

evening set	4100 Feb 18 22:34	15° $\Upsilon$ 12'00	conjunction	4106 Mar 30 21:44	10° $\Upsilon$ 12'51 -0°44'30
			minimum elong	4106 Mar 30 21:44	10° $\Upsilon$ 12'51 0°44'31
conjunction	4100 Mar 06 14:00	16° $\Upsilon$ 06'26 -0°45'19	max. Earth dist.	4106 Mar 31 20:19	10° $\Upsilon$ 16'06 21.00567 AU
minimum elong	4100 Mar 06 14:00	16° $\Upsilon$ 06'26 0°45'19	morning rise	4106 Apr 15 18:18	11° $\Upsilon$ 07'15
max. Earth dist.	4100 Mar 07 09:18	16° $\Upsilon$ 09'15 20.81719 AU	retrograde	4106 Jul 18 10:40	14° $\Upsilon$ 13'59
morning rise	4100 Mar 22 07:06	17° $\Upsilon$ 01'06	opposition	4106 Oct 04 11:31	12° $\Upsilon$ 15'07 -0°48'42
retrograde	4100 Jun 23 08:21	20° $\Upsilon$ 08'53	min. Earth dist.	4106 Oct 03 14:22	12° $\Upsilon$ 17'14 19.01637 AU
min. Earth dist.	4100 Sep 08 05:28	18° $\Upsilon$ 11'53 18.83736 AU	direct	4106 Dec 19 10:23	10° $\Upsilon$ 18'33
opposition	4100 Sep 09 00:16	18° $\Upsilon$ 10'00 -0°50'24	evening set	4107 Mar 19 08:14	13° $\Upsilon$ 18'10
direct	4100 Nov 24 12:44	16° $\Upsilon$ 12'21			
evening set	4101 Feb 23 04:05	19° $\Upsilon$ 15'17	conjunction	4107 Apr 04 02:42	14° $\Upsilon$ 12'11 -0°43'37
			minimum elong	4107 Apr 04 02:42	14° $\Upsilon$ 12'11 0°43'36
conjunction	4101 Mar 10 19:54	20° $\Upsilon$ 09'36 -0°45'45	max. Earth dist.	4107 Apr 05 01:40	14° $\Upsilon$ 15'29 21.02524 AU
minimum elong	4101 Mar 10 19:54	20° $\Upsilon$ 09'36 0°45'45	morning rise	4107 Apr 19 23:57	15° $\Upsilon$ 06'36
max. Earth dist.	4101 Mar 11 16:20	20° $\Upsilon$ 12'35 20.85612 AU	retrograde	4107 Jul 22 20:17	18° $\Upsilon$ 13'19
morning rise	4101 Mar 26 13:22	21° $\Upsilon$ 04'10	opposition	4107 Oct 08 20:10	16° $\Upsilon$ 14'28 -0°47'35
retrograde	4101 Jun 27 17:54	24° $\Upsilon$ 11'39	min. Earth dist.	4107 Oct 07 22:04	16° $\Upsilon$ 16'41 19.03374 AU
opposition	4101 Sep 13 11:12	22° $\Upsilon$ 12'45 -0°50'44	direct	4107 Dec 23 17:08	14° $\Upsilon$ 18'03
min. Earth dist.	4101 Sep 12 14:47	22° $\Upsilon$ 14'47 18.87474 AU	evening set	4108 Mar 22 12:52	17° $\Upsilon$ 17'22
direct	4101 Nov 28 22:59	20° $\Upsilon$ 15'16			
evening set	4102 Feb 27 09:21	23° $\Upsilon$ 17'28	conjunction	4108 Apr 07 07:53	18° $\Upsilon$ 11'23 -0°42'30
			minimum elong	4108 Apr 07 07:53	18° $\Upsilon$ 11'23 0°42'31
conjunction	4102 Mar 15 01:19	24° $\Upsilon$ 11'41 -0°45'57	max. Earth dist.	4108 Apr 08 06:24	18° $\Upsilon$ 14'37 21.04028 AU
minimum elong	4102 Mar 15 01:19	24° $\Upsilon$ 11'41 0°45'57	morning rise	4108 Apr 23 05:58	19° $\Upsilon$ 05'51
max. Earth dist.	4102 Mar 15 22:05	24° $\Upsilon$ 14'42 20.89195 AU	retrograde	4108 Jul 26 03:36	22° $\Upsilon$ 12'34
morning rise	4102 Mar 30 19:20	25° $\Upsilon$ 06'11	min. Earth dist.	4108 Oct 11 07:55	20° $\Upsilon$ 15'48 19.04643 AU
retrograde	4102 Jul 02 01:29	28° $\Upsilon$ 13'26	opposition	4108 Oct 12 04:33	20° $\Upsilon$ 13'44 -0°46'15
opposition	4102 Sep 17 21:46	26° $\Upsilon$ 14'30 -0°50'49	direct	4108 Dec 26 22:12	18° $\Upsilon$ 17'26
min. Earth dist.	4102 Sep 17 01:45	26° $\Upsilon$ 16'30 18.90926 AU	evening set	4109 Mar 26 17:31	21° $\Upsilon$ 16'30
direct	4102 Dec 03 06:16	24° $\Upsilon$ 17'12			
evening set	4103 Mar 03 14:14	27° $\Upsilon$ 18'44	conjunction	4109 Apr 11 13:19	22° $\Upsilon$ 10'33 -0°41'12
			minimum elong	4109 Apr 11 13:19	22° $\Upsilon$ 10'33 0°41'12
conjunction	4103 Mar 19 06:40	28° $\Upsilon$ 12'52 -0°45'55	max. Earth dist.	4109 Apr 12 11:38	22° $\Upsilon$ 13'45 21.05047 AU
minimum elong	4103 Mar 19 06:40	28° $\Upsilon$ 12'52 0°45'55	morning rise	4109 Apr 27 12:09	23° $\Upsilon$ 05'03
max. Earth dist.	4103 Mar 20 04:28	28° $\Upsilon$ 16'02 20.92510 AU	retrograde	4109 Jul 30 13:22	26° $\Upsilon$ 11'49
morning rise	4103 Apr 04 01:10	29° $\Upsilon$ 07'19	opposition	4109 Oct 16 12:42	24° $\Upsilon$ 12'58 -0°44'41
	4103 Apr 20 03:47	0° $\Upsilon$	min. Earth dist.	4109 Oct 15 15:33	24° $\Upsilon$ 15'05 19.05389 AU
retrograde	4103 Jul 06 11:04	2° $\Upsilon$ 14'22	direct	4109 Dec 31 04:50	22° $\Upsilon$ 16'43
min. Earth dist.	4103 Sep 21 10:10	0° $\Upsilon$ 17'35 18.94095 AU	evening set	4110 Mar 30 22:20	25° $\Upsilon$ 15'36
opposition	4103 Sep 22 07:45	0° $\Upsilon$ 15'25 -0°50'39			
	4103 Sep 28 18:29	30° $\Upsilon$	conjunction	4110 Apr 15 18:45	26° $\Upsilon$ 09'42 -0°39'41
direct	4103 Dec 07 15:08	28° $\Upsilon$ 18'19	minimum elong	4110 Apr 15 18:45	26° $\Upsilon$ 09'42 0°39'41
	4104 Feb 10 17:47	0° $\Upsilon$	max. Earth dist.	4110 Apr 16 16:14	26° $\Upsilon$ 12'47 21.05510 AU
evening set	4104 Mar 06 18:54	1° $\Upsilon$ 19'16	morning rise	4110 May 01 18:27	27° $\Upsilon$ 04'17
				4110 Jul 13 12:36	0° $\Upsilon$
conjunction	4104 Mar 22 11:40	2° $\Upsilon$ 13'21 -0°45'40	retrograde	4110 Aug 03 20:39	0° $\Upsilon$ 11'07
minimum elong	4104 Mar 22 11:40	2° $\Upsilon$ 13'21 0°45'40		4110 Aug 25 13:44	30° $\Upsilon$
max. Earth dist.	4104 Mar 23 09:40	2° $\Upsilon$ 16'31 20.95524 AU	opposition	4110 Oct 20 20:51	28° $\Upsilon$ 12'11 -0°42'54
morning rise	4104 Apr 07 06:53	3° $\Upsilon$ 07'46	min. Earth dist.	4110 Oct 20 01:21	28° $\Upsilon$ 14'08 19.05573 AU
retrograde	4104 Jul 09 18:10	6° $\Upsilon$ 14'40	direct	4111 Jan 04 09:38	26° $\Upsilon$ 15'58
opposition	4104 Sep 25 17:27	4° $\Upsilon$ 15'44 -0°50'14	evening set	4111 Apr 04 03:16	29° $\Upsilon$ 14'41
min. Earth dist.	4104 Sep 24 20:32	4° $\Upsilon$ 17'50 18.96959 AU		4111 Apr 17 10:42	0° $\Upsilon$
direct	4104 Dec 10 21:18	2° $\Upsilon$ 18'49			
evening set	4105 Mar 10 23:25	5° $\Upsilon$ 19'15	conjunction	4111 Apr 20 00:34	0° $\Upsilon$ 08'52 -0°37'59
			minimum elong	4111 Apr 20 00:34	0° $\Upsilon$ 08'52 0°37'59
conjunction	4105 Mar 26 16:47	6° $\Upsilon$ 13'17 -0°45'12	max. Earth dist.	4111 Apr 20 21:34	0° $\Upsilon$ 11'52 21.05423 AU
minimum elong	4105 Mar 26 16:47	6° $\Upsilon$ 13'17 0°45'11	morning rise	4111 May 06 01:06	1° $\Upsilon$ 03'31
max. Earth dist.	4105 Mar 27 15:26	6° $\Upsilon$ 16'33 20.98228 AU	retrograde	4111 Aug 08 06:44	4° $\Upsilon$ 10'25
morning rise	4105 Apr 11 12:35	7° $\Upsilon$ 07'41	min. Earth dist.	4111 Oct 24 08:49	2° $\Upsilon$ 13'23 19.05201 AU
retrograde	4105 Jul 14 03:39	10° $\Upsilon$ 14'28	opposition	4111 Oct 25 04:37	2° $\Upsilon$ 11'23 -0°40'55
min. Earth dist.	4105 Sep 29 04:20	8° $\Upsilon$ 17'47 18.99484 AU	direct	4112 Jan 08 16:31	0° $\Upsilon$ 15'08
opposition	4105 Sep 30 02:28	8° $\Upsilon$ 15'35 -0°49'35	evening set	4112 Apr 07 08:24	3° $\Upsilon$ 13'45
direct	4105 Dec 15 04:51	6° $\Upsilon$ 18'50			
evening set	4106 Mar 15 03:56	9° $\Upsilon$ 18'50	conjunction	4112 Apr 23 06:27	4° $\Upsilon$ 08'00 -0°36'05
			minimum elong	4112 Apr 23 06:27	4° $\Upsilon$ 08'00 0°36'05

max. Earth dist.	4112 Apr 24 02:32	4°8'10"52	21.04778 AU	opposition	4118 Nov 22 08:10	0°11'11" -0°22'01"
morning rise	4112 May 09 07:57	5°8'02"45		min. Earth dist.	4118 Nov 21 18:41	0°12'39" 18.90444 AU
retrograde	4112 Aug 11 13:44	8°8'09"45			4118 Nov 26 22:50	30°8'8"
opposition	4112 Oct 28 12:20	6°8'10"35	-0°38'44"	direct	4119 Feb 05 07:16	28°8'14"07"
min. Earth dist.	4112 Oct 27 18:18	6°8'12"24	19.04293 AU		4119 Apr 12 17:38	0°12'
direct	4113 Jan 11 20:54	4°8'14"14		evening set	4119 May 06 04:09	1°12'14"04"
evening set	4113 Apr 11 13:39	7°8'12"49				
conjunction	4113 Apr 27 12:36	8°8'07"10	-0°34'01"	conjunction	4119 May 22 08:38	2°12'09"22 -0°18'29"
minimum elong	4113 Apr 27 12:37	8°8'07"10	0°34'02"	minimum elong	4119 May 22 08:38	2°12'09"22 0°18'30"
max. Earth dist.	4113 Apr 28 08:10	8°8'09"58	21.03635 AU	max. Earth dist.	4119 May 22 23:22	2°12'11"29 20.88747 AU
morning rise	4113 May 13 14:58	9°8'02"01		morning rise	4119 Jun 07 16:38	3°12'05"12"
retrograde	4113 Aug 15 23:39	12°8'09"08		retrograde	4119 Sep 10 07:46	6°12'13"55"
opposition	4113 Nov 01 19:35	10°8'09"48	-0°36'21"	opposition	4119 Nov 26 15:37	4°12'13"49 -0°18'44"
min. Earth dist.	4113 Nov 01 01:20	10°8'11"39	19.02913 AU	min. Earth dist.	4119 Nov 26 02:20	4°12'15"11 18.86975 AU
direct	4114 Jan 16 03:57	8°8'13"21		direct	4120 Feb 09 13:39	2°12'16"31"
evening set	4114 Apr 15 19:11	11°8'11"57		evening set	4120 May 09 12:31	5°12'17"00"
conjunction	4114 May 01 18:55	12°8'06"26	-0°31'47"	conjunction	4120 May 25 17:56	6°12'12"31 -0°15'29"
minimum elong	4114 May 01 18:56	12°8'06"26	0°31'47"	minimum elong	4120 May 25 17:56	6°12'12"31 0°15'30"
max. Earth dist.	4114 May 02 13:42	12°8'09"06	21.02036 AU	behind sun begin	4120 May 25 16:21	6°12'12"17"
morning rise	4114 May 17 22:15	13°8'01"24		behind sun end	4120 May 25 19:32	6°12'12"44"
retrograde	4114 Jun 27 01:25	15°8'		max. Earth dist.	4120 May 26 07:29	6°12'14"27 20.85106 AU
	4114 Aug 20 07:03	16°8'08"40		morning rise	4120 Jun 11 02:51	7°12'08"33"
	4114 Oct 15 10:45	15°8'8"		retrograde	4120 Sep 13 17:39	10°12'17"41"
min. Earth dist.	4114 Nov 05 10:24	14°8'10"52	19.01115 AU	opposition	4120 Nov 29 23:31	8°12'17"31 -0°15'21"
opposition	4114 Nov 06 03:01	14°8'09"11	-0°33'47"	min. Earth dist.	4120 Nov 29 12:16	8°12'18"41 18.83157 AU
direct	4115 Jan 20 08:08	12°8'12"36		direct	4121 Feb 12 19:32	6°12'20"04"
	4115 Apr 16 15:12	15°8'		evening set	4121 May 13 21:30	9°12'21"08"
evening set	4115 Apr 20 00:49	15°8'11"18		conjunction	4121 May 30 03:53	10°12'16"53 -0°12'23"
conjunction	4115 May 06 01:32	16°8'05"54	-0°29'24"	minimum elong	4121 May 30 03:53	10°12'16"53 0°12'23"
minimum elong	4115 May 06 01:32	16°8'05"54	0°29'24"	behind sun begin	4121 May 29 23:32	10°12'16"16"
max. Earth dist.	4115 May 06 19:50	16°8'08"31	21.00059 AU	behind sun end	4121 May 30 08:13	10°12'17"30"
morning rise	4115 May 22 05:47	17°8'01"02		max. Earth dist.	4121 May 30 15:58	10°12'18"37 20.81118 AU
retrograde	4115 Aug 24 16:54	20°8'08"30		morning rise	4121 Jun 15 13:40	11°12'13"08"
opposition	4115 Nov 10 10:13	18°8'08"51	-0°31'04"	retrograde	4121 Sep 18 06:11	14°12'22"45"
min. Earth dist.	4115 Nov 09 17:22	18°8'10"33	18.98950 AU	opposition	4121 Dec 04 07:31	12°12'22"30 -0°11'53"
direct	4116 Jan 24 15:07	16°8'12"07		min. Earth dist.	4121 Dec 03 20:49	12°12'23"36 18.78975 AU
evening set	4116 Apr 23 07:02	19°8'11"01		direct	4122 Feb 17 02:48	10°12'24"52"
conjunction	4116 May 09 08:37	20°8'05"46	-0°26'52"	evening set	4122 May 18 07:21	13°12'26"36"
minimum elong	4116 May 09 08:37	20°8'05"46	0°26'52"	conjunction	4122 Jun 03 14:39	14°12'22"36 -0°09'12"
max. Earth dist.	4116 May 10 02:02	20°8'08"15	20.97713 AU	minimum elong	4122 Jun 03 14:39	14°12'22"36 0°09'13"
morning rise	4116 May 25 13:50	21°8'01"03		behind sun begin	4122 Jun 03 09:01	14°12'21"48"
retrograde	4116 Aug 28 01:10	24°8'08"45		behind sun end	4122 Jun 03 20:17	14°12'23"23"
opposition	4116 Nov 13 17:23	22°8'08"58	-0°28'11"	max. Earth dist.	4122 Jun 04 01:18	14°12'24"07 20.76735 AU
min. Earth dist.	4116 Nov 13 02:17	22°8'10"30	18.96436 AU	morning rise	4122 Jun 20 01:16	15°12'19"04"
direct	4117 Jan 27 19:35	20°8'12"05		retrograde	4122 Sep 22 16:56	18°12'29"10"
evening set	4117 Apr 27 13:35	23°8'11"16		opposition	4122 Dec 08 16:01	16°12'28"50 -0°08'19"
conjunction	4117 May 13 16:10	24°8'06"11	-0°24'12"	min. Earth dist.	4122 Dec 08 07:36	16°12'29"42 18.74390 AU
minimum elong	4117 May 13 16:10	24°8'06"11	0°24'12"	direct	4123 Feb 21 09:16	14°12'30"59"
max. Earth dist.	4117 May 14 08:48	24°8'08"34	20.95046 AU	evening set	4123 May 22 17:53	17°12'33"27"
morning rise	4117 May 29 22:17	25°8'01"38		conjunction	4123 Jun 08 02:10	18°12'29"41 -0°05'58"
retrograde	4117 Sep 01 11:24	28°8'09"37		minimum elong	4123 Jun 08 02:09	18°12'29"41 0°05'58"
min. Earth dist.	4117 Nov 17 09:24	26°8'11"16	18.93601 AU	behind sun begin	4123 Jun 07 19:47	18°12'28"47"
opposition	4117 Nov 18 00:38	26°8'09"43	-0°25'10"	behind sun end	4123 Jun 08 08:32	18°12'30"35"
direct	4118 Feb 01 02:05	24°8'12"42		max. Earth dist.	4123 Jun 08 10:50	18°12'30"55 20.71953 AU
evening set	4118 May 01 20:34	27°8'12"13		morning rise	4123 Jun 24 13:41	19°12'26"24"
conjunction	4118 May 18 00:01	28°8'07"19	-0°21'24"	retrograde	4123 Sep 27 06:35	22°12'37"00"
minimum elong	4118 May 18 00:01	28°8'07"19	0°21'24"	opposition	4123 Dec 13 00:47	20°12'36"32 -0°04'41"
max. Earth dist.	4118 May 18 15:46	28°8'09"34	20.92047 AU	min. Earth dist.	4123 Dec 12 17:15	20°12'37"19 18.69391 AU
morning rise	4118 Jun 03 07:04	29°8'02"57		direct	4124 Feb 25 18:15	18°12'38"25"
	4118 Jun 20 23:58	0°12'		evening set	4124 May 26 05:19	21°12'41"38"
retrograde	4118 Sep 05 20:27	2°12'11"17		conjunction	4124 Jun 11 14:32	22°12'38"09 -0°02'40"
				minimum elong	4124 Jun 11 14:32	22°12'38"09 0°02'40"

behind sun begin	4124 Jun 11 07:50	22° $\Pi$ 37'12		morning rise	4129 Jul 20 06:30	14° $\mathfrak{D}$ 39'15	
behind sun end	4124 Jun 11 21:14	22° $\Pi$ 39'05		retrograde	4129 Oct 22 14:35	17° $\mathfrak{D}$ 53'01	
max. Earth dist.	4124 Jun 11 21:36	22° $\Pi$ 39'08	20.66739 AU	opposition	4130 Jan 06 13:00	15° $\mathfrak{D}$ 51'26	0°17'22
morning rise	4124 Jun 28 02:48	23° $\Pi$ 35'06		min. Earth dist.	4130 Jan 06 14:32	15° $\mathfrak{D}$ 51'16	18.33150 AU
retrograde	4124 Sep 30 17:35	26° $\Pi$ 46'12		direct	4130 Mar 22 05:55	13° $\mathfrak{D}$ 51'03	
opposition	4124 Dec 16 09:52	24° $\Pi$ 45'35	-0°01'01	evening set	4130 Jun 21 17:22	16° $\mathfrak{D}$ 59'53	
min. Earth dist.	4124 Dec 16 04:40	24° $\Pi$ 46'07	18.63976 AU				
direct	4125 Mar 01 01:34	22° $\Pi$ 47'09		conjunction	4130 Jul 08 07:37	17° $\mathfrak{D}$ 58'03	0°17'16
asc. node	4125 Mar 27 14:15	23° $\Pi$ 05'29		minimum elong	4130 Jul 08 07:37	17° $\mathfrak{D}$ 58'03	0°17'15
evening set	4125 May 30 17:25	25° $\Pi$ 51'11		max. Earth dist.	4130 Jul 08 05:05	17° $\mathfrak{D}$ 57'41	20.29936 AU
				morning rise	4130 Jul 24 23:43	18° $\mathfrak{D}$ 56'31	
conjunction	4125 Jun 16 03:33	26° $\Pi$ 47'57	0°00'45	retrograde	4130 Oct 27 05:29	22° $\mathfrak{D}$ 10'53	
minimum elong	4125 Jun 16 03:32	26° $\Pi$ 47'57	0°00'45	opposition	4131 Jan 11 00:36	20° $\mathfrak{D}$ 09'08	0°20'54
behind sun begin	4125 Jun 15 20:50	26° $\Pi$ 47'00		min. Earth dist.	4131 Jan 11 03:39	20° $\mathfrak{D}$ 08'48	18.26700 AU
behind sun end	4125 Jun 16 10:14	26° $\Pi$ 48'54		direct	4131 Mar 26 17:10	18° $\mathfrak{D}$ 08'23	
max. Earth dist.	4125 Jun 16 08:25	26° $\Pi$ 48'37	20.61158 AU	evening set	4131 Jun 26 10:22	21° $\mathfrak{D}$ 18'18	
morning rise	4125 Jul 02 16:39	27° $\Pi$ 45'09					
	4125 Aug 17 20:11	0° $\mathfrak{D}$		conjunction	4131 Jul 13 01:12	22° $\mathfrak{D}$ 16'45	0°20'24
retrograde	4125 Oct 05 07:52	0° $\mathfrak{D}$ 56'46		minimum elong	4131 Jul 13 01:12	22° $\mathfrak{D}$ 16'45	0°20'24
	4125 Nov 23 17:33	30° $\mathfrak{R}$ $\Pi$		max. Earth dist.	4131 Jul 12 20:14	22° $\mathfrak{D}$ 16'02	20.23506 AU
opposition	4125 Dec 20 19:19	28° $\Pi$ 55'57	0°02'41	morning rise	4131 Jul 29 17:55	23° $\mathfrak{D}$ 15'29	
min. Earth dist.	4125 Dec 20 15:04	28° $\Pi$ 56'24	18.58223 AU	retrograde	4131 Oct 31 22:25	26° $\mathfrak{D}$ 30'26	
direct	4126 Mar 05 12:04	26° $\Pi$ 57'10		opposition	4132 Jan 15 12:48	24° $\mathfrak{D}$ 28'33	0°24'20
	4126 Jun 03 15:35	0° $\mathfrak{D}$		min. Earth dist.	4132 Jan 15 16:55	24° $\mathfrak{D}$ 28'07	18.20293 AU
evening set	4126 Jun 04 06:06	0° $\mathfrak{D}$ 02'03		direct	4132 Mar 30 05:55	22° $\mathfrak{D}$ 27'25	
				evening set	4132 Jun 30 04:16	25° $\mathfrak{D}$ 38'29	
conjunction	4126 Jun 20 17:08	0° $\mathfrak{D}$ 59'06	0°04'09				
minimum elong	4126 Jun 20 17:09	0° $\mathfrak{D}$ 59'06	0°04'09	conjunction	4132 Jul 16 19:49	26° $\mathfrak{D}$ 37'14	0°23'26
behind sun begin	4126 Jun 20 10:31	0° $\mathfrak{D}$ 58'10		minimum elong	4132 Jul 16 19:49	26° $\mathfrak{D}$ 37'14	0°23'26
behind sun end	4126 Jun 20 23:46	1° $\mathfrak{D}$ 00'02		max. Earth dist.	4132 Jul 16 14:18	26° $\mathfrak{D}$ 36'26	20.17116 AU
max. Earth dist.	4126 Jun 20 20:48	0° $\mathfrak{D}$ 59'36	20.55251 AU	morning rise	4132 Aug 02 12:42	27° $\mathfrak{D}$ 36'14	
morning rise	4126 Jul 07 06:55	1° $\mathfrak{D}$ 56'33			4132 Sep 20 07:14	0° $\mathfrak{Q}$	
retrograde	4126 Oct 09 19:24	5° $\mathfrak{D}$ 08'41		retrograde	4132 Nov 04 15:05	0° $\mathfrak{Q}$ 51'46	
opposition	4126 Dec 25 05:12	3° $\mathfrak{D}$ 07'41	0°06'24		4132 Dec 20 18:48	30° $\mathfrak{R}$ $\mathfrak{D}$	
min. Earth dist.	4126 Dec 25 03:02	3° $\mathfrak{D}$ 07'55	18.52185 AU	opposition	4133 Jan 19 01:36	28° $\mathfrak{D}$ 49'48	0°27'39
direct	4127 Mar 09 20:46	1° $\mathfrak{D}$ 08'31		min. Earth dist.	4133 Jan 19 07:01	28° $\mathfrak{D}$ 49'13	18.13937 AU
evening set	4127 Jun 08 19:45	4° $\mathfrak{D}$ 14'19		direct	4133 Apr 03 18:23	26° $\mathfrak{D}$ 48'20	
				evening set	4133 Jul 04 23:10	0° $\mathfrak{Q}$ 00'35	
conjunction	4127 Jun 25 07:37	5° $\mathfrak{D}$ 11'38	0°07'29		4133 Jul 04 19:11	0° $\mathfrak{Q}$	
minimum elong	4127 Jun 25 07:37	5° $\mathfrak{D}$ 11'37	0°07'28				
behind sun begin	4127 Jun 25 01:30	5° $\mathfrak{D}$ 10'45		conjunction	4133 Jul 21 15:08	0° $\mathfrak{Q}$ 59'37	0°26'22
behind sun end	4127 Jun 25 13:44	5° $\mathfrak{D}$ 12'30		minimum elong	4133 Jul 21 15:08	0° $\mathfrak{Q}$ 59'37	0°26'22
max. Earth dist.	4127 Jun 25 09:04	5° $\mathfrak{D}$ 11'49	20.49115 AU	max. Earth dist.	4133 Jul 21 07:03	0° $\mathfrak{Q}$ 58'25	20.10808 AU
morning rise	4127 Jul 11 22:11	6° $\mathfrak{D}$ 09'20		morning rise	4133 Aug 07 08:29	1° $\mathfrak{Q}$ 58'51	
retrograde	4127 Oct 14 10:09	9° $\mathfrak{D}$ 22'00		retrograde	4133 Nov 09 09:36	5° $\mathfrak{Q}$ 15'02	
opposition	4127 Dec 29 15:15	7° $\mathfrak{D}$ 20'47	0°10'06	opposition	4134 Jan 23 15:04	3° $\mathfrak{Q}$ 12'58	0°30'50
min. Earth dist.	4127 Dec 29 14:06	7° $\mathfrak{D}$ 20'55	18.45956 AU	min. Earth dist.	4134 Jan 23 21:49	3° $\mathfrak{Q}$ 12'14	18.07673 AU
direct	4128 Mar 13 07:59	5° $\mathfrak{D}$ 21'13		direct	4134 Apr 08 08:22	1° $\mathfrak{Q}$ 11'10	
evening set	4128 Jun 12 10:11	8° $\mathfrak{D}$ 27'59		evening set	4134 Jul 09 18:50	4° $\mathfrak{Q}$ 24'38	
conjunction	4128 Jun 28 22:56	9° $\mathfrak{D}$ 25'35	0°10'47	conjunction	4134 Jul 26 11:28	5° $\mathfrak{Q}$ 23'57	0°29'09
minimum elong	4128 Jun 28 22:56	9° $\mathfrak{D}$ 25'35	0°10'47	minimum elong	4134 Jul 26 11:27	5° $\mathfrak{Q}$ 23'57	0°29'09
behind sun begin	4128 Jun 28 17:50	9° $\mathfrak{D}$ 24'51		max. Earth dist.	4134 Jul 26 02:57	5° $\mathfrak{Q}$ 22'41	20.04570 AU
behind sun end	4128 Jun 29 04:02	9° $\mathfrak{D}$ 26'18		morning rise	4134 Aug 12 04:53	6° $\mathfrak{Q}$ 23'27	
max. Earth dist.	4128 Jun 28 23:22	9° $\mathfrak{D}$ 25'38	20.42799 AU	retrograde	4134 Nov 14 04:01	9° $\mathfrak{Q}$ 40'14	
morning rise	4128 Jul 15 14:00	10° $\mathfrak{D}$ 23'33		opposition	4135 Jan 28 05:17	7° $\mathfrak{Q}$ 38'07	0°33'52
retrograde	4128 Oct 17 23:12	13° $\mathfrak{D}$ 36'45		min. Earth dist.	4135 Jan 28 13:19	7° $\mathfrak{Q}$ 37'15	18.01460 AU
opposition	4129 Jan 02 01:55	11° $\mathfrak{D}$ 35'21	0°13'46	direct	4135 Apr 12 22:34	5° $\mathfrak{Q}$ 36'00	
min. Earth dist.	4129 Jan 02 02:33	11° $\mathfrak{D}$ 35'17	18.39582 AU	evening set	4135 Jul 14 15:53	8° $\mathfrak{Q}$ 50'41	
direct	4129 Mar 17 18:05	9° $\mathfrak{D}$ 35'23					
evening set	4129 Jun 17 01:21	12° $\mathfrak{D}$ 43'08		conjunction	4135 Jul 31 08:45	9° $\mathfrak{Q}$ 50'17	0°31'48
				minimum elong	4135 Jul 31 08:44	9° $\mathfrak{Q}$ 50'17	0°31'48
conjunction	4129 Jul 03 14:45	13° $\mathfrak{D}$ 41'01	0°14'03	max. Earth dist.	4135 Jul 30 21:18	9° $\mathfrak{Q}$ 48'34	19.98383 AU
minimum elong	4129 Jul 03 14:45	13° $\mathfrak{D}$ 41'01	0°14'03	morning rise	4135 Aug 17 02:27	10° $\mathfrak{Q}$ 50'01	
behind sun begin	4129 Jul 03 11:34	13° $\mathfrak{D}$ 40'34		retrograde	4135 Nov 18 23:34	14° $\mathfrak{Q}$ 07'25	
behind sun end	4129 Jul 03 17:57	13° $\mathfrak{D}$ 41'29		opposition	4136 Feb 01 20:06	12° $\mathfrak{Q}$ 05'13	0°36'43
max. Earth dist.	4129 Jul 03 12:56	13° $\mathfrak{D}$ 40'46	20.36390 AU	min. Earth dist.	4136 Feb 02 05:56	12° $\mathfrak{Q}$ 04'10	17.95302 AU

direct	4136 Apr 16 14:16	10° $\Omega$ 02'45	evening set	4142 Aug 16 16:34	10° $\eta$ 42'15	
evening set	4136 Jul 18 13:41	13° $\Omega$ 18'41				
conjunction	4136 Aug 04 07:03	14° $\Omega$ 18'34 0°34'16	conjunction	4142 Sep 02 10:17	11° $\eta$ 43'27 0°44'24	
minimum elong	4136 Aug 04 07:03	14° $\Omega$ 18'34 0°34'16	minimum elong	4142 Sep 02 10:17	11° $\eta$ 43'27 0°44'24	
max. Earth dist.	4136 Aug 03 18:59	14° $\Omega$ 16'45 19.92229 AU	max. Earth dist.	4142 Sep 01 13:45	11° $\eta$ 40'18 19.58037 AU	
	4136 Aug 15 19:20	15° $\Omega$	morning rise	4142 Sep 19 02:35	12° $\eta$ 44'28	
morning rise	4136 Aug 21 00:38	15° $\Omega$ 18'31	retrograde	4142 Dec 21 01:09	16° $\eta$ 05'15	
retrograde	4136 Nov 22 19:15	18° $\Omega$ 36'29	opposition	4143 Mar 04 23:16	14° $\eta$ 02'22 0°49'54	
opposition	4137 Feb 05 11:46	16° $\Omega$ 34'13 0°39'23	min. Earth dist.	4143 Mar 05 16:32	14° $\eta$ 00'29 17.55679 AU	
min. Earth dist.	4137 Feb 05 22:42	16° $\Omega$ 33'03 17.89167 AU	direct	4143 May 19 06:03	11° $\eta$ 57'25	
	4137 Mar 19 01:09	15° $\kappa$ $\Omega$	evening set	4143 Aug 21 19:16	15° $\eta$ 21'14	
direct	4137 Apr 21 06:51	14° $\Omega$ 31'25	conjunction	4143 Sep 07 12:41	16° $\eta$ 22'35 0°45'09	
	4137 May 24 04:39	15° $\Omega$	minimum elong	4143 Sep 07 12:41	16° $\eta$ 22'35 0°45'10	
evening set	4137 Jul 23 12:22	17° $\Omega$ 48'33	max. Earth dist.	4143 Sep 06 15:01	16° $\eta$ 19'15 19.53380 AU	
conjunction	4137 Aug 09 05:48	18° $\Omega$ 48'41 0°36'33	morning rise	4143 Sep 24 04:25	17° $\eta$ 23'44	
minimum elong	4137 Aug 09 05:48	18° $\Omega$ 48'41 0°36'32	retrograde	4143 Dec 25 21:56	20° $\eta$ 44'52	
max. Earth dist.	4137 Aug 08 14:50	18° $\Omega$ 46'25 19.86119 AU	opposition	4144 Mar 08 19:25	18° $\eta$ 41'56 0°50'36	
morning rise	4137 Aug 25 23:30	19° $\Omega$ 48'51	min. Earth dist.	4144 Mar 09 14:10	18° $\eta$ 39'53 17.51268 AU	
retrograde	4137 Nov 27 15:13	23° $\Omega$ 07'23	direct	4144 May 23 03:15	16° $\eta$ 36'41	
opposition	4138 Feb 10 04:11	21° $\Omega$ 05'01 0°41'48	evening set	4144 Aug 25 22:19	20° $\eta$ 01'29	
min. Earth dist.	4138 Feb 10 16:59	21° $\Omega$ 03'38 17.83101 AU	conjunction	4144 Sep 11 15:25	21° $\eta$ 02'58 0°45'37	
direct	4138 Apr 26 00:02	19° $\Omega$ 01'50	minimum elong	4144 Sep 11 15:25	21° $\eta$ 02'58 0°45'36	
evening set	4138 Jul 28 11:48	22° $\Omega$ 20'10	max. Earth dist.	4144 Sep 10 17:29	20° $\eta$ 59'34 19.49217 AU	
conjunction	4138 Aug 14 05:37	23° $\Omega$ 20'33 0°38'37	morning rise	4144 Sep 28 06:36	22° $\eta$ 04'12	
minimum elong	4138 Aug 14 05:37	23° $\Omega$ 20'33 0°38'37	retrograde	4144 Dec 29 21:47	25° $\eta$ 25'39	
max. Earth dist.	4138 Aug 13 14:06	23° $\Omega$ 18'12 19.80092 AU	opposition	4145 Mar 13 16:08	23° $\eta$ 22'42 0°50'57	
morning rise	4138 Aug 30 23:04	24° $\Omega$ 20'55	min. Earth dist.	4145 Mar 14 10:09	23° $\eta$ 20'44 17.47364 AU	
retrograde	4138 Dec 02 12:07	27° $\Omega$ 39'58	direct	4145 May 28 03:57	21° $\eta$ 17'15	
opposition	4139 Feb 14 21:03	25° $\Omega$ 37'29 0°44'00	evening set	4145 Aug 31 01:38	24° $\eta$ 42'55	
min. Earth dist.	4139 Feb 15 10:37	25° $\Omega$ 36'01 17.77131 AU	conjunction	4145 Sep 16 18:21	25° $\eta$ 44'31 0°45'47	
direct	4139 Apr 30 19:04	23° $\Omega$ 33'56	minimum elong	4145 Sep 16 18:21	25° $\eta$ 44'31 0°45'46	
evening set	4139 Aug 02 12:11	26° $\Omega$ 53'27	max. Earth dist.	4145 Sep 15 20:15	25° $\eta$ 41'05 19.45575 AU	
max. Earth dist.	4139 Aug 18 11:52	27° $\Omega$ 51'18 19.74197 AU	morning rise	4145 Oct 03 08:49	26° $\eta$ 45'49	
conjunction	4139 Aug 19 05:58	27° $\Omega$ 54'03 0°40'27		4145 Dec 18 10:06	0° $\Omega$	
minimum elong	4139 Aug 19 05:58	27° $\Omega$ 54'03 0°40'26	retrograde	4146 Jan 03 20:00	0° $\Omega$ 07'34	
morning rise	4139 Sep 04 23:22	28° $\Omega$ 54'37		4146 Jan 20 10:32	30° $\kappa$ $\eta$	
	4139 Sep 24 03:37	0° $\eta$	opposition	4146 Mar 18 13:35	28° $\eta$ 04'39 0°50'59	
retrograde	4139 Dec 07 08:13	2° $\eta$ 14'09	min. Earth dist.	4146 Mar 19 08:49	28° $\eta$ 02'33 17.44003 AU	
opposition	4140 Feb 19 14:45	0° $\eta$ 11'33 0°45'55	direct	4146 Jun 02 02:16	25° $\eta$ 59'01	
min. Earth dist.	4140 Feb 20 06:14	0° $\eta$ 09'52 17.71338 AU	evening set	4146 Sep 05 05:29	29° $\eta$ 25'32	
	4140 Feb 24 01:17	30° $\kappa$ $\Omega$		4146 Sep 14 14:23	0° $\Omega$	
direct	4140 May 04 13:29	28° $\Omega$ 07'38	conjunction	4146 Sep 21 21:42	0° $\Omega$ 27'13 0°45'38	
	4140 Jul 11 02:18	0° $\eta$	minimum elong	4146 Sep 21 21:42	0° $\Omega$ 27'13 0°45'38	
evening set	4140 Aug 06 13:01	1° $\eta$ 28'16	max. Earth dist.	4146 Sep 20 23:05	0° $\Omega$ 23'42 19.42496 AU	
conjunction	4140 Aug 23 06:56	2° $\eta$ 29'06 0°42'02	morning rise	4146 Oct 08 11:35	1° $\Omega$ 28'36	
minimum elong	4140 Aug 23 06:56	2° $\eta$ 29'06 0°42'02	retrograde	4147 Jan 08 20:38	4° $\Omega$ 50'34	
max. Earth dist.	4140 Aug 22 12:30	2° $\eta$ 26'17 19.68509 AU	opposition	4147 Mar 23 11:19	2° $\Omega$ 47'44 0°50'39	
morning rise	4140 Sep 08 23:56	3° $\eta$ 29'49	min. Earth dist.	4147 Mar 24 05:50	2° $\Omega$ 45'42 17.41192 AU	
retrograde	4140 Dec 11 06:06	6° $\eta$ 49'49	direct	4147 Jun 07 03:17	0° $\Omega$ 41'58	
opposition	4141 Feb 23 08:56	4° $\eta$ 47'07 0°47'33	evening set	4147 Sep 10 09:42	4° $\Omega$ 09'15	
min. Earth dist.	4141 Feb 24 00:40	4° $\eta$ 45'24 17.65777 AU	max. Earth dist.	4147 Sep 26 03:14	5° $\Omega$ 07'34 19.39945 AU	
direct	4141 May 09 10:48	2° $\eta$ 42'50	conjunction	4147 Sep 27 01:25	5° $\Omega$ 11'01 0°45'11	
evening set	4141 Aug 11 14:36	6° $\eta$ 04'34	minimum elong	4147 Sep 27 01:25	5° $\Omega$ 11'01 0°45'10	
conjunction	4141 Aug 28 08:21	7° $\eta$ 05'35 0°43'21	morning rise	4147 Oct 13 14:23	6° $\Omega$ 12'25	
minimum elong	4141 Aug 28 08:21	7° $\eta$ 05'35 0°43'21	retrograde	4148 Jan 13 20:25	9° $\Omega$ 34'35	
max. Earth dist.	4141 Aug 27 12:03	7° $\eta$ 02'29 19.63092 AU	opposition	4148 Mar 27 09:58	7° $\Omega$ 31'52 0°50'00	
morning rise	4141 Sep 14 01:04	8° $\eta$ 06'29	min. Earth dist.	4148 Mar 28 05:35	7° $\Omega$ 29'43 17.38903 AU	
retrograde	4141 Dec 16 02:24	11° $\eta$ 26'53	direct	4148 Jun 11 02:41	5° $\Omega$ 26'02	
opposition	4142 Feb 28 03:50	9° $\eta$ 24'05 0°48'53	evening set	4148 Sep 14 14:04	8° $\Omega$ 53'59	
min. Earth dist.	4142 Feb 28 21:19	9° $\eta$ 22'11 17.60541 AU	max. Earth dist.	4148 Sep 30 06:01	9° $\Omega$ 52'11 19.37912 AU	
direct	4142 May 14 06:37	7° $\eta$ 19'26	conjunction	4148 Oct 01 05:00	9° $\Omega$ 55'46 0°44'26	

minimum elong	4148 Oct 01 05:00	9° <u>♄</u> 55'46	0°44'27	min. Earth dist.	4155 May 01 05:15	10° <u>♄</u> 50'55	17.35890 AU
morning rise	4148 Oct 17 17:16	10° <u>♄</u> 57'12		direct	4155 Jul 15 22:24	8° <u>♄</u> 46'51	
retrograde	4149 Jan 17 21:22	14° <u>♄</u> 19'31		evening set	4155 Oct 19 19:06	12° <u>♄</u> 16'16	
opposition	4149 Apr 01 08:59	12° <u>♄</u> 16'53	0°49'00	max. Earth dist.	4155 Nov 04 08:39	13° <u>♄</u> 14'31	19.36542 AU
min. Earth dist.	4149 Apr 02 03:54	12° <u>♄</u> 14'49	17.37113 AU				
direct	4149 Jun 16 04:25	10° <u>♄</u> 10'59		conjunction	4155 Nov 05 04:07	13° <u>♄</u> 17'34	0°31'08
evening set	4149 Sep 19 18:35	13° <u>♄</u> 39'30		minimum elong	4155 Nov 05 04:07	13° <u>♄</u> 17'34	0°31'08
max. Earth dist.	4149 Oct 05 10:52	14° <u>♄</u> 37'52	19.36348 AU	morning rise	4155 Nov 21 09:24	14° <u>♄</u> 18'22	
					4155 Dec 02 23:03	15° <u>♄</u>	
conjunction	4149 Oct 06 08:57	14° <u>♄</u> 41'19	0°43'22	retrograde	4156 Feb 20 18:32	17° <u>♄</u> 39'50	
minimum elong	4149 Oct 06 08:57	14° <u>♄</u> 41'19	0°43'22	opposition	4156 May 04 12:20	15° <u>♄</u> 37'44	0°33'09
morning rise	4149 Oct 22 20:10	15° <u>♄</u> 42'43		min. Earth dist.	4156 May 05 05:03	15° <u>♄</u> 35'56	17.37374 AU
retrograde	4150 Jan 22 21:30	19° <u>♄</u> 05'06			4156 May 19 06:48	15° <u>♄</u>	
opposition	4150 Apr 06 08:35	17° <u>♄</u> 02'34	0°47'39	direct	4156 Jul 20 02:45	13° <u>♄</u> 31'48	
min. Earth dist.	4150 Apr 07 04:19	17° <u>♄</u> 00'25	17.35779 AU		4156 Sep 17 08:19	15° <u>♄</u>	
direct	4150 Jun 21 05:17	14° <u>♄</u> 56'38		evening set	4156 Oct 23 21:36	17° <u>♄</u> 00'56	
evening set	4150 Sep 24 23:18	18° <u>♄</u> 25'36		max. Earth dist.	4156 Nov 08 10:34	17° <u>♄</u> 59'05	19.38306 AU
conjunction	4150 Oct 11 12:46	19° <u>♄</u> 27'23	0°42'01	conjunction	4156 Nov 09 05:28	18° <u>♄</u> 02'03	0°28'15
minimum elong	4150 Oct 11 12:46	19° <u>♄</u> 27'23	0°42'01	minimum elong	4156 Nov 09 05:28	18° <u>♄</u> 02'03	0°28'15
max. Earth dist.	4150 Oct 10 13:36	19° <u>♄</u> 23'46	19.35243 AU	morning rise	4156 Nov 25 09:48	19° <u>♄</u> 02'41	
morning rise	4150 Oct 27 23:14	20° <u>♄</u> 28'45		retrograde	4157 Feb 24 16:32	22° <u>♄</u> 23'50	
retrograde	4151 Jan 27 21:41	23° <u>♄</u> 51'09		opposition	4157 May 09 13:22	20° <u>♄</u> 21'48	0°29'50
opposition	4151 Apr 11 08:33	21° <u>♄</u> 48'42	0°45'59	min. Earth dist.	4157 May 10 05:26	20° <u>♄</u> 20'04	17.39428 AU
min. Earth dist.	4151 Apr 12 03:42	21° <u>♄</u> 46'36	17.34895 AU	direct	4157 Jul 25 05:24	18° <u>♄</u> 15'57	
direct	4151 Jun 26 08:07	19° <u>♄</u> 42'42		evening set	4157 Oct 28 23:29	21° <u>♄</u> 44'44	
evening set	4151 Sep 30 03:48	23° <u>♄</u> 12'01					
				conjunction	4157 Nov 14 06:24	22° <u>♄</u> 45'40	0°25'11
conjunction	4151 Oct 16 16:35	24° <u>♄</u> 13'46	0°40'22	minimum elong	4157 Nov 14 06:24	22° <u>♄</u> 45'40	0°25'11
minimum elong	4151 Oct 16 16:35	24° <u>♄</u> 13'46	0°40'23	max. Earth dist.	4157 Nov 13 13:28	22° <u>♄</u> 43'01	19.40652 AU
max. Earth dist.	4151 Oct 15 18:42	24° <u>♄</u> 10'20	19.34572 AU	morning rise	4157 Nov 30 09:40	23° <u>♄</u> 46'06	
morning rise	4151 Nov 02 01:53	25° <u>♄</u> 15'03		retrograde	4158 Mar 01 15:48	27° <u>♄</u> 06'52	
retrograde	4152 Feb 01 21:37	28° <u>♄</u> 37'23		opposition	4158 May 14 14:07	25° <u>♄</u> 04'58	0°26'19
opposition	4152 Apr 15 09:00	26° <u>♄</u> 35'01	0°44'00	min. Earth dist.	4158 May 15 04:17	25° <u>♄</u> 03'27	17.42052 AU
min. Earth dist.	4152 Apr 16 04:24	26° <u>♄</u> 32'54	17.34440 AU	direct	4158 Jul 30 09:20	22° <u>♄</u> 59'15	
direct	4152 Jun 30 11:02	24° <u>♄</u> 29'01		evening set	4158 Nov 03 00:52	26° <u>♄</u> 27'36	
evening set	4152 Oct 04 08:18	27° <u>♄</u> 58'31					
				conjunction	4158 Nov 19 06:40	27° <u>♄</u> 28'20	0°21'58
conjunction	4152 Oct 20 20:01	29° <u>♄</u> 00'11	0°38'27	minimum elong	4158 Nov 19 06:40	27° <u>♄</u> 28'20	0°21'59
minimum elong	4152 Oct 20 20:01	29° <u>♄</u> 00'11	0°38'26	max. Earth dist.	4158 Nov 18 14:57	27° <u>♄</u> 25'52	19.43572 AU
max. Earth dist.	4152 Oct 19 21:19	28° <u>♄</u> 56'38	19.34350 AU	morning rise	4158 Dec 05 08:55	28° <u>♄</u> 28'34	
	4152 Nov 05 19:27	0° <u>♄</u>			4159 Jan 01 00:20	0° <u>♄</u>	
morning rise	4152 Nov 06 04:28	0° <u>♄</u> 01'23		retrograde	4159 Mar 06 13:12	1° <u>♄</u> 48'56	
retrograde	4153 Feb 05 20:53	3° <u>♄</u> 23'36			4159 May 14 15:21	30° <u>♄</u>	
opposition	4153 Apr 20 09:37	1° <u>♄</u> 21'18	0°41'42	opposition	4159 May 19 15:03	29° <u>♄</u> 47'12	0°22'38
min. Earth dist.	4153 Apr 21 04:26	1° <u>♄</u> 19'15	17.34452 AU	min. Earth dist.	4159 May 20 04:34	29° <u>♄</u> 45'45	17.45266 AU
	4153 May 24 07:32	30° <u>♄</u>		direct	4159 Aug 04 10:30	27° <u>♄</u> 41'42	
direct	4153 Jul 05 14:45	29° <u>♄</u> 15'17			4159 Oct 19 05:17	0° <u>♄</u>	
	4153 Aug 16 02:28	0° <u>♄</u>		evening set	4159 Nov 08 01:24	1° <u>♄</u> 09'31	
evening set	4153 Oct 09 12:10	2° <u>♄</u> 44'52					
				conjunction	4159 Nov 24 06:08	2° <u>♄</u> 10'02	0°18'37
conjunction	4153 Oct 25 23:10	3° <u>♄</u> 46'27	0°36'15	minimum elong	4159 Nov 24 06:08	2° <u>♄</u> 10'02	0°18'37
minimum elong	4153 Oct 25 23:10	3° <u>♄</u> 46'27	0°36'16	max. Earth dist.	4159 Nov 23 16:11	2° <u>♄</u> 07'51	19.47076 AU
max. Earth dist.	4153 Oct 25 02:08	3° <u>♄</u> 43'08	19.34594 AU	morning rise	4159 Dec 10 07:24	3° <u>♄</u> 10'02	
morning rise	4153 Nov 11 06:30	4° <u>♄</u> 47'31		retrograde	4160 Mar 10 12:45	6° <u>♄</u> 29'59	
retrograde	4154 Feb 10 20:27	8° <u>♄</u> 09'33		opposition	4160 May 23 15:44	4° <u>♄</u> 28'27	0°18'50
opposition	4154 Apr 25 10:27	6° <u>♄</u> 07'19	0°39'06	min. Earth dist.	4160 May 24 02:52	4° <u>♄</u> 27'16	17.49024 AU
min. Earth dist.	4154 Apr 26 04:53	6° <u>♄</u> 05'19	17.34920 AU	direct	4160 Aug 08 13:57	2° <u>♄</u> 23'14	
direct	4154 Jul 10 18:49	4° <u>♄</u> 01'18		evening set	4160 Nov 12 01:16	5° <u>♄</u> 50'27	
evening set	4154 Oct 14 15:59	7° <u>♄</u> 30'51					
max. Earth dist.	4154 Oct 30 04:29	8° <u>♄</u> 28'57	19.35311 AU	conjunction	4160 Nov 28 04:59	6° <u>♄</u> 50'43	0°15'09
				minimum elong	4160 Nov 28 04:59	6° <u>♄</u> 50'43	0°15'10
conjunction	4154 Oct 31 01:52	8° <u>♄</u> 32'18	0°33'48	behind sun begin	4160 Nov 28 02:41	6° <u>♄</u> 50'22	
minimum elong	4154 Oct 31 01:52	8° <u>♄</u> 32'18	0°33'48	behind sun end	4160 Nov 28 07:16	6° <u>♄</u> 51'04	
morning rise	4154 Nov 16 08:17	9° <u>♄</u> 33'15		max. Earth dist.	4160 Nov 27 16:50	6° <u>♄</u> 48'50	19.51094 AU
retrograde	4155 Feb 15 19:07	12° <u>♄</u> 55'02		morning rise	4160 Dec 14 05:13	7° <u>♄</u> 50'30	
opposition	4155 Apr 30 11:18	10° <u>♄</u> 52'51	0°36'15	retrograde	4161 Mar 15 09:14	11° <u>♄</u> 10'01	

opposition	4161 May 28 16:15	9°♂08'42	0°14'55	conjunction	4166 Dec 26 05:40	4°♂28'05	-0°06'42
min. Earth dist.	4161 May 29 02:57	9°♂07'33	17.53284 AU	minimum elong	4166 Dec 26 05:39	4°♂28'05	0°06'41
direct	4161 Aug 13 13:44	7°♂03'47		behind sun begin	4166 Dec 25 23:29	4°♂27'09	
evening set	4161 Nov 17 00:23	10°♂30'20		behind sun end	4166 Dec 26 11:50	4°♂29'01	
				max. Earth dist.	4166 Dec 26 03:00	4°♂27'43	19.82252 AU
conjunction	4161 Dec 03 03:01	11°♂30'21	0°11'36	morning rise	4167 Jan 11 00:49	5°♂26'18	
minimum elong	4161 Dec 03 03:01	11°♂30'21	0°11'37	retrograde	4167 Apr 12 08:20	8°♂42'36	
behind sun begin	4161 Dec 02 22:16	11°♂29'37		opposition	4167 Jun 26 13:00	6°♂42'23	-0°09'20
behind sun end	4161 Dec 03 07:46	11°♂31'04		min. Earth dist.	4167 Jun 26 15:24	6°♂42'08	17.85128 AU
max. Earth dist.	4161 Dec 02 16:08	11°♂28'39	19.55580 AU	direct	4167 Sep 11 18:19	4°♂39'27	
morning rise	4161 Dec 19 02:25	12°♂29'53		evening set	4167 Dec 15 01:47	8°♂00'22	
retrograde	4162 Mar 20 08:32	15°♂48'56					
opposition	4162 Jun 02 16:29	13°♂47'50	0°10'55	conjunction	4167 Dec 30 22:35	8°♂58'38	-0°10'14
min. Earth dist.	4162 Jun 03 00:47	13°♂46'57	17.57952 AU	minimum elong	4167 Dec 30 22:36	8°♂58'38	0°10'14
direct	4162 Aug 18 16:38	11°♂43'15		behind sun begin	4167 Dec 30 17:19	8°♂57'50	
evening set	4162 Nov 21 22:46	15°♂09'02		behind sun end	4167 Dec 31 03:52	8°♂59'25	
				max. Earth dist.	4167 Dec 30 20:27	8°♂58'19	19.88065 AU
conjunction	4162 Dec 08 00:24	16°♂08'47	0°08'00	morning rise	4168 Jan 15 17:16	9°♂56'34	
minimum elong	4162 Dec 08 00:24	16°♂08'47	0°08'00	retrograde	4168 Apr 16 02:42	13°♂12'17	
behind sun begin	4162 Dec 07 18:28	16°♂07'53		opposition	4168 Jun 30 10:49	11°♂12'09	-0°13'15
behind sun end	4162 Dec 08 06:20	16°♂09'41		min. Earth dist.	4168 Jun 30 10:58	11°♂12'08	17.90993 AU
max. Earth dist.	4162 Dec 07 15:36	16°♂07'26	19.60424 AU	direct	4168 Sep 15 17:15	9°♂09'29	
morning rise	4162 Dec 23 22:46	17°♂08'04		evening set	4168 Dec 18 18:40	12°♂29'17	
retrograde	4163 Mar 25 03:51	20°♂26'37					
opposition	4163 Jun 07 16:36	18°♂25'44	0°06'51	conjunction	4169 Jan 03 14:51	13°♂27'14	-0°13'42
min. Earth dist.	4163 Jun 08 00:35	18°♂24'54	17.62960 AU	minimum elong	4169 Jan 03 14:51	13°♂27'14	0°13'40
direct	4163 Aug 23 16:09	16°♂21'30		behind sun begin	4169 Jan 03 11:12	13°♂26'42	
evening set	4163 Nov 26 20:24	19°♂46'27		behind sun end	4169 Jan 03 18:31	13°♂27'47	
				max. Earth dist.	4169 Jan 03 15:27	13°♂27'20	19.93977 AU
conjunction	4163 Dec 12 20:54	20°♂45'55	0°04'22	morning rise	4169 Jan 19 08:48	14°♂24'54	
minimum elong	4163 Dec 12 20:55	20°♂45'55	0°04'23	retrograde	4169 Apr 20 18:24	17°♂39'58	
behind sun begin	4163 Dec 12 14:25	20°♂44'56		opposition	4169 Jul 05 07:56	15°♂39'55	-0°17'02
behind sun end	4163 Dec 13 03:25	20°♂46'54		min. Earth dist.	4169 Jul 05 07:12	15°♂40'00	17.96954 AU
max. Earth dist.	4163 Dec 12 12:57	20°♂44'42	19.65584 AU	direct	4169 Sep 20 14:33	13°♂37'33	
morning rise	4163 Dec 28 18:32	21°♂44'56		evening set	4169 Dec 23 10:43	16°♂56'10	
retrograde	4164 Mar 29 01:46	25°♂02'58					
opposition	4164 Jun 11 16:19	23°♂02'17	0°02'47	conjunction	4170 Jan 08 06:00	17°♂53'49	-0°17'03
min. Earth dist.	4164 Jun 11 21:52	23°♂01'42	17.68243 AU	minimum elong	4170 Jan 08 06:00	17°♂53'49	0°17'03
direct	4164 Aug 27 18:52	20°♂58'23		max. Earth dist.	4170 Jan 08 07:11	17°♂54'00	20.00000 AU
evening set	4164 Nov 30 16:58	24°♂22'25		morning rise	4170 Jan 23 23:35	18°♂51'13	
				retrograde	4170 Apr 25 11:09	22°♂05'39	
conjunction	4164 Dec 16 16:38	25°♂21'36	0°00'39	opposition	4170 Jul 10 04:26	20°♂05'40	-0°20'42
minimum elong	4164 Dec 16 16:39	25°♂21'36	0°00'39	min. Earth dist.	4170 Jul 10 01:31	20°♂05'58	18.03044 AU
behind sun begin	4164 Dec 16 10:03	25°♂20'36		direct	4170 Sep 25 10:46	18°♂03'34	
behind sun end	4164 Dec 16 23:14	25°♂22'36		evening set	4170 Dec 28 01:35	21°♂21'01	
max. Earth dist.	4164 Dec 16 11:02	25°♂20'45	19.70975 AU				
morning rise	4165 Jan 01 13:19	26°♂20'21		conjunction	4171 Jan 12 20:18	22°♂18'22	-0°20'17
desc. node	4165 Feb 18 06:59	28°♂47'11		minimum elong	4171 Jan 12 20:18	22°♂18'22	0°20'16
retrograde	4165 Apr 02 19:38	29°♂37'50		max. Earth dist.	4171 Jan 13 00:28	22°♂19'00	20.06148 AU
opposition	4165 Jun 16 15:45	27°♂37'20	-0°01'18	morning rise	4171 Jan 28 13:13	23°♂15'30	
min. Earth dist.	4165 Jun 16 20:58	27°♂36'47	17.73731 AU	retrograde	4171 Apr 30 02:05	26°♂29'19	
direct	4165 Sep 01 18:05	25°♂33'46		opposition	4171 Jul 15 00:24	24°♂29'25	-0°24'13
evening set	4165 Dec 05 12:55	28°♂56'50		min. Earth dist.	4171 Jul 14 20:00	24°♂29'52	18.09261 AU
				direct	4171 Sep 30 06:40	22°♂27'39	
conjunction	4165 Dec 21 11:30	29°♂55'42	-0°03'06	evening set	4172 Jan 01 15:45	25°♂43'54	
minimum elong	4165 Dec 21 11:30	29°♂55'42	0°03'05				
behind sun begin	4165 Dec 21 04:56	29°♂54'42		conjunction	4172 Jan 17 09:39	26°♂40'58	-0°23'22
behind sun end	4165 Dec 21 18:04	29°♂56'41		minimum elong	4172 Jan 17 09:39	26°♂40'58	0°23'21
max. Earth dist.	4165 Dec 21 06:22	29°♂54'56	19.76550 AU	max. Earth dist.	4172 Jan 17 14:36	26°♂41'42	20.12439 AU
	4165 Dec 22 15:18	0°♂		morning rise	4172 Feb 02 02:20	27°♂37'50	
morning rise	4166 Jan 06 07:32	0°♂54'11			4172 Mar 20 06:03	0°♂	
retrograde	4166 Apr 07 15:46	4°♂11'05		retrograde	4172 May 03 17:54	0°♂51'04	
opposition	4166 Jun 21 14:27	2°♂10'44	-0°05'21		4172 Jun 19 02:44	30°♂♂	
min. Earth dist.	4166 Jun 21 17:25	2°♂10'25	17.79374 AU	opposition	4172 Jul 18 19:35	28°♂51'16	-0°27'33
direct	4166 Sep 06 19:36	0°♂07'29		min. Earth dist.	4172 Jul 18 13:08	28°♂51'55	18.15629 AU
evening set	4166 Dec 10 07:50	3°♂29'31		direct	4172 Oct 04 00:43	26°♂49'49	
					4173 Jan 03 19:27	0°♂	

evening set	4173 Jan 05 04:47	0°04'55		max. Earth dist.	4179 Feb 16 03:25	26°35'07	20.56602 AU
				morning rise	4179 Mar 03 03:13	27°28'08	
conjunction	4173 Jan 20 22:18	1°01'42 -0°26'18			4179 Apr 25 16:21	0°	
minimum elong	4173 Jan 20 22:18	1°01'42 0°26'17		retrograde	4179 Jun 03 16:01	0°37'54	
max. Earth dist.	4173 Jan 21 06:06	1°02'53 20.18858 AU			4179 Jul 13 20:02	30°	
morning rise	4173 Feb 05 14:30	1°58'19		opposition	4179 Aug 19 16:30	28°39'01 -0°45'11	
retrograde	4173 May 08 08:07	5°10'58		min. Earth dist.	4179 Aug 19 00:39	28°40'37 18.59426 AU	
opposition	4173 Jul 23 14:08	3°11'19 -0°30'42		direct	4179 Nov 04 13:20	26°40'13	
min. Earth dist.	4173 Jul 23 06:03	3°12'08 18.22085 AU		evening set	4180 Feb 04 04:43	29°47'48	
direct	4173 Oct 08 18:47	1°10'15			4180 Feb 07 16:46	0°	
evening set	4174 Jan 09 17:14	4°24'12					
				conjunction	4180 Feb 19 19:51	0°42'54 -0°41'33	
conjunction	4174 Jan 25 10:04	5°20'43 -0°29'03		minimum elong	4180 Feb 19 19:51	0°42'54 0°41'33	
minimum elong	4174 Jan 25 10:03	5°20'43 0°29'03		max. Earth dist.	4180 Feb 20 11:43	0°45'15 20.62142 AU	
max. Earth dist.	4174 Jan 25 18:31	5°21'59 20.25345 AU		morning rise	4180 Mar 06 11:43	1°38'06	
morning rise	4174 Feb 10 02:08	6°17'06		retrograde	4180 Jun 07 02:30	4°47'28	
retrograde	4174 May 12 22:51	9°29'13		opposition	4180 Aug 23 06:44	2°48'38 -0°46'46	
opposition	4174 Jul 28 07:59	7°29'41 -0°33'40		min. Earth dist.	4180 Aug 22 14:49	2°50'14 18.64807 AU	
min. Earth dist.	4174 Jul 27 22:20	7°30'40 18.28594 AU		direct	4180 Nov 08 01:22	0°50'06	
direct	4174 Oct 13 11:15	5°29'01		evening set	4181 Feb 07 12:22	3°56'42	
evening set	4175 Jan 14 04:46	8°41'51					
				conjunction	4181 Feb 23 03:38	4°51'38 -0°42'53	
conjunction	4175 Jan 29 21:18	9°38'06 -0°31'38		minimum elong	4181 Feb 23 03:38	4°51'38 0°42'53	
minimum elong	4175 Jan 29 21:18	9°38'06 0°31'39		max. Earth dist.	4181 Feb 23 20:58	4°54'11 20.67339 AU	
max. Earth dist.	4175 Jan 30 08:20	9°39'45 20.31850 AU		morning rise	4181 Mar 10 19:36	5°46'41	
morning rise	4175 Feb 14 13:01	10°34'15		retrograde	4181 Jun 11 14:24	8°55'37	
retrograde	4175 May 17 12:27	13°45'51		opposition	4181 Aug 27 20:14	6°56'48 -0°48'06	
opposition	4175 Aug 02 01:21	11°46'29 -0°36'25		min. Earth dist.	4181 Aug 27 02:55	6°58'33 18.69815 AU	
min. Earth dist.	4175 Aug 01 14:03	11°47'38 18.35076 AU		direct	4181 Nov 12 14:40	4°58'32	
direct	4175 Oct 18 03:42	9°46'14		evening set	4182 Feb 11 19:34	8°04'10	
evening set	4176 Jan 18 15:37	12°57'57					
				conjunction	4182 Feb 27 10:43	8°58'56 -0°43'59	
conjunction	4176 Feb 03 07:36	13°53'56 -0°34'02		minimum elong	4182 Feb 27 10:43	8°58'56 0°44'00	
minimum elong	4176 Feb 03 07:36	13°53'56 0°34'01		max. Earth dist.	4182 Feb 28 04:08	9°01'29 20.72165 AU	
max. Earth dist.	4176 Feb 03 19:11	13°55'40 20.38296 AU		morning rise	4182 Mar 15 03:04	9°53'51	
morning rise	4176 Feb 18 23:22	14°49'53		retrograde	4182 Jun 15 23:12	13°02'24	
	4176 Feb 21 20:51	15°		opposition	4182 Sep 01 09:13	11°03'34 -0°49'11	
retrograde	4176 May 21 02:07	18°01'00		min. Earth dist.	4182 Aug 31 15:59	11°05'17 18.74481 AU	
opposition	4176 Aug 05 18:08	16°01'46 -0°38'58		direct	4182 Nov 17 01:02	9°05'29	
min. Earth dist.	4176 Aug 05 05:45	16°03'02 18.41479 AU		evening set	4183 Feb 16 02:02	12°10'13	
	4176 Sep 01 09:30	15°					
direct	4176 Oct 21 18:32	14°01'54		conjunction	4183 Mar 03 17:26	13°04'49 -0°44'51	
	4176 Dec 09 02:05	15°		minimum elong	4183 Mar 03 17:26	13°04'49 0°44'51	
evening set	4177 Jan 22 01:46	17°12'33		max. Earth dist.	4183 Mar 04 12:23	13°07'36 20.76671 AU	
				morning rise	4183 Mar 19 10:00	13°59'36	
conjunction	4177 Feb 06 17:36	18°08'18 -0°36'14		retrograde	4183 Jun 20 09:42	17°07'47	
minimum elong	4177 Feb 06 17:36	18°08'18 0°36'14		opposition	4183 Sep 05 21:26	15°08'55 -0°50'00	
max. Earth dist.	4177 Feb 07 07:21	18°10'21 20.44620 AU		min. Earth dist.	4183 Sep 05 02:34	15°10'49 18.78834 AU	
morning rise	4177 Feb 22 09:09	19°04'02		direct	4183 Nov 21 13:12	13°11'03	
retrograde	4177 May 25 15:03	22°14'40		evening set	4184 Feb 20 08:05	16°14'54	
opposition	4177 Aug 10 10:02	20°15'36 -0°41'16					
min. Earth dist.	4177 Aug 09 20:11	20°17'00 18.47708 AU		conjunction	4184 Mar 06 23:32	17°09'22 -0°45'29	
direct	4177 Oct 26 09:40	18°16'07		minimum elong	4184 Mar 06 23:32	17°09'22 0°45'29	
evening set	4178 Jan 26 11:27	21°25'43		max. Earth dist.	4184 Mar 07 18:43	17°12'10 20.80877 AU	
				morning rise	4184 Mar 22 16:37	18°04'03	
conjunction	4178 Feb 11 02:52	22°21'14 -0°38'13		retrograde	4184 Jun 23 17:53	21°11'55	
minimum elong	4178 Feb 11 02:52	22°21'14 0°38'13		opposition	4184 Sep 09 09:11	19°13'00 -0°50'33	
max. Earth dist.	4178 Feb 11 16:51	22°23'19 20.50738 AU		min. Earth dist.	4184 Sep 08 14:26	19°14'53 18.82915 AU	
morning rise	4178 Feb 26 18:32	23°16'47		direct	4184 Nov 24 21:47	17°15'19	
retrograde	4178 May 30 03:20	26°26'59		evening set	4185 Feb 23 13:40	20°18'23	
min. Earth dist.	4178 Aug 14 11:14	24°29'28 18.53718 AU					
opposition	4178 Aug 15 01:36	24°28'01 -0°43'21		conjunction	4185 Mar 11 05:28	21°12'43 -0°45'52	
direct	4178 Oct 30 23:06	22°28'53		minimum elong	4185 Mar 11 05:28	21°12'43 0°45'52	
evening set	4179 Jan 30 20:15	25°37'27		max. Earth dist.	4185 Mar 12 02:00	21°15'43 20.84822 AU	
				morning rise	4185 Mar 26 22:53	22°07'19	
conjunction	4179 Feb 15 11:37	26°32'46 -0°40'00		retrograde	4185 Jun 28 03:10	25°14'52	
minimum elong	4179 Feb 15 11:37	26°32'46 0°40'00		opposition	4185 Sep 13 20:02	23°15'57 -0°50'51	

min. Earth dist.	4185 Sep 12 23:39	23° $\text{H}$ 18'00	18.86727 AU	conjunction	4192 Apr 07 17:54	19° $\text{Y}$ 15'53	-0°42'24
direct	4185 Nov 29 08:12	21° $\text{H}$ 18'27		minimum elong	4192 Apr 07 17:54	19° $\text{Y}$ 15'53	0°42'24
evening set	4186 Feb 27 18:59	24° $\text{H}$ 20'48		max. Earth dist.	4192 Apr 08 16:01	19° $\text{Y}$ 19'04	21.03564 AU
				morning rise	4192 Apr 23 15:56	20° $\text{Y}$ 10'21	
conjunction	4186 Mar 15 10:57	25° $\text{H}$ 15'02	-0°46'02	retrograde	4192 Jul 26 13:35	23° $\text{Y}$ 17'06	
minimum elong	4186 Mar 15 10:57	25° $\text{H}$ 15'02	0°46'02	opposition	4192 Oct 12 14:10	21° $\text{Y}$ 18'12	-0°46'06
max. Earth dist.	4186 Mar 16 07:39	25° $\text{H}$ 18'02	20.88498 AU	min. Earth dist.	4192 Oct 11 17:49	21° $\text{Y}$ 20'15	19.04137 AU
morning rise	4186 Mar 31 04:58	26° $\text{H}$ 09'33		direct	4192 Dec 27 08:08	19° $\text{Y}$ 21'50	
retrograde	4186 Jul 02 11:12	29° $\text{H}$ 16'53		evening set	4193 Mar 27 03:38	22° $\text{Y}$ 20'56	
min. Earth dist.	4186 Sep 17 10:36	27° $\text{H}$ 19'58	18.90279 AU				
opposition	4186 Sep 18 06:44	27° $\text{H}$ 17'57	-0°50'54	conjunction	4193 Apr 11 23:23	23° $\text{Y}$ 15'00	-0°41'03
direct	4186 Dec 03 15:26	25° $\text{H}$ 20'38		minimum elong	4193 Apr 11 23:23	23° $\text{Y}$ 15'00	0°41'03
evening set	4187 Mar 03 23:46	28° $\text{H}$ 22'19		max. Earth dist.	4193 Apr 12 21:27	23° $\text{Y}$ 18'10	21.04486 AU
				morning rise	4193 Apr 27 22:07	24° $\text{Y}$ 09'30	
conjunction	4187 Mar 19 16:13	29° $\text{H}$ 16'29	-0°45'59	retrograde	4193 Jul 30 22:55	27° $\text{Y}$ 16'15	
minimum elong	4187 Mar 19 16:13	29° $\text{H}$ 16'29	0°45'58	opposition	4193 Oct 16 22:18	25° $\text{Y}$ 17'19	-0°44'30
max. Earth dist.	4187 Mar 20 14:08	29° $\text{H}$ 19'39	20.91913 AU	min. Earth dist.	4193 Oct 16 01:29	25° $\text{Y}$ 19'24	19.04772 AU
	4187 Apr 01 05:40	0° $\text{Y}$		direct	4193 Dec 31 15:22	23° $\text{Y}$ 21'00	
morning rise	4187 Apr 04 10:42	0° $\text{Y}$ 10'57		evening set	4194 Mar 31 08:32	26° $\text{Y}$ 19'52	
retrograde	4187 Jul 06 20:08	3° $\text{Y}$ 18'04					
opposition	4187 Sep 22 16:49	1° $\text{Y}$ 19'09	-0°50'42	conjunction	4194 Apr 16 04:54	27° $\text{Y}$ 13'59	-0°39'30
min. Earth dist.	4187 Sep 21 19:10	1° $\text{Y}$ 21'19	18.93541 AU	minimum elong	4194 Apr 16 04:54	27° $\text{Y}$ 13'59	0°39'31
	4187 Oct 28 20:49	30° $\text{R}$ $\text{H}$		max. Earth dist.	4194 Apr 17 01:55	27° $\text{Y}$ 16'59	21.04841 AU
direct	4187 Dec 08 00:23	29° $\text{H}$ 22'02		morning rise	4194 May 02 04:33	28° $\text{Y}$ 08'33	
	4188 Jan 15 19:15	0° $\text{Y}$			4194 Jun 08 08:32	0° $\text{R}$	
evening set	4188 Mar 07 04:35	2° $\text{Y}$ 23'07		retrograde	4194 Aug 04 06:12	1° $\text{R}$ 15'21	
					4194 Oct 02 15:59	30° $\text{R}$ $\text{Y}$	
conjunction	4188 Mar 22 21:21	3° $\text{Y}$ 17'13	-0°45'42	min. Earth dist.	4194 Oct 20 11:18	29° $\text{Y}$ 18'14	19.04855 AU
minimum elong	4188 Mar 22 21:21	3° $\text{Y}$ 17'13	0°45'41	opposition	4194 Oct 21 06:29	29° $\text{Y}$ 16'19	-0°42'41
max. Earth dist.	4188 Mar 23 19:13	3° $\text{Y}$ 20'22	20.95015 AU	direct	4195 Jan 04 20:25	27° $\text{Y}$ 19'59	
morning rise	4188 Apr 07 16:33	4° $\text{Y}$ 11'39			4195 Mar 29 22:03	0° $\text{R}$	
retrograde	4188 Jul 10 04:00	7° $\text{Y}$ 18'37		evening set	4195 Apr 04 13:15	0° $\text{R}$ 18'41	
min. Earth dist.	4188 Sep 25 05:31	5° $\text{Y}$ 21'48	18.96486 AU				
opposition	4188 Sep 26 02:29	5° $\text{Y}$ 19'43	-0°50'15	conjunction	4195 Apr 20 10:32	1° $\text{R}$ 12'51	-0°37'46
direct	4188 Dec 11 06:19	3° $\text{Y}$ 22'47		minimum elong	4195 Apr 20 10:32	1° $\text{R}$ 12'52	0°37'46
evening set	4189 Mar 11 09:09	6° $\text{Y}$ 23'20		max. Earth dist.	4195 Apr 21 07:25	1° $\text{R}$ 15'51	21.04668 AU
				morning rise	4195 May 06 11:01	2° $\text{R}$ 07'31	
conjunction	4189 Mar 27 02:31	7° $\text{Y}$ 17'24	-0°45'11	retrograde	4195 Aug 08 15:27	5° $\text{R}$ 14'22	
minimum elong	4189 Mar 27 02:31	7° $\text{Y}$ 17'24	0°45'12	opposition	4195 Oct 25 14:12	3° $\text{R}$ 15'13	-0°40'40
max. Earth dist.	4189 Mar 28 01:12	7° $\text{Y}$ 20'40	20.97787 AU	min. Earth dist.	4195 Oct 24 18:37	3° $\text{R}$ 17'11	19.04415 AU
morning rise	4189 Apr 11 22:16	8° $\text{Y}$ 11'49		direct	4196 Jan 09 03:04	1° $\text{R}$ 18'49	
retrograde	4189 Jul 14 12:58	11° $\text{Y}$ 18'39		evening set	4196 Apr 07 18:21	4° $\text{R}$ 17'25	
opposition	4189 Sep 30 11:44	9° $\text{Y}$ 19'47	-0°49'34				
min. Earth dist.	4189 Sep 29 13:37	9° $\text{Y}$ 22'00	18.99063 AU	conjunction	4196 Apr 23 16:20	5° $\text{R}$ 11'41	-0°35'51
direct	4189 Dec 15 14:26	7° $\text{Y}$ 23'02		minimum elong	4196 Apr 23 16:20	5° $\text{R}$ 11'41	0°35'51
evening set	4190 Mar 15 13:41	10° $\text{Y}$ 23'08		max. Earth dist.	4196 Apr 24 12:12	5° $\text{R}$ 14'31	21.03984 AU
				morning rise	4196 May 09 17:48	6° $\text{R}$ 06'26	
conjunction	4190 Mar 31 07:26	11° $\text{Y}$ 17'10	-0°44'28	retrograde	4196 Aug 11 22:33	9° $\text{R}$ 13'22	
minimum elong	4190 Mar 31 07:26	11° $\text{Y}$ 17'10	0°44'28	opposition	4196 Oct 28 21:42	7° $\text{R}$ 14'05	-0°38'27
max. Earth dist.	4190 Apr 01 05:51	11° $\text{Y}$ 20'23	21.00159 AU	min. Earth dist.	4196 Oct 28 03:48	7° $\text{R}$ 15'53	19.03506 AU
morning rise	4190 Apr 16 03:57	12° $\text{Y}$ 11'34		direct	4197 Jan 12 07:54	5° $\text{R}$ 17'37	
retrograde	4190 Jul 18 20:41	15° $\text{Y}$ 18'21		evening set	4197 Apr 11 23:30	8° $\text{R}$ 16'11	
opposition	4190 Oct 04 20:55	13° $\text{Y}$ 19'30	-0°48'38				
min. Earth dist.	4190 Oct 03 23:50	13° $\text{Y}$ 21'36	19.01232 AU	conjunction	4197 Apr 27 22:25	9° $\text{R}$ 10'33	-0°33'45
direct	4190 Dec 19 19:34	11° $\text{Y}$ 22'55		minimum elong	4197 Apr 27 22:25	9° $\text{R}$ 10'33	0°33'45
evening set	4191 Mar 19 18:13	14° $\text{Y}$ 22'36		max. Earth dist.	4197 Apr 28 18:07	9° $\text{R}$ 13'22	21.02870 AU
				morning rise	4197 May 14 00:41	10° $\text{R}$ 05'24	
conjunction	4191 Apr 04 12:40	15° $\text{Y}$ 16'38	-0°43'32	retrograde	4197 Aug 16 08:02	13° $\text{R}$ 12'29	
minimum elong	4191 Apr 04 12:40	15° $\text{Y}$ 16'38	0°43'33	min. Earth dist.	4197 Nov 01 10:38	11° $\text{R}$ 14'55	19.02186 AU
max. Earth dist.	4191 Apr 05 11:32	15° $\text{Y}$ 19'55	21.02111 AU	opposition	4197 Nov 02 05:00	11° $\text{R}$ 13'04	-0°36'02
morning rise	4191 Apr 20 09:49	16° $\text{Y}$ 11'03		direct	4198 Jan 16 14:01	9° $\text{R}$ 16'30	
retrograde	4191 Jul 23 06:02	19° $\text{Y}$ 17'48		evening set	4198 Apr 16 04:49	12° $\text{R}$ 15'07	
min. Earth dist.	4191 Oct 08 07:43	17° $\text{Y}$ 21'07	19.02943 AU				
opposition	4191 Oct 09 05:34	17° $\text{Y}$ 18'56	-0°47'29	conjunction	4198 May 02 04:29	13° $\text{R}$ 09'36	-0°31'30
direct	4191 Dec 24 03:12	15° $\text{Y}$ 22'29		minimum elong	4198 May 02 04:29	13° $\text{R}$ 09'36	0°31'30
evening set	4192 Mar 22 22:56	18° $\text{Y}$ 21'51		max. Earth dist.	4198 May 02 23:19	13° $\text{R}$ 12'17	21.01357 AU
				morning rise	4198 May 18 07:45	14° $\text{R}$ 04'35	



	4198 Jun 04 12:42	15°♄	morning rise	4204 Jun 12 12:29	8°♄12'56	
retrograde	4198 Aug 20 15:26	17°♄11'51	retrograde	4204 Sep 15 03:51	11°♄22'10	
opposition	4198 Nov 06 12:25	15°♄12'18 -0°33'27	opposition	4204 Dec 01 09:08	9°♄22'06 -0°14'54	
min. Earth dist.	4198 Nov 05 19:36	15°♄13'59 19.00496 AU	min. Earth dist.	4204 Nov 30 21:55	9°♄23'15 18.83325 AU	
	4198 Nov 11 14:10	15°♄	direct	4205 Feb 14 04:13	7°♄24'43	
direct	4199 Jan 20 18:33	13°♄15'38	evening set	4205 May 15 07:28	10°♄25'53	
	4199 Mar 27 19:31	15°♄				
evening set	4199 Apr 20 10:31	16°♄14'23	conjunction	4205 May 31 13:46	11°♄21'37 -0°11'58	
			minimum elong	4205 May 31 13:46	11°♄21'37 0°11'58	
conjunction	4199 May 06 11:11	17°♄09'00 -0°29'05	behind sun begin	4205 May 31 09:13	11°♄20'59	
minimum elong	4199 May 06 11:11	17°♄09'00 0°29'05	behind sun end	4205 May 31 18:19	11°♄22'16	
max. Earth dist.	4199 May 07 05:46	17°♄11'39 20.99504 AU	max. Earth dist.	4205 Jun 01 02:01	11°♄23'23 20.81304 AU	
morning rise	4199 May 22 15:19	18°♄04'07	morning rise	4205 Jun 16 23:27	12°♄17'52	
retrograde	4199 Aug 25 01:58	21°♄11'37	retrograde	4205 Sep 19 16:21	15°♄27'32	
opposition	4199 Nov 10 19:30	19°♄11'57 -0°30'42	opposition	4205 Dec 05 17:18	13°♄27'22 -0°11'24	
min. Earth dist.	4199 Nov 10 02:20	19°♄13'41 18.98469 AU	min. Earth dist.	4205 Dec 05 06:37	13°♄28'28 18.79170 AU	
direct	4200 Jan 25 00:42	17°♄15'11	direct	4206 Feb 18 12:36	11°♄29'48	
evening set	4200 Apr 24 16:42	20°♄14'09	evening set	4206 May 19 17:14	14°♄31'35	
conjunction	4200 May 10 18:12	21°♄08'55 -0°26'32	conjunction	4206 Jun 05 00:27	15°♄27'33 -0°08'46	
minimum elong	4200 May 10 18:12	21°♄08'55 0°26'32	minimum elong	4206 Jun 05 00:27	15°♄27'33 0°08'46	
max. Earth dist.	4200 May 11 11:45	21°♄11'25 20.97307 AU	behind sun begin	4206 Jun 04 18:41	15°♄26'45	
morning rise	4200 May 26 23:20	22°♄04'12	behind sun end	4206 Jun 05 06:12	15°♄28'22	
retrograde	4200 Aug 29 09:45	25°♄11'57	max. Earth dist.	4206 Jun 05 10:59	15°♄29'04 20.76924 AU	
min. Earth dist.	4200 Nov 14 11:23	23°♄13'45 18.96109 AU	morning rise	4206 Jun 21 11:00	16°♄24'02	
opposition	4200 Nov 15 02:50	23°♄12'11 -0°27'48	retrograde	4206 Sep 24 03:04	19°♄34'10	
direct	4201 Jan 29 04:48	21°♄15'19	opposition	4206 Dec 10 01:57	17°♄33'51 -0°07'49	
evening set	4201 Apr 28 23:10	24°♄14'35	min. Earth dist.	4206 Dec 09 17:40	17°♄34'42 18.74566 AU	
			direct	4207 Feb 22 19:16	15°♄36'01	
conjunction	4201 May 15 01:40	25°♄09'30 -0°23'50	evening set	4207 May 24 03:49	18°♄38'28	
minimum elong	4201 May 15 01:40	25°♄09'30 0°23'51				
max. Earth dist.	4201 May 15 18:44	25°♄11'57 20.94795 AU	conjunction	4207 Jun 09 12:02	19°♄34'42 -0°05'31	
morning rise	4201 May 31 07:40	26°♄04'57	minimum elong	4207 Jun 09 12:02	19°♄34'42 0°05'32	
retrograde	4201 Sep 02 21:21	29°♄13'02	behind sun begin	4207 Jun 09 05:35	19°♄33'47	
opposition	4201 Nov 19 10:05	27°♄13'11 -0°24'46	behind sun end	4207 Jun 09 18:28	19°♄35'36	
min. Earth dist.	4201 Nov 18 18:26	27°♄14'46 18.93428 AU	max. Earth dist.	4207 Jun 09 20:45	19°♄35'56 20.72116 AU	
direct	4202 Feb 02 11:32	25°♄16'12	morning rise	4207 Jun 25 23:28	20°♄31'24	
evening set	4202 May 03 06:18	28°♄15'50	retrograde	4207 Sep 28 15:49	23°♄41'58	
			opposition	4207 Dec 14 10:35	21°♄41'30 -0°04'11	
conjunction	4202 May 19 09:40	29°♄10'56 -0°21'01	min. Earth dist.	4207 Dec 14 03:05	21°♄42'17 18.69542 AU	
minimum elong	4202 May 19 09:39	29°♄10'56 0°21'02	direct	4208 Feb 27 04:09	19°♄43'21	
max. Earth dist.	4202 May 20 01:37	29°♄13'13 20.91952 AU	evening set	4208 May 27 15:08	22°♄46'32	
	4202 Jun 02 17:47	0°♄				
morning rise	4202 Jun 04 16:39	0°♄06'35	conjunction	4208 Jun 13 00:17	23°♄43'01 -0°02'13	
retrograde	4202 Sep 07 05:56	3°♄15'00	minimum elong	4208 Jun 13 00:16	23°♄43'01 0°02'13	
opposition	4202 Nov 23 17:40	1°♄15'05 -0°21'35	behind sun begin	4208 Jun 12 17:34	23°♄42'04	
min. Earth dist.	4202 Nov 23 03:55	1°♄16'29 18.90421 AU	behind sun end	4208 Jun 13 06:59	23°♄43'57	
	4202 Dec 27 00:40	30°♄	max. Earth dist.	4208 Jun 13 07:15	23°♄44'00 20.66889 AU	
direct	4203 Feb 06 15:35	29°♄18'00	morning rise	4208 Jun 29 12:29	24°♄39'57	
	4203 Mar 19 09:17	0°♄	retrograde	4208 Oct 02 03:15	27°♄50'59	
evening set	4203 May 07 13:53	2°♄18'03	opposition	4208 Dec 17 19:45	25°♄50'19 -0°00'30	
			min. Earth dist.	4208 Dec 17 14:34	25°♄50'51 18.64130 AU	
conjunction	4203 May 23 18:18	3°♄13'22 -0°18'06	asc. node	4209 Feb 05 23:02	24°♄07'20	
minimum elong	4203 May 23 18:19	3°♄13'22 0°18'07	direct	4209 Mar 02 12:21	23°♄51'51	
max. Earth dist.	4203 May 24 09:26	3°♄15'32 20.88788 AU	evening set	4209 Jun 01 02:58	26°♄55'47	
morning rise	4203 Jun 09 02:13	4°♄09'12				
retrograde	4203 Sep 11 18:08	7°♄18'00	conjunction	4209 Jun 17 13:01	27°♄52'31 0°01'14	
min. Earth dist.	4203 Nov 27 11:45	5°♄19'24 18.87068 AU	minimum elong	4209 Jun 17 13:01	27°♄52'31 0°01'14	
opposition	4203 Nov 28 01:16	5°♄18'01 -0°18'18	behind sun begin	4209 Jun 17 06:18	27°♄51'34	
direct	4204 Feb 10 23:16	3°♄20'48	behind sun end	4209 Jun 17 19:43	27°♄53'28	
evening set	4204 May 10 22:23	6°♄21'22	max. Earth dist.	4209 Jun 17 18:11	27°♄53'14 20.61326 AU	
			morning rise	4209 Jul 04 02:02	28°♄49'42	
conjunction	4204 May 27 03:41	7°♄16'54 -0°15'05		4209 Jul 25 21:10	0°♄	
minimum elong	4204 May 27 03:40	7°♄16'54 0°15'04	retrograde	4209 Oct 06 16:21	2°♄01'13	
behind sun begin	4204 May 27 01:25	7°♄16'35	opposition	4209 Dec 22 05:06	0°♄00'21 0°03'12	
behind sun end	4204 May 27 05:55	7°♄17'13	min. Earth dist.	4209 Dec 22 00:36	0°♄00'49 18.58417 AU	
max. Earth dist.	4204 May 27 17:19	7°♄18'51 20.85241 AU		4209 Dec 22 08:24	30°♄	

direct	4210 Mar 06 21:57	28° $\Pi$ 01'30	opposition	4216 Jan 16 22:14	25° $\mathfrak{C}$ 31'05	0°24'48
	4210 May 16 04:37	0° $\mathfrak{C}$	min. Earth dist.	4216 Jan 17 01:54	25° $\mathfrak{C}$ 30'41	18.21236 AU
evening set	4210 Jun 05 15:41	1° $\mathfrak{C}$ 06'16	direct	4216 Mar 31 15:10	23° $\mathfrak{C}$ 30'04	
			evening set	4216 Jul 01 13:24	26° $\mathfrak{C}$ 41'04	
conjunction	4210 Jun 22 02:37	2° $\mathfrak{C}$ 03'16	0°04'37			
minimum elong	4210 Jun 22 02:36	2° $\mathfrak{C}$ 03'16	0°04'36	conjunction	4216 Jul 18 04:51	27° $\mathfrak{C}$ 39'47
behind sun begin	4210 Jun 21 20:01	2° $\mathfrak{C}$ 02'20		minimum elong	4216 Jul 18 04:51	27° $\mathfrak{C}$ 39'47
behind sun end	4210 Jun 22 09:11	2° $\mathfrak{C}$ 04'12		max. Earth dist.	4216 Jul 17 23:43	27° $\mathfrak{C}$ 39'02
max. Earth dist.	4210 Jun 22 06:23	2° $\mathfrak{C}$ 03'47	20.55480 AU	morning rise	4216 Aug 03 21:41	28° $\mathfrak{C}$ 38'45
morning rise	4210 Jul 08 16:18	3° $\mathfrak{C}$ 00'42			4216 Aug 28 19:09	0° $\mathcal{O}$
retrograde	4210 Oct 11 04:45	6° $\mathfrak{C}$ 12'43		retrograde	4216 Nov 06 00:30	1° $\mathcal{O}$ 54'17
opposition	4210 Dec 26 14:49	4° $\mathfrak{C}$ 11'38	0°06'55		4217 Jan 17 11:56	30° $\mathfrak{R}$ $\mathfrak{C}$
min. Earth dist.	4210 Dec 26 12:27	4° $\mathfrak{C}$ 11'53	18.52463 AU	opposition	4217 Jan 20 11:10	29° $\mathfrak{C}$ 52'25
direct	4211 Mar 11 06:59	2° $\mathfrak{C}$ 12'25		min. Earth dist.	4217 Jan 20 16:28	29° $\mathfrak{C}$ 51'51
evening set	4211 Jun 10 05:08	5° $\mathfrak{C}$ 18'04		direct	4217 Apr 05 03:46	27° $\mathfrak{C}$ 51'06
					4217 Jun 17 08:01	0° $\mathcal{O}$
conjunction	4211 Jun 26 16:55	6° $\mathfrak{C}$ 15'21	0°07'56	evening set	4217 Jul 06 08:14	1° $\mathcal{O}$ 03'18
minimum elong	4211 Jun 26 16:56	6° $\mathfrak{C}$ 15'21	0°07'56			
behind sun begin	4211 Jun 26 10:55	6° $\mathfrak{C}$ 14'30		conjunction	4217 Jul 23 00:06	2° $\mathcal{O}$ 02'18
behind sun end	4211 Jun 26 22:56	6° $\mathfrak{C}$ 16'12		minimum elong	4217 Jul 23 00:06	2° $\mathcal{O}$ 02'18
max. Earth dist.	4211 Jun 26 18:45	6° $\mathfrak{C}$ 15'36	20.49443 AU	max. Earth dist.	4217 Jul 22 16:26	2° $\mathcal{O}$ 01'10
morning rise	4211 Jul 13 07:24	7° $\mathfrak{C}$ 13'02		morning rise	4217 Aug 08 17:24	3° $\mathcal{O}$ 01'32
retrograde	4211 Oct 15 19:03	10° $\mathfrak{C}$ 25'35		retrograde	4217 Nov 10 18:45	6° $\mathcal{O}$ 17'43
opposition	4211 Dec 31 00:54	8° $\mathfrak{C}$ 24'18	0°10'36	opposition	4218 Jan 25 00:43	4° $\mathcal{O}$ 15'47
min. Earth dist.	4211 Dec 30 23:14	8° $\mathfrak{C}$ 24'29	18.46344 AU	min. Earth dist.	4218 Jan 25 07:19	4° $\mathcal{O}$ 15'05
direct	4212 Mar 14 17:37	6° $\mathfrak{C}$ 24'41		direct	4218 Apr 09 17:53	2° $\mathcal{O}$ 14'09
evening set	4212 Jun 13 19:26	9° $\mathfrak{C}$ 31'19		evening set	4218 Jul 11 04:09	5° $\mathcal{O}$ 27'35
conjunction	4212 Jun 30 08:02	10° $\mathfrak{C}$ 28'52	0°11'14	conjunction	4218 Jul 27 20:39	6° $\mathcal{O}$ 26'53
minimum elong	4212 Jun 30 08:02	10° $\mathfrak{C}$ 28'52	0°11'14	minimum elong	4218 Jul 27 20:39	6° $\mathcal{O}$ 26'53
behind sun begin	4212 Jun 30 03:07	10° $\mathfrak{C}$ 28'10		max. Earth dist.	4218 Jul 27 12:14	6° $\mathcal{O}$ 25'38
behind sun end	4212 Jun 30 12:57	10° $\mathfrak{C}$ 29'34		morning rise	4218 Aug 13 14:00	7° $\mathcal{O}$ 26'21
max. Earth dist.	4212 Jun 30 08:44	10° $\mathfrak{C}$ 28'58	20.43246 AU	retrograde	4218 Nov 15 13:33	10° $\mathcal{O}$ 43'09
morning rise	4212 Jul 16 23:00	11° $\mathfrak{C}$ 26'48		opposition	4219 Jan 29 14:54	8° $\mathcal{O}$ 41'10
retrograde	4212 Oct 19 08:23	14° $\mathfrak{C}$ 39'54		min. Earth dist.	4219 Jan 29 23:09	8° $\mathcal{O}$ 40'17
opposition	4213 Jan 03 11:25	12° $\mathfrak{C}$ 38'27	0°14'15	direct	4219 Apr 14 08:23	6° $\mathcal{O}$ 39'12
min. Earth dist.	4213 Jan 03 11:40	12° $\mathfrak{C}$ 38'26	18.40102 AU	evening set	4219 Jul 16 01:12	9° $\mathcal{O}$ 53'52
direct	4213 Mar 19 03:22	10° $\mathfrak{C}$ 38'28				
evening set	4213 Jun 18 10:32	13° $\mathfrak{C}$ 46'06		conjunction	4219 Aug 01 17:59	10° $\mathcal{O}$ 53'26
				minimum elong	4219 Aug 01 17:59	10° $\mathcal{O}$ 53'26
conjunction	4213 Jul 04 23:51	14° $\mathfrak{C}$ 43'57	0°14'30	max. Earth dist.	4219 Aug 01 06:31	10° $\mathcal{O}$ 51'43
minimum elong	4213 Jul 04 23:51	14° $\mathfrak{C}$ 43'57	0°14'30	morning rise	4219 Aug 18 11:38	11° $\mathcal{O}$ 53'09
behind sun begin	4213 Jul 04 21:05	14° $\mathfrak{C}$ 43'33			4219 Oct 31 09:28	15° $\mathcal{O}$
behind sun end	4213 Jul 05 02:38	14° $\mathfrak{C}$ 44'21		retrograde	4219 Nov 20 08:49	15° $\mathcal{O}$ 10'34
max. Earth dist.	4213 Jul 04 22:32	14° $\mathfrak{C}$ 43'45	20.36982 AU		4219 Dec 10 10:47	15° $\mathfrak{R}$ $\mathcal{O}$
morning rise	4213 Jul 21 15:30	15° $\mathfrak{C}$ 42'08		opposition	4220 Feb 03 05:53	13° $\mathcal{O}$ 08'29
retrograde	4213 Oct 24 00:08	18° $\mathfrak{C}$ 55'49		min. Earth dist.	4220 Feb 03 15:45	13° $\mathcal{O}$ 07'25
opposition	4214 Jan 07 22:28	16° $\mathfrak{C}$ 54'13	0°17'51	direct	4220 Apr 17 23:55	11° $\mathcal{O}$ 06'09
min. Earth dist.	4214 Jan 07 23:25	16° $\mathfrak{C}$ 54'07	18.33819 AU	evening set	4220 Jul 19 22:54	14° $\mathcal{O}$ 22'02
direct	4214 Mar 23 15:11	14° $\mathfrak{C}$ 53'52			4220 Jul 30 14:34	15° $\mathcal{O}$
evening set	4214 Jun 23 02:26	18° $\mathfrak{C}$ 02'34				
				conjunction	4220 Aug 05 16:10	15° $\mathcal{O}$ 21'52
conjunction	4214 Jul 09 16:35	19° $\mathfrak{C}$ 00'42	0°17'42	minimum elong	4220 Aug 05 16:10	15° $\mathcal{O}$ 21'52
minimum elong	4214 Jul 09 16:35	19° $\mathfrak{C}$ 00'42	0°17'42	max. Earth dist.	4220 Aug 05 04:01	15° $\mathcal{O}$ 20'03
max. Earth dist.	4214 Jul 09 14:25	19° $\mathfrak{C}$ 00'24	20.30679 AU	morning rise	4220 Aug 22 09:40	16° $\mathcal{O}$ 21'48
morning rise	4214 Jul 26 08:37	19° $\mathfrak{C}$ 59'09		retrograde	4220 Nov 24 05:08	19° $\mathcal{O}$ 39'47
retrograde	4214 Oct 28 14:50	23° $\mathfrak{C}$ 13'26		opposition	4221 Feb 06 21:31	17° $\mathcal{O}$ 37'36
opposition	4215 Jan 12 10:09	21° $\mathfrak{C}$ 11'43	0°21'22	min. Earth dist.	4221 Feb 07 08:39	17° $\mathcal{O}$ 36'24
min. Earth dist.	4215 Jan 12 12:49	21° $\mathfrak{C}$ 11'26	18.27514 AU	direct	4221 Apr 22 16:24	15° $\mathcal{O}$ 34'54
direct	4215 Mar 28 02:10	19° $\mathfrak{C}$ 11'02		evening set	4221 Jul 24 21:36	18° $\mathcal{O}$ 51'59
evening set	4215 Jun 27 19:28	22° $\mathfrak{C}$ 20'51				
				conjunction	4221 Aug 10 14:59	19° $\mathcal{O}$ 52'04
conjunction	4215 Jul 14 10:13	23° $\mathfrak{C}$ 19'17	0°20'49	minimum elong	4221 Aug 10 14:59	19° $\mathcal{O}$ 52'04
minimum elong	4215 Jul 14 10:12	23° $\mathfrak{C}$ 19'17	0°20'49	max. Earth dist.	4221 Aug 09 23:55	19° $\mathcal{O}$ 49'48
max. Earth dist.	4215 Jul 14 05:46	23° $\mathfrak{C}$ 18'38	20.24390 AU	morning rise	4221 Aug 27 08:38	20° $\mathcal{O}$ 52'14
morning rise	4215 Jul 31 02:50	24° $\mathfrak{C}$ 17'59		retrograde	4221 Nov 29 00:41	24° $\mathcal{O}$ 10'45
retrograde	4215 Nov 02 07:51	27° $\mathfrak{C}$ 32'53		opposition	4222 Feb 11 13:46	22° $\mathcal{O}$ 08'26

min. Earth dist.	4222 Feb 12 02:36	22°07'03	17.83815 AU	conjunction	4228 Sep 12 23:30	22°04'45	0°45'44
direct	4222 Apr 27 09:40	20°05'19		minimum elong	4228 Sep 12 23:30	22°04'45	0°45'44
evening set	4222 Jul 29 20:52	23°02'35		max. Earth dist.	4228 Sep 12 02:09	22°01'27	19.50115 AU
				morning rise	4228 Sep 29 14:42	23°05'57	
conjunction	4222 Aug 15 14:40	24°02'55	0°38'56	retrograde	4228 Dec 31 06:24	26°07'18	
minimum elong	4222 Aug 15 14:40	24°02'55	0°38'55	opposition	4229 Mar 15 01:07	24°02'42	0°51'03
max. Earth dist.	4222 Aug 14 23:10	24°02'13	19.80766 AU	min. Earth dist.	4229 Mar 15 18:41	24°02'27	17.48314 AU
morning rise	4222 Sep 01 08:06	25°02'47		direct	4229 May 29 12:15	22°01'58	
retrograde	4222 Dec 03 21:42	28°04'17		evening set	4229 Sep 01 09:47	25°04'42	
opposition	4223 Feb 16 06:39	26°04'05	0°44'20	max. Earth dist.	4229 Sep 17 04:39	26°04'38	19.46576 AU
min. Earth dist.	4223 Feb 16 20:19	26°03'22	17.77770 AU				
direct	4223 May 02 03:56	24°03'21		conjunction	4229 Sep 18 02:30	26°04'01	0°45'51
evening set	4223 Aug 03 21:08	27°05'45		minimum elong	4229 Sep 18 02:29	26°04'01	0°45'51
				morning rise	4229 Oct 04 17:01	27°04'18	
conjunction	4223 Aug 20 14:52	28°05'20	0°40'44		4229 Nov 15 07:24	0°00'	
minimum elong	4223 Aug 20 14:52	28°05'20	0°40'44	retrograde	4230 Jan 05 04:28	1°08'56	
max. Earth dist.	4223 Aug 19 20:47	28°05'35	19.74813 AU		4230 Feb 26 15:42	30°00'	
morning rise	4223 Sep 06 08:14	29°05'52		opposition	4230 Mar 19 22:21	29°06'04	0°51'02
	4223 Sep 06 22:38	0°00'		min. Earth dist.	4230 Mar 20 17:18	29°03'59	17.45040 AU
retrograde	4223 Dec 08 17:32	3°00'17		direct	4230 Jun 03 10:37	27°00'30	
opposition	4224 Feb 21 00:08	1°00'46	0°46'13		4230 Aug 30 01:41	0°00'	
min. Earth dist.	4224 Feb 21 15:29	1°00'13	17.71941 AU	evening set	4230 Sep 06 13:36	0°02'51	
	4224 Mar 22 19:47	30°00'		max. Earth dist.	4230 Sep 22 07:34	1°02'50	19.43557 AU
direct	4224 May 05 23:14	29°01'05					
	4224 Jun 18 10:46	0°00'		conjunction	4230 Sep 23 05:51	1°02'30	0°45'40
evening set	4224 Aug 07 21:50	2°00'31		minimum elong	4230 Sep 23 05:51	1°02'30	0°45'41
				morning rise	4230 Oct 09 19:45	2°02'50	
conjunction	4224 Aug 24 15:45	3°00'32	0°42'17	retrograde	4231 Jan 10 05:29	5°05'14	
minimum elong	4224 Aug 24 15:45	3°00'32	0°42'17	opposition	4231 Mar 24 20:10	3°04'55	0°50'41
max. Earth dist.	4224 Aug 23 21:33	3°00'29	19.69110 AU	min. Earth dist.	4231 Mar 25 14:29	3°04'55	17.42257 AU
morning rise	4224 Sep 10 08:44	4°00'32		direct	4231 Jun 08 11:53	1°04'15	
retrograde	4224 Dec 12 14:56	7°00'52		evening set	4231 Sep 11 17:47	5°01'02	
opposition	4225 Feb 24 18:15	5°00'50	0°47'49	max. Earth dist.	4231 Sep 27 11:16	6°08'37	19.40999 AU
min. Earth dist.	4225 Feb 25 09:50	5°00'48	17.66388 AU				
direct	4225 May 10 19:35	3°00'45		conjunction	4231 Sep 28 09:29	6°01'20	0°45'11
evening set	4225 Aug 12 23:08	7°00'07		minimum elong	4231 Sep 28 09:29	6°01'20	0°45'12
				morning rise	4231 Oct 14 22:29	7°01'32	
conjunction	4225 Aug 29 16:51	8°00'08	0°43'34	retrograde	4232 Jan 15 04:12	10°03'53	
minimum elong	4225 Aug 29 16:51	8°00'08	0°43'34	opposition	4232 Mar 28 18:45	8°03'50	0°49'59
max. Earth dist.	4225 Aug 28 20:46	8°00'05	19.63721 AU	min. Earth dist.	4232 Mar 29 14:21	8°03'41	17.39934 AU
morning rise	4225 Sep 15 09:37	9°00'09		direct	4232 Jun 12 11:22	6°02'70	
retrograde	4225 Dec 17 11:11	12°00'29		evening set	4232 Sep 15 22:15	9°05'54	
opposition	4226 Mar 01 13:05	10°00'26	0°49'06				
min. Earth dist.	4226 Mar 02 06:11	10°00'24	17.61195 AU	conjunction	4232 Oct 02 13:13	10°05'36	0°44'24
direct	4226 May 15 16:20	8°00'22		minimum elong	4232 Oct 02 13:13	10°05'36	0°44'24
evening set	4226 Aug 18 01:02	11°00'44		max. Earth dist.	4232 Oct 01 14:10	10°05'30	19.38902 AU
				morning rise	4232 Oct 19 01:30	11°05'57	
conjunction	4226 Sep 03 18:45	12°00'45	0°44'35	retrograde	4233 Jan 19 05:44	15°02'01	
minimum elong	4226 Sep 03 18:45	12°00'45	0°44'35	opposition	4233 Apr 02 17:41	13°01'73	0°48'56
max. Earth dist.	4226 Sep 02 22:38	12°00'42	19.58724 AU	min. Earth dist.	4233 Apr 03 12:36	13°01'53	17.38055 AU
morning rise	4226 Sep 20 11:01	13°00'46		direct	4233 Jun 17 13:34	11°01'14	
retrograde	4226 Dec 22 09:33	17°00'07		evening set	4233 Sep 21 02:39	14°04'04	
opposition	4227 Mar 06 08:20	15°00'04	0°50'05				
min. Earth dist.	4227 Mar 07 01:14	15°00'02	17.56412 AU	conjunction	4233 Oct 07 17:04	15°04'51	0°43'18
direct	4227 May 20 14:42	12°00'59		minimum elong	4233 Oct 07 17:04	15°04'51	0°43'19
evening set	4227 Aug 23 03:36	16°00'23		max. Earth dist.	4233 Oct 06 18:40	15°03'82	19.37229 AU
				morning rise	4233 Oct 24 04:21	16°04'31	
conjunction	4227 Sep 08 20:59	17°00'24	0°45'18	retrograde	4234 Jan 24 05:02	20°05'29	
minimum elong	4227 Sep 08 20:59	17°00'24	0°45'17	opposition	4234 Apr 07 17:17	18°02'58	0°47'33
max. Earth dist.	4227 Sep 07 23:37	17°00'21	19.54165 AU	min. Earth dist.	4234 Apr 08 13:13	18°00'47	17.36593 AU
morning rise	4227 Sep 25 12:46	18°00'25		direct	4234 Jun 22 14:14	15°05'70	
retrograde	4227 Dec 27 06:42	21°00'46		evening set	4234 Sep 26 07:21	19°02'55	
opposition	4228 Mar 10 04:29	19°00'43	0°50'44				
min. Earth dist.	4228 Mar 10 22:43	19°00'41	17.52109 AU	conjunction	4234 Oct 12 20:51	20°02'73	0°41'55
direct	4228 May 24 12:27	17°00'38		minimum elong	4234 Oct 12 20:51	20°02'73	0°41'54
evening set	4228 Aug 27 06:23	21°00'03		max. Earth dist.	4234 Oct 11 21:26	20°02'35	19.35984 AU
				morning rise	4234 Oct 29 07:21	21°02'56	

retrograde	4235 Jan 29 06:14	24° <u>♄</u> 51'13		direct	4241 Jul 26 12:49	19° <u>♄</u> 14'05	
opposition	4235 Apr 12 17:03	22° <u>♄</u> 48'45	0°45'51	evening set	4241 Oct 30 06:27	22° <u>♄</u> 42'48	
min. Earth dist.	4235 Apr 13 12:17	22° <u>♄</u> 46'39	17.35562 AU				
direct	4235 Jun 27 17:09	20° <u>♄</u> 42'46		conjunction	4241 Nov 15 13:29	23° <u>♄</u> 43'44	0°24'52
evening set	4235 Oct 01 11:46	24° <u>♄</u> 11'54		minimum elong	4241 Nov 15 13:29	23° <u>♄</u> 43'44	0°24'53
max. Earth dist.	4235 Oct 17 02:25	25° <u>♄</u> 10'09	19.35170 AU	max. Earth dist.	4241 Nov 14 20:51	23° <u>♄</u> 41'08	19.41003 AU
				morning rise	4241 Dec 01 16:50	24° <u>♄</u> 44'10	
conjunction	4235 Oct 18 00:36	25° <u>♄</u> 13'38	0°40'13	retrograde	4242 Mar 02 22:42	28° <u>♄</u> 04'53	
minimum elong	4235 Oct 18 00:37	25° <u>♄</u> 13'38	0°40'13	opposition	4242 May 15 21:21	26° <u>♄</u> 03'00	0°25'57
morning rise	4235 Nov 03 09:58	26° <u>♄</u> 14'54		min. Earth dist.	4242 May 16 11:26	26° <u>♄</u> 01'29	17.42437 AU
retrograde	4236 Feb 03 05:25	29° <u>♄</u> 37'07		direct	4242 Jul 31 16:15	23° <u>♄</u> 57'19	
opposition	4236 Apr 16 17:23	27° <u>♄</u> 34'44	0°43'49	evening set	4242 Nov 04 07:44	27° <u>♄</u> 25'37	
min. Earth dist.	4236 Apr 17 13:03	27° <u>♄</u> 32'35	17.34970 AU				
direct	4236 Jul 01 19:03	25° <u>♄</u> 28'43		conjunction	4242 Nov 20 13:37	28° <u>♄</u> 26'20	0°21'38
evening set	4236 Oct 05 15:56	28° <u>♄</u> 58'03		minimum elong	4242 Nov 20 13:37	28° <u>♄</u> 26'20	0°21'38
max. Earth dist.	4236 Oct 21 04:52	29° <u>♄</u> 56'07	19.34818 AU	max. Earth dist.	4242 Nov 19 21:59	28° <u>♄</u> 23'54	19.43991 AU
				morning rise	4242 Dec 06 15:59	29° <u>♄</u> 26'34	
conjunction	4236 Oct 22 03:44	29° <u>♄</u> 59'42	0°38'15		4242 Dec 15 22:05	0° <u>♄</u>	
minimum elong	4236 Oct 22 03:44	29° <u>♄</u> 59'42	0°38'16	retrograde	4243 Mar 07 20:32	2° <u>♄</u> 46'54	
	4236 Oct 22 05:39	0° <u>♄</u>		opposition	4243 May 20 22:05	0° <u>♄</u> 45'13	0°22'16
morning rise	4236 Nov 07 12:18	1° <u>♄</u> 00'53		min. Earth dist.	4243 May 21 11:27	0° <u>♄</u> 43'47	17.45711 AU
retrograde	4237 Feb 07 05:35	4° <u>♄</u> 23'00			4243 Jun 07 21:20	30° <u>♄</u>	
opposition	4237 Apr 21 17:46	2° <u>♄</u> 20'39	0°41'28	direct	4243 Aug 05 17:44	28° <u>♄</u> 39'45	
min. Earth dist.	4237 Apr 22 12:40	2° <u>♄</u> 18'36	17.34859 AU		4243 Oct 01 05:17	0° <u>♄</u>	
direct	4237 Jul 06 22:34	0° <u>♄</u> 14'36		evening set	4243 Nov 09 08:17	2° <u>♄</u> 07'34	
evening set	4237 Oct 10 19:45	3° <u>♄</u> 44'02					
max. Earth dist.	4237 Oct 26 09:42	4° <u>♄</u> 42'17	19.34952 AU	conjunction	4243 Nov 25 13:10	3° <u>♄</u> 08'04	0°18'16
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conjunction	4237 Oct 27 06:50	4° <u>♄</u> 45'37	0°36'02	max. Earth dist.	4243 Nov 24 23:26	3° <u>♄</u> 05'55	19.47542 AU
minimum elong	4237 Oct 27 06:50	4° <u>♄</u> 45'37	0°36'01	morning rise	4243 Dec 11 14:32	4° <u>♄</u> 08'05	
morning rise	4237 Nov 12 14:15	5° <u>♄</u> 46'40		retrograde	4244 Mar 11 19:31	7° <u>♄</u> 28'00	
retrograde	4238 Feb 12 04:17	9° <u>♄</u> 08'36		opposition	4244 May 24 22:41	5° <u>♄</u> 26'31	0°18'26
opposition	4238 Apr 26 18:17	7° <u>♄</u> 06'19	0°38'51	min. Earth dist.	4244 May 25 09:54	5° <u>♄</u> 25'19	17.49497 AU
min. Earth dist.	4238 Apr 27 12:58	7° <u>♄</u> 04'17	17.35236 AU	direct	4244 Aug 09 20:07	3° <u>♄</u> 21'21	
direct	4238 Jul 12 02:09	5° <u>♄</u> 00'16		evening set	4244 Nov 13 08:03	6° <u>♄</u> 48'32	
evening set	4238 Oct 15 23:22	8° <u>♄</u> 29'41					
max. Earth dist.	4238 Oct 31 11:54	9° <u>♄</u> 27'45	19.35600 AU	conjunction	4244 Nov 29 11:53	7° <u>♄</u> 48'48	0°14'47
				minimum elong	4244 Nov 29 11:53	7° <u>♄</u> 48'48	0°14'48
conjunction	4238 Nov 01 09:20	9° <u>♄</u> 31'07	0°33'33	behind sun begin	4244 Nov 29 09:11	7° <u>♄</u> 48'24	
minimum elong	4238 Nov 01 09:20	9° <u>♄</u> 31'07	0°33'34	behind sun end	4244 Nov 29 14:34	7° <u>♄</u> 49'13	
morning rise	4238 Nov 17 15:52	10° <u>♄</u> 32'04		max. Earth dist.	4244 Nov 28 23:38	7° <u>♄</u> 46'54	19.51562 AU
retrograde	4239 Feb 17 03:00	13° <u>♄</u> 53'45		morning rise	4244 Dec 15 12:16	8° <u>♄</u> 48'35	
opposition	4239 May 01 19:01	11° <u>♄</u> 51'31	0°35'57	retrograde	4245 Mar 16 16:59	12° <u>♄</u> 08'04	
min. Earth dist.	4239 May 02 12:53	11° <u>♄</u> 49'35	17.36160 AU	opposition	4245 May 29 23:13	10° <u>♄</u> 06'48	0°14'30
direct	4239 Jul 17 05:55	9° <u>♄</u> 45'29		min. Earth dist.	4245 May 30 10:00	10° <u>♄</u> 05'39	17.53734 AU
evening set	4239 Oct 21 02:12	13° <u>♄</u> 14'46		direct	4245 Aug 14 20:59	8° <u>♄</u> 01'55	
				evening set	4245 Nov 18 07:15	11° <u>♄</u> 28'26	
conjunction	4239 Nov 06 11:17	14° <u>♄</u> 16'03	0°30'51				
minimum elong	4239 Nov 06 11:17	14° <u>♄</u> 16'03	0°30'52	conjunction	4245 Dec 04 10:01	12° <u>♄</u> 28'27	0°11'14
max. Earth dist.	4239 Nov 05 16:04	14° <u>♄</u> 13'02	19.36804 AU	minimum elong	4245 Dec 04 10:01	12° <u>♄</u> 28'27	0°11'14
	4239 Nov 18 03:36	15° <u>♄</u>		behind sun begin	4245 Dec 04 05:06	12° <u>♄</u> 27'42	
morning rise	4239 Nov 22 16:40	15° <u>♄</u> 16'50		behind sun end	4245 Dec 04 14:56	12° <u>♄</u> 29'12	
retrograde	4240 Feb 22 01:42	18° <u>♄</u> 38'15		max. Earth dist.	4245 Dec 03 23:07	12° <u>♄</u> 26'45	19.55999 AU
opposition	4240 May 05 19:51	16° <u>♄</u> 36'06	0°32'50	morning rise	4245 Dec 20 09:30	13° <u>♄</u> 27'59	
min. Earth dist.	4240 May 06 12:35	16° <u>♄</u> 34'17	17.37644 AU	retrograde	4246 Mar 21 14:58	16° <u>♄</u> 46'59	
	4240 Jun 17 00:35	15° <u>♄</u>		opposition	4246 Jun 03 23:21	14° <u>♄</u> 45'55	0°10'29
direct	4240 Jul 21 10:10	14° <u>♄</u> 30'08		min. Earth dist.	4246 Jun 04 07:54	14° <u>♄</u> 45'00	17.58335 AU
	4240 Aug 24 04:41	15° <u>♄</u>		direct	4246 Aug 19 23:16	12° <u>♄</u> 41'21	
evening set	4240 Oct 25 04:41	17° <u>♄</u> 59'10		evening set	4246 Nov 23 05:44	16° <u>♄</u> 07'06	
conjunction	4240 Nov 10 12:37	19° <u>♄</u> 00'17	0°27'57	conjunction	4246 Dec 09 07:29	17° <u>♄</u> 06'51	0°07'37
minimum elong	4240 Nov 10 12:37	19° <u>♄</u> 00'17	0°27'57	minimum elong	4246 Dec 09 07:29	17° <u>♄</u> 06'51	0°07'38
max. Earth dist.	4240 Nov 09 17:51	18° <u>♄</u> 57'20	19.38594 AU	behind sun begin	4246 Dec 09 01:28	17° <u>♄</u> 05'56	
morning rise	4240 Nov 26 17:03	20° <u>♄</u> 00'54		behind sun end	4246 Dec 09 13:30	17° <u>♄</u> 07'46	
retrograde	4241 Feb 25 23:41	23° <u>♄</u> 21'59		max. Earth dist.	4246 Dec 08 22:23	17° <u>♄</u> 05'27	19.60762 AU
opposition	4241 May 10 20:36	21° <u>♄</u> 19'57	0°29'29	morning rise	4246 Dec 25 05:58	18° <u>♄</u> 06'08	
min. Earth dist.	4241 May 11 12:27	21° <u>♄</u> 18'14	17.39746 AU	retrograde	4247 Mar 26 11:07	21° <u>♄</u> 24'37	


























































































































opposition	4247 Jun 08 23:33	19° $\mathring{A}$ 23'45	0°06'25	evening set	4252 Dec 20 01:32	13° $\mathring{B}$ 25'43	
min. Earth dist.	4247 Jun 09 07:47	19° $\mathring{A}$ 22'53	17.63250 AU				
direct	4247 Aug 24 23:48	17° $\mathring{A}$ 19'30		conjunction	4253 Jan 04 21:49	14° $\mathring{B}$ 23'41	-0°14'06
evening set	4247 Nov 28 03:17	20° $\mathring{A}$ 44'24		minimum elong	4253 Jan 04 21:50	14° $\mathring{B}$ 23'41	0°14'06
				behind sun begin	4253 Jan 04 18:28	14° $\mathring{B}$ 23'11	
conjunction	4247 Dec 14 03:57	21° $\mathring{A}$ 43'51	0°03'58	behind sun end	4253 Jan 05 01:11	14° $\mathring{B}$ 24'11	
minimum elong	4247 Dec 14 03:56	21° $\mathring{A}$ 43'51	0°03'58	max. Earth dist.	4253 Jan 04 22:19	14° $\mathring{B}$ 23'46	19.93826 AU
behind sun begin	4247 Dec 13 21:24	21° $\mathring{A}$ 42'52		morning rise	4253 Jan 20 15:52	15° $\mathring{B}$ 21'21	
behind sun end	4247 Dec 14 10:28	21° $\mathring{A}$ 44'51		retrograde	4253 Apr 22 01:16	18° $\mathring{B}$ 36'19	
max. Earth dist.	4247 Dec 13 19:51	21° $\mathring{A}$ 42'37	19.65816 AU	opposition	4253 Jul 06 14:29	16° $\mathring{B}$ 36'12	-0°17'29
morning rise	4247 Dec 30 01:39	22° $\mathring{A}$ 42'52		min. Earth dist.	4253 Jul 06 13:45	16° $\mathring{B}$ 36'17	17.96828 AU
retrograde	4248 Mar 30 08:07	26° $\mathring{A}$ 00'51		direct	4253 Sep 21 21:23	14° $\mathring{B}$ 33'45	
opposition	4248 Jun 12 23:15	24° $\mathring{A}$ 00'08	0°02'20	evening set	4253 Dec 24 17:32	17° $\mathring{B}$ 52'20	
min. Earth dist.	4248 Jun 13 05:04	23° $\mathring{A}$ 59'31	17.68415 AU				
direct	4248 Aug 29 01:36	21° $\mathring{A}$ 56'12		conjunction	4254 Jan 09 12:52	18° $\mathring{B}$ 49'59	-0°17'26
evening set	4248 Dec 02 00:03	25° $\mathring{A}$ 20'10		minimum elong	4254 Jan 09 12:52	18° $\mathring{B}$ 49'59	0°17'26
				max. Earth dist.	4254 Jan 09 14:07	18° $\mathring{B}$ 50'10	19.99909 AU
conjunction	4248 Dec 17 23:48	26° $\mathring{A}$ 19'21	0°00'14	morning rise	4254 Jan 25 06:30	19° $\mathring{B}$ 47'23	
minimum elong	4248 Dec 17 23:49	26° $\mathring{A}$ 19'21	0°00'15	retrograde	4254 Apr 26 18:14	23° $\mathring{B}$ 01'45	
behind sun begin	4248 Dec 17 17:16	26° $\mathring{A}$ 18'21		opposition	4254 Jul 11 10:50	21° $\mathring{B}$ 01'44	-0°21'08
behind sun end	4248 Dec 18 06:22	26° $\mathring{A}$ 20'20		min. Earth dist.	4254 Jul 11 07:39	21° $\mathring{B}$ 02'03	18.03004 AU
max. Earth dist.	4248 Dec 17 17:48	26° $\mathring{A}$ 18'26	19.71085 AU	direct	4254 Sep 26 18:02	18° $\mathring{B}$ 59'35	
morning rise	4249 Jan 02 20:35	27° $\mathring{A}$ 18'06		evening set	4254 Dec 29 08:27	22° $\mathring{B}$ 17'02	
desc. node	4249 Jan 09 19:40	27° $\mathring{A}$ 43'06					
	4249 Feb 26 20:06	0° $\mathring{B}$		conjunction	4255 Jan 14 03:15	23° $\mathring{B}$ 14'24	-0°20'39
retrograde	4249 Apr 04 02:39	0° $\mathring{B}$ 35'30		minimum elong	4255 Jan 14 03:15	23° $\mathring{B}$ 14'24	0°20'40
	4249 May 11 11:42	30° $\mathring{R}$ $\mathring{A}$		max. Earth dist.	4255 Jan 14 07:28	23° $\mathring{B}$ 15'02	20.06166 AU
opposition	4249 Jun 17 22:32	28° $\mathring{A}$ 34'57	-0°01'45	morning rise	4255 Jan 29 20:13	24° $\mathring{B}$ 11'32	
min. Earth dist.	4249 Jun 18 04:05	28° $\mathring{A}$ 34'22	17.73783 AU	retrograde	4255 May 01 08:43	27° $\mathring{B}$ 25'19	
direct	4249 Sep 03 01:32	26° $\mathring{A}$ 31'19		opposition	4255 Jul 16 06:45	25° $\mathring{B}$ 25'26	-0°24'38
evening set	4249 Dec 06 20:00	29° $\mathring{A}$ 54'19		min. Earth dist.	4255 Jul 16 02:18	25° $\mathring{B}$ 25'53	18.09341 AU
	4249 Dec 08 09:33	0° $\mathring{B}$		direct	4255 Oct 01 13:20	23° $\mathring{B}$ 23'40	
				evening set	4256 Jan 02 22:31	26° $\mathring{B}$ 39'58	
conjunction	4249 Dec 22 18:43	0° $\mathring{B}$ 53'11	-0°03'30				
minimum elong	4249 Dec 22 18:43	0° $\mathring{B}$ 53'11	0°03'30	conjunction	4256 Jan 18 16:30	27° $\mathring{B}$ 37'02	-0°23'44
behind sun begin	4249 Dec 22 12:10	0° $\mathring{B}$ 52'12		minimum elong	4256 Jan 18 16:30	27° $\mathring{B}$ 37'02	0°23'43
behind sun end	4249 Dec 23 01:16	0° $\mathring{B}$ 54'10		max. Earth dist.	4256 Jan 18 21:28	27° $\mathring{B}$ 37'47	20.12579 AU
max. Earth dist.	4249 Dec 22 13:19	0° $\mathring{B}$ 52'23	19.76545 AU	morning rise	4256 Feb 03 09:15	28° $\mathring{B}$ 33'55	
morning rise	4250 Jan 07 14:52	1° $\mathring{B}$ 51'40			4256 Feb 29 06:38	0° $\mathring{A}$	
retrograde	4250 Apr 08 22:19	5° $\mathring{B}$ 08'29		retrograde	4256 May 05 00:39	1° $\mathring{A}$ 47'09	
opposition	4250 Jun 22 21:19	3° $\mathring{B}$ 08'04	-0°05'48		4256 Jul 14 22:57	30° $\mathring{R}$ $\mathring{B}$	
min. Earth dist.	4250 Jun 23 00:27	3° $\mathring{B}$ 07'44	17.79316 AU	opposition	4256 Jul 20 01:56	29° $\mathring{B}$ 47'24	-0°27'57
direct	4250 Sep 08 02:09	1° $\mathring{B}$ 04'43		min. Earth dist.	4256 Jul 19 19:18	29° $\mathring{B}$ 48'05	18.15817 AU
evening set	4250 Dec 11 14:50	4° $\mathring{B}$ 26'41		direct	4256 Oct 05 07:17	27° $\mathring{B}$ 46'01	
					4256 Dec 19 11:58	0° $\mathring{A}$	
conjunction	4250 Dec 27 12:45	5° $\mathring{B}$ 25'15	-0°07'06	evening set	4257 Jan 06 11:41	1° $\mathring{A}$ 01'12	
minimum elong	4250 Dec 27 12:45	5° $\mathring{B}$ 25'15	0°07'06				
behind sun begin	4250 Dec 27 06:39	5° $\mathring{B}$ 24'20		conjunction	4257 Jan 22 05:16	1° $\mathring{A}$ 58'00	-0°26'39
behind sun end	4250 Dec 27 18:51	5° $\mathring{B}$ 26'10		minimum elong	4257 Jan 22 05:16	1° $\mathring{A}$ 58'00	0°26'39
max. Earth dist.	4250 Dec 27 09:46	5° $\mathring{B}$ 24'49	19.82150 AU	max. Earth dist.	4257 Jan 22 13:02	1° $\mathring{A}$ 59'10	20.19090 AU
morning rise	4251 Jan 12 08:01	6° $\mathring{B}$ 23'27		morning rise	4257 Feb 06 21:30	2° $\mathring{A}$ 54'37	
retrograde	4251 Apr 13 15:30	9° $\mathring{B}$ 39'40		retrograde	4257 May 09 14:45	6° $\mathring{A}$ 07'18	
opposition	4251 Jun 27 19:45	7° $\mathring{B}$ 39'22	-0°09'48	opposition	4257 Jul 24 20:21	4° $\mathring{A}$ 07'44	-0°31'06
min. Earth dist.	4251 Jun 27 22:21	7° $\mathring{B}$ 39'06	17.84993 AU	min. Earth dist.	4257 Jul 24 12:31	4° $\mathring{A}$ 08'33	18.22346 AU
direct	4251 Sep 13 01:08	5° $\mathring{B}$ 36'19		direct	4257 Oct 10 01:09	2° $\mathring{A}$ 06'46	
evening set	4251 Dec 16 08:48	8° $\mathring{B}$ 57'11		evening set	4258 Jan 11 00:15	5° $\mathring{A}$ 20'50	
conjunction	4252 Jan 01 05:44	9° $\mathring{B}$ 55'27	-0°10'39	conjunction	4258 Jan 26 17:08	6° $\mathring{A}$ 17'21	-0°29'24
minimum elong	4252 Jan 01 05:44	9° $\mathring{B}$ 55'27	0°10'37	minimum elong	4258 Jan 26 17:08	6° $\mathring{A}$ 17'21	0°29'24
behind sun begin	4252 Jan 01 00:35	9° $\mathring{B}$ 54'40		max. Earth dist.	4258 Jan 27 01:26	6° $\mathring{A}$ 18'36	20.25630 AU
behind sun end	4252 Jan 01 10:52	9° $\mathring{B}$ 56'13		morning rise	4258 Feb 11 09:15	7° $\mathring{A}$ 13'45	
max. Earth dist.	4252 Jan 01 03:25	9° $\mathring{B}$ 55'06	19.87911 AU	retrograde	4258 May 14 05:38	10° $\mathring{A}$ 25'54	
morning rise	4252 Jan 17 00:30	10° $\mathring{B}$ 53'23		opposition	4258 Jul 29 14:22	8° $\mathring{A}$ 26'31	-0°34'03
retrograde	4252 Apr 17 09:43	14° $\mathring{B}$ 08'59		min. Earth dist.	4258 Jul 29 04:49	8° $\mathring{A}$ 27'29	18.28885 AU
opposition	4252 Jul 01 17:21	12° $\mathring{B}$ 08'45	-0°13'42	direct	4258 Oct 14 16:43	6° $\mathring{A}$ 25'56	
min. Earth dist.	4252 Jul 01 17:30	12° $\mathring{B}$ 08'44	17.90833 AU	evening set	4259 Jan 15 11:47	9° $\mathring{A}$ 38'54	
direct	4252 Sep 17 00:05	10° $\mathring{B}$ 05'59					

conjunction	4259 Jan 31 04:22	10° $\approx$ 35'09 -0°31'59	minimum elong	4265 Feb 24 11:16	5° $\times$ 50'17 0°43'08
minimum elong	4259 Jan 31 04:22	10° $\approx$ 35'09 0°31'58	max. Earth dist.	4265 Feb 25 04:07	5° $\times$ 52'46 20.66825 AU
max. Earth dist.	4259 Jan 31 15:16	10° $\approx$ 36'48 20.32135 AU	morning rise	4265 Mar 12 03:13	6° $\times$ 45'20
morning rise	4259 Feb 15 20:06	11° $\approx$ 31'19	retrograde	4265 Jun 12 20:17	9° $\times$ 54'14
retrograde	4259 May 18 19:25	14° $\approx$ 42'59	min. Earth dist.	4265 Aug 28 10:11	7° $\times$ 57'04 18.69239 AU
opposition	4259 Aug 03 07:48	12° $\approx$ 43'45 -0°36'47	opposition	4265 Aug 29 03:00	7° $\times$ 55'22 -0°48'22
min. Earth dist.	4259 Aug 02 20:58	12° $\approx$ 44'51 18.35342 AU	direct	4265 Nov 13 21:57	5° $\times$ 57'00
direct	4259 Oct 19 09:57	10° $\approx$ 43'35	evening set	4266 Feb 13 03:11	9° $\times$ 02'41
evening set	4260 Jan 19 22:52	13° $\approx$ 55'26			
conjunction	4260 Feb 04 14:53	14° $\approx$ 51'27 -0°34'22	conjunction	4266 Feb 28 18:21	9° $\times$ 57'26 -0°44'12
minimum elong	4260 Feb 04 14:53	14° $\approx$ 51'27 0°34'22	minimum elong	4266 Feb 28 18:21	9° $\times$ 57'26 0°44'12
max. Earth dist.	4260 Feb 05 02:06	14° $\approx$ 53'08 20.38531 AU	max. Earth dist.	4266 Mar 01 11:17	9° $\times$ 59'56 20.71551 AU
	4260 Feb 06 23:51	15° $\approx$	morning rise	4266 Mar 16 10:43	10° $\times$ 52'22
morning rise	4260 Feb 20 06:39	15° $\approx$ 47'24	retrograde	4266 Jun 17 06:29	14° $\times$ 00'53
retrograde	4260 May 22 09:18	18° $\approx$ 58'35	opposition	4266 Sep 02 16:04	12° $\times$ 01'58 -0°49'24
opposition	4260 Aug 07 00:30	16° $\approx$ 59'29 -0°39'19	min. Earth dist.	4266 Sep 01 22:57	12° $\times$ 03'41 18.73841 AU
min. Earth dist.	4260 Aug 06 12:32	17° $\approx$ 00'41 18.41675 AU	direct	4266 Nov 18 08:26	10° $\times$ 03'47
	4260 Oct 19 12:27	15° $\approx$	evening set	4267 Feb 17 09:34	13° $\times$ 08'33
direct	4260 Oct 22 23:59	14° $\approx$ 59'41	conjunction	4267 Mar 05 00:59	14° $\times$ 03'10 -0°45'02
	4260 Oct 26 12:25	15° $\approx$	minimum elong	4267 Mar 05 00:59	14° $\times$ 03'10 0°45'03
evening set	4261 Jan 23 09:06	18° $\approx$ 10'28	max. Earth dist.	4267 Mar 05 19:46	14° $\times$ 05'55 20.76018 AU
conjunction	4261 Feb 08 01:00	19° $\approx$ 06'14 -0°36'33	morning rise	4267 Mar 20 17:32	14° $\times$ 57'57
minimum elong	4261 Feb 08 00:59	19° $\approx$ 06'14 0°36'32	retrograde	4267 Jun 21 16:09	18° $\times$ 06'07
max. Earth dist.	4261 Feb 08 14:22	19° $\approx$ 08'14 20.44758 AU	min. Earth dist.	4267 Sep 06 09:39	16° $\times$ 09'03 18.78182 AU
morning rise	4261 Feb 23 16:32	20° $\approx$ 01'59	opposition	4267 Sep 07 04:22	16° $\times$ 07'11 -0°50'11
retrograde	4261 May 26 22:13	23° $\approx$ 12'41	direct	4267 Nov 22 19:59	14° $\times$ 09'13
opposition	4261 Aug 11 16:39	21° $\approx$ 13'42 -0°41'37	evening set	4268 Feb 21 15:46	17° $\times$ 13'08
min. Earth dist.	4261 Aug 11 03:28	21° $\approx$ 15'02 18.47784 AU	conjunction	4268 Mar 08 07:12	18° $\times$ 07'36 -0°45'38
direct	4261 Oct 27 16:14	19° $\approx$ 14'17	minimum elong	4268 Mar 08 07:12	18° $\times$ 07'36 0°45'37
evening set	4262 Jan 27 18:51	22° $\approx$ 24'00	max. Earth dist.	4268 Mar 09 02:06	18° $\times$ 10'22 20.80236 AU
conjunction	4262 Feb 12 10:17	23° $\approx$ 19'32 -0°38'31	morning rise	4268 Mar 24 00:16	19° $\times$ 02'18
minimum elong	4262 Feb 12 10:17	23° $\approx$ 19'32 0°38'32	retrograde	4268 Jun 25 01:01	22° $\times$ 10'08
max. Earth dist.	4262 Feb 12 23:42	23° $\approx$ 21'32 20.50734 AU	opposition	4268 Sep 10 16:01	20° $\times$ 11'11 -0°50'43
morning rise	4262 Feb 28 01:57	24° $\approx$ 15'05	min. Earth dist.	4268 Sep 09 21:15	20° $\times$ 13'04 18.82295 AU
retrograde	4262 May 31 11:01	27° $\approx$ 25'20	direct	4268 Nov 26 04:53	18° $\times$ 13'25
opposition	4262 Aug 16 08:16	25° $\approx$ 26'26 -0°43'40	evening set	4269 Feb 24 21:23	21° $\times$ 16'34
min. Earth dist.	4262 Aug 15 18:24	25° $\approx$ 27'50 18.53633 AU	conjunction	4269 Mar 12 13:12	22° $\times$ 10'56 -0°46'00
direct	4262 Nov 01 05:28	23° $\approx$ 27'19	minimum elong	4269 Mar 12 13:12	22° $\times$ 10'56 0°46'01
evening set	4263 Feb 01 03:50	26° $\approx$ 36'00	max. Earth dist.	4269 Mar 13 09:42	22° $\times$ 13'55 20.84223 AU
conjunction	4263 Feb 16 19:16	27° $\approx$ 31'19 -0°40'17	morning rise	4269 Mar 28 06:34	23° $\times$ 05'32
minimum elong	4263 Feb 16 19:15	27° $\approx$ 31'19 0°40'17	retrograde	4269 Jun 29 10:53	26° $\times$ 13'06
max. Earth dist.	4263 Feb 17 10:30	27° $\approx$ 33'35 20.56427 AU	min. Earth dist.	4269 Sep 14 06:50	24° $\times$ 16'12 18.86149 AU
morning rise	4263 Mar 04 10:51	28° $\approx$ 26'42	opposition	4269 Sep 15 03:07	24° $\times$ 14'10 -0°50'59
	4263 Apr 02 13:21	0° $\times$	direct	4269 Nov 30 14:54	22° $\times$ 16'38
retrograde	4263 Jun 04 22:37	1° $\times$ 36'29	evening set	4270 Mar 01 02:42	25° $\times$ 19'04
	4263 Aug 11 15:54	30° $\approx$	conjunction	4270 Mar 16 18:38	26° $\times$ 13'20 -0°46'09
opposition	4263 Aug 20 23:14	29° $\approx$ 37'38 -0°45'29	minimum elong	4270 Mar 16 18:38	26° $\times$ 13'20 0°46'09
min. Earth dist.	4263 Aug 20 08:05	29° $\approx$ 39'09 18.59162 AU	max. Earth dist.	4270 Mar 17 15:12	26° $\times$ 16'19 20.87942 AU
direct	4263 Nov 05 20:34	27° $\approx$ 38'49	morning rise	4270 Apr 01 12:38	27° $\times$ 07'52
	4264 Jan 22 16:24	0° $\times$		4270 Jun 08 21:34	0° $\gamma$
evening set	4264 Feb 05 12:16	0° $\times$ 46'27	retrograde	4270 Jul 03 18:56	0° $\gamma$ 15'15
conjunction	4264 Feb 21 03:27	1° $\times$ 41'34 -0°41'49		4270 Jul 29 02:04	30° $\approx$
minimum elong	4264 Feb 21 03:27	1° $\times$ 41'34 0°41'49	opposition	4270 Sep 19 13:57	28° $\times$ 16'19 -0°51'00
max. Earth dist.	4264 Feb 21 18:37	1° $\times$ 43'49 20.61790 AU	min. Earth dist.	4270 Sep 18 17:51	28° $\times$ 18'20 18.89739 AU
morning rise	4264 Mar 07 19:21	2° $\times$ 36'47	direct	4270 Dec 04 22:28	26° $\times$ 19'01
retrograde	4264 Jun 08 10:16	5° $\times$ 46'08	evening set	4271 Mar 05 07:42	29° $\times$ 20'48
opposition	4264 Aug 24 13:34	3° $\times$ 47'17 -0°47'03		4271 Mar 16 16:56	0° $\gamma$
min. Earth dist.	4264 Aug 23 22:04	3° $\times$ 48'50 18.64367 AU	conjunction	4271 Mar 21 00:09	0° $\gamma$ 14'59 -0°46'03
direct	4264 Nov 09 08:29	1° $\times$ 48'41	minimum elong	4271 Mar 21 00:09	0° $\gamma$ 14'59 0°46'03
evening set	4265 Feb 08 19:57	4° $\times$ 55'20	max. Earth dist.	4271 Mar 21 22:05	0° $\gamma$ 18'10 20.91385 AU
conjunction	4265 Feb 24 11:16	5° $\times$ 50'17 -0°43'08	morning rise	4271 Apr 05 18:34	1° $\gamma$ 09'28
			retrograde	4271 Jul 08 04:49	4° $\gamma$ 16'40

min. Earth dist.	4271 Sep 23 02:42	2°♈19'55	18.93018 AU	max. Earth dist.	4278 Apr 18 10:01	28°♈18'17	21.03625 AU
opposition	4271 Sep 24 00:06	2°♈17'47	-0°50'46	morning rise	4278 May 03 13:09	29°♈09'57	
direct	4271 Dec 09 07:31	0°♈20'42			4278 May 18 23:25	0°♈	
evening set	4272 Mar 08 12:38	3°♈21'55		retrograde	4278 Aug 05 14:25	2°♈16'51	
				opposition	4278 Oct 22 14:40	0°♈17'46	-0°42'30
conjunction	4272 Mar 24 05:23	4°♈16'03	-0°45'44	min. Earth dist.	4278 Oct 21 19:44	0°♈19'40	19.03585 AU
minimum elong	4272 Mar 24 05:23	4°♈16'03	0°45'45		4278 Oct 30 00:14	30°♈	
max. Earth dist.	4272 Mar 25 03:02	4°♈19'11	20.94491 AU	direct	4279 Jan 06 04:47	28°♈21'21	
morning rise	4272 Apr 09 00:33	5°♈10'30			4279 Mar 11 07:10	0°♈	
retrograde	4272 Jul 11 12:26	8°♈17'35		evening set	4279 Apr 05 21:59	1°♈20'11	
opposition	4272 Sep 27 10:02	6°♈18'44	-0°50'17				
min. Earth dist.	4272 Sep 26 13:19	6°♈20'48	18.95949 AU	conjunction	4279 Apr 21 19:14	2°♈14'23	-0°37'35
direct	4272 Dec 12 13:52	4°♈21'51		minimum elong	4279 Apr 21 19:14	2°♈14'23	0°37'35
evening set	4273 Mar 12 17:21	7°♈22'34		max. Earth dist.	4279 Apr 22 15:58	2°♈17'22	21.03367 AU
				morning rise	4279 May 07 19:38	3°♈09'04	
conjunction	4273 Mar 28 10:40	8°♈16'39	-0°45'12	retrograde	4279 Aug 09 23:26	6°♈16'01	
minimum elong	4273 Mar 28 10:40	8°♈16'39	0°45'12	opposition	4279 Oct 26 22:16	4°♈16'47	-0°40'26
max. Earth dist.	4273 Mar 29 09:16	8°♈19'54	20.97226 AU	min. Earth dist.	4279 Oct 26 02:51	4°♈18'44	19.03099 AU
morning rise	4273 Apr 13 06:20	9°♈11'05		direct	4280 Jan 10 11:59	2°♈20'18	
retrograde	4273 Jul 15 21:52	12°♈18'04		evening set	4280 Apr 09 03:03	5°♈19'02	
opposition	4273 Oct 01 19:25	10°♈19'15	-0°49'34				
min. Earth dist.	4273 Sep 30 21:42	10°♈21'25	18.98471 AU	conjunction	4280 Apr 25 00:58	6°♈13'19	-0°35'37
direct	4273 Dec 16 22:08	8°♈22'34		minimum elong	4280 Apr 25 00:59	6°♈13'19	0°35'37
evening set	4274 Mar 16 22:11	11°♈22'50		max. Earth dist.	4280 Apr 25 20:42	6°♈16'08	21.02670 AU
				morning rise	4280 May 11 02:23	7°♈08'06	
conjunction	4274 Apr 01 15:52	12°♈16'54	-0°44'27	retrograde	4280 Aug 13 06:41	10°♈15'08	
minimum elong	4274 Apr 01 15:52	12°♈16'54	0°44'28	opposition	4280 Oct 30 05:56	8°♈15'45	-0°38'11
max. Earth dist.	4274 Apr 02 13:49	12°♈20'04	20.99527 AU	min. Earth dist.	4280 Oct 29 12:01	8°♈17'33	19.02209 AU
morning rise	4274 Apr 17 12:20	13°♈11'20		direct	4281 Jan 13 16:00	6°♈19'11	
retrograde	4274 Jul 20 05:29	16°♈18'16		evening set	4281 Apr 13 08:06	9°♈17'53	
min. Earth dist.	4274 Oct 05 08:05	14°♈21'32	19.00549 AU				
opposition	4274 Oct 06 04:45	14°♈19'28	-0°48'36	conjunction	4281 Apr 29 06:56	10°♈12'15	-0°33'30
direct	4274 Dec 21 03:53	12°♈22'55		minimum elong	4281 Apr 29 06:57	10°♈12'15	0°33'31
evening set	4275 Mar 21 02:47	15°♈22'48		max. Earth dist.	4281 Apr 30 02:53	10°♈15'07	21.01596 AU
				morning rise	4281 May 15 09:07	11°♈07'08	
conjunction	4275 Apr 05 21:12	16°♈16'52	-0°43'29	retrograde	4281 Aug 17 16:06	14°♈14'18	
minimum elong	4275 Apr 05 21:12	16°♈16'52	0°43'29	opposition	4281 Nov 03 13:18	12°♈14'48	-0°35'44
max. Earth dist.	4275 Apr 06 19:40	16°♈20'06	21.01361 AU	min. Earth dist.	4281 Nov 02 18:48	12°♈16'40	19.00951 AU
morning rise	4275 Apr 21 18:17	17°♈11'19		direct	4282 Jan 17 22:55	10°♈18'09	
retrograde	4275 Jul 24 14:42	20°♈18'13		evening set	4282 Apr 17 13:35	13°♈16'53	
opposition	4275 Oct 10 13:36	18°♈19'25	-0°47'25				
min. Earth dist.	4275 Oct 09 16:16	18°♈21'32	19.02116 AU	conjunction	4282 May 03 13:10	14°♈11'23	-0°31'13
direct	4275 Dec 25 11:29	16°♈22'58		minimum elong	4282 May 03 13:10	14°♈11'23	0°31'12
evening set	4276 Mar 24 07:43	19°♈22'32		max. Earth dist.	4282 May 04 08:05	14°♈14'05	21.00167 AU
					4282 May 17 18:46	15°♈	
conjunction	4276 Apr 09 02:37	20°♈16'36	-0°42'19	morning rise	4282 May 19 16:21	15°♈06'23	
minimum elong	4276 Apr 09 02:37	20°♈16'36	0°42'19	retrograde	4282 Aug 21 23:56	18°♈13'44	
max. Earth dist.	4276 Apr 09 23:58	20°♈19'40	21.02654 AU	opposition	4282 Nov 07 20:45	16°♈14'06	-0°33'07
morning rise	4276 Apr 25 00:35	21°♈11'06		min. Earth dist.	4282 Nov 07 03:48	16°♈15'49	18.99360 AU
retrograde	4276 Jul 27 22:12	24°♈17'58			4282 Dec 10 22:03	15°♈	
opposition	4276 Oct 13 22:11	22°♈19'06	-0°46'00	direct	4283 Jan 22 03:01	14°♈17'21	
min. Earth dist.	4276 Oct 13 02:18	22°♈21'05	19.03141 AU		4283 Mar 04 05:54	15°♈	
direct	4276 Dec 28 16:46	20°♈22'43		evening set	4283 Apr 21 19:13	17°♈16'13	
evening set	4277 Mar 28 12:26	23°♈22'00					
				conjunction	4283 May 07 19:51	18°♈10'51	-0°28'46
conjunction	4277 Apr 13 08:10	24°♈16'06	-0°40'56	minimum elong	4283 May 07 19:51	18°♈10'51	0°28'47
minimum elong	4277 Apr 13 08:10	24°♈16'06	0°40'56	max. Earth dist.	4283 May 08 14:44	18°♈13'33	20.98420 AU
max. Earth dist.	4277 Apr 14 05:41	24°♈19'11	21.03410 AU	morning rise	4283 May 23 23:54	19°♈05'59	
morning rise	4277 Apr 29 06:50	25°♈10'38		retrograde	4283 Aug 26 09:52	22°♈13'33	
retrograde	4277 Aug 01 07:05	28°♈17'30		min. Earth dist.	4283 Nov 11 10:39	20°♈15'35	18.97438 AU
min. Earth dist.	4277 Oct 17 10:02	26°♈20'36	19.03616 AU	opposition	4283 Nov 12 04:00	20°♈13'49	-0°30'21
opposition	4277 Oct 18 06:27	26°♈18'33	-0°44'21	direct	4284 Jan 26 09:31	18°♈17'00	
direct	4278 Jan 02 00:10	24°♈22'10		evening set	4284 Apr 25 01:28	21°♈16'03	
evening set	4278 Apr 01 17:12	27°♈21'12					
				conjunction	4284 May 11 02:53	22°♈10'50	-0°26'11
conjunction	4278 Apr 17 13:31	28°♈15'21	-0°39'21	minimum elong	4284 May 11 02:53	22°♈10'50	0°26'11
minimum elong	4278 Apr 17 13:31	28°♈15'21	0°39'21	max. Earth dist.	4284 May 11 20:31	22°♈13'22	20.96330 AU

morning rise	4284 May 27 07:57	23°♄06'08	behind sun end	4290 Jun 05 15:37	16°♄31'00	
retrograde	4284 Aug 29 18:32	26°♄13'58	max. Earth dist.	4290 Jun 05 19:58	16°♄31'38	20.76008 AU
opposition	4284 Nov 15 11:21	24°♄14'09 -0°27'25	morning rise	4290 Jun 21 20:13	17°♄26'40	
min. Earth dist.	4284 Nov 14 19:47	24°♄15'44 18.95185 AU	retrograde	4290 Sep 24 11:42	20°♄36'51	
direct	4285 Jan 29 14:01	22°♄17'14	opposition	4290 Dec 10 11:15	18°♄36'29 -0°07'18	
evening set	4285 Apr 29 08:02	25°♄16'35	min. Earth dist.	4290 Dec 10 03:02	18°♄37'20 18.73620 AU	
			direct	4291 Feb 23 04:18	16°♄38'34	
conjunction	4285 May 15 10:29	26°♄11'32 -0°23'28	evening set	4291 May 24 13:06	19°♄41'05	
minimum elong	4285 May 15 10:29	26°♄11'32 0°23'29				
max. Earth dist.	4285 May 16 03:49	26°♄14'01 20.93923 AU	conjunction	4291 Jun 09 21:15	20°♄37'19 -0°05'03	
morning rise	4285 May 31 16:24	27°♄07'00	minimum elong	4291 Jun 09 21:16	20°♄37'19 0°05'03	
	4285 Aug 09 06:23	0°♄	behind sun begin	4291 Jun 09 14:46	20°♄36'24	
retrograde	4285 Sep 03 05:09	0°♄15'09	behind sun end	4291 Jun 10 03:46	20°♄38'14	
	4285 Sep 28 09:07	30°♄	max. Earth dist.	4291 Jun 10 06:03	20°♄38'34 20.71150 AU	
opposition	4285 Nov 19 18:47	28°♄15'15 -0°24'21	morning rise	4291 Jun 26 08:36	21°♄34'02	
min. Earth dist.	4285 Nov 19 03:00	28°♄16'52 18.92599 AU	retrograde	4291 Sep 29 01:30	24°♄44'41	
direct	4286 Feb 02 20:23	26°♄18'15	opposition	4291 Dec 14 19:58	22°♄44'08 -0°03'39	
evening set	4286 May 03 15:10	29°♄17'58	min. Earth dist.	4291 Dec 14 12:19	22°♄44'55 18.68566 AU	
	4286 May 15 23:13	0°♄	direct	4292 Feb 27 13:46	20°♄45'55	
			evening set	4292 May 28 00:20	23°♄49'08	
conjunction	4286 May 19 18:27	0°♄13'05 -0°20'38				
minimum elong	4286 May 19 18:27	0°♄13'05 0°20'39	conjunction	4292 Jun 13 09:21	24°♄45'38 -0°01'43	
max. Earth dist.	4286 May 20 10:24	0°♄15'22 20.91159 AU	minimum elong	4292 Jun 13 09:20	24°♄45'38 0°01'43	
morning rise	4286 Jun 05 01:24	1°♄08'45	behind sun begin	4292 Jun 13 02:38	24°♄44'41	
retrograde	4286 Sep 07 14:36	4°♄17'15	behind sun end	4292 Jun 13 16:03	24°♄46'34	
opposition	4286 Nov 24 02:32	2°♄17'18 -0°21'09	max. Earth dist.	4292 Jun 13 16:23	24°♄46'38 20.65921 AU	
min. Earth dist.	4286 Nov 23 12:48	2°♄18'42 18.89650 AU	morning rise	4292 Jun 29 21:28	25°♄42'35	
direct	4287 Feb 07 01:28	0°♄20'11	retrograde	4292 Oct 02 12:06	28°♄53'41	
evening set	4287 May 07 22:59	3°♄20'20	asc. node	4292 Dec 13 21:42	27°♄03'40	
			opposition	4292 Dec 18 05:02	26°♄52'57 0°00'03	
conjunction	4287 May 24 03:20	4°♄15'40 -0°17'42	min. Earth dist.	4292 Dec 17 23:42	26°♄53'30 18.63188 AU	
minimum elong	4287 May 24 03:20	4°♄15'40 0°17'42	direct	4293 Mar 02 20:38	24°♄54'24	
max. Earth dist.	4287 May 24 18:32	4°♄17'50 20.88028 AU	evening set	4293 Jun 01 12:12	27°♄58'25	
morning rise	4287 Jun 09 11:08	5°♄11'30				
retrograde	4287 Sep 12 02:27	8°♄20'24	conjunction	4293 Jun 17 22:08	28°♄55'09 0°01'44	
opposition	4287 Nov 28 10:10	6°♄20'23 -0°17'50	minimum elong	4293 Jun 17 22:09	28°♄55'09 0°01'44	
min. Earth dist.	4287 Nov 27 20:42	6°♄21'46 18.86307 AU	behind sun begin	4293 Jun 17 15:26	28°♄54'13	
direct	4288 Feb 11 08:22	4°♄23'08	behind sun end	4293 Jun 18 04:52	28°♄56'06	
evening set	4288 May 11 07:38	7°♄23'49	max. Earth dist.	4293 Jun 18 03:46	28°♄55'56 20.60427 AU	
			morning rise	4293 Jul 04 11:04	29°♄52'21	
conjunction	4288 May 27 12:49	8°♄19'21 -0°14'39		4293 Jul 06 17:18	0°♄	
minimum elong	4288 May 27 12:49	8°♄19'21 0°14'40	retrograde	4293 Oct 07 02:23	3°♄03'57	
behind sun begin	4288 May 27 10:07	8°♄18'58	opposition	4293 Dec 22 14:20	1°♄03'01 0°03'45	
behind sun end	4288 May 27 15:32	8°♄19'44	min. Earth dist.	4293 Dec 22 09:29	1°♄03'31 18.57578 AU	
max. Earth dist.	4288 May 28 02:11	8°♄21'16 20.84465 AU		4294 Jan 18 03:54	30°♄	
morning rise	4288 Jun 12 21:34	9°♄15'24	direct	4294 Mar 07 07:17	29°♄04'07	
retrograde	4288 Sep 15 12:19	12°♄24'43		4294 Apr 23 04:32	0°♄	
opposition	4288 Dec 01 18:20	10°♄24'37 -0°14'24	evening set	4294 Jun 06 00:46	2°♄08'57	
min. Earth dist.	4288 Dec 01 07:14	10°♄25'45 18.82525 AU				
direct	4289 Feb 14 14:01	8°♄27'11	conjunction	4294 Jun 22 11:36	3°♄05'59 0°05'06	
evening set	4289 May 15 16:40	11°♄28'25	minimum elong	4294 Jun 22 11:36	3°♄05'59 0°05'07	
			behind sun begin	4294 Jun 22 05:05	3°♄05'03	
conjunction	4289 May 31 22:54	12°♄24'11 -0°11'31	behind sun end	4294 Jun 22 18:07	3°♄06'54	
minimum elong	4289 May 31 22:54	12°♄24'11 0°11'31	max. Earth dist.	4294 Jun 22 15:46	3°♄06'33 20.54711 AU	
behind sun begin	4289 May 31 18:07	12°♄23'31	morning rise	4294 Jul 09 01:15	4°♄03'25	
behind sun end	4289 Jun 01 03:40	12°♄24'51	retrograde	4294 Oct 11 13:53	7°♄15'32	
max. Earth dist.	4289 Jun 01 11:04	12°♄25'55 20.80466 AU	opposition	4294 Dec 27 00:08	5°♄14'25 0°07'27	
morning rise	4289 Jun 17 08:29	13°♄20'27	min. Earth dist.	4294 Dec 26 21:25	5°♄14'42 18.51778 AU	
retrograde	4289 Sep 20 01:26	16°♄30'12	direct	4295 Mar 11 15:25	3°♄15'10	
opposition	4289 Dec 06 02:38	14°♄29'59 -0°10'53	evening set	4295 Jun 10 14:15	6°♄20'54	
min. Earth dist.	4289 Dec 05 15:58	14°♄31'04 18.78291 AU				
direct	4290 Feb 18 22:06	12°♄32'20	conjunction	4295 Jun 27 01:57	7°♄18'11 0°08'25	
evening set	4290 May 20 02:37	15°♄34'11	minimum elong	4295 Jun 27 01:57	7°♄18'11 0°08'25	
			behind sun begin	4295 Jun 26 20:04	7°♄17'21	
conjunction	4290 Jun 05 09:44	16°♄30'11 -0°08'18	behind sun end	4295 Jun 27 07:50	7°♄19'01	
minimum elong	4290 Jun 05 09:44	16°♄30'11 0°08'19	max. Earth dist.	4295 Jun 27 04:28	7°♄18'32 20.48849 AU	
behind sun begin	4290 Jun 05 03:51	16°♄29'21	morning rise	4295 Jul 13 16:18	8°♄15'53	



retrograde	4295 Oct 16 04:45	11°  28'31		retrograde	4301 Nov 12 04:40	7°  21'55	
opposition	4295 Dec 31 10:06	9°  27'14	0°11'09	opposition	4302 Jan 26 10:22	5°  20'02	0°31'46
min. Earth dist.	4295 Dec 31 07:56	9°  27'27	18.45857 AU	min. Earth dist.	4302 Jan 26 16:43	5°  19'22	18.09322 AU
direct	4296 Mar 15 02:40	7°  27'37		direct	4302 Apr 11 03:29	3°  18'28	
evening set	4296 Jun 14 04:33	10°  34'19		evening set	4302 Jul 12 13:31	6°  31'51	
conjunction	4296 Jun 30 17:03	11°  31'53	0°11'43	conjunction	4302 Jul 29 05:57	7°  31'07	0°29'59
minimum elong	4296 Jun 30 17:03	11°  31'53	0°11'43	minimum elong	4302 Jul 29 05:57	7°  31'07	0°29'59
behind sun begin	4296 Jun 30 12:22	11°  31'13		max. Earth dist.	4302 Jul 28 21:27	7°  29'52	20.06201 AU
behind sun end	4296 Jun 30 21:44	11°  32'33		morning rise	4302 Aug 14 23:14	8°  30'34	
max. Earth dist.	4296 Jun 30 18:19	11°  32'04	20.42872 AU	retrograde	4302 Nov 16 22:47	11°  14'21	
morning rise	4296 Jul 17 07:57	12°  29'50		opposition	4303 Jan 31 00:44	9°  45'23	0°34'47
retrograde	4296 Oct 19 17:44	15°  34'01		min. Earth dist.	4303 Jan 31 08:56	9°  44'30	18.03055 AU
opposition	4297 Jan 03 20:48	13°  34'35	0°14'47	direct	4303 Apr 15 17:54	7°  43'27	
min. Earth dist.	4297 Jan 03 20:34	13°  34'37	18.39848 AU	evening set	4303 Jul 17 10:32	10°  58'01	
direct	4297 Mar 19 12:24	11°  34'39					
evening set	4297 Jun 18 19:30	14°  34'20		conjunction	4303 Aug 03 03:15	11°  57'33	0°32'36
				minimum elong	4303 Aug 03 03:14	11°  57'33	0°32'36
conjunction	4297 Jul 05 08:46	15°  34'11	0°14'59	max. Earth dist.	4303 Aug 02 15:46	11°  55'50	19.99913 AU
minimum elong	4297 Jul 05 08:45	15°  34'11	0°14'58	morning rise	4303 Aug 19 20:49	12°  57'14	
behind sun begin	4297 Jul 05 06:31	15°  34'52			4303 Sep 28 05:25	15°  34'00	
behind sun end	4297 Jul 05 11:00	15°  34'30		retrograde	4303 Nov 21 18:18	16°  14'35	
max. Earth dist.	4297 Jul 05 08:16	15°  34'07	20.36849 AU		4304 Jan 16 16:53	15°  34'00	
morning rise	4297 Jul 22 00:20	16°  34'23		opposition	4304 Feb 04 15:37	14°  12'29	0°37'36
retrograde	4297 Oct 24 09:23	19°  34'09		min. Earth dist.	4304 Feb 05 01:17	14°  11'27	17.96759 AU
opposition	4298 Jan 08 07:55	17°  34'35	0°18'23	direct	4304 Apr 19 10:02	12°  10'10	
min. Earth dist.	4298 Jan 08 08:14	17°  34'34	18.33807 AU		4304 Jul 13 20:49	15°  34'00	
direct	4298 Mar 24 00:17	15°  34'19		evening set	4304 Jul 21 08:13	15°  25'55	
evening set	4298 Jun 23 11:33	19°  34'04					
conjunction	4298 Jul 10 01:36	20°  34'12	0°18'10	conjunction	4304 Aug 07 01:25	16°  25'43	0°35'02
minimum elong	4298 Jul 10 01:36	20°  34'12	0°18'09	minimum elong	4304 Aug 07 01:25	16°  25'43	0°35'02
max. Earth dist.	4298 Jul 10 00:02	20°  33'58	20.30785 AU	max. Earth dist.	4304 Aug 06 13:14	16°  23'54	19.93608 AU
morning rise	4298 Jul 26 17:35	21°  33'39		morning rise	4304 Aug 23 18:53	17°  25'37	
retrograde	4298 Oct 29 00:16	24°  33'00		retrograde	4304 Nov 25 13:36	20°  43'30	
opposition	4299 Jan 12 19:35	22°  33'21	0°21'54	opposition	4305 Feb 08 07:14	18°  41'18	0°40'12
min. Earth dist.	4299 Jan 12 21:49	22°  33'07	18.27734 AU	min. Earth dist.	4305 Feb 08 18:19	18°  40'06	17.90472 AU
direct	4299 Mar 28 11:26	20°  33'46		direct	4305 Apr 24 02:28	16°  38'34	
evening set	4299 Jun 28 04:37	23°  33'37		evening set	4305 Jul 26 06:40	19°  55'29	
conjunction	4299 Jul 14 19:17	24°  33'03	0°21'17	conjunction	4305 Aug 12 00:02	20°  55'32	0°37'16
minimum elong	4299 Jul 14 19:17	24°  33'03	0°21'17	minimum elong	4305 Aug 12 00:01	20°  55'32	0°37'15
max. Earth dist.	4299 Jul 14 15:31	24°  32'30	20.24712 AU	morning rise	4305 Aug 28 17:41	21°  55'40	
morning rise	4299 Jul 31 11:51	25°  32'15		retrograde	4305 Nov 30 09:35	25°  14'04	
retrograde	4299 Nov 02 17:24	28°  36'43		opposition	4306 Feb 12 23:27	23°  11'43	0°42'35
opposition	4300 Jan 17 07:50	26°  35'00	0°25'19	min. Earth dist.	4306 Feb 13 12:01	23°  10'21	17.84289 AU
min. Earth dist.	4300 Jan 17 10:59	26°  34'40	18.21646 AU	direct	4306 Apr 28 19:48	21°  08'34	
direct	4300 Apr 02 00:27	24°  34'05		evening set	4306 Jul 31 05:54	24°  26'39	
evening set	4300 Jul 02 22:33	27°  34'06					
conjunction	4300 Jul 19 13:53	28°  34'48	0°24'19	conjunction	4306 Aug 16 23:39	25°  26'58	0°39'17
minimum elong	4300 Jul 19 13:53	28°  34'48	0°24'18	minimum elong	4306 Aug 16 23:39	25°  26'58	0°39'17
max. Earth dist.	4300 Jul 19 09:06	28°  34'06	20.18593 AU	max. Earth dist.	4306 Aug 16 08:22	25°  24'39	19.81243 AU
morning rise	4300 Aug 05 06:38	29°  34'24		morning rise	4306 Sep 02 17:03	26°  27'17	
	4300 Aug 10 06:58	0°  27'00		retrograde	4306 Dec 05 06:10	29°  26'10	
retrograde	4300 Nov 07 09:55	2°  58'21		opposition	4307 Feb 17 16:08	27°  43'41	0°44'42
opposition	4301 Jan 21 20:49	0°  56'34	0°28'37	min. Earth dist.	4307 Feb 18 05:41	27°  42'13	17.78257 AU
min. Earth dist.	4301 Jan 22 01:54	0°  56'01	18.15507 AU	direct	4307 May 03 14:20	25°  40'09	
	4301 Feb 13 21:20	30°  27'00		evening set	4307 Aug 05 06:01	28°  59'23	
direct	4301 Apr 06 12:58	28°  25'50		conjunction	4307 Aug 21 23:42	29°  59'55	0°41'03
	4301 May 26 21:19	0°  25'00		minimum elong	4307 Aug 21 23:42	29°  59'55	0°41'02
evening set	4301 Jul 07 17:35	2°  27'31		max. Earth dist.	4307 Aug 21 05:56	29°  57'13	19.75322 AU
conjunction	4301 Jul 24 09:23	3°  26'31	0°27'13	morning rise	4307 Aug 22 00:15	0°  27'00	
minimum elong	4301 Jul 24 09:22	3°  26'31	0°27'13	retrograde	4307 Sep 07 17:05	1°  27'00'26	
max. Earth dist.	4301 Jul 24 01:56	3°  25'25	20.12434 AU		4307 Dec 10 02:19	4°  27'19'48	
morning rise	4301 Aug 10 02:35	4°  25'43		opposition	4308 Feb 22 09:38	2°  27'17'10	0°46'33
				min. Earth dist.	4308 Feb 23 00:36	2°  27'15'33	17.72478 AU

direct	4308 May 07 08:31	0° <u>0</u> 13'15		minimum elong	4314 Sep 24 14:26	2° <u>0</u> 30'43	0°45'46
evening set	4308 Aug 09 06:25	3° <u>0</u> 33'36		max. Earth dist.	4314 Sep 23 16:24	2° <u>0</u> 27'18	19.44654 AU
max. Earth dist.	4308 Aug 25 06:38	4° <u>0</u> 31'40	19.69681 AU	morning rise	4314 Oct 11 04:21	3° <u>0</u> 32'02	
				retrograde	4315 Jan 11 14:24	6° <u>0</u> 53'55	
conjunction	4308 Aug 26 00:17	4° <u>0</u> 34'22	0°42'34	opposition	4315 Mar 26 05:18	4° <u>0</u> 51'17	0°50'46
minimum elong	4308 Aug 26 00:17	4° <u>0</u> 34'22	0°42'35	min. Earth dist.	4315 Mar 26 23:40	4° <u>0</u> 49'16	17.43331 AU
morning rise	4308 Sep 11 17:15	5° <u>0</u> 35'02		direct	4315 Jun 09 20:44	2° <u>0</u> 45'46	
retrograde	4308 Dec 14 00:14	8° <u>0</u> 54'51		evening set	4315 Sep 13 02:27	6° <u>0</u> 12'49	
opposition	4309 Feb 26 03:40	6° <u>0</u> 52'08	0°48'07				
min. Earth dist.	4309 Feb 26 18:58	6° <u>0</u> 50'28	17.67002 AU	conjunction	4315 Sep 29 18:09	7° <u>0</u> 14'31	0°45'15
direct	4309 May 12 05:10	4° <u>0</u> 47'52		minimum elong	4315 Sep 29 18:09	7° <u>0</u> 14'32	0°45'14
evening set	4309 Aug 14 07:44	8° <u>0</u> 09'18		max. Earth dist.	4315 Sep 28 19:48	7° <u>0</u> 11'03	19.42036 AU
max. Earth dist.	4309 Aug 30 05:46	9° <u>0</u> 07'15	19.64385 AU	morning rise	4315 Oct 16 07:11	8° <u>0</u> 15'53	
				retrograde	4316 Jan 16 13:33	11° <u>0</u> 37'57	
conjunction	4309 Aug 31 01:23	9° <u>0</u> 10'15	0°43'50	opposition	4316 Mar 30 03:56	9° <u>0</u> 35'22	0°50'01
minimum elong	4309 Aug 31 01:23	9° <u>0</u> 10'15	0°43'50	min. Earth dist.	4316 Mar 30 23:39	9° <u>0</u> 33'13	17.40925 AU
morning rise	4309 Sep 16 18:09	10° <u>0</u> 11'05		direct	4316 Jun 13 20:16	7° <u>0</u> 29'44	
retrograde	4309 Dec 18 20:24	13° <u>0</u> 31'20		evening set	4316 Sep 17 06:43	10° <u>0</u> 57'25	
opposition	4310 Mar 02 22:18	11° <u>0</u> 28'31	0°49'22				
min. Earth dist.	4310 Mar 03 14:58	11° <u>0</u> 26'42	17.61919 AU	conjunction	4316 Oct 03 21:44	11° <u>0</u> 59'09	0°44'25
direct	4310 May 17 00:38	9° <u>0</u> 23'56		minimum elong	4316 Oct 03 21:44	11° <u>0</u> 59'09	0°44'26
evening set	4310 Aug 19 09:33	12° <u>0</u> 46'27		max. Earth dist.	4316 Oct 02 22:43	11° <u>0</u> 55'34	19.39834 AU
max. Earth dist.	4310 Sep 04 07:46	13° <u>0</u> 44'35	19.59508 AU	morning rise	4316 Oct 20 10:04	13° <u>0</u> 00'32	
				retrograde	4317 Jan 20 14:39	16° <u>0</u> 22'43	
conjunction	4310 Sep 05 03:14	13° <u>0</u> 47'35	0°44'48	opposition	4317 Apr 04 02:51	14° <u>0</u> 20'11	0°48'56
minimum elong	4310 Sep 05 03:14	13° <u>0</u> 47'35	0°44'48	min. Earth dist.	4317 Apr 04 21:52	14° <u>0</u> 18'06	17.38920 AU
morning rise	4310 Sep 21 19:29	14° <u>0</u> 48'33		direct	4317 Jun 18 22:40	12° <u>0</u> 14'25	
retrograde	4310 Dec 23 19:15	18° <u>0</u> 09'11		evening set	4317 Sep 22 11:12	15° <u>0</u> 42'38	
opposition	4311 Mar 07 17:37	16° <u>0</u> 06'20	0°50'19	max. Earth dist.	4317 Oct 08 02:59	16° <u>0</u> 40'52	19.38025 AU
min. Earth dist.	4311 Mar 08 10:08	16° <u>0</u> 04'32	17.57261 AU				
direct	4311 May 21 23:18	14° <u>0</u> 01'30		conjunction	4317 Oct 09 01:38	16° <u>0</u> 44'24	0°43'17
evening set	4311 Aug 24 12:01	17° <u>0</u> 25'01		minimum elong	4317 Oct 09 01:38	16° <u>0</u> 44'24	0°43'16
max. Earth dist.	4311 Sep 09 08:28	18° <u>0</u> 23'06	19.55079 AU	morning rise	4317 Oct 25 12:58	17° <u>0</u> 45'45	
				retrograde	4318 Jan 25 13:57	21° <u>0</u> 07'58	
conjunction	4311 Sep 10 05:21	18° <u>0</u> 26'19	0°45'30	opposition	4318 Apr 09 02:14	19° <u>0</u> 05'28	0°47'30
minimum elong	4311 Sep 10 05:20	18° <u>0</u> 26'19	0°45'30	min. Earth dist.	4318 Apr 09 22:23	19° <u>0</u> 03'16	17.37321 AU
morning rise	4311 Sep 26 21:08	19° <u>0</u> 27'24		direct	4318 Jun 23 23:00	16° <u>0</u> 59'36	
retrograde	4311 Dec 28 15:56	22° <u>0</u> 48'25		evening set	4318 Sep 27 15:47	20° <u>0</u> 28'15	
opposition	4312 Mar 11 13:40	20° <u>0</u> 45'34	0°50'56	max. Earth dist.	4318 Oct 13 05:50	21° <u>0</u> 26'19	19.36646 AU
min. Earth dist.	4312 Mar 12 07:28	20° <u>0</u> 43'38	17.53083 AU				
direct	4312 May 25 20:21	18° <u>0</u> 40'30		conjunction	4318 Oct 14 05:21	21° <u>0</u> 30'00	0°41'51
evening set	4312 Aug 28 14:53	22° <u>0</u> 05'02		minimum elong	4318 Oct 14 05:22	21° <u>0</u> 30'00	0°41'51
max. Earth dist.	4312 Sep 13 11:14	23° <u>0</u> 03'15	19.51145 AU	morning rise	4318 Oct 30 15:56	22° <u>0</u> 31'19	
				retrograde	4319 Jan 30 14:41	25° <u>0</u> 53'30	
conjunction	4312 Sep 14 08:00	23° <u>0</u> 06'28	0°45'53	opposition	4319 Apr 14 01:57	23° <u>0</u> 51'02	0°45'45
minimum elong	4312 Sep 14 08:00	23° <u>0</u> 06'28	0°45'53	min. Earth dist.	4319 Apr 14 21:14	23° <u>0</u> 48'56	17.36160 AU
morning rise	4312 Sep 30 23:12	24° <u>0</u> 07'39		direct	4319 Jun 29 02:15	21° <u>0</u> 45'04	
retrograde	4313 Jan 01 15:48	27° <u>0</u> 29'00		evening set	4319 Oct 02 19:59	25° <u>0</u> 14'02	
opposition	4313 Mar 16 10:12	25° <u>0</u> 26'12	0°51'13	max. Earth dist.	4319 Oct 18 10:32	26° <u>0</u> 12'14	19.35709 AU
min. Earth dist.	4313 Mar 17 03:34	25° <u>0</u> 24'18	17.49385 AU				
direct	4313 May 30 20:46	23° <u>0</u> 20'59		conjunction	4319 Oct 19 08:52	26° <u>0</u> 15'44	0°40'07
evening set	4313 Sep 02 18:17	26° <u>0</u> 46'25		minimum elong	4319 Oct 19 08:52	26° <u>0</u> 15'44	0°40'08
				morning rise	4319 Nov 04 18:19	27° <u>0</u> 16'58	
conjunction	4313 Sep 19 10:59	27° <u>0</u> 47'58	0°45'59		4319 Dec 28 22:33	0° <u>0</u>	
minimum elong	4313 Sep 19 11:00	27° <u>0</u> 47'58	0°45'59	retrograde	4320 Feb 04 13:44	0° <u>0</u> 39'05	
max. Earth dist.	4313 Sep 18 13:21	27° <u>0</u> 44'37	19.47676 AU		4320 Mar 14 00:11	30° <u>0</u> R <u>0</u>	
morning rise	4313 Oct 06 01:35	28° <u>0</u> 49'14		opposition	4320 Apr 18 02:06	28° <u>0</u> 36'39	0°43'40
	4313 Oct 26 12:22	0° <u>0</u>		min. Earth dist.	4320 Apr 18 21:54	28° <u>0</u> 34'29	17.35457 AU
retrograde	4314 Jan 06 13:41	2° <u>0</u> 10'53		direct	4320 Jul 03 03:57	26° <u>0</u> 30'36	
opposition	4314 Mar 21 07:33	0° <u>0</u> 08'09	0°51'10	evening set	4320 Oct 07 00:08	29° <u>0</u> 59'45	
min. Earth dist.	4314 Mar 22 02:24	0° <u>0</u> 06'06	17.46147 AU		4320 Oct 07 01:46	0° <u>0</u>	
	4314 Mar 24 10:17	30° <u>0</u> R <u>0</u>					
direct	4314 Jun 04 19:08	28° <u>0</u> 02'47		conjunction	4320 Oct 23 12:01	1° <u>0</u> 01'23	0°38'07
	4314 Aug 12 17:39	0° <u>0</u>		minimum elong	4320 Oct 23 12:01	1° <u>0</u> 01'23	0°38'07
evening set	4314 Sep 07 22:12	1° <u>0</u> 29'05		max. Earth dist.	4320 Oct 22 13:04	0° <u>0</u> 57'47	19.35263 AU
				morning rise	4320 Nov 08 20:40	2° <u>0</u> 02'32	
conjunction	4314 Sep 24 14:26	2° <u>0</u> 30'43	0°45'46	retrograde	4321 Feb 08 13:22	5° <u>0</u> 24'31	

opposition	4321 Apr 23 02:12	3°M.22'05	0°41'17	evening set	4327 Nov 10 15:42	3°J.06'28	
min. Earth dist.	4321 Apr 23 21:02	3°M.20'02	17.35269 AU				
direct	4321 Jul 08 07:47	1°M.15'58		conjunction	4327 Nov 26 20:41	4°J.06'58	0°17'55
evening set	4321 Oct 12 03:46	4°M.45'13		minimum elong	4327 Nov 26 20:42	4°J.06'58	0°17'55
				max. Earth dist.	4327 Nov 26 06:59	4°J.04'49	19.48035 AU
conjunction	4321 Oct 28 14:57	5°M.46'45	0°35'51	morning rise	4327 Dec 12 22:10	5°J.06'58	
minimum elong	4321 Oct 28 14:57	5°M.46'45	0°35'52	retrograde	4328 Mar 13 03:20	8°J.26'52	
max. Earth dist.	4321 Oct 27 17:48	5°M.43'26	19.35336 AU	opposition	4328 May 26 06:30	6°J.25'25	0°18'02
morning rise	4321 Nov 13 22:28	6°M.47'48		min. Earth dist.	4328 May 26 17:55	6°J.24'11	17.49953 AU
retrograde	4322 Feb 13 12:02	10°M.09'33		direct	4328 Aug 11 04:30	4°J.20'17	
opposition	4322 Apr 28 02:41	8°M.07'11	0°38'37	evening set	4328 Nov 14 15:41	7°J.47'27	
min. Earth dist.	4322 Apr 28 21:23	8°M.05'09	17.35606 AU				
direct	4322 Jul 13 10:33	6°M.01'03		conjunction	4328 Nov 30 19:35	8°J.47'43	0°14'25
evening set	4322 Oct 17 07:12	9°M.30'16		minimum elong	4328 Nov 30 19:35	8°J.47'43	0°14'26
				behind sun begin	4328 Nov 30 16:33	8°J.47'15	
conjunction	4322 Nov 02 17:13	10°M.31'40	0°33'20	behind sun end	4328 Nov 30 22:37	8°J.48'10	
minimum elong	4322 Nov 02 17:13	10°M.31'40	0°33'20	max. Earth dist.	4328 Nov 30 06:57	8°J.45'45	19.51971 AU
max. Earth dist.	4322 Nov 01 19:53	10°M.28'19	19.35964 AU	morning rise	4328 Dec 16 20:05	9°J.47'30	
morning rise	4322 Nov 18 23:51	11°M.32'35		retrograde	4329 Mar 18 00:05	13°J.06'57	
retrograde	4323 Feb 18 11:02	14°M.54'07		opposition	4329 May 31 06:52	11°J.05'43	0°14'05
opposition	4323 May 03 03:13	12°M.51'48	0°35'42	min. Earth dist.	4329 May 31 17:55	11°J.04'33	17.54086 AU
min. Earth dist.	4323 May 03 20:46	12°M.49'54	17.36534 AU	direct	4329 Aug 16 04:28	9°J.00'52	
direct	4323 Jul 18 14:30	10°M.45'41		evening set	4329 Nov 19 14:58	12°J.27'23	
evening set	4323 Oct 22 09:56	14°M.14'46					
	4323 Nov 03 13:03	15°M.		conjunction	4329 Dec 05 17:49	13°J.27'24	0°10'50
				minimum elong	4329 Dec 05 17:50	13°J.27'24	0°10'51
conjunction	4323 Nov 07 19:07	15°M.16'02	0°30'36	behind sun begin	4329 Dec 05 12:46	13°J.26'38	
minimum elong	4323 Nov 07 19:08	15°M.16'02	0°30'37	behind sun end	4329 Dec 05 22:54	13°J.28'11	
max. Earth dist.	4323 Nov 07 00:05	15°M.13'03	19.37194 AU	max. Earth dist.	4329 Dec 05 06:39	13°J.25'40	19.56282 AU
morning rise	4323 Nov 24 00:35	16°M.16'48		morning rise	4329 Dec 21 17:24	14°J.26'57	
retrograde	4324 Feb 23 09:29	19°M.38'03		retrograde	4330 Mar 22 23:10	17°J.45'56	
opposition	4324 May 07 03:54	17°M.35'50	0°32'32	opposition	4330 Jun 05 07:06	15°J.44'54	0°10'02
min. Earth dist.	4324 May 07 20:27	17°M.34'03	17.38065 AU	min. Earth dist.	4330 Jun 05 16:05	15°J.43'57	17.58544 AU
direct	4324 Jul 22 17:40	15°M.29'49		direct	4330 Aug 21 07:18	13°J.40'21	
evening set	4324 Oct 26 12:12	18°M.58'41		evening set	4330 Nov 24 13:25	17°J.06'07	
conjunction	4324 Nov 11 20:15	19°M.59'47	0°27'41	conjunction	4330 Dec 10 15:13	18°J.05'52	0°07'13
minimum elong	4324 Nov 11 20:15	19°M.59'47	0°27'41	minimum elong	4330 Dec 10 15:13	18°J.05'52	0°07'13
max. Earth dist.	4324 Nov 11 01:32	19°M.56'51	19.39044 AU	behind sun begin	4330 Dec 10 09:07	18°J.04'56	
morning rise	4324 Nov 28 00:50	21°M.00'23		behind sun end	4330 Dec 10 21:20	18°J.06'48	
retrograde	4325 Feb 27 07:55	24°M.21'21		max. Earth dist.	4330 Dec 10 05:33	18°J.04'22	19.60886 AU
opposition	4325 May 12 04:36	22°M.19'16	0°29'10	morning rise	4330 Dec 26 13:48	19°J.05'10	
min. Earth dist.	4325 May 12 20:03	22°M.17'36	17.40222 AU	retrograde	4331 Mar 27 18:41	22°J.23'40	
direct	4325 Jul 27 20:35	20°M.13'24		opposition	4331 Jun 10 07:14	20°J.22'48	0°05'57
evening set	4325 Oct 31 13:57	23°M.41'58		min. Earth dist.	4331 Jun 10 15:51	20°J.21'53	17.63290 AU
				direct	4331 Aug 26 06:42	18°J.18'33	
conjunction	4325 Nov 16 21:06	24°M.42'54	0°24'34	evening set	4331 Nov 29 11:04	21°J.43'29	
minimum elong	4325 Nov 16 21:06	24°M.42'54	0°24'34				
max. Earth dist.	4325 Nov 16 04:38	24°M.40'19	19.41504 AU	conjunction	4331 Dec 15 11:50	22°J.42'57	0°03'33
morning rise	4325 Dec 03 00:33	25°M.43'19		minimum elong	4331 Dec 15 11:50	22°J.42'57	0°03'34
retrograde	4326 Mar 04 06:31	29°M.03'56		behind sun begin	4331 Dec 15 05:16	22°J.41'57	
opposition	4326 May 17 05:10	27°M.02'03	0°25'36	behind sun end	4331 Dec 15 18:24	22°J.43'57	
min. Earth dist.	4326 May 17 19:11	27°M.00'33	17.42952 AU	max. Earth dist.	4331 Dec 15 03:17	22°J.41'38	19.65765 AU
direct	4326 Aug 01 23:49	24°M.56'24		morning rise	4331 Dec 31 09:37	23°J.41'59	
evening set	4326 Nov 05 15:16	28°M.24'36		retrograde	4332 Mar 31 16:27	26°J.59'57	
				opposition	4332 Jun 14 06:45	24°J.59'15	0°01'51
conjunction	4326 Nov 21 21:15	29°M.25'19	0°21'18	min. Earth dist.	4332 Jun 14 13:04	24°J.58'35	17.68277 AU
minimum elong	4326 Nov 21 21:15	29°M.25'19	0°21'19	direct	4332 Aug 30 09:07	22°J.55'17	
max. Earth dist.	4326 Nov 21 05:29	29°M.22'51	19.44516 AU	desc. node	4332 Nov 28 05:27	26°J.00'56	
	4326 Dec 01 02:35	0°J.		evening set	4332 Dec 03 07:45	26°J.19'18	
morning rise	4326 Dec 07 23:45	0°J.25'32					
retrograde	4327 Mar 09 04:19	3°J.45'49		conjunction	4332 Dec 19 07:38	27°J.18'29	-0°00'13
opposition	4327 May 22 05:55	1°J.44'09	0°21'53	minimum elong	4332 Dec 19 07:37	27°J.18'29	0°00'13
min. Earth dist.	4327 May 22 19:09	1°J.42'44	17.46226 AU	behind sun begin	4332 Dec 19 01:05	27°J.17'30	
	4327 Jul 09 02:30	30°R.M.		behind sun end	4332 Dec 19 14:10	27°J.19'28	
direct	4327 Aug 07 01:22	29°M.38'44		max. Earth dist.	4332 Dec 19 00:58	27°J.17'29	19.70858 AU
	4327 Sep 04 13:47	0°J.		morning rise	4333 Jan 04 04:31	28°J.17'15	

	4333 Feb 03 23:29	0°♄	conjunction	4339 Jan 15 10:43	24°♄13'13 -0°21'04
retrograde	4333 Apr 05 10:33	1°♄34'39	minimum elong	4339 Jan 15 10:43	24°♄13'13 0°21'03
	4333 Jun 08 21:11	30°♄♂	max. Earth dist.	4339 Jan 15 15:04	24°♄13'52 20.05798 AU
opposition	4333 Jun 19 06:02	29°♄34'05 -0°02'15	morning rise	4339 Jan 31 03:46	25°♄10'21
min. Earth dist.	4333 Jun 19 12:02	29°♄33'27 17.73473 AU	retrograde	4339 May 02 16:13	28°♄24'09
direct	4333 Sep 04 07:59	27°♄30'24	opposition	4339 Jul 17 13:46	26°♄24'15 -0°25'05
	4333 Nov 22 22:00	0°♄	min. Earth dist.	4339 Jul 17 09:18	26°♄24'43 18.09023 AU
evening set	4333 Dec 08 03:36	0°♄53'26	direct	4339 Oct 02 20:10	24°♄22'28
			evening set	4340 Jan 04 06:05	27°♄38'50
conjunction	4333 Dec 24 02:28	1°♄52'20 -0°03'57			
minimum elong	4333 Dec 24 02:26	1°♄52'19 0°03'56	conjunction	4340 Jan 20 00:10	28°♄35'55 -0°24'08
behind sun begin	4333 Dec 23 19:55	1°♄51'20	minimum elong	4340 Jan 20 00:09	28°♄35'55 0°24'08
behind sun end	4333 Dec 24 08:58	1°♄53'19	max. Earth dist.	4340 Jan 20 05:13	28°♄36'41 20.12311 AU
max. Earth dist.	4333 Dec 23 20:42	1°♄51'28 19.76158 AU	morning rise	4340 Feb 04 16:58	29°♄32'48
morning rise	4334 Jan 08 22:39	2°♄50'49		4340 Feb 12 10:53	0°♄
retrograde	4334 Apr 10 06:23	6°♄07'38	retrograde	4340 May 06 08:14	2°♄46'02
opposition	4334 Jun 24 04:38	4°♄07'10 -0°06'18	opposition	4340 Jul 21 08:50	0°♄46'18 -0°28'24
min. Earth dist.	4334 Jun 24 08:09	4°♄06'48 17.78862 AU	min. Earth dist.	4340 Jul 21 02:05	0°♄47'00 18.15590 AU
direct	4334 Sep 09 09:53	2°♄03'46		4340 Aug 09 15:27	30°♄♂
evening set	4334 Dec 12 22:24	5°♄25'45	direct	4340 Oct 06 14:41	28°♄44'54
				4340 Nov 30 16:11	0°♄
conjunction	4334 Dec 28 20:25	6°♄24'20 -0°07'33	evening set	4341 Jan 07 19:19	2°♄00'09
minimum elong	4334 Dec 28 20:26	6°♄24'20 0°07'32			
behind sun begin	4334 Dec 28 14:25	6°♄23'26	conjunction	4341 Jan 23 13:00	2°♄56'58 -0°27'03
behind sun end	4334 Dec 29 02:27	6°♄25'15	minimum elong	4341 Jan 23 13:00	2°♄56'58 0°27'03
max. Earth dist.	4334 Dec 28 17:07	6°♄23'51 19.81647 AU	max. Earth dist.	4341 Jan 23 20:46	2°♄58'08 20.18900 AU
morning rise	4335 Jan 13 15:48	7°♄22'34	morning rise	4341 Feb 08 05:18	3°♄53'37
retrograde	4335 Apr 14 22:54	10°♄38'46	retrograde	4341 May 10 22:23	7°♄06'17
opposition	4335 Jun 29 02:58	8°♄38'23 -0°10'17	opposition	4341 Jul 26 03:30	5°♄06'45 -0°31'32
min. Earth dist.	4335 Jun 29 05:54	8°♄38'05 17.84457 AU	min. Earth dist.	4341 Jul 25 19:46	5°♄07'32 18.22185 AU
direct	4335 Sep 14 08:07	6°♄35'15	direct	4341 Oct 11 08:05	3°♄05'46
evening set	4335 Dec 17 16:09	9°♄56'08	evening set	4342 Jan 12 07:56	6°♄19'53
conjunction	4336 Jan 02 13:12	10°♄54'25 -0°11'05	conjunction	4342 Jan 28 00:52	7°♄16'25 -0°29'48
minimum elong	4336 Jan 02 13:12	10°♄54'25 0°11'05	minimum elong	4342 Jan 28 00:52	7°♄16'25 0°29'47
behind sun begin	4336 Jan 02 08:14	10°♄53'40	max. Earth dist.	4342 Jan 28 09:06	7°♄17'40 20.25489 AU
behind sun end	4336 Jan 02 18:10	10°♄55'10	morning rise	4342 Feb 12 17:03	8°♄12'49
max. Earth dist.	4336 Jan 02 10:55	10°♄54'05 19.87356 AU	retrograde	4342 May 15 13:32	11°♄25'00
morning rise	4336 Jan 18 08:05	11°♄52'22	opposition	4342 Jul 30 21:35	9°♄25'36 -0°34'29
retrograde	4336 Apr 18 17:03	15°♄07'57	min. Earth dist.	4342 Jul 30 12:00	9°♄26'35 18.28757 AU
opposition	4336 Jul 03 00:30	13°♄07'40 -0°14'11	direct	4342 Oct 16 01:11	7°♄25'01
min. Earth dist.	4336 Jul 03 00:43	13°♄07'38 17.90275 AU	evening set	4343 Jan 16 19:42	10°♄38'03
direct	4336 Sep 18 07:42	11°♄04'48			
evening set	4336 Dec 21 08:57	14°♄24'34	conjunction	4343 Feb 01 12:20	11°♄34'19 -0°32'22
			minimum elong	4343 Feb 01 12:20	11°♄34'19 0°32'22
conjunction	4337 Jan 06 05:20	15°♄22'33 -0°14'31	max. Earth dist.	4343 Feb 01 23:04	11°♄35'56 20.32010 AU
minimum elong	4337 Jan 06 05:19	15°♄22'33 0°14'31	morning rise	4343 Feb 17 04:07	12°♄30'29
behind sun begin	4337 Jan 06 02:18	15°♄22'06		4343 Apr 09 11:50	15°♄
behind sun end	4337 Jan 06 08:21	15°♄23'00	retrograde	4343 May 20 02:58	15°♄42'09
max. Earth dist.	4337 Jan 06 05:50	15°♄22'38 19.93281 AU		4343 Jul 01 07:09	15°♄
morning rise	4337 Jan 21 23:25	16°♄20'14	opposition	4343 Aug 04 15:06	13°♄42'56 -0°37'13
retrograde	4337 Apr 23 08:28	19°♄35'12	min. Earth dist.	4343 Aug 04 04:33	13°♄44'00 18.35217 AU
opposition	4337 Jul 07 21:27	17°♄35'01 -0°17'57	direct	4343 Oct 20 17:10	11°♄42'45
min. Earth dist.	4337 Jul 07 20:48	17°♄35'05 17.96316 AU	evening set	4344 Jan 21 06:50	14°♄54'39
direct	4337 Sep 23 04:25	15°♄32'29		4344 Jan 22 19:17	15°♄
evening set	4337 Dec 26 01:00	18°♄51'07			
			conjunction	4344 Feb 05 22:56	15°♄50'40 -0°34'44
conjunction	4338 Jan 10 20:26	19°♄48'47 -0°17'52	minimum elong	4344 Feb 05 22:56	15°♄50'40 0°34'44
minimum elong	4338 Jan 10 20:27	19°♄48'47 0°17'52	max. Earth dist.	4344 Feb 06 09:48	15°♄52'18 20.38390 AU
max. Earth dist.	4338 Jan 10 21:50	19°♄49'00 19.99440 AU	morning rise	4344 Feb 21 14:45	16°♄46'38
morning rise	4338 Jan 26 14:08	20°♄46'12	retrograde	4344 May 23 16:54	19°♄57'48
retrograde	4338 Apr 28 01:16	24°♄00'34	opposition	4344 Aug 08 07:58	17°♄58'42 -0°39'43
opposition	4338 Jul 12 17:51	22°♄00'31 -0°21'36	min. Earth dist.	4344 Aug 07 20:08	17°♄59'54 18.41509 AU
min. Earth dist.	4338 Jul 12 14:29	22°♄00'52 18.02584 AU	direct	4344 Oct 24 08:37	15°♄58'53
direct	4338 Sep 28 01:14	19°♄58'19	evening set	4345 Jan 24 17:14	19°♄09'44
evening set	4338 Dec 30 15:51	23°♄15'50			
			conjunction	4345 Feb 09 09:09	20°♄05'31 -0°36'54

minimum elong	4345 Feb 09 09:09	20° <del>00</del> 05'31	0°36'55	opposition	4351 Sep 08 11:43	17° <del>00</del> 06'39	-0°50'25
max. Earth dist.	4345 Feb 09 22:08	20° <del>00</del> 07'27	20.44556 AU	min. Earth dist.	4351 Sep 07 17:07	17° <del>00</del> 08'31	18.77870 AU
morning rise	4345 Feb 25 00:42	21° <del>00</del> 01'15		direct	4351 Nov 24 03:23	15° <del>00</del> 08'42	
retrograde	4345 May 28 05:34	24° <del>00</del> 11'57		evening set	4352 Feb 22 23:55	18° <del>00</del> 12'44	
min. Earth dist.	4345 Aug 12 11:23	22° <del>00</del> 14'15	18.47543 AU				
opposition	4345 Aug 13 00:08	22° <del>00</del> 12'58	-0°42'00	conjunction	4352 Mar 09 15:21	19° <del>00</del> 07'14	-0°45'50
direct	4345 Oct 28 23:42	20° <del>00</del> 13'30		minimum elong	4352 Mar 09 15:21	19° <del>00</del> 07'14	0°45'50
evening set	4346 Jan 29 03:08	23° <del>00</del> 23'16		max. Earth dist.	4352 Mar 10 10:14	19° <del>00</del> 10'00	20.79972 AU
				morning rise	4352 Mar 25 08:24	20° <del>00</del> 01'57	
conjunction	4346 Feb 13 18:37	24° <del>00</del> 18'49	-0°38'52	retrograde	4352 Jun 26 09:50	23° <del>00</del> 09'52	
minimum elong	4346 Feb 13 18:37	24° <del>00</del> 18'49	0°38'51	opposition	4352 Sep 11 23:32	21° <del>00</del> 10'59	-0°50'55
max. Earth dist.	4346 Feb 14 07:29	24° <del>00</del> 20'44	20.50451 AU	min. Earth dist.	4352 Sep 11 04:40	21° <del>00</del> 12'52	18.82077 AU
morning rise	4346 Mar 01 10:18	25° <del>00</del> 14'23		direct	4352 Nov 27 11:52	19° <del>00</del> 13'16	
retrograde	4346 Jun 01 18:08	28° <del>00</del> 24'36		evening set	4353 Feb 26 05:33	22° <del>00</del> 16'34	
opposition	4346 Aug 17 15:51	26° <del>00</del> 25'41	-0°44'03				
min. Earth dist.	4346 Aug 17 02:11	26° <del>00</del> 27'04	18.53302 AU	conjunction	4353 Mar 13 21:21	23° <del>00</del> 10'56	-0°46'10
direct	4346 Nov 02 13:23	24° <del>00</del> 26'31		minimum elong	4353 Mar 13 21:21	23° <del>00</del> 10'56	0°46'10
evening set	4347 Feb 02 12:01	27° <del>00</del> 35'14		max. Earth dist.	4353 Mar 14 17:56	23° <del>00</del> 13'57	20.84046 AU
				morning rise	4353 Mar 29 14:40	24° <del>00</del> 05'34	
conjunction	4347 Feb 18 03:30	28° <del>00</del> 30'35	-0°40'36	retrograde	4353 Jun 30 18:49	27° <del>00</del> 13'14	
minimum elong	4347 Feb 18 03:30	28° <del>00</del> 30'35	0°40'36	opposition	4353 Sep 16 10:42	25° <del>00</del> 14'23	-0°51'09
max. Earth dist.	4347 Feb 18 18:23	28° <del>00</del> 32'47	20.56051 AU	min. Earth dist.	4353 Sep 15 14:29	25° <del>00</del> 16'25	18.86010 AU
morning rise	4347 Mar 05 19:07	29° <del>00</del> 25'57		direct	4353 Dec 01 22:37	23° <del>00</del> 16'55	
	4347 Mar 15 19:03	0° <del>00</del>		evening set	4354 Mar 02 11:04	26° <del>00</del> 19'30	
retrograde	4347 Jun 06 06:14	2° <del>00</del> 35'44					
opposition	4347 Aug 22 06:49	0° <del>00</del> 36'51	-0°45'50	conjunction	4354 Mar 18 02:59	27° <del>00</del> 13'47	-0°46'17
min. Earth dist.	4347 Aug 21 16:07	0° <del>00</del> 38'20	18.58741 AU	minimum elong	4354 Mar 18 02:59	27° <del>00</del> 13'47	0°46'18
	4347 Sep 06 18:29	30° <del>00</del>		max. Earth dist.	4354 Mar 18 23:22	27° <del>00</del> 16'45	20.87837 AU
direct	4347 Nov 07 03:48	28° <del>00</del> 37'58		morning rise	4354 Apr 02 20:57	28° <del>00</del> 08'21	
	4348 Jan 04 02:43	0° <del>00</del>			4354 May 09 13:30	0° <del>00</del>	
evening set	4348 Feb 06 20:30	1° <del>00</del> 45'39		retrograde	4354 Jul 05 04:14	1° <del>00</del> 15'49	
					4354 Sep 02 13:27	30° <del>00</del>	
conjunction	4348 Feb 22 11:43	2° <del>00</del> 40'47	-0°42'07	opposition	4354 Sep 20 21:38	29° <del>00</del> 16'59	-0°51'09
minimum elong	4348 Feb 22 11:43	2° <del>00</del> 40'47	0°42'07	min. Earth dist.	4354 Sep 20 01:30	29° <del>00</del> 19'00	18.89657 AU
max. Earth dist.	4348 Feb 23 02:32	2° <del>00</del> 42'58	20.61341 AU	direct	4354 Dec 06 06:00	27° <del>00</del> 19'45	
morning rise	4348 Mar 09 03:38	3° <del>00</del> 36'00			4355 Feb 28 04:55	0° <del>00</del>	
retrograde	4348 Jun 09 17:08	6° <del>00</del> 45'20		evening set	4355 Mar 06 16:07	0° <del>00</del> 21'41	
opposition	4348 Aug 25 20:56	4° <del>00</del> 46'27	-0°47'22				
min. Earth dist.	4348 Aug 25 05:40	4° <del>00</del> 47'59	18.63897 AU	conjunction	4355 Mar 22 08:34	1° <del>00</del> 15'54	-0°46'10
direct	4348 Nov 10 15:41	2° <del>00</del> 47'48		minimum elong	4355 Mar 22 08:34	1° <del>00</del> 15'54	0°46'11
evening set	4349 Feb 10 04:07	5° <del>00</del> 54'30		max. Earth dist.	4355 Mar 23 06:23	1° <del>00</del> 19'04	20.91316 AU
				morning rise	4355 Apr 07 02:57	2° <del>00</del> 10'24	
conjunction	4349 Feb 25 19:28	6° <del>00</del> 49'27	-0°43'24	retrograde	4355 Jul 09 12:51	5° <del>00</del> 17'42	
minimum elong	4349 Feb 25 19:28	6° <del>00</del> 49'27	0°43'23	min. Earth dist.	4355 Sep 24 10:45	3° <del>00</del> 21'02	18.92950 AU
max. Earth dist.	4349 Feb 26 12:17	6° <del>00</del> 51'56	20.66352 AU	opposition	4355 Sep 25 07:58	3° <del>00</del> 18'55	-0°50'53
morning rise	4349 Mar 13 11:25	7° <del>00</del> 44'31		direct	4355 Dec 10 15:17	1° <del>00</del> 21'54	
retrograde	4349 Jun 14 04:19	10° <del>00</del> 53'25		evening set	4356 Mar 09 21:17	4° <del>00</del> 23'16	
opposition	4349 Aug 30 10:28	8° <del>00</del> 54'32	-0°48'39				
min. Earth dist.	4349 Aug 29 17:55	8° <del>00</del> 56'12	18.68777 AU	conjunction	4356 Mar 25 13:58	5° <del>00</del> 17'24	-0°45'50
direct	4349 Nov 15 05:04	6° <del>00</del> 56'07		minimum elong	4356 Mar 25 13:58	5° <del>00</del> 17'24	0°45'50
evening set	4350 Feb 14 11:13	10° <del>00</del> 01'52		max. Earth dist.	4356 Mar 26 11:13	5° <del>00</del> 20'28	20.94414 AU
				morning rise	4356 Apr 10 09:04	6° <del>00</del> 11'52	
conjunction	4350 Mar 02 02:23	10° <del>00</del> 56'39	-0°44'27	retrograde	4356 Jul 12 21:29	9° <del>00</del> 19'01	
minimum elong	4350 Mar 02 02:23	10° <del>00</del> 56'39	0°44'27	opposition	4356 Sep 28 17:54	7° <del>00</del> 20'16	-0°50'22
max. Earth dist.	4350 Mar 02 19:20	10° <del>00</del> 59'08	20.71110 AU	min. Earth dist.	4356 Sep 27 21:23	7° <del>00</del> 22'19	18.95850 AU
morning rise	4350 Mar 17 18:44	11° <del>00</del> 51'35		direct	4356 Dec 13 21:47	5° <del>00</del> 23'26	
retrograde	4350 Jun 18 14:08	15° <del>00</del> 00'08		evening set	4357 Mar 14 02:11	8° <del>00</del> 24'17	
opposition	4350 Sep 03 23:31	13° <del>00</del> 01'13	-0°49'40				
min. Earth dist.	4350 Sep 03 06:22	13° <del>00</del> 02'56	18.73437 AU	conjunction	4357 Mar 29 19:28	9° <del>00</del> 18'23	-0°45'16
direct	4350 Nov 19 15:15	11° <del>00</del> 03'02		minimum elong	4357 Mar 29 19:28	9° <del>00</del> 18'23	0°45'17
evening set	4351 Feb 18 17:44	14° <del>00</del> 07'54		max. Earth dist.	4357 Mar 30 17:43	9° <del>00</del> 21'36	20.97094 AU
				morning rise	4357 Apr 14 15:04	10° <del>00</del> 12'50	
conjunction	4351 Mar 06 09:09	15° <del>00</del> 02'31	-0°45'15	retrograde	4357 Jul 17 06:21	13° <del>00</del> 19'53	
minimum elong	4351 Mar 06 09:09	15° <del>00</del> 02'31	0°45'14	min. Earth dist.	4357 Oct 02 06:14	11° <del>00</del> 23'16	18.98292 AU
max. Earth dist.	4351 Mar 07 04:05	15° <del>00</del> 05'18	20.75654 AU	opposition	4357 Oct 03 03:33	11° <del>00</del> 21'08	-0°49'37
morning rise	4351 Mar 22 01:39	15° <del>00</del> 05'20		direct	4357 Dec 18 06:14	9° <del>00</del> 24'28	
retrograde	4351 Jun 23 00:14	19° <del>00</del> 05'32		evening set	4358 Mar 18 07:04	12° <del>00</del> 24'51	

conjunction	4358 Apr 03 00:43	13°♈18'55 -0°44'29	retrograde	4364 Aug 14 15:09	11°♈16'39
minimum elong	4358 Apr 03 00:43	13°♈18'55 0°44'29	opposition	4364 Oct 31 14:32	9°♈17'12 -0°37'58
max. Earth dist.	4358 Apr 03 22:07	13°♈22'00 20.99289 AU	min. Earth dist.	4364 Oct 30 20:33	9°♈19'01 19.01438 AU
morning rise	4358 Apr 18 21:08	14°♈13'22	direct	4365 Jan 15 01:52	7°♈20'34
retrograde	4358 Jul 21 14:27	17°♈20'21	evening set	4365 Apr 14 17:10	10°♈19'20
opposition	4358 Oct 07 13:03	15°♈21'34 -0°48'38			
min. Earth dist.	4358 Oct 06 16:48	15°♈23'35 19.00239 AU	conjunction	4365 Apr 30 15:58	11°♈13'44 -0°33'17
direct	4358 Dec 22 12:09	13°♈25'01	minimum elong	4365 Apr 30 15:58	11°♈13'44 0°33'17
evening set	4359 Mar 22 11:54	16°♈24'59	max. Earth dist.	4365 May 01 11:58	11°♈16'36 21.00858 AU
			morning rise	4365 May 16 18:03	12°♈08'37
conjunction	4359 Apr 07 06:17	17°♈19'03 -0°43'29		4365 Jul 24 11:39	15°♈
minimum elong	4359 Apr 07 06:17	17°♈19'03 0°43'30	retrograde	4365 Aug 19 00:32	15°♈15'50
max. Earth dist.	4359 Apr 08 04:17	17°♈22'13 21.00970 AU		4365 Sep 13 21:43	15°♈
morning rise	4359 Apr 23 03:18	18°♈13'31	opposition	4365 Nov 04 21:59	13°♈16'18 -0°35'29
retrograde	4359 Jul 25 23:31	21°♈20'25	min. Earth dist.	4365 Nov 04 03:21	13°♈18'11 19.00250 AU
opposition	4359 Oct 11 21:55	19°♈21'35 -0°47'24	direct	4366 Jan 19 08:11	11°♈19'36
min. Earth dist.	4359 Oct 11 01:10	19°♈23'40 19.01640 AU	evening set	4366 Apr 18 22:34	14°♈18'26
direct	4359 Dec 26 20:12	17°♈25'06		4366 May 01 03:42	15°♈
evening set	4360 Mar 25 16:50	20°♈24'42			
			conjunction	4366 May 04 22:05	15°♈12'57 -0°30'58
conjunction	4360 Apr 10 11:43	21°♈18'47 -0°42'17	minimum elong	4366 May 04 22:06	15°♈12'57 0°30'59
minimum elong	4360 Apr 10 11:43	21°♈18'47 0°42'16	max. Earth dist.	4366 May 05 16:57	15°♈15'39 20.99505 AU
max. Earth dist.	4360 Apr 11 08:30	21°♈21'46 21.02099 AU	morning rise	4366 May 21 01:14	16°♈07'58
morning rise	4360 Apr 26 09:39	22°♈13'17	retrograde	4366 Aug 23 08:26	19°♈15'24
retrograde	4360 Jul 29 06:58	25°♈20'09	opposition	4366 Nov 09 05:33	17°♈15'46 -0°32'51
min. Earth dist.	4360 Oct 14 11:17	23°♈23'10 19.02505 AU	min. Earth dist.	4366 Nov 08 12:25	17°♈17'30 18.98733 AU
opposition	4360 Oct 15 06:43	23°♈21'13 -0°45'56	direct	4367 Jan 23 12:16	15°♈19'02
direct	4360 Dec 30 01:45	21°♈24'45	evening set	4367 Apr 23 04:19	18°♈18'00
evening set	4361 Mar 29 21:27	24°♈24'02			
			conjunction	4367 May 09 04:54	19°♈12'40 -0°28'30
conjunction	4361 Apr 14 17:09	25°♈18'09 -0°40'51	minimum elong	4367 May 09 04:53	19°♈12'40 0°28'30
minimum elong	4361 Apr 14 17:09	25°♈18'09 0°40'52	max. Earth dist.	4367 May 09 23:54	19°♈15'23 20.97828 AU
max. Earth dist.	4361 Apr 15 14:27	25°♈21'12 21.02707 AU	morning rise	4367 May 25 08:51	20°♈07'49
morning rise	4361 Apr 30 15:45	26°♈12'41	retrograde	4367 Aug 27 18:43	23°♈15'30
retrograde	4361 Aug 02 15:51	29°♈19'32	opposition	4367 Nov 13 12:46	21°♈15'48 -0°30'02
opposition	4361 Oct 19 15:02	27°♈20'29 -0°44'15	min. Earth dist.	4367 Nov 12 19:19	21°♈17'34 18.96878 AU
min. Earth dist.	4361 Oct 18 19:02	27°♈22'29 19.02858 AU	direct	4368 Jan 27 18:48	19°♈19'00
direct	4362 Jan 03 09:18	25°♈24'00	evening set	4368 Apr 26 10:38	22°♈18'12
evening set	4362 Apr 03 02:18	28°♈23'02			
			conjunction	4368 May 12 11:58	23°♈13'00 -0°25'53
conjunction	4362 Apr 18 22:34	29°♈17'11 -0°39'14	minimum elong	4368 May 12 11:58	23°♈13'00 0°25'54
minimum elong	4362 Apr 18 22:34	29°♈17'11 0°39'15	max. Earth dist.	4368 May 13 05:35	23°♈15'31 20.95801 AU
max. Earth dist.	4362 Apr 19 18:48	29°♈20'05 21.02833 AU	morning rise	4368 May 28 16:59	24°♈08'20
	4362 May 01 10:19	0°♈	retrograde	4368 Aug 31 03:10	27°♈16'18
morning rise	4362 May 04 22:09	0°♈11'48	opposition	4368 Nov 16 20:21	25°♈16'32 -0°27'04
retrograde	4362 Aug 06 22:58	3°♈18'41	min. Earth dist.	4368 Nov 16 04:42	25°♈18'08 18.94674 AU
opposition	4362 Oct 23 23:12	1°♈19'29 -0°42'22	direct	4369 Jan 30 22:30	23°♈19'41
min. Earth dist.	4362 Oct 23 04:30	1°♈21'21 19.02774 AU	evening set	4369 Apr 30 17:10	26°♈19'11
	4362 Nov 29 05:19	30°♈			
direct	4363 Jan 07 14:28	29°♈22'57	conjunction	4369 May 16 19:33	27°♈14'09 -0°23'09
	4363 Feb 14 21:21	0°♈	minimum elong	4369 May 16 19:33	27°♈14'09 0°23'09
evening set	4363 Apr 07 07:01	2°♈21'48	max. Earth dist.	4369 May 17 13:04	27°♈16'39 20.93422 AU
			morning rise	4369 Jun 02 01:22	28°♈09'38
conjunction	4363 Apr 23 04:13	3°♈16'01 -0°37'26		4369 Jul 08 16:43	0°♈
minimum elong	4363 Apr 23 04:13	3°♈16'01 0°37'26	retrograde	4369 Sep 04 14:40	1°♈17'57
max. Earth dist.	4363 Apr 24 00:57	3°♈19'00 21.02548 AU		4369 Nov 03 15:03	30°♈
morning rise	4363 May 09 04:33	4°♈10'43	opposition	4369 Nov 21 03:56	29°♈18'08 -0°23'58
retrograde	4363 Aug 11 07:57	7°♈17'39	min. Earth dist.	4369 Nov 20 12:12	29°♈19'44 18.92094 AU
min. Earth dist.	4363 Oct 27 11:35	5°♈20'16 19.02287 AU	direct	4370 Feb 04 05:38	27°♈21'11
opposition	4363 Oct 28 06:55	5°♈18'20 -0°40'16		4370 Apr 28 16:15	0°♈
direct	4364 Jan 11 21:11	3°♈21'45	evening set	4370 May 05 00:36	0°♈21'03
evening set	4364 Apr 10 12:05	6°♈20'31			
			conjunction	4370 May 21 03:46	1°♈16'13 -0°20'17
conjunction	4364 Apr 26 09:55	7°♈14'49 -0°35'27	minimum elong	4370 May 21 03:46	1°♈16'13 0°20'17
minimum elong	4364 Apr 26 09:55	7°♈14'49 0°35'27	max. Earth dist.	4370 May 21 19:35	1°♈18'28 20.90642 AU
max. Earth dist.	4364 Apr 27 05:31	7°♈17'37 21.01871 AU	morning rise	4370 Jun 06 10:38	2°♈11'53
morning rise	4364 May 12 11:14	8°♈09'36	retrograde	4370 Sep 08 23:55	5°♈20'33

opposition	4370 Nov 25 11:42	3°II20'40 -0°20'44	max. Earth dist.	4376 Jun 15 01:39	25°II50'38 20.64880 AU
min. Earth dist.	4370 Nov 24 22:12	3°II22'03 18.89107 AU	morning rise	4376 Jul 01 06:47	26°II46'37
direct	4371 Feb 08 09:54	1°II23'36	retrograde	4376 Oct 03 21:08	29°II57'45
evening set	4371 May 09 08:30	4°II23'55	asc. node	4376 Oct 22 17:25	29°II48'57
			opposition	4376 Dec 19 14:27	27°II56'52 0°00'35
conjunction	4371 May 25 12:47	5°II19'16 -0°17'18	min. Earth dist.	4376 Dec 19 09:03	27°II57'26 18.62162 AU
minimum elong	4371 May 25 12:47	5°II19'16 0°17'19	direct	4377 Mar 04 07:14	25°II58'12
max. Earth dist.	4371 May 26 03:51	5°II21'25 20.87439 AU	evening set	4377 Jun 02 21:25	29°II02'12
morning rise	4371 Jun 10 20:28	6°II15'08			
retrograde	4371 Sep 13 11:59	9°II24'11	conjunction	4377 Jun 19 07:20	29°II58'57 0°02'14
opposition	4371 Nov 29 19:34	7°II24'12 -0°17'23	minimum elong	4377 Jun 19 07:19	29°II58'57 0°02'14
min. Earth dist.	4371 Nov 29 06:23	7°II25'33 18.85665 AU	behind sun begin	4377 Jun 19 00:37	29°II58'00
direct	4372 Feb 12 17:39	5°II26'58	behind sun end	4377 Jun 19 14:02	29°II59'54
evening set	4372 May 12 17:12	8°II27'46		4377 Jun 19 14:41	0°☾
			max. Earth dist.	4377 Jun 19 13:13	29°II59'47 20.59425 AU
conjunction	4372 May 28 22:16	9°II23'20 -0°14'14	morning rise	4377 Jul 05 20:10	0°☾56'09
minimum elong	4372 May 28 22:16	9°II23'20 0°14'14	retrograde	4377 Oct 08 10:39	4°☾07'46
behind sun begin	4372 May 28 19:09	9°II22'54	opposition	4377 Dec 23 23:47	2°☾06'42 0°04'18
behind sun end	4372 May 29 01:23	9°II23'46	min. Earth dist.	4377 Dec 23 18:39	2°☾07'14 18.56610 AU
max. Earth dist.	4372 May 29 11:14	9°II25'11 20.83756 AU	direct	4378 Mar 08 16:52	0°☾07'41
morning rise	4372 Jun 14 06:55	10°II19'24	evening set	4378 Jun 07 10:06	3°☾12'31
retrograde	4372 Sep 16 22:15	13°II28'51			
opposition	4372 Dec 03 03:47	11°II28'44 -0°13'56	conjunction	4378 Jun 23 20:49	4°☾09'32 0°05'36
min. Earth dist.	4372 Dec 02 17:00	11°II29'50 18.81747 AU	minimum elong	4378 Jun 23 20:49	4°☾09'32 0°05'35
direct	4373 Feb 15 23:16	9°II31'17	behind sun begin	4378 Jun 23 14:22	4°☾08'37
evening set	4373 May 17 02:19	12°II32'37	behind sun end	4378 Jun 24 03:17	4°☾10'27
			max. Earth dist.	4378 Jun 24 01:08	4°☾10'08 20.53786 AU
conjunction	4373 Jun 02 08:29	13°II28'24 -0°11'04	morning rise	4378 Jul 10 10:24	5°☾06'59
minimum elong	4373 Jun 02 08:29	13°II28'24 0°11'05	retrograde	4378 Oct 12 22:52	8°☾19'06
behind sun begin	4373 Jun 02 03:32	13°II27'42	opposition	4378 Dec 28 09:31	6°☾17'52 0°08'00
behind sun end	4373 Jun 02 13:26	13°II29'06	min. Earth dist.	4378 Dec 28 06:32	6°☾18'11 18.50908 AU
max. Earth dist.	4373 Jun 02 20:24	13°II30'06 20.79622 AU	direct	4379 Mar 13 01:24	4°☾18'31
morning rise	4373 Jun 18 17:57	14°II24'41	evening set	4379 Jun 11 23:30	7°☾24'15
retrograde	4373 Sep 21 10:20	17°II34'31			
opposition	4373 Dec 07 12:04	15°II34'15 -0°10'24	conjunction	4379 Jun 28 11:09	8°☾21'33 0°08'55
min. Earth dist.	4373 Dec 07 01:40	15°II35'19 18.77383 AU	minimum elong	4379 Jun 28 11:09	8°☾21'33 0°08'55
direct	4374 Feb 20 07:36	13°II36'32	behind sun begin	4379 Jun 28 05:24	8°☾20'44
evening set	4374 May 21 12:09	16°II38'27	behind sun end	4379 Jun 28 16:53	8°☾22'22
			max. Earth dist.	4379 Jun 28 14:06	8°☾21'57 20.48036 AU
conjunction	4374 Jun 06 19:11	17°II34'27 -0°07'51	morning rise	4379 Jul 15 01:25	9°☾19'14
minimum elong	4374 Jun 06 19:11	17°II34'27 0°07'51	retrograde	4379 Oct 17 13:46	12°☾31'54
behind sun begin	4374 Jun 06 13:11	17°II33'37	opposition	4380 Jan 01 19:39	10°☾30'31 0°11'41
behind sun end	4374 Jun 07 01:11	17°II35'18	min. Earth dist.	4380 Jan 01 16:59	10°☾30'48 18.45108 AU
max. Earth dist.	4374 Jun 07 05:03	17°II35'52 20.75050 AU	direct	4380 Mar 16 12:09	8°☾30'50
morning rise	4374 Jun 23 05:38	18°II30'58	evening set	4380 Jun 15 13:42	11°☾37'32
retrograde	4374 Sep 25 21:20	21°II41'13			
opposition	4374 Dec 11 20:43	19°II40'44 -0°06'47	conjunction	4380 Jul 02 02:06	12°☾35'06 0°12'13
min. Earth dist.	4374 Dec 11 12:44	19°II41'34 18.72617 AU	minimum elong	4380 Jul 02 02:06	12°☾35'06 0°12'11
direct	4375 Feb 24 14:29	17°II42'44	behind sun begin	4380 Jul 01 21:39	12°☾34'28
evening set	4375 May 25 22:35	20°II45'16	behind sun end	4380 Jul 02 06:32	12°☾35'44
			max. Earth dist.	4380 Jul 02 03:41	12°☾35'20 20.42188 AU
conjunction	4375 Jun 11 06:41	21°II41'31 -0°04'34	morning rise	4380 Jul 18 16:57	13°☾33'03
minimum elong	4375 Jun 11 06:41	21°II41'31 0°04'35	retrograde	4380 Oct 21 03:05	16°☾46'17
behind sun begin	4375 Jun 11 00:08	21°II40'36	opposition	4381 Jan 05 06:25	14°☾44'48 0°15'20
behind sun end	4375 Jun 11 13:14	21°II42'27	min. Earth dist.	4381 Jan 05 05:46	14°☾44'52 18.39234 AU
max. Earth dist.	4375 Jun 11 15:26	21°II42'46 20.70119 AU	direct	4381 Mar 20 21:19	12°☾44'48
morning rise	4375 Jun 27 17:55	22°II38'15	evening set	4381 Jun 20 04:49	15°☾52'31
retrograde	4375 Sep 30 09:47	25°II48'55			
opposition	4375 Dec 16 05:17	23°II48'15 -0°03'07	conjunction	4381 Jul 06 18:00	16°☾50'22 0°15'28
min. Earth dist.	4375 Dec 15 21:42	23°II49'02 18.67521 AU	minimum elong	4381 Jul 06 18:00	16°☾50'22 0°15'27
direct	4376 Feb 28 23:20	21°II49'54	behind sun begin	4381 Jul 06 16:33	16°☾50'10
evening set	4376 May 29 09:47	24°II53'10	behind sun end	4381 Jul 06 19:28	16°☾50'35
			max. Earth dist.	4381 Jul 06 18:02	16°☾50'23 20.36303 AU
conjunction	4376 Jun 14 18:41	25°II49'39 -0°01'13	morning rise	4381 Jul 23 09:30	17°☾48'35
minimum elong	4376 Jun 14 18:42	25°II49'39 0°01'13	retrograde	4381 Oct 25 19:36	21°☾02'25
behind sun begin	4376 Jun 14 12:00	25°II48'43	opposition	4382 Jan 09 17:31	19°☾00'50 0°18'55
behind sun end	4376 Jun 15 01:24	25°II50'36	min. Earth dist.	4382 Jan 09 17:24	19°☾00'50 18.33324 AU

direct	4382 Mar 25 09:36	17°00'33		evening set	4388 Jul 21 17:42	16°03'31	
evening set	4382 Jun 24 20:56	20°09'20					
conjunction	4382 Jul 11 10:54	21°07'30	0°18'39	conjunction	4388 Aug 07 10:51	17°03'20	0°35'27
minimum elong	4382 Jul 11 10:53	21°07'30	0°18'39	minimum elong	4388 Aug 07 10:51	17°03'20	0°35'26
max. Earth dist.	4382 Jul 11 09:36	21°07'18	20.30362 AU	max. Earth dist.	4388 Aug 06 22:57	17°028'33	19.93272 AU
morning rise	4382 Jul 28 02:51	22°05'57		morning rise	4388 Aug 24 04:18	18°03'15	
retrograde	4382 Oct 30 10:09	25°20'24		retrograde	4388 Nov 25 23:04	21°048'12	
opposition	4383 Jan 14 05:23	23°18'46	0°22'26	opposition	4389 Feb 08 17:24	19°045'58	0°40'39
min. Earth dist.	4383 Jan 14 07:26	23°18'33	18.27357 AU	min. Earth dist.	4389 Feb 09 04:21	19°044'47	17.90160 AU
direct	4383 Mar 29 20:03	21°18'12		direct	4389 Apr 24 12:32	17°043'15	
evening set	4383 Jun 29 14:05	24°28'07		evening set	4389 Jul 26 16:14	21°00'10	
conjunction	4383 Jul 16 04:40	25°26'33	0°21'46	conjunction	4389 Aug 12 09:32	22°00'14	0°37'39
minimum elong	4383 Jul 16 04:40	25°26'33	0°21'46	minimum elong	4389 Aug 12 09:32	22°00'14	0°37'39
max. Earth dist.	4383 Jul 16 01:19	25°26'04	20.24370 AU	max. Earth dist.	4389 Aug 11 18:59	21°058'02	19.87087 AU
morning rise	4383 Aug 01 21:08	26°25'17		morning rise	4389 Aug 29 03:10	23°00'21	
retrograde	4383 Nov 04 03:54	29°40'21		retrograde	4389 Nov 30 19:22	26°018'50	
opposition	4384 Jan 18 17:40	27°38'39	0°25'51	opposition	4390 Feb 13 09:26	24°016'26	0°43'00
min. Earth dist.	4384 Jan 18 20:37	27°38'20	18.21328 AU	min. Earth dist.	4390 Feb 13 21:37	24°015'07	17.84056 AU
direct	4384 Apr 02 09:55	25°37'47		direct	4390 Apr 29 06:13	22°013'17	
evening set	4384 Jul 03 08:13	28°48'53		evening set	4390 Jul 31 15:23	25°031'22	
conjunction	4384 Jul 19 23:28	29°47'36	0°24'47	conjunction	4390 Aug 17 09:05	26°031'40	0°39'38
minimum elong	4384 Jul 19 23:27	29°47'36	0°24'48	minimum elong	4390 Aug 17 09:04	26°031'40	0°39'38
max. Earth dist.	4384 Jul 19 18:47	29°46'55	20.18286 AU	max. Earth dist.	4390 Aug 16 18:13	26°029'26	19.81061 AU
	4384 Jul 23 11:04	0°0		morning rise	4390 Sep 03 02:27	27°032'00	
morning rise	4384 Aug 05 16:10	0°046'34			4390 Oct 22 09:31	0°0	
retrograde	4384 Nov 07 19:59	4°02'17		retrograde	4390 Dec 05 15:42	0°050'56	
opposition	4385 Jan 22 06:50	2°00'30	0°29'08		4391 Jan 19 15:15	30°00	
min. Earth dist.	4385 Jan 22 11:57	1°059'58	18.15204 AU	opposition	4391 Feb 18 02:11	28°048'25	0°45'05
	4385 Apr 01 21:17	30°00		min. Earth dist.	4391 Feb 18 15:26	28°046'59	17.78138 AU
direct	4385 Apr 06 22:24	29°59'20		direct	4391 May 03 23:35	26°044'53	
	4385 Apr 11 22:46	0°0			4391 Aug 04 11:42	0°0	
evening set	4385 Jul 08 03:13	3°011'35		evening set	4391 Aug 05 15:21	0°004'05	
conjunction	4385 Jul 24 18:58	4°010'35	0°27'41	conjunction	4391 Aug 22 08:57	1°004'37	0°41'23
minimum elong	4385 Jul 24 18:58	4°010'35	0°27'40	minimum elong	4391 Aug 22 08:57	1°004'37	0°41'24
max. Earth dist.	4385 Jul 24 11:45	4°009'31	20.12121 AU	max. Earth dist.	4391 Aug 21 15:43	1°002'00	19.75268 AU
morning rise	4385 Aug 10 12:08	5°009'49		morning rise	4391 Sep 08 02:18	2°005'07	
retrograde	4385 Nov 12 14:37	8°026'08		retrograde	4391 Dec 10 12:28	5°024'31	
opposition	4386 Jan 26 20:33	6°024'16	0°32'17	opposition	4392 Feb 22 19:34	3°021'52	0°46'54
min. Earth dist.	4386 Jan 27 02:47	6°023'36	18.08994 AU	min. Earth dist.	4392 Feb 23 09:58	3°020'18	17.72500 AU
direct	4386 Apr 11 13:39	4°022'43		direct	4392 May 07 18:58	1°017'58	
evening set	4386 Jul 12 23:16	7°036'09		evening set	4392 Aug 09 15:49	4°038'16	
conjunction	4386 Jul 29 15:37	8°035'26	0°30'26	conjunction	4392 Aug 26 09:38	5°039'01	0°42'53
minimum elong	4386 Jul 29 15:37	8°035'26	0°30'27	minimum elong	4392 Aug 26 09:38	5°039'01	0°42'52
max. Earth dist.	4386 Jul 29 07:10	8°034'11	20.05858 AU	max. Earth dist.	4392 Aug 25 16:32	5°036'25	19.69782 AU
morning rise	4386 Aug 15 08:52	9°034'54		morning rise	4392 Sep 12 02:34	6°039'41	
retrograde	4386 Nov 17 08:21	12°051'46		retrograde	4392 Dec 14 09:22	9°059'31	
opposition	4387 Jan 31 10:52	10°049'48	0°35'16	opposition	4393 Feb 26 13:34	7°056'47	0°48'26
min. Earth dist.	4387 Jan 31 19:08	10°048'55	18.02701 AU	min. Earth dist.	4393 Feb 27 04:24	7°055'10	17.67194 AU
direct	4387 Apr 16 04:07	8°047'54		direct	4393 May 12 14:09	5°052'33	
evening set	4387 Jul 17 20:14	12°002'30		evening set	4393 Aug 14 17:04	9°013'56	
conjunction	4387 Aug 03 12:54	13°002'03	0°33'02	conjunction	4393 Aug 31 10:42	10°014'52	0°44'06
minimum elong	4387 Aug 03 12:54	13°002'03	0°33'02	minimum elong	4393 Aug 31 10:42	10°014'52	0°44'06
max. Earth dist.	4387 Aug 03 01:41	13°000'22	19.99558 AU	max. Earth dist.	4393 Aug 30 15:32	10°011'57	19.64666 AU
morning rise	4387 Aug 20 06:27	14°001'45		morning rise	4393 Sep 17 03:28	11°015'42	
	4387 Sep 06 12:17	15°0		retrograde	4393 Dec 19 06:35	14°035'57	
retrograde	4387 Nov 22 03:53	17°019'11		opposition	4394 Mar 03 08:19	12°033'09	0°49'39
opposition	4388 Feb 05 01:49	15°017'04	0°38'04	min. Earth dist.	4394 Mar 04 00:18	12°031'25	17.62288 AU
min. Earth dist.	4388 Feb 05 11:14	15°016'04	17.96407 AU	direct	4394 May 17 10:55	10°028'37	
	4388 Feb 11 17:14	15°00		evening set	4394 Aug 19 18:53	13°051'04	
direct	4388 Apr 19 20:34	13°014'45		conjunction	4394 Sep 05 12:33	14°052'12	0°45'03
	4388 Jun 24 01:55	15°0		minimum elong	4394 Sep 05 12:33	14°052'12	0°45'03



max. Earth dist.	4394 Sep 04 17:38	14° <del>17</del> 49'18	19.59965 AU	min. Earth dist.	4401 Apr 05 08:00	15° <del>02</del> 22'29	17.39488 AU
morning rise	4394 Sep 22 04:47	15° <del>17</del> 53'09		direct	4401 Jun 19 08:49	13° <del>02</del> 18'50	
retrograde	4394 Dec 24 04:36	19° <del>17</del> 13'47		evening set	4401 Sep 22 20:53	16° <del>02</del> 46'57	
opposition	4395 Mar 08 03:35	17° <del>17</del> 10'59	0°50'34				
min. Earth dist.	4395 Mar 08 19:37	17° <del>17</del> 09'14	17.57800 AU	conjunction	4401 Oct 09 11:21	17° <del>02</del> 48'41	0°43'16
direct	4395 May 22 08:31	15° <del>17</del> 06'13		minimum elong	4401 Oct 09 11:21	17° <del>02</del> 48'41	0°43'17
evening set	4395 Aug 24 21:27	18° <del>17</del> 29'42		max. Earth dist.	4401 Oct 08 12:30	17° <del>02</del> 45'07	19.38560 AU
				morning rise	4401 Oct 25 22:45	18° <del>02</del> 50'01	
conjunction	4395 Sep 10 14:46	19° <del>17</del> 30'58	0°45'42	retrograde	4402 Jan 25 23:19	22° <del>02</del> 12'09	
minimum elong	4395 Sep 10 14:46	19° <del>17</del> 30'58	0°45'42	opposition	4402 Apr 09 12:23	20° <del>02</del> 09'39	0°47'28
max. Earth dist.	4395 Sep 09 18:13	19° <del>17</del> 27'49	19.55697 AU	min. Earth dist.	4402 Apr 10 08:34	20° <del>02</del> 07'27	17.37827 AU
morning rise	4395 Sep 27 06:35	20° <del>17</del> 32'03		direct	4402 Jun 24 09:39	18° <del>02</del> 03'47	
retrograde	4395 Dec 29 02:21	23° <del>17</del> 53'04		evening set	4402 Sep 28 01:19	21° <del>02</del> 32'20	
opposition	4396 Mar 11 23:42	21° <del>17</del> 50'17	0°51'09				
min. Earth dist.	4396 Mar 12 17:01	21° <del>17</del> 48'24	17.53761 AU	conjunction	4402 Oct 14 14:56	22° <del>02</del> 34'02	0°41'48
direct	4396 May 26 06:17	19° <del>17</del> 45'19		minimum elong	4402 Oct 14 14:56	22° <del>02</del> 34'02	0°41'48
evening set	4396 Aug 29 00:15	23° <del>17</del> 09'46		max. Earth dist.	4402 Oct 13 15:31	22° <del>02</del> 30'23	19.37131 AU
				morning rise	4402 Oct 31 01:33	23° <del>02</del> 35'20	
conjunction	4396 Sep 14 17:23	24° <del>17</del> 11'11	0°46'04	retrograde	4403 Jan 31 00:10	26° <del>02</del> 57'27	
minimum elong	4396 Sep 14 17:23	24° <del>17</del> 11'11	0°46'04	opposition	4403 Apr 14 11:56	24° <del>02</del> 54'59	0°45'40
max. Earth dist.	4396 Sep 13 21:02	24° <del>17</del> 08'03	19.51870 AU	min. Earth dist.	4403 Apr 15 07:09	24° <del>02</del> 52'53	17.36628 AU
morning rise	4396 Oct 01 08:37	25° <del>17</del> 12'21		direct	4403 Jun 29 12:29	22° <del>02</del> 49'01	
retrograde	4397 Jan 02 01:52	28° <del>17</del> 33'42		evening set	4403 Oct 03 05:28	26° <del>02</del> 17'51	
opposition	4397 Mar 16 20:21	26° <del>17</del> 30'59	0°51'24				
min. Earth dist.	4397 Mar 17 13:30	26° <del>17</del> 29'06	17.50134 AU	conjunction	4403 Oct 19 18:25	27° <del>02</del> 19'33	0°40'02
direct	4397 May 31 05:53	24° <del>17</del> 25'51		minimum elong	4403 Oct 19 18:25	27° <del>02</del> 19'33	0°40'02
evening set	4397 Sep 03 03:53	27° <del>17</del> 51'13		max. Earth dist.	4403 Oct 18 20:09	27° <del>02</del> 16'03	19.36175 AU
				morning rise	4403 Nov 05 03:57	28° <del>02</del> 20'46	
conjunction	4397 Sep 19 20:34	28° <del>17</del> 52'44	0°46'07		4403 Dec 04 08:55	0° <del>17</del>	
minimum elong	4397 Sep 19 20:34	28° <del>17</del> 52'44	0°46'07	retrograde	4404 Feb 04 23:14	1° <del>17</del> 42'48	
max. Earth dist.	4397 Sep 18 22:57	28° <del>17</del> 49'24	19.48437 AU		4404 Apr 10 22:51	30° <del>17</del> R <del>02</del>	
morning rise	4397 Oct 06 11:11	29° <del>17</del> 53'59		opposition	4404 Apr 18 11:58	29° <del>02</del> 40'22	0°43'33
	4397 Oct 08 03:04	0° <del>17</del>		min. Earth dist.	4404 Apr 19 07:45	29° <del>02</del> 38'13	17.35931 AU
retrograde	4398 Jan 07 00:11	3° <del>17</del> 15'37		direct	4404 Jul 03 13:58	27° <del>02</del> 34'19	
opposition	4398 Mar 21 17:39	1° <del>17</del> 12'57	0°51'18		4404 Sep 19 09:55	0° <del>17</del>	
min. Earth dist.	4398 Mar 22 12:23	1° <del>17</del> 10'54	17.46906 AU	evening set	4404 Oct 07 09:22	1° <del>17</del> 03'21	
	4398 Apr 20 11:08	30° <del>17</del> R <del>02</del>					
direct	4398 Jun 05 04:48	29° <del>17</del> 07'39		conjunction	4404 Oct 23 21:20	2° <del>17</del> 04'58	0°37'59
	4398 Jul 20 02:25	0° <del>17</del>		minimum elong	4404 Oct 23 21:20	2° <del>17</del> 04'58	0°38'00
evening set	4398 Sep 08 07:52	2° <del>17</del> 33'52		max. Earth dist.	4404 Oct 22 22:42	2° <del>17</del> 01'25	19.35754 AU
max. Earth dist.	4398 Sep 24 02:12	3° <del>17</del> 32'04	19.45396 AU	morning rise	4404 Nov 09 06:06	3° <del>17</del> 06'07	
				retrograde	4405 Feb 08 23:24	6° <del>17</del> 28'01	
conjunction	4398 Sep 25 00:07	3° <del>17</del> 35'28	0°45'53	opposition	4405 Apr 23 12:02	4° <del>17</del> 25'36	0°41'07
minimum elong	4398 Sep 25 00:07	3° <del>17</del> 35'28	0°45'52	min. Earth dist.	4405 Apr 24 06:36	4° <del>17</del> 23'35	17.35783 AU
morning rise	4398 Oct 11 14:02	4° <del>17</del> 36'46		direct	4405 Jul 08 16:59	2° <del>17</del> 19'30	
retrograde	4399 Jan 12 00:47	7° <del>17</del> 58'38		evening set	4405 Oct 12 12:57	5° <del>17</del> 48'38	
opposition	4399 Mar 26 15:35	5° <del>17</del> 56'01	0°50'52	max. Earth dist.	4405 Oct 28 03:23	6° <del>17</del> 46'54	19.35887 AU
min. Earth dist.	4399 Mar 27 09:55	5° <del>17</del> 54'00	17.44047 AU				
direct	4399 Jun 10 06:18	3° <del>17</del> 50'34		conjunction	4405 Oct 29 00:10	6° <del>17</del> 50'09	0°35'41
evening set	4399 Sep 13 12:02	7° <del>17</del> 17'30		minimum elong	4405 Oct 29 00:10	6° <del>17</del> 50'10	0°35'40
max. Earth dist.	4399 Sep 29 05:13	8° <del>17</del> 15'41	19.42717 AU	morning rise	4405 Nov 14 07:44	7° <del>17</del> 51'11	
				retrograde	4406 Feb 13 22:00	11° <del>17</del> 12'54	
conjunction	4399 Sep 30 03:43	8° <del>17</del> 19'11	0°45'19	opposition	4406 Apr 28 12:21	9° <del>17</del> 10'33	0°38'25
minimum elong	4399 Sep 30 03:43	8° <del>17</del> 19'11	0°45'20	min. Earth dist.	4406 Apr 29 06:50	9° <del>17</del> 08'32	17.36209 AU
morning rise	4399 Oct 16 16:48	9° <del>17</del> 20'31		direct	4406 Jul 13 19:47	7° <del>17</del> 04'27	
retrograde	4400 Jan 16 23:19	12° <del>17</del> 42'32		evening set	4406 Oct 17 16:18	10° <del>17</del> 33'34	
opposition	4400 Mar 30 14:11	10° <del>17</del> 39'58	0°50'05	max. Earth dist.	4406 Nov 02 05:29	11° <del>17</del> 31'41	19.36629 AU
min. Earth dist.	4400 Mar 31 09:54	10° <del>17</del> 37'48	17.41569 AU				
direct	4400 Jun 14 06:15	8° <del>17</del> 34'22		conjunction	4406 Nov 03 02:23	11° <del>17</del> 34'58	0°33'08
evening set	4400 Sep 17 16:25	12° <del>17</del> 01'56		minimum elong	4406 Nov 03 02:23	11° <del>17</del> 34'58	0°33'08
max. Earth dist.	4400 Oct 03 08:27	13° <del>17</del> 00'03	19.40439 AU	morning rise	4406 Nov 19 09:06	12° <del>17</del> 35'52	
					4407 Jan 04 00:15	15° <del>17</del>	
conjunction	4400 Oct 04 07:29	13° <del>17</del> 03'39	0°44'27	retrograde	4407 Feb 18 20:52	15° <del>17</del> 57'22	
minimum elong	4400 Oct 04 07:29	13° <del>17</del> 03'39	0°44'27		4407 Apr 07 05:39	15° <del>17</del> R <del>02</del>	
morning rise	4400 Oct 20 19:50	14° <del>17</del> 05'00		opposition	4407 May 03 12:50	13° <del>17</del> 55'05	0°35'27
retrograde	4401 Jan 21 00:22	17° <del>17</del> 27'06		min. Earth dist.	4407 May 04 05:53	13° <del>17</del> 53'15	17.37265 AU
opposition	4401 Apr 04 12:56	15° <del>17</del> 24'34	0°48'57	direct	4407 Jul 18 22:56	11° <del>17</del> 49'03	

	4407 Oct 17 19:50	15° $\mathbb{M}$		conjunction	4413 Dec 06 03:00	14° $\mathbb{X}$ 30'48	0°10'25
evening set	4407 Oct 22 18:52	15° $\mathbb{M}$ 18'04		minimum elong	4413 Dec 06 03:00	14° $\mathbb{X}$ 30'48	0°10'26
max. Earth dist.	4407 Nov 07 09:37	16° $\mathbb{M}$ 16'25	19.37998 AU	behind sun begin	4413 Dec 05 21:46	14° $\mathbb{X}$ 30'01	
				behind sun end	4413 Dec 06 08:13	14° $\mathbb{X}$ 31'36	
conjunction	4407 Nov 08 04:08	16° $\mathbb{M}$ 19'19	0°30'22	max. Earth dist.	4413 Dec 05 15:39	14° $\mathbb{X}$ 29'03	19.57155 AU
minimum elong	4407 Nov 08 04:08	16° $\mathbb{M}$ 19'19	0°30'22	morning rise	4413 Dec 22 02:36	15° $\mathbb{X}$ 30'19	
morning rise	4407 Nov 24 09:40	17° $\mathbb{M}$ 20'04		retrograde	4414 Mar 23 07:29	18° $\mathbb{X}$ 49'10	
retrograde	4408 Feb 23 19:28	20° $\mathbb{M}$ 41'18		opposition	4414 Jun 05 16:10	16° $\mathbb{X}$ 48'09	0°09'34
opposition	4408 May 07 13:27	18° $\mathbb{M}$ 39'10	0°32'15	min. Earth dist.	4414 Jun 06 01:26	16° $\mathbb{X}$ 47'10	17.59355 AU
min. Earth dist.	4408 May 08 05:43	18° $\mathbb{M}$ 37'25	17.38934 AU	direct	4414 Aug 21 16:27	14° $\mathbb{X}$ 43'35	
direct	4408 Jul 23 02:39	16° $\mathbb{M}$ 33'16		evening set	4414 Nov 24 22:30	18° $\mathbb{X}$ 09'11	
evening set	4408 Oct 26 21:16	20° $\mathbb{M}$ 02'05					
max. Earth dist.	4408 Nov 11 11:01	21° $\mathbb{M}$ 00'17	19.39981 AU	conjunction	4414 Dec 11 00:23	19° $\mathbb{X}$ 08'54	0°06'46
				minimum elong	4414 Dec 11 00:23	19° $\mathbb{X}$ 08'54	0°06'47
conjunction	4408 Nov 12 05:23	21° $\mathbb{M}$ 03'10	0°27'24	behind sun begin	4414 Dec 10 18:12	19° $\mathbb{X}$ 07'58	
minimum elong	4408 Nov 12 05:23	21° $\mathbb{M}$ 03'10	0°27'25	behind sun end	4414 Dec 11 06:34	19° $\mathbb{X}$ 09'51	
morning rise	4408 Nov 28 10:03	22° $\mathbb{M}$ 03'45		max. Earth dist.	4414 Dec 10 14:14	19° $\mathbb{X}$ 07'20	19.61630 AU
retrograde	4409 Feb 27 17:25	25° $\mathbb{M}$ 24'41		morning rise	4414 Dec 26 23:03	20° $\mathbb{X}$ 08'10	
opposition	4409 May 12 13:53	23° $\mathbb{M}$ 22'44	0°28'51	retrograde	4415 Mar 28 03:30	23° $\mathbb{X}$ 26'30	
min. Earth dist.	4409 May 13 05:03	23° $\mathbb{M}$ 21'06	17.41209 AU	opposition	4415 Jun 10 16:08	21° $\mathbb{X}$ 25'36	0°05'28
direct	4409 Jul 28 05:26	21° $\mathbb{M}$ 16'59		min. Earth dist.	4415 Jun 11 00:58	21° $\mathbb{X}$ 24'40	17.63968 AU
evening set	4409 Oct 31 23:03	24° $\mathbb{M}$ 45'31		direct	4415 Aug 26 16:42	19° $\mathbb{X}$ 21'18	
				evening set	4415 Nov 29 19:54	22° $\mathbb{X}$ 46'02	
conjunction	4409 Nov 17 06:17	25° $\mathbb{M}$ 46'26	0°24'16				
minimum elong	4409 Nov 17 06:17	25° $\mathbb{M}$ 46'26	0°24'17	conjunction	4415 Dec 15 20:46	23° $\mathbb{X}$ 45'29	0°03'05
max. Earth dist.	4409 Nov 16 14:11	25° $\mathbb{M}$ 43'55	19.42535 AU	minimum elong	4415 Dec 15 20:47	23° $\mathbb{X}$ 45'29	0°03'05
morning rise	4409 Dec 03 09:48	26° $\mathbb{M}$ 46'50		behind sun begin	4415 Dec 15 14:12	23° $\mathbb{X}$ 44'29	
	4410 Feb 16 10:02	0° $\mathbb{X}$		behind sun end	4415 Dec 16 03:23	23° $\mathbb{X}$ 46'29	
retrograde	4410 Mar 04 16:05	0° $\mathbb{X}$ 07'25		max. Earth dist.	4415 Dec 15 12:00	23° $\mathbb{X}$ 44'08	19.66372 AU
	4410 Mar 21 03:02	30° $\mathbb{R}\mathbb{M}$		morning rise	4415 Dec 31 18:40	24° $\mathbb{X}$ 44'29	
opposition	4410 May 17 14:33	28° $\mathbb{M}$ 05'40	0°25'15	retrograde	4416 Apr 01 00:18	28° $\mathbb{X}$ 02'15	
min. Earth dist.	4410 May 18 04:35	28° $\mathbb{M}$ 04'09	17.44009 AU	opposition	4416 Jun 14 15:30	26° $\mathbb{X}$ 01'29	0°01'20
direct	4410 Aug 02 08:50	26° $\mathbb{M}$ 00'09		min. Earth dist.	4416 Jun 14 22:06	26° $\mathbb{X}$ 00'48	17.68815 AU
evening set	4410 Nov 06 00:19	29° $\mathbb{M}$ 28'17		direct	4416 Aug 30 18:27	23° $\mathbb{X}$ 57'26	
	4410 Nov 14 13:20	0° $\mathbb{X}$		desc. node	4416 Oct 13 03:11	24° $\mathbb{X}$ 45'21	
				evening set	4416 Dec 03 16:32	27° $\mathbb{X}$ 21'15	
conjunction	4410 Nov 22 06:21	0° $\mathbb{X}$ 28'59	0°20'59				
minimum elong	4410 Nov 22 06:21	0° $\mathbb{X}$ 28'59	0°20'59	conjunction	4416 Dec 19 16:29	28° $\mathbb{X}$ 20'24	-0°00'42
max. Earth dist.	4410 Nov 21 14:42	0° $\mathbb{X}$ 26'32	19.45584 AU	minimum elong	4416 Dec 19 16:29	28° $\mathbb{X}$ 20'24	0°00'41
morning rise	4410 Dec 08 08:56	1° $\mathbb{X}$ 29'11		behind sun begin	4416 Dec 19 09:53	28° $\mathbb{X}$ 19'25	
retrograde	4411 Mar 09 13:54	4° $\mathbb{X}$ 49'25		behind sun end	4416 Dec 19 23:05	28° $\mathbb{X}$ 21'24	
opposition	4411 May 22 15:13	2° $\mathbb{X}$ 47'51	0°21'30	max. Earth dist.	4416 Dec 19 09:22	28° $\mathbb{X}$ 19'20	19.71336 AU
min. Earth dist.	4411 May 23 04:25	2° $\mathbb{X}$ 46'26	17.47292 AU	morning rise	4417 Jan 04 13:28	29° $\mathbb{X}$ 19'09	
direct	4411 Aug 07 10:44	0° $\mathbb{X}$ 42'33			4417 Jan 16 01:36	0° $\mathbb{Z}$	
evening set	4411 Nov 11 00:53	4° $\mathbb{X}$ 10'12		retrograde	4417 Apr 05 18:19	2° $\mathbb{Z}$ 36'20	
				opposition	4417 Jun 19 14:27	0° $\mathbb{Z}$ 35'40	-0°02'46
conjunction	4411 Nov 27 05:58	5° $\mathbb{X}$ 10'41	0°17'33	min. Earth dist.	4417 Jun 19 20:42	0° $\mathbb{Z}$ 35'01	17.73898 AU
minimum elong	4411 Nov 27 05:58	5° $\mathbb{X}$ 10'41	0°17'34		4417 Jul 03 22:37	30° $\mathbb{R}\mathbb{X}$	
max. Earth dist.	4411 Nov 26 16:20	5° $\mathbb{X}$ 08'33	19.49083 AU	direct	4417 Sep 04 17:46	28° $\mathbb{X}$ 31'52	
morning rise	4411 Dec 13 07:29	6° $\mathbb{X}$ 10'40			4417 Nov 03 10:27	0° $\mathbb{Z}$	
retrograde	4412 Mar 13 12:24	9° $\mathbb{X}$ 30'28		evening set	4417 Dec 08 12:12	1° $\mathbb{Z}$ 54'42	
opposition	4412 May 26 15:40	7° $\mathbb{X}$ 29'06	0°17'37				
min. Earth dist.	4412 May 27 03:21	7° $\mathbb{X}$ 27'51	17.50977 AU	conjunction	4417 Dec 24 11:09	2° $\mathbb{Z}$ 53'34	-0°04'25
direct	4412 Aug 11 13:09	5° $\mathbb{X}$ 24'03		minimum elong	4417 Dec 24 11:09	2° $\mathbb{Z}$ 53'34	0°04'25
evening set	4412 Nov 15 00:51	8° $\mathbb{X}$ 51'06		behind sun begin	4417 Dec 24 04:40	2° $\mathbb{Z}$ 52'35	
				behind sun end	4417 Dec 24 17:38	2° $\mathbb{Z}$ 54'32	
conjunction	4412 Dec 01 04:49	9° $\mathbb{X}$ 51'21	0°14'02	max. Earth dist.	4417 Dec 24 05:16	2° $\mathbb{Z}$ 52'41	19.76546 AU
minimum elong	4412 Dec 01 04:49	9° $\mathbb{X}$ 51'21	0°14'02	morning rise	4418 Jan 09 07:26	3° $\mathbb{Z}$ 52'02	
behind sun begin	4412 Dec 01 01:28	9° $\mathbb{X}$ 50'50		retrograde	4418 Apr 10 14:05	7° $\mathbb{Z}$ 08'37	
behind sun end	4412 Dec 01 08:10	9° $\mathbb{X}$ 51'52		opposition	4418 Jun 24 12:55	5° $\mathbb{Z}$ 08'03	-0°06'49
max. Earth dist.	4412 Nov 30 15:52	9° $\mathbb{X}$ 49'20	19.52953 AU	min. Earth dist.	4418 Jun 24 16:34	5° $\mathbb{Z}$ 07'40	17.79221 AU
morning rise	4412 Dec 17 05:25	10° $\mathbb{X}$ 51'06		direct	4418 Sep 09 18:20	3° $\mathbb{Z}$ 04'30	
retrograde	4413 Mar 18 09:45	14° $\mathbb{X}$ 10'27		evening set	4418 Dec 13 06:41	6° $\mathbb{Z}$ 26'18	
opposition	4413 May 31 16:05	12° $\mathbb{X}$ 09'15	0°13'38				
min. Earth dist.	4413 Jun 01 03:15	12° $\mathbb{X}$ 08'04	17.55021 AU	conjunction	4418 Dec 29 04:48	7° $\mathbb{Z}$ 24'52	-0°08'01
direct	4413 Aug 16 14:17	10° $\mathbb{X}$ 04'27		minimum elong	4418 Dec 29 04:47	7° $\mathbb{Z}$ 24'51	0°08'00
evening set	4413 Nov 20 00:03	13° $\mathbb{X}$ 30'49		behind sun begin	4418 Dec 28 22:53	7° $\mathbb{Z}$ 23'58	

behind sun end	4418 Dec 29 10:42	7°325'45		minimum elong	4425 Jan 23 20:56	3°56'10	0°27'28
max. Earth dist.	4418 Dec 29 01:19	7°324'21	19.81993 AU	max. Earth dist.	4425 Jan 24 04:29	3°57'18	20.19434 AU
morning rise	4419 Jan 14 00:15	8°323'03		morning rise	4425 Feb 08 13:17	4°52'48	
retrograde	4419 Apr 15 06:40	11°339'03		retrograde	4425 May 11 06:05	8°05'29	
opposition	4419 Jun 29 11:02	9°338'35	-0°10'48	opposition	4425 Jul 26 10:57	6°06'01	-0°32'00
min. Earth dist.	4419 Jun 29 13:59	9°338'16	17.84807 AU	min. Earth dist.	4425 Jul 26 03:40	6°06'46	18.22692 AU
direct	4419 Sep 14 16:27	7°335'20		direct	4425 Oct 11 15:57	4°05'07	
evening set	4419 Dec 18 00:23	10°356'03		evening set	4426 Jan 12 15:57	7°19'17	
conjunction	4420 Jan 02 21:31	11°354'19	-0°11'32	conjunction	4426 Jan 28 08:57	8°15'49	-0°30'12
minimum elong	4420 Jan 02 21:31	11°354'19	0°11'32	minimum elong	4426 Jan 28 08:57	8°15'49	0°30'12
behind sun begin	4420 Jan 02 16:44	11°353'36		max. Earth dist.	4426 Jan 28 16:53	8°17'00	20.25959 AU
behind sun end	4420 Jan 03 02:18	11°355'02		morning rise	4426 Feb 13 01:09	9°12'13	
max. Earth dist.	4420 Jan 02 19:15	11°353'58	19.87719 AU	retrograde	4426 May 15 21:23	12°24'23	
morning rise	4420 Jan 18 16:26	12°352'14		opposition	4426 Jul 31 05:02	10°25'05	-0°34'56
retrograde	4420 Apr 19 01:11	16°307'38		min. Earth dist.	4426 Jul 30 19:47	10°26'02	18.29181 AU
opposition	4420 Jul 03 08:14	14°307'17	-0°14'41	direct	4426 Oct 16 08:15	8°24'34	
min. Earth dist.	4420 Jul 03 08:22	14°307'16	17.90666 AU	evening set	4427 Jan 17 03:39	11°37'38	
direct	4420 Sep 18 15:26	12°304'21		conjunction	4427 Feb 01 20:21	12°33'54	-0°32'45
evening set	4420 Dec 21 17:04	15°324'00		minimum elong	4427 Feb 01 20:20	12°33'54	0°32'45
conjunction	4421 Jan 06 13:30	16°321'58	-0°14'59	max. Earth dist.	4427 Feb 02 06:42	12°35'28	20.32376 AU
minimum elong	4421 Jan 06 13:30	16°321'58	0°14'59	morning rise	4427 Feb 17 12:09	13°30'05	
behind sun begin	4421 Jan 06 10:55	16°321'35			4427 Mar 16 24:00	15°	
behind sun end	4421 Jan 06 16:06	16°322'21		retrograde	4427 May 20 10:25	16°41'44	
max. Earth dist.	4421 Jan 06 13:54	16°322'01	19.93704 AU		4427 Jul 28 18:38	15°R	
morning rise	4421 Jan 22 07:41	17°319'37		opposition	4427 Aug 04 22:34	14°42'35	-0°37'39
retrograde	4421 Apr 23 16:26	20°334'26		min. Earth dist.	4427 Aug 04 12:36	14°43'36	18.35519 AU
opposition	4421 Jul 08 05:11	18°334'14	-0°18'28	direct	4427 Oct 21 01:00	12°42'27	
min. Earth dist.	4421 Jul 08 04:28	18°334'19	17.96777 AU		4428 Jan 05 13:12	15°	
direct	4421 Sep 23 11:50	16°331'41		evening set	4428 Jan 21 14:56	15°54'24	
evening set	4421 Dec 26 08:55	19°350'15		conjunction	4428 Feb 06 07:04	16°50'25	-0°35'07
conjunction	4422 Jan 11 04:27	20°347'55	-0°18'18	minimum elong	4428 Feb 06 07:03	16°50'25	0°35'07
minimum elong	4422 Jan 11 04:26	20°347'55	0°18'18	max. Earth dist.	4428 Feb 06 17:26	16°51'58	20.38620 AU
max. Earth dist.	4422 Jan 11 05:51	20°348'07	19.99935 AU	morning rise	4428 Feb 21 22:53	17°46'23	
morning rise	4422 Jan 26 22:11	21°345'18		retrograde	4428 May 24 00:39	20°57'32	
retrograde	4422 Apr 28 10:02	24°359'34		opposition	4428 Aug 08 15:14	18°58'29	-0°40'08
opposition	4422 Jul 13 01:25	22°359'33	-0°22'05	min. Earth dist.	4428 Aug 08 03:51	18°59'38	18.41663 AU
min. Earth dist.	4422 Jul 12 21:58	22°359'54	18.03106 AU	direct	4428 Oct 24 15:41	16°58'40	
direct	4422 Sep 28 08:58	20°357'23		evening set	4429 Jan 25 01:21	20°09'33	
evening set	4422 Dec 30 23:48	24°314'51		conjunction	4429 Feb 09 17:19	21°05'20	-0°37'16
conjunction	4423 Jan 15 18:46	25°312'14	-0°21'31	minimum elong	4429 Feb 09 17:18	21°05'20	0°37'15
minimum elong	4423 Jan 15 18:46	25°312'14	0°21'30	max. Earth dist.	4429 Feb 10 05:47	21°07'11	20.44634 AU
max. Earth dist.	4423 Jan 15 22:59	25°312'52	20.06345 AU	morning rise	4429 Feb 25 08:52	22°01'05	
morning rise	4423 Jan 31 11:53	26°309'22		retrograde	4429 May 28 12:40	22°11'43	
retrograde	4423 May 03 00:07	29°323'06		opposition	4429 Aug 13 07:29	23°12'45	-0°42'24
opposition	4423 Jul 17 21:14	27°323'15	-0°25'34	min. Earth dist.	4429 Aug 12 19:20	23°13'59	18.47548 AU
min. Earth dist.	4423 Jul 17 16:58	27°323'42	18.09585 AU	direct	4429 Oct 29 07:22	21°13'15	
direct	4423 Oct 03 03:45	25°321'31		evening set	4430 Jan 29 11:04	24°23'02	
evening set	4424 Jan 04 13:56	28°337'53		conjunction	4430 Feb 14 02:35	25°18'35	-0°39'13
conjunction	4424 Jan 20 08:07	29°334'58	-0°24'34	minimum elong	4430 Feb 14 02:35	25°18'35	0°39'13
minimum elong	4424 Jan 20 08:06	29°334'58	0°24'33	max. Earth dist.	4430 Feb 14 15:01	25°20'26	20.50389 AU
max. Earth dist.	4424 Jan 20 13:03	29°335'43	20.12877 AU	morning rise	4430 Mar 01 18:18	26°14'08	
	4424 Jan 27 04:45	0°		retrograde	4430 Jun 02 01:53	29°24'18	
morning rise	4424 Feb 05 00:59	0°31'52		opposition	4430 Aug 17 23:05	27°25'21	-0°44'25
retrograde	4424 May 06 16:38	3°45'03		min. Earth dist.	4430 Aug 17 09:43	27°26'42	18.53180 AU
opposition	4424 Jul 21 16:20	1°45'25	-0°28'53	direct	4430 Nov 02 21:16	25°26'07	
min. Earth dist.	4424 Jul 21 09:44	1°46'05	18.16144 AU	evening set	4431 Feb 02 19:57	28°34'49	
	4424 Sep 11 12:24	30°R3		conjunction	4431 Feb 18 11:29	29°30'09	-0°40'56
direct	4424 Oct 06 22:22	29°344'05		minimum elong	4431 Feb 18 11:28	29°30'09	0°40'55
	4424 Oct 31 19:42	0°		max. Earth dist.	4431 Feb 19 02:03	29°32'19	20.55887 AU
evening set	4425 Jan 08 03:14	2°59'21			4431 Feb 26 20:40	0°H	
conjunction	4425 Jan 23 20:56	3°56'10	-0°27'28	morning rise	4431 Mar 06 03:06	0°H25'32	

retrograde	4431 Jun 06 12:41	3°♄35'12	conjunction	4438 Mar 18 10:37	28°♄11'52 -0°46'26
opposition	4431 Aug 22 13:49	1°♄36'15 -0°46'11	minimum elong	4438 Mar 18 10:37	28°♄11'52 0°46'26
min. Earth dist.	4431 Aug 21 23:32	1°♄37'42 18.58553 AU	max. Earth dist.	4438 Mar 19 06:55	28°♄14'49 20.88161 AU
	4431 Oct 07 20:33	30°♄	morning rise	4438 Apr 03 04:33	29°♄06'25
direct	4431 Nov 07 11:24	29°♄37'16		4438 Apr 19 12:32	0°♄
	4431 Dec 07 09:53	0°♄	retrograde	4438 Jul 05 11:10	2°♄13'52
evening set	4432 Feb 07 04:16	2°♄44'56	min. Earth dist.	4438 Sep 20 08:40	0°♄17'06 18.89987 AU
			opposition	4438 Sep 21 04:39	0°♄15'06 -0°51'18
conjunction	4432 Feb 22 19:31	3°♄40'03 -0°42'25		4438 Sep 27 12:12	30°♄
minimum elong	4432 Feb 22 19:31	3°♄40'03 0°42'25	direct	4438 Dec 06 12:41	28°♄17'55
max. Earth dist.	4432 Feb 23 10:06	3°♄42'13 20.61145 AU		4439 Feb 09 20:03	0°♄
morning rise	4432 Mar 09 11:27	4°♄35'16	evening set	4439 Mar 06 23:57	1°♄19'54
retrograde	4432 Jun 10 00:28	7°♄44'29			
opposition	4432 Aug 26 03:57	5°♄45'31 -0°47'41	conjunction	4439 Mar 22 16:23	2°♄14'06 -0°46'18
min. Earth dist.	4432 Aug 25 12:39	5°♄47'04 18.63714 AU	minimum elong	4439 Mar 22 16:23	2°♄14'06 0°46'18
direct	4432 Nov 10 23:49	3°♄46'46	max. Earth dist.	4439 Mar 23 14:06	2°♄17'15 20.91642 AU
evening set	4433 Feb 10 11:46	6°♄53'26	morning rise	4439 Apr 07 10:42	3°♄08'36
			retrograde	4439 Jul 09 21:02	6°♄15'52
conjunction	4433 Feb 26 03:06	7°♄48'22 -0°43'40	opposition	4439 Sep 25 14:57	4°♄17'10 -0°51'00
minimum elong	4433 Feb 26 03:06	7°♄48'22 0°43'41	min. Earth dist.	4439 Sep 24 18:15	4°♄19'14 18.93257 AU
max. Earth dist.	4433 Feb 26 19:55	7°♄50'51 20.66193 AU	direct	4439 Dec 10 22:00	2°♄20'13
morning rise	4433 Mar 13 19:00	8°♄43'25	evening set	4440 Mar 10 05:13	5°♄21'38
retrograde	4433 Jun 14 10:19	11°♄52'14			
opposition	4433 Aug 30 17:25	9°♄53'16 -0°48'56	conjunction	4440 Mar 25 21:52	6°♄15'47 -0°45'56
min. Earth dist.	4433 Aug 30 00:51	9°♄54'56 18.68663 AU	minimum elong	4440 Mar 25 21:52	6°♄15'47 0°45'56
direct	4433 Nov 15 12:23	7°♄54'46	max. Earth dist.	4440 Mar 26 18:45	6°♄18'48 20.94690 AU
evening set	4434 Feb 14 18:57	11°♄00'29	morning rise	4440 Apr 10 16:56	7°♄10'15
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minimum elong	4434 Mar 02 10:06	11°♄55'15 0°44'41	opposition	4440 Sep 29 01:08	8°♄18'44 -0°50'28
max. Earth dist.	4434 Mar 03 02:58	11°♄57'44 20.71050 AU	direct	4440 Dec 14 04:40	6°♄21'59
morning rise	4434 Mar 18 02:25	12°♄50'10	evening set	4441 Mar 14 10:08	9°♄22'54
retrograde	4434 Jun 18 20:55	15°♄58'37			
opposition	4434 Sep 04 06:21	13°♄59'39 -0°49'55	conjunction	4441 Mar 30 03:22	10°♄17'00 -0°45'21
min. Earth dist.	4434 Sep 03 12:56	14°♄01'24 18.73439 AU	minimum elong	4441 Mar 30 03:23	10°♄17'00 0°45'20
direct	4434 Nov 19 23:00	12°♄01'24	max. Earth dist.	4441 Mar 31 01:16	10°♄20'10 20.97262 AU
evening set	4435 Feb 19 01:19	15°♄06'15	morning rise	4441 Apr 14 22:53	11°♄11'27
			retrograde	4441 Jul 17 14:39	14°♄18'32
conjunction	4435 Mar 06 16:45	16°♄00'52 -0°45'28	opposition	4441 Oct 03 10:55	12°♄19'51 -0°49'41
minimum elong	4435 Mar 06 16:45	16°♄00'52 0°45'29	min. Earth dist.	4441 Oct 02 14:11	12°♄21'56 18.98389 AU
max. Earth dist.	4435 Mar 07 11:43	16°♄03'39 20.75717 AU	direct	4441 Dec 18 13:45	10°♄23'15
morning rise	4435 Mar 22 09:14	16°♄55'39	evening set	4442 Mar 18 15:13	13°♄23'43
retrograde	4435 Jun 23 06:45	20°♄03'47			
opposition	4435 Sep 08 18:37	18°♄04'52 -0°50'39	conjunction	4442 Apr 03 08:49	14°♄17'48 -0°44'32
min. Earth dist.	4435 Sep 07 23:58	18°♄06'44 18.77990 AU	minimum elong	4442 Apr 03 08:49	14°♄17'48 0°44'33
direct	4435 Nov 24 09:56	16°♄06'53	max. Earth dist.	4442 Apr 04 05:33	14°♄20'47 20.99306 AU
evening set	4436 Feb 23 07:33	19°♄10'55	morning rise	4442 Apr 19 05:10	15°♄12'15
			retrograde	4442 Jul 21 23:08	18°♄19'16
conjunction	4436 Mar 09 22:58	20°♄05'24 -0°46'01	opposition	4442 Oct 07 20:25	16°♄20'32 -0°48'40
minimum elong	4436 Mar 09 22:58	20°♄05'24 0°46'01	min. Earth dist.	4442 Oct 07 00:37	16°♄22'31 19.00173 AU
max. Earth dist.	4436 Mar 10 17:47	20°♄08'09 20.80149 AU	direct	4442 Dec 22 19:53	14°♄24'01
morning rise	4436 Mar 25 15:59	21°♄00'06	evening set	4443 Mar 22 19:59	17°♄24'04
retrograde	4436 Jun 26 16:15	24°♄07'56			
min. Earth dist.	4436 Sep 11 11:20	22°♄10'59 18.82302 AU	conjunction	4443 Apr 07 14:22	18°♄18'09 -0°43'30
opposition	4436 Sep 12 06:19	22°♄09'05 -0°51'07	minimum elong	4443 Apr 07 14:22	18°♄18'09 0°43'30
direct	4436 Nov 27 19:00	20°♄11'21	max. Earth dist.	4443 Apr 08 11:47	18°♄21'14 21.00818 AU
evening set	4437 Feb 26 13:15	23°♄14'39	morning rise	4443 Apr 23 11:19	19°♄12'37
			retrograde	4443 Jul 26 07:22	22°♄19'34
conjunction	4437 Mar 14 05:03	24°♄09'01 -0°46'21	min. Earth dist.	4443 Oct 11 09:09	20°♄22'47 19.01406 AU
minimum elong	4437 Mar 14 05:03	24°♄09'01 0°46'21	opposition	4443 Oct 12 05:26	20°♄20'46 -0°47'24
max. Earth dist.	4437 Mar 15 01:40	24°♄12'02 20.84316 AU	direct	4443 Dec 27 04:11	18°♄24'17
morning rise	4437 Mar 29 22:19	25°♄03'38	evening set	4444 Mar 26 00:52	21°♄23'58
retrograde	4437 Jul 01 02:21	28°♄11'14			
opposition	4437 Sep 16 17:38	26°♄12'26 -0°51'20	conjunction	4444 Apr 10 19:41	22°♄18'03 -0°42'16
min. Earth dist.	4437 Sep 15 21:35	26°♄14'27 18.86310 AU	minimum elong	4444 Apr 10 19:41	22°♄18'03 0°42'17
direct	4437 Dec 02 04:53	24°♄15'00	max. Earth dist.	4444 Apr 11 15:53	22°♄20'58 21.01796 AU
evening set	4438 Mar 02 18:43	27°♄17'36	morning rise	4444 Apr 26 17:33	23°♄12'34

retrograde	4444 Jul 29 15:19	26°♈19'28	opposition	4450 Nov 09 13:17	18°♈16'21 -0°32'38
opposition	4444 Oct 15 14:08	24°♈20'33 -0°45'55	min. Earth dist.	4450 Nov 08 20:14	18°♈18'05 18.98437 AU
min. Earth dist.	4444 Oct 14 18:57	24°♈22'28 19.02144 AU	direct	4451 Jan 23 20:15	16°♈19'38
direct	4444 Dec 30 09:48	22°♈24'05	evening set	4451 Apr 23 12:33	19°♈18'43
evening set	4445 Mar 30 05:30	25°♈23'27			
conjunction	4445 Apr 15 01:09	26°♈17'34 -0°40'49	conjunction	4451 May 09 13:04	20°♈13'23 -0°28'17
minimum elong	4445 Apr 15 01:09	26°♈17'34 0°40'49	minimum elong	4451 May 09 13:04	20°♈13'23 0°28'19
max. Earth dist.	4445 Apr 15 22:10	26°♈20'35 21.02309 AU	max. Earth dist.	4451 May 10 08:08	20°♈16'06 20.97539 AU
morning rise	4445 Apr 30 23:40	27°♈12'07	morning rise	4451 May 25 16:56	21°♈08'33
	4445 Jul 05 23:04	0°♈	retrograde	4451 Aug 28 02:43	24°♈16'17
retrograde	4445 Aug 02 23:16	0°♈19'01	opposition	4451 Nov 13 20:47	22°♈16'38 -0°29'47
	4445 Aug 31 10:34	30°♈♈	min. Earth dist.	4451 Nov 13 03:29	22°♈18'23 18.96585 AU
opposition	4445 Oct 19 22:29	28°♈19'58 -0°44'12	direct	4452 Jan 28 02:33	20°♈19'52
min. Earth dist.	4445 Oct 19 02:40	28°♈21'57 19.02435 AU	evening set	4452 Apr 26 18:58	23°♈19'10
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max. Earth dist.	4446 Apr 20 02:26	0°♈19'38 21.02399 AU	retrograde	4452 Aug 31 11:43	28°♈17'21
morning rise	4446 May 05 05:58	1°♈11'23	opposition	4452 Nov 17 04:30	26°♈17'37 -0°26'48
retrograde	4446 Aug 07 06:57	4°♈18'19	min. Earth dist.	4452 Nov 16 13:03	26°♈19'11 18.94347 AU
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opposition	4446 Oct 24 06:42	2°♈19'08 -0°42'16	evening set	4453 May 01 01:47	27°♈20'22
direct	4447 Jan 07 22:03	0°♈22'36			
evening set	4447 Apr 07 15:01	3°♈21'33	conjunction	4453 May 17 04:05	28°♈15'21 -0°22'53
conjunction	4447 Apr 23 12:09	4°♈15'47 -0°37'20	minimum elong	4453 May 17 04:05	28°♈15'21 0°22'53
minimum elong	4447 Apr 23 12:09	4°♈15'47 0°37'20	max. Earth dist.	4453 May 17 21:22	28°♈17'49 20.93059 AU
max. Earth dist.	4447 Apr 24 08:53	4°♈18'45 21.02118 AU	morning rise	4453 Jun 02 09:47	29°♈10'51
morning rise	4447 May 09 12:22	5°♈10'29		4453 Jun 17 12:51	0°♈
retrograde	4447 Aug 11 15:20	8°♈17'29	retrograde	4453 Sep 04 22:39	2°♈19'13
opposition	4447 Oct 28 14:20	6°♈18'11 -0°40'08	opposition	4453 Nov 21 12:12	0°♈19'25 -0°23'39
min. Earth dist.	4447 Oct 27 19:03	6°♈20'07 19.01872 AU	min. Earth dist.	4453 Nov 20 20:49	0°♈20'59 18.91684 AU
direct	4448 Jan 12 05:06	4°♈21'36		4453 Nov 29 12:05	30°♈
evening set	4448 Apr 10 20:07	7°♈20'29	direct	4454 Feb 04 14:04	28°♈22'28
conjunction	4448 Apr 26 17:52	8°♈14'47 -0°35'19		4454 Apr 09 01:13	0°♈
minimum elong	4448 Apr 26 17:52	8°♈14'47 0°35'19	evening set	4454 May 05 09:19	1°♈22'26
max. Earth dist.	4448 Apr 27 13:24	8°♈17'35 21.01479 AU	conjunction	4454 May 21 12:25	2°♈17'36 -0°19'59
morning rise	4448 May 12 19:06	9°♈09'35	minimum elong	4454 May 21 12:25	2°♈17'36 0°19'59
retrograde	4448 Aug 14 23:05	12°♈16'42	max. Earth dist.	4454 May 22 03:39	2°♈19'46 20.90168 AU
opposition	4448 Oct 31 22:08	10°♈17'18 -0°37'49	morning rise	4454 Jun 06 19:11	3°♈13'17
min. Earth dist.	4448 Oct 31 04:05	10°♈19'07 19.01067 AU	retrograde	4454 Sep 09 08:18	6°♈22'01
direct	4449 Jan 15 09:13	8°♈20'40	opposition	4454 Nov 25 20:13	4°♈22'06 -0°20'23
evening set	4449 Apr 15 01:07	11°♈19'32	min. Earth dist.	4454 Nov 25 07:04	4°♈23'27 18.88556 AU
conjunction	4449 Apr 30 23:50	12°♈13'56 -0°33'08	direct	4455 Feb 08 19:24	2°♈25'00
minimum elong	4449 Apr 30 23:51	12°♈13'56 0°33'09	evening set	4455 May 09 17:23	5°♈25'23
max. Earth dist.	4449 May 01 20:02	12°♈16'50 21.00509 AU	conjunction	4455 May 25 21:34	6°♈20'45 -0°16'59
morning rise	4449 May 17 01:50	13°♈08'50	minimum elong	4455 May 25 21:34	6°♈20'45 0°16'58
	4449 Jun 23 02:48	15°♈	max. Earth dist.	4455 May 26 12:08	6°♈22'51 20.86801 AU
retrograde	4449 Aug 19 08:20	16°♈16'08	morning rise	4455 Jun 11 05:08	7°♈16'38
	4449 Oct 17 21:26	15°♈	retrograde	4455 Sep 13 20:05	10°♈25'43
min. Earth dist.	4449 Nov 04 11:08	14°♈18'30 18.99920 AU	opposition	4455 Nov 30 04:08	8°♈25'42 -0°17'00
opposition	4449 Nov 05 05:43	14°♈16'37 -0°35'18	min. Earth dist.	4455 Nov 29 15:18	8°♈27'01 18.84937 AU
direct	4450 Jan 19 15:54	12°♈19'58	direct	4456 Feb 13 03:04	6°♈28'24
	4450 Apr 13 14:01	15°♈	evening set	4456 May 13 02:07	9°♈29'16
evening set	4450 Apr 19 06:43	15°♈18'53	conjunction	4456 May 29 07:07	10°♈24'50 -0°13'52
conjunction	4450 May 05 06:09	16°♈13'25 -0°30'47	minimum elong	4456 May 29 07:06	10°♈24'50 0°13'53
minimum elong	4450 May 05 06:09	16°♈13'25 0°30'47	behind sun begin	4456 May 29 03:43	10°♈24'21
max. Earth dist.	4450 May 06 00:59	16°♈16'06 20.99195 AU	behind sun end	4456 May 29 10:30	10°♈25'18
morning rise	4450 May 21 09:13	17°♈08'27	max. Earth dist.	4456 May 29 19:27	10°♈26'36 20.82948 AU
retrograde	4450 Aug 23 16:37	20°♈15'57	morning rise	4456 Jun 14 15:42	11°♈20'55
			retrograde	4456 Sep 17 05:51	14°♈30'24
			opposition	4456 Dec 03 12:30	12°♈30'12 -0°13'31
			min. Earth dist.	4456 Dec 03 01:58	12°♈31'17 18.80857 AU


























































































































































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				behind sun begin	4462 Jun 23 23:02	5°☾10'21	
conjunction	4457 Jun 02 17:12	14°II29'50 -0°10'41		behind sun end	4462 Jun 24 11:49	5°☾12'09	
minimum elong	4457 Jun 02 17:12	14°II29'50 0°10'41		max. Earth dist.	4462 Jun 24 09:55	5°☾11'53	20.52849 AU
behind sun begin	4457 Jun 02 12:05	14°II29'07		morning rise	4462 Jul 10 18:57	6°☾08'44	
behind sun end	4457 Jun 02 22:19	14°II30'33		retrograde	4462 Oct 13 08:10	9°☾21'00	
max. Earth dist.	4457 Jun 03 04:55	14°II31'31 20.78666 AU		opposition	4462 Dec 28 18:31	7°☾19'45	0°08'31
morning rise	4457 Jun 19 02:36	15°II26'08		min. Earth dist.	4462 Dec 28 15:19	7°☾20'05	18.50020 AU
retrograde	4457 Sep 21 18:49	18°II36'01		direct	4463 Mar 13 09:29	5°☾20'23	
opposition	4457 Dec 07 20:51	16°II35'39 -0°09'57		evening set	4463 Jun 12 08:10	8°☾26'15	
min. Earth dist.	4457 Dec 07 10:36	16°II36'42 18.76367 AU					
direct	4458 Feb 20 17:14	14°II37'50		conjunction	4463 Jun 28 19:43	9°☾23'35	0°09'22
evening set	4458 May 21 20:59	17°II39'48		minimum elong	4463 Jun 28 19:43	9°☾23'35	0°09'21
				behind sun begin	4463 Jun 28 14:07	9°☾22'47	
conjunction	4458 Jun 07 03:56	18°II35'49 -0°07'27		behind sun end	4463 Jun 29 01:20	9°☾24'23	
minimum elong	4458 Jun 07 03:56	18°II35'49 0°07'28		max. Earth dist.	4463 Jun 28 23:08	9°☾24'03	20.47194 AU
behind sun begin	4458 Jun 06 21:50	18°II34'58		morning rise	4463 Jul 15 09:53	10°☾21'18	
behind sun end	4458 Jun 07 10:01	18°II36'40		retrograde	4463 Oct 17 23:10	13°☾34'08	
max. Earth dist.	4458 Jun 07 13:36	18°II37'12 20.73997 AU		opposition	4464 Jan 02 04:40	11°☾32'46	0°12'12
morning rise	4458 Jun 23 14:19	19°II32'20		min. Earth dist.	4464 Jan 02 01:42	11°☾33'05	18.44317 AU
retrograde	4458 Sep 26 04:51	22°II42'38		direct	4464 Mar 16 20:26	9°☾33'07	
opposition	4458 Dec 12 05:23	20°II42'04 -0°06'19		evening set	4464 Jun 15 22:30	12°☾39'57	
min. Earth dist.	4458 Dec 11 21:29	20°II42'53 18.71537 AU					
direct	4459 Feb 24 23:08	18°II43'57		conjunction	4464 Jul 02 10:48	13°☾37'33	0°12'40
evening set	4459 May 26 07:22	21°II46'35		minimum elong	4464 Jul 02 10:48	13°☾37'33	0°12'40
				behind sun begin	4464 Jul 02 06:37	13°☾36'57	
conjunction	4459 Jun 11 15:23	22°II42'50 -0°04'09		behind sun end	4464 Jul 02 14:58	13°☾38'09	
minimum elong	4459 Jun 11 15:23	22°II42'50 0°04'09		max. Earth dist.	4464 Jul 02 12:34	13°☾37'48	20.41448 AU
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behind sun end	4459 Jun 11 21:58	22°II43'46		retrograde	4464 Oct 21 12:47	17°☾48'57	
max. Earth dist.	4459 Jun 12 00:19	22°II44'07 20.69029 AU		opposition	4465 Jan 05 15:32	15°☾47'29	0°15'51
morning rise	4459 Jun 28 02:32	23°II39'35		min. Earth dist.	4465 Jan 05 14:43	15°☾47'34	18.38538 AU
retrograde	4459 Sep 30 18:37	26°II50'20		direct	4465 Mar 21 06:05	13°☾47'33	
opposition	4459 Dec 16 14:06	24°II49'35 -0°02'38		evening set	4465 Jun 20 13:35	16°☾55'24	
min. Earth dist.	4459 Dec 16 06:25	24°II50'23 18.66432 AU					
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evening set	4460 May 29 18:25	25°II54'29		minimum elong	4465 Jul 07 02:44	17°☾53'18	0°15'55
				max. Earth dist.	4465 Jul 07 03:08	17°☾53'21	20.35641 AU
conjunction	4460 Jun 15 03:14	26°II51'00 -0°00'46		morning rise	4465 Jul 23 18:10	18°☾51'32	
minimum elong	4460 Jun 15 03:13	26°II51'00 0°00'46		retrograde	4465 Oct 26 04:49	22°☾05'34	
behind sun begin	4460 Jun 14 20:31	26°II50'04		opposition	4466 Jan 10 02:49	20°☾04'00	0°19'26
behind sun end	4460 Jun 15 09:54	26°II51'57		min. Earth dist.	4466 Jan 10 02:31	20°☾04'02	18.32681 AU
max. Earth dist.	4460 Jun 15 10:19	26°II52'01 20.63803 AU		direct	4466 Mar 25 18:01	18°☾03'46	
morning rise	4460 Jul 01 15:13	27°II47'59		evening set	4466 Jun 25 05:57	21°☾12'43	
	4460 Aug 15 14:55	0°☾					
asc. node	4460 Sep 04 12:59	0°☾37'23		conjunction	4466 Jul 11 19:47	22°☾10'53	0°19'07
retrograde	4460 Oct 04 05:35	0°☾59'14		minimum elong	4466 Jul 11 19:47	22°☾10'53	0°19'07
	4460 Nov 23 22:51	30°☾II		max. Earth dist.	4466 Jul 11 18:29	22°☾10'42	20.29726 AU
opposition	4460 Dec 19 23:18	28°II58'17 0°01'04		morning rise	4466 Jul 28 11:41	23°☾09'23	
min. Earth dist.	4460 Dec 19 17:46	28°II58'52 18.61110 AU		retrograde	4466 Oct 30 19:56	26°☾24'00	
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	4461 Jun 02 04:15	0°☾		min. Earth dist.	4467 Jan 14 16:49	24°☾22'10	18.26715 AU
evening set	4461 Jun 03 06:09	0°☾03'40		direct	4467 Mar 30 05:30	22°☾21'51	
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minimum elong	4461 Jun 19 15:58	1°☾00'26 0°02'40		conjunction	4467 Jul 16 13:45	26°☾30'22	0°22'14
behind sun begin	4461 Jun 19 09:17	0°☾59'29		minimum elong	4467 Jul 16 13:44	26°☾30'22	0°22'14
behind sun end	4461 Jun 19 22:40	1°☾01'23		max. Earth dist.	4467 Jul 16 10:26	26°☾29'53	20.23706 AU
max. Earth dist.	4461 Jun 19 22:16	1°☾01'19 20.58402 AU		morning rise	4467 Aug 02 06:07	27°☾29'07	
morning rise	4461 Jul 06 04:43	1°☾57'40			4467 Sep 23 13:57	0°♈	
retrograde	4461 Oct 08 19:52	5°☾09'24		retrograde	4467 Nov 04 13:06	0°♈44'21	
opposition	4461 Dec 24 08:36	3°☾08'18 0°04'48			4467 Dec 17 03:31	30°☾R☾	
min. Earth dist.	4461 Dec 24 03:15	3°☾08'51 18.55630 AU		opposition	4468 Jan 19 03:13	28°☾42'38	0°26'22
direct	4462 Mar 09 01:30	1°☾09'15		min. Earth dist.	4468 Jan 19 06:06	28°☾42'19	18.20631 AU
evening set	4462 Jun 07 18:48	4°☾14'12		direct	4468 Apr 02 19:03	26°☾41'46	
				evening set	4468 Jul 03 17:21	29°☾52'56	

	4468 Jul 05 18:01	0°♈		max. Earth dist.	4474 Aug 17 03:46	27°♊32'36	19.80292 AU
				morning rise	4474 Sep 03 11:26	28°♊35'05	
conjunction	4468 Jul 20 08:29	0°♊51'41 0°25'15			4474 Sep 28 23:37	0°♐	
minimum elong	4468 Jul 20 08:29	0°♊51'41 0°25'14		retrograde	4474 Dec 06 00:22	1°♐54'03	
max. Earth dist.	4468 Jul 20 03:33	0°♊50'57 20.17544 AU			4475 Feb 15 04:26	30°♐♌	
morning rise	4468 Aug 06 01:09	1°♊50'40		opposition	4475 Feb 18 11:48	29°♊51'24 0°45'28	
retrograde	4468 Nov 08 05:29	5°♊06'30		min. Earth dist.	4475 Feb 19 00:40	29°♊50'01 17.77449 AU	
opposition	4469 Jan 22 16:31	3°♊04'40 0°29'39		direct	4475 May 04 10:05	27°♊47'47	
min. Earth dist.	4469 Jan 22 21:43	3°♊04'07 18.14413 AU			4475 Jul 17 07:07	0°♐	
direct	4469 Apr 07 08:01	1°♊03'27		evening set	4475 Aug 06 00:25	1°♐06'58	
evening set	4469 Jul 08 12:30	4°♊15'45					
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conjunction	4469 Jul 25 04:12	5°♊14'46 0°28'08		minimum elong	4475 Aug 22 17:59	2°♐07'30 0°41'42	
minimum elong	4469 Jul 25 04:12	5°♊14'46 0°28'08		max. Earth dist.	4475 Aug 22 01:26	2°♐04'59 19.74670 AU	
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morning rise	4469 Aug 10 21:17	6°♊14'00		retrograde	4475 Dec 10 21:03	6°♐27'27	
retrograde	4469 Nov 13 00:02	9°♊30'24		opposition	4476 Feb 23 05:14	4°♐24'43 0°47'15	
opposition	4470 Jan 27 06:09	7°♊28'26 0°32'47		min. Earth dist.	4476 Feb 23 18:55	4°♐23'14 17.72005 AU	
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direct	4470 Apr 11 23:18	5°♊26'48		evening set	4476 Aug 10 00:44	5°♐41'04	
evening set	4470 Jul 13 08:33	8°♊40'15					
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conjunction	4470 Jul 30 00:50	9°♊39'33 0°30'53		minimum elong	4476 Aug 26 18:33	6°♐41'49 0°43'10	
minimum elong	4470 Jul 30 00:50	9°♊39'33 0°30'52		max. Earth dist.	4476 Aug 26 02:14	6°♐39'20 19.69394 AU	
max. Earth dist.	4470 Jul 29 16:11	9°♊38'16 20.04937 AU		morning rise	4476 Sep 12 11:30	7°♐42'30	
morning rise	4470 Aug 15 18:03	10°♊39'01		retrograde	4476 Dec 14 19:14	11°♐02'23	
retrograde	4470 Nov 17 17:34	13°♊55'57		opposition	4477 Feb 26 23:20	8°♐59'37 0°48'45	
opposition	4471 Jan 31 20:35	11°♊53'51 0°35'46		min. Earth dist.	4477 Feb 27 13:38	8°♐58'04 17.66917 AU	
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direct	4471 Apr 16 13:46	9°♊51'49		evening set	4477 Aug 15 02:06	10°♐16'47	
evening set	4471 Jul 18 05:22	13°♊06'25					
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conjunction	4471 Aug 03 21:58	14°♊05'58 0°33'28		minimum elong	4477 Aug 31 19:44	11°♐17'44 0°44'21	
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conjunction	4472 Aug 07 20:01	18°♊33'59 0°35'51		retrograde	4478 Dec 24 15:25	20°♐16'59	
minimum elong	4472 Aug 07 20:01	18°♊33'59 0°35'51		opposition	4479 Mar 08 13:25	18°♐14'15 0°50'48	
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morning rise	4472 Aug 24 13:27	19°♊33'54		direct	4479 May 22 17:26	16°♐09'36	
retrograde	4472 Nov 26 07:51	22°♊51'53		evening set	4479 Aug 25 06:31	19°♐33'06	
opposition	4473 Feb 09 02:58	20°♊49'29 0°41'05					
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direct	4473 Apr 24 22:30	18°♊46'38		minimum elong	4479 Sep 10 23:48	20°♐34'24 0°45'55	
evening set	4473 Jul 27 01:20	22°♊03'31		max. Earth dist.	4479 Sep 10 03:52	20°♐31'20 19.55921 AU	
				morning rise	4479 Sep 27 15:40	21°♐35'29	
conjunction	4473 Aug 12 18:37	23°♊03'35 0°38'02		retrograde	4479 Dec 29 12:36	24°♐56'37	
minimum elong	4473 Aug 12 18:37	23°♊03'35 0°38'02		opposition	4480 Mar 12 09:34	22°♐53'55 0°51'21	
max. Earth dist.	4473 Aug 12 04:31	23°♊01'28 19.86204 AU		min. Earth dist.	4480 Mar 13 02:33	22°♐52'04 17.54044 AU	
morning rise	4473 Aug 29 12:14	24°♊03'43		direct	4480 May 26 14:53	20°♐49'04	
retrograde	4473 Dec 01 03:58	27°♊22'12		evening set	4480 Aug 29 09:33	24°♐13'35	
opposition	4474 Feb 13 19:05	25°♊19'40 0°43'24		max. Earth dist.	4480 Sep 14 06:50	25°♐11'56 19.52192 AU	
min. Earth dist.	4474 Feb 14 06:48	25°♊18'24 17.83225 AU					
direct	4474 Apr 29 16:11	23°♊16'24		conjunction	4480 Sep 15 02:41	25°♐15'00 0°46'15	
evening set	4474 Aug 01 00:28	26°♊34'27		minimum elong	4480 Sep 15 02:41	25°♐15'00 0°46'14	
				morning rise	4480 Oct 01 17:55	26°♐16'10	
conjunction	4474 Aug 17 18:05	27°♊34'46 0°39'59		retrograde	4481 Jan 02 12:24	29°♐37'37	
minimum elong	4474 Aug 17 18:05	27°♊34'46 0°40'00		opposition	4481 Mar 17 06:12	27°♐34'59 0°51'34	

min. Earth dist.	4481 Mar 17 23:18	27° <u>0</u> 33'07	17.50484 AU	minimum elong	4487 Oct 20 03:26	28° <u>0</u> 23'42	0°39'58
direct	4481 May 31 14:56	25° <u>0</u> 29'58		morning rise	4487 Nov 05 13:03	29° <u>0</u> 24'55	
evening set	4481 Sep 03 13:16	28° <u>0</u> 55'22			4487 Nov 15 07:01	0° <u>0</u>	
max. Earth dist.	4481 Sep 19 08:24	29° <u>0</u> 53'34	19.48794 AU	retrograde	4488 Feb 05 08:06	2° <u>0</u> 46'53	
				opposition	4488 Apr 18 21:36	0° <u>0</u> 44'23	0°43'27
conjunction	4481 Sep 20 05:55	29° <u>0</u> 56'54	0°46'16	min. Earth dist.	4488 Apr 19 17:09	0° <u>0</u> 42'16	17.36151 AU
minimum elong	4481 Sep 20 05:55	29° <u>0</u> 56'54	0°46'17		4488 May 06 05:50	30° <u>0</u> 4	
	4481 Sep 21 01:59	0° <u>0</u>		direct	4488 Jul 03 23:23	28° <u>0</u> 38'19	
morning rise	4481 Oct 06 20:35	0° <u>0</u> 58'09			4488 Aug 29 19:49	0° <u>0</u>	
retrograde	4482 Jan 07 10:06	4° <u>0</u> 19'52		evening set	4488 Oct 07 18:23	2° <u>0</u> 07'13	
opposition	4482 Mar 22 03:40	2° <u>0</u> 17'16	0°51'27	max. Earth dist.	4488 Oct 23 08:06	3° <u>0</u> 05'19	19.36006 AU
min. Earth dist.	4482 Mar 22 22:16	2° <u>0</u> 15'14	17.47261 AU				
direct	4482 Jun 05 14:04	0° <u>0</u> 12'04		conjunction	4488 Oct 24 06:24	3° <u>0</u> 08'49	0°37'53
evening set	4482 Sep 08 17:11	3° <u>0</u> 38'17		minimum elong	4488 Oct 24 06:24	3° <u>0</u> 08'49	0°37'52
max. Earth dist.	4482 Sep 24 11:44	4° <u>0</u> 36'32	19.45732 AU	morning rise	4488 Nov 09 15:14	4° <u>0</u> 09'57	
				retrograde	4489 Feb 09 08:27	7° <u>0</u> 31'46	
conjunction	4482 Sep 25 09:26	4° <u>0</u> 39'54	0°45'59	opposition	4489 Apr 23 21:28	5° <u>0</u> 29'18	0°40'59
minimum elong	4482 Sep 25 09:26	4° <u>0</u> 39'54	0°45'59	min. Earth dist.	4489 Apr 24 15:37	5° <u>0</u> 27'20	17.36079 AU
morning rise	4482 Oct 11 23:21	5° <u>0</u> 41'12		direct	4489 Jul 09 03:12	3° <u>0</u> 23'11	
retrograde	4483 Jan 12 10:32	9° <u>0</u> 03'07		evening set	4489 Oct 12 21:58	6° <u>0</u> 52'11	
opposition	4483 Mar 27 01:33	7° <u>0</u> 00'33	0°50'58				
min. Earth dist.	4483 Mar 27 19:51	6° <u>0</u> 58'33	17.44364 AU	conjunction	4489 Oct 29 09:14	7° <u>0</u> 53'42	0°35'33
direct	4483 Jun 10 16:01	4° <u>0</u> 55'11		minimum elong	4489 Oct 29 09:14	7° <u>0</u> 53'42	0°35'33
evening set	4483 Sep 13 21:26	8° <u>0</u> 22'06		max. Earth dist.	4489 Oct 28 12:44	7° <u>0</u> 50'29	19.36235 AU
				morning rise	4489 Nov 14 16:53	8° <u>0</u> 54'43	
conjunction	4483 Sep 30 13:08	9° <u>0</u> 23'46	0°45'24	retrograde	4490 Feb 14 06:44	12° <u>0</u> 16'21	
minimum elong	4483 Sep 30 13:08	9° <u>0</u> 23'46	0°45'23	opposition	4490 Apr 28 21:52	10° <u>0</u> 13'59	0°38'15
max. Earth dist.	4483 Sep 29 14:31	9° <u>0</u> 20'15	19.43010 AU	min. Earth dist.	4490 Apr 29 15:59	10° <u>0</u> 12'00	17.36617 AU
morning rise	4483 Oct 17 02:16	10° <u>0</u> 25'06		direct	4490 Jul 14 04:45	8° <u>0</u> 07'53	
retrograde	4484 Jan 17 09:00	13° <u>0</u> 47'09		evening set	4490 Oct 18 01:14	11° <u>0</u> 36'53	
opposition	4484 Mar 31 00:04	11° <u>0</u> 44'36	0°50'08				
min. Earth dist.	4484 Mar 31 19:44	11° <u>0</u> 42'27	17.41838 AU	conjunction	4490 Nov 03 11:22	12° <u>0</u> 38'16	0°32'58
direct	4484 Jun 14 16:01	9° <u>0</u> 39'03		minimum elong	4490 Nov 03 11:22	12° <u>0</u> 38'16	0°32'58
evening set	4484 Sep 18 01:40	13° <u>0</u> 06'35		max. Earth dist.	4490 Nov 02 14:49	12° <u>0</u> 35'03	19.37098 AU
				morning rise	4490 Nov 19 18:09	13° <u>0</u> 39'10	
conjunction	4484 Oct 04 16:48	14° <u>0</u> 08'17	0°44'29		4490 Dec 13 00:35	15° <u>0</u>	
minimum elong	4484 Oct 04 16:48	14° <u>0</u> 08'17	0°44'30	retrograde	4491 Feb 19 06:37	17° <u>0</u> 00'36	
max. Earth dist.	4484 Oct 03 17:55	14° <u>0</u> 04'43	19.40683 AU	opposition	4491 May 03 22:17	14° <u>0</u> 58'20	0°35'15
morning rise	4484 Oct 21 05:14	15° <u>0</u> 09'38			4491 May 03 06:58	15° <u>0</u> 4	
retrograde	4485 Jan 21 09:57	18° <u>0</u> 31'45		min. Earth dist.	4491 May 04 14:51	14° <u>0</u> 56'33	17.37793 AU
opposition	4485 Apr 04 22:52	16° <u>0</u> 29'13	0°48'58	direct	4491 Jul 19 08:47	12° <u>0</u> 52'20	
min. Earth dist.	4485 Apr 05 17:50	16° <u>0</u> 27'09	17.39705 AU		4491 Sep 29 17:46	15° <u>0</u>	
direct	4485 Jun 19 18:47	14° <u>0</u> 23'30		evening set	4491 Oct 23 03:58	16° <u>0</u> 21'16	
evening set	4485 Sep 23 06:07	17° <u>0</u> 51'32					
				conjunction	4491 Nov 08 13:19	17° <u>0</u> 22'31	0°30'10
conjunction	4485 Oct 09 20:37	18° <u>0</u> 53'16	0°43'16	minimum elong	4491 Nov 08 13:19	17° <u>0</u> 22'31	0°30'11
minimum elong	4485 Oct 09 20:37	18° <u>0</u> 53'16	0°43'16	max. Earth dist.	4491 Nov 07 19:03	17° <u>0</u> 19'39	19.38582 AU
max. Earth dist.	4485 Oct 08 21:44	18° <u>0</u> 49'41	19.38759 AU	morning rise	4491 Nov 24 18:56	18° <u>0</u> 23'15	
morning rise	4485 Oct 26 08:05	19° <u>0</u> 54'35		retrograde	4492 Feb 24 04:42	21° <u>0</u> 44'26	
retrograde	4486 Jan 26 08:37	23° <u>0</u> 16'42		opposition	4492 May 07 22:47	19° <u>0</u> 42'21	0°32'01
opposition	4486 Apr 09 22:08	21° <u>0</u> 14'11	0°47'27	min. Earth dist.	4492 May 08 14:57	19° <u>0</u> 40'36	17.39564 AU
min. Earth dist.	4486 Apr 10 18:14	21° <u>0</u> 11'59	17.38013 AU	direct	4492 Jul 23 10:49	17° <u>0</u> 36'31	
direct	4486 Jun 24 19:07	19° <u>0</u> 08'19		evening set	4492 Oct 27 06:26	21° <u>0</u> 05'16	
evening set	4486 Sep 28 10:30	22° <u>0</u> 36'45					
max. Earth dist.	4486 Oct 14 00:59	23° <u>0</u> 34'50	19.37314 AU	conjunction	4492 Nov 12 14:37	22° <u>0</u> 06'21	0°27'11
				minimum elong	4492 Nov 12 14:37	22° <u>0</u> 06'21	0°27'12
conjunction	4486 Oct 15 00:10	23° <u>0</u> 38'28	0°41'46	max. Earth dist.	4492 Nov 11 20:20	22° <u>0</u> 03'29	19.40645 AU
minimum elong	4486 Oct 15 00:11	23° <u>0</u> 38'28	0°41'46	morning rise	4492 Nov 28 19:24	23° <u>0</u> 06'56	
morning rise	4486 Oct 31 10:52	24° <u>0</u> 39'45		retrograde	4493 Feb 28 04:01	26° <u>0</u> 27'50	
retrograde	4487 Jan 31 09:43	28° <u>0</u> 01'49		opposition	4493 May 12 23:23	24° <u>0</u> 25'56	0°28'35
opposition	4487 Apr 14 21:39	25° <u>0</u> 59'18	0°45'36	min. Earth dist.	4493 May 13 14:21	24° <u>0</u> 24'19	17.41889 AU
min. Earth dist.	4487 Apr 15 16:37	25° <u>0</u> 57'14	17.36814 AU	direct	4493 Jul 28 14:25	22° <u>0</u> 20'17	
direct	4487 Jun 29 22:32	23° <u>0</u> 53'18		evening set	4493 Nov 01 08:17	25° <u>0</u> 48'46	
evening set	4487 Oct 03 14:26	27° <u>0</u> 22'01					
max. Earth dist.	4487 Oct 19 05:21	28° <u>0</u> 20'14	19.36374 AU	conjunction	4493 Nov 17 15:35	26° <u>0</u> 49'40	0°24'01
				minimum elong	4493 Nov 17 15:35	26° <u>0</u> 49'40	0°24'01
conjunction	4487 Oct 20 03:26	28° <u>0</u> 23'42	0°39'57	max. Earth dist.	4493 Nov 16 23:32	26° <u>0</u> 47'09	19.43217 AU



morning rise	4493 Dec 03 19:10	27° $\mathbb{M}$ 50'04	minimum elong	4499 Dec 16 06:22	24° $\mathbb{Z}$ 49'13	0°02'42
	4494 Jan 12 21:11	0° $\mathbb{Z}$	behind sun begin	4499 Dec 15 23:46	24° $\mathbb{Z}$ 48'13	
retrograde	4494 Mar 05 02:01	1° $\mathbb{Z}$ 10'38	behind sun end	4499 Dec 16 12:59	24° $\mathbb{Z}$ 50'13	
	4494 Apr 27 13:52	30° $\mathbb{R}\mathbb{M}$	max. Earth dist.	4499 Dec 15 21:28	24° $\mathbb{Z}$ 47'51	19.66497 AU
opposition	4494 May 18 00:05	29° $\mathbb{M}$ 08'57	0°24'57	morning rise	4500 Jan 01 04:20	25° $\mathbb{Z}$ 48'13
min. Earth dist.	4494 May 18 14:14	29° $\mathbb{M}$ 07'26	17.44682 AU	retrograde	4500 Apr 02 09:45	29° $\mathbb{Z}$ 05'58
direct	4494 Aug 02 17:20	27° $\mathbb{M}$ 03'31		opposition	4500 Jun 16 00:46	27° $\mathbb{Z}$ 05'12
	4494 Oct 28 15:17	0° $\mathbb{Z}$		min. Earth dist.	4500 Jun 16 07:42	27° $\mathbb{Z}$ 04'28
evening set	4494 Nov 06 09:44	0° $\mathbb{Z}$ 31'37		17.68900 AU		
			direct	4500 Sep 01 03:41	25° $\mathbb{Z}$ 01'08	
conjunction	4494 Nov 22 15:49	1° $\mathbb{Z}$ 32'19	0°20'41	desc. node	4500 Sep 02 01:39	25° $\mathbb{Z}$ 01'10
minimum elong	4494 Nov 22 15:49	1° $\mathbb{Z}$ 32'19	0°20'43	evening set	4500 Dec 05 01:55	28° $\mathbb{Z}$ 24'56
max. Earth dist.	4494 Nov 21 23:56	1° $\mathbb{Z}$ 29'50	19.46237 AU			
morning rise	4494 Dec 08 18:30	2° $\mathbb{Z}$ 32'31		conjunction	4500 Dec 21 02:00	29° $\mathbb{Z}$ 24'07
retrograde	4495 Mar 10 00:11	5° $\mathbb{Z}$ 52'44		minimum elong	4500 Dec 21 01:58	29° $\mathbb{Z}$ 24'06
opposition	4495 May 23 00:46	3° $\mathbb{Z}$ 51'14	0°21'10	behind sun begin	4500 Dec 20 19:21	29° $\mathbb{Z}$ 23'07
min. Earth dist.	4495 May 23 14:00	3° $\mathbb{Z}$ 49'49	17.47915 AU	behind sun end	4500 Dec 21 08:34	29° $\mathbb{Z}$ 25'06
direct	4495 Aug 07 19:53	1° $\mathbb{Z}$ 46'01		max. Earth dist.	4500 Dec 20 18:39	29° $\mathbb{Z}$ 23'00
evening set	4495 Nov 11 10:15	5° $\mathbb{Z}$ 13'38		19.71396 AU		
				4500 Dec 30 17:40	0° $\mathbb{Z}$	
conjunction	4495 Nov 27 15:27	6° $\mathbb{Z}$ 14'07	0°17'14	morning rise	4501 Jan 05 23:04	0° $\mathbb{Z}$ 22'51
minimum elong	4495 Nov 27 15:27	6° $\mathbb{Z}$ 14'07	0°17'14	retrograde	4501 Apr 07 04:07	3° $\mathbb{Z}$ 40'00
max. Earth dist.	4495 Nov 27 01:38	6° $\mathbb{Z}$ 11'58	19.49663 AU	opposition	4501 Jun 20 23:45	1° $\mathbb{Z}$ 39'20
morning rise	4495 Dec 13 17:03	7° $\mathbb{Z}$ 14'06		min. Earth dist.	4501 Jun 21 06:07	1° $\mathbb{Z}$ 38'40
retrograde	4496 Mar 13 22:14	10° $\mathbb{Z}$ 33'54		17.73945 AU		
opposition	4496 May 27 01:19	8° $\mathbb{Z}$ 32'36	0°17'15		4501 Aug 05 17:22	30° $\mathbb{R}\mathbb{Z}$
min. Earth dist.	4496 May 27 13:17	8° $\mathbb{Z}$ 31'19	17.51506 AU	direct	4501 Sep 06 02:26	29° $\mathbb{Z}$ 35'30
direct	4496 Aug 11 22:54	6° $\mathbb{Z}$ 27'37		4501 Oct 06 23:39	0° $\mathbb{Z}$	
evening set	4496 Nov 15 10:21	9° $\mathbb{Z}$ 54'39		evening set	4501 Dec 09 21:24	2° $\mathbb{Z}$ 58'19
conjunction	4496 Dec 01 14:23	10° $\mathbb{Z}$ 54'53	0°13'41	conjunction	4501 Dec 25 20:26	3° $\mathbb{Z}$ 57'10
minimum elong	4496 Dec 01 14:23	10° $\mathbb{Z}$ 54'53	0°13'41	minimum elong	4501 Dec 25 20:27	3° $\mathbb{Z}$ 57'11
behind sun begin	4496 Dec 01 10:47	10° $\mathbb{Z}$ 54'20		behind sun begin	4501 Dec 25 14:00	3° $\mathbb{Z}$ 56'12
behind sun end	4496 Dec 01 17:59	10° $\mathbb{Z}$ 55'26		behind sun end	4501 Dec 26 02:54	3° $\mathbb{Z}$ 58'09
max. Earth dist.	4496 Dec 01 01:00	10° $\mathbb{Z}$ 52'48	19.53425 AU	max. Earth dist.	4501 Dec 25 14:46	3° $\mathbb{Z}$ 56'19
morning rise	4496 Dec 17 15:04	11° $\mathbb{Z}$ 54'39		19.76591 AU		
retrograde	4497 Mar 18 19:06	15° $\mathbb{Z}$ 13'59		morning rise	4502 Jan 10 16:49	4° $\mathbb{Z}$ 55'39
opposition	4497 Jun 01 01:36	13° $\mathbb{Z}$ 12'51	0°13'14	retrograde	4502 Apr 11 23:21	8° $\mathbb{Z}$ 12'12
min. Earth dist.	4497 Jun 01 12:59	13° $\mathbb{Z}$ 11'38	17.55432 AU	opposition	4502 Jun 25 22:07	6° $\mathbb{Z}$ 11'37
direct	4497 Aug 16 23:44	11° $\mathbb{Z}$ 08'05		min. Earth dist.	4502 Jun 26 01:45	6° $\mathbb{Z}$ 11'14
evening set	4497 Nov 20 09:36	14° $\mathbb{Z}$ 34'28		17.79283 AU		
				direct	4502 Sep 11 03:34	4° $\mathbb{Z}$ 08'03
conjunction	4497 Dec 06 12:39	15° $\mathbb{Z}$ 34'27	0°10'03	evening set	4502 Dec 14 15:58	7° $\mathbb{Z}$ 29'50
minimum elong	4497 Dec 06 12:39	15° $\mathbb{Z}$ 34'27	0°10'04			
behind sun begin	4497 Dec 06 07:18	15° $\mathbb{Z}$ 33'38		conjunction	4502 Dec 30 14:08	8° $\mathbb{Z}$ 28'24
behind sun end	4497 Dec 06 18:00	15° $\mathbb{Z}$ 35'16		minimum elong	4502 Dec 30 14:08	8° $\mathbb{Z}$ 28'24
max. Earth dist.	4497 Dec 06 01:04	15° $\mathbb{Z}$ 32'39	19.57505 AU	behind sun begin	4502 Dec 30 08:19	8° $\mathbb{Z}$ 27'32
morning rise	4497 Dec 22 12:20	16° $\mathbb{Z}$ 33'58		behind sun end	4502 Dec 30 19:56	8° $\mathbb{Z}$ 29'16
retrograde	4498 Mar 23 17:09	19° $\mathbb{Z}$ 52'48		max. Earth dist.	4502 Dec 30 10:43	8° $\mathbb{Z}$ 27'54
opposition	4498 Jun 06 01:45	17° $\mathbb{Z}$ 51'49	0°09'08	19.82082 AU		
min. Earth dist.	4498 Jun 06 11:23	17° $\mathbb{Z}$ 50'48	17.59643 AU	morning rise	4503 Jan 15 09:40	9° $\mathbb{Z}$ 26'36
direct	4498 Aug 22 02:20	15° $\mathbb{Z}$ 47'18		retrograde	4503 Apr 16 16:17	12° $\mathbb{Z}$ 42'33
evening set	4498 Nov 25 07:55	19° $\mathbb{Z}$ 12'53		opposition	4503 Jun 30 20:04	10° $\mathbb{Z}$ 42'04
				min. Earth dist.	4503 Jun 30 22:54	10° $\mathbb{Z}$ 41'47
conjunction	4498 Dec 11 09:53	20° $\mathbb{Z}$ 12'36	0°06'23	17.84940 AU		
minimum elong	4498 Dec 11 09:53	20° $\mathbb{Z}$ 12'36	0°06'23	direct	4503 Sep 16 01:09	8° $\mathbb{Z}$ 38'49
behind sun begin	4498 Dec 11 03:38	20° $\mathbb{Z}$ 11'39		evening set	4503 Dec 19 09:32	11° $\mathbb{Z}$ 59'32
behind sun end	4498 Dec 11 16:09	20° $\mathbb{Z}$ 13'34				
max. Earth dist.	4498 Dec 10 23:21	20° $\mathbb{Z}$ 10'59	19.61859 AU	conjunction	4504 Jan 04 06:48	12° $\mathbb{Z}$ 57'48
morning rise	4498 Dec 27 08:40	21° $\mathbb{Z}$ 11'53		minimum elong	4504 Jan 04 06:47	12° $\mathbb{Z}$ 57'48
retrograde	4499 Mar 28 12:48	24° $\mathbb{Z}$ 30'12		behind sun begin	4504 Jan 04 02:13	12° $\mathbb{Z}$ 57'06
opposition	4499 Jun 11 01:37	22° $\mathbb{Z}$ 29'20	0°05'01	behind sun end	4504 Jan 04 11:22	12° $\mathbb{Z}$ 58'29
min. Earth dist.	4499 Jun 11 10:42	22° $\mathbb{Z}$ 28'22	17.64140 AU	max. Earth dist.	4504 Jan 04 04:47	12° $\mathbb{Z}$ 57'30
direct	4499 Aug 27 01:56	20° $\mathbb{Z}$ 25'02		19.87895 AU		
evening set	4499 Nov 30 05:22	23° $\mathbb{Z}$ 49'46		morning rise	4504 Jan 20 01:47	13° $\mathbb{Z}$ 55'43
				retrograde	4504 Apr 20 10:14	17° $\mathbb{Z}$ 11'05
conjunction	4499 Dec 16 06:23	24° $\mathbb{Z}$ 49'13	0°02'40	opposition	4504 Jul 04 17:17	15° $\mathbb{Z}$ 10'45
				min. Earth dist.	4504 Jul 04 17:15	15° $\mathbb{Z}$ 10'45
				direct	4504 Sep 20 00:26	13° $\mathbb{Z}$ 07'50
				evening set	4504 Dec 23 02:14	16° $\mathbb{Z}$ 27'28
				conjunction	4505 Jan 07 22:44	17° $\mathbb{Z}$ 25'26
				minimum elong	4505 Jan 07 22:44	17° $\mathbb{Z}$ 25'26
				behind sun begin	4505 Jan 07 20:38	17° $\mathbb{Z}$ 25'08
				behind sun end	4505 Jan 08 00:49	17° $\mathbb{Z}$ 25'45

max. Earth dist.	4505 Jan 07 23:13	17°  25'31	19.93969 AU	opposition	4511 Aug 06 07:16	15°  45'18	-0°38'06
morning rise	4505 Jan 23 16:58	18°  23'05		min. Earth dist.	4511 Aug 05 21:51	15°  46'15	18.35547 AU
retrograde	4505 Apr 25 01:55	21°  37'53			4511 Aug 25 07:44	15°  R 	
opposition	4505 Jul 09 14:07	19°  37'43	-0°18'57	direct	4511 Oct 22 10:15	13°  45'04	
min. Earth dist.	4505 Jul 09 13:21	19°  37'47	17.97080 AU		4511 Dec 16 13:39	15° 	
direct	4505 Sep 24 20:49	17°  35'10		evening set	4512 Jan 23 00:22	16°  57'00	
evening set	4505 Dec 27 18:08	20°  53'44					
conjunction	4506 Jan 12 13:45	21°  51'24	-0°18'45	conjunction	4512 Feb 07 16:33	17°  53'00	-0°35'31
minimum elong	4506 Jan 12 13:45	21°  51'24	0°18'45	minimum elong	4512 Feb 07 16:33	17°  53'00	0°35'30
max. Earth dist.	4506 Jan 12 15:19	21°  51'38	20.00273 AU	max. Earth dist.	4512 Feb 08 02:21	17°  54'28	20.38577 AU
morning rise	4506 Jan 28 07:34	22°  38'47		morning rise	4512 Feb 23 08:24	18°  48'57	
retrograde	4506 Apr 29 18:47	26°  30'01		retrograde	4512 May 25 09:23	22°  00'00	
opposition	4506 Jul 14 10:22	24°  30'01	-0°22'35	opposition	4512 Aug 09 23:58	20°  00'52	-0°40'34
min. Earth dist.	4506 Jul 14 06:51	24°  30'23	18.03464 AU	min. Earth dist.	4512 Aug 09 12:56	20°  02'00	18.41551 AU
direct	4506 Sep 29 17:51	22°  30'52		direct	4512 Oct 26 01:59	18°  00'58	
evening set	4507 Jan 01 08:58	25°  31'20		evening set	4513 Jan 26 10:38	21°  11'47	
conjunction	4507 Jan 17 04:00	26°  31'54	-0°21'57	conjunction	4513 Feb 11 02:38	22°  07'34	-0°37'39
minimum elong	4507 Jan 17 03:59	26°  31'54	0°21'56	minimum elong	4513 Feb 11 02:38	22°  07'34	0°37'39
max. Earth dist.	4507 Jan 17 08:09	26°  31'20	20.06715 AU	max. Earth dist.	4513 Feb 11 14:37	22°  09'21	20.44457 AU
morning rise	4507 Feb 01 21:11	27°  31'25		morning rise	4513 Feb 26 18:12	23°  03'18	
	4507 Apr 02 16:27	0° 		retrograde	4513 May 29 21:04	26°  13'50	
retrograde	4507 May 04 09:42	0°  26'30		opposition	4513 Aug 14 16:06	24°  14'47	-0°42'48
	4507 Jun 06 00:21	30°  R 		min. Earth dist.	4513 Aug 14 04:26	24°  15'58	18.47316 AU
opposition	4507 Jul 19 06:11	28°  32'42	-0°26'04	direct	4513 Oct 30 16:52	22°  15'10	
min. Earth dist.	4507 Jul 19 02:04	28°  32'07	18.09952 AU	evening set	4514 Jan 30 20:17	25°  14'54	
direct	4507 Oct 04 12:32	26°  32'45		conjunction	4514 Feb 15 11:51	26°  20'26	-0°39'34
evening set	4508 Jan 05 23:15	29°  34'19		minimum elong	4514 Feb 15 11:51	26°  20'26	0°39'33
	4508 Jan 11 04:23	0° 		max. Earth dist.	4514 Feb 15 23:57	26°  22'14	20.50120 AU
conjunction	4508 Jan 21 17:29	0°  38'23	-0°25'01	morning rise	4514 Mar 03 03:36	27°  15'59	
minimum elong	4508 Jan 21 17:29	0°  38'23	0°25'01		4514 May 02 08:20	0°  H 	
max. Earth dist.	4508 Jan 21 22:17	0°  39'07	20.13232 AU	retrograde	4514 Jun 03 09:34	0°  H  26'03	
morning rise	4508 Feb 06 10:23	1°  35'16			4514 Jul 06 07:33	30°  R 	
retrograde	4508 May 08 01:38	4°  48'23		opposition	4514 Aug 19 07:29	28°  27'01	-0°44'47
opposition	4508 Jul 23 01:08	2°  48'46	-0°29'22	min. Earth dist.	4514 Aug 18 18:20	28°  28'20	18.52886 AU
min. Earth dist.	4508 Jul 22 18:42	2°  49'25	18.16478 AU	direct	4514 Nov 04 06:21	26°  27'39	
direct	4508 Oct 08 07:38	0°  47'25		evening set	4515 Feb 04 04:55	29°  36'20	
evening set	4509 Jan 09 12:40	4°  02'40			4515 Feb 10 22:47	0°  H 	
conjunction	4509 Jan 25 06:25	4°  59'28	-0°27'54	conjunction	4515 Feb 19 20:30	0°  H  31'40	-0°41'15
minimum elong	4509 Jan 25 06:24	4°  59'28	0°27'54	minimum elong	4515 Feb 19 20:30	0°  H  31'40	0°41'15
max. Earth dist.	4509 Jan 25 13:35	5°  00'33	20.19738 AU	max. Earth dist.	4515 Feb 20 10:58	0°  H  33'48	20.55585 AU
morning rise	4509 Feb 09 22:47	5°  56'06		morning rise	4515 Mar 07 12:09	1°  H  27'02	
retrograde	4509 May 12 15:31	9°  08'41		retrograde	4515 Jun 07 20:31	4°  H  36'38	
opposition	4509 Jul 27 19:52	7°  09'13	-0°32'29	opposition	4515 Aug 23 22:12	2°  H  37'36	-0°46'31
min. Earth dist.	4509 Jul 27 12:55	7°  09'56	18.22958 AU	min. Earth dist.	4515 Aug 23 08:09	2°  H  39'02	18.58260 AU
direct	4509 Oct 13 00:53	5°  08'17		direct	4515 Nov 08 20:17	0°  H  38'32	
evening set	4510 Jan 14 01:18	8°  02'25		evening set	4516 Feb 08 13:12	3°  H  46'11	
conjunction	4510 Jan 29 18:21	9°  18'56	-0°30'38	conjunction	4516 Feb 24 04:27	4°  H  41'18	-0°42'43
minimum elong	4510 Jan 29 18:21	9°  18'56	0°30'37	minimum elong	4516 Feb 24 04:27	4°  H  41'18	0°42'43
max. Earth dist.	4510 Jan 30 01:54	9°  20'04	20.26174 AU	max. Earth dist.	4516 Feb 24 19:02	4°  H  43'28	20.60875 AU
morning rise	4510 Feb 14 10:34	10°  15'19		morning rise	4516 Mar 10 20:21	5°  H  36'31	
retrograde	4510 May 17 06:44	13°  27'24		retrograde	4516 Jun 11 07:59	8°  H  45'41	
opposition	4510 Aug 01 13:54	11°  28'04	-0°35'24	opposition	4516 Aug 27 12:08	6°  H  46'41	-0°48'00
min. Earth dist.	4510 Aug 01 04:56	11°  28'59	18.29339 AU	min. Earth dist.	4516 Aug 26 20:44	6°  H  48'14	18.63483 AU
direct	4510 Oct 17 18:25	9°  27'30		direct	4516 Nov 12 07:35	4°  H  47'52	
evening set	4511 Jan 18 13:10	12°  22'31		evening set	4517 Feb 11 20:41	7°  H  54'34	
conjunction	4511 Feb 03 05:53	13°  36'47	-0°33'10	conjunction	4517 Feb 27 12:02	8°  H  49'31	-0°43'56
minimum elong	4511 Feb 03 05:53	13°  36'47	0°33'10	minimum elong	4517 Feb 27 12:02	8°  H  49'31	0°43'56
max. Earth dist.	4511 Feb 03 15:41	13°  38'15	20.32469 AU	max. Earth dist.	4517 Feb 28 04:58	8°  H  52'01	20.66012 AU
morning rise	4511 Feb 18 21:43	14°  32'57		morning rise	4517 Mar 15 03:56	9°  H  44'34	
	4511 Feb 26 16:49	15° 		retrograde	4517 Jun 15 18:16	12°  H  53'21	
retrograde	4511 May 21 19:26	17°  44'30		min. Earth dist.	4517 Aug 31 09:06	10°  H  56'04	18.68539 AU
				opposition	4517 Sep 01 01:37	10°  H  54'24	-0°49'13

direct	4517 Nov 16 20:26	8° $\Upsilon$ 55'53		minimum elong	4524 Mar 27 06:54	7° $\Upsilon$ 18'25	0°46'01
evening set	4518 Feb 16 03:41	12° $\Upsilon$ 01'40		max. Earth dist.	4524 Mar 28 03:25	7° $\Upsilon$ 21'23	20.94926 AU
				morning rise	4524 Apr 12 01:53	8° $\Upsilon$ 12'53	
conjunction	4518 Mar 03 18:52	12° $\Upsilon$ 56'26	-0°44'56	retrograde	4524 Jul 14 14:28	11° $\Upsilon$ 20'01	
minimum elong	4518 Mar 03 18:52	12° $\Upsilon$ 56'26	0°44'56	opposition	4524 Sep 30 09:35	9° $\Upsilon$ 21'23	-0°50'33
max. Earth dist.	4518 Mar 04 11:53	12° $\Upsilon$ 58'56	20.70985 AU	min. Earth dist.	4524 Sep 29 13:35	9° $\Upsilon$ 23'22	18.96288 AU
morning rise	4518 Mar 19 11:12	13° $\Upsilon$ 51'22		direct	4524 Dec 15 13:47	7° $\Upsilon$ 24'37	
retrograde	4518 Jun 20 05:27	16° $\Upsilon$ 59'49		evening set	4525 Mar 15 19:20	10° $\Upsilon$ 25'32	
opposition	4518 Sep 05 14:32	15° $\Upsilon$ 00'55	-0°50'10				
min. Earth dist.	4518 Sep 04 20:57	15° $\Upsilon$ 02'41	18.73428 AU	conjunction	4525 Mar 31 12:33	11° $\Upsilon$ 19'38	-0°45'24
direct	4518 Nov 21 06:21	13° $\Upsilon$ 02'41		minimum elong	4525 Mar 31 12:33	11° $\Upsilon$ 19'38	0°45'25
evening set	4519 Feb 20 10:09	16° $\Upsilon$ 07'37		max. Earth dist.	4525 Apr 01 10:04	11° $\Upsilon$ 22'44	20.97434 AU
				morning rise	4525 Apr 16 07:59	12° $\Upsilon$ 14'04	
conjunction	4519 Mar 08 01:37	17° $\Upsilon$ 02'14	-0°45'41	retrograde	4525 Jul 18 23:06	15° $\Upsilon$ 21'04	
minimum elong	4519 Mar 08 01:37	17° $\Upsilon$ 02'14	0°45'40	opposition	4525 Oct 04 19:23	13° $\Upsilon$ 22'23	-0°49'44
max. Earth dist.	4519 Mar 08 20:42	17° $\Upsilon$ 05'02	20.75762 AU	min. Earth dist.	4525 Oct 03 22:59	13° $\Upsilon$ 24'26	18.98525 AU
morning rise	4519 Mar 23 18:05	17° $\Upsilon$ 57'03		direct	4525 Dec 19 22:17	11° $\Upsilon$ 25'45	
retrograde	4519 Jun 24 15:02	21° $\Upsilon$ 05'11		evening set	4526 Mar 20 00:15	14° $\Upsilon$ 26'09	
min. Earth dist.	4519 Sep 09 08:09	19° $\Upsilon$ 08'13	18.78086 AU				
opposition	4519 Sep 10 02:41	19° $\Upsilon$ 06'21	-0°50'52	conjunction	4526 Apr 04 17:50	15° $\Upsilon$ 20'13	-0°44'34
direct	4519 Nov 25 17:53	17° $\Upsilon$ 08'26		minimum elong	4526 Apr 04 17:50	15° $\Upsilon$ 20'13	0°44'33
evening set	4520 Feb 24 16:24	20° $\Upsilon$ 12'33		max. Earth dist.	4526 Apr 05 14:14	15° $\Upsilon$ 23'09	20.99410 AU
				morning rise	4526 Apr 20 14:09	16° $\Upsilon$ 14'40	
conjunction	4520 Mar 11 07:50	21° $\Upsilon$ 07'03	-0°46'13	retrograde	4526 Jul 23 07:05	19° $\Upsilon$ 21'34	
minimum elong	4520 Mar 11 07:50	21° $\Upsilon$ 07'03	0°46'13	min. Earth dist.	4526 Oct 08 09:13	17° $\Upsilon$ 24'45	19.00243 AU
max. Earth dist.	4520 Mar 12 02:40	21° $\Upsilon$ 09'48	20.80294 AU	opposition	4526 Oct 09 04:52	17° $\Upsilon$ 22'47	-0°48'41
morning rise	4520 Mar 27 00:50	22° $\Upsilon$ 01'45		direct	4526 Dec 24 04:57	15° $\Upsilon$ 26'12	
retrograde	4520 Jun 28 01:52	25° $\Upsilon$ 09'38		evening set	4527 Mar 24 04:58	18° $\Upsilon$ 26'10	
opposition	4520 Sep 13 14:32	23° $\Upsilon$ 10'52	-0°51'19				
min. Earth dist.	4520 Sep 12 19:27	23° $\Upsilon$ 12'46	18.82486 AU	conjunction	4527 Apr 08 23:19	19° $\Upsilon$ 20'13	-0°43'30
direct	4520 Nov 29 02:43	21° $\Upsilon$ 13'13		minimum elong	4527 Apr 08 23:19	19° $\Upsilon$ 20'13	0°43'31
evening set	4521 Feb 27 22:03	24° $\Upsilon$ 16'36		max. Earth dist.	4527 Apr 09 20:37	19° $\Upsilon$ 23'17	21.00873 AU
				morning rise	4527 Apr 24 20:11	20° $\Upsilon$ 14'40	
conjunction	4521 Mar 15 13:50	25° $\Upsilon$ 10'59	-0°46'31	retrograde	4527 Jul 27 15:38	23° $\Upsilon$ 21'28	
minimum elong	4521 Mar 15 13:50	25° $\Upsilon$ 10'59	0°46'30	opposition	4527 Oct 13 13:38	21° $\Upsilon$ 22'36	-0°47'23
max. Earth dist.	4521 Mar 16 10:30	25° $\Upsilon$ 13'59	20.84533 AU	min. Earth dist.	4527 Oct 12 17:39	21° $\Upsilon$ 24'36	19.01455 AU
morning rise	4521 Mar 31 07:05	26° $\Upsilon$ 05'36		direct	4527 Dec 28 12:53	19° $\Upsilon$ 26'02	
retrograde	4521 Jul 02 10:41	29° $\Upsilon$ 13'15		evening set	4528 Mar 27 09:44	22° $\Upsilon$ 25'37	
min. Earth dist.	4521 Sep 17 06:01	27° $\Upsilon$ 16'32	18.86554 AU				
opposition	4521 Sep 18 01:56	27° $\Upsilon$ 14'32	-0°51'30	conjunction	4528 Apr 12 04:30	23° $\Upsilon$ 19'41	-0°42'14
direct	4521 Dec 03 13:10	25° $\Upsilon$ 17'11		minimum elong	4528 Apr 12 04:31	23° $\Upsilon$ 19'41	0°42'14
evening set	4522 Mar 04 03:43	28° $\Upsilon$ 19'51		max. Earth dist.	4528 Apr 13 00:41	23° $\Upsilon$ 22'35	21.01860 AU
				morning rise	4528 Apr 28 02:19	24° $\Upsilon$ 14'10	
conjunction	4522 Mar 19 19:36	29° $\Upsilon$ 14'08	-0°46'35	retrograde	4528 Jul 30 22:58	27° $\Upsilon$ 20'56	
minimum elong	4522 Mar 19 19:36	29° $\Upsilon$ 14'08	0°46'35	opposition	4528 Oct 16 22:19	25° $\Upsilon$ 21'56	-0°45'52
max. Earth dist.	4522 Mar 20 15:43	29° $\Upsilon$ 17'04	20.88424 AU	min. Earth dist.	4528 Oct 16 03:08	25° $\Upsilon$ 23'51	19.02233 AU
	4522 Apr 02 00:31	0° $\Upsilon$		direct	4528 Dec 31 18:33	23° $\Upsilon$ 25'22	
morning rise	4522 Apr 04 13:30	0° $\Upsilon$ 08'41		evening set	4529 Mar 31 14:08	26° $\Upsilon$ 24'38	
retrograde	4522 Jul 06 20:58	3° $\Upsilon$ 16'09					
opposition	4522 Sep 22 12:54	1° $\Upsilon$ 17'29	-0°51'26	conjunction	4529 Apr 16 09:44	27° $\Upsilon$ 18'44	-0°40'46
min. Earth dist.	4522 Sep 21 16:57	1° $\Upsilon$ 19'28	18.90261 AU	minimum elong	4529 Apr 16 09:44	27° $\Upsilon$ 18'44	0°40'46
	4522 Oct 27 19:25	30° $\Upsilon$		max. Earth dist.	4529 Apr 17 06:57	27° $\Upsilon$ 21'47	21.02432 AU
direct	4522 Dec 07 21:07	29° $\Upsilon$ 20'21		morning rise	4529 May 02 08:09	28° $\Upsilon$ 13'15	
	4523 Jan 16 15:04	0° $\Upsilon$			4529 Jun 06 14:07	0° $\Upsilon$	
evening set	4523 Mar 08 08:59	2° $\Upsilon$ 22'24		retrograde	4529 Aug 04 07:29	1° $\Upsilon$ 20'01	
					4529 Oct 04 17:13	30° $\Upsilon$	
conjunction	4523 Mar 24 01:23	3° $\Upsilon$ 16'36	-0°46'25	min. Earth dist.	4529 Oct 20 10:49	29° $\Upsilon$ 22'54	19.02605 AU
minimum elong	4523 Mar 24 01:23	3° $\Upsilon$ 16'36	0°46'25	opposition	4529 Oct 21 06:36	29° $\Upsilon$ 20'55	-0°44'07
max. Earth dist.	4523 Mar 24 22:52	3° $\Upsilon$ 19'43	20.91912 AU	direct	4530 Jan 05 01:54	27° $\Upsilon$ 24'21	
morning rise	4523 Apr 08 19:39	4° $\Upsilon$ 11'06			4530 Mar 28 17:14	0° $\Upsilon$	
retrograde	4523 Jul 11 05:24	7° $\Upsilon$ 18'23		evening set	4530 Apr 04 18:55	0° $\Upsilon$ 23'24	
opposition	4523 Sep 26 23:24	5° $\Upsilon$ 19'45	-0°51'07				
min. Earth dist.	4523 Sep 26 02:57	5° $\Upsilon$ 21'47	18.93517 AU	conjunction	4530 Apr 20 15:03	1° $\Upsilon$ 17'33	-0°39'05
direct	4523 Dec 12 06:21	3° $\Upsilon$ 22'50		minimum elong	4530 Apr 20 15:03	1° $\Upsilon$ 17'33	0°39'05
evening set	4524 Mar 11 14:19	6° $\Upsilon$ 24'17		max. Earth dist.	4530 Apr 21 11:08	1° $\Upsilon$ 20'25	21.02620 AU
				morning rise	4530 May 06 14:29	2° $\Upsilon$ 12'08	
conjunction	4524 Mar 27 06:54	7° $\Upsilon$ 18'25	-0°46'01	retrograde	4530 Aug 08 15:05	5° $\Upsilon$ 18'57	

opposition	4530 Oct 25 14:38	3°♄19'44 -0°42'10	conjunction	4537 May 18 12:49	29°♄17'02 -0°22'38
min. Earth dist.	4530 Oct 24 19:47	3°♄21'38 19.02619 AU	minimum elong	4537 May 18 12:49	29°♄17'02 0°22'38
direct	4531 Jan 09 06:48	1°♄23'10	max. Earth dist.	4537 May 19 05:52	29°♄19'28 20.93562 AU
evening set	4531 Apr 08 23:37	4°♄22'05		4537 May 31 01:21	0°♄
			morning rise	4537 Jun 03 18:25	0°♄12'32
conjunction	4531 Apr 24 20:41	5°♄16'18 -0°37'14	retrograde	4537 Sep 06 07:19	3°♄20'58
minimum elong	4531 Apr 24 20:41	5°♄16'18 0°37'14	opposition	4537 Nov 22 20:49	1°♄21'17 -0°23'22
max. Earth dist.	4531 Apr 25 17:33	5°♄19'17 21.02454 AU	min. Earth dist.	4537 Nov 22 05:51	1°♄22'49 18.92114 AU
morning rise	4531 May 10 20:48	6°♄10'58		4537 Dec 29 17:05	30°♄
retrograde	4531 Aug 12 23:40	9°♄17'53	direct	4538 Feb 05 22:58	29°♄24'26
opposition	4531 Oct 29 22:24	7°♄18'36 -0°40'00		4538 Mar 15 06:16	0°♄
min. Earth dist.	4531 Oct 29 03:02	7°♄20'32 19.02267 AU	evening set	4538 May 06 18:18	2°♄24'28
direct	4532 Jan 13 13:29	5°♄22'02			
evening set	4532 Apr 12 04:35	8°♄20'53	conjunction	4538 May 22 21:17	3°♄19'38 -0°19'43
			minimum elong	4538 May 22 21:17	3°♄19'38 0°19'43
conjunction	4532 Apr 28 02:15	9°♄15'10 -0°35'12	max. Earth dist.	4538 May 23 12:02	3°♄21'44 20.90518 AU
minimum elong	4532 Apr 28 02:15	9°♄15'10 0°35'12	morning rise	4538 Jun 08 03:58	4°♄15'18
max. Earth dist.	4532 Apr 28 21:50	9°♄17'58 21.01928 AU	retrograde	4538 Sep 10 16:59	7°♄24'05
morning rise	4532 May 14 03:24	10°♄09'57	opposition	4538 Nov 27 04:48	5°♄24'16 -0°20'04
retrograde	4532 Aug 16 07:47	13°♄17'01	min. Earth dist.	4538 Nov 26 16:04	5°♄25'34 18.88819 AU
min. Earth dist.	4532 Nov 01 11:56	11°♄19'30 19.01568 AU	direct	4539 Feb 10 03:59	3°♄27'13
opposition	4532 Nov 02 06:14	11°♄17'39 -0°37'40	evening set	4539 May 11 02:18	6°♄27'39
direct	4533 Jan 16 18:04	9°♄21'05			
evening set	4533 Apr 16 09:43	12°♄19'57	conjunction	4539 May 27 06:25	7°♄23'01 -0°16'41
			minimum elong	4539 May 27 06:25	7°♄23'01 0°16'42
conjunction	4533 May 02 08:22	13°♄14'21 -0°32'59	max. Earth dist.	4539 May 27 20:40	7°♄25'03 20.86981 AU
minimum elong	4533 May 02 08:22	13°♄14'21 0°32'59	morning rise	4539 Jun 12 13:53	8°♄18'53
max. Earth dist.	4533 May 03 04:37	13°♄17'15 21.01055 AU	retrograde	4539 Sep 15 04:21	11°♄28'00
morning rise	4533 May 18 10:16	14°♄09'14	opposition	4539 Dec 01 12:51	9°♄28'01 -0°16'40
	4533 Jun 03 02:23	15°♄	min. Earth dist.	4539 Dec 01 00:25	9°♄29'17 18.85033 AU
retrograde	4533 Aug 20 16:46	17°♄16'31	direct	4540 Feb 14 11:38	7°♄30'45
opposition	4533 Nov 06 13:51	15°♄17'06 -0°35'08	evening set	4540 May 14 10:49	10°♄31'37
min. Earth dist.	4533 Nov 05 19:12	15°♄18'59 19.00505 AU			
	4533 Nov 13 16:02	15°♄	conjunction	4540 May 30 15:43	11°♄27'11 -0°13'33
direct	4534 Jan 21 00:30	13°♄20'32	minimum elong	4540 May 30 15:43	11°♄27'11 0°13'33
	4534 Mar 26 06:21	15°♄	behind sun begin	4540 May 30 12:05	11°♄26'40
evening set	4534 Apr 20 15:18	16°♄19'29	behind sun end	4540 May 30 19:21	11°♄27'41
			max. Earth dist.	4540 May 31 03:45	11°♄28'54 20.82977 AU
conjunction	4534 May 06 14:40	17°♄14'00 -0°30'37	morning rise	4540 Jun 16 00:14	12°♄23'15
minimum elong	4534 May 06 14:40	17°♄14'00 0°30'38	retrograde	4540 Sep 18 14:46	15°♄32'45
max. Earth dist.	4534 May 07 09:24	17°♄16'41 20.99811 AU	opposition	4540 Dec 04 21:12	13°♄32'34 -0°13'10
morning rise	4534 May 22 17:40	18°♄09'02	min. Earth dist.	4540 Dec 04 10:56	13°♄33'37 18.80824 AU
retrograde	4534 Aug 25 01:31	21°♄16'33	direct	4541 Feb 17 17:50	11°♄35'01
opposition	4534 Nov 10 21:36	19°♄17'04 -0°32'25	evening set	4541 May 18 19:50	14°♄36'23
min. Earth dist.	4534 Nov 10 04:26	19°♄18'48 18.99067 AU			
direct	4535 Jan 25 04:40	17°♄20'29	conjunction	4541 Jun 04 01:52	15°♄32'10 -0°10'21
evening set	4535 Apr 24 21:14	20°♄19'36	minimum elong	4541 Jun 04 01:51	15°♄32'10 0°10'23
			behind sun begin	4541 Jun 03 20:37	15°♄31'26
conjunction	4535 May 10 21:38	21°♄14'16 -0°28'06	behind sun end	4541 Jun 04 07:06	15°♄32'54
minimum elong	4535 May 10 21:38	21°♄14'16 0°28'06	max. Earth dist.	4541 Jun 04 13:29	15°♄33'50 20.78589 AU
max. Earth dist.	4535 May 11 16:39	21°♄16'59 20.98172 AU	morning rise	4541 Jun 20 11:10	16°♄28'27
morning rise	4535 May 27 01:23	22°♄09'26	retrograde	4541 Sep 23 02:25	19°♄38'19
retrograde	4535 Aug 29 11:14	25°♄17'13	opposition	4541 Dec 09 05:25	17°♄37'56 -0°09'34
min. Earth dist.	4535 Nov 14 11:57	23°♄19'26 18.97208 AU	min. Earth dist.	4541 Dec 08 19:22	17°♄38'58 18.76259 AU
opposition	4535 Nov 15 05:05	23°♄17'42 -0°29'33	direct	4542 Feb 22 01:42	15°♄40'05
direct	4536 Jan 29 11:26	21°♄21'04	evening set	4542 May 23 05:36	18°♄42'02
evening set	4536 Apr 28 03:48	24°♄20'27			
			conjunction	4542 Jun 08 12:27	19°♄38'02 -0°07'05
conjunction	4536 May 14 04:55	25°♄15'15 -0°25'26	minimum elong	4542 Jun 08 12:27	19°♄38'02 0°07'06
minimum elong	4536 May 14 04:55	25°♄15'15 0°25'27	behind sun begin	4542 Jun 08 06:17	19°♄37'10
max. Earth dist.	4536 May 14 22:04	25°♄17'42 20.96098 AU	behind sun end	4542 Jun 08 18:37	19°♄38'54
morning rise	4536 May 30 09:43	26°♄10'35	max. Earth dist.	4542 Jun 08 21:56	19°♄39'23 20.73869 AU
retrograde	4536 Sep 01 20:27	29°♄18'41	morning rise	4542 Jun 24 22:46	20°♄34'33
opposition	4536 Nov 18 12:58	27°♄19'06 -0°26'32	retrograde	4542 Sep 27 13:37	23°♄44'50
min. Earth dist.	4536 Nov 17 21:43	27°♄20'39 18.94908 AU	opposition	4542 Dec 13 14:03	21°♄44'13 -0°05'55
direct	4537 Feb 01 15:32	25°♄22'23	min. Earth dist.	4542 Dec 13 06:08	21°♄45'02 18.71401 AU
evening set	4537 May 02 10:37	28°♄22'03	direct	4543 Feb 26 08:35	19°♄46'04





































































































evening set	4543 May 27 15:51	22° <del>II</del> 48'39		minimum elong	4548 Jul 03 19:05	14° <del>III</del> 39'00	0°13'04
				behind sun begin	4548 Jul 03 15:09	14° <del>III</del> 38'27	
conjunction	4543 Jun 12 23:44	23° <del>II</del> 44'54 -0°03'47		behind sun end	4548 Jul 03 23:01	14° <del>III</del> 39'34	
minimum elong	4543 Jun 12 23:45	23° <del>II</del> 44'54 0°03'47		max. Earth dist.	4548 Jul 03 20:55	14° <del>III</del> 39'16	20.41512 AU
behind sun begin	4543 Jun 12 17:08	23° <del>II</del> 43'58		morning rise	4548 Jul 20 09:50	15° <del>III</del> 36'59	
behind sun end	4543 Jun 13 06:22	23° <del>II</del> 45'50		retrograde	4548 Oct 22 21:14	18° <del>III</del> 50'26	
max. Earth dist.	4543 Jun 13 08:48	23° <del>II</del> 46'12 20.68888 AU		opposition	4549 Jan 07 00:21	16° <del>III</del> 48'59	0°16'19
morning rise	4543 Jun 29 10:46	24° <del>II</del> 41'38		min. Earth dist.	4549 Jan 06 23:32	16° <del>III</del> 49'04	18.38591 AU
retrograde	4543 Oct 02 02:05	27° <del>II</del> 52'21		direct	4549 Mar 22 14:10	14° <del>III</del> 49'04	
opposition	4543 Dec 17 22:40	25° <del>II</del> 51'33 -0°02'13		evening set	4549 Jun 21 22:14	17° <del>III</del> 56'56	
min. Earth dist.	4543 Dec 17 14:51	25° <del>II</del> 52'22 18.66303 AU					
direct	4544 Mar 01 17:15	23° <del>II</del> 53'05		conjunction	4549 Jul 08 11:17	18° <del>III</del> 54'49	0°16'21
evening set	4544 May 31 02:55	26° <del>II</del> 56'23		minimum elong	4549 Jul 08 11:17	18° <del>III</del> 54'49	0°16'21
				max. Earth dist.	4549 Jul 08 11:49	18° <del>III</del> 54'53	20.35672 AU
conjunction	4544 Jun 16 11:36	27° <del>II</del> 52'53 -0°00'22		morning rise	4549 Jul 25 02:36	19° <del>III</del> 53'03	
minimum elong	4544 Jun 16 11:35	27° <del>II</del> 52'53 0°00'23		retrograde	4549 Oct 27 14:21	23° <del>III</del> 07'06	
behind sun begin	4544 Jun 16 04:55	27° <del>II</del> 51'57		opposition	4550 Jan 11 11:37	21° <del>III</del> 05'35	0°19'55
behind sun end	4544 Jun 16 18:16	27° <del>II</del> 53'49		min. Earth dist.	4550 Jan 11 11:26	21° <del>III</del> 05'36	18.32674 AU
max. Earth dist.	4544 Jun 16 18:39	27° <del>II</del> 53'53 20.63691 AU		direct	4550 Mar 27 02:53	19° <del>III</del> 05'22	
morning rise	4544 Jul 02 23:31	28° <del>II</del> 49'51		evening set	4550 Jun 26 14:42	22° <del>III</del> 14'20	
	4544 Jul 24 18:00	0° <del>III</del>					
asc. node	4544 Jul 25 16:22	0° <del>III</del> 02'47		conjunction	4550 Jul 13 04:26	23° <del>III</del> 12'30	0°19'33
retrograde	4544 Oct 05 13:38	2° <del>III</del> 01'04		minimum elong	4550 Jul 13 04:25	23° <del>III</del> 12'30	0°19'33
opposition	4544 Dec 21 07:51	0° <del>III</del> 00'05 0°01'30		max. Earth dist.	4550 Jul 13 02:50	23° <del>III</del> 12'16	20.29664 AU
min. Earth dist.	4544 Dec 21 02:06	0° <del>III</del> 00'40 18.61024 AU		morning rise	4550 Jul 29 20:15	24° <del>III</del> 11'00	
	4544 Dec 21 08:35	30° <del>III</del>		retrograde	4550 Nov 01 04:53	27° <del>III</del> 25'41	
direct	4545 Mar 06 00:39	28° <del>II</del> 01'18		opposition	4551 Jan 15 23:44	25° <del>III</del> 24'03	0°23'26
	4545 May 15 10:01	0° <del>III</del>		min. Earth dist.	4551 Jan 16 02:08	25° <del>III</del> 23'48	18.26588 AU
evening set	4545 Jun 04 14:31	1° <del>III</del> 05'22		direct	4551 Mar 31 13:22	23° <del>III</del> 23'32	
				evening set	4551 Jul 01 07:55	26° <del>III</del> 33'36	
conjunction	4545 Jun 21 00:16	2° <del>III</del> 02'08 0°03'05					
minimum elong	4545 Jun 21 00:16	2° <del>III</del> 02'08 0°03'05		conjunction	4551 Jul 17 22:20	27° <del>III</del> 32'03	0°22'40
behind sun begin	4545 Jun 20 17:35	2° <del>III</del> 01'11		minimum elong	4551 Jul 17 22:20	27° <del>III</del> 32'03	0°22'40
behind sun end	4545 Jun 21 06:57	2° <del>III</del> 03'05		max. Earth dist.	4551 Jul 17 18:55	27° <del>III</del> 31'33	20.23497 AU
max. Earth dist.	4545 Jun 21 06:46	2° <del>III</del> 03'03 20.58339 AU		morning rise	4551 Aug 03 14:36	28° <del>III</del> 30'48	
morning rise	4545 Jul 07 12:54	2° <del>III</del> 59'21			4551 Aug 31 06:16	0° <del>III</del>	
retrograde	4545 Oct 10 03:45	6° <del>III</del> 11'04		retrograde	4551 Nov 05 22:53	1° <del>III</del> 46'06	
opposition	4545 Dec 25 17:13	4° <del>III</del> 09'55 0°05'14			4552 Jan 14 08:39	30° <del>III</del>	
min. Earth dist.	4545 Dec 25 11:36	4° <del>III</del> 10'31 18.55593 AU		opposition	4552 Jan 20 12:18	29° <del>III</del> 44'22	0°26'50
direct	4546 Mar 10 10:22	2° <del>III</del> 10'51		min. Earth dist.	4552 Jan 20 15:24	29° <del>III</del> 44'02	18.20339 AU
evening set	4546 Jun 09 03:13	5° <del>III</del> 15'46		direct	4552 Apr 04 03:58	27° <del>III</del> 43'29	
					4552 Jun 18 18:09	0° <del>III</del>	
conjunction	4546 Jun 25 13:43	6° <del>III</del> 12'48 0°06'26		evening set	4552 Jul 05 02:08	0° <del>III</del> 54'40	
minimum elong	4546 Jun 25 13:43	6° <del>III</del> 12'48 0°06'26					
behind sun begin	4546 Jun 25 07:24	6° <del>III</del> 11'54		conjunction	4552 Jul 21 17:11	1° <del>III</del> 53'25	0°25'41
behind sun end	4546 Jun 25 20:02	6° <del>III</del> 13'42		minimum elong	4552 Jul 21 17:11	1° <del>III</del> 53'25	0°25'40
max. Earth dist.	4546 Jun 25 18:15	6° <del>III</del> 13'26 20.52840 AU		max. Earth dist.	4552 Jul 21 11:52	1° <del>III</del> 52'38	20.17169 AU
morning rise	4546 Jul 12 03:09	7° <del>III</del> 10'16		morning rise	4552 Aug 07 09:48	2° <del>III</del> 52'25	
retrograde	4546 Oct 14 16:00	10° <del>III</del> 22'31		retrograde	4552 Nov 09 14:20	6° <del>III</del> 08'18	
opposition	4546 Dec 30 03:04	8° <del>III</del> 21'15 0°08'57		opposition	4553 Jan 24 01:33	4° <del>III</del> 06'25	0°30'07
min. Earth dist.	4546 Dec 29 23:39	8° <del>III</del> 21'37 18.50038 AU		min. Earth dist.	4553 Jan 24 07:06	4° <del>III</del> 05'50	18.13958 AU
direct	4547 Mar 14 18:20	6° <del>III</del> 21'53		direct	4553 Apr 08 16:33	2° <del>III</del> 05'10	
evening set	4547 Jun 13 16:37	9° <del>III</del> 27'44		evening set	4553 Jul 09 21:10	5° <del>III</del> 17'29	
conjunction	4547 Jun 30 04:06	10° <del>III</del> 25'03 0°09'47		conjunction	4553 Jul 26 12:49	6° <del>III</del> 16'31	0°28'33
minimum elong	4547 Jun 30 04:05	10° <del>III</del> 25'03 0°09'46		minimum elong	4553 Jul 26 12:49	6° <del>III</del> 16'31	0°28'33
behind sun begin	4547 Jun 29 22:37	10° <del>III</del> 24'16		max. Earth dist.	4553 Jul 26 05:25	6° <del>III</del> 15'25	20.10753 AU
behind sun end	4547 Jun 30 09:33	10° <del>III</del> 25'49		morning rise	4553 Aug 12 05:52	7° <del>III</del> 15'45	
max. Earth dist.	4547 Jun 30 07:47	10° <del>III</del> 25'34 20.47237 AU		retrograde	4553 Nov 14 08:57	10° <del>III</del> 32'13	
morning rise	4547 Jul 16 18:09	11° <del>III</del> 22'45		opposition	4554 Jan 28 15:14	8° <del>III</del> 30'11	0°33'15
retrograde	4547 Oct 19 07:43	14° <del>III</del> 35'36		min. Earth dist.	4554 Jan 28 21:31	8° <del>III</del> 29'31	18.07512 AU
opposition	4548 Jan 03 13:21	12° <del>III</del> 34'13 0°12'39		direct	4554 Apr 13 08:22	6° <del>III</del> 28'31	
min. Earth dist.	4548 Jan 03 10:11	12° <del>III</del> 34'33 18.44373 AU		evening set	4554 Jul 14 17:08	9° <del>III</del> 41'59	
direct	4548 Mar 18 05:16	10° <del>III</del> 34'35					
evening set	4548 Jun 17 06:54	13° <del>III</del> 41'25		conjunction	4554 Jul 31 09:19	10° <del>III</del> 41'18	0°31'17
				minimum elong	4554 Jul 31 09:19	10° <del>III</del> 41'18	0°31'18
conjunction	4548 Jul 03 19:05	14° <del>III</del> 39'00 0°13'05		max. Earth dist.	4554 Jul 31 00:30	10° <del>III</del> 39'59	20.04286 AU

morning rise	4554 Aug 17 02:29	11° $\Omega$ 40'46	min. Earth dist.	4561 Feb 28 22:15	10° $\eta$ 00'24	17.66457 AU
retrograde	4554 Nov 19 01:49	14° $\Omega$ 57'47	direct	4561 May 14 08:06	7° $\eta$ 57'43	
opposition	4555 Feb 02 05:32	12° $\Omega$ 55'36 0°36'12	evening set	4561 Aug 16 10:22	11° $\eta$ 19'11	
min. Earth dist.	4555 Feb 02 13:58	12° $\Omega$ 54'42 18.01059 AU	max. Earth dist.	4561 Sep 01 09:53	12° $\eta$ 17'22	19.64089 AU
direct	4555 Apr 17 22:53	10° $\Omega$ 53'31				
evening set	4555 Jul 19 13:52	14° $\Omega$ 08'09	conjunction	4561 Sep 02 03:58	12° $\eta$ 20'08 0°44'36	
	4555 Aug 03 02:59	15° $\Omega$	minimum elong	4561 Sep 02 03:58	12° $\eta$ 20'08 0°44'36	
			morning rise	4561 Sep 18 20:48	13° $\eta$ 21'00	
conjunction	4555 Aug 05 06:26	15° $\Omega$ 07'43 0°33'51	retrograde	4561 Dec 21 01:46	16° $\eta$ 41'28	
minimum elong	4555 Aug 05 06:26	15° $\Omega$ 07'43 0°33'50	opposition	4562 Mar 05 03:04	14° $\eta$ 38'41 0°50'11	
max. Earth dist.	4555 Aug 04 19:32	15° $\Omega$ 06'05 19.97872 AU	min. Earth dist.	4562 Mar 05 18:01	14° $\eta$ 37'03 17.61849 AU	
morning rise	4555 Aug 21 23:54	16° $\Omega$ 07'26	direct	4562 May 19 04:50	12° $\eta$ 34'14	
retrograde	4555 Nov 23 21:20	19° $\Omega$ 24'59	evening set	4562 Aug 21 12:19	15° $\eta$ 56'47	
opposition	4556 Feb 06 20:23	17° $\Omega$ 22'39 0°38'57				
min. Earth dist.	4556 Feb 07 05:24	17° $\Omega$ 21'41 17.94700 AU	conjunction	4562 Sep 07 05:57	16° $\eta$ 57'56 0°45'29	
direct	4556 Apr 21 15:42	15° $\Omega$ 20'09	minimum elong	4562 Sep 07 05:57	16° $\eta$ 57'56 0°45'30	
evening set	4556 Jul 23 11:13	18° $\Omega$ 35'55	max. Earth dist.	4562 Sep 06 12:07	16° $\eta$ 55'11 19.59650 AU	
			morning rise	4562 Sep 23 22:11	17° $\eta$ 58'55	
conjunction	4556 Aug 09 04:16	19° $\Omega$ 35'45 0°36'13	retrograde	4562 Dec 25 23:45	21° $\eta$ 19'47	
minimum elong	4556 Aug 09 04:16	19° $\Omega$ 35'45 0°36'13	opposition	4563 Mar 09 22:33	19° $\eta$ 17'02 0°51'02	
max. Earth dist.	4556 Aug 08 16:37	19° $\Omega$ 34'00 19.91569 AU	min. Earth dist.	4563 Mar 10 14:07	19° $\eta$ 15'20 17.57583 AU	
morning rise	4556 Aug 25 21:42	20° $\Omega$ 35'41	direct	4563 May 24 02:01	17° $\eta$ 12'24	
retrograde	4556 Nov 27 15:45	23° $\Omega$ 53'46	evening set	4563 Aug 26 15:06	20° $\eta$ 35'58	
opposition	4557 Feb 10 11:57	21° $\Omega$ 51'18 0°41'29				
min. Earth dist.	4557 Feb 10 22:40	21° $\Omega$ 50'08 17.88486 AU	conjunction	4563 Sep 12 08:21	21° $\eta$ 37'15 0°46'06	
direct	4557 Apr 26 07:26	19° $\Omega$ 48'23	minimum elong	4563 Sep 12 08:21	21° $\eta$ 37'15 0°46'05	
evening set	4557 Jul 28 09:37	23° $\Omega$ 05'19	max. Earth dist.	4563 Sep 11 12:26	21° $\eta$ 34'11 19.55553 AU	
			morning rise	4563 Sep 29 00:14	22° $\eta$ 38'22	
conjunction	4557 Aug 14 02:52	24° $\Omega$ 05'24 0°38'22	retrograde	4563 Dec 30 22:12	25° $\eta$ 59'36	
minimum elong	4557 Aug 14 02:52	24° $\Omega$ 05'24 0°38'22	opposition	4564 Mar 13 18:46	23° $\eta$ 56'52 0°51'33	
max. Earth dist.	4557 Aug 13 13:03	24° $\Omega$ 03'19 19.85462 AU	min. Earth dist.	4564 Mar 14 11:34	23° $\eta$ 55'02 17.53664 AU	
morning rise	4557 Aug 30 20:28	25° $\Omega$ 05'33	direct	4564 May 28 00:02	21° $\eta$ 52'01	
retrograde	4557 Dec 02 12:36	28° $\Omega$ 24'08	evening set	4564 Aug 30 18:12	25° $\eta$ 16'33	
opposition	4558 Feb 15 03:55	26° $\Omega$ 21'32 0°43'46				
min. Earth dist.	4558 Feb 15 15:16	26° $\Omega$ 20'18 17.82505 AU	conjunction	4564 Sep 16 11:21	26° $\eta$ 17'59 0°46'24	
direct	4558 May 01 01:25	24° $\Omega$ 18'14	minimum elong	4564 Sep 16 11:21	26° $\eta$ 17'59 0°46'24	
evening set	4558 Aug 02 08:42	27° $\Omega$ 36'19	max. Earth dist.	4564 Sep 15 15:33	26° $\eta$ 14'55 19.51786 AU	
			morning rise	4564 Oct 03 02:37	27° $\eta$ 19'11	
conjunction	4558 Aug 19 02:16	28° $\Omega$ 36'39 0°40'18		4564 Nov 26 02:02	0° $\Omega$	
minimum elong	4558 Aug 19 02:16	28° $\Omega$ 36'39 0°40'17	retrograde	4565 Jan 03 21:28	0° $\Omega$ 40'42	
max. Earth dist.	4558 Aug 18 12:12	28° $\Omega$ 34'31 19.79602 AU		4565 Feb 12 08:22	30° $\eta$	
morning rise	4558 Sep 04 19:37	29° $\Omega$ 37'00	opposition	4565 Mar 18 15:38	28° $\eta$ 38'01 0°51'44	
	4558 Sep 11 09:12	0° $\eta$	min. Earth dist.	4565 Mar 19 08:42	28° $\eta$ 36'09 17.50049 AU	
retrograde	4558 Dec 07 08:30	2° $\eta$ 56'04	direct	4565 Jun 01 23:48	26° $\eta$ 32'58	
opposition	4559 Feb 19 20:45	0° $\eta$ 53'22 0°45'48	evening set	4565 Sep 04 22:03	29° $\eta$ 58'22	
min. Earth dist.	4559 Feb 20 09:19	0° $\eta$ 52'00 17.76800 AU		4565 Sep 05 08:54	0° $\Omega$	
	4559 Mar 13 01:37	30° $\eta$				
direct	4559 May 05 18:17	28° $\Omega$ 49'44	conjunction	4565 Sep 21 14:42	0° $\Omega$ 59'54 0°46'23	
	4559 Jun 27 04:17	0° $\eta$	minimum elong	4565 Sep 21 14:42	0° $\Omega$ 59'54 0°46'23	
evening set	4559 Aug 07 08:27	2° $\eta$ 08'57	max. Earth dist.	4565 Sep 20 17:05	0° $\Omega$ 56'33 19.48329 AU	
max. Earth dist.	4559 Aug 23 09:53	3° $\eta$ 07'03 19.74065 AU	morning rise	4565 Oct 08 05:24	2° $\Omega$ 01'10	
			retrograde	4566 Jan 08 19:51	5° $\Omega$ 22'56	
conjunction	4559 Aug 24 02:01	3° $\eta$ 09'30 0°42'00	opposition	4566 Mar 23 13:04	3° $\Omega$ 20'16 0°51'34	
minimum elong	4559 Aug 24 02:00	3° $\eta$ 09'30 0°42'00	min. Earth dist.	4566 Mar 24 07:32	3° $\Omega$ 18'15 17.46770 AU	
morning rise	4559 Sep 09 19:22	4° $\eta$ 10'02	direct	4566 Jun 06 23:11	1° $\Omega$ 15'01	
retrograde	4559 Dec 12 06:22	7° $\eta$ 29'36	evening set	4566 Sep 10 02:03	4° $\Omega$ 41'12	
opposition	4560 Feb 24 14:13	5° $\eta$ 26'50 0°47'33				
min. Earth dist.	4560 Feb 25 03:21	5° $\eta$ 25'24 17.71448 AU	conjunction	4566 Sep 26 18:22	5° $\Omega$ 42'50 0°46'04	
direct	4560 May 09 13:34	3° $\eta$ 22'53	minimum elong	4566 Sep 26 18:22	5° $\Omega$ 42'50 0°46'04	
evening set	4560 Aug 11 08:56	6° $\eta$ 43'13	max. Earth dist.	4566 Sep 25 20:48	5° $\Omega$ 39'29 19.45224 AU	
max. Earth dist.	4560 Aug 27 10:47	7° $\eta$ 41'34 19.68887 AU	morning rise	4566 Oct 13 08:19	6° $\Omega$ 44'09	
			retrograde	4567 Jan 13 19:55	10° $\Omega$ 06'05	
conjunction	4560 Aug 28 02:43	7° $\eta$ 43'59 0°43'26	opposition	4567 Mar 28 11:03	8° $\Omega$ 03'26 0°51'03	
minimum elong	4560 Aug 28 02:43	7° $\eta$ 43'59 0°43'25	min. Earth dist.	4567 Mar 29 05:15	8° $\Omega$ 01'27 17.43841 AU	
morning rise	4560 Sep 13 19:41	8° $\eta$ 44'42	direct	4567 Jun 12 00:50	5° $\Omega$ 58'00	
retrograde	4560 Dec 16 03:20	12° $\eta$ 04'43	evening set	4567 Sep 15 06:12	9° $\Omega$ 24'52	
opposition	4561 Feb 28 08:15	10° $\eta$ 01'56 0°49'01				

conjunction	4567 Oct 01 21:55	10° <u>♏</u> 26'33	0°45'27	retrograde	4574 Feb 15 16:36	13° <u>♍</u> 18'40	
minimum elong	4567 Oct 01 21:55	10° <u>♏</u> 26'33	0°45'27	opposition	4574 Apr 30 07:04	11° <u>♍</u> 16'22	0°38'04
max. Earth dist.	4567 Sep 30 23:24	10° <u>♏</u> 23'03	19.42487 AU	min. Earth dist.	4574 May 01 00:47	11° <u>♍</u> 14'27	17.36937 AU
morning rise	4567 Oct 18 11:09	11° <u>♏</u> 27'54		direct	4574 Jul 15 13:32	9° <u>♍</u> 10'23	
retrograde	4568 Jan 18 18:16	14° <u>♏</u> 49'59		evening set	4574 Oct 19 10:00	12° <u>♍</u> 39'25	
opposition	4568 Apr 01 09:33	12° <u>♏</u> 47'20	0°50'11				
min. Earth dist.	4568 Apr 02 05:02	12° <u>♏</u> 45'12	17.41317 AU	conjunction	4574 Nov 04 20:14	13° <u>♍</u> 40'49	0°32'47
direct	4568 Jun 16 01:08	10° <u>♏</u> 41'42		minimum elong	4574 Nov 04 20:14	13° <u>♍</u> 40'49	0°32'48
evening set	4568 Sep 19 10:31	14° <u>♏</u> 09'11		max. Earth dist.	4574 Nov 04 00:15	13° <u>♍</u> 37'41	19.37510 AU
max. Earth dist.	4568 Oct 05 03:12	15° <u>♏</u> 07'24	19.40180 AU	morning rise	4574 Nov 21 03:07	14° <u>♍</u> 41'43	
					4574 Nov 26 03:30	15° <u>♍</u>	
conjunction	4568 Oct 06 01:43	15° <u>♏</u> 10'55	0°44'30	retrograde	4575 Feb 20 16:15	18° <u>♍</u> 03'13	
minimum elong	4568 Oct 06 01:43	15° <u>♏</u> 10'55	0°44'30	opposition	4575 May 05 07:26	16° <u>♍</u> 01'04	0°35'02
morning rise	4568 Oct 22 14:11	16° <u>♏</u> 12'16		min. Earth dist.	4575 May 05 23:36	15° <u>♍</u> 59'19	17.38277 AU
retrograde	4569 Jan 22 18:46	19° <u>♏</u> 34'23			4575 May 29 20:26	15° <u>♍</u>	
opposition	4569 Apr 06 08:11	17° <u>♏</u> 31'45	0°48'58	direct	4575 Jul 20 16:17	13° <u>♍</u> 55'12	
min. Earth dist.	4569 Apr 07 03:00	17° <u>♏</u> 29'42	17.39228 AU		4575 Sep 09 01:59	15° <u>♍</u>	
direct	4569 Jun 21 04:02	15° <u>♏</u> 25'58		evening set	4575 Oct 24 12:41	17° <u>♍</u> 24'10	
evening set	4569 Sep 24 14:57	18° <u>♏</u> 53'58					
max. Earth dist.	4569 Oct 10 06:52	19° <u>♏</u> 52'10	19.38324 AU	conjunction	4575 Nov 09 22:08	18° <u>♍</u> 25'26	0°29'58
				minimum elong	4575 Nov 09 22:08	18° <u>♍</u> 25'26	0°29'58
conjunction	4569 Oct 11 05:29	19° <u>♏</u> 55'41	0°43'15	max. Earth dist.	4575 Nov 09 04:16	18° <u>♍</u> 22'38	19.39127 AU
minimum elong	4569 Oct 11 05:29	19° <u>♏</u> 55'41	0°43'16	morning rise	4575 Nov 26 03:52	19° <u>♍</u> 26'11	
morning rise	4569 Oct 27 17:03	20° <u>♏</u> 57'02		retrograde	4576 Feb 25 15:08	22° <u>♍</u> 47'25	
retrograde	4570 Jan 27 17:23	24° <u>♏</u> 19'09		opposition	4576 May 09 08:03	20° <u>♍</u> 45'29	0°31'46
opposition	4570 Apr 11 07:30	22° <u>♏</u> 16'33	0°47'24	min. Earth dist.	4576 May 10 00:05	20° <u>♍</u> 43'44	17.40147 AU
min. Earth dist.	4570 Apr 12 03:19	22° <u>♏</u> 14'23	17.37628 AU	direct	4576 Jul 24 19:27	18° <u>♍</u> 39'47	
direct	4570 Jun 26 04:54	20° <u>♏</u> 10'37		evening set	4576 Oct 28 15:18	22° <u>♍</u> 08'34	
evening set	4570 Sep 29 19:08	23° <u>♏</u> 39'00					
max. Earth dist.	4570 Oct 15 10:20	24° <u>♏</u> 37'11	19.36989 AU	conjunction	4576 Nov 13 23:34	23° <u>♍</u> 09'39	0°26'57
				minimum elong	4576 Nov 13 23:34	23° <u>♍</u> 09'40	0°26'57
conjunction	4570 Oct 16 08:52	24° <u>♏</u> 40'43	0°41'42	max. Earth dist.	4576 Nov 13 05:30	23° <u>♍</u> 06'50	19.41253 AU
minimum elong	4570 Oct 16 08:52	24° <u>♏</u> 40'43	0°41'42	morning rise	4576 Nov 30 04:26	24° <u>♍</u> 10'15	
morning rise	4570 Nov 01 19:37	25° <u>♏</u> 42'01		retrograde	4577 Mar 01 13:28	27° <u>♍</u> 31'12	
retrograde	4571 Feb 01 18:01	29° <u>♏</u> 04'06		opposition	4577 May 14 08:36	25° <u>♍</u> 29'26	0°28'18
opposition	4571 Apr 16 06:57	27° <u>♏</u> 01'31	0°45'31	min. Earth dist.	4577 May 14 23:25	25° <u>♍</u> 27'50	17.42507 AU
min. Earth dist.	4571 Apr 17 01:30	26° <u>♏</u> 59'29	17.36560 AU	direct	4577 Jul 29 22:41	23° <u>♍</u> 23'54	
direct	4571 Jul 01 07:51	24° <u>♏</u> 55'29		evening set	4577 Nov 02 17:16	26° <u>♍</u> 52'25	
evening set	4571 Oct 04 23:11	28° <u>♏</u> 24'10		max. Earth dist.	4577 Nov 18 08:43	27° <u>♍</u> 50'50	19.43833 AU
conjunction	4571 Oct 21 12:12	29° <u>♏</u> 25'50	0°39'52	conjunction	4577 Nov 19 00:40	27° <u>♍</u> 53'20	0°23'45
minimum elong	4571 Oct 21 12:12	29° <u>♏</u> 25'50	0°39'52	minimum elong	4577 Nov 19 00:40	27° <u>♍</u> 53'20	0°23'46
max. Earth dist.	4571 Oct 20 14:38	29° <u>♏</u> 22'28	19.36203 AU	morning rise	4577 Dec 05 04:20	28° <u>♍</u> 53'43	
	4571 Oct 30 14:37	0° <u>♍</u>			4577 Dec 24 00:09	0° <u>♏</u>	
morning rise	4571 Nov 06 21:54	0° <u>♍</u> 27'04		retrograde	4578 Mar 06 11:54	2° <u>♏</u> 14'20	
retrograde	4572 Feb 06 17:06	3° <u>♍</u> 49'03		opposition	4578 May 19 09:25	0° <u>♏</u> 12'45	0°24'39
opposition	4572 Apr 20 06:45	1° <u>♍</u> 46'32	0°43'19	min. Earth dist.	4578 May 19 23:41	0° <u>♏</u> 11'13	17.45286 AU
min. Earth dist.	4572 Apr 21 01:53	1° <u>♍</u> 44'27	17.36076 AU		4578 May 24 08:19	30° <u>♍</u>	
	4572 Jun 07 22:17	30° <u>♍</u>		direct	4578 Aug 04 02:18	28° <u>♍</u> 07'26	
direct	4572 Jul 05 08:58	29° <u>♏</u> 40'26			4578 Oct 10 18:23	0° <u>♏</u>	
	4572 Aug 01 13:46	0° <u>♍</u>		evening set	4578 Nov 07 18:40	1° <u>♏</u> 35'31	
evening set	4572 Oct 09 03:05	3° <u>♍</u> 09'20		max. Earth dist.	4578 Nov 23 08:54	2° <u>♏</u> 33'43	19.46815 AU
conjunction	4572 Oct 25 15:11	4° <u>♍</u> 10'56	0°37'45	conjunction	4578 Nov 24 00:51	2° <u>♏</u> 36'13	0°20'25
minimum elong	4572 Oct 25 15:11	4° <u>♍</u> 10'56	0°37'46	minimum elong	4578 Nov 24 00:51	2° <u>♏</u> 36'13	0°20'24
max. Earth dist.	4572 Oct 24 17:34	4° <u>♍</u> 07'33	19.36028 AU	morning rise	4578 Dec 10 03:38	3° <u>♏</u> 36'25	
morning rise	4572 Nov 11 00:05	5° <u>♍</u> 12'06		retrograde	4579 Mar 11 09:41	6° <u>♏</u> 56'38	
retrograde	4573 Feb 10 17:32	8° <u>♍</u> 33'57		opposition	4579 May 24 10:08	4° <u>♏</u> 55'12	0°20'50
opposition	4573 Apr 25 06:44	6° <u>♍</u> 31'30	0°40'50	min. Earth dist.	4579 May 24 23:20	4° <u>♏</u> 53'48	17.48461 AU
min. Earth dist.	4573 Apr 26 00:18	6° <u>♍</u> 29'35	17.36201 AU	direct	4579 Aug 09 05:00	2° <u>♏</u> 50'04	
direct	4573 Jul 10 11:42	4° <u>♍</u> 25'25		evening set	4579 Nov 12 19:23	6° <u>♏</u> 17'39	
evening set	4573 Oct 14 06:39	7° <u>♍</u> 54'26		max. Earth dist.	4579 Nov 28 10:47	7° <u>♏</u> 15'58	19.50168 AU
conjunction	4573 Oct 30 17:58	8° <u>♍</u> 55'58	0°35'23	conjunction	4579 Nov 29 00:40	7° <u>♏</u> 18'08	0°16'56
minimum elong	4573 Oct 30 17:58	8° <u>♍</u> 55'58	0°35'23	minimum elong	4579 Nov 29 00:40	7° <u>♏</u> 18'08	0°16'57
max. Earth dist.	4573 Oct 29 22:03	8° <u>♍</u> 52'50	19.36459 AU	morning rise	4579 Dec 15 02:20	8° <u>♏</u> 18'06	
morning rise	4573 Nov 16 01:41	9° <u>♍</u> 56'59		retrograde	4580 Mar 15 07:34	11° <u>♏</u> 37'52	

opposition	4580 May 28 10:33	9° $\mathring{A}$ 36'37	0°16'53	evening set	4585 Dec 10 06:24	4° $\mathring{B}$ 00'38
min. Earth dist.	4580 May 28 22:47	9° $\mathring{A}$ 35'18	17.51969 AU			
direct	4580 Aug 13 07:51	7° $\mathring{A}$ 31'40		conjunction	4585 Dec 26 05:33	4° $\mathring{B}$ 59'29 -0°05'14
evening set	4580 Nov 16 19:34	10° $\mathring{A}$ 58'38		minimum elong	4585 Dec 26 05:32	4° $\mathring{B}$ 59'29 0°05'14
				behind sun begin	4585 Dec 25 23:08	4° $\mathring{B}$ 58'31
conjunction	4580 Dec 02 23:41	11° $\mathring{A}$ 58'52	0°13'21	behind sun end	4585 Dec 26 11:56	5° $\mathring{B}$ 00'27
minimum elong	4580 Dec 02 23:41	11° $\mathring{A}$ 58'52	0°13'22	max. Earth dist.	4585 Dec 26 00:06	4° $\mathring{B}$ 58'40 19.76938 AU
behind sun begin	4580 Dec 02 19:52	11° $\mathring{A}$ 58'17		morning rise	4586 Jan 11 01:57	5° $\mathring{B}$ 57'56
behind sun end	4580 Dec 03 03:30	11° $\mathring{A}$ 59'27		retrograde	4586 Apr 12 08:11	9° $\mathring{B}$ 14'22
max. Earth dist.	4580 Dec 02 10:01	11° $\mathring{A}$ 56'45	19.53844 AU	opposition	4586 Jun 26 07:00	7° $\mathring{B}$ 13'46 -0°07'45
morning rise	4580 Dec 19 00:28	12° $\mathring{A}$ 58'38		min. Earth dist.	4586 Jun 26 10:22	7° $\mathring{B}$ 13'25 17.79688 AU
retrograde	4581 Mar 20 04:41	16° $\mathring{A}$ 17'54		direct	4586 Sep 11 12:27	5° $\mathring{B}$ 10'10
opposition	4581 Jun 02 10:56	14° $\mathring{A}$ 16'46	0°12'51	evening set	4586 Dec 15 00:50	8° $\mathring{B}$ 31'52
min. Earth dist.	4581 Jun 02 22:21	14° $\mathring{A}$ 15'33	17.55807 AU			
direct	4581 Aug 18 09:25	12° $\mathring{A}$ 12'00		conjunction	4586 Dec 30 23:05	9° $\mathring{B}$ 30'25 -0°08'51
evening set	4581 Nov 21 18:43	15° $\mathring{A}$ 38'17		minimum elong	4586 Dec 30 23:05	9° $\mathring{B}$ 30'25 0°08'50
				behind sun begin	4586 Dec 30 17:23	9° $\mathring{B}$ 29'34
conjunction	4581 Dec 07 21:52	16° $\mathring{A}$ 38'16	0°09'42	behind sun end	4586 Dec 31 04:47	9° $\mathring{B}$ 31'17
minimum elong	4581 Dec 07 21:53	16° $\mathring{A}$ 38'16	0°09'43	max. Earth dist.	4586 Dec 30 19:44	9° $\mathring{B}$ 29'56 19.82549 AU
behind sun begin	4581 Dec 07 16:25	16° $\mathring{A}$ 37'26		morning rise	4587 Jan 15 18:43	10° $\mathring{B}$ 28'36
behind sun end	4581 Dec 08 03:21	16° $\mathring{A}$ 39'06		retrograde	4587 Apr 17 00:46	13° $\mathring{B}$ 44'28
max. Earth dist.	4581 Dec 07 10:13	16° $\mathring{A}$ 36'27	19.57837 AU	opposition	4587 Jul 01 04:54	11° $\mathring{B}$ 44'01 -0°11'44
morning rise	4581 Dec 23 21:38	17° $\mathring{A}$ 37'46		min. Earth dist.	4587 Jul 01 07:28	11° $\mathring{B}$ 43'45 17.85465 AU
retrograde	4582 Mar 25 02:00	20° $\mathring{A}$ 56'31		direct	4587 Sep 16 09:33	9° $\mathring{B}$ 40'47
opposition	4582 Jun 07 11:00	18° $\mathring{A}$ 55'31	0°08'44	evening set	4587 Dec 19 18:31	13° $\mathring{B}$ 01'27
min. Earth dist.	4582 Jun 07 20:47	18° $\mathring{A}$ 54'28	17.59938 AU			
direct	4582 Aug 23 11:39	16° $\mathring{A}$ 50'57		conjunction	4588 Jan 04 15:52	13° $\mathring{B}$ 59'42 -0°12'23
evening set	4582 Nov 26 17:08	20° $\mathring{A}$ 16'26		minimum elong	4588 Jan 04 15:52	13° $\mathring{B}$ 59'42 0°12'22
				behind sun begin	4588 Jan 04 11:28	13° $\mathring{B}$ 59'03
conjunction	4582 Dec 12 19:10	21° $\mathring{A}$ 16'08	0°06'01	behind sun end	4588 Jan 04 20:15	14° $\mathring{B}$ 00'22
minimum elong	4582 Dec 12 19:11	21° $\mathring{A}$ 16'08	0°06'02	max. Earth dist.	4588 Jan 04 14:01	13° $\mathring{B}$ 59'26 19.88480 AU
behind sun begin	4582 Dec 12 12:52	21° $\mathring{A}$ 15'11		morning rise	4588 Jan 20 10:53	14° $\mathring{B}$ 57'37
behind sun end	4582 Dec 13 01:30	21° $\mathring{A}$ 17'06		retrograde	4588 Apr 20 19:48	18° $\mathring{B}$ 12'55
max. Earth dist.	4582 Dec 12 08:22	21° $\mathring{A}$ 14'28	19.62127 AU	opposition	4588 Jul 05 01:58	16° $\mathring{B}$ 12'39 -0°15'38
morning rise	4582 Dec 28 18:05	22° $\mathring{A}$ 15'24		min. Earth dist.	4588 Jul 05 01:50	16° $\mathring{B}$ 12'40 17.91518 AU
retrograde	4583 Mar 29 21:45	25° $\mathring{A}$ 33'35		direct	4588 Sep 20 08:37	14° $\mathring{B}$ 09'47
opposition	4583 Jun 12 10:40	23° $\mathring{A}$ 32'40	0°04'36	evening set	4588 Dec 23 11:19	17° $\mathring{B}$ 29'25
min. Earth dist.	4583 Jun 12 19:44	23° $\mathring{A}$ 31'42	17.64391 AU			
direct	4583 Aug 28 11:47	21° $\mathring{A}$ 28'18		conjunction	4589 Jan 08 07:53	18° $\mathring{B}$ 27'23 -0°15'49
evening set	4583 Dec 01 14:25	24° $\mathring{A}$ 52'55		minimum elong	4589 Jan 08 07:53	18° $\mathring{B}$ 27'23 0°15'49
				behind sun begin	4589 Jan 08 06:25	18° $\mathring{B}$ 27'10
conjunction	4583 Dec 17 15:34	25° $\mathring{A}$ 52'21	0°02'18	behind sun end	4589 Jan 08 09:20	18° $\mathring{B}$ 27'36
minimum elong	4583 Dec 17 15:34	25° $\mathring{A}$ 52'21	0°02'18	max. Earth dist.	4589 Jan 08 08:17	18° $\mathring{B}$ 27'27 19.94646 AU
behind sun begin	4583 Dec 17 08:57	25° $\mathring{A}$ 51'21		morning rise	4589 Jan 24 02:12	19° $\mathring{B}$ 25'02
behind sun end	4583 Dec 17 22:11	25° $\mathring{A}$ 53'21		retrograde	4589 Apr 25 11:14	22° $\mathring{B}$ 39'47
max. Earth dist.	4583 Dec 17 06:42	25° $\mathring{A}$ 50'59	19.66740 AU	opposition	4589 Jul 09 22:54	20° $\mathring{B}$ 39'43 -0°19'24
morning rise	4584 Jan 02 13:37	26° $\mathring{A}$ 51'21		min. Earth dist.	4589 Jul 09 22:09	20° $\mathring{B}$ 39'47 17.97786 AU
	4584 Mar 15 16:16	0° $\mathring{B}$		direct	4589 Sep 25 04:19	18° $\mathring{B}$ 37'16
retrograde	4584 Apr 02 18:16	0° $\mathring{B}$ 08'57		evening set	4589 Dec 28 03:10	21° $\mathring{B}$ 55'50
	4584 Apr 21 00:44	30° $\mathring{R}$ $\mathring{A}$				
opposition	4584 Jun 16 09:51	28° $\mathring{A}$ 08'07	0°00'27	conjunction	4590 Jan 12 22:52	22° $\mathring{B}$ 53'29 -0°19'09
min. Earth dist.	4584 Jun 16 16:45	28° $\mathring{A}$ 07'24	17.69147 AU	minimum elong	4590 Jan 12 22:52	22° $\mathring{B}$ 53'29 0°19'08
desc. node	4584 Jul 26 09:14	26° $\mathring{A}$ 37'51		max. Earth dist.	4590 Jan 13 00:29	22° $\mathring{B}$ 53'44 20.00998 AU
direct	4584 Sep 01 13:26	26° $\mathring{A}$ 03'59		morning rise	4590 Jan 28 16:43	23° $\mathring{B}$ 50'52
evening set	4584 Dec 05 10:54	29° $\mathring{A}$ 27'39		retrograde	4590 Apr 30 05:08	27° $\mathring{B}$ 05'04
	4584 Dec 14 06:07	0° $\mathring{B}$		opposition	4590 Jul 14 19:08	25° $\mathring{B}$ 05'12 -0°23'02
conjunction	4584 Dec 21 11:00	0° $\mathring{B}$ 26'48	-0°01'32	min. Earth dist.	4590 Jul 14 15:46	25° $\mathring{B}$ 05'33 18.04193 AU
minimum elong	4584 Dec 21 11:00	0° $\mathring{B}$ 26'48	0°01'32	direct	4590 Sep 30 02:16	23° $\mathring{B}$ 03'09
behind sun begin	4584 Dec 21 04:23	0° $\mathring{B}$ 25'48		evening set	4591 Jan 01 18:13	26° $\mathring{B}$ 20'38
behind sun end	4584 Dec 21 17:37	0° $\mathring{B}$ 27'48				
max. Earth dist.	4584 Dec 21 03:40	0° $\mathring{B}$ 25'41	19.71661 AU	conjunction	4591 Jan 17 13:17	27° $\mathring{B}$ 18'01 -0°22'21
morning rise	4585 Jan 06 08:11	1° $\mathring{B}$ 25'32		minimum elong	4591 Jan 17 13:17	27° $\mathring{B}$ 18'01 0°22'21
retrograde	4585 Apr 07 12:13	4° $\mathring{B}$ 42'33		max. Earth dist.	4591 Jan 17 17:11	27° $\mathring{B}$ 18'36 20.07438 AU
opposition	4585 Jun 21 08:41	2° $\mathring{B}$ 41'49	-0°03'41	morning rise	4591 Feb 02 06:31	28° $\mathring{B}$ 15'08
min. Earth dist.	4585 Jun 21 14:48	2° $\mathring{B}$ 41'10	17.74246 AU		4591 Mar 06 12:30	0° $\mathring{B}$
direct	4585 Sep 06 12:06	0° $\mathring{B}$ 37'56		retrograde	4591 May 04 19:10	1° $\mathring{B}$ 28'47
					4591 Jul 06 23:07	30° $\mathring{R}$ $\mathring{B}$



opposition	4591 Jul 19 14:51	29°  29'06 -0°26'30	evening set	4598 Jan 31 05:05	26°  27'19
min. Earth dist.	4591 Jul 19 11:06	29°  29'29 18.10662 AU			
direct	4591 Oct 04 20:42	27°  27'28	conjunction	4598 Feb 15 20:43	27°  22'51 -0°39'52
	4591 Dec 24 16:34	0° 	minimum elong	4598 Feb 15 20:43	27°  22'51 0°39'53
evening set	4592 Jan 06 08:32	0°  43'52	max. Earth dist.	4598 Feb 16 08:42	27°  24'38 20.50165 AU
			morning rise	4598 Mar 03 12:29	28°  18'23
conjunction	4592 Jan 22 02:51	1°  40'56 -0°25'25		4598 Apr 04 12:04	0° 
minimum elong	4592 Jan 22 02:51	1°  40'56 0°25'24	retrograde	4598 Jun 03 17:57	1°  28'20
max. Earth dist.	4592 Jan 22 07:26	1°  41'38 20.13912 AU		4598 Aug 06 19:48	30° 
morning rise	4592 Feb 06 19:47	2°  37'49	opposition	4598 Aug 19 15:47	29°  29'13 -0°45'07
retrograde	4592 May 08 11:43	5°  50'55	min. Earth dist.	4598 Aug 19 02:35	29°  30'33 18.52934 AU
opposition	4592 Jul 23 09:56	3°  51'24 -0°29'48	direct	4598 Nov 04 15:46	27°  29'46
min. Earth dist.	4592 Jul 23 03:52	3°  52'02 18.17120 AU		4599 Jan 24 06:18	0° 
direct	4592 Oct 08 16:30	1°  50'09	evening set	4599 Feb 04 13:45	0°  38'23
evening set	4593 Jan 09 21:55	5°  05'26			
			conjunction	4599 Feb 20 05:20	1°  33'41 -0°41'32
conjunction	4593 Jan 25 15:42	6°  02'15 -0°28'18	minimum elong	4599 Feb 20 05:20	1°  33'41 0°41'31
minimum elong	4593 Jan 25 15:42	6°  02'15 0°28'18	max. Earth dist.	4599 Feb 20 19:42	1°  35'49 20.55649 AU
max. Earth dist.	4593 Jan 25 22:30	6°  03'16 20.20327 AU	morning rise	4599 Mar 07 20:59	2°  29'02
morning rise	4593 Feb 10 08:06	6°  58'52	retrograde	4599 Jun 08 04:12	5°  38'30
retrograde	4593 May 13 00:48	10°  11'26	opposition	4599 Aug 24 06:13	3°  39'25 -0°46'49
opposition	4593 Jul 28 04:38	8°  12'04 -0°32'55	min. Earth dist.	4599 Aug 23 16:15	3°  40'50 18.58357 AU
min. Earth dist.	4593 Jul 27 22:13	8°  12'43 18.23492 AU	direct	4599 Nov 09 04:32	1°  40'16
direct	4593 Oct 13 09:55	6°  11'12	evening set	4600 Feb 08 21:56	4°  47'51
evening set	4594 Jan 14 10:39	9°  25'21			
			conjunction	4600 Feb 24 13:12	5°  42'58 -0°42'58
conjunction	4594 Jan 30 03:46	10°  21'52 -0°31'01	minimum elong	4600 Feb 24 13:12	5°  42'58 0°42'58
minimum elong	4594 Jan 30 03:46	10°  21'52 0°31'01	max. Earth dist.	4600 Feb 25 03:45	5°  45'07 20.61011 AU
max. Earth dist.	4594 Jan 30 10:55	10°  22'57 20.26643 AU	morning rise	4600 Mar 12 05:06	6°  38'09
morning rise	4594 Feb 14 20:00	11°  18'16	retrograde	4600 Jun 12 16:03	9°  47'11
retrograde	4594 May 17 15:51	14°  30'18	opposition	4600 Aug 28 20:09	7°  48'09 -0°48'16
opposition	4594 Aug 01 22:35	12°  31'03 -0°35'49	min. Earth dist.	4600 Aug 28 04:33	7°  49'43 18.63662 AU
min. Earth dist.	4594 Aug 01 14:02	12°  31'55 18.29740 AU	direct	4600 Nov 13 17:05	5°  49'16
direct	4594 Oct 18 03:19	10°  30'30	evening set	4601 Feb 13 05:14	8°  55'54
evening set	4595 Jan 18 22:23	13°  43'32			
			conjunction	4601 Feb 28 20:36	9°  50'50 -0°44'10
conjunction	4595 Feb 03 15:11	14°  39'48 -0°33'33	minimum elong	4601 Feb 28 20:36	9°  50'50 0°44'10
minimum elong	4595 Feb 03 15:11	14°  39'48 0°33'32	max. Earth dist.	4601 Mar 01 13:30	9°  53'19 20.66233 AU
max. Earth dist.	4595 Feb 04 00:28	14°  41'11 20.32796 AU	morning rise	4601 Mar 16 12:29	10°  45'52
	4595 Feb 09 05:25	15° 	retrograde	4601 Jun 17 02:02	13°  54'32
morning rise	4595 Feb 19 07:04	15°  35'57	opposition	4601 Sep 02 09:35	11°  55'33 -0°49'27
retrograde	4595 May 22 04:12	18°  47'27	min. Earth dist.	4601 Sep 01 17:06	11°  57'13 18.68802 AU
opposition	4595 Aug 06 15:58	16°  48'16 -0°38'30	direct	4601 Nov 18 04:31	9°  56'59
min. Earth dist.	4595 Aug 06 07:05	16°  49'11 18.35801 AU			
	4595 Sep 30 19:44	15° 			
direct	4595 Oct 22 19:26	14°  48'03			
	4595 Nov 13 10:12	15° 			
evening set	4596 Jan 23 09:31	17°  59'57			
conjunction	4596 Feb 08 01:46	18°  55'57 -0°35'52			
minimum elong	4596 Feb 08 01:46	18°  55'57 0°35'53			
max. Earth dist.	4596 Feb 08 11:10	18°  57'21 20.38764 AU			
morning rise	4596 Feb 23 17:38	19°  51'53			
retrograde	4596 May 25 17:52	23°  02'51			
opposition	4596 Aug 10 08:28	21°  03'43 -0°40'57			
min. Earth dist.	4596 Aug 09 21:43	21°  04'48 18.41677 AU			
direct	4596 Oct 26 10:59	19°  03'45			
evening set	4597 Jan 26 19:42	22°  14'32			
conjunction	4597 Feb 11 11:45	23°  10'18 -0°37'59			
minimum elong	4597 Feb 11 11:45	23°  10'18 0°37'58			
max. Earth dist.	4597 Feb 11 23:25	23°  12'02 20.44543 AU			
morning rise	4597 Feb 27 03:22	24°  06'01			
retrograde	4597 May 30 05:06	27°  16'27			
opposition	4597 Aug 15 00:32	25°  17'21 -0°43'10			
min. Earth dist.	4597 Aug 14 13:10	25°  18'30 18.47373 AU			
direct	4597 Oct 31 01:39	23°  17'39			