

retrograde	8100 Mar 22 11:38	20° $\mathring{\text{A}}$ 14'46		retrograde	8106 Apr 20 11:52	18° $\mathring{\text{Z}}$ 49'11	
opposition	8100 Jun 04 05:52	18° $\mathring{\text{A}}$ 11'54	0°33'43	opposition	8106 Jul 03 08:02	16° $\mathring{\text{Z}}$ 46'53	0°06'34
min. Earth dist.	8100 Jun 04 21:20	18° $\mathring{\text{A}}$ 10'12	17.35414 AU	min. Earth dist.	8106 Jul 03 22:02	16° $\mathring{\text{Z}}$ 45'22	17.38151 AU
direct	8100 Aug 18 21:38	16° $\mathring{\text{A}}$ 06'15		direct	8106 Sep 17 14:05	14° $\mathring{\text{Z}}$ 41'08	
evening set	8100 Nov 22 03:43	19° $\mathring{\text{A}}$ 34'21		evening set	8106 Dec 22 02:57	18° $\mathring{\text{Z}}$ 09'31	
conjunction	8100 Dec 08 17:42	20° $\mathring{\text{A}}$ 36'12	0°28'23	conjunction	8107 Jan 07 12:16	19° $\mathring{\text{Z}}$ 10'46	0°03'44
minimum elong	8100 Dec 08 17:42	20° $\mathring{\text{A}}$ 36'12	0°28'32	minimum elong	8107 Jan 07 12:16	19° $\mathring{\text{Z}}$ 10'46	0°03'53
max. Earth dist.	8100 Dec 08 00:19	20° $\mathring{\text{A}}$ 33'29	19.34993 AU	behind sun begin	8107 Jan 07 05:39	19° $\mathring{\text{Z}}$ 09'45	
morning rise	8100 Dec 25 05:06	21° $\mathring{\text{A}}$ 37'42		behind sun end	8107 Jan 07 18:53	19° $\mathring{\text{Z}}$ 11'46	
retrograde	8101 Mar 27 13:28	25° $\mathring{\text{A}}$ 00'48		max. Earth dist.	8107 Jan 06 20:58	19° $\mathring{\text{Z}}$ 08'22	19.39172 AU
opposition	8101 Jun 09 05:48	22° $\mathring{\text{A}}$ 58'02	0°29'36	morning rise	8107 Jan 23 18:35	20° $\mathring{\text{Z}}$ 11'34	
min. Earth dist.	8101 Jun 09 20:38	22° $\mathring{\text{A}}$ 56'25	17.34724 AU	retrograde	8107 Apr 25 11:15	23° $\mathring{\text{Z}}$ 33'04	
direct	8101 Aug 24 00:21	20° $\mathring{\text{A}}$ 52'21		opposition	8107 Jul 08 08:25	21° $\mathring{\text{Z}}$ 30'52	0°01'43
evening set	8101 Nov 27 08:23	24° $\mathring{\text{A}}$ 20'45		min. Earth dist.	8107 Jul 08 20:32	21° $\mathring{\text{Z}}$ 29'33	17.40344 AU
conjunction	8101 Dec 13 21:40	25° $\mathring{\text{A}}$ 22'35	0°24'36	direct	8107 Sep 22 18:08	19° $\mathring{\text{Z}}$ 25'11	
minimum elong	8101 Dec 13 21:40	25° $\mathring{\text{A}}$ 22'35	0°24'45	desc. node	8107 Nov 14 22:36	20° $\mathring{\text{Z}}$ 37'16	
max. Earth dist.	8101 Dec 13 03:43	25° $\mathring{\text{A}}$ 19'46	19.34524 AU	evening set	8107 Dec 27 05:05	22° $\mathring{\text{Z}}$ 53'14	
morning rise	8101 Dec 30 08:20	26° $\mathring{\text{A}}$ 24'02		conjunction	8108 Jan 12 13:36	23° $\mathring{\text{Z}}$ 54'18	-0°00'43
retrograde	8102 Apr 01 12:57	29° $\mathring{\text{A}}$ 47'00		minimum elong	8108 Jan 12 13:36	23° $\mathring{\text{Z}}$ 54'18	0°00'35
opposition	8102 Jun 14 05:58	27° $\mathring{\text{A}}$ 44'21	0°25'17	behind sun begin	8108 Jan 12 06:55	23° $\mathring{\text{Z}}$ 53'17	
min. Earth dist.	8102 Jun 14 21:35	27° $\mathring{\text{A}}$ 42'39	17.34482 AU	behind sun end	8108 Jan 12 20:16	23° $\mathring{\text{Z}}$ 55'19	
direct	8102 Aug 29 02:02	25° $\mathring{\text{A}}$ 38'36		max. Earth dist.	8108 Jan 12 00:17	23° $\mathring{\text{Z}}$ 52'14	19.41642 AU
evening set	8102 Dec 02 12:51	29° $\mathring{\text{A}}$ 07'14		morning rise	8108 Jan 28 18:48	24° $\mathring{\text{Z}}$ 54'55	
	8102 Dec 16 16:14	0° $\mathring{\text{Z}}$		retrograde	8108 Apr 29 08:42	28° $\mathring{\text{Z}}$ 15'59	
max. Earth dist.	8102 Dec 18 08:02	0° $\mathring{\text{Z}}$ 06'16	19.34508 AU	opposition	8108 Jul 12 08:53	26° $\mathring{\text{Z}}$ 13'54	-0°03'08
conjunction	8102 Dec 19 01:30	0° $\mathring{\text{Z}}$ 09'00	0°20'38	min. Earth dist.	8108 Jul 12 20:50	26° $\mathring{\text{Z}}$ 12'37	17.43102 AU
minimum elong	8102 Dec 19 01:30	0° $\mathring{\text{Z}}$ 09'00	0°20'47	direct	8108 Sep 26 20:36	24° $\mathring{\text{Z}}$ 08'21	
morning rise	8103 Jan 04 11:21	1° $\mathring{\text{Z}}$ 10'22		evening set	8108 Dec 31 06:36	27° $\mathring{\text{Z}}$ 36'00	
retrograde	8103 Apr 06 14:18	4° $\mathring{\text{Z}}$ 33'09		conjunction	8109 Jan 16 14:02	28° $\mathring{\text{Z}}$ 36'51	-0°05'05
opposition	8103 Jun 19 06:22	2° $\mathring{\text{Z}}$ 30'36	0°20'47	minimum elong	8109 Jan 16 14:02	28° $\mathring{\text{Z}}$ 36'51	0°04'57
min. Earth dist.	8103 Jun 19 20:52	2° $\mathring{\text{Z}}$ 29'01	17.34679 AU	behind sun begin	8109 Jan 16 07:32	28° $\mathring{\text{Z}}$ 35'51	
direct	8103 Sep 03 05:34	0° $\mathring{\text{Z}}$ 24'50		behind sun end	8109 Jan 16 20:32	28° $\mathring{\text{Z}}$ 37'50	
evening set	8103 Dec 07 16:58	3° $\mathring{\text{Z}}$ 53'33		max. Earth dist.	8109 Jan 16 01:02	28° $\mathring{\text{Z}}$ 34'49	19.44694 AU
max. Earth dist.	8103 Dec 23 11:42	4° $\mathring{\text{Z}}$ 52'33	19.34934 AU	morning rise	8109 Feb 01 18:29	29° $\mathring{\text{Z}}$ 37'15	
conjunction	8103 Dec 24 04:51	4° $\mathring{\text{Z}}$ 55'14	0°16'32		8109 Feb 08 00:57	0° $\mathring{\text{Z}}$	
minimum elong	8103 Dec 24 04:51	4° $\mathring{\text{Z}}$ 55'14	0°16'42	retrograde	8109 May 04 07:10	2° $\mathring{\text{Z}}$ 57'52	
morning rise	8104 Jan 09 13:47	5° $\mathring{\text{Z}}$ 56'30		opposition	8109 Jul 17 09:01	0° $\mathring{\text{Z}}$ 55'57	-0°07'56
retrograde	8104 Apr 10 13:13	9° $\mathring{\text{Z}}$ 19'03		min. Earth dist.	8109 Jul 17 18:56	0° $\mathring{\text{Z}}$ 54'53	17.46432 AU
opposition	8104 Jun 23 07:00	7° $\mathring{\text{Z}}$ 16'34	0°16'08		8109 Aug 08 20:34	30° $\mathring{\text{R}}$ $\mathring{\text{Z}}$	
min. Earth dist.	8104 Jun 23 22:06	7° $\mathring{\text{Z}}$ 14'56	17.35345 AU	direct	8109 Oct 01 23:47	28° $\mathring{\text{Z}}$ 50'34	
direct	8104 Sep 07 07:38	5° $\mathring{\text{Z}}$ 10'47			8109 Nov 23 04:37	0° $\mathring{\text{Z}}$	
evening set	8104 Dec 11 20:46	8° $\mathring{\text{Z}}$ 39'30		evening set	8110 Jan 05 07:28	2° $\mathring{\text{Z}}$ 17'45	
conjunction	8104 Dec 28 07:51	9° $\mathring{\text{Z}}$ 41'04	0°12'20	conjunction	8110 Jan 21 14:05	3° $\mathring{\text{Z}}$ 18'22	-0°09'21
minimum elong	8104 Dec 28 07:51	9° $\mathring{\text{Z}}$ 41'04	0°12'29	minimum elong	8110 Jan 21 14:05	3° $\mathring{\text{Z}}$ 18'22	0°09'14
behind sun begin	8104 Dec 28 03:32	9° $\mathring{\text{Z}}$ 40'24		behind sun begin	8110 Jan 21 08:27	3° $\mathring{\text{Z}}$ 17'31	
behind sun end	8104 Dec 28 12:09	9° $\mathring{\text{Z}}$ 41'44		behind sun end	8110 Jan 21 19:43	3° $\mathring{\text{Z}}$ 19'14	
max. Earth dist.	8104 Dec 27 15:05	9° $\mathring{\text{Z}}$ 38'26	19.35848 AU	max. Earth dist.	8110 Jan 21 03:25	3° $\mathring{\text{Z}}$ 16'43	19.48295 AU
morning rise	8105 Jan 13 15:59	10° $\mathring{\text{Z}}$ 42'12		morning rise	8110 Feb 06 17:24	4° $\mathring{\text{Z}}$ 18'33	
retrograde	8105 Apr 15 13:48	14° $\mathring{\text{Z}}$ 04'27		retrograde	8110 May 09 04:10	7° $\mathring{\text{Z}}$ 38'40	
opposition	8105 Jun 28 07:24	12° $\mathring{\text{Z}}$ 02'04	0°11'23	opposition	8110 Jul 22 09:00	5° $\mathring{\text{Z}}$ 36'59	-0°12'40
min. Earth dist.	8105 Jun 28 21:02	12° $\mathring{\text{Z}}$ 00'35	17.36495 AU	min. Earth dist.	8110 Jul 22 18:31	5° $\mathring{\text{Z}}$ 35'57	17.50290 AU
direct	8105 Sep 12 11:37	9° $\mathring{\text{Z}}$ 56'17		direct	8110 Oct 07 00:59	3° $\mathring{\text{Z}}$ 31'50	
evening set	8105 Dec 17 00:06	13° $\mathring{\text{Z}}$ 24'53		evening set	8111 Jan 10 07:49	6° $\mathring{\text{Z}}$ 58'27	
conjunction	8106 Jan 02 10:26	14° $\mathring{\text{Z}}$ 26'19	0°08'03	conjunction	8111 Jan 26 13:16	7° $\mathring{\text{Z}}$ 58'50	-0°13'32
minimum elong	8106 Jan 02 10:25	14° $\mathring{\text{Z}}$ 26'19	0°08'12	minimum elong	8111 Jan 26 13:16	7° $\mathring{\text{Z}}$ 58'50	0°13'25
behind sun begin	8106 Jan 02 04:29	14° $\mathring{\text{Z}}$ 25'24		behind sun begin	8111 Jan 26 09:30	7° $\mathring{\text{Z}}$ 58'16	
behind sun end	8106 Jan 02 16:21	14° $\mathring{\text{Z}}$ 27'13		behind sun end	8111 Jan 26 17:03	7° $\mathring{\text{Z}}$ 59'25	
max. Earth dist.	8106 Jan 01 18:48	14° $\mathring{\text{Z}}$ 23'52	19.37247 AU	max. Earth dist.	8111 Jan 26 02:50	7° $\mathring{\text{Z}}$ 57'13	19.52413 AU
morning rise	8106 Jan 18 17:34	15° $\mathring{\text{Z}}$ 27'17		morning rise	8111 Feb 11 15:48	8° $\mathring{\text{Z}}$ 58'46	
				retrograde	8111 May 14 02:32	12° $\mathring{\text{Z}}$ 18'24	

opposition	8111 Jul 27 08:48	10° $\approx$ 16'56 -0°17'17	min. Earth dist.	8117 Aug 24 02:41	7° $\mathbb{H}$ 47'51 17.86854 AU
min. Earth dist.	8111 Jul 27 16:32	10° $\approx$ 16'06 17.54638 AU	direct	8117 Nov 09 00:58	5° $\mathbb{H}$ 44'59
direct	8111 Oct 12 02:41	8° $\approx$ 12'03	evening set	8118 Feb 11 11:16	9° $\mathbb{H}$ 05'41
evening set	8112 Jan 15 07:05	11° $\approx$ 38'03			
			conjunction	8118 Feb 27 10:11	10° $\mathbb{H}$ 04'03 -0°38'38
conjunction	8112 Jan 31 11:44	12° $\approx$ 38'11 -0°17'37	minimum elong	8118 Feb 27 10:11	10° $\mathbb{H}$ 04'03 0°38'35
minimum elong	8112 Jan 31 11:43	12° $\approx$ 38'10 0°17'30	max. Earth dist.	8118 Feb 27 08:50	10° $\mathbb{H}$ 03'50 19.89794 AU
max. Earth dist.	8112 Jan 31 03:46	12° $\approx$ 36'57 19.56971 AU	morning rise	8118 Mar 15 06:42	11° $\mathbb{H}$ 02'03
morning rise	8112 Feb 16 13:10	13° $\approx$ 37'52	retrograde	8118 Jun 14 18:41	14° $\mathbb{H}$ 17'29
	8112 Mar 11 10:20	15° $\approx$	opposition	8118 Aug 28 21:40	12° $\mathbb{H}$ 17'17 -0°44'27
retrograde	8112 May 17 23:15	16° $\approx$ 56'58	min. Earth dist.	8118 Aug 28 22:00	12° $\mathbb{H}$ 17'15 17.92745 AU
	8112 Jul 29 16:21	15° $\mathbb{R}\approx$	direct	8118 Nov 14 00:07	10° $\mathbb{H}$ 14'30
opposition	8112 Jul 31 08:24	14° $\approx$ 55'44 -0°21'47	evening set	8119 Feb 16 04:48	13° $\mathbb{H}$ 34'07
min. Earth dist.	8112 Jul 31 15:31	14° $\approx$ 54'59 17.59382 AU			
direct	8112 Oct 16 02:38	12° $\approx$ 51'10	conjunction	8119 Mar 04 02:49	14° $\mathbb{H}$ 32'10 -0°41'21
	8112 Dec 28 02:28	15° $\approx$	minimum elong	8119 Mar 04 02:49	14° $\mathbb{H}$ 32'10 0°41'17
evening set	8113 Jan 19 05:57	16° $\approx$ 16'27	max. Earth dist.	8119 Mar 04 02:15	14° $\mathbb{H}$ 32'04 19.95732 AU
			morning rise	8119 Mar 19 22:44	15° $\mathbb{H}$ 29'54
conjunction	8113 Feb 04 09:26	17° $\approx$ 16'18 -0°21'35	retrograde	8119 Jun 19 10:05	18° $\mathbb{H}$ 44'39
minimum elong	8113 Feb 04 09:25	17° $\approx$ 16'18 0°21'29	opposition	8119 Sep 02 18:08	16° $\mathbb{H}$ 44'32 -0°47'19
max. Earth dist.	8113 Feb 04 01:34	17° $\approx$ 15'05 19.61893 AU	min. Earth dist.	8119 Sep 02 17:53	16° $\mathbb{H}$ 44'34 17.98743 AU
morning rise	8113 Feb 20 10:07	18° $\approx$ 15'43	direct	8119 Nov 18 20:42	14° $\mathbb{H}$ 42'01
retrograde	8113 May 22 20:50	21° $\approx$ 34'17	evening set	8120 Feb 20 21:05	18° $\mathbb{H}$ 00'31
opposition	8113 Aug 05 07:32	19° $\approx$ 33'16 -0°26'06			
min. Earth dist.	8113 Aug 05 13:20	19° $\approx$ 32'39 17.64466 AU	conjunction	8120 Mar 07 18:24	18° $\mathbb{H}$ 58'15 -0°43'48
direct	8113 Oct 21 03:14	17° $\approx$ 28'59	minimum elong	8120 Mar 07 18:24	18° $\mathbb{H}$ 58'15 0°43'46
evening set	8114 Jan 24 03:55	20° $\approx$ 53'30	max. Earth dist.	8120 Mar 07 19:40	18° $\mathbb{H}$ 58'26 20.01781 AU
			morning rise	8120 Mar 23 13:42	19° $\mathbb{H}$ 55'42
conjunction	8114 Feb 09 06:35	21° $\approx$ 53'05 -0°25'23	retrograde	8120 Jun 23 02:35	23° $\mathbb{H}$ 09'47
minimum elong	8114 Feb 09 06:34	21° $\approx$ 53'05 0°25'17	opposition	8120 Sep 06 13:48	21° $\mathbb{H}$ 09'45 -0°49'52
max. Earth dist.	8114 Feb 09 00:54	21° $\approx$ 52'12 19.67111 AU	min. Earth dist.	8120 Sep 06 11:29	21° $\mathbb{H}$ 09'59 18.04837 AU
morning rise	8114 Feb 25 06:13	22° $\approx$ 52'14	direct	8120 Nov 22 18:25	19° $\mathbb{H}$ 07'30
retrograde	8114 May 27 16:49	26° $\approx$ 10'11	evening set	8121 Feb 24 12:37	22° $\mathbb{H}$ 24'52
opposition	8114 Aug 10 06:31	24° $\approx$ 09'24 -0°30'14			
min. Earth dist.	8114 Aug 10 11:25	24° $\approx$ 08'53 17.69799 AU	conjunction	8121 Mar 12 09:08	23° $\mathbb{H}$ 22'18 -0°45'58
direct	8114 Oct 26 02:55	22° $\approx$ 05'27	minimum elong	8121 Mar 12 09:08	23° $\mathbb{H}$ 22'18 0°45'57
evening set	8115 Jan 29 01:08	25° $\approx$ 29'06	max. Earth dist.	8121 Mar 12 11:37	23° $\mathbb{H}$ 22'41 20.07929 AU
			morning rise	8121 Mar 28 03:54	24° $\mathbb{H}$ 19'29
conjunction	8115 Feb 14 02:39	26° $\approx$ 28'22 -0°29'01	retrograde	8121 Jun 27 16:18	27° $\mathbb{H}$ 32'54
minimum elong	8115 Feb 14 02:39	26° $\approx$ 28'22 0°28'56	opposition	8121 Sep 11 08:47	25° $\mathbb{H}$ 32'58 -0°52'06
max. Earth dist.	8115 Feb 13 21:09	26° $\approx$ 27'31 19.72553 AU	min. Earth dist.	8121 Sep 11 05:56	25° $\mathbb{H}$ 33'16 18.11061 AU
morning rise	8115 Mar 02 01:33	27° $\approx$ 27'14	direct	8121 Nov 27 12:43	23° $\mathbb{H}$ 31'01
	8115 Apr 21 16:23	0° $\mathbb{H}$	evening set	8122 Mar 01 03:10	26° $\mathbb{H}$ 47'17
retrograde	8115 Jun 01 12:44	0° $\mathbb{H}$ 44'37			
	8115 Jul 13 16:22	30° $\mathbb{R}\approx$	conjunction	8122 Mar 16 23:02	27° $\mathbb{H}$ 44'25 -0°47'51
opposition	8115 Aug 15 05:07	28° $\approx$ 43'59 -0°34'10	minimum elong	8122 Mar 16 23:02	27° $\mathbb{H}$ 44'25 0°47'50
min. Earth dist.	8115 Aug 15 09:00	28° $\approx$ 43'35 17.75346 AU	max. Earth dist.	8122 Mar 17 03:09	27° $\mathbb{H}$ 45'02 20.14216 AU
direct	8115 Oct 31 02:41	26° $\approx$ 40'20	morning rise	8122 Apr 01 17:16	28° $\mathbb{H}$ 41'19
evening set	8116 Feb 02 21:23	0° $\mathbb{H}$ 03'04		8122 Apr 25 06:02	0° $\mathbb{Y}$
	8116 Feb 02 01:02	0° $\mathbb{H}$	retrograde	8122 Jul 02 07:49	1° $\mathbb{Y}$ 54'06
				8122 Sep 13 19:50	30° $\mathbb{R}\mathbb{H}$
conjunction	8116 Feb 18 22:06	1° $\mathbb{H}$ 02'02 -0°32'27	opposition	8122 Sep 16 03:10	29° $\mathbb{H}$ 54'18 -0°54'01
minimum elong	8116 Feb 18 22:06	1° $\mathbb{H}$ 02'02 0°32'22	min. Earth dist.	8122 Sep 15 21:53	29° $\mathbb{H}$ 54'51 18.17402 AU
max. Earth dist.	8116 Feb 18 18:37	1° $\mathbb{H}$ 01'30 19.78181 AU	direct	8122 Dec 02 08:31	27° $\mathbb{H}$ 52'42
morning rise	8116 Mar 05 20:04	2° $\mathbb{H}$ 00'37		8123 Feb 13 13:20	0° $\mathbb{Y}$
retrograde	8116 Jun 05 07:31	5° $\mathbb{H}$ 17'22	evening set	8123 Mar 05 16:43	1° $\mathbb{Y}$ 07'50
opposition	8116 Aug 19 03:09	3° $\mathbb{H}$ 16'55 -0°37'51			
min. Earth dist.	8116 Aug 19 05:46	3° $\mathbb{H}$ 16'38 17.81039 AU	conjunction	8123 Mar 21 11:56	2° $\mathbb{Y}$ 04'41 -0°49'27
direct	8116 Nov 04 02:28	1° $\mathbb{H}$ 13'34	minimum elong	8123 Mar 21 11:55	2° $\mathbb{Y}$ 04'41 0°49'27
evening set	8117 Feb 06 16:50	4° $\mathbb{H}$ 35'18	max. Earth dist.	8123 Mar 21 17:35	2° $\mathbb{Y}$ 05'32 20.20606 AU
			morning rise	8123 Apr 06 05:44	3° $\mathbb{Y}$ 01'21
conjunction	8117 Feb 22 16:32	5° $\mathbb{H}$ 33'58 -0°35'39	retrograde	8123 Jul 06 20:29	6° $\mathbb{Y}$ 13'32
minimum elong	8117 Feb 22 16:32	5° $\mathbb{H}$ 33'58 0°35'35	opposition	8123 Sep 20 21:05	4° $\mathbb{Y}$ 13'52 -0°55'37
max. Earth dist.	8117 Feb 22 13:23	5° $\mathbb{H}$ 33'29 19.83935 AU	min. Earth dist.	8123 Sep 20 15:17	4° $\mathbb{Y}$ 14'28 18.23845 AU
morning rise	8117 Mar 10 13:52	6° $\mathbb{H}$ 32'16	direct	8123 Dec 07 00:58	2° $\mathbb{Y}$ 12'39
retrograde	8117 Jun 10 01:04	9° $\mathbb{H}$ 48'22	evening set	8124 Mar 09 05:29	5° $\mathbb{Y}$ 26'42
opposition	8117 Aug 24 00:44	7° $\mathbb{H}$ 48'03 -0°41'17			

conjunction	8124 Mar 25 00:09	6° $\Upsilon$ 23'16 -0°50'45	retrograde	8130 Aug 05 11:33	5° $\mathcal{B}$ 47'19
minimum elong	8124 Mar 25 00:09	6° $\Upsilon$ 23'16 0°50'45	opposition	8130 Oct 21 08:49	3° $\mathcal{B}$ 48'40 -0°57'48
max. Earth dist.	8124 Mar 25 07:08	6° $\Upsilon$ 24'19 20.27081 AU	min. Earth dist.	8130 Oct 20 19:30	3° $\mathcal{B}$ 50'01 18.66270 AU
morning rise	8124 Apr 09 17:38	7° $\Upsilon$ 19'41	direct	8131 Jan 06 06:27	1° $\mathcal{B}$ 49'56
retrograde	8124 Jul 10 11:05	10° $\Upsilon$ 31'17	evening set	8131 Apr 08 02:51	4° $\mathcal{B}$ 56'54
opposition	8124 Sep 24 14:01	8° $\Upsilon$ 31'48 -0°56'53			
min. Earth dist.	8124 Sep 24 05:55	8° $\Upsilon$ 32'38 18.30327 AU	conjunction	8131 Apr 23 19:24	5° $\mathcal{B}$ 51'54 -0°51'50
direct	8124 Dec 10 18:28	6° $\Upsilon$ 30'58	minimum elong	8131 Apr 23 19:24	5° $\mathcal{B}$ 51'54 0°51'55
evening set	8125 Mar 13 17:28	9° $\Upsilon$ 43'57	max. Earth dist.	8131 Apr 24 09:01	5° $\mathcal{B}$ 53'54 20.68765 AU
			morning rise	8131 May 09 12:10	6° $\mathcal{B}$ 46'58
conjunction	8125 Mar 29 11:39	10° $\Upsilon$ 40'15 -0°51'46	retrograde	8131 Aug 09 20:27	9° $\mathcal{B}$ 55'09
minimum elong	8125 Mar 29 11:39	10° $\Upsilon$ 40'15 0°51'48	opposition	8131 Oct 25 22:02	7° $\mathcal{B}$ 56'33 -0°56'53
max. Earth dist.	8125 Mar 29 20:07	10° $\Upsilon$ 41'32 20.33552 AU	min. Earth dist.	8131 Oct 25 09:10	7° $\mathcal{B}$ 57'51 18.71215 AU
morning rise	8125 Apr 14 04:50	11° $\Upsilon$ 36'27	direct	8132 Jan 10 17:19	5° $\mathcal{B}$ 58'04
retrograde	8125 Jul 14 22:55	14° $\Upsilon$ 47'30	evening set	8132 Apr 11 10:18	9° $\mathcal{B}$ 04'05
opposition	8125 Sep 29 06:40	12° $\Upsilon$ 48'12 -0°57'50			
min. Earth dist.	8125 Sep 28 22:25	12° $\Upsilon$ 49'02 18.36781 AU	conjunction	8132 Apr 27 02:45	9° $\mathcal{B}$ 58'55 -0°50'53
direct	8125 Dec 15 09:18	10° $\Upsilon$ 47'45	minimum elong	8132 Apr 27 02:45	9° $\mathcal{B}$ 58'55 0°50'59
evening set	8126 Mar 18 04:40	13° $\Upsilon$ 59'41	max. Earth dist.	8132 Apr 27 16:16	10° $\mathcal{B}$ 00'54 20.73533 AU
			morning rise	8132 May 12 19:48	10° $\mathcal{B}$ 53'50
conjunction	8126 Apr 02 22:23	14° $\Upsilon$ 55'44 -0°52'29	retrograde	8132 Aug 13 07:29	14° $\mathcal{B}$ 01'36
minimum elong	8126 Apr 02 22:22	14° $\Upsilon$ 55'44 0°52'31	opposition	8132 Oct 29 10:18	12° $\mathcal{B}$ 02'59 -0°55'41
max. Earth dist.	8126 Apr 03 07:44	14° $\Upsilon$ 57'08 20.39967 AU	min. Earth dist.	8132 Oct 28 20:03	12° $\mathcal{B}$ 04'25 18.75803 AU
morning rise	8126 Apr 18 15:21	15° $\Upsilon$ 51'42	direct	8133 Jan 14 06:08	10° $\mathcal{B}$ 04'41
retrograde	8126 Jul 19 12:41	19° $\Upsilon$ 02'15	evening set	8133 Apr 15 17:05	13° $\mathcal{B}$ 09'50
opposition	8126 Oct 03 22:35	17° $\Upsilon$ 03'07 -0°58'27			
min. Earth dist.	8126 Oct 03 12:12	17° $\Upsilon$ 04'10 18.43135 AU	conjunction	8133 May 01 09:38	14° $\mathcal{B}$ 04'31 -0°49'41
direct	8126 Dec 20 01:06	15° $\Upsilon$ 03'03	minimum elong	8133 May 01 09:38	14° $\mathcal{B}$ 04'31 0°49'47
evening set	8127 Mar 22 15:11	18° $\Upsilon$ 13'57	max. Earth dist.	8133 May 02 00:28	14° $\mathcal{B}$ 06'41 20.77942 AU
			morning rise	8133 May 17 02:48	14° $\mathcal{B}$ 59'18
conjunction	8127 Apr 07 08:33	19° $\Upsilon$ 09'46 -0°52'55		8133 May 17 07:41	15° $\mathcal{B}$
minimum elong	8127 Apr 07 08:33	19° $\Upsilon$ 09'46 0°52'58	retrograde	8133 Aug 17 15:45	18° $\mathcal{B}$ 06'40
max. Earth dist.	8127 Apr 07 19:20	19° $\Upsilon$ 11'23 20.46242 AU	opposition	8133 Nov 02 22:17	16° $\mathcal{B}$ 08'02 -0°54'11
morning rise	8127 Apr 23 01:18	20° $\Upsilon$ 05'32	min. Earth dist.	8133 Nov 02 08:21	16° $\mathcal{B}$ 09'26 18.80054 AU
retrograde	8127 Jul 23 23:45	23° $\Upsilon$ 15'34		8133 Dec 03 00:37	15° $\mathcal{R}$ $\mathcal{B}$
opposition	8127 Oct 08 14:05	21° $\Upsilon$ 16'36 -0°58'45	direct	8134 Jan 18 15:51	14° $\mathcal{B}$ 09'55
min. Earth dist.	8127 Oct 08 03:50	21° $\Upsilon$ 17'38 18.49331 AU		8134 Mar 04 16:03	15° $\mathcal{B}$
direct	8127 Dec 24 14:23	19° $\Upsilon$ 16'55	evening set	8134 Apr 19 23:16	17° $\mathcal{B}$ 14'13
evening set	8128 Mar 26 01:00	22° $\Upsilon$ 26'48			
			conjunction	8134 May 05 15:48	18° $\mathcal{B}$ 08'44 -0°48'14
conjunction	8128 Apr 10 18:02	23° $\Upsilon$ 22'23 -0°53'04	minimum elong	8134 May 05 15:48	18° $\mathcal{B}$ 08'45 0°48'21
minimum elong	8128 Apr 10 18:02	23° $\Upsilon$ 22'23 0°53'08	max. Earth dist.	8134 May 06 06:43	18° $\mathcal{B}$ 10'55 20.82050 AU
max. Earth dist.	8128 Apr 11 05:16	23° $\Upsilon$ 24'03 20.52332 AU	morning rise	8134 May 21 09:20	19° $\mathcal{B}$ 03'26
morning rise	8128 Apr 26 10:48	24° $\Upsilon$ 17'57	retrograde	8134 Aug 22 01:29	22° $\mathcal{B}$ 10'26
retrograde	8128 Jul 27 13:03	27° $\Upsilon$ 27'31	opposition	8134 Nov 07 09:36	20° $\mathcal{B}$ 11'47 -0°52'26
opposition	8128 Oct 12 04:50	25° $\Upsilon$ 28'41 -0°58'45	min. Earth dist.	8134 Nov 06 18:07	20° $\mathcal{B}$ 13'20 18.84023 AU
min. Earth dist.	8128 Oct 11 16:45	25° $\Upsilon$ 29'54 18.55292 AU	direct	8135 Jan 23 03:14	18° $\mathcal{B}$ 13'50
direct	8128 Dec 28 04:48	23° $\Upsilon$ 29'21	evening set	8135 Apr 24 05:02	21° $\mathcal{B}$ 17'21
evening set	8129 Mar 30 10:16	26° $\Upsilon$ 38'14			
			conjunction	8135 May 09 21:46	22° $\mathcal{B}$ 11'46 -0°46'32
conjunction	8129 Apr 15 03:04	27° $\Upsilon$ 33'37 -0°52'56	minimum elong	8135 May 09 21:46	22° $\mathcal{B}$ 11'46 0°46'39
minimum elong	8129 Apr 15 03:04	27° $\Upsilon$ 33'37 0°53'00	max. Earth dist.	8135 May 10 14:09	22° $\mathcal{B}$ 14'09 20.85875 AU
max. Earth dist.	8129 Apr 15 15:29	27° $\Upsilon$ 35'27 20.58139 AU	morning rise	8135 May 25 15:33	23° $\mathcal{B}$ 06'22
morning rise	8129 Apr 30 19:42	28° $\Upsilon$ 29'00	retrograde	8135 Aug 26 09:20	26° $\mathcal{B}$ 13'03
	8129 May 29 04:23	0° $\mathcal{B}$	opposition	8135 Nov 11 20:24	24° $\mathcal{B}$ 14'24 -0°50'26
retrograde	8129 Jul 31 22:52	1° $\mathcal{B}$ 38'05	min. Earth dist.	8135 Nov 11 05:07	24° $\mathcal{B}$ 15'56 18.87721 AU
	8129 Oct 08 05:33	30° $\mathcal{R}$ $\Upsilon$	direct	8136 Jan 27 12:00	22° $\mathcal{B}$ 16'38
opposition	8129 Oct 16 19:06	29° $\Upsilon$ 39'22 -0°58'26	evening set	8136 Apr 27 10:26	25° $\mathcal{B}$ 19'26
min. Earth dist.	8129 Oct 16 07:26	29° $\Upsilon$ 40'33 18.60950 AU			
direct	8130 Jan 01 16:53	27° $\Upsilon$ 40'22	conjunction	8136 May 13 03:19	26° $\mathcal{B}$ 13'45 -0°44'37
	8130 Mar 20 08:37	0° $\mathcal{B}$	minimum elong	8136 May 13 03:19	26° $\mathcal{B}$ 13'45 0°44'45
evening set	8130 Apr 03 18:57	0° $\mathcal{B}$ 48'17	max. Earth dist.	8136 May 13 19:33	26° $\mathcal{B}$ 16'06 20.89445 AU
			morning rise	8136 May 28 21:36	27° $\mathcal{B}$ 08'16
conjunction	8130 Apr 19 11:31	1° $\mathcal{B}$ 43'28 -0°52'31		8136 Aug 05 08:10	0° $\mathcal{II}$
minimum elong	8130 Apr 19 11:31	1° $\mathcal{B}$ 43'28 0°52'36	retrograde	8136 Aug 29 18:26	0° $\mathcal{II}$ 14'42
max. Earth dist.	8130 Apr 19 23:58	1° $\mathcal{B}$ 45'18 20.63637 AU		8136 Sep 23 11:50	30° $\mathcal{R}$ $\mathcal{B}$
morning rise	8130 May 05 04:15	2° $\mathcal{B}$ 38'40	opposition	8136 Nov 15 06:40	28° $\mathcal{B}$ 16'03 -0°48'11

min. Earth dist.	8136 Nov 14 14:01	28° <b>8</b> 17'43	18.91151 AU	max. Earth dist.	8143 Jun 11 09:06	24° <b>II</b> 14'58	21.04531 AU
direct	8137 Jan 30 21:15	26° <b>8</b> 18'28		morning rise	8143 Jun 26 13:24	25° <b>II</b> 06'53	
evening set	8137 May 01 15:28	29° <b>8</b> 20'38		retrograde	8143 Sep 28 03:10	28° <b>II</b> 12'52	
	8137 May 13 02:07	0° <b>II</b>		opposition	8143 Dec 14 22:08	26° <b>II</b> 14'21	-0°26'51
				min. Earth dist.	8143 Dec 14 06:09	26° <b>II</b> 15'57	19.04742 AU
conjunction	8137 May 17 08:39	0° <b>II</b> 14'52	-0°42'29	direct	8144 Feb 28 22:48	24° <b>II</b> 17'47	
minimum elong	8137 May 17 08:39	0° <b>II</b> 14'52	0°42'38	evening set	8144 May 29 00:27	27° <b>II</b> 17'21	
max. Earth dist.	8137 May 18 02:12	0° <b>II</b> 17'24	20.92721 AU				
morning rise	8137 Jun 02 03:14	1° <b>II</b> 09'19		conjunction	8144 Jun 13 20:41	28° <b>II</b> 11'30	-0°22'41
retrograde	8137 Sep 03 01:52	4° <b>II</b> 15'33		minimum elong	8144 Jun 13 20:42	28° <b>II</b> 11'30	0°22'51
opposition	8137 Nov 19 16:37	2° <b>II</b> 16'56	-0°45'42	max. Earth dist.	8144 Jun 14 13:02	28° <b>II</b> 13'51	21.04774 AU
min. Earth dist.	8137 Nov 19 00:12	2° <b>II</b> 18'34	18.94277 AU	morning rise	8144 Jun 29 19:37	29° <b>II</b> 06'02	
direct	8138 Feb 04 05:15	0° <b>II</b> 19'33			8144 Jul 16 12:06	0° <b>III</b>	
evening set	8138 May 05 20:21	3° <b>II</b> 21'08		retrograde	8144 Oct 01 12:39	2° <b>III</b> 12'06	
				opposition	8144 Dec 18 06:21	0° <b>III</b> 13'29	-0°23'10
conjunction	8138 May 21 13:46	4° <b>II</b> 15'18	-0°40'10	min. Earth dist.	8144 Dec 17 14:31	0° <b>III</b> 15'04	19.04702 AU
minimum elong	8138 May 21 13:46	4° <b>II</b> 15'18	0°40'18		8144 Dec 23 21:32	30° <b>R</b> <b>II</b>	
max. Earth dist.	8138 May 22 06:57	4° <b>II</b> 17'47	20.95703 AU	direct	8145 Mar 04 05:14	28° <b>II</b> 16'54	
morning rise	8138 Jun 06 08:57	5° <b>II</b> 09'43			8145 May 08 23:11	0° <b>III</b>	
retrograde	8138 Sep 07 10:54	8° <b>II</b> 15'48		evening set	8145 Jun 02 05:13	1° <b>III</b> 16'20	
min. Earth dist.	8138 Nov 23 08:43	6° <b>II</b> 18'57	18.97094 AU				
opposition	8138 Nov 24 02:11	6° <b>II</b> 17'12	-0°43'01	conjunction	8145 Jun 18 02:10	2° <b>III</b> 10'34	-0°19'18
direct	8139 Feb 08 12:57	4° <b>II</b> 20'00		minimum elong	8145 Jun 18 02:10	2° <b>III</b> 10'34	0°19'27
evening set	8139 May 10 00:55	7° <b>II</b> 21'05		max. Earth dist.	8145 Jun 18 18:54	2° <b>III</b> 12'57	21.04455 AU
				morning rise	8145 Jul 04 01:40	3° <b>III</b> 05'09	
conjunction	8139 May 25 18:47	8° <b>II</b> 15'13	-0°37'39	retrograde	8145 Oct 05 19:22	6° <b>III</b> 11'20	
minimum elong	8139 May 25 18:48	8° <b>II</b> 15'13	0°37'48	opposition	8145 Dec 22 14:27	4° <b>III</b> 12'36	-0°19'22
max. Earth dist.	8139 May 26 13:07	8° <b>II</b> 17'51	20.98336 AU	min. Earth dist.	8145 Dec 21 23:29	4° <b>III</b> 14'06	19.04117 AU
morning rise	8139 Jun 10 14:25	9° <b>II</b> 09'37		direct	8146 Mar 08 11:32	2° <b>III</b> 15'59	
retrograde	8139 Sep 11 18:15	12° <b>II</b> 15'35		evening set	8146 Jun 06 10:13	5° <b>III</b> 15'19	
opposition	8139 Nov 28 11:30	10° <b>II</b> 17'02	-0°40'08				
min. Earth dist.	8139 Nov 27 18:30	10° <b>II</b> 18'44	18.99536 AU	conjunction	8146 Jun 22 07:43	6° <b>III</b> 09'36	-0°15'49
direct	8140 Feb 12 20:14	8° <b>II</b> 20'02		minimum elong	8146 Jun 22 07:43	6° <b>III</b> 09'36	0°16'00
evening set	8140 May 13 05:37	11° <b>II</b> 20'40		behind sun begin	8146 Jun 22 06:59	6° <b>III</b> 09'30	
				behind sun end	8146 Jun 22 08:27	6° <b>III</b> 09'42	
conjunction	8140 May 28 23:48	12° <b>II</b> 14'46	-0°34'57	max. Earth dist.	8146 Jun 22 23:07	6° <b>III</b> 11'48	21.03641 AU
minimum elong	8140 May 28 23:48	12° <b>II</b> 14'46	0°35'06	morning rise	8146 Jul 08 08:07	7° <b>III</b> 04'17	
max. Earth dist.	8140 May 29 17:23	12° <b>II</b> 17'18	21.00589 AU	retrograde	8146 Oct 10 04:16	10° <b>III</b> 10'36	
morning rise	8140 Jun 13 20:06	13° <b>II</b> 09'10		opposition	8146 Dec 26 22:18	8° <b>III</b> 11'44	-0°15'29
retrograde	8140 Sep 15 03:33	16° <b>II</b> 15'05		min. Earth dist.	8146 Dec 26 07:31	8° <b>III</b> 13'13	19.03075 AU
opposition	8140 Dec 01 20:20	14° <b>II</b> 16'33	-0°37'04	direct	8147 Mar 12 17:27	6° <b>III</b> 15'01	
min. Earth dist.	8140 Dec 01 02:47	14° <b>II</b> 18'19	19.01578 AU	evening set	8147 Jun 10 15:14	9° <b>III</b> 14'20	
direct	8141 Feb 16 03:06	12° <b>II</b> 19'42					
evening set	8141 May 17 10:13	15° <b>II</b> 20'00		conjunction	8147 Jun 26 13:33	10° <b>III</b> 08'43	-0°12'16
				minimum elong	8147 Jun 26 13:33	10° <b>III</b> 08'43	0°12'25
conjunction	8141 Jun 02 04:55	16° <b>II</b> 14'05	-0°32'06	behind sun begin	8147 Jun 26 09:12	10° <b>III</b> 08'07	
minimum elong	8141 Jun 02 04:56	16° <b>II</b> 14'05	0°32'16	behind sun end	8147 Jun 26 17:53	10° <b>III</b> 09'19	
max. Earth dist.	8141 Jun 02 23:18	16° <b>II</b> 16'44	21.02400 AU	max. Earth dist.	8147 Jun 27 05:27	10° <b>III</b> 10'59	21.02376 AU
morning rise	8141 Jun 18 01:42	17° <b>II</b> 08'30		morning rise	8147 Jul 12 14:37	11° <b>III</b> 03'30	
retrograde	8141 Sep 19 10:41	20° <b>II</b> 14'24		retrograde	8147 Oct 14 11:45	14° <b>III</b> 09'59	
opposition	8141 Dec 06 05:11	18° <b>II</b> 15'54	-0°33'49	opposition	8147 Dec 31 06:04	12° <b>III</b> 10'58	-0°11'31
min. Earth dist.	8141 Dec 05 12:22	18° <b>II</b> 17'35	19.03151 AU	min. Earth dist.	8147 Dec 30 15:58	12° <b>III</b> 12'23	19.01602 AU
direct	8142 Feb 20 09:50	16° <b>II</b> 19'12		direct	8148 Mar 15 23:27	10° <b>III</b> 14'11	
evening set	8142 May 21 14:49	19° <b>II</b> 19'12		evening set	8148 Jun 13 20:39	13° <b>III</b> 13'33	
conjunction	8142 Jun 06 09:55	20° <b>II</b> 13'17	-0°29'06	conjunction	8148 Jun 29 19:31	14° <b>III</b> 08'01	-0°08'40
minimum elong	8142 Jun 06 09:55	20° <b>II</b> 13'17	0°29'15	minimum elong	8148 Jun 29 19:31	14° <b>III</b> 08'01	0°08'49
max. Earth dist.	8142 Jun 07 03:15	20° <b>II</b> 15'46	21.03735 AU	behind sun begin	8148 Jun 29 13:49	14° <b>III</b> 07'14	
morning rise	8142 Jun 22 07:27	21° <b>II</b> 07'43		behind sun end	8148 Jun 30 01:14	14° <b>III</b> 08'49	
retrograde	8142 Sep 23 20:27	24° <b>II</b> 13'39		max. Earth dist.	8148 Jun 30 10:03	14° <b>III</b> 10'06	21.00718 AU
opposition	8142 Dec 10 13:49	22° <b>II</b> 15'09	-0°30'24	morning rise	8148 Jul 15 21:28	15° <b>III</b> 02'55	
min. Earth dist.	8142 Dec 09 20:50	22° <b>II</b> 16'51	19.04228 AU	retrograde	8148 Oct 17 20:28	18° <b>III</b> 09'38	
direct	8143 Feb 24 16:27	20° <b>II</b> 18'32		opposition	8149 Jan 03 13:39	16° <b>III</b> 10'29	-0°07'29
evening set	8143 May 25 19:35	23° <b>II</b> 18'18		min. Earth dist.	8149 Jan 02 23:47	16° <b>III</b> 11'52	18.99765 AU
				direct	8149 Mar 20 05:00	14° <b>III</b> 13'34	
conjunction	8143 Jun 10 15:19	24° <b>II</b> 12'25	-0°25'57	evening set	8149 Jun 18 02:13	17° <b>III</b> 13'05	
minimum elong	8143 Jun 10 15:19	24° <b>II</b> 12'25	0°26'06				

conjunction	8149 Jul 04 01:56	18°☾07'41 -0°05'01	behind sun end	8154 Jul 24 20:16	8°♄17'08	
minimum elong	8149 Jul 04 01:55	18°☾07'41 0°05'09	max. Earth dist.	8154 Jul 25 03:06	8°♄18'07	20.83709 AU
behind sun begin	8149 Jul 03 19:30	18°☾06'47	morning rise	8154 Aug 09 23:17	9°♄12'29	
behind sun end	8149 Jul 04 08:20	18°☾08'34	retrograde	8154 Nov 12 08:07	12°♄21'32	
max. Earth dist.	8149 Jul 04 16:56	18°☾09'49 20.98701 AU	opposition	8155 Jan 28 13:45	10°♄21'41	0°16'59
morning rise	8149 Jul 20 04:30	19°☾02'42	min. Earth dist.	8155 Jan 28 04:13	10°♄22'39	18.81726 AU
retrograde	8149 Oct 22 04:41	22°☾09'41	direct	8155 Apr 13 16:11	8°♄24'04	
opposition	8150 Jan 07 21:22	20°☾10'24 -0°03'24	evening set	8155 Jul 12 21:53	11°♄25'54	
min. Earth dist.	8150 Jan 07 08:04	20°☾11'45 18.97577 AU				
direct	8150 Mar 24 10:33	18°☾13'24	conjunction	8155 Jul 29 02:20	12°♄21'32	0°17'10
evening set	8150 Jun 22 08:08	21°☾13'06	minimum elong	8155 Jul 29 02:20	12°♄21'32	0°17'02
			max. Earth dist.	8155 Jul 29 12:43	12°♄23'01	20.79637 AU
conjunction	8150 Jul 08 08:29	22°☾07'50 -0°01'17	morning rise	8155 Aug 14 09:42	13°♄17'36	
minimum elong	8150 Jul 08 08:29	22°☾07'50 0°01'26		8155 Sep 16 16:41	15°♄	
behind sun begin	8150 Jul 08 01:52	22°☾06'55	retrograde	8155 Nov 16 19:54	16°♄27'10	
behind sun end	8150 Jul 08 15:06	22°☾08'45		8156 Jan 19 10:08	15°♄	
max. Earth dist.	8150 Jul 08 22:05	22°☾09'46 20.96361 AU	opposition	8156 Feb 01 22:35	14°♄27'12	0°20'57
morning rise	8150 Jul 24 12:02	23°☾03'00	min. Earth dist.	8156 Feb 01 14:07	14°♄28'04	18.77438 AU
retrograde	8150 Oct 26 14:24	26°☾10'19	direct	8156 Apr 16 23:46	12°♄29'24	
asc. node	8150 Nov 10 10:25	26°☾05'00		8156 Jul 06 17:13	15°♄	
opposition	8151 Jan 12 05:09	24°☾10'54 0°00'42	evening set	8156 Jul 16 07:32	15°♄31'51	
min. Earth dist.	8151 Jan 11 16:14	24°☾12'12 18.95076 AU				
direct	8151 Mar 28 16:17	22°☾13'47	conjunction	8156 Aug 01 12:37	16°♄27'41	0°20'42
evening set	8151 Jun 26 14:31	25°☾13'46	minimum elong	8156 Aug 01 12:36	16°♄27'41	0°20'36
			max. Earth dist.	8156 Aug 01 20:32	16°♄28'49	20.75136 AU
conjunction	8151 Jul 12 15:47	26°☾08'39 0°02'32	morning rise	8156 Aug 17 20:52	17°♄23'59	
minimum elong	8151 Jul 12 15:47	26°☾08'39 0°02'23	retrograde	8156 Nov 20 07:55	20°♄34'05	
behind sun begin	8151 Jul 12 09:09	26°☾07'44	opposition	8157 Feb 05 07:48	18°♄33'57	0°24'50
behind sun end	8151 Jul 12 22:25	26°☾09'35	min. Earth dist.	8157 Feb 05 00:50	18°♄34'40	18.72720 AU
max. Earth dist.	8151 Jul 13 05:44	26°☾10'39 20.93692 AU	direct	8157 Apr 21 06:41	16°♄35'56	
morning rise	8151 Jul 28 19:59	27°☾03'59	evening set	8157 Jul 20 17:46	19°♄39'02	
	8151 Oct 09 05:05	0°♄				
retrograde	8151 Oct 30 23:24	0°♄11'39	conjunction	8157 Aug 05 23:48	20°♄35'07	0°24'09
	8151 Nov 22 01:26	30°♄	minimum elong	8157 Aug 05 23:48	20°♄35'07	0°24'03
opposition	8152 Jan 16 12:52	28°☾12'08 0°04'48	max. Earth dist.	8157 Aug 06 07:20	20°♄36'12	20.70198 AU
min. Earth dist.	8152 Jan 16 00:39	28°☾13'22 18.92241 AU	morning rise	8157 Aug 22 08:39	21°♄31'37	
direct	8152 Mar 31 21:35	26°☾14'54	retrograde	8157 Nov 24 20:40	24°♄42'16	
evening set	8152 Jun 29 21:31	29°☾15'15	opposition	8158 Feb 09 17:19	22°♄41'57	0°28'37
	8152 Jul 12 23:51	0°♄	min. Earth dist.	8158 Feb 09 11:21	22°♄42'34	18.67568 AU
			direct	8158 Apr 25 15:44	20°♄43'40	
conjunction	8152 Jul 15 23:25	0°♄10'18 0°06'14	evening set	8158 Jul 25 04:45	23°♄47'27	
minimum elong	8152 Jul 15 23:26	0°♄10'18 0°06'06				
behind sun begin	8152 Jul 15 17:07	0°♄09'25	conjunction	8158 Aug 10 11:29	24°♄43'46	0°27'30
behind sun end	8152 Jul 16 05:44	0°♄11'11	minimum elong	8158 Aug 10 11:29	24°♄43'46	0°27'24
max. Earth dist.	8152 Jul 16 11:41	0°♄12'03 20.90707 AU	max. Earth dist.	8158 Aug 10 16:26	24°♄44'29	20.64860 AU
morning rise	8152 Aug 01 04:35	1°♄05'47	morning rise	8158 Aug 26 21:16	25°♄40'31	
retrograde	8152 Nov 03 10:10	4°♄13'53	retrograde	8158 Nov 29 09:15	28°♄51'44	
opposition	8153 Jan 19 20:56	2°♄14'15 0°08'54	opposition	8159 Feb 14 03:11	26°♄51'11	0°32'16
min. Earth dist.	8153 Jan 19 09:25	2°♄15'25 18.89091 AU	min. Earth dist.	8159 Feb 13 22:53	26°♄51'38	18.62050 AU
direct	8153 Apr 05 03:42	0°♄16'54	direct	8159 Apr 29 23:39	24°♄52'35	
evening set	8153 Jul 04 04:49	3°♄17'40	evening set	8159 Jul 29 16:24	27°♄57'07	
conjunction	8153 Jul 20 07:39	4°♄12'54 0°09'55	conjunction	8159 Aug 15 00:05	28°♄53'42	0°30'44
minimum elong	8153 Jul 20 07:38	4°♄12'54 0°09'46	minimum elong	8159 Aug 15 00:05	28°♄53'42	0°30'39
behind sun begin	8153 Jul 20 02:12	4°♄12'08	max. Earth dist.	8159 Aug 15 04:44	28°♄54'22	20.59172 AU
behind sun end	8153 Jul 20 13:05	4°♄13'40	morning rise	8159 Aug 31 10:24	29°♄50'41	
max. Earth dist.	8153 Jul 20 20:12	4°♄14'42 20.87382 AU		8159 Sep 03 04:17	0°♄	
morning rise	8153 Aug 05 13:26	5°♄08'35	retrograde	8159 Dec 03 22:41	3°♄02'28	
retrograde	8153 Nov 07 20:33	8°♄17'07	opposition	8160 Feb 18 13:10	1°♄01'42	0°35'46
opposition	8154 Jan 24 05:15	6°♄17'24 0°12'58	min. Earth dist.	8160 Feb 18 09:42	1°♄02'03	18.56213 AU
min. Earth dist.	8154 Jan 23 18:31	6°♄18'29 18.85588 AU		8160 Mar 15 13:26	30°♄	
direct	8154 Apr 09 09:48	4°♄19'56	direct	8160 May 03 09:32	29°♄02'46	
evening set	8154 Jul 08 13:03	7°♄21'12		8160 Jun 19 21:26	0°♄	
			evening set	8160 Aug 02 04:54	2°♄08'07	
conjunction	8154 Jul 24 16:32	8°♄16'37 0°13'34				
minimum elong	8154 Jul 24 16:32	8°♄16'37 0°13'26	conjunction	8160 Aug 18 13:12	3°♄04'57	0°33'48
behind sun begin	8154 Jul 24 12:49	8°♄16'05	minimum elong	8160 Aug 18 13:12	3°♄04'57	0°33'43

max. Earth dist.	8160 Aug 18 15:25	3° $\mathring{\text{M}}$ 05'16	20.53221 AU	direct	8167 Jun 02 17:25	28° $\mathring{\text{M}}$ 57'16	
morning rise	8160 Sep 04 00:22	4° $\mathring{\text{M}}$ 02'11			8167 Jul 22 05:09	0° $\mathring{\text{A}}$	
retrograde	8160 Dec 07 12:15	7° $\mathring{\text{M}}$ 14'34		evening set	8167 Sep 02 18:50	2° $\mathring{\text{A}}$ 09'40	
opposition	8161 Feb 21 23:46	5° $\mathring{\text{M}}$ 13'33	0°39'06				
min. Earth dist.	8161 Feb 21 21:53	5° $\mathring{\text{M}}$ 13'45	18.50163 AU	conjunction	8167 Sep 19 08:07	3° $\mathring{\text{A}}$ 08'30	0°49'41
direct	8161 May 07 18:36	3° $\mathring{\text{M}}$ 14'16		minimum elong	8167 Sep 19 08:07	3° $\mathring{\text{A}}$ 08'30	0°49'41
evening set	8161 Aug 06 17:50	6° $\mathring{\text{M}}$ 20'29		max. Earth dist.	8167 Sep 19 03:09	3° $\mathring{\text{A}}$ 07'45	20.09292 AU
				morning rise	8167 Oct 05 22:48	4° $\mathring{\text{A}}$ 07'33	
conjunction	8161 Aug 23 03:04	7° $\mathring{\text{M}}$ 17'35	0°36'43	retrograde	8168 Jan 08 04:23	7° $\mathring{\text{A}}$ 24'37	
minimum elong	8161 Aug 23 03:04	7° $\mathring{\text{M}}$ 17'35	0°36'39	opposition	8168 Mar 23 15:16	5° $\mathring{\text{A}}$ 22'28	0°55'55
max. Earth dist.	8161 Aug 23 05:16	7° $\mathring{\text{M}}$ 17'54	20.47079 AU	min. Earth dist.	8168 Mar 23 19:48	5° $\mathring{\text{A}}$ 21'59	18.06189 AU
morning rise	8161 Sep 08 14:43	8° $\mathring{\text{M}}$ 15'05		direct	8168 Jun 06 08:35	3° $\mathring{\text{A}}$ 21'00	
retrograde	8161 Dec 12 02:37	11° $\mathring{\text{M}}$ 28'05		evening set	8168 Sep 06 14:26	6° $\mathring{\text{A}}$ 34'34	
opposition	8162 Feb 26 10:40	9° $\mathring{\text{M}}$ 26'51	0°42'14				
min. Earth dist.	8162 Feb 26 09:15	9° $\mathring{\text{M}}$ 27'00	18.43948 AU	conjunction	8168 Sep 23 04:07	7° $\mathring{\text{A}}$ 33'40	0°50'56
direct	8162 May 12 05:11	7° $\mathring{\text{M}}$ 27'14		minimum elong	8168 Sep 23 04:07	7° $\mathring{\text{A}}$ 33'40	0°50'58
evening set	8162 Aug 11 07:55	10° $\mathring{\text{M}}$ 34'21		max. Earth dist.	8168 Sep 22 20:55	7° $\mathring{\text{A}}$ 32'36	20.03084 AU
				morning rise	8168 Oct 09 19:12	8° $\mathring{\text{A}}$ 33'00	
conjunction	8162 Aug 27 17:44	11° $\mathring{\text{M}}$ 31'44	0°39'26	retrograde	8169 Jan 11 22:14	11° $\mathring{\text{A}}$ 50'44	
minimum elong	8162 Aug 27 17:44	11° $\mathring{\text{M}}$ 31'43	0°39'23	opposition	8169 Mar 28 06:24	9° $\mathring{\text{A}}$ 48'29	0°57'11
max. Earth dist.	8162 Aug 27 17:35	11° $\mathring{\text{M}}$ 31'42	20.40811 AU	min. Earth dist.	8169 Mar 28 13:06	9° $\mathring{\text{A}}$ 47'46	18.00001 AU
morning rise	8162 Sep 13 06:10	12° $\mathring{\text{M}}$ 29'29		direct	8169 Jun 10 22:58	7° $\mathring{\text{A}}$ 46'42	
retrograde	8162 Dec 16 17:26	15° $\mathring{\text{M}}$ 43'08		evening set	8169 Sep 11 10:45	11° $\mathring{\text{A}}$ 01'25	
opposition	8163 Mar 02 22:01	13° $\mathring{\text{M}}$ 41'40	0°45'09				
min. Earth dist.	8163 Mar 02 22:15	13° $\mathring{\text{M}}$ 41'39	18.37648 AU	conjunction	8169 Sep 28 01:04	12° $\mathring{\text{A}}$ 00'48	0°51'55
direct	8163 May 16 15:30	11° $\mathring{\text{M}}$ 41'42		minimum elong	8169 Sep 28 01:04	12° $\mathring{\text{A}}$ 00'48	0°51'57
evening set	8163 Aug 15 22:40	14° $\mathring{\text{M}}$ 49'48		max. Earth dist.	8169 Sep 27 17:09	11° $\mathring{\text{A}}$ 59'37	19.96901 AU
				morning rise	8169 Oct 14 16:22	13° $\mathring{\text{A}}$ 00'22	
conjunction	8163 Sep 01 09:23	15° $\mathring{\text{M}}$ 47'28	0°41'57	retrograde	8170 Jan 16 18:44	16° $\mathring{\text{A}}$ 18'45	
minimum elong	8163 Sep 01 09:23	15° $\mathring{\text{M}}$ 47'28	0°41'55	opposition	8170 Apr 01 22:04	14° $\mathring{\text{A}}$ 16'23	0°58'07
max. Earth dist.	8163 Sep 01 09:11	15° $\mathring{\text{M}}$ 47'26	20.34477 AU	min. Earth dist.	8170 Apr 02 05:04	14° $\mathring{\text{A}}$ 15'38	17.93818 AU
morning rise	8163 Sep 17 22:13	16° $\mathring{\text{M}}$ 45'29		direct	8170 Jun 15 16:15	12° $\mathring{\text{A}}$ 14'17	
retrograde	8163 Dec 21 08:46	19° $\mathring{\text{M}}$ 59'47		evening set	8170 Sep 16 08:17	15° $\mathring{\text{A}}$ 30'07	
opposition	8164 Mar 06 09:52	17° $\mathring{\text{M}}$ 58'08	0°47'51				
min. Earth dist.	8164 Mar 06 10:21	17° $\mathring{\text{M}}$ 58'05	18.31296 AU	conjunction	8170 Oct 02 22:58	16° $\mathring{\text{A}}$ 29'47	0°52'35
direct	8164 May 20 03:13	15° $\mathring{\text{M}}$ 57'51		minimum elong	8170 Oct 02 22:58	16° $\mathring{\text{A}}$ 29'47	0°52'37
evening set	8164 Aug 19 14:19	19° $\mathring{\text{M}}$ 06'58		max. Earth dist.	8170 Oct 02 12:52	16° $\mathring{\text{A}}$ 28'16	19.90720 AU
				morning rise	8170 Oct 19 14:31	17° $\mathring{\text{A}}$ 29'36	
conjunction	8164 Sep 05 01:32	20° $\mathring{\text{M}}$ 04'54	0°44'15	retrograde	8171 Jan 21 13:38	20° $\mathring{\text{A}}$ 48'34	
minimum elong	8164 Sep 05 01:32	20° $\mathring{\text{M}}$ 04'54	0°44'14	opposition	8171 Apr 06 14:25	18° $\mathring{\text{A}}$ 46'05	0°58'42
max. Earth dist.	8164 Sep 04 23:07	20° $\mathring{\text{M}}$ 04'33	20.28122 AU	min. Earth dist.	8171 Apr 06 23:41	18° $\mathring{\text{A}}$ 45'05	17.87663 AU
morning rise	8164 Sep 21 15:02	21° $\mathring{\text{M}}$ 03'11		direct	8171 Jun 20 08:09	16° $\mathring{\text{A}}$ 43'36	
retrograde	8164 Dec 25 00:28	24° $\mathring{\text{M}}$ 18'11		evening set	8171 Sep 21 06:29	20° $\mathring{\text{A}}$ 00'34	
opposition	8165 Mar 10 22:24	22° $\mathring{\text{M}}$ 16'21	0°50'17				
min. Earth dist.	8165 Mar 11 00:32	22° $\mathring{\text{M}}$ 16'08	18.24958 AU	conjunction	8171 Oct 07 21:38	21° $\mathring{\text{A}}$ 00'29	0°52'56
direct	8165 May 24 14:59	20° $\mathring{\text{M}}$ 15'45		minimum elong	8171 Oct 07 21:38	21° $\mathring{\text{A}}$ 00'29	0°52'59
evening set	8165 Aug 24 06:46	23° $\mathring{\text{M}}$ 25'55		max. Earth dist.	8171 Oct 07 10:31	20° $\mathring{\text{A}}$ 58'48	19.84599 AU
				morning rise	8171 Oct 24 13:19	22° $\mathring{\text{A}}$ 00'32	
conjunction	8165 Sep 09 18:51	24° $\mathring{\text{M}}$ 24'10	0°46'19	retrograde	8172 Jan 26 11:18	25° $\mathring{\text{A}}$ 20'03	
minimum elong	8165 Sep 09 18:51	24° $\mathring{\text{M}}$ 24'10	0°46'17	opposition	8172 Apr 10 07:20	23° $\mathring{\text{A}}$ 17'25	0°58'56
max. Earth dist.	8165 Sep 09 16:24	24° $\mathring{\text{M}}$ 23'48	20.21800 AU	min. Earth dist.	8172 Apr 10 16:45	23° $\mathring{\text{A}}$ 16'24	17.81585 AU
morning rise	8165 Sep 26 08:41	25° $\mathring{\text{M}}$ 22'42		direct	8172 Jun 24 02:48	21° $\mathring{\text{A}}$ 14'34	
retrograde	8165 Dec 29 17:12	28° $\mathring{\text{M}}$ 38'23		evening set	8172 Sep 25 05:22	24° $\mathring{\text{A}}$ 32'37	
opposition	8166 Mar 15 11:20	26° $\mathring{\text{M}}$ 36'26	0°52'27				
min. Earth dist.	8166 Mar 15 13:38	26° $\mathring{\text{M}}$ 36'11	18.18655 AU	conjunction	8172 Oct 11 20:48	25° $\mathring{\text{A}}$ 32'47	0°52'57
direct	8166 May 29 04:13	24° $\mathring{\text{M}}$ 35'32		minimum elong	8172 Oct 11 20:48	25° $\mathring{\text{A}}$ 32'47	0°53'01
evening set	8166 Aug 29 00:22	27° $\mathring{\text{M}}$ 46'48		max. Earth dist.	8172 Oct 11 08:12	25° $\mathring{\text{A}}$ 30'53	19.78578 AU
				morning rise	8172 Oct 28 12:33	26° $\mathring{\text{A}}$ 33'04	
conjunction	8166 Sep 14 12:56	28° $\mathring{\text{M}}$ 45'20	0°48'08	retrograde	8173 Jan 30 07:27	29° $\mathring{\text{A}}$ 53'06	
minimum elong	8166 Sep 14 12:56	28° $\mathring{\text{M}}$ 45'20	0°48'08	opposition	8173 Apr 15 01:02	27° $\mathring{\text{A}}$ 50'19	0°58'47
max. Earth dist.	8166 Sep 14 08:17	28° $\mathring{\text{M}}$ 44'38	20.15522 AU	min. Earth dist.	8173 Apr 15 12:25	27° $\mathring{\text{A}}$ 49'05	17.75652 AU
morning rise	8166 Oct 01 03:23	29° $\mathring{\text{M}}$ 44'08		direct	8173 Jun 28 20:28	25° $\mathring{\text{A}}$ 47'04	
	8166 Oct 05 17:36	0° $\mathring{\text{A}}$		evening set	8173 Sep 30 05:02	29° $\mathring{\text{A}}$ 06'11	
retrograde	8167 Jan 03 09:55	3° $\mathring{\text{A}}$ 00'31			8173 Oct 15 01:27	0° $\mathring{\text{M}}$	
opposition	8167 Mar 20 01:05	0° $\mathring{\text{A}}$ 58'27	0°54'20				
min. Earth dist.	8167 Mar 20 05:19	0° $\mathring{\text{A}}$ 58'00	18.12406 AU	conjunction	8173 Oct 16 20:47	0° $\mathring{\text{M}}$ .06'36	0°52'38
	8167 Apr 12 22:30	30° $\mathring{\text{R}}$ $\mathring{\text{M}}$		minimum elong	8173 Oct 16 20:47	0° $\mathring{\text{M}}$ .06'36	0°52'43

max. Earth dist.	8173 Oct 16 07:06	0°M.04'31	19.72751 AU	opposition	8180 May 16 19:47	0°♂18'06	0°47'20
morning rise	8173 Nov 02 12:37	1°M.07'05		min. Earth dist.	8180 May 17 09:59	0°♂16'33	17.43860 AU
retrograde	8174 Feb 04 05:35	4°M.27'36			8180 May 23 18:02	30°R.M.	
opposition	8174 Apr 19 18:59	2°M.24'39	0°58'16	direct	8180 Jul 31 02:55	28°M.12'54	
min. Earth dist.	8174 Apr 20 06:22	2°M.23'25	17.69941 AU		8180 Oct 04 13:13	0°♂	
direct	8174 Jul 03 16:26	0°M.21'02		evening set	8180 Nov 02 19:13	1°♂38'32	
evening set	8174 Oct 05 05:27	3°M.41'11					
conjunction	8174 Oct 21 21:27	4°M.41'51	0°51'59	conjunction	8180 Nov 19 11:00	2°♂40'11	0°41'07
minimum elong	8174 Oct 21 21:27	4°M.41'51	0°52'05	minimum elong	8180 Nov 19 11:00	2°♂40'11	0°41'15
max. Earth dist.	8174 Oct 21 06:56	4°M.39'38	19.67164 AU	max. Earth dist.	8180 Nov 18 18:19	2°♂37'36	19.42468 AU
morning rise	8174 Nov 07 13:09	5°M.42'31		morning rise	8180 Dec 06 00:54	3°♂41'37	
retrograde	8175 Feb 09 02:34	9°M.03'28		retrograde	8181 Mar 08 19:51	7°♂04'26	
opposition	8175 Apr 24 13:48	7°M.00'23	0°57'23	opposition	8181 May 21 17:54	5°♂01'17	0°44'17
min. Earth dist.	8175 Apr 25 02:51	6°M.58'58	17.64510 AU	min. Earth dist.	8181 May 22 08:33	4°♂59'41	17.41247 AU
direct	8175 Jul 08 11:41	4°M.56'24		direct	8181 Aug 05 02:57	2°♂55'59	
evening set	8175 Oct 10 06:25	8°M.17'34		evening set	8181 Nov 07 23:18	6°♂22'21	
conjunction	8175 Oct 26 22:28	9°M.18'26	0°51'00	conjunction	8181 Nov 24 14:35	7°♂24'05	0°38'14
minimum elong	8175 Oct 26 22:28	9°M.18'26	0°51'05	minimum elong	8181 Nov 24 14:35	7°♂24'05	0°38'23
max. Earth dist.	8175 Oct 26 06:48	9°M.16'02	19.61906 AU	max. Earth dist.	8181 Nov 23 20:29	7°♂21'16	19.40102 AU
morning rise	8175 Nov 12 14:08	10°M.19'17		morning rise	8181 Dec 11 04:08	8°♂25'34	
retrograde	8176 Feb 14 01:06	13°M.40'38		retrograde	8182 Mar 13 19:36	11°♂48'33	
opposition	8176 Apr 28 08:58	11°M.37'25	0°56'06	opposition	8182 May 26 16:24	9°♂45'30	0°40'56
min. Earth dist.	8176 Apr 28 21:47	11°M.36'02	17.59441 AU	min. Earth dist.	8182 May 27 07:22	9°♂43'52	17.39118 AU
direct	8176 Jul 12 09:12	9°M.33'06		direct	8182 Aug 10 04:03	7°♂40'06	
evening set	8176 Oct 14 07:56	12°M.55'15		evening set	8182 Nov 13 03:33	11°♂07'07	
max. Earth dist.	8176 Oct 30 08:28	13°M.53'54	19.57031 AU	conjunction	8182 Nov 29 18:35	12°♂08'55	0°35'05
conjunction	8176 Oct 31 00:07	13°M.56'18	0°49'40	minimum elong	8182 Nov 29 18:36	12°♂08'55	0°35'14
minimum elong	8176 Oct 31 00:07	13°M.56'18	0°49'47	max. Earth dist.	8182 Nov 29 01:21	12°♂06'14	19.38192 AU
morning rise	8176 Nov 16 15:29	14°M.57'18		morning rise	8182 Dec 16 07:22	13°♂10'26	
retrograde	8176 Nov 17 09:26	15°M.		retrograde	8183 Mar 18 20:17	16°♂33'29	
opposition	8177 Feb 17 22:53	18°M.19'01		opposition	8183 May 31 15:32	14°♂30'34	0°37'18
min. Earth dist.	8177 May 03 04:52	16°M.15'44	0°54'27	min. Earth dist.	8183 Jun 01 06:33	14°♂28'56	17.37420 AU
direct	8177 May 03 18:50	16°M.14'13	17.54792 AU	direct	8183 Aug 15 05:45	12°♂25'05	
evening set	8177 Jun 03 07:33	15°R.M.		evening set	8183 Nov 18 07:58	15°♂52'38	
max. Earth dist.	8177 Jul 17 05:57	14°M.11'07		conjunction	8183 Dec 04 22:22	16°♂54'27	0°31'42
conjunction	8177 Aug 29 11:24	15°M.		minimum elong	8183 Dec 04 22:22	16°♂54'27	0°31'51
evening set	8177 Oct 19 10:03	17°M.34'12		max. Earth dist.	8183 Dec 04 03:53	16°♂51'34	19.36711 AU
max. Earth dist.	8177 Nov 04 09:14	18°M.32'50	19.52623 AU	morning rise	8183 Dec 21 10:35	17°♂55'58	
conjunction	8177 Nov 05 02:09	18°M.35'26	0°48'00	retrograde	8184 Mar 22 20:23	21°♂19'04	
minimum elong	8177 Nov 05 02:09	18°M.35'26	0°48'07	opposition	8184 Jun 04 15:05	19°♂16'13	0°33'23
morning rise	8177 Nov 21 17:25	19°M.36'35		min. Earth dist.	8184 Jun 05 06:34	19°♂14'32	17.36162 AU
retrograde	8178 Feb 22 21:50	22°M.58'37		direct	8184 Aug 19 07:08	17°♂10'38	
opposition	8178 May 08 01:15	20°M.55'17	0°52'26	evening set	8184 Nov 22 12:22	20°♂38'38	
min. Earth dist.	8178 May 08 14:54	20°M.53'48	17.50629 AU	max. Earth dist.	8184 Dec 08 08:45	21°♂37'42	19.35668 AU
direct	8178 Jul 22 04:39	18°M.50'25		conjunction	8184 Dec 09 02:22	21°♂40'27	0°28'05
evening set	8178 Oct 24 12:42	22°M.14'24		minimum elong	8184 Dec 09 02:22	21°♂40'27	0°28'15
conjunction	8178 Nov 10 04:50	23°M.15'48	0°46'01	morning rise	8184 Dec 25 13:48	22°♂41'57	
minimum elong	8178 Nov 10 04:50	23°M.15'48	0°46'08	retrograde	8185 Mar 27 21:47	26°♂04'59	
max. Earth dist.	8178 Nov 09 12:28	23°M.13'16	19.48705 AU	opposition	8185 Jun 09 14:47	24°♂02'15	0°29'15
morning rise	8178 Nov 26 19:35	24°M.17'03		min. Earth dist.	8185 Jun 10 05:49	24°♂00'36	17.35326 AU
retrograde	8179 Feb 27 20:44	27°M.39'23		direct	8185 Aug 24 09:43	21°♂56'35	
opposition	8179 May 12 22:14	25°M.36'05	0°50'03	evening set	8185 Nov 27 16:54	25°♂24'53	
min. Earth dist.	8179 May 13 12:37	25°M.34'31	17.46973 AU	max. Earth dist.	8185 Dec 13 11:49	26°♂23'49	19.35054 AU
direct	8179 Jul 27 02:59	23°M.31'02		conjunction	8185 Dec 14 06:13	26°♂26'41	0°24'16
evening set	8179 Oct 29 15:54	26°M.55'52		minimum elong	8185 Dec 14 06:13	26°♂26'41	0°24'26
conjunction	8179 Nov 15 07:44	27°M.57'24	0°43'43	morning rise	8185 Dec 30 16:57	27°♂28'08	
minimum elong	8179 Nov 15 07:44	27°M.57'24	0°43'51	retrograde	8186 Feb 17 14:58	0°♂	
max. Earth dist.	8179 Nov 14 14:04	27°M.54'40	19.45326 AU		8186 Apr 01 21:35	0°♂51'02	
morning rise	8179 Dec 01 22:15	28°M.58'45		opposition	8186 May 16 08:41	30°R.♂	
retrograde	8179 Dec 19 10:35	0°♂		min. Earth dist.	8186 Jun 14 14:54	28°♂48'23	0°24'54
	8179 Dec 19 10:35	0°♂		direct	8186 Jun 15 06:33	28°♂46'41	17.34941 AU
	8180 Mar 03 20:05	2°♂21'21			8186 Aug 29 10:42	26°♂42'39	

	8186 Nov 29 19:40	0°♄	opposition	8192 Jul 12 16:48	27°♄16'05 -0°03'36
evening set	8186 Dec 02 21:08	0°♄11'10	min. Earth dist.	8192 Jul 13 04:29	27°♄14'49 17.43426 AU
			direct	8192 Sep 27 03:48	25°♄10'30
conjunction	8186 Dec 19 09:50	1°♄12'55 0°20'17	evening set	8192 Dec 31 13:59	28°♄38'03
minimum elong	8186 Dec 19 09:50	1°♄12'55 0°20'27			
max. Earth dist.	8186 Dec 18 16:14	1°♄10'10 19.34900 AU	conjunction	8193 Jan 16 21:30	29°♄38'53 -0°05'31
morning rise	8187 Jan 04 19:42	2°♄14'16	minimum elong	8193 Jan 16 21:31	29°♄38'53 0°05'22
retrograde	8187 Apr 06 23:05	5°♄37'00	behind sun begin	8193 Jan 16 15:03	29°♄37'54
opposition	8187 Jun 19 15:04	3°♄34'25 0°20'22	behind sun end	8193 Jan 17 03:58	29°♄39'52
min. Earth dist.	8187 Jun 20 05:42	3°♄32'49 17.35011 AU	max. Earth dist.	8193 Jan 16 08:49	29°♄36'55 19.45066 AU
direct	8187 Sep 03 14:30	1°♄28'37		8193 Jan 22 12:19	0°♄
evening set	8187 Dec 08 01:09	4°♄57'14	morning rise	8193 Feb 02 02:03	0°♄39'17
			retrograde	8193 May 04 15:17	3°♄59'49
conjunction	8187 Dec 24 13:05	5°♄58'54 0°16'10	opposition	8193 Jul 17 16:42	1°♄57'55 -0°08'24
minimum elong	8187 Dec 24 13:05	5°♄58'54 0°16'20	min. Earth dist.	8193 Jul 18 02:24	1°♄56'52 17.46841 AU
max. Earth dist.	8187 Dec 23 19:38	5°♄56'10 19.35218 AU		8193 Sep 15 08:10	30°♄
morning rise	8188 Jan 09 22:07	7°♄00'09	direct	8193 Oct 02 07:17	29°♄52'32
retrograde	8188 Apr 10 21:33	10°♄22'37		8193 Oct 19 01:07	0°♄
opposition	8188 Jun 23 15:27	8°♄20'06 0°15'42	evening set	8194 Jan 05 14:53	3°♄19'38
min. Earth dist.	8188 Jun 24 06:34	8°♄18'28 17.35589 AU			
direct	8188 Sep 07 15:34	6°♄14'17	conjunction	8194 Jan 21 21:35	4°♄20'15 -0°09'46
evening set	8188 Dec 12 04:37	9°♄42'52	minimum elong	8194 Jan 21 21:35	4°♄20'15 0°09'38
			behind sun begin	8194 Jan 21 16:04	4°♄19'25
conjunction	8188 Dec 28 15:48	10°♄44'25 0°11'56	behind sun end	8194 Jan 22 03:05	4°♄21'06
minimum elong	8188 Dec 28 15:48	10°♄44'25 0°12'06	max. Earth dist.	8194 Jan 21 11:06	4°♄18'38 19.48743 AU
behind sun begin	8188 Dec 28 11:18	10°♄43'44	morning rise	8194 Feb 07 01:00	5°♄20'25
behind sun end	8188 Dec 28 20:19	10°♄45'07	retrograde	8194 May 09 12:07	8°♄40'29
max. Earth dist.	8188 Dec 27 23:06	10°♄41'48 19.36060 AU	opposition	8194 Jul 22 16:47	6°♄38'49 -0°13'08
morning rise	8189 Jan 14 00:03	11°♄45'33	min. Earth dist.	8194 Jul 23 02:18	6°♄37'47 17.50761 AU
retrograde	8189 Apr 15 22:08	15°♄07'43	direct	8194 Oct 07 08:14	4°♄33'42
opposition	8189 Jun 28 15:44	13°♄05'15 0°10'56	evening set	8195 Jan 10 15:10	8°♄00'15
min. Earth dist.	8189 Jun 29 05:20	13°♄03'47 17.36684 AU			
direct	8189 Sep 12 20:10	10°♄59'25	conjunction	8195 Jan 26 20:42	9°♄00'37 -0°13'58
evening set	8189 Dec 17 07:49	14°♄27'53	minimum elong	8195 Jan 26 20:42	9°♄00'37 0°13'50
			behind sun begin	8195 Jan 26 17:13	9°♄00'05
conjunction	8190 Jan 02 18:11	15°♄29'18 0°07'39	behind sun end	8195 Jan 27 00:12	9°♄01'09
minimum elong	8190 Jan 02 18:11	15°♄29'18 0°07'48	max. Earth dist.	8195 Jan 26 10:27	8°♄59'01 19.52899 AU
behind sun begin	8190 Jan 02 12:09	15°♄28'22	morning rise	8195 Feb 11 23:19	10°♄00'33
behind sun end	8190 Jan 03 00:13	15°♄30'13	retrograde	8195 May 14 10:29	13°♄20'07
max. Earth dist.	8190 Jan 02 02:30	15°♄26'51 19.37427 AU	opposition	8195 Jul 27 16:33	11°♄18'40 -0°17'46
morning rise	8190 Jan 19 01:25	16°♄30'16	min. Earth dist.	8195 Jul 28 00:15	11°♄17'51 17.55127 AU
retrograde	8190 Apr 20 19:30	19°♄52'04	direct	8195 Oct 12 10:11	9°♄13'50
opposition	8190 Jul 03 16:07	17°♄49'42 0°06'07	evening set	8196 Jan 15 14:40	12°♄39'45
min. Earth dist.	8190 Jul 04 05:58	17°♄48'12 17.38340 AU			
direct	8190 Sep 17 21:46	15°♄43'53	conjunction	8196 Jan 31 19:22	13°♄39'52 -0°18'03
evening set	8190 Dec 22 10:30	19°♄12'09	minimum elong	8196 Jan 31 19:22	13°♄39'52 0°17'56
			max. Earth dist.	8196 Jan 31 11:26	13°♄38'39 19.57453 AU
conjunction	8191 Jan 07 19:54	20°♄13'23 0°03'19	morning rise	8196 Feb 16 20:53	14°♄39'32
minimum elong	8191 Jan 07 19:54	20°♄13'23 0°03'28		8196 Feb 22 12:48	15°♄
behind sun begin	8191 Jan 07 13:16	20°♄12'22	retrograde	8196 May 18 07:02	17°♄58'35
behind sun end	8191 Jan 08 02:33	20°♄14'24	opposition	8196 Jul 31 16:07	15°♄57'23 -0°22'15
max. Earth dist.	8191 Jan 07 04:52	20°♄11'02 19.39381 AU	min. Earth dist.	8196 Jul 31 23:28	15°♄56'36 17.59853 AU
morning rise	8191 Jan 24 02:18	21°♄14'10		8196 Aug 24 00:28	15°♄
retrograde	8191 Apr 25 19:15	24°♄35'35	direct	8196 Oct 16 10:44	13°♄52'50
opposition	8191 Jul 08 16:25	22°♄33'19 0°01'15		8196 Dec 06 22:57	15°♄
min. Earth dist.	8191 Jul 09 04:14	22°♄32'03 17.40585 AU	evening set	8197 Jan 19 13:35	17°♄18'03
direct	8191 Sep 23 02:32	20°♄27'36			
desc. node	8191 Oct 11 01:22	20°♄36'12	conjunction	8197 Feb 04 17:08	18°♄17'53 -0°22'01
evening set	8191 Dec 27 12:25	23°♄55'32	minimum elong	8197 Feb 04 17:08	18°♄17'53 0°21'54
			max. Earth dist.	8197 Feb 04 09:11	18°♄16'39 19.62341 AU
conjunction	8192 Jan 12 20:58	24°♄56'35 -0°01'09	morning rise	8197 Feb 20 17:55	19°♄17'18
minimum elong	8192 Jan 12 20:59	24°♄56'35 0°00'59	retrograde	8197 May 23 04:15	22°♄35'48
behind sun begin	8192 Jan 12 14:18	24°♄55'34	opposition	8197 Aug 05 15:21	20°♄34'48 -0°26'35
behind sun end	8192 Jan 13 03:40	24°♄57'36	min. Earth dist.	8197 Aug 05 21:13	20°♄34'11 17.64884 AU
max. Earth dist.	8192 Jan 12 07:51	24°♄54'33 19.41923 AU	direct	8197 Oct 21 11:11	18°♄30'32
morning rise	8192 Jan 29 02:18	25°♄57'11	evening set	8198 Jan 24 11:35	21°♄54'59
retrograde	8192 Apr 29 16:02	29°♄18'11			



conjunction	8198 Feb 09 14:18	22° $\approx$ 54'32 -0°25'49	retrograde	8204 Jun 24 09:58	24° $\mathbf{H}$ 10'30
minimum elong	8198 Feb 09 14:18	22° $\approx$ 54'32 0°25'44	opposition	8204 Sep 07 20:54	22° $\mathbf{H}$ 10'29 -0°50'15
max. Earth dist.	8198 Feb 09 08:33	22° $\approx$ 53'39 19.67489 AU	min. Earth dist.	8204 Sep 07 18:35	22° $\mathbf{H}$ 10'43 18.04877 AU
morning rise	8198 Feb 25 14:00	23° $\approx$ 53'41	direct	8204 Nov 24 01:15	20° $\mathbf{H}$ 08'15
retrograde	8198 May 28 00:05	27° $\approx$ 11'36	evening set	8205 Feb 25 20:07	23° $\mathbf{H}$ 25'40
opposition	8198 Aug 10 14:18	25° $\approx$ 10'48 -0°30'43			
min. Earth dist.	8198 Aug 10 19:30	25° $\approx$ 10'15 17.70138 AU	conjunction	8205 Mar 13 16:42	24° $\mathbf{H}$ 23'06 -0°46'18
direct	8198 Oct 26 11:27	23° $\approx$ 06'51	minimum elong	8205 Mar 13 16:42	24° $\mathbf{H}$ 23'06 0°46'17
evening set	8199 Jan 29 08:55	26° $\approx$ 30'26	max. Earth dist.	8205 Mar 13 19:05	24° $\mathbf{H}$ 23'28 20.08001 AU
			morning rise	8205 Mar 29 11:32	25° $\mathbf{H}$ 20'17
conjunction	8199 Feb 14 10:30	27° $\approx$ 29'42 -0°29'26	retrograde	8205 Jun 29 00:42	28° $\mathbf{H}$ 33'44
minimum elong	8199 Feb 14 10:30	27° $\approx$ 29'42 0°29'21	opposition	8205 Sep 12 15:58	26° $\mathbf{H}$ 33'50 -0°52'28
max. Earth dist.	8199 Feb 14 04:46	27° $\approx$ 28'49 19.72848 AU	min. Earth dist.	8205 Sep 12 12:52	26° $\mathbf{H}$ 34'09 18.11172 AU
morning rise	8199 Mar 02 09:29	28° $\approx$ 28'34	direct	8205 Nov 28 19:51	24° $\mathbf{H}$ 31'56
	8199 Mar 29 11:46	0° $\mathbf{H}$	evening set	8206 Mar 02 10:34	27° $\mathbf{H}$ 48'15
retrograde	8199 Jun 01 19:57	1° $\mathbf{H}$ 45'53			
	8199 Aug 09 16:24	30° $\mathbf{R}$	conjunction	8206 Mar 18 06:31	28° $\mathbf{H}$ 45'24 -0°48'10
opposition	8199 Aug 15 12:50	29° $\approx$ 45'16 -0°34'38	minimum elong	8206 Mar 18 06:31	28° $\mathbf{H}$ 45'24 0°48'09
min. Earth dist.	8199 Aug 15 16:49	29° $\approx$ 44'50 17.75596 AU	max. Earth dist.	8206 Mar 18 10:45	28° $\mathbf{H}$ 46'03 20.14362 AU
direct	8199 Oct 31 10:29	27° $\approx$ 41'35	morning rise	8206 Apr 03 00:48	29° $\mathbf{H}$ 42'20
	8200 Jan 15 15:43	0° $\mathbf{H}$		8206 Apr 08 01:25	0° $\mathbf{Y}$
evening set	8200 Feb 03 05:03	1° $\mathbf{H}$ 04'16	retrograde	8206 Jul 03 15:18	2° $\mathbf{Y}$ 55'09
			opposition	8206 Sep 17 10:19	0° $\mathbf{Y}$ 55'25 -0°54'21
conjunction	8200 Feb 19 05:52	2° $\mathbf{H}$ 03'14 -0°32'52	min. Earth dist.	8206 Sep 17 04:58	0° $\mathbf{Y}$ 55'58 18.17580 AU
minimum elong	8200 Feb 19 05:52	2° $\mathbf{H}$ 03'14 0°32'47		8206 Oct 10 17:04	30° $\mathbf{R}$ $\mathbf{H}$
max. Earth dist.	8200 Feb 19 02:16	2° $\mathbf{H}$ 02'41 19.78381 AU	direct	8206 Dec 03 15:28	28° $\mathbf{H}$ 53'54
morning rise	8200 Mar 07 03:56	3° $\mathbf{H}$ 01'49		8207 Jan 24 04:20	0° $\mathbf{Y}$
retrograde	8200 Jun 06 14:49	6° $\mathbf{H}$ 18'30	evening set	8207 Mar 07 00:17	2° $\mathbf{Y}$ 09'08
opposition	8200 Aug 20 10:51	4° $\mathbf{H}$ 18'03 -0°38'19			
min. Earth dist.	8200 Aug 20 13:49	4° $\mathbf{H}$ 17'44 17.81188 AU	conjunction	8207 Mar 22 19:33	3° $\mathbf{Y}$ 06'00 -0°49'44
direct	8200 Nov 05 10:06	2° $\mathbf{H}$ 14'40	minimum elong	8207 Mar 22 19:33	3° $\mathbf{Y}$ 06'00 0°49'44
evening set	8201 Feb 08 00:33	5° $\mathbf{H}$ 36'22	max. Earth dist.	8207 Mar 23 01:02	3° $\mathbf{Y}$ 06'49 20.20813 AU
			morning rise	8207 Apr 07 13:27	4° $\mathbf{Y}$ 02'40
conjunction	8201 Feb 24 00:20	6° $\mathbf{H}$ 35'02 -0°36'04	retrograde	8207 Jul 08 04:43	7° $\mathbf{Y}$ 14'55
minimum elong	8201 Feb 24 00:19	6° $\mathbf{H}$ 35'01 0°36'00	opposition	8207 Sep 22 04:11	5° $\mathbf{Y}$ 15'21 -0°55'55
max. Earth dist.	8201 Feb 23 20:53	6° $\mathbf{H}$ 34'30 19.84038 AU	min. Earth dist.	8207 Sep 21 22:23	5° $\mathbf{Y}$ 15'57 18.24070 AU
morning rise	8201 Mar 11 21:44	7° $\mathbf{H}$ 33'20	direct	8207 Dec 08 07:41	3° $\mathbf{Y}$ 14'12
retrograde	8201 Jun 11 08:58	10° $\mathbf{H}$ 49'22	evening set	8208 Mar 10 13:02	6° $\mathbf{Y}$ 28'21
opposition	8201 Aug 25 08:12	8° $\mathbf{H}$ 49'02 -0°41'44			
min. Earth dist.	8201 Aug 25 10:18	8° $\mathbf{H}$ 48'49 17.86915 AU	conjunction	8208 Mar 26 07:49	7° $\mathbf{Y}$ 24'57 -0°51'01
direct	8201 Nov 10 08:08	6° $\mathbf{H}$ 45'56	minimum elong	8208 Mar 26 07:49	7° $\mathbf{Y}$ 24'57 0°51'03
evening set	8202 Feb 12 18:55	10° $\mathbf{H}$ 06'36	max. Earth dist.	8208 Mar 26 14:45	7° $\mathbf{Y}$ 25'59 20.27312 AU
			morning rise	8208 Apr 11 01:22	8° $\mathbf{Y}$ 21'23
conjunction	8202 Feb 28 17:58	11° $\mathbf{H}$ 04'58 -0°39'01	retrograde	8208 Jul 11 18:55	11° $\mathbf{Y}$ 33'03
minimum elong	8202 Feb 28 17:57	11° $\mathbf{H}$ 04'58 0°38'57	opposition	8208 Sep 25 21:19	9° $\mathbf{Y}$ 33'40 -0°57'10
max. Earth dist.	8202 Feb 28 16:33	11° $\mathbf{H}$ 04'45 19.89825 AU	min. Earth dist.	8208 Sep 25 13:24	9° $\mathbf{Y}$ 34'28 18.30550 AU
morning rise	8202 Mar 16 14:33	12° $\mathbf{H}$ 02'59	direct	8208 Dec 12 01:39	7° $\mathbf{Y}$ 32'55
retrograde	8202 Jun 16 02:05	15° $\mathbf{H}$ 18'21	evening set	8209 Mar 15 01:11	10° $\mathbf{Y}$ 46'00
opposition	8202 Aug 30 05:07	13° $\mathbf{H}$ 18'08 -0°44'52			
min. Earth dist.	8202 Aug 30 05:41	13° $\mathbf{H}$ 18'04 17.92754 AU	conjunction	8209 Mar 30 19:24	11° $\mathbf{Y}$ 42'19 -0°52'01
direct	8202 Nov 15 07:10	11° $\mathbf{H}$ 15'19	minimum elong	8209 Mar 30 19:24	11° $\mathbf{Y}$ 42'19 0°52'02
evening set	8203 Feb 17 12:16	14° $\mathbf{H}$ 34'54	max. Earth dist.	8209 Mar 31 03:30	11° $\mathbf{Y}$ 43'32 20.33758 AU
			morning rise	8209 Apr 15 12:38	12° $\mathbf{Y}$ 38'31
conjunction	8203 Mar 05 10:21	15° $\mathbf{H}$ 32'57 -0°41'43	retrograde	8209 Jul 16 07:07	15° $\mathbf{Y}$ 49'38
minimum elong	8203 Mar 05 10:20	15° $\mathbf{H}$ 32'57 0°41'41	opposition	8209 Sep 30 14:01	13° $\mathbf{Y}$ 50'26 -0°58'06
max. Earth dist.	8203 Mar 05 09:40	15° $\mathbf{H}$ 32'51 19.95730 AU	min. Earth dist.	8209 Sep 30 06:02	13° $\mathbf{Y}$ 51'15 18.36960 AU
morning rise	8203 Mar 21 06:21	16° $\mathbf{H}$ 30'41	direct	8209 Dec 16 16:06	11° $\mathbf{Y}$ 50'03
retrograde	8203 Jun 20 18:33	19° $\mathbf{H}$ 45'25	evening set	8210 Mar 19 12:35	15° $\mathbf{Y}$ 02'05
opposition	8203 Sep 04 01:27	17° $\mathbf{H}$ 45'17 -0°47'43			
min. Earth dist.	8203 Sep 04 01:07	17° $\mathbf{H}$ 45'19 17.98743 AU	conjunction	8210 Apr 04 06:23	15° $\mathbf{Y}$ 58'09 -0°52'42
direct	8203 Nov 20 03:44	15° $\mathbf{H}$ 42'44	minimum elong	8210 Apr 04 06:22	15° $\mathbf{Y}$ 58'09 0°52'46
evening set	8204 Feb 22 04:35	19° $\mathbf{H}$ 01'14	max. Earth dist.	8210 Apr 04 15:30	15° $\mathbf{Y}$ 59'31 20.40111 AU
			morning rise	8210 Apr 19 23:23	16° $\mathbf{Y}$ 54'08
conjunction	8204 Mar 09 01:59	19° $\mathbf{H}$ 58'59 -0°44'09	retrograde	8210 Jul 20 20:54	20° $\mathbf{Y}$ 04'43
minimum elong	8204 Mar 09 01:59	19° $\mathbf{H}$ 58'59 0°44'06	opposition	8210 Oct 05 06:07	18° $\mathbf{Y}$ 05'39 -0°58'41
max. Earth dist.	8204 Mar 09 03:22	19° $\mathbf{H}$ 59'11 20.01792 AU	min. Earth dist.	8210 Oct 04 20:08	18° $\mathbf{Y}$ 06'40 18.43232 AU
morning rise	8204 Mar 24 21:19	20° $\mathbf{H}$ 56'26	direct	8210 Dec 21 08:32	16° $\mathbf{Y}$ 05'39












































































































































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			minimum elong	8217 May 02 18:04	15° $\text{♄}$ 07'03 0°49'50
conjunction	8211 Apr 08 16:36	20° $\Upsilon$ 12'28 -0°53'07	max. Earth dist.	8217 May 03 08:41	15° $\text{♄}$ 09'11 20.77155 AU
minimum elong	8211 Apr 08 16:36	20° $\Upsilon$ 12'28 0°53'10	morning rise	8217 May 18 11:15	16° $\text{♄}$ 01'52
max. Earth dist.	8211 Apr 09 02:52	20° $\Upsilon$ 13'59 20.46280 AU	retrograde	8217 Aug 18 22:50	19° $\text{♄}$ 09'14
morning rise	8211 Apr 24 09:25	21° $\Upsilon$ 08'14	opposition	8217 Nov 04 06:16	17° $\text{♄}$ 10'32 -0°54'12
retrograde	8211 Jul 25 08:13	24° $\Upsilon$ 18'19	min. Earth dist.	8217 Nov 03 16:26	17° $\text{♄}$ 11'56 18.79272 AU
opposition	8211 Oct 09 21:46	22° $\Upsilon$ 19'23 -0°58'58	direct	8218 Jan 20 00:33	15° $\text{♄}$ 12'20
min. Earth dist.	8211 Oct 09 12:00	22° $\Upsilon$ 20'22 18.49300 AU	evening set	8218 Apr 21 07:51	18° $\text{♄}$ 16'42
direct	8211 Dec 25 21:58	20° $\Upsilon$ 19'44			
evening set	8212 Mar 27 09:16	23° $\Upsilon$ 29'40	conjunction	8218 May 07 00:24	19° $\text{♄}$ 11'15 -0°48'13
			minimum elong	8218 May 07 00:24	19° $\text{♄}$ 11'15 0°48'20
conjunction	8212 Apr 12 02:21	24° $\Upsilon$ 25'17 -0°53'15	max. Earth dist.	8218 May 07 15:17	19° $\text{♄}$ 13'26 20.81281 AU
minimum elong	8212 Apr 12 02:21	24° $\Upsilon$ 25'17 0°53'18	morning rise	8218 May 22 17:56	20° $\text{♄}$ 05'58
max. Earth dist.	8212 Apr 12 13:09	24° $\Upsilon$ 26'53 20.52222 AU	retrograde	8218 Aug 23 09:44	23° $\text{♄}$ 13'01
morning rise	8212 Apr 27 19:07	25° $\Upsilon$ 20'51	opposition	8218 Nov 08 17:36	21° $\text{♄}$ 14'20 -0°52'24
retrograde	8212 Jul 28 20:58	28° $\Upsilon$ 30'25	min. Earth dist.	8218 Nov 08 02:00	21° $\text{♄}$ 15'53 18.83279 AU
opposition	8212 Oct 13 12:30	26° $\Upsilon$ 31'36 -0°58'56	direct	8219 Jan 24 10:44	19° $\text{♄}$ 16'19
min. Earth dist.	8212 Oct 13 01:01	26° $\Upsilon$ 32'46 18.55097 AU	evening set	8219 Apr 25 13:36	22° $\text{♄}$ 19'57
direct	8212 Dec 29 12:53	24° $\Upsilon$ 32'15			
evening set	8213 Mar 31 18:42	27° $\Upsilon$ 41'12	conjunction	8219 May 11 06:21	23° $\text{♄}$ 14'24 -0°46'29
			minimum elong	8219 May 11 06:22	23° $\text{♄}$ 14'24 0°46'37
conjunction	8213 Apr 16 11:33	28° $\Upsilon$ 36'36 -0°53'05	max. Earth dist.	8219 May 11 22:33	23° $\text{♄}$ 16'45 20.85157 AU
minimum elong	8213 Apr 16 11:33	28° $\Upsilon$ 36'36 0°53'09	morning rise	8219 May 27 00:10	24° $\text{♄}$ 09'01
max. Earth dist.	8213 Apr 16 23:17	28° $\Upsilon$ 38'20 20.57856 AU	retrograde	8219 Aug 27 17:03	27° $\text{♄}$ 15'47
morning rise	8213 May 02 04:13	29° $\Upsilon$ 31'59	opposition	8219 Nov 13 04:32	25° $\text{♄}$ 17'08 -0°50'21
	8213 May 10 09:10	0° $\text{♄}$	min. Earth dist.	8219 Nov 12 13:13	25° $\text{♄}$ 18'40 18.87030 AU
retrograde	8213 Aug 02 07:20	2° $\text{♄}$ 41'05	direct	8220 Jan 28 19:29	23° $\text{♄}$ 19'22
opposition	8213 Oct 18 03:00	0° $\text{♄}$ 42'20 -0°58'35	evening set	8220 Apr 28 19:08	26° $\text{♄}$ 22'18
min. Earth dist.	8213 Oct 17 15:56	0° $\text{♄}$ 43'27 18.60576 AU			
	8213 Nov 04 23:35	30° $\text{♄}$	conjunction	8220 May 14 12:02	27° $\text{♄}$ 16'39 -0°44'32
direct	8214 Jan 03 01:28	28° $\Upsilon$ 43'17	minimum elong	8220 May 14 12:02	27° $\text{♄}$ 16'39 0°44'40
	8214 Feb 28 04:32	0° $\text{♄}$	max. Earth dist.	8220 May 15 04:12	27° $\text{♄}$ 19'00 20.88781 AU
evening set	8214 Apr 05 03:21	1° $\text{♄}$ 51'14	morning rise	8220 May 30 06:17	28° $\text{♄}$ 11'11
				8220 Jul 04 21:32	0° $\text{♄}$
conjunction	8214 Apr 20 20:00	2° $\text{♄}$ 46'25 -0°52'38	retrograde	8220 Aug 31 03:29	1° $\text{♄}$ 17'44
minimum elong	8214 Apr 20 20:00	2° $\text{♄}$ 46'25 0°52'43		8220 Oct 30 05:47	30° $\text{♄}$
max. Earth dist.	8214 Apr 21 08:02	2° $\text{♄}$ 48'12 20.63170 AU	opposition	8220 Nov 16 14:45	29° $\text{♄}$ 19'07 -0°48'04
morning rise	8214 May 06 12:45	3° $\text{♄}$ 41'39	min. Earth dist.	8220 Nov 15 22:02	29° $\text{♄}$ 20'48 18.90509 AU
retrograde	8214 Aug 06 19:00	6° $\text{♄}$ 50'16	direct	8221 Feb 01 04:54	27° $\text{♄}$ 21'34
opposition	8214 Oct 22 16:45	4° $\text{♄}$ 51'34 -0°57'55		8221 Apr 25 20:49	0° $\text{♄}$
min. Earth dist.	8214 Oct 22 03:58	4° $\text{♄}$ 52'51 18.65715 AU	evening set	8221 May 03 00:19	0° $\text{♄}$ 23'54
direct	8215 Jan 07 14:58	2° $\text{♄}$ 52'45			
evening set	8215 Apr 09 11:23	5° $\text{♄}$ 59'44	conjunction	8221 May 18 17:31	1° $\text{♄}$ 18'10 -0°42'22
			minimum elong	8221 May 18 17:31	1° $\text{♄}$ 18'10 0°42'30
conjunction	8215 Apr 25 03:58	6° $\text{♄}$ 54'45 -0°51'55	max. Earth dist.	8221 May 19 10:51	1° $\text{♄}$ 20'41 20.92105 AU
minimum elong	8215 Apr 25 03:58	6° $\text{♄}$ 54'45 0°52'02	morning rise	8221 Jun 03 12:06	2° $\text{♄}$ 12'40
max. Earth dist.	8215 Apr 25 17:05	6° $\text{♄}$ 56'41 20.68135 AU	retrograde	8221 Sep 04 10:42	5° $\text{♄}$ 19'01
morning rise	8215 May 10 20:48	7° $\text{♄}$ 49'49	min. Earth dist.	8221 Nov 20 08:37	3° $\text{♄}$ 22'06 18.93675 AU
retrograde	8215 Aug 11 04:03	10° $\text{♄}$ 57'59	opposition	8221 Nov 21 00:54	3° $\text{♄}$ 20'28 -0°45'33
opposition	8215 Oct 27 05:52	8° $\text{♄}$ 59'18 -0°56'58	direct	8222 Feb 05 12:10	1° $\text{♄}$ 23'08
min. Earth dist.	8215 Oct 26 17:31	9° $\text{♄}$ 00'33 18.70523 AU	evening set	8222 May 07 05:13	4° $\text{♄}$ 24'54
direct	8216 Jan 12 02:29	7° $\text{♄}$ 00'42			
evening set	8216 Apr 12 18:45	10° $\text{♄}$ 06'45	conjunction	8222 May 22 22:40	5° $\text{♄}$ 19'06 -0°40'00
			minimum elong	8222 May 22 22:40	5° $\text{♄}$ 19'06 0°40'10
conjunction	8216 Apr 28 11:17	11° $\text{♄}$ 01'36 -0°50'56	max. Earth dist.	8222 May 23 15:50	5° $\text{♄}$ 21'35 20.95112 AU
minimum elong	8216 Apr 28 11:17	11° $\text{♄}$ 01'36 0°51'03	morning rise	8222 Jun 07 17:50	6° $\text{♄}$ 13'34
max. Earth dist.	8216 Apr 29 00:38	11° $\text{♄}$ 03'33 20.72793 AU	retrograde	8222 Sep 08 20:36	9° $\text{♄}$ 19'47
morning rise	8216 May 14 04:21	11° $\text{♄}$ 56'32	opposition	8222 Nov 25 10:35	7° $\text{♄}$ 21'17 -0°42'50
	8216 Aug 01 13:53	15° $\text{♄}$	min. Earth dist.	8222 Nov 24 17:14	7° $\text{♄}$ 23'01 18.96500 AU
retrograde	8216 Aug 14 15:00	15° $\text{♄}$ 04'17	direct	8223 Feb 09 21:09	5° $\text{♄}$ 24'08
	8216 Aug 27 18:00	15° $\text{♄}$	evening set	8223 May 11 10:03	8° $\text{♄}$ 25'25
opposition	8216 Oct 30 18:17	13° $\text{♄}$ 05'35 -0°55'43			
min. Earth dist.	8216 Oct 30 04:14	13° $\text{♄}$ 07'00 18.75032 AU	conjunction	8223 May 27 03:55	9° $\text{♄}$ 19'35 -0°37'28
direct	8217 Jan 15 14:09	11° $\text{♄}$ 07'10	minimum elong	8223 May 27 03:55	9° $\text{♄}$ 19'35 0°37'36
evening set	8217 Apr 17 01:31	14° $\text{♄}$ 12'21	max. Earth dist.	8223 May 27 21:59	9° $\text{♄}$ 22'12 20.97736 AU
	8217 Apr 30 17:55	15° $\text{♄}$	morning rise	8223 Jun 11 23:32	10° $\text{♄}$ 14'01

retrograde	8223 Sep 13 03:54	13° $\Pi$ 20'09	evening set	8230 Jun 07 19:37	6° $\Theta$ 21'14
opposition	8223 Nov 29 19:54	11° $\Pi$ 21'41 -0°39'54	conjunction	8230 Jun 23 17:06	7° $\Theta$ 15'32 -0°15'25
min. Earth dist.	8223 Nov 29 03:21	11° $\Pi$ 23'20 18.98920 AU	minimum elong	8230 Jun 23 17:06	7° $\Theta$ 15'32 0°15'34
direct	8224 Feb 14 03:44	9° $\Pi$ 24'43	behind sun begin	8230 Jun 23 15:23	7° $\Theta$ 15'17
evening set	8224 May 14 14:53	12° $\Pi$ 25'35	behind sun end	8230 Jun 23 18:50	7° $\Theta$ 15'46
conjunction	8224 May 30 09:05	13° $\Pi$ 19'43 -0°34'44	max. Earth dist.	8230 Jun 24 08:31	7° $\Theta$ 17'44 21.02457 AU
minimum elong	8224 May 30 09:05	13° $\Pi$ 19'43 0°34'54	morning rise	8230 Jul 09 17:28	8° $\Theta$ 10'13
max. Earth dist.	8224 May 31 02:30	13° $\Pi$ 22'14 20.99947 AU	retrograde	8230 Oct 11 13:15	11° $\Theta$ 16'32
morning rise	8224 Jun 15 05:21	14° $\Pi$ 14'09	opposition	8230 Dec 28 07:19	9° $\Theta$ 17'32 -0°15'01
retrograde	8224 Sep 16 13:14	17° $\Pi$ 20'13	min. Earth dist.	8230 Dec 27 16:20	9° $\Theta$ 19'02 19.01916 AU
min. Earth dist.	8224 Dec 02 11:49	15° $\Pi$ 23'29 19.00897 AU	direct	8231 Mar 14 03:06	7° $\Theta$ 20'40
opposition	8224 Dec 03 05:00	15° $\Pi$ 21'46 -0°36'48	evening set	8231 Jun 12 00:42	10° $\Theta$ 20'02
direct	8225 Feb 17 11:49	13° $\Pi$ 24'57	conjunction	8231 Jun 27 22:57	11° $\Theta$ 14'25 -0°11'50
evening set	8225 May 18 19:34	16° $\Pi$ 25'26	minimum elong	8231 Jun 27 22:57	11° $\Theta$ 14'25 0°12'01
conjunction	8225 Jun 03 14:14	17° $\Pi$ 19'34 -0°31'51	behind sun begin	8231 Jun 27 18:25	11° $\Theta$ 13'47
minimum elong	8225 Jun 03 14:14	17° $\Pi$ 19'34 0°32'00	behind sun end	8231 Jun 28 03:30	11° $\Theta$ 15'03
max. Earth dist.	8225 Jun 04 08:14	17° $\Pi$ 22'09 21.01668 AU	max. Earth dist.	8231 Jun 28 14:49	11° $\Theta$ 16'41 21.01253 AU
morning rise	8225 Jun 19 10:59	18° $\Pi$ 14'00	morning rise	8231 Jul 13 23:58	12° $\Theta$ 09'13
retrograde	8225 Sep 20 20:43	21° $\Pi$ 20'03	retrograde	8231 Oct 15 20:15	15° $\Theta$ 15'41
opposition	8225 Dec 07 14:02	19° $\Pi$ 21'36 -0°33'31	opposition	8232 Jan 01 14:57	13° $\Theta$ 16'33 -0°11'01
min. Earth dist.	8225 Dec 06 21:46	19° $\Pi$ 23'13 19.02363 AU	min. Earth dist.	8232 Jan 01 00:48	13° $\Theta$ 17'59 19.00531 AU
direct	8226 Feb 21 18:29	17° $\Pi$ 24'53	direct	8232 Mar 17 08:42	11° $\Theta$ 19'37
evening set	8226 May 23 00:24	20° $\Pi$ 25'03	evening set	8232 Jun 15 06:05	14° $\Theta$ 19'02
conjunction	8226 Jun 07 19:30	21° $\Pi$ 19'11 -0°28'48	conjunction	8232 Jul 01 04:57	15° $\Theta$ 13'31 -0°08'13
minimum elong	8226 Jun 07 19:30	21° $\Pi$ 19'11 0°28'58	minimum elong	8232 Jul 01 04:56	15° $\Theta$ 13'31 0°08'22
max. Earth dist.	8226 Jun 08 12:27	21° $\Pi$ 21'37 21.02878 AU	behind sun begin	8232 Jun 30 23:07	15° $\Theta$ 12'43
morning rise	8226 Jun 23 16:59	22° $\Pi$ 13'38	behind sun end	8232 Jul 01 10:45	15° $\Theta$ 14'20
retrograde	8226 Sep 25 05:25	25° $\Pi$ 19'42	max. Earth dist.	8232 Jul 01 19:41	15° $\Theta$ 15'38 20.99706 AU
opposition	8226 Dec 11 22:42	23° $\Pi$ 21'11 -0°30'04	morning rise	8232 Jul 17 06:49	16° $\Theta$ 08'26
min. Earth dist.	8226 Dec 11 06:08	23° $\Pi$ 22'50 19.03300 AU	retrograde	8232 Oct 19 06:02	19° $\Theta$ 15'09
direct	8227 Feb 26 01:42	21° $\Pi$ 24'31	opposition	8233 Jan 04 22:41	17° $\Theta$ 15'53 -0°06'59
evening set	8227 May 27 05:09	24° $\Pi$ 24'25	min. Earth dist.	8233 Jan 04 08:29	17° $\Theta$ 17'18 18.98816 AU
conjunction	8227 Jun 12 00:54	25° $\Pi$ 18'34 -0°25'37	direct	8233 Mar 21 14:26	15° $\Theta$ 18'52
minimum elong	8227 Jun 12 00:54	25° $\Pi$ 18'34 0°25'48	evening set	8233 Jun 19 11:32	18° $\Theta$ 18'25
max. Earth dist.	8227 Jun 12 18:05	25° $\Pi$ 21'02 21.03531 AU	conjunction	8233 Jul 05 11:12	19° $\Theta$ 13'01 -0°04'33
morning rise	8227 Jun 27 22:58	26° $\Pi$ 13'04	minimum elong	8233 Jul 05 11:12	19° $\Theta$ 13'01 0°04'43
retrograde	8227 Sep 29 12:50	29° $\Pi$ 19'08	behind sun begin	8233 Jul 05 04:44	19° $\Theta$ 12'07
opposition	8227 Dec 16 07:13	27° $\Pi$ 20'32 -0°26'29	behind sun end	8233 Jul 05 17:40	19° $\Theta$ 13'55
min. Earth dist.	8227 Dec 15 15:41	27° $\Pi$ 22'05 19.03673 AU	max. Earth dist.	8233 Jul 06 02:26	19° $\Theta$ 15'12 20.97818 AU
direct	8228 Mar 01 08:13	25° $\Pi$ 23'53	morning rise	8233 Jul 21 13:45	20° $\Theta$ 08'03
evening set	8228 May 30 09:58	28° $\Pi$ 23'32	retrograde	8233 Oct 23 13:43	23° $\Theta$ 15'04
conjunction	8228 Jun 15 06:13	29° $\Pi$ 17'43 -0°22'19	opposition	8234 Jan 09 06:30	21° $\Theta$ 15'41 -0°02'53
minimum elong	8228 Jun 15 06:13	29° $\Pi$ 17'43 0°22'29	min. Earth dist.	8234 Jan 08 17:03	21° $\Theta$ 17'03 18.96763 AU
max. Earth dist.	8228 Jun 15 22:13	29° $\Pi$ 20'01 21.03649 AU	direct	8234 Mar 25 20:06	19° $\Theta$ 18'37
	8228 Jun 27 13:55	0° $\Theta$	evening set	8234 Jun 23 17:36	22° $\Theta$ 18'22
morning rise	8228 Jul 01 05:05	0° $\Theta$ 12'16	conjunction	8234 Jul 09 17:55	23° $\Theta$ 13'06 -0°00'48
retrograde	8228 Oct 02 21:07	3° $\Theta$ 18'23	minimum elong	8234 Jul 09 17:55	23° $\Theta$ 13'06 0°00'58
opposition	8228 Dec 19 15:21	1° $\Theta$ 19'40 -0°22'46	behind sun begin	8234 Jul 09 11:19	23° $\Theta$ 12'11
min. Earth dist.	8228 Dec 18 23:40	1° $\Theta$ 21'14 19.03532 AU	behind sun end	8234 Jul 10 00:32	23° $\Theta$ 14'02
	8229 Jan 25 01:59	30° $\kappa$ $\Pi$	max. Earth dist.	8234 Jul 10 07:53	23° $\Theta$ 15'06 20.95617 AU
direct	8229 Mar 05 14:54	29° $\Pi$ 22'57	morning rise	8234 Jul 25 21:24	24° $\Theta$ 08'17
	8229 Apr 12 23:17	0° $\Theta$	asc. node	8234 Sep 25 03:46	26° $\Theta$ 49'30
evening set	8229 Jun 03 14:46	2° $\Theta$ 22'27	retrograde	8234 Oct 28 00:02	27° $\Theta$ 15'38
conjunction	8229 Jun 19 11:41	3° $\Theta$ 16'41 -0°18'55	opposition	8235 Jan 13 14:15	25° $\Theta$ 16'10 0°01'13
minimum elong	8229 Jun 19 11:41	3° $\Theta$ 16'41 0°19'05	min. Earth dist.	8235 Jan 13 01:03	25° $\Theta$ 17'30 18.94400 AU
max. Earth dist.	8229 Jun 20 04:06	3° $\Theta$ 19'01 21.03265 AU	direct	8235 Mar 30 01:39	23° $\Theta$ 19'00
morning rise	8229 Jul 05 11:11	4° $\Theta$ 11'18	evening set	8235 Jun 28 00:02	26° $\Theta$ 19'04
retrograde	8229 Oct 07 04:14	7° $\Theta$ 17'28	conjunction	8235 Jul 14 01:15	27° $\Theta$ 13'58 0°03'01
opposition	8229 Dec 23 23:27	5° $\Theta$ 18'37 -0°18'56	minimum elong	8235 Jul 14 01:14	27° $\Theta$ 13'58 0°02'52
min. Earth dist.	8229 Dec 23 08:38	5° $\Theta$ 20'06 19.02923 AU	behind sun begin	8235 Jul 13 18:37	27° $\Theta$ 13'02
direct	8230 Mar 09 20:55	3° $\Theta$ 21'51	behind sun end	8235 Jul 14 07:51	27° $\Theta$ 14'53

max. Earth dist.	8235 Jul 14 15:26	27°☾15'59	20.93080 AU	direct	8241 Apr 22 17:16	17°♈42'35	
morning rise	8235 Jul 30 05:24	28°☾09'18		evening set	8241 Jul 22 03:38	20°♈45'45	
	8235 Sep 04 23:25	0°♈					
retrograde	8235 Nov 01 08:51	1°♈17'01		conjunction	8241 Aug 07 09:37	21°♈41'51	0°24'40
	8235 Dec 31 01:18	30°♈☾		minimum elong	8241 Aug 07 09:37	21°♈41'51	0°24'34
opposition	8236 Jan 17 22:13	29°☾17'29	0°05'20	max. Earth dist.	8241 Aug 07 17:03	21°♈42'55	20.69745 AU
min. Earth dist.	8236 Jan 17 09:56	29°☾18'44	18.91688 AU	morning rise	8241 Aug 23 18:25	22°♈38'22	
direct	8236 Apr 02 07:34	27°☾20'15		retrograde	8241 Nov 26 05:39	25°♈49'04	
	8236 Jun 25 01:45	0°♈		opposition	8242 Feb 11 03:03	23°♈48'45	0°29'11
evening set	8236 Jul 01 07:01	0°♈20'41		min. Earth dist.	8242 Feb 10 21:06	23°♈49'22	18.67124 AU
				direct	8242 Apr 27 00:54	21°♈50'26	
conjunction	8236 Jul 17 08:52	1°♈15'44	0°06'44	evening set	8242 Jul 26 14:39	24°♈54'17	
minimum elong	8236 Jul 17 08:52	1°♈15'44	0°06'35				
behind sun begin	8236 Jul 17 02:38	1°♈14'52		conjunction	8242 Aug 11 21:19	25°♈50'36	0°28'01
behind sun end	8236 Jul 17 15:05	1°♈16'36		minimum elong	8242 Aug 11 21:18	25°♈50'36	0°27'55
max. Earth dist.	8236 Jul 17 21:28	1°♈17'32	20.90205 AU	max. Earth dist.	8242 Aug 12 02:24	25°♈51'20	20.64445 AU
morning rise	8236 Aug 02 13:56	2°♈11'15		morning rise	8242 Aug 28 07:01	26°♈47'22	
retrograde	8236 Nov 04 19:46	5°♈19'25		retrograde	8242 Nov 30 19:03	29°♈58'36	
opposition	8237 Jan 21 06:21	3°♈19'48	0°09'27	opposition	8243 Feb 15 12:45	27°♈58'02	0°32'49
min. Earth dist.	8237 Jan 20 18:39	3°♈20'59	18.88633 AU	min. Earth dist.	8243 Feb 15 08:11	27°♈58'31	18.61677 AU
direct	8237 Apr 06 13:25	1°♈22'28		direct	8243 May 01 09:45	25°♈59'24	
evening set	8237 Jul 05 14:35	4°♈23'21		evening set	8243 Jul 31 02:13	29°♈03'59	
conjunction	8237 Jul 21 17:19	5°♈18'35	0°10'25	conjunction	8243 Aug 16 09:49	0°♈00'34	0°31'14
minimum elong	8237 Jul 21 17:19	5°♈18'35	0°10'17	minimum elong	8243 Aug 16 09:49	0°♈00'34	0°31'08
behind sun begin	8237 Jul 21 12:03	5°♈17'51			8243 Aug 16 05:56	0°♈	
behind sun end	8237 Jul 21 22:35	5°♈19'20		max. Earth dist.	8243 Aug 16 14:45	0°♈01'17	20.58856 AU
max. Earth dist.	8237 Jul 22 05:55	5°♈20'24	20.86958 AU	morning rise	8243 Sep 01 20:03	0°♈57'33	
morning rise	8237 Aug 06 23:02	6°♈14'17		retrograde	8243 Dec 05 08:07	4°♈09'21	
retrograde	8237 Nov 09 05:48	9°♈22'55		opposition	8244 Feb 19 22:51	2°♈08'33	0°36'19
opposition	8238 Jan 25 14:44	7°♈23'13	0°13'32	min. Earth dist.	8244 Feb 19 19:06	2°♈08'57	18.55968 AU
min. Earth dist.	8238 Jan 25 04:08	7°♈24'18	18.85188 AU	direct	8244 May 04 18:50	0°♈09'36	
direct	8238 Apr 10 19:44	5°♈25'48		evening set	8244 Aug 03 14:29	3°♈14'58	
evening set	8238 Jul 09 22:52	8°♈27'10					
				conjunction	8244 Aug 19 22:41	4°♈11'47	0°34'17
conjunction	8238 Jul 26 02:18	9°♈22'37	0°14'04	minimum elong	8244 Aug 19 22:41	4°♈11'47	0°34'13
minimum elong	8238 Jul 26 02:17	9°♈22'37	0°13'56	max. Earth dist.	8244 Aug 20 01:25	4°♈12'11	20.53053 AU
behind sun begin	8238 Jul 25 22:55	9°♈22'08		morning rise	8244 Sep 05 09:45	5°♈09'01	
behind sun end	8238 Jul 26 05:40	9°♈23'05		retrograde	8244 Dec 08 21:47	8°♈21'25	
max. Earth dist.	8238 Jul 26 12:50	9°♈24'07	20.83317 AU	opposition	8245 Feb 23 09:24	6°♈20'23	0°39'37
morning rise	8238 Aug 11 08:57	10°♈18'30		min. Earth dist.	8245 Feb 23 06:58	6°♈20'38	18.50087 AU
retrograde	8238 Nov 13 17:51	13°♈27'39		direct	8245 May 09 04:07	4°♈21'05	
opposition	8239 Jan 29 23:23	11°♈27'50	0°17'34	evening set	8245 Aug 08 03:28	7°♈27'17	
min. Earth dist.	8239 Jan 29 13:51	11°♈28'49	18.81331 AU				
direct	8239 Apr 15 02:29	9°♈30'15		conjunction	8245 Aug 24 12:36	8°♈24'23	0°37'11
evening set	8239 Jul 14 07:52	12°♈32'12		minimum elong	8245 Aug 24 12:36	8°♈24'23	0°37'06
				max. Earth dist.	8245 Aug 24 15:21	8°♈24'47	20.47095 AU
conjunction	8239 Jul 30 12:13	13°♈27'50	0°17'41	morning rise	8245 Sep 10 00:09	9°♈21'52	
minimum elong	8239 Jul 30 12:12	13°♈27'50	0°17'34	retrograde	8245 Dec 13 12:22	12°♈34'51	
max. Earth dist.	8239 Jul 30 22:19	13°♈29'17	20.79225 AU	opposition	8246 Feb 27 20:13	10°♈33'36	0°42'44
morning rise	8239 Aug 15 19:28	14°♈23'56		min. Earth dist.	8246 Feb 27 18:24	10°♈33'48	18.44070 AU
	8239 Aug 26 17:21	15°♈		direct	8246 May 13 14:53	8°♈33'59	
retrograde	8239 Nov 18 04:47	17°♈33'34		evening set	8246 Aug 12 17:25	11°♈41'05	
opposition	8240 Feb 03 08:14	15°♈33'38	0°21'32				
min. Earth dist.	8240 Feb 02 23:58	15°♈34'29	18.77010 AU	conjunction	8246 Aug 29 03:10	12°♈38'26	0°39'53
	8240 Feb 17 05:09	15°♈		minimum elong	8246 Aug 29 03:09	12°♈38'26	0°39'50
direct	8240 Apr 18 09:16	13°♈35'52		max. Earth dist.	8246 Aug 29 03:35	12°♈38'30	20.41036 AU
	8240 Jun 15 20:52	15°♈		morning rise	8246 Sep 14 15:30	13°♈36'11	
evening set	8240 Jul 17 17:34	16°♈38'24		retrograde	8246 Dec 18 02:23	16°♈49'48	
				opposition	8247 Mar 04 07:38	14°♈48'21	0°45'38
conjunction	8240 Aug 02 22:35	17°♈34'15	0°21'13	min. Earth dist.	8247 Mar 04 07:18	14°♈48'23	18.37981 AU
minimum elong	8240 Aug 02 22:35	17°♈34'15	0°21'06	direct	8247 May 18 00:51	12°♈48'24	
max. Earth dist.	8240 Aug 03 06:18	17°♈35'22	20.74694 AU	evening set	8247 Aug 17 08:04	15°♈56'26	
morning rise	8240 Aug 19 06:45	18°♈30'34					
retrograde	8240 Nov 21 17:42	21°♈40'44		conjunction	8247 Sep 02 18:41	16°♈54'05	0°42'23
opposition	8241 Feb 06 17:31	19°♈40'37	0°25'24	minimum elong	8247 Sep 02 18:41	16°♈54'05	0°42'21
min. Earth dist.	8241 Feb 06 10:28	19°♈41'20	18.72267 AU	max. Earth dist.	8247 Sep 02 19:06	16°♈54'08	20.34910 AU

morning rise	8247 Sep 19 07:24	17° <del>17</del> 52'04	conjunction	8254 Oct 04 08:16	17° <del>17</del> 35'32	0°52'51	
retrograde	8247 Dec 22 18:26	21° <del>17</del> 06'20	minimum elong	8254 Oct 04 08:16	17° <del>17</del> 35'32	0°52'54	
opposition	8248 Mar 07 19:26	19° <del>17</del> 04'43	0°48'18	max. Earth dist.	8254 Oct 03 21:53	17° <del>17</del> 33'58	19.91459 AU
min. Earth dist.	8248 Mar 07 19:32	19° <del>17</del> 04'42	18.31835 AU	morning rise	8254 Oct 20 23:47	18° <del>17</del> 35'19	
direct	8248 May 21 13:12	17° <del>17</del> 04'28		retrograde	8255 Jan 22 22:47	21° <del>17</del> 54'12	
evening set	8248 Aug 20 23:45	20° <del>17</del> 13'30		opposition	8255 Apr 08 00:11	19° <del>17</del> 51'42	0°58'59
				min. Earth dist.	8255 Apr 08 09:28	19° <del>17</del> 50'42	17.88356 AU
conjunction	8248 Sep 06 10:54	21° <del>17</del> 11'26	0°44'40	direct	8255 Jun 21 18:00	17° <del>17</del> 49'15	
minimum elong	8248 Sep 06 10:54	21° <del>17</del> 11'26	0°44'37	evening set	8255 Sep 22 15:39	21° <del>17</del> 46'04	
max. Earth dist.	8248 Sep 06 09:00	21° <del>17</del> 11'09	20.28762 AU				
morning rise	8248 Sep 23 00:19	22° <del>17</del> 09'41		conjunction	8255 Oct 09 06:43	22° <del>17</del> 05'57	0°53'10
retrograde	8248 Dec 26 09:23	25° <del>17</del> 24'37		minimum elong	8255 Oct 09 06:43	22° <del>17</del> 05'57	0°53'13
opposition	8249 Mar 12 07:59	23° <del>17</del> 22'51	0°50'43	max. Earth dist.	8255 Oct 08 19:38	22° <del>17</del> 04'17	19.85253 AU
min. Earth dist.	8249 Mar 12 09:40	23° <del>17</del> 22'40	18.25690 AU	morning rise	8255 Oct 25 22:19	23° <del>17</del> 05'58	
direct	8249 May 26 00:16	21° <del>17</del> 22'18		retrograde	8256 Jan 27 20:10	26° <del>17</del> 25'24	
evening set	8249 Aug 25 16:08	24° <del>17</del> 32'24		opposition	8256 Apr 11 16:58	24° <del>17</del> 22'45	0°59'10
				min. Earth dist.	8256 Apr 12 02:19	24° <del>17</del> 21'45	17.82207 AU
conjunction	8249 Sep 11 04:09	25° <del>17</del> 30'36	0°46'42	direct	8256 Jun 25 13:00	22° <del>17</del> 19'56	
minimum elong	8249 Sep 11 04:08	25° <del>17</del> 30'36	0°46'41	evening set	8256 Sep 26 14:32	25° <del>17</del> 37'50	
max. Earth dist.	8249 Sep 11 02:13	25° <del>17</del> 30'19	20.22611 AU				
morning rise	8249 Sep 27 17:55	26° <del>17</del> 29'07		conjunction	8256 Oct 13 05:53	26° <del>17</del> 37'59	0°53'09
retrograde	8249 Dec 31 02:59	29° <del>17</del> 44'44		minimum elong	8256 Oct 13 05:53	26° <del>17</del> 37'59	0°53'14
opposition	8250 Mar 16 21:02	27° <del>17</del> 42'51	0°52'52	max. Earth dist.	8256 Oct 12 17:10	26° <del>17</del> 36'03	19.79179 AU
min. Earth dist.	8250 Mar 16 23:09	27° <del>17</del> 42'38	18.19528 AU	morning rise	8256 Oct 29 21:35	27° <del>17</del> 38'13	
direct	8250 May 30 14:06	25° <del>17</del> 42'02			8256 Dec 15 05:45	0° <del>17</del> 38'13	
evening set	8250 Aug 30 09:51	28° <del>17</del> 53'13		retrograde	8257 Jan 31 15:36	0° <del>17</del> 58'11	
					8257 Mar 21 04:24	30° <del>17</del> 38'13	
conjunction	8250 Sep 15 22:19	29° <del>17</del> 51'43	0°48'30	opposition	8257 Apr 16 10:28	28° <del>17</del> 55'23	0°58'59
minimum elong	8250 Sep 15 22:19	29° <del>17</del> 51'43	0°48'29	min. Earth dist.	8257 Apr 16 21:47	28° <del>17</del> 54'10	17.76242 AU
max. Earth dist.	8250 Sep 15 17:54	29° <del>17</del> 51'04	20.16444 AU	direct	8257 Jun 30 06:07	26° <del>17</del> 52'10	
	8250 Sep 18 06:00	0° <del>17</del> 51'04			8257 Sep 28 10:21	0° <del>17</del> 52'10	
morning rise	8250 Oct 02 12:40	0° <del>17</del> 50'30		evening set	8257 Oct 01 14:01	0° <del>17</del> 51'10	
retrograde	8251 Jan 04 19:21	4° <del>17</del> 06'48					
opposition	8251 Mar 21 10:42	2° <del>17</del> 04'49	0°54'43	conjunction	8257 Oct 18 05:44	1° <del>17</del> 11'33	0°52'48
min. Earth dist.	8251 Mar 21 14:51	2° <del>17</del> 04'23	18.13357 AU	minimum elong	8257 Oct 18 05:43	1° <del>17</del> 11'33	0°52'53
direct	8251 Jun 04 02:38	0° <del>17</del> 03'43		max. Earth dist.	8257 Oct 17 16:15	1° <del>17</del> 09'30	19.73335 AU
evening set	8251 Sep 04 04:23	3° <del>17</del> 16'02		morning rise	8257 Nov 03 21:31	2° <del>17</del> 12'00	
				retrograde	8258 Feb 05 14:39	5° <del>17</del> 32'27	
conjunction	8251 Sep 20 17:35	4° <del>17</del> 14'49	0°50'01	opposition	8258 Apr 21 04:25	3° <del>17</del> 29'31	0°58'26
minimum elong	8251 Sep 20 17:35	4° <del>17</del> 14'49	0°50'02	min. Earth dist.	8258 Apr 21 15:35	3° <del>17</del> 28'18	17.70526 AU
max. Earth dist.	8251 Sep 20 12:45	4° <del>17</del> 14'06	20.10250 AU	direct	8258 Jul 05 02:38	1° <del>17</del> 25'56	
morning rise	8251 Oct 07 08:10	5° <del>17</del> 13'51		evening set	8258 Oct 06 14:21	4° <del>17</del> 45'59	
retrograde	8252 Jan 09 14:26	8° <del>17</del> 30'51					
opposition	8252 Mar 25 01:04	6° <del>17</del> 28'46	0°56'17	conjunction	8258 Oct 23 06:14	5° <del>17</del> 46'36	0°52'07
min. Earth dist.	8252 Mar 25 05:39	6° <del>17</del> 28'16	18.07140 AU	minimum elong	8258 Oct 23 06:14	5° <del>17</del> 46'36	0°52'13
direct	8252 Jun 07 18:07	4° <del>17</del> 27'22		max. Earth dist.	8258 Oct 22 15:48	5° <del>17</del> 44'24	19.67758 AU
evening set	8252 Sep 07 23:52	7° <del>17</del> 40'49		morning rise	8258 Nov 08 21:54	6° <del>17</del> 47'15	
				retrograde	8259 Feb 10 10:52	10° <del>17</del> 08'08	
conjunction	8252 Sep 24 13:27	8° <del>17</del> 39'52	0°51'16	opposition	8259 Apr 25 23:03	8° <del>17</del> 05'05	0°57'30
minimum elong	8252 Sep 24 13:27	8° <del>17</del> 39'52	0°51'17	min. Earth dist.	8259 Apr 26 11:53	8° <del>17</del> 03'42	17.65125 AU
max. Earth dist.	8252 Sep 24 06:06	8° <del>17</del> 38'46	20.04008 AU	direct	8259 Jul 09 20:51	6° <del>17</del> 01'09	
morning rise	8252 Oct 11 04:29	9° <del>17</del> 39'10		evening set	8259 Oct 11 15:13	9° <del>17</del> 22'14	
retrograde	8253 Jan 13 08:00	12° <del>17</del> 56'50					
opposition	8253 Mar 29 16:15	10° <del>17</del> 54'37	0°57'31	conjunction	8259 Oct 28 07:13	10° <del>17</del> 23'04	0°51'05
min. Earth dist.	8253 Mar 29 22:59	10° <del>17</del> 53'54	18.00886 AU	minimum elong	8259 Oct 28 07:13	10° <del>17</del> 23'04	0°51'12
direct	8253 Jun 12 08:33	8° <del>17</del> 52'53		max. Earth dist.	8259 Oct 27 15:55	10° <del>17</del> 20'43	19.62550 AU
evening set	8253 Sep 12 20:15	12° <del>17</del> 07'28		morning rise	8259 Nov 13 22:51	11° <del>17</del> 23'53	
				retrograde	8260 Feb 15 10:44	14° <del>17</del> 45'12	
conjunction	8253 Sep 29 10:30	13° <del>17</del> 06'49	0°52'13	opposition	8260 Apr 29 18:12	12° <del>17</del> 42'03	0°56'11
minimum elong	8253 Sep 29 10:30	13° <del>17</del> 06'49	0°52'14	min. Earth dist.	8260 Apr 30 06:36	12° <del>17</del> 40'42	17.60121 AU
max. Earth dist.	8253 Sep 29 02:27	13° <del>17</del> 05'36	19.97737 AU	direct	8260 Jul 13 18:27	10° <del>17</del> 37'48	
morning rise	8253 Oct 16 01:43	14° <del>17</del> 06'21		evening set	8260 Oct 15 16:32	13° <del>17</del> 59'51	
retrograde	8254 Jan 18 04:13	17° <del>17</del> 24'38					
opposition	8254 Apr 03 07:48	15° <del>17</del> 22'18	0°58'25	conjunction	8260 Nov 01 08:40	15° <del>17</del> 00'54	0°49'43
min. Earth dist.	8254 Apr 03 14:55	15° <del>17</del> 21'32	17.94605 AU	minimum elong	8260 Nov 01 08:40	15° <del>17</del> 00'54	0°49'49
direct	8254 Jun 17 01:49	13° <del>17</del> 20'13		max. Earth dist.	8260 Oct 31 17:15	14° <del>17</del> 58'32	19.57752 AU
evening set	8254 Sep 17 17:41	16° <del>17</del> 35'55			8260 Nov 01 02:48	15° <del>17</del> 58'32	

morning rise	8260 Nov 18 00:02	16° $\mathbb{M}$ 01'53	direct	8267 Aug 16 14:36	13° $\mathbb{X}$ 30'10	
retrograde	8261 Feb 19 07:48	19° $\mathbb{M}$ 23'35	evening set	8267 Nov 19 16:34	16° $\mathbb{X}$ 57'35	
opposition	8261 May 04 14:07	17° $\mathbb{M}$ 20'22 0°54'29				
min. Earth dist.	8261 May 05 03:45	17° $\mathbb{M}$ 18'53 17.55556 AU	conjunction	8267 Dec 06 06:59	17° $\mathbb{X}$ 59'23 0°31'29	
direct	8261 Jul 18 14:12	15° $\mathbb{M}$ 15'51	minimum elong	8267 Dec 06 06:59	17° $\mathbb{X}$ 59'23 0°31'39	
evening set	8261 Oct 20 18:39	18° $\mathbb{M}$ 38'52	max. Earth dist.	8267 Dec 05 12:14	17° $\mathbb{X}$ 56'27 19.37244 AU	
			morning rise	8267 Dec 22 19:15	19° $\mathbb{X}$ 00'52	
conjunction	8261 Nov 06 10:44	19° $\mathbb{M}$ 40'05 0°48'01	retrograde	8268 Mar 24 05:13	22° $\mathbb{X}$ 23'52	
minimum elong	8261 Nov 06 10:44	19° $\mathbb{M}$ 40'05 0°48'09	opposition	8268 Jun 06 00:04	20° $\mathbb{X}$ 21'00 0°33'08	
max. Earth dist.	8261 Nov 05 18:14	19° $\mathbb{M}$ 37'32 19.53434 AU	min. Earth dist.	8268 Jun 06 15:43	20° $\mathbb{X}$ 19'18 17.36616 AU	
morning rise	8261 Nov 23 01:58	20° $\mathbb{M}$ 41'13	direct	8268 Aug 20 16:16	18° $\mathbb{X}$ 15'23	
retrograde	8262 Feb 24 07:56	24° $\mathbb{M}$ 03'15	evening set	8268 Nov 23 20:47	21° $\mathbb{X}$ 43'13	
opposition	8262 May 09 10:20	22° $\mathbb{M}$ 00'01 0°52'25				
min. Earth dist.	8262 May 09 23:37	21° $\mathbb{M}$ 58'34 17.51482 AU	conjunction	8268 Dec 10 10:52	22° $\mathbb{X}$ 45'01 0°27'50	
direct	8262 Jul 23 13:21	19° $\mathbb{M}$ 55'17	minimum elong	8268 Dec 10 10:52	22° $\mathbb{X}$ 45'01 0°28'00	
evening set	8262 Oct 25 21:16	23° $\mathbb{M}$ 19'12	max. Earth dist.	8268 Dec 09 17:07	22° $\mathbb{X}$ 42'15 19.36042 AU	
			morning rise	8268 Dec 26 22:20	23° $\mathbb{X}$ 46'29	
conjunction	8262 Nov 11 13:23	24° $\mathbb{M}$ 20'36 0°45'59	retrograde	8269 Mar 29 06:03	27° $\mathbb{X}$ 09'24	
minimum elong	8262 Nov 11 13:23	24° $\mathbb{M}$ 20'36 0°46'07	opposition	8269 Jun 10 23:47	25° $\mathbb{X}$ 06'36 0°28'57	
max. Earth dist.	8262 Nov 10 21:18	24° $\mathbb{M}$ 18'07 19.49600 AU	min. Earth dist.	8269 Jun 11 15:07	25° $\mathbb{X}$ 04'56 17.35621 AU	
morning rise	8262 Nov 28 04:09	25° $\mathbb{M}$ 21'50	direct	8269 Aug 25 18:40	23° $\mathbb{X}$ 00'53	
retrograde	8263 Mar 01 05:38	28° $\mathbb{M}$ 44'10	evening set	8269 Nov 29 01:13	26° $\mathbb{X}$ 29'01	
opposition	8263 May 14 07:24	26° $\mathbb{M}$ 40'59 0°50'01				
min. Earth dist.	8263 May 14 21:40	26° $\mathbb{M}$ 39'25 17.47892 AU	conjunction	8269 Dec 15 14:34	27° $\mathbb{X}$ 30'48 0°23'59	
direct	8263 Jul 28 11:03	24° $\mathbb{M}$ 36'05	minimum elong	8269 Dec 15 14:34	27° $\mathbb{X}$ 30'48 0°24'10	
evening set	8263 Oct 31 00:20	28° $\mathbb{M}$ 00'52	max. Earth dist.	8269 Dec 14 19:57	27° $\mathbb{X}$ 27'53 19.35278 AU	
			morning rise	8270 Jan 01 01:22	28° $\mathbb{X}$ 32'13	
conjunction	8263 Nov 16 16:08	29° $\mathbb{M}$ 02'22 0°43'39		8270 Jan 26 13:15	0° $\mathbb{X}$	
minimum elong	8263 Nov 16 16:08	29° $\mathbb{M}$ 02'22 0°43'48	retrograde	8270 Apr 03 05:38	1° $\mathbb{X}$ 55'00	
max. Earth dist.	8263 Nov 15 22:50	28° $\mathbb{M}$ 59'41 19.46262 AU		8270 Jun 13 00:22	30° $\mathbb{R}$ $\mathbb{X}$	
	8263 Dec 02 06:07	0° $\mathbb{X}$	opposition	8270 Jun 15 23:38	29° $\mathbb{X}$ 52'15 0°24'34	
morning rise	8263 Dec 03 06:40	0° $\mathbb{X}$ 03'43	min. Earth dist.	8270 Jun 16 15:25	29° $\mathbb{X}$ 50'32 17.35100 AU	
retrograde	8264 Mar 05 05:50	3° $\mathbb{X}$ 26'20	direct	8270 Aug 30 20:34	27° $\mathbb{X}$ 46'25	
opposition	8264 May 18 04:55	1° $\mathbb{X}$ 23'12 0°47'15		8270 Nov 12 18:57	0° $\mathbb{X}$	
min. Earth dist.	8264 May 18 19:01	1° $\mathbb{X}$ 21'39 17.44791 AU	evening set	8270 Dec 04 05:18	1° $\mathbb{X}$ 14'46	
	8264 Jun 21 23:22	30° $\mathbb{R}$ $\mathbb{M}$				
direct	8264 Aug 01 11:38	29° $\mathbb{M}$ 18'08	conjunction	8270 Dec 20 18:04	2° $\mathbb{X}$ 16'29 0°19'59	
	8264 Sep 10 08:24	0° $\mathbb{X}$	minimum elong	8270 Dec 20 18:04	2° $\mathbb{X}$ 16'29 0°20'08	
evening set	8264 Nov 04 03:51	2° $\mathbb{X}$ 43'43	max. Earth dist.	8270 Dec 20 00:32	2° $\mathbb{X}$ 13'44 19.35005 AU	
			morning rise	8271 Jan 06 04:01	3° $\mathbb{X}$ 17'50	
conjunction	8264 Nov 20 19:35	3° $\mathbb{X}$ 45'21 0°41'01	retrograde	8271 Apr 08 06:17	6° $\mathbb{X}$ 40'25	
minimum elong	8264 Nov 20 19:35	3° $\mathbb{X}$ 45'21 0°41'11	opposition	8271 Jun 20 23:44	4° $\mathbb{X}$ 37'43 0°20'01	
max. Earth dist.	8264 Nov 20 02:59	3° $\mathbb{X}$ 42'46 19.43379 AU	min. Earth dist.	8271 Jun 21 14:30	4° $\mathbb{X}$ 36'07 17.35069 AU	
morning rise	8264 Dec 07 09:30	4° $\mathbb{X}$ 46'45	direct	8271 Sep 04 23:25	2° $\mathbb{X}$ 31'50	
retrograde	8265 Mar 10 04:45	8° $\mathbb{X}$ 09'34	evening set	8271 Dec 09 09:02	6° $\mathbb{X}$ 00'16	
opposition	8265 May 23 02:58	6° $\mathbb{X}$ 06'31 0°44'10				
min. Earth dist.	8265 May 23 17:52	6° $\mathbb{X}$ 04'53 17.42124 AU	conjunction	8271 Dec 25 21:00	7° $\mathbb{X}$ 01'54 0°15'50	
direct	8265 Aug 06 11:36	4° $\mathbb{X}$ 01'19	minimum elong	8271 Dec 25 21:01	7° $\mathbb{X}$ 01'55 0°16'00	
evening set	8265 Nov 09 07:57	7° $\mathbb{X}$ 27'36	max. Earth dist.	8271 Dec 25 03:32	6° $\mathbb{X}$ 59'10 19.35239 AU	
			morning rise	8272 Jan 11 06:09	8° $\mathbb{X}$ 03'09	
conjunction	8265 Nov 25 23:14	8° $\mathbb{X}$ 29'19 0°38'06	retrograde	8272 Apr 12 05:26	11° $\mathbb{X}$ 25'31	
minimum elong	8265 Nov 25 23:14	8° $\mathbb{X}$ 29'19 0°38'15	opposition	8272 Jun 24 23:59	9° $\mathbb{X}$ 22'52 0°15'19	
max. Earth dist.	8265 Nov 25 05:01	8° $\mathbb{X}$ 26'29 19.40928 AU	min. Earth dist.	8272 Jun 25 15:02	9° $\mathbb{X}$ 21'14 17.35582 AU	
morning rise	8265 Dec 12 12:47	9° $\mathbb{X}$ 30'47	direct	8272 Sep 09 01:20	7° $\mathbb{X}$ 16'56	
retrograde	8266 Mar 15 04:57	12° $\mathbb{X}$ 53'44	evening set	8272 Dec 13 12:28	10° $\mathbb{X}$ 45'22	
opposition	8266 May 28 01:35	10° $\mathbb{X}$ 50'44 0°40'46				
min. Earth dist.	8266 May 28 16:39	10° $\mathbb{X}$ 49'06 17.39882 AU	conjunction	8272 Dec 29 23:43	11° $\mathbb{X}$ 46'54 0°11'35	
direct	8266 Aug 11 13:05	8° $\mathbb{X}$ 45'23	minimum elong	8272 Dec 29 23:43	11° $\mathbb{X}$ 46'54 0°11'45	
evening set	8266 Nov 14 12:07	12° $\mathbb{X}$ 12'18	behind sun begin	8272 Dec 29 19:02	11° $\mathbb{X}$ 46'11	
max. Earth dist.	8266 Nov 30 09:47	13° $\mathbb{X}$ 11'22 19.38880 AU	behind sun end	8272 Dec 30 04:24	11° $\mathbb{X}$ 47'37	
			max. Earth dist.	8272 Dec 29 07:16	11° $\mathbb{X}$ 44'20 19.36037 AU	
conjunction	8266 Dec 01 03:09	13° $\mathbb{X}$ 14'04 0°34'55	morning rise	8273 Jan 15 08:01	12° $\mathbb{X}$ 48'01	
minimum elong	8266 Dec 01 03:09	13° $\mathbb{X}$ 14'04 0°35'05	retrograde	8273 Apr 17 05:31	16° $\mathbb{X}$ 10'04	
morning rise	8266 Dec 17 15:56	14° $\mathbb{X}$ 15'33	opposition	8273 Jun 30 00:02	14° $\mathbb{X}$ 07'31 0°10'32	
retrograde	8267 Mar 20 05:07	17° $\mathbb{X}$ 38'33	min. Earth dist.	8273 Jun 30 13:33	14° $\mathbb{X}$ 06'03 17.36659 AU	
opposition	8267 Jun 02 00:40	15° $\mathbb{X}$ 35'38 0°37'05	direct	8273 Sep 14 04:27	12° $\mathbb{X}$ 01'36	
min. Earth dist.	8267 Jun 02 16:00	15° $\mathbb{X}$ 33'58 17.38033 AU	evening set	8273 Dec 18 15:36	15° $\mathbb{X}$ 29'57	

max. Earth dist.	8274 Jan 03 10:27	16°  28'55	19.37411 AU	behind sun begin	8279 Jan 28 01:32	10°  02'33	
				behind sun end	8279 Jan 28 07:50	10°  03'30	
conjunction	8274 Jan 04 02:01	16°  31'21	0°07'17	max. Earth dist.	8279 Jan 27 18:17	10°  01'25	19.52924 AU
minimum elong	8274 Jan 04 02:00	16°  31'21	0°07'26	morning rise	8279 Feb 13 07:23	11°  02'58	
behind sun begin	8274 Jan 03 19:53	16°  30'25		retrograde	8279 May 15 18:53	14°  22'39	
behind sun end	8274 Jan 04 08:07	16°  32'17		opposition	8279 Jul 29 00:39	12°  21'14	-0°18'15
morning rise	8274 Jan 20 09:19	17°  32'18		min. Earth dist.	8279 Jul 29 08:24	12°  20'25	17.55106 AU
retrograde	8274 Apr 22 03:55	20°  35'03		direct	8279 Oct 13 18:14	10°  16'28	
opposition	8274 Jul 05 00:26	18°  35'1'36	0°05'41	evening set	8280 Jan 16 22:33	13°  42'28	
min. Earth dist.	8274 Jul 05 14:01	18°  35'0'08	17.38344 AU				
direct	8274 Sep 19 06:14	16°  34'5'45		conjunction	8280 Feb 02 03:21	14°  42'36	-0°18'29
evening set	8274 Dec 23 18:07	20°  31'3'55		minimum elong	8280 Feb 02 03:21	14°  42'36	0°18'22
				max. Earth dist.	8280 Feb 01 19:05	14°  41'19	19.57372 AU
conjunction	8275 Jan 09 03:36	21°  31'5'09	0°02'56		8280 Feb 06 18:55	15° 	
minimum elong	8275 Jan 09 03:35	21°  31'5'09	0°03'06	morning rise	8280 Feb 18 04:58	15°  42'18	
behind sun begin	8275 Jan 08 20:55	21°  31'4'08		retrograde	8280 May 19 15:12	19°  01'26	
behind sun end	8275 Jan 09 10:15	21°  31'6'10		opposition	8280 Aug 02 00:18	17°  00'16	-0°22'45
max. Earth dist.	8275 Jan 08 12:57	21°  31'2'52	19.39408 AU	min. Earth dist.	8280 Aug 02 07:55	16°  59'27	17.59708 AU
morning rise	8275 Jan 25 10:02	22°  31'5'57			8280 Oct 04 22:22	15°  R 	
retrograde	8275 Apr 27 03:22	25°  33'7'20		direct	8280 Oct 17 18:30	14°  55'45	
opposition	8275 Jul 10 00:38	23°  33'5'03	0°00'49		8280 Oct 30 11:54	15° 	
min. Earth dist.	8275 Jul 10 12:10	23°  33'3'48	17.40639 AU	evening set	8281 Jan 20 21:36	18°  21'02	
desc. node	8275 Sep 08 19:26	21°  33'5'43					
direct	8275 Sep 24 09:33	21°  32'9'20		conjunction	8281 Feb 06 01:14	19°  20'54	-0°22'27
evening set	8275 Dec 28 20:10	24°  35'7'14		minimum elong	8281 Feb 06 01:14	19°  20'54	0°22'21
				max. Earth dist.	8281 Feb 05 16:52	19°  19'36	19.62122 AU
conjunction	8276 Jan 14 04:49	25°  35'8'18	-0°01'34	morning rise	8281 Feb 22 02:05	20°  20'20	
minimum elong	8276 Jan 14 04:48	25°  35'8'18	0°01'24	retrograde	8281 May 24 12:37	23°  38'55	
behind sun begin	8276 Jan 13 22:06	25°  35'7'16		opposition	8281 Aug 06 23:25	21°  37'55	-0°27'05
behind sun end	8276 Jan 14 11:29	25°  35'9'19		min. Earth dist.	8281 Aug 07 05:29	21°  37'17	17.64592 AU
max. Earth dist.	8276 Jan 13 15:47	25°  35'6'16	19.42005 AU	direct	8281 Oct 22 19:28	19°  33'40	
morning rise	8276 Jan 30 10:12	26°  38'5'54		evening set	8282 Jan 25 19:42	22°  58'11	
	8276 Apr 04 06:48	0° 					
retrograde	8276 May 01 01:00	0°  19'55		conjunction	8282 Feb 10 22:31	23°  57'46	-0°26'16
	8276 May 28 06:14	30°  R 		minimum elong	8282 Feb 10 22:31	23°  57'46	0°26'09
opposition	8276 Jul 14 00:50	28°  31'7'50	-0°04'03	max. Earth dist.	8282 Feb 10 16:20	23°  56'49	19.67122 AU
min. Earth dist.	8276 Jul 14 12:23	28°  31'6'35	17.43528 AU	morning rise	8282 Feb 26 22:18	24°  56'56	
direct	8276 Sep 28 11:25	26°  31'2'18		retrograde	8282 May 29 08:23	28°  14'54	
evening set	8277 Jan 01 21:43	29°  33'9'52		opposition	8282 Aug 11 22:27	26°  14'06	-0°31'13
	8277 Jan 07 08:38	0° 		min. Earth dist.	8282 Aug 12 04:02	26°  13'31	17.69697 AU
				direct	8282 Oct 27 19:00	24°  10'07	
conjunction	8277 Jan 18 05:21	0°  40'43	-0°05'55	evening set	8283 Jan 30 16:56	27°  33'45	
minimum elong	8277 Jan 18 05:20	0°  40'43	0°05'46				
behind sun begin	8277 Jan 17 22:56	0°  39'45		conjunction	8283 Feb 15 18:36	28°  33'02	-0°29'53
behind sun end	8277 Jan 18 11:44	0°  41'42		minimum elong	8283 Feb 15 18:36	28°  33'02	0°29'48
max. Earth dist.	8277 Jan 17 16:49	0°  38'46	19.45179 AU	max. Earth dist.	8283 Feb 15 12:26	28°  32'05	19.72335 AU
morning rise	8277 Feb 03 09:58	1°  41'07		morning rise	8283 Mar 03 17:42	29°  31'56	
retrograde	8277 May 05 23:39	5°  01'44			8283 Mar 11 14:15	0° 	
opposition	8277 Jul 19 00:50	2°  59'52	-0°08'52	retrograde	8283 Jun 03 04:17	2°  H 	49'18
min. Earth dist.	8277 Jul 19 10:25	2°  58'50	17.46949 AU	opposition	8283 Aug 16 20:55	0°  H 	48'37 -0°35'08
direct	8277 Oct 03 14:31	0°  54'34		min. Earth dist.	8283 Aug 17 01:06	0°  H 	48'11 17.75014 AU
evening set	8278 Jan 06 22:39	4°  21'43			8283 Sep 05 14:55	30°  R 	
				direct	8283 Nov 01 18:45	28°  44'53	
conjunction	8278 Jan 23 05:25	5°  22'21	-0°10'12		8283 Dec 26 14:44	0° 	
minimum elong	8278 Jan 23 05:24	5°  22'21	0°10'03	evening set	8284 Feb 04 13:11	2°  H 	07'35
behind sun begin	8278 Jan 23 00:02	5°  21'32					
behind sun end	8278 Jan 23 10:46	5°  23'10		conjunction	8284 Feb 20 14:07	3°  H 	06'35 -0°33'18
max. Earth dist.	8278 Jan 22 18:50	5°  20'42	19.48834 AU	minimum elong	8284 Feb 20 14:07	3°  H 	06'35 0°33'13
morning rise	8278 Feb 08 08:54	6°  22'31		max. Earth dist.	8284 Feb 20 10:11	3°  H 	05'59 19.77740 AU
retrograde	8278 May 10 20:39	9°  42'40		morning rise	8284 Mar 07 12:15	4°  H 	05'11
opposition	8278 Jul 24 00:53	7°  41'03	-0°13'37	retrograde	8284 Jun 06 22:52	7°  H 	21'53
min. Earth dist.	8278 Jul 24 10:29	7°  40'02	17.50825 AU	opposition	8284 Aug 20 18:45	5°  H 	21'20 -0°38'48
direct	8278 Oct 08 15:56	5°  36'01		min. Earth dist.	8284 Aug 20 22:05	5°  H 	20'59 17.80500 AU
evening set	8279 Jan 11 23:05	9°  02'38		direct	8284 Nov 05 18:08	3°  H 	17'52
				evening set	8285 Feb 08 08:38	6°  H 	39'34
conjunction	8279 Jan 28 04:42	10°  03'01	-0°14'24				
minimum elong	8279 Jan 28 04:41	10°  03'01	0°14'16	conjunction	8285 Feb 24 08:31	7°  H 	38'15 -0°36'29

minimum elong	8285 Feb 24 08:30	7° $\mathbf{\text{H}}$ 38'15	0°36'25	opposition	8291 Sep 22 12:16	6° $\mathbf{\text{Y}}$ 17'53	-0°56'16
max. Earth dist.	8285 Feb 24 04:48	7° $\mathbf{\text{H}}$ 37'41	19.83319 AU	min. Earth dist.	8291 Sep 22 06:21	6° $\mathbf{\text{Y}}$ 18'29	18.23995 AU
morning rise	8285 Mar 12 06:02	8° $\mathbf{\text{H}}$ 36'35		direct	8291 Dec 08 15:26	4° $\mathbf{\text{Y}}$ 16'46	
retrograde	8285 Jun 11 16:34	11° $\mathbf{\text{H}}$ 52'37		evening set	8292 Mar 10 21:26	7° $\mathbf{\text{Y}}$ 30'59	
opposition	8285 Aug 25 16:08	9° $\mathbf{\text{H}}$ 52'09	-0°42'12				
min. Earth dist.	8285 Aug 25 18:15	9° $\mathbf{\text{H}}$ 51'56	17.86177 AU	conjunction	8292 Mar 26 16:18	8° $\mathbf{\text{Y}}$ 27'35	-0°51'19
direct	8285 Nov 10 16:23	7° $\mathbf{\text{H}}$ 48'56		minimum elong	8292 Mar 26 16:17	8° $\mathbf{\text{Y}}$ 27'35	0°51'20
evening set	8286 Feb 13 02:50	11° $\mathbf{\text{H}}$ 09'36		max. Earth dist.	8292 Mar 26 23:23	8° $\mathbf{\text{Y}}$ 28'39	20.27269 AU
				morning rise	8292 Apr 11 09:52	9° $\mathbf{\text{Y}}$ 24'02	
conjunction	8286 Mar 01 01:59	12° $\mathbf{\text{H}}$ 07'58	-0°39'26	retrograde	8292 Jul 12 03:55	12° $\mathbf{\text{Y}}$ 35'43	
minimum elong	8286 Mar 01 01:58	12° $\mathbf{\text{H}}$ 07'58	0°39'23	opposition	8292 Sep 26 05:22	10° $\mathbf{\text{Y}}$ 36'23	-0°57'30
max. Earth dist.	8286 Mar 01 00:41	12° $\mathbf{\text{H}}$ 07'46	19.89087 AU	min. Earth dist.	8292 Sep 25 21:36	10° $\mathbf{\text{Y}}$ 37'11	18.30526 AU
morning rise	8286 Mar 16 22:38	13° $\mathbf{\text{H}}$ 06'00		direct	8292 Dec 12 09:38	8° $\mathbf{\text{Y}}$ 35'40	
retrograde	8286 Jun 16 10:02	16° $\mathbf{\text{H}}$ 21'21		evening set	8293 Mar 15 09:46	11° $\mathbf{\text{Y}}$ 48'50	
opposition	8286 Aug 30 13:01	14° $\mathbf{\text{H}}$ 21'00	-0°45'20				
min. Earth dist.	8286 Aug 30 13:38	14° $\mathbf{\text{H}}$ 20'57	17.92038 AU	conjunction	8293 Mar 31 04:03	12° $\mathbf{\text{Y}}$ 45'11	-0°52'17
direct	8286 Nov 15 15:17	12° $\mathbf{\text{H}}$ 18'03		minimum elong	8293 Mar 31 04:02	12° $\mathbf{\text{Y}}$ 45'11	0°52'20
evening set	8287 Feb 17 20:16	15° $\mathbf{\text{H}}$ 37'39		max. Earth dist.	8293 Mar 31 11:58	12° $\mathbf{\text{Y}}$ 46'22	20.33744 AU
				morning rise	8293 Apr 15 21:20	13° $\mathbf{\text{Y}}$ 41'23	
conjunction	8287 Mar 05 18:25	16° $\mathbf{\text{H}}$ 35'42	-0°42'07	retrograde	8293 Jul 16 16:18	16° $\mathbf{\text{Y}}$ 52'33	
minimum elong	8287 Mar 05 18:25	16° $\mathbf{\text{H}}$ 35'42	0°42'04	opposition	8293 Sep 30 22:15	14° $\mathbf{\text{Y}}$ 53'23	-0°58'24
max. Earth dist.	8287 Mar 05 17:50	16° $\mathbf{\text{H}}$ 35'37	19.95054 AU	min. Earth dist.	8293 Sep 30 14:22	14° $\mathbf{\text{Y}}$ 54'12	18.36944 AU
morning rise	8287 Mar 21 14:31	17° $\mathbf{\text{H}}$ 33'27		direct	8293 Dec 17 00:39	12° $\mathbf{\text{Y}}$ 53'04	
retrograde	8287 Jun 21 01:38	20° $\mathbf{\text{H}}$ 48'09		evening set	8294 Mar 19 21:11	16° $\mathbf{\text{Y}}$ 05'11	
opposition	8287 Sep 04 09:13	18° $\mathbf{\text{H}}$ 47'54	-0°48'09				
min. Earth dist.	8287 Sep 04 08:37	18° $\mathbf{\text{H}}$ 47'58	17.98127 AU	conjunction	8294 Apr 04 15:03	17° $\mathbf{\text{Y}}$ 01'16	-0°52'58
direct	8287 Nov 20 11:31	16° $\mathbf{\text{H}}$ 45'15		minimum elong	8294 Apr 04 15:02	17° $\mathbf{\text{Y}}$ 01'16	0°53'00
evening set	8288 Feb 22 12:32	20° $\mathbf{\text{H}}$ 03'45		max. Earth dist.	8294 Apr 05 00:06	17° $\mathbf{\text{Y}}$ 02'37	20.40076 AU
				morning rise	8294 Apr 20 08:04	17° $\mathbf{\text{Y}}$ 57'15	
conjunction	8288 Mar 09 10:03	21° $\mathbf{\text{H}}$ 01'31	-0°44'32	retrograde	8294 Jul 21 05:45	21° $\mathbf{\text{Y}}$ 07'54	
minimum elong	8288 Mar 09 10:03	21° $\mathbf{\text{H}}$ 01'31	0°44'30	opposition	8294 Oct 05 14:26	19° $\mathbf{\text{Y}}$ 08'54	-0°58'58
max. Earth dist.	8288 Mar 09 11:48	21° $\mathbf{\text{H}}$ 01'47	20.01244 AU	min. Earth dist.	8294 Oct 05 04:42	19° $\mathbf{\text{Y}}$ 09'54	18.43170 AU
morning rise	8288 Mar 25 05:27	21° $\mathbf{\text{H}}$ 58'59		direct	8294 Dec 21 17:16	17° $\mathbf{\text{Y}}$ 08'57	
retrograde	8288 Jun 24 18:11	25° $\mathbf{\text{H}}$ 13'02		evening set	8295 Mar 24 08:03	20° $\mathbf{\text{Y}}$ 20'01	
opposition	8288 Sep 08 04:49	23° $\mathbf{\text{H}}$ 12'56	-0°50'39				
min. Earth dist.	8288 Sep 08 02:19	23° $\mathbf{\text{H}}$ 13'12	18.04405 AU	conjunction	8295 Apr 09 01:29	21° $\mathbf{\text{Y}}$ 15'52	-0°53'21
direct	8288 Nov 24 08:56	21° $\mathbf{\text{H}}$ 10'38		minimum elong	8295 Apr 09 01:29	21° $\mathbf{\text{Y}}$ 15'52	0°53'25
evening set	8289 Feb 26 04:07	24° $\mathbf{\text{H}}$ 28'03		max. Earth dist.	8295 Apr 09 11:17	21° $\mathbf{\text{Y}}$ 17'20	20.46178 AU
				morning rise	8295 Apr 24 18:21	22° $\mathbf{\text{Y}}$ 11'40	
conjunction	8289 Mar 14 00:46	25° $\mathbf{\text{H}}$ 25'31	-0°46'39	retrograde	8295 Jul 25 17:05	25° $\mathbf{\text{Y}}$ 21'48	
minimum elong	8289 Mar 14 00:46	25° $\mathbf{\text{H}}$ 25'31	0°46'38	opposition	8295 Oct 10 06:02	23° $\mathbf{\text{Y}}$ 22'55	-0°59'13
max. Earth dist.	8289 Mar 14 03:23	25° $\mathbf{\text{H}}$ 25'55	20.07609 AU	min. Earth dist.	8295 Oct 09 20:34	23° $\mathbf{\text{Y}}$ 23'53	18.49154 AU
morning rise	8289 Mar 29 19:41	26° $\mathbf{\text{H}}$ 22'43		direct	8295 Dec 26 06:31	21° $\mathbf{\text{Y}}$ 23'18	
retrograde	8289 Jun 29 08:30	29° $\mathbf{\text{H}}$ 36'09		evening set	8296 Mar 27 18:10	24° $\mathbf{\text{Y}}$ 33'21	
opposition	8289 Sep 12 23:51	27° $\mathbf{\text{H}}$ 36'13	-0°52'51				
min. Earth dist.	8289 Sep 12 20:27	27° $\mathbf{\text{H}}$ 36'34	18.10857 AU	conjunction	8296 Apr 12 11:21	25° $\mathbf{\text{Y}}$ 28'59	-0°53'27
direct	8289 Nov 29 03:05	25° $\mathbf{\text{H}}$ 34'17		minimum elong	8296 Apr 12 11:20	25° $\mathbf{\text{Y}}$ 28'59	0°53'31
evening set	8290 Mar 02 18:43	28° $\mathbf{\text{H}}$ 50'38		max. Earth dist.	8296 Apr 12 21:46	25° $\mathbf{\text{Y}}$ 30'32	20.52018 AU
				morning rise	8296 Apr 28 04:07	26° $\mathbf{\text{Y}}$ 24'34	
conjunction	8290 Mar 18 14:46	29° $\mathbf{\text{H}}$ 47'48	-0°48'30	retrograde	8296 Jul 29 05:44	29° $\mathbf{\text{Y}}$ 34'12	
minimum elong	8290 Mar 18 14:46	29° $\mathbf{\text{H}}$ 47'48	0°48'30	opposition	8296 Oct 13 20:57	27° $\mathbf{\text{Y}}$ 35'26	-0°59'09
max. Earth dist.	8290 Mar 18 19:24	29° $\mathbf{\text{H}}$ 48'30	20.14124 AU	min. Earth dist.	8296 Oct 13 09:47	27° $\mathbf{\text{Y}}$ 36'33	18.54834 AU
	8290 Mar 21 23:10	0° $\mathbf{\text{Y}}$		direct	8296 Dec 29 21:51	25° $\mathbf{\text{Y}}$ 36'06	
morning rise	8290 Apr 03 09:07	0° $\mathbf{\text{Y}}$ 44'44		evening set	8297 Apr 01 03:36	28° $\mathbf{\text{Y}}$ 45'09	
retrograde	8290 Jul 04 00:06	3° $\mathbf{\text{Y}}$ 57'34					
opposition	8290 Sep 17 18:19	1° $\mathbf{\text{Y}}$ 57'50	-0°54'43	conjunction	8297 Apr 16 20:29	29° $\mathbf{\text{Y}}$ 40'34	-0°53'16
min. Earth dist.	8290 Sep 17 12:52	1° $\mathbf{\text{Y}}$ 58'24	18.17406 AU	minimum elong	8297 Apr 16 20:29	29° $\mathbf{\text{Y}}$ 40'34	0°53'21
	8290 Nov 21 20:06	30° $\mathbf{\text{R}}$ $\mathbf{\text{H}}$		max. Earth dist.	8297 Apr 17 07:40	29° $\mathbf{\text{Y}}$ 42'13	20.57532 AU
direct	8290 Dec 03 23:00	29° $\mathbf{\text{H}}$ 56'19			8297 Apr 22 07:40	0° $\mathbf{\text{B}}$	
	8290 Dec 15 21:21	0° $\mathbf{\text{Y}}$		morning rise	8297 May 02 13:11	0° $\mathbf{\text{B}}$ 35'58	
evening set	8291 Mar 07 08:27	3° $\mathbf{\text{Y}}$ 11'35		retrograde	8297 Aug 02 15:43	3° $\mathbf{\text{B}}$ 45'07	
				opposition	8297 Oct 18 11:26	1° $\mathbf{\text{B}}$ 46'24	-0°58'46
conjunction	8291 Mar 23 03:48	4° $\mathbf{\text{Y}}$ 08'28	-0°50'03	min. Earth dist.	8297 Oct 18 00:39	1° $\mathbf{\text{B}}$ 47'29	18.60196 AU
minimum elong	8291 Mar 23 03:48	4° $\mathbf{\text{Y}}$ 08'28	0°50'04		8297 Dec 11 17:56	30° $\mathbf{\text{R}}$ $\mathbf{\text{Y}}$	
max. Earth dist.	8291 Mar 23 09:24	4° $\mathbf{\text{Y}}$ 09'19	20.20697 AU	direct	8298 Jan 03 09:41	29° $\mathbf{\text{Y}}$ 47'20	
morning rise	8291 Apr 07 21:47	5° $\mathbf{\text{Y}}$ 05'10			8298 Jan 25 19:09	0° $\mathbf{\text{B}}$	
retrograde	8291 Jul 08 13:30	8° $\mathbf{\text{Y}}$ 17'26		evening set	8298 Apr 05 12:19	2° $\mathbf{\text{B}}$ 55'22	



conjunction	8298 Apr 21 05:02	3° <b>8</b> 50'35 -0°52'48		8304 Jun 13 19:57	0° <b>II</b>
minimum elong	8298 Apr 21 05:02	3° <b>8</b> 50'35 0°52'54	retrograde	8304 Sep 01 12:02	2° <b>II</b> 22'58
max. Earth dist.	8298 Apr 21 16:47	3° <b>8</b> 52'19 20.62747 AU	opposition	8304 Nov 17 23:21	0° <b>II</b> 24'25 -0°48'01
morning rise	8298 May 06 21:48	4° <b>8</b> 45'50	min. Earth dist.	8304 Nov 17 06:42	0° <b>II</b> 26'05 18.90388 AU
retrograde	8298 Aug 07 03:39	7° <b>8</b> 54'29		8304 Nov 28 05:14	30° <b>R</b> 8
opposition	8298 Oct 23 01:06	5° <b>8</b> 55'47 -0°58'05	direct	8305 Feb 02 13:19	28° <b>8</b> 26'52
min. Earth dist.	8298 Oct 22 12:35	5° <b>8</b> 57'03 18.65257 AU		8305 Apr 05 21:18	0° <b>II</b>
direct	8299 Jan 07 23:45	3° <b>8</b> 56'57	evening set	8305 May 04 09:30	1° <b>II</b> 29'17
evening set	8299 Apr 09 20:15	7° <b>8</b> 04'01			
conjunction	8299 Apr 25 12:53	7° <b>8</b> 59'03 -0°52'03	conjunction	8305 May 20 02:42	2° <b>II</b> 23'34 -0°42'18
minimum elong	8299 Apr 25 12:53	7° <b>8</b> 59'03 0°52'09	minimum elong	8305 May 20 02:42	2° <b>II</b> 23'34 0°42'28
max. Earth dist.	8299 Apr 26 01:40	8° <b>8</b> 00'56 20.67660 AU	max. Earth dist.	8305 May 20 19:55	2° <b>II</b> 26'04 20.92000 AU
morning rise	8299 May 11 05:45	8° <b>8</b> 54'09	morning rise	8305 Jun 04 21:18	3° <b>II</b> 18'04
retrograde	8299 Aug 11 12:35	12° <b>8</b> 02'21	retrograde	8305 Sep 05 19:42	6° <b>II</b> 24'28
opposition	8299 Oct 27 14:16	10° <b>8</b> 03'39 -0°57'05	opposition	8305 Nov 22 09:41	4° <b>II</b> 25'57 -0°45'28
min. Earth dist.	8299 Oct 27 02:03	10° <b>8</b> 04'53 18.70045 AU	min. Earth dist.	8305 Nov 21 17:37	4° <b>II</b> 27'34 18.93576 AU
direct	8300 Jan 12 10:09	8° <b>8</b> 05'01	direct	8306 Feb 06 21:27	2° <b>II</b> 28'39
evening set	8300 Apr 14 03:39	11° <b>8</b> 11'10	evening set	8306 May 08 14:39	5° <b>II</b> 30'30
conjunction	8300 Apr 29 20:12	12° <b>8</b> 06'01 -0°51'02	conjunction	8306 May 24 08:07	6° <b>II</b> 24'42 -0°39'54
minimum elong	8300 Apr 29 20:12	12° <b>8</b> 06'01 0°51'09	minimum elong	8306 May 24 08:07	6° <b>II</b> 24'42 0°40'04
max. Earth dist.	8300 Apr 30 09:34	12° <b>8</b> 07'59 20.72326 AU	max. Earth dist.	8306 May 25 01:11	6° <b>II</b> 27'11 20.95010 AU
morning rise	8300 May 15 13:14	13° <b>8</b> 00'58	morning rise	8306 Jun 09 03:16	7° <b>II</b> 19'10
retrograde	8300 Jun 23 18:48	15° <b>8</b>	retrograde	8306 Sep 10 05:36	10° <b>II</b> 25'25
opposition	8300 Aug 15 23:18	16° <b>8</b> 08'45	opposition	8306 Nov 26 19:26	8° <b>II</b> 26'57 -0°42'42
min. Earth dist.	8300 Oct 10 17:38	15° <b>R</b> 8	min. Earth dist.	8306 Nov 26 02:17	8° <b>II</b> 28'40 18.96383 AU
direct	8300 Nov 01 02:34	14° <b>8</b> 10'03 -0°55'48	direct	8307 Feb 11 05:36	6° <b>II</b> 29'49
evening set	8300 Oct 31 12:31	14° <b>8</b> 11'28 18.74592 AU	evening set	8307 May 12 19:38	9° <b>II</b> 31'11
conjunction	8301 Jan 16 22:58	12° <b>8</b> 11'37	conjunction	8307 May 28 13:29	10° <b>II</b> 25'21 -0°37'19
minimum elong	8301 Apr 13 10:54	15° <b>8</b>	minimum elong	8307 May 28 13:29	10° <b>II</b> 25'21 0°37'30
max. Earth dist.	8301 Apr 18 10:31	15° <b>8</b> 16'55	max. Earth dist.	8307 May 29 07:07	10° <b>II</b> 27'54 20.97591 AU
morning rise	8301 May 04 03:04	16° <b>8</b> 11'37 -0°49'45	morning rise	8307 Jun 13 09:06	11° <b>II</b> 19'48
retrograde	8301 May 04 03:04	16° <b>8</b> 11'37 0°49'52	retrograde	8307 Sep 14 12:50	14° <b>II</b> 25'57
opposition	8301 May 04 17:37	16° <b>8</b> 13'45 20.76755 AU	opposition	8307 Dec 01 05:03	12° <b>II</b> 27'30 -0°39'44
min. Earth dist.	8301 May 19 20:16	17° <b>8</b> 06'27	min. Earth dist.	8307 Nov 30 12:50	12° <b>II</b> 29'08 18.98735 AU
direct	8301 Aug 20 08:02	20° <b>8</b> 13'51	direct	8308 Feb 15 13:02	10° <b>II</b> 30'33
evening set	8301 Nov 05 14:37	18° <b>8</b> 15'11 -0°54'15	evening set	8308 May 16 00:36	13° <b>II</b> 31'28
conjunction	8301 Nov 05 00:47	18° <b>8</b> 16'34 18.78919 AU	conjunction	8308 May 31 18:47	14° <b>II</b> 25'37 -0°34'34
minimum elong	8302 Jan 21 08:10	16° <b>8</b> 16'58	minimum elong	8308 May 31 18:47	14° <b>II</b> 25'37 0°34'43
max. Earth dist.	8302 Apr 22 16:44	19° <b>8</b> 21'26	max. Earth dist.	8308 Jun 01 11:48	14° <b>II</b> 28'04 20.99705 AU
morning rise	8302 May 08 09:21	20° <b>8</b> 16'01 -0°48'14	morning rise	8308 Jun 16 14:59	15° <b>II</b> 20'03
retrograde	8302 May 08 09:21	20° <b>8</b> 16'01 0°48'22	retrograde	8308 Sep 17 22:49	18° <b>II</b> 26'08
opposition	8302 May 09 00:25	20° <b>8</b> 18'13 20.80974 AU	opposition	8308 Dec 04 14:14	16° <b>II</b> 27'41 -0°36'35
min. Earth dist.	8302 May 24 02:52	21° <b>8</b> 10'44	min. Earth dist.	8308 Dec 03 21:19	16° <b>II</b> 29'23 19.00592 AU
direct	8302 Aug 24 17:59	24° <b>8</b> 17'49	direct	8309 Feb 18 20:49	14° <b>II</b> 30'51
evening set	8302 Nov 09 10:21	22° <b>8</b> 20'44 18.83017 AU	evening set	8309 May 20 05:30	17° <b>II</b> 31'24
conjunction	8302 Nov 10 01:59	22° <b>8</b> 19'10 -0°52'25	conjunction	8309 Jun 05 00:09	18° <b>II</b> 25'32 -0°31'38
minimum elong	8303 Jan 25 19:25	20° <b>8</b> 21'11	minimum elong	8309 Jun 05 00:10	18° <b>II</b> 25'32 0°31'49
max. Earth dist.	8303 Apr 26 22:40	23° <b>8</b> 24'54	max. Earth dist.	8309 Jun 05 17:27	18° <b>II</b> 28'01 21.01292 AU
morning rise	8303 May 12 15:27	24° <b>8</b> 19'22 -0°46'29	morning rise	8309 Jun 20 20:53	19° <b>II</b> 19'59
retrograde	8303 May 12 15:27	24° <b>8</b> 19'22 0°46'37	retrograde	8309 Sep 22 05:45	22° <b>II</b> 26'02
opposition	8303 May 13 07:35	24° <b>8</b> 21'43 20.84940 AU	opposition	8309 Dec 08 23:23	20° <b>II</b> 27'33 -0°33'16
min. Earth dist.	8303 May 28 09:16	25° <b>8</b> 14'00	min. Earth dist.	8309 Dec 08 07:33	20° <b>II</b> 29'08 19.01910 AU
direct	8303 Aug 29 02:21	28° <b>8</b> 20'48	direct	8310 Feb 23 03:29	18° <b>II</b> 30'48
evening set	8303 Nov 14 12:53	26° <b>8</b> 22'12 -0°50'20	evening set	8310 May 24 10:16	21° <b>II</b> 31'00
conjunction	8303 Nov 13 21:42	26° <b>8</b> 23'43 18.86851 AU	conjunction	8310 Jun 09 05:24	22° <b>II</b> 25'08 -0°28'34
minimum elong	8304 Jan 30 03:53	24° <b>8</b> 24'26	minimum elong	8310 Jun 09 05:24	22° <b>II</b> 25'08 0°28'44
max. Earth dist.	8304 Apr 30 04:16	27° <b>8</b> 27'29	max. Earth dist.	8310 Jun 09 21:53	22° <b>II</b> 27'30 21.02349 AU
morning rise	8304 May 15 21:13	28° <b>8</b> 21'50 -0°44'30	morning rise	8310 Jun 25 02:52	23° <b>II</b> 19'36
retrograde	8304 May 15 21:13	28° <b>8</b> 21'50 0°44'38	retrograde	8310 Sep 26 15:33	26° <b>II</b> 25'39
opposition	8304 May 16 13:31	28° <b>8</b> 24'12 20.88637 AU	opposition	8310 Dec 13 08:06	24° <b>II</b> 27'06 -0°29'47
min. Earth dist.	8304 May 31 15:28	29° <b>8</b> 16'24	min. Earth dist.	8310 Dec 12 15:50	24° <b>II</b> 28'43 19.02691 AU
direct			direct	8311 Feb 27 11:14	22° <b>II</b> 30'22

evening set	8311 May 28 15:04	25° $\Pi$ 30'17	min. Earth dist.	8317 Jan 05 17:36	18° $\Theta$ 23'33	18.98284 AU
			direct	8317 Mar 23 00:15	16° $\Theta$ 25'05	
conjunction	8311 Jun 13 10:48	26° $\Pi$ 24'27 -0°25'21	evening set	8317 Jun 20 21:19	19° $\Theta$ 24'46	
minimum elong	8311 Jun 13 10:48	26° $\Pi$ 24'27 0°25'31				
max. Earth dist.	8311 Jun 14 03:28	26° $\Pi$ 26'51 21.02861 AU	conjunction	8317 Jul 06 20:53	20° $\Theta$ 19'24 -0°04'08	
morning rise	8311 Jun 29 08:51	27° $\Pi$ 18'58	minimum elong	8317 Jul 06 20:54	20° $\Theta$ 19'24 0°04'18	
	8311 Aug 29 19:08	0° $\Theta$	behind sun begin	8317 Jul 06 14:23	20° $\Theta$ 18'29	
retrograde	8311 Sep 30 21:57	0° $\Theta$ 25'00	behind sun end	8317 Jul 07 03:25	20° $\Theta$ 20'18	
	8311 Nov 02 15:47	30° $\kappa$ $\Pi$	max. Earth dist.	8317 Jul 07 12:07	20° $\Theta$ 21'34 20.97332 AU	
opposition	8311 Dec 17 16:29	28° $\Pi$ 26'21 -0°26'09	morning rise	8317 Jul 22 23:24	21° $\Theta$ 14'27	
min. Earth dist.	8311 Dec 17 01:23	28° $\Pi$ 27'52 19.02950 AU	retrograde	8317 Oct 24 23:40	24° $\Theta$ 21'33	
direct	8312 Mar 02 17:16	26° $\Pi$ 29'36	opposition	8318 Jan 10 15:51	22° $\Theta$ 22'13 -0°02'25	
evening set	8312 May 31 19:50	29° $\Pi$ 29'19	min. Earth dist.	8318 Jan 10 02:22	22° $\Theta$ 23'35 18.96321 AU	
	8312 Jun 09 20:24	0° $\Theta$	direct	8318 Mar 27 05:25	20° $\Theta$ 25'11	
			evening set	8318 Jun 25 03:21	23° $\Theta$ 25'04	
conjunction	8312 Jun 16 16:04	0° $\Theta$ 23'30 -0°22'01				
minimum elong	8312 Jun 16 16:05	0° $\Theta$ 23'30 0°22'12	conjunction	8318 Jul 11 03:40	24° $\Theta$ 19'50 -0°00'21	
max. Earth dist.	8312 Jun 17 07:59	0° $\Theta$ 25'47 21.02896 AU	minimum elong	8318 Jul 11 03:39	24° $\Theta$ 19'50 0°00'31	
morning rise	8312 Jul 02 14:54	1° $\Theta$ 18'04	behind sun begin	8318 Jul 10 21:02	24° $\Theta$ 18'54	
retrograde	8312 Oct 04 07:16	4° $\Theta$ 24'10	behind sun end	8318 Jul 11 10:15	24° $\Theta$ 20'45	
min. Earth dist.	8312 Dec 20 09:08	2° $\Theta$ 26'57 19.02761 AU	max. Earth dist.	8318 Jul 11 17:40	24° $\Theta$ 21'50 20.95212 AU	
opposition	8312 Dec 21 00:40	2° $\Theta$ 25'23 -0°22'25	morning rise	8318 Jul 27 07:03	25° $\Theta$ 15'01	
direct	8313 Mar 07 00:36	0° $\Theta$ 28'36	asc. node	8318 Aug 13 00:22	26° $\Theta$ 09'09	
evening set	8313 Jun 05 00:28	3° $\Theta$ 28'08	retrograde	8318 Oct 29 09:40	28° $\Theta$ 22'29	
			opposition	8319 Jan 14 23:43	26° $\Theta$ 23'03 0°01'43	
conjunction	8313 Jun 20 21:21	4° $\Theta$ 22'24 -0°18'35	min. Earth dist.	8319 Jan 14 10:20	26° $\Theta$ 24'25 18.94023 AU	
minimum elong	8313 Jun 20 21:21	4° $\Theta$ 22'24 0°18'45	direct	8319 Mar 31 11:29	24° $\Theta$ 25'56	
max. Earth dist.	8313 Jun 21 13:43	4° $\Theta$ 24'44 21.02492 AU	evening set	8319 Jun 29 09:54	27° $\Theta$ 26'07	
morning rise	8313 Jul 06 20:49	5° $\Theta$ 17'01				
retrograde	8313 Oct 08 13:59	8° $\Theta$ 23'14	conjunction	8319 Jul 15 11:00	28° $\Theta$ 21'02 0°03'29	
opposition	8313 Dec 25 08:48	6° $\Theta$ 24'19 -0°18'33	minimum elong	8319 Jul 15 11:00	28° $\Theta$ 21'02 0°03'19	
min. Earth dist.	8313 Dec 24 18:09	6° $\Theta$ 25'47 19.02163 AU	behind sun begin	8319 Jul 15 04:24	28° $\Theta$ 20'07	
direct	8314 Mar 11 06:20	4° $\Theta$ 27'29	behind sun end	8319 Jul 15 17:35	28° $\Theta$ 21'57	
evening set	8314 Jun 09 05:23	7° $\Theta$ 26'57	max. Earth dist.	8319 Jul 16 01:02	28° $\Theta$ 23'03 20.92724 AU	
			morning rise	8319 Jul 31 15:04	29° $\Theta$ 16'23	
conjunction	8314 Jun 25 02:52	8° $\Theta$ 21'16 -0°15'03		8319 Aug 13 23:20	0° $\Omega$	
minimum elong	8314 Jun 25 02:52	8° $\Theta$ 21'16 0°15'14	retrograde	8319 Nov 02 18:32	2° $\Omega$ 24'13	
behind sun begin	8314 Jun 25 00:40	8° $\Theta$ 20'57	opposition	8320 Jan 19 07:40	0° $\Omega$ 24'44 0°05'51	
behind sun end	8314 Jun 25 05:03	8° $\Theta$ 21'34	min. Earth dist.	8320 Jan 18 19:30	0° $\Omega$ 25'58 18.91343 AU	
max. Earth dist.	8314 Jun 25 18:27	8° $\Theta$ 23'30 21.01720 AU		8320 Jan 29 13:05	30° $\kappa$ $\Theta$	
morning rise	8314 Jul 11 03:09	9° $\Theta$ 15'59	direct	8320 Apr 03 16:49	28° $\Theta$ 27'32	
retrograde	8314 Oct 12 22:54	12° $\Theta$ 22'20		8320 Jun 04 09:51	0° $\Omega$	
opposition	8314 Dec 29 16:31	10° $\Theta$ 23'18 -0°14'36	evening set	8320 Jul 02 17:02	1° $\Omega$ 28'05	
min. Earth dist.	8314 Dec 29 01:29	10° $\Theta$ 24'49 19.01214 AU				
direct	8315 Mar 15 12:47	8° $\Theta$ 26'24	conjunction	8320 Jul 18 18:49	2° $\Omega$ 23'09 0°07'12	
evening set	8315 Jun 13 10:26	11° $\Theta$ 25'52	minimum elong	8320 Jul 18 18:49	2° $\Omega$ 23'09 0°07'03	
			behind sun begin	8320 Jul 18 12:41	2° $\Omega$ 22'18	
conjunction	8315 Jun 29 08:39	12° $\Theta$ 20'17 -0°11'27	behind sun end	8320 Jul 19 00:57	2° $\Omega$ 24'01	
minimum elong	8315 Jun 29 08:39	12° $\Theta$ 20'17 0°11'37	max. Earth dist.	8320 Jul 19 07:20	2° $\Omega$ 24'56 20.89863 AU	
behind sun begin	8315 Jun 29 03:55	12° $\Theta$ 19'37	morning rise	8320 Aug 03 23:48	3° $\Omega$ 18'40	
behind sun end	8315 Jun 29 13:22	12° $\Theta$ 20'56	retrograde	8320 Nov 06 05:47	6° $\Omega$ 26'56	
max. Earth dist.	8315 Jun 30 00:33	12° $\Theta$ 22'33 21.00588 AU	opposition	8321 Jan 22 15:56	4° $\Omega$ 27'20 0°09'59	
morning rise	8315 Jul 15 09:37	13° $\Theta$ 15'05	min. Earth dist.	8321 Jan 22 04:17	4° $\Omega$ 28'31 18.88278 AU	
retrograde	8315 Oct 17 06:28	16° $\Theta$ 21'39	direct	8321 Apr 07 23:16	2° $\Omega$ 30'02	
min. Earth dist.	8316 Jan 02 10:10	14° $\Theta$ 23'56 18.99911 AU	evening set	8321 Jul 07 00:38	5° $\Omega$ 31'00	
opposition	8316 Jan 03 00:19	14° $\Theta$ 22'30 -0°10'35				
direct	8316 Mar 18 18:11	12° $\Theta$ 25'34	conjunction	8321 Jul 23 03:17	6° $\Omega$ 26'16 0°10'54	
evening set	8316 Jun 16 15:43	15° $\Theta$ 25'05	minimum elong	8321 Jul 23 03:17	6° $\Omega$ 26'16 0°10'45	
			behind sun begin	8321 Jul 22 22:11	6° $\Omega$ 25'33	
conjunction	8316 Jul 02 14:31	16° $\Theta$ 19'36 -0°07'49	behind sun end	8321 Jul 23 08:22	6° $\Omega$ 26'58	
minimum elong	8316 Jul 02 14:31	16° $\Theta$ 19'36 0°07'59	max. Earth dist.	8321 Jul 23 15:35	6° $\Omega$ 28'01 20.86574 AU	
behind sun begin	8316 Jul 02 08:37	16° $\Theta$ 18'46	morning rise	8321 Aug 08 08:56	7° $\Omega$ 21'58	
behind sun end	8316 Jul 02 20:26	16° $\Theta$ 20'26	retrograde	8321 Nov 10 15:47	10° $\Omega$ 30'40	
max. Earth dist.	8316 Jul 03 05:29	16° $\Theta$ 21'44 20.99128 AU	opposition	8322 Jan 27 00:29	8° $\Omega$ 30'58 0°14'04	
morning rise	8316 Jul 18 16:19	17° $\Theta$ 14'31	min. Earth dist.	8322 Jan 26 14:14	8° $\Omega$ 32'01 18.84763 AU	
retrograde	8316 Oct 20 15:22	20° $\Theta$ 21'20	direct	8322 Apr 12 05:33	6° $\Omega$ 33'31	
opposition	8317 Jan 06 08:02	18° $\Theta$ 22'05 -0°06'31	evening set	8322 Jul 11 09:05	9° $\Omega$ 34'58	

conjunction	8322 Jul 27 12:28	10° $\Omega$ 30'24	0°14'34	conjunction	8328 Aug 21 08:22	5° $\Upsilon$ 17'57	0°34'46
minimum elong	8322 Jul 27 12:27	10° $\Omega$ 30'24	0°14'26	minimum elong	8328 Aug 21 08:21	5° $\Upsilon$ 17'57	0°34'40
behind sun begin	8322 Jul 27 09:30	10° $\Omega$ 29'59		max. Earth dist.	8328 Aug 21 11:23	5° $\Upsilon$ 18'24	20.52474 AU
behind sun end	8322 Jul 27 15:24	10° $\Omega$ 30'49		morning rise	8328 Sep 06 19:20	6° $\Upsilon$ 15'11	
max. Earth dist.	8322 Jul 27 22:43	10° $\Omega$ 31'52	20.82839 AU	retrograde	8328 Dec 10 06:48	9° $\Upsilon$ 27'34	
morning rise	8322 Aug 12 19:01	11° $\Omega$ 26'18		opposition	8329 Feb 24 19:05	7° $\Upsilon$ 26'27	0°40'08
retrograde	8322 Nov 15 03:40	14° $\Omega$ 35'28		min. Earth dist.	8329 Feb 24 16:15	7° $\Upsilon$ 26'44	18.49580 AU
opposition	8323 Jan 31 09:07	12° $\Omega$ 35'37	0°18'07	direct	8329 May 10 14:44	5° $\Upsilon$ 27'04	
min. Earth dist.	8323 Jan 30 23:48	12° $\Omega$ 36'34	18.80795 AU	evening set	8329 Aug 09 13:06	8° $\Upsilon$ 33'17	
direct	8323 Apr 16 12:29	10° $\Omega$ 37'58					
evening set	8323 Jul 15 18:03	13° $\Omega$ 39'56		conjunction	8329 Aug 25 22:10	9° $\Upsilon$ 30'22	0°37'38
				minimum elong	8329 Aug 25 22:10	9° $\Upsilon$ 30'22	0°37'35
conjunction	8323 Jul 31 22:20	14° $\Omega$ 35'35	0°18'11	max. Earth dist.	8329 Aug 26 01:13	9° $\Upsilon$ 30'49	20.46661 AU
minimum elong	8323 Jul 31 22:20	14° $\Omega$ 35'35	0°18'03	morning rise	8329 Sep 11 09:39	10° $\Upsilon$ 27'51	
max. Earth dist.	8323 Aug 01 08:05	14° $\Omega$ 36'59	20.78631 AU	retrograde	8329 Dec 14 20:51	13° $\Upsilon$ 40'51	
	8323 Aug 07 23:25	15° $\Omega$		opposition	8330 Mar 01 06:01	11° $\Upsilon$ 39'34	0°43'14
morning rise	8323 Aug 17 05:33	15° $\Omega$ 31'40		min. Earth dist.	8330 Mar 01 03:52	11° $\Upsilon$ 39'47	18.43718 AU
retrograde	8323 Nov 19 14:38	18° $\Omega$ 41'19		direct	8330 May 15 00:17	9° $\Upsilon$ 39'55	
opposition	8324 Feb 04 18:08	16° $\Omega$ 41'17	0°22'05	evening set	8330 Aug 14 03:05	12° $\Upsilon$ 47'02	
min. Earth dist.	8324 Feb 04 10:13	16° $\Omega$ 42'06	18.76359 AU				
	8324 Mar 25 05:33	15° $\Upsilon$ $\Omega$		conjunction	8330 Aug 30 12:45	13° $\Upsilon$ 44'23	0°40'19
direct	8324 Apr 19 20:01	14° $\Omega$ 43'24		minimum elong	8330 Aug 30 12:45	13° $\Upsilon$ 44'23	0°40'16
	8324 May 15 02:14	15° $\Omega$		max. Earth dist.	8330 Aug 30 13:33	13° $\Upsilon$ 44'30	20.40769 AU
evening set	8324 Jul 19 03:31	17° $\Omega$ 45'56		morning rise	8330 Sep 16 01:00	14° $\Upsilon$ 42'07	
				retrograde	8330 Dec 19 12:35	17° $\Upsilon$ 55'47	
conjunction	8324 Aug 04 08:30	18° $\Omega$ 41'47	0°21'44	opposition	8331 Mar 05 17:22	15° $\Upsilon$ 54'20	0°46'07
minimum elong	8324 Aug 04 08:30	18° $\Omega$ 41'47	0°21'36	min. Earth dist.	8331 Mar 05 16:29	15° $\Upsilon$ 54'26	18.37805 AU
max. Earth dist.	8324 Aug 04 16:09	18° $\Omega$ 42'53	20.73999 AU	direct	8331 May 19 10:56	13° $\Upsilon$ 54'24	
morning rise	8324 Aug 20 16:37	19° $\Omega$ 38'05		evening set	8331 Aug 18 17:46	17° $\Upsilon$ 02'30	
retrograde	8324 Nov 23 02:54	22° $\Omega$ 48'14					
opposition	8325 Feb 08 03:23	20° $\Omega$ 47'59	0°25'58	conjunction	8331 Sep 04 04:18	18° $\Upsilon$ 00'09	0°42'48
min. Earth dist.	8325 Feb 07 20:26	20° $\Omega$ 48'42	18.71534 AU	minimum elong	8331 Sep 04 04:18	18° $\Upsilon$ 00'09	0°42'46
direct	8325 Apr 24 03:34	18° $\Omega$ 49'49		max. Earth dist.	8331 Sep 04 05:08	18° $\Upsilon$ 00'16	20.34827 AU
evening set	8325 Jul 23 13:38	21° $\Omega$ 52'57		morning rise	8331 Sep 20 16:56	18° $\Upsilon$ 58'08	
				retrograde	8331 Dec 24 03:51	22° $\Upsilon$ 12'28	
conjunction	8325 Aug 08 19:33	22° $\Omega$ 49'02	0°25'11	opposition	8332 Mar 09 05:19	20° $\Upsilon$ 10'54	0°48'46
minimum elong	8325 Aug 08 19:33	22° $\Omega$ 49'02	0°25'03	min. Earth dist.	8332 Mar 09 05:00	20° $\Upsilon$ 10'56	18.31842 AU
max. Earth dist.	8325 Aug 09 02:55	22° $\Omega$ 50'06	20.68994 AU	direct	8332 May 22 21:43	18° $\Upsilon$ 10'43	
morning rise	8325 Aug 25 04:17	23° $\Omega$ 45'33		evening set	8332 Aug 22 09:21	21° $\Upsilon$ 19'49	
retrograde	8325 Nov 27 14:37	26° $\Omega$ 56'13					
opposition	8326 Feb 12 12:48	24° $\Omega$ 55'45	0°29'44	conjunction	8332 Sep 07 20:25	22° $\Upsilon$ 17'44	0°45'04
min. Earth dist.	8326 Feb 12 07:01	24° $\Omega$ 56'20	18.66371 AU	minimum elong	8332 Sep 07 20:24	22° $\Upsilon$ 17'44	0°45'02
direct	8326 Apr 28 12:05	22° $\Omega$ 57'17		max. Earth dist.	8332 Sep 07 19:00	22° $\Upsilon$ 17'32	20.28855 AU
evening set	8326 Jul 28 00:30	26° $\Omega$ 01'06		morning rise	8332 Sep 24 09:46	23° $\Upsilon$ 16'00	
				retrograde	8332 Dec 27 20:35	26° $\Upsilon$ 31'02	
conjunction	8326 Aug 13 07:07	26° $\Omega$ 57'25	0°28'31	opposition	8333 Mar 13 17:57	24° $\Upsilon$ 29'21	0°51'09
minimum elong	8326 Aug 13 07:06	26° $\Omega$ 57'25	0°28'24	min. Earth dist.	8333 Mar 13 19:09	24° $\Upsilon$ 29'14	18.25855 AU
max. Earth dist.	8326 Aug 13 12:21	26° $\Omega$ 58'10	20.63701 AU	direct	8333 May 27 09:45	22° $\Upsilon$ 28'55	
morning rise	8326 Aug 29 16:44	27° $\Omega$ 54'10		evening set	8333 Aug 27 01:57	25° $\Upsilon$ 39'05	
	8326 Oct 10 22:45	0° $\Upsilon$					
retrograde	8326 Dec 02 03:46	1° $\Upsilon$ 05'22		conjunction	8333 Sep 12 13:51	26° $\Upsilon$ 37'18	0°47'05
	8327 Jan 24 18:42	30° $\Upsilon$ $\Omega$		minimum elong	8333 Sep 12 13:51	26° $\Upsilon$ 37'18	0°47'04
opposition	8327 Feb 16 22:33	29° $\Omega$ 04'40	0°33'22	max. Earth dist.	8333 Sep 12 12:18	26° $\Upsilon$ 37'04	20.22840 AU
min. Earth dist.	8327 Feb 16 17:47	29° $\Omega$ 05'09	18.60957 AU	morning rise	8333 Sep 29 03:32	27° $\Upsilon$ 35'49	
direct	8327 May 02 20:22	27° $\Omega$ 05'54			8333 Nov 17 03:07	0° $\Omega$	
	8327 Jul 29 09:57	0° $\Upsilon$		retrograde	8334 Jan 01 13:17	0° $\Omega$ 51'32	
evening set	8327 Aug 01 11:56	0° $\Upsilon$ 10'27			8334 Feb 16 18:39	30° $\Upsilon$ $\Omega$	
				opposition	8334 Mar 18 06:57	28° $\Upsilon$ 49'46	0°53'17
conjunction	8327 Aug 17 19:26	1° $\Upsilon$ 07'01	0°31'43	min. Earth dist.	8334 Mar 18 08:54	28° $\Upsilon$ 49'33	18.19808 AU
minimum elong	8327 Aug 17 19:26	1° $\Upsilon$ 07'01	0°31'38	direct	8334 May 31 22:43	26° $\Upsilon$ 49'04	
max. Earth dist.	8327 Aug 18 00:34	1° $\Upsilon$ 07'45	20.58168 AU	evening set	8334 Aug 31 19:45	0° $\Omega$ 00'20	
morning rise	8327 Sep 03 05:35	2° $\Upsilon$ 04'00			8334 Aug 31 17:28	0° $\Omega$	
retrograde	8327 Dec 06 16:24	5° $\Upsilon$ 15'46					
opposition	8328 Feb 21 08:34	3° $\Upsilon$ 14'51	0°36'51	conjunction	8334 Sep 17 08:06	0° $\Omega$ 58'49	0°48'52
min. Earth dist.	8328 Feb 21 04:42	3° $\Upsilon$ 15'15	18.55331 AU	minimum elong	8334 Sep 17 08:06	0° $\Omega$ 58'49	0°48'52
direct	8328 May 06 05:25	1° $\Upsilon$ 15'48		max. Earth dist.	8334 Sep 17 03:53	0° $\Omega$ 58'12	20.16756 AU
evening set	8328 Aug 05 00:14	4° $\Upsilon$ 21'08		morning rise	8334 Oct 03 22:22	1° $\Omega$ 57'36	

retrograde	8335 Jan 06 06:25	5° <u>♏</u> 14'01	evening set	8341 Oct 02 23:28	1° <u>♏</u> 18'11	
opposition	8335 Mar 22 20:49	3° <u>♏</u> 12'08 0°55'07				
min. Earth dist.	8335 Mar 23 00:45	3° <u>♏</u> 11'43 18.13691 AU	conjunction	8341 Oct 19 15:08	2° <u>♏</u> 18'32 0°52'57	
direct	8335 Jun 05 12:12	1° <u>♏</u> 11'08	minimum elong	8341 Oct 19 15:08	2° <u>♏</u> 18'32 0°53'03	
evening set	8335 Sep 05 14:15	4° <u>♏</u> 23'30	max. Earth dist.	8341 Oct 19 02:09	2° <u>♏</u> 16'33 19.73817 AU	
			morning rise	8341 Nov 05 06:51	3° <u>♏</u> 18'57	
conjunction	8335 Sep 22 03:20	5° <u>♏</u> 22'17 0°50'22	retrograde	8342 Feb 06 23:21	6° <u>♏</u> 39'17	
minimum elong	8335 Sep 22 03:20	5° <u>♏</u> 22'17 0°50'22	opposition	8342 Apr 22 14:10	4° <u>♏</u> 36'19 0°58'35	
max. Earth dist.	8335 Sep 21 22:40	5° <u>♏</u> 21'35 20.10585 AU	min. Earth dist.	8342 Apr 23 01:02	4° <u>♏</u> 35'09 17.71064 AU	
morning rise	8335 Oct 08 17:48	6° <u>♏</u> 21'19	direct	8342 Jul 06 12:20	2° <u>♏</u> 32'44	
retrograde	8336 Jan 11 00:38	9° <u>♏</u> 38'23	evening set	8342 Oct 07 23:40	5° <u>♏</u> 52'37	
opposition	8336 Mar 26 11:15	7° <u>♏</u> 36'22 0°56'39				
min. Earth dist.	8336 Mar 26 15:47	7° <u>♏</u> 35'53 18.07474 AU	conjunction	8342 Oct 24 15:30	6° <u>♏</u> 53'13 0°52'14	
direct	8336 Jun 09 03:39	5° <u>♏</u> 35'04	minimum elong	8342 Oct 24 15:29	6° <u>♏</u> 53'13 0°52'20	
evening set	8336 Sep 09 09:52	8° <u>♏</u> 48'31	max. Earth dist.	8342 Oct 24 01:26	6° <u>♏</u> 51'04 19.68359 AU	
			morning rise	8342 Nov 10 07:09	7° <u>♏</u> 53'49	
conjunction	8336 Sep 25 23:21	9° <u>♏</u> 47'35 0°51'35	retrograde	8343 Feb 11 20:17	11° <u>♏</u> 14'36	
minimum elong	8336 Sep 25 23:21	9° <u>♏</u> 47'35 0°51'37	opposition	8343 Apr 27 08:51	9° <u>♏</u> 11'31 0°57'36	
max. Earth dist.	8336 Sep 25 16:00	9° <u>♏</u> 46'29 20.04333 AU	min. Earth dist.	8343 Apr 27 21:18	9° <u>♏</u> 10'10 17.65797 AU	
morning rise	8336 Oct 12 14:18	10° <u>♏</u> 46'52	direct	8343 Jul 11 07:04	7° <u>♏</u> 07'36	
retrograde	8337 Jan 14 18:15	14° <u>♏</u> 04'34	evening set	8343 Oct 13 00:17	10° <u>♏</u> 28'31	
opposition	8337 Mar 31 02:21	12° <u>♏</u> 02'24 0°57'52				
min. Earth dist.	8337 Mar 31 09:01	12° <u>♏</u> 01'41 18.01202 AU	conjunction	8343 Oct 29 16:16	11° <u>♏</u> 29'18 0°51'10	
direct	8337 Jun 13 18:35	10° <u>♏</u> 00'43	minimum elong	8343 Oct 29 16:16	11° <u>♏</u> 29'18 0°51'16	
evening set	8337 Sep 14 06:10	13° <u>♏</u> 15'17	max. Earth dist.	8343 Oct 29 01:38	11° <u>♏</u> 27'04 19.63293 AU	
			morning rise	8343 Nov 15 07:51	12° <u>♏</u> 30'06	
conjunction	8337 Sep 30 20:21	14° <u>♏</u> 14'37 0°52'30		8344 Jan 03 15:33	15° <u>♏</u>	
minimum elong	8337 Sep 30 20:21	14° <u>♏</u> 14'37 0°52'33	retrograde	8344 Feb 16 19:13	15° <u>♏</u> 51'19	
max. Earth dist.	8337 Sep 30 12:27	14° <u>♏</u> 13'26 19.98045 AU		8344 Apr 01 18:09	15° <u>♏</u>	
morning rise	8337 Oct 17 11:29	15° <u>♏</u> 14'08	opposition	8344 May 01 03:59	13° <u>♏</u> 48'09 0°56'15	
retrograde	8338 Jan 19 13:59	18° <u>♏</u> 32'25	min. Earth dist.	8344 May 01 15:53	13° <u>♏</u> 46'52 17.60940 AU	
opposition	8338 Apr 04 17:57	16° <u>♏</u> 30'05 0°58'44	direct	8344 Jul 15 04:30	11° <u>♏</u> 43'57	
min. Earth dist.	8338 Apr 05 01:03	16° <u>♏</u> 29'20 17.94907 AU		8344 Oct 15 10:34	15° <u>♏</u>	
direct	8338 Jun 18 12:06	14° <u>♏</u> 28'03	evening set	8344 Oct 17 01:43	15° <u>♏</u> 05'51	
evening set	8338 Sep 19 03:30	17° <u>♏</u> 43'41				
			conjunction	8344 Nov 02 17:48	16° <u>♏</u> 06'51 0°49'46	
conjunction	8338 Oct 05 17:59	18° <u>♏</u> 43'17 0°53'07	minimum elong	8344 Nov 02 17:48	16° <u>♏</u> 06'51 0°49'53	
minimum elong	8338 Oct 05 17:59	18° <u>♏</u> 43'17 0°53'09	max. Earth dist.	8344 Nov 02 02:48	16° <u>♏</u> 04'33 19.58649 AU	
max. Earth dist.	8338 Oct 05 07:43	18° <u>♏</u> 41'45 19.91764 AU	morning rise	8344 Nov 19 09:09	17° <u>♏</u> 07'48	
morning rise	8338 Oct 22 09:26	19° <u>♏</u> 43'03	retrograde	8345 Feb 20 17:00	20° <u>♏</u> 29'23	
retrograde	8339 Jan 24 08:25	23° <u>♏</u> 01'54	opposition	8345 May 05 23:47	18° <u>♏</u> 26'14 0°54'31	
opposition	8339 Apr 09 10:11	20° <u>♏</u> 59'24 0°59'15	min. Earth dist.	8345 May 06 13:03	18° <u>♏</u> 24'47 17.56527 AU	
min. Earth dist.	8339 Apr 09 19:21	20° <u>♏</u> 58'25 17.88672 AU	direct	8345 Jul 20 00:21	16° <u>♏</u> 21'47	
direct	8339 Jun 23 04:13	18° <u>♏</u> 56'56	evening set	8345 Oct 22 03:48	19° <u>♏</u> 44'39	
evening set	8339 Sep 24 01:24	22° <u>♏</u> 13'41				
			conjunction	8345 Nov 07 19:52	20° <u>♏</u> 45'50 0°48'02	
conjunction	8339 Oct 10 16:25	23° <u>♏</u> 13'32 0°53'24	minimum elong	8345 Nov 07 19:52	20° <u>♏</u> 45'50 0°48'09	
minimum elong	8339 Oct 10 16:25	23° <u>♏</u> 13'32 0°53'28	max. Earth dist.	8345 Nov 07 03:55	20° <u>♏</u> 43'23 19.54474 AU	
max. Earth dist.	8339 Oct 10 05:41	23° <u>♏</u> 11'55 19.85588 AU	morning rise	8345 Nov 24 11:06	21° <u>♏</u> 46'56	
morning rise	8339 Oct 27 07:57	24° <u>♏</u> 13'31	retrograde	8346 Feb 25 16:50	25° <u>♏</u> 08'53	
retrograde	8340 Jan 29 05:32	27° <u>♏</u> 32'54	opposition	8346 May 10 20:06	23° <u>♏</u> 05'45 0°52'25	
opposition	8340 Apr 13 02:55	25° <u>♏</u> 30'13 0°59'24	min. Earth dist.	8346 May 11 08:57	23° <u>♏</u> 04'20 17.52574 AU	
min. Earth dist.	8340 Apr 13 12:07	25° <u>♏</u> 29'14 17.82569 AU	direct	8346 Jul 24 23:08	21° <u>♏</u> 01'07	
direct	8340 Jun 26 22:57	23° <u>♏</u> 27'23	evening set	8346 Oct 27 06:24	24° <u>♏</u> 24'55	
evening set	8340 Sep 28 00:02	26° <u>♏</u> 45'11				
			conjunction	8346 Nov 12 22:27	25° <u>♏</u> 26'16 0°45'58	
conjunction	8340 Oct 14 15:20	27° <u>♏</u> 45'18 0°53'21	minimum elong	8346 Nov 12 22:27	25° <u>♏</u> 26'16 0°46'08	
minimum elong	8340 Oct 14 15:19	27° <u>♏</u> 45'18 0°53'25	max. Earth dist.	8346 Nov 12 06:38	25° <u>♏</u> 23'49 19.50734 AU	
max. Earth dist.	8340 Oct 14 02:53	27° <u>♏</u> 43'25 19.79577 AU	morning rise	8346 Nov 29 13:12	26° <u>♏</u> 27'29	
morning rise	8340 Oct 31 07:02	28° <u>♏</u> 45'30	retrograde	8347 Mar 02 15:39	29° <u>♏</u> 49'45	
	8340 Nov 22 08:41	0° <u>♏</u>	opposition	8347 May 15 17:09	27° <u>♏</u> 46'40 0°49'58	
retrograde	8341 Feb 02 01:22	2° <u>♏</u> 05'23	min. Earth dist.	8347 May 16 07:15	27° <u>♏</u> 45'08 17.49052 AU	
opposition	8341 Apr 17 20:24	0° <u>♏</u> 02'33 0°59'11	direct	8347 Jul 29 20:34	25° <u>♏</u> 41'53	
min. Earth dist.	8341 Apr 18 07:28	0° <u>♏</u> 01'21 17.76678 AU	evening set	8347 Nov 01 09:36	29° <u>♏</u> 06'33	
	8341 Apr 18 20:00	30° <u>♏</u>		8347 Nov 15 21:36	0° <u>♏</u>	
direct	8341 Jul 01 16:26	27° <u>♏</u> 59'19	max. Earth dist.	8347 Nov 17 08:15	0° <u>♏</u> 05'23 19.47430 AU	
	8341 Sep 09 18:05	0° <u>♏</u>				

conjunction	8347 Nov 18 01:23	0°♊08'02	0°43'36		8354 Jul 10 03:15	30°♋♊	
minimum elong	8347 Nov 18 01:23	0°♊08'02	0°43'46	direct	8354 Sep 01 05:42	28°♊♊1'33	
morning rise	8347 Dec 04 15:55	1°♊09'21			8354 Oct 22 20:03	0°♊	
retrograde	8348 Mar 06 15:42	4°♊31'54		evening set	8354 Dec 05 13:50	2°♊19'45	
opposition	8348 May 19 14:39	2°♊28'52	0°47'10	max. Earth dist.	8354 Dec 21 09:20	3°♊18'44	19.35718 AU
min. Earth dist.	8348 May 20 04:34	2°♊27'21	17.45954 AU				
direct	8348 Aug 02 20:52	0°♊23'56		conjunction	8354 Dec 22 02:39	3°♊21'27	0°19'41
evening set	8348 Nov 05 13:05	3°♊49'24		minimum elong	8354 Dec 22 02:39	3°♊21'27	0°19'52
				morning rise	8355 Jan 07 12:37	4°♊22'46	
conjunction	8348 Nov 22 04:49	4°♊51'00	0°40'56	retrograde	8355 Apr 09 15:27	7°♊45'16	
minimum elong	8348 Nov 22 04:49	4°♊51'00	0°41'05	opposition	8355 Jun 22 08:51	5°♊42'35	0°19'40
max. Earth dist.	8348 Nov 21 12:06	4°♊48'24	19.44517 AU	min. Earth dist.	8355 Jun 22 23:31	5°♊40'59	17.35786 AU
morning rise	8348 Dec 08 18:44	5°♊52'23		direct	8355 Sep 06 08:52	3°♊36'43	
retrograde	8349 Mar 11 15:02	9°♊15'08		evening set	8355 Dec 10 17:33	7°♊05'00	
opposition	8349 May 24 12:49	7°♊12'10	0°44'02				
min. Earth dist.	8349 May 25 03:45	7°♊10'33	17.43229 AU	conjunction	8355 Dec 27 05:32	8°♊06'37	0°15'30
direct	8349 Aug 07 20:13	5°♊07'05		minimum elong	8355 Dec 27 05:32	8°♊06'37	0°15'41
evening set	8349 Nov 10 17:11	8°♊33'15		behind sun begin	8355 Dec 27 04:22	8°♊06'26	
				behind sun end	8355 Dec 27 06:43	8°♊06'48	
conjunction	8349 Nov 27 08:26	9°♊34'56	0°37'59	max. Earth dist.	8355 Dec 26 12:11	8°♊03'54	19.35972 AU
minimum elong	8349 Nov 27 08:26	9°♊34'56	0°38'09	morning rise	8356 Jan 12 14:45	9°♊07'50	
max. Earth dist.	8349 Nov 26 14:05	9°♊32'05	19.41987 AU	retrograde	8356 Apr 13 13:49	12°♊30'05	
morning rise	8349 Dec 13 21:59	10°♊36'23		opposition	8356 Jun 26 08:49	10°♊27'28	0°14'57
retrograde	8350 Mar 16 14:58	13°♊59'16		min. Earth dist.	8356 Jun 26 23:36	10°♊25'51	17.36345 AU
opposition	8350 May 29 11:18	11°♊56'21	0°40'36	direct	8356 Sep 10 09:31	8°♊21'33	
min. Earth dist.	8350 May 30 02:17	11°♊54'43	17.40894 AU	evening set	8356 Dec 14 20:50	11°♊49'50	
direct	8350 Aug 12 22:20	9°♊51'06					
evening set	8350 Nov 15 21:19	13°♊17'54		conjunction	8356 Dec 31 08:08	12°♊51'21	0°11'14
				minimum elong	8356 Dec 31 08:08	12°♊51'20	0°11'25
conjunction	8350 Dec 02 12:21	14°♊19'38	0°34'45	behind sun begin	8356 Dec 31 03:17	12°♊50'36	
minimum elong	8350 Dec 02 12:21	14°♊19'38	0°34'55	behind sun end	8356 Dec 31 12:58	12°♊52'05	
max. Earth dist.	8350 Dec 01 18:48	14°♊16'54	19.39844 AU	max. Earth dist.	8356 Dec 30 16:04	12°♊48'50	19.36834 AU
morning rise	8350 Dec 19 01:08	15°♊21'06		morning rise	8357 Jan 16 16:27	13°♊52'26	
retrograde	8351 Mar 21 14:35	18°♊44'02		retrograde	8357 Apr 18 14:45	17°♊14'23	
opposition	8351 Jun 03 10:22	16°♊41'11	0°36'53	opposition	8357 Jul 01 08:53	15°♊11'51	0°10'08
min. Earth dist.	8351 Jun 04 01:47	16°♊39'30	17.38948 AU	min. Earth dist.	8357 Jul 01 22:08	15°♊10'24	17.37500 AU
direct	8351 Aug 17 23:36	14°♊35'48		direct	8357 Sep 15 13:20	13°♊05'58	
evening set	8351 Nov 21 01:31	18°♊03'05		evening set	8357 Dec 19 23:49	16°♊34'09	
conjunction	8351 Dec 07 15:56	19°♊04'51	0°31'17	conjunction	8358 Jan 05 10:14	17°♊35'32	0°06'55
minimum elong	8351 Dec 07 15:57	19°♊04'51	0°31'28	minimum elong	8358 Jan 05 10:14	17°♊35'32	0°07'05
max. Earth dist.	8351 Dec 06 21:04	19°♊01'54	19.38114 AU	behind sun begin	8358 Jan 05 04:02	17°♊34'35	
morning rise	8351 Dec 24 04:16	20°♊06'19		behind sun end	8358 Jan 05 16:25	17°♊36'29	
retrograde	8352 Mar 25 14:24	23°♊29'15		max. Earth dist.	8358 Jan 04 18:52	17°♊33'08	19.38299 AU
opposition	8352 Jun 07 09:40	21°♊26'26	0°32'53	morning rise	8358 Jan 21 17:36	18°♊36'28	
min. Earth dist.	8352 Jun 08 01:12	21°♊24'44	17.37439 AU	retrograde	8358 Apr 23 12:06	21°♊58'06	
direct	8352 Aug 22 01:57	19°♊20'53		opposition	8358 Jul 06 09:04	19°♊55'42	0°05'16
evening set	8352 Nov 25 05:44	22°♊48'36		min. Earth dist.	8358 Jul 06 22:20	19°♊54'16	17.39281 AU
				direct	8358 Sep 20 14:15	17°♊49'54	
conjunction	8352 Dec 11 19:49	23°♊50'22	0°27'36	evening set	8358 Dec 25 02:18	21°♊17'56	
minimum elong	8352 Dec 11 19:50	23°♊50'22	0°27'47				
max. Earth dist.	8352 Dec 11 02:01	23°♊47'35	19.36828 AU	conjunction	8359 Jan 10 11:51	22°♊19'08	0°02'32
morning rise	8352 Dec 28 07:20	24°♊51'49		minimum elong	8359 Jan 10 11:51	22°♊19'08	0°02'42
retrograde	8353 Mar 30 14:48	28°♊14'39		behind sun begin	8359 Jan 10 05:10	22°♊18'07	
opposition	8353 Jun 12 09:07	26°♊11'53	0°28'40	behind sun end	8359 Jan 10 18:32	22°♊20'10	
min. Earth dist.	8353 Jun 13 00:32	26°♊10'13	17.36375 AU	max. Earth dist.	8359 Jan 09 21:33	22°♊16'54	19.40393 AU
direct	8353 Aug 27 04:16	24°♊06'13		morning rise	8359 Jan 26 18:21	23°♊19'54	
evening set	8353 Nov 30 10:03	27°♊34'13		retrograde	8359 Apr 28 12:13	26°♊41'11	
				opposition	8359 Jul 11 09:07	24°♊38'58	0°00'22
conjunction	8353 Dec 16 23:24	28°♊35'58	0°23'43	min. Earth dist.	8359 Jul 11 20:30	24°♊37'44	17.41658 AU
minimum elong	8353 Dec 16 23:24	28°♊35'58	0°23'54	desc. node	8359 Aug 08 03:05	23°♊30'53	
max. Earth dist.	8353 Dec 16 04:43	28°♊33'03	19.36013 AU	direct	8359 Sep 25 18:20	22°♊33'19	
morning rise	8354 Jan 02 10:16	29°♊37'22		evening set	8359 Dec 30 04:12	26°♊01'04	
	8354 Jan 08 15:56	0°♊					
retrograde	8354 Apr 04 14:21	3°♊00'05		conjunction	8360 Jan 15 12:54	27°♊02'06	-0°01'58
opposition	8354 Jun 17 08:56	0°♊57'20	0°24'15	minimum elong	8360 Jan 15 12:54	27°♊02'06	0°01'48
min. Earth dist.	8354 Jun 18 00:31	0°♊55'39	17.35818 AU	behind sun begin	8360 Jan 15 06:13	27°♊01'05	

behind sun end	8360 Jan 15 19:36	27°30'08"		min. Earth dist.	8365 Aug 08 13:47	22°39'16"	17.65063 AU
max. Earth dist.	8360 Jan 14 23:56	27°30'05"	19.43050 AU	direct	8365 Oct 24 04:09	20°35'38"	
morning rise	8360 Jan 31 18:25	28°30'24"		evening set	8366 Jan 27 03:26	23°59'59"	
	8360 Mar 07 06:15	0°					
retrograde	8360 May 02 09:01	1°23'35"		conjunction	8366 Feb 12 06:20	24°59'33"	-0°26'43"
	8360 Jun 30 06:22	30°8'30"		minimum elong	8366 Feb 12 06:20	24°59'33"	0°26'37"
opposition	8360 Jul 15 09:17	29°32'13"	-0°04'30"	max. Earth dist.	8366 Feb 11 23:48	24°58'32"	19.67501 AU
min. Earth dist.	8360 Jul 15 20:50	29°32'01"	17.44579 AU	morning rise	8366 Feb 28 06:11	25°58'41"	
direct	8360 Sep 29 19:09	27°31'06"		retrograde	8366 May 30 15:13	29°16'32"	
	8360 Dec 22 01:18	0°		opposition	8366 Aug 13 06:15	27°15'39"	-0°31'43"
evening set	8361 Jan 03 05:48	0°43'31"		min. Earth dist.	8366 Aug 13 12:16	27°15'00"	17.69993 AU
				direct	8366 Oct 29 03:45	25°11'35"	
conjunction	8361 Jan 19 13:29	1°44'21"	-0°06'20"	evening set	8367 Feb 01 00:37	28°35'05"	
minimum elong	8361 Jan 19 13:29	1°44'21"	0°06'11"				
behind sun begin	8361 Jan 19 07:09	1°43'23"		conjunction	8367 Feb 17 02:24	29°34'21"	-0°30'20"
behind sun end	8361 Jan 19 19:49	1°45'19"		minimum elong	8367 Feb 17 02:24	29°34'21"	0°30'13"
max. Earth dist.	8361 Jan 19 01:04	1°42'25"	19.46221 AU	max. Earth dist.	8367 Feb 16 19:53	29°33'21"	19.72551 AU
morning rise	8361 Feb 04 18:09	2°44'43"			8367 Feb 24 00:11	0°	
retrograde	8361 May 07 08:29	6°05'12"		morning rise	8367 Mar 05 01:35	0°33'13"	
opposition	8361 Jul 20 09:08	4°03'23"	-0°09'21"	retrograde	8367 Jun 04 11:14	3°50'27"	
min. Earth dist.	8361 Jul 20 18:52	4°02'20"	17.47967 AU	opposition	8367 Aug 18 04:25	1°49'42"	-0°35'37"
direct	8361 Oct 04 23:01	1°58'08"		min. Earth dist.	8367 Aug 18 08:49	1°49'14"	17.75159 AU
evening set	8362 Jan 08 06:46	5°25'07"			8367 Oct 10 12:16	30°	
				direct	8367 Nov 03 03:19	29°45'52"	
conjunction	8362 Jan 24 13:34	6°25'44"	-0°10'37"		8367 Nov 26 11:03	0°	
minimum elong	8362 Jan 24 13:34	6°25'44"	0°10'28"	evening set	8368 Feb 05 20:38	3°08'27"	
behind sun begin	8362 Jan 24 08:21	6°24'56"					
behind sun end	8362 Jan 24 18:48	6°26'31"		conjunction	8368 Feb 21 21:42	4°07'26"	-0°33'44"
max. Earth dist.	8362 Jan 24 02:49	6°24'04"	19.49817 AU	minimum elong	8368 Feb 21 21:41	4°07'26"	0°33'39"
morning rise	8362 Feb 09 17:08	7°25'53"		max. Earth dist.	8368 Feb 21 17:33	4°06'48"	19.77824 AU
retrograde	8362 May 12 04:51	10°45'54"		morning rise	8368 Mar 08 19:56	5°06'02"	
opposition	8362 Jul 25 09:12	8°44'18"	-0°14'06"	retrograde	8368 Jun 08 05:06	8°22'36"	
min. Earth dist.	8362 Jul 25 19:05	8°43'14"	17.51763 AU	opposition	8368 Aug 22 02:13	6°21'59"	-0°39'17"
direct	8362 Oct 09 23:44	6°39'17"		min. Earth dist.	8368 Aug 22 05:50	6°21'36"	17.80535 AU
evening set	8363 Jan 13 07:02	10°05'44"		direct	8368 Nov 07 01:48	4°18'25"	
				evening set	8369 Feb 09 15:55	7°40'01"	
conjunction	8363 Jan 29 12:43	11°06'05"	-0°14'50"				
minimum elong	8363 Jan 29 12:43	11°06'05"	0°14'42"	conjunction	8369 Feb 25 15:52	8°38'41"	-0°36'55"
behind sun begin	8363 Jan 29 09:58	11°05'40"		minimum elong	8369 Feb 25 15:52	8°38'41"	0°36'51"
behind sun end	8363 Jan 29 15:29	11°06'30"		max. Earth dist.	8369 Feb 25 12:03	8°38'06"	19.83319 AU
max. Earth dist.	8363 Jan 29 02:12	11°04'27"	19.53800 AU	morning rise	8369 Mar 13 13:29	9°37'00"	
morning rise	8363 Feb 14 15:30	12°06'00"		retrograde	8369 Jun 12 23:47	12°52'57"	
	8363 Apr 16 15:48	15°		opposition	8369 Aug 26 23:23	10°52'25"	-0°42'40"
retrograde	8363 May 17 03:22	15°25'32"		min. Earth dist.	8369 Aug 27 01:25	10°52'13"	17.86161 AU
	8363 Jun 17 06:20	15°		direct	8369 Nov 12 00:06	8°49'07"	
opposition	8363 Jul 30 08:53	13°24'08"	-0°18'44"	evening set	8370 Feb 14 10:05	12°09'44"	
min. Earth dist.	8363 Jul 30 16:56	13°23'16"	17.55913 AU				
direct	8363 Oct 15 02:30	11°19'20"		conjunction	8370 Mar 02 09:18	13°08'06"	-0°39'50"
evening set	8364 Jan 18 06:35	14°45'10"		minimum elong	8370 Mar 02 09:18	13°08'06"	0°39'47"
	8364 Jan 22 07:39	15°		max. Earth dist.	8370 Mar 02 08:04	13°07'54"	19.89068 AU
conjunction	8364 Feb 03 11:26	15°45'17"	-0°18'56"	morning rise	8370 Mar 18 06:01	14°06'08"	
minimum elong	8364 Feb 03 11:26	15°45'17"	0°18'49"	retrograde	8370 Jun 17 16:29	17°21'26"	
max. Earth dist.	8364 Feb 03 02:49	15°43'57"	19.58099 AU	opposition	8370 Aug 31 20:09	15°21'03"	-0°45'46"
morning rise	8364 Feb 19 13:07	16°44'56"		min. Earth dist.	8370 Aug 31 20:45	15°20'59"	17.92035 AU
retrograde	8364 May 20 23:06	20°03'56"		direct	8370 Nov 16 21:32	13°18'03"	
opposition	8364 Aug 03 08:17	18°02'43"	-0°23'15"	evening set	8371 Feb 19 03:20	16°37'37"	
min. Earth dist.	8364 Aug 03 16:24	18°01'51"	17.60356 AU				
direct	8364 Oct 19 02:48	15°58'10"		conjunction	8371 Mar 07 01:34	17°35'41"	-0°42'30"
evening set	8365 Jan 22 05:33	19°23'19"		minimum elong	8371 Mar 07 01:34	17°35'41"	0°42'28"
				max. Earth dist.	8371 Mar 07 00:57	17°35'36"	19.95071 AU
conjunction	8365 Feb 07 09:16	20°23'08"	-0°22'54"	morning rise	8371 Mar 22 21:46	18°33'27"	
minimum elong	8365 Feb 07 09:16	20°23'08"	0°22'46"	retrograde	8371 Jun 22 09:51	21°48'08"	
max. Earth dist.	8365 Feb 07 00:33	20°21'48"	19.62681 AU	opposition	8371 Sep 05 16:16	19°47'53"	-0°48'34"
morning rise	8365 Feb 23 10:12	21°22'33"		min. Earth dist.	8371 Sep 05 15:24	19°47'58"	17.98169 AU
retrograde	8365 May 25 20:20	24°40'59"		direct	8371 Nov 21 18:17	17°45'14"	
opposition	8365 Aug 08 07:24	22°39'56"	-0°27'35"	evening set	8372 Feb 23 19:39	21°03'46"	

conjunction	8372 Mar 10 17:16	22° $\text{H}$ 01'32 -0°44'54	retrograde	8378 Jul 22 13:17	22° $\text{Y}$ 09'21
minimum elong	8372 Mar 10 17:15	22° $\text{H}$ 01'32 0°44'51	opposition	8378 Oct 06 21:26	20° $\text{Y}$ 10'21 -0°59'14
max. Earth dist.	8372 Mar 10 19:03	22° $\text{H}$ 01'49 20.01312 AU	min. Earth dist.	8378 Oct 06 12:13	20° $\text{Y}$ 11'17 18.42988 AU
morning rise	8372 Mar 26 12:43	22° $\text{H}$ 59'01	direct	8378 Dec 23 00:17	18° $\text{Y}$ 10'21
retrograde	8372 Jun 26 01:12	26° $\text{H}$ 13'05	evening set	8379 Mar 25 15:40	21° $\text{Y}$ 21'27
opposition	8372 Sep 09 11:40	24° $\text{H}$ 13'02 -0°51'03			
min. Earth dist.	8372 Sep 09 09:12	24° $\text{H}$ 13'17 18.04497 AU	conjunction	8379 Apr 10 09:10	22° $\text{Y}$ 17'19 -0°53'35
direct	8372 Nov 25 14:48	22° $\text{H}$ 10'46	minimum elong	8379 Apr 10 09:09	22° $\text{Y}$ 17'19 0°53'39
evening set	8373 Feb 27 11:17	25° $\text{H}$ 28'15	max. Earth dist.	8379 Apr 10 18:24	22° $\text{Y}$ 18'42 20.45935 AU
			morning rise	8379 Apr 26 02:05	23° $\text{Y}$ 13'07
conjunction	8373 Mar 15 08:00	26° $\text{H}$ 25'44 -0°47'00	retrograde	8379 Jul 27 00:25	26° $\text{Y}$ 23'13
minimum elong	8373 Mar 15 08:00	26° $\text{H}$ 25'44 0°46'59	opposition	8379 Oct 11 13:07	24° $\text{Y}$ 24'18 -0°59'28
max. Earth dist.	8373 Mar 15 10:26	26° $\text{H}$ 26'06 20.07724 AU	min. Earth dist.	8379 Oct 11 04:03	24° $\text{Y}$ 25'13 18.48851 AU
morning rise	8373 Mar 31 03:00	27° $\text{H}$ 22'57	direct	8379 Dec 27 14:09	22° $\text{Y}$ 24'36
	8373 May 24 09:25	0° $\text{Y}$	evening set	8380 Mar 29 01:49	25° $\text{Y}$ 34'39
retrograde	8373 Jun 30 16:52	0° $\text{Y}$ 36'25			
	8373 Aug 08 02:05	30° $\text{R}$ $\text{H}$	conjunction	8380 Apr 13 19:03	26° $\text{Y}$ 30'17 -0°53'40
opposition	8373 Sep 14 06:45	28° $\text{H}$ 36'33 -0°53'14	minimum elong	8380 Apr 13 19:03	26° $\text{Y}$ 30'17 0°53'45
min. Earth dist.	8373 Sep 14 03:14	28° $\text{H}$ 36'55 18.10982 AU	max. Earth dist.	8380 Apr 14 05:12	26° $\text{Y}$ 31'47 20.51658 AU
direct	8373 Nov 30 09:53	26° $\text{H}$ 34'41	morning rise	8380 Apr 29 11:50	27° $\text{Y}$ 25'52
evening set	8374 Mar 04 01:47	29° $\text{H}$ 51'07		8380 Jun 23 03:03	0° $\text{B}$
	8374 Mar 06 13:39	0° $\text{Y}$	retrograde	8380 Jul 30 12:48	0° $\text{B}$ 35'26
				8380 Sep 07 02:50	30° $\text{R}$ $\text{Y}$
conjunction	8374 Mar 19 21:56	0° $\text{Y}$ 48'18 -0°48'50	opposition	8380 Oct 15 03:55	28° $\text{Y}$ 36'35 -0°59'22
minimum elong	8374 Mar 19 21:56	0° $\text{Y}$ 48'18 0°48'49	min. Earth dist.	8380 Oct 14 17:12	28° $\text{Y}$ 37'40 18.54424 AU
max. Earth dist.	8374 Mar 20 02:33	0° $\text{Y}$ 49'00 20.14253 AU	direct	8380 Dec 31 05:17	26° $\text{Y}$ 37'09
morning rise	8374 Apr 04 16:20	1° $\text{Y}$ 45'15	evening set	8381 Apr 02 11:14	29° $\text{Y}$ 46'10
retrograde	8374 Jul 05 07:34	4° $\text{Y}$ 58'08		8381 Apr 06 10:22	0° $\text{B}$
opposition	8374 Sep 19 01:13	2° $\text{Y}$ 58'29 -0°55'05			
min. Earth dist.	8374 Sep 18 19:59	2° $\text{Y}$ 59'01 18.17528 AU	conjunction	8381 Apr 18 04:11	0° $\text{B}$ 41'36 -0°53'27
direct	8374 Dec 05 05:15	0° $\text{Y}$ 57'02	minimum elong	8381 Apr 18 04:10	0° $\text{B}$ 41'36 0°53'32
evening set	8375 Mar 08 15:44	4° $\text{Y}$ 12'23	max. Earth dist.	8381 Apr 18 14:58	0° $\text{B}$ 43'11 20.57091 AU
			morning rise	8381 May 03 20:57	1° $\text{B}$ 37'00
conjunction	8375 Mar 24 11:08	5° $\text{Y}$ 09'17 -0°50'22	retrograde	8381 Aug 03 22:47	4° $\text{B}$ 46'03
minimum elong	8375 Mar 24 11:08	5° $\text{Y}$ 09'17 0°50'22	opposition	8381 Oct 19 18:22	2° $\text{B}$ 47'14 -0°58'57
max. Earth dist.	8375 Mar 24 16:24	5° $\text{Y}$ 10'05 20.20805 AU	min. Earth dist.	8381 Oct 19 07:50	2° $\text{B}$ 48'18 18.59733 AU
morning rise	8375 Apr 09 05:12	6° $\text{Y}$ 05'59	direct	8382 Jan 04 17:56	0° $\text{B}$ 48'02
retrograde	8375 Jul 09 21:19	9° $\text{Y}$ 18'18	evening set	8382 Apr 06 19:43	3° $\text{B}$ 56'03
opposition	8375 Sep 23 19:04	7° $\text{Y}$ 18'50 -0°56'37			
min. Earth dist.	8375 Sep 23 13:20	7° $\text{Y}$ 19'25 18.24083 AU	conjunction	8382 Apr 22 12:32	4° $\text{B}$ 51'15 -0°52'57
direct	8375 Dec 09 22:17	5° $\text{Y}$ 17'46	minimum elong	8382 Apr 22 12:32	4° $\text{B}$ 51'15 0°53'02
evening set	8376 Mar 12 04:48	8° $\text{Y}$ 32'04	max. Earth dist.	8382 Apr 23 00:20	4° $\text{B}$ 53'00 20.62278 AU
			morning rise	8382 May 08 05:20	5° $\text{B}$ 46'30
conjunction	8376 Mar 27 23:45	9° $\text{Y}$ 28'42 -0°51'37	retrograde	8382 Aug 08 10:12	8° $\text{B}$ 55'04
minimum elong	8376 Mar 27 23:44	9° $\text{Y}$ 28'42 0°51'39	opposition	8382 Oct 24 08:00	6° $\text{B}$ 56'16 -0°58'14
max. Earth dist.	8376 Mar 28 06:39	9° $\text{Y}$ 29'44 20.27326 AU	min. Earth dist.	8382 Oct 23 19:35	6° $\text{B}$ 57'31 18.64796 AU
morning rise	8376 Apr 12 17:21	10° $\text{Y}$ 25'09	direct	8383 Jan 09 07:27	4° $\text{B}$ 57'18
retrograde	8376 Jul 13 11:29	13° $\text{Y}$ 36'53	evening set	8383 Apr 11 03:44	8° $\text{B}$ 04'21
opposition	8376 Sep 27 12:22	11° $\text{Y}$ 37'36 -0°57'49			
min. Earth dist.	8376 Sep 27 05:00	11° $\text{Y}$ 38'21 18.30547 AU	conjunction	8383 Apr 26 20:23	8° $\text{B}$ 59'23 -0°52'10
direct	8376 Dec 13 16:25	9° $\text{Y}$ 36'55	minimum elong	8383 Apr 26 20:23	8° $\text{B}$ 59'23 0°52'17
evening set	8377 Mar 16 17:12	12° $\text{Y}$ 50'09	max. Earth dist.	8383 Apr 27 09:04	9° $\text{B}$ 01'14 20.67223 AU
			morning rise	8383 May 12 13:17	9° $\text{B}$ 54'28
conjunction	8377 Apr 01 11:30	13° $\text{Y}$ 46'30 -0°52'34	retrograde	8383 Aug 12 19:06	13° $\text{B}$ 02'35
minimum elong	8377 Apr 01 11:30	13° $\text{Y}$ 46'30 0°52'36	opposition	8383 Oct 28 21:00	11° $\text{B}$ 03'49 -0°57'13
max. Earth dist.	8377 Apr 01 18:59	13° $\text{Y}$ 47'38 20.33719 AU	min. Earth dist.	8383 Oct 28 08:46	11° $\text{B}$ 05'02 18.69647 AU
morning rise	8377 Apr 17 04:50	14° $\text{Y}$ 42'44	direct	8384 Jan 13 18:25	9° $\text{B}$ 05'04
retrograde	8377 Jul 17 23:48	17° $\text{Y}$ 53'55	evening set	8384 Apr 14 11:07	12° $\text{B}$ 11'14
opposition	8377 Oct 02 05:17	15° $\text{Y}$ 54'47 -0°58'41			
min. Earth dist.	8377 Oct 01 21:44	15° $\text{Y}$ 55'33 18.36873 AU	conjunction	8384 Apr 30 03:44	13° $\text{B}$ 06'06 -0°51'07
direct	8377 Dec 18 07:37	13° $\text{Y}$ 54'27	minimum elong	8384 Apr 30 03:44	13° $\text{B}$ 06'06 0°51'14
evening set	8378 Mar 21 04:48	17° $\text{Y}$ 06'37	max. Earth dist.	8384 Apr 30 17:15	13° $\text{B}$ 08'05 20.71973 AU
			morning rise	8384 May 15 20:46	14° $\text{B}$ 01'03
conjunction	8378 Apr 05 22:44	18° $\text{Y}$ 02'43 -0°53'13		8384 Jun 02 17:54	15° $\text{B}$
minimum elong	8378 Apr 05 22:44	18° $\text{Y}$ 02'43 0°53'17	retrograde	8384 Aug 16 06:03	17° $\text{B}$ 08'47
max. Earth dist.	8378 Apr 06 07:29	18° $\text{Y}$ 04'02 20.39948 AU	opposition	8384 Nov 01 09:25	15° $\text{B}$ 10'03 -0°55'54
morning rise	8378 Apr 21 15:46	18° $\text{Y}$ 58'43	min. Earth dist.	8384 Oct 31 19:15	15° $\text{B}$ 11'28 18.74290 AU

	8384 Nov 05 13:26	15°♄	conjunction	8391 May 28 21:44	11°♄27'40 -0°37'14
direct	8385 Jan 17 06:17	13°♄11'34	minimum elong	8391 May 28 21:44	11°♄27'40 0°37'23
	8385 Mar 25 20:42	15°♄	max. Earth dist.	8391 May 29 14:48	11°♄30'08 20.97349 AU
evening set	8385 Apr 18 17:54	16°♄16'53	morning rise	8391 Jun 13 17:19	12°♄22'08
			retrograde	8391 Sep 14 21:50	15°♄28'25
conjunction	8385 May 04 10:28	17°♄11'36 -0°49'49	opposition	8391 Dec 01 12:38	13°♄30'04 -0°39'37
minimum elong	8385 May 04 10:28	17°♄11'36 0°49'58	min. Earth dist.	8391 Nov 30 21:01	13°♄31'38 18.98425 AU
max. Earth dist.	8385 May 05 00:57	17°♄13'43 20.76502 AU	direct	8392 Feb 15 19:35	11°♄33'10
morning rise	8385 May 20 03:42	18°♄06'26	evening set	8392 May 16 09:03	14°♄34'16
retrograde	8385 Aug 20 14:21	21°♄13'50			
opposition	8385 Nov 05 21:32	19°♄15'10 -0°54'18	conjunction	8392 Jun 01 03:14	15°♄28'27 -0°34'26
min. Earth dist.	8385 Nov 05 07:35	19°♄16'34 18.78715 AU	minimum elong	8392 Jun 01 03:14	15°♄28'27 0°34'37
direct	8386 Jan 21 15:42	17°♄16'57	max. Earth dist.	8392 Jun 01 19:50	15°♄30'50 20.99318 AU
evening set	8386 Apr 23 00:17	20°♄21'29	morning rise	8392 Jun 16 23:24	16°♄22'54
			retrograde	8392 Sep 18 07:06	19°♄29'06
conjunction	8386 May 08 16:57	21°♄16'04 -0°48'16	opposition	8392 Dec 04 22:02	17°♄30'44 -0°36'26
minimum elong	8386 May 08 16:57	21°♄16'04 0°48'24	min. Earth dist.	8392 Dec 04 05:38	17°♄32'22 19.00121 AU
max. Earth dist.	8386 May 09 08:05	21°♄18'17 20.80815 AU	direct	8393 Feb 19 04:31	15°♄33'55
morning rise	8386 May 24 10:27	22°♄10'48	evening set	8393 May 20 13:55	18°♄34'37
retrograde	8386 Aug 25 01:22	25°♄17'55			
opposition	8386 Nov 10 08:53	23°♄19'19 -0°52'27	conjunction	8393 Jun 05 08:34	19°♄28'46 -0°31'29
min. Earth dist.	8386 Nov 09 17:12	23°♄20'53 18.82894 AU	minimum elong	8393 Jun 05 08:34	19°♄28'46 0°31'39
direct	8387 Jan 26 02:14	21°♄21'21	max. Earth dist.	8393 Jun 06 01:16	19°♄31'10 21.00738 AU
evening set	8387 Apr 27 06:17	24°♄25'11	morning rise	8393 Jun 21 05:17	20°♄23'14
			retrograde	8393 Sep 22 14:42	23°♄29'23
conjunction	8387 May 12 23:04	25°♄19'40 -0°46'29	opposition	8393 Dec 09 07:17	21°♄30'56 -0°33'05
minimum elong	8387 May 12 23:05	25°♄19'40 0°46'39	min. Earth dist.	8393 Dec 08 16:02	21°♄32'27 19.01275 AU
max. Earth dist.	8387 May 13 15:00	25°♄21'59 20.84847 AU	direct	8394 Feb 23 11:29	19°♄34'09
morning rise	8387 May 28 16:55	26°♄14'19	evening set	8394 May 24 18:47	22°♄34'29
retrograde	8387 Aug 29 09:12	29°♄21'11			
opposition	8387 Nov 14 20:01	27°♄22'40 -0°50'20	conjunction	8394 Jun 09 13:56	23°♄28'38 -0°28'23
min. Earth dist.	8387 Nov 14 04:53	27°♄24'11 18.86777 AU	minimum elong	8394 Jun 09 13:56	23°♄28'38 0°28'34
direct	8388 Jan 30 10:09	25°♄24'58	max. Earth dist.	8394 Jun 10 06:05	23°♄30'58 21.01647 AU
evening set	8388 Apr 30 11:57	28°♄28'08	morning rise	8394 Jun 25 11:21	24°♄23'08
			retrograde	8394 Sep 26 23:23	27°♄29'14
conjunction	8388 May 16 04:55	29°♄22'31 -0°44'29	opposition	8394 Dec 13 15:53	25°♄30'40 -0°29'34
minimum elong	8388 May 16 04:55	29°♄22'31 0°44'38	min. Earth dist.	8394 Dec 12 23:59	25°♄32'15 19.01932 AU
max. Earth dist.	8388 May 16 21:11	29°♄24'53 20.88572 AU	direct	8395 Feb 27 19:11	23°♄33'52
	8388 May 26 23:27	0°♄	evening set	8395 May 28 23:34	26°♄33'54
morning rise	8388 May 31 23:08	0°♄17'06			
retrograde	8388 Sep 01 19:53	3°♄23'45	conjunction	8395 Jun 13 19:16	27°♄28'05 -0°25'08
opposition	8388 Nov 18 06:35	1°♄25'19 -0°47'59	minimum elong	8395 Jun 13 19:16	27°♄28'05 0°25'19
min. Earth dist.	8388 Nov 17 14:02	1°♄26'58 18.90321 AU	max. Earth dist.	8395 Jun 14 11:33	27°♄30'25 21.02064 AU
	8388 Dec 28 01:05	30°♄	morning rise	8395 Jun 29 17:19	28°♄22'36
direct	8389 Feb 02 20:16	29°♄27'52		8395 Jul 31 09:17	0°♄
	8389 Mar 10 15:46	0°♄	retrograde	8395 Oct 01 06:17	1°♄28'42
evening set	8389 May 04 17:28	2°♄30'27		8395 Dec 05 09:18	30°♄
			min. Earth dist.	8395 Dec 17 09:35	29°♄31'29 19.02130 AU
conjunction	8389 May 20 10:38	3°♄24'45 -0°42'16	opposition	8395 Dec 18 00:25	29°♄30'00 -0°25'54
minimum elong	8389 May 20 10:38	3°♄24'45 0°42'25	direct	8396 Mar 03 01:47	27°♄33'11
max. Earth dist.	8389 May 21 03:31	3°♄27'12 20.91925 AU		8396 May 22 03:50	0°♄
morning rise	8389 Jun 05 05:15	4°♄19'17	evening set	8396 Jun 01 04:13	0°♄32'58
retrograde	8389 Sep 06 03:51	7°♄25'47			
opposition	8389 Nov 22 17:03	5°♄27'24 -0°45'24	conjunction	8396 Jun 17 00:26	1°♄27'11 -0°21'46
min. Earth dist.	8389 Nov 22 01:18	5°♄28'58 18.93481 AU	minimum elong	8396 Jun 17 00:26	1°♄27'11 0°21'57
direct	8390 Feb 07 03:06	3°♄30'11	max. Earth dist.	8396 Jun 17 16:18	1°♄29'27 21.02067 AU
evening set	8390 May 08 22:41	6°♄32'12	morning rise	8396 Jul 02 23:12	2°♄21'45
			retrograde	8396 Oct 04 15:01	5°♄27'54
conjunction	8390 May 24 16:10	7°♄26'27 -0°39'50	opposition	8396 Dec 21 08:38	3°♄29'03 -0°22'07
minimum elong	8390 May 24 16:10	7°♄26'27 0°40'01	min. Earth dist.	8396 Dec 20 17:01	3°♄30'37 19.01938 AU
max. Earth dist.	8390 May 25 09:01	7°♄28'53 20.94879 AU	direct	8397 Mar 07 08:45	1°♄32'12
morning rise	8390 Jun 09 11:17	8°♄20'56	evening set	8397 Jun 05 09:03	4°♄31'49
retrograde	8390 Sep 10 13:49	11°♄27'19			
min. Earth dist.	8390 Nov 26 10:13	9°♄30'39 18.96203 AU	conjunction	8397 Jun 21 05:52	5°♄26'05 -0°18'18
opposition	8390 Nov 27 02:59	9°♄28'58 -0°42'37	minimum elong	8397 Jun 21 05:52	5°♄26'05 0°18'30
direct	8391 Feb 11 12:57	7°♄31'56	max. Earth dist.	8397 Jun 21 22:02	5°♄28'24 21.01686 AU
evening set	8391 May 13 03:56	10°♄33'28	morning rise	8397 Jul 07 05:17	6°♄20'44



retrograde	8397 Oct 08 21:51	9°☾26'58	conjunction	8403 Jul 15 20:07	29°☾25'24	0°03'54
opposition	8397 Dec 25 16:45	7°☾28'00 -0°18'14	minimum elong	8403 Jul 15 20:08	29°☾25'24	0°03'44
min. Earth dist.	8397 Dec 25 02:06	7°☾29'28 19.01386 AU	behind sun begin	8403 Jul 15 13:34	29°☾24'29	
direct	8398 Mar 11 14:29	5°☾31'06	behind sun end	8403 Jul 16 02:42	29°☾26'19	
evening set	8398 Jun 09 13:56	8°☾30'38	max. Earth dist.	8403 Jul 16 10:00	29°☾27'23	20.92188 AU
				8403 Jul 25 21:21	0°♈	
conjunction	8398 Jun 25 11:24	9°☾24'58 -0°14'45	morning rise	8403 Aug 01 00:10	0°♈20'46	
minimum elong	8398 Jun 25 11:24	9°☾24'58 0°14'56	retrograde	8403 Nov 03 04:07	3°♈28'41	
behind sun begin	8398 Jun 25 08:51	9°☾24'37	opposition	8404 Jan 19 16:34	1°♈29'13	0°06'19
behind sun end	8398 Jun 25 13:57	9°☾25'20	min. Earth dist.	8404 Jan 19 04:47	1°♈30'24	18.90784 AU
max. Earth dist.	8398 Jun 26 03:00	9°☾27'12 21.00972 AU		8404 Mar 01 07:05	30°♈☾	
morning rise	8398 Jul 11 11:37	10°☾19'42	direct	8404 Apr 04 01:49	29°☾32'01	
retrograde	8398 Oct 13 07:25	13°☾26'05		8404 May 07 02:49	0°♈	
min. Earth dist.	8398 Dec 29 09:23	11°☾28'32 19.00498 AU	evening set	8404 Jul 03 02:16	2°♈32'41	
opposition	8398 Dec 30 00:37	11°☾27'00 -0°14'16				
direct	8399 Mar 15 20:57	9°☾30'03	conjunction	8404 Jul 19 04:01	3°♈27'47	0°07'38
evening set	8399 Jun 13 19:05	12°☾29'36	minimum elong	8404 Jul 19 04:00	3°♈27'47	0°07'28
			behind sun begin	8404 Jul 18 21:57	3°♈26'56	
conjunction	8399 Jun 29 17:12	13°☾24'01 -0°11'08	behind sun end	8404 Jul 19 10:03	3°♈28'38	
minimum elong	8399 Jun 29 17:12	13°☾24'01 0°11'19	max. Earth dist.	8404 Jul 19 16:23	3°♈29'33	20.89263 AU
behind sun begin	8399 Jun 29 12:21	13°☾23'20	morning rise	8404 Aug 04 08:53	4°♈23'19	
behind sun end	8399 Jun 29 22:04	13°☾24'42	retrograde	8404 Nov 06 15:17	7°♈31'41	
max. Earth dist.	8399 Jun 30 09:00	13°☾26'17 20.99906 AU	opposition	8405 Jan 23 01:00	5°♈32'06	0°10'28
morning rise	8399 Jul 15 18:06	14°☾18'50	min. Earth dist.	8405 Jan 22 13:36	5°♈33'16	18.87628 AU
retrograde	8399 Oct 17 14:18	17°☾25'26	direct	8405 Apr 08 08:48	3°♈34'47	
opposition	8400 Jan 03 08:29	15°☾26'16 -0°10'13	evening set	8405 Jul 07 10:08	6°♈35'53	
min. Earth dist.	8400 Jan 02 18:18	15°☾27'41 18.99265 AU				
direct	8400 Mar 19 02:09	13°☾29'17	conjunction	8405 Jul 23 12:42	7°♈31'10	0°11'21
evening set	8400 Jun 17 00:29	16°☾28'53	minimum elong	8405 Jul 23 12:42	7°♈31'09	0°11'12
			behind sun begin	8405 Jul 23 07:47	7°♈30'28	
conjunction	8400 Jul 02 23:16	17°☾23'25 -0°07'28	behind sun end	8405 Jul 23 17:36	7°♈31'51	
minimum elong	8400 Jul 02 23:17	17°☾23'25 0°07'38	max. Earth dist.	8405 Jul 24 00:30	7°♈32'51	20.85861 AU
behind sun begin	8400 Jul 02 17:17	17°☾22'34	morning rise	8405 Aug 08 18:17	8°♈26'53	
behind sun end	8400 Jul 03 05:16	17°☾24'15	retrograde	8405 Nov 11 01:09	11°♈35'41	
max. Earth dist.	8400 Jul 03 14:22	17°☾25'34 20.98520 AU	opposition	8406 Jan 27 09:36	9°♈35'58	0°14'35
morning rise	8400 Jul 19 01:00	18°☾18'21	min. Earth dist.	8406 Jan 26 23:47	9°♈36'58	18.83986 AU
retrograde	8400 Oct 21 00:41	21°☾25'12	direct	8406 Apr 12 15:04	7°♈38'30	
opposition	8401 Jan 06 16:22	19°☾25'57 -0°06'07	evening set	8406 Jul 11 18:33	10°♈40'03	
min. Earth dist.	8401 Jan 06 01:49	19°☾27'25 18.97706 AU				
direct	8401 Mar 23 08:27	17°☾28'55	conjunction	8406 Jul 27 21:53	11°♈35'31	0°15'02
evening set	8401 Jun 21 06:07	20°☾28'41	minimum elong	8406 Jul 27 21:53	11°♈35'31	0°14'53
			behind sun begin	8406 Jul 27 19:23	11°♈35'10	
conjunction	8401 Jul 07 05:41	21°☾23'20 -0°03'46	behind sun end	8406 Jul 28 00:24	11°♈35'52	
minimum elong	8401 Jul 07 05:40	21°☾23'20 0°03'56	max. Earth dist.	8406 Jul 28 07:46	11°♈36'56	20.81995 AU
behind sun begin	8401 Jul 06 23:08	21°☾22'25	morning rise	8406 Aug 13 04:23	12°♈31'25	
behind sun end	8401 Jul 07 12:13	21°☾24'15		8406 Oct 05 12:37	15°♈	
max. Earth dist.	8401 Jul 07 20:52	21°☾25'30 20.96782 AU	retrograde	8406 Nov 15 12:51	15°♈40'41	
morning rise	8401 Jul 23 08:09	22°☾18'24		8406 Dec 27 09:47	15°♈☾	
retrograde	8401 Oct 25 08:24	25°☾25'34	opposition	8407 Jan 31 18:23	13°♈40'48	0°18'38
min. Earth dist.	8402 Jan 10 11:05	23°☾27'35 18.95786 AU	min. Earth dist.	8407 Jan 31 09:13	13°♈41'44	18.79887 AU
opposition	8402 Jan 11 00:25	23°☾26'14 -0°01'59	direct	8407 Apr 16 22:43	11°♈43'06	
direct	8402 Mar 27 13:43	21°☾29'11	evening set	8407 Jul 16 03:26	14°♈45'10	
evening set	8402 Jun 25 12:22	24°☾29'10		8407 Jul 20 12:04	15°♈	
asc. node	8402 Jul 05 10:52	25°☾03'00				
			conjunction	8407 Aug 01 07:38	15°♈40'50	0°18'39
conjunction	8402 Jul 11 12:38	25°☾23'57 0°00'03	minimum elong	8407 Aug 01 07:37	15°♈40'50	0°18'32
minimum elong	8402 Jul 11 12:38	25°☾23'57 0°00'07	max. Earth dist.	8407 Aug 01 16:59	15°♈42'10	20.77671 AU
behind sun begin	8402 Jul 11 06:13	25°☾23'03	morning rise	8407 Aug 17 14:46	16°♈36'56	
behind sun end	8402 Jul 11 19:02	25°☾24'50	retrograde	8407 Nov 19 23:10	19°♈46'41	
max. Earth dist.	8402 Jul 12 02:45	25°☾25'58 20.94689 AU	opposition	8408 Feb 05 03:22	17°♈46'35	0°22'37
morning rise	8402 Jul 27 15:58	26°☾19'10	min. Earth dist.	8408 Feb 04 19:39	17°♈47'23	18.75360 AU
retrograde	8402 Oct 29 19:15	29°☾26'41	direct	8408 Apr 20 05:29	15°♈48'39	
opposition	8403 Jan 15 08:18	27°☾27'17 0°02'10	evening set	8408 Jul 19 12:56	18°♈51'16	
min. Earth dist.	8403 Jan 14 19:03	27°☾28'37 18.93497 AU				
direct	8403 Mar 31 20:08	25°☾30'09	conjunction	8408 Aug 04 17:51	19°♈47'08	0°22'12
evening set	8403 Jun 29 19:06	28°☾30'28	minimum elong	8408 Aug 04 17:51	19°♈47'08	0°22'05
			max. Earth dist.	8408 Aug 05 01:24	19°♈48'13	20.72979 AU

morning rise	8408 Aug 21 01:53	20° $\Omega$ 43'27	direct	8415 May 19 19:42	15° $\eta$ 00'36	
retrograde	8408 Nov 23 11:45	23° $\Omega$ 53'42	evening set	8415 Aug 19 02:55	18° $\eta$ 08'46	
opposition	8409 Feb 08 12:33	21° $\Omega$ 53'23 0°26'30				
min. Earth dist.	8409 Feb 08 05:29	21° $\Omega$ 54'06 18.70508 AU	conjunction	8415 Sep 04 13:20	19° $\eta$ 06'24 0°43'13	
direct	8409 Apr 24 13:44	19° $\Omega$ 55'09	minimum elong	8415 Sep 04 13:20	19° $\eta$ 06'24 0°43'11	
evening set	8409 Jul 23 22:56	22° $\Omega$ 58'23	max. Earth dist.	8415 Sep 04 14:34	19° $\eta$ 06'35 20.34459 AU	
			morning rise	8415 Sep 21 01:54	20° $\eta$ 04'24	
conjunction	8409 Aug 09 04:46	23° $\Omega$ 54'29 0°25'39	retrograde	8415 Dec 24 13:29	23° $\eta$ 18'49	
minimum elong	8409 Aug 09 04:46	23° $\Omega$ 54'29 0°25'33	opposition	8416 Mar 09 14:45	21° $\eta$ 17'15 0°49'13	
max. Earth dist.	8409 Aug 09 12:04	23° $\Omega$ 55'32 20.67973 AU	min. Earth dist.	8416 Mar 09 14:22	21° $\eta$ 17'17 18.31519 AU	
morning rise	8409 Aug 25 13:26	24° $\Omega$ 51'02	direct	8416 May 23 07:41	19° $\eta$ 17'05	
retrograde	8409 Nov 27 23:15	28° $\Omega$ 01'47	evening set	8416 Aug 22 18:45	22° $\eta$ 26'14	
opposition	8410 Feb 12 22:01	26° $\Omega$ 01'15 0°30'16				
min. Earth dist.	8410 Feb 12 16:12	26° $\Omega$ 01'51 18.65369 AU	conjunction	8416 Sep 08 05:43	23° $\eta$ 24'09 0°45'28	
direct	8410 Apr 28 21:08	24° $\Omega$ 02'44	minimum elong	8416 Sep 08 05:43	23° $\eta$ 24'09 0°45'26	
evening set	8410 Jul 28 09:46	27° $\Omega$ 06'38	max. Earth dist.	8416 Sep 08 04:32	23° $\eta$ 23'59 20.28567 AU	
			morning rise	8416 Sep 24 18:59	24° $\eta$ 22'25	
conjunction	8410 Aug 13 16:17	28° $\Omega$ 02'58 0°28'59	retrograde	8416 Dec 28 05:19	27° $\eta$ 37'31	
minimum elong	8410 Aug 13 16:17	28° $\Omega$ 02'58 0°28'54	opposition	8417 Mar 14 03:23	25° $\eta$ 35'50 0°51'36	
max. Earth dist.	8410 Aug 13 21:45	28° $\Omega$ 03'45 20.62727 AU	min. Earth dist.	8417 Mar 14 04:31	25° $\eta$ 35'42 18.25589 AU	
morning rise	8410 Aug 30 01:48	28° $\Omega$ 59'44	direct	8417 May 27 19:12	23° $\eta$ 35'23	
	8410 Sep 17 12:57	0° $\eta$	evening set	8417 Aug 27 11:27	26° $\eta$ 45'36	
retrograde	8410 Dec 02 12:31	2° $\eta$ 11'02				
opposition	8411 Feb 17 07:37	0° $\eta$ 10'17 0°33'54	conjunction	8417 Sep 12 23:16	27° $\eta$ 43'48 0°47'28	
min. Earth dist.	8411 Feb 17 02:33	0° $\eta$ 10'48 18.60026 AU	minimum elong	8417 Sep 12 23:16	27° $\eta$ 43'48 0°47'28	
	8411 Feb 21 10:54	30° $\mathcal{R}\mathcal{L}$	max. Earth dist.	8417 Sep 12 21:44	27° $\eta$ 43'34 20.22574 AU	
direct	8411 May 03 05:51	28° $\Omega$ 11'27	morning rise	8417 Sep 29 12:52	28° $\eta$ 42'19	
	8411 Jul 09 04:10	0° $\eta$		8417 Oct 23 05:38	0° $\mathcal{L}$	
evening set	8411 Aug 01 21:11	1° $\eta$ 16'06	retrograde	8418 Jan 01 22:49	1° $\mathcal{L}$ 58'05	
				8418 Mar 17 05:37	30° $\mathcal{R}\mathcal{L}$	
conjunction	8411 Aug 18 04:35	2° $\eta$ 12'42 0°32'11	opposition	8418 Mar 18 16:38	29° $\eta$ 56'17 0°53'42	
minimum elong	8411 Aug 18 04:35	2° $\eta$ 12'41 0°32'05	min. Earth dist.	8418 Mar 18 18:44	29° $\eta$ 56'04 18.19534 AU	
max. Earth dist.	8411 Aug 18 09:56	2° $\eta$ 13'28 20.57286 AU	direct	8418 Jun 01 08:43	27° $\eta$ 55'34	
morning rise	8411 Sep 03 14:39	3° $\eta$ 09'41		8418 Aug 12 01:48	0° $\mathcal{L}$	
retrograde	8411 Dec 07 01:34	6° $\eta$ 21'33	evening set	8418 Sep 01 05:19	1° $\mathcal{L}$ 06'50	
opposition	8412 Feb 21 17:45	4° $\eta$ 20'36 0°37'21				
min. Earth dist.	8412 Feb 21 13:40	4° $\eta$ 21'02 18.54509 AU	conjunction	8418 Sep 17 17:34	2° $\mathcal{L}$ 05'19 0°49'13	
direct	8412 May 06 14:27	2° $\eta$ 21'30	minimum elong	8418 Sep 17 17:34	2° $\mathcal{L}$ 05'19 0°49'13	
evening set	8412 Aug 05 09:19	5° $\eta$ 26'56	max. Earth dist.	8418 Sep 17 13:14	2° $\mathcal{L}$ 04'41 20.16458 AU	
			morning rise	8418 Oct 04 07:45	3° $\mathcal{L}$ 04'06	
conjunction	8412 Aug 21 17:22	6° $\eta$ 23'46 0°35'13	retrograde	8419 Jan 06 15:43	6° $\mathcal{L}$ 20'32	
minimum elong	8412 Aug 21 17:22	6° $\eta$ 23'46 0°35'09	opposition	8419 Mar 23 06:31	4° $\mathcal{L}$ 18'35 0°55'31	
max. Earth dist.	8412 Aug 21 20:51	6° $\eta$ 24'16 20.51714 AU	min. Earth dist.	8419 Mar 23 10:26	4° $\mathcal{L}$ 18'10 18.13368 AU	
morning rise	8412 Sep 07 04:16	7° $\eta$ 21'01	direct	8419 Jun 05 22:09	2° $\mathcal{L}$ 17'32	
retrograde	8412 Dec 10 15:44	10° $\eta$ 33'29	evening set	8419 Sep 05 23:52	5° $\mathcal{L}$ 29'53	
opposition	8413 Feb 25 04:19	8° $\eta$ 32'20 0°40'38				
min. Earth dist.	8413 Feb 25 01:03	8° $\eta$ 32'41 18.48886 AU	conjunction	8419 Sep 22 12:54	6° $\mathcal{L}$ 28'39 0°50'42	
direct	8413 May 10 23:32	6° $\eta$ 32'57	minimum elong	8419 Sep 22 12:54	6° $\mathcal{L}$ 28'39 0°50'44	
evening set	8413 Aug 09 22:17	9° $\eta$ 39'13	max. Earth dist.	8419 Sep 22 08:07	6° $\mathcal{L}$ 27'57 20.10235 AU	
			morning rise	8419 Oct 09 03:17	7° $\mathcal{L}$ 27'41	
conjunction	8413 Aug 26 07:15	10° $\eta$ 36'20 0°38'05	retrograde	8420 Jan 11 10:07	10° $\mathcal{L}$ 44'44	
minimum elong	8413 Aug 26 07:15	10° $\eta$ 36'19 0°38'00	opposition	8420 Mar 26 20:59	8° $\mathcal{L}$ 42'39 0°57'01	
max. Earth dist.	8413 Aug 26 10:41	10° $\eta$ 36'50 20.46034 AU	min. Earth dist.	8420 Mar 27 01:36	8° $\mathcal{L}$ 42'09 18.07101 AU	
morning rise	8413 Sep 11 18:39	11° $\eta$ 33'49	direct	8420 Jun 09 13:18	6° $\mathcal{L}$ 41'16	
retrograde	8413 Dec 15 06:23	14° $\eta$ 46'54	evening set	8420 Sep 09 19:20	9° $\mathcal{L}$ 54'40	
opposition	8414 Mar 01 15:11	12° $\eta$ 45'36 0°43'43				
min. Earth dist.	8414 Mar 01 12:51	12° $\eta$ 45'51 18.43163 AU	conjunction	8420 Sep 26 08:46	10° $\mathcal{L}$ 53'43 0°51'54	
direct	8414 May 15 09:49	10° $\eta$ 45'56	minimum elong	8420 Sep 26 08:46	10° $\mathcal{L}$ 53'43 0°51'55	
evening set	8414 Aug 14 12:17	13° $\eta$ 53'08	max. Earth dist.	8420 Sep 26 01:20	10° $\mathcal{L}$ 52'37 20.03947 AU	
			morning rise	8420 Oct 12 23:42	11° $\mathcal{L}$ 53'00	
conjunction	8414 Aug 30 21:52	14° $\eta$ 50'30 0°40'45	retrograde	8421 Jan 15 03:57	15° $\mathcal{L}$ 10'41	
minimum elong	8414 Aug 30 21:51	14° $\eta$ 50'30 0°40'42	opposition	8421 Mar 31 12:07	13° $\mathcal{L}$ 08'24 0°58'12	
max. Earth dist.	8414 Aug 30 23:07	14° $\eta$ 50'41 20.40283 AU	min. Earth dist.	8421 Mar 31 18:37	13° $\mathcal{L}$ 07'43 18.00807 AU	
morning rise	8414 Sep 16 10:02	15° $\eta$ 48'15	direct	8421 Jun 14 04:26	11° $\mathcal{L}$ 06'39	
retrograde	8414 Dec 19 21:19	19° $\eta$ 01'59	evening set	8421 Sep 14 15:36	14° $\mathcal{L}$ 21'09	
opposition	8415 Mar 06 02:42	17° $\eta$ 00'32 0°46'35				
min. Earth dist.	8415 Mar 06 01:27	17° $\eta$ 00'40 18.37381 AU	conjunction	8421 Oct 01 05:44	15° $\mathcal{L}$ 20'28 0°52'47	

minimum elong	8421 Oct 01 05:44	15° <u>♏</u> 20'28	0°52'50	retrograde	8428 Feb 17 04:52	16° <u>♏</u> 56'22	
max. Earth dist.	8421 Sep 30 21:57	15° <u>♏</u> 19'18	19.97656 AU		8428 Apr 28 23:45	15° <u>♏</u>	
morning rise	8421 Oct 17 20:49	16° <u>♏</u> 20'00		opposition	8428 May 01 13:21	14° <u>♏</u> 53'18	0°56'20
retrograde	8422 Jan 19 23:18	19° <u>♏</u> 38'14		min. Earth dist.	8428 May 02 00:41	14° <u>♏</u> 52'04	17.61546 AU
opposition	8422 Apr 05 03:33	17° <u>♏</u> 35'49	0°59'02	direct	8428 Jul 15 13:28	12° <u>♏</u> 49'14	
min. Earth dist.	8422 Apr 05 10:30	17° <u>♏</u> 35'04	17.94536 AU		8428 Sep 26 16:04	15° <u>♏</u>	
direct	8422 Jun 18 21:21	15° <u>♏</u> 33'41		evening set	8428 Oct 17 10:29	16° <u>♏</u> 11'06	
evening set	8422 Sep 19 12:49	18° <u>♏</u> 49'16		max. Earth dist.	8428 Nov 02 11:59	17° <u>♏</u> 09'52	19.59345 AU
conjunction	8422 Oct 06 03:15	19° <u>♏</u> 48'51	0°53'22	conjunction	8428 Nov 03 02:32	17° <u>♏</u> 12'06	0°49'49
minimum elong	8422 Oct 06 03:15	19° <u>♏</u> 48'51	0°53'26	minimum elong	8428 Nov 03 02:32	17° <u>♏</u> 12'06	0°49'57
max. Earth dist.	8422 Oct 05 17:09	19° <u>♏</u> 47'20	19.91429 AU	morning rise	8428 Nov 19 17:54	18° <u>♏</u> 13'03	
morning rise	8422 Oct 22 18:41	20° <u>♏</u> 48'37		retrograde	8429 Feb 21 02:27	21° <u>♏</u> 34'41	
retrograde	8423 Jan 24 17:49	24° <u>♏</u> 07'26		opposition	8429 May 06 09:13	19° <u>♏</u> 31'38	0°54'34
opposition	8423 Apr 09 19:49	22° <u>♏</u> 04'50	0°59'31	min. Earth dist.	8429 May 06 22:07	19° <u>♏</u> 30'14	17.57293 AU
min. Earth dist.	8423 Apr 10 04:35	22° <u>♏</u> 03'53	17.88382 AU	direct	8429 Jul 20 09:11	17° <u>♏</u> 27'21	
direct	8423 Jun 23 13:56	20° <u>♏</u> 02'20		evening set	8429 Oct 22 12:37	20° <u>♏</u> 50'13	
evening set	8423 Sep 24 10:27	23° <u>♏</u> 18'59		conjunction	8429 Nov 08 04:39	21° <u>♏</u> 51'23	0°48'03
conjunction	8423 Oct 11 01:25	24° <u>♏</u> 18'50	0°53'37	minimum elong	8429 Nov 08 04:39	21° <u>♏</u> 51'23	0°48'12
minimum elong	8423 Oct 11 01:25	24° <u>♏</u> 18'50	0°53'41	max. Earth dist.	8429 Nov 07 13:14	21° <u>♏</u> 49'00	19.55293 AU
max. Earth dist.	8423 Oct 10 15:13	24° <u>♏</u> 17'18	19.85354 AU	morning rise	8429 Nov 24 19:50	22° <u>♏</u> 52'28	
morning rise	8423 Oct 27 16:55	25° <u>♏</u> 18'49		retrograde	8430 Feb 26 03:01	26° <u>♏</u> 14'28	
retrograde	8424 Jan 29 14:28	28° <u>♏</u> 38'11		opposition	8430 May 11 05:28	24° <u>♏</u> 11'27	0°52'26
opposition	8424 Apr 13 12:31	26° <u>♏</u> 35'26	0°59'38	min. Earth dist.	8430 May 11 18:06	24° <u>♏</u> 10'05	17.53427 AU
min. Earth dist.	8424 Apr 13 21:17	26° <u>♏</u> 34'29	17.82402 AU	direct	8430 Jul 25 07:44	22° <u>♏</u> 06'59	
direct	8424 Jun 27 08:31	24° <u>♏</u> 32'34		evening set	8430 Oct 27 15:19	25° <u>♏</u> 30'46	
evening set	8424 Sep 28 09:08	27° <u>♏</u> 50'18		conjunction	8430 Nov 13 07:19	26° <u>♏</u> 32'06	0°45'58
conjunction	8424 Oct 15 00:20	28° <u>♏</u> 50'24	0°53'32	minimum elong	8430 Nov 13 07:19	26° <u>♏</u> 32'06	0°46'07
minimum elong	8424 Oct 15 00:20	28° <u>♏</u> 50'24	0°53'38	max. Earth dist.	8430 Nov 12 15:39	26° <u>♏</u> 29'41	19.51602 AU
max. Earth dist.	8424 Oct 14 12:20	28° <u>♏</u> 48'35	19.79486 AU	morning rise	8430 Nov 29 22:04	27° <u>♏</u> 33'18	
morning rise	8424 Oct 31 16:01	29° <u>♏</u> 50'36			8431 Jan 16 07:38	0° <u>♏</u>	
	8424 Nov 03 07:45	0° <u>♏</u>		retrograde	8431 Mar 03 01:07	0° <u>♏</u> 55'36	
retrograde	8425 Feb 02 09:52	3° <u>♏</u> 10'28			8431 Apr 18 20:05	30° <u>♏</u>	
opposition	8425 Apr 18 05:50	1° <u>♏</u> 07'35	0°59'22	opposition	8431 May 16 02:37	28° <u>♏</u> 52'38	0°49'57
min. Earth dist.	8425 Apr 18 16:22	1° <u>♏</u> 06'27	17.76678 AU	min. Earth dist.	8431 May 16 16:44	28° <u>♏</u> 51'06	17.49918 AU
	8425 May 15 19:39	30° <u>♏</u>		direct	8431 Jul 30 05:20	26° <u>♏</u> 47'59	
direct	8425 Jul 02 02:00	29° <u>♏</u> 04'21		evening set	8431 Oct 29 06:24	0° <u>♏</u>	
	8425 Aug 17 08:28	0° <u>♏</u>			8431 Nov 01 18:26	0° <u>♏</u> 12'37	
evening set	8425 Oct 03 08:25	2° <u>♏</u> 23'10		conjunction	8431 Nov 18 10:13	1° <u>♏</u> 14'04	0°43'34
max. Earth dist.	8425 Oct 19 11:47	3° <u>♏</u> 21'39	19.73908 AU	minimum elong	8431 Nov 18 10:13	1° <u>♏</u> 14'04	0°43'44
conjunction	8425 Oct 20 00:02	3° <u>♏</u> 23'30	0°53'07	max. Earth dist.	8431 Nov 17 17:15	1° <u>♏</u> 11'27	19.48273 AU
minimum elong	8425 Oct 20 00:02	3° <u>♏</u> 23'30	0°53'12	morning rise	8431 Dec 05 00:44	2° <u>♏</u> 15'23	
morning rise	8425 Nov 05 15:43	4° <u>♏</u> 23'55		retrograde	8432 Mar 07 01:39	5° <u>♏</u> 37'56	
retrograde	8426 Feb 07 08:28	7° <u>♏</u> 44'16		opposition	8432 May 20 00:10	3° <u>♏</u> 34'59	0°47'07
opposition	8426 Apr 22 23:41	5° <u>♏</u> 41'17	0°58'44	min. Earth dist.	8432 May 20 14:06	3° <u>♏</u> 33'28	17.46759 AU
min. Earth dist.	8426 Apr 23 09:56	5° <u>♏</u> 40'10	17.71257 AU	direct	8432 Aug 03 05:51	1° <u>♏</u> 30'09	
direct	8426 Jul 06 22:07	3° <u>♏</u> 37'44		evening set	8432 Nov 05 22:04	4° <u>♏</u> 55'32	
evening set	8426 Oct 08 08:29	6° <u>♏</u> 57'35		conjunction	8432 Nov 22 13:45	5° <u>♏</u> 57'07	0°40'52
max. Earth dist.	8426 Oct 24 10:44	7° <u>♏</u> 56'06	19.68654 AU	minimum elong	8432 Nov 22 13:45	5° <u>♏</u> 57'07	0°41'02
conjunction	8426 Oct 25 00:12	7° <u>♏</u> 58'09	0°52'21	max. Earth dist.	8432 Nov 21 20:56	5° <u>♏</u> 54'31	19.45276 AU
minimum elong	8426 Oct 25 00:12	7° <u>♏</u> 58'09	0°52'28	morning rise	8432 Dec 09 03:40	6° <u>♏</u> 58'29	
morning rise	8426 Nov 10 15:49	8° <u>♏</u> 58'45		retrograde	8433 Mar 12 00:09	10° <u>♏</u> 21'12	
retrograde	8427 Feb 12 04:47	12° <u>♏</u> 19'34		opposition	8433 May 24 22:15	8° <u>♏</u> 18'17	0°43'57
opposition	8427 Apr 27 18:19	10° <u>♏</u> 16'32	0°57'43	min. Earth dist.	8433 May 25 13:25	8° <u>♏</u> 16'38	17.43938 AU
min. Earth dist.	8427 Apr 28 06:06	10° <u>♏</u> 15'15	17.66200 AU	direct	8433 Aug 08 05:50	6° <u>♏</u> 13'16	
direct	8427 Jul 11 16:23	8° <u>♏</u> 12'41		evening set	8433 Nov 11 02:08	9° <u>♏</u> 39'20	
evening set	8427 Oct 13 09:08	11° <u>♏</u> 33'34		conjunction	8433 Nov 27 17:23	10° <u>♏</u> 40'59	0°37'53
max. Earth dist.	8427 Oct 29 11:12	12° <u>♏</u> 32'14	19.63801 AU	minimum elong	8433 Nov 27 17:23	10° <u>♏</u> 40'59	0°38'03
conjunction	8427 Oct 30 01:04	12° <u>♏</u> 34'21	0°51'15	max. Earth dist.	8433 Nov 26 23:01	10° <u>♏</u> 38'08	19.42643 AU
minimum elong	8427 Oct 30 01:04	12° <u>♏</u> 34'21	0°51'23	morning rise	8433 Dec 14 06:57	11° <u>♏</u> 42'24	
morning rise	8427 Nov 15 16:37	13° <u>♏</u> 35'08		retrograde	8434 Mar 17 00:15	15° <u>♏</u> 05'13	
	8427 Dec 10 20:11	15° <u>♏</u>		opposition	8434 May 29 20:46	13° <u>♏</u> 02'20	0°40'29

min. Earth dist.	8434 May 30 11:47	13° <del>2</del> 00'41	17.41493 AU	evening set	8440 Dec 15 05:13	12° <del>3</del> 53'27	
direct	8434 Aug 13 07:33	10° <del>2</del> 57'06					
evening set	8434 Nov 16 06:04	14° <del>2</del> 23'45		conjunction	8440 Dec 31 16:35	13° <del>3</del> 54'56	0°10'57
				minimum elong	8440 Dec 31 16:35	13° <del>3</del> 54'56	0°11'07
conjunction	8434 Dec 02 21:06	15° <del>2</del> 25'28	0°34'38	behind sun begin	8440 Dec 31 11:37	13° <del>3</del> 54'11	
minimum elong	8434 Dec 02 21:06	15° <del>2</del> 25'28	0°34'49	behind sun end	8440 Dec 31 21:33	13° <del>3</del> 55'42	
max. Earth dist.	8434 Dec 02 03:32	15° <del>2</del> 22'44	19.40390 AU	max. Earth dist.	8440 Dec 31 00:55	13° <del>3</del> 52'29	19.37353 AU
morning rise	8434 Dec 19 09:55	16° <del>2</del> 26'55		morning rise	8441 Jan 17 00:56	14° <del>3</del> 56'01	
retrograde	8435 Mar 21 23:34	19° <del>2</del> 49'46		retrograde	8441 Apr 18 22:32	18° <del>3</del> 17'55	
opposition	8435 Jun 03 19:45	17° <del>2</del> 46'53	0°36'43	opposition	8441 Jul 01 17:45	16° <del>3</del> 15'25	0°09'48
min. Earth dist.	8435 Jun 04 11:22	17° <del>2</del> 45'11	17.39445 AU	min. Earth dist.	8441 Jul 02 06:42	16° <del>3</del> 14'01	17.38065 AU
direct	8435 Aug 18 09:04	15° <del>2</del> 41'30		direct	8441 Sep 15 21:50	14° <del>3</del> 09'35	
evening set	8435 Nov 21 10:20	19° <del>2</del> 08'37		evening set	8441 Dec 20 08:15	17° <del>3</del> 37'43	
max. Earth dist.	8435 Dec 07 05:54	20° <del>2</del> 07'25	19.38570 AU				
				conjunction	8442 Jan 05 18:43	18° <del>3</del> 39'05	0°06'36
conjunction	8435 Dec 08 00:46	20° <del>2</del> 10'22	0°31'08	minimum elong	8442 Jan 05 18:43	18° <del>3</del> 39'05	0°06'47
minimum elong	8435 Dec 08 00:47	20° <del>2</del> 10'22	0°31'19	behind sun begin	8442 Jan 05 12:28	18° <del>3</del> 38'08	
morning rise	8435 Dec 24 13:08	21° <del>2</del> 11'49		behind sun end	8442 Jan 06 00:59	18° <del>3</del> 40'02	
retrograde	8436 Mar 25 23:28	24° <del>2</del> 34'39		max. Earth dist.	8442 Jan 05 03:31	18° <del>3</del> 36'43	19.38910 AU
opposition	8436 Jun 07 18:50	22° <del>2</del> 31'46	0°32'42	morning rise	8442 Jan 22 02:12	19° <del>3</del> 40'01	
min. Earth dist.	8436 Jun 08 10:22	22° <del>2</del> 30'05	17.37858 AU	retrograde	8442 Apr 23 21:38	23° <del>3</del> 01'38	
direct	8436 Aug 22 11:10	20° <del>2</del> 26'12		opposition	8442 Jul 06 17:58	20° <del>3</del> 59'19	0°04'54
evening set	8436 Nov 25 14:27	23° <del>2</del> 53'44		min. Earth dist.	8442 Jul 07 06:53	20° <del>3</del> 57'55	17.39925 AU
max. Earth dist.	8436 Dec 11 10:52	24° <del>2</del> 52'43	19.37220 AU	direct	8442 Sep 20 23:02	18° <del>3</del> 53'37	
				evening set	8442 Dec 25 10:37	22° <del>3</del> 21'37	
conjunction	8436 Dec 12 04:35	24° <del>2</del> 55'29	0°27'25				
minimum elong	8436 Dec 12 04:35	24° <del>2</del> 55'29	0°27'36	conjunction	8443 Jan 10 20:14	23° <del>3</del> 22'49	0°02'12
morning rise	8436 Dec 28 16:07	25° <del>2</del> 56'54		minimum elong	8443 Jan 10 20:15	23° <del>3</del> 22'49	0°02'23
retrograde	8437 Mar 30 23:21	29° <del>2</del> 19'38		behind sun begin	8443 Jan 10 13:34	23° <del>3</del> 21'48	
opposition	8437 Jun 12 18:19	27° <del>2</del> 16'48	0°28'27	behind sun end	8443 Jan 11 02:57	23° <del>3</del> 23'50	
min. Earth dist.	8437 Jun 13 09:49	27° <del>2</del> 15'06	17.36747 AU	max. Earth dist.	8443 Jan 10 06:18	23° <del>3</del> 20'39	19.41061 AU
direct	8437 Aug 27 13:21	25° <del>2</del> 11'05		morning rise	8443 Jan 27 02:51	24° <del>3</del> 23'35	
evening set	8437 Nov 30 18:37	28° <del>2</del> 38'54		retrograde	8443 Apr 28 21:22	27° <del>3</del> 44'53	
				opposition	8443 Jul 11 18:03	25° <del>3</del> 42'47	-0°00'00
conjunction	8437 Dec 17 07:58	29° <del>2</del> 40'38	0°23'30	desc. node	8443 Jul 11 06:50	25° <del>3</del> 43'59	
minimum elong	8437 Dec 17 07:58	29° <del>2</del> 40'38	0°23'42	min. Earth dist.	8443 Jul 12 05:19	25° <del>3</del> 41'33	17.42330 AU
max. Earth dist.	8437 Dec 16 13:26	29° <del>2</del> 37'44	19.36374 AU	direct	8443 Sep 26 01:54	23° <del>3</del> 37'15	
	8437 Dec 22 11:42	0° <del>3</del>		evening set	8443 Dec 30 12:45	27° <del>3</del> 05'01	
morning rise	8438 Jan 02 18:53	0° <del>3</del> 42'00					
retrograde	8438 Apr 04 22:58	4° <del>3</del> 04'35		conjunction	8444 Jan 15 21:28	28° <del>3</del> 06'03	-0°02'19
opposition	8438 Jun 17 17:58	2° <del>3</del> 01'47	0°24'00	minimum elong	8444 Jan 15 21:29	28° <del>3</del> 06'03	0°02'10
min. Earth dist.	8438 Jun 18 09:21	2° <del>3</del> 00'07	17.36181 AU	behind sun begin	8444 Jan 15 14:48	28° <del>3</del> 05'01	
	8438 Aug 20 07:15	30° <del>2</del> 47'		behind sun end	8444 Jan 16 04:11	28° <del>3</del> 07'04	
direct	8438 Sep 01 15:27	29° <del>2</del> 55'57		max. Earth dist.	8444 Jan 15 08:27	28° <del>3</del> 04'01	19.43717 AU
	8438 Sep 13 21:22	0° <del>3</del>		morning rise	8444 Feb 01 03:06	29° <del>3</del> 06'38	
evening set	8438 Dec 05 22:22	3° <del>3</del> 23'59			8444 Feb 16 03:52	0° <del>3</del>	
				retrograde	8444 May 02 19:12	2° <del>3</del> 27'34	
conjunction	8438 Dec 22 11:13	4° <del>3</del> 25'39	0°19'26	opposition	8444 Jul 15 18:09	0° <del>3</del> 25'40	-0°04'55
minimum elong	8438 Dec 22 11:13	4° <del>3</del> 25'39	0°19'37	min. Earth dist.	8444 Jul 16 05:43	0° <del>3</del> 24'25	17.45226 AU
max. Earth dist.	8438 Dec 21 18:15	4° <del>3</del> 23'00	19.36092 AU		8444 Jul 25 18:01	30° <del>2</del> 47'	
morning rise	8439 Jan 07 21:14	5° <del>3</del> 26'57		direct	8444 Sep 30 03:22	28° <del>3</del> 20'19	
retrograde	8439 Apr 09 23:03	8° <del>3</del> 49'21			8444 Dec 02 10:52	0° <del>3</del>	
opposition	8439 Jun 22 17:48	6° <del>3</del> 46'36	0°19'23	evening set	8445 Jan 03 14:26	1° <del>3</del> 47'46	
min. Earth dist.	8439 Jun 23 08:19	6° <del>3</del> 45'01	17.36188 AU				
direct	8439 Sep 06 17:46	4° <del>3</del> 40'43		conjunction	8445 Jan 19 22:11	2° <del>3</del> 48'36	-0°06'42
evening set	8439 Dec 11 01:56	8° <del>3</del> 08'51		minimum elong	8445 Jan 19 22:11	2° <del>3</del> 48'36	0°06'32
				behind sun begin	8445 Jan 19 15:55	2° <del>3</del> 47'38	
conjunction	8439 Dec 27 13:58	9° <del>3</del> 10'27	0°15'14	behind sun end	8445 Jan 20 04:28	2° <del>3</del> 49'33	
minimum elong	8439 Dec 27 13:58	9° <del>3</del> 10'27	0°15'26	max. Earth dist.	8445 Jan 19 09:46	2° <del>3</del> 46'40	19.46835 AU
behind sun begin	8439 Dec 27 12:17	9° <del>3</del> 10'11		morning rise	8445 Feb 05 02:56	3° <del>3</del> 48'58	
behind sun end	8439 Dec 27 15:40	9° <del>3</del> 10'42		retrograde	8445 May 07 18:00	7° <del>3</del> 09'30	
max. Earth dist.	8439 Dec 26 20:50	9° <del>3</del> 07'46	19.36407 AU	opposition	8445 Jul 20 18:10	5° <del>3</del> 07'48	-0°09'46
morning rise	8440 Jan 12 23:16	10° <del>3</del> 11'39		min. Earth dist.	8445 Jul 21 04:00	5° <del>3</del> 06'44	17.48539 AU
retrograde	8440 Apr 13 22:32	13° <del>3</del> 33'49		direct	8445 Oct 05 06:39	3° <del>3</del> 02'40	
opposition	8440 Jun 26 17:48	11° <del>3</del> 31'10	0°14'38	evening set	8446 Jan 08 15:24	6° <del>3</del> 29'40	
min. Earth dist.	8440 Jun 27 08:09	11° <del>3</del> 29'36	17.36820 AU				
direct	8440 Sep 10 19:29	9° <del>3</del> 25'16		conjunction	8446 Jan 24 22:13	7° <del>3</del> 30'17	-0°11'00

minimum elong	8446 Jan 24 22:14	7° $\approx$ 30'17	0°10'52	evening set	8452 Feb 06 05:12	4° $\mathbb{H}$ 13'07	
behind sun begin	8446 Jan 24 17:09	7° $\approx$ 29'30					
behind sun end	8446 Jan 25 03:18	7° $\approx$ 31'03		conjunction	8452 Feb 22 06:19	5° $\mathbb{H}$ 12'06	-0°34'10
max. Earth dist.	8446 Jan 24 11:10	7° $\approx$ 28'34	19.50332 AU	minimum elong	8452 Feb 22 06:18	5° $\mathbb{H}$ 12'06	0°34'04
morning rise	8446 Feb 10 01:52	8° $\approx$ 30'26		max. Earth dist.	8452 Feb 22 02:07	5° $\mathbb{H}$ 11'27	19.77635 AU
retrograde	8446 May 12 14:43	11° $\approx$ 50'30		morning rise	8452 Mar 09 04:37	6° $\mathbb{H}$ 10'41	
opposition	8446 Jul 25 18:15	9° $\approx$ 49'00	-0°14'32	retrograde	8452 Jun 08 13:39	9° $\mathbb{H}$ 27'12	
min. Earth dist.	8446 Jul 26 04:18	9° $\approx$ 47'55	17.52220 AU	opposition	8452 Aug 22 10:43	7° $\mathbb{H}$ 26'29	-0°39'44
direct	8446 Oct 10 08:15	7° $\approx$ 44'04		min. Earth dist.	8452 Aug 22 14:30	7° $\mathbb{H}$ 26'05	17.80347 AU
evening set	8447 Jan 13 15:48	11° $\approx$ 10'33		direct	8452 Nov 07 10:51	5° $\mathbb{H}$ 22'49	
				evening set	8453 Feb 10 00:26	8° $\mathbb{H}$ 44'22	
conjunction	8447 Jan 29 21:34	12° $\approx$ 10'54	-0°15'14				
minimum elong	8447 Jan 29 21:34	12° $\approx$ 10'54	0°15'05	conjunction	8453 Feb 26 00:27	9° $\mathbb{H}$ 43'02	-0°37'19
behind sun begin	8447 Jan 29 19:15	12° $\approx$ 10'33		minimum elong	8453 Feb 26 00:27	9° $\mathbb{H}$ 43'02	0°37'15
behind sun end	8447 Jan 29 23:54	12° $\approx$ 11'15		max. Earth dist.	8453 Feb 25 20:41	9° $\mathbb{H}$ 42'27	19.83144 AU
max. Earth dist.	8447 Jan 29 10:45	12° $\approx$ 09'14	19.54187 AU	morning rise	8453 Mar 13 22:08	10° $\mathbb{H}$ 41'21	
morning rise	8447 Feb 15 00:24	13° $\approx$ 10'49		retrograde	8453 Jun 13 07:39	13° $\mathbb{H}$ 57'13	
	8447 Mar 19 19:34	15° $\approx$		opposition	8453 Aug 27 07:53	11° $\mathbb{H}$ 56'36	-0°43'07
retrograde	8447 May 17 12:34	16° $\approx$ 30'24		min. Earth dist.	8453 Aug 27 09:43	11° $\mathbb{H}$ 56'25	17.86012 AU
	8447 Jul 18 12:48	15° $\mathbb{R}$		direct	8453 Nov 12 08:35	9° $\mathbb{H}$ 53'13	
opposition	8447 Jul 30 17:49	14° $\approx$ 29'03	-0°19'12	evening set	8454 Feb 14 18:26	13° $\mathbb{H}$ 13'45	
min. Earth dist.	8447 Jul 31 02:04	14° $\approx$ 28'10	17.56230 AU				
direct	8447 Oct 15 11:10	12° $\approx$ 24'20		conjunction	8454 Mar 02 17:44	14° $\mathbb{H}$ 12'07	-0°40'14
	8448 Jan 04 10:56	15° $\approx$		minimum elong	8454 Mar 02 17:44	14° $\mathbb{H}$ 12'07	0°40'11
evening set	8448 Jan 18 15:22	15° $\approx$ 50'11		max. Earth dist.	8454 Mar 02 16:41	14° $\mathbb{H}$ 11'58	19.88951 AU
				morning rise	8454 Mar 18 14:30	15° $\mathbb{H}$ 10'09	
conjunction	8448 Feb 03 20:18	16° $\approx$ 50'17	-0°19'21	retrograde	8454 Jun 18 00:48	18° $\mathbb{H}$ 25'23	
minimum elong	8448 Feb 03 20:18	16° $\approx$ 50'17	0°19'13	opposition	8454 Sep 01 04:33	16° $\mathbb{H}$ 24'56	-0°46'12
max. Earth dist.	8448 Feb 03 11:11	16° $\approx$ 48'53	19.58340 AU	min. Earth dist.	8454 Sep 01 05:09	16° $\mathbb{H}$ 24'52	17.91957 AU
morning rise	8448 Feb 19 22:04	17° $\approx$ 49'58		direct	8454 Nov 17 06:37	14° $\mathbb{H}$ 21'53	
retrograde	8448 May 21 08:12	21° $\approx$ 08'59		evening set	8455 Feb 19 11:48	17° $\mathbb{H}$ 41'24	
opposition	8448 Aug 03 17:19	19° $\approx$ 07'48	-0°23'43				
min. Earth dist.	8448 Aug 04 01:42	19° $\approx$ 06'55	17.60521 AU	conjunction	8455 Mar 07 10:06	18° $\mathbb{H}$ 39'28	-0°42'53
direct	8448 Oct 19 11:41	17° $\approx$ 03'17		minimum elong	8455 Mar 07 10:06	18° $\mathbb{H}$ 39'28	0°42'49
evening set	8449 Jan 22 14:18	20° $\approx$ 28'25		max. Earth dist.	8455 Mar 07 09:34	18° $\mathbb{H}$ 39'23	19.95031 AU
				morning rise	8455 Mar 23 06:22	19° $\mathbb{H}$ 37'13	
conjunction	8449 Feb 07 18:06	21° $\approx$ 28'15	-0°23'20	retrograde	8455 Jun 22 17:14	22° $\mathbb{H}$ 51'50	
minimum elong	8449 Feb 07 18:06	21° $\approx$ 28'15	0°23'13	opposition	8455 Sep 06 00:27	20° $\mathbb{H}$ 51'33	-0°48'59
max. Earth dist.	8449 Feb 07 09:02	21° $\approx$ 26'51	19.62771 AU	min. Earth dist.	8455 Sep 05 23:28	20° $\mathbb{H}$ 51'39	17.98161 AU
morning rise	8449 Feb 23 19:06	22° $\approx$ 27'40		direct	8455 Nov 22 02:23	18° $\mathbb{H}$ 48'52	
retrograde	8449 May 26 05:13	25° $\approx$ 46'06		evening set	8456 Feb 24 04:08	22° $\mathbb{H}$ 07'22	
opposition	8449 Aug 08 16:17	23° $\approx$ 45'04	-0°28'03				
min. Earth dist.	8449 Aug 08 22:51	23° $\approx$ 44'22	17.65081 AU	conjunction	8456 Mar 11 01:49	23° $\mathbb{H}$ 05'08	-0°45'16
direct	8449 Oct 24 13:09	21° $\approx$ 40'44		minimum elong	8456 Mar 11 01:49	23° $\mathbb{H}$ 05'08	0°45'14
evening set	8450 Jan 27 12:13	25° $\approx$ 05'05		max. Earth dist.	8456 Mar 11 03:46	23° $\mathbb{H}$ 05'26	20.01332 AU
				morning rise	8456 Mar 26 21:20	24° $\mathbb{H}$ 02'37	
conjunction	8450 Feb 12 15:12	26° $\approx$ 04'38	-0°27'09	retrograde	8456 Jun 26 09:36	27° $\mathbb{H}$ 16'37	
minimum elong	8450 Feb 12 15:12	26° $\approx$ 04'38	0°27'01	opposition	8456 Sep 09 19:58	25° $\mathbb{H}$ 16'33	-0°51'27
max. Earth dist.	8450 Feb 12 08:18	26° $\approx$ 03'35	19.67459 AU	min. Earth dist.	8456 Sep 09 17:40	25° $\mathbb{H}$ 16'48	18.04533 AU
morning rise	8450 Feb 28 15:08	27° $\approx$ 03'47		direct	8456 Nov 25 23:18	23° $\mathbb{H}$ 14'16	
	8450 May 02 21:36	0° $\mathbb{H}$		evening set	8457 Feb 27 19:44	26° $\mathbb{H}$ 31'44	
retrograde	8450 May 31 00:06	0° $\mathbb{H}$ 21'36					
	8450 Jun 28 18:08	30° $\mathbb{R}$		conjunction	8457 Mar 15 16:31	27° $\mathbb{H}$ 29'12	-0°47'21
opposition	8450 Aug 13 15:02	28° $\approx$ 20'41	-0°32'11	minimum elong	8457 Mar 15 16:31	27° $\mathbb{H}$ 29'12	0°47'20
min. Earth dist.	8450 Aug 13 21:21	28° $\approx$ 20'01	17.69899 AU	max. Earth dist.	8457 Mar 15 18:56	27° $\mathbb{H}$ 29'34	20.07766 AU
direct	8450 Oct 29 12:32	26° $\approx$ 16'34		morning rise	8457 Mar 31 11:35	28° $\mathbb{H}$ 26'25	
evening set	8451 Feb 01 09:11	29° $\approx$ 40'01			8457 Apr 28 21:10	0° $\mathbb{Y}$	
	8451 Feb 06 20:33	0° $\mathbb{H}$		retrograde	8457 Jul 01 00:53	1° $\mathbb{Y}$ 39'51	
					8457 Sep 06 12:23	30° $\mathbb{R}$ $\mathbb{H}$	
conjunction	8451 Feb 17 11:04	0° $\mathbb{H}$ 39'17	-0°30'45	opposition	8457 Sep 14 15:01	29° $\mathbb{H}$ 39'59	-0°53'37
minimum elong	8451 Feb 17 11:04	0° $\mathbb{H}$ 39'17	0°30'40	min. Earth dist.	8457 Sep 14 11:33	29° $\mathbb{H}$ 40'20	18.11021 AU
max. Earth dist.	8451 Feb 17 04:23	0° $\mathbb{H}$ 38'15	19.72414 AU	direct	8457 Nov 30 17:35	27° $\mathbb{H}$ 38'06	
morning rise	8451 Mar 05 10:22	1° $\mathbb{H}$ 38'10			8458 Feb 16 12:15	0° $\mathbb{Y}$	
retrograde	8451 Jun 04 19:41	4° $\mathbb{H}$ 55'21		evening set	8458 Mar 04 10:24	0° $\mathbb{Y}$ 54'31	
opposition	8451 Aug 18 13:08	2° $\mathbb{H}$ 54'30	-0°36'06				
min. Earth dist.	8451 Aug 18 17:36	2° $\mathbb{H}$ 54'02	17.74988 AU	conjunction	8458 Mar 20 06:37	1° $\mathbb{Y}$ 51'42	-0°49'10
direct	8451 Nov 03 12:09	0° $\mathbb{H}$ 50'36		minimum elong	8458 Mar 20 06:37	1° $\mathbb{Y}$ 51'42	0°49'10

max. Earth dist.	8458 Mar 20 11:13	1°♈52'24	20.14278 AU	direct	8464 Dec 31 14:25	27°♈40'29	
morning rise	8458 Apr 05 01:04	2°♈48'40			8465 Mar 19 01:02	0°♈	
retrograde	8458 Jul 05 16:08	6°♈01'31		evening set	8465 Apr 02 19:44	0°♈49'34	
opposition	8458 Sep 19 09:26	4°♈01'51	-0°55'27				
min. Earth dist.	8458 Sep 19 04:34	4°♈02'21	18.17535 AU	conjunction	8465 Apr 18 12:43	1°♈45'00	-0°53'37
direct	8458 Dec 05 13:21	2°♈00'23		minimum elong	8465 Apr 18 12:43	1°♈45'00	0°53'43
evening set	8459 Mar 09 00:22	5°♈15'45		max. Earth dist.	8465 Apr 18 23:19	1°♈46'34	20.56450 AU
				morning rise	8465 May 04 05:33	2°♈40'26	
conjunction	8459 Mar 24 19:50	6°♈12'39	-0°50'41	retrograde	8465 Aug 04 07:03	5°♈49'31	
minimum elong	8459 Mar 24 19:50	6°♈12'39	0°50'42	opposition	8465 Oct 20 02:30	3°♈50'38	-0°59'08
max. Earth dist.	8459 Mar 25 00:46	6°♈13'24	20.20778 AU	min. Earth dist.	8465 Oct 19 15:58	3°♈51'42	18.59104 AU
morning rise	8459 Apr 09 13:58	7°♈09'22		direct	8466 Jan 05 02:06	1°♈51'22	
retrograde	8459 Jul 10 06:28	10°♈21'39		evening set	8466 Apr 07 04:17	4°♈59'27	
opposition	8459 Sep 24 03:24	8°♈22'11	-0°56'57				
min. Earth dist.	8459 Sep 23 21:52	8°♈22'45	18.24016 AU	conjunction	8466 Apr 22 21:08	5°♈54'41	-0°53'05
direct	8459 Dec 10 06:07	6°♈21'05		minimum elong	8466 Apr 22 21:08	5°♈54'41	0°53'12
evening set	8460 Mar 12 13:29	9°♈35'25		max. Earth dist.	8466 Apr 23 09:06	5°♈56'27	20.61677 AU
				morning rise	8466 May 08 13:57	6°♈49'57	
conjunction	8460 Mar 28 08:29	10°♈32'03	-0°51'55	retrograde	8466 Aug 08 18:07	9°♈58'33	
minimum elong	8460 Mar 28 08:29	10°♈32'03	0°51'56	opposition	8466 Oct 24 15:57	7°♈59'42	-0°58'22
max. Earth dist.	8460 Mar 28 15:08	10°♈33'03	20.27204 AU	min. Earth dist.	8466 Oct 24 03:31	8°♈00'58	18.64244 AU
morning rise	8460 Apr 13 02:07	11°♈28'31		direct	8467 Jan 09 15:58	6°♈00'42	
retrograde	8460 Jul 13 20:15	14°♈40'14		evening set	8467 Apr 11 12:16	9°♈07'50	
opposition	8460 Sep 27 20:39	12°♈40'57	-0°58'08				
min. Earth dist.	8460 Sep 27 13:42	12°♈41'40	18.30371 AU	conjunction	8467 Apr 27 04:56	10°♈02'54	-0°52'17
direct	8460 Dec 14 00:43	10°♈40'15		minimum elong	8467 Apr 27 04:56	10°♈02'54	0°52'23
evening set	8461 Mar 17 01:59	13°♈53'31		max. Earth dist.	8467 Apr 27 17:39	10°♈04'46	20.66728 AU
				morning rise	8467 May 12 21:53	10°♈58'00	
conjunction	8461 Apr 01 20:21	14°♈49'53	-0°52'51	retrograde	8467 Aug 13 03:22	14°♈06'10	
minimum elong	8461 Apr 01 20:21	14°♈49'53	0°52'54	opposition	8467 Oct 29 05:04	12°♈07'23	-0°57'19
max. Earth dist.	8461 Apr 02 03:16	14°♈50'55	20.33481 AU	min. Earth dist.	8467 Oct 28 16:39	12°♈08'38	18.69221 AU
morning rise	8461 Apr 17 13:45	15°♈46'07		direct	8468 Jan 14 02:04	10°♈08'38	
retrograde	8461 Jul 18 09:21	18°♈57'19		evening set	8468 Apr 14 19:35	13°♈14'53	
opposition	8461 Oct 02 13:36	16°♈58'09	-0°58'59				
min. Earth dist.	8461 Oct 02 06:18	16°♈58'54	18.36570 AU	conjunction	8468 Apr 30 12:14	14°♈09'46	-0°51'12
direct	8461 Dec 18 16:09	14°♈57'48		minimum elong	8468 Apr 30 12:14	14°♈09'46	0°51'21
evening set	8462 Mar 21 13:28	18°♈10'00		max. Earth dist.	8468 May 01 02:05	14°♈11'48	20.71616 AU
					8468 May 14 20:18	15°♈	
conjunction	8462 Apr 06 07:30	19°♈06'08	-0°53'29	morning rise	8468 May 16 05:15	15°♈04'44	
minimum elong	8462 Apr 06 07:30	19°♈06'08	0°53'31	retrograde	8468 Aug 16 14:02	18°♈12'31	
max. Earth dist.	8462 Apr 06 15:51	19°♈07'23	20.39575 AU	opposition	8468 Nov 01 17:28	16°♈13'48	-0°55'58
morning rise	8462 Apr 22 00:35	20°♈02'08		min. Earth dist.	8468 Nov 01 03:09	16°♈15'15	18.74005 AU
retrograde	8462 Jul 22 21:56	23°♈12'47			8468 Dec 04 17:30	15°♈	
opposition	8462 Oct 07 05:46	21°♈13'45	-0°59'30	direct	8469 Jan 17 14:21	14°♈15'20	
min. Earth dist.	8462 Oct 06 20:56	21°♈14'39	18.42543 AU		8469 Feb 28 23:04	15°♈	
direct	8462 Dec 23 09:11	19°♈13'43		evening set	8469 Apr 19 02:31	17°♈20'45	
evening set	8463 Mar 26 00:25	22°♈24'52					
				conjunction	8469 May 04 19:06	18°♈15'29	-0°49'52
conjunction	8463 Apr 10 17:59	23°♈20'45	-0°53'49	minimum elong	8469 May 04 19:06	18°♈15'29	0°50'00
minimum elong	8463 Apr 10 17:59	23°♈20'45	0°53'53	max. Earth dist.	8469 May 05 09:41	18°♈17'37	20.76294 AU
max. Earth dist.	8463 Apr 11 02:37	23°♈22'02	20.45427 AU	morning rise	8469 May 20 12:22	19°♈10'19	
morning rise	8463 Apr 26 10:59	24°♈16'34		retrograde	8469 Aug 20 23:09	22°♈17'46	
retrograde	8463 Jul 27 09:21	27°♈26'40		opposition	8469 Nov 06 05:36	20°♈19'08	-0°54'21
opposition	8463 Oct 11 21:15	25°♈27'42	-0°59'42	min. Earth dist.	8469 Nov 05 15:31	20°♈20'33	18.78577 AU
min. Earth dist.	8463 Oct 11 12:27	25°♈28'36	18.48285 AU	direct	8470 Jan 21 23:29	18°♈20'56	
direct	8463 Dec 27 22:50	23°♈27'57		evening set	8470 Apr 23 08:50	21°♈25'33	
evening set	8464 Mar 29 10:29	26°♈38'04					
				conjunction	8470 May 09 01:34	22°♈20'09	-0°48'18
conjunction	8464 Apr 14 03:49	27°♈33'43	-0°53'52	minimum elong	8470 May 09 01:34	22°♈20'09	0°48'27
minimum elong	8464 Apr 14 03:49	27°♈33'43	0°53'56	max. Earth dist.	8470 May 09 17:00	22°♈22'24	20.80742 AU
max. Earth dist.	8464 Apr 14 13:44	27°♈35'11	20.51053 AU	morning rise	8470 May 24 19:05	23°♈14'54	
morning rise	8464 Apr 29 20:38	28°♈29'19		retrograde	8470 Aug 25 09:24	26°♈22'02	
	8464 May 27 23:54	0°♈		opposition	8470 Nov 10 17:03	24°♈23'29	-0°52'28
retrograde	8464 Jul 30 20:58	1°♈38'54		min. Earth dist.	8470 Nov 10 01:19	24°♈25'03	18.82875 AU
	8464 Oct 07 05:43	30°♈		direct	8471 Jan 26 10:22	22°♈25'33	
opposition	8464 Oct 15 12:06	29°♈39'59	-0°59'34	evening set	8471 Apr 27 15:00	25°♈29'27	
min. Earth dist.	8464 Oct 15 01:38	29°♈41'03	18.53790 AU				

conjunction	8471 May 13 07:47	26° <b>8</b> 23'56 -0°46'29	retrograde	8477 Sep 22 22:11	24° <b>II</b> 33'12
minimum elong	8471 May 13 07:47	26° <b>8</b> 23'56 0°46'38	opposition	8477 Dec 09 15:34	22° <b>II</b> 34'41 -0°32'53
max. Earth dist.	8471 May 13 23:42	26° <b>8</b> 26'15 20.84878 AU	min. Earth dist.	8477 Dec 09 00:36	22° <b>II</b> 36'11 19.01095 AU
morning rise	8471 May 29 01:38	27° <b>8</b> 18'35	direct	8478 Feb 23 19:30	20° <b>II</b> 37'50
	8471 Jul 28 16:18	0° <b>II</b>	evening set	8478 May 25 03:42	23° <b>II</b> 38'08
retrograde	8471 Aug 29 18:02	0° <b>II</b> 25'27			
	8471 Oct 01 14:43	30° <b>8</b>	conjunction	8478 Jun 09 22:52	24° <b>II</b> 32'17 -0°28'11
opposition	8471 Nov 15 04:09	28° <b>8</b> 26'59 -0°50'19	minimum elong	8478 Jun 09 22:52	24° <b>II</b> 32'17 0°28'23
min. Earth dist.	8471 Nov 14 13:04	28° <b>8</b> 28'30 18.86847 AU	max. Earth dist.	8478 Jun 10 14:57	24° <b>II</b> 34'36 21.01456 AU
direct	8472 Jan 30 18:52	26° <b>8</b> 29'19	morning rise	8478 Jun 25 20:15	25° <b>II</b> 26'46
evening set	8472 Apr 30 20:49	29° <b>8</b> 32'32	retrograde	8478 Sep 27 07:43	28° <b>II</b> 32'47
	8472 May 08 20:24	0° <b>II</b>	min. Earth dist.	8478 Dec 13 08:24	26° <b>II</b> 35'46 19.01742 AU
			opposition	8478 Dec 14 00:14	26° <b>II</b> 34'11 -0°29'21
conjunction	8472 May 16 13:48	0° <b>II</b> 26'55 -0°44'27	direct	8479 Feb 28 03:55	24° <b>II</b> 37'19
minimum elong	8472 May 16 13:48	0° <b>II</b> 26'55 0°44'37	evening set	8479 May 29 08:26	27° <b>II</b> 37'21
max. Earth dist.	8472 May 17 06:09	0° <b>II</b> 29'18 20.88675 AU			
morning rise	8472 Jun 01 07:59	1° <b>II</b> 21'30	conjunction	8479 Jun 14 04:04	28° <b>II</b> 31'31 -0°24'55
retrograde	8472 Sep 02 04:09	4° <b>II</b> 28'09	minimum elong	8479 Jun 14 04:04	28° <b>II</b> 31'31 0°25'07
opposition	8472 Nov 18 14:52	2° <b>II</b> 29'45 -0°47'56	max. Earth dist.	8479 Jun 14 20:16	28° <b>II</b> 33'51 21.01888 AU
min. Earth dist.	8472 Nov 17 22:25	2° <b>II</b> 31'23 18.90443 AU	morning rise	8479 Jun 30 02:04	29° <b>II</b> 26'02
direct	8473 Feb 03 04:32	0° <b>II</b> 32'18		8479 Jul 10 09:27	0° <b>III</b>
evening set	8473 May 05 02:20	3° <b>II</b> 34'55	retrograde	8479 Oct 01 14:31	2° <b>III</b> 32'06
			opposition	8479 Dec 18 08:42	0° <b>III</b> 33'22 -0°25'40
conjunction	8473 May 20 19:29	4° <b>II</b> 29'13 -0°42'12	min. Earth dist.	8479 Dec 17 17:56	0° <b>III</b> 34'51 19.01984 AU
minimum elong	8473 May 20 19:29	4° <b>II</b> 29'13 0°42'23		8480 Jan 01 10:33	30° <b>8</b> <b>II</b>
max. Earth dist.	8473 May 21 12:07	4° <b>II</b> 31'38 20.92053 AU	direct	8480 Mar 03 09:14	28° <b>II</b> 36'31
morning rise	8473 Jun 05 14:06	5° <b>II</b> 23'44		8480 May 01 03:05	0° <b>III</b>
retrograde	8473 Sep 06 12:04	8° <b>II</b> 30'13	evening set	8480 Jun 01 13:08	1° <b>III</b> 36'20
min. Earth dist.	8473 Nov 22 09:53	6° <b>II</b> 33'24 18.93603 AU			
opposition	8473 Nov 23 01:25	6° <b>II</b> 31'51 -0°45'20	conjunction	8480 Jun 17 09:20	2° <b>III</b> 30'33 -0°21'32
direct	8474 Feb 07 12:39	4° <b>II</b> 34'38	minimum elong	8480 Jun 17 09:20	2° <b>III</b> 30'33 0°21'44
evening set	8474 May 09 07:46	7° <b>II</b> 36'40	max. Earth dist.	8480 Jun 18 01:23	2° <b>III</b> 32'51 21.01957 AU
			morning rise	8480 Jul 03 08:01	3° <b>III</b> 25'07
conjunction	8474 May 25 01:15	8° <b>II</b> 30'54 -0°39'46	retrograde	8480 Oct 04 23:46	6° <b>III</b> 31'15
minimum elong	8474 May 25 01:15	8° <b>II</b> 30'54 0°39'56	opposition	8480 Dec 21 16:57	4° <b>III</b> 32'26 -0°21'52
max. Earth dist.	8474 May 25 17:52	8° <b>II</b> 33'19 20.94978 AU	min. Earth dist.	8480 Dec 21 01:15	4° <b>III</b> 34'00 19.01873 AU
morning rise	8474 Jun 09 20:18	9° <b>II</b> 25'23	direct	8481 Mar 07 17:03	2° <b>III</b> 35'35
retrograde	8474 Sep 10 22:18	12° <b>II</b> 31'43	evening set	8481 Jun 05 17:51	5° <b>III</b> 35'15
opposition	8474 Nov 27 11:15	10° <b>II</b> 33'22 -0°42'31			
min. Earth dist.	8474 Nov 26 18:46	10° <b>II</b> 35'01 18.96272 AU	conjunction	8481 Jun 21 14:38	6° <b>III</b> 29'32 -0°18'03
direct	8475 Feb 11 21:25	8° <b>II</b> 36'18	minimum elong	8481 Jun 21 14:38	6° <b>III</b> 29'32 0°18'14
evening set	8475 May 13 13:04	11° <b>II</b> 37'50	max. Earth dist.	8481 Jun 22 06:49	6° <b>III</b> 31'51 21.01665 AU
			morning rise	8481 Jul 07 14:02	7° <b>III</b> 24'10
conjunction	8475 May 29 06:51	12° <b>II</b> 32'02 -0°37'07	retrograde	8481 Oct 09 07:13	10° <b>III</b> 30'26
minimum elong	8475 May 29 06:51	12° <b>II</b> 32'02 0°37'19	min. Earth dist.	8481 Dec 25 10:31	8° <b>III</b> 33'00 19.01410 AU
max. Earth dist.	8475 May 29 23:21	12° <b>II</b> 34'25 20.97377 AU	opposition	8481 Dec 26 01:09	8° <b>III</b> 31'32 -0°17'57
morning rise	8475 Jun 14 02:25	13° <b>II</b> 26'30	direct	8482 Mar 11 22:15	6° <b>III</b> 34'40
retrograde	8475 Sep 15 05:24	16° <b>II</b> 32'42	evening set	8482 Jun 09 22:49	9° <b>III</b> 34'17
opposition	8475 Dec 01 21:04	14° <b>II</b> 34'20 -0°39'29			
min. Earth dist.	8475 Dec 01 05:47	14° <b>II</b> 35'52 18.98404 AU	conjunction	8482 Jun 25 20:15	10° <b>III</b> 28'38 -0°14'29
direct	8476 Feb 16 04:44	12° <b>II</b> 37'23	minimum elong	8482 Jun 25 20:16	10° <b>III</b> 28'38 0°14'41
evening set	8476 May 16 18:04	15° <b>II</b> 38'28	behind sun begin	8482 Jun 25 17:28	10° <b>III</b> 28'15
			behind sun end	8482 Jun 25 23:03	10° <b>III</b> 29'02
conjunction	8476 Jun 01 12:16	16° <b>II</b> 32'37 -0°34'18	max. Earth dist.	8482 Jun 26 12:03	10° <b>III</b> 30'54 21.01040 AU
minimum elong	8476 Jun 01 12:16	16° <b>II</b> 32'37 0°34'29	morning rise	8482 Jul 11 20:25	11° <b>III</b> 23'22
max. Earth dist.	8476 Jun 02 04:32	16° <b>II</b> 34'58 20.99247 AU	retrograde	8482 Oct 13 16:22	14° <b>III</b> 29'48
morning rise	8476 Jun 17 08:23	17° <b>II</b> 27'04	opposition	8482 Dec 30 08:58	12° <b>III</b> 30'49 -0°13'57
retrograde	8476 Sep 18 15:30	20° <b>II</b> 33'11	min. Earth dist.	8482 Dec 29 17:40	12° <b>III</b> 32'22 19.00608 AU
opposition	8476 Dec 05 06:27	18° <b>II</b> 34'46 -0°36'16	direct	8483 Mar 16 05:04	10° <b>III</b> 33'57
min. Earth dist.	8476 Dec 04 14:17	18° <b>II</b> 36'23 19.00000 AU	evening set	8483 Jun 14 04:02	13° <b>III</b> 33'36
direct	8477 Feb 19 13:21	16° <b>II</b> 37'52			
evening set	8477 May 20 23:00	19° <b>II</b> 38'32	conjunction	8483 Jun 30 02:07	14° <b>III</b> 28'02 -0°10'51
			minimum elong	8483 Jun 30 02:07	14° <b>III</b> 28'02 0°11'02
conjunction	8477 Jun 05 17:37	20° <b>II</b> 32'41 -0°31'19	behind sun begin	8483 Jun 29 21:08	14° <b>III</b> 27'20
minimum elong	8477 Jun 05 17:37	20° <b>II</b> 32'41 0°31'31	behind sun end	8483 Jun 30 07:05	14° <b>III</b> 28'44
max. Earth dist.	8477 Jun 06 09:52	20° <b>II</b> 35'02 21.00584 AU	max. Earth dist.	8483 Jun 30 17:51	14° <b>III</b> 30'17 21.00057 AU
morning rise	8477 Jun 21 14:20	21° <b>II</b> 27'09	morning rise	8483 Jul 16 02:59	15° <b>III</b> 22'52

retrograde	8483 Oct 18 00:19	18° $\Omega$ 29'32	direct	8489 Apr 08 18:02	4° $\Omega$ 41'03	
opposition	8484 Jan 03 17:02	16° $\Omega$ 30'29 -0°09'54	evening set	8489 Jul 07 19:37	7° $\Omega$ 42'11	
min. Earth dist.	8484 Jan 03 02:54	16° $\Omega$ 31'54 18.99447 AU				
direct	8484 Mar 19 10:25	14° $\Omega$ 33'37	conjunction	8489 Jul 23 22:07	8° $\Omega$ 37'28 0°11'45	
evening set	8484 Jun 17 09:22	17° $\Omega$ 33'20	minimum elong	8489 Jul 23 22:07	8° $\Omega$ 37'28 0°11'35	
			behind sun begin	8489 Jul 23 17:23	8° $\Omega$ 36'48	
conjunction	8484 Jul 03 08:09	18° $\Omega$ 27'52 -0°07'10	behind sun end	8489 Jul 24 02:52	8° $\Omega$ 38'08	
minimum elong	8484 Jul 03 08:08	18° $\Omega$ 27'52 0°07'22	max. Earth dist.	8489 Jul 24 09:21	8° $\Omega$ 39'04 20.85667 AU	
behind sun begin	8484 Jul 03 02:05	18° $\Omega$ 27'01	morning rise	8489 Aug 09 03:39	9° $\Omega$ 33'11	
behind sun end	8484 Jul 03 14:11	18° $\Omega$ 28'43	retrograde	8489 Nov 11 10:05	12° $\Omega$ 41'59	
max. Earth dist.	8484 Jul 03 23:20	18° $\Omega$ 30'03 20.98728 AU	opposition	8490 Jan 27 18:49	10° $\Omega$ 42'15 0°15'02	
morning rise	8484 Jul 19 09:48	19° $\Omega$ 22'49	min. Earth dist.	8490 Jan 27 09:26	10° $\Omega$ 43'13 18.83709 AU	
retrograde	8484 Oct 21 09:50	22° $\Omega$ 29'46	direct	8490 Apr 13 00:31	8° $\Omega$ 44'44	
min. Earth dist.	8485 Jan 06 10:27	20° $\Omega$ 32'07 18.97927 AU	evening set	8490 Jul 12 03:59	11° $\Omega$ 46'17	
opposition	8485 Jan 07 01:03	20° $\Omega$ 30'38 -0°05'46				
direct	8485 Mar 23 16:55	18° $\Omega$ 33'44	conjunction	8490 Jul 28 07:16	12° $\Omega$ 41'44 0°15'27	
evening set	8485 Jun 21 15:16	21° $\Omega$ 33'38	minimum elong	8490 Jul 28 07:16	12° $\Omega$ 41'44 0°15'19	
			behind sun begin	8490 Jul 28 05:18	12° $\Omega$ 41'28	
conjunction	8485 Jul 07 14:44	22° $\Omega$ 28'17 -0°03'26	behind sun end	8490 Jul 28 09:14	12° $\Omega$ 42'01	
minimum elong	8485 Jul 07 14:45	22° $\Omega$ 28'17 0°03'37	max. Earth dist.	8490 Jul 28 16:55	12° $\Omega$ 43'07 20.81651 AU	
behind sun begin	8485 Jul 07 08:11	22° $\Omega$ 27'22	morning rise	8490 Aug 13 13:39	13° $\Omega$ 37'39	
behind sun end	8485 Jul 07 21:18	22° $\Omega$ 29'12		8490 Sep 08 15:20	15° $\Omega$	
max. Earth dist.	8485 Jul 08 05:42	22° $\Omega$ 30'25 20.97009 AU	retrograde	8490 Nov 15 21:56	16° $\Omega$ 46'52	
morning rise	8485 Jul 23 17:09	23° $\Omega$ 23'22		8491 Jan 26 19:10	15° $\Omega$	
retrograde	8485 Oct 25 18:18	26° $\Omega$ 30'38	opposition	8491 Feb 01 03:26	14° $\Omega$ 46'55 0°19'06	
opposition	8486 Jan 11 09:07	24° $\Omega$ 31'26 -0°01'37	min. Earth dist.	8491 Jan 31 18:31	14° $\Omega$ 47'50 18.79482 AU	
min. Earth dist.	8486 Jan 10 20:00	24° $\Omega$ 32'46 18.96007 AU	direct	8491 Apr 17 08:08	12° $\Omega$ 49'08	
direct	8486 Mar 27 22:19	22° $\Omega$ 34'30		8491 Jun 30 20:33	15° $\Omega$	
asc. node	8486 Jun 01 20:32	24° $\Omega$ 18'40	evening set	8491 Jul 16 12:51	15° $\Omega$ 51'11	
evening set	8486 Jun 25 21:37	25° $\Omega$ 34'36				
			conjunction	8491 Aug 01 16:57	16° $\Omega$ 46'50 0°19'05	
conjunction	8486 Jul 11 21:48	26° $\Omega$ 29'24 0°00'25	minimum elong	8491 Aug 01 16:57	16° $\Omega$ 46'50 0°18'56	
minimum elong	8486 Jul 11 21:49	26° $\Omega$ 29'24 0°00'14	max. Earth dist.	8491 Aug 02 02:05	16° $\Omega$ 48'09 20.77229 AU	
behind sun begin	8486 Jul 11 15:16	26° $\Omega$ 28'29	morning rise	8491 Aug 18 00:02	17° $\Omega$ 42'56	
behind sun end	8486 Jul 12 04:23	26° $\Omega$ 30'19	retrograde	8491 Nov 20 07:58	20° $\Omega$ 52'37	
max. Earth dist.	8486 Jul 12 11:46	26° $\Omega$ 31'24 20.94888 AU	opposition	8492 Feb 05 12:27	18° $\Omega$ 52'26 0°23'06	
morning rise	8486 Jul 28 01:04	27° $\Omega$ 24'37	min. Earth dist.	8492 Feb 05 05:01	18° $\Omega$ 53'12 18.74890 AU	
	8486 Sep 23 15:29	0° $\Omega$	direct	8492 Apr 20 15:16	16° $\Omega$ 54'24	
retrograde	8486 Oct 30 04:45	0° $\Omega$ 32'15	evening set	8492 Jul 19 22:08	19° $\Omega$ 56'58	
	8486 Dec 06 10:17	30° $\Omega$				
opposition	8487 Jan 15 17:15	28° $\Omega$ 32'57 0°02'34	conjunction	8492 Aug 05 03:00	20° $\Omega$ 52'50 0°22'38	
min. Earth dist.	8487 Jan 15 04:08	28° $\Omega$ 34'17 18.93659 AU	minimum elong	8492 Aug 05 03:00	20° $\Omega$ 52'50 0°22'31	
direct	8487 Apr 01 05:03	26° $\Omega$ 35'56	max. Earth dist.	8492 Aug 05 10:41	20° $\Omega$ 53'56 20.72496 AU	
evening set	8487 Jun 30 04:26	29° $\Omega$ 36'21	morning rise	8492 Aug 21 10:57	21° $\Omega$ 49'09	
	8487 Jul 07 03:28	0° $\Omega$	retrograde	8492 Nov 23 20:29	24° $\Omega$ 59'20	
			opposition	8493 Feb 08 21:37	22° $\Omega$ 58'55 0°26'59	
conjunction	8487 Jul 16 05:22	0° $\Omega$ 31'17 0°04'16	min. Earth dist.	8493 Feb 08 14:33	22° $\Omega$ 59'38 18.70020 AU	
minimum elong	8487 Jul 16 05:21	0° $\Omega$ 31'17 0°04'05	direct	8493 Apr 24 23:22	21° $\Omega$ 00'34	
behind sun begin	8487 Jul 15 22:49	0° $\Omega$ 30'22	evening set	8493 Jul 24 08:12	24° $\Omega$ 03'46	
behind sun end	8487 Jul 16 11:54	0° $\Omega$ 32'12				
max. Earth dist.	8487 Jul 16 18:44	0° $\Omega$ 33'12 20.92295 AU	conjunction	8493 Aug 09 13:56	24° $\Omega$ 59'52 0°26'05	
morning rise	8487 Aug 01 09:17	1° $\Omega$ 26'40	minimum elong	8493 Aug 09 13:56	24° $\Omega$ 59'52 0°25'58	
retrograde	8487 Nov 03 13:26	4° $\Omega$ 34'40	max. Earth dist.	8493 Aug 09 21:14	25° $\Omega$ 00'55 20.67492 AU	
opposition	8488 Jan 20 01:38	2° $\Omega$ 35'16 0°06'44	morning rise	8493 Aug 25 22:31	25° $\Omega$ 56'23	
min. Earth dist.	8488 Jan 19 14:13	2° $\Omega$ 36'26 18.90828 AU	retrograde	8493 Nov 28 07:33	29° $\Omega$ 07'05	
direct	8488 Apr 04 10:49	0° $\Omega$ 38'08	opposition	8494 Feb 13 06:58	27° $\Omega$ 06'27 0°30'45	
evening set	8488 Jul 03 11:48	3° $\Omega$ 38'53	min. Earth dist.	8494 Feb 13 01:14	27° $\Omega$ 07'03 18.64908 AU	
			direct	8494 Apr 29 07:04	25° $\Omega$ 07'51	
conjunction	8488 Jul 19 13:29	4° $\Omega$ 33'59 0°08'01	evening set	8494 Jul 28 18:58	28° $\Omega$ 11'43	
minimum elong	8488 Jul 19 13:29	4° $\Omega$ 33'59 0°07'51				
behind sun begin	8488 Jul 19 07:31	4° $\Omega$ 33'08	conjunction	8494 Aug 14 01:25	29° $\Omega$ 08'03 0°29'25	
behind sun end	8488 Jul 19 19:26	4° $\Omega$ 34'49	minimum elong	8494 Aug 14 01:25	29° $\Omega$ 08'03 0°29'18	
max. Earth dist.	8488 Jul 20 01:27	4° $\Omega$ 35'41 20.89232 AU	max. Earth dist.	8494 Aug 14 07:04	29° $\Omega$ 08'52 20.62290 AU	
morning rise	8488 Aug 04 18:15	5° $\Omega$ 29'31		8494 Aug 29 01:00	0° $\Omega$	
retrograde	8488 Nov 07 00:57	8° $\Omega$ 37'55	morning rise	8494 Aug 30 10:50	0° $\Omega$ 04'48	
opposition	8489 Jan 23 10:07	6° $\Omega$ 38'22 0°10'54	retrograde	8494 Dec 02 21:10	3° $\Omega$ 16'04	
min. Earth dist.	8489 Jan 22 23:00	6° $\Omega$ 39'30 18.87515 AU	opposition	8495 Feb 17 16:42	1° $\Omega$ 15'14 0°34'22	



min. Earth dist.	8495 Feb 17 11:25	1° $\mathring{M}$ 15'47	18.59621 AU	minimum elong	8501 Sep 14 08:41	28° $\mathring{M}$ 49'40	0°47'49
	8495 Mar 22 10:06	30° $\mathring{R}$ 8		max. Earth dist.	8501 Sep 14 06:52	28° $\mathring{M}$ 49'24	20.22259 AU
direct	8495 May 03 15:49	29° $\mathring{O}$ 16'20		morning rise	8501 Sep 30 22:12	29° $\mathring{M}$ 48'12	
	8495 Jun 13 21:27	0° $\mathring{M}$			8501 Oct 04 08:16	0° $\mathring{A}$	
evening set	8495 Aug 02 06:15	2° $\mathring{M}$ 20'58		retrograde	8502 Jan 03 08:34	3° $\mathring{A}$ 04'04	
				opposition	8502 Mar 20 02:11	1° $\mathring{A}$ 02'18	0°54'05
conjunction	8495 Aug 18 13:33	3° $\mathring{M}$ 17'33	0°32'36	min. Earth dist.	8502 Mar 20 04:33	1° $\mathring{A}$ 02'03	18.19154 AU
minimum elong	8495 Aug 18 13:33	3° $\mathring{M}$ 17'33	0°32'31		8502 Apr 14 20:19	30° $\mathring{R}$ $\mathring{M}$	
max. Earth dist.	8495 Aug 18 18:59	3° $\mathring{M}$ 18'20	20.56914 AU	direct	8502 Jun 02 17:31	29° $\mathring{M}$ 01'36	
morning rise	8495 Sep 03 23:32	4° $\mathring{M}$ 14'32			8502 Jul 20 11:09	0° $\mathring{A}$	
retrograde	8495 Dec 07 09:27	7° $\mathring{M}$ 26'24		evening set	8502 Sep 02 14:48	2° $\mathring{A}$ 12'56	
opposition	8496 Feb 22 02:54	5° $\mathring{M}$ 25'23	0°37'49				
min. Earth dist.	8496 Feb 21 22:42	5° $\mathring{M}$ 25'49	18.54177 AU	conjunction	8502 Sep 19 03:00	3° $\mathring{A}$ 11'26	0°49'34
direct	8496 May 07 00:06	3° $\mathring{M}$ 26'15		minimum elong	8502 Sep 19 02:59	3° $\mathring{A}$ 11'26	0°49'34
evening set	8496 Aug 05 18:29	6° $\mathring{M}$ 31'41		max. Earth dist.	8502 Sep 18 22:25	3° $\mathring{A}$ 10'45	20.16014 AU
				morning rise	8502 Oct 05 17:07	4° $\mathring{A}$ 10'14	
conjunction	8496 Aug 22 02:28	7° $\mathring{M}$ 28'30	0°35'38	retrograde	8503 Jan 08 01:54	7° $\mathring{A}$ 26'45	
minimum elong	8496 Aug 22 02:28	7° $\mathring{M}$ 28'30	0°35'32	opposition	8503 Mar 24 16:10	5° $\mathring{A}$ 24'48	0°55'53
max. Earth dist.	8496 Aug 22 06:08	7° $\mathring{M}$ 29'02	20.51422 AU	min. Earth dist.	8503 Mar 24 20:08	5° $\mathring{A}$ 24'23	18.12857 AU
morning rise	8496 Sep 07 13:16	8° $\mathring{M}$ 25'45		direct	8503 Jun 07 07:10	3° $\mathring{A}$ 23'45	
retrograde	8496 Dec 11 00:30	11° $\mathring{M}$ 38'15		evening set	8503 Sep 07 09:08	6° $\mathring{A}$ 36'08	
opposition	8497 Feb 25 13:25	9° $\mathring{M}$ 37'04	0°41'06				
min. Earth dist.	8497 Feb 25 09:51	9° $\mathring{M}$ 37'26	18.48634 AU	conjunction	8503 Sep 23 22:06	7° $\mathring{A}$ 34'56	0°51'01
direct	8497 May 11 09:45	7° $\mathring{M}$ 37'40		minimum elong	8503 Sep 23 22:06	7° $\mathring{A}$ 34'56	0°51'02
evening set	8497 Aug 10 07:28	10° $\mathring{M}$ 43'59		max. Earth dist.	8503 Sep 23 17:15	7° $\mathring{A}$ 34'12	20.09669 AU
				morning rise	8503 Oct 10 12:27	8° $\mathring{A}$ 33'58	
conjunction	8497 Aug 26 16:21	11° $\mathring{M}$ 41'05	0°38'29	retrograde	8504 Jan 12 19:54	11° $\mathring{A}$ 51'07	
minimum elong	8497 Aug 26 16:21	11° $\mathring{M}$ 41'05	0°38'26	opposition	8504 Mar 28 06:39	9° $\mathring{A}$ 48'59	0°57'21
max. Earth dist.	8497 Aug 26 19:49	11° $\mathring{M}$ 41'35	20.45818 AU	min. Earth dist.	8504 Mar 28 11:26	9° $\mathring{A}$ 48'28	18.06483 AU
morning rise	8497 Sep 12 03:41	12° $\mathring{M}$ 38'34		direct	8504 Jun 10 22:44	7° $\mathring{A}$ 47'34	
retrograde	8497 Dec 15 14:29	15° $\mathring{M}$ 51'43		evening set	8504 Sep 11 04:37	11° $\mathring{A}$ 01'00	
opposition	8498 Mar 02 00:29	13° $\mathring{M}$ 50'25	0°44'10				
min. Earth dist.	8498 Mar 01 22:03	13° $\mathring{M}$ 50'41	18.42977 AU	conjunction	8504 Sep 27 17:59	12° $\mathring{A}$ 00'04	0°52'11
direct	8498 May 15 18:41	11° $\mathring{M}$ 50'48		minimum elong	8504 Sep 27 17:59	12° $\mathring{A}$ 00'04	0°52'13
evening set	8498 Aug 14 21:28	14° $\mathring{M}$ 58'03		max. Earth dist.	8504 Sep 27 10:34	11° $\mathring{A}$ 58'57	20.03294 AU
				morning rise	8504 Oct 14 08:53	12° $\mathring{A}$ 59'22	
conjunction	8498 Aug 31 06:57	15° $\mathring{M}$ 55'24	0°41'09	retrograde	8505 Jan 16 13:14	16° $\mathring{A}$ 17'06	
minimum elong	8498 Aug 31 06:57	15° $\mathring{M}$ 55'24	0°41'06	opposition	8505 Apr 01 21:36	14° $\mathring{A}$ 14'46	0°58'30
max. Earth dist.	8498 Aug 31 08:21	15° $\mathring{M}$ 55'37	20.40118 AU	min. Earth dist.	8505 Apr 02 04:05	14° $\mathring{A}$ 14'04	18.00128 AU
morning rise	8498 Sep 16 19:01	16° $\mathring{M}$ 53'09		direct	8505 Jun 15 13:45	12° $\mathring{A}$ 12'57	
retrograde	8498 Dec 20 06:53	20° $\mathring{M}$ 06'59		evening set	8505 Sep 16 00:46	15° $\mathring{A}$ 27'28	
opposition	8499 Mar 06 11:59	18° $\mathring{M}$ 05'35	0°47'01				
min. Earth dist.	8499 Mar 06 10:34	18° $\mathring{M}$ 05'44	18.37227 AU	conjunction	8505 Oct 02 14:51	16° $\mathring{A}$ 26'48	0°53'03
direct	8499 May 20 05:40	16° $\mathring{M}$ 05'42		minimum elong	8505 Oct 02 14:51	16° $\mathring{A}$ 26'48	0°53'06
evening set	8499 Aug 19 12:18	19° $\mathring{M}$ 13'57		max. Earth dist.	8505 Oct 02 07:16	16° $\mathring{A}$ 25'40	19.96964 AU
				morning rise	8505 Oct 19 05:53	17° $\mathring{A}$ 26'20	
conjunction	8499 Sep 04 22:37	20° $\mathring{M}$ 11'36	0°43'36	retrograde	8506 Jan 21 08:29	20° $\mathring{A}$ 44'39	
minimum elong	8499 Sep 04 22:37	20° $\mathring{M}$ 11'36	0°43'34	opposition	8506 Apr 06 13:07	18° $\mathring{A}$ 42'08	0°59'18
max. Earth dist.	8499 Sep 04 23:46	20° $\mathring{M}$ 11'46	20.34303 AU	min. Earth dist.	8506 Apr 06 20:04	18° $\mathring{A}$ 41'23	17.93844 AU
morning rise	8499 Sep 21 11:06	21° $\mathring{M}$ 09'36		direct	8506 Jun 20 07:11	16° $\mathring{A}$ 39'56	
retrograde	8499 Dec 24 22:26	24° $\mathring{M}$ 24'08		evening set	8506 Sep 20 21:48	19° $\mathring{A}$ 55'31	
opposition	8500 Mar 11 00:09	22° $\mathring{M}$ 22'37	0°49'38				
min. Earth dist.	8500 Mar 10 23:54	22° $\mathring{M}$ 22'39	18.31349 AU	conjunction	8506 Oct 07 12:08	20° $\mathring{A}$ 55'07	0°53'35
direct	8500 May 24 16:05	20° $\mathring{M}$ 22'30		minimum elong	8506 Oct 07 12:08	20° $\mathring{A}$ 55'07	0°53'39
evening set	8500 Aug 24 04:08	23° $\mathring{M}$ 31'46		max. Earth dist.	8506 Oct 07 02:20	20° $\mathring{A}$ 53'38	19.90747 AU
				morning rise	8506 Oct 24 03:30	21° $\mathring{A}$ 54'52	
conjunction	8500 Sep 09 15:02	24° $\mathring{M}$ 29'41	0°45'50	retrograde	8507 Jan 26 02:37	25° $\mathring{A}$ 13'44	
minimum elong	8500 Sep 09 15:02	24° $\mathring{M}$ 29'41	0°45'49	opposition	8507 Apr 11 05:16	23° $\mathring{A}$ 11'03	0°59'45
max. Earth dist.	8500 Sep 09 13:44	24° $\mathring{M}$ 29'30	20.28362 AU	min. Earth dist.	8507 Apr 11 13:48	23° $\mathring{A}$ 10'08	17.87724 AU
morning rise	8500 Sep 26 04:14	25° $\mathring{M}$ 27'58		direct	8507 Jun 24 23:26	21° $\mathring{A}$ 08'27	
retrograde	8500 Dec 29 15:50	28° $\mathring{M}$ 43'11		evening set	8507 Sep 25 19:26	24° $\mathring{A}$ 25'07	
opposition	8501 Mar 15 12:57	26° $\mathring{M}$ 41'33	0°52'00				
min. Earth dist.	8501 Mar 15 14:08	26° $\mathring{M}$ 41'25	18.25336 AU	conjunction	8507 Oct 12 10:21	25° $\mathring{A}$ 24'58	0°53'48
direct	8501 May 29 04:29	24° $\mathring{M}$ 41'09		minimum elong	8507 Oct 12 10:21	25° $\mathring{A}$ 24'58	0°53'54
evening set	8501 Aug 28 20:58	27° $\mathring{M}$ 51'27		max. Earth dist.	8507 Oct 12 00:36	25° $\mathring{A}$ 23'29	19.84729 AU
				morning rise	8507 Oct 29 01:47	26° $\mathring{A}$ 24'57	
conjunction	8501 Sep 14 08:42	28° $\mathring{M}$ 49'40	0°47'50	retrograde	8508 Jan 30 23:17	29° $\mathring{A}$ 44'20	

opposition	8508 Apr 14 21:52	27° <u>♏</u> 41'30	0°59'50	evening set	8514 Oct 29 00:30	26° <u>♏</u> 36'35	
min. Earth dist.	8508 Apr 15 06:25	27° <u>♏</u> 40'34	17.81827 AU				
direct	8508 Jun 28 18:07	25° <u>♏</u> 38'33		conjunction	8514 Nov 14 16:27	27° <u>♏</u> 37'54	0°45'56
evening set	8508 Sep 29 18:02	28° <u>♏</u> 56'16		minimum elong	8514 Nov 14 16:27	27° <u>♏</u> 37'54	0°46'06
				max. Earth dist.	8514 Nov 14 00:52	27° <u>♏</u> 35'30	19.51824 AU
conjunction	8508 Oct 16 09:11	29° <u>♏</u> 56'22	0°53'41	morning rise	8514 Dec 01 07:12	28° <u>♏</u> 39'06	
minimum elong	8508 Oct 16 09:11	29° <u>♏</u> 56'22	0°53'47		8514 Dec 24 22:51	0° <u>♏</u>	
max. Earth dist.	8508 Oct 15 21:33	29° <u>♏</u> 54'36	19.78966 AU	retrograde	8515 Mar 04 10:38	2° <u>♏</u> 01'25	
	8508 Oct 17 09:09	0° <u>♏</u>			8515 May 16 22:20	30° <u>♏</u>	
morning rise	8508 Nov 02 00:50	0° <u>♏</u> 56'34		opposition	8515 May 17 12:26	29° <u>♏</u> 58'28	0°49'53
retrograde	8509 Feb 03 18:57	4° <u>♏</u> 16'28		min. Earth dist.	8515 May 18 02:23	29° <u>♏</u> 56'56	17.50152 AU
opposition	8509 Apr 19 15:16	2° <u>♏</u> 13'30	0°59'32	direct	8515 Jul 31 15:05	27° <u>♏</u> 53'50	
min. Earth dist.	8509 Apr 20 01:22	2° <u>♏</u> 12'25	17.76224 AU		8515 Oct 11 07:22	0° <u>♏</u>	
direct	8509 Jul 03 11:30	0° <u>♏</u> 10'12		evening set	8515 Nov 03 03:46	1° <u>♏</u> 18'24	
evening set	8509 Oct 04 17:19	3° <u>♏</u> 28'59					
				conjunction	8515 Nov 19 19:31	2° <u>♏</u> 19'51	0°43'29
conjunction	8509 Oct 21 08:52	4° <u>♏</u> 29'20	0°53'14	minimum elong	8515 Nov 19 19:31	2° <u>♏</u> 19'51	0°43'40
minimum elong	8509 Oct 21 08:52	4° <u>♏</u> 29'20	0°53'21	max. Earth dist.	8515 Nov 19 02:44	2° <u>♏</u> 17'15	19.48511 AU
max. Earth dist.	8509 Oct 20 21:12	4° <u>♏</u> 27'33	19.73524 AU	morning rise	8515 Dec 06 10:02	3° <u>♏</u> 21'09	
morning rise	8509 Nov 07 00:28	5° <u>♏</u> 29'44		retrograde	8516 Mar 08 11:17	6° <u>♏</u> 43'41	
retrograde	8510 Feb 08 17:01	8° <u>♏</u> 50'06		opposition	8516 May 21 09:53	4° <u>♏</u> 40'45	0°47'00
opposition	8510 Apr 24 09:05	6° <u>♏</u> 47'04	0°58'51	min. Earth dist.	8516 May 21 23:35	4° <u>♏</u> 39'15	17.47002 AU
min. Earth dist.	8510 Apr 24 18:52	6° <u>♏</u> 46'00	17.70955 AU	direct	8516 Aug 04 15:48	2° <u>♏</u> 35'55	
direct	8510 Jul 08 07:19	4° <u>♏</u> 43'29		evening set	8516 Nov 07 07:22	6° <u>♏</u> 01'15	
evening set	8510 Oct 09 17:26	8° <u>♏</u> 03'18					
				conjunction	8516 Nov 23 23:03	7° <u>♏</u> 02'49	0°40'45
conjunction	8510 Oct 26 09:07	9° <u>♏</u> 03'53	0°52'27	minimum elong	8516 Nov 23 23:03	7° <u>♏</u> 02'49	0°40'56
minimum elong	8510 Oct 26 09:06	9° <u>♏</u> 03'53	0°52'33	max. Earth dist.	8516 Nov 23 06:12	7° <u>♏</u> 00'12	19.45522 AU
max. Earth dist.	8510 Oct 25 20:02	9° <u>♏</u> 01'53	19.68439 AU	morning rise	8516 Dec 10 12:59	8° <u>♏</u> 04'11	
morning rise	8510 Nov 12 00:44	10° <u>♏</u> 04'29		retrograde	8517 Mar 13 10:04	11° <u>♏</u> 26'52	
retrograde	8511 Feb 13 14:06	13° <u>♏</u> 25'19		opposition	8517 May 26 08:03	9° <u>♏</u> 23'57	0°43'48
opposition	8511 Apr 29 03:47	11° <u>♏</u> 22'14	0°57'48	min. Earth dist.	8517 May 26 23:03	9° <u>♏</u> 22'19	17.44188 AU
min. Earth dist.	8511 Apr 29 15:03	11° <u>♏</u> 21'01	17.66070 AU	direct	8517 Aug 09 14:34	7° <u>♏</u> 18'56	
direct	8511 Jul 13 01:47	9° <u>♏</u> 18'24		evening set	8517 Nov 12 11:18	10° <u>♏</u> 44'55	
evening set	8511 Oct 14 18:00	12° <u>♏</u> 39'15		max. Earth dist.	8517 Nov 28 08:21	11° <u>♏</u> 43'45	19.42901 AU
conjunction	8511 Oct 31 09:57	13° <u>♏</u> 40'02	0°51'19	conjunction	8517 Nov 29 02:33	11° <u>♏</u> 46'34	0°37'44
minimum elong	8511 Oct 31 09:57	13° <u>♏</u> 40'02	0°51'26	minimum elong	8517 Nov 29 02:33	11° <u>♏</u> 46'34	0°37'56
max. Earth dist.	8511 Oct 30 20:43	13° <u>♏</u> 38'01	19.63754 AU	morning rise	8517 Dec 15 16:07	12° <u>♏</u> 47'59	
morning rise	8511 Nov 17 01:29	14° <u>♏</u> 40'49		retrograde	8518 Mar 18 10:22	16° <u>♏</u> 10'46	
	8511 Nov 22 10:58	15° <u>♏</u>		opposition	8518 May 31 06:26	14° <u>♏</u> 07'52	0°40'18
retrograde	8512 Feb 18 13:35	18° <u>♏</u> 02'06		min. Earth dist.	8518 May 31 21:08	14° <u>♏</u> 06'16	17.41763 AU
opposition	8512 May 02 22:56	15° <u>♏</u> 59'02	0°56'22	direct	8518 Aug 14 17:07	12° <u>♏</u> 02'39	
min. Earth dist.	8512 May 03 09:51	15° <u>♏</u> 57'50	17.61569 AU	evening set	8518 Nov 17 15:14	15° <u>♏</u> 29'13	
	8512 May 26 12:53	15° <u>♏</u>					
direct	8512 Jul 16 23:10	13° <u>♏</u> 54'59		conjunction	8518 Dec 04 06:17	16° <u>♏</u> 30'56	0°34'27
	8512 Sep 05 01:55	15° <u>♏</u>		minimum elong	8518 Dec 04 06:17	16° <u>♏</u> 30'56	0°34'38
evening set	8512 Oct 18 19:36	17° <u>♏</u> 16'50		max. Earth dist.	8518 Dec 03 12:49	16° <u>♏</u> 28'13	19.40681 AU
				morning rise	8518 Dec 20 19:07	17° <u>♏</u> 32'21	
conjunction	8512 Nov 04 11:35	18° <u>♏</u> 17'50	0°49'51	retrograde	8519 Mar 23 08:56	20° <u>♏</u> 55'10	
minimum elong	8512 Nov 04 11:35	18° <u>♏</u> 17'50	0°49'59	opposition	8519 Jun 05 05:16	18° <u>♏</u> 52'17	0°36'30
max. Earth dist.	8512 Nov 03 21:21	18° <u>♏</u> 15'38	19.59433 AU	min. Earth dist.	8519 Jun 05 20:43	18° <u>♏</u> 50'36	17.39761 AU
morning rise	8512 Nov 21 02:57	19° <u>♏</u> 18'46		direct	8519 Aug 19 17:30	16° <u>♏</u> 46'54	
retrograde	8513 Feb 22 11:30	22° <u>♏</u> 40'26		evening set	8519 Nov 22 19:16	20° <u>♏</u> 13'57	
opposition	8513 May 07 18:47	20° <u>♏</u> 37'24	0°54'34				
min. Earth dist.	8513 May 08 07:25	20° <u>♏</u> 36'02	17.57433 AU	conjunction	8519 Dec 09 09:45	21° <u>♏</u> 15'41	0°30'55
direct	8513 Jul 21 18:48	18° <u>♏</u> 33'09		minimum elong	8519 Dec 09 09:45	21° <u>♏</u> 15'41	0°31'08
evening set	8513 Oct 23 21:50	21° <u>♏</u> 56'00		max. Earth dist.	8519 Dec 08 15:08	21° <u>♏</u> 12'46	19.38917 AU
				morning rise	8519 Dec 25 22:11	22° <u>♏</u> 17'07	
conjunction	8513 Nov 09 13:50	22° <u>♏</u> 57'10	0°48'03	retrograde	8520 Mar 27 08:54	25° <u>♏</u> 39'54	
minimum elong	8513 Nov 09 13:50	22° <u>♏</u> 57'10	0°48'11	opposition	8520 Jun 09 04:18	23° <u>♏</u> 37'02	0°32'27
max. Earth dist.	8513 Nov 08 22:49	22° <u>♏</u> 54'51	19.55472 AU	min. Earth dist.	8520 Jun 09 19:27	23° <u>♏</u> 35'22	17.38236 AU
morning rise	8513 Nov 26 05:00	23° <u>♏</u> 58'15		direct	8520 Aug 23 20:40	21° <u>♏</u> 31'28	
retrograde	8514 Feb 27 12:06	27° <u>♏</u> 20'16		evening set	8520 Nov 26 23:16	24° <u>♏</u> 58'55	
opposition	8514 May 12 15:13	25° <u>♏</u> 17'16	0°52'24				
min. Earth dist.	8514 May 13 03:35	25° <u>♏</u> 15'56	17.53634 AU	conjunction	8520 Dec 13 13:25	26° <u>♏</u> 00'39	0°27'11
direct	8514 Jul 26 17:58	23° <u>♏</u> 12'50		minimum elong	8520 Dec 13 13:25	26° <u>♏</u> 00'39	0°27'22

max. Earth dist.	8520 Dec 12 20:03	25° $\overline{8}$ 57'56	19.37638 AU	conjunction	8527 Jan 12 04:55	24° $\overline{3}$ 28'01	0°01'52
morning rise	8520 Dec 30 00:59	27° $\overline{8}$ 02'03		minimum elong	8527 Jan 12 04:54	24° $\overline{3}$ 28'01	0°02'03
	8521 Mar 02 11:32	0° $\overline{3}$		behind sun begin	8527 Jan 11 22:12	24° $\overline{3}$ 27'00	
retrograde	8521 Apr 01 08:07	0° $\overline{3}$ 24'44		behind sun end	8527 Jan 12 11:36	24° $\overline{3}$ 29'02	
	8521 May 01 16:58	30° $\overline{8}$ $\overline{8}$		max. Earth dist.	8527 Jan 11 15:14	24° $\overline{3}$ 25'53	19.42163 AU
opposition	8521 Jun 14 03:37	28° $\overline{8}$ 21'54	0°28'10	morning rise	8527 Jan 28 11:31	25° $\overline{3}$ 28'46	
min. Earth dist.	8521 Jun 14 18:52	28° $\overline{8}$ 20'15	17.37215 AU	retrograde	8527 Apr 30 06:46	28° $\overline{3}$ 50'01	
direct	8521 Aug 28 22:27	26° $\overline{8}$ 16'13		desc. node	8527 Jun 13 20:40	27° $\overline{3}$ 59'01	
evening set	8521 Dec 02 03:17	29° $\overline{8}$ 43'58		opposition	8527 Jul 13 03:00	26° $\overline{3}$ 48'00	-0°00'23
	8521 Dec 06 11:47	0° $\overline{3}$		min. Earth dist.	8527 Jul 13 14:23	26° $\overline{3}$ 46'46	17.43431 AU
				direct	8527 Sep 27 10:52	24° $\overline{3}$ 42'35	
conjunction	8521 Dec 18 16:40	0° $\overline{3}$ 45'40	0°23'15	evening set	8527 Dec 31 21:25	28° $\overline{3}$ 10'15	
minimum elong	8521 Dec 18 16:40	0° $\overline{3}$ 45'40	0°23'27				
max. Earth dist.	8521 Dec 17 22:31	0° $\overline{3}$ 42'50	19.36901 AU	conjunction	8528 Jan 17 06:12	29° $\overline{3}$ 11'15	-0°02'41
morning rise	8522 Jan 04 03:39	1° $\overline{3}$ 47'01		minimum elong	8528 Jan 17 06:12	29° $\overline{3}$ 11'15	0°02'29
retrograde	8522 Apr 06 07:44	5° $\overline{3}$ 09'34		behind sun begin	8528 Jan 16 23:30	29° $\overline{3}$ 10'14	
opposition	8522 Jun 19 03:12	3° $\overline{3}$ 06'47	0°23'42	behind sun end	8528 Jan 17 12:53	29° $\overline{3}$ 12'16	
min. Earth dist.	8522 Jun 19 18:00	3° $\overline{3}$ 05'11	17.36774 AU	max. Earth dist.	8528 Jan 16 17:02	29° $\overline{3}$ 09'12	19.44800 AU
direct	8522 Sep 03 00:31	1° $\overline{3}$ 01'00			8528 Jan 30 06:57	0° $\approx$	
evening set	8522 Dec 07 06:47	4° $\overline{3}$ 28'57		morning rise	8528 Feb 02 11:53	0° $\approx$ 11'49	
				retrograde	8528 May 04 03:56	3° $\approx$ 32'40	
conjunction	8522 Dec 23 19:40	5° $\overline{3}$ 30'36	0°19'10	opposition	8528 Jul 17 03:13	1° $\approx$ 30'51	-0°05'18
minimum elong	8522 Dec 23 19:40	5° $\overline{3}$ 30'36	0°19'22	min. Earth dist.	8528 Jul 17 14:52	1° $\approx$ 29'35	17.46282 AU
max. Earth dist.	8522 Dec 23 03:15	5° $\overline{3}$ 28'02	19.36755 AU		8528 Aug 25 12:36	30° $\overline{8}$ $\overline{3}$	
morning rise	8523 Jan 09 05:45	6° $\overline{3}$ 31'53		direct	8528 Oct 01 12:00	29° $\overline{3}$ 25'35	
retrograde	8523 Apr 11 08:13	9° $\overline{3}$ 54'15			8528 Nov 06 21:13	0° $\approx$	
opposition	8523 Jun 24 03:00	7° $\overline{3}$ 51'33	0°19'04	evening set	8529 Jan 04 23:07	2° $\approx$ 52'54	
min. Earth dist.	8523 Jun 24 17:07	7° $\overline{3}$ 50'01	17.36926 AU				
direct	8523 Sep 08 02:48	5° $\overline{3}$ 45'45		conjunction	8529 Jan 21 06:56	3° $\approx$ 53'42	-0°07'04
evening set	8523 Dec 12 10:25	9° $\overline{3}$ 13'48		minimum elong	8529 Jan 21 06:55	3° $\approx$ 53'42	0°06'55
				behind sun begin	8529 Jan 21 00:43	3° $\approx$ 52'45	
conjunction	8523 Dec 28 22:28	10° $\overline{3}$ 15'23	0°14'57	behind sun end	8529 Jan 21 13:07	3° $\approx$ 54'39	
minimum elong	8523 Dec 28 22:28	10° $\overline{3}$ 15'23	0°15'08	max. Earth dist.	8529 Jan 20 18:30	3° $\approx$ 51'46	19.47848 AU
behind sun begin	8523 Dec 28 20:19	10° $\overline{3}$ 15'03		morning rise	8529 Feb 06 11:40	4° $\approx$ 54'03	
behind sun end	8523 Dec 29 00:36	10° $\overline{3}$ 15'42		retrograde	8529 May 09 03:15	8° $\approx$ 14'28	
max. Earth dist.	8523 Dec 28 05:44	10° $\overline{3}$ 12'46	19.37224 AU	opposition	8529 Jul 22 03:10	6° $\approx$ 12'49	-0°10'11
morning rise	8524 Jan 14 07:49	11° $\overline{3}$ 16'34		min. Earth dist.	8529 Jul 22 13:12	6° $\approx$ 11'45	17.49506 AU
retrograde	8524 Apr 15 07:15	14° $\overline{3}$ 38'43		direct	8529 Oct 06 15:56	4° $\approx$ 07'44	
opposition	8524 Jun 28 02:47	12° $\overline{3}$ 36'09	0°14'18	evening set	8530 Jan 10 00:11	7° $\approx$ 34'36	
min. Earth dist.	8524 Jun 28 16:38	12° $\overline{3}$ 34'38	17.37710 AU				
direct	8524 Sep 12 03:36	10° $\overline{3}$ 30'21		conjunction	8530 Jan 26 07:04	8° $\approx$ 35'11	-0°11'23
evening set	8524 Dec 16 13:40	13° $\overline{3}$ 58'28		minimum elong	8530 Jan 26 07:03	8° $\approx$ 35'11	0°11'13
max. Earth dist.	8525 Jan 01 09:58	14° $\overline{3}$ 57'35	19.38315 AU	behind sun begin	8530 Jan 26 02:08	8° $\approx$ 34'26	
				behind sun end	8530 Jan 26 11:59	8° $\approx$ 35'56	
conjunction	8525 Jan 02 01:06	14° $\overline{3}$ 59'56	0°10'39	max. Earth dist.	8530 Jan 25 19:41	8° $\approx$ 33'25	19.51246 AU
minimum elong	8525 Jan 02 01:06	14° $\overline{3}$ 59'56	0°10'51	morning rise	8530 Feb 11 10:46	9° $\approx$ 35'18	
behind sun begin	8525 Jan 01 20:01	14° $\overline{3}$ 59'10		retrograde	8530 May 13 23:28	12° $\approx$ 55'15	
behind sun end	8525 Jan 02 06:11	15° $\overline{3}$ 00'43		opposition	8530 Jul 27 03:11	10° $\approx$ 53'46	-0°14'58
morning rise	8525 Jan 18 09:31	16° $\overline{3}$ 01'00		min. Earth dist.	8530 Jul 27 13:27	10° $\approx$ 52'40	17.53080 AU
retrograde	8525 Apr 20 08:23	19° $\overline{3}$ 22'52		direct	8530 Oct 11 16:44	8° $\approx$ 48'51	
opposition	8525 Jul 03 02:49	17° $\overline{3}$ 20'29	0°09'27	evening set	8531 Jan 15 00:26	12° $\approx$ 15'10	
min. Earth dist.	8525 Jul 03 15:33	17° $\overline{3}$ 19'06	17.39081 AU				
direct	8525 Sep 17 06:29	15° $\overline{3}$ 14'48		conjunction	8531 Jan 31 06:19	13° $\approx$ 15'30	-0°15'37
evening set	8525 Dec 21 16:39	18° $\overline{3}$ 42'51		minimum elong	8531 Jan 31 06:18	13° $\approx$ 15'30	0°15'29
				behind sun begin	8531 Jan 31 04:31	13° $\approx$ 15'14	
conjunction	8526 Jan 07 03:09	19° $\overline{3}$ 44'11	0°06'17	behind sun end	8531 Jan 31 08:06	13° $\approx$ 15'47	
minimum elong	8526 Jan 07 03:08	19° $\overline{3}$ 44'11	0°06'29	max. Earth dist.	8531 Jan 30 19:23	13° $\approx$ 13'49	19.54985 AU
behind sun begin	8526 Jan 06 20:50	19° $\overline{3}$ 43'13		morning rise	8531 Feb 16 09:13	14° $\approx$ 15'24	
behind sun end	8526 Jan 07 09:26	19° $\overline{3}$ 45'09			8531 Feb 28 21:56	15° $\approx$	
max. Earth dist.	8526 Jan 06 12:13	19° $\overline{3}$ 41'52	19.39973 AU	retrograde	8531 May 18 21:46	17° $\approx$ 34'50	
morning rise	8526 Jan 23 10:41	20° $\overline{3}$ 45'06		opposition	8531 Aug 01 02:44	15° $\approx$ 33'29	-0°19'38
retrograde	8526 Apr 25 06:27	24° $\overline{3}$ 06'42		min. Earth dist.	8531 Aug 01 11:12	15° $\approx$ 32'35	17.56964 AU
opposition	8526 Jul 08 02:59	22° $\overline{3}$ 04'29	0°04'32		8531 Aug 14 08:24	15° $\overline{8}$ $\approx$	
min. Earth dist.	8526 Jul 08 15:43	22° $\overline{3}$ 03'07	17.41014 AU	direct	8531 Oct 16 19:57	13° $\approx$ 28'46	
direct	8526 Sep 22 07:24	19° $\overline{3}$ 58'55			8531 Dec 16 07:39	15° $\approx$	
evening set	8526 Dec 26 19:13	23° $\overline{3}$ 26'50		evening set	8532 Jan 20 00:03	16° $\approx$ 54'27	

conjunction	8532 Feb 05 05:02	17° $\approx$ 54'32 -0°19'45	retrograde	8538 Jun 19 08:30	19° $\cancel{\text{H}}$ 27'52
minimum elong	8532 Feb 05 05:02	17° $\approx$ 54'32 0°19'37	opposition	8538 Sep 02 12:31	17° $\cancel{\text{H}}$ 27'31 -0°46'35
max. Earth dist.	8532 Feb 04 19:38	17° $\approx$ 53'05 19.59013 AU	min. Earth dist.	8538 Sep 02 13:06	17° $\cancel{\text{H}}$ 27'27 17.92641 AU
morning rise	8532 Feb 21 06:52	18° $\approx$ 54'10	direct	8538 Nov 18 13:15	15° $\cancel{\text{H}}$ 24'33
retrograde	8532 May 22 16:58	22° $\approx$ 13'03	evening set	8539 Feb 20 19:55	18° $\cancel{\text{H}}$ 44'04
opposition	8532 Aug 05 02:02	20° $\approx$ 11'51 -0°24'09			
min. Earth dist.	8532 Aug 05 10:41	20° $\approx$ 10'55 17.61138 AU	conjunction	8539 Mar 08 18:19	19° $\cancel{\text{H}}$ 42'08 -0°43'14
direct	8532 Oct 20 20:22	18° $\approx$ 07'18	minimum elong	8539 Mar 08 18:19	19° $\cancel{\text{H}}$ 42'08 0°43'12
evening set	8533 Jan 23 22:55	21° $\approx$ 32'17	max. Earth dist.	8539 Mar 08 17:43	19° $\cancel{\text{H}}$ 42'03 19.95739 AU
			morning rise	8539 Mar 24 14:41	20° $\cancel{\text{H}}$ 39'54
conjunction	8533 Feb 09 02:48	22° $\approx$ 32'05 -0°23'44	retrograde	8539 Jun 24 02:21	23° $\cancel{\text{H}}$ 54'30
minimum elong	8533 Feb 09 02:48	22° $\approx$ 32'05 0°23'35	opposition	8539 Sep 07 08:27	21° $\cancel{\text{H}}$ 54'21 -0°49'22
max. Earth dist.	8533 Feb 08 17:39	22° $\approx$ 30'40 19.63341 AU	min. Earth dist.	8539 Sep 07 07:22	21° $\cancel{\text{H}}$ 54'27 17.98877 AU
morning rise	8533 Feb 25 03:52	23° $\approx$ 31'28	direct	8539 Nov 23 10:11	19° $\cancel{\text{H}}$ 51'46
retrograde	8533 May 27 13:51	26° $\approx$ 49'46	evening set	8540 Feb 25 12:15	23° $\cancel{\text{H}}$ 10'17
opposition	8533 Aug 10 00:57	24° $\approx$ 48'40 -0°28'30			
min. Earth dist.	8533 Aug 10 07:37	24° $\approx$ 47'58 17.65608 AU	conjunction	8540 Mar 12 10:01	24° $\cancel{\text{H}}$ 08'04 -0°45'36
direct	8533 Oct 25 22:18	22° $\approx$ 44'19	minimum elong	8540 Mar 12 10:01	24° $\cancel{\text{H}}$ 08'04 0°45'34
evening set	8534 Jan 28 20:35	26° $\approx$ 08'30	max. Earth dist.	8540 Mar 12 11:52	24° $\cancel{\text{H}}$ 08'21 20.02046 AU
			morning rise	8540 Mar 28 05:35	25° $\cancel{\text{H}}$ 05'33
conjunction	8534 Feb 13 23:38	27° $\approx$ 08'02 -0°27'32	retrograde	8540 Jun 27 17:57	28° $\cancel{\text{H}}$ 19'33
minimum elong	8534 Feb 13 23:38	27° $\approx$ 08'02 0°27'26	opposition	8540 Sep 11 03:57	26° $\cancel{\text{H}}$ 19'37 -0°51'49
max. Earth dist.	8534 Feb 13 16:41	27° $\approx$ 06'57 19.67955 AU	min. Earth dist.	8540 Sep 11 01:53	26° $\cancel{\text{H}}$ 19'50 18.05234 AU
morning rise	8534 Mar 01 23:41	28° $\approx$ 07'09	direct	8540 Nov 27 05:53	24° $\cancel{\text{H}}$ 17'26
	8534 Apr 05 08:53	0° $\cancel{\text{H}}$	evening set	8541 Mar 01 03:58	27° $\cancel{\text{H}}$ 34'56
retrograde	8534 Jun 01 08:03	1° $\cancel{\text{H}}$ 24'50			
	8534 Jul 31 12:41	30° $\cancel{\text{R}}$	conjunction	8541 Mar 17 00:48	28° $\cancel{\text{H}}$ 32'24 -0°47'41
opposition	8534 Aug 14 23:33	29° $\approx$ 23'52 -0°32'38	minimum elong	8541 Mar 17 00:48	28° $\cancel{\text{H}}$ 32'24 0°47'41
min. Earth dist.	8534 Aug 15 05:58	29° $\approx$ 23'11 17.70374 AU	max. Earth dist.	8541 Mar 17 02:54	28° $\cancel{\text{H}}$ 32'43 20.08446 AU
direct	8534 Oct 30 21:32	27° $\approx$ 19'43	morning rise	8541 Apr 01 19:57	29° $\cancel{\text{H}}$ 29'37
	8535 Jan 21 12:54	0° $\cancel{\text{H}}$		8541 Apr 10 12:16	0° $\cancel{\text{Y}}$
evening set	8535 Feb 02 17:33	0° $\cancel{\text{H}}$ 43'02	retrograde	8541 Jul 02 10:07	2° $\cancel{\text{Y}}$ 43'03
			opposition	8541 Sep 15 23:01	0° $\cancel{\text{Y}}$ 43'17 -0°53'57
conjunction	8535 Feb 18 19:30	1° $\cancel{\text{H}}$ 42'16 -0°31'09	min. Earth dist.	8541 Sep 15 19:41	0° $\cancel{\text{Y}}$ 43'38 18.11667 AU
minimum elong	8535 Feb 18 19:30	1° $\cancel{\text{H}}$ 42'16 0°31'02		8541 Oct 03 19:18	30° $\cancel{\text{R}}$ $\cancel{\text{H}}$
max. Earth dist.	8535 Feb 18 12:55	1° $\cancel{\text{H}}$ 41'15 19.72883 AU	direct	8541 Dec 02 01:25	28° $\cancel{\text{H}}$ 41'30
morning rise	8535 Mar 06 18:53	2° $\cancel{\text{H}}$ 41'07		8542 Jan 27 12:35	0° $\cancel{\text{Y}}$
retrograde	8535 Jun 06 03:43	5° $\cancel{\text{H}}$ 58'11	evening set	8542 Mar 05 18:33	1° $\cancel{\text{Y}}$ 57'56
opposition	8535 Aug 19 21:22	3° $\cancel{\text{H}}$ 57'19 -0°36'31			
min. Earth dist.	8535 Aug 20 01:42	3° $\cancel{\text{H}}$ 56'51 17.75466 AU	conjunction	8542 Mar 21 14:52	2° $\cancel{\text{Y}}$ 55'08 -0°49'28
direct	8535 Nov 04 21:30	1° $\cancel{\text{H}}$ 53'23	minimum elong	8542 Mar 21 14:52	2° $\cancel{\text{Y}}$ 55'08 0°49'29
evening set	8536 Feb 07 13:30	5° $\cancel{\text{H}}$ 15'49	max. Earth dist.	8542 Mar 21 19:10	2° $\cancel{\text{Y}}$ 55'47 20.14876 AU
			morning rise	8542 Apr 06 09:22	3° $\cancel{\text{Y}}$ 52'05
conjunction	8536 Feb 23 14:40	6° $\cancel{\text{H}}$ 14'46 -0°34'32	retrograde	8542 Jul 07 00:54	7° $\cancel{\text{Y}}$ 04'56
minimum elong	8536 Feb 23 14:40	6° $\cancel{\text{H}}$ 14'46 0°34'27	opposition	8542 Sep 20 17:30	5° $\cancel{\text{Y}}$ 05'21 -0°55'46
max. Earth dist.	8536 Feb 23 10:35	6° $\cancel{\text{H}}$ 14'08 19.78132 AU	min. Earth dist.	8542 Sep 20 13:05	5° $\cancel{\text{Y}}$ 05'49 18.18075 AU
morning rise	8536 Mar 10 13:03	7° $\cancel{\text{H}}$ 13'20	direct	8542 Dec 06 20:38	3° $\cancel{\text{Y}}$ 03'57
retrograde	8536 Jun 09 20:57	10° $\cancel{\text{H}}$ 29'46	evening set	8543 Mar 10 08:40	6° $\cancel{\text{Y}}$ 19'19
opposition	8536 Aug 23 18:59	8° $\cancel{\text{H}}$ 29'03 -0°40'10			
min. Earth dist.	8536 Aug 23 22:37	8° $\cancel{\text{H}}$ 28'40 17.80880 AU	conjunction	8543 Mar 26 04:11	7° $\cancel{\text{Y}}$ 16'14 -0°50'59
direct	8536 Nov 08 19:01	6° $\cancel{\text{H}}$ 25'24	minimum elong	8543 Mar 26 04:11	7° $\cancel{\text{Y}}$ 16'13 0°51'00
evening set	8537 Feb 11 08:35	9° $\cancel{\text{H}}$ 46'52	max. Earth dist.	8543 Mar 26 08:35	7° $\cancel{\text{Y}}$ 16'53 20.21251 AU
			morning rise	8543 Apr 10 22:22	8° $\cancel{\text{Y}}$ 12'56
conjunction	8537 Feb 27 08:40	10° $\cancel{\text{H}}$ 45'32 -0°37'42	retrograde	8543 Jul 11 14:46	11° $\cancel{\text{Y}}$ 25'12
minimum elong	8537 Feb 27 08:39	10° $\cancel{\text{H}}$ 45'32 0°37'37	opposition	8543 Sep 25 11:18	9° $\cancel{\text{Y}}$ 25'46 -0°57'16
max. Earth dist.	8537 Feb 27 05:02	10° $\cancel{\text{H}}$ 44'58 19.83713 AU	min. Earth dist.	8543 Sep 25 06:09	9° $\cancel{\text{Y}}$ 26'18 18.24415 AU
morning rise	8537 Mar 15 06:24	11° $\cancel{\text{H}}$ 43'50	direct	8543 Dec 11 14:24	7° $\cancel{\text{Y}}$ 24'43
retrograde	8537 Jun 14 15:54	14° $\cancel{\text{H}}$ 59'39	evening set	8544 Mar 13 21:51	10° $\cancel{\text{Y}}$ 39'02
opposition	8537 Aug 28 15:59	12° $\cancel{\text{H}}$ 59'05 -0°43'31			
min. Earth dist.	8537 Aug 28 17:29	12° $\cancel{\text{H}}$ 58'56 17.86623 AU	conjunction	8544 Mar 29 16:55	11° $\cancel{\text{Y}}$ 35'40 -0°52'11
direct	8537 Nov 13 17:15	10° $\cancel{\text{H}}$ 55'45	minimum elong	8544 Mar 29 16:55	11° $\cancel{\text{Y}}$ 35'40 0°52'13
evening set	8538 Feb 16 02:38	14° $\cancel{\text{H}}$ 16'17	max. Earth dist.	8544 Mar 29 23:08	11° $\cancel{\text{Y}}$ 36'36 20.27522 AU
			morning rise	8544 Apr 14 10:34	12° $\cancel{\text{Y}}$ 32'07
conjunction	8538 Mar 04 02:01	15° $\cancel{\text{H}}$ 14'38 -0°40'36	retrograde	8544 Jul 15 04:47	15° $\cancel{\text{Y}}$ 43'47
minimum elong	8538 Mar 04 02:01	15° $\cancel{\text{H}}$ 14'38 0°40'32	opposition	8544 Sep 29 04:39	13° $\cancel{\text{Y}}$ 44'30 -0°58'25
max. Earth dist.	8538 Mar 04 01:04	15° $\cancel{\text{H}}$ 14'29 19.89601 AU	min. Earth dist.	8544 Sep 28 22:17	13° $\cancel{\text{Y}}$ 45'09 18.30604 AU
morning rise	8538 Mar 19 22:52	16° $\cancel{\text{H}}$ 12'40	direct	8544 Dec 15 08:37	11° $\cancel{\text{Y}}$ 43'47

evening set	8545 Mar 18 10:15	14° $\Upsilon$ 57'01	max. Earth dist.	8551 Apr 29 01:14	11° $\mathcal{B}$ 05'42	20.66564 AU
			morning rise	8551 May 14 05:40	11° $\mathcal{B}$ 58'58	
conjunction	8545 Apr 03 04:39	15° $\Upsilon$ 53'23 -0°53'06		8551 Jul 28 19:22	15° $\mathcal{B}$	
minimum elong	8545 Apr 03 04:39	15° $\Upsilon$ 53'23 0°53'08	retrograde	8551 Aug 14 10:46	15° $\mathcal{B}$ 07'03	
max. Earth dist.	8545 Apr 03 11:00	15° $\Upsilon$ 54'20 20.33624 AU		8551 Aug 31 08:49	15° $\mathcal{R}$ $\mathcal{B}$	
morning rise	8545 Apr 18 22:06	16° $\Upsilon$ 49'36	opposition	8551 Oct 30 12:11	13° $\mathcal{B}$ 08'14 -0°57'23	
retrograde	8545 Jul 19 16:55	20° $\Upsilon$ 00'43	min. Earth dist.	8551 Oct 29 23:40	13° $\mathcal{B}$ 09'29 18.69089 AU	
opposition	8545 Oct 03 21:29	18° $\Upsilon$ 01'32 -0°59'15	direct	8552 Jan 15 10:21	11° $\mathcal{B}$ 09'25	
min. Earth dist.	8545 Oct 03 14:38	18° $\Upsilon$ 02'13 18.36624 AU	evening set	8552 Apr 16 03:22	14° $\mathcal{B}$ 15'41	
direct	8545 Dec 20 00:26	16° $\Upsilon$ 01'06		8552 Apr 28 20:07	15° $\mathcal{B}$	
evening set	8546 Mar 22 21:45	19° $\Upsilon$ 13'15				
			conjunction	8552 May 01 20:04	15° $\mathcal{B}$ 10'34 -0°51'15	
conjunction	8546 Apr 07 15:52	20° $\Upsilon$ 09'22 -0°53'42	minimum elong	8552 May 01 20:04	15° $\mathcal{B}$ 10'34 0°51'23	
minimum elong	8546 Apr 07 15:52	20° $\Upsilon$ 09'22 0°53'46	max. Earth dist.	8552 May 02 09:55	15° $\mathcal{B}$ 12'36 20.71518 AU	
max. Earth dist.	8546 Apr 07 23:51	20° $\Upsilon$ 10'33 20.39544 AU	morning rise	8552 May 17 13:05	16° $\mathcal{B}$ 05'32	
morning rise	8546 Apr 23 08:58	21° $\Upsilon$ 05'22	retrograde	8552 Aug 17 21:24	19° $\mathcal{B}$ 13'16	
retrograde	8546 Jul 24 05:45	24° $\Upsilon$ 15'53	min. Earth dist.	8552 Nov 02 10:20	17° $\mathcal{B}$ 15'59 18.73931 AU	
opposition	8546 Oct 08 13:23	22° $\Upsilon$ 16'46 -0°59'44	opposition	8552 Nov 03 00:38	17° $\mathcal{B}$ 14'33 -0°56'01	
min. Earth dist.	8546 Oct 08 05:12	22° $\Upsilon$ 17'36 18.42436 AU	direct	8553 Jan 18 22:23	15° $\mathcal{B}$ 16'03	
direct	8546 Dec 24 17:13	20° $\Upsilon$ 16'37	evening set	8553 Apr 20 10:13	18° $\mathcal{B}$ 21'30	
evening set	8547 Mar 27 08:34	23° $\Upsilon$ 27'41				
			conjunction	8553 May 06 02:50	19° $\mathcal{B}$ 16'14 -0°49'54	
conjunction	8547 Apr 12 02:11	24° $\Upsilon$ 23'34 -0°54'01	minimum elong	8553 May 06 02:50	19° $\mathcal{B}$ 16'14 0°50'03	
minimum elong	8547 Apr 12 02:11	24° $\Upsilon$ 23'34 0°54'05	max. Earth dist.	8553 May 06 17:12	19° $\mathcal{B}$ 18'20 20.76241 AU	
max. Earth dist.	8547 Apr 12 10:23	24° $\Upsilon$ 24'47 20.45257 AU	morning rise	8553 May 21 20:08	20° $\mathcal{B}$ 11'05	
morning rise	8547 Apr 27 19:15	25° $\Upsilon$ 19'21	retrograde	8553 Aug 22 06:20	23° $\mathcal{B}$ 18'31	
retrograde	8547 Jul 28 16:37	28° $\Upsilon$ 29'20	opposition	8553 Nov 07 12:46	21° $\mathcal{B}$ 19'55 -0°54'22	
opposition	8547 Oct 13 04:51	26° $\Upsilon$ 30'15 -0°59'54	min. Earth dist.	8553 Nov 06 22:44	21° $\mathcal{B}$ 21'19 18.78534 AU	
min. Earth dist.	8547 Oct 12 20:23	26° $\Upsilon$ 31'07 18.48065 AU	direct	8554 Jan 23 07:08	19° $\mathcal{B}$ 21'43	
direct	8547 Dec 29 07:11	24° $\Upsilon$ 30'21	evening set	8554 Apr 24 16:41	22° $\mathcal{B}$ 26'25	
evening set	8548 Mar 30 18:24	27° $\Upsilon$ 40'22				
			conjunction	8554 May 10 09:27	23° $\mathcal{B}$ 21'01 -0°48'18	
conjunction	8548 Apr 15 11:47	28° $\Upsilon$ 36'00 -0°54'01	minimum elong	8554 May 10 09:27	23° $\mathcal{B}$ 21'01 0°48'27	
minimum elong	8548 Apr 15 11:47	28° $\Upsilon$ 36'00 0°54'08	max. Earth dist.	8554 May 11 00:47	23° $\mathcal{B}$ 23'16 20.80704 AU	
max. Earth dist.	8548 Apr 15 21:40	28° $\Upsilon$ 37'28 20.50797 AU	morning rise	8554 May 26 02:56	24° $\mathcal{B}$ 15'46	
morning rise	8548 May 01 04:37	29° $\Upsilon$ 31'36	retrograde	8554 Aug 26 16:49	27° $\mathcal{B}$ 22'55	
	8548 May 09 11:48	0° $\mathcal{B}$	min. Earth dist.	8554 Nov 11 08:38	25° $\mathcal{B}$ 25'58 18.82832 AU	
retrograde	8548 Aug 01 04:19	2° $\mathcal{B}$ 41'02	opposition	8554 Nov 12 00:06	25° $\mathcal{B}$ 24'25 -0°52'27	
opposition	8548 Oct 16 19:33	0° $\mathcal{B}$ 42'00 -0°59'45	direct	8555 Jan 27 18:06	23° $\mathcal{B}$ 26'31	
min. Earth dist.	8548 Oct 16 09:20	0° $\mathcal{B}$ 43'02 18.53521 AU	evening set	8555 Apr 28 22:57	26° $\mathcal{B}$ 30'31	
	8548 Nov 03 10:55	30° $\mathcal{R}$ $\Upsilon$				
direct	8549 Jan 01 22:20	28° $\Upsilon$ 42'21	conjunction	8555 May 14 15:44	27° $\mathcal{B}$ 25'01 -0°46'28	
	8549 Feb 27 07:29	0° $\mathcal{B}$	minimum elong	8555 May 14 15:44	27° $\mathcal{B}$ 25'01 0°46'38	
evening set	8549 Apr 04 03:40	1° $\mathcal{B}$ 51'20	max. Earth dist.	8555 May 15 07:16	27° $\mathcal{B}$ 27'16 20.84826 AU	
			morning rise	8555 May 30 09:35	28° $\mathcal{B}$ 19'40	
conjunction	8549 Apr 19 20:40	2° $\mathcal{B}$ 46'46 -0°53'45		8555 Jul 01 16:19	0° $\mathcal{B}$	
minimum elong	8549 Apr 19 20:39	2° $\mathcal{B}$ 46'46 0°53'51	retrograde	8555 Aug 31 01:15	1° $\mathcal{B}$ 26'35	
max. Earth dist.	8549 Apr 20 07:05	2° $\mathcal{B}$ 48'18 20.56182 AU		8555 Nov 03 01:18	30° $\mathcal{R}$ $\mathcal{B}$	
morning rise	8549 May 05 13:32	3° $\mathcal{B}$ 42'10	opposition	8555 Nov 16 11:24	29° $\mathcal{B}$ 28'11 -0°50'17	
retrograde	8549 Aug 05 14:22	6° $\mathcal{B}$ 51'07	min. Earth dist.	8555 Nov 15 20:36	29° $\mathcal{B}$ 29'40 18.86775 AU	
opposition	8549 Oct 21 09:47	4° $\mathcal{B}$ 52'08 -0°59'16	direct	8556 Feb 01 01:39	27° $\mathcal{B}$ 30'33	
min. Earth dist.	8549 Oct 20 23:13	4° $\mathcal{B}$ 53'12 18.58856 AU		8556 Apr 22 00:37	0° $\mathcal{B}$	
direct	8550 Jan 06 10:35	2° $\mathcal{B}$ 52'44	evening set	8556 May 02 04:44	0° $\mathcal{B}$ 33'54	
evening set	8550 Apr 08 12:02	6° $\mathcal{B}$ 00'46				
			conjunction	8556 May 17 21:45	1° $\mathcal{B}$ 28'17 -0°44'24	
conjunction	8550 Apr 24 04:58	6° $\mathcal{B}$ 55'59 -0°53'11	minimum elong	8556 May 17 21:45	1° $\mathcal{B}$ 28'17 0°44'35	
minimum elong	8550 Apr 24 04:58	6° $\mathcal{B}$ 55'59 0°53'18	max. Earth dist.	8556 May 18 13:55	1° $\mathcal{B}$ 30'38 20.88571 AU	
max. Earth dist.	8550 Apr 24 16:59	6° $\mathcal{B}$ 57'46 20.61451 AU	morning rise	8556 Jun 02 15:53	2° $\mathcal{B}$ 22'53	
morning rise	8550 May 09 21:47	7° $\mathcal{B}$ 51'14	retrograde	8556 Sep 03 11:35	5° $\mathcal{B}$ 29'35	
retrograde	8550 Aug 10 01:24	10° $\mathcal{B}$ 59'44	opposition	8556 Nov 19 22:12	3° $\mathcal{B}$ 31'16 -0°47'53	
opposition	8550 Oct 25 23:14	9° $\mathcal{B}$ 00'49 -0°58'28	min. Earth dist.	8556 Nov 19 06:09	3° $\mathcal{B}$ 32'52 18.90301 AU	
min. Earth dist.	8550 Oct 25 10:47	9° $\mathcal{B}$ 02'04 18.64049 AU	direct	8557 Feb 04 12:08	1° $\mathcal{B}$ 33'52	
direct	8551 Jan 10 23:55	7° $\mathcal{B}$ 01'42	evening set	8557 May 06 10:30	4° $\mathcal{B}$ 36'36	
evening set	8551 Apr 12 20:02	10° $\mathcal{B}$ 08'49				
			conjunction	8557 May 22 03:39	5° $\mathcal{B}$ 30'55 -0°42'08	
conjunction	8551 Apr 28 12:43	11° $\mathcal{B}$ 03'52 -0°52'21	minimum elong	8557 May 22 03:39	5° $\mathcal{B}$ 30'55 0°42'19	
minimum elong	8551 Apr 28 12:43	11° $\mathcal{B}$ 03'52 0°52'29	max. Earth dist.	8557 May 22 19:46	5° $\mathcal{B}$ 33'15 20.91865 AU	

morning rise	8557 Jun 06 22:14	6°II25'27			8564 Apr 02 17:12	0°☿
retrograde	8557 Sep 07 19:58	9°II32'00		evening set	8564 Jun 02 20:56	2°☿38'32
opposition	8557 Nov 24 08:45	7°II33'42	-0°45'14			
min. Earth dist.	8557 Nov 23 17:41	7°II35'12	18.93365 AU	conjunction	8564 Jun 18 17:07	3°☿32'45 -0°21'18
direct	8558 Feb 08 19:05	5°II36'29		minimum elong	8564 Jun 18 17:08	3°☿32'45 0°21'30
evening set	8558 May 10 15:54	8°II38'39		max. Earth dist.	8564 Jun 19 09:27	3°☿35'06 21.01765 AU
				morning rise	8564 Jul 04 15:45	4°☿27'19
conjunction	8558 May 26 09:26	9°II32'54	-0°39'40	retrograde	8564 Oct 06 07:21	7°☿33'26
minimum elong	8558 May 26 09:26	9°II32'54	0°39'51	min. Earth dist.	8564 Dec 22 08:22	5°☿36'12 19.01750 AU
max. Earth dist.	8558 May 27 01:43	9°II35'16	20.94682 AU	opposition	8564 Dec 23 00:21	5°☿34'36 -0°21'36
morning rise	8558 Jun 11 04:28	10°II27'24		direct	8565 Mar 09 00:28	3°☿37'43
retrograde	8558 Sep 12 05:34	13°II33'47		evening set	8565 Jun 07 01:48	6°☿37'25
opposition	8558 Nov 28 18:47	11°II35'29	-0°42'23			
min. Earth dist.	8558 Nov 28 02:43	11°II37'05	18.95915 AU	conjunction	8565 Jun 22 22:32	7°☿31'41 -0°17'48
direct	8559 Feb 13 05:02	9°II38'24		minimum elong	8565 Jun 22 22:32	7°☿31'41 0°18'01
evening set	8559 May 14 21:12	12°II40'03		max. Earth dist.	8565 Jun 23 14:44	7°☿34'01 21.01611 AU
				morning rise	8565 Jul 08 21:53	8°☿26'20
conjunction	8559 May 30 14:59	13°II34'16	-0°37'00	retrograde	8565 Oct 10 14:09	11°☿32'34
minimum elong	8559 May 30 14:59	13°II34'16	0°37'11	opposition	8565 Dec 27 08:30	9°☿33'40 -0°17'40
max. Earth dist.	8559 May 31 06:59	13°II36'34	20.96966 AU	min. Earth dist.	8565 Dec 26 17:42	9°☿35'09 19.01422 AU
morning rise	8559 Jun 15 10:32	14°II28'44		direct	8566 Mar 13 05:45	7°☿36'48
retrograde	8559 Sep 16 13:45	17°II34'58		evening set	8566 Jun 11 06:45	10°☿36'27
opposition	8559 Dec 03 04:34	15°II36'38	-0°39'20			
min. Earth dist.	8559 Dec 02 13:39	15°II38'07	18.97947 AU	conjunction	8566 Jun 27 04:11	11°☿30'47 -0°14'13
direct	8560 Feb 17 11:55	13°II39'38		minimum elong	8566 Jun 27 04:11	11°☿30'47 0°14'25
evening set	8560 May 18 02:11	16°II40'47		behind sun begin	8566 Jun 27 01:09	11°☿30'21
				behind sun end	8566 Jun 27 07:13	11°☿31'12
conjunction	8560 Jun 02 20:25	17°II34'58	-0°34'09	max. Earth dist.	8566 Jun 27 20:12	11°☿33'05 21.01111 AU
minimum elong	8560 Jun 02 20:25	17°II34'58	0°34'22	morning rise	8566 Jul 13 04:15	12°☿25'30
max. Earth dist.	8560 Jun 03 12:33	17°II37'18	20.98763 AU	retrograde	8566 Oct 15 00:17	15°☿31'55
morning rise	8560 Jun 18 16:30	18°II29'26		opposition	8566 Dec 31 16:30	13°☿32'58 -0°13'39
retrograde	8560 Sep 19 22:37	21°II35'33		min. Earth dist.	8566 Dec 31 01:00	13°☿34'31 19.00729 AU
opposition	8560 Dec 06 13:54	19°II37'07	-0°36'06	direct	8567 Mar 17 12:40	11°☿36'06
min. Earth dist.	8560 Dec 05 21:56	19°II38'43	18.99502 AU	evening set	8567 Jun 15 11:58	14°☿35'46
direct	8561 Feb 20 20:48	17°II40'10				
evening set	8561 May 22 06:57	20°II40'53		conjunction	8567 Jul 01 09:58	15°☿30'12 -0°10'34
				minimum elong	8567 Jul 01 09:58	15°☿30'12 0°10'47
conjunction	8561 Jun 07 01:34	21°II35'03	-0°31'09	behind sun begin	8567 Jul 01 04:54	15°☿29'29
minimum elong	8561 Jun 07 01:34	21°II35'03	0°31'20	behind sun end	8567 Jul 01 15:02	15°☿30'54
max. Earth dist.	8561 Jun 07 17:39	21°II37'22	21.00090 AU	max. Earth dist.	8567 Jul 02 01:43	15°☿32'27 21.00221 AU
morning rise	8561 Jun 22 22:18	22°II29'31		morning rise	8567 Jul 17 10:47	16°☿25'01
retrograde	8561 Sep 24 06:06	25°II35'34		retrograde	8567 Oct 19 07:32	19°☿31'41
opposition	8561 Dec 10 23:01	23°II37'01	-0°32'41	min. Earth dist.	8568 Jan 04 10:33	17°☿34'05 18.99643 AU
min. Earth dist.	8561 Dec 10 08:06	23°II38'31	19.00622 AU	opposition	8568 Jan 05 00:41	17°☿32'40 -0°09'34
direct	8562 Feb 25 03:37	21°II40'06		direct	8568 Mar 20 17:25	15°☿35'49
evening set	8562 May 26 11:40	24°II40'27		evening set	8568 Jun 18 17:32	18°☿35'34
conjunction	8562 Jun 11 06:49	25°II34'37	-0°28'00	conjunction	8568 Jul 04 16:15	19°☿30'06 -0°06'52
minimum elong	8562 Jun 11 06:49	25°II34'37	0°28'12	minimum elong	8568 Jul 04 16:15	19°☿30'06 0°07'04
max. Earth dist.	8562 Jun 11 23:02	25°II36'56	21.01017 AU	behind sun begin	8568 Jul 04 10:08	19°☿29'14
morning rise	8562 Jun 27 04:07	26°II29'05		behind sun end	8568 Jul 04 22:21	19°☿30'57
retrograde	8562 Sep 28 14:58	29°II35'06		max. Earth dist.	8568 Jul 05 07:34	19°☿32'17 20.98946 AU
opposition	8562 Dec 15 07:30	27°II36'27	-0°29'07	morning rise	8568 Jul 20 17:48	20°☿25'02
min. Earth dist.	8562 Dec 14 15:33	27°II38'03	19.01354 AU	retrograde	8568 Oct 22 18:13	23°☿31'59
direct	8563 Mar 01 11:09	25°II39'33		opposition	8569 Jan 08 08:44	21°☿32'54 -0°05'26
evening set	8563 May 30 16:24	28°II39'36		min. Earth dist.	8569 Jan 07 18:14	21°☿34'22 18.98154 AU
				direct	8569 Mar 25 00:32	19°☿36'02
conjunction	8563 Jun 15 11:59	29°II33'47	-0°24'42	evening set	8569 Jun 22 23:30	22°☿35'58
minimum elong	8563 Jun 15 11:59	29°II33'47	0°24'54			
max. Earth dist.	8563 Jun 16 04:10	29°II36'06	21.01560 AU	conjunction	8569 Jul 08 22:53	23°☿30'37 -0°03'07
	8563 Jun 23 02:28	0°☿		minimum elong	8569 Jul 08 22:54	23°☿30'37 0°03'19
morning rise	8563 Jul 01 09:57	0°☿28'18		behind sun begin	8569 Jul 08 16:19	23°☿29'42
retrograde	8563 Oct 02 21:47	3°☿34'20		behind sun end	8569 Jul 09 05:29	23°☿31'32
opposition	8563 Dec 19 16:05	1°☿35'36	-0°25'25	max. Earth dist.	8569 Jul 09 13:38	23°☿32'43 20.97229 AU
min. Earth dist.	8563 Dec 19 01:07	1°☿37'06	19.01725 AU	morning rise	8569 Jul 25 01:15	24°☿25'41
	8564 Feb 04 04:07	30°☿II		retrograde	8569 Oct 27 02:24	27°☿32'58
direct	8564 Mar 04 17:29	29°II38'42		opposition	8570 Jan 12 17:00	25°☿33'49 -0°01'16

min. Earth dist.	8570 Jan 12 04:13	25°☾35'07	18.96205 AU	direct	8575 Apr 18 16:59	13°♈51'54	
direct	8570 Mar 29 05:33	23°☾36'55			8575 Jun 09 21:55	15°♈	
asc. node	8570 May 02 15:00	24°☾07'00		evening set	8575 Jul 17 21:10	16°♈54'00	
evening set	8570 Jun 27 06:01	26°☾37'04					
				conjunction	8575 Aug 03 01:10	17°♈49'40	0°19'28
conjunction	8570 Jul 13 06:09	27°☾31'52	0°00'46	minimum elong	8575 Aug 03 01:10	17°♈49'40	0°19'20
minimum elong	8570 Jul 13 06:09	27°☾31'51	0°00'35	max. Earth dist.	8575 Aug 03 10:09	17°♈50'57	20.76931 AU
behind sun begin	8570 Jul 12 23:33	27°☾30'56		morning rise	8575 Aug 19 08:10	18°♈45'46	
behind sun end	8570 Jul 13 12:45	27°☾32'47		retrograde	8575 Nov 21 16:07	21°♈55'30	
max. Earth dist.	8570 Jul 13 19:54	27°☾33'49	20.95044 AU	opposition	8576 Feb 06 20:39	19°♈55'19	0°23'31
morning rise	8570 Jul 29 09:15	28°☾27'04		min. Earth dist.	8576 Feb 06 13:11	19°♈56'05	18.74604 AU
	8570 Aug 28 09:03	0°♈		direct	8576 Apr 21 23:41	17°♈57'17	
retrograde	8570 Oct 31 13:20	1°♈34'42		evening set	8576 Jul 21 06:33	20°♈59'56	
	8571 Jan 06 20:46	30°♈☾					
opposition	8571 Jan 17 01:08	29°☾35'28	0°02'56	conjunction	8576 Aug 06 11:20	21°♈55'48	0°23'01
min. Earth dist.	8571 Jan 16 12:22	29°☾36'45	18.93765 AU	minimum elong	8576 Aug 06 11:20	21°♈55'48	0°22'53
direct	8571 Apr 02 12:58	27°☾38'28		max. Earth dist.	8576 Aug 06 19:09	21°♈56'56	20.72227 AU
	8571 Jun 19 16:17	0°♈		morning rise	8576 Aug 22 19:10	22°♈52'07	
evening set	8571 Jul 01 12:59	0°♈38'55		retrograde	8576 Nov 25 04:36	26°♈02'22	
				opposition	8577 Feb 10 05:44	24°♈01'58	0°27'24
conjunction	8571 Jul 17 13:49	1°♈33'52	0°04'36	min. Earth dist.	8577 Feb 09 22:26	24°♈02'43	18.69782 AU
minimum elong	8571 Jul 17 13:49	1°♈33'52	0°04'26	direct	8577 Apr 26 08:02	22°♈03'39	
behind sun begin	8571 Jul 17 07:19	1°♈32'57		evening set	8577 Jul 25 16:34	25°♈06'56	
behind sun end	8571 Jul 17 20:20	1°♈34'46					
max. Earth dist.	8571 Jul 18 02:39	1°♈35'42	20.92341 AU	conjunction	8577 Aug 10 22:12	26°♈03'02	0°26'28
morning rise	8571 Aug 02 17:41	2°♈29'14		minimum elong	8577 Aug 10 22:12	26°♈03'02	0°26'21
retrograde	8571 Nov 04 22:20	5°♈37'15		max. Earth dist.	8577 Aug 11 05:31	26°♈04'06	20.67286 AU
opposition	8572 Jan 21 09:42	3°♈37'52	0°07'08	morning rise	8577 Aug 27 06:43	26°♈59'34	
min. Earth dist.	8572 Jan 20 22:43	3°♈38'59	18.90807 AU		8577 Nov 09 08:04	0°♈	
direct	8572 Apr 05 18:46	1°♈40'45		retrograde	8577 Nov 29 15:42	0°♈10'21	
evening set	8572 Jul 04 20:15	4°♈41'31			8577 Dec 20 05:57	30°♈♈	
				opposition	8578 Feb 14 15:15	28°♈09'46	0°31'10
conjunction	8572 Jul 20 21:53	5°♈36'38	0°08'22	min. Earth dist.	8578 Feb 14 09:23	28°♈10'22	18.64742 AU
minimum elong	8572 Jul 20 21:54	5°♈36'38	0°08'12	direct	8578 Apr 30 15:18	26°♈11'11	
behind sun begin	8572 Jul 20 16:01	5°♈35'48		evening set	8578 Jul 30 03:16	29°♈15'09	
behind sun end	8572 Jul 21 03:46	5°♈37'27			8578 Aug 12 02:42	0°♈	
max. Earth dist.	8572 Jul 21 09:32	5°♈38'18	20.89144 AU				
morning rise	8572 Aug 06 02:36	6°♈32'10		conjunction	8578 Aug 15 09:37	0°♈11'29	0°29'48
retrograde	8572 Nov 08 09:18	9°♈40'35		minimum elong	8578 Aug 15 09:37	0°♈11'29	0°29'42
opposition	8573 Jan 24 18:15	7°♈41'02	0°11'18	max. Earth dist.	8578 Aug 15 15:35	0°♈12'21	20.62164 AU
min. Earth dist.	8573 Jan 24 07:24	7°♈42'08	18.87359 AU	morning rise	8578 Aug 31 18:55	1°♈08'15	
direct	8573 Apr 10 02:34	5°♈43'43		retrograde	8578 Dec 04 05:17	4°♈19'36	
evening set	8573 Jul 09 04:08	8°♈44'53		opposition	8579 Feb 19 01:00	2°♈18'49	0°34'47
				min. Earth dist.	8579 Feb 18 19:22	2°♈19'24	18.59541 AU
conjunction	8573 Jul 25 06:34	9°♈40'10	0°12'07	direct	8579 May 05 00:02	0°♈19'59	
minimum elong	8573 Jul 25 06:34	9°♈40'10	0°11'58	evening set	8579 Aug 03 14:41	3°♈24'42	
behind sun begin	8573 Jul 25 02:00	9°♈39'31					
behind sun end	8573 Jul 25 11:08	9°♈40'48		conjunction	8579 Aug 19 21:52	4°♈21'17	0°32'59
max. Earth dist.	8573 Jul 25 17:19	9°♈41'42	20.85459 AU	minimum elong	8579 Aug 19 21:52	4°♈21'17	0°32'53
morning rise	8573 Aug 10 12:02	10°♈35'53		max. Earth dist.	8579 Aug 20 03:28	4°♈22'06	20.56881 AU
retrograde	8573 Nov 12 18:48	13°♈44'42		morning rise	8579 Sep 05 07:46	5°♈18'17	
opposition	8574 Jan 29 02:50	11°♈44'57	0°15'27	retrograde	8579 Dec 08 18:09	8°♈30'14	
min. Earth dist.	8574 Jan 28 17:47	11°♈45'53	18.83457 AU	opposition	8580 Feb 23 11:17	6°♈29'17	0°38'14
direct	8574 Apr 14 08:55	9°♈47'25		min. Earth dist.	8580 Feb 23 06:59	6°♈29'44	18.54191 AU
evening set	8574 Jul 13 12:27	12°♈49'01		direct	8580 May 08 08:19	4°♈30'13	
				evening set	8580 Aug 07 02:51	7°♈35'44	
conjunction	8574 Jul 29 15:41	13°♈44'29	0°15'50				
minimum elong	8574 Jul 29 15:41	13°♈44'29	0°15'40	conjunction	8580 Aug 23 10:47	8°♈32'34	0°36'00
behind sun begin	8574 Jul 29 14:18	13°♈44'17		minimum elong	8580 Aug 23 10:47	8°♈32'34	0°35'56
behind sun end	8574 Jul 29 17:03	13°♈44'41		max. Earth dist.	8580 Aug 23 14:49	8°♈33'09	20.51477 AU
max. Earth dist.	8574 Jul 30 01:13	13°♈45'51	20.81372 AU	morning rise	8580 Sep 08 21:31	9°♈29'48	
morning rise	8574 Aug 14 21:58	14°♈40'23		retrograde	8580 Dec 12 08:58	12°♈42'24	
	8574 Aug 20 18:53	15°♈		opposition	8581 Feb 26 21:57	10°♈41'18	0°41'30
retrograde	8574 Nov 17 06:04	17°♈49'39		min. Earth dist.	8581 Feb 26 18:10	10°♈41'41	18.48720 AU
opposition	8575 Feb 02 11:35	15°♈49'41	0°19'31	direct	8581 May 12 17:39	8°♈41'59	
min. Earth dist.	8575 Feb 02 02:38	15°♈50'36	18.79188 AU	evening set	8581 Aug 11 16:00	11°♈48'22	
	8575 Feb 23 08:53	15°♈♈					

conjunction	8581 Aug 28 00:46	12° <u>17</u> 45'28	0°38'51	min. Earth dist.	8588 Mar 28 20:16	10° <u>05</u> 52'25	18.06107 AU
minimum elong	8581 Aug 28 00:46	12° <u>17</u> 45'28	0°38'47	direct	8588 Jun 11 07:23	8° <u>05</u> 51'25	
max. Earth dist.	8581 Aug 28 04:21	12° <u>17</u> 45'59	20.45930 AU	evening set	8588 Sep 11 13:05	12° <u>05</u> 04'47	
morning rise	8581 Sep 13 12:01	13° <u>17</u> 42'57					
retrograde	8581 Dec 16 23:28	16° <u>17</u> 56'11		conjunction	8588 Sep 28 02:23	13° <u>05</u> 03'49	0°52'27
opposition	8582 Mar 03 09:01	14° <u>17</u> 54'58	0°44'35	minimum elong	8588 Sep 28 02:23	13° <u>05</u> 03'49	0°52'29
min. Earth dist.	8582 Mar 03 06:43	14° <u>17</u> 55'12	18.43101 AU	max. Earth dist.	8588 Sep 27 18:58	13° <u>05</u> 02'42	20.02906 AU
direct	8582 May 17 03:28	12° <u>17</u> 55'24		morning rise	8588 Oct 14 17:13	14° <u>05</u> 03'06	
evening set	8582 Aug 16 06:07	16° <u>17</u> 02'43		retrograde	8589 Jan 16 22:03	17° <u>05</u> 20'48	
				opposition	8589 Apr 02 06:20	15° <u>05</u> 18'20	0°58'47
conjunction	8582 Sep 01 15:31	17° <u>17</u> 00'05	0°41'31	min. Earth dist.	8589 Apr 02 12:37	15° <u>05</u> 17'40	17.99737 AU
minimum elong	8582 Sep 01 15:31	17° <u>17</u> 00'05	0°41'28	direct	8589 Jun 15 23:02	13° <u>05</u> 16'25	
max. Earth dist.	8582 Sep 01 17:04	17° <u>17</u> 00'18	20.40245 AU	evening set	8589 Sep 16 09:09	16° <u>05</u> 30'51	
morning rise	8582 Sep 18 03:29	17° <u>17</u> 57'50					
retrograde	8582 Dec 21 15:24	21° <u>17</u> 11'44		conjunction	8589 Oct 02 23:07	17° <u>05</u> 30'11	0°53'17
opposition	8583 Mar 07 20:44	19° <u>17</u> 10'22	0°47'25	minimum elong	8589 Oct 02 23:07	17° <u>05</u> 30'11	0°53'20
min. Earth dist.	8583 Mar 07 19:19	19° <u>17</u> 10'31	18.37338 AU	max. Earth dist.	8589 Oct 02 15:40	17° <u>05</u> 29'04	19.96577 AU
direct	8583 May 21 13:58	17° <u>17</u> 10'33		morning rise	8589 Oct 19 14:03	18° <u>05</u> 29'42	
evening set	8583 Aug 20 20:56	20° <u>17</u> 18'49		retrograde	8590 Jan 21 16:31	21° <u>05</u> 47'58	
				opposition	8590 Apr 06 21:43	19° <u>05</u> 45'20	0°59'33
conjunction	8583 Sep 06 07:09	21° <u>17</u> 16'28	0°43'58	min. Earth dist.	8590 Apr 07 04:30	19° <u>05</u> 44'36	17.93476 AU
minimum elong	8583 Sep 06 07:09	21° <u>17</u> 16'28	0°43'55	direct	8590 Jun 20 15:10	17° <u>05</u> 43'03	
max. Earth dist.	8583 Sep 06 08:09	21° <u>17</u> 16'37	20.34381 AU	evening set	8590 Sep 21 06:06	20° <u>05</u> 58'34	
morning rise	8583 Sep 22 19:33	22° <u>17</u> 14'28					
retrograde	8583 Dec 26 07:13	25° <u>17</u> 29'02		conjunction	8590 Oct 07 20:22	21° <u>05</u> 58'09	0°53'48
opposition	8584 Mar 11 09:04	23° <u>17</u> 27'32	0°50'02	minimum elong	8590 Oct 07 20:21	21° <u>05</u> 58'09	0°53'52
min. Earth dist.	8584 Mar 11 09:07	23° <u>17</u> 27'32	18.31382 AU	max. Earth dist.	8590 Oct 07 10:44	21° <u>05</u> 56'42	19.90407 AU
direct	8584 May 25 01:32	21° <u>17</u> 27'27		morning rise	8590 Oct 24 11:41	22° <u>05</u> 57'55	
evening set	8584 Aug 24 12:57	24° <u>17</u> 36'41		retrograde	8591 Jan 26 11:29	26° <u>05</u> 16'46	
				opposition	8591 Apr 11 13:51	24° <u>05</u> 13'58	0°59'58
conjunction	8584 Sep 09 23:45	25° <u>17</u> 34'36	0°46'11	min. Earth dist.	8591 Apr 11 21:58	24° <u>05</u> 13'06	17.87422 AU
minimum elong	8584 Sep 09 23:45	25° <u>17</u> 34'36	0°46'09	direct	8591 Jun 25 08:00	22° <u>05</u> 11'20	
max. Earth dist.	8584 Sep 09 22:14	25° <u>17</u> 34'23	20.28336 AU	evening set	8591 Sep 26 03:33	25° <u>05</u> 27'56	
morning rise	8584 Sep 26 12:51	26° <u>17</u> 32'52					
retrograde	8584 Dec 29 23:55	29° <u>17</u> 48'06		conjunction	8591 Oct 12 18:25	26° <u>05</u> 27'47	0°53'59
opposition	8585 Mar 15 21:49	27° <u>17</u> 46'26	0°52'23	minimum elong	8591 Oct 12 18:25	26° <u>05</u> 27'47	0°54'03
min. Earth dist.	8585 Mar 15 23:09	27° <u>17</u> 46'17	18.25247 AU	max. Earth dist.	8591 Oct 12 09:01	26° <u>05</u> 26'22	19.84466 AU
direct	8585 May 29 13:54	25° <u>17</u> 46'00		morning rise	8591 Oct 29 09:47	27° <u>05</u> 27'46	
evening set	8585 Aug 29 05:45	28° <u>17</u> 56'15			8591 Dec 19 15:41	0° <u>05</u>	
				retrograde	8592 Jan 31 07:29	0° <u>05</u> 47'10	
conjunction	8585 Sep 14 17:22	29° <u>17</u> 54'28	0°48'10		8592 Mar 14 17:16	30° <u>05</u>	
minimum elong	8585 Sep 14 17:22	29° <u>17</u> 54'28	0°48'09	opposition	8592 Apr 15 06:31	28° <u>05</u> 44'16	1°00'00
max. Earth dist.	8585 Sep 14 15:12	29° <u>17</u> 54'08	20.22104 AU	min. Earth dist.	8592 Apr 15 14:43	28° <u>05</u> 43'23	17.81611 AU
	8585 Sep 16 06:42	0° <u>05</u>		direct	8592 Jun 29 02:03	26° <u>05</u> 41'19	
morning rise	8585 Oct 01 06:48	0° <u>05</u> 52'59		evening set	8592 Sep 30 02:09	29° <u>05</u> 59'00	
retrograde	8586 Jan 03 16:39	4° <u>05</u> 08'50			8592 Sep 30 08:57	0° <u>05</u>	
opposition	8586 Mar 20 11:10	2° <u>05</u> 06'59	0°54'27				
min. Earth dist.	8586 Mar 20 13:48	2° <u>05</u> 06'42	18.18937 AU	conjunction	8592 Oct 16 17:13	0° <u>05</u> 59'06	0°53'50
direct	8586 Jun 03 02:53	0° <u>05</u> 06'13		minimum elong	8592 Oct 16 17:13	0° <u>05</u> 59'06	0°53'56
evening set	8586 Sep 02 23:22	3° <u>05</u> 17'29		max. Earth dist.	8592 Oct 16 05:52	0° <u>05</u> 57'23	19.78801 AU
				morning rise	8592 Nov 02 08:51	1° <u>05</u> 59'18	
conjunction	8586 Sep 19 11:28	4° <u>05</u> 15'58	0°49'53	retrograde	8593 Feb 04 03:14	5° <u>05</u> 19'14	
minimum elong	8586 Sep 19 11:28	4° <u>05</u> 15'58	0°49'53	opposition	8593 Apr 19 23:47	3° <u>05</u> 16'15	0°59'40
max. Earth dist.	8586 Sep 19 06:44	4° <u>05</u> 15'15	20.15741 AU	min. Earth dist.	8593 Apr 20 09:26	3° <u>05</u> 15'13	17.76113 AU
morning rise	8586 Oct 06 01:30	5° <u>05</u> 14'44		direct	8593 Jul 03 19:54	1° <u>05</u> 12'59	
retrograde	8587 Jan 08 10:05	8° <u>05</u> 31'13		evening set	8593 Oct 05 01:22	4° <u>05</u> 31'46	
opposition	8587 Mar 25 01:03	6° <u>05</u> 29'10	0°56'13				
min. Earth dist.	8587 Mar 25 05:00	6° <u>05</u> 28'44	18.12538 AU	conjunction	8593 Oct 21 16:53	5° <u>05</u> 32'07	0°53'21
direct	8587 Jun 07 17:06	4° <u>05</u> 28'01		minimum elong	8593 Oct 21 16:53	5° <u>05</u> 32'07	0°53'27
evening set	8587 Sep 07 17:46	7° <u>05</u> 40'19		max. Earth dist.	8593 Oct 21 05:42	5° <u>05</u> 30'25	19.73468 AU
				morning rise	8593 Nov 07 08:27	6° <u>05</u> 32'32	
conjunction	8587 Sep 24 06:38	8° <u>05</u> 39'05	0°51'19	retrograde	8594 Feb 09 01:18	9° <u>05</u> 52'58	
minimum elong	8587 Sep 24 06:38	8° <u>05</u> 39'05	0°51'21	opposition	8594 Apr 24 17:42	7° <u>05</u> 49'57	0°58'57
max. Earth dist.	8587 Sep 24 01:38	8° <u>05</u> 38'20	20.09315 AU	min. Earth dist.	8594 Apr 25 03:11	7° <u>05</u> 48'56	17.70946 AU
morning rise	8587 Oct 10 20:54	9° <u>05</u> 38'07		direct	8594 Jul 08 15:36	5° <u>05</u> 46'27	
retrograde	8588 Jan 13 03:38	12° <u>05</u> 55'12		evening set	8594 Oct 10 01:20	9° <u>05</u> 06'18	
opposition	8588 Mar 28 15:23	10° <u>05</u> 52'57	0°57'40				



conjunction	8594 Oct 26 16:57	10° $\mathbb{M}$ 06'52	0°52'31	minimum elong	8600 Nov 25 07:05	8° $\mathbb{Z}$ 06'55	0°40'50
minimum elong	8594 Oct 26 16:57	10° $\mathbb{M}$ 06'52	0°52'39	max. Earth dist.	8600 Nov 24 14:11	8° $\mathbb{Z}$ 04'18	19.45202 AU
max. Earth dist.	8594 Oct 26 04:15	10° $\mathbb{M}$ 04'56	19.68475 AU	morning rise	8600 Dec 11 21:03	9° $\mathbb{Z}$ 08'17	
morning rise	8594 Nov 12 08:35	11° $\mathbb{M}$ 07'29		retrograde	8601 Mar 14 18:12	12° $\mathbb{Z}$ 30'59	
retrograde	8595 Feb 13 22:13	14° $\mathbb{M}$ 28'25		opposition	8601 May 27 16:37	10° $\mathbb{Z}$ 27'59	0°43'40
opposition	8595 Apr 29 12:24	12° $\mathbb{M}$ 25'25	0°57'52	min. Earth dist.	8601 May 28 07:43	10° $\mathbb{Z}$ 26'20	17.43836 AU
min. Earth dist.	8595 Apr 29 23:27	12° $\mathbb{M}$ 24'13	17.66133 AU	direct	8601 Aug 10 23:48	8° $\mathbb{Z}$ 22'54	
direct	8595 Jul 13 10:16	10° $\mathbb{M}$ 21'40		evening set	8601 Nov 13 19:14	11° $\mathbb{Z}$ 48'49	
evening set	8595 Oct 15 02:06	13° $\mathbb{M}$ 42'34					
conjunction	8595 Oct 31 18:00	14° $\mathbb{M}$ 43'22	0°51'21	conjunction	8601 Nov 30 10:31	12° $\mathbb{Z}$ 50'28	0°37'36
minimum elong	8595 Oct 31 18:00	14° $\mathbb{M}$ 43'22	0°51'30	minimum elong	8601 Nov 30 10:31	12° $\mathbb{Z}$ 50'28	0°37'47
max. Earth dist.	8595 Oct 31 05:10	14° $\mathbb{M}$ 41'24	19.63833 AU	max. Earth dist.	8601 Nov 29 16:35	12° $\mathbb{Z}$ 47'41	19.42533 AU
	8595 Nov 05 06:26	15° $\mathbb{M}$		morning rise	8601 Dec 17 00:09	13° $\mathbb{Z}$ 51'53	
morning rise	8595 Nov 17 09:30	15° $\mathbb{M}$ 44'09					
retrograde	8596 Feb 18 22:14	19° $\mathbb{M}$ 05'32					
opposition	8596 May 03 07:29	17° $\mathbb{M}$ 02'32	0°56'25				
min. Earth dist.	8596 May 03 18:24	17° $\mathbb{M}$ 01'21	17.61647 AU				
	8596 Jul 10 01:04	15° $\mathbb{R}$ $\mathbb{M}$					
direct	8596 Jul 17 07:20	14° $\mathbb{M}$ 58'35					
	8596 Jul 24 11:53	15° $\mathbb{M}$					
evening set	8596 Oct 19 03:47	18° $\mathbb{M}$ 20'30					
conjunction	8596 Nov 04 19:42	19° $\mathbb{M}$ 21'30	0°49'52				
minimum elong	8596 Nov 04 19:42	19° $\mathbb{M}$ 21'30	0°50'00				
max. Earth dist.	8596 Nov 04 05:27	19° $\mathbb{M}$ 19'19	19.59494 AU				
morning rise	8596 Nov 21 11:04	20° $\mathbb{M}$ 22'28					
retrograde	8597 Feb 22 20:21	23° $\mathbb{M}$ 44'14					
opposition	8597 May 08 03:30	21° $\mathbb{M}$ 41'16	0°54'34				
min. Earth dist.	8597 May 08 16:13	21° $\mathbb{M}$ 39'53	17.57464 AU				
direct	8597 Jul 22 03:29	19° $\mathbb{M}$ 37'04					
evening set	8597 Oct 24 05:58	22° $\mathbb{M}$ 59'58					
conjunction	8597 Nov 09 21:56	24° $\mathbb{M}$ 01'08	0°48'02				
minimum elong	8597 Nov 09 21:56	24° $\mathbb{M}$ 01'08	0°48'12				
max. Earth dist.	8597 Nov 09 07:00	23° $\mathbb{M}$ 58'50	19.55456 AU				
morning rise	8597 Nov 26 13:03	25° $\mathbb{M}$ 02'13					
retrograde	8598 Feb 27 20:53	28° $\mathbb{M}$ 24'20					
opposition	8598 May 12 23:57	26° $\mathbb{M}$ 21'22	0°52'22				
min. Earth dist.	8598 May 13 12:25	26° $\mathbb{M}$ 20'01	17.53568 AU				
direct	8598 Jul 27 02:00	24° $\mathbb{M}$ 16'58					
evening set	8598 Oct 29 08:44	27° $\mathbb{M}$ 40'43					
max. Earth dist.	8598 Nov 14 08:51	28° $\mathbb{M}$ 39'36	19.51704 AU				
conjunction	8598 Nov 15 00:39	28° $\mathbb{M}$ 42'03	0°45'53				
minimum elong	8598 Nov 15 00:39	28° $\mathbb{M}$ 42'03	0°46'03				
morning rise	8598 Dec 01 15:25	29° $\mathbb{M}$ 43'15					
	8598 Dec 06 07:19	0° $\mathbb{Z}$					
retrograde	8599 Mar 04 19:23	3° $\mathbb{Z}$ 05'38					
opposition	8599 May 17 21:07	1° $\mathbb{Z}$ 02'40	0°49'49				
min. Earth dist.	8599 May 18 11:13	1° $\mathbb{Z}$ 01'07	17.49979 AU				
	8599 Jun 11 23:40	30° $\mathbb{R}$ $\mathbb{M}$					
direct	8599 Jul 31 23:49	28° $\mathbb{M}$ 58'01					
	8599 Sep 18 22:10	0° $\mathbb{Z}$					
evening set	8599 Nov 03 11:51	2° $\mathbb{Z}$ 22'35					
max. Earth dist.	8599 Nov 19 10:54	3° $\mathbb{Z}$ 21'27	19.48284 AU				
conjunction	8599 Nov 20 03:39	3° $\mathbb{Z}$ 24'02	0°43'25				
minimum elong	8599 Nov 20 03:39	3° $\mathbb{Z}$ 24'02	0°43'36				
morning rise	8599 Dec 06 18:11	4° $\mathbb{Z}$ 25'21					
retrograde	8600 Mar 09 19:51	7° $\mathbb{Z}$ 47'55					
opposition	8600 May 22 18:38	5° $\mathbb{Z}$ 44'56	0°46'54				
min. Earth dist.	8600 May 23 08:21	5° $\mathbb{Z}$ 43'26	17.46723 AU				
direct	8600 Aug 06 00:08	3° $\mathbb{Z}$ 40'04					
evening set	8600 Nov 08 15:25	7° $\mathbb{Z}$ 05'20					
conjunction	8600 Nov 25 07:05	8° $\mathbb{Z}$ 06'55	0°40'39				