 Oct 13 01:47	17°  59'25	evening set	4505 Aug 16 00:51	5°  02'39
	4500 Jan 16 13:55	0°  0			
evening set	4500 Feb 15 12:10	6°  44'47	conjunction	4505 Aug 29 15:53	8°  03'47 0°31'21
max. Earth dist.	4500 Feb 26 17:39	9°  22'59 6.10718 AU	minimum elong	4505 Aug 29 15:52	8°  03'46 0°31'21
			max. Earth dist.	4505 Aug 31 07:45	8°  03'00 6.26652 AU
conjunction	4500 Feb 28 06:45	9°  44'50 -0°32'32	morning rise	4505 Sep 12 06:04	11°  03'21
minimum elong	4500 Feb 28 06:44	9°  44'49 0°32'33	retrograde	4506 Jan 14 02:14	29°  02'46
morning rise	4500 Mar 13 02:03	12°  45'34	min. Earth dist.	4506 Mar 14 10:05	24°  02'09 4.33866 AU
	4500 Jun 11 13:44	0°  0	opposition	4506 Mar 15 03:45	24°  02'17 1°04'03
retrograde	4500 Jul 19 16:55	2°  01'40	direct	4506 May 14 21:37	19°  02'20
	4500 Aug 27 03:02	30°  0		4506 Aug 14 19:41	0°  0
opposition	4500 Sep 18 01:37	27°  01'55 -1°08'19	evening set	4506 Sep 18 10:31	7°  01'58
min. Earth dist.	4500 Sep 18 17:24	27°  01'46 4.03457 AU			
direct	4500 Nov 16 16:25	22°  02'57	conjunction	4506 Oct 01 19:27	10°  05'00 0°52'59
	4501 Jan 27 16:29	0°  0	minimum elong	4506 Oct 01 19:25	10°  05'00 0°52'59
evening set	4501 Mar 22 09:08	11°  05'57	max. Earth dist.	4506 Oct 02 06:46	10°  05'10 6.39991 AU
			morning rise	4506 Oct 15 02:17	12°  05'52
conjunction	4501 Apr 04 08:30	14°  05'53 -0°54'36	retrograde	4507 Feb 13 10:04	29°  05'24
minimum elong	4501 Apr 04 08:29	14°  05'52 0°54'36	opposition	4507 Apr 14 19:26	25°  02'35 1°24'07
max. Earth dist.	4501 Apr 04 01:11	14°  05'27 5.97672 AU	min. Earth dist.	4507 Apr 14 21:35	25°  01'53 4.44507 AU
morning rise	4501 Apr 17 10:05	18°  09'11	direct	4507 Jun 15 18:49	20°  00'07
	4501 Jun 09 13:37	0°  0		4507 Sep 13 13:47	0°  0
retrograde	4501 Aug 27 01:38	8°  39'57	evening set	4507 Oct 20 00:55	7°  02'60
opposition	4501 Oct 25 22:47	3°  40'09 -1°28'00	max. Earth dist.	4507 Nov 01 09:26	10°  05'07 6.47136 AU
min. Earth dist.	4501 Oct 25 14:57	3°  42'46 3.93898 AU			
	4501 Nov 26 04:08	30°  0	conjunction	4507 Nov 02 03:13	10°  05'14 0°59'07
direct	4501 Dec 23 07:11	28°  05'46'20	minimum elong	4507 Nov 02 03:13	10°  05'14 0°59'07
	4502 Jan 19 06:42	0°  0	morning rise	4507 Nov 15 03:00	13°  02'00
	4502 Apr 12 22:04	15°  0		4507 Nov 24 09:25	15°  0
evening set	4502 Apr 28 07:01	18°  40'38	retrograde	4508 Mar 14 05:41	29°  04'19
			opposition	4508 May 13 22:59	24°  04'23 1°21'21
conjunction	4502 May 11 14:13	21°  45'35 -0°56'11	min. Earth dist.	4508 May 14 19:18	24°  04'50 4.47857 AU
minimum elong	4502 May 11 14:14	21°  45'35 0°56'11	direct	4508 Jul 15 14:52	19°  05'12
max. Earth dist.	4502 May 12 19:37	22°  42'29 5.92534 AU		4508 Oct 14 23:22	0°  0
morning rise	4502 May 25 00:12	25°  41'06	evening set	4508 Nov 18 14:05	7°  06'28
	4502 Jun 14 09:10	0°  0	max. Earth dist.	4508 Nov 29 19:35	9°  03'50 6.46409 AU
retrograde	4502 Oct 04 13:04	15°  02'59'03			
min. Earth dist.	4502 Dec 01 21:07	11°  05'25 3.93925 AU	conjunction	4508 Dec 01 11:12	9°  03'17 0°49'26
opposition	4502 Dec 03 01:29	10°  05'54'49 -1°12'18	minimum elong	4508 Dec 01 11:13	9°  03'18 0°49'27
direct	4503 Jan 29 21:20	6°  00'58	morning rise	4508 Dec 14 05:41	12°  03'39'01
evening set	4503 Jun 05 04:36	25°  02'48'29	retrograde	4509 Apr 13 16:20	29°  03'25'52
			opposition	4509 Jun 13 14:34	24°  03'33 0°57'20
conjunction	4503 Jun 18 19:02	29°  02'33'29 -0°35'17	min. Earth dist.	4509 Jun 15 00:21	24°  03'22'47 4.43135 AU
minimum elong	4503 Jun 18 19:04	29°  02'33'30 0°35'16	direct	4509 Aug 15 08:12	19°  03'22'27
max. Earth dist.	4503 Jun 21 00:40	29°  02'33'33 5.97652 AU		4509 Nov 14 23:21	0°  0
	4503 Jun 22 17:34	0°  0	evening set	4509 Dec 19 00:26	7°  03'08'39
morning rise	4503 Jul 02 12:07	2°  01'37	max. Earth dist.	4509 Dec 29 13:02	9°  03'27'59 6.37987 AU
retrograde	4503 Nov 10 04:28	22°  03'11'16			
min. Earth dist.	4504 Jan 07 03:33	17°  03'39'16 4.03524 AU	conjunction	4509 Dec 31 18:09	9°  03'57'23 0°26'20
opposition	4504 Jan 08 17:14	17°  02'26'25 -0°28'12	minimum elong	4509 Dec 31 18:11	9°  03'57'24 0°26'20
direct	4504 Mar 06 22:52	12°  02'28'51	morning rise	4510 Jan 13 10:19	12°  04'53'32
	4504 Jul 04 01:59	0°  0		4510 May 05 17:25	0°  0
evening set	4504 Jul 11 11:58	1°  04'15'53	retrograde	4510 May 15 19:13	0°  09'30
				4510 May 25 20:15	30°  0

opposition	4510 Jul 15 16:36	25°  17'12	0°16'36	direct	4516 Mar 12 03:34	17°  37'29	
min. Earth dist.	4510 Jul 17 07:38	25°  04'44	4.31455 AU		4516 Jun 16 09:01	0° 	
direct	4510 Sep 15 20:02	20°  17'49		asc. node	4516 Jun 19 16:53	0°  42'43	
desc. node	4510 Dec 01 00:21	28°  06'56		evening set	4516 Jul 16 15:10	6°  43'19	
	4510 Dec 10 22:25	0° 					
evening set	4511 Jan 19 07:14	8°  26'52		conjunction	4516 Jul 30 08:40	9°  52'27	0°03'38
max. Earth dist.	4511 Jan 29 21:39	10°  51'51	6.23942 AU	minimum elong	4516 Jul 30 08:39	9°  52'27	0°03'38
				behind sun begin	4516 Jul 30 00:21	9°  47'42	
conjunction	4511 Feb 01 00:22	11°  20'51	-0°05'14	behind sun end	4516 Jul 30 16:57	9°  57'12	
minimum elong	4511 Feb 01 00:21	11°  20'50	0°05'13	max. Earth dist.	4516 Aug 01 16:51	10°  24'44	6.13227 AU
behind sun begin	4511 Jan 31 16:37	11°  16'26		morning rise	4516 Aug 13 02:46	13°  01'34	
behind sun end	4511 Feb 01 08:05	11°  25'14			4516 Aug 21 20:11	15° 	
morning rise	4511 Feb 13 16:51	14°  14'49			4516 Nov 13 12:44	0° 	
	4511 Feb 17 00:25	15° 		retrograde	4516 Dec 17 21:45	1°  15'59	
	4511 May 07 22:30	0° 			4517 Jan 21 01:38	30° 	
retrograde	4511 Jun 19 04:31	2°  41'02		min. Earth dist.	4517 Feb 14 09:35	26°  59'08	4.21147 AU
	4511 Aug 01 00:56	30° 		opposition	4517 Feb 15 16:23	26°  48'44	0°30'11
opposition	4511 Aug 18 21:23	27°  47'16	-0°31'54	direct	4517 Apr 16 06:07	21°  48'11	
min. Earth dist.	4511 Aug 20 04:36	27°  37'12	4.15934 AU		4517 Jul 02 16:37	0° 	
direct	4511 Oct 18 18:34	22°  50'17		evening set	4517 Aug 20 20:20	10°  10'45	
	4511 Dec 28 16:45	0° 					
evening set	4512 Feb 21 07:45	11°  43'35		conjunction	4517 Sep 03 10:32	13°  10'33	0°35'13
max. Earth dist.	4512 Mar 03 17:31	14°  25'11	6.08249 AU	minimum elong	4517 Sep 03 10:30	13°  10'32	0°35'13
				max. Earth dist.	4517 Sep 04 21:33	13°  10'30	6.28950 AU
conjunction	4512 Mar 05 02:49	14°  44'54	-0°36'31	morning rise	4517 Sep 16 23:48	16°  10'35	
minimum elong	4512 Mar 05 02:47	14°  44'53	0°36'31		4517 Nov 28 07:00	0° 	
morning rise	4512 Mar 17 22:54	17°  47'02		retrograde	4518 Jan 18 10:43	3°  53'18	
	4512 May 13 12:25	0° 			4518 Mar 11 01:54	30° 	
retrograde	4512 Jul 25 03:34	7°  26'58		opposition	4518 Mar 19 12:26	28°  53'23	1°08'12
opposition	4512 Sep 23 09:24	2°  30'20	-1°12'55	min. Earth dist.	4518 Mar 18 22:27	28°  58'02	4.35825 AU
min. Earth dist.	4512 Sep 23 22:09	2°  26'09	4.01390 AU	direct	4518 May 19 12:07	23°  51'19	
	4512 Oct 13 11:04	30° 			4518 Jul 25 16:09	0° 	
direct	4512 Nov 21 19:38	27°  43'37		evening set	4518 Sep 22 22:46	11°  36'22	
	4512 Dec 30 12:04	0° 					
evening set	4513 Mar 27 13:07	17°  10'33		conjunction	4518 Oct 06 06:50	14°  29'28	0°54'48
				minimum elong	4518 Oct 06 06:49	14°  29'28	0°54'48
conjunction	4513 Apr 09 13:36	20°  19'37	-0°56'12	max. Earth dist.	4518 Oct 06 14:11	14°  33'28	6.41469 AU
minimum elong	4513 Apr 09 13:36	20°  19'37	0°56'13	morning rise	4518 Oct 19 12:37	17°  21'20	
max. Earth dist.	4513 Apr 09 12:51	20°  19'10	5.96219 AU		4518 Dec 25 04:20	0° 	
morning rise	4513 Apr 22 16:17	23°  30'06		retrograde	4519 Feb 17 13:20	4°  18'03	
	4513 May 20 09:44	0° 			4519 Apr 14 02:58	30° 	
retrograde	4513 Sep 01 15:07	14°  07'00		opposition	4519 Apr 19 00:46	29°  21'43	1°25'04
opposition	4513 Oct 31 10:27	9°  06'39	-1°27'55	min. Earth dist.	4519 Apr 19 05:03	29°  20'19	4.45441 AU
min. Earth dist.	4513 Oct 30 22:52	9°  10'31	3.93259 AU	direct	4519 Jun 20 02:16	24°  19'16	
direct	4513 Dec 28 15:14	4°  12'52			4519 Aug 24 07:26	0° 	
	4514 Mar 25 03:04	15° 		evening set	4519 Oct 24 08:25	11°  14'35	
evening set	4514 May 03 16:40	24°  07'58					
				conjunction	4519 Nov 06 09:55	14°  31'45	0°58'39
conjunction	4514 May 17 00:49	27°  08'22	-0°54'25	minimum elong	4519 Nov 06 09:55	14°  31'45	0°58'39
minimum elong	4514 May 17 00:51	27°  08'22	0°54'26	max. Earth dist.	4519 Nov 05 12:45	14°  20'22	6.47462 AU
max. Earth dist.	4514 May 18 10:01	27°  04'23	5.92741 AU		4519 Nov 08 14:25	15° 	
	4514 May 27 20:43	0° 		morning rise	4519 Nov 19 08:48	17°  18'39	
morning rise	4514 May 30 12:08	0°  38'17			4520 Jan 26 04:23	0° 	
retrograde	4514 Oct 09 20:18	21°  12'41		retrograde	4520 Mar 18 11:01	3°  57'36	
min. Earth dist.	4514 Dec 07 02:18	16°  11'31	3.94950 AU		4520 May 10 21:24	30° 	
opposition	4514 Dec 08 09:45	16°  12'03	-1°07'16	opposition	4520 May 18 04:55	29°  10'04	1°19'09
direct	4515 Feb 04 05:37	11°  12'53		min. Earth dist.	4520 May 19 03:56	28°  56'40	4.47563 AU
	4515 Jun 05 17:43	0° 		direct	4520 Jul 19 22:26	24°  10'02	
evening set	4515 Jun 10 13:38	1°  08'26			4520 Sep 25 02:15	0° 	
				evening set	4520 Nov 22 20:14	11°  17'42	
conjunction	4515 Jun 24 04:53	4°  22'58	-0°30'54	max. Earth dist.	4520 Dec 03 20:59	13°  17'56	6.45504 AU
minimum elong	4515 Jun 24 04:55	4°  22'59	0°30'54				
max. Earth dist.	4515 Jun 26 12:55	4°  56'20	5.99377 AU	conjunction	4520 Dec 05 16:41	14°  11'39	0°46'52
morning rise	4515 Jul 07 22:22	7°  38'27		minimum elong	4520 Dec 05 16:42	14°  11'40	0°46'52
retrograde	4515 Nov 15 04:53	27°  04'19		morning rise	4520 Dec 18 10:51	16°  17'36	
min. Earth dist.	4516 Jan 12 04:48	22°  04'00	4.05713 AU		4521 Feb 25 20:33	0° 	
opposition	4516 Jan 13 17:35	22°  03'28	-0°20'47	retrograde	4521 Apr 18 02:38	3°  48'34	

	4521 Jun 09 15:08	30° 	retrograde	4526 Oct 15 01:19	26° 	
opposition	4521 Jun 18 00:26	28°  56'23 0°52'25	min. Earth dist.	4526 Dec 12 06:06	21°  47'45 3.96340 AU	
min. Earth dist.	4521 Jun 19 11:47	28°  45'06 4.41675 AU	opposition	4526 Dec 13 14:14	21°  36'50 -1°01'50	
direct	4521 Aug 19 17:00	23°  55'29	direct	4527 Feb 09 11:53	16°  41'15	
	4521 Oct 25 23:14	0° 		4527 May 19 07:31	0° 	
evening set	4521 Dec 23 08:37	11°  36'05	evening set	4527 Jun 15 18:35	6°  18'45	
max. Earth dist.	4522 Jan 02 21:43	13°  35'16 6.36091 AU				
			conjunction	4527 Jun 29 10:23	9°  32'38 -0°26'25	
conjunction	4522 Jan 05 02:19	14°  32'5'31 0°22'12	minimum elong	4527 Jun 29 10:25	9°  32'39 0°26'26	
minimum elong	4522 Jan 05 02:20	14°  32'5'31 0°22'13	max. Earth dist.	4527 Jul 01 20:01	10°  30'45 6.01280 AU	
morning rise	4522 Jan 17 18:14	17°  31'4'22	morning rise	4527 Jul 13 04:17	12°  34'7'21	
	4522 Mar 23 19:30	0° 		4527 Oct 09 20:31	0° 	
retrograde	4522 May 20 11:48	4°  46'27	retrograde	4527 Nov 19 23:19	2°  39'01	
	4522 Jul 19 14:55	30° 		4527 Dec 30 22:43	30° 	
opposition	4522 Jul 20 09:22	29°  35'4'06 0°09'53	min. Earth dist.	4528 Jan 17 00:11	27°  34'5'4 4.07922 AU	
min. Earth dist.	4522 Jul 21 23:37	29°  34'1'54 4.29248 AU	opposition	4528 Jan 18 13:18	27°  34'1'7 -0°13'30	
direct	4522 Sep 20 08:31	24°  35'5'08	direct	4528 Mar 17 02:06	22°  35'5'4	
desc. node	4522 Oct 09 23:55	25°  30'3'31	asc. node	4528 Apr 30 05:55	25°  39'4'8	
	4522 Nov 19 07:04	0° 		4528 May 27 14:56	0° 	
evening set	4523 Jan 23 20:49	13°  33'10'36	evening set	4528 Jul 21 14:19	11°  34'5'3	
	4523 Jan 31 19:56	15° 				
max. Earth dist.	4523 Feb 03 12:32	15°  37'08 6.21609 AU	conjunction	4528 Aug 04 07:29	14°  34'2'51 0°08'25	
			minimum elong	4528 Aug 04 07:28	14°  34'2'50 0°08'24	
conjunction	4523 Feb 05 13:57	16°  33'0'5'33 -0°09'55	behind sun begin	4528 Aug 04 00:11	14°  38'4'1	
minimum elong	4523 Feb 05 13:56	16°  33'0'5'33 0°09'56	behind sun end	4528 Aug 04 14:46	14°  46'5'9	
behind sun begin	4523 Feb 05 07:25	16°  31'4'49		4528 Aug 05 13:30	15° 	
behind sun end	4523 Feb 05 20:27	16°  30'9'17	max. Earth dist.	4528 Aug 06 11:53	15°  12'4'8 6.15538 AU	
morning rise	4523 Feb 18 06:53	19°  30'0'4'41	morning rise	4528 Aug 18 01:14	17°  30'4'3	
	4523 Apr 11 04:39	0° 		4528 Oct 16 00:19	0° 	
retrograde	4523 Jun 24 08:08	7°  37'3'3	retrograde	4528 Dec 22 09:00	6°  30'4'8	
opposition	4523 Aug 23 22:49	2°  34'2'9 -0°38'38	min. Earth dist.	4529 Feb 19 00:11	1°  37'1'8 4.23345 AU	
min. Earth dist.	4523 Aug 25 03:59	2°  34'0'4 4.13660 AU	opposition	4529 Feb 20 03:58	1°  37'5'7 0°36'27	
	4523 Sep 15 07:25	30° 		4529 Mar 03 05:10	30° 	
direct	4523 Oct 23 15:34	27°  34'6'53	direct	4529 Apr 20 23:24	26°  32'7'04	
	4523 Nov 30 10:51	0° 		4529 Jun 08 19:02	0° 	
evening set	4524 Feb 26 04:36	16°  34'4'41	evening set	4529 Aug 25 12:08	14°  34'2'58	
max. Earth dist.	4524 Mar 08 20:11	19°  32'2'4 6.06266 AU				
			conjunction	4529 Sep 08 01:46	17°  34'2'42 0°38'45	
conjunction	4524 Mar 10 00:20	19°  34'9'08 -0°40'18	minimum elong	4529 Sep 08 01:45	17°  34'2'41 0°38'46	
minimum elong	4524 Mar 10 00:18	19°  34'9'07 0°40'18	max. Earth dist.	4529 Sep 09 10:04	18°  34'0'33 6.30872 AU	
morning rise	4524 Mar 22 21:03	22°  34'5'2'26	morning rise	4529 Sep 21 14:00	20°  34'1'30	
	4524 Apr 23 00:50	0° 		4529 Nov 05 18:48	0° 	
retrograde	4524 Jul 30 12:47	12°  34'1'44	retrograde	4530 Jan 22 15:11	8°  34'1'52	
opposition	4524 Sep 28 17:24	7°  34'4'39 -1°17'00	opposition	4530 Mar 23 18:38	3°  34'1'28 1°11'51	
min. Earth dist.	4524 Sep 29 02:28	7°  34'1'40 3.99930 AU	min. Earth dist.	4530 Mar 23 06:29	3°  34'2'1'29 4.37356 AU	
direct	4524 Nov 26 22:20	2°  34'5'0'15		4530 Apr 20 00:49	30° 	
evening set	4525 Apr 01 17:05	22°  34'2'8'49	direct	4530 May 23 21:03	28°  34'1'5'18	
				4530 Jun 27 04:20	0° 	
conjunction	4525 Apr 14 18:20	25°  34'8'40 -0°57'22	evening set	4530 Sep 27 08:49	15°  34'5'7'08	
minimum elong	4525 Apr 14 18:19	25°  34'8'39 0°57'22				
max. Earth dist.	4525 Apr 14 21:49	25°  34'4'0'47 5.95409 AU	conjunction	4530 Oct 10 15:51	18°  34'4'2'6 0°56'17	
morning rise	4525 Apr 27 22:14	28°  34'5'0'02	minimum elong	4530 Oct 10 15:50	18°  34'4'2'5 0°56'16	
	4525 May 02 18:40	0° 	max. Earth dist.	4530 Oct 10 17:53	18°  34'5'0'32 6.42501 AU	
	4525 Jul 14 09:12	15° 	morning rise	4530 Oct 23 20:45	21°  34'4'0'31	
retrograde	4525 Sep 07 00:16	19°  34'0'12		4530 Dec 03 18:59	0° 	
	4525 Nov 01 23:56	15° 	retrograde	4531 Feb 21 18:20	8°  34'3'3'55	
opposition	4525 Nov 05 19:42	14°  34'2'9'16 -1°27'05	opposition	4531 Apr 23 05:17	3°  34'3'8'03 1°25'34	
min. Earth dist.	4525 Nov 05 03:56	14°  34'3'33 3.93216 AU	min. Earth dist.	4531 Apr 23 13:14	3°  34'3'5'28 4.45940 AU	
direct	4526 Jan 02 22:25	9°  34'5'2'2		4531 May 24 15:28	30° 	
	4526 Mar 02 14:44	15° 	direct	4531 Jun 24 10:23	28°  34'5'3'36	
evening set	4526 May 08 23:40	29°  34'2'9'13		4531 Jul 25 11:50	0° 	
	4526 May 11 02:41	0° 		4531 Oct 23 23:25	15° 	
			evening set	4531 Oct 28 15:05	15°  34'5'9'25	
conjunction	4526 May 22 09:00	2°  34'3'45 -0°52'15				
minimum elong	4526 May 22 09:01	2°  34'3'46 0°52'15	conjunction	4531 Nov 10 15:55	18°  34'3'47'20 0°57'52	
max. Earth dist.	4526 May 23 23:25	3°  34'0'7'03 5.93463 AU	minimum elong	4531 Nov 10 15:55	18°  34'3'47'20 0°57'53	
morning rise	4526 Jun 04 21:09	5°  34'5'9'46	max. Earth dist.	4531 Nov 09 15:13	18°  34'3'47'02 6.47393 AU	

morning rise	4531 Nov 23 14:03	21° \mathbb{M} 33'59			4537 Jun 20 08:56	15° \mathcal{B}
	4532 Jan 04 07:58	0° \mathcal{A}		retrograde	4537 Sep 12 09:36	24° \mathcal{B} 47'31
retrograde	4532 Mar 22 15:57	8° \mathcal{A} 13'39		min. Earth dist.	4537 Nov 10 09:09	19° \mathcal{B} 52'00 3.93119 AU
opposition	4532 May 22 10:49	3° \mathcal{A} 20'21 1°16'33		opposition	4537 Nov 11 02:41	19° \mathcal{B} 46'06 -1°25'34
min. Earth dist.	4532 May 23 11:12	3° \mathcal{A} 12'32 4.46965 AU			4537 Dec 30 10:42	15° \mathcal{R} \mathcal{B}
	4532 Jun 20 00:48	30° \mathcal{R} \mathbb{M}		direct	4538 Jan 08 04:12	14° \mathcal{B} 52'06
direct	4532 Jul 24 03:48	28° \mathbb{M} 18'26			4538 Jan 16 20:50	15° \mathcal{B}
	4532 Aug 27 12:22	0° \mathcal{A}			4538 Apr 24 03:04	0° \mathbb{I}
evening set	4532 Nov 27 02:28	15° \mathcal{A} 43'13		evening set	4538 May 14 05:19	4° \mathbb{I} 45'24
max. Earth dist.	4532 Dec 08 02:15	18° \mathcal{A} 06'18 6.44428 AU				
				conjunction	4538 May 27 15:41	8° \mathbb{I} 00'10 -0°49'41
conjunction	4532 Dec 09 22:29	18° \mathcal{A} 30'24 0°44'03		minimum elong	4538 May 27 15:42	8° \mathbb{I} 00'12 0°49'41
minimum elong	4532 Dec 09 22:31	18° \mathcal{A} 30'25 0°44'04		max. Earth dist.	4538 May 29 09:26	8° \mathbb{I} 25'26 5.93998 AU
morning rise	4532 Dec 22 16:08	21° \mathcal{A} 16'35		morning rise	4538 Jun 10 04:58	11° \mathbb{I} 16'26
	4533 Feb 03 10:09	0° \mathcal{B}			4538 Sep 15 18:36	0° \mathcal{E}
retrograde	4533 Apr 22 13:03	8° \mathcal{B} 12'03		retrograde	4538 Oct 20 03:36	1° \mathcal{E} 53'20
opposition	4533 Jun 22 11:03	3° \mathcal{B} 19'57 0°47'10			4538 Nov 23 08:29	30° \mathcal{R} \mathbb{I}
min. Earth dist.	4533 Jun 23 23:26	3° \mathcal{B} 08'22 4.40183 AU		min. Earth dist.	4538 Dec 17 06:33	27° \mathbb{I} 00'43 3.97457 AU
	4533 Jul 21 03:15	30° \mathcal{R} \mathcal{A}		opposition	4538 Dec 18 16:42	26° \mathbb{I} 49'06 -0°56'00
direct	4533 Aug 24 02:17	28° \mathcal{A} 19'19		direct	4539 Feb 14 14:02	21° \mathbb{I} 53'12
	4533 Sep 27 00:28	0° \mathcal{B}			4539 Apr 29 16:03	0° \mathcal{E}
evening set	4533 Dec 27 17:10	16° \mathcal{B} 04'01		evening set	4539 Jun 20 23:17	11° \mathcal{E} 26'48
max. Earth dist.	4534 Jan 07 04:43	18° \mathcal{B} 24'00 6.34286 AU				
				conjunction	4539 Jul 04 15:32	14° \mathcal{E} 40'11 -0°21'47
conjunction	4534 Jan 09 10:31	18° \mathcal{B} 54'03 0°17'56		minimum elong	4539 Jul 04 15:34	14° \mathcal{E} 40'12 0°21'47
minimum elong	4534 Jan 09 10:32	18° \mathcal{B} 54'04 0°17'57		max. Earth dist.	4539 Jul 07 00:13	15° \mathcal{E} 13'36 6.02859 AU
morning rise	4534 Jan 22 02:34	21° \mathcal{B} 43'38		morning rise	4539 Jul 18 09:53	17° \mathcal{E} 54'19
	4534 Mar 02 06:06	0° \approx			4539 Sep 12 17:30	0° \mathcal{Q}
retrograde	4534 May 25 05:55	9° \approx 23'27		retrograde	4539 Nov 24 18:41	7° \mathcal{Q} 37'21
opposition	4534 Jul 25 02:40	4° \approx 30'54 0°03'05		min. Earth dist.	4540 Jan 21 20:54	2° \mathcal{Q} 44'57 4.09769 AU
min. Earth dist.	4534 Jul 26 16:00	4° \approx 18'57 4.27233 AU		opposition	4540 Jan 23 08:47	2° \mathcal{Q} 32'44 -0°06'09
desc. node	4534 Aug 19 10:10	1° \approx 30'15			4540 Feb 12 01:59	30° \mathcal{R} \mathcal{E}
	4534 Sep 07 14:33	30° \mathcal{R} \mathcal{B}		asc. node	4540 Mar 10 05:08	27° \mathcal{E} 48'14
direct	4534 Sep 24 22:22	29° \mathcal{B} 32'11		direct	4540 Mar 22 01:51	27° \mathcal{E} 33'57
	4534 Oct 12 06:10	0° \approx			4540 Apr 30 05:26	0° \mathcal{Q}
	4535 Jan 15 16:16	15° \approx			4540 Jul 20 02:24	15° \mathcal{Q}
evening set	4535 Jan 28 10:11	17° \approx 53'08		evening set	4540 Jul 26 13:56	16° \mathcal{Q} 27'41
max. Earth dist.	4535 Feb 08 05:29	20° \approx 22'22 6.19549 AU				
				conjunction	4540 Aug 09 07:06	19° \mathcal{Q} 34'43 0°13'11
conjunction	4535 Feb 10 03:36	20° \approx 49'01 -0°14'33		minimum elong	4540 Aug 09 07:05	19° \mathcal{Q} 34'43 0°13'10
minimum elong	4535 Feb 10 03:35	20° \approx 49'00 0°14'33		behind sun begin	4540 Aug 09 02:20	19° \mathcal{Q} 32'01
behind sun begin	4535 Feb 09 23:54	20° \approx 46'53		behind sun end	4540 Aug 09 11:50	19° \mathcal{Q} 37'24
behind sun end	4535 Feb 10 07:17	20° \approx 51'07		max. Earth dist.	4540 Aug 11 10:43	20° \mathcal{Q} 04'06 6.17508 AU
morning rise	4535 Feb 22 20:42	23° \approx 45'05		morning rise	4540 Aug 23 00:15	22° \mathcal{Q} 41'29
	4535 Mar 22 20:28	0° \mathcal{H}			4540 Sep 25 16:53	0° \mathcal{H}
retrograde	4535 Jun 29 09:51	12° \mathcal{H} 31'22		retrograde	4540 Dec 26 21:20	11° \mathcal{H} 12'35
opposition	4535 Aug 28 23:12	7° \mathcal{H} 36'58 -0°45'03		opposition	4541 Feb 24 16:44	6° \mathcal{H} 10'13 0°42'33
min. Earth dist.	4535 Aug 30 02:18	7° \mathcal{H} 28'12 4.11705 AU		min. Earth dist.	4541 Feb 23 14:16	6° \mathcal{H} 19'07 4.25256 AU
direct	4535 Oct 28 10:58	2° \mathcal{H} 40'44		direct	4541 Apr 25 15:22	1° \mathcal{H} 09'10
evening set	4536 Mar 02 00:36	21° \mathcal{H} 45'56		evening set	4541 Aug 30 05:50	19° \mathcal{H} 20'29
conjunction	4536 Mar 14 20:43	24° \mathcal{H} 49'20 -0°43'45		conjunction	4541 Sep 12 18:31	22° \mathcal{H} 19'09 0°42'07
minimum elong	4536 Mar 14 20:41	24° \mathcal{H} 49'19 0°43'46		minimum elong	4541 Sep 12 18:29	22° \mathcal{H} 19'08 0°42'07
max. Earth dist.	4536 Mar 13 19:10	24° \mathcal{H} 34'05 6.04566 AU		max. Earth dist.	4541 Sep 13 21:40	22° \mathcal{H} 34'07 6.32578 AU
morning rise	4536 Mar 27 18:22	27° \mathcal{H} 53'45		morning rise	4541 Sep 26 05:58	25° \mathcal{H} 16'53
	4536 Apr 05 16:34	0° \mathcal{Y}			4541 Oct 18 07:22	0° \mathcal{A}
retrograde	4536 Aug 04 18:58	17° \mathcal{Y} 51'21		retrograde	4542 Jan 26 23:24	12° \mathcal{A} 45'39
opposition	4536 Oct 03 23:17	12° \mathcal{Y} 53'44 -1°20'25		opposition	4542 Mar 28 02:55	7° \mathcal{A} 46'48 1°15'10
min. Earth dist.	4536 Oct 04 04:33	12° \mathcal{Y} 52'00 3.98649 AU		min. Earth dist.	4542 Mar 27 17:53	7° \mathcal{A} 49'47 4.38765 AU
direct	4536 Dec 01 23:48	7° \mathcal{Y} 59'30		direct	4542 May 28 09:41	2° \mathcal{A} 44'34
evening set	4537 Apr 06 19:07	27° \mathcal{Y} 41'22		evening set	4542 Oct 01 20:51	20° \mathcal{A} 23'28
	4537 Apr 16 07:54	0° \mathcal{B}				
				conjunction	4542 Oct 15 03:09	23° \mathcal{A} 15'03 0°57'29
conjunction	4537 Apr 19 21:30	0° \mathcal{B} 52'03 -0°58'04		minimum elong	4542 Oct 15 03:08	23° \mathcal{A} 15'02 0°57'29
minimum elong	4537 Apr 19 21:30	0° \mathcal{B} 52'03 0°58'04		max. Earth dist.	4542 Oct 15 02:58	23° \mathcal{A} 14'56 6.43541 AU
max. Earth dist.	4537 Apr 20 07:05	0° \mathcal{B} 57'52 5.94675 AU		morning rise	4542 Oct 28 06:54	26° \mathcal{A} 05'19
morning rise	4537 May 03 02:21	4° \mathcal{B} 04'13			4542 Nov 15 20:05	0° \mathbb{M}

retrograde	4543 Feb 25 22:52	12°♄55'15		conjunction	4549 Apr 24 20:22	5°♄54'14	-0°58'18
opposition	4543 Apr 27 11:44	7°♄59'51	1°25'38	minimum elong	4549 Apr 24 20:22	5°♄54'14	0°58'19
min. Earth dist.	4543 Apr 27 20:49	7°♄56'54	4.46594 AU	max. Earth dist.	4549 Apr 25 08:40	6°♄01'43	5.93871 AU
direct	4543 Jun 28 17:50	2°♄57'32		morning rise	4549 May 08 02:29	9°♄07'20	
	4543 Oct 07 06:43	15°♄			4549 Jun 02 00:26	15°♄	
evening set	4543 Nov 01 23:19	20°♄20'06		retrograde	4549 Sep 17 12:15	29°♄53'54	
				min. Earth dist.	4549 Nov 15 08:14	24°♄58'58	3.92817 AU
conjunction	4543 Nov 14 23:13	23°♄07'36	0°56'49	opposition	4549 Nov 16 04:43	24°♄52'04	-1°23'30
minimum elong	4543 Nov 14 23:14	23°♄07'36	0°56'49	direct	4550 Jan 13 02:54	19°♄57'54	
max. Earth dist.	4543 Nov 13 19:34	22°♄52'42	6.47637 AU		4550 Apr 06 01:53	0°♄	
morning rise	4543 Nov 27 20:37	25°♄53'53		evening set	4550 May 19 07:26	9°♄51'55	
	4543 Dec 17 09:11	0°♄					
retrograde	4544 Mar 26 23:28	12°♄33'15		conjunction	4550 Jun 01 18:50	13°♄07'06	-0°46'52
opposition	4544 May 26 18:17	7°♄40'14	1°13'33	minimum elong	4550 Jun 01 18:52	13°♄07'07	0°46'52
min. Earth dist.	4544 May 27 21:03	7°♄31'40	4.46800 AU	max. Earth dist.	4550 Jun 03 14:25	13°♄33'26	5.94224 AU
direct	4544 Jul 28 13:08	2°♄38'30		morning rise	4550 Jun 15 09:13	16°♄23'43	
evening set	4544 Dec 01 08:51	20°♄03'37			4550 Aug 17 01:01	0°♄	
max. Earth dist.	4544 Dec 12 06:03	22°♄25'34	6.43869 AU	retrograde	4550 Oct 25 03:51	6°♄57'56	
				min. Earth dist.	4550 Dec 22 05:31	2°♄05'16	3.98173 AU
conjunction	4544 Dec 14 04:18	22°♄50'47	0°41'04	opposition	4550 Dec 23 16:05	1°♄53'29	-0°50'01
minimum elong	4544 Dec 14 04:19	22°♄50'48	0°41'04		4551 Jan 06 22:42	30°♄	
morning rise	4544 Dec 26 21:31	25°♄37'02		direct	4551 Feb 19 15:18	26°♄57'11	
	4545 Jan 16 12:04	0°♄			4551 Apr 04 00:06	0°♄	
retrograde	4545 Apr 26 22:14	12°♄35'19		evening set	4551 Jun 26 01:32	16°♄28'31	
opposition	4545 Jun 26 21:15	7°♄43'11	0°41'47				
min. Earth dist.	4545 Jun 28 09:28	7°♄31'39	4.39263 AU	conjunction	4551 Jul 09 18:32	19°♄41'40	-0°17'08
direct	4545 Aug 28 10:35	2°♄42'45		minimum elong	4551 Jul 09 18:33	19°♄41'40	0°17'08
evening set	4546 Jan 01 00:17	20°♄29'34		max. Earth dist.	4551 Jul 12 05:10	20°♄16'08	6.04019 AU
max. Earth dist.	4546 Jan 11 13:08	22°♄50'38	6.33078 AU	morning rise	4551 Jul 23 13:04	22°♄55'21	
					4551 Aug 23 23:50	0°♄	
conjunction	4546 Jan 13 17:27	23°♄19'57	0°13'43	retrograde	4551 Nov 29 13:29	12°♄31'19	
minimum elong	4546 Jan 13 17:28	23°♄19'58	0°13'43	asc. node	4552 Jan 20 10:09	8°♄29'12	
behind sun begin	4546 Jan 13 13:05	23°♄17'31		min. Earth dist.	4552 Jan 26 15:14	7°♄38'57	4.11243 AU
behind sun end	4546 Jan 13 21:51	23°♄22'24		opposition	4552 Jan 28 02:46	7°♄26'53	0°01'01
morning rise	4546 Jan 26 09:14	26°♄09'57		direct	4552 Mar 26 22:20	2°♄27'46	
	4546 Feb 12 20:32	0°♄			4552 Jul 02 20:58	15°♄	
retrograde	4546 May 29 21:06	13°♄55'29		evening set	4552 Jul 31 12:56	21°♄17'31	
desc. node	4546 Jul 01 03:27	12°♄21'21					
opposition	4546 Jul 29 17:34	9°♄02'46	-0°03'29	conjunction	4552 Aug 14 05:40	24°♄23'40	0°17'44
min. Earth dist.	4546 Jul 31 06:51	8°♄50'51	4.25792 AU	minimum elong	4552 Aug 14 05:39	24°♄23'39	0°17'44
direct	4546 Sep 29 10:35	4°♄04'21		max. Earth dist.	4552 Aug 16 06:19	24°♄51'15	6.19164 AU
	4546 Dec 29 20:26	15°♄		morning rise	4552 Aug 27 22:31	27°♄29'29	
evening set	4547 Feb 01 20:32	22°♄28'51			4552 Sep 08 04:51	0°♄	
max. Earth dist.	4547 Feb 12 15:57	24°♄58'43	6.17979 AU	retrograde	4552 Dec 31 08:24	15°♄52'34	
				min. Earth dist.	4553 Feb 28 04:10	10°♄58'52	4.26951 AU
conjunction	4547 Feb 14 13:55	25°♄25'22	-0°18'53	opposition	4553 Mar 01 04:59	10°♄50'31	0°48'15
minimum elong	4547 Feb 14 13:54	25°♄25'22	0°18'53	direct	4553 Apr 30 07:44	5°♄49'12	
morning rise	4547 Feb 27 07:30	28°♄22'15		evening set	4553 Sep 03 22:53	23°♄56'18	
	4547 Mar 06 09:51	0°♄					
retrograde	4547 Jul 04 05:54	17°♄16'26		conjunction	4553 Sep 17 10:57	26°♄53'59	0°45'09
opposition	4547 Sep 02 19:41	12°♄21'35	-0°50'52	minimum elong	4553 Sep 17 10:55	26°♄53'58	0°45'08
min. Earth dist.	4547 Sep 03 20:15	12°♄13'36	4.10115 AU	max. Earth dist.	4553 Sep 18 12:18	27°♄07'55	6.34186 AU
direct	4547 Nov 02 03:03	7°♄25'33		morning rise	4553 Sep 30 21:14	29°♄50'36	
evening set	4548 Mar 06 16:14	26°♄35'03			4553 Oct 01 14:29	0°♄	
				retrograde	4554 Jan 31 06:02	17°♄12'50	
conjunction	4548 Mar 19 13:04	29°♄39'21	-0°46'44	opposition	4554 Apr 01 11:02	12°♄14'27	1°17'59
minimum elong	4548 Mar 19 13:02	29°♄39'20	0°46'44	min. Earth dist.	4554 Apr 01 03:42	12°♄16'52	4.40156 AU
max. Earth dist.	4548 Mar 18 15:55	29°♄26'41	6.03105 AU	direct	4554 Jun 01 21:07	7°♄12'10	
	4548 Mar 20 23:33	0°♄		evening set	4554 Oct 06 08:08	24°♄47'42	
morning rise	4548 Apr 01 11:18	2°♄44'43					
retrograde	4548 Aug 09 22:35	22°♄49'47		conjunction	4554 Oct 19 13:19	27°♄38'27	0°58'19
opposition	4548 Oct 09 00:19	17°♄51'42	-1°23'05	minimum elong	4554 Oct 19 13:18	27°♄38'27	0°58'20
min. Earth dist.	4548 Oct 09 04:08	17°♄50'27	3.97463 AU	max. Earth dist.	4554 Oct 19 08:21	27°♄35'46	6.44575 AU
direct	4548 Dec 06 22:06	12°♄57'34			4554 Oct 30 12:06	0°♄	
	4549 Mar 31 09:30	0°♄		morning rise	4554 Nov 01 16:13	0°♄27'57	
evening set	4549 Apr 11 17:02	2°♄42'44			4555 Jan 22 15:06	15°♄	
				retrograde	4555 Mar 02 04:50	17°♄14'24	

	4555 Apr 09 19:23	15° \mathbb{M}	evening set	4561 Apr 16 22:08	8° \mathbb{S} 02'26	
opposition	4555 May 01 18:02	12° \mathbb{M} 19'20 1°25'12				
min. Earth dist.	4555 May 02 06:16	12° \mathbb{M} 15'23 4.47191 AU	conjunction	4561 Apr 30 02:36	11° \mathbb{S} 14'50 -0°58'05	
direct	4555 Jul 03 03:35	7° \mathbb{M} 17'00	minimum elong	4561 Apr 30 02:37	11° \mathbb{S} 14'51 0°58'05	
	4555 Sep 18 17:50	15° \mathbb{M}	max. Earth dist.	4561 Apr 30 19:51	11° \mathbb{S} 25'21 5.93113 AU	
evening set	4555 Nov 06 06:30	24° \mathbb{M} 38'17	morning rise	4561 May 13 09:57	14° \mathbb{S} 28'51	
max. Earth dist.	4555 Nov 18 00:12	27° \mathbb{M} 09'32 6.47721 AU		4561 May 15 13:33	15° \mathbb{S}	
				4561 Jul 25 09:18	0° \mathbb{II}	
conjunction	4555 Nov 19 05:47	27° \mathbb{M} 25'28 0°55'25	retrograde	4561 Sep 22 22:04	5° \mathbb{II} 18'06	
minimum elong	4555 Nov 19 05:48	27° \mathbb{M} 25'29 0°55'25	opposition	4561 Nov 21 13:31	0° \mathbb{II} 15'47 -1°20'35	
	4555 Dec 01 04:59	0° \mathbb{X}	min. Earth dist.	4561 Nov 20 14:38	0° \mathbb{II} 23'31 3.92799 AU	
morning rise	4555 Dec 02 02:18	0° \mathbb{X} 11'25		4561 Nov 23 12:16	30° \mathbb{R} \mathbb{S}	
retrograde	4556 Mar 31 04:39	16° \mathbb{X} 51'07	direct	4562 Jan 18 10:49	25° \mathbb{S} 21'29	
opposition	4556 May 31 01:16	11° \mathbb{X} 58'17 1°10'07		4562 Mar 13 09:23	0° \mathbb{II}	
min. Earth dist.	4556 Jun 01 04:58	11° \mathbb{X} 49'26 4.46351 AU	evening set	4562 May 24 16:02	15° \mathbb{II} 14'44	
direct	4556 Aug 01 19:30	6° \mathbb{X} 56'42				
evening set	4556 Dec 05 15:04	24° \mathbb{X} 23'15	conjunction	4562 Jun 07 04:38	18° \mathbb{II} 30'06 -0°43'30	
max. Earth dist.	4556 Dec 16 10:05	26° \mathbb{X} 44'23 6.42898 AU	minimum elong	4562 Jun 07 04:40	18° \mathbb{II} 30'08 0°43'30	
			max. Earth dist.	4562 Jun 09 05:22	18° \mathbb{II} 59'29 5.94975 AU	
conjunction	4556 Dec 18 09:58	27° \mathbb{X} 10'34 0°37'47	morning rise	4562 Jun 20 19:50	21° \mathbb{II} 46'46	
minimum elong	4556 Dec 18 09:59	27° \mathbb{X} 10'35 0°37'48		4562 Jul 26 15:46	0° \mathbb{S}	
morning rise	4556 Dec 31 02:49	29° \mathbb{X} 57'04	retrograde	4562 Oct 30 08:50	12° \mathbb{S} 15'17	
	4556 Dec 31 08:13	0° \mathbb{S}	min. Earth dist.	4562 Dec 27 08:03	7° \mathbb{S} 22'53 3.99623 AU	
retrograde	4557 May 01 10:21	16° \mathbb{S} 59'51	opposition	4562 Dec 28 19:52	7° \mathbb{S} 10'41 -0°43'19	
opposition	4557 Jul 01 08:35	12° \mathbb{S} 07'47 0°36'01	direct	4563 Feb 24 20:39	2° \mathbb{S} 14'03	
min. Earth dist.	4557 Jul 02 22:36	11° \mathbb{S} 55'40 4.37796 AU	evening set	4563 Jul 01 08:00	21° \mathbb{S} 40'08	
direct	4557 Sep 01 20:51	7° \mathbb{S} 07'36				
evening set	4558 Jan 05 08:40	24° \mathbb{S} 58'30	conjunction	4563 Jul 15 01:09	24° \mathbb{S} 52'27 -0°12'11	
max. Earth dist.	4558 Jan 15 20:02	27° \mathbb{S} 19'23 6.31217 AU	minimum elong	4563 Jul 15 01:10	24° \mathbb{S} 52'27 0°12'11	
			behind sun begin	4563 Jul 14 19:39	24° \mathbb{S} 49'14	
conjunction	4558 Jan 18 01:41	27° \mathbb{S} 49'34 0°09'17	behind sun end	4563 Jul 15 06:41	24° \mathbb{S} 55'40	
minimum elong	4558 Jan 18 01:41	27° \mathbb{S} 49'34 0°09'17	max. Earth dist.	4563 Jul 17 11:19	25° \mathbb{S} 26'27 6.06026 AU	
behind sun begin	4558 Jan 17 18:57	27° \mathbb{S} 45'48	morning rise	4563 Jul 28 19:58	28° \mathbb{S} 05'15	
behind sun end	4558 Jan 18 08:25	27° \mathbb{S} 53'20		4563 Aug 06 03:14	0° \mathbb{Q}	
	4558 Jan 27 17:38	0° \approx		4563 Oct 25 07:06	15° \mathbb{Q}	
morning rise	4558 Jan 30 17:36	0° \approx 40'20	asc. node	4563 Nov 29 22:26	17° \mathbb{Q} 28'37	
	4558 Apr 15 07:52	15° \approx	retrograde	4563 Dec 04 06:47	17° \mathbb{Q} 30'32	
desc. node	4558 May 10 22:04	17° \approx 42'11		4564 Jan 13 02:55	15° \mathbb{R} \mathbb{Q}	
retrograde	4558 Jun 03 15:10	18° \approx 34'19	min. Earth dist.	4564 Jan 31 10:51	12° \mathbb{Q} 38'14 4.13589 AU	
	4558 Jul 24 02:52	15° \mathbb{R} \approx	opposition	4564 Feb 01 22:12	12° \mathbb{Q} 26'13 0°08'19	
opposition	4558 Aug 03 11:32	13° \approx 41'22 -0°10'20	direct	4564 Mar 31 21:25	7° \mathbb{Q} 26'42	
min. Earth dist.	4558 Aug 04 23:11	13° \approx 29'57 4.23648 AU		4564 Jun 12 22:50	15° \mathbb{Q}	
direct	4558 Oct 03 23:38	8° \approx 43'17	evening set	4564 Aug 05 12:13	26° \mathbb{Q} 09'15	
	4558 Dec 09 16:50	15° \approx				
evening set	4559 Feb 06 10:35	27° \approx 14'01	conjunction	4564 Aug 19 04:34	29° \mathbb{Q} 14'06 0°22'14	
max. Earth dist.	4559 Feb 17 09:41	29° \approx 46'45 6.15735 AU	minimum elong	4564 Aug 19 04:33	29° \mathbb{Q} 14'05 0°22'15	
	4559 Feb 18 08:25	0° \mathbb{X}	max. Earth dist.	4564 Aug 21 03:24	29° \mathbb{Q} 40'30 6.21659 AU	
				4564 Aug 22 13:58	0° \mathbb{P}	
conjunction	4559 Feb 19 04:20	0° \mathbb{X} 11'36 -0°23'20	morning rise	4564 Sep 01 20:31	2° \mathbb{P} 18'27	
minimum elong	4559 Feb 19 04:18	0° \mathbb{X} 11'35 0°23'19	retrograde	4565 Jan 04 18:50	20° \mathbb{P} 30'46	
morning rise	4559 Mar 03 22:14	3° \mathbb{X} 09'36	opposition	4565 Mar 05 16:30	15° \mathbb{P} 29'10 0°53'36	
retrograde	4559 Jul 09 10:10	22° \mathbb{X} 14'23	min. Earth dist.	4565 Mar 04 18:04	15° \mathbb{P} 36'40 4.29357 AU	
opposition	4559 Sep 07 21:28	17° \mathbb{X} 19'13 -0°56'43	direct	4565 May 05 00:45	10° \mathbb{P} 27'37	
min. Earth dist.	4559 Sep 08 20:43	17° \mathbb{X} 11'40 4.07949 AU	evening set	4565 Sep 08 13:58	28° \mathbb{P} 28'09	
direct	4559 Nov 07 00:40	12° \mathbb{X} 23'32		4565 Sep 15 14:25	0° \mathbb{A}	
	4560 Mar 04 14:13	0° \mathbb{Y}				
evening set	4560 Mar 11 14:08	1° \mathbb{Y} 39'34	conjunction	4565 Sep 22 00:58	1° \mathbb{A} 24'33 0°47'53	
			minimum elong	4565 Sep 22 00:56	1° \mathbb{A} 24'32 0°47'52	
conjunction	4560 Mar 24 11:38	4° \mathbb{Y} 45'02 -0°49'34	max. Earth dist.	4565 Sep 22 21:35	1° \mathbb{A} 35'49 6.36299 AU	
minimum elong	4560 Mar 24 11:37	4° \mathbb{Y} 45'01 0°49'33	morning rise	4565 Oct 05 10:17	4° \mathbb{A} 19'52	
max. Earth dist.	4560 Mar 23 17:23	4° \mathbb{Y} 34'04 6.01212 AU	retrograde	4566 Feb 04 09:40	21° \mathbb{A} 34'25	
morning rise	4560 Apr 06 10:58	7° \mathbb{Y} 51'43	opposition	4566 Apr 05 16:47	16° \mathbb{A} 36'26 1°20'16	
retrograde	4560 Aug 15 07:32	28° \mathbb{Y} 05'46	min. Earth dist.	4566 Apr 05 12:17	16° \mathbb{A} 37'54 4.41842 AU	
opposition	4560 Oct 14 08:02	23° \mathbb{Y} 07'13 -1°25'18	direct	4566 Jun 06 07:12	11° \mathbb{A} 34'00	
min. Earth dist.	4560 Oct 14 07:34	23° \mathbb{Y} 07'22 3.96068 AU	evening set	4566 Oct 10 16:22	29° \mathbb{A} 05'28	
direct	4560 Dec 12 00:12	18° \mathbb{Y} 13'14		4566 Oct 14 22:13	0° \mathbb{M}	
	4561 Mar 13 09:27	0° \mathbb{S}				

conjunction	4566 Oct 23 20:45	1°♍55'25	0°58'49	morning rise	4572 Apr 11 13:48	13°♊05'49
minimum elong	4566 Oct 23 20:44	1°♍55'25	0°58'49		4572 Jul 04 01:50	0°♋
max. Earth dist.	4566 Oct 23 12:47	1°♍51'08	6.45710 AU	retrograde	4572 Aug 20 20:20	3°♋28'48
morning rise	4566 Nov 05 22:28	4°♍44'03			4572 Oct 08 06:33	30°♋♊
	4566 Dec 28 01:24	15°♍		opposition	4572 Oct 19 18:51	28°♊29'40 -1°26'49
retrograde	4567 Mar 06 06:26	21°♍27'07		min. Earth dist.	4572 Oct 19 14:59	28°♊30'57 3.94825 AU
opposition	4567 May 05 21:39	16°♍32'25	1°24'19	direct	4572 Dec 17 07:41	23°♊35'47
min. Earth dist.	4567 May 06 12:13	16°♍27'43	4.47709 AU		4573 Feb 19 19:56	0°♋
	4567 May 18 00:45	15°♋♍		evening set	4573 Apr 22 06:18	13°♋28'05
direct	4567 Jul 07 09:30	11°♍30'07			4573 Apr 28 13:45	15°♋
	4567 Aug 26 16:35	15°♍				
evening set	4567 Nov 10 11:02	28°♍50'30		conjunction	4573 May 05 12:04	16°♋41'16 -0°57'21
	4567 Nov 15 20:39	0°♋		minimum elong	4573 May 05 12:05	16°♋41'17 0°57'21
max. Earth dist.	4567 Nov 21 22:54	1°♋18'48	6.47562 AU	max. Earth dist.	4573 May 06 12:01	16°♋55'52 5.92687 AU
				morning rise	4573 May 18 20:35	19°♋56'03
conjunction	4567 Nov 23 09:27	1°♋37'26	0°53'45		4573 Jul 01 20:20	0°♌
minimum elong	4567 Nov 23 09:28	1°♋37'26	0°53'46	retrograde	4573 Sep 28 09:55	10°♌45'40
morning rise	4567 Dec 06 05:28	4°♋23'14		opposition	4573 Nov 26 23:39	5°♌42'55 -1°16'53
retrograde	4568 Apr 04 10:35	21°♋04'23		min. Earth dist.	4573 Nov 25 21:49	5°♌51'39 3.93261 AU
opposition	4568 Jun 04 06:53	16°♋11'42	1°06'23	direct	4574 Jan 23 19:57	0°♌48'24
min. Earth dist.	4568 Jun 05 13:39	16°♋01'52	4.45520 AU	evening set	4574 May 30 02:04	20°♌38'55
direct	4568 Aug 06 02:05	11°♋10'10				
evening set	4568 Dec 09 19:29	28°♋39'20		conjunction	4574 Jun 12 15:24	23°♌54'05 -0°39'43
	4568 Dec 15 23:19	0°♋		minimum elong	4574 Jun 12 15:26	23°♌54'06 0°39'44
max. Earth dist.	4568 Dec 20 12:21	0°♋59'46	6.41444 AU	max. Earth dist.	4574 Jun 14 18:13	24°♌24'35 5.96229 AU
				morning rise	4574 Jun 26 07:36	27°♌10'30
conjunction	4568 Dec 22 14:09	1°♋27'06	0°34'21		4574 Jul 08 07:05	0°♍
minimum elong	4568 Dec 22 14:11	1°♋27'06	0°34'21	retrograde	4574 Nov 04 10:30	17°♍31'05
morning rise	4569 Jan 04 06:40	4°♋14'02		min. Earth dist.	4575 Jan 01 09:54	12°♍39'00 4.01502 AU
retrograde	4569 May 05 20:32	21°♋23'06		opposition	4575 Jan 02 23:08	12°♍26'18 -0°36'15
opposition	4569 Jul 05 19:26	16°♋30'57	0°30'07	direct	4575 Mar 02 01:58	7°♍29'14
min. Earth dist.	4569 Jul 07 09:18	16°♋18'53	4.35804 AU	evening set	4575 Jul 06 13:34	26°♍48'46
direct	4569 Sep 06 04:03	11°♋30'59				
evening set	4570 Jan 09 17:19	29°♋27'48		conjunction	4575 Jul 20 06:58	0°♌00'06 -0°07'10
	4570 Jan 12 02:43	0°♌		minimum elong	4575 Jul 20 06:58	0°♌00'06 0°07'11
max. Earth dist.	4570 Jan 20 05:23	1°♌49'50	6.28838 AU	behind sun begin	4575 Jul 19 23:17	29°♍55'38
				behind sun end	4575 Jul 20 14:40	0°♌04'33
conjunction	4570 Jan 22 10:18	2°♌19'47	0°04'49		4575 Jul 20 06:49	0°♌
minimum elong	4570 Jan 22 10:18	2°♌19'47	0°04'50	max. Earth dist.	4575 Jul 22 17:06	0°♌33'54 6.08341 AU
behind sun begin	4570 Jan 22 02:32	2°♌15'25		morning rise	4575 Aug 03 01:32	3°♌11'43
behind sun end	4570 Jan 22 18:04	2°♌24'10			4575 Sep 27 19:07	15°♌
morning rise	4570 Feb 04 02:22	5°♌11'35		asc. node	4575 Oct 08 23:58	16°♌56'15
desc. node	4570 Mar 21 02:56	14°♌42'53		retrograde	4575 Dec 09 00:48	22°♌25'42
	4570 Mar 22 15:15	15°♌		min. Earth dist.	4576 Feb 05 07:11	17°♌32'59 4.16076 AU
retrograde	4570 Jun 08 12:54	23°♌15'55		opposition	4576 Feb 06 16:29	17°♌21'42 0°15'30
opposition	4570 Aug 08 07:00	18°♌22'46	-0°17'10		4576 Feb 24 21:23	15°♋♌
min. Earth dist.	4570 Aug 09 18:39	18°♌11'19	4.21029 AU	direct	4576 Apr 05 21:07	12°♌21'53
	4570 Sep 06 07:04	15°♋♌			4576 May 17 02:33	15°♌
direct	4570 Oct 08 15:30	13°♌24'59			4576 Aug 06 03:26	0°♎
	4570 Nov 09 17:45	15°♌		evening set	4576 Aug 10 10:18	0°♎57'14
	4571 Feb 02 04:10	0°♎				
evening set	4571 Feb 11 02:32	2°♎03'37		conjunction	4576 Aug 24 02:02	4°♎00'46 0°26'35
max. Earth dist.	4571 Feb 22 03:54	4°♎38'34	6.13102 AU	minimum elong	4576 Aug 24 02:00	4°♎00'45 0°26'34
				max. Earth dist.	4576 Aug 25 21:54	4°♎25'21 6.24101 AU
conjunction	4571 Feb 23 20:43	5°♎02'29	-0°27'38	morning rise	4576 Sep 06 17:13	7°♎03'42
minimum elong	4571 Feb 23 20:41	5°♎02'28	0°27'39	retrograde	4577 Jan 09 02:37	25°♎06'01
morning rise	4571 Mar 08 15:21	8°♎01'54		min. Earth dist.	4577 Mar 09 06:13	20°♎11'49 4.31572 AU
retrograde	4571 Jul 14 15:44	27°♎18'44		opposition	4577 Mar 10 02:49	20°♎04'56 0°58'37
opposition	4571 Sep 13 02:06	22°♎23'09	-1°02'15	direct	4577 May 09 15:04	15°♎03'14
min. Earth dist.	4571 Sep 13 21:19	22°♎16'54	4.05552 AU		4577 Aug 30 07:17	0°♏
direct	4571 Nov 11 22:40	17°♎27'50		evening set	4577 Sep 13 04:17	2°♏58'20
	4572 Feb 16 01:15	0°♏				
evening set	4572 Mar 16 15:06	6°♏51'05		conjunction	4577 Sep 26 14:22	5°♏53'36 0°50'21
				minimum elong	4577 Sep 26 14:21	5°♏53'35 0°50'22
conjunction	4572 Mar 29 13:28	9°♏57'49	-0°52'02	max. Earth dist.	4577 Sep 27 06:40	6°♏02'30 6.38131 AU
minimum elong	4572 Mar 29 13:27	9°♏57'48	0°52'02	morning rise	4577 Oct 09 22:33	8°♏47'45
max. Earth dist.	4572 Mar 29 00:49	9°♏50'11	5.99281 AU	retrograde	4578 Feb 08 14:56	25°♏55'59

opposition	4578 Apr 09 22:48	20°♄58'35	1°22'12	conjunction	4584 Apr 03 16:19	15°♊12'54	-0°54'08
min. Earth dist.	4578 Apr 09 21:41	20°♄58'57	4.43181 AU	minimum elong	4584 Apr 03 16:18	15°♊12'54	0°54'09
direct	4578 Jun 10 17:53	15°♄56'10		max. Earth dist.	4584 Apr 03 09:38	15°♊08'52	5.97978 AU
	4578 Sep 28 19:27	0°♌		morning rise	4584 Apr 16 17:37	18°♊21'57	
evening set	4578 Oct 15 00:52	3°♌24'50			4584 Jun 07 20:13	0°♋	
				retrograde	4584 Aug 26 07:08	8°♋50'39	
conjunction	4578 Oct 28 04:16	6°♌14'09	0°59'02	opposition	4584 Oct 25 04:29	3°♋50'58	-1°27'35
minimum elong	4578 Oct 28 04:16	6°♌14'09	0°59'02	min. Earth dist.	4584 Oct 24 20:49	3°♋53'31	3.94263 AU
max. Earth dist.	4578 Oct 27 15:08	6°♌07'05	6.46448 AU		4584 Nov 27 13:58	30°♋	
morning rise	4578 Nov 10 05:12	9°♌02'11		direct	4584 Dec 22 13:21	28°♋57'10	
	4578 Dec 09 00:40	15°♌			4585 Jan 16 11:26	0°♋	
retrograde	4579 Mar 10 10:36	25°♌43'23			4585 Apr 11 11:59	15°♋	
opposition	4579 May 10 02:49	20°♌49'03	1°23'02	evening set	4585 Apr 27 13:05	18°♋49'53	
min. Earth dist.	4579 May 10 20:10	20°♌43'27	4.47831 AU				
direct	4579 Jul 11 16:34	15°♌46'48		conjunction	4585 May 10 19:45	22°♋03'27	-0°56'10
	4579 Oct 30 21:52	0°♌		minimum elong	4585 May 10 19:46	22°♋03'28	0°56'10
evening set	4579 Nov 14 16:58	3°♌07'33		max. Earth dist.	4585 May 11 23:17	22°♋20'12	5.92894 AU
max. Earth dist.	4579 Nov 26 02:34	5°♌34'49	6.47061 AU	morning rise	4585 May 24 05:32	25°♋18'39	
					4585 Jun 12 23:58	0°♌	
conjunction	4579 Nov 27 14:54	5°♌54'27	0°51'48	retrograde	4585 Oct 03 15:33	16°♌05'51	
minimum elong	4579 Nov 27 14:55	5°♌54'28	0°51'49	min. Earth dist.	4585 Dec 01 01:22	11°♌12'23	3.94219 AU
morning rise	4579 Dec 10 10:09	8°♌40'12		opposition	4585 Dec 02 06:13	11°♌02'37	-1°12'39
retrograde	4580 Apr 08 17:05	25°♌23'54		direct	4586 Jan 29 02:30	6°♌07'45	
opposition	4580 Jun 08 14:39	20°♌31'26	1°02'14	evening set	4586 Jun 04 08:27	25°♌53'53	
min. Earth dist.	4580 Jun 09 22:39	20°♌21'13	4.44430 AU				
direct	4580 Aug 10 08:59	15°♌30'08		conjunction	4586 Jun 17 22:41	29°♌08'39	-0°35'46
	4580 Nov 29 23:17	0°♍		minimum elong	4586 Jun 17 22:43	29°♌08'41	0°35'45
evening set	4580 Dec 14 02:32	3°♍02'41		max. Earth dist.	4586 Jun 20 04:16	29°♌40'42	5.97840 AU
max. Earth dist.	4580 Dec 24 16:42	5°♍22'14	6.39839 AU		4586 Jun 21 12:33	0°♎	
				morning rise	4586 Jul 01 15:19	2°♎24'31	
conjunction	4580 Dec 26 20:43	5°♍50'55	0°30'38	retrograde	4586 Nov 09 09:26	22°♎35'56	
minimum elong	4580 Dec 26 20:45	5°♍50'55	0°30'38	min. Earth dist.	4587 Jan 06 09:26	17°♎43'31	4.03556 AU
morning rise	4581 Jan 08 13:11	8°♍38'27		opposition	4587 Jan 07 21:51	17°♎31'06	-0°29'12
retrograde	4581 May 10 12:05	25°♍54'21		direct	4587 Mar 07 04:29	12°♎33'37	
opposition	4581 Jul 10 09:35	21°♍02'11	0°23'50		4587 Jul 03 21:23	0°♏	
min. Earth dist.	4581 Jul 12 00:37	20°♍49'44	4.33768 AU	evening set	4587 Jul 11 14:59	1°♏46'17	
direct	4581 Sep 10 16:32	16°♍02'29					
	4581 Dec 26 17:00	0°♐		conjunction	4587 Jul 25 08:26	4°♏56'35	-0°02'16
evening set	4582 Jan 14 04:29	4°♐05'10		minimum elong	4587 Jul 25 08:25	4°♏56'35	0°02'16
max. Earth dist.	4582 Jan 24 17:37	6°♐28'33	6.26543 AU	behind sun begin	4587 Jul 25 00:02	4°♏51'45	
				behind sun end	4587 Jul 25 16:49	5°♏01'24	
conjunction	4582 Jan 26 21:35	6°♐58'06	0°00'07	max. Earth dist.	4587 Jul 27 17:42	5°♏29'41	6.10641 AU
minimum elong	4582 Jan 26 21:37	6°♐58'07	0°00'08	morning rise	4587 Aug 08 02:49	8°♏07'02	
behind sun begin	4582 Jan 26 13:47	6°♐53'41		asc. node	4587 Aug 19 11:47	10°♏41'58	
behind sun end	4582 Jan 27 05:26	7°♐02'32			4587 Sep 08 04:49	15°♏	
desc. node	4582 Jan 28 04:20	7°♐15'35		retrograde	4587 Dec 13 12:45	27°♏10'03	
morning rise	4582 Feb 08 13:51	9°♐50'56		min. Earth dist.	4588 Feb 09 21:48	22°♏17'23	4.18400 AU
	4582 Mar 03 20:45	15°♐		opposition	4588 Feb 11 06:19	22°♏06'23	0°22'19
retrograde	4582 Jun 13 11:07	28°♐05'21		direct	4588 Apr 10 14:27	17°♏06'13	
opposition	4582 Aug 13 05:16	23°♐11'58	-0°24'06		4588 Jul 20 09:48	0°♐	
min. Earth dist.	4582 Aug 14 14:22	23°♐01'20	4.18659 AU	evening set	4588 Aug 15 04:29	5°♐35'16	
direct	4582 Oct 13 08:03	18°♐14'37					
	4583 Jan 15 17:44	0°♑		conjunction	4588 Aug 28 19:33	8°♐37'35	0°30'37
evening set	4583 Feb 15 20:59	7°♑00'06		minimum elong	4588 Aug 28 19:31	8°♐37'34	0°30'36
max. Earth dist.	4583 Feb 27 02:28	9°♑38'16	6.10879 AU	max. Earth dist.	4588 Aug 30 10:38	8°♐59'24	6.26263 AU
				morning rise	4588 Sep 11 09:56	11°♐39'14	
conjunction	4583 Feb 28 15:29	10°♑00'04	-0°31'53	retrograde	4589 Jan 13 10:19	29°♐32'57	
minimum elong	4583 Feb 28 15:28	10°♑00'03	0°31'52	opposition	4589 Mar 14 10:26	24°♐32'25	1°03'09
morning rise	4583 Mar 13 10:45	13°♑00'42		min. Earth dist.	4589 Mar 13 17:28	24°♐38'04	4.33407 AU
	4583 Jun 09 20:09	0°♒		direct	4589 May 14 04:20	19°♐30'32	
retrograde	4583 Jul 20 00:30	2°♒27'57			4589 Aug 13 04:26	0°♑	
	4583 Aug 29 11:55	30°♒		evening set	4589 Sep 17 15:50	7°♑21'28	
opposition	4583 Sep 18 08:13	27°♒31'55	-1°07'25				
min. Earth dist.	4583 Sep 19 00:40	27°♒26'32	4.03690 AU	conjunction	4589 Oct 01 01:07	10°♑15'51	0°52'29
direct	4583 Nov 17 00:43	22°♒36'52		minimum elong	4589 Oct 01 01:05	10°♑15'50	0°52'30
	4584 Jan 26 19:16	0°♒		max. Earth dist.	4589 Oct 01 13:31	10°♑22'36	6.39504 AU
evening set	4584 Mar 21 17:00	12°♒05'10		morning rise	4589 Oct 14 08:16	13°♑09'02	

	4590 Feb 01 07:07	0°♌		retrograde	4595 Jul 25 06:18	7°♑33'45	
retrograde	4590 Feb 12 17:26	0°♌12'35		opposition	4595 Sep 23 12:53	2°♑37'17	-1°12'00
	4590 Feb 24 04:21	30°♌♌		min. Earth dist.	4595 Sep 24 02:10	2°♑32'55	4.02144 AU
opposition	4590 Apr 14 03:10	25°♌15'41	1°23'40		4595 Oct 14 15:48	30°♌♌	
min. Earth dist.	4590 Apr 14 04:07	25°♌15'22	4.44046 AU	direct	4595 Nov 21 23:57	27°♌42'33	
direct	4590 Jun 15 00:21	20°♌13'15			4595 Dec 29 18:50	0°♑	
	4590 Sep 11 15:09	0°♌		evening set	4596 Mar 26 17:24	17°♑14'59	
evening set	4590 Oct 19 08:16	7°♌40'37					
				conjunction	4596 Apr 08 17:24	20°♑23'33	-0°55'47
conjunction	4590 Nov 01 10:53	10°♌29'30	0°58'56	minimum elong	4596 Apr 08 17:23	20°♑23'33	0°55'48
minimum elong	4590 Nov 01 10:53	10°♌29'30	0°58'57	max. Earth dist.	4596 Apr 08 14:15	20°♑21'39	5.96902 AU
max. Earth dist.	4590 Oct 31 18:19	10°♌20'35	6.46754 AU	morning rise	4596 Apr 21 19:51	23°♑33'35	
morning rise	4590 Nov 14 10:54	13°♌17'06			4596 May 19 08:04	0°♌	
	4590 Nov 22 12:37	15°♌		retrograde	4596 Aug 31 14:27	14°♌07'21	
retrograde	4591 Mar 14 15:14	29°♌57'44		opposition	4596 Oct 30 11:37	9°♌07'08	-1°27'39
opposition	4591 May 14 07:44	25°♌03'48	1°21'21	min. Earth dist.	4596 Oct 30 00:17	9°♌10'55	3.93786 AU
min. Earth dist.	4591 May 15 03:45	24°♌57'22	4.47583 AU	direct	4596 Dec 27 17:57	4°♌13'18	
direct	4591 Jul 15 23:19	20°♌01'42			4597 Mar 24 06:08	15°♌	
	4591 Oct 13 20:07	0°♌		evening set	4597 May 02 17:58	24°♌06'39	
evening set	4591 Nov 18 22:53	7°♌23'49					
max. Earth dist.	4591 Nov 30 03:56	9°♌49'01	6.46271 AU	conjunction	4597 May 16 01:52	27°♌20'42	-0°54'33
				minimum elong	4597 May 16 01:54	27°♌20'42	0°54'34
conjunction	4591 Dec 01 20:08	10°♌10'48	0°49'34	max. Earth dist.	4597 May 17 10:44	27°♌40'40	5.93069 AU
minimum elong	4591 Dec 01 20:10	10°♌10'48	0°49'35		4597 May 27 00:29	0°♌	
morning rise	4591 Dec 14 15:03	12°♌56'43		morning rise	4597 May 29 12:35	0°♌36'16	
retrograde	4592 Apr 13 02:12	29°♌43'54		retrograde	4597 Oct 08 21:23	21°♌21'24	
opposition	4592 Jun 12 23:27	24°♌51'34	0°57'44	min. Earth dist.	4597 Dec 06 04:53	16°♌27'53	3.95024 AU
min. Earth dist.	4592 Jun 14 08:51	24°♌40'54	4.43158 AU	opposition	4597 Dec 07 10:32	16°♌17'49	-1°07'54
direct	4592 Aug 14 17:02	19°♌50'27		direct	4598 Feb 03 07:32	11°♌22'40	
	4592 Nov 12 19:20	0°♌			4598 Jun 04 22:44	0°♌	
evening set	4592 Dec 18 09:49	7°♌26'44		evening set	4598 Jun 09 13:37	1°♌05'32	
max. Earth dist.	4592 Dec 29 00:36	9°♌47'09	6.38186 AU				
				conjunction	4598 Jun 23 04:35	4°♌20'02	-0°31'34
conjunction	4592 Dec 31 03:53	10°♌15'31	0°26'45	minimum elong	4598 Jun 23 04:37	4°♌20'03	0°31'34
minimum elong	4592 Dec 31 03:54	10°♌15'32	0°26'45	max. Earth dist.	4598 Jun 25 11:55	4°♌52'59	5.99180 AU
morning rise	4593 Jan 12 20:01	13°♌03'37		morning rise	4598 Jul 06 21:55	7°♌35'33	
	4593 Apr 28 05:50	0°♌		retrograde	4598 Nov 14 06:03	27°♌39'03	
retrograde	4593 May 15 02:10	0°♌26'29		min. Earth dist.	4599 Jan 11 06:10	22°♌46'56	4.05282 AU
	4593 May 31 23:44	30°♌♌		opposition	4599 Jan 12 19:24	22°♌34'15	-0°22'00
opposition	4593 Jul 15 00:23	25°♌34'16	0°17'22	direct	4599 Mar 12 03:51	17°♌36'23	
min. Earth dist.	4593 Jul 16 14:39	25°♌22'04	4.31839 AU		4599 Jun 16 10:15	0°♌	
direct	4593 Sep 15 03:45	20°♌34'56		asc. node	4599 Jun 29 14:36	2°♌52'17	
desc. node	4593 Dec 07 15:01	29°♌45'24		evening set	4599 Jul 16 16:06	6°♌43'45	
	4593 Dec 08 21:10	0°♌					
evening set	4594 Jan 18 16:14	8°♌42'58		conjunction	4599 Jul 30 09:28	9°♌53'08	0°02'45
max. Earth dist.	4594 Jan 29 06:13	11°♌07'34	6.24482 AU	minimum elong	4599 Jul 30 09:27	9°♌53'08	0°02'46
				behind sun begin	4599 Jul 30 01:06	9°♌48'20	
conjunction	4594 Jan 31 09:14	11°♌36'43	-0°04'36	behind sun end	4599 Jul 30 17:49	9°♌57'55	
minimum elong	4594 Jan 31 09:14	11°♌36'42	0°04'36	max. Earth dist.	4599 Aug 01 15:57	10°♌24'30	6.12589 AU
behind sun begin	4594 Jan 31 01:25	11°♌32'16		morning rise	4599 Aug 13 03:42	13°♌02'35	
behind sun end	4594 Jan 31 17:02	11°♌41'09			4599 Aug 21 18:58	15°♌	
morning rise	4594 Feb 13 01:48	14°♌30'29			4599 Nov 13 01:30	0°♌	
	4594 Feb 15 05:49	15°♌		retrograde	4599 Dec 18 03:14	1°♌56'19	
	4594 May 05 09:28	0°♌			4600 Jan 21 22:33	30°♌♌	
retrograde	4594 Jun 18 11:10	2°♌54'12		opposition	4600 Feb 15 20:46	26°♌52'58	0°28'59
	4594 Aug 02 04:26	30°♌♌		min. Earth dist.	4600 Feb 14 14:46	27°♌03'07	4.20368 AU
opposition	4594 Aug 18 03:32	28°♌00'31	-0°30'53	direct	4600 Apr 16 10:18	21°♌52'29	
min. Earth dist.	4594 Aug 19 11:12	27°♌50'19	4.16593 AU		4600 Jul 02 07:49	0°♌	
direct	4594 Oct 18 02:44	23°♌03'27		evening set	4600 Aug 20 23:29	10°♌16'26	
	4594 Dec 26 20:26	0°♌					
evening set	4595 Feb 20 14:40	11°♌54'41		conjunction	4600 Sep 03 14:03	13°♌17'44	0°34'29
max. Earth dist.	4595 Mar 04 00:50	14°♌36'13	6.08983 AU	minimum elong	4600 Sep 03 14:01	13°♌17'43	0°34'29
				max. Earth dist.	4600 Sep 05 03:08	13°♌38'21	6.28105 AU
conjunction	4595 Mar 05 09:45	14°♌55'40	-0°35'52	morning rise	4600 Sep 17 03:29	16°♌18'13	
minimum elong	4595 Mar 05 09:43	14°♌55'39	0°35'51		4600 Nov 27 08:18	0°♌	
morning rise	4595 Mar 18 05:32	17°♌57'23		retrograde	4601 Jan 18 17:36	4°♌04'22	
	4595 May 12 23:26	0°♌			4601 Mar 12 18:48	30°♌♌	

opposition	4601 Mar 19 19:18	29° <u>10</u> 04'22	1°07'22
min. Earth dist.	4601 Mar 19 03:45	29° <u>10</u> 09'31	4.35001 AU
direct	4601 May 19 16:02	24° <u>10</u> 02'23	
	4601 Jul 24 16:28	0° <u>10</u>	
evening set	4601 Sep 23 05:06	11° <u>10</u> 49'49	
conjunction	4601 Oct 06 13:21	14° <u>10</u> 43'19	0°54'22
minimum elong	4601 Oct 06 13:20	14° <u>10</u> 43'19	0°54'22
max. Earth dist.	4601 Oct 06 20:56	14° <u>10</u> 47'26	6.40747 AU
morning rise	4601 Oct 19 19:35	17° <u>10</u> 35'38	
	4601 Dec 23 17:13	0° <u>10</u>	