retrograde	10100 Jan 29	19:20	1°♏31'43		
	10100 Apr 03	08:11	30°℞♎		
opposition	10100 Apr 15	11:28	29°♎29'21	1°02'52	
min. Earth dist.	10100 Apr 15	14:11	29°♎29'03	18.05699 AU	
direct	10100 Jun 29	03:11	27°♎28'02		
	10100 Sep 17	02:55	0°♏		
evening set	10100 Sep 29	03:46	0°♏41'12		
conjunction	10100 Oct 15	15:34	1°♏40'07	0°56'54	
minimum elong	10100 Oct 15	15:33	1°♏40'07	0°57'06	
max. Earth dist.	10100 Oct 15	12:01	1°♏39'35	20.02655 AU	
morning rise	10100 Nov 01	04:52	2°♏39'18		
retrograde	10101 Feb 03	13:56	5°♏57'31		
opposition	10101 Apr 20	02:54	3°♏55'04	1°03'31	
min. Earth dist.	10101 Apr 20	06:32	3°♏54'41	17.99661 AU	
direct	10101 Jul 03	17:42	1°♏53'31		
evening set	10101 Oct 03	23:40	5°♏07'47		
conjunction	10101 Oct 20	11:54	6°♏07'00	0°57'18	
minimum elong	10101 Oct 20	11:54	6°♏07'00	0°57'33	
max. Earth dist.	10101 Oct 20	06:17	6°♏06'09	19.96672 AU	
morning rise	10101 Nov 06	01:46	7°♏06'27		
retrograde	10102 Feb 08	09:47	10°♏25'22		
opposition	10102 Apr 24	18:51	8°♏22'49	1°03'48	
min. Earth dist.	10102 Apr 24	23:31	8°♏22'19	17.93726 AU	
direct	10102 Jul 08	10:17	6°♏20'59		
evening set	10102 Oct 08	20:26	9°♏36'23		
conjunction	10102 Oct 25	09:24	10°♏35'53	0°57'22	
minimum elong	10102 Oct 25	09:24	10°♏35'53	0°57'37	
max. Earth dist.	10102 Oct 25	03:40	10°♏35'01	19.90759 AU	
morning rise	10102 Nov 10	23:27	11°♏35'35		
retrograde	10103 Feb 13	05:27	14°♏55'09		
opposition	10103 Apr 29	11:34	12°♏52'32	1°03'42	
min. Earth dist.	10103 Apr 29	17:10	12°♏51'56	17.87839 AU	
direct	10103 Jul 13	03:04	10°♏50'25		
evening set	10103 Oct 13	18:16	14°♏06'55		
	10103 Oct 28	11:33	15°♏		
conjunction	10103 Oct 30	07:33	15°♏06'41	0°57'05	
minimum elong	10103 Oct 30	07:33	15°♏06'41	0°57'23	
max. Earth dist.	10103 Oct 29	23:23	15°♏05'26	19.84903 AU	
morning rise	10103 Nov 15	22:02	16°♏06'38		
retrograde	10104 Feb 18	01:56	19°♏26'48		
opposition	10104 May 03	04:58	17°♏24'04	1°03'12	
min. Earth dist.	10104 May 03	11:51	17°♏23'20	17.82023 AU	
direct	10104 Jul 16	21:28	15°♏21'38		
evening set	10104 Oct 17	16:46	18°♏39'13		
conjunction	10104 Nov 03	06:41	19°♏39'15	0°56'26	
minimum elong	10104 Nov 03	06:41	19°♏39'15	0°56'45	
max. Earth dist.	10104 Nov 02	22:28	19°♏38'00	19.79123 AU	
morning rise	10104 Nov 19	21:15	20°♏39'25		
retrograde	10105 Feb 21	23:06	24°♏00'09		
opposition	10105 May 07	22:55	21°♏57'18	1°02'19	
min. Earth dist.	10105 May 08	06:22	21°♏56'30	17.76291 AU	
direct	10105 Jul 21	16:25	19°♏54'32		
evening set	10105 Oct 22	16:08	23°♏13'09		
conjunction	10105 Nov 08	06:20	24°♏13'25	0°55'26	
minimum elong	10105 Nov 08	06:20	24°♏13'25	0°55'47	
max. Earth dist.	10105 Nov 07	19:50	24°♏11'49	19.73463 AU	
morning rise	10105 Nov 24	21:17	25°♏13'50		
retrograde	10106 Feb 26	20:15	28°♏35'04		
opposition	10106 May 12	17:32	26°♏32'04	1°01'01	
min. Earth dist.	10106 May 13	02:27	26°♏31'07	17.70715 AU	
direct	10106 Jul 26	11:44	24°♏28'56		
evening set	10106 Oct 27	16:11	27°♏48'34		
conjunction	10106 Nov 13	06:56	28°♏49'06	0°54'05	
minimum elong	10106 Nov 13	06:55	28°♏49'06	0°54'27	
max. Earth dist.	10106 Nov 12	20:29	28°♏47'30	19.67980 AU	
morning rise	10106 Nov 29	21:52	29°♏49'42		
	10106 Dec 02	19:09	0°♐		
retrograde	10107 Mar 03	19:17	3°♐11'22		
opposition	10107 May 17	12:28	1°♐08'16	0°59'20	
min. Earth dist.	10107 May 17	21:35	1°♐07'17	17.65341 AU	
	10107 Jun 14	08:00	30°℞♏		
direct	10107 Jul 31	08:30	29°♏04'47		
	10107 Sep 15	06:15	0°♐		
evening set	10107 Nov 01	17:01	2°♐25'23		
conjunction	10107 Nov 18	07:54	3°♐26'08	0°52'22	
minimum elong	10107 Nov 18	07:54	3°♐26'08	0°52'44	
max. Earth dist.	10107 Nov 17	19:36	3°♐24'15	19.62741 AU	
morning rise	10107 Dec 04	23:01	4°♐26'57		
retrograde	10108 Mar 07	16:50	7°♐49'01		
opposition	10108 May 21	08:09	5°♐45'46	0°57'14	
min. Earth dist.	10108 May 21	18:40	5°♐44'38	17.60261 AU	
direct	10108 Aug 04	04:15	3°♐41'56		
evening set	10108 Nov 05	18:06	7°♐03'28		
conjunction	10108 Nov 22	09:23	8°♐04'26	0°50'17	
minimum elong	10108 Nov 22	09:23	8°♐04'26	0°50'42	
max. Earth dist.	10108 Nov 21	21:24	8°♐02'35	19.57830 AU	
morning rise	10108 Dec 09	00:26	9°♐05'25		
retrograde	10109 Mar 12	17:21	12°♐27'51		
opposition	10109 May 26	04:13	10°♐24'29	0°54'46	
min. Earth dist.	10109 May 26	14:24	10°♐23'23	17.55529 AU	
direct	10109 Aug 09	02:33	8°♐20'19		
evening set	10109 Nov 10	20:06	11°♐42'45		
conjunction	10109 Nov 27	11:26	12°♐43'54	0°47'53	
minimum elong	10109 Nov 27	11:26	12°♐43'54	0°48'17	
max. Earth dist.	10109 Nov 26	22:11	12°♐41'51	19.53297 AU	
morning rise	10109 Dec 14	02:29	13°♐45'03		
retrograde	10110 Mar 17	15:08	17°♐07'47		
opposition	10110 May 31	00:47	15°♐04'20	0°51'55	
min. Earth dist.	10110 May 31	12:19	15°♐03'05	17.51222 AU	
direct	10110 Aug 13	23:24	12°♐59'50		
evening set	10110 Nov 15	22:30	16°♐23'08		
conjunction	10110 Dec 02	14:02	17°♐24'28	0°45'09	
minimum elong	10110 Dec 02	14:02	17°♐24'28	0°45'34	
max. Earth dist.	10110 Dec 02	00:55	17°♐22'26	19.49225 AU	
morning rise	10110 Dec 19	04:55	18°♐25'45		
retrograde	10111 Mar 22	16:02	21°♐48'44		
opposition	10111 Jun 04	21:50	19°♐45'14	0°48'42	
min. Earth dist.	10111 Jun 05	08:38	19°♐44'04	17.47391 AU	
direct	10111 Aug 18	22:54	17°♐40'29		
evening set	10111 Nov 21	01:20	21°♐04'35		
conjunction	10111 Dec 07	16:49	22°♐06'04	0°42'06	
minimum elong	10111 Dec 07	16:49	22°♐06'04	0°42'32	
max. Earth dist.	10111 Dec 07	03:12	22°♐03'57	19.45649 AU	
morning rise	10111 Dec 24	07:27	23°♐07'27		
retrograde	10112 Mar 26	14:21	26°♐30'40		
opposition	10112 Jun 08	19:32	24°♐27'10	0°45'09	
min. Earth dist.	10112 Jun 09	07:24	24°♐25'52	17.44096 AU	
direct	10112 Aug 22	21:02	22°♐22'12		

evening set	10112 Nov 25 04:35	25°♐47'03	
conjunction	10112 Dec 11 20:03	26°♐48'40	0°38'45
minimum elong	10112 Dec 11 20:04	26°♐48'40	0°39'11
max. Earth dist.	10112 Dec 11 06:24	26°♐46'32	19.42642 AU
morning rise	10112 Dec 28 10:29	27°♐50'09	
	10113 Feb 06 17:37	0°♑	
retrograde	10113 Mar 31 15:39	1°♑13'32	
	10113 May 25 03:22	30°℞♐	
opposition	10113 Jun 13 17:26	29°♐10'05	0°41'16
min. Earth dist.	10113 Jun 14 04:23	29°♐08'53	17.41365 AU
direct	10113 Aug 27 21:39	27°♐04'58	
	10113 Nov 21 19:54	0°♑	
evening set	10113 Nov 30 08:17	0°♑30'31	
conjunction	10113 Dec 16 23:41	1°♑32'15	0°35'08
minimum elong	10113 Dec 16 23:41	1°♑32'15	0°35'36
max. Earth dist.	10113 Dec 16 10:08	1°♑30'08	19.40188 AU
morning rise	10114 Jan 02 13:42	2°♑33'48	
retrograde	10114 Apr 05 14:42	5°♑57'19	
opposition	10114 Jun 18 16:01	3°♑53'57	0°37'07
min. Earth dist.	10114 Jun 19 04:04	3°♑52'38	17.39183 AU
direct	10114 Sep 01 20:54	1°♑48'44	
evening set	10114 Dec 05 12:22	5°♑14'57	
conjunction	10114 Dec 22 03:29	6°♑16'44	0°31'17
minimum elong	10114 Dec 22 03:29	6°♑16'44	0°31'44
max. Earth dist.	10114 Dec 21 13:24	6°♑14'32	19.38278 AU
morning rise	10115 Jan 07 17:10	7°♑18'19	
retrograde	10115 Apr 10 16:09	10°♑41'57	
opposition	10115 Jun 23 14:48	8°♑38'41	0°32'41
min. Earth dist.	10115 Jun 24 02:05	8°♑37'27	17.37524 AU
direct	10115 Sep 06 22:40	6°♑33'23	
evening set	10115 Dec 10 16:39	10°♑00'10	
conjunction	10115 Dec 27 07:33	11°♑02'00	0°27'12
minimum elong	10115 Dec 27 07:34	11°♑02'00	0°27'39
max. Earth dist.	10115 Dec 26 18:02	10°♑59'54	19.36859 AU
morning rise	10116 Jan 12 20:36	12°♑03'36	
retrograde	10116 Apr 14 15:44	15°♑27'15	
opposition	10116 Jun 27 14:13	13°♑24'07	0°28'02
min. Earth dist.	10116 Jun 28 02:27	13°♑22'47	17.36346 AU
direct	10116 Sep 10 23:33	11°♑18'45	
evening set	10116 Dec 14 21:03	14°♑45'59	
conjunction	10116 Dec 31 11:29	15°♑47'51	0°22'56
minimum elong	10116 Dec 31 11:29	15°♑47'51	0°23'22
max. Earth dist.	10116 Dec 30 20:59	15°♑45'35	19.35917 AU
morning rise	10117 Jan 17 00:09	16°♑49'26	
retrograde	10117 Apr 19 16:45	20°♑13'03	
opposition	10117 Jul 02 13:46	18°♑10'01	0°23'10
min. Earth dist.	10117 Jul 03 01:23	18°♑08'45	17.35624 AU
direct	10117 Sep 16 02:18	16°♑04'35	
evening set	10117 Dec 20 01:34	19°♑32'12	
conjunction	10118 Jan 05 15:42	20°♑34'02	0°18'30
minimum elong	10118 Jan 05 15:42	20°♑34'02	0°18'55
max. Earth dist.	10118 Jan 05 02:03	20°♑31'55	19.35406 AU
morning rise	10118 Jan 22 03:34	21°♑35'35	
retrograde	10118 Apr 24 16:32	24°♑59'03	
opposition	10118 Jul 07 13:36	22°♑56'10	0°18'09
min. Earth dist.	10118 Jul 08 01:55	22°♑54'49	17.35327 AU
direct	10118 Sep 21 04:21	20°♑50'40	
evening set	10118 Dec 25 06:10	24°♑18'32	
conjunction	10119 Jan 10 19:36	25°♑20'20	0°13'56
minimum elong	10119 Jan 10 19:36	25°♑20'20	0°14'21
behind sun begin	10119 Jan 10 16:38	25°♑19'52	
behind sun end	10119 Jan 10 22:35	25°♑20'47	
max. Earth dist.	10119 Jan 10 04:50	25°♑18'01	19.35336 AU
morning rise	10119 Jan 27 06:58	26°♑21'49	
retrograde	10119 Apr 29 17:23	29°♑45'06	
opposition	10119 Jul 12 13:37	27°♑42'18	0°13'00
min. Earth dist.	10119 Jul 13 01:25	27°♑41'01	17.35479 AU
direct	10119 Sep 26 07:23	25°♑36'45	
evening set	10119 Dec 30 10:12	29°♑04'45	
	10120 Jan 14 05:52	0°♒	
conjunction	10120 Jan 15 23:14	0°♒06'29	0°09'17
minimum elong	10120 Jan 15 23:14	0°♒06'29	0°09'41
behind sun begin	10120 Jan 15 17:43	0°♒05'38	
behind sun end	10120 Jan 16 04:45	0°♒07'20	
max. Earth dist.	10120 Jan 15 09:48	0°♒04'23	19.35708 AU
morning rise	10120 Feb 01 09:42	1°♒07'53	
retrograde	10120 May 03 17:19	4°♒30'54	
opposition	10120 Jul 16 13:46	2°♒28'12	0°07'45
min. Earth dist.	10120 Jul 17 01:40	2°♒26'54	17.36072 AU
direct	10120 Sep 30 09:20	0°♒22'37	
evening set	10121 Jan 03 14:16	3°♒50'39	
conjunction	10121 Jan 20 02:31	4°♒52'17	0°04'35
minimum elong	10121 Jan 20 02:30	4°♒52'17	0°04'58
behind sun begin	10121 Jan 19 19:57	4°♒51'17	
behind sun end	10121 Jan 20 09:03	4°♒53'17	
max. Earth dist.	10121 Jan 19 12:12	4°♒50'03	19.36541 AU
morning rise	10121 Feb 05 12:22	5°♒53'34	
retrograde	10121 May 08 17:46	9°♒16'15	
opposition	10121 Jul 21 13:43	7°♒13'38	0°02'28
min. Earth dist.	10121 Jul 22 01:18	7°♒12'23	17.37147 AU
direct	10121 Oct 05 11:53	5°♒08'01	
desc. node	10122 Jan 06 06:14	8°♒26'55	
evening set	10122 Jan 08 17:48	8°♒35'59	
conjunction	10122 Jan 25 05:31	9°♒37'30	-0°00'14
minimum elong	10122 Jan 25 05:30	9°♒37'30	0°00'09
behind sun begin	10122 Jan 24 22:54	9°♒36'29	
behind sun end	10122 Jan 25 12:07	9°♒38'30	
max. Earth dist.	10122 Jan 24 16:42	9°♒35'30	19.37857 AU
morning rise	10122 Feb 10 14:25	10°♒38'38	
retrograde	10122 May 13 17:15	14°♒00'55	
opposition	10122 Jul 26 13:46	11°♒58'24	-0°02'50
min. Earth dist.	10122 Jul 27 00:51	11°♒57'12	17.38699 AU
direct	10122 Oct 10 13:40	9°♒52'47	
evening set	10123 Jan 13 20:56	13°♒20'34	
conjunction	10123 Jan 30 07:42	14°♒21'55	-0°05'03
minimum elong	10123 Jan 30 07:41	14°♒21'55	0°04'43
behind sun begin	10123 Jan 30 01:08	14°♒20'55	
behind sun end	10123 Jan 30 14:15	14°♒22'55	
max. Earth dist.	10123 Jan 29 18:35	14°♒19'53	19.39666 AU
	10123 Feb 09 11:25	15°♒	
morning rise	10123 Feb 15 15:51	15°♒22'54	
retrograde	10123 May 18 16:30	18°♒44'45	
opposition	10123 Jul 31 13:43	16°♒42'19	-0°08'06
min. Earth dist.	10123 Aug 01 00:26	16°♒41'09	17.40780 AU
	10123 Sep 15 15:01	15°℞♒	
direct	10123 Oct 15 16:01	14°♒36'42	
	10123 Nov 14 09:13	15°♒	
evening set	10124 Jan 18 23:20	18°♒04'12	
conjunction	10124 Feb 04 09:25	19°♒05'24	-0°09'43
minimum elong	10124 Feb 04 09:25	19°♒05'24	0°09'23
behind sun begin	10124 Feb 04 03:49	19°♒04'32	
behind sun end	10124 Feb 04 15:01	19°♒06'15	

max. Earth dist.	10124 Feb 03 22:00	19°♒03'37	19.42018 AU
morning rise	10124 Feb 20 16:36	20°♒06'10	
retrograde	10124 May 22 14:49	23°♒27'32	
opposition	10124 Aug 04 13:25	21°♒25'12	-0°13'17
min. Earth dist.	10124 Aug 04 22:53	21°♒24'11	17.43401 AU
direct	10124 Oct 19 18:21	19°♒19'41	
evening set	10125 Jan 23 01:14	22°♒46'49	
conjunction	10125 Feb 08 10:23	23°♒47'48	-0°14'19
minimum elong	10125 Feb 08 10:23	23°♒47'48	0°14'02
behind sun begin	10125 Feb 08 07:04	23°♒47'17	
behind sun end	10125 Feb 08 13:41	23°♒48'18	
max. Earth dist.	10125 Feb 07 23:18	23°♒46'04	19.44920 AU
morning rise	10125 Feb 24 16:45	24°♒48'22	
retrograde	10125 May 27 12:18	28°♒09'13	
opposition	10125 Aug 09 13:03	26°♒07'01	-0°18'22
min. Earth dist.	10125 Aug 09 22:13	26°♒06'02	17.46594 AU
direct	10125 Oct 24 20:08	24°♒01'37	
evening set	10126 Jan 28 02:30	27°♒28'19	
conjunction	10126 Feb 13 10:49	28°♒29'05	-0°18'48
minimum elong	10126 Feb 13 10:49	28°♒29'05	0°18'33
max. Earth dist.	10126 Feb 13 01:13	28°♒27'35	19.48393 AU
morning rise	10126 Mar 01 16:13	29°♒29'25	
	10126 Mar 10 04:21	0°♓	
retrograde	10126 Jun 01 09:57	2°♓49'44	
opposition	10126 Aug 14 12:20	0°♓47'43	-0°23'18
min. Earth dist.	10126 Aug 14 19:47	0°♓46'55	17.50328 AU
	10126 Sep 02 11:31	30°℞♒	
direct	10126 Oct 29 22:42	28°♒42'31	
	10126 Dec 24 07:19	0°♓	
evening set	10127 Feb 02 03:10	2°♓08'42	
conjunction	10127 Feb 18 10:31	3°♓09'13	-0°23'09
minimum elong	10127 Feb 18 10:31	3°♓09'13	0°22'54
max. Earth dist.	10127 Feb 18 01:49	3°♓07'52	19.52393 AU
morning rise	10127 Mar 06 14:59	4°♓09'19	
retrograde	10127 Jun 06 06:11	7°♓29'05	
opposition	10127 Aug 19 11:34	5°♓27'17	-0°28'03
min. Earth dist.	10127 Aug 19 18:53	5°♓26'30	17.54584 AU
direct	10127 Nov 03 23:27	3°♓22'19	
evening set	10128 Feb 07 02:55	6°♓47'55	
conjunction	10128 Feb 23 09:22	7°♓48'11	-0°27'19
minimum elong	10128 Feb 23 09:22	7°♓48'11	0°27'08
max. Earth dist.	10128 Feb 23 01:48	7°♓47'01	19.56885 AU
morning rise	10128 Mar 10 12:58	8°♓48'02	
retrograde	10128 Jun 10 03:30	12°♓07'14	
opposition	10128 Aug 23 10:21	10°♓05'40	-0°32'36
min. Earth dist.	10128 Aug 23 15:53	10°♓05'05	17.59274 AU
direct	10128 Nov 08 01:26	8°♓00'58	
evening set	10129 Feb 11 02:11	11°♓25'55	
conjunction	10129 Feb 27 07:42	12°♓25'55	-0°31'18
minimum elong	10129 Feb 27 07:42	12°♓25'55	0°31'08
max. Earth dist.	10129 Feb 27 01:19	12°♓24'56	19.61761 AU
morning rise	10129 Mar 15 10:20	13°♓25'30	
retrograde	10129 Jun 14 22:38	16°♓44'05	
opposition	10129 Aug 28 08:53	14°♓42'47	-0°36'55
min. Earth dist.	10129 Aug 28 14:38	14°♓42'10	17.64328 AU
direct	10129 Nov 13 00:42	12°♓38'21	
evening set	10130 Feb 16 00:44	16°♓02'36	
conjunction	10130 Mar 04 05:15	17°♓02'18	-0°35'04
minimum elong	10130 Mar 04 05:14	17°♓02'18	0°34'56
max. Earth dist.	10130 Mar 03 23:21	17°♓01'24	19.66971 AU
morning rise	10130 Mar 20 07:02	18°♓01'37	
retrograde	10130 Jun 19 19:28	21°♓19'35	
opposition	10130 Sep 02 07:05	19°♓18'30	-0°40'58
min. Earth dist.	10130 Sep 02 11:02	19°♓18'05	17.69667 AU
direct	10130 Nov 18 01:46	17°♓14'23	
evening set	10131 Feb 20 22:19	20°♓37'49	
conjunction	10131 Mar 09 01:56	21°♓37'14	-0°38'35
minimum elong	10131 Mar 09 01:56	21°♓37'14	0°38'29
max. Earth dist.	10131 Mar 08 21:33	21°♓36'34	19.72422 AU
morning rise	10131 Mar 25 02:43	22°♓36'16	
retrograde	10131 Jun 24 13:31	25°♓53'36	
opposition	10131 Sep 07 05:04	23°♓52'44	-0°44'44
min. Earth dist.	10131 Sep 07 09:14	23°♓52'17	17.75232 AU
direct	10131 Nov 23 00:04	21°♓48'54	
evening set	10132 Feb 25 19:11	25°♓11'30	
conjunction	10132 Mar 12 21:46	26°♓10'37	-0°41'51
minimum elong	10132 Mar 12 21:46	26°♓10'37	0°41'46
max. Earth dist.	10132 Mar 12 17:31	26°♓09'58	19.78080 AU
morning rise	10132 Mar 28 21:50	27°♓09'22	
	10132 May 28 08:23	0°♈	
retrograde	10132 Jun 28 09:04	0°♈26'01	
	10132 Jul 30 02:30	30°℞♓	
opposition	10132 Sep 11 02:16	28°♓25'21	-0°48'13
min. Earth dist.	10132 Sep 11 04:41	28°♓25'06	17.80966 AU
direct	10132 Nov 26 23:35	26°♓21'49	
evening set	10133 Mar 01 15:05	29°♓43'30	
	10133 Mar 06 04:26	0°♈	
conjunction	10133 Mar 17 16:54	0°♈42'20	-0°44'50
minimum elong	10133 Mar 17 16:54	0°♈42'20	0°44'49
max. Earth dist.	10133 Mar 17 14:18	0°♈41'56	19.83872 AU
morning rise	10133 Apr 02 16:01	1°♈40'47	
retrograde	10133 Jul 03 02:07	4°♈56'45	
opposition	10133 Sep 15 23:17	2°♈56'17	-0°51'22
min. Earth dist.	10133 Sep 16 01:55	2°♈56'00	17.86814 AU
direct	10133 Dec 01 21:02	0°♈53'03	
evening set	10134 Mar 06 10:10	4°♈13'46	
conjunction	10134 Mar 22 10:57	5°♈12'17	-0°47'32
minimum elong	10134 Mar 22 10:56	5°♈12'17	0°47'32
max. Earth dist.	10134 Mar 22 08:17	5°♈11'52	19.89770 AU
morning rise	10134 Apr 07 09:25	6°♈10'28	
retrograde	10134 Jul 07 20:03	9°♈25'44	
opposition	10134 Sep 20 19:35	7°♈25'25	-0°54'11
min. Earth dist.	10134 Sep 20 20:28	7°♈25'20	17.92754 AU
direct	10134 Dec 06 18:57	5°♈22'28	
evening set	10135 Mar 11 04:08	8°♈42'11	
conjunction	10135 Mar 27 04:14	9°♈40'24	-0°49'56
minimum elong	10135 Mar 27 04:14	9°♈40'24	0°49'58
max. Earth dist.	10135 Mar 27 03:31	9°♈40'17	19.95746 AU
morning rise	10135 Apr 12 01:49	10°♈38'17	
retrograde	10135 Jul 12 11:59	13°♈52'51	
opposition	10135 Sep 25 15:26	11°♈52'41	-0°56'39
min. Earth dist.	10135 Sep 25 16:15	11°♈52'36	17.98770 AU
direct	10135 Dec 11 15:30	9°♈50'00	
evening set	10136 Mar 14 21:10	13°♈08'40	
conjunction	10136 Mar 30 20:19	14°♈06'35	-0°52'00
minimum elong	10136 Mar 30 20:18	14°♈06'35	0°52'05
max. Earth dist.	10136 Mar 30 19:37	14°♈06'28	20.01807 AU
morning rise	10136 Apr 15 17:26	15°♈04'12	
retrograde	10136 Jul 16 04:24	18°♈18'03	
opposition	10136 Sep 29 10:31	16°♈18'00	-0°58'46
min. Earth dist.	10136 Sep 29 09:35	16°♈18'06	18.04875 AU
direct	10136 Dec 15 11:25	14°♈15'36	

evening set	10137 Mar 19 13:09	17°♈33'12	
conjunction	10137 Apr 04 11:41	18°♈30'49	-0°53'45
minimum elong	10137 Apr 04 11:41	18°♈30'49	0°53'52
max. Earth dist.	10137 Apr 04 13:13	18°♈31'03	20.07949 AU
morning rise	10137 Apr 20 08:00	19°♈28'08	
retrograde	10137 Jul 20 18:54	22°♈41'17	
opposition	10137 Oct 04 05:00	20°♈41'23	-1°00'31
min. Earth dist.	10137 Oct 04 03:37	20°♈41'32	18.11068 AU
direct	10137 Dec 20 07:18	18°♈39'16	
evening set	10138 Mar 24 04:22	21°♈55'48	
conjunction	10138 Apr 09 01:59	22°♈53'07	-0°55'11
minimum elong	10138 Apr 09 01:58	22°♈53'07	0°55'20
max. Earth dist.	10138 Apr 09 03:39	22°♈53'22	20.14203 AU
morning rise	10138 Apr 24 21:52	23°♈50'10	
retrograde	10138 Jul 25 09:53	27°♈02'39	
opposition	10138 Oct 08 22:56	25°♈02'53	-1°01'54
min. Earth dist.	10138 Oct 08 19:43	25°♈03'13	18.17387 AU
direct	10138 Dec 25 01:31	23°♈01'05	
evening set	10139 Mar 28 18:21	26°♈16'34	
conjunction	10139 Apr 13 15:27	27°♈13'35	-0°56'17
minimum elong	10139 Apr 13 15:26	27°♈13'35	0°56'26
max. Earth dist.	10139 Apr 13 19:33	27°♈14'12	20.20569 AU
morning rise	10139 Apr 29 10:39	28°♈10'23	
	10139 Jun 02 19:48	0°♉	
retrograde	10139 Jul 29 23:18	1°♉22'12	
	10139 Sep 28 07:06	30°℞♈	
opposition	10139 Oct 13 16:16	29°♈22'37	-1°02'55
min. Earth dist.	10139 Oct 13 12:15	29°♈23'02	18.23795 AU
direct	10139 Dec 29 20:10	27°♈21'11	
	10140 Mar 21 23:33	0°♉	
evening set	10140 Apr 01 07:45	0°♉35'36	
conjunction	10140 Apr 17 04:04	1°♉32'21	-0°57'03
minimum elong	10140 Apr 17 04:03	1°♉32'21	0°57'15
max. Earth dist.	10140 Apr 17 08:14	1°♉32'59	20.27017 AU
morning rise	10140 May 02 23:00	2°♉28'53	
retrograde	10140 Aug 02 13:05	5°♉40'06	
opposition	10140 Oct 17 08:46	3°♉40'41	-1°03'35
min. Earth dist.	10140 Oct 17 03:21	3°♉41'15	18.30269 AU
direct	10141 Jan 02 12:42	1°♉39'37	
evening set	10141 Apr 05 20:11	4°♉53'02	
conjunction	10141 Apr 21 16:07	5°♉49'31	-0°57'29
minimum elong	10141 Apr 21 16:06	5°♉49'30	0°57'43
max. Earth dist.	10141 Apr 21 22:27	5°♉50'27	20.33490 AU
morning rise	10141 May 07 10:29	6°♉45'48	
retrograde	10141 Aug 07 01:07	9°♉56'25	
opposition	10141 Oct 22 00:56	7°♉57'13	-1°03'53
min. Earth dist.	10141 Oct 21 18:44	7°♉57'51	18.36720 AU
direct	10142 Jan 07 05:49	5°♉56'33	
evening set	10142 Apr 10 07:56	9°♉08'55	
conjunction	10142 Apr 26 03:09	10°♉05'08	-0°57'37
minimum elong	10142 Apr 26 03:09	10°♉05'08	0°57'53
max. Earth dist.	10142 Apr 26 09:27	10°♉06'05	20.39912 AU
morning rise	10142 May 11 21:20	11°♉01'12	
retrograde	10142 Aug 11 14:09	14°♉11'16	
opposition	10142 Oct 26 16:34	12°♉12'15	-1°03'50
min. Earth dist.	10142 Oct 26 09:20	12°♉12'59	18.43102 AU
direct	10143 Jan 11 20:45	10°♉11'57	
evening set	10143 Apr 14 18:52	13°♉23'20	
conjunction	10143 Apr 30 13:47	14°♉19'18	-0°57'26
minimum elong	10143 Apr 30 13:47	14°♉19'18	0°57'43
max. Earth dist.	10143 Apr 30 22:01	14°♉20'32	20.46224 AU
	10143 May 11 23:55	15°♉	
morning rise	10143 May 16 07:33	15°♉15'09	
retrograde	10143 Aug 16 00:57	18°♉24'39	
opposition	10143 Oct 31 07:35	16°♉25'50	-1°03'26
min. Earth dist.	10143 Oct 30 23:36	16°♉26'39	18.49327 AU
	10143 Dec 09 13:01	15°℞♉	
direct	10144 Jan 16 12:09	14°♉25'55	
	10144 Feb 22 08:11	15°♉	
evening set	10144 Apr 18 05:15	17°♉36'18	
conjunction	10144 May 03 23:38	18°♉32'02	-0°56'56
minimum elong	10144 May 03 23:38	18°♉32'02	0°57'15
max. Earth dist.	10144 May 04 07:34	18°♉33'13	20.52348 AU
morning rise	10144 May 19 17:22	19°♉27'41	
retrograde	10144 Aug 19 12:48	22°♉36'40	
opposition	10144 Nov 03 22:08	20°♉38'01	-1°02'43
min. Earth dist.	10144 Nov 03 13:38	20°♉38'52	18.55340 AU
direct	10145 Jan 20 01:23	18°♉38'25	
evening set	10145 Apr 22 14:53	21°♉47'51	
conjunction	10145 May 08 09:03	22°♉43'22	-0°56'09
minimum elong	10145 May 08 09:03	22°♉43'22	0°56'30
max. Earth dist.	10145 May 08 18:34	22°♉44'46	20.58219 AU
morning rise	10145 May 24 02:26	23°♉38'48	
retrograde	10145 Aug 23 23:04	26°♉47'17	
opposition	10145 Nov 08 12:07	24°♉48'47	-1°01'40
min. Earth dist.	10145 Nov 08 02:54	24°♉49'43	18.61055 AU
direct	10146 Jan 24 15:40	22°♉49'31	
evening set	10146 Apr 27 00:05	25°♉58'00	
conjunction	10146 May 12 17:48	26°♉53'18	-0°55'04
minimum elong	10146 May 12 17:48	26°♉53'18	0°55'25
max. Earth dist.	10146 May 13 02:52	26°♉54'38	20.63774 AU
morning rise	10146 May 28 11:14	27°♉48'34	
	10146 Jul 11 16:22	0°♊	
retrograde	10146 Aug 28 09:39	0°♊56'35	
	10146 Oct 17 04:37	30°℞♉	
opposition	10146 Nov 13 01:43	28°♉58'11	-1°00'18
min. Earth dist.	10146 Nov 12 16:19	28°♉59'07	18.66447 AU
direct	10147 Jan 29 03:10	26°♉59'11	
	10147 Apr 29 09:13	0°♊	
evening set	10147 May 01 08:21	0°♊06'44	
conjunction	10147 May 17 02:02	1°♊01'51	-0°53'43
minimum elong	10147 May 17 02:02	1°♊01'51	0°54'06
max. Earth dist.	10147 May 17 12:27	1°♊03'23	20.68977 AU
morning rise	10147 Jun 01 19:20	1°♊56'57	
retrograde	10147 Sep 01 19:35	5°♊04'30	
opposition	10147 Nov 17 14:39	3°♊06'10	-0°58'37
min. Earth dist.	10147 Nov 17 04:29	3°♊07'11	18.71448 AU
direct	10148 Feb 02 16:36	1°♊07'25	
evening set	10148 May 04 16:19	4°♊14'04	
conjunction	10148 May 20 09:42	5°♊09'00	-0°52'05
minimum elong	10148 May 20 09:42	5°♊09'00	0°52'28
max. Earth dist.	10148 May 20 19:34	5°♊10'27	20.73785 AU
morning rise	10148 Jun 05 03:11	6°♊03'57	
retrograde	10148 Sep 05 04:52	9°♊11'03	
opposition	10148 Nov 21 02:57	7°♊12'46	-0°56'39
min. Earth dist.	10148 Nov 20 16:58	7°♊13'46	18.76070 AU
direct	10149 Feb 06 02:51	5°♊14'12	
evening set	10149 May 08 23:28	8°♊20'00	
conjunction	10149 May 24 16:54	9°♊14'46	-0°50'11
minimum elong	10149 May 24 16:54	9°♊14'46	0°50'36
max. Earth dist.	10149 May 25 04:06	9°♊16'24	20.78219 AU

morning rise	10149 Jun 09	10:21	10°♊09'34		
retrograde	10149 Sep 09	14:04	13°♊16'16		
opposition	10149 Nov 25	14:47	11°♊17'59	-0°54'25	
min. Earth dist.	10149 Nov 25	03:48	11°♊19'05	18.80314 AU	
direct	10150 Feb 10	14:58	9°♊19'36		
evening set	10150 May 13	06:03	12°♊24'33		
conjunction	10150 May 28	23:17	13°♊19'11	-0°48'03	
minimum elong	10150 May 28	23:17	13°♊19'11	0°48'29	
max. Earth dist.	10150 May 29	10:16	13°♊20'47	20.82297 AU	
morning rise	10150 Jun 13	17:02	14°♊13'52		
retrograde	10150 Sep 13	22:30	17°♊20'13		
opposition	10150 Nov 30	02:14	15°♊21'54	-0°51'54	
min. Earth dist.	10150 Nov 29	15:17	15°♊23'00	18.84245 AU	
direct	10151 Feb 15	00:18	13°♊23'41		
evening set	10151 May 17	12:06	16°♊27'53		
conjunction	10151 Jun 02	05:30	17°♊22'23	-0°45'41	
minimum elong	10151 Jun 02	05:30	17°♊22'23	0°46'06	
max. Earth dist.	10151 Jun 02	17:53	17°♊24'11	20.86075 AU	
morning rise	10151 Jun 17	23:20	18°♊16'58		
retrograde	10151 Sep 18	07:10	21°♊22'59		
opposition	10151 Dec 04	12:52	19°♊24'41	-0°49'09	
min. Earth dist.	10151 Dec 04	00:44	19°♊25'54	18.87872 AU	
direct	10152 Feb 19	10:32	17°♊26'39		
evening set	10152 May 20	17:52	20°♊30'09		
conjunction	10152 Jun 05	11:13	21°♊24'32	-0°43'05	
minimum elong	10152 Jun 05	11:13	21°♊24'32	0°43'32	
max. Earth dist.	10152 Jun 05	23:18	21°♊26'18	20.89557 AU	
morning rise	10152 Jun 21	05:25	22°♊19'03		
retrograde	10152 Sep 21	15:08	25°♊24'49		
opposition	10152 Dec 07	23:20	23°♊26'32	-0°46'09	
min. Earth dist.	10152 Dec 07	11:20	23°♊27'44	18.91217 AU	
direct	10153 Feb 22	18:34	21°♊28'40		
evening set	10153 May 24	23:04	24°♊31'34		
conjunction	10153 Jun 09	16:39	25°♊25'51	-0°40'17	
minimum elong	10153 Jun 09	16:40	25°♊25'51	0°40'44	
max. Earth dist.	10153 Jun 10	06:01	25°♊27'48	20.92754 AU	
morning rise	10153 Jun 25	11:01	26°♊20'18		
retrograde	10153 Sep 25	23:46	29°♊25'52		
opposition	10153 Dec 12	09:19	27°♊27'38	-0°42'56	
min. Earth dist.	10153 Dec 11	20:03	27°♊28'57	18.94253 AU	
direct	10154 Feb 27	03:29	25°♊29'58		
evening set	10154 May 29	04:12	28°♊32'18		
conjunction	10154 Jun 13	21:49	29°♊26'31	-0°37'18	
minimum elong	10154 Jun 13	21:49	29°♊26'31	0°37'46	
max. Earth dist.	10154 Jun 14	10:51	29°♊28'24	20.95634 AU	
	10154 Jun 23	13:44	0°♋		
morning rise	10154 Jun 29	16:40	0°♋20'55		
retrograde	10154 Sep 30	07:34	3°♋26'22		
opposition	10154 Dec 16	19:05	1°♋28'09	-0°39'32	
min. Earth dist.	10154 Dec 16	06:14	1°♋29'26	18.96975 AU	
	10155 Jan 27	08:19	30°℞♊		
direct	10155 Mar 03	10:21	29°♊30'41		
	10155 Apr 06	16:58	0°♋		
evening set	10155 Jun 02	08:54	2°♋32'32		
conjunction	10155 Jun 18	02:55	3°♋26'42	-0°34'09	
minimum elong	10155 Jun 18	02:55	3°♋26'42	0°34'36	
max. Earth dist.	10155 Jun 18	17:01	3°♋28'44	20.98182 AU	
morning rise	10155 Jul 03	22:04	4°♋21'03		
retrograde	10155 Oct 04	16:43	7°♋26'25		
opposition	10155 Dec 21	04:24	5°♋28'16	-0°35'57	
min. Earth dist.	10155 Dec 20	14:31	5°♋29'39	18.99323 AU	

direct	10156 Mar 06	18:35	3°♋30'59		
evening set	10156 Jun 05	13:44	6°♋32'25		
conjunction	10156 Jun 21	07:51	7°♋26'32	-0°30'50	
minimum elong	10156 Jun 21	07:51	7°♋26'32	0°31'17	
max. Earth dist.	10156 Jun 21	21:24	7°♋28'29	21.00332 AU	
morning rise	10156 Jul 07	03:31	8°♋20'53		
retrograde	10156 Oct 08	00:08	11°♋26'13		
opposition	10156 Dec 24	13:34	9°♋28'05	-0°32'11	
min. Earth dist.	10156 Dec 24	00:31	9°♋29'24	19.01273 AU	
direct	10157 Mar 11	00:35	7°♋30'59		
evening set	10157 Jun 09	18:21	10°♋32'03		
conjunction	10157 Jun 25	12:54	11°♋26'10	-0°27'22	
minimum elong	10157 Jun 25	12:54	11°♋26'10	0°27'49	
max. Earth dist.	10157 Jun 26	03:15	11°♋28'14	21.02070 AU	
morning rise	10157 Jul 11	08:55	12°♋20'30		
retrograde	10157 Oct 12	09:54	15°♋25'51		
opposition	10157 Dec 28	22:32	13°♋27'45	-0°28'17	
min. Earth dist.	10157 Dec 28	08:39	13°♋29'08	19.02774 AU	
direct	10158 Mar 15	08:40	11°♋30'47		
evening set	10158 Jun 13	23:01	14°♋31'33		
conjunction	10158 Jun 29	17:47	15°♋25'39	-0°23'47	
minimum elong	10158 Jun 29	17:47	15°♋25'39	0°24'13	
max. Earth dist.	10158 Jun 30	07:24	15°♋27'36	21.03330 AU	
morning rise	10158 Jul 15	14:26	16°♋20'01		
retrograde	10158 Oct 16	17:14	19°♋25'26		
opposition	10159 Jan 02	07:30	17°♋27'19	-0°24'15	
min. Earth dist.	10159 Jan 01	18:47	17°♋28'35	19.03789 AU	
direct	10159 Mar 19	14:02	15°♋30'28		
evening set	10159 Jun 18	03:45	18°♋30'59		
conjunction	10159 Jul 03	23:03	19°♋25'06	-0°20'04	
minimum elong	10159 Jul 03	23:03	19°♋25'06	0°20'31	
max. Earth dist.	10159 Jul 04	13:02	19°♋27'06	21.04082 AU	
morning rise	10159 Jul 19	20:08	20°♋19'29		
retrograde	10159 Oct 21	02:44	23°♋24'58		
opposition	10160 Jan 06	15:59	21°♋26'49	-0°20'05	
min. Earth dist.	10160 Jan 06	02:44	21°♋28'08	19.04259 AU	
direct	10160 Mar 22	22:25	19°♋30'01		
evening set	10160 Jun 21	08:42	22°♋30'21		
conjunction	10160 Jul 07	04:18	23°♋24'30	-0°16'17	
minimum elong	10160 Jul 07	04:18	23°♋24'30	0°16'42	
max. Earth dist.	10160 Jul 07	17:07	23°♋26'20	21.04270 AU	
morning rise	10160 Jul 23	02:03	24°♋18'56		
retrograde	10160 Oct 24	10:21	27°♋24'32		
opposition	10161 Jan 10	00:40	25°♋26'17	-0°15'50	
min. Earth dist.	10161 Jan 09	12:49	25°♋27'28	19.04170 AU	
direct	10161 Mar 27	03:32	23°♋29'30		
evening set	10161 Jun 25	13:24	26°♋29'39		
conjunction	10161 Jul 11	09:37	27°♋23'51	-0°12'24	
minimum elong	10161 Jul 11	09:36	27°♋23'51	0°12'50	
behind sun begin	10161 Jul 11	05:29	27°♋23'16		
behind sun end	10161 Jul 11	13:44	27°♋24'25		
max. Earth dist.	10161 Jul 11	22:40	27°♋25'43	21.03907 AU	
morning rise	10161 Jul 27	07:51	28°♋18'21		
	10161 Aug 29	15:26	0°♌		
retrograde	10161 Oct 28	19:05	1°♌24'05		
	10161 Dec 30	21:03	30°℞♋		
opposition	10162 Jan 14	09:05	29°♋25'41	-0°11'30	
min. Earth dist.	10162 Jan 13	20:37	29°♋26'56	19.03526 AU	
direct	10162 Mar 31	12:11	27°♋28'52		
	10162 Jun 21	00:07	0°♌		
evening set	10162 Jun 29	18:24	0°♌28'54		

conjunction	10162 Jul 15	15:00	1°♌23'09	-0°08'28	
minimum elong	10162 Jul 15	15:00	1°♌23'09	0°08'52	
behind sun begin	10162 Jul 15	09:19	1°♌22'22		
behind sun end	10162 Jul 15	20:41	1°♌23'57		
max. Earth dist.	10162 Jul 16	03:01	1°♌24'52	21.03008 AU	
morning rise	10162 Jul 31	14:00	2°♌17'44		
retrograde	10162 Nov 02	02:58	5°♌23'38		
opposition	10163 Jan 18	17:23	3°♌25'03	-0°07'07	
min. Earth dist.	10163 Jan 18	06:20	3°♌26'10	19.02389 AU	
direct	10163 Apr 04	17:18	1°♌28'09		
evening set	10163 Jul 03	23:21	4°♌28'08		
conjunction	10163 Jul 19	20:38	5°♌22'27	-0°04'30	
minimum elong	10163 Jul 19	20:38	5°♌22'27	0°04'54	
behind sun begin	10163 Jul 19	14:13	5°♌21'34		
behind sun end	10163 Jul 20	03:04	5°♌23'21		
max. Earth dist.	10163 Jul 20	08:57	5°♌24'13	21.01648 AU	
morning rise	10163 Aug 04	20:12	6°♌17'07		
retrograde	10163 Nov 06	11:24	9°♌23'13		
opposition	10164 Jan 23	01:26	7°♌24'28	-0°02'41	
min. Earth dist.	10164 Jan 22	13:40	7°♌25'39	19.00809 AU	
direct	10164 Apr 08	01:07	5°♌27'27		
evening set	10164 Jul 07	04:35	8°♌27'27		
conjunction	10164 Jul 23	02:18	9°♌21'52	-0°00'26	
minimum elong	10164 Jul 23	02:16	9°♌21'52	0°00'48	
behind sun begin	10164 Jul 22	19:41	9°♌20'56		
behind sun end	10164 Jul 23	08:52	9°♌22'47		
max. Earth dist.	10164 Jul 23	13:42	9°♌23'29	20.99864 AU	
morning rise	10164 Aug 08	02:34	10°♌16'38		
asc. node	10164 Aug 30	07:14	11°♌27'14		
retrograde	10164 Nov 09	19:12	13°♌22'59		
opposition	10165 Jan 26	09:35	11°♌24'02	0°01'46	
min. Earth dist.	10165 Jan 25	23:04	11°♌25'06	18.98847 AU	
direct	10165 Apr 12	06:26	9°♌26'55		
evening set	10165 Jul 11	09:57	12°♌27'01		
conjunction	10165 Jul 27	08:22	13°♌21'32	0°03'41	
minimum elong	10165 Jul 27	08:21	13°♌21'32	0°03'20	
behind sun begin	10165 Jul 27	01:48	13°♌20'37		
behind sun end	10165 Jul 27	14:55	13°♌22'27		
max. Earth dist.	10165 Jul 27	20:10	13°♌23'13	20.97734 AU	
morning rise	10165 Aug 12	09:14	14°♌16'24		
	10165 Aug 25	17:27	15°♌		
retrograde	10165 Nov 14	04:21	17°♌23'04		
opposition	10166 Jan 30	17:38	15°♌23'57	0°06'13	
min. Earth dist.	10166 Jan 30	06:19	15°♌25'05	18.96545 AU	
	10166 Feb 09	16:51	15°℞♌		
direct	10166 Apr 16	13:27	13°♌26'43		
	10166 Jun 17	17:14	15°♌		
evening set	10166 Jul 15	15:41	16°♌26'58		
conjunction	10166 Jul 31	14:37	17°♌21'36	0°07'41	
minimum elong	10166 Jul 31	14:37	17°♌21'36	0°07'21	
behind sun begin	10166 Jul 31	08:33	17°♌20'46		
behind sun end	10166 Jul 31	20:40	17°♌22'27		
max. Earth dist.	10166 Aug 01	01:35	17°♌23'10	20.95266 AU	
morning rise	10166 Aug 16	16:18	18°♌16'38		
retrograde	10166 Nov 18	12:30	21°♌23'39		
opposition	10167 Feb 04	01:55	19°♌24'22	0°10'39	
min. Earth dist.	10167 Feb 03	15:55	19°♌25'22	18.93924 AU	
direct	10167 Apr 20	18:47	17°♌27'02		
evening set	10167 Jul 19	21:47	20°♌27'31		
conjunction	10167 Aug 04	21:29	21°♌22'18	0°11'39	
minimum elong	10167 Aug 04	21:29	21°♌22'18	0°11'21	
behind sun begin	10167 Aug 04	16:39	21°♌21'37		
behind sun end	10167 Aug 05	02:19	21°♌22'59		
max. Earth dist.	10167 Aug 05	08:38	21°♌23'54	20.92494 AU	
morning rise	10167 Aug 20	23:47	22°♌17'28		
retrograde	10167 Nov 22	22:48	25°♌24'53		
opposition	10168 Feb 08	10:00	23°♌25'27	0°15'02	
min. Earth dist.	10168 Feb 07	23:23	23°♌26'32	18.90990 AU	
direct	10168 Apr 24	01:49	21°♌28'01		
evening set	10168 Jul 23	04:28	24°♌28'50		
conjunction	10168 Aug 08	04:42	25°♌23'46	0°15'35	
minimum elong	10168 Aug 08	04:42	25°♌23'46	0°15'17	
behind sun begin	10168 Aug 08	02:37	25°♌23'29		
behind sun end	10168 Aug 08	06:47	25°♌24'04		
max. Earth dist.	10168 Aug 08	14:56	25°♌25'14	20.89405 AU	
morning rise	10168 Aug 24	07:47	26°♌19'06		
retrograde	10168 Nov 26	07:34	29°♌26'59		
opposition	10169 Feb 11	18:37	27°♌27'25	0°19'21	
min. Earth dist.	10169 Feb 11	09:27	27°♌28'21	18.87752 AU	
direct	10169 Apr 28	07:05	25°♌29'53		
evening set	10169 Jul 27	11:24	28°♌31'05		
conjunction	10169 Aug 12	12:25	29°♌26'11	0°19'26	
minimum elong	10169 Aug 12	12:25	29°♌26'11	0°19'11	
max. Earth dist.	10169 Aug 12	22:44	29°♌27'40	20.86020 AU	
	10169 Aug 22	07:17	0°♍		
morning rise	10169 Aug 28	16:11	0°♍21'42		
retrograde	10169 Nov 30	19:20	3°♍30'06		
opposition	10170 Feb 16	03:20	1°♍30'24	0°23'35	
min. Earth dist.	10170 Feb 15	17:42	1°♍31'23	18.84201 AU	
	10170 Mar 30	07:47	30°℞♌		
direct	10170 May 02	14:48	29°♌32'46		
	10170 Jun 04	03:53	0°♍		
evening set	10170 Jul 31	19:14	2°♍34'26		
conjunction	10170 Aug 16	20:51	3°♍29'44	0°23'13	
minimum elong	10170 Aug 16	20:51	3°♍29'44	0°22'59	
max. Earth dist.	10170 Aug 17	06:04	3°♍31'03	20.82300 AU	
morning rise	10170 Sep 02	01:25	4°♍25'26		
retrograde	10170 Dec 05	04:50	7°♍34'23		
opposition	10171 Feb 20	12:20	5°♍34'34	0°27'44	
min. Earth dist.	10171 Feb 20	04:30	5°♍35'22	18.80315 AU	
direct	10171 May 06	20:24	3°♍36'49		
evening set	10171 Aug 05	03:37	6°♍39'02		
conjunction	10171 Aug 21	06:03	7°♍34'31	0°26'54	
minimum elong	10171 Aug 21	06:03	7°♍34'31	0°26'42	
max. Earth dist.	10171 Aug 21	14:48	7°♍35'47	20.78238 AU	
morning rise	10171 Sep 06	11:16	8°♍30'25		
retrograde	10171 Dec 09	17:44	11°♍39'58		
opposition	10172 Feb 24	21:35	9°♍40'01	0°31'45	
min. Earth dist.	10172 Feb 24	13:39	9°♍40'50	18.76060 AU	
direct	10172 May 10	04:59	7°♍42'08		
evening set	10172 Aug 08	12:45	10°♍44'56		
conjunction	10172 Aug 24	15:47	11°♍40'38	0°30'28	
minimum elong	10172 Aug 24	15:47	11°♍40'38	0°30'18	
max. Earth dist.	10172 Aug 24	23:10	11°♍41'42	20.73776 AU	
morning rise	10172 Sep 09	21:43	12°♍36'45		
retrograde	10172 Dec 13	04:07	15°♍46'55		
opposition	10173 Feb 28	07:24	13°♍46'48	0°35'39	
min. Earth dist.	10173 Feb 28	01:26	13°♍47'25	18.71401 AU	
direct	10173 May 14	11:46	11°♍48'45		
evening set	10173 Aug 12	22:33	14°♍52'11		
conjunction	10173 Aug 29	02:25	15°♍48'06	0°33'54	
minimum elong	10173 Aug 29	02:24	15°♍48'06	0°33'45	
max. Earth dist.	10173 Aug 29	08:56	15°♍49'02	20.68922 AU	

morning rise	10173 Sep 14	09:02	16°♍44'26		
retrograde	10173 Dec 17	17:49	19°♍55'13		
opposition	10174 Mar 04	17:23	17°♍54'56	0°39'23	
min. Earth dist.	10174 Mar 04	11:27	17°♍55'32	18.66342 AU	
direct	10174 May 18	21:13	15°♍56'38		
evening set	10174 Aug 17	09:07	19°♍00'44		
conjunction	10174 Sep 02	13:40	19°♍56'54	0°37'11	
minimum elong	10174 Sep 02	13:40	19°♍56'54	0°37'04	
max. Earth dist.	10174 Sep 02	18:44	19°♍57'38	20.63662 AU	
morning rise	10174 Sep 18	21:04	20°♍53'28		
retrograde	10174 Dec 22	05:19	24°♍04'53		
opposition	10175 Mar 09	03:52	22°♍04'22	0°42'55	
min. Earth dist.	10175 Mar 08	23:55	22°♍04'46	18.60899 AU	
direct	10175 May 23	05:03	20°♍05'48		
evening set	10175 Aug 21	20:18	23°♍10'37		
conjunction	10175 Sep 07	01:39	24°♍07'00	0°40'17	
minimum elong	10175 Sep 07	01:39	24°♍07'00	0°40'12	
max. Earth dist.	10175 Sep 07	05:46	24°♍07'36	20.58061 AU	
morning rise	10175 Sep 23	09:43	25°♍03'49		
retrograde	10175 Dec 26	19:41	28°♍15'51		
opposition	10176 Mar 12	14:27	26°♍15'06	0°46'16	
min. Earth dist.	10176 Mar 12	10:33	26°♍15'30	18.55148 AU	
direct	10176 May 26	15:27	24°♍16'14		
evening set	10176 Aug 25	08:14	27°♍21'48		
conjunction	10176 Sep 10	14:16	28°♍18'27	0°43'11	
minimum elong	10176 Sep 10	14:16	28°♍18'27	0°43'08	
max. Earth dist.	10176 Sep 10	17:18	28°♍18'54	20.52177 AU	
morning rise	10176 Sep 26	23:00	29°♍15'30		
	10176 Oct 10	07:28	0°♎		
retrograde	10176 Dec 30	08:13	2°♎28'12		
opposition	10177 Mar 17	01:38	0°♎27'11	0°49'23	
min. Earth dist.	10177 Mar 16	23:27	0°♎27'25	18.49161 AU	
	10177 Mar 28	01:19	30°℞♍		
direct	10177 May 30	23:51	28°♍28'00		
	10177 Jul 31	00:09	0°♎		
evening set	10177 Aug 29	20:43	1°♎34'22		
conjunction	10177 Sep 15	03:33	2°♎31'16	0°45'52	
minimum elong	10177 Sep 15	03:33	2°♎31'16	0°45'51	
max. Earth dist.	10177 Sep 15	05:43	2°♎31'35	20.46110 AU	
morning rise	10177 Oct 01	13:00	3°♎28'35		
retrograde	10178 Jan 04	00:12	6°♎41'57		
opposition	10178 Mar 21	13:06	4°♎40'41	0°52'15	
min. Earth dist.	10178 Mar 21	10:52	4°♎40'55	18.43020 AU	
direct	10178 Jun 04	11:14	2°♎41'10		
evening set	10178 Sep 03	10:12	5°♎48'22		
conjunction	10178 Sep 19	17:45	6°♎45'33	0°48'19	
minimum elong	10178 Sep 19	17:45	6°♎45'33	0°48'20	
max. Earth dist.	10178 Sep 19	19:06	6°♎45'45	20.39900 AU	
morning rise	10178 Oct 06	03:48	7°♎43'07		
retrograde	10179 Jan 08	13:47	10°♎57'09		
opposition	10179 Mar 26	00:57	8°♎55'39	0°54'50	
min. Earth dist.	10179 Mar 26	00:19	8°♎55'43	18.36772 AU	
direct	10179 Jun 08	20:25	6°♎55'49		
evening set	10179 Sep 08	00:25	10°♎03'55		
conjunction	10179 Sep 24	08:42	11°♎01'22	0°50'31	
minimum elong	10179 Sep 24	08:41	11°♎01'22	0°50'34	
max. Earth dist.	10179 Sep 24	08:58	11°♎01'25	20.33631 AU	
morning rise	10179 Oct 10	19:24	11°♎59'12		
retrograde	10180 Jan 13	07:08	15°♎13'55		
opposition	10180 Mar 29	13:19	13°♎12'12	0°57'09	
min. Earth dist.	10180 Mar 29	12:39	13°♎12'16	18.30490 AU	
direct	10180 Jun 12	08:49	11°♎12'02		
evening set	10180 Sep 11	15:22	14°♎21'05		
conjunction	10180 Sep 28	00:22	15°♎18'49	0°52'26	
minimum elong	10180 Sep 28	00:21	15°♎18'49	0°52'30	
max. Earth dist.	10180 Sep 28	00:12	15°♎18'48	20.27333 AU	
morning rise	10180 Oct 14	11:34	16°♎16'55		
retrograde	10181 Jan 16	22:19	19°♎32'20		
opposition	10181 Apr 03	02:21	17°♎30'25	0°59'09	
min. Earth dist.	10181 Apr 03	03:01	17°♎30'21	18.24205 AU	
direct	10181 Jun 16	19:26	15°♎29'58		
evening set	10181 Sep 16	07:20	18°♎39'59		
conjunction	10181 Oct 02	17:00	19°♎38'00	0°54'04	
minimum elong	10181 Oct 02	16:59	19°♎38'00	0°54'11	
max. Earth dist.	10181 Oct 02	15:34	19°♎37'47	20.21077 AU	
morning rise	10181 Oct 19	04:53	20°♎36'23		
retrograde	10182 Jan 21	16:37	23°♎52'30		
opposition	10182 Apr 07	15:45	21°♎50'24	1°00'49	
min. Earth dist.	10182 Apr 07	16:36	21°♎50'19	18.17976 AU	
direct	10182 Jun 21	09:02	19°♎49'39		
evening set	10182 Sep 21	00:15	23°♎00'42		
conjunction	10182 Oct 07	10:40	23°♎59'02	0°55'25	
minimum elong	10182 Oct 07	10:40	23°♎59'02	0°55'33	
max. Earth dist.	10182 Oct 07	08:56	23°♎58'46	20.14866 AU	
morning rise	10182 Oct 23	22:59	24°♎57'40		
retrograde	10183 Jan 26	09:25	28°♎14'30		
opposition	10183 Apr 12	05:57	26°♎12'16	1°02'10	
min. Earth dist.	10183 Apr 12	08:05	26°♎12'03	18.11796 AU	
direct	10183 Jun 25	21:36	24°♎11'16		
evening set	10183 Sep 25	18:07	27°♎23'22		
conjunction	10183 Oct 12	05:05	28°♎21'58	0°56'26	
minimum elong	10183 Oct 12	05:05	28°♎21'58	0°56'38	
max. Earth dist.	10183 Oct 12	01:46	28°♎21'28	20.08728 AU	
morning rise	10183 Oct 28	18:00	29°♎20'53		
	10183 Nov 09	04:10	0°♏		
retrograde	10184 Jan 31	04:32	2°♏38'26		
opposition	10184 Apr 15	20:40	0°♏36'05	1°03'09	
min. Earth dist.	10184 Apr 15	23:16	0°♏35'49	18.05691 AU	
	10184 Apr 30	05:04	30°℞♎		
direct	10184 Jun 29	12:25	28°♎34'49		
	10184 Aug 26	14:59	0°♏		
evening set	10184 Sep 29	12:58	1°♏48'00		
conjunction	10184 Oct 16	00:39	2°♏46'54	0°57'09	
minimum elong	10184 Oct 16	00:39	2°♏46'54	0°57'22	
max. Earth dist.	10184 Oct 15	21:06	2°♏46'22	20.02639 AU	
morning rise	10184 Nov 01	13:52	3°♏46'05		
retrograde	10185 Feb 03	22:59	7°♏04'20		
opposition	10185 Apr 20	12:08	5°♏01'53	1°03'46	
min. Earth dist.	10185 Apr 20	16:02	5°♏01'28	17.99626 AU	
direct	10185 Jul 04	03:22	3°♏00'21		
evening set	10185 Oct 04	08:52	6°♏14'37		
conjunction	10185 Oct 20	21:03	7°♏13'49	0°57'31	
minimum elong	10185 Oct 20	21:03	7°♏13'49	0°57'46	
max. Earth dist.	10185 Oct 20	15:23	7°♏12'58	19.96597 AU	
morning rise	10185 Nov 06	10:51	8°♏13'16		
retrograde	10186 Feb 08	18:47	11°♏32'12		
opposition	10186 Apr 25	04:17	9°♏29'38	1°04'01	
min. Earth dist.	10186 Apr 25	09:04	9°♏29'07	17.93598 AU	
direct	10186 Jul 08	19:36	7°♏27'47		
evening set	10186 Oct 09	05:44	10°♏43'10		
conjunction	10186 Oct 25	18:36	11°♏42'38	0°57'33	

minimum elong	10186 Oct 25	18:36	11°♏42'38	0°57'51
max. Earth dist.	10186 Oct 25	12:36	11°♏41'44	19.90567 AU
morning rise	10186 Nov 11	08:34	12°♏42'20	
	10186 Dec 26	05:55	15°♏	
retrograde	10187 Feb 13	14:49	16°♏01'54	
	10187 Apr 05	03:29	15°℞♏	
opposition	10187 Apr 29	20:59	13°♏59'13	1°03'54
min. Earth dist.	10187 Apr 30	02:54	13°♏58'35	17.87583 AU
direct	10187 Jul 13	12:54	11°♏57'03	
	10187 Oct 10	07:30	15°♏	
evening set	10187 Oct 14	03:32	15°♏13'30	
conjunction	10187 Oct 30	16:46	16°♏13'15	0°57'14
minimum elong	10187 Oct 30	16:46	16°♏13'15	0°57'32
max. Earth dist.	10187 Oct 30	08:24	16°♏11'59	19.84586 AU
morning rise	10187 Nov 16	07:13	17°♏13'12	
retrograde	10188 Feb 18	11:05	20°♏33'21	
opposition	10188 May 03	14:25	18°♏30'32	1°03'22
min. Earth dist.	10188 May 03	21:23	18°♏29'47	17.81647 AU
direct	10188 Jul 17	06:42	16°♏28'01	
evening set	10188 Oct 18	01:50	19°♏45'32	
conjunction	10188 Nov 03	15:43	20°♏45'33	0°56'34
minimum elong	10188 Nov 03	15:43	20°♏45'33	0°56'54
max. Earth dist.	10188 Nov 03	07:24	20°♏44'17	19.78698 AU
morning rise	10188 Nov 20	06:16	21°♏45'44	
retrograde	10189 Feb 22	08:22	25°♏06'26	
opposition	10189 May 08	08:24	23°♏03'28	1°02'26
min. Earth dist.	10189 May 08	16:02	23°♏02'39	17.75824 AU
direct	10189 Jul 22	01:58	21°♏00'37	
evening set	10189 Oct 23	01:13	24°♏19'09	
conjunction	10189 Nov 08	15:23	25°♏19'26	0°55'32
minimum elong	10189 Nov 08	15:23	25°♏19'26	0°55'53
max. Earth dist.	10189 Nov 08	04:52	25°♏17'50	19.72972 AU
morning rise	10189 Nov 25	06:18	26°♏19'51	
retrograde	10190 Feb 27	05:14	29°♏41'03	
opposition	10190 May 13	02:49	27°♏37'57	1°01'07
min. Earth dist.	10190 May 13	11:40	27°♏36'59	17.70211 AU
direct	10190 Jul 26	21:08	25°♏34'43	
evening set	10190 Oct 28	01:10	28°♏54'18	
conjunction	10190 Nov 13	15:52	29°♏54'49	0°54'08
minimum elong	10190 Nov 13	15:52	29°♏54'49	0°54'31
max. Earth dist.	10190 Nov 13	05:37	29°♏53'15	19.67477 AU
	10190 Nov 15	01:43	0°♐	
morning rise	10190 Nov 30	06:47	0°♐55'26	
retrograde	10191 Mar 04	03:41	4°♐17'05	
opposition	10191 May 17	21:50	2°♐13'52	0°59'23
min. Earth dist.	10191 May 18	06:51	2°♐12'54	17.64852 AU
direct	10191 Jul 31	17:59	0°♐10'19	
evening set	10191 Nov 02	01:47	3°♐30'52	
conjunction	10191 Nov 18	16:37	4°♐31'37	0°52'23
minimum elong	10191 Nov 18	16:37	4°♐31'37	0°52'48
max. Earth dist.	10191 Nov 18	04:35	4°♐29'46	19.62279 AU
morning rise	10191 Dec 05	07:43	5°♐32'25	
retrograde	10192 Mar 08	01:28	8°♐54'31	
opposition	10192 May 21	17:28	6°♐51'11	0°57'15
min. Earth dist.	10192 May 22	03:36	6°♐50'05	17.59839 AU
direct	10192 Aug 04	14:11	4°♐47'17	
evening set	10192 Nov 06	02:56	8°♐08'47	
conjunction	10192 Nov 22	18:10	9°♐09'45	0°50'17
minimum elong	10192 Nov 22	18:10	9°♐09'45	0°50'42
max. Earth dist.	10192 Nov 22	06:38	9°♐07'59	19.57458 AU
morning rise	10192 Dec 09	09:11	10°♐10'44	
retrograde	10193 Mar 13	01:10	13°♐33'12	
opposition	10193 May 26	13:26	11°♐29'47	0°54'44
min. Earth dist.	10193 May 26	23:15	11°♐28'43	17.55222 AU
direct	10193 Aug 09	12:05	9°♐25'35	
evening set	10193 Nov 11	04:50	12°♐48'00	
conjunction	10193 Nov 27	20:08	13°♐49'10	0°47'50
minimum elong	10193 Nov 27	20:08	13°♐49'10	0°48'17
max. Earth dist.	10193 Nov 27	07:14	13°♐47'10	19.53061 AU
morning rise	10193 Dec 14	11:11	14°♐50'19	
retrograde	10194 Mar 18	00:04	18°♐13'06	
opposition	10194 May 31	10:07	16°♐09'38	0°51'51
min. Earth dist.	10194 May 31	21:03	16°♐08'27	17.51068 AU
direct	10194 Aug 14	08:49	14°♐05'09	
evening set	10194 Nov 16	07:09	17°♐28'28	
conjunction	10194 Dec 02	22:39	18°♐29'48	0°45'04
minimum elong	10194 Dec 02	22:39	18°♐29'48	0°45'31
max. Earth dist.	10194 Dec 02	10:09	18°♐27'52	19.49152 AU
morning rise	10194 Dec 19	13:29	19°♐31'05	
retrograde	10195 Mar 23	00:57	22°♐54'09	
opposition	10195 Jun 05	07:09	20°♐50'41	0°48'36
min. Earth dist.	10195 Jun 05	17:21	20°♐49'34	17.47408 AU
direct	10195 Aug 19	08:08	18°♐45'59	
evening set	10195 Nov 21	10:04	22°♐10'07	
conjunction	10195 Dec 08	01:30	23°♐11'36	0°41'59
minimum elong	10195 Dec 08	01:30	23°♐11'36	0°42'26
max. Earth dist.	10195 Dec 07	12:17	23°♐09'33	19.45756 AU
morning rise	10195 Dec 24	16:10	24°♐13'01	
retrograde	10196 Mar 27	00:05	27°♐36'19	
opposition	10196 Jun 09	04:50	25°♐32'54	0°45'01
min. Earth dist.	10196 Jun 09	16:09	25°♐31'39	17.44284 AU
direct	10196 Aug 23	05:17	23°♐28'02	
evening set	10196 Nov 25	13:13	26°♐52'56	
conjunction	10196 Dec 12	04:43	27°♐54'33	0°38'37
minimum elong	10196 Dec 12	04:43	27°♐54'33	0°39'05
max. Earth dist.	10196 Dec 11	15:37	27°♐52'31	19.42902 AU
morning rise	10196 Dec 28	19:09	28°♐56'03	
	10197 Jan 16	02:01	0°♑	
retrograde	10197 Apr 01	01:32	2°♑19'34	
opposition	10197 Jun 14	02:51	0°♑16'13	0°41'07
min. Earth dist.	10197 Jun 14	13:24	0°♑15'03	17.41674 AU
	10197 Jun 20	07:34	30°℞♐	
direct	10197 Aug 28	06:14	28°♐11'13	
	10197 Nov 02	02:05	0°♑	
evening set	10197 Nov 30	17:06	1°♑36'51	
conjunction	10197 Dec 17	08:27	2°♑38'34	0°34'59
minimum elong	10197 Dec 17	08:27	2°♑38'34	0°35'26
max. Earth dist.	10197 Dec 16	19:03	2°♑36'29	19.40534 AU
morning rise	10198 Jan 02	22:29	3°♑40'08	
retrograde	10198 Apr 06	00:46	7°♑03'47	
opposition	10198 Jun 19	01:24	5°♑00'32	0°36'55
min. Earth dist.	10198 Jun 19	13:17	4°♑59'14	17.39546 AU
direct	10198 Sep 02	04:59	2°♑55'26	
evening set	10198 Dec 05	21:18	6°♑21'42	
conjunction	10198 Dec 22	12:24	7°♑23'30	0°31'05
minimum elong	10198 Dec 22	12:24	7°♑23'30	0°31'33
max. Earth dist.	10198 Dec 21	22:29	7°♑21'20	19.38639 AU
morning rise	10199 Jan 08	02:05	8°♑25'06	
retrograde	10199 Apr 11	02:05	11°♑48'50	
opposition	10199 Jun 24	00:21	9°♑45'40	0°32'28
min. Earth dist.	10199 Jun 24	11:31	9°♑44'27	17.37866 AU
direct	10199 Sep 07	07:45	7°♑40'29	

evening set	10199 Dec 11 01:35	11°♉07'17	
conjunction	10199 Dec 27 16:27	12°♉09'08	0°26'59
minimum elong	10199 Dec 27 16:27	12°♉09'08	0°27'27
max. Earth dist.	10199 Dec 27 02:46	12°♉07'00	19.37166 AU
morning rise	10200 Jan 13 05:31	13°♉10'44	
retrograde	10200 Apr 16 01:19	16°♉34'28	
opposition	10200 Jun 28 23:51	14°♉31'24	0°27'47
min. Earth dist.	10200 Jun 29 12:10	14°♉30'03	17.36607 AU
direct	10200 Sep 12 08:08	12°♉26'07	
evening set	10200 Dec 16 06:11	15°♉53'21	
conjunction	10201 Jan 01 20:36	16°♉55'12	0°22'41
minimum elong	10201 Jan 01 20:37	16°♉55'12	0°23'08
max. Earth dist.	10201 Jan 01 05:59	16°♉52'55	19.36123 AU
morning rise	10201 Jan 18 09:17	17°♉56'48	
retrograde	10201 Apr 21 02:34	21°♉20'27	
opposition	10201 Jul 03 23:19	19°♉17'28	0°22'53
min. Earth dist.	10201 Jul 04 11:02	19°♉16'11	17.35771 AU
direct	10201 Sep 17 12:00	17°♉12'04	
evening set	10201 Dec 21 10:46	20°♉39'39	
max. Earth dist.	10202 Jan 06 10:59	21°♉39'20	19.35492 AU
conjunction	10202 Jan 07 00:54	21°♉41'30	0°18'13
minimum elong	10202 Jan 07 00:54	21°♉41'30	0°18'41
morning rise	10202 Jan 23 12:48	22°♉43'03	
retrograde	10202 Apr 26 02:08	26°♉06'33	
opposition	10202 Jul 08 23:18	24°♉03'39	0°17'50
min. Earth dist.	10202 Jul 09 11:49	24°♉02'17	17.35352 AU
direct	10202 Sep 22 13:31	21°♉58'09	
evening set	10202 Dec 26 15:16	25°♉25'58	
conjunction	10203 Jan 12 04:43	26°♉27'46	0°13'38
minimum elong	10203 Jan 12 04:43	26°♉27'46	0°14'04
behind sun begin	10203 Jan 12 01:29	26°♉27'16	
behind sun end	10203 Jan 12 07:57	26°♉28'16	
max. Earth dist.	10203 Jan 11 13:50	26°♉25'27	19.35302 AU
morning rise	10203 Jan 28 16:06	27°♉29'15	
	10203 Mar 18 02:33	0°♒	
retrograde	10203 May 01 02:54	0°♒52'33	
	10203 Jun 15 08:13	30°℞♉	
opposition	10203 Jul 13 23:15	28°♉49'42	0°12'39
min. Earth dist.	10203 Jul 14 11:06	28°♉48'25	17.35391 AU
direct	10203 Sep 27 16:53	26°♉44'07	
	10203 Dec 28 12:01	0°♒	
evening set	10203 Dec 31 19:25	0°♒12'04	
conjunction	10204 Jan 17 08:29	1°♒13'48	0°08'58
minimum elong	10204 Jan 17 08:29	1°♒13'48	0°09'23
behind sun begin	10204 Jan 17 02:52	1°♒12'56	
behind sun end	10204 Jan 17 14:05	1°♒14'39	
max. Earth dist.	10204 Jan 16 18:55	1°♒11'41	19.35574 AU
morning rise	10204 Feb 02 18:59	2°♒15'11	
retrograde	10204 May 05 02:49	5°♒38'11	
opposition	10204 Jul 17 23:18	3°♒35'25	0°07'23
min. Earth dist.	10204 Jul 18 11:24	3°♒34'06	17.35900 AU
direct	10204 Oct 01 18:57	1°♒29'46	
evening set	10205 Jan 04 23:24	4°♒57'44	
conjunction	10205 Jan 21 11:41	5°♒59'22	0°04'15
minimum elong	10205 Jan 21 11:40	5°♒59'22	0°04'39
behind sun begin	10205 Jan 21 05:06	5°♒58'21	
behind sun end	10205 Jan 21 18:15	6°♒00'22	
max. Earth dist.	10205 Jan 20 21:20	5°♒57'08	19.36340 AU
morning rise	10205 Feb 06 21:37	7°♒00'39	
retrograde	10205 May 10 02:37	10°♒23'18	
opposition	10205 Jul 22 23:19	8°♒20'36	0°02'05
min. Earth dist.	10205 Jul 23 10:49	8°♒19'21	17.36922 AU
direct	10205 Oct 06 21:25	6°♒14'54	
desc. node	10205 Dec 11 01:43	8°♒01'04	
evening set	10206 Jan 10 02:53	9°♒42'47	
conjunction	10206 Jan 26 14:37	10°♒44'18	-0°00'36
minimum elong	10206 Jan 26 14:37	10°♒44'18	0°00'15
behind sun begin	10206 Jan 26 07:58	10°♒43'17	
behind sun end	10206 Jan 26 21:16	10°♒45'19	
max. Earth dist.	10206 Jan 26 01:58	10°♒42'20	19.37619 AU
morning rise	10206 Feb 11 23:34	11°♒45'26	
	10206 Apr 28 11:38	15°♒	
retrograde	10206 May 15 02:25	15°♒07'42	
	10206 May 31 19:27	15°℞♒	
opposition	10206 Jul 27 23:18	13°♒05'05	-0°03'14
min. Earth dist.	10206 Jul 28 10:23	13°♒03'53	17.38464 AU
direct	10206 Oct 12 00:04	10°♒59'23	
evening set	10207 Jan 15 06:02	14°♒27'06	
	10207 Jan 24 02:58	15°♒	
conjunction	10207 Jan 31 16:49	15°♒28'27	-0°05'25
minimum elong	10207 Jan 31 16:49	15°♒28'27	0°05'03
behind sun begin	10207 Jan 31 10:18	15°♒27'27	
behind sun end	10207 Jan 31 23:21	15°♒29'27	
max. Earth dist.	10207 Jan 31 03:55	15°♒26'26	19.39446 AU
morning rise	10207 Feb 17 01:03	16°♒29'26	
retrograde	10207 May 20 00:52	19°♒51'16	
opposition	10207 Aug 01 23:16	17°♒48'45	-0°08'31
min. Earth dist.	10207 Aug 02 09:41	17°♒47'37	17.40590 AU
direct	10207 Oct 17 01:33	15°♒43'05	
evening set	10208 Jan 20 08:20	19°♒10'32	
conjunction	10208 Feb 05 18:29	20°♒11'43	-0°10'06
minimum elong	10208 Feb 05 18:29	20°♒11'43	0°09'47
behind sun begin	10208 Feb 05 13:01	20°♒10'53	
behind sun end	10208 Feb 05 23:57	20°♒12'34	
max. Earth dist.	10208 Feb 05 07:31	20°♒10'01	19.41863 AU
morning rise	10208 Feb 22 01:44	21°♒12'30	
retrograde	10208 May 24 00:28	24°♒33'53	
opposition	10208 Aug 05 23:04	22°♒31'31	-0°13'43
min. Earth dist.	10208 Aug 06 08:20	22°♒30'31	17.43290 AU
direct	10208 Oct 21 04:12	20°♒25'59	
evening set	10209 Jan 24 10:24	23°♒53'05	
conjunction	10209 Feb 09 19:35	24°♒54'05	-0°14'42
minimum elong	10209 Feb 09 19:35	24°♒54'05	0°14'24
behind sun begin	10209 Feb 09 16:36	24°♒53'37	
behind sun end	10209 Feb 09 22:34	24°♒54'32	
max. Earth dist.	10209 Feb 09 08:46	24°♒52'24	19.44858 AU
morning rise	10209 Feb 26 02:01	25°♒54'40	
retrograde	10209 May 28 21:42	29°♒15'33	
opposition	10209 Aug 10 22:37	27°♒13'22	-0°18'48
min. Earth dist.	10209 Aug 11 07:29	27°♒12'25	17.46577 AU
direct	10209 Oct 26 04:58	25°♒08'00	
evening set	10210 Jan 29 11:46	28°♒34'44	
conjunction	10210 Feb 14 20:11	29°♒35'30	-0°19'12
minimum elong	10210 Feb 14 20:11	29°♒35'30	0°18'56
max. Earth dist.	10210 Feb 14 11:00	29°♒34'05	19.48424 AU
	10210 Feb 21 09:08	0°♓	
morning rise	10210 Mar 03 01:39	0°♓35'51	
retrograde	10210 Jun 02 20:33	3°♓56'15	
opposition	10210 Aug 15 22:03	1°♓54'18	-0°23'45
min. Earth dist.	10210 Aug 16 05:26	1°♓53'30	17.50390 AU
	10210 Oct 10 20:58	30°℞♒	
direct	10210 Oct 31 07:38	29°♒49'10	
	10210 Nov 20 13:38	0°♓	

evening set	10211 Feb 03 12:27	3°♓15'24	
conjunction	10211 Feb 19 19:51	4°♓15'57	-0°23'33
minimum elong	10211 Feb 19 19:51	4°♓15'57	0°23'19
max. Earth dist.	10211 Feb 19 11:19	4°♓14'37	19.52480 AU
morning rise	10211 Mar 08 00:25	5°♓16'04	
retrograde	10211 Jun 07 16:39	8°♓35'56	
opposition	10211 Aug 20 21:21	6°♓34'13	-0°28'30
min. Earth dist.	10211 Aug 21 04:36	6°♓33'26	17.54679 AU
direct	10211 Nov 05 07:50	4°♓29'20	
evening set	10212 Feb 08 12:29	7°♓55'02	
conjunction	10212 Feb 24 19:00	8°♓55'19	-0°27'44
minimum elong	10212 Feb 24 18:59	8°♓55'19	0°27'31
max. Earth dist.	10212 Feb 24 11:37	8°♓54'11	19.56975 AU
morning rise	10212 Mar 11 22:39	9°♓55'11	
retrograde	10212 Jun 11 14:24	13°♓14'30	
opposition	10212 Aug 24 20:10	11°♓13'02	-0°33'04
min. Earth dist.	10212 Aug 25 01:50	11°♓12'25	17.59351 AU
direct	10212 Nov 09 10:26	9°♓08'26	
evening set	10213 Feb 12 11:54	12°♓33'29	
conjunction	10213 Feb 28 17:28	13°♓33'30	-0°31'43
minimum elong	10213 Feb 28 17:28	13°♓33'30	0°31'33
max. Earth dist.	10213 Feb 28 10:56	13°♓32'30	19.61810 AU
morning rise	10213 Mar 16 20:11	14°♓33'07	
retrograde	10213 Jun 16 09:17	17°♓51'50	
opposition	10213 Aug 29 18:56	15°♓50'36	-0°37'23
min. Earth dist.	10213 Aug 30 00:47	15°♓49'58	17.64343 AU
direct	10213 Nov 14 10:03	13°♓46'16	
evening set	10214 Feb 17 10:30	17°♓10'37	
conjunction	10214 Mar 05 15:05	18°♓10'21	-0°35'29
minimum elong	10214 Mar 05 15:04	18°♓10'21	0°35'21
max. Earth dist.	10214 Mar 05 09:11	18°♓09'26	19.66936 AU
morning rise	10214 Mar 21 16:55	19°♓09'41	
retrograde	10214 Jun 21 05:55	22°♓27'47	
opposition	10214 Sep 03 17:13	20°♓26'46	-0°41'26
min. Earth dist.	10214 Sep 03 21:18	20°♓26'20	17.69585 AU
direct	10214 Nov 19 11:40	18°♓22'43	
evening set	10215 Feb 22 08:18	21°♓46'16	
conjunction	10215 Mar 10 11:58	22°♓45'42	-0°39'00
minimum elong	10215 Mar 10 11:58	22°♓45'42	0°38'54
max. Earth dist.	10215 Mar 10 07:17	22°♓44'59	19.72282 AU
morning rise	10215 Mar 26 12:50	23°♓44'46	
retrograde	10215 Jun 25 23:49	27°♓02'12	
opposition	10215 Sep 08 15:13	25°♓01'23	-0°45'12
min. Earth dist.	10215 Sep 08 19:34	25°♓00'55	17.75037 AU
direct	10215 Nov 24 09:56	22°♓57'37	
evening set	10216 Feb 27 05:10	26°♓20'17	
conjunction	10216 Mar 14 07:52	27°♓19'26	-0°42'16
minimum elong	10216 Mar 14 07:51	27°♓19'26	0°42'13
max. Earth dist.	10216 Mar 14 03:26	27°♓18'45	19.77822 AU
morning rise	10216 Mar 30 08:00	28°♓18'13	
	10216 Apr 30 01:10	0°♈	
retrograde	10216 Jun 29 19:32	1°♈34'58	
	10216 Sep 02 07:08	30°℞♓	
opposition	10216 Sep 12 12:33	29°♓34'19	-0°48'40
min. Earth dist.	10216 Sep 12 15:06	29°♓34'03	17.80645 AU
direct	10216 Nov 28 10:04	27°♓30'48	
	10217 Feb 15 22:44	0°♈	
evening set	10217 Mar 03 01:10	0°♈52'34	
conjunction	10217 Mar 19 03:03	1°♈51'24	-0°45'14
minimum elong	10217 Mar 19 03:02	1°♈51'24	0°45'13
max. Earth dist.	10217 Mar 19 00:06	1°♈50'57	19.83491 AU
morning rise	10217 Apr 04 02:14	2°♈49'54	
retrograde	10217 Jul 04 11:58	6°♈05'56	
opposition	10217 Sep 17 09:28	4°♈05'27	-0°51'48
min. Earth dist.	10217 Sep 17 12:16	4°♈05'10	17.86381 AU
direct	10217 Dec 03 06:50	2°♈02'12	
evening set	10218 Mar 07 20:17	5°♈22'58	
conjunction	10218 Mar 23 21:10	6°♈21'30	-0°47'55
minimum elong	10218 Mar 23 21:10	6°♈21'30	0°47'57
max. Earth dist.	10218 Mar 23 18:20	6°♈21'04	19.89296 AU
morning rise	10218 Apr 08 19:43	7°♈19'42	
retrograde	10218 Jul 09 06:43	10°♈35'01	
opposition	10218 Sep 22 05:46	8°♈34'39	-0°54'36
min. Earth dist.	10218 Sep 22 06:39	8°♈34'34	17.92246 AU
direct	10218 Dec 08 05:29	6°♈31'38	
evening set	10219 Mar 12 14:06	9°♈51'22	
conjunction	10219 Mar 28 14:16	10°♈49'36	-0°50'18
minimum elong	10219 Mar 28 14:16	10°♈49'36	0°50'20
max. Earth dist.	10219 Mar 28 13:28	10°♈49'29	19.95219 AU
morning rise	10219 Apr 13 11:58	11°♈47'31	
retrograde	10219 Jul 13 21:41	15°♈02'05	
opposition	10219 Sep 27 01:34	13°♈01'51	-0°57'03
min. Earth dist.	10219 Sep 27 02:23	13°♈01'46	17.98237 AU
direct	10219 Dec 13 01:03	10°♈59'05	
evening set	10220 Mar 16 07:11	14°♈17'45	
conjunction	10220 Apr 01 06:24	15°♈15'40	-0°52'21
minimum elong	10220 Apr 01 06:23	15°♈15'40	0°52'26
max. Earth dist.	10220 Apr 01 05:46	15°♈15'35	20.01284 AU
morning rise	10220 Apr 17 03:35	16°♈13'18	
retrograde	10220 Jul 17 14:38	19°♈27'08	
opposition	10220 Sep 30 20:26	17°♈27'01	-0°59'08
min. Earth dist.	10220 Sep 30 19:18	17°♈27'08	18.04380 AU
direct	10220 Dec 16 22:21	15°♈24'31	
evening set	10221 Mar 20 23:11	18°♈42'07	
conjunction	10221 Apr 05 21:46	19°♈39'44	-0°54'04
minimum elong	10221 Apr 05 21:46	19°♈39'44	0°54'12
max. Earth dist.	10221 Apr 05 23:26	19°♈39'59	20.07497 AU
morning rise	10221 Apr 21 18:08	20°♈37'04	
retrograde	10221 Jul 22 04:27	23°♈50'12	
opposition	10221 Oct 05 15:00	21°♈50'13	-1°00'52
min. Earth dist.	10221 Oct 05 13:26	21°♈50'23	18.10672 AU
direct	10221 Dec 21 16:47	19°♈48'02	
evening set	10222 Mar 25 14:17	23°♈04'33	
conjunction	10222 Apr 10 11:57	24°♈01'52	-0°55'28
minimum elong	10222 Apr 10 11:57	24°♈01'52	0°55'37
max. Earth dist.	10222 Apr 10 13:52	24°♈02'09	20.13867 AU
morning rise	10222 Apr 26 07:53	24°♈58'55	
retrograde	10222 Jul 26 19:49	28°♈11'23	
opposition	10222 Oct 10 08:51	26°♈11'33	-1°02'13
min. Earth dist.	10222 Oct 10 05:19	26°♈11'55	18.17114 AU
direct	10222 Dec 26 12:16	24°♈09'43	
evening set	10223 Mar 30 04:24	27°♈25'10	
conjunction	10223 Apr 15 01:34	28°♈22'13	-0°56'32
minimum elong	10223 Apr 15 01:33	28°♈22'12	0°56'43
max. Earth dist.	10223 Apr 15 05:50	28°♈22'51	20.20359 AU
morning rise	10223 Apr 30 20:49	29°♈19'00	
	10223 May 12 18:31	0°♉	
retrograde	10223 Jul 31 08:48	2°♉30'48	
opposition	10223 Oct 15 02:04	0°♉31'10	-1°03'12
min. Earth dist.	10223 Oct 14 22:02	0°♉31'35	18.23644 AU
	10223 Oct 27 20:00	30°℞♈	

direct	10223 Dec 31 05:32	28°♈29'42	
	10224 Mar 01 05:50	0°♉	
evening set	10224 Apr 02 17:48	1°♉44'07	
conjunction	10224 Apr 18 14:12	2°♉40'52	-0°57'16
minimum elong	10224 Apr 18 14:11	2°♉40'52	0°57'29
max. Earth dist.	10224 Apr 18 18:29	2°♉41'31	20.26917 AU
morning rise	10224 May 04 09:12	3°♉37'25	
retrograde	10224 Aug 03 22:49	6°♉48'36	
opposition	10224 Oct 18 18:43	4°♉49'10	-1°03'49
min. Earth dist.	10224 Oct 18 13:09	4°♉49'44	18.30207 AU
direct	10225 Jan 03 22:44	2°♉48'05	
evening set	10225 Apr 07 06:16	6°♉01'28	
conjunction	10225 Apr 23 02:15	6°♉57'57	-0°57'41
minimum elong	10225 Apr 23 02:14	6°♉57'57	0°57'57
max. Earth dist.	10225 Apr 23 08:41	6°♉58'55	20.33458 AU
morning rise	10225 May 08 20:39	7°♉54'15	
retrograde	10225 Aug 08 11:18	11°♉04'50	
opposition	10225 Oct 23 10:53	9°♉05'37	-1°04'05
min. Earth dist.	10225 Oct 23 04:48	9°♉06'15	18.36711 AU
direct	10226 Jan 08 15:07	7°♉04'56	
evening set	10226 Apr 11 18:10	10°♉17'18	
conjunction	10226 Apr 27 13:26	11°♉13'31	-0°57'47
minimum elong	10226 Apr 27 13:26	11°♉13'31	0°58'04
max. Earth dist.	10226 Apr 27 19:43	11°♉14'27	20.39917 AU
morning rise	10226 May 13 07:40	12°♉09'35	
	10226 Jul 16 10:42	15°♉	
retrograde	10226 Aug 12 23:53	15°♉19'37	
	10226 Sep 10 01:45	15°℞♉	
opposition	10226 Oct 28 02:31	13°♉20'36	-1°04'00
min. Earth dist.	10226 Oct 27 19:19	13°♉21'20	18.43114 AU
direct	10227 Jan 13 06:22	11°♉20'17	
evening set	10227 Apr 16 05:04	14°♉31'39	
	10227 Apr 24 06:19	15°♉	
conjunction	10227 May 02 00:04	15°♉27'37	-0°57'34
minimum elong	10227 May 02 00:04	15°♉27'37	0°57'52
max. Earth dist.	10227 May 02 08:16	15°♉28'51	20.46229 AU
morning rise	10227 May 17 17:53	16°♉23'28	
retrograde	10227 Aug 17 11:50	19°♉32'57	
opposition	10227 Nov 01 17:36	17°♉34'07	-1°03'34
min. Earth dist.	10227 Nov 01 09:55	17°♉34'54	18.49317 AU
direct	10228 Jan 17 21:50	15°♉34'10	
evening set	10228 Apr 19 15:35	18°♉44'34	
conjunction	10228 May 05 09:59	19°♉40'18	-0°57'03
minimum elong	10228 May 05 09:59	19°♉40'18	0°57'23
max. Earth dist.	10228 May 05 17:43	19°♉41'27	20.52313 AU
morning rise	10228 May 21 03:45	20°♉35'57	
retrograde	10228 Aug 20 22:58	23°♉44'54	
opposition	10228 Nov 05 08:01	21°♉46'14	-1°02'48
min. Earth dist.	10228 Nov 04 23:42	21°♉47'04	18.55277 AU
direct	10229 Jan 21 11:27	19°♉46'37	
evening set	10229 Apr 24 01:15	22°♉56'03	
conjunction	10229 May 09 19:29	23°♉51'34	-0°56'13
minimum elong	10229 May 09 19:29	23°♉51'34	0°56'34
max. Earth dist.	10229 May 10 04:47	23°♉52'57	20.58121 AU
morning rise	10229 May 25 12:55	24°♉47'01	
retrograde	10229 Aug 25 09:48	27°♉55'28	
opposition	10229 Nov 09 22:06	25°♉56'57	-1°01'43
min. Earth dist.	10229 Nov 09 13:13	25°♉57'50	18.60920 AU
direct	10230 Jan 26 01:50	23°♉57'38	
evening set	10230 Apr 28 10:19	27°♉06'07	

conjunction	10230 May 14 04:06	28°♉01'26	-0°55'07
minimum elong	10230 May 14 04:06	28°♉01'26	0°55'29
max. Earth dist.	10230 May 14 12:51	28°♉02'43	20.63598 AU
morning rise	10230 May 29 21:36	28°♉56'42	
	10230 Jun 18 02:02	0°♊	
retrograde	10230 Aug 29 20:09	2°♊04'41	
opposition	10230 Nov 14 11:37	0°♊06'15	-1°00'19
min. Earth dist.	10230 Nov 14 02:22	0°♊07'11	18.66231 AU
	10230 Nov 17 01:38	30°℞♉	
direct	10231 Jan 30 14:05	28°♉07'12	
	10231 Apr 09 17:41	0°♊	
evening set	10231 May 02 18:38	1°♊14'46	
conjunction	10231 May 18 12:23	2°♊09'53	-0°53'43
minimum elong	10231 May 18 12:23	2°♊09'53	0°54'06
max. Earth dist.	10231 May 18 22:35	2°♊11'23	20.68730 AU
morning rise	10231 Jun 03 05:44	3°♊04'59	
retrograde	10231 Sep 03 05:29	6°♊12'29	
opposition	10231 Nov 19 00:20	4°♊14'07	-0°58'36
min. Earth dist.	10231 Nov 18 14:27	4°♊15'07	18.71178 AU
direct	10232 Feb 04 02:50	2°♊15'18	
evening set	10232 May 06 02:27	5°♊21'58	
conjunction	10232 May 21 19:54	6°♊16'54	-0°52'03
minimum elong	10232 May 21 19:54	6°♊16'54	0°52'28
max. Earth dist.	10232 May 22 05:34	6°♊18'19	20.73511 AU
morning rise	10232 Jun 06 13:27	7°♊11'51	
retrograde	10232 Sep 06 14:56	10°♊18'55	
opposition	10232 Nov 22 12:39	8°♊20'34	-0°56'36
min. Earth dist.	10232 Nov 22 02:34	8°♊21'35	18.75804 AU
direct	10233 Feb 07 13:33	6°♊21'56	
evening set	10233 May 10 09:23	9°♊27'45	
conjunction	10233 May 26 02:52	10°♊22'31	-0°50'07
minimum elong	10233 May 26 02:52	10°♊22'31	0°50'33
max. Earth dist.	10233 May 26 14:11	10°♊24'10	20.77980 AU
morning rise	10233 Jun 10 20:21	11°♊17'20	
retrograde	10233 Sep 10 23:24	14°♊23'59	
opposition	10233 Nov 27 00:24	12°♊25'40	-0°54'19
min. Earth dist.	10233 Nov 26 13:18	12°♊26'47	18.80125 AU
direct	10234 Feb 12 01:06	10°♊27'14	
evening set	10234 May 14 16:00	13°♊32'13	
conjunction	10234 May 30 09:16	14°♊26'50	-0°47'57
minimum elong	10234 May 30 09:16	14°♊26'50	0°48'24
max. Earth dist.	10234 May 30 20:21	14°♊28'27	20.82171 AU
morning rise	10234 Jun 15 03:02	15°♊21'32	
retrograde	10234 Sep 15 08:03	18°♊27'51	
opposition	10234 Dec 01 11:40	16°♊29'32	-0°51'47
min. Earth dist.	10234 Dec 01 00:20	16°♊30'40	18.84199 AU
direct	10235 Feb 16 09:42	14°♊31'18	
evening set	10235 May 18 21:55	17°♊35'32	
conjunction	10235 Jun 03 15:22	18°♊30'02	-0°45'33
minimum elong	10235 Jun 03 15:22	18°♊30'02	0°46'01
max. Earth dist.	10235 Jun 04 04:02	18°♊31'52	20.86114 AU
morning rise	10235 Jun 19 09:12	19°♊24'37	
retrograde	10235 Sep 19 16:30	22°♊30'36	
opposition	10235 Dec 05 22:21	20°♊32'21	-0°48'59
min. Earth dist.	10235 Dec 05 09:55	20°♊33'35	18.88002 AU
direct	10236 Feb 20 20:18	18°♊34'19	
evening set	10236 May 22 03:39	21°♊37'51	
conjunction	10236 Jun 06 20:59	22°♊32'14	-0°42'56
minimum elong	10236 Jun 06 20:59	22°♊32'14	0°43'23
max. Earth dist.	10236 Jun 07 09:19	22°♊34'01	20.89781 AU
morning rise	10236 Jun 22 15:12	23°♊26'44	

retrograde	10236 Sep 23 00:39	26°♊32'29	
opposition	10236 Dec 09 08:40	24°♊34'16	-0°45'58
min. Earth dist.	10236 Dec 08 20:18	24°♊35'30	18.91535 AU
direct	10237 Feb 24 03:17	22°♊36'26	
evening set	10237 May 26 08:53	25°♊39'21	
conjunction	10237 Jun 11 02:30	26°♊33'39	-0°40'06
minimum elong	10237 Jun 11 02:30	26°♊33'39	0°40'35
max. Earth dist.	10237 Jun 11 16:15	26°♊35'38	20.93167 AU
morning rise	10237 Jun 26 20:51	27°♊28'04	
	10237 Aug 21 09:17	0°♋	
retrograde	10237 Sep 27 09:12	0°♋33'37	
	10237 Nov 04 11:02	30°℞♊	
opposition	10237 Dec 13 18:39	28°♊35'27	-0°42'43
min. Earth dist.	10237 Dec 13 05:14	28°♊36'47	18.94753 AU
direct	10238 Feb 28 13:01	26°♊37'50	
evening set	10238 May 30 13:54	29°♊40'11	
	10238 Jun 05 09:15	0°♋	
conjunction	10238 Jun 15 07:33	0°♋34'23	-0°37'06
minimum elong	10238 Jun 15 07:33	0°♋34'23	0°37'33
max. Earth dist.	10238 Jun 15 20:51	0°♋36'19	20.96219 AU
morning rise	10238 Jul 01 02:25	1°♋28'46	
retrograde	10238 Oct 01 17:26	4°♋34'10	
opposition	10238 Dec 18 04:25	2°♋36'02	-0°39'17
min. Earth dist.	10238 Dec 17 15:23	2°♋37'21	18.97630 AU
direct	10239 Mar 04 19:26	0°♋38'38	
evening set	10239 Jun 03 18:44	3°♋40'28	
conjunction	10239 Jun 19 12:45	4°♋34'37	-0°33'55
minimum elong	10239 Jun 19 12:45	4°♋34'37	0°34'23
max. Earth dist.	10239 Jun 20 03:09	4°♋36'41	20.98903 AU
morning rise	10239 Jul 05 07:52	5°♋28'57	
retrograde	10239 Oct 06 01:48	8°♋34'14	
opposition	10239 Dec 22 13:36	6°♋36'09	-0°35'40
min. Earth dist.	10239 Dec 21 23:48	6°♋37'32	19.00100 AU
direct	10240 Mar 08 04:14	4°♋38'56	
evening set	10240 Jun 06 23:37	7°♋40'20	
conjunction	10240 Jun 22 17:43	8°♋34'26	-0°30'34
minimum elong	10240 Jun 22 17:43	8°♋34'26	0°31'02
max. Earth dist.	10240 Jun 23 07:19	8°♋36'23	21.01157 AU
morning rise	10240 Jul 08 13:23	9°♋28'45	
retrograde	10240 Oct 09 10:08	12°♋33'59	
opposition	10240 Dec 25 22:53	10°♋35'56	-0°31'54
min. Earth dist.	10240 Dec 25 09:51	10°♋37'14	19.02131 AU
direct	10241 Mar 12 10:25	8°♋38'51	
evening set	10241 Jun 11 04:09	11°♋39'52	
conjunction	10241 Jun 26 22:42	12°♋33'57	-0°27'05
minimum elong	10241 Jun 26 22:42	12°♋33'57	0°27'33
max. Earth dist.	10241 Jun 27 13:05	12°♋36'01	21.02946 AU
morning rise	10241 Jul 12 18:41	13°♋28'16	
retrograde	10241 Oct 13 18:29	16°♋33'29	
opposition	10241 Dec 30 07:52	14°♋35'26	-0°27'58
min. Earth dist.	10241 Dec 29 18:11	14°♋36'48	19.03657 AU
direct	10242 Mar 16 18:32	12°♋38'29	
evening set	10242 Jun 15 09:00	15°♋39'10	
conjunction	10242 Jul 01 03:44	16°♋33'15	-0°23'29
minimum elong	10242 Jul 01 03:44	16°♋33'15	0°23'57
max. Earth dist.	10242 Jul 01 16:59	16°♋35'08	21.04203 AU
morning rise	10242 Jul 17 00:21	17°♋27'34	
retrograde	10242 Oct 18 02:33	20°♋32'50	
opposition	10243 Jan 03 16:40	18°♋34'44	-0°23'54
min. Earth dist.	10243 Jan 03 04:08	18°♋35'59	19.04646 AU
direct	10243 Mar 21 00:28	16°♋37'51	
evening set	10243 Jun 19 13:38	19°♋38'16	
conjunction	10243 Jul 05 08:56	20°♋32'22	-0°19'45
minimum elong	10243 Jul 05 08:56	20°♋32'22	0°20'12
max. Earth dist.	10243 Jul 05 22:33	20°♋34'19	21.04907 AU
morning rise	10243 Jul 21 05:58	21°♋26'43	
retrograde	10243 Oct 22 11:07	24°♋32'01	
opposition	10244 Jan 08 01:13	22°♋33'51	-0°19'44
min. Earth dist.	10244 Jan 07 12:13	22°♋35'09	19.05049 AU
direct	10244 Mar 24 08:03	20°♋37'01	
evening set	10244 Jun 22 18:24	23°♋37'12	
conjunction	10244 Jul 08 13:58	24°♋31'19	-0°15'56
minimum elong	10244 Jul 08 13:58	24°♋31'19	0°16'24
max. Earth dist.	10244 Jul 09 02:20	24°♋33'05	21.05025 AU
morning rise	10244 Jul 24 11:41	25°♋25'43	
retrograde	10244 Oct 25 18:28	28°♋31'07	
opposition	10245 Jan 11 09:45	26°♋32'50	-0°15'28
min. Earth dist.	10245 Jan 10 22:01	26°♋34'00	19.04894 AU
direct	10245 Mar 28 13:56	24°♋35'59	
evening set	10245 Jun 26 23:01	27°♋35'59	
conjunction	10245 Jul 12 19:13	28°♋30'08	-0°12'03
minimum elong	10245 Jul 12 19:13	28°♋30'08	0°12'29
behind sun begin	10245 Jul 12 14:54	28°♋29'32	
behind sun end	10245 Jul 12 23:32	28°♋30'45	
max. Earth dist.	10245 Jul 13 08:06	28°♋31'59	21.04614 AU
morning rise	10245 Jul 28 17:25	29°♋24'36	
	10245 Aug 08 12:06	0°♌	
retrograde	10245 Oct 30 03:37	2°♌30'07	
opposition	10246 Jan 15 17:58	0°♌31'42	-0°11'07
min. Earth dist.	10246 Jan 15 05:40	0°♌32'56	19.04226 AU
	10246 Jan 29 02:46	30°℞♋	
direct	10246 Apr 01 21:14	28°♋34'48	
	10246 May 31 07:34	0°♌	
evening set	10246 Jul 01 03:46	1°♌34'42	
conjunction	10246 Jul 17 00:21	2°♌28'54	-0°08'06
minimum elong	10246 Jul 17 00:21	2°♌28'54	0°08'32
behind sun begin	10246 Jul 16 18:35	2°♌28'06	
behind sun end	10246 Jul 17 06:07	2°♌29'43	
max. Earth dist.	10246 Jul 17 12:14	2°♌30'36	21.03715 AU
morning rise	10246 Aug 01 23:20	3°♌23'27	
retrograde	10246 Nov 03 10:37	6°♌29'09	
opposition	10247 Jan 20 02:12	4°♌30'34	-0°06'42
min. Earth dist.	10247 Jan 19 15:07	4°♌31'40	19.03113 AU
direct	10247 Apr 06 02:29	2°♌33'36	
evening set	10247 Jul 05 08:37	5°♌33'28	
conjunction	10247 Jul 21 05:52	6°♌27'45	-0°04'07
minimum elong	10247 Jul 21 05:52	6°♌27'45	0°04'31
behind sun begin	10247 Jul 20 23:24	6°♌26'51	
behind sun end	10247 Jul 21 12:20	6°♌28'39	
max. Earth dist.	10247 Jul 21 18:19	6°♌29'32	21.02397 AU
morning rise	10247 Aug 06 05:20	7°♌22'23	
retrograde	10247 Nov 07 20:14	10°♌28'18	
opposition	10248 Jan 24 10:03	8°♌29'34	-0°02'16
min. Earth dist.	10248 Jan 23 22:17	8°♌30'45	19.01596 AU
direct	10248 Apr 09 09:47	6°♌32'33	
evening set	10248 Jul 08 13:48	9°♌32'28	
conjunction	10248 Jul 24 11:26	10°♌26'50	-0°00'03
minimum elong	10248 Jul 24 11:26	10°♌26'50	0°00'26
behind sun begin	10248 Jul 24 04:52	10°♌25'55	
behind sun end	10248 Jul 24 18:00	10°♌27'45	
max. Earth dist.	10248 Jul 24 22:55	10°♌28'28	21.00697 AU
asc. node	10248 Jul 27 04:00	10°♌36'07	

morning rise	10248 Aug 09 11:41	11°♌21'34	
retrograde	10248 Nov 11 03:35	14°♌27'48	
opposition	10249 Jan 27 18:12	12°♌28'54	0°02'11
min. Earth dist.	10249 Jan 27 07:35	12°♌29'58	18.99727 AU
direct	10249 Apr 13 14:17	10°♌31'48	
evening set	10249 Jul 12 18:56	13°♌31'50	
conjunction	10249 Jul 28 17:19	14°♌26'19	0°04'04
minimum elong	10249 Jul 28 17:19	14°♌26'19	0°03'43
behind sun begin	10249 Jul 28 10:47	14°♌25'24	
behind sun end	10249 Jul 28 23:52	14°♌27'14	
max. Earth dist.	10249 Jul 29 05:23	14°♌28'03	20.98660 AU
	10249 Aug 07 12:16	15°♌	
morning rise	10249 Aug 13 18:08	15°♌21'11	
retrograde	10249 Nov 15 13:28	18°♌27'44	
opposition	10250 Feb 01 02:14	16°♌28'42	0°06'38
min. Earth dist.	10250 Jan 31 14:53	16°♌29'51	18.97516 AU
	10250 Mar 14 15:43	15°℞♌	
direct	10250 Apr 17 22:04	14°♌31'34	
	10250 May 21 08:52	15°♌	
evening set	10250 Jul 17 00:44	17°♌31'47	
conjunction	10250 Aug 01 23:35	18°♌26'24	0°08'04
minimum elong	10250 Aug 01 23:36	18°♌26'24	0°07'44
behind sun begin	10250 Aug 01 17:37	18°♌25'33	
behind sun end	10250 Aug 02 05:34	18°♌27'14	
max. Earth dist.	10250 Aug 02 10:35	18°♌27'58	20.96282 AU
morning rise	10250 Aug 18 01:14	19°♌21'23	
retrograde	10250 Nov 19 21:50	22°♌28'20	
opposition	10251 Feb 05 10:22	20°♌29'10	0°11'04
min. Earth dist.	10251 Feb 05 00:22	20°♌30'11	18.94978 AU
direct	10251 Apr 22 02:25	18°♌31'57	
evening set	10251 Jul 21 06:46	21°♌32'26	
conjunction	10251 Aug 06 06:26	22°♌27'12	0°12'03
minimum elong	10251 Aug 06 06:25	22°♌27'12	0°11'43
behind sun begin	10251 Aug 06 01:44	22°♌26'33	
behind sun end	10251 Aug 06 11:06	22°♌27'51	
max. Earth dist.	10251 Aug 06 17:42	22°♌28'49	20.93582 AU
morning rise	10251 Aug 22 08:39	23°♌22'21	
retrograde	10251 Nov 24 08:01	26°♌29'43	
opposition	10252 Feb 09 18:36	24°♌30'27	0°15'27
min. Earth dist.	10252 Feb 09 08:01	24°♌31'31	18.92102 AU
direct	10252 Apr 25 10:16	22°♌33'09	
evening set	10252 Jul 24 13:19	25°♌33'59	
conjunction	10252 Aug 09 13:29	26°♌28'53	0°15'58
minimum elong	10252 Aug 09 13:29	26°♌28'53	0°15'41
behind sun begin	10252 Aug 09 12:02	26°♌28'41	
behind sun end	10252 Aug 09 14:55	26°♌29'05	
max. Earth dist.	10252 Aug 09 23:36	26°♌30'20	20.90534 AU
morning rise	10252 Aug 25 16:31	27°♌24'12	
	10252 Oct 22 08:10	0°♍	
retrograde	10252 Nov 27 17:24	0°♍32'05	
	10253 Jan 03 18:27	30°℞♌	
opposition	10253 Feb 13 03:15	28°♌32'40	0°19'47
min. Earth dist.	10253 Feb 12 18:10	28°♌33'35	18.88885 AU
direct	10253 Apr 29 15:26	26°♌35'18	
evening set	10253 Jul 28 20:24	29°♌36'31	
	10253 Aug 04 17:50	0°♍	
conjunction	10253 Aug 13 21:22	0°♍31'36	0°19'50
minimum elong	10253 Aug 13 21:22	0°♍31'36	0°19'33
max. Earth dist.	10253 Aug 14 07:34	0°♍33'04	20.87144 AU
morning rise	10253 Aug 30 01:01	1°♍27'05	
retrograde	10253 Dec 02 04:17	4°♍35'29	
opposition	10254 Feb 17 11:54	2°♍35'58	0°24'02
min. Earth dist.	10254 Feb 17 02:30	2°♍36'55	18.85305 AU
direct	10254 May 03 23:11	0°♍38'29	
evening set	10254 Aug 02 04:15	3°♍40'10	
conjunction	10254 Aug 18 05:47	4°♍35'26	0°23'37
minimum elong	10254 Aug 18 05:47	4°♍35'26	0°23'23
max. Earth dist.	10254 Aug 18 14:32	4°♍36'42	20.83363 AU
morning rise	10254 Sep 03 10:16	5°♍31'07	
retrograde	10254 Dec 06 14:31	8°♍40'05	
opposition	10255 Feb 21 21:03	6°♍40'24	0°28'11
min. Earth dist.	10255 Feb 21 13:32	6°♍41'10	18.81323 AU
direct	10255 May 08 05:19	4°♍42'47	
evening set	10255 Aug 06 12:40	7°♍45'00	
conjunction	10255 Aug 22 15:00	8°♍40'28	0°27'19
minimum elong	10255 Aug 22 15:00	8°♍40'28	0°27'07
max. Earth dist.	10255 Aug 22 23:21	8°♍41'40	20.79169 AU
morning rise	10255 Sep 07 20:04	9°♍36'20	
retrograde	10255 Dec 11 02:17	12°♍45'52	
opposition	10256 Feb 26 06:17	10°♍46'02	0°32'13
min. Earth dist.	10256 Feb 25 22:43	10°♍46'48	18.76906 AU
direct	10256 May 11 13:50	8°♍48'14	
evening set	10256 Aug 09 21:53	11°♍51'00	
conjunction	10256 Aug 26 00:49	12°♍46'41	0°30'53
minimum elong	10256 Aug 26 00:49	12°♍46'41	0°30'42
max. Earth dist.	10256 Aug 26 07:30	12°♍47'39	20.74529 AU
morning rise	10256 Sep 11 06:40	13°♍42'46	
retrograde	10256 Dec 14 13:09	16°♍52'53	
opposition	10257 Mar 01 16:08	14°♍52'50	0°36'06
min. Earth dist.	10257 Mar 01 10:33	14°♍53'24	18.72054 AU
direct	10257 May 15 20:45	12°♍54'48	
evening set	10257 Aug 14 07:29	15°♍58'10	
conjunction	10257 Aug 30 11:18	16°♍54'04	0°34'19
minimum elong	10257 Aug 30 11:17	16°♍54'04	0°34'11
max. Earth dist.	10257 Aug 30 17:25	16°♍54'57	20.69478 AU
morning rise	10257 Sep 15 17:49	17°♍50'22	
retrograde	10257 Dec 19 02:11	21°♍01'04	
opposition	10258 Mar 06 02:05	19°♍00'47	0°39'49
min. Earth dist.	10258 Mar 05 20:29	19°♍01'21	18.66799 AU
direct	10258 May 20 06:19	17°♍02'28	
evening set	10258 Aug 18 17:59	20°♍06'28	
conjunction	10258 Sep 03 22:27	21°♍02'36	0°37'35
minimum elong	10258 Sep 03 22:26	21°♍02'36	0°37'28
max. Earth dist.	10258 Sep 04 03:01	21°♍03'16	20.64040 AU
morning rise	10258 Sep 20 05:45	21°♍59'08	
retrograde	10258 Dec 23 13:31	25°♍10'26	
opposition	10259 Mar 10 12:19	23°♍09'53	0°43'22
min. Earth dist.	10259 Mar 10 08:44	23°♍10'15	18.61204 AU
direct	10259 May 24 14:01	21°♍11'16	
evening set	10259 Aug 23 05:02	24°♍15'58	
conjunction	10259 Sep 08 10:19	25°♍12'20	0°40'40
minimum elong	10259 Sep 08 10:19	25°♍12'20	0°40'36
max. Earth dist.	10259 Sep 08 14:19	25°♍12'55	20.58311 AU
morning rise	10259 Sep 24 18:16	26°♍09'06	
retrograde	10259 Dec 28 03:45	29°♍21'01	
opposition	10260 Mar 13 22:52	27°♍20'11	0°46'42
min. Earth dist.	10260 Mar 13 19:09	27°♍20'35	18.55352 AU
direct	10260 May 28 00:13	25°♍21'15	
evening set	10260 Aug 26 16:42	28°♍26'42	
conjunction	10260 Sep 11 22:38	29°♍23'19	0°43'34
minimum elong	10260 Sep 11 22:37	29°♍23'19	0°43'31
max. Earth dist.	10260 Sep 12 01:30	29°♍23'44	20.52348 AU

	10260 Sep	22	10:00	0°♎	
morning rise	10260 Sep	28	07:17	0°♎20'20	
retrograde	10260 Dec	31	16:13	3°♎32'54	
opposition	10261 Mar	18	10:00	1°♎31'49	0°49'48
min. Earth dist.	10261 Mar	18	07:59	1°♎32'01	18.49309 AU
	10261 Apr	29	09:01	30°℞♍	
direct	10261 Jun	01	09:01	29°♍32'33	
	10261 Jul	03	19:42	0°♎	
evening set	10261 Aug	31	05:11	2°♎38'47	
conjunction	10261 Sep	16	11:56	3°♎35'40	0°46'14
minimum elong	10261 Sep	16	11:55	3°♎35'40	0°46'13
max. Earth dist.	10261 Sep	16	14:11	3°♎36'00	20.46241 AU
morning rise	10261 Oct	02	21:15	4°♎32'57	
retrograde	10262 Jan	05	07:33	7°♎46'11	
opposition	10262 Mar	22	21:15	5°♎44'50	0°52'38
min. Earth dist.	10262 Mar	22	19:05	5°♎45'04	18.43146 AU
direct	10262 Jun	05	19:55	3°♎45'15	
evening set	10262 Sep	04	18:32	6°♎52'22	
conjunction	10262 Sep	21	01:59	7°♎49'31	0°48'40
minimum elong	10262 Sep	21	01:59	7°♎49'31	0°48'41
max. Earth dist.	10262 Sep	21	03:14	7°♎49'42	20.40022 AU
morning rise	10262 Oct	07	11:57	8°♎47'03	
retrograde	10263 Jan	09	21:30	12°♎00'59	
opposition	10263 Mar	27	09:13	9°♎59'25	0°55'13
min. Earth dist.	10263 Mar	27	08:39	9°♎59'28	18.36900 AU
direct	10263 Jun	10	05:46	7°♎59'31	
evening set	10263 Sep	09	08:35	11°♎07'32	
conjunction	10263 Sep	25	16:46	12°♎04'58	0°50'50
minimum elong	10263 Sep	25	16:46	12°♎04'58	0°50'54
max. Earth dist.	10263 Sep	25	17:14	12°♎05'02	20.33761 AU
morning rise	10263 Oct	12	03:21	13°♎02'47	
retrograde	10264 Jan	14	14:09	16°♎17'25	
opposition	10264 Mar	30	21:33	14°♎15'39	0°57'30
min. Earth dist.	10264 Mar	30	20:47	14°♎15'44	18.30629 AU
direct	10264 Jun	13	17:45	12°♎15'28	
evening set	10264 Sep	12	23:37	15°♎24'28	
conjunction	10264 Sep	29	08:29	16°♎22'11	0°52'44
minimum elong	10264 Sep	29	08:29	16°♎22'11	0°52'50
max. Earth dist.	10264 Sep	29	08:15	16°♎22'08	20.27482 AU
morning rise	10264 Oct	15	19:38	17°♎20'16	
retrograde	10265 Jan	18	05:37	20°♎35'38	
opposition	10265 Apr	04	10:35	18°♎33'42	0°59'28
min. Earth dist.	10265 Apr	04	11:17	18°♎33'38	18.24362 AU
direct	10265 Jun	18	04:33	16°♎33'16	
evening set	10265 Sep	17	15:29	19°♎43'15	
conjunction	10265 Oct	04	01:06	20°♎41'16	0°54'21
minimum elong	10265 Oct	04	01:05	20°♎41'16	0°54'29
max. Earth dist.	10265 Oct	03	23:47	20°♎41'04	20.21236 AU
morning rise	10265 Oct	20	12:54	21°♎39'37	
retrograde	10266 Jan	23	00:13	24°♎55'45	
opposition	10266 Apr	09	00:06	22°♎53'41	1°01'07
min. Earth dist.	10266 Apr	09	00:51	22°♎53'36	18.18124 AU
direct	10266 Jun	22	17:49	20°♎52'58	
evening set	10266 Sep	22	08:28	24°♎04'02	
conjunction	10266 Oct	08	18:46	25°♎02'20	0°55'40
minimum elong	10266 Oct	08	18:46	25°♎02'20	0°55'51
max. Earth dist.	10266 Oct	08	16:50	25°♎02'03	20.14997 AU
morning rise	10266 Oct	25	07:00	26°♎00'59	
retrograde	10267 Jan	27	17:13	29°♎17'51	
opposition	10267 Apr	13	14:15	27°♎15'41	1°02'26
min. Earth dist.	10267 Apr	13	16:34	27°♎15'26	18.11896 AU
direct	10267 Jun	27	05:53	25°♎14'43	
evening set	10267 Sep	27	02:26	28°♎26'52	
conjunction	10267 Oct	13	13:20	29°♎25'28	0°56'41
minimum elong	10267 Oct	13	13:19	29°♎25'28	0°56'53
max. Earth dist.	10267 Oct	13	09:49	29°♎24'57	20.08783 AU
	10267 Oct	23	04:32	0°♏	
morning rise	10267 Oct	30	02:09	0°♏24'23	
retrograde	10268 Feb	01	13:14	3°♏42'01	
opposition	10268 Apr	17	05:05	1°♏39'44	1°03'24
min. Earth dist.	10268 Apr	17	07:48	1°♏39'26	18.05685 AU
	10268 Jun	02	02:43	30°℞♎	
direct	10268 Jun	30	20:52	29°♎38'30	
	10268 Jul	29	07:27	0°♏	
evening set	10268 Sep	30	21:15	2°♏51'45	
conjunction	10268 Oct	17	08:50	3°♏50'39	0°57'22
minimum elong	10268 Oct	17	08:50	3°♏50'39	0°57'35
max. Earth dist.	10268 Oct	17	04:48	3°♏50'03	20.02554 AU
morning rise	10268 Nov	02	22:00	4°♏49'51	
retrograde	10269 Feb	05	07:37	8°♏08'12	
opposition	10269 Apr	21	20:42	6°♏05'47	1°04'00
min. Earth dist.	10269 Apr	22	00:58	6°♏05'20	17.99448 AU
direct	10269 Jul	05	10:45	4°♏04'17	
evening set	10269 Oct	05	17:16	7°♏18'37	
conjunction	10269 Oct	22	05:22	8°♏17'50	0°57'43
minimum elong	10269 Oct	22	05:22	8°♏17'50	0°57'59
max. Earth dist.	10269 Oct	21	23:14	8°♏16'54	19.96317 AU
morning rise	10269 Nov	07	19:05	9°♏17'17	
retrograde	10270 Feb	10	04:19	12°♏36'19	
opposition	10270 Apr	26	12:46	10°♏33'45	1°04'13
min. Earth dist.	10270 Apr	26	17:48	10°♏33'13	17.93211 AU
direct	10270 Jul	10	04:08	8°♏31'55	
evening set	10270 Oct	10	14:04	11°♏47'21	
conjunction	10270 Oct	27	02:52	12°♏46'51	0°57'43
minimum elong	10270 Oct	27	02:52	12°♏46'51	0°58'00
max. Earth dist.	10270 Oct	26	20:20	12°♏45'52	19.90076 AU
morning rise	10270 Nov	12	16:48	13°♏46'34	
	10270 Dec	04	12:45	15°♏	
retrograde	10271 Feb	14	23:12	17°♏06'13	
opposition	10271 May	01	05:36	15°♏03'31	1°04'03
min. Earth dist.	10271 May	01	11:53	15°♏02'51	17.86988 AU
	10271 May	02	14:24	15°℞♏	
direct	10271 Jul	14	20:17	13°♏01'20	
	10271 Sep	22	06:07	15°♏	
evening set	10271 Oct	15	11:40	16°♏17'51	
conjunction	10271 Nov	01	00:50	17°♏17'37	0°57'22
minimum elong	10271 Nov	01	00:50	17°♏17'37	0°57'42
max. Earth dist.	10271 Oct	31	16:13	17°♏16'18	19.83899 AU
morning rise	10271 Nov	17	15:14	18°♏17'35	
retrograde	10272 Feb	19	20:13	21°♏37'51	
opposition	10272 May	04	23:00	19°♏34'57	1°03'30
min. Earth dist.	10272 May	05	06:04	19°♏34'12	17.80871 AU
direct	10272 Jul	18	15:29	17°♏32'24	
evening set	10272 Oct	19	10:00	20°♏49'58	
conjunction	10272 Nov	04	23:50	21°♏50'01	0°56'40
minimum elong	10272 Nov	04	23:50	21°♏50'01	0°57'00
max. Earth dist.	10272 Nov	04	15:17	21°♏48'43	19.77850 AU
morning rise	10272 Nov	21	14:20	22°♏50'13	
retrograde	10273 Feb	23	16:13	26°♏11'01	
opposition	10273 May	09	16:51	24°♏07'58	1°02'32
min. Earth dist.	10273 May	10	00:43	24°♏07'07	17.74913 AU
direct	10273 Jul	23	09:59	22°♏05'03	

evening set	10273 Oct 24 09:17	25°♏23'39	
conjunction	10273 Nov 09 23:24	26°♏23'57	0°55'36
minimum elong	10273 Nov 09 23:24	26°♏23'57	0°55'58
max. Earth dist.	10273 Nov 09 12:49	26°♏22'20	19.72011 AU
morning rise	10273 Nov 26 14:18	27°♏24'23	
	10274 Jan 17 18:53	0°♐	
retrograde	10274 Feb 28 13:34	0°♐45'41	
	10274 Apr 12 03:27	30°℞♏	
opposition	10274 May 14 11:21	28°♏42'29	1°01'10
min. Earth dist.	10274 May 14 20:07	28°♏41'32	17.69207 AU
direct	10274 Jul 28 06:00	26°♏39'11	
evening set	10274 Oct 29 09:06	29°♏58'48	
	10274 Oct 29 17:07	0°♐	
conjunction	10274 Nov 14 23:44	0°♐59'21	0°54'10
minimum elong	10274 Nov 14 23:44	0°♐59'21	0°54'34
max. Earth dist.	10274 Nov 14 13:36	0°♐57'48	19.66441 AU
morning rise	10274 Dec 01 14:35	1°♐59'59	
retrograde	10275 Mar 05 11:31	5°♐21'45	
opposition	10275 May 19 06:18	3°♐18'25	0°59'24
min. Earth dist.	10275 May 19 15:19	3°♐17'27	17.63800 AU
direct	10275 Aug 02 02:18	1°♐14'46	
evening set	10275 Nov 03 09:45	4°♐35'22	
conjunction	10275 Nov 20 00:31	5°♐36'08	0°52'22
minimum elong	10275 Nov 20 00:31	5°♐36'08	0°52'47
max. Earth dist.	10275 Nov 19 12:39	5°♐34'19	19.61222 AU
morning rise	10275 Dec 06 15:36	6°♐36'59	
retrograde	10276 Mar 09 09:32	9°♐59'10	
opposition	10276 May 23 01:54	7°♐55'43	0°57'14
min. Earth dist.	10276 May 23 11:48	7°♐54'39	17.58789 AU
direct	10276 Aug 05 22:38	5°♐51'44	
evening set	10276 Nov 07 10:48	9°♐13'17	
conjunction	10276 Nov 24 02:01	10°♐14'17	0°50'14
minimum elong	10276 Nov 24 02:01	10°♐14'17	0°50'41
max. Earth dist.	10276 Nov 23 14:51	10°♐12'33	19.56420 AU
morning rise	10276 Dec 10 17:01	11°♐15'17	
retrograde	10277 Mar 14 09:32	14°♐37'51	
opposition	10277 May 27 22:01	12°♐34'20	0°54'40
min. Earth dist.	10277 May 28 07:39	12°♐33'17	17.54207 AU
direct	10277 Aug 10 20:22	10°♐30'04	
evening set	10277 Nov 12 12:49	13°♐52'32	
conjunction	10277 Nov 29 04:04	14°♐53'43	0°47'45
minimum elong	10277 Nov 29 04:04	14°♐53'43	0°48'12
max. Earth dist.	10277 Nov 28 15:27	14°♐51'47	19.52077 AU
morning rise	10277 Dec 15 19:06	15°♐54'54	
retrograde	10278 Mar 19 08:08	19°♐17'48	
opposition	10278 Jun 01 18:40	17°♐14'15	0°51'45
min. Earth dist.	10278 Jun 02 05:18	17°♐13'06	17.50120 AU
direct	10278 Aug 15 17:28	15°♐09'43	
evening set	10278 Nov 17 15:14	18°♐33'06	
conjunction	10278 Dec 04 06:44	19°♐34'27	0°44'57
minimum elong	10278 Dec 04 06:44	19°♐34'27	0°45'25
max. Earth dist.	10278 Dec 03 18:43	19°♐32'36	19.48248 AU
morning rise	10278 Dec 20 21:33	20°♐35'46	
retrograde	10279 Mar 24 09:15	23°♐58'58	
opposition	10279 Jun 06 15:53	21°♐55'27	0°48'27
min. Earth dist.	10279 Jun 07 01:52	21°♐54'21	17.46540 AU
direct	10279 Aug 20 16:21	19°♐50'44	
evening set	10279 Nov 22 18:10	23°♐14'57	
conjunction	10279 Dec 09 09:35	24°♐16'28	0°41'50
minimum elong	10279 Dec 09 09:35	24°♐16'28	0°42'19
max. Earth dist.	10279 Dec 08 20:41	24°♐14'28	19.44927 AU
morning rise	10279 Dec 26 00:18	25°♐17'54	
retrograde	10280 Mar 28 08:38	28°♐41'22	
opposition	10280 Jun 10 13:44	26°♐37'54	0°44'50
min. Earth dist.	10280 Jun 11 00:52	26°♐36'41	17.43476 AU
direct	10280 Aug 24 14:40	24°♐33'02	
evening set	10280 Nov 26 21:40	27°♐58'02	
conjunction	10280 Dec 13 13:09	28°♐59'41	0°38'26
minimum elong	10280 Dec 13 13:10	28°♐59'41	0°38'54
max. Earth dist.	10280 Dec 13 00:26	28°♐57'43	19.42111 AU
	10280 Dec 29 19:33	0°♑	
morning rise	10280 Dec 30 03:35	0°♑01'13	
retrograde	10281 Apr 02 10:15	3°♑24'53	
opposition	10281 Jun 15 11:49	1°♑21'30	0°40'54
min. Earth dist.	10281 Jun 15 22:22	1°♑20'21	17.40886 AU
	10281 Jul 19 08:46	30°℞♐	
direct	10281 Aug 29 14:57	29°♐16'31	
	10281 Oct 09 04:04	0°♑	
evening set	10281 Dec 02 01:48	2°♑42'15	
conjunction	10281 Dec 18 17:07	3°♑44'00	0°34'46
minimum elong	10281 Dec 18 17:07	3°♑44'00	0°35'15
max. Earth dist.	10281 Dec 18 03:44	3°♑41'55	19.39739 AU
morning rise	10282 Jan 04 07:11	4°♑45'36	
retrograde	10282 Apr 07 10:01	8°♑09'24	
opposition	10282 Jun 20 10:41	6°♑06'07	0°36'40
min. Earth dist.	10282 Jun 20 22:35	6°♑04'49	17.38738 AU
direct	10282 Sep 03 14:32	4°♑01'00	
evening set	10282 Dec 07 06:04	7°♑27'23	
conjunction	10282 Dec 23 21:10	8°♑29'12	0°30'51
minimum elong	10282 Dec 23 21:10	8°♑29'12	0°31'19
max. Earth dist.	10282 Dec 23 07:27	8°♑27'04	19.37805 AU
morning rise	10283 Jan 09 10:51	9°♑30'50	
retrograde	10283 Apr 12 11:43	12°♑54'43	
opposition	10283 Jun 25 09:48	10°♑51'31	0°32'10
min. Earth dist.	10283 Jun 25 20:57	10°♑50'18	17.37007 AU
direct	10283 Sep 08 16:28	8°♑46'17	
evening set	10283 Dec 12 10:37	12°♑13'11	
max. Earth dist.	10283 Dec 28 11:44	13°♑12'55	19.36279 AU
conjunction	10283 Dec 29 01:29	13°♑15'04	0°26'42
minimum elong	10283 Dec 29 01:29	13°♑15'04	0°27'11
morning rise	10284 Jan 14 14:36	14°♑16'43	
retrograde	10284 Apr 16 11:20	17°♑40'35	
opposition	10284 Jun 29 09:20	15°♑37'27	0°27'27
min. Earth dist.	10284 Jun 29 21:42	15°♑36'06	17.35697 AU
direct	10284 Sep 12 17:28	13°♑32'07	
evening set	10284 Dec 16 15:17	16°♑59'28	
conjunction	10285 Jan 02 05:46	18°♑01'21	0°22'22
minimum elong	10285 Jan 02 05:46	18°♑01'21	0°22'51
max. Earth dist.	10285 Jan 01 15:14	17°♑59'05	19.35190 AU
morning rise	10285 Jan 18 18:29	19°♑02'59	
retrograde	10285 Apr 21 12:24	22°♑26'47	
opposition	10285 Jul 04 09:00	20°♑23'43	0°22'32
min. Earth dist.	10285 Jul 04 20:35	20°♑22'27	17.34817 AU
direct	10285 Sep 17 20:33	18°♑18'16	
evening set	10285 Dec 21 19:55	21°♑45'57	
conjunction	10286 Jan 07 10:04	22°♑47'50	0°17'53
minimum elong	10286 Jan 07 10:04	22°♑47'50	0°18'20
max. Earth dist.	10286 Jan 06 20:11	22°♑45'40	19.34525 AU
morning rise	10286 Jan 23 22:01	23°♑49'26	
retrograde	10286 Apr 26 11:52	27°♑13'03	
opposition	10286 Jul 09 08:57	25°♑10'05	0°17'27

min. Earth dist.	10286 Jul 09	21:24	25°♉08'44		17.34380 AU
direct	10286 Sep 22	22:52	23°♉04'33		
evening set	10286 Dec 27	00:29	26°♉32'28		
conjunction	10287 Jan 12	14:00	27°♉34'18	0°13'16	
minimum elong	10287 Jan 12	14:00	27°♉34'18	0°13'44	
behind sun begin	10287 Jan 12	10:30	27°♉33'45		
behind sun end	10287 Jan 12	17:31	27°♉34'50		
max. Earth dist.	10287 Jan 11	23:18	27°♉32'00		19.34337 AU
morning rise	10287 Jan 29	01:27	28°♉35'49		
	10287 Feb 22	09:37	0°♒		
retrograde	10287 May 01	12:29	1°♒59'15		
	10287 Jul 12	23:14	30°℞♉		
opposition	10287 Jul 14	08:56	29°♉56'20	0°12'14	
min. Earth dist.	10287 Jul 14	20:29	29°♉55'04		17.34436 AU
direct	10287 Sep 28	02:23	27°♉50'42		
	10287 Dec 09	12:54	0°♒		
evening set	10288 Jan 01	04:33	1°♒18'44		
conjunction	10288 Jan 17	17:40	2°♒20'30	0°08'35	
minimum elong	10288 Jan 17	17:40	2°♒20'30	0°09'00	
behind sun begin	10288 Jan 17	11:56	2°♒19'38		
behind sun end	10288 Jan 17	23:24	2°♒21'23		
max. Earth dist.	10288 Jan 17	04:20	2°♒18'26		19.34639 AU
morning rise	10288 Feb 03	04:16	3°♒21'56		
retrograde	10288 May 05	11:50	6°♒45'04		
opposition	10288 Jul 18	09:04	4°♒42'15	0°06'57	
min. Earth dist.	10288 Jul 18	20:58	4°♒40'57		17.34990 AU
direct	10288 Oct 02	04:33	2°♒36'34		
evening set	10289 Jan 05	08:37	6°♒04'37		
conjunction	10289 Jan 21	20:55	7°♒06'17	0°03'50	
minimum elong	10289 Jan 21	20:56	7°♒06'17	0°04'14	
behind sun begin	10289 Jan 21	14:19	7°♒05'16		
behind sun end	10289 Jan 22	03:34	7°♒07'18		
max. Earth dist.	10289 Jan 21	06:55	7°♒04'06		19.35466 AU
morning rise	10289 Feb 07	06:57	8°♒07'36		
retrograde	10289 May 10	12:19	11°♒30'24		
opposition	10289 Jul 23	09:01	9°♒27'39	0°01'37	
min. Earth dist.	10289 Jul 23	20:04	9°♒26'26		17.36094 AU
direct	10289 Oct 07	07:28	7°♒21'55		
desc. node	10289 Nov 09	05:44	7°♒50'41		
evening set	10290 Jan 10	12:07	10°♒49'55		
conjunction	10290 Jan 26	23:54	11°♒51'27	-0°01'03	
minimum elong	10290 Jan 26	23:54	11°♒51'27	0°00'39	
behind sun begin	10290 Jan 26	17:12	11°♒50'26		
behind sun end	10290 Jan 27	06:36	11°♒52'29		
max. Earth dist.	10290 Jan 26	11:42	11°♒49'33		19.36848 AU
morning rise	10290 Feb 12	08:55	12°♒52'38		
	10290 Mar 23	11:01	15°♒		
retrograde	10290 May 15	11:39	16°♒15'02		
	10290 Jul 09	14:57	15°℞♒		
opposition	10290 Jul 28	09:08	14°♒12'24	-0°03'43	
min. Earth dist.	10290 Jul 28	19:50	14°♒11'14		17.37762 AU
direct	10290 Oct 12	09:01	12°♒06'42		
	10291 Jan 06	00:48	15°♒		
evening set	10291 Jan 15	15:11	15°♒34'31		
conjunction	10291 Feb 01	02:02	16°♒35'55	-0°05'51	
minimum elong	10291 Feb 01	02:01	16°♒35'54	0°05'30	
behind sun begin	10291 Jan 31	19:33	16°♒34'55		
behind sun end	10291 Feb 01	08:29	16°♒36'54		
max. Earth dist.	10291 Jan 31	13:33	16°♒33'58		19.38817 AU
morning rise	10291 Feb 17	10:20	17°♒36'55		
retrograde	10291 May 20	11:35	20°♒58'55		
opposition	10291 Aug 02	09:10	18°♒56'24	-0°09'00	
min. Earth dist.	10291 Aug 02	18:57	18°♒55'21		17.40039 AU
direct	10291 Oct 17	11:11	16°♒50'47		
evening set	10292 Jan 20	17:42	20°♒18'22		
conjunction	10292 Feb 06	03:56	21°♒19'35	-0°10'32	
minimum elong	10292 Feb 06	03:55	21°♒19'35	0°10'11	
behind sun begin	10292 Feb 05	22:35	21°♒18'46		
behind sun end	10292 Feb 06	09:15	21°♒20'24		
max. Earth dist.	10292 Feb 05	17:25	21°♒17'57		19.41393 AU
morning rise	10292 Feb 22	11:14	22°♒20'24		
retrograde	10292 May 24	10:18	25°♒41'56		
opposition	10292 Aug 06	08:56	23°♒39'37	-0°14'13	
min. Earth dist.	10292 Aug 06	17:50	23°♒38'39		17.42898 AU
direct	10292 Oct 21	12:47	21°♒34'09		
evening set	10293 Jan 24	19:55	25°♒01'24		
conjunction	10293 Feb 10	05:10	26°♒02'25	-0°15'09	
minimum elong	10293 Feb 10	05:10	26°♒02'25	0°14'51	
behind sun begin	10293 Feb 10	02:37	26°♒02'02		
behind sun end	10293 Feb 10	07:42	26°♒02'49		
max. Earth dist.	10293 Feb 09	18:36	26°♒00'47		19.44540 AU
morning rise	10293 Feb 26	11:42	27°♒03'03		
	10293 Apr 29	19:01	0°♓		
retrograde	10293 May 29	08:49	0°♓24'06		
	10293 Jun 28	09:45	30°℞♒		
opposition	10293 Aug 11	08:42	28°♒21'59	-0°19'18	
min. Earth dist.	10293 Aug 11	17:06	28°♒21'05		17.46316 AU
direct	10293 Oct 26	14:21	26°♒16'42		
evening set	10294 Jan 29	21:23	29°♒43'34		
	10294 Feb 03	08:39	0°♓		
conjunction	10294 Feb 15	05:51	0°♓44'22	-0°19'39	
minimum elong	10294 Feb 15	05:50	0°♓44'22	0°19'23	
max. Earth dist.	10294 Feb 14	21:01	0°♓43'00		19.48208 AU
morning rise	10294 Mar 03	11:21	1°♓44'45		
retrograde	10294 Jun 03	06:57	5°♓05'18		
opposition	10294 Aug 16	08:17	3°♓03'25	-0°24'15	
min. Earth dist.	10294 Aug 16	15:29	3°♓02'39		17.50205 AU
direct	10294 Oct 31	16:49	0°♓58'22		
evening set	10295 Feb 03	22:24	4°♓24'44		
conjunction	10295 Feb 20	05:50	5°♓25'18	-0°24'00	
minimum elong	10295 Feb 20	05:50	5°♓25'18	0°23'45	
max. Earth dist.	10295 Feb 19	21:18	5°♓23'58		19.52314 AU
morning rise	10295 Mar 08	10:28	6°♓25'27		
retrograde	10295 Jun 08	03:39	9°♓45'27		
opposition	10295 Aug 21	07:41	7°♓43'47	-0°29'01	
min. Earth dist.	10295 Aug 21	14:47	7°♓43'01		17.54521 AU
direct	10295 Nov 05	17:50	5°♓38'58		
evening set	10296 Feb 08	22:35	9°♓04'45		
conjunction	10296 Feb 25	05:10	10°♓05'04	-0°28'11	
minimum elong	10296 Feb 25	05:10	10°♓05'04	0°28'00	
max. Earth dist.	10296 Feb 24	21:52	10°♓03'56		19.56809 AU
morning rise	10296 Mar 12	08:53	11°♓04'57		
retrograde	10296 Jun 12	01:08	14°♓24'22		
opposition	10296 Aug 25	06:45	12°♓22'56	-0°33'34	
min. Earth dist.	10296 Aug 25	12:29	12°♓22'19		17.59168 AU
direct	10296 Nov 09	20:15	10°♓18'22		
evening set	10297 Feb 12	22:14	13°♓43'29		
conjunction	10297 Mar 01	03:49	14°♓43'31	-0°32'10	
minimum elong	10297 Mar 01	03:49	14°♓43'31	0°32'00	
max. Earth dist.	10297 Feb 28	21:03	14°♓42'28		19.61600 AU
morning rise	10297 Mar 17	06:35	15°♓43'09		
retrograde	10297 Jun 16	20:22	19°♓01'56		
opposition	10297 Aug 30	05:34	17°♓00'42	-0°37'53	

min. Earth dist.	10297 Aug 30 11:30	17°♓00'04	17.64104 AU
direct	10297 Nov 14 20:14	14°♓56'23	
evening set	10298 Feb 17 21:02	18°♓20'46	
conjunction	10298 Mar 06 01:40	19°♓20'30	-0°35'56
minimum elong	10298 Mar 06 01:40	19°♓20'30	0°35'49
max. Earth dist.	10298 Mar 05 19:41	19°♓19'35	19.66662 AU
morning rise	10298 Mar 22 03:33	20°♓19'51	
retrograde	10298 Jun 21 17:04	23°♓37'59	
opposition	10298 Sep 04 03:59	21°♓36'57	-0°41'56
min. Earth dist.	10298 Sep 04 08:14	21°♓36'30	17.69273 AU
direct	10298 Nov 19 21:55	19°♓32'53	
evening set	10299 Feb 22 18:49	22°♓56'26	
conjunction	10299 Mar 10 22:33	23°♓55'53	-0°39'27
minimum elong	10299 Mar 10 22:33	23°♓55'53	0°39'22
max. Earth dist.	10299 Mar 10 17:36	23°♓55'07	19.71931 AU
morning rise	10299 Mar 26 23:30	24°♓54'57	
retrograde	10299 Jun 26 10:54	28°♓12'25	
opposition	10299 Sep 09 02:03	26°♓11'33	-0°45'42
min. Earth dist.	10299 Sep 09 06:33	26°♓11'04	17.74645 AU
direct	10299 Nov 24 20:35	24°♓07'43	
evening set	10300 Feb 27 15:52	27°♓30'24	
conjunction	10300 Mar 15 18:38	28°♓29'33	-0°42'42
minimum elong	10300 Mar 15 18:38	28°♓29'33	0°42'38
max. Earth dist.	10300 Mar 15 14:07	28°♓28'51	19.77395 AU
morning rise	10300 Mar 31 18:50	29°♓28'20	
	10300 Apr 09 17:00	0°♈	
retrograde	10300 Jul 01 06:18	2°♈45'05	
opposition	10300 Sep 13 23:17	0°♈44'22	-0°49'09
min. Earth dist.	10300 Sep 14 02:01	0°♈44'05	17.80186 AU
	10300 Oct 01 21:49	30°℞♓	
direct	10300 Nov 29 20:49	28°♓40'47	
	10301 Jan 25 06:14	0°♈	
evening set	10301 Mar 04 11:56	2°♈02'32	
conjunction	10301 Mar 20 13:52	3°♈01'23	-0°45'40
minimum elong	10301 Mar 20 13:52	3°♈01'23	0°45'39
max. Earth dist.	10301 Mar 20 10:48	3°♈00'55	19.83014 AU
morning rise	10301 Apr 05 13:08	3°♈59'53	
retrograde	10301 Jul 05 22:47	7°♈15'54	
opposition	10301 Sep 18 20:17	5°♈15'20	-0°52'16
min. Earth dist.	10301 Sep 18 23:12	5°♈15'02	17.85892 AU
direct	10301 Dec 04 18:21	3°♈11'59	
evening set	10302 Mar 09 06:54	6°♈32'44	
conjunction	10302 Mar 25 07:51	7°♈31'17	-0°48'19
minimum elong	10302 Mar 25 07:51	7°♈31'17	0°48'20
max. Earth dist.	10302 Mar 25 05:14	7°♈30'53	19.88808 AU
morning rise	10302 Apr 10 06:28	8°♈29'29	
retrograde	10302 Jul 10 16:40	11°♈44'48	
opposition	10302 Sep 23 16:32	9°♈44'21	-0°55'03
min. Earth dist.	10302 Sep 23 17:22	9°♈44'16	17.91771 AU
direct	10302 Dec 09 16:38	7°♈41'15	
evening set	10303 Mar 14 00:50	11°♈00'58	
conjunction	10303 Mar 30 01:03	11°♈59'13	-0°50'40
minimum elong	10303 Mar 30 01:02	11°♈59'13	0°50'44
max. Earth dist.	10303 Mar 30 00:27	11°♈59'07	19.94774 AU
morning rise	10303 Apr 14 22:48	12°♈57'08	
retrograde	10303 Jul 15 08:00	16°♈11'42	
opposition	10303 Sep 28 12:12	14°♈11'24	-0°57'28
min. Earth dist.	10303 Sep 28 12:55	14°♈11'19	17.97841 AU
direct	10303 Dec 14 12:37	12°♈08'34	
evening set	10304 Mar 17 17:54	15°♈27'15	
conjunction	10304 Apr 02 17:11	16°♈25'11	-0°52'42
minimum elong	10304 Apr 02 17:10	16°♈25'11	0°52'48
max. Earth dist.	10304 Apr 02 16:56	16°♈25'09	20.00944 AU
morning rise	10304 Apr 18 14:25	17°♈22'50	
retrograde	10304 Jul 19 00:46	20°♈36'41	
opposition	10304 Oct 02 07:11	18°♈36'32	-0°59'31
min. Earth dist.	10304 Oct 02 05:43	18°♈36'41	18.04109 AU
direct	10304 Dec 18 08:37	16°♈34'01	
evening set	10305 Mar 22 09:52	19°♈51'40	
conjunction	10305 Apr 07 08:30	20°♈49'18	-0°54'23
minimum elong	10305 Apr 07 08:29	20°♈49'18	0°54'32
max. Earth dist.	10305 Apr 07 10:29	20°♈49'36	20.07295 AU
morning rise	10305 Apr 23 04:54	21°♈46'39	
retrograde	10305 Jul 23 14:57	24°♈59'50	
opposition	10305 Oct 07 01:43	22°♈59'53	-1°01'12
min. Earth dist.	10305 Oct 06 23:53	23°♈00'04	18.10544 AU
direct	10305 Dec 23 03:30	20°♈57'43	
evening set	10306 Mar 27 01:05	24°♈14'19	
conjunction	10306 Apr 11 22:50	25°♈11'39	-0°55'45
minimum elong	10306 Apr 11 22:50	25°♈11'39	0°55'56
max. Earth dist.	10306 Apr 12 01:03	25°♈12'00	20.13811 AU
morning rise	10306 Apr 27 18:50	26°♈08'44	
retrograde	10306 Jul 28 06:58	29°♈21'16	
opposition	10306 Oct 11 19:33	27°♈21'30	-1°02'31
min. Earth dist.	10306 Oct 11 15:41	27°♈21'54	18.17119 AU
direct	10306 Dec 27 21:42	25°♈19'43	
evening set	10307 Mar 31 15:09	28°♈35'17	
conjunction	10307 Apr 16 12:24	29°♈32'20	-0°56'48
minimum elong	10307 Apr 16 12:24	29°♈32'20	0°56'59
max. Earth dist.	10307 Apr 16 16:52	29°♈33'01	20.20418 AU
	10307 Apr 24 03:56	0°♉	
morning rise	10307 May 02 07:45	0°♉29'10	
retrograde	10307 Aug 01 20:07	3°♉41'02	
opposition	10307 Oct 16 12:54	1°♉41'30	-1°03'28
min. Earth dist.	10307 Oct 16 08:45	1°♉41'56	18.23740 AU
	10307 Dec 04 05:09	30°℞♈	
direct	10308 Jan 01 15:31	29°♈40'08	
	10308 Jan 29 15:06	0°♉	
evening set	10308 Apr 04 04:41	2°♉54'38	
conjunction	10308 Apr 20 01:08	3°♉51'25	-0°57'30
minimum elong	10308 Apr 20 01:08	3°♉51'25	0°57'45
max. Earth dist.	10308 Apr 20 05:30	3°♉52'04	20.27041 AU
morning rise	10308 May 05 20:11	4°♉47'59	
retrograde	10308 Aug 05 10:52	7°♉59'14	
opposition	10308 Oct 20 05:30	5°♉59'55	-1°04'03
min. Earth dist.	10308 Oct 19 23:49	6°♉00'30	18.30348 AU
direct	10309 Jan 05 08:44	3°♉58'55	
evening set	10309 Apr 08 17:18	7°♉12'24	
conjunction	10309 Apr 24 13:20	8°♉08'55	-0°57'53
minimum elong	10309 Apr 24 13:20	8°♉08'54	0°58'09
max. Earth dist.	10309 Apr 24 19:43	8°♉09'52	20.33607 AU
morning rise	10309 May 10 07:48	9°♉05'14	
retrograde	10309 Aug 09 22:42	12°♉15'53	
opposition	10309 Oct 24 21:49	10°♉16'46	-1°04'17
min. Earth dist.	10309 Oct 24 15:51	10°♉17'22	18.36857 AU
direct	10310 Jan 10 01:24	8°♉16'09	
evening set	10310 Apr 13 05:10	11°♉28'36	
conjunction	10310 Apr 29 00:30	12°♉24'50	-0°57'57
minimum elong	10310 Apr 29 00:30	12°♉24'50	0°58'15
max. Earth dist.	10310 Apr 29 06:38	12°♉25'45	20.40048 AU
morning rise	10310 May 14 18:48	13°♉20'55	

	10310 Jun 14 17:07	15°♉	
retrograde	10310 Aug 14 12:21	16°♉31'00	
	10310 Oct 18 00:46	15°℞♉	
opposition	10310 Oct 29 13:29	14°♉32'03	-1°04'10
min. Earth dist.	10310 Oct 29 06:21	14°♉32'47	18.43218 AU
direct	10311 Jan 14 17:18	12°♉31'47	
	10311 Apr 04 22:17	15°♉	
evening set	10311 Apr 17 16:16	15°♉43'13	
conjunction	10311 May 03 11:19	16°♉39'13	-0°57'42
minimum elong	10311 May 03 11:18	16°♉39'13	0°58'01
max. Earth dist.	10311 May 03 19:13	16°♉40'23	20.46296 AU
morning rise	10311 May 19 05:10	17°♉35'04	
retrograde	10311 Aug 18 22:39	20°♉44'34	
opposition	10311 Nov 03 04:28	18°♉45'47	-1°03'42
min. Earth dist.	10311 Nov 02 21:09	18°♉46'32	18.49343 AU
direct	10312 Jan 19 08:36	16°♉45'51	
evening set	10312 Apr 21 02:50	19°♉56'17	
conjunction	10312 May 06 21:18	20°♉52'02	-0°57'08
minimum elong	10312 May 06 21:18	20°♉52'02	0°57'29
max. Earth dist.	10312 May 07 04:37	20°♉53'07	20.52290 AU
morning rise	10312 May 22 15:06	21°♉47'41	
retrograde	10312 Aug 22 10:46	24°♉56'38	
opposition	10312 Nov 06 19:01	22°♉57'58	-1°02'54
min. Earth dist.	10312 Nov 06 10:55	22°♉58'47	18.55198 AU
direct	10313 Jan 22 22:47	20°♉58'19	
evening set	10313 Apr 25 12:26	24°♉07'45	
conjunction	10313 May 11 06:43	25°♉03'17	-0°56'17
minimum elong	10313 May 11 06:43	25°♉03'17	0°56'40
max. Earth dist.	10313 May 11 15:39	25°♉04'36	20.57983 AU
morning rise	10313 May 27 00:10	25°♉58'43	
retrograde	10313 Aug 26 20:23	29°♉07'08	
opposition	10313 Nov 11 09:02	27°♉08'33	-1°01'46
min. Earth dist.	10313 Nov 11 00:33	27°♉09'25	18.60725 AU
direct	10314 Jan 27 12:58	25°♉09'11	
evening set	10314 Apr 29 21:31	28°♉17'37	
conjunction	10314 May 15 15:22	29°♉12'56	-0°55'08
minimum elong	10314 May 15 15:22	29°♉12'56	0°55'31
max. Earth dist.	10314 May 15 23:46	29°♉14'10	20.63356 AU
	10314 May 29 00:08	0°♊	
morning rise	10314 May 31 08:55	0°♊08'12	
retrograde	10314 Aug 31 06:46	3°♊16'05	
opposition	10314 Nov 15 22:20	1°♊17'34	-1°00'19
min. Earth dist.	10314 Nov 15 13:18	1°♊18'28	18.65948 AU
	10314 Dec 20 19:03	30°℞♉	
direct	10315 Feb 01 01:11	29°♉18'24	
	10315 Mar 13 22:56	0°♊	
evening set	10315 May 04 05:38	2°♊25'53	
conjunction	10315 May 19 23:28	3°♊21'00	-0°53'42
minimum elong	10315 May 19 23:28	3°♊21'00	0°54'08
max. Earth dist.	10315 May 20 09:33	3°♊22'29	20.68421 AU
morning rise	10315 Jun 04 16:52	4°♊16'06	
retrograde	10315 Sep 04 15:58	7°♊23'29	
opposition	10315 Nov 20 11:03	5°♊24'59	-0°58'34
min. Earth dist.	10315 Nov 20 01:25	5°♊25'57	18.70856 AU
direct	10316 Feb 05 14:08	3°♊26'02	
evening set	10316 May 07 13:19	6°♊32'36	
conjunction	10316 May 23 06:47	7°♊27'31	-0°52'00
minimum elong	10316 May 23 06:47	7°♊27'31	0°52'25
max. Earth dist.	10316 May 23 16:30	7°♊28'57	20.73193 AU
morning rise	10316 Jun 08 00:22	8°♊22'28	
retrograde	10316 Sep 08 01:01	11°♊29'24	
opposition	10316 Nov 23 23:11	9°♊30'56	-0°56'32
min. Earth dist.	10316 Nov 23 13:00	9°♊31'57	18.75510 AU
direct	10317 Feb 09 00:41	7°♊32'09	
evening set	10317 May 11 20:14	10°♊37'52	
conjunction	10317 May 27 13:45	11°♊32'38	-0°50'02
minimum elong	10317 May 27 13:45	11°♊32'38	0°50'29
max. Earth dist.	10317 May 28 01:16	11°♊34'19	20.77724 AU
morning rise	10317 Jun 12 07:14	12°♊27'26	
retrograde	10317 Sep 12 09:48	15°♊33'58	
opposition	10317 Nov 28 10:50	13°♊35'32	-0°54'12
min. Earth dist.	10317 Nov 27 23:41	13°♊36'39	18.79921 AU
direct	10318 Feb 13 12:04	11°♊36'59	
evening set	10318 May 16 02:40	14°♊41'53	
conjunction	10318 May 31 19:58	15°♊36'30	-0°47'50
minimum elong	10318 May 31 19:58	15°♊36'30	0°48'17
max. Earth dist.	10318 Jun 01 07:13	15°♊38'08	20.82023 AU
morning rise	10318 Jun 16 13:47	16°♊31'11	
retrograde	10318 Sep 16 18:24	19°♊37'23	
opposition	10318 Dec 02 22:00	17°♊39'00	-0°51'37
min. Earth dist.	10318 Dec 02 10:25	17°♊40'09	18.84110 AU
direct	10319 Feb 17 21:13	15°♊40'40	
evening set	10319 May 20 08:36	18°♊44'51	
conjunction	10319 Jun 05 02:06	19°♊39'20	-0°45'23
minimum elong	10319 Jun 05 02:06	19°♊39'20	0°45'51
max. Earth dist.	10319 Jun 05 14:56	19°♊41'12	20.86084 AU
morning rise	10319 Jun 20 19:56	20°♊33'55	
retrograde	10319 Sep 21 02:44	23°♊39'48	
opposition	10319 Dec 07 08:29	21°♊41'30	-0°48'48
min. Earth dist.	10319 Dec 06 20:02	21°♊42'45	18.88030 AU
direct	10320 Feb 22 06:50	19°♊43'25	
evening set	10320 May 23 14:20	22°♊46'56	
conjunction	10320 Jun 08 07:42	23°♊41'19	-0°42'44
minimum elong	10320 Jun 08 07:42	23°♊41'19	0°43'13
max. Earth dist.	10320 Jun 08 20:04	23°♊43'06	20.89868 AU
morning rise	10320 Jun 24 01:56	24°♊35'48	
retrograde	10320 Sep 24 11:08	27°♊41'29	
opposition	10320 Dec 10 18:52	25°♊43'15	-0°45'44
min. Earth dist.	10320 Dec 10 06:18	25°♊44'30	18.91669 AU
direct	10321 Feb 25 14:52	23°♊45'24	
evening set	10321 May 27 19:28	26°♊48'19	
conjunction	10321 Jun 12 13:07	27°♊42'36	-0°39'53
minimum elong	10321 Jun 12 13:07	27°♊42'36	0°40'22
max. Earth dist.	10321 Jun 13 02:57	27°♊44'36	20.93344 AU
morning rise	10321 Jun 28 07:29	28°♊37'01	
	10321 Jul 24 13:10	0°♋	
retrograde	10321 Sep 28 19:28	1°♋42'31	
	10321 Dec 08 15:56	30°℞♊	
opposition	10321 Dec 15 04:51	29°♊44'22	-0°42'28
min. Earth dist.	10321 Dec 14 15:27	29°♊45'43	18.94962 AU
direct	10322 Mar 01 23:27	27°♊46'46	
	10322 May 17 00:02	0°♋	
evening set	10322 Jun 01 00:37	0°♋49'08	
conjunction	10322 Jun 16 18:16	1°♋43'20	-0°36'51
minimum elong	10322 Jun 16 18:16	1°♋43'20	0°37'21
max. Earth dist.	10322 Jun 17 07:26	1°♋45'14	20.96456 AU
morning rise	10322 Jul 02 13:09	2°♋37'43	
retrograde	10322 Oct 03 03:39	5°♋43'05	
opposition	10322 Dec 19 14:28	3°♋45'00	-0°39'00
min. Earth dist.	10322 Dec 19 01:25	3°♋46'18	18.97885 AU
direct	10323 Mar 06 06:13	1°♋47'37	
evening set	10323 Jun 05 05:28	4°♋49'30	

conjunction	10323 Jun 20	23:30	5°♋43'39	-0°33'39	
minimum elong	10323 Jun 20	23:30	5°♋43'39	0°34'08	
max. Earth dist.	10323 Jun 21	13:46	5°♋45'42	20.99166 AU	
morning rise	10323 Jul 06	18:37	6°♋37'59		
retrograde	10323 Oct 07	12:11	9°♋43'16		
opposition	10323 Dec 23	23:51	7°♋45'15	-0°35'22	
min. Earth dist.	10323 Dec 23	10:14	7°♋46'37	19.00360 AU	
direct	10324 Mar 09	14:33	5°♋48'04		
evening set	10324 Jun 08	10:20	8°♋49'31		
conjunction	10324 Jun 24	04:26	9°♋43'37	-0°30'17	
minimum elong	10324 Jun 24	04:26	9°♋43'37	0°30'46	
max. Earth dist.	10324 Jun 24	17:44	9°♋45'32	21.01403 AU	
morning rise	10324 Jul 10	00:05	10°♋37'57		
retrograde	10324 Oct 10	20:08	13°♋43'12		
opposition	10324 Dec 27	09:08	11°♋45'12	-0°31'33	
min. Earth dist.	10324 Dec 26	20:14	11°♋46'29	19.02356 AU	
direct	10325 Mar 13	20:23	9°♋48'10		
evening set	10325 Jun 12	15:02	12°♋49'14		
conjunction	10325 Jun 28	09:35	13°♋43'19	-0°26'46	
minimum elong	10325 Jun 28	09:35	13°♋43'19	0°27'15	
max. Earth dist.	10325 Jun 28	23:42	13°♋45'21	21.03138 AU	
morning rise	10325 Jul 14	05:32	14°♋37'38		
retrograde	10325 Oct 15	04:57	17°♋42'52		
opposition	10325 Dec 31	18:07	15°♋44'52	-0°27'36	
min. Earth dist.	10325 Dec 31	04:48	15°♋46'12	19.03813 AU	
direct	10326 Mar 18	04:47	13°♋47'57		
evening set	10326 Jun 16	19:47	16°♋48'41		
conjunction	10326 Jul 02	14:32	17°♋42'46	-0°23'08	
minimum elong	10326 Jul 02	14:33	17°♋42'46	0°23'37	
max. Earth dist.	10326 Jul 03	03:25	17°♋44'36	21.04319 AU	
morning rise	10326 Jul 18	11:10	18°♋37'06		
retrograde	10326 Oct 19	12:45	21°♋42'21		
opposition	10327 Jan 05	02:59	19°♋44'17	-0°23'31	
min. Earth dist.	10327 Jan 04	14:41	19°♋45'31	19.04717 AU	
direct	10327 Mar 22	10:07	17°♋47'25		
evening set	10327 Jun 21	00:22	20°♋47'52		
conjunction	10327 Jul 06	19:41	21°♋41'57	-0°19'24	
minimum elong	10327 Jul 06	19:42	21°♋41'57	0°19'52	
max. Earth dist.	10327 Jul 07	09:09	21°♋43'52	21.04944 AU	
morning rise	10327 Jul 22	16:42	22°♋36'18		
retrograde	10327 Oct 23	21:05	25°♋41'34		
opposition	10328 Jan 09	11:22	23°♋43'25	-0°19'19	
min. Earth dist.	10328 Jan 08	22:42	23°♋44'41	19.05060 AU	
direct	10328 Mar 25	18:31	21°♋46'34		
evening set	10328 Jun 24	05:03	24°♋46'46		
conjunction	10328 Jul 10	00:38	25°♋40'52	-0°15'34	
minimum elong	10328 Jul 10	00:38	25°♋40'52	0°16'00	
behind sun begin	10328 Jul 09	23:47	25°♋40'45		
behind sun end	10328 Jul 10	01:30	25°♋40'59		
max. Earth dist.	10328 Jul 10	12:54	25°♋42'37	21.05036 AU	
morning rise	10328 Jul 25	22:22	26°♋35'16		
retrograde	10328 Oct 27	05:00	29°♋40'37		
opposition	10329 Jan 12	19:51	27°♋42'19	-0°15'02	
min. Earth dist.	10329 Jan 12	08:10	27°♋43'29	19.04914 AU	
direct	10329 Mar 29	23:45	25°♋45'26		
evening set	10329 Jun 28	09:26	28°♋45'26		
conjunction	10329 Jul 14	05:39	29°♋39'35	-0°11'39	
minimum elong	10329 Jul 14	05:39	29°♋39'35	0°12'06	
behind sun begin	10329 Jul 14	01:09	29°♋38'57		
behind sun end	10329 Jul 14	10:09	29°♋40'13		
max. Earth dist.	10329 Jul 14	18:44	29°♋41'27	21.04663 AU	

	10329 Jul 20	03:49	0°♌		
morning rise	10329 Jul 30	03:50	0°♌34'02		
retrograde	10329 Oct 31	12:58	3°♌39'30		
opposition	10330 Jan 17	03:59	1°♌41'03	-0°10'40	
min. Earth dist.	10330 Jan 16	15:40	1°♌42'17	19.04318 AU	
	10330 Mar 08	21:26	30°℞♋		
direct	10330 Apr 03	07:41	29°♋44'08		
	10330 Apr 28	07:43	0°♌		
evening set	10330 Jul 02	14:12	2°♌44'01		
conjunction	10330 Jul 18	10:45	3°♌38'12	-0°07'42	
minimum elong	10330 Jul 18	10:45	3°♌38'12	0°08'07	
behind sun begin	10330 Jul 18	04:53	3°♌37'23		
behind sun end	10330 Jul 18	16:37	3°♌39'02		
max. Earth dist.	10330 Jul 18	22:44	3°♌39'55	21.03865 AU	
morning rise	10330 Aug 03	09:42	4°♌32'44		
retrograde	10330 Nov 04	21:13	7°♌38'22		
opposition	10331 Jan 21	11:59	5°♌39'46	-0°06'15	
min. Earth dist.	10331 Jan 21	00:40	5°♌40'54	19.03335 AU	
direct	10331 Apr 07	12:40	3°♌42'47		
evening set	10331 Jul 06	18:57	6°♌42'37		
conjunction	10331 Jul 22	16:10	7°♌36'53	-0°03'42	
minimum elong	10331 Jul 22	16:10	7°♌36'53	0°04'07	
behind sun begin	10331 Jul 22	09:40	7°♌35'59		
behind sun end	10331 Jul 22	22:40	7°♌37'48		
max. Earth dist.	10331 Jul 23	04:53	7°♌38'42	21.02694 AU	
morning rise	10331 Aug 07	15:36	8°♌31'30		
retrograde	10331 Nov 09	05:19	11°♌37'21		
opposition	10332 Jan 25	19:54	9°♌38'36	-0°01'48	
min. Earth dist.	10332 Jan 25	07:52	9°♌39'49	19.01976 AU	
direct	10332 Apr 10	19:46	7°♌41'35		
asc. node	10332 Jun 19	08:40	9°♌35'38		
evening set	10332 Jul 09	23:56	10°♌41'27		
conjunction	10332 Jul 25	21:30	11°♌35'48	0°00'24	
minimum elong	10332 Jul 25	21:31	11°♌35'48	0°00'01	
behind sun begin	10332 Jul 25	18:51	11°♌35'29		
behind sun end	10332 Jul 26	00:11	11°♌36'07		
max. Earth dist.	10332 Jul 26	09:10	11°♌37'27	21.01158 AU	
morning rise	10332 Aug 10	21:44	12°♌30'31		
	10332 Oct 04	12:34	15°♌		
retrograde	10332 Nov 12	13:38	15°♌36'39		
	10332 Dec 22	11:03	15°℞♌		
opposition	10333 Jan 29	04:01	13°♌37'46	0°02'39	
min. Earth dist.	10333 Jan 28	17:02	13°♌38'53	19.00271 AU	
direct	10333 Apr 15	00:58	11°♌40'41		
evening set	10333 Jul 14	05:08	14°♌40'40		
	10333 Jul 19	22:07	15°♌		
conjunction	10333 Jul 30	03:30	15°♌35'08	0°04'30	
minimum elong	10333 Jul 30	03:29	15°♌35'08	0°04'08	
behind sun begin	10333 Jul 29	20:59	15°♌34'13		
behind sun end	10333 Jul 30	10:00	15°♌36'02		
max. Earth dist.	10333 Jul 30	15:48	15°♌36'53	20.99282 AU	
morning rise	10333 Aug 15	04:14	16°♌29'57		
retrograde	10333 Nov 16	22:54	19°♌36'25		
opposition	10334 Feb 02	11:57	17°♌37'25	0°07'07	
min. Earth dist.	10334 Feb 02	00:21	17°♌38'35	18.98214 AU	
direct	10334 Apr 19	07:35	15°♌40'18		
evening set	10334 Jul 18	10:51	18°♌40'27		
conjunction	10334 Aug 03	09:41	19°♌35'02	0°08'30	
minimum elong	10334 Aug 03	09:40	19°♌35'02	0°08'09	
behind sun begin	10334 Aug 03	03:48	19°♌34'13		
behind sun end	10334 Aug 03	15:33	19°♌35'51		
max. Earth dist.	10334 Aug 03	20:45	19°♌36'37	20.97047 AU	

morning rise	10334 Aug 19 11:16	20°♌30'00	
retrograde	10334 Nov 21 07:19	23°♌36'51	
opposition	10335 Feb 06 20:11	21°♌37'44	0°11'33
min. Earth dist.	10335 Feb 06 09:56	21°♌38'46	18.95801 AU
direct	10335 Apr 23 12:50	19°♌40'33	
evening set	10335 Jul 22 16:51	22°♌40'59	
conjunction	10335 Aug 07 16:27	23°♌35'42	0°12'28
minimum elong	10335 Aug 07 16:27	23°♌35'42	0°12'10
behind sun begin	10335 Aug 07 11:58	23°♌35'05	
behind sun end	10335 Aug 07 20:55	23°♌36'20	
max. Earth dist.	10335 Aug 08 03:57	23°♌37'21	20.94450 AU
morning rise	10335 Aug 23 18:35	24°♌30'49	
retrograde	10335 Nov 25 17:57	27°♌38'06	
opposition	10336 Feb 11 04:24	25°♌38'53	0°15'56
min. Earth dist.	10336 Feb 10 17:45	25°♌39'58	18.93005 AU
direct	10336 Apr 26 19:49	23°♌41'39	
evening set	10336 Jul 25 23:34	26°♌42'24	
conjunction	10336 Aug 10 23:38	27°♌37'17	0°16'24
minimum elong	10336 Aug 10 23:38	27°♌37'17	0°16'06
max. Earth dist.	10336 Aug 11 09:44	27°♌38'43	20.91462 AU
morning rise	10336 Aug 27 02:36	28°♌32'34	
	10336 Sep 24 01:30	0°♍	
retrograde	10336 Nov 29 02:54	1°♍40'21	
	10337 Feb 06 16:44	30°℞♌	
opposition	10337 Feb 14 13:03	29°♌41'01	0°20'16
min. Earth dist.	10337 Feb 14 04:03	29°♌41'55	18.89822 AU
direct	10337 May 01 01:00	27°♌43'41	
	10337 Jul 16 13:48	0°♍	
evening set	10337 Jul 30 06:37	0°♍44'51	
conjunction	10337 Aug 15 07:31	1°♍39'54	0°20'16
minimum elong	10337 Aug 15 07:31	1°♍39'54	0°20'01
max. Earth dist.	10337 Aug 15 17:43	1°♍41'22	20.88070 AU
morning rise	10337 Aug 31 11:05	2°♍35'22	
retrograde	10337 Dec 03 14:45	5°♍43'40	
opposition	10338 Feb 18 21:47	3°♍44'12	0°24'31
min. Earth dist.	10338 Feb 18 12:40	3°♍45'08	18.86203 AU
direct	10338 May 05 09:02	1°♍46'47	
evening set	10338 Aug 03 14:38	4°♍48'25	
conjunction	10338 Aug 19 16:04	5°♍43'39	0°24'04
minimum elong	10338 Aug 19 16:04	5°♍43'39	0°23'50
max. Earth dist.	10338 Aug 20 00:26	5°♍44'51	20.84217 AU
morning rise	10338 Sep 04 20:27	6°♍39'18	
retrograde	10338 Dec 08 00:23	9°♍48'10	
opposition	10339 Feb 23 06:51	7°♍48'33	0°28'40
min. Earth dist.	10339 Feb 22 23:44	7°♍49'16	18.82122 AU
direct	10339 May 09 14:42	5°♍50'57	
evening set	10339 Aug 07 23:04	8°♍53'07	
conjunction	10339 Aug 24 01:20	9°♍48'33	0°27'45
minimum elong	10339 Aug 24 01:20	9°♍48'33	0°27'33
max. Earth dist.	10339 Aug 24 09:20	9°♍49'42	20.79904 AU
morning rise	10339 Sep 09 06:18	10°♍44'24	
retrograde	10339 Dec 12 12:51	13°♍53'49	
opposition	10340 Feb 27 16:11	11°♍54'01	0°32'42
min. Earth dist.	10340 Feb 27 09:01	11°♍54'45	18.77570 AU
direct	10340 May 12 23:55	9°♍56'15	
evening set	10340 Aug 11 08:05	12°♍58'56	
conjunction	10340 Aug 27 10:57	13°♍54'35	0°31'19
minimum elong	10340 Aug 27 10:57	13°♍54'35	0°31'09
max. Earth dist.	10340 Aug 27 17:09	13°♍55'29	20.75128 AU
morning rise	10340 Sep 12 16:45	14°♍50'39	
retrograde	10340 Dec 15 23:12	18°♍00'40	
opposition	10341 Mar 03 02:01	16°♍00'38	0°36'35
min. Earth dist.	10341 Mar 02 20:47	16°♍01'10	18.72588 AU
direct	10341 May 17 06:44	14°♍02'37	
evening set	10341 Aug 15 17:41	17°♍05'54	
conjunction	10341 Aug 31 21:26	18°♍01'47	0°34'45
minimum elong	10341 Aug 31 21:26	18°♍01'47	0°34'35
max. Earth dist.	10341 Sep 01 03:19	18°♍02'38	20.69962 AU
morning rise	10341 Sep 17 03:53	18°♍58'04	
retrograde	10341 Dec 20 12:09	22°♍08'40	
opposition	10342 Mar 07 11:46	20°♍08'23	0°40'18
min. Earth dist.	10342 Mar 07 06:27	20°♍08'56	18.67243 AU
direct	10342 May 21 16:30	18°♍10'05	
evening set	10342 Aug 20 04:03	21°♍14'02	
conjunction	10342 Sep 05 08:26	22°♍10'08	0°38'00
minimum elong	10342 Sep 05 08:25	22°♍10'08	0°37'54
max. Earth dist.	10342 Sep 05 12:42	22°♍10'46	20.64457 AU
morning rise	10342 Sep 21 15:40	23°♍06'40	
retrograde	10342 Dec 24 23:25	26°♍17'53	
opposition	10343 Mar 11 22:05	24°♍17'20	0°43'49
min. Earth dist.	10343 Mar 11 18:36	24°♍17'42	18.61606 AU
direct	10343 May 26 00:11	22°♍18'45	
evening set	10343 Aug 24 14:52	25°♍23'24	
conjunction	10343 Sep 09 20:04	26°♍19'45	0°41'05
minimum elong	10343 Sep 09 20:03	26°♍19'45	0°41'00
max. Earth dist.	10343 Sep 10 00:07	26°♍20'20	20.58705 AU
morning rise	10343 Sep 26 03:54	27°♍16'30	
	10343 Nov 25 17:22	0°♎	
retrograde	10343 Dec 29 13:08	0°♎28'23	
	10344 Feb 01 21:11	30°℞♍	
opposition	10344 Mar 15 08:34	28°♍27'35	0°47'08
min. Earth dist.	10344 Mar 15 04:47	28°♍27'59	18.55751 AU
direct	10344 May 29 10:34	26°♍28'41	
evening set	10344 Aug 28 02:35	29°♍34'06	
	10344 Sep 04 14:17	0°♎	
conjunction	10344 Sep 13 08:24	0°♎30'42	0°43'57
minimum elong	10344 Sep 13 08:24	0°♎30'42	0°43'56
max. Earth dist.	10344 Sep 13 11:10	0°♎31'06	20.52759 AU
morning rise	10344 Sep 29 16:59	1°♎27'43	
retrograde	10345 Jan 02 01:38	4°♎40'15	
opposition	10345 Mar 19 19:36	2°♎39'13	0°50'13
min. Earth dist.	10345 Mar 19 17:31	2°♎39'26	18.49743 AU
direct	10345 Jun 02 18:48	0°♎40'00	
evening set	10345 Sep 01 14:55	3°♎46'14	
conjunction	10345 Sep 17 21:36	4°♎43'06	0°46'36
minimum elong	10345 Sep 17 21:35	4°♎43'06	0°46'36
max. Earth dist.	10345 Sep 18 00:00	4°♎43'28	20.46696 AU
morning rise	10345 Oct 04 06:49	5°♎40'22	
retrograde	10346 Jan 06 17:05	8°♎53'36	
opposition	10346 Mar 24 06:56	6°♎52'20	0°53'03
min. Earth dist.	10346 Mar 24 04:32	6°♎52'35	18.43627 AU
direct	10346 Jun 07 06:05	4°♎52'49	
evening set	10346 Sep 06 04:15	7°♎59'56	
conjunction	10346 Sep 22 11:34	8°♎57'04	0°49'01
minimum elong	10346 Sep 22 11:34	8°♎57'04	0°49'03
max. Earth dist.	10346 Sep 22 12:50	8°♎57'15	20.40531 AU
morning rise	10346 Oct 08 21:26	9°♎54'36	
retrograde	10347 Jan 11 06:44	13°♎08'32	
opposition	10347 Mar 28 18:49	11°♎07'04	0°55'36
min. Earth dist.	10347 Mar 28 18:05	11°♎07'08	18.37441 AU
direct	10347 Jun 11 15:07	9°♎07'16	
evening set	10347 Sep 10 18:18	12°♎15'18	

conjunction	10347 Sep 27 02:24	13°♎12'43	0°51'10
minimum elong	10347 Sep 27 02:24	13°♎12'43	0°51'15
max. Earth dist.	10347 Sep 27 03:07	13°♎12'49	20.34334 AU
morning rise	10347 Oct 13 12:53	14°♎10'30	
retrograde	10348 Jan 16 00:03	17°♎25'10	
opposition	10348 Apr 01 07:13	15°♎23'31	0°57'51
min. Earth dist.	10348 Apr 01 06:13	15°♎23'37	18.31229 AU
direct	10348 Jun 15 03:18	13°♎23'26	
evening set	10348 Sep 14 09:13	16°♎32'26	
conjunction	10348 Sep 30 18:01	17°♎30'08	0°53'03
minimum elong	10348 Sep 30 18:01	17°♎30'08	0°53'09
max. Earth dist.	10348 Sep 30 17:50	17°♎30'07	20.28105 AU
morning rise	10348 Oct 17 05:06	18°♎28'13	
retrograde	10349 Jan 19 15:36	21°♎43'37	
opposition	10349 Apr 05 20:21	19°♎41'48	0°59'48
min. Earth dist.	10349 Apr 05 21:01	19°♎41'44	18.24995 AU
direct	10349 Jun 19 13:54	17°♎41'28	
evening set	10349 Sep 19 01:13	20°♎51'28	
conjunction	10349 Oct 05 10:45	21°♎49'28	0°54'39
minimum elong	10349 Oct 05 10:45	21°♎49'28	0°54'48
max. Earth dist.	10349 Oct 05 09:36	21°♎49'18	20.21871 AU
morning rise	10349 Oct 21 22:27	22°♎47'49	
retrograde	10350 Jan 24 10:07	26°♎03'58	
opposition	10350 Apr 10 09:47	24°♎02'00	1°01'26
min. Earth dist.	10350 Apr 10 10:36	24°♎01'55	18.18746 AU
direct	10350 Jun 24 03:14	22°♎01'23	
evening set	10350 Sep 23 18:17	25°♎12'27	
conjunction	10350 Oct 10 04:29	26°♎10'45	0°55'57
minimum elong	10350 Oct 10 04:28	26°♎10'45	0°56'07
max. Earth dist.	10350 Oct 10 02:22	26°♎10'26	20.15592 AU
morning rise	10350 Oct 26 16:38	27°♎09'23	
	10350 Dec 28 02:29	0°♏	
retrograde	10351 Jan 29 03:25	0°♏26'16	
	10351 Mar 02 12:53	30°℞♎	
opposition	10351 Apr 15 00:08	28°♎24'10	1°02'43
min. Earth dist.	10351 Apr 15 02:47	28°♎23'53	18.12448 AU
direct	10351 Jun 28 15:48	26°♎23'17	
evening set	10351 Sep 28 12:09	29°♎35'24	
	10351 Oct 05 11:16	0°♏	
conjunction	10351 Oct 14 22:58	0°♏33'59	0°56'56
minimum elong	10351 Oct 14 22:58	0°♏33'59	0°57'09
max. Earth dist.	10351 Oct 14 19:23	0°♏33'27	20.09272 AU
morning rise	10351 Oct 31 11:41	1°♏32'54	
retrograde	10352 Feb 02 22:48	4°♏50'31	
opposition	10352 Apr 18 15:03	2°♏48'15	1°03'40
min. Earth dist.	10352 Apr 18 18:02	2°♏47'56	18.06099 AU
direct	10352 Jul 02 06:49	0°♏47'03	
evening set	10352 Oct 02 07:07	4°♏00'15	
conjunction	10352 Oct 18 18:37	4°♏59'08	0°57'35
minimum elong	10352 Oct 18 18:36	4°♏59'08	0°57'50
max. Earth dist.	10352 Oct 18 14:10	4°♏58'28	20.02883 AU
morning rise	10352 Nov 04 07:42	5°♏58'18	
retrograde	10353 Feb 06 17:13	9°♏16'37	
opposition	10353 Apr 23 06:37	7°♏14'11	1°04'14
min. Earth dist.	10353 Apr 23 11:20	7°♏13'41	17.99691 AU
direct	10353 Jul 06 21:42	5°♏12'39	
evening set	10353 Oct 07 03:01	8°♏26'54	
conjunction	10353 Oct 23 15:04	9°♏26'05	0°57'54
minimum elong	10353 Oct 23 15:04	9°♏26'05	0°58'11
max. Earth dist.	10353 Oct 23 08:42	9°♏25'07	19.96471 AU
morning rise	10353 Nov 09 04:43	10°♏25'32	
retrograde	10354 Feb 11 13:06	13°♏44'29	
opposition	10354 Apr 27 22:43	11°♏41'52	1°04'25
min. Earth dist.	10354 Apr 28 03:58	11°♏41'18	17.93279 AU
direct	10354 Jul 11 14:17	9°♏39'57	
evening set	10354 Oct 11 23:40	12°♏55'17	
conjunction	10354 Oct 28 12:22	13°♏54'45	0°57'53
minimum elong	10354 Oct 28 12:22	13°♏54'45	0°58'12
max. Earth dist.	10354 Oct 28 05:31	13°♏53'43	19.90065 AU
morning rise	10354 Nov 14 02:12	14°♏54'27	
	10354 Nov 15 15:59	15°♏	
retrograde	10355 Feb 16 08:38	18°♏14'01	
opposition	10355 May 02 15:26	16°♏11'13	1°04'13
min. Earth dist.	10355 May 02 22:00	16°♏10'31	17.86910 AU
	10355 Jun 01 03:41	15°℞♏	
direct	10355 Jul 16 07:16	14°♏08'57	
	10355 Aug 29 12:49	15°♏	
evening set	10355 Oct 16 21:14	17°♏25'20	
conjunction	10355 Nov 02 10:20	18°♏25'05	0°57'30
minimum elong	10355 Nov 02 10:20	18°♏25'05	0°57'50
max. Earth dist.	10355 Nov 02 01:36	18°♏23'45	19.83767 AU
morning rise	10355 Nov 19 00:40	19°♏25'01	
retrograde	10356 Feb 21 04:56	22°♏45'11	
opposition	10356 May 06 08:40	20°♏42'12	1°03'37
min. Earth dist.	10356 May 06 15:47	20°♏41'26	17.80694 AU
direct	10356 Jul 20 01:15	18°♏39'32	
evening set	10356 Oct 20 19:23	21°♏56'59	
conjunction	10356 Nov 06 09:09	22°♏57'00	0°56'45
minimum elong	10356 Nov 06 09:09	22°♏57'00	0°57'07
max. Earth dist.	10356 Nov 06 00:29	22°♏55'41	19.77637 AU
morning rise	10356 Nov 22 23:37	23°♏57'11	
retrograde	10357 Feb 25 01:45	27°♏17'54	
opposition	10357 May 11 02:32	25°♏14'45	1°02'36
min. Earth dist.	10357 May 11 10:30	25°♏13'53	17.74673 AU
direct	10357 Jul 24 19:54	23°♏11'44	
evening set	10357 Oct 25 18:35	26°♏30'13	
conjunction	10357 Nov 11 08:37	27°♏30'30	0°55'38
minimum elong	10357 Nov 11 08:37	27°♏30'30	0°56'02
max. Earth dist.	10357 Nov 10 22:04	27°♏28'53	19.71753 AU
morning rise	10357 Nov 27 23:28	28°♏30'55	
	10357 Dec 24 14:48	0°♐	
retrograde	10358 Mar 01 22:42	1°♐52'10	
	10358 May 11 13:42	30°℞♏	
opposition	10358 May 15 20:49	29°♏48'51	1°01'12
min. Earth dist.	10358 May 16 05:26	29°♏47'55	17.68943 AU
direct	10358 Jul 29 15:24	27°♏45'27	
	10358 Oct 11 19:31	0°♐	
evening set	10358 Oct 30 18:19	1°♐05'00	
conjunction	10358 Nov 16 08:53	2°♐05'32	0°54'10
minimum elong	10358 Nov 16 08:53	2°♐05'32	0°54'35
max. Earth dist.	10358 Nov 15 22:50	2°♐04'00	19.66179 AU
morning rise	10358 Dec 02 23:42	3°♐06'10	
retrograde	10359 Mar 06 20:35	6°♐27'53	
opposition	10359 May 20 15:49	4°♐24'28	0°59'23
min. Earth dist.	10359 May 21 00:43	4°♐23'30	17.63550 AU
direct	10359 Aug 03 11:38	2°♐20'46	
evening set	10359 Nov 04 18:44	5°♐41'18	
conjunction	10359 Nov 21 09:27	6°♐42'04	0°52'21
minimum elong	10359 Nov 21 09:27	6°♐42'04	0°52'47
max. Earth dist.	10359 Nov 20 21:46	6°♐40'17	19.60990 AU
morning rise	10359 Dec 08 00:32	7°♐42'54	
retrograde	10360 Mar 10 18:32	11°♐05'06	

opposition	10360 May 24 11:25	9°♐01'35	0°57'10
min. Earth dist.	10360 May 24 20:57	9°♐00'33	17.58579 AU
direct	10360 Aug 07 08:14	6°♐57'34	
evening set	10360 Nov 08 19:50	10°♐19'07	
conjunction	10360 Nov 25 11:01	11°♐20'06	0°50'10
minimum elong	10360 Nov 25 11:01	11°♐20'06	0°50'36
max. Earth dist.	10360 Nov 25 00:03	11°♐18'25	19.56237 AU
morning rise	10360 Dec 12 01:58	12°♐21'07	
retrograde	10361 Mar 15 18:03	15°♐43'43	
opposition	10361 May 29 07:25	13°♐40'12	0°54'35
min. Earth dist.	10361 May 29 16:51	13°♐39'10	17.54054 AU
direct	10361 Aug 12 05:48	11°♐35'56	
evening set	10361 Nov 13 21:49	14°♐58'27	
conjunction	10361 Nov 30 13:02	15°♐59'38	0°47'39
minimum elong	10361 Nov 30 13:02	15°♐59'38	0°48'08
max. Earth dist.	10361 Nov 30 00:33	15°♐57'42	19.51955 AU
morning rise	10361 Dec 17 04:05	17°♐00'49	
retrograde	10362 Mar 20 17:17	20°♐23'48	
opposition	10362 Jun 03 04:12	18°♐20'17	0°51'37
min. Earth dist.	10362 Jun 03 14:29	18°♐19'10	17.50019 AU
direct	10362 Aug 17 02:51	16°♐15'49	
evening set	10362 Nov 19 00:08	19°♐39'15	
conjunction	10362 Dec 05 15:36	20°♐40'37	0°44'49
minimum elong	10362 Dec 05 15:36	20°♐40'37	0°45'18
max. Earth dist.	10362 Dec 05 03:50	20°♐38'48	19.48160 AU
morning rise	10362 Dec 22 06:24	21°♐41'57	
retrograde	10363 Mar 25 18:38	25°♐05'16	
opposition	10363 Jun 08 01:26	23°♐01'49	0°48'17
min. Earth dist.	10363 Jun 08 11:20	23°♐00'44	17.46451 AU
direct	10363 Aug 22 01:56	20°♐57'11	
evening set	10363 Nov 24 03:17	24°♐21'28	
conjunction	10363 Dec 10 18:40	25°♐23'00	0°41'40
minimum elong	10363 Dec 10 18:40	25°♐23'00	0°42'10
max. Earth dist.	10363 Dec 10 05:41	25°♐20'59	19.44825 AU
morning rise	10363 Dec 27 09:23	26°♐24'28	
retrograde	10364 Mar 29 18:19	29°♐48'04	
opposition	10364 Jun 11 23:15	27°♐44'40	0°44'38
min. Earth dist.	10364 Jun 12 10:23	27°♐43'27	17.43346 AU
direct	10364 Aug 25 23:19	25°♐39'52	
evening set	10364 Nov 28 06:52	29°♐04'59	
	10364 Dec 13 03:40	0°♑	
conjunction	10364 Dec 14 22:20	0°♑06'39	0°38'14
minimum elong	10364 Dec 14 22:20	0°♑06'39	0°38'44
max. Earth dist.	10364 Dec 14 09:33	0°♑04'40	19.41933 AU
morning rise	10364 Dec 31 12:45	1°♑08'12	
retrograde	10365 Apr 03 20:42	4°♑32'00	
opposition	10365 Jun 16 21:33	2°♑28'41	0°40'39
min. Earth dist.	10365 Jun 17 08:15	2°♑27'30	17.40650 AU
direct	10365 Aug 31 00:25	0°♑23'44	
evening set	10365 Dec 03 11:02	3°♑49'33	
conjunction	10365 Dec 20 02:18	4°♑51'19	0°34'32
minimum elong	10365 Dec 20 02:18	4°♑51'20	0°35'01
max. Earth dist.	10365 Dec 19 12:34	4°♑49'11	19.39433 AU
morning rise	10366 Jan 05 16:22	5°♑52'57	
retrograde	10366 Apr 08 19:58	9°♑16'52	
opposition	10366 Jun 21 20:25	7°♑13'37	0°36'23
min. Earth dist.	10366 Jun 22 08:27	7°♑12'18	17.38359 AU
direct	10366 Sep 04 23:15	5°♑08'30	
evening set	10366 Dec 08 15:22	8°♑34'57	
conjunction	10366 Dec 25 06:29	9°♑36'48	0°30'35
minimum elong	10366 Dec 25 06:29	9°♑36'48	0°31'05
max. Earth dist.	10366 Dec 24 16:35	9°♑34'38	19.37351 AU
morning rise	10367 Jan 10 20:10	10°♑38'27	
retrograde	10367 Apr 13 21:50	14°♑02'26	
opposition	10367 Jun 26 19:32	11°♑59'13	0°31'52
min. Earth dist.	10367 Jun 27 06:51	11°♑57'58	17.36479 AU
direct	10367 Sep 10 02:07	9°♑53'58	
evening set	10367 Dec 13 19:48	13°♑20'55	
conjunction	10367 Dec 30 10:42	14°♑22'49	0°26'24
minimum elong	10367 Dec 30 10:42	14°♑22'49	0°26'54
max. Earth dist.	10367 Dec 29 20:35	14°♑20'37	19.35681 AU
morning rise	10368 Jan 15 23:52	15°♑24'29	
retrograde	10368 Apr 17 20:46	18°♑48'27	
opposition	10368 Jun 30 19:08	16°♑45'16	0°27'06
min. Earth dist.	10368 Jul 01 07:38	16°♑43'54	17.35030 AU
direct	10368 Sep 14 02:31	14°♑39'52	
evening set	10368 Dec 18 00:29	18°♑07'14	
conjunction	10369 Jan 03 15:00	19°♑09'09	0°22'03
minimum elong	10369 Jan 03 15:00	19°♑09'09	0°22'31
max. Earth dist.	10369 Jan 03 00:24	19°♑06'52	19.34465 AU
morning rise	10369 Jan 20 03:44	20°♑10'48	
retrograde	10369 Apr 22 22:11	23°♑34'40	
opposition	10369 Jul 05 18:39	21°♑31'31	0°22'09
min. Earth dist.	10369 Jul 06 06:18	21°♑30'14	17.34042 AU
direct	10369 Sep 19 06:47	19°♑25'59	
evening set	10369 Dec 23 05:05	22°♑53'40	
conjunction	10370 Jan 08 19:15	23°♑55'34	0°17'32
minimum elong	10370 Jan 08 19:16	23°♑55'34	0°18'01
max. Earth dist.	10370 Jan 08 05:17	23°♑53'23	19.33717 AU
morning rise	10370 Jan 25 07:17	24°♑57'11	
retrograde	10370 Apr 27 21:00	28°♑20'52	
opposition	10370 Jul 10 18:41	26°♑17'46	0°17'02
min. Earth dist.	10370 Jul 11 07:10	26°♑16'24	17.33546 AU
direct	10370 Sep 24 08:06	24°♑12'07	
evening set	10370 Dec 28 09:27	27°♑40'01	
conjunction	10371 Jan 13 23:01	28°♑41'52	0°12'54
minimum elong	10371 Jan 13 23:01	28°♑41'52	0°13'21
behind sun begin	10371 Jan 13 19:15	28°♑41'17	
behind sun end	10371 Jan 14 02:47	28°♑42'27	
max. Earth dist.	10371 Jan 13 08:36	28°♑39'37	19.33493 AU
morning rise	10371 Jan 30 10:32	29°♑43'25	
	10371 Feb 03 23:46	0°♒	
retrograde	10371 May 02 22:01	3°♒06'53	
opposition	10371 Jul 15 18:38	1°♒03'49	0°11'49
min. Earth dist.	10371 Jul 16 06:02	1°♒02'35	17.33591 AU
	10371 Aug 10 07:57	30°℞♑	
direct	10371 Sep 29 12:12	28°♑58'04	
	10371 Nov 17 07:20	0°♒	
evening set	10372 Jan 02 13:37	2°♒26'05	
conjunction	10372 Jan 19 02:47	3°♒27'52	0°08'11
minimum elong	10372 Jan 19 02:46	3°♒27'52	0°08'38
behind sun begin	10372 Jan 18 20:56	3°♒26'58	
behind sun end	10372 Jan 19 08:36	3°♒28'46	
max. Earth dist.	10372 Jan 18 13:44	3°♒25'50	19.33812 AU
morning rise	10372 Feb 04 13:25	4°♒29'19	
retrograde	10372 May 06 21:10	7°♒52'28	
opposition	10372 Jul 19 18:40	5°♒49'30	0°06'30
min. Earth dist.	10372 Jul 20 06:26	5°♒48'13	17.34199 AU
direct	10372 Oct 03 13:58	3°♒43'41	
evening set	10373 Jan 06 17:41	7°♒11'44	
conjunction	10373 Jan 23 06:03	8°♒13'24	0°03'26

minimum elong	10373 Jan	23	06:03	8°♒13'24	0°03'51
behind sun begin	10373 Jan	22	23:24	8°♒12'23	
behind sun end	10373 Jan	23	12:42	8°♒14'25	
max. Earth dist.	10373 Jan	22	16:32	8°♒11'18	19.34724 AU
morning rise	10373 Feb	08	16:06	9°♒14'44	
retrograde	10373 May	11	21:29	12°♒37'34	
opposition	10373 Jul	24	18:44	10°♒34'41	0°01'09
min. Earth dist.	10373 Jul	25	05:19	10°♒33'32	17.35417 AU
direct	10373 Oct	08	17:07	8°♒28'51	
desc. node	10373 Oct	10	06:08	8°♒28'55	
evening set	10374 Jan	11	21:10	11°♒56'50	
conjunction	10374 Jan	28	08:58	12°♒58'23	-0°01'29
minimum elong	10374 Jan	28	08:58	12°♒58'23	0°01'06
behind sun begin	10374 Jan	28	02:15	12°♒57'21	
behind sun end	10374 Jan	28	15:41	12°♒59'24	
max. Earth dist.	10374 Jan	27	21:21	12°♒56'35	19.36245 AU
morning rise	10374 Feb	13	18:00	13°♒59'34	
	10374 Mar	02	20:16	15°♒	
retrograde	10374 May	16	20:52	17°♒22'01	
opposition	10374 Jul	29	18:53	15°♒19'17	-0°04'11
min. Earth dist.	10374 Jul	30	05:10	15°♒18'10	17.37247 AU
	10374 Aug	06	04:46	15°℞♒	
direct	10374 Oct	13	19:00	13°♒13'32	
	10374 Dec	18	02:10	15°♒	
evening set	10375 Jan	17	00:25	16°♒41'21	
conjunction	10375 Feb	02	11:18	17°♒42'45	-0°06'17
minimum elong	10375 Feb	02	11:18	17°♒42'45	0°05'54
behind sun begin	10375 Feb	02	04:53	17°♒41'46	
behind sun end	10375 Feb	02	17:42	17°♒43'44	
max. Earth dist.	10375 Feb	01	23:23	17°♒40'54	19.38397 AU
morning rise	10375 Feb	18	19:40	18°♒43'47	
retrograde	10375 May	21	20:25	22°♒05'49	
opposition	10375 Aug	03	18:51	20°♒03'16	-0°09'29
min. Earth dist.	10375 Aug	04	04:05	20°♒02'16	17.39709 AU
direct	10375 Oct	18	20:54	17°♒57'38	
evening set	10376 Jan	22	03:00	21°♒25'15	
conjunction	10376 Feb	07	13:17	22°♒26'29	-0°10'58
minimum elong	10376 Feb	07	13:17	22°♒26'29	0°10'39
behind sun begin	10376 Feb	07	08:07	22°♒25'41	
behind sun end	10376 Feb	07	18:27	22°♒27'16	
max. Earth dist.	10376 Feb	07	03:22	22°♒24'56	19.41151 AU
morning rise	10376 Feb	23	20:40	23°♒27'19	
retrograde	10376 May	25	20:00	26°♒48'55	
opposition	10376 Aug	07	18:48	24°♒46'36	-0°14'42
min. Earth dist.	10376 Aug	08	03:27	24°♒45'40	17.42726 AU
direct	10376 Oct	22	22:44	22°♒41'10	
evening set	10377 Jan	26	05:22	26°♒08'28	
conjunction	10377 Feb	11	14:38	27°♒09'30	-0°15'35
minimum elong	10377 Feb	11	14:38	27°♒09'30	0°15'17
behind sun begin	10377 Feb	11	12:38	27°♒09'12	
behind sun end	10377 Feb	11	16:37	27°♒09'48	
max. Earth dist.	10377 Feb	11	04:29	27°♒07'55	19.44430 AU
morning rise	10377 Feb	27	21:14	28°♒10'08	
	10377 Apr	01	19:21	0°♓	
retrograde	10377 May	30	18:29	1°♓31'16	
	10377 Jul	31	17:42	30°℞♒	
opposition	10377 Aug	12	18:35	29°♒29'11	-0°19'48
min. Earth dist.	10377 Aug	13	02:42	29°♒28'19	17.46251 AU
direct	10377 Oct	28	00:02	27°♒23'57	
	10378 Jan	16	22:42	0°♓	
evening set	10378 Jan	31	07:02	0°♓50'53	
conjunction	10378 Feb	16	15:32	1°♓51'42	-0°20'06
minimum elong	10378 Feb	16	15:32	1°♓51'42	0°19'50
max. Earth dist.	10378 Feb	16	07:05	1°♓50'23	19.48176 AU
morning rise	10378 Mar	04	21:06	2°♓52'06	
retrograde	10378 Jun	04	17:25	6°♓12'44	
opposition	10378 Aug	17	18:18	4°♓10'54	-0°24'45
min. Earth dist.	10378 Aug	18	01:30	4°♓10'07	17.50193 AU
direct	10378 Nov	02	02:00	2°♓05'55	
evening set	10379 Feb	05	08:04	5°♓32'20	
conjunction	10379 Feb	21	15:33	6°♓32'55	-0°24'27
minimum elong	10379 Feb	21	15:32	6°♓32'55	0°24'14
max. Earth dist.	10379 Feb	21	07:04	6°♓31'36	19.52306 AU
morning rise	10379 Mar	09	20:16	7°♓33'05	
retrograde	10379 Jun	09	14:31	10°♓53'11	
opposition	10379 Aug	22	17:49	8°♓51'34	-0°29'31
min. Earth dist.	10379 Aug	23	00:51	8°♓50'48	17.54505 AU
direct	10379 Nov	07	03:01	6°♓46'48	
evening set	10380 Feb	10	08:27	10°♓12'40	
conjunction	10380 Feb	26	15:07	11°♓12'59	-0°28'38
minimum elong	10380 Feb	26	15:06	11°♓12'59	0°28'26
max. Earth dist.	10380 Feb	26	07:52	11°♓11'52	19.56772 AU
morning rise	10380 Mar	13	18:51	12°♓12'54	
retrograde	10380 Jun	13	11:58	15°♓32'24	
opposition	10380 Aug	26	16:51	13°♓31'00	-0°34'04
min. Earth dist.	10380 Aug	26	22:44	13°♓30'22	17.59104 AU
direct	10380 Nov	11	05:28	11°♓26'30	
evening set	10381 Feb	14	08:15	14°♓51'41	
conjunction	10381 Mar	02	13:53	15°♓51'44	-0°32'37
minimum elong	10381 Mar	02	13:52	15°♓51'44	0°32'28
max. Earth dist.	10381 Mar	02	06:53	15°♓50'40	19.61502 AU
morning rise	10381 Mar	18	16:43	16°♓51'23	
retrograde	10381 Jun	18	07:21	20°♓10'16	
opposition	10381 Aug	31	15:48	18°♓09'04	-0°38'23
min. Earth dist.	10381 Aug	31	21:45	18°♓08'26	17.63969 AU
direct	10381 Nov	16	05:51	16°♓04'48	
evening set	10382 Feb	19	06:58	19°♓29'15	
conjunction	10382 Mar	07	11:41	20°♓29'01	-0°36'23
minimum elong	10382 Mar	07	11:40	20°♓29'01	0°36'15
max. Earth dist.	10382 Mar	07	05:39	20°♓28'05	19.66483 AU
morning rise	10382 Mar	23	13:36	21°♓28'23	
retrograde	10382 Jun	23	03:31	24°♓46'37	
opposition	10382 Sep	05	14:13	22°♓45'35	-0°42'26
min. Earth dist.	10382 Sep	05	18:35	22°♓45'07	17.69050 AU
direct	10382 Nov	21	07:46	20°♓41'33	
evening set	10383 Feb	24	04:56	24°♓05'11	
conjunction	10383 Mar	12	08:43	25°♓04'39	-0°39'53
minimum elong	10383 Mar	12	08:43	25°♓04'39	0°39'48
max. Earth dist.	10383 Mar	12	03:29	25°♓03'51	19.71668 AU
morning rise	10383 Mar	28	09:45	26°♓03'45	
retrograde	10383 Jun	27	21:20	29°♓21'17	
opposition	10383 Sep	10	12:07	27°♓20'25	-0°46'10
min. Earth dist.	10383 Sep	10	16:43	27°♓19'56	17.74348 AU
direct	10383 Nov	26	06:42	25°♓16'36	
evening set	10384 Feb	29	01:55	28°♓39'20	
conjunction	10384 Mar	16	04:48	29°♓38'31	-0°43'07
minimum elong	10384 Mar	16	04:47	29°♓38'31	0°43'05
max. Earth dist.	10384 Mar	16	00:15	29°♓37'49	19.77069 AU
	10384 Mar	22	00:07	0°♈	
morning rise	10384 Apr	01	05:03	0°♈37'19	
retrograde	10384 Jul	01	16:25	3°♈54'08	
opposition	10384 Sep	14	09:27	1°♈53'24	-0°49'36
min. Earth dist.	10384 Sep	14	12:13	1°♈53'07	17.79839 AU

	10384 Nov 10	05:34	30°℞♓		
direct	10384 Nov 30	07:12	29°♓49'49		
	10384 Dec 20	00:37	0°♈		
evening set	10385 Mar 04	21:54	3°♈11'36		
conjunction	10385 Mar 20	23:53	4°♈10'28	-0°46'04	
minimum elong	10385 Mar 20	23:53	4°♈10'28	0°46'03	
max. Earth dist.	10385 Mar 20	20:45	4°♈09'59	19.82657 AU	
morning rise	10385 Apr 05	23:14	5°♈08'59		
retrograde	10385 Jul 06	08:46	8°♈25'04		
opposition	10385 Sep 19	06:25	6°♈24'28	-0°52'42	
min. Earth dist.	10385 Sep 19	09:12	6°♈24'11	17.85544 AU	
direct	10385 Dec 05	04:06	4°♈21'06		
evening set	10386 Mar 09	16:54	7°♈41'53		
conjunction	10386 Mar 25	17:56	8°♈40'27	-0°48'42	
minimum elong	10386 Mar 25	17:56	8°♈40'27	0°48'45	
max. Earth dist.	10386 Mar 25	15:30	8°♈40'05	19.88481 AU	
morning rise	10386 Apr 10	16:37	9°♈38'40		
retrograde	10386 Jul 11	03:06	12°♈54'01		
opposition	10386 Sep 24	02:36	10°♈53'33	-0°55'27	
min. Earth dist.	10386 Sep 24	03:11	10°♈53'29	17.91484 AU	
direct	10386 Dec 10	02:50	8°♈50'26		
evening set	10387 Mar 14	10:46	12°♈10'11		
conjunction	10387 Mar 30	11:03	13°♈08'27	-0°51'02	
minimum elong	10387 Mar 30	11:03	13°♈08'27	0°51'06	
max. Earth dist.	10387 Mar 30	10:34	13°♈08'22	19.94533 AU	
morning rise	10387 Apr 15	08:54	14°♈06'23		
retrograde	10387 Jul 15	18:09	17°♈21'00		
opposition	10387 Sep 28	22:24	15°♈20'41	-0°57'51	
min. Earth dist.	10387 Sep 28	22:47	15°♈20'39	17.97659 AU	
direct	10387 Dec 14	21:57	13°♈17'52		
evening set	10388 Mar 18	03:55	16°♈36'35		
conjunction	10388 Apr 03	03:17	17°♈34'32	-0°53'01	
minimum elong	10388 Apr 03	03:16	17°♈34'32	0°53'08	
max. Earth dist.	10388 Apr 03	03:17	17°♈34'32	20.00823 AU	
morning rise	10388 Apr 19	00:33	18°♈32'11		
retrograde	10388 Jul 19	11:19	21°♈46'05		
opposition	10388 Oct 02	17:20	19°♈45'57	-0°59'52	
min. Earth dist.	10388 Oct 02	15:31	19°♈46'08	18.04048 AU	
direct	10388 Dec 18	19:03	17°♈43'28		
evening set	10389 Mar 22	20:03	21°♈01'09		
conjunction	10389 Apr 07	18:45	21°♈58'48	-0°54'42	
minimum elong	10389 Apr 07	18:45	21°♈58'48	0°54'50	
max. Earth dist.	10389 Apr 07	20:52	21°♈59'07	20.07299 AU	
morning rise	10389 Apr 23	15:15	22°♈56'10		
retrograde	10389 Jul 24	01:38	26°♈09'23		
opposition	10389 Oct 07	12:01	24°♈09'28	-1°01'31	
min. Earth dist.	10389 Oct 07	10:00	24°♈09'40	18.10600 AU	
direct	10389 Dec 23	12:57	22°♈07'21		
evening set	10390 Mar 27	11:15	25°♈23'59		
conjunction	10390 Apr 12	09:06	26°♈21'20	-0°56'02	
minimum elong	10390 Apr 12	09:05	26°♈21'20	0°56'12	
max. Earth dist.	10390 Apr 12	11:32	26°♈21'42	20.13913 AU	
morning rise	10390 Apr 28	05:10	27°♈18'25		
	10390 Jun 24	08:00	0°♉		
retrograde	10390 Jul 28	17:23	0°♉30'59		
	10390 Sep 01	23:31	30°℞♈		
opposition	10390 Oct 12	05:56	28°♈31'16	-1°02'49	
min. Earth dist.	10390 Oct 12	01:57	28°♈31'41	18.17250 AU	
direct	10390 Dec 28	08:30	26°♈29'32		
evening set	10391 Apr 01	01:37	29°♈45'07		
	10391 Apr 05	06:07	0°♉		

conjunction	10391 Apr 16	22:55	0°♉42'11	-0°57'02	
minimum elong	10391 Apr 16	22:55	0°♉42'11	0°57'16	
max. Earth dist.	10391 Apr 17	03:25	0°♉42'52	20.20573 AU	
morning rise	10391 May 02	18:20	1°♉39'01		
retrograde	10391 Aug 02	06:45	4°♉50'54		
opposition	10391 Oct 16	23:16	2°♉51'25	-1°03'44	
min. Earth dist.	10391 Oct 16	19:18	2°♉51'50	18.23908 AU	
direct	10392 Jan 02	01:33	0°♉50'05		
evening set	10392 Apr 04	15:20	4°♉04'37		
conjunction	10392 Apr 20	11:51	5°♉01'24	-0°57'43	
minimum elong	10392 Apr 20	11:51	5°♉01'24	0°57'58	
max. Earth dist.	10392 Apr 20	16:14	5°♉02'03	20.27214 AU	
morning rise	10392 May 06	06:57	5°♉57'58		
retrograde	10392 Aug 05	21:08	9°♉09'14		
opposition	10392 Oct 20	16:06	7°♉09'57	-1°04'17	
min. Earth dist.	10392 Oct 20	10:31	7°♉10'31	18.30513 AU	
direct	10393 Jan 05	19:11	5°♉08'59		
evening set	10393 Apr 09	04:01	8°♉22'29		
conjunction	10393 Apr 25	00:05	9°♉19'00	-0°58'05	
minimum elong	10393 Apr 25	00:05	9°♉19'00	0°58'22	
max. Earth dist.	10393 Apr 25	06:24	9°♉19'56	20.33753 AU	
morning rise	10393 May 10	18:35	10°♉15'19		
retrograde	10393 Aug 10	09:38	13°♉25'58		
opposition	10393 Oct 25	08:31	11°♉26'53	-1°04'29	
min. Earth dist.	10393 Oct 25	02:52	11°♉27'27	18.36980 AU	
direct	10394 Jan 10	11:40	9°♉26'17		
evening set	10394 Apr 13	16:08	12°♉38'45		
conjunction	10394 Apr 29	11:30	13°♉34'59	-0°58'07	
minimum elong	10394 Apr 29	11:30	13°♉34'59	0°58'25	
max. Earth dist.	10394 Apr 29	17:27	13°♉35'52	20.40136 AU	
morning rise	10394 May 15	05:50	14°♉31'04		
	10394 May 23	15:37	15°♉		
retrograde	10394 Aug 14	22:36	17°♉41'08		
opposition	10394 Oct 30	00:08	15°♉42'13	-1°04'20	
min. Earth dist.	10394 Oct 29	17:14	15°♉42'55	18.43269 AU	
	10394 Nov 16	15:10	15°℞♉		
direct	10395 Jan 15	03:22	13°♉41'56		
	10395 Mar 12	18:37	15°♉		
evening set	10395 Apr 18	03:17	16°♉53'23		
conjunction	10395 May 03	22:24	17°♉49'23	-0°57'49	
minimum elong	10395 May 03	22:24	17°♉49'23	0°58'10	
max. Earth dist.	10395 May 04	06:00	17°♉50'31	20.46298 AU	
morning rise	10395 May 19	16:17	18°♉45'15		
retrograde	10395 Aug 19	10:07	21°♉54'43		
opposition	10395 Nov 03	15:19	19°♉55'57	-1°03'49	
min. Earth dist.	10395 Nov 03	08:21	19°♉56'39	18.49297 AU	
direct	10396 Jan 19	19:04	17°♉55'59		
evening set	10396 Apr 21	13:53	21°♉06'25		
conjunction	10396 May 07	08:24	22°♉02'10	-0°57'14	
minimum elong	10396 May 07	08:24	22°♉02'10	0°57'36	
max. Earth dist.	10396 May 07	15:25	22°♉03'13	20.52190 AU	
morning rise	10396 May 23	02:14	22°♉57'50		
retrograde	10396 Aug 22	21:36	26°♉06'45		
opposition	10396 Nov 07	05:48	24°♉08'04	-1°02'59	
min. Earth dist.	10396 Nov 06	21:50	24°♉08'52	18.55050 AU	
direct	10397 Jan 23	09:21	22°♉08'23		
evening set	10397 Apr 25	23:32	25°♉17'49		
conjunction	10397 May 11	17:53	26°♉13'21	-0°56'20	
minimum elong	10397 May 11	17:53	26°♉13'21	0°56'43	
max. Earth dist.	10397 May 12	02:35	26°♉14'38	20.57797 AU	
morning rise	10397 May 27	11:24	27°♉08'48		

	10397 Aug 01	09:15	0°♊	
retrograde	10397 Aug 27	07:42	0°♊17'10	
	10397 Sep 22	17:41	30°℞♉	
opposition	10397 Nov 11	19:46	28°♉18'34	-1°01'48
min. Earth dist.	10397 Nov 11	11:32	28°♉19'24	18.60510 AU
direct	10398 Jan 27	23:52	26°♉19'08	
evening set	10398 Apr 30	08:26	29°♉27'34	
	10398 May 09	15:09	0°♊	
conjunction	10398 May 16	02:21	0°♊22'54	-0°55'09
minimum elong	10398 May 16	02:21	0°♊22'54	0°55'34
max. Earth dist.	10398 May 16	10:38	0°♊24'07	20.63126 AU
morning rise	10398 May 31	19:59	1°♊18'10	
retrograde	10398 Aug 31	18:15	4°♊26'01	
opposition	10398 Nov 16	09:00	2°♊27'27	-1°00'19
min. Earth dist.	10398 Nov 15	23:53	2°♊28'22	18.65715 AU
direct	10399 Feb 01	12:23	0°♊28'14	
evening set	10399 May 04	16:33	3°♊35'44	
conjunction	10399 May 20	10:25	4°♊30'51	-0°53'40
minimum elong	10399 May 20	10:25	4°♊30'51	0°54'05
max. Earth dist.	10399 May 20	20:31	4°♊32'20	20.68203 AU
morning rise	10399 Jun 05	03:51	5°♊25'57	
retrograde	10399 Sep 05	02:35	8°♊33'18	
opposition	10399 Nov 20	21:30	6°♊34'48	-0°58'31
min. Earth dist.	10399 Nov 20	11:52	6°♊35'46	18.70674 AU
direct	10400 Feb 06	01:04	4°♊35'48	
evening set	10400 May 08	00:13	7°♊42'24	
conjunction	10400 May 23	17:43	8°♊37'20	-0°51'55
minimum elong	10400 May 23	17:44	8°♊37'20	0°52'23
max. Earth dist.	10400 May 24	03:30	8°♊38'46	20.73060 AU
morning rise	10400 Jun 08	11:20	9°♊32'16	
retrograde	10400 Sep 08	12:31	12°♊39'12	
opposition	10400 Nov 24	09:37	10°♊40'43	-0°56'26
min. Earth dist.	10400 Nov 23	23:07	10°♊41'47	18.75438 AU
direct	10401 Feb 09	11:41	8°♊41'57	
evening set	10401 May 12	06:57	11°♊47'42	
conjunction	10401 May 28	00:31	12°♊42'29	-0°49'55
minimum elong	10401 May 28	00:31	12°♊42'29	0°50'23
max. Earth dist.	10401 May 28	12:12	12°♊44'11	20.77717 AU
morning rise	10401 Jun 12	18:01	13°♊37'17	
retrograde	10401 Sep 12	20:12	16°♊43'49	
opposition	10401 Nov 28	21:12	14°♊45'25	-0°54'04
min. Earth dist.	10401 Nov 28	09:55	14°♊46'33	18.79982 AU
direct	10402 Feb 13	22:44	12°♊46'54	
evening set	10402 May 16	13:27	15°♊51'51	
conjunction	10402 Jun 01	06:48	16°♊46'29	-0°47'41
minimum elong	10402 Jun 01	06:49	16°♊46'29	0°48'09
max. Earth dist.	10402 Jun 01	18:09	16°♊48'08	20.82154 AU
morning rise	10402 Jun 17	00:38	17°♊41'10	
retrograde	10402 Sep 17	05:21	20°♊47'22	
opposition	10402 Dec 03	08:12	18°♊49'02	-0°51'26
min. Earth dist.	10402 Dec 02	20:23	18°♊50'13	18.84306 AU
direct	10403 Feb 18	07:17	16°♊50'45	
evening set	10403 May 20	19:21	19°♊54'59	
conjunction	10403 Jun 05	12:54	20°♊49'29	-0°45'12
minimum elong	10403 Jun 05	12:54	20°♊49'29	0°45'42
max. Earth dist.	10403 Jun 06	01:54	20°♊51'22	20.86342 AU
morning rise	10403 Jun 21	06:46	21°♊44'04	
retrograde	10403 Sep 21	13:14	24°♊49'58	
opposition	10403 Dec 07	18:50	22°♊51'44	-0°48'34
min. Earth dist.	10403 Dec 07	06:23	22°♊52'59	18.88339 AU
direct	10404 Feb 22	17:24	20°♊53'43	
evening set	10404 May 24	01:00	23°♊57'16	
conjunction	10404 Jun 08	18:24	24°♊51'38	-0°42'31
minimum elong	10404 Jun 08	18:24	24°♊51'38	0°43'01
max. Earth dist.	10404 Jun 09	06:53	24°♊53'27	20.90223 AU
morning rise	10404 Jun 24	12:40	25°♊46'08	
retrograde	10404 Sep 24	21:50	28°♊51'48	
opposition	10404 Dec 11	05:13	26°♊53'39	-0°45'29
min. Earth dist.	10404 Dec 10	16:33	26°♊54'55	18.92060 AU
direct	10405 Feb 26	00:36	24°♊55'51	
evening set	10405 May 28	06:15	27°♊58'47	
conjunction	10405 Jun 12	23:56	28°♊53'04	-0°39'38
minimum elong	10405 Jun 12	23:56	28°♊53'04	0°40'09
max. Earth dist.	10405 Jun 13	13:53	28°♊55'05	20.93765 AU
morning rise	10405 Jun 28	18:19	29°♊47'29	
	10405 Jul 02	11:27	0°♋	
retrograde	10405 Sep 29	05:56	2°♋52'58	
opposition	10405 Dec 15	15:10	0°♋54'53	-0°42'10
min. Earth dist.	10405 Dec 15	01:59	0°♋56'12	18.95403 AU
	10406 Jan 08	10:43	30°℞♊	
direct	10406 Mar 02	09:58	28°♊57'19	
	10406 Apr 22	01:42	0°♋	
evening set	10406 Jun 01	11:23	1°♋59'41	
conjunction	10406 Jun 17	05:05	2°♋53'53	-0°36'34
minimum elong	10406 Jun 17	05:05	2°♋53'53	0°37'04
max. Earth dist.	10406 Jun 17	18:10	2°♋55'46	20.96906 AU
morning rise	10406 Jul 02	23:58	3°♋48'15	
retrograde	10406 Oct 03	14:28	6°♋53'35	
min. Earth dist.	10406 Dec 19	11:58	4°♋56'50	18.98331 AU
opposition	10406 Dec 20	00:53	4°♋55'32	-0°38'41
direct	10407 Mar 06	16:45	2°♋58'10	
evening set	10407 Jun 05	16:17	6°♋00'02	
conjunction	10407 Jun 21	10:19	6°♋54'10	-0°33'20
minimum elong	10407 Jun 21	10:20	6°♋54'10	0°33'50
max. Earth dist.	10407 Jun 22	00:27	6°♋56'12	20.99593 AU
morning rise	10407 Jul 07	05:24	7°♋48'30	
retrograde	10407 Oct 07	22:22	10°♋53'41	
opposition	10407 Dec 24	10:10	8°♋55'42	-0°35'00
min. Earth dist.	10407 Dec 23	20:57	8°♋57'01	19.00764 AU
direct	10408 Mar 10	01:11	6°♋58'30	
evening set	10408 Jun 08	21:14	9°♋59'54	
conjunction	10408 Jun 24	15:20	10°♋53'59	-0°29'56
minimum elong	10408 Jun 24	15:20	10°♋53'59	0°30'26
max. Earth dist.	10408 Jun 25	04:17	10°♋55'51	21.01774 AU
morning rise	10408 Jul 10	10:59	11°♋48'17	
retrograde	10408 Oct 11	06:46	14°♋53'25	
opposition	10408 Dec 27	19:27	12°♋55'24	-0°31'10
min. Earth dist.	10408 Dec 27	06:47	12°♋56'40	19.02685 AU
direct	10409 Mar 14	07:56	10°♋58'19	
evening set	10409 Jun 13	01:46	13°♋59'18	
conjunction	10409 Jun 28	20:21	14°♋53'22	-0°26'24
minimum elong	10409 Jun 28	20:21	14°♋53'22	0°26'54
max. Earth dist.	10409 Jun 29	10:07	14°♋55'21	21.03420 AU
morning rise	10409 Jul 14	16:18	15°♋47'40	
retrograde	10409 Oct 15	14:38	18°♋52'45	
opposition	10410 Jan 01	04:22	16°♋54'41	-0°27'11
min. Earth dist.	10409 Dec 31	15:25	16°♋55'59	19.04045 AU
direct	10410 Mar 18	15:41	14°♋57'41	
evening set	10410 Jun 17	06:29	17°♋58'18	
conjunction	10410 Jul 03	01:15	18°♋52'21	-0°22'45
minimum elong	10410 Jul 03	01:15	18°♋52'21	0°23'14

max. Earth dist.	10410 Jul 03	13:41	18°♋54'07	21.04512 AU	
morning rise	10410 Jul 18	21:53	19°♋46'39		
retrograde	10410 Oct 19	22:21	22°♋51'43		
opposition	10411 Jan 05	12:56	20°♋53'34	-0°23'04	
min. Earth dist.	10411 Jan 05	00:48	20°♋54'46	19.04875 AU	
direct	10411 Mar 22	21:59	18°♋56'34		
evening set	10411 Jun 21	10:53	21°♋56'53		
conjunction	10411 Jul 07	06:14	22°♋50'56	-0°18'59	
minimum elong	10411 Jul 07	06:13	22°♋50'56	0°19'27	
max. Earth dist.	10411 Jul 07	19:29	22°♋52'50	21.05088 AU	
morning rise	10411 Jul 23	03:13	23°♋45'15		
retrograde	10411 Oct 24	06:12	26°♋50'20		
opposition	10412 Jan 09	21:18	24°♋52'05	-0°18'51	
min. Earth dist.	10412 Jan 09	08:45	24°♋53'20	19.05201 AU	
direct	10412 Mar 26	05:18	22°♋55'06		
evening set	10412 Jun 24	15:17	25°♋55'09		
conjunction	10412 Jul 10	10:51	26°♋49'13	-0°15'08	
minimum elong	10412 Jul 10	10:51	26°♋49'13	0°15'37	
behind sun begin	10412 Jul 10	09:07	26°♋48'59		
behind sun end	10412 Jul 10	12:34	26°♋49'28		
max. Earth dist.	10412 Jul 10	23:04	26°♋50'58	21.05193 AU	
morning rise	10412 Jul 26	08:33	27°♋43'35		
	10412 Sep 12	10:14	0°♌		
retrograde	10412 Oct 27	13:32	0°♌48'45		
	10412 Dec 13	03:58	30°℞♋		
opposition	10413 Jan 13	05:38	28°♋50'21	-0°14'33	
min. Earth dist.	10413 Jan 12	17:46	28°♋51'33	19.05102 AU	
direct	10413 Mar 30	10:49	26°♋53'22		
evening set	10413 Jun 28	19:38	29°♋53'14		
	10413 Jun 30	19:51	0°♌		
conjunction	10413 Jul 14	15:49	0°♌47'21	-0°11'13	
minimum elong	10413 Jul 14	15:49	0°♌47'21	0°11'40	
behind sun begin	10413 Jul 14	11:07	0°♌46'42		
behind sun end	10413 Jul 14	20:31	0°♌48'00		
max. Earth dist.	10413 Jul 15	05:03	0°♌49'14	21.04894 AU	
morning rise	10413 Jul 30	13:57	1°♌41'46		
retrograde	10413 Oct 31	21:58	4°♌47'04		
opposition	10414 Jan 17	13:32	2°♌48'33	-0°10'10	
min. Earth dist.	10414 Jan 17	01:07	2°♌49'48	19.04610 AU	
direct	10414 Apr 03	17:46	0°♌51'33		
evening set	10414 Jul 03	00:13	3°♌51'20		
conjunction	10414 Jul 18	20:44	4°♌45'30	-0°07'15	
minimum elong	10414 Jul 18	20:44	4°♌45'30	0°07'42	
behind sun begin	10414 Jul 18	14:46	4°♌44'40		
behind sun end	10414 Jul 19	02:42	4°♌46'20		
max. Earth dist.	10414 Jul 19	08:53	4°♌47'13	21.04219 AU	
morning rise	10414 Aug 03	19:39	5°♌39'59		
retrograde	10414 Nov 05	05:26	8°♌45'29		
opposition	10415 Jan 21	21:32	6°♌46'51	-0°05'45	
min. Earth dist.	10415 Jan 21	09:55	6°♌48'01	19.03761 AU	
direct	10415 Apr 07	22:17	4°♌49'50		
evening set	10415 Jul 07	04:48	7°♌49'36		
conjunction	10415 Jul 23	02:00	8°♌43'51	-0°03'15	
minimum elong	10415 Jul 23	01:58	8°♌43'51	0°03'39	
behind sun begin	10415 Jul 22	19:27	8°♌42'56		
behind sun end	10415 Jul 23	08:30	8°♌44'45		
max. Earth dist.	10415 Jul 23	15:02	8°♌45'42	21.03189 AU	
morning rise	10415 Aug 08	01:19	9°♌38'25		
retrograde	10415 Nov 09	14:27	12°♌44'10		
opposition	10416 Jan 26	05:18	10°♌45'27	-0°01'17	
min. Earth dist.	10416 Jan 25	17:07	10°♌46'40	19.02548 AU	
direct	10416 Apr 11	05:18	8°♌48'25		
asc. node	10416 May 08	10:21	9°♌07'14		
evening set	10416 Jul 10	09:47	11°♌48'15		
conjunction	10416 Jul 26	07:21	12°♌42'35	0°00'53	
minimum elong	10416 Jul 26	07:20	12°♌42'35	0°00'29	
behind sun begin	10416 Jul 26	00:45	12°♌41'40		
behind sun end	10416 Jul 26	13:55	12°♌43'30		
max. Earth dist.	10416 Jul 26	19:13	12°♌44'16	21.01807 AU	
morning rise	10416 Aug 11	07:29	13°♌37'16		
	10416 Sep 06	17:29	15°♌		
retrograde	10416 Nov 12	22:40	16°♌43'19		
	10417 Jan 23	02:33	15°℞♌		
opposition	10417 Jan 29	13:19	14°♌44'30	0°03'11	
min. Earth dist.	10417 Jan 29	02:07	14°♌45'38	19.00996 AU	
direct	10417 Apr 15	09:26	12°♌47'28		
	10417 Jun 30	00:44	15°♌		
evening set	10417 Jul 14	14:51	15°♌47'25		
conjunction	10417 Jul 30	13:11	16°♌41'52	0°04'58	
minimum elong	10417 Jul 30	13:11	16°♌41'52	0°04'36	
behind sun begin	10417 Jul 30	06:43	16°♌40'57		
behind sun end	10417 Jul 30	19:39	16°♌42'46		
max. Earth dist.	10417 Jul 31	01:48	16°♌43'40	21.00076 AU	
morning rise	10417 Aug 15	13:53	17°♌36'40		
retrograde	10417 Nov 17	08:12	20°♌43'04		
opposition	10418 Feb 02	21:15	18°♌44'10	0°07'38	
min. Earth dist.	10418 Feb 02	09:36	18°♌45'21	18.99071 AU	
direct	10418 Apr 19	16:47	16°♌47'08		
evening set	10418 Jul 18	20:36	19°♌47'17		
conjunction	10418 Aug 03	19:21	20°♌41'51	0°08'58	
minimum elong	10418 Aug 03	19:22	20°♌41'51	0°08'38	
behind sun begin	10418 Aug 03	13:36	20°♌41'03		
behind sun end	10418 Aug 04	01:07	20°♌42'39		
max. Earth dist.	10418 Aug 04	06:32	20°♌43'27	20.97964 AU	
morning rise	10418 Aug 19	20:53	21°♌36'48		
retrograde	10418 Nov 21	17:32	24°♌43'36		
opposition	10419 Feb 07	05:20	22°♌44'37	0°12'05	
min. Earth dist.	10419 Feb 06	19:02	22°♌45'39	18.96767 AU	
direct	10419 Apr 23	21:14	20°♌47'33		
evening set	10419 Jul 23	02:39	23°♌47'59		
conjunction	10419 Aug 08	02:11	24°♌42'41	0°12'57	
minimum elong	10419 Aug 08	02:10	24°♌42'41	0°12'37	
behind sun begin	10419 Aug 07	21:56	24°♌42'05		
behind sun end	10419 Aug 08	06:25	24°♌43'17		
max. Earth dist.	10419 Aug 08	13:46	24°♌44'20	20.95458 AU	
morning rise	10419 Aug 24	04:13	25°♌37'47		
retrograde	10419 Nov 26	03:20	28°♌45'01		
opposition	10420 Feb 11	13:38	26°♌45'57	0°16'28	
min. Earth dist.	10420 Feb 11	03:04	26°♌47'01	18.94042 AU	
direct	10420 Apr 27	04:46	24°♌48'50		
evening set	10420 Jul 26	09:16	27°♌49'36		
conjunction	10420 Aug 11	09:16	28°♌44'27	0°16'53	
minimum elong	10420 Aug 11	09:15	28°♌44'27	0°16'36	
max. Earth dist.	10420 Aug 11	19:11	28°♌45'52	20.92513 AU	
morning rise	10420 Aug 27	12:09	29°♌39'43		
	10420 Sep 02	14:23	0°♍		
retrograde	10420 Nov 29	13:36	2°♍47'28		
opposition	10421 Feb 14	22:19	0°♍48'15	0°20'48	
min. Earth dist.	10421 Feb 14	13:25	0°♍49'09	18.90872 AU	
	10421 Mar 07	09:23	30°℞♌		
direct	10421 May 01	10:16	28°♌51'03		
	10421 Jun 23	06:19	0°♍		
evening set	10421 Jul 30	16:26	1°♍52'12		

conjunction	10421 Aug 15 17:16	2°♑47'14	0°20'45
minimum elong	10421 Aug 15 17:16	2°♑47'14	0°20'29
max. Earth dist.	10421 Aug 16 03:13	2°♑48'39	20.89102 AU
morning rise	10421 Aug 31 20:44	3°♑42'39	
retrograde	10421 Dec 04 00:00	6°♑50'54	
opposition	10422 Feb 19 06:57	4°♑51'33	0°25'03
min. Earth dist.	10422 Feb 18 22:05	4°♑52'27	18.87208 AU
direct	10422 May 05 18:01	2°♑54'12	
evening set	10422 Aug 04 00:21	5°♑55'48	
conjunction	10422 Aug 20 01:43	6°♑51'00	0°24'33
minimum elong	10422 Aug 20 01:43	6°♑51'00	0°24'19
max. Earth dist.	10422 Aug 20 09:37	6°♑52'08	20.85186 AU
morning rise	10422 Sep 05 06:02	7°♑46'37	
retrograde	10422 Dec 08 10:17	10°♑55'23	
opposition	10423 Feb 23 16:06	8°♑55'50	0°29'12
min. Earth dist.	10423 Feb 23 09:07	8°♑56'33	18.83048 AU
direct	10423 May 10 00:42	6°♑58'18	
evening set	10423 Aug 08 08:31	10°♑00'21	
conjunction	10423 Aug 24 10:44	10°♑55'46	0°28'14
minimum elong	10423 Aug 24 10:43	10°♑55'46	0°28'01
max. Earth dist.	10423 Aug 24 18:32	10°♑56'53	20.80789 AU
morning rise	10423 Sep 09 15:36	11°♑51'34	
retrograde	10423 Dec 12 21:33	15°♑00'52	
opposition	10424 Feb 28 01:20	13°♑01'05	0°33'13
min. Earth dist.	10424 Feb 27 18:18	13°♑01'48	18.78417 AU
direct	10424 May 13 09:15	11°♑03'19	
evening set	10424 Aug 11 17:27	14°♑05'53	
conjunction	10424 Aug 27 20:14	15°♑01'30	0°31'47
minimum elong	10424 Aug 27 20:14	15°♑01'30	0°31'37
max. Earth dist.	10424 Aug 28 02:14	15°♑02'22	20.75953 AU
morning rise	10424 Sep 13 01:58	15°♑57'31	
retrograde	10424 Dec 16 07:58	19°♑07'23	
opposition	10425 Mar 03 10:55	17°♑07'20	0°37'05
min. Earth dist.	10425 Mar 03 05:46	17°♑07'52	18.73398 AU
direct	10425 May 17 16:23	15°♑09'17	
evening set	10425 Aug 16 02:48	18°♑12'26	
conjunction	10425 Sep 01 06:29	19°♑08'16	0°35'12
minimum elong	10425 Sep 01 06:29	19°♑08'16	0°35'04
max. Earth dist.	10425 Sep 01 12:27	19°♑09'08	20.70765 AU
morning rise	10425 Sep 17 12:50	20°♑04'30	
retrograde	10425 Dec 20 20:30	23°♑14'56	
opposition	10426 Mar 07 20:36	21°♑14'38	0°40'47
min. Earth dist.	10426 Mar 07 15:18	21°♑15'11	18.68048 AU
direct	10426 May 22 01:46	19°♑16'18	
evening set	10426 Aug 20 13:00	22°♑20'05	
conjunction	10426 Sep 05 17:15	23°♑16'09	0°38'27
minimum elong	10426 Sep 05 17:14	23°♑16'09	0°38'20
max. Earth dist.	10426 Sep 05 21:34	23°♑16'46	20.65272 AU
morning rise	10426 Sep 22 00:23	24°♑12'37	
retrograde	10426 Dec 25 07:30	27°♑23'40	
opposition	10427 Mar 12 06:42	25°♑23'06	0°44'18
min. Earth dist.	10427 Mar 12 03:10	25°♑23'28	18.62442 AU
direct	10427 May 26 09:14	23°♑24'28	
evening set	10427 Aug 24 23:42	26°♑28'58	
conjunction	10427 Sep 10 04:49	27°♑25'16	0°41'30
minimum elong	10427 Sep 10 04:48	27°♑25'16	0°41'27
max. Earth dist.	10427 Sep 10 09:07	27°♑25'53	20.59565 AU
morning rise	10427 Sep 26 12:32	28°♑21'58	
	10427 Oct 27 19:14	0°♒	
retrograde	10427 Dec 29 21:31	1°♒33'40	
	10428 Mar 04 16:36	30°℞♑	
opposition	10428 Mar 15 17:08	29°♑32'51	0°47'36
min. Earth dist.	10428 Mar 15 13:14	29°♑33'15	18.56642 AU
direct	10428 May 29 19:19	27°♑33'56	
	10428 Aug 16 17:20	0°♒	
evening set	10428 Aug 28 11:11	0°♒39'11	
conjunction	10428 Sep 13 16:55	1°♒35'44	0°44'22
minimum elong	10428 Sep 13 16:55	1°♒35'44	0°44'19
max. Earth dist.	10428 Sep 13 19:46	1°♒36'09	20.53680 AU
morning rise	10428 Sep 30 01:25	2°♒32'42	
retrograde	10429 Jan 02 09:48	5°♒45'05	
opposition	10429 Mar 20 04:09	3°♒44'02	0°50'39
min. Earth dist.	10429 Mar 20 01:57	3°♒44'15	18.50695 AU
direct	10429 Jun 03 03:40	1°♒44'50	
evening set	10429 Sep 01 23:29	4°♒50'55	
conjunction	10429 Sep 18 06:05	5°♒47'44	0°46'59
minimum elong	10429 Sep 18 06:05	5°♒47'44	0°47'00
max. Earth dist.	10429 Sep 18 08:43	5°♒48'07	20.47677 AU
morning rise	10429 Oct 04 15:11	6°♒44'57	
retrograde	10430 Jan 07 01:13	9°♒58'01	
opposition	10430 Mar 24 15:19	7°♒56'46	0°53'27
min. Earth dist.	10430 Mar 24 12:50	7°♒57'02	18.44638 AU
direct	10430 Jun 07 14:37	5°♒57'18	
evening set	10430 Sep 06 12:44	9°♒04'17	
conjunction	10430 Sep 22 19:57	10°♒01'23	0°49'23
minimum elong	10430 Sep 22 19:57	10°♒01'23	0°49'25
max. Earth dist.	10430 Sep 22 21:13	10°♒01'34	20.41570 AU
morning rise	10430 Oct 09 05:45	10°♒58'52	
retrograde	10431 Jan 11 15:02	14°♒12'41	
opposition	10431 Mar 29 03:19	12°♒11'15	0°55'59
min. Earth dist.	10431 Mar 29 02:32	12°♒11'20	18.38500 AU
direct	10431 Jun 12 00:01	10°♒11'31	
evening set	10431 Sep 11 02:36	13°♒19'26	
conjunction	10431 Sep 27 10:38	14°♒16'49	0°51'31
minimum elong	10431 Sep 27 10:37	14°♒16'49	0°51'35
max. Earth dist.	10431 Sep 27 11:32	14°♒16'57	20.35405 AU
morning rise	10431 Oct 13 21:00	15°♒14'34	
retrograde	10432 Jan 16 08:03	18°♒29'09	
opposition	10432 Apr 01 15:44	16°♒27'34	0°58'13
min. Earth dist.	10432 Apr 01 14:43	16°♒27'41	18.32299 AU
direct	10432 Jun 15 12:15	14°♒27'36	
evening set	10432 Sep 14 17:42	17°♒36'31	
conjunction	10432 Oct 01 02:22	18°♒34'11	0°53'22
minimum elong	10432 Oct 01 02:22	18°♒34'11	0°53'30
max. Earth dist.	10432 Oct 01 02:00	18°♒34'08	20.29165 AU
morning rise	10432 Oct 17 13:22	19°♒32'13	
retrograde	10433 Jan 19 23:29	22°♒47'35	
opposition	10433 Apr 06 04:47	20°♒45'52	1°00'09
min. Earth dist.	10433 Apr 06 05:41	20°♒45'46	18.26028 AU
direct	10433 Jun 19 22:43	18°♒45'38	
evening set	10433 Sep 19 09:43	21°♒55'36	
conjunction	10433 Oct 05 19:09	22°♒53'34	0°54'57
minimum elong	10433 Oct 05 19:09	22°♒53'34	0°55'06
max. Earth dist.	10433 Oct 05 17:51	22°♒53'22	20.22857 AU
morning rise	10433 Oct 22 06:43	23°♒51'53	
retrograde	10434 Jan 24 18:26	27°♒08'01	
opposition	10434 Apr 10 18:22	25°♒06'09	1°01'46
min. Earth dist.	10434 Apr 10 19:24	25°♒06'03	18.19668 AU
direct	10434 Jun 24 12:31	23°♒05'40	
evening set	10434 Sep 24 02:49	26°♒16'42	
conjunction	10434 Oct 10 12:51	27°♒14'58	0°56'14

minimum elong	10434 Oct 10 12:51	27°♎14'57	0°56'26
max. Earth dist.	10434 Oct 10 10:12	27°♎14'34	20.16430 AU
morning rise	10434 Oct 27 00:53	28°♎13'34	
	10434 Nov 29 11:43	0°♏	
retrograde	10435 Jan 29 11:08	1°♏30'27	
	10435 Apr 02 19:07	30°℞♎	
opposition	10435 Apr 15 08:46	29°♎28'27	1°03'02
min. Earth dist.	10435 Apr 15 11:46	29°♎28'08	18.13193 AU
direct	10435 Jun 29 00:27	27°♎27'39	
	10435 Sep 17 05:31	0°♏	
evening set	10435 Sep 28 20:48	0°♏39'45	
conjunction	10435 Oct 15 07:31	1°♏38'19	0°57'11
minimum elong	10435 Oct 15 07:31	1°♏38'19	0°57'25
max. Earth dist.	10435 Oct 15 03:29	1°♏37'43	20.09913 AU
morning rise	10435 Oct 31 20:06	2°♏37'12	
retrograde	10436 Feb 03 07:36	5°♏54'49	
opposition	10436 Apr 18 23:40	3°♏52'38	1°03'56
min. Earth dist.	10436 Apr 19 02:55	3°♏52'17	18.06632 AU
direct	10436 Jul 02 16:00	1°♏51'30	
evening set	10436 Oct 02 15:40	5°♏04'40	
conjunction	10436 Oct 19 03:04	6°♏03'32	0°57'49
minimum elong	10436 Oct 19 03:04	6°♏03'32	0°58'05
max. Earth dist.	10436 Oct 18 21:58	6°♏02'46	20.03310 AU
morning rise	10436 Nov 04 16:06	7°♏02'42	
retrograde	10437 Feb 07 01:26	10°♏21'00	
opposition	10437 Apr 23 15:18	8°♏18'38	1°04'29
min. Earth dist.	10437 Apr 23 20:22	8°♏18'05	18.00010 AU
direct	10437 Jul 07 05:41	6°♏17'08	
evening set	10437 Oct 07 11:31	9°♏31'23	
conjunction	10437 Oct 23 23:29	10°♏30'32	0°58'07
minimum elong	10437 Oct 23 23:29	10°♏30'32	0°58'25
max. Earth dist.	10437 Oct 23 16:46	10°♏29'32	19.96695 AU
morning rise	10437 Nov 09 13:01	11°♏29'58	
retrograde	10438 Feb 11 22:25	14°♏48'56	
opposition	10438 Apr 28 07:14	12°♏46'21	1°04'38
min. Earth dist.	10438 Apr 28 12:40	12°♏45'46	17.93413 AU
direct	10438 Jul 11 23:09	10°♏44'28	
evening set	10438 Oct 12 08:07	13°♏59'47	
conjunction	10438 Oct 28 20:43	14°♏59'15	0°58'03
minimum elong	10438 Oct 28 20:43	14°♏59'15	0°58'22
max. Earth dist.	10438 Oct 28 13:29	14°♏58'09	19.90128 AU
	10438 Oct 29 01:42	15°♏	
morning rise	10438 Nov 14 10:31	15°♏58'56	
retrograde	10439 Feb 16 16:51	19°♏18'31	
opposition	10439 May 02 23:59	17°♏15'44	1°04'24
min. Earth dist.	10439 May 03 06:48	17°♏15'00	17.86907 AU
direct	10439 Jul 16 14:42	15°♏13'28	
evening set	10439 Oct 17 05:24	18°♏29'51	
conjunction	10439 Nov 02 18:27	19°♏29'35	0°57'38
minimum elong	10439 Nov 02 18:27	19°♏29'35	0°58'00
max. Earth dist.	10439 Nov 02 09:43	19°♏28'16	19.83710 AU
morning rise	10439 Nov 19 08:44	20°♏29'32	
retrograde	10440 Feb 21 14:17	23°♏49'44	
opposition	10440 May 06 17:12	21°♏46'44	1°03'45
min. Earth dist.	10440 May 07 00:19	21°♏45'58	17.80587 AU
direct	10440 Jul 20 09:53	19°♏44'04	
evening set	10440 Oct 21 03:35	23°♏01'31	
conjunction	10440 Nov 06 17:15	24°♏01'32	0°56'51
minimum elong	10440 Nov 06 17:15	24°♏01'32	0°57'14
max. Earth dist.	10440 Nov 06 08:32	24°♏00'13	19.77493 AU
morning rise	10440 Nov 23 07:41	25°♏01'44	
retrograde	10441 Feb 25 09:37	28°♏22'29	
opposition	10441 May 11 10:55	26°♏19'18	1°02'42
min. Earth dist.	10441 May 11 19:03	26°♏18'25	17.74503 AU
direct	10441 Jul 25 03:47	24°♏16'16	
evening set	10441 Oct 26 02:39	27°♏34'46	
conjunction	10441 Nov 11 16:39	28°♏35'03	0°55'42
minimum elong	10441 Nov 11 16:39	28°♏35'03	0°56'07
max. Earth dist.	10441 Nov 11 06:16	28°♏33'28	19.71564 AU
morning rise	10441 Nov 28 07:26	29°♏35'28	
	10441 Dec 05 06:12	0°♐	
retrograde	10442 Mar 02 07:18	2°♐56'45	
opposition	10442 May 16 05:18	0°♐53'25	1°01'15
min. Earth dist.	10442 May 16 13:45	0°♐52'31	17.68743 AU
	10442 Jun 06 11:27	30°℞♏	
direct	10442 Jul 29 23:54	28°♏50'02	
	10442 Sep 20 00:10	0°♐	
evening set	10442 Oct 31 02:13	2°♐09'34	
conjunction	10442 Nov 16 16:43	3°♐10'06	0°54'12
minimum elong	10442 Nov 16 16:43	3°♐10'06	0°54'38
max. Earth dist.	10442 Nov 16 06:52	3°♐08'36	19.65973 AU
morning rise	10442 Dec 03 07:29	4°♐10'44	
retrograde	10443 Mar 07 04:34	7°♐32'31	
opposition	10443 May 21 00:21	5°♐29'04	0°59'24
min. Earth dist.	10443 May 21 09:13	5°♐28'07	17.63347 AU
direct	10443 Aug 03 19:51	3°♐25'22	
evening set	10443 Nov 05 02:45	6°♐45'55	
conjunction	10443 Nov 21 17:26	7°♐46'41	0°52'20
minimum elong	10443 Nov 21 17:26	7°♐46'41	0°52'47
max. Earth dist.	10443 Nov 21 05:58	7°♐44'55	19.60792 AU
morning rise	10443 Dec 08 08:28	8°♐47'31	
retrograde	10444 Mar 11 03:03	12°♐09'47	
opposition	10444 May 24 19:53	10°♐06'15	0°57'08
min. Earth dist.	10444 May 25 05:13	10°♐05'15	17.58390 AU
direct	10444 Aug 07 16:33	8°♐02'15	
evening set	10444 Nov 09 03:52	11°♐23'49	
conjunction	10444 Nov 25 19:01	12°♐24'48	0°50'07
minimum elong	10444 Nov 25 19:02	12°♐24'48	0°50'36
max. Earth dist.	10444 Nov 25 08:17	12°♐23'09	19.56053 AU
morning rise	10444 Dec 12 09:58	13°♐25'50	
retrograde	10445 Mar 16 02:32	16°♐48'30	
opposition	10445 May 29 16:06	14°♐44'58	0°54'30
min. Earth dist.	10445 May 30 01:33	14°♐43'57	17.53866 AU
direct	10445 Aug 12 13:54	12°♐40'45	
evening set	10445 Nov 14 05:54	16°♐03'16	
conjunction	10445 Nov 30 21:03	17°♐04'28	0°47'34
minimum elong	10445 Nov 30 21:03	17°♐04'28	0°48'03
max. Earth dist.	10445 Nov 30 08:42	17°♐02'33	19.51756 AU
morning rise	10445 Dec 17 12:06	18°♐05'39	
retrograde	10446 Mar 21 02:00	21°♐28'43	
opposition	10446 Jun 03 12:52	19°♐25'13	0°51'30
min. Earth dist.	10446 Jun 03 23:09	19°♐24'06	17.49794 AU
direct	10446 Aug 17 11:26	17°♐20'46	
evening set	10446 Nov 19 08:25	20°♐44'14	
conjunction	10446 Dec 05 23:51	21°♐45'36	0°44'41
minimum elong	10446 Dec 05 23:51	21°♐45'37	0°45'12
max. Earth dist.	10446 Dec 05 12:09	21°♐43'48	19.47897 AU
morning rise	10446 Dec 22 14:38	22°♐46'57	
retrograde	10447 Mar 26 03:01	26°♐10'21	
opposition	10447 Jun 08 10:14	24°♐06'53	0°48'08
min. Earth dist.	10447 Jun 08 20:25	24°♐05'46	17.46136 AU
direct	10447 Aug 22 10:10	22°♐02'15	

evening set	10447	Nov	24	11:36	25°♐26'35
conjunction	10447	Dec	11	02:58	26°♐28'07	0°41'30
minimum elong	10447	Dec	11	02:58	26°♐28'07	0°42'01
max. Earth dist.	10447	Dec	10	13:44	26°♐26'04	19.44439 AU
morning rise	10447	Dec	27	17:42	27°♐29'36
	10448	Feb	14	10:14	0°♑
retrograde	10448	Mar	30	03:07	0°♑53'17
	10448	May	14	20:34	30°℞♐
opposition	10448	Jun	12	08:14	28°♐49'51	0°44'26
min. Earth dist.	10448	Jun	12	19:35	28°♐48'36	17.42879 AU
direct	10448	Aug	26	09:01	26°♐45'01
	10448	Nov	25	20:05	0°♑
evening set	10448	Nov	28	15:19	0°♑10'09
conjunction	10448	Dec	15	06:47	1°♑11'49	0°38'02
minimum elong	10448	Dec	15	06:47	1°♑11'49	0°38'32
max. Earth dist.	10448	Dec	14	17:46	1°♑09'48	19.41370 AU
morning rise	10448	Dec	31	21:11	2°♑13'24
retrograde	10449	Apr	04	04:34	5°♑37'16
opposition	10449	Jun	17	06:32	3°♑33'53	0°40'24
min. Earth dist.	10449	Jun	17	17:35	3°♑32'40	17.39991 AU
direct	10449	Aug	31	09:21	1°♑28'52
evening set	10449	Dec	03	19:33	4°♑54'43
conjunction	10449	Dec	20	10:49	5°♑56'30	0°34'17
minimum elong	10449	Dec	20	10:49	5°♑56'30	0°34'48
max. Earth dist.	10449	Dec	19	20:38	5°♑54'17	19.38675 AU
morning rise	10450	Jan	06	00:55	6°♑58'09
retrograde	10450	Apr	09	04:49	10°♑22'09
opposition	10450	Jun	22	05:32	8°♑18'47	0°36'06
min. Earth dist.	10450	Jun	22	17:47	8°♑17'27	17.37504 AU
direct	10450	Sep	05	09:15	6°♑13'36
evening set	10450	Dec	08	23:45	9°♑40'03
conjunction	10450	Dec	25	14:55	10°♑41'55	0°30'18
minimum elong	10450	Dec	25	14:55	10°♑41'55	0°30'48
max. Earth dist.	10450	Dec	25	00:51	10°♑39'44	19.36401 AU
morning rise	10451	Jan	11	04:37	11°♑43'37
retrograde	10451	Apr	14	06:22	15°♑07'41
opposition	10451	Jun	27	04:43	13°♑04'21	0°31'32
min. Earth dist.	10451	Jun	27	16:13	13°♑03'05	17.35436 AU
direct	10451	Sep	10	11:06	10°♑58'59
evening set	10451	Dec	14	04:23	14°♑25'59
conjunction	10451	Dec	30	19:16	15°♑27'54	0°26'06
minimum elong	10451	Dec	30	19:16	15°♑27'54	0°26'36
max. Earth dist.	10451	Dec	30	04:49	15°♑25'39	19.34557 AU
morning rise	10452	Jan	16	08:30	16°♑29'37
retrograde	10452	Apr	18	06:07	19°♑53'40
opposition	10452	Jul	01	04:12	17°♑50'22	0°26'44
min. Earth dist.	10452	Jul	01	16:53	17°♑48'58	17.33833 AU
direct	10452	Sep	14	11:56	15°♑44'50
evening set	10452	Dec	18	09:04	19°♑12'16
conjunction	10453	Jan	03	23:38	20°♑14'13	0°21'42
minimum elong	10453	Jan	03	23:38	20°♑14'13	0°22'12
max. Earth dist.	10453	Jan	03	09:02	20°♑11'57	19.33207 AU
morning rise	10453	Jan	20	12:25	21°♑15'55
retrograde	10453	Apr	23	07:10	24°♑39'54
opposition	10453	Jul	06	03:51	22°♑36'37	0°21'45
min. Earth dist.	10453	Jul	06	15:32	22°♑35'20	17.32729 AU
direct	10453	Sep	19	14:59	20°♑30'58
evening set	10453	Dec	23	13:37	23°♑58'44
conjunction	10454	Jan	09	03:47	25°♑00'41	0°17'09
minimum elong	10454	Jan	09	03:47	25°♑00'41	0°17'38
max. Earth dist.	10454	Jan	08	13:44	24°♑58'29	19.32362 AU
morning rise	10454	Jan	25	15:52	26°♑02'20
retrograde	10454	Apr	28	06:30	29°♑26'10
opposition	10454	Jul	11	03:51	27°♑22'56	0°16'36
min. Earth dist.	10454	Jul	11	16:18	27°♑21'34	17.32165 AU
direct	10454	Sep	24	17:04	25°♑17'10
evening set	10454	Dec	28	18:06	28°♑45'11
conjunction	10455	Jan	14	07:42	29°♑47'05	0°12'30
minimum elong	10455	Jan	14	07:42	29°♑47'05	0°12'58
behind sun begin	10455	Jan	14	03:41	29°♑46'28
behind sun end	10455	Jan	14	11:43	29°♑47'41
max. Earth dist.	10455	Jan	13	17:26	29°♑44'51	19.32096 AU
	10455	Jan	17	18:03	0°♒
morning rise	10455	Jan	30	19:15	0°♒48'40
retrograde	10455	May	03	06:55	4°♒12'18
opposition	10455	Jul	16	03:44	2°♒09'07	0°11'21
min. Earth dist.	10455	Jul	16	14:54	2°♒07'54	17.32196 AU
direct	10455	Sep	29	20:44	0°♒03'17
evening set	10456	Jan	02	22:16	3°♒31'26
conjunction	10456	Jan	19	11:27	4°♒33'16	0°07'46
minimum elong	10456	Jan	19	11:27	4°♒33'16	0°08'12
behind sun begin	10456	Jan	19	05:30	4°♒32'21
behind sun end	10456	Jan	19	17:24	4°♒34'10
max. Earth dist.	10456	Jan	18	22:30	4°♒31'15	19.32428 AU
morning rise	10456	Feb	04	22:10	5°♒34'46
retrograde	10456	May	07	06:05	8°♒58'07
opposition	10456	Jul	20	03:57	6°♒55'03	0°06'01
min. Earth dist.	10456	Jul	20	15:26	6°♒53'48	17.32841 AU
direct	10456	Oct	03	22:53	4°♒49'11
evening set	10457	Jan	07	02:23	8°♒17'23
conjunction	10457	Jan	23	14:46	9°♒19'07	0°02'59
minimum elong	10457	Jan	23	14:47	9°♒19'07	0°03'24
behind sun begin	10457	Jan	23	08:06	9°♒18'06
behind sun end	10457	Jan	23	21:27	9°♒20'08
max. Earth dist.	10457	Jan	23	01:32	9°♒17'03	19.33400 AU
morning rise	10457	Feb	09	00:53	10°♒20'30
retrograde	10457	May	12	06:42	13°♒43'33
opposition	10457	Jul	25	04:01	11°♒40'37	0°00'39
min. Earth dist.	10457	Jul	25	14:06	11°♒39'31	17.34137 AU
desc. node	10457	Sep	06	11:23	10°♒02'10
direct	10457	Oct	09	02:13	9°♒34'47
evening set	10458	Jan	12	06:01	13°♒02'57
conjunction	10458	Jan	28	17:52	14°♒04'34	-0°01'57
minimum elong	10458	Jan	28	17:53	14°♒04'34	0°01'33
behind sun begin	10458	Jan	28	11:09	14°♒03'32
behind sun end	10458	Jan	29	00:36	14°♒05'35
max. Earth dist.	10458	Jan	28	06:30	14°♒02'48	19.35017 AU
	10458	Feb	12	13:09	15°♒
morning rise	10458	Feb	14	03:00	15°♒05'49
retrograde	10458	May	17	06:07	18°♒28'30
opposition	10458	Jul	30	04:18	16°♒25'46	-0°04'43
min. Earth dist.	10458	Jul	30	14:16	16°♒24'41	17.36068 AU
	10458	Sep	04	08:57	15°℞♒
direct	10458	Oct	14	03:40	14°♒20'02
	10458	Nov	22	03:51	15°♒
evening set	10459	Jan	17	09:17	17°♒48'04
conjunction	10459	Feb	02	20:15	18°♒49'32	-0°06'45
minimum elong	10459	Feb	02	20:15	18°♒49'32	0°06'23
behind sun begin	10459	Feb	02	13:56	18°♒48'34
behind sun end	10459	Feb	03	02:35	18°♒50'30
max. Earth dist.	10459	Feb	02	08:37	18°♒47'43	19.37266 AU
morning rise	10459	Feb	19	04:44	19°♒50'37

retrograde	10459 May 22 06:40	23°♒12'56	
opposition	10459 Aug 04 04:25	21°♒10'23	-0°10'01
min. Earth dist.	10459 Aug 04 13:18	21°♒09'26	17.38608 AU
direct	10459 Oct 19 05:56	19°♒04'48	
evening set	10460 Jan 22 12:11	22°♒32'38	
conjunction	10460 Feb 07 22:32	23°♒33'56	-0°11'27
minimum elong	10460 Feb 07 22:32	23°♒33'56	0°11'06
behind sun begin	10460 Feb 07 17:33	23°♒33'10	
behind sun end	10460 Feb 08 03:30	23°♒34'41	
max. Earth dist.	10460 Feb 07 12:47	23°♒32'25	19.40077 AU
morning rise	10460 Feb 24 05:59	24°♒34'50	
retrograde	10460 May 26 05:57	27°♒56'41	
opposition	10460 Aug 08 04:27	25°♒54'24	-0°15'15
min. Earth dist.	10460 Aug 08 13:05	25°♒53'27	17.41667 AU
direct	10460 Oct 23 07:25	23°♒48'59	
evening set	10461 Jan 26 14:49	27°♒16'31	
conjunction	10461 Feb 12 00:08	28°♒17'36	-0°16'05
minimum elong	10461 Feb 12 00:08	28°♒17'36	0°15'47
behind sun begin	10461 Feb 11 23:07	28°♒17'27	
behind sun end	10461 Feb 12 01:09	28°♒17'45	
max. Earth dist.	10461 Feb 11 13:59	28°♒16'01	19.43381 AU
morning rise	10461 Feb 28 06:49	29°♒18'18	
	10461 Mar 11 22:22	0°♓	
retrograde	10461 May 31 05:17	2°♓39'41	
opposition	10461 Aug 13 04:31	0°♓37'36	-0°20'22
min. Earth dist.	10461 Aug 13 12:29	0°♓36'44	17.45201 AU
	10461 Aug 27 22:28	30°℞♒	
direct	10461 Oct 28 09:09	28°♒32'23	
	10461 Dec 26 09:44	0°♓	
evening set	10462 Jan 31 16:34	1°♓59'29	
conjunction	10462 Feb 17 01:09	3°♓00'22	-0°20'36
minimum elong	10462 Feb 17 01:08	3°♓00'22	0°20'20
max. Earth dist.	10462 Feb 16 16:45	2°♓59'04	19.47117 AU
morning rise	10462 Mar 05 06:46	4°♓00'49	
retrograde	10462 Jun 05 03:47	7°♓21'41	
opposition	10462 Aug 18 04:25	5°♓19'49	-0°25'19
min. Earth dist.	10462 Aug 18 11:41	5°♓19'02	17.49124 AU
direct	10462 Nov 02 11:38	3°♓14'48	
evening set	10463 Feb 05 17:56	6°♓41'24	
conjunction	10463 Feb 22 01:28	7°♓42'01	-0°24'58
minimum elong	10463 Feb 22 01:27	7°♓42'01	0°24'43
max. Earth dist.	10463 Feb 21 16:51	7°♓40'41	19.51222 AU
morning rise	10463 Mar 10 06:16	8°♓42'14	
retrograde	10463 Jun 10 00:52	12°♓02'31	
opposition	10463 Aug 23 03:56	10°♓00'50	-0°30'06
min. Earth dist.	10463 Aug 23 10:55	10°♓00'05	17.53408 AU
direct	10463 Nov 07 12:51	7°♓56'02	
evening set	10464 Feb 10 18:28	11°♓22'01	
conjunction	10464 Feb 27 01:13	12°♓22'23	-0°29'09
minimum elong	10464 Feb 27 01:12	12°♓22'23	0°28'58
max. Earth dist.	10464 Feb 26 18:00	12°♓21'16	19.55660 AU
morning rise	10464 Mar 14 05:01	13°♓22'21	
retrograde	10464 Jun 13 22:29	16°♓41'59	
opposition	10464 Aug 27 03:15	14°♓40'30	-0°34'39
min. Earth dist.	10464 Aug 27 09:12	14°♓39'52	17.57982 AU
direct	10464 Nov 11 15:36	12°♓35'55	
evening set	10465 Feb 14 18:19	16°♓01'12	
conjunction	10465 Mar 02 23:59	17°♓01'18	-0°33'08
minimum elong	10465 Mar 02 23:59	17°♓01'17	0°32'58
max. Earth dist.	10465 Mar 02 16:56	17°♓00'12	19.60371 AU
morning rise	10465 Mar 19 02:55	18°♓00'59	
retrograde	10465 Jun 18 17:42	21°♓19'58	
opposition	10465 Sep 01 02:14	19°♓18'39	-0°38'57
min. Earth dist.	10465 Sep 01 08:05	19°♓18'02	17.62837 AU
direct	10465 Nov 16 16:00	17°♓14'16	
evening set	10466 Feb 19 17:11	20°♓38'47	
conjunction	10466 Mar 07 22:00	21°♓38'35	-0°36'53
minimum elong	10466 Mar 07 22:00	21°♓38'35	0°36'46
max. Earth dist.	10466 Mar 07 16:10	21°♓37'41	19.65359 AU
morning rise	10466 Mar 23 24:00	22°♓37'59	
retrograde	10466 Jun 23 14:12	25°♓56'17	
opposition	10466 Sep 06 00:39	23°♓55'07	-0°42'59
min. Earth dist.	10466 Sep 06 05:01	23°♓54'40	17.67943 AU
direct	10466 Nov 21 18:02	21°♓50'58	
evening set	10467 Feb 24 15:08	25°♓14'37	
conjunction	10467 Mar 12 19:00	26°♓14'07	-0°40'23
minimum elong	10467 Mar 12 18:59	26°♓14'07	0°40'18
max. Earth dist.	10467 Mar 12 13:52	26°♓13'20	19.70588 AU
morning rise	10467 Mar 28 20:09	27°♓13'14	
	10467 May 25 14:52	0°♈	
retrograde	10467 Jun 28 07:49	0°♈30'49	
	10467 Aug 01 21:59	30°℞♓	
opposition	10467 Sep 10 22:40	28°♓29'48	-0°46'43
min. Earth dist.	10467 Sep 11 03:03	28°♓29'20	17.73302 AU
direct	10467 Nov 26 16:55	26°♓25'51	
evening set	10468 Feb 29 12:09	29°♓48'36	
	10468 Mar 03 15:42	0°♈	
conjunction	10468 Mar 16 15:07	0°♈47'48	-0°43'36
minimum elong	10468 Mar 16 15:06	0°♈47'48	0°43'34
max. Earth dist.	10468 Mar 16 11:01	0°♈47'10	19.76072 AU
morning rise	10468 Apr 01 15:26	1°♈46'37	
retrograde	10468 Jul 02 03:00	5°♈03'27	
opposition	10468 Sep 14 19:57	3°♈02'35	-0°50'08
min. Earth dist.	10468 Sep 14 22:28	3°♈02'19	17.78905 AU
direct	10468 Nov 30 17:39	0°♈58'52	
evening set	10469 Mar 05 08:13	4°♈20'40	
conjunction	10469 Mar 21 10:15	5°♈19'33	-0°46'31
minimum elong	10469 Mar 21 10:15	5°♈19'33	0°46'32
max. Earth dist.	10469 Mar 21 07:31	5°♈19'08	19.81804 AU
morning rise	10469 Apr 06 09:42	6°♈18'05	
retrograde	10469 Jul 06 19:13	9°♈34'11	
opposition	10469 Sep 19 16:58	7°♈33'28	-0°53'12
min. Earth dist.	10469 Sep 19 19:18	7°♈33'13	17.84784 AU
direct	10469 Dec 05 15:00	5°♈30'01	
evening set	10470 Mar 10 03:08	8°♈50'49	
conjunction	10470 Mar 26 04:15	9°♈49'23	-0°49'08
minimum elong	10470 Mar 26 04:14	9°♈49'23	0°49'10
max. Earth dist.	10470 Mar 26 02:30	9°♈49'08	19.87820 AU
morning rise	10470 Apr 11 02:59	10°♈47'38	
retrograde	10470 Jul 11 13:16	14°♈03'01	
opposition	10470 Sep 24 13:12	12°♈02'29	-0°55'55
min. Earth dist.	10470 Sep 24 13:17	12°♈02'28	17.90929 AU
direct	10470 Dec 10 13:29	9°♈59'20	
evening set	10471 Mar 14 21:13	13°♈19'08	
conjunction	10471 Mar 30 21:33	14°♈17'25	-0°51'26
minimum elong	10471 Mar 30 21:32	14°♈17'25	0°51'31
max. Earth dist.	10471 Mar 30 21:32	14°♈17'24	19.94088 AU
morning rise	10471 Apr 15 19:27	15°♈15'21	
retrograde	10471 Jul 16 04:32	18°♈30'02	
opposition	10471 Sep 29 08:52	16°♈29'43	-0°58'17
min. Earth dist.	10471 Sep 29 08:51	16°♈29'43	17.97319 AU
direct	10471 Dec 15 08:59	14°♈26'55	

evening set	10472 Mar 18 14:27	17°♈45'43	
conjunction	10472 Apr 03 13:53	18°♈43'41	-0°53'24
minimum elong	10472 Apr 03 13:53	18°♈43'41	0°53'31
max. Earth dist.	10472 Apr 03 14:27	18°♈43'46	20.00584 AU
morning rise	10472 Apr 19 11:13	19°♈41'21	
retrograde	10472 Jul 19 21:50	22°♈55'21	
opposition	10472 Oct 03 03:58	20°♈55'16	-1°00'16
min. Earth dist.	10472 Oct 03 01:47	20°♈55'29	18.03894 AU
direct	10472 Dec 19 05:22	18°♈52'50	
evening set	10473 Mar 23 06:36	22°♈10'37	
conjunction	10473 Apr 08 05:21	23°♈08'18	-0°55'02
minimum elong	10473 Apr 08 05:20	23°♈08'18	0°55'12
max. Earth dist.	10473 Apr 08 07:49	23°♈08'40	20.07221 AU
morning rise	10473 Apr 24 01:54	24°♈05'41	
retrograde	10473 Jul 24 12:10	27°♈19'00	
opposition	10473 Oct 07 22:43	25°♈19'10	-1°01'53
min. Earth dist.	10473 Oct 07 20:29	25°♈19'24	18.10584 AU
direct	10473 Dec 23 23:31	23°♈17'09	
evening set	10474 Mar 27 22:03	26°♈33'54	
conjunction	10474 Apr 12 19:57	27°♈31'16	-0°56'21
minimum elong	10474 Apr 12 19:57	27°♈31'16	0°56'33
max. Earth dist.	10474 Apr 12 22:39	27°♈31'41	20.13945 AU
morning rise	10474 Apr 28 16:04	28°♈28'23	
	10474 May 26 12:48	0°♉	
retrograde	10474 Jul 29 04:50	1°♉41'03	
	10474 Oct 05 04:11	30°℞♈	
opposition	10474 Oct 12 16:36	29°♈41'27	-1°03'09
min. Earth dist.	10474 Oct 12 12:30	29°♈41'52	18.17319 AU
direct	10474 Dec 28 18:18	27°♈39'49	
	10475 Mar 16 04:55	0°♉	
evening set	10475 Apr 01 12:33	0°♉55'32	
conjunction	10475 Apr 17 09:54	1°♉52'37	-0°57'20
minimum elong	10475 Apr 17 09:54	1°♉52'37	0°57'33
max. Earth dist.	10475 Apr 17 14:22	1°♉53'17	20.20663 AU
morning rise	10475 May 03 05:22	2°♉49'28	
retrograde	10475 Aug 02 17:54	6°♉01'28	
opposition	10475 Oct 17 10:11	4°♉02'06	-1°04'02
min. Earth dist.	10475 Oct 17 06:13	4°♉02'30	18.24011 AU
direct	10476 Jan 02 11:29	2°♉00'52	
evening set	10476 Apr 05 02:22	5°♉15'31	
conjunction	10476 Apr 20 22:55	6°♉12'19	-0°57'59
minimum elong	10476 Apr 20 22:55	6°♉12'19	0°58'16
max. Earth dist.	10476 Apr 21 03:14	6°♉12'58	20.27312 AU
morning rise	10476 May 06 18:03	7°♉08'55	
retrograde	10476 Aug 06 09:24	10°♉20'17	
opposition	10476 Oct 21 03:04	8°♉21'06	-1°04'33
min. Earth dist.	10476 Oct 20 21:28	8°♉21'41	18.30601 AU
direct	10477 Jan 06 05:33	6°♉20'13	
evening set	10477 Apr 09 15:17	9°♉33'50	
conjunction	10477 Apr 25 11:23	10°♉30'22	-0°58'18
minimum elong	10477 Apr 25 11:23	10°♉30'22	0°58'36
max. Earth dist.	10477 Apr 25 17:24	10°♉31'16	20.33821 AU
morning rise	10477 May 11 05:56	11°♉26'43	
retrograde	10477 Aug 10 21:08	14°♉37'27	
opposition	10477 Oct 25 19:33	12°♉38'26	-1°04'43
min. Earth dist.	10477 Oct 25 14:05	12°♉39'00	18.37024 AU
direct	10478 Jan 10 21:37	10°♉37'54	
evening set	10478 Apr 14 03:22	13°♉50'27	
conjunction	10478 Apr 29 22:49	14°♉46'43	-0°58'18
minimum elong	10478 Apr 29 22:49	14°♉46'43	0°58'38
max. Earth dist.	10478 Apr 30 04:28	14°♉47'34	20.40143 AU
	10478 May 03 15:42	15°♉	
morning rise	10478 May 15 17:13	15°♉42'49	
retrograde	10478 Aug 15 11:01	18°♉52'57	
opposition	10478 Oct 30 11:15	16°♉54'04	-1°04'31
min. Earth dist.	10478 Oct 30 04:28	16°♉54'45	18.43234 AU
	10478 Dec 30 20:59	15°℞♉	
direct	10479 Jan 15 14:40	14°♉53'50	
	10479 Jan 31 04:16	15°♉	
evening set	10479 Apr 18 14:40	18°♉05'20	
conjunction	10479 May 04 09:49	19°♉01'21	-0°57'59
minimum elong	10479 May 04 09:49	19°♉01'21	0°58'20
max. Earth dist.	10479 May 04 17:02	19°♉02'25	20.46220 AU
morning rise	10479 May 20 03:45	19°♉57'13	
retrograde	10479 Aug 19 21:08	23°♉06'43	
opposition	10479 Nov 04 02:19	21°♉07'57	-1°03'59
min. Earth dist.	10479 Nov 03 19:41	21°♉08'38	18.49178 AU
direct	10480 Jan 20 05:43	19°♉07'59	
evening set	10480 Apr 22 01:15	22°♉18'27	
conjunction	10480 May 07 19:51	23°♉14'13	-0°57'21
minimum elong	10480 May 07 19:51	23°♉14'13	0°57'44
max. Earth dist.	10480 May 08 02:37	23°♉15'13	20.52042 AU
morning rise	10480 May 23 13:44	24°♉09'52	
retrograde	10480 Aug 23 09:13	27°♉18'46	
opposition	10480 Nov 07 16:48	25°♉20'04	-1°03'06
min. Earth dist.	10480 Nov 07 08:58	25°♉20'52	18.54875 AU
direct	10481 Jan 23 20:55	23°♉20'20	
evening set	10481 Apr 26 10:42	26°♉29'45	
conjunction	10481 May 12 05:07	27°♉25'18	-0°56'25
minimum elong	10481 May 12 05:07	27°♉25'18	0°56'50
max. Earth dist.	10481 May 12 13:46	27°♉26'35	20.57611 AU
morning rise	10481 May 27 22:42	28°♉20'45	
	10481 Jun 28 07:07	0°♊	
retrograde	10481 Aug 27 18:26	1°♊29'05	
	10481 Oct 30 23:19	30°℞♉	
opposition	10481 Nov 12 06:44	29°♉30'25	-1°01'53
min. Earth dist.	10481 Nov 11 22:42	29°♉31'14	18.60325 AU
direct	10482 Jan 28 10:45	27°♉30'55	
	10482 Apr 19 03:12	0°♊	
evening set	10482 Apr 30 19:38	0°♊39'19	
conjunction	10482 May 16 13:37	1°♊34'38	-0°55'11
minimum elong	10482 May 16 13:37	1°♊34'38	0°55'36
max. Earth dist.	10482 May 16 22:00	1°♊35'52	20.62960 AU
morning rise	10482 Jun 01 07:18	2°♊29'55	
retrograde	10482 Sep 01 04:45	5°♊37'42	
opposition	10482 Nov 16 19:46	3°♊39'04	-1°00'20
min. Earth dist.	10482 Nov 16 10:35	3°♊40'00	18.65584 AU
direct	10483 Feb 01 23:32	1°♊39'46	
evening set	10483 May 05 03:44	4°♊47'14	
conjunction	10483 May 20 21:40	5°♊42'21	-0°53'40
minimum elong	10483 May 20 21:40	5°♊42'21	0°54'08
max. Earth dist.	10483 May 21 07:57	5°♊43'52	20.68116 AU
morning rise	10483 Jun 05 15:07	6°♊37'27	
retrograde	10483 Sep 05 13:42	9°♊44'44	
opposition	10483 Nov 21 08:26	7°♊46'10	-0°58'30
min. Earth dist.	10483 Nov 20 22:45	7°♊47'09	18.70644 AU
direct	10484 Feb 06 11:49	5°♊47'07	
evening set	10484 May 08 11:18	8°♊53'41	
conjunction	10484 May 24 04:51	9°♊48'37	-0°51'53
minimum elong	10484 May 24 04:51	9°♊48'37	0°52'21
max. Earth dist.	10484 May 24 14:53	9°♊50'05	20.73088 AU

morning rise	10484 Jun 08 22:29	10°♊43'33	
retrograde	10484 Sep 08 23:01	13°♊50'25	
opposition	10484 Nov 24 20:32	11°♊51'55	-0°56'22
min. Earth dist.	10484 Nov 24 09:45	11°♊53'00	18.75526 AU
direct	10485 Feb 09 22:41	9°♊53'07	
evening set	10485 May 12 18:11	12°♊58'50	
conjunction	10485 May 28 11:48	13°♊53'36	-0°49'50
minimum elong	10485 May 28 11:48	13°♊53'36	0°50'20
max. Earth dist.	10485 May 28 23:42	13°♊55'20	20.77863 AU
morning rise	10485 Jun 13 05:21	14°♊48'24	
retrograde	10485 Sep 13 07:43	17°♊54'52	
opposition	10485 Nov 29 08:06	15°♊56'28	-0°53'57
min. Earth dist.	10485 Nov 28 20:47	15°♊57'36	18.80183 AU
direct	10486 Feb 14 09:29	13°♊57'57	
evening set	10486 May 17 00:40	17°♊02'53	
conjunction	10486 Jun 01 18:05	17°♊57'30	-0°47'34
minimum elong	10486 Jun 01 18:05	17°♊57'30	0°48'04
max. Earth dist.	10486 Jun 02 05:31	17°♊59'10	20.82403 AU
morning rise	10486 Jun 17 11:58	18°♊52'11	
retrograde	10486 Sep 17 16:45	21°♊58'20	
opposition	10486 Dec 03 19:12	20°♊00'01	-0°51'17
min. Earth dist.	10486 Dec 03 07:13	20°♊01'13	18.84589 AU
direct	10487 Feb 18 18:50	18°♊01'45	
evening set	10487 May 21 06:38	21°♊05'58	
conjunction	10487 Jun 06 00:13	22°♊00'28	-0°45'03
minimum elong	10487 Jun 06 00:13	22°♊00'28	0°45'33
max. Earth dist.	10487 Jun 06 13:15	22°♊02'22	20.86651 AU
morning rise	10487 Jun 21 18:05	22°♊55'03	
retrograde	10487 Sep 22 00:50	26°♊00'54	
opposition	10487 Dec 08 05:51	24°♊02'42	-0°48'23
min. Earth dist.	10487 Dec 07 17:29	24°♊03'57	18.88667 AU
direct	10488 Feb 23 04:24	22°♊04'43	
evening set	10488 May 24 12:26	25°♊08'16	
conjunction	10488 Jun 09 05:53	26°♊02'39	-0°42'20
minimum elong	10488 Jun 09 05:53	26°♊02'39	0°42'51
max. Earth dist.	10488 Jun 09 18:13	26°♊04'26	20.90564 AU
morning rise	10488 Jun 25 00:09	26°♊57'08	
	10488 Sep 14 21:32	0°♋	
retrograde	10488 Sep 25 09:49	0°♋02'46	
	10488 Oct 06 00:38	30°℞♊	
opposition	10488 Dec 11 16:17	28°♊04'40	-0°45'15
min. Earth dist.	10488 Dec 11 03:37	28°♊05'56	18.92399 AU
direct	10489 Feb 26 12:42	26°♊06'54	
evening set	10489 May 28 17:40	29°♊09'51	
	10489 Jun 12 06:47	0°♋	
conjunction	10489 Jun 13 11:23	0°♋04'09	-0°39'24
minimum elong	10489 Jun 13 11:23	0°♋04'09	0°39'55
max. Earth dist.	10489 Jun 14 01:08	0°♋06'08	20.94090 AU
morning rise	10489 Jun 29 05:47	0°♋58'33	
retrograde	10489 Sep 29 17:32	4°♋04'01	
opposition	10489 Dec 16 02:19	2°♋05'59	-0°41'54
min. Earth dist.	10489 Dec 15 13:25	2°♋07'16	18.95703 AU
direct	10490 Mar 02 21:21	0°♋08'28	
evening set	10490 Jun 01 23:00	3°♋10'51	
conjunction	10490 Jun 17 16:41	4°♋05'03	-0°36'18
minimum elong	10490 Jun 17 16:41	4°♋05'03	0°36'50
max. Earth dist.	10490 Jun 18 05:22	4°♋06'53	20.97169 AU
morning rise	10490 Jul 03 11:34	4°♋59'25	
retrograde	10490 Oct 04 02:05	8°♋04'44	
opposition	10490 Dec 20 11:54	6°♋06'44	-0°38'22
min. Earth dist.	10490 Dec 19 23:14	6°♋08'00	18.98546 AU
direct	10491 Mar 07 04:28	4°♋09'24	
evening set	10491 Jun 06 03:58	7°♋11'18	
conjunction	10491 Jun 21 22:01	8°♋05'26	-0°33'02
minimum elong	10491 Jun 21 22:01	8°♋05'27	0°33'32
max. Earth dist.	10491 Jun 22 11:42	8°♋07'25	20.99752 AU
morning rise	10491 Jul 07 17:06	8°♋59'46	
retrograde	10491 Oct 08 09:40	12°♋04'57	
opposition	10491 Dec 24 21:21	10°♋07'00	-0°34'39
min. Earth dist.	10491 Dec 24 08:34	10°♋08'16	19.00858 AU
direct	10492 Mar 10 12:56	8°♋09'48	
evening set	10492 Jun 09 08:48	11°♋11'14	
conjunction	10492 Jun 25 02:55	12°♋05'19	-0°29'36
minimum elong	10492 Jun 25 02:56	12°♋05'19	0°30'08
max. Earth dist.	10492 Jun 25 15:24	12°♋07'07	21.01799 AU
morning rise	10492 Jul 10 22:34	12°♋59'37	
retrograde	10492 Oct 11 17:46	16°♋04'45	
opposition	10492 Dec 28 06:36	14°♋06'44	-0°30'47
min. Earth dist.	10492 Dec 27 18:14	14°♋07'58	19.02639 AU
direct	10493 Mar 14 18:58	12°♋09'38	
evening set	10493 Jun 13 13:22	15°♋10'38	
conjunction	10493 Jun 29 07:59	16°♋04'42	-0°26'02
minimum elong	10493 Jun 29 07:59	16°♋04'42	0°26'33
max. Earth dist.	10493 Jun 29 21:23	16°♋06'38	21.03313 AU
morning rise	10493 Jul 15 03:56	16°♋59'00	
retrograde	10493 Oct 16 01:11	20°♋04'03	
opposition	10494 Jan 01 15:18	18°♋05'59	-0°26'46
min. Earth dist.	10494 Jan 01 02:49	18°♋07'13	19.03885 AU
direct	10494 Mar 19 03:19	16°♋08'55	
evening set	10494 Jun 17 17:55	19°♋09'33	
conjunction	10494 Jul 03 12:43	20°♋03'36	-0°22'21
minimum elong	10494 Jul 03 12:43	20°♋03'36	0°22'51
max. Earth dist.	10494 Jul 04 00:55	20°♋05'21	21.04316 AU
morning rise	10494 Jul 19 09:21	20°♋57'54	
retrograde	10494 Oct 20 09:01	24°♋02'56	
opposition	10495 Jan 05 23:51	22°♋04'45	-0°22'38
min. Earth dist.	10495 Jan 05 11:53	22°♋05'57	19.04656 AU
direct	10495 Mar 23 08:35	20°♋07'42	
evening set	10495 Jun 21 22:06	23°♋08'01	
conjunction	10495 Jul 07 17:25	24°♋02'05	-0°18'34
minimum elong	10495 Jul 07 17:25	24°♋02'05	0°19'04
max. Earth dist.	10495 Jul 08 06:43	24°♋03'59	21.04861 AU
morning rise	10495 Jul 23 14:23	24°♋56'24	
retrograde	10495 Oct 24 16:14	28°♋01'27	
opposition	10496 Jan 10 08:03	26°♋03'09	-0°18'23
min. Earth dist.	10496 Jan 09 19:40	26°♋04'23	19.04988 AU
direct	10496 Mar 26 16:22	24°♋06'07	
evening set	10496 Jun 25 02:30	27°♋06'11	
conjunction	10496 Jul 10 22:03	28°♋00'15	-0°14'41
minimum elong	10496 Jul 10 22:03	28°♋00'15	0°15'10
behind sun begin	10496 Jul 10 19:43	27°♋59'56	
behind sun end	10496 Jul 11 00:23	28°♋00'35	
max. Earth dist.	10496 Jul 11 10:18	28°♋02'00	21.05006 AU
morning rise	10496 Jul 26 19:44	28°♋54'37	
	10496 Aug 16 06:36	0°♌	
retrograde	10496 Oct 28 00:26	1°♌59'45	
opposition	10497 Jan 13 16:13	0°♌01'20	-0°14'03
min. Earth dist.	10497 Jan 13 04:16	0°♌02'32	19.04956 AU
	10497 Jan 14 05:32	30°℞♋	
direct	10497 Mar 30 21:31	28°♋04'17	
	10497 Jun 09 04:24	0°♌	
evening set	10497 Jun 29 06:40	1°♌04'11	

conjunction	10497 Jul	15	02:52	1°♌58'18	-0°10'45
minimum elong	10497 Jul	15	02:51	1°♌58'18	0°11'13
behind sun begin	10497 Jul	14	21:58	1°♌57'37	
behind sun end	10497 Jul	15	07:45	1°♌58'59	
max. Earth dist.	10497 Jul	15	16:12	2°♌00'12	21.04788 AU
morning rise	10497 Jul	31	00:58	2°♌52'43	
retrograde	10497 Nov	01	07:58	5°♌57'58	
min. Earth dist.	10498 Jan	17	11:39	4°♌00'42	19.04552 AU
opposition	10498 Jan	18	00:06	3°♌59'27	-0°09'39
direct	10498 Apr	04	04:17	2°♌02'25	
evening set	10498 Jul	03	11:14	5°♌02'13	
conjunction	10498 Jul	19	07:43	5°♌56'23	-0°06'46
minimum elong	10498 Jul	19	07:43	5°♌56'22	0°07'12
behind sun begin	10498 Jul	19	01:39	5°♌55'32	
behind sun end	10498 Jul	19	13:47	5°♌57'13	
max. Earth dist.	10498 Jul	19	19:51	5°♌58'06	21.04210 AU
morning rise	10498 Aug	04	06:35	6°♌50'52	
retrograde	10498 Nov	05	16:28	9°♌56'19	
opposition	10499 Jan	22	07:55	7°♌57'42	-0°05'13
min. Earth dist.	10499 Jan	21	20:07	7°♌58'52	19.03803 AU
direct	10499 Apr	08	09:23	6°♌00'39	
evening set	10499 Jul	07	15:47	9°♌00'26	
conjunction	10499 Jul	23	12:57	9°♌54'40	-0°02'45
minimum elong	10499 Jul	23	12:57	9°♌54'40	0°03'11
behind sun begin	10499 Jul	23	06:24	9°♌53'45	
behind sun end	10499 Jul	23	19:31	9°♌55'35	
max. Earth dist.	10499 Jul	24	02:03	9°♌56'32	21.03284 AU
morning rise	10499 Aug	08	12:16	10°♌49'14	
retrograde	10499 Nov	10	00:38	13°♌54'56	
opposition	10500 Jan	26	15:47	11°♌56'14	-0°00'45
min. Earth dist.	10500 Jan	26	03:31	11°♌57'28	19.02689 AU
asc. node	10500 Mar	27	04:23	10°♌06'00	
direct	10500 Apr	12	15:39	9°♌59'12	
evening set	10500 Jul	11	20:38	12°♌59'01	
conjunction	10500 Jul	27	18:11	13°♌53'20	0°01'24
minimum elong	10500 Jul	27	18:11	13°♌53'20	0°01'00
behind sun begin	10500 Jul	27	11:36	13°♌52'25	
behind sun end	10500 Jul	28	00:47	13°♌54'15	
max. Earth dist.	10500 Jul	28	06:04	13°♌55'02	21.01994 AU
morning rise	10500 Aug	12	18:20	14°♌48'01	
	10500 Aug	16	08:29	15°♌	
retrograde	10500 Nov	14	09:22	17°♌54'02	
opposition	10501 Jan	30	23:51	15°♌55'13	0°03'44
min. Earth dist.	10501 Jan	30	12:27	15°♌56'22	19.01215 AU
	10501 Feb	23	19:47	15°℞♌	
direct	10501 Apr	16	20:52	13°♌58'12	
	10501 Jun	05	22:51	15°♌	
evening set	10501 Jul	16	01:49	16°♌58'08	
conjunction	10501 Aug	01	00:08	17°♌52'34	0°05'29
minimum elong	10501 Aug	01	00:07	17°♌52'34	0°05'05
behind sun begin	10501 Jul	31	17:43	17°♌51'40	
behind sun end	10501 Aug	01	06:32	17°♌53'28	
max. Earth dist.	10501 Aug	01	12:45	17°♌54'22	21.00326 AU
morning rise	10501 Aug	17	00:46	18°♌47'21	
retrograde	10501 Nov	18	18:41	21°♌53'42	
opposition	10502 Feb	04	07:41	19°♌54'50	0°08'12
min. Earth dist.	10502 Feb	03	20:07	19°♌55'59	18.99339 AU
direct	10502 Apr	21	03:14	17°♌57'47	
evening set	10502 Jul	20	07:36	20°♌57'55	
conjunction	10502 Aug	05	06:20	21°♌52'28	0°09'29
minimum elong	10502 Aug	05	06:19	21°♌52'28	0°09'07
behind sun begin	10502 Aug	05	00:42	21°♌51'41	
behind sun end	10502 Aug	05	11:57	21°♌53'15	
max. Earth dist.	10502 Aug	05	17:23	21°♌54'03	20.98243 AU
morning rise	10502 Aug	21	07:48	22°♌47'24	
retrograde	10502 Nov	23	03:30	25°♌54'09	
opposition	10503 Feb	08	15:56	23°♌55'11	0°12'39
min. Earth dist.	10503 Feb	08	05:41	23°♌56'13	18.97043 AU
direct	10503 Apr	25	08:26	21°♌58'06	
evening set	10503 Jul	24	13:35	24°♌58'30	
conjunction	10503 Aug	09	13:04	25°♌53'12	0°13'28
minimum elong	10503 Aug	09	13:04	25°♌53'12	0°13'09
behind sun begin	10503 Aug	09	09:08	25°♌52'39	
behind sun end	10503 Aug	09	17:00	25°♌53'45	
max. Earth dist.	10503 Aug	10	00:35	25°♌54'50	20.95716 AU
morning rise	10503 Aug	25	15:02	26°♌48'16	
retrograde	10503 Nov	27	14:07	29°♌55'28	
opposition	10504 Feb	13	00:17	27°♌56'23	0°17'03
min. Earth dist.	10504 Feb	12	14:01	27°♌57'25	18.94273 AU
direct	10504 Apr	28	15:35	25°♌59'14	
evening set	10504 Jul	27	20:23	28°♌59'58	
conjunction	10504 Aug	12	20:19	29°♌54'48	0°17'25
minimum elong	10504 Aug	12	20:19	29°♌54'48	0°17'06
max. Earth dist.	10504 Aug	13	05:57	29°♌56'11	20.92703 AU
	10504 Aug	14	08:25	0°♍	
morning rise	10504 Aug	28	23:09	0°♍50'03	
retrograde	10504 Nov	30	23:18	3°♍57'43	
opposition	10505 Feb	16	08:56	1°♍58'29	0°21'23
min. Earth dist.	10505 Feb	16	00:18	1°♍59'22	18.91017 AU
direct	10505 May	02	20:54	0°♍01'14	
evening set	10505 Aug	01	03:29	3°♍02'20	
conjunction	10505 Aug	17	04:17	3°♍57'20	0°21'17
minimum elong	10505 Aug	17	04:17	3°♍57'20	0°21'01
max. Earth dist.	10505 Aug	17	13:57	3°♍58'43	20.89190 AU
morning rise	10505 Sep	02	07:41	4°♍52'45	
retrograde	10505 Dec	05	10:38	8°♍00'54	
opposition	10506 Feb	20	17:39	6°♍01'30	0°25'38
min. Earth dist.	10506 Feb	20	09:08	6°♍02'22	18.87242 AU
direct	10506 May	07	05:09	4°♍04'05	
evening set	10506 Aug	05	11:17	7°♍05'36	
conjunction	10506 Aug	21	12:35	8°♍00'48	0°25'04
minimum elong	10506 Aug	21	12:35	8°♍00'48	0°24'50
max. Earth dist.	10506 Aug	21	20:12	8°♍01'53	20.85174 AU
morning rise	10506 Sep	06	16:49	8°♍56'24	
retrograde	10506 Dec	09	20:21	12°♍05'04	
opposition	10507 Feb	25	02:39	10°♍05'27	0°29'46
min. Earth dist.	10507 Feb	24	19:52	10°♍06'08	18.83000 AU
direct	10507 May	11	11:02	8°♍07'50	
evening set	10507 Aug	09	19:22	11°♍09'49	
conjunction	10507 Aug	25	21:33	12°♍05'12	0°28'45
minimum elong	10507 Aug	25	21:33	12°♍05'12	0°28'33
max. Earth dist.	10507 Aug	26	05:18	12°♍06'19	20.80725 AU
morning rise	10507 Sep	11	02:21	13°♍01'00	
retrograde	10507 Dec	14	07:56	16°♍10'12	
opposition	10508 Feb	29	11:47	14°♍10'21	0°33'47
min. Earth dist.	10508 Feb	29	04:53	14°♍11'03	18.78352 AU
direct	10508 May	14	20:07	12°♍12'30	
evening set	10508 Aug	13	04:06	15°♍15'01	
conjunction	10508 Aug	29	06:50	16°♍10'36	0°32'18
minimum elong	10508 Aug	29	06:50	16°♍10'36	0°32'08
max. Earth dist.	10508 Aug	29	12:49	16°♍11'28	20.75903 AU
morning rise	10508 Sep	14	12:31	17°♍06'36	
retrograde	10508 Dec	17	18:39	20°♍16'23	

opposition	10509 Mar 04 21:19	18°♍16'17	0°37'39
min. Earth dist.	10509 Mar 04 16:03	18°♍16'49	18.73376 AU
direct	10509 May 19 02:43	16°♍18'11	
evening set	10509 Aug 17 13:24	19°♍21'17	
conjunction	10509 Sep 02 17:00	20°♍17'06	0°35'42
minimum elong	10509 Sep 02 17:00	20°♍17'06	0°35'34
max. Earth dist.	10509 Sep 02 23:09	20°♍18'00	20.70783 AU
morning rise	10509 Sep 18 23:15	21°♍13'20	
retrograde	10509 Dec 22 06:42	24°♍23'42	
opposition	10510 Mar 09 06:47	22°♍23'22	0°41'20
min. Earth dist.	10510 Mar 09 01:19	22°♍23'56	18.68125 AU
direct	10510 May 23 12:06	20°♍25'01	
evening set	10510 Aug 21 23:29	23°♍28'47	
conjunction	10510 Sep 07 03:39	24°♍24'49	0°38'56
minimum elong	10510 Sep 07 03:38	24°♍24'49	0°38'50
max. Earth dist.	10510 Sep 07 08:06	24°♍25'28	20.65414 AU
morning rise	10510 Sep 23 10:42	25°♍21'16	
retrograde	10510 Dec 26 18:20	28°♍32'17	
opposition	10511 Mar 13 16:55	26°♍31'43	0°44'49
min. Earth dist.	10511 Mar 13 13:02	26°♍32'07	18.62660 AU
direct	10511 May 27 19:39	24°♍33'07	
evening set	10511 Aug 26 09:58	27°♍37'35	
conjunction	10511 Sep 11 15:00	28°♍33'52	0°41'58
minimum elong	10511 Sep 11 15:00	28°♍33'52	0°41'54
max. Earth dist.	10511 Sep 11 19:41	28°♍34'33	20.59857 AU
morning rise	10511 Sep 27 22:37	29°♍30'34	
	10511 Oct 06 17:09	0°♎	
retrograde	10511 Dec 31 07:31	2°♎42'15	
opposition	10512 Mar 17 03:19	0°♎41'28	0°48'06
min. Earth dist.	10512 Mar 16 23:02	0°♎41'55	18.57018 AU
	10512 Apr 03 04:35	30°℞♍	
direct	10512 May 31 05:33	28°♍42'37	
	10512 Jul 25 21:09	0°♎	
evening set	10512 Aug 29 21:30	1°♎47'52	
conjunction	10512 Sep 15 03:07	2°♎44'24	0°44'48
minimum elong	10512 Sep 15 03:07	2°♎44'24	0°44'47
max. Earth dist.	10512 Sep 15 06:14	2°♎44'51	20.54138 AU
morning rise	10512 Oct 01 11:32	3°♎41'21	
retrograde	10513 Jan 03 20:15	6°♎53'43	
opposition	10513 Mar 21 14:11	4°♎52'45	0°51'08
min. Earth dist.	10513 Mar 21 11:37	4°♎53'01	18.51239 AU
direct	10513 Jun 04 13:52	2°♎53'38	
evening set	10513 Sep 03 09:43	5°♎59'44	
conjunction	10513 Sep 19 16:15	6°♎56'32	0°47'25
minimum elong	10513 Sep 19 16:14	6°♎56'32	0°47'25
max. Earth dist.	10513 Sep 19 19:18	6°♎56'59	20.48299 AU
morning rise	10513 Oct 06 01:14	7°♎53'44	
retrograde	10514 Jan 08 11:14	11°♎06'50	
opposition	10514 Mar 26 01:28	9°♎05'41	0°53'55
min. Earth dist.	10514 Mar 25 22:38	9°♎05'58	18.45333 AU
direct	10514 Jun 09 00:49	7°♎06'20	
evening set	10514 Sep 07 22:54	10°♎13'19	
conjunction	10514 Sep 24 05:59	11°♎10'24	0°49'47
minimum elong	10514 Sep 24 05:59	11°♎10'24	0°49'51
max. Earth dist.	10514 Sep 24 07:31	11°♎10'37	20.42330 AU
morning rise	10514 Oct 10 15:41	12°♎07'52	
retrograde	10515 Jan 13 01:14	15°♎21'42	
opposition	10515 Mar 30 13:27	13°♎20'24	0°56'25
min. Earth dist.	10515 Mar 30 12:27	13°♎20'30	18.39313 AU
direct	10515 Jun 13 10:02	11°♎20'48	
evening set	10515 Sep 12 12:55	14°♎28'45	
conjunction	10515 Sep 28 20:51	15°♎26'06	0°51'54
minimum elong	10515 Sep 28 20:51	15°♎26'06	0°52'00
max. Earth dist.	10515 Sep 28 22:04	15°♎26'17	20.36258 AU
morning rise	10515 Oct 15 07:06	16°♎23'50	
retrograde	10516 Jan 17 18:21	19°♎38'26	
opposition	10516 Apr 03 01:51	17°♎36'59	0°58'38
min. Earth dist.	10516 Apr 03 00:48	17°♎37'06	18.33175 AU
direct	10516 Jun 16 22:10	15°♎37'09	
evening set	10516 Sep 16 04:03	18°♎46'04	
conjunction	10516 Oct 02 12:36	19°♎43'43	0°53'44
minimum elong	10516 Oct 02 12:36	19°♎43'43	0°53'52
max. Earth dist.	10516 Oct 02 12:10	19°♎43'40	20.30044 AU
morning rise	10516 Oct 18 23:32	20°♎41'44	
retrograde	10517 Jan 21 10:05	23°♎57'06	
opposition	10517 Apr 07 15:04	21°♎55'30	1°00'32
min. Earth dist.	10517 Apr 07 16:07	21°♎55'24	18.26890 AU
direct	10517 Jun 21 09:00	19°♎55'23	
evening set	10517 Sep 20 20:09	23°♎05'20	
conjunction	10517 Oct 07 05:29	24°♎03'16	0°55'17
minimum elong	10517 Oct 07 05:29	24°♎03'16	0°55'29
max. Earth dist.	10517 Oct 07 04:06	24°♎03'04	20.23680 AU
morning rise	10517 Oct 23 16:55	25°♎01'34	
retrograde	10518 Jan 26 04:31	28°♎17'40	
opposition	10518 Apr 12 04:38	26°♎15'54	1°02'07
min. Earth dist.	10518 Apr 12 05:53	26°♎15'46	18.20444 AU
direct	10518 Jun 25 22:29	24°♎15'29	
evening set	10518 Sep 25 13:16	27°♎26'27	
conjunction	10518 Oct 11 23:12	28°♎24'42	0°56'33
minimum elong	10518 Oct 11 23:12	28°♎24'42	0°56'45
max. Earth dist.	10518 Oct 11 20:10	28°♎24'15	20.17148 AU
morning rise	10518 Oct 28 11:11	29°♎23'16	
	10518 Nov 08 05:14	0°♏	
retrograde	10519 Jan 30 21:48	2°♏40'05	
opposition	10519 Apr 16 19:07	0°♏38'08	1°03'22
min. Earth dist.	10519 Apr 16 22:25	0°♏37'47	18.13847 AU
	10519 May 02 01:23	30°℞♎	
direct	10519 Jun 30 11:16	28°♎37'22	
	10519 Aug 26 17:03	0°♏	
evening set	10519 Sep 30 07:02	1°♏49'22	
conjunction	10519 Oct 16 17:42	2°♏47'54	0°57'29
minimum elong	10519 Oct 16 17:42	2°♏47'54	0°57'44
max. Earth dist.	10519 Oct 16 13:32	2°♏47'17	20.10503 AU
morning rise	10519 Nov 02 06:13	3°♏46'45	
retrograde	10520 Feb 04 17:04	7°♏04'17	
opposition	10520 Apr 20 10:00	5°♏02'06	1°04'15
min. Earth dist.	10520 Apr 20 13:28	5°♏01'44	18.07157 AU
direct	10520 Jul 04 02:29	3°♏00'57	
evening set	10520 Oct 04 01:54	6°♏14'00	
conjunction	10520 Oct 20 13:13	7°♏12'51	0°58'05
minimum elong	10520 Oct 20 13:12	7°♏12'51	0°58'21
max. Earth dist.	10520 Oct 20 07:48	7°♏12'02	20.03782 AU
morning rise	10520 Nov 06 02:11	8°♏11'58	
retrograde	10521 Feb 08 11:12	11°♏30'09	
opposition	10521 Apr 25 01:27	9°♏27'45	1°04'45
min. Earth dist.	10521 Apr 25 06:49	9°♏27'11	18.00435 AU
direct	10521 Jul 08 17:02	7°♏26'13	
evening set	10521 Oct 08 21:34	10°♏40'20	
conjunction	10521 Oct 25 09:30	11°♏39'28	0°58'20
minimum elong	10521 Oct 25 09:30	11°♏39'28	0°58'39
max. Earth dist.	10521 Oct 25 02:49	11°♏38'27	19.97085 AU
morning rise	10521 Nov 10 22:58	12°♏38'52	

	10521 Dec 27 13:08	15°♏	
retrograde	10522 Feb 13 07:14	15°♏57'42	
	10522 Apr 03 00:49	15°℞♏	
opposition	10522 Apr 29 17:26	13°♏55'04	1°04'52
min. Earth dist.	10522 Apr 29 22:53	13°♏54'29	17.93775 AU
direct	10522 Jul 13 09:47	11°♏53'08	
	10522 Oct 11 09:16	15°♏	
evening set	10522 Oct 13 17:56	15°♏08'18	
conjunction	10522 Oct 30 06:26	16°♏07'44	0°58'15
minimum elong	10522 Oct 30 06:26	16°♏07'44	0°58'36
max. Earth dist.	10522 Oct 29 23:12	16°♏06'38	19.90471 AU
morning rise	10522 Nov 15 20:11	17°♏07'23	
retrograde	10523 Feb 18 02:24	20°♏26'52	
opposition	10523 May 04 10:08	18°♏24'01	1°04'35
min. Earth dist.	10523 May 04 16:59	18°♏23'17	17.87241 AU
direct	10523 Jul 18 02:00	16°♏21'43	
evening set	10523 Oct 18 15:14	19°♏37'57	
conjunction	10523 Nov 04 04:14	20°♏37'40	0°57'47
minimum elong	10523 Nov 04 04:14	20°♏37'40	0°58'09
max. Earth dist.	10523 Nov 03 19:39	20°♏36'22	19.84042 AU
morning rise	10523 Nov 20 18:26	21°♏37'35	
retrograde	10524 Feb 22 23:12	24°♏57'40	
opposition	10524 May 08 03:12	22°♏54'37	1°03'54
min. Earth dist.	10524 May 08 10:06	22°♏53'53	17.80929 AU
direct	10524 Jul 21 20:06	20°♏51'56	
evening set	10524 Oct 22 13:19	24°♏09'15	
conjunction	10524 Nov 08 02:55	25°♏09'15	0°56'58
minimum elong	10524 Nov 08 02:55	25°♏09'15	0°57'23
max. Earth dist.	10524 Nov 07 18:15	25°♏07'56	19.77847 AU
morning rise	10524 Nov 24 17:17	26°♏09'25	
retrograde	10525 Feb 26 19:42	29°♏30'05	
opposition	10525 May 12 21:01	27°♏26'53	1°02'49
min. Earth dist.	10525 May 13 04:59	27°♏26'01	17.74879 AU
direct	10525 Jul 26 13:47	25°♏23'50	
evening set	10525 Oct 27 12:17	28°♏42'14	
conjunction	10525 Nov 13 02:11	29°♏42'30	0°55'47
minimum elong	10525 Nov 13 02:11	29°♏42'30	0°56'13
max. Earth dist.	10525 Nov 12 16:02	29°♏40'57	19.71963 AU
	10525 Nov 17 20:52	0°♐	
morning rise	10525 Nov 29 16:54	0°♐42'53	
retrograde	10526 Mar 03 17:16	4°♐04'08	
opposition	10526 May 17 15:21	2°♐00'48	1°01'19
min. Earth dist.	10526 May 17 23:23	1°♐59'56	17.69174 AU
	10526 Jul 21 16:30	30°℞♏	
direct	10526 Jul 31 09:35	29°♏57'26	
	10526 Aug 10 02:30	0°♐	
evening set	10526 Nov 01 11:54	3°♐16'54	
conjunction	10526 Nov 18 02:19	4°♐17'26	0°54'14
minimum elong	10526 Nov 18 02:19	4°♐17'26	0°54'41
max. Earth dist.	10526 Nov 17 16:37	4°♐15'56	19.66438 AU
morning rise	10526 Dec 04 17:02	5°♐18'03	
retrograde	10527 Mar 08 14:51	8°♐39'49	
opposition	10527 May 22 10:23	6°♐36'25	0°59'25
min. Earth dist.	10527 May 22 19:02	6°♐35'29	17.63847 AU
direct	10527 Aug 05 04:47	4°♐32'47	
evening set	10527 Nov 06 12:19	7°♐53'18	
conjunction	10527 Nov 23 02:58	8°♐54'04	0°52'20
minimum elong	10527 Nov 23 02:58	8°♐54'04	0°52'49
max. Earth dist.	10527 Nov 22 15:43	8°♐52'20	19.61325 AU
morning rise	10527 Dec 09 18:00	9°♐54'53	
retrograde	10528 Mar 12 13:29	13°♐17'10	
opposition	10528 May 26 06:01	11°♐13'45	0°57'08
min. Earth dist.	10528 May 26 15:01	11°♐12'46	17.58939 AU
direct	10528 Aug 09 02:06	9°♐09'52	
evening set	10528 Nov 10 13:34	12°♐31'25	
conjunction	10528 Nov 27 04:39	13°♐32'25	0°50'05
minimum elong	10528 Nov 27 04:39	13°♐32'25	0°50'34
max. Earth dist.	10528 Nov 26 18:00	13°♐30'46	19.56614 AU
morning rise	10528 Dec 13 19:33	14°♐33'26	
retrograde	10529 Mar 17 12:36	17°♐56'10	
opposition	10529 May 31 02:11	15°♐52'46	0°54'27
min. Earth dist.	10529 May 31 11:39	15°♐51'44	17.54422 AU
direct	10529 Aug 13 23:17	13°♐48'40	
evening set	10529 Nov 15 15:42	17°♐11'14	
conjunction	10529 Dec 02 06:48	18°♐12'25	0°47'30
minimum elong	10529 Dec 02 06:48	18°♐12'25	0°48'00
max. Earth dist.	10529 Dec 01 18:24	18°♐10'30	19.52298 AU
morning rise	10529 Dec 18 21:49	19°♐13'37	
retrograde	10530 Mar 22 12:11	22°♐36'46	
opposition	10530 Jun 04 23:06	20°♐33'23	0°51'24
min. Earth dist.	10530 Jun 05 09:20	20°♐32'16	17.50300 AU
direct	10530 Aug 18 21:22	18°♐29'04	
evening set	10530 Nov 20 18:11	21°♐52'34	
conjunction	10530 Dec 07 09:35	22°♐53'57	0°44'35
minimum elong	10530 Dec 07 09:35	22°♐53'57	0°45'06
max. Earth dist.	10530 Dec 06 21:44	22°♐52'07	19.48350 AU
morning rise	10530 Dec 24 00:20	23°♐55'18	
retrograde	10531 Mar 27 13:17	27°♐18'48	
opposition	10531 Jun 09 20:35	25°♐15'26	0°47'59
min. Earth dist.	10531 Jun 10 06:59	25°♐14'18	17.46524 AU
direct	10531 Aug 23 20:27	23°♐10'55	
evening set	10531 Nov 25 21:35	26°♐35'17	
conjunction	10531 Dec 12 12:53	27°♐36'49	0°41'21
minimum elong	10531 Dec 12 12:53	27°♐36'49	0°41'52
max. Earth dist.	10531 Dec 11 23:17	27°♐34'42	19.44753 AU
morning rise	10531 Dec 29 03:36	28°♐38'18	
	10532 Jan 21 22:23	0°♑	
retrograde	10532 Mar 31 13:14	2°♑02'03	
opposition	10532 Jun 13 18:32	29°♐58'42	0°44'14
	10532 Jun 13 06:34	30°℞♐	
min. Earth dist.	10532 Jun 14 06:02	29°♐57'26	17.43112 AU
direct	10532 Aug 27 18:50	27°♐53'56	
	10532 Nov 07 02:32	0°♑	
evening set	10532 Nov 30 01:19	1°♑19'06	
conjunction	10532 Dec 16 16:46	2°♑20'47	0°37'50
minimum elong	10532 Dec 16 16:46	2°♑20'47	0°38'23
max. Earth dist.	10532 Dec 16 03:31	2°♑18'43	19.41520 AU
morning rise	10533 Jan 02 07:08	3°♑22'21	
retrograde	10533 Apr 05 15:38	6°♑46'18	
opposition	10533 Jun 18 16:59	4°♑42'56	0°40'11
min. Earth dist.	10533 Jun 19 04:16	4°♑41'42	17.40057 AU
direct	10533 Sep 01 19:50	2°♑37'59	
evening set	10533 Dec 05 05:26	6°♑03'49	
conjunction	10533 Dec 21 20:38	7°♑05'36	0°34'03
minimum elong	10533 Dec 21 20:39	7°♑05'36	0°34'35
max. Earth dist.	10533 Dec 21 06:09	7°♑03'21	19.38662 AU
morning rise	10534 Jan 07 10:45	8°♑07'16	
retrograde	10534 Apr 10 14:53	11°♑31'19	
opposition	10534 Jun 23 15:54	9°♑27'57	0°35'49
min. Earth dist.	10534 Jun 24 04:17	9°♑26'36	17.37416 AU
direct	10534 Sep 06 18:58	7°♑22'46	
evening set	10534 Dec 10 09:42	10°♑49'13	

max. Earth dist.	10534 Dec	26	10:43	11°♉48'53	19.36246 AU
conjunction	10534 Dec	27	00:51	11°♉51'05	0°30'02
minimum elong	10534 Dec	27	00:51	11°♉51'05	0°30'34
morning rise	10535 Jan	12	14:33	12°♉52'47	
retrograde	10535 Apr	15	17:01	16°♉16'53	
opposition	10535 Jun	28	14:56	14°♉13'30	0°31'13
min. Earth dist.	10535 Jun	29	02:39	14°♉12'13	17.35223 AU
direct	10535 Sep	11	21:27	12°♉08'07	
evening set	10535 Dec	15	14:12	15°♉35'04	
conjunction	10536 Jan	01	05:05	16°♉37'00	0°25'47
minimum elong	10536 Jan	01	05:05	16°♉37'00	0°26'19
max. Earth dist.	10535 Dec	31	14:26	16°♉34'43	19.34295 AU
morning rise	10536 Jan	17	18:22	17°♉38'43	
retrograde	10536 Apr	19	15:45	21°♉02'46	
opposition	10536 Jul	02	14:27	18°♉59'24	0°26'23
min. Earth dist.	10536 Jul	03	03:12	18°♉58'00	17.33527 AU
direct	10536 Sep	15	21:53	16°♉53'48	
evening set	10536 Dec	19	18:45	20°♉21'12	
conjunction	10537 Jan	05	09:20	21°♉23'09	0°21'22
minimum elong	10537 Jan	05	09:20	21°♉23'09	0°21'52
max. Earth dist.	10537 Jan	04	18:51	21°♉20'53	19.32867 AU
morning rise	10537 Jan	21	22:06	22°♉24'50	
retrograde	10537 Apr	24	17:14	25°♉48'48	
opposition	10537 Jul	07	13:57	23°♉45'26	0°21'21
min. Earth dist.	10537 Jul	08	01:38	23°♉44'09	17.32367 AU
direct	10537 Sep	21	01:48	21°♉39'42	
evening set	10537 Dec	24	23:16	25°♉07'24	
conjunction	10538 Jan	10	13:26	26°♉09'20	0°16'47
minimum elong	10538 Jan	10	13:26	26°♉09'20	0°17'17
max. Earth dist.	10538 Jan	09	23:24	26°♉07'09	19.31992 AU
morning rise	10538 Jan	27	01:33	27°♉11'00	
	10538 Mar	25	02:14	0°♒	
retrograde	10538 Apr	29	15:40	0°♒34'48	
	10538 Jun	04	22:23	30°℞♉	
opposition	10538 Jul	12	13:54	28°♉31'28	0°16'10
min. Earth dist.	10538 Jul	13	02:16	28°♉30'06	17.31799 AU
direct	10538 Sep	26	02:50	26°♉25'36	
evening set	10538 Dec	30	03:31	29°♉53'32	
	10538 Dec	31	21:42	0°♒	
conjunction	10539 Jan	15	17:10	0°♒55'26	0°12'06
minimum elong	10539 Jan	15	17:11	0°♒55'26	0°12'34
behind sun begin	10539 Jan	15	12:55	0°♒54'47	
behind sun end	10539 Jan	15	21:26	0°♒56'05	
max. Earth dist.	10539 Jan	15	03:16	0°♒53'15	19.31740 AU
morning rise	10539 Feb	01	04:47	1°♒57'02	
retrograde	10539 May	04	16:59	5°♒20'38	
opposition	10539 Jul	17	13:49	3°♒17'21	0°10'53
min. Earth dist.	10539 Jul	18	00:45	3°♒16'09	17.31858 AU
direct	10539 Oct	01	07:02	1°♒11'25	
evening set	10540 Jan	04	07:45	4°♒39'30	
conjunction	10540 Jan	20	20:56	5°♒41'20	0°07'20
minimum elong	10540 Jan	20	20:57	5°♒41'20	0°07'48
behind sun begin	10540 Jan	20	14:54	5°♒40'25	
behind sun end	10540 Jan	21	03:00	5°♒42'16	
max. Earth dist.	10540 Jan	20	08:14	5°♒39'21	19.32118 AU
morning rise	10540 Feb	06	07:43	6°♒42'50	
retrograde	10540 May	08	15:45	10°♒06'11	
opposition	10540 Jul	21	13:55	8°♒03'01	0°05'32
min. Earth dist.	10540 Jul	22	01:14	8°♒01'47	17.32565 AU
direct	10540 Oct	05	08:26	5°♒57'06	
evening set	10541 Jan	08	11:52	9°♒25'15	
max. Earth dist.	10541 Jan	24	11:28	10°♒24'59	19.33160 AU
conjunction	10541 Jan	25	00:19	10°♒26'59	0°02'32
minimum elong	10541 Jan	25	00:19	10°♒26'59	0°02'58
behind sun begin	10541 Jan	24	17:37	10°♒25'58	
behind sun end	10541 Jan	25	07:01	10°♒28'01	
morning rise	10541 Feb	10	10:28	11°♒28'23	
retrograde	10541 May	13	16:43	14°♒51'26	
opposition	10541 Jul	26	14:04	12°♒48'26	0°00'09
min. Earth dist.	10541 Jul	26	23:54	12°♒47'22	17.33925 AU
desc. node	10541 Aug	05	07:03	12°♒23'13	
direct	10541 Oct	10	11:56	10°♒42'35	
evening set	10542 Jan	13	15:24	14°♒10'43	
	10542 Jan	26	20:41	15°♒	
conjunction	10542 Jan	30	03:19	15°♒12'20	-0°02'25
minimum elong	10542 Jan	30	03:18	15°♒12'20	0°02'01
behind sun begin	10542 Jan	29	20:35	15°♒11'18	
behind sun end	10542 Jan	30	10:01	15°♒13'22	
max. Earth dist.	10542 Jan	29	16:13	15°♒10'37	19.34829 AU
morning rise	10542 Feb	15	12:30	16°♒13'35	
retrograde	10542 May	18	15:54	19°♒36'19	
opposition	10542 Jul	31	14:22	17°♒33'32	-0°05'14
min. Earth dist.	10542 Aug	01	00:20	17°♒32'27	17.35887 AU
direct	10542 Oct	15	13:26	15°♒27'48	
evening set	10543 Jan	18	18:53	18°♒55'50	
conjunction	10543 Feb	04	05:53	19°♒57'18	-0°07'13
minimum elong	10543 Feb	04	05:53	19°♒57'18	0°06'50
behind sun begin	10543 Feb	03	23:38	19°♒56'21	
behind sun end	10543 Feb	04	12:07	19°♒58'16	
max. Earth dist.	10543 Feb	03	18:25	19°♒55'31	19.37082 AU
morning rise	10543 Feb	20	14:25	20°♒58'24	
retrograde	10543 May	23	16:20	24°♒20'46	
opposition	10543 Aug	05	14:25	22°♒18'12	-0°10'34
min. Earth dist.	10543 Aug	05	23:18	22°♒17'14	17.38406 AU
direct	10543 Oct	20	16:12	20°♒12'36	
evening set	10544 Jan	23	21:53	23°♒40'28	
conjunction	10544 Feb	09	08:16	24°♒41'46	-0°11'56
minimum elong	10544 Feb	09	08:16	24°♒41'46	0°11'36
behind sun begin	10544 Feb	09	03:30	24°♒41'02	
behind sun end	10544 Feb	09	13:01	24°♒42'29	
max. Earth dist.	10544 Feb	08	22:31	24°♒40'15	19.39842 AU
morning rise	10544 Feb	25	15:46	25°♒42'41	
retrograde	10544 May	27	15:33	29°♒04'36	
opposition	10544 Aug	09	14:40	27°♒02'17	-0°15'48
min. Earth dist.	10544 Aug	09	23:30	27°♒01'19	17.41391 AU
direct	10544 Oct	24	17:43	24°♒56'52	
evening set	10545 Jan	28	00:31	28°♒24'25	
conjunction	10545 Feb	13	09:52	29°♒25'31	-0°16'35
minimum elong	10545 Feb	13	09:51	29°♒25'31	0°16'16
max. Earth dist.	10545 Feb	12	23:35	29°♒23'55	19.43047 AU
	10545 Feb	22	14:32	0°♓	
morning rise	10545 Mar	01	16:35	0°♓26'14	
retrograde	10545 Jun	01	15:03	3°♓47'42	
opposition	10545 Aug	14	14:44	1°♓45'35	-0°20'55
min. Earth dist.	10545 Aug	14	22:45	1°♓44'43	17.44809 AU
	10545 Oct	02	05:04	30°℞♒	
direct	10545 Oct	29	19:53	29°♒40'20	
	10545 Nov	26	02:50	0°♓	
evening set	10546 Feb	02	02:27	3°♓07'30	
conjunction	10546 Feb	18	11:04	4°♓08'23	-0°21'06
minimum elong	10546 Feb	18	11:04	4°♓08'23	0°20'50
max. Earth dist.	10546 Feb	18	02:31	4°♓07'03	19.46655 AU

morning rise	10546 Mar 06 16:44	5°♓08'52	
retrograde	10546 Jun 06 13:40	8°♓29'48	
opposition	10546 Aug 19 14:37	6°♓27'54	-0°25'53
min. Earth dist.	10546 Aug 19 22:11	6°♓27'05	17.48596 AU
direct	10546 Nov 03 21:14	4°♓22'52	
evening set	10547 Feb 07 03:49	7°♓49'30	
conjunction	10547 Feb 23 11:24	8°♓50'10	-0°25'29
minimum elong	10547 Feb 23 11:24	8°♓50'10	0°25'15
max. Earth dist.	10547 Feb 23 02:28	8°♓48'46	19.50620 AU
morning rise	10547 Mar 11 16:18	9°♓50'24	
retrograde	10547 Jun 11 11:44	13°♓10'46	
opposition	10547 Aug 24 14:15	11°♓09'03	-0°30'40
min. Earth dist.	10547 Aug 24 21:20	11°♓08'18	17.52733 AU
direct	10547 Nov 08 23:02	9°♓04'12	
evening set	10548 Feb 12 04:24	12°♓30'16	
conjunction	10548 Feb 28 11:13	13°♓30'40	-0°29'40
minimum elong	10548 Feb 28 11:12	13°♓30'40	0°29'28
max. Earth dist.	10548 Feb 28 03:48	13°♓29'31	19.54912 AU
morning rise	10548 Mar 15 15:04	14°♓30'39	
retrograde	10548 Jun 15 08:44	17°♓50'23	
opposition	10548 Aug 28 13:29	15°♓48'51	-0°35'13
min. Earth dist.	10548 Aug 28 19:40	15°♓48'12	17.57169 AU
direct	10548 Nov 13 00:52	13°♓44'13	
evening set	10549 Feb 16 04:19	17°♓09'35	
conjunction	10549 Mar 04 10:03	18°♓09'42	-0°33'38
minimum elong	10549 Mar 04 10:03	18°♓09'42	0°33'30
max. Earth dist.	10549 Mar 04 02:41	18°♓08'34	19.59505 AU
morning rise	10549 Mar 20 13:04	19°♓09'26	
retrograde	10549 Jun 20 04:50	22°♓28'31	
opposition	10549 Sep 02 12:28	20°♓27'08	-0°39'31
min. Earth dist.	10549 Sep 02 18:18	20°♓26'31	17.61923 AU
direct	10549 Nov 18 01:56	18°♓22'41	
evening set	10550 Feb 21 03:01	21°♓47'17	
conjunction	10550 Mar 09 07:57	22°♓47'07	-0°37'23
minimum elong	10550 Mar 09 07:56	22°♓47'07	0°37'16
max. Earth dist.	10550 Mar 09 02:07	22°♓46'13	19.64409 AU
morning rise	10550 Mar 25 10:02	23°♓46'34	
retrograde	10550 Jun 25 00:20	27°♓04'58	
opposition	10550 Sep 07 10:52	25°♓03'44	-0°43'32
min. Earth dist.	10550 Sep 07 15:16	25°♓03'15	17.66967 AU
direct	10550 Nov 23 03:39	22°♓59'30	
evening set	10551 Feb 26 01:03	26°♓23'14	
conjunction	10551 Mar 14 04:58	27°♓22'46	-0°40'52
minimum elong	10551 Mar 14 04:58	27°♓22'46	0°40'47
max. Earth dist.	10551 Mar 13 23:46	27°♓21'58	19.69605 AU
morning rise	10551 Mar 30 06:14	28°♓21'56	
	10551 Apr 28 13:56	0°♈	
retrograde	10551 Jun 29 18:20	1°♈39'37	
	10551 Sep 03 20:53	30°♑℞	
opposition	10551 Sep 12 08:43	29°♓38'31	-0°47'15
min. Earth dist.	10551 Sep 12 12:54	29°♓38'04	17.72330 AU
direct	10551 Nov 28 03:13	27°♓34'29	
	10552 Feb 14 10:46	0°♈	
evening set	10552 Mar 01 22:04	0°♈57'20	
conjunction	10552 Mar 18 01:06	1°♈56'34	-0°44'03
minimum elong	10552 Mar 18 01:06	1°♈56'34	0°44'02
max. Earth dist.	10552 Mar 17 21:19	1°♈55'59	19.75128 AU
morning rise	10552 Apr 03 01:29	2°♈55'25	
retrograde	10552 Jul 03 12:52	6°♈12'22	
opposition	10552 Sep 16 06:06	4°♈11'26	-0°50'38
min. Earth dist.	10552 Sep 16 08:20	4°♈11'11	17.78009 AU
direct	10552 Dec 02 03:38	2°♈07'39	
evening set	10553 Mar 06 18:04	5°♈29'33	
conjunction	10553 Mar 22 20:08	6°♈28'28	-0°46'57
minimum elong	10553 Mar 22 20:08	6°♈28'28	0°46'58
max. Earth dist.	10553 Mar 22 17:38	6°♈28'05	19.80968 AU
morning rise	10553 Apr 07 19:39	7°♈27'02	
retrograde	10553 Jul 08 05:32	10°♈43'16	
opposition	10553 Sep 21 03:07	8°♈42'30	-0°53'41
min. Earth dist.	10553 Sep 21 04:59	8°♈42'18	17.84023 AU
direct	10553 Dec 07 00:46	6°♈39'01	
evening set	10554 Mar 11 13:09	9°♈59'56	
conjunction	10554 Mar 27 14:21	10°♈58'33	-0°49'33
minimum elong	10554 Mar 27 14:21	10°♈58'32	0°49'36
max. Earth dist.	10554 Mar 27 13:01	10°♈58'20	19.87141 AU
morning rise	10554 Apr 12 13:08	11°♈56'49	
retrograde	10554 Jul 12 23:36	15°♈12'19	
opposition	10554 Sep 25 23:15	13°♈11'46	-0°56'22
min. Earth dist.	10554 Sep 25 23:00	13°♈11'47	17.90334 AU
direct	10554 Dec 11 23:22	11°♈08'37	
evening set	10555 Mar 16 07:20	14°♈28'32	
conjunction	10555 Apr 01 07:43	15°♈26'50	-0°51'49
minimum elong	10555 Apr 01 07:43	15°♈26'50	0°51'54
max. Earth dist.	10555 Apr 01 07:54	15°♈26'52	19.93577 AU
morning rise	10555 Apr 17 05:44	16°♈24'49	
retrograde	10555 Jul 17 15:11	19°♈39'36	
opposition	10555 Sep 30 19:07	17°♈39'18	-0°58'42
min. Earth dist.	10555 Sep 30 18:46	17°♈39'20	17.96883 AU
direct	10555 Dec 16 18:28	15°♈36'31	
evening set	10556 Mar 20 00:38	18°♈55'25	
conjunction	10556 Apr 05 00:09	19°♈53'25	-0°53'46
minimum elong	10556 Apr 05 00:08	19°♈53'25	0°53'54
max. Earth dist.	10556 Apr 05 01:03	19°♈53'33	20.00218 AU
morning rise	10556 Apr 20 21:31	20°♈51'06	
retrograde	10556 Jul 21 08:33	24°♈05'11	
opposition	10556 Oct 04 14:16	22°♈05'07	-1°00'40
min. Earth dist.	10556 Oct 04 11:52	22°♈05'22	18.03587 AU
direct	10556 Dec 20 15:32	20°♈02'43	
evening set	10557 Mar 24 17:02	23°♈20'35	
conjunction	10557 Apr 09 15:49	24°♈18'16	-0°55'23
minimum elong	10557 Apr 09 15:49	24°♈18'16	0°55'33
max. Earth dist.	10557 Apr 09 18:22	24°♈18'40	20.06968 AU
morning rise	10557 Apr 25 12:27	25°♈15'41	
retrograde	10557 Jul 25 23:13	28°♈29'04	
opposition	10557 Oct 09 09:05	26°♈29'14	-1°02'16
min. Earth dist.	10557 Oct 09 06:48	26°♈29'29	18.10375 AU
direct	10557 Dec 25 09:31	24°♈27'14	
evening set	10558 Mar 29 08:31	27°♈44'02	
conjunction	10558 Apr 14 06:31	28°♈41'26	-0°56'40
minimum elong	10558 Apr 14 06:31	28°♈41'26	0°56'53
max. Earth dist.	10558 Apr 14 09:23	28°♈41'52	20.13769 AU
morning rise	10558 Apr 30 02:42	29°♈38'34	
	10558 May 06 05:31	0°♉	
retrograde	10558 Jul 30 15:12	2°♉51'15	
opposition	10558 Oct 14 03:09	0°♉51'39	-1°03'29
min. Earth dist.	10558 Oct 13 23:02	0°♉52'05	18.17163 AU
	10558 Nov 04 15:39	30°♑♈	
direct	10558 Dec 30 05:10	28°♈50'01	
	10559 Feb 21 11:06	0°♉	
evening set	10559 Apr 02 23:13	2°♉05'46	
conjunction	10559 Apr 18 20:36	3°♉02'52	-0°57'37

minimum elong	10559 Apr 18 20:36	3°♉02'52	0°57'53
max. Earth dist.	10559 Apr 19 01:01	3°♉03'32	20.20518 AU
morning rise	10559 May 04 16:07	3°♉59'44	
retrograde	10559 Aug 04 04:45	7°♉11'45	
opposition	10559 Oct 18 20:43	5°♉12'22	-1°04'21
min. Earth dist.	10559 Oct 18 16:55	5°♉12'45	18.23871 AU
direct	10560 Jan 03 22:19	3°♉11'06	
evening set	10560 Apr 06 13:10	6°♉25'47	
conjunction	10560 Apr 22 09:48	7°♉22'35	-0°58'14
minimum elong	10560 Apr 22 09:47	7°♉22'35	0°58'31
max. Earth dist.	10560 Apr 22 14:07	7°♉23'14	20.27169 AU
morning rise	10560 May 08 04:58	8°♉19'11	
retrograde	10560 Aug 07 19:21	11°♉30'33	
opposition	10560 Oct 22 13:44	9°♉31'20	-1°04'50
min. Earth dist.	10560 Oct 22 08:15	9°♉31'54	18.30446 AU
direct	10561 Jan 07 16:17	7°♉30'25	
evening set	10561 Apr 11 02:01	10°♉44'02	
conjunction	10561 Apr 26 22:12	11°♉40'34	-0°58'32
minimum elong	10561 Apr 26 22:12	11°♉40'34	0°58'51
max. Earth dist.	10561 Apr 27 04:06	11°♉41'27	20.33645 AU
morning rise	10561 May 12 16:49	12°♉36'55	
	10561 Jun 30 04:08	15°♉	
retrograde	10561 Aug 12 07:40	15°♉47'38	
	10561 Sep 26 01:31	15°℞♉	
opposition	10561 Oct 27 06:16	13°♉48'35	-1°04'57
min. Earth dist.	10561 Oct 27 01:03	13°♉49'07	18.36825 AU
direct	10562 Jan 12 08:46	11°♉48'00	
evening set	10562 Apr 15 14:16	15°♉00'32	
	10562 Apr 15 10:36	15°♉	
conjunction	10562 May 01 09:48	15°♉56'48	-0°58'30
minimum elong	10562 May 01 09:48	15°♉56'48	0°58'50
max. Earth dist.	10562 May 01 15:20	15°♉57'38	20.39918 AU
morning rise	10562 May 17 04:15	16°♉52'55	
retrograde	10562 Aug 16 20:54	20°♉02'59	
opposition	10562 Oct 31 21:49	18°♉04'04	-1°04'43
min. Earth dist.	10562 Oct 31 15:11	18°♉04'45	18.42984 AU
direct	10563 Jan 17 00:48	16°♉03'45	
evening set	10563 Apr 20 01:32	19°♉15'15	
conjunction	10563 May 05 20:46	20°♉11'16	-0°58'08
minimum elong	10563 May 05 20:46	20°♉11'16	0°58'31
max. Earth dist.	10563 May 06 03:53	20°♉12'19	20.45955 AU
morning rise	10563 May 21 14:47	21°♉07'09	
retrograde	10563 Aug 21 07:46	24°♉16'36	
opposition	10563 Nov 05 13:00	22°♉17'47	-1°04'08
min. Earth dist.	10563 Nov 05 06:31	22°♉18'26	18.48903 AU
direct	10564 Jan 21 16:27	20°♉17'45	
evening set	10564 Apr 23 11:59	23°♉28'11	
conjunction	10564 May 09 06:39	24°♉23'57	-0°57'28
minimum elong	10564 May 09 06:39	24°♉23'57	0°57'53
max. Earth dist.	10564 May 09 13:30	24°♉24'58	20.51772 AU
morning rise	10564 May 25 00:36	25°♉19'37	
retrograde	10564 Aug 24 19:46	28°♉28'29	
opposition	10564 Nov 09 03:26	26°♉29'43	-1°03'13
min. Earth dist.	10564 Nov 08 19:26	26°♉30'32	18.54623 AU
direct	10565 Jan 25 07:01	24°♉29'56	
evening set	10565 Apr 27 21:31	27°♉39'21	
conjunction	10565 May 13 15:59	28°♉34'54	-0°56'30
minimum elong	10565 May 13 15:59	28°♉34'54	0°56'55
max. Earth dist.	10565 May 14 00:45	28°♉36'12	20.57394 AU
morning rise	10565 May 29 09:37	29°♉30'22	
	10565 Jun 07 02:41	0°♊	
retrograde	10565 Aug 29 05:17	2°♊38'40	
opposition	10565 Nov 13 17:14	0°♊39'59	-1°01'57
min. Earth dist.	10565 Nov 13 09:04	0°♊40'49	18.60163 AU
	10565 Nov 30 11:51	30°℞♉	
direct	10566 Jan 29 21:05	28°♉40'27	
	10566 Mar 28 04:13	0°♊	
evening set	10566 May 02 06:25	1°♊48'53	
conjunction	10566 May 18 00:27	2°♊44'13	-0°55'14
minimum elong	10566 May 18 00:27	2°♊44'13	0°55'42
max. Earth dist.	10566 May 18 09:01	2°♊45'29	20.62858 AU
morning rise	10566 Jun 02 18:10	3°♊39'30	
retrograde	10566 Sep 02 16:30	6°♊47'17	
opposition	10566 Nov 18 06:23	4°♊48'41	-1°00'22
min. Earth dist.	10566 Nov 17 20:45	4°♊49'39	18.65553 AU
direct	10567 Feb 03 09:52	2°♊49'24	
evening set	10567 May 06 14:32	5°♊56'56	
conjunction	10567 May 22 08:29	6°♊52'04	-0°53'41
minimum elong	10567 May 22 08:29	6°♊52'04	0°54'08
max. Earth dist.	10567 May 22 18:57	6°♊53'36	20.68158 AU
morning rise	10567 Jun 07 01:57	7°♊47'10	
retrograde	10567 Sep 07 00:38	10°♊54'29	
opposition	10567 Nov 22 18:59	8°♊55'59	-0°58'29
min. Earth dist.	10567 Nov 22 09:03	8°♊57'00	18.70764 AU
direct	10568 Feb 07 22:11	6°♊57'01	
evening set	10568 May 09 22:12	10°♊03'39	
conjunction	10568 May 25 15:49	10°♊58'36	-0°51'51
minimum elong	10568 May 25 15:49	10°♊58'36	0°52'21
max. Earth dist.	10568 May 26 02:00	11°♊00'06	20.73286 AU
morning rise	10568 Jun 10 09:28	11°♊53'33	
retrograde	10568 Sep 10 11:22	15°♊00'28	
opposition	10568 Nov 26 07:07	13°♊02'04	-0°56'19
min. Earth dist.	10568 Nov 25 20:00	13°♊03'11	18.75793 AU
direct	10569 Feb 11 09:09	11°♊03'22	
evening set	10569 May 14 05:02	14°♊09'11	
conjunction	10569 May 29 22:42	15°♊03'58	-0°49'47
minimum elong	10569 May 29 22:42	15°♊03'58	0°50'16
max. Earth dist.	10569 May 30 10:45	15°♊05'44	20.78195 AU
morning rise	10569 Jun 14 16:18	15°♊58'47	
retrograde	10569 Sep 14 18:53	19°♊05'19	
opposition	10569 Nov 30 18:47	17°♊07'03	-0°53'52
min. Earth dist.	10569 Nov 30 07:25	17°♊08'11	18.80566 AU
direct	10570 Feb 15 19:55	15°♊08'38	
evening set	10570 May 18 11:42	18°♊13'40	
conjunction	10570 Jun 03 05:09	19°♊08'18	-0°47'27
minimum elong	10570 Jun 03 05:09	19°♊08'18	0°47'58
max. Earth dist.	10570 Jun 03 16:40	19°♊09'59	20.82833 AU
morning rise	10570 Jun 18 23:03	20°♊03'00	
retrograde	10570 Sep 19 04:32	23°♊09'12	
opposition	10570 Dec 05 05:49	21°♊11'02	-0°51'09
min. Earth dist.	10570 Dec 04 17:46	21°♊12'14	18.85052 AU
direct	10571 Feb 20 05:12	19°♊12'53	
evening set	10571 May 22 17:49	22°♊17'12	
conjunction	10571 Jun 07 11:25	23°♊11'43	-0°44'55
minimum elong	10571 Jun 07 11:25	23°♊11'43	0°45'27
max. Earth dist.	10571 Jun 08 00:28	23°♊13'37	20.87144 AU
morning rise	10571 Jun 23 05:18	24°♊06'18	
retrograde	10571 Sep 23 12:14	27°♊12'12	
opposition	10571 Dec 09 16:40	25°♊14'08	-0°48'13
min. Earth dist.	10571 Dec 09 04:30	25°♊15'21	18.89174 AU
direct	10572 Feb 24 15:04	23°♊16'16	
evening set	10572 May 25 23:37	26°♊19'53	

conjunction	10572 Jun	10	17:05	27°♊14'16	-0°42'09
minimum elong	10572 Jun	10	17:05	27°♊14'16	0°42'41
max. Earth dist.	10572 Jun	11	05:24	27°♊16'03	20.91076 AU
morning rise	10572 Jun	26	11:22	28°♊08'46	
	10572 Aug	02	02:41	0°♋	
retrograde	10572 Sep	26	21:07	1°♋14'26	
	10572 Nov	24	12:20	30°℞♊	
opposition	10572 Dec	13	03:10	29°♊16'26	-0°45'02
min. Earth dist.	10572 Dec	12	14:38	29°♊17'41	18.92902 AU
direct	10573 Feb	27	23:07	27°♊18'46	
	10573 May	23	17:04	0°♋	
evening set	10573 May	30	05:07	0°♋21'46	
conjunction	10573 Jun	14	22:50	1°♋16'04	-0°39'12
minimum elong	10573 Jun	14	22:50	1°♋16'04	0°39'45
max. Earth dist.	10573 Jun	15	12:23	1°♋18'01	20.94572 AU
morning rise	10573 Jun	30	17:13	2°♋10'28	
retrograde	10573 Oct	01	04:52	5°♋15'55	
opposition	10573 Dec	17	13:08	3°♋17'59	-0°41'39
min. Earth dist.	10573 Dec	17	00:41	3°♋19'13	18.96158 AU
direct	10574 Mar	04	08:13	1°♋20'30	
evening set	10574 Jun	03	10:28	4°♋22'55	
conjunction	10574 Jun	19	04:12	5°♋17'07	-0°36'04
minimum elong	10574 Jun	19	04:12	5°♋17'07	0°36'35
max. Earth dist.	10574 Jun	19	16:32	5°♋18'54	20.97582 AU
morning rise	10574 Jul	04	23:05	6°♋11'29	
retrograde	10574 Oct	05	13:18	9°♋16'45	
opposition	10574 Dec	21	22:52	7°♋18'48	-0°38'05
min. Earth dist.	10574 Dec	21	10:28	7°♋20'02	18.98912 AU
direct	10575 Mar	08	15:45	5°♋21'28	
evening set	10575 Jun	07	15:24	8°♋23'20	
conjunction	10575 Jun	23	09:28	9°♋17'28	-0°32'45
minimum elong	10575 Jun	23	09:28	9°♋17'28	0°33'18
max. Earth dist.	10575 Jun	23	22:47	9°♋19'23	21.00063 AU
morning rise	10575 Jul	09	04:32	10°♋11'47	
retrograde	10575 Oct	09	20:40	13°♋16'54	
opposition	10575 Dec	26	08:18	11°♋18'55	-0°34'20
min. Earth dist.	10575 Dec	25	19:55	11°♋20'09	19.01118 AU
direct	10576 Mar	12	00:02	9°♋21'41	
evening set	10576 Jun	10	20:16	12°♋23'03	
conjunction	10576 Jun	26	14:25	13°♋17'08	-0°29'17
minimum elong	10576 Jun	26	14:25	13°♋17'08	0°29'49
max. Earth dist.	10576 Jun	27	02:31	13°♋18'52	21.02018 AU
morning rise	10576 Jul	12	10:05	14°♋11'25	
retrograde	10576 Oct	13	04:45	17°♋16'25	
opposition	10576 Dec	29	17:23	15°♋18'21	-0°30'25
min. Earth dist.	10576 Dec	29	05:12	15°♋19'34	19.02823 AU
direct	10577 Mar	16	07:15	13°♋21'10	
evening set	10577 Jun	15	00:37	16°♋22'04	
conjunction	10577 Jun	30	19:16	17°♋16'08	-0°25'42
minimum elong	10577 Jun	30	19:16	17°♋16'08	0°26'13
max. Earth dist.	10577 Jul	01	08:28	17°♋18'01	21.03476 AU
morning rise	10577 Jul	16	15:15	18°♋10'24	
retrograde	10577 Oct	17	11:49	21°♋15'18	
opposition	10578 Jan	03	02:05	19°♋17'09	-0°26'22
min. Earth dist.	10578 Jan	02	13:47	19°♋18'22	19.04040 AU
direct	10578 Mar	20	14:35	17°♋20'00	
evening set	10578 Jun	19	05:04	20°♋20'31	
conjunction	10578 Jul	04	23:52	21°♋14'32	-0°21'59
minimum elong	10578 Jul	04	23:52	21°♋14'32	0°22'29
max. Earth dist.	10578 Jul	05	11:58	21°♋16'16	21.04481 AU
morning rise	10578 Jul	20	20:29	22°♋08'49	
retrograde	10578 Oct	21	19:24	25°♋13'41	
opposition	10579 Jan	07	10:26	23°♋15'25	-0°22'12
min. Earth dist.	10579 Jan	06	22:20	23°♋16'38	19.04847 AU
direct	10579 Mar	24	20:57	21°♋18'17	
evening set	10579 Jun	23	09:14	24°♋18'30	
conjunction	10579 Jul	09	04:34	25°♋12'32	-0°18'10
minimum elong	10579 Jul	09	04:33	25°♋12'32	0°18'39
max. Earth dist.	10579 Jul	09	17:53	25°♋14'26	21.05090 AU
morning rise	10579 Jul	25	01:30	26°♋06'49	
retrograde	10579 Oct	26	02:36	29°♋11'43	
opposition	10580 Jan	11	18:39	27°♋13'22	-0°17'55
min. Earth dist.	10580 Jan	11	06:10	27°♋14'36	19.05266 AU
direct	10580 Mar	28	03:43	25°♋16'15	
evening set	10580 Jun	26	13:26	28°♋16'13	
conjunction	10580 Jul	12	08:59	29°♋10'16	-0°14'16
minimum elong	10580 Jul	12	08:59	29°♋10'16	0°14'46
behind sun begin	10580 Jul	12	06:14	29°♋09'53	
behind sun end	10580 Jul	12	11:44	29°♋10'39	
max. Earth dist.	10580 Jul	12	21:21	29°♋12'02	21.05336 AU
	10580 Jul	26	21:50	0°♌	
morning rise	10580 Jul	28	06:39	0°♌04'36	
retrograde	10580 Oct	29	10:19	3°♌09'36	
opposition	10581 Jan	15	02:45	1°♌11'09	-0°13'34
min. Earth dist.	10581 Jan	14	14:31	1°♌12'22	19.05341 AU
	10581 Feb	15	22:42	30°℞♋	
direct	10581 Apr	01	08:51	29°♋14'04	
	10581 May	14	10:02	0°♌	
evening set	10581 Jun	30	17:37	2°♌13'53	
conjunction	10581 Jul	16	13:48	3°♌07'59	-0°10'19
minimum elong	10581 Jul	16	13:48	3°♌07'59	0°10'46
behind sun begin	10581 Jul	16	08:44	3°♌07'16	
behind sun end	10581 Jul	16	18:52	3°♌08'41	
max. Earth dist.	10581 Jul	17	03:18	3°♌09'54	21.05229 AU
morning rise	10581 Aug	01	11:53	4°♌02'22	
retrograde	10581 Nov	02	18:00	7°♌07'30	
opposition	10582 Jan	19	10:28	5°♌08'59	-0°09'09
min. Earth dist.	10582 Jan	18	21:59	5°♌10'14	19.05049 AU
direct	10582 Apr	05	15:25	3°♌11'57	
evening set	10582 Jul	04	22:07	6°♌11'41	
conjunction	10582 Jul	20	18:36	7°♌05'50	-0°06'19
minimum elong	10582 Jul	20	18:36	7°♌05'50	0°06'47
behind sun begin	10582 Jul	20	12:27	7°♌04'58	
behind sun end	10582 Jul	21	00:45	7°♌06'41	
max. Earth dist.	10582 Jul	21	06:53	7°♌07'35	21.04763 AU
morning rise	10582 Aug	05	17:27	8°♌00'18	
retrograde	10582 Nov	07	02:10	11°♌05'40	
opposition	10583 Jan	23	18:22	9°♌07'04	-0°04'42
min. Earth dist.	10583 Jan	23	06:25	9°♌08'16	19.04403 AU
direct	10583 Apr	09	19:33	7°♌10'04	
evening set	10583 Jul	09	02:31	10°♌09'48	
conjunction	10583 Jul	24	23:40	11°♌04'01	-0°02'16
minimum elong	10583 Jul	24	23:40	11°♌04'01	0°02'42
behind sun begin	10583 Jul	24	17:05	11°♌03'06	
behind sun end	10583 Jul	25	06:15	11°♌04'56	
max. Earth dist.	10583 Jul	25	12:58	11°♌05'55	21.03926 AU
morning rise	10583 Aug	09	22:57	11°♌58'34	
	10583 Oct	29	08:20	15°♌	
retrograde	10583 Nov	11	10:34	15°♌04'12	
	10583 Nov	24	15:33	15°℞♌	
opposition	10584 Jan	28	02:14	13°♌05'33	-0°00'13
min. Earth dist.	10584 Jan	27	14:03	13°♌06'47	19.03365 AU
asc. node	10584 Feb	13	18:13	12°♌26'12	

direct	10584 Apr	13	02:21	11°♌08'35	
evening set	10584 Jul	12	07:29	14°♌08'23	
	10584 Jul	27	10:11	15°♌	
conjunction	10584 Jul	28	05:01	15°♌02'41	0°01'54
minimum elong	10584 Jul	28	05:00	15°♌02'41	0°01'29
behind sun begin	10584 Jul	27	22:24	15°♌01'46	
behind sun end	10584 Jul	28	11:36	15°♌03'37	
max. Earth dist.	10584 Jul	28	16:55	15°♌04'23	21.02697 AU
morning rise	10584 Aug	13	05:06	15°♌57'21	
retrograde	10584 Nov	14	19:39	19°♌03'19	
opposition	10585 Jan	31	10:10	17°♌04'36	0°04'17
min. Earth dist.	10585 Jan	30	22:51	17°♌05'44	19.01937 AU
direct	10585 Apr	17	06:34	15°♌07'38	
evening set	10585 Jul	16	12:38	18°♌07'35	
conjunction	10585 Aug	01	10:54	19°♌02'00	0°05'59
minimum elong	10585 Aug	01	10:54	19°♌02'00	0°05'35
behind sun begin	10585 Aug	01	04:33	19°♌01'06	
behind sun end	10585 Aug	01	17:15	19°♌02'53	
max. Earth dist.	10585 Aug	01	23:28	19°♌03'47	21.01049 AU
morning rise	10585 Aug	17	11:29	19°♌56'46	
retrograde	10585 Nov	19	04:42	23°♌03'05	
opposition	10586 Feb	04	18:07	21°♌04'19	0°08'46
min. Earth dist.	10586 Feb	04	06:51	21°♌05'27	19.00054 AU
direct	10586 Apr	21	13:24	19°♌07'21	
evening set	10586 Jul	20	18:23	22°♌07'30	
conjunction	10586 Aug	05	17:02	23°♌02'02	0°10'00
minimum elong	10586 Aug	05	17:02	23°♌02'02	0°09'39
behind sun begin	10586 Aug	05	11:34	23°♌01'16	
behind sun end	10586 Aug	05	22:30	23°♌02'48	
max. Earth dist.	10586 Aug	06	03:50	23°♌03'34	20.98932 AU
morning rise	10586 Aug	21	18:26	23°♌56'56	
retrograde	10586 Nov	23	14:42	27°♌03'41	
opposition	10587 Feb	09	02:17	25°♌04'47	0°13'13
min. Earth dist.	10587 Feb	08	16:16	25°♌05'48	18.97697 AU
direct	10587 Apr	25	18:29	23°♌07'46	
evening set	10587 Jul	25	00:28	26°♌08'11	
conjunction	10587 Aug	09	23:53	27°♌02'52	0°14'00
minimum elong	10587 Aug	09	23:53	27°♌02'52	0°13'39
behind sun begin	10587 Aug	09	20:17	27°♌02'21	
behind sun end	10587 Aug	10	03:29	27°♌03'22	
max. Earth dist.	10587 Aug	10	10:59	27°♌04'27	20.96318 AU
morning rise	10587 Aug	26	01:46	27°♌57'55	
	10587 Oct	06	11:32	0°♍	
retrograde	10587 Nov	28	00:04	1°♍05'05	
	10588 Jan	21	07:32	30°℞♌	
opposition	10588 Feb	13	10:37	29°♌06'04	0°17'38
min. Earth dist.	10588 Feb	13	00:44	29°♌07'04	18.94818 AU
direct	10588 Apr	29	01:31	27°♌08'58	
	10588 Jul	25	09:44	0°♍	
evening set	10588 Jul	28	07:05	0°♍09'40	
conjunction	10588 Aug	13	07:00	1°♍04'30	0°17'56
minimum elong	10588 Aug	13	06:59	1°♍04'29	0°17'39
max. Earth dist.	10588 Aug	13	16:04	1°♍05'47	20.93183 AU
morning rise	10588 Aug	29	09:46	1°♍59'43	
retrograde	10588 Dec	01	10:33	5°♍07'20	
opposition	10589 Feb	16	19:12	3°♍08'08	0°21'58
min. Earth dist.	10589 Feb	16	10:48	3°♍08'59	18.91426 AU
direct	10589 May	03	07:38	1°♍10'53	
evening set	10589 Aug	01	14:05	4°♍11'56	
conjunction	10589 Aug	17	14:50	5°♍06'55	0°21'49
minimum elong	10589 Aug	17	14:50	5°♍06'55	0°21'32
max. Earth dist.	10589 Aug	18	00:03	5°♍08'15	20.89538 AU
morning rise	10589 Sep	02	18:08	6°♍02'18	
retrograde	10589 Dec	05	20:15	9°♍10'22	
opposition	10590 Feb	21	03:38	7°♍10'58	0°26'13
min. Earth dist.	10590 Feb	20	19:25	7°♍11'48	18.87534 AU
direct	10590 May	07	15:08	5°♍13'31	
evening set	10590 Aug	05	21:42	8°♍14'58	
conjunction	10590 Aug	21	22:57	9°♍10'08	0°25'36
minimum elong	10590 Aug	21	22:57	9°♍10'08	0°25'22
max. Earth dist.	10590 Aug	22	06:15	9°♍11'11	20.85432 AU
morning rise	10590 Sep	07	03:07	10°♍05'43	
retrograde	10590 Dec	10	06:22	13°♍14'16	
opposition	10591 Feb	25	12:32	11°♍14'37	0°30'21
min. Earth dist.	10591 Feb	25	05:48	11°♍15'18	18.83231 AU
direct	10591 May	11	21:57	9°♍16'57	
evening set	10591 Aug	10	05:27	12°♍18'50	
conjunction	10591 Aug	26	07:34	13°♍14'12	0°29'16
minimum elong	10591 Aug	26	07:33	13°♍14'12	0°29'04
max. Earth dist.	10591 Aug	26	15:18	13°♍15'19	20.80944 AU
morning rise	10591 Sep	11	12:17	14°♍09'58	
retrograde	10591 Dec	14	17:20	17°♍19'03	
opposition	10592 Feb	29	21:31	15°♍19'08	0°34'22
min. Earth dist.	10592 Feb	29	14:40	15°♍19'50	18.78572 AU
direct	10592 May	15	06:05	13°♍21'14	
evening set	10592 Aug	13	14:07	16°♍23'38	
conjunction	10592 Aug	29	16:46	17°♍19'12	0°32'49
minimum elong	10592 Aug	29	16:46	17°♍19'12	0°32'38
max. Earth dist.	10592 Aug	29	22:46	17°♍20'04	20.76137 AU
morning rise	10592 Sep	14	22:22	18°♍15'11	
retrograde	10592 Dec	18	03:32	21°♍24'49	
opposition	10593 Mar	05	06:46	19°♍24'40	0°38'12
min. Earth dist.	10593 Mar	05	01:26	19°♍25'13	18.73636 AU
direct	10593 May	19	13:03	17°♍26'30	
evening set	10593 Aug	17	23:13	20°♍29'30	
conjunction	10593 Sep	03	02:45	21°♍25'17	0°36'12
minimum elong	10593 Sep	03	02:45	21°♍25'17	0°36'04
max. Earth dist.	10593 Sep	03	09:07	21°♍26'12	20.71072 AU
morning rise	10593 Sep	19	08:54	22°♍21'28	
retrograde	10593 Dec	22	15:56	25°♍31'42	
opposition	10594 Mar	09	16:16	23°♍31'19	0°41'53
min. Earth dist.	10594 Mar	09	10:43	23°♍31'53	18.68454 AU
direct	10594 May	23	22:00	21°♍32'55	
evening set	10594 Aug	22	09:05	24°♍36'34	
conjunction	10594 Sep	07	13:08	25°♍32'34	0°39'25
minimum elong	10594 Sep	07	13:08	25°♍32'34	0°39'19
max. Earth dist.	10594 Sep	07	17:48	25°♍33'15	20.65784 AU
morning rise	10594 Sep	23	20:06	26°♍28'59	
retrograde	10594 Dec	27	02:55	29°♍39'52	
opposition	10595 Mar	14	02:19	27°♍39'16	0°45'21
min. Earth dist.	10595 Mar	13	22:13	27°♍39'41	18.63079 AU
direct	10595 May	28	05:14	25°♍40'37	
evening set	10595 Aug	26	19:33	28°♍44'59	
conjunction	10595 Sep	12	00:31	29°♍41'14	0°42'26
minimum elong	10595 Sep	12	00:30	29°♍41'13	0°42'23
max. Earth dist.	10595 Sep	12	05:29	29°♍41'57	20.60325 AU
	10595 Sep	17	09:16	0°♎	
morning rise	10595 Sep	28	08:01	0°♎37'53	
retrograde	10595 Dec	31	16:47	3°♎49'26	
opposition	10596 Mar	17	12:36	1°♎48'38	0°48'36
min. Earth dist.	10596 Mar	17	08:14	1°♎49'05	18.57538 AU
	10596 May	11	15:20	30°℞♍	

direct	10596 May 31	15:09	29°♍49'45		
	10596 Jun 20	07:55	0°♎		
evening set	10596 Aug 30	06:58	2°♎54'54		
conjunction	10596 Sep 15	12:31	3°♎51'24	0°45'15	
minimum elong	10596 Sep 15	12:31	3°♎51'24	0°45'14	
max. Earth dist.	10596 Sep 15	15:45	3°♎51'53	20.54707 AU	
morning rise	10596 Oct 01	20:52	4°♎48'19		
retrograde	10597 Jan 04	05:17	8°♎00'35		
opposition	10597 Mar 21	23:32	5°♎59'36	0°51'37	
min. Earth dist.	10597 Mar 21	20:49	5°♎59'53	18.51852 AU	
direct	10597 Jun 04	23:10	4°♎00'30		
evening set	10597 Sep 03	19:09	7°♎06'29		
conjunction	10597 Sep 20	01:34	8°♎03'16	0°47'50	
minimum elong	10597 Sep 20	01:34	8°♎03'16	0°47'52	
max. Earth dist.	10597 Sep 20	04:51	8°♎03'45	20.48950 AU	
morning rise	10597 Oct 06	10:27	9°♎00'26		
retrograde	10598 Jan 08	20:38	12°♎13'25		
opposition	10598 Mar 26	10:44	10°♎12'18	0°54'22	
min. Earth dist.	10598 Mar 26	07:51	10°♎12'36	18.46017 AU	
direct	10598 Jun 09	10:10	8°♎12'59		
evening set	10598 Sep 08	08:23	11°♎19'53		
conjunction	10598 Sep 24	15:22	12°♎16'56	0°50'11	
minimum elong	10598 Sep 24	15:22	12°♎16'56	0°50'15	
max. Earth dist.	10598 Sep 24	16:51	12°♎17'09	20.43040 AU	
morning rise	10598 Oct 11	01:00	13°♎14'22		
retrograde	10599 Jan 13	10:39	16°♎28'08		
opposition	10599 Mar 30	22:47	14°♎26'52	0°56'51	
min. Earth dist.	10599 Mar 30	21:47	14°♎26'58	18.40035 AU	
direct	10599 Jun 13	19:28	12°♎27'19		
evening set	10599 Sep 12	22:19	15°♎35'11		
conjunction	10599 Sep 29	06:10	16°♎32'31	0°52'17	
minimum elong	10599 Sep 29	06:10	16°♎32'31	0°52'23	
max. Earth dist.	10599 Sep 29	07:22	16°♎32'42	20.36974 AU	
morning rise	10599 Oct 15	16:19	17°♎30'13		
retrograde	10600 Jan 18	03:38	20°♎44'45		
opposition	10600 Apr 04	11:15	18°♎43'21	0°59'03	
min. Earth dist.	10600 Apr 04	10:19	18°♎43'27	18.33872 AU	
direct	10600 Jun 18	07:56	16°♎43'34		
evening set	10600 Sep 17	13:33	19°♎52'25		
conjunction	10600 Oct 03	22:00	20°♎50'02	0°54'06	
minimum elong	10600 Oct 03	22:00	20°♎50'02	0°54'15	
max. Earth dist.	10600 Oct 03	21:11	20°♎49'55	20.30706 AU	
morning rise	10600 Oct 20	08:50	21°♎48'02		
retrograde	10601 Jan 22	19:00	25°♎03'19		
opposition	10601 Apr 09	00:23	23°♎01'45	1°00'56	
min. Earth dist.	10601 Apr 09	01:37	23°♎01'37	18.27511 AU	
direct	10601 Jun 22	18:42	21°♎01'40		
evening set	10601 Sep 22	05:35	24°♎11'33		
conjunction	10601 Oct 08	14:50	25°♎09'28	0°55'38	
minimum elong	10601 Oct 08	14:50	25°♎09'28	0°55'49	
max. Earth dist.	10601 Oct 08	13:14	25°♎09'14	20.24250 AU	
morning rise	10601 Oct 25	02:10	26°♎07'44		