evening set	2000 Jan 09 11:01	3°♒28'56	
conjunction	2000 Jan 24 18:08	4°♒03'28	0°13'51
minimum elong	2000 Jan 24 18:08	4°♒03'28	0°13'50
behind sun begin	2000 Jan 24 14:40	4°♒03'09	
behind sun end	2000 Jan 24 21:37	4°♒03'47	
max. Earth dist.	2000 Jan 25 00:11	4°♒04'02	31.10413 AU
morning rise	2000 Feb 09 02:23	4°♒38'08	
retrograde	2000 May 08 12:30	6°♒34'24	
opposition	2000 Jul 27 22:49	5°♒10'43	0°12'40
min. Earth dist.	2000 Jul 27 16:54	5°♒11'07	29.09783 AU
direct	2000 Oct 15 14:12	3°♒47'25	
evening set	2001 Jan 10 20:44	5°♒41'01	
conjunction	2001 Jan 26 03:55	6°♒15'34	0°09'57
minimum elong	2001 Jan 26 03:55	6°♒15'34	0°09'58
behind sun begin	2001 Jan 25 22:41	6°♒15'06	
behind sun end	2001 Jan 26 09:08	6°♒16'03	
max. Earth dist.	2001 Jan 26 10:19	6°♒16'10	31.09167 AU
morning rise	2001 Feb 10 12:31	6°♒50'16	
retrograde	2001 May 11 01:13	8°♒46'38	
opposition	2001 Jul 30 11:48	7°♒22'51	0°08'29
min. Earth dist.	2001 Jul 30 04:04	7°♒23'23	29.08568 AU
direct	2001 Oct 18 01:49	5°♒59'32	
evening set	2002 Jan 13 06:23	7°♒53'05	
conjunction	2002 Jan 28 13:45	8°♒27'40	0°06'03
minimum elong	2002 Jan 28 13:45	8°♒27'40	0°06'03
behind sun begin	2002 Jan 28 07:39	8°♒27'07	
behind sun end	2002 Jan 28 19:51	8°♒28'13	
max. Earth dist.	2002 Jan 28 21:22	8°♒28'22	31.07982 AU
morning rise	2002 Feb 12 22:36	9°♒02'23	
retrograde	2002 May 13 12:10	10°♒58'52	
opposition	2002 Aug 02 00:57	9°♒35'01	0°04'17
min. Earth dist.	2002 Aug 01 17:08	9°♒35'33	29.07440 AU
direct	2002 Oct 20 13:52	8°♒11'42	
evening set	2003 Jan 15 16:02	10°♒05'12	
conjunction	2003 Jan 30 23:34	10°♒39'48	0°02'07
minimum elong	2003 Jan 30 23:34	10°♒39'48	0°02'07
behind sun begin	2003 Jan 30 17:11	10°♒39'14	
behind sun end	2003 Jan 31 05:58	10°♒40'23	
max. Earth dist.	2003 Jan 31 08:22	10°♒40'37	31.06915 AU
morning rise	2003 Feb 15 08:38	11°♒14'34	
retrograde	2003 May 16 00:46	13°♒11'10	
opposition	2003 Aug 04 13:54	11°♒47'15	0°00'05
min. Earth dist.	2003 Aug 04 03:57	11°♒47'56	29.06427 AU
desc. node	2003 Aug 11 04:10	11°♒36'31	
direct	2003 Oct 23 01:54	10°♒23'58	
evening set	2004 Jan 18 01:52	12°♒17'26	
conjunction	2004 Feb 02 09:29	12°♒52'04	-0°01'56
minimum elong	2004 Feb 02 09:29	12°♒52'04	0°01'57
behind sun begin	2004 Feb 02 03:05	12°♒51'29	
behind sun end	2004 Feb 02 15:53	12°♒52'38	
max. Earth dist.	2004 Feb 02 18:51	12°♒52'56	31.05960 AU
morning rise	2004 Feb 17 18:55	13°♒26'51	
	2004 Apr 09 08:43	15°♒	
retrograde	2004 May 17 12:13	15°♒23'37	
	2004 Jun 25 20:39	15°℞♒	
opposition	2004 Aug 06 03:07	13°♒59'38	-0°04'08
min. Earth dist.	2004 Aug 05 17:08	14°♒00'19	29.05537 AU
direct	2004 Oct 24 11:56	12°♒36'24	
evening set	2005 Jan 19 11:31	14°♒29'50	
	2005 Feb 01 20:20	15°♒	
conjunction	2005 Feb 03 19:28	15°♒04'29	-0°05'53
minimum elong	2005 Feb 03 19:29	15°♒04'29	0°05'53
behind sun begin	2005 Feb 03 13:21	15°♒03'55	
behind sun end	2005 Feb 04 01:37	15°♒05'02	
max. Earth dist.	2005 Feb 04 06:42	15°♒05'32	31.05121 AU
morning rise	2005 Feb 19 05:07	15°♒39'18	
retrograde	2005 May 19 23:35	17°♒36'13	
opposition	2005 Aug 08 16:11	16°♒12'12	-0°08'21
min. Earth dist.	2005 Aug 08 04:32	16°♒13'00	29.04730 AU
	2005 Sep 30 22:39	15°℞♒	
direct	2005 Oct 26 23:24	14°♒49'01	
	2005 Nov 21 08:51	15°♒	
evening set	2006 Jan 21 21:33	16°♒42'26	
conjunction	2006 Feb 06 05:33	17°♒17'06	-0°09'48
minimum elong	2006 Feb 06 05:33	17°♒17'06	0°09'48
behind sun begin	2006 Feb 06 00:16	17°♒16'38	
behind sun end	2006 Feb 06 10:49	17°♒17'35	
max. Earth dist.	2006 Feb 06 16:36	17°♒18'08	31.04345 AU
morning rise	2006 Feb 21 15:39	17°♒51'57	
retrograde	2006 May 22 13:05	19°♒49'01	
opposition	2006 Aug 11 05:14	18°♒24'59	-0°12'33
min. Earth dist.	2006 Aug 10 17:18	18°♒25'48	29.03983 AU
direct	2006 Oct 29 07:56	17°♒01'50	
evening set	2007 Jan 24 07:31	18°♒55'16	
conjunction	2007 Feb 08 15:52	19°♒29'57	-0°13'43
minimum elong	2007 Feb 08 15:52	19°♒29'57	0°13'42
behind sun begin	2007 Feb 08 12:19	19°♒29'37	
behind sun end	2007 Feb 08 19:25	19°♒30'16	
max. Earth dist.	2007 Feb 09 04:43	19°♒31'09	31.03602 AU
morning rise	2007 Feb 24 02:06	20°♒04'50	
retrograde	2007 May 25 01:08	22°♒02'03	
opposition	2007 Aug 13 18:25	20°♒37'59	-0°16'44
min. Earth dist.	2007 Aug 13 05:39	20°♒38'51	29.03234 AU
direct	2007 Oct 31 20:07	19°♒14'53	
evening set	2008 Jan 26 17:39	21°♒08'17	
conjunction	2008 Feb 11 02:04	21°♒43'00	-0°17'37
minimum elong	2008 Feb 11 02:03	21°♒43'00	0°17'37
max. Earth dist.	2008 Feb 11 14:36	21°♒44'10	31.02844 AU
morning rise	2008 Feb 26 12:45	22°♒17'55	
retrograde	2008 May 26 16:15	24°♒15'17	
opposition	2008 Aug 15 07:43	22°♒51'10	-0°20'55
min. Earth dist.	2008 Aug 14 18:10	22°♒52'05	29.02456 AU
direct	2008 Nov 02 06:38	21°♒28'06	
evening set	2009 Jan 28 03:56	23°♒21'30	
conjunction	2009 Feb 12 12:41	23°♒56'13	-0°21'30
minimum elong	2009 Feb 12 12:41	23°♒56'13	0°21'29
max. Earth dist.	2009 Feb 13 02:35	23°♒57'32	31.02016 AU
morning rise	2009 Feb 27 23:34	24°♒31'10	
retrograde	2009 May 29 04:30	26°♒28'40	
opposition	2009 Aug 17 20:55	25°♒04'30	-0°25'03
min. Earth dist.	2009 Aug 17 07:34	25°♒05'25	29.01584 AU
direct	2009 Nov 04 18:10	23°♒41'27	
evening set	2010 Jan 30 14:23	25°♒34'49	
conjunction	2010 Feb 14 23:19	26°♒09'34	-0°25'21
minimum elong	2010 Feb 14 23:19	26°♒09'34	0°25'21
max. Earth dist.	2010 Feb 15 13:02	26°♒10'52	31.01095 AU
morning rise	2010 Mar 02 10:37	26°♒44'33	
retrograde	2010 May 31 18:48	28°♒42'09	
opposition	2010 Aug 20 10:07	27°♒17'54	-0°29'09
min. Earth dist.	2010 Aug 19 19:32	27°♒18'54	29.00605 AU

direct	2010 Nov 07 06:04	25°♒54'50	
evening set	2011 Feb 02 00:47	27°♒48'10	
conjunction	2011 Feb 17 09:56	28°♒22'57	-0°29'10
minimum elong	2011 Feb 17 09:56	28°♒22'57	0°29'10
max. Earth dist.	2011 Feb 18 00:13	28°♒24'18	31.00049 AU
morning rise	2011 Mar 04 21:33	28°♒57'57	
	2011 Apr 04 13:50	0°♓	
retrograde	2011 Jun 03 07:28	0°♓55'39	
	2011 Aug 05 02:54	30°℞♒	
opposition	2011 Aug 22 23:26	29°♒31'18	-0°33'13
min. Earth dist.	2011 Aug 22 09:20	29°♒32'16	28.99518 AU
direct	2011 Nov 09 18:54	28°♒08'13	
	2012 Feb 03 19:03	0°♓	
evening set	2012 Feb 04 11:12	0°♓01'29	
conjunction	2012 Feb 19 20:41	0°♓36'17	-0°32'56
minimum elong	2012 Feb 19 20:41	0°♓36'17	0°32'57
max. Earth dist.	2012 Feb 20 11:43	0°♓37'42	30.98940 AU
morning rise	2012 Mar 06 08:37	1°♓11'19	
retrograde	2012 Jun 04 21:04	3°♓09'05	
opposition	2012 Aug 24 12:32	1°♓44'38	-0°37'14
min. Earth dist.	2012 Aug 23 20:49	1°♓45'43	28.98391 AU
direct	2012 Nov 11 07:53	0°♓21'31	
evening set	2013 Feb 05 21:40	2°♓14'44	
conjunction	2013 Feb 21 07:19	2°♓49'32	-0°36'40
minimum elong	2013 Feb 21 07:18	2°♓49'32	0°36'40
max. Earth dist.	2013 Feb 21 22:31	2°♓50'59	30.97806 AU
morning rise	2013 Mar 08 19:43	3°♓24'36	
retrograde	2013 Jun 07 08:25	5°♓22'27	
min. Earth dist.	2013 Aug 26 10:22	3°♓58'57	28.97282 AU
opposition	2013 Aug 27 01:43	3°♓57'54	-0°41'11
direct	2013 Nov 13 18:42	2°♓34'45	
evening set	2014 Feb 08 08:08	4°♓27'54	
conjunction	2014 Feb 23 18:11	5°♓02'43	-0°40'20
minimum elong	2014 Feb 23 18:11	5°♓02'43	0°40'20
max. Earth dist.	2014 Feb 24 11:00	5°♓04'19	30.96724 AU
morning rise	2014 Mar 11 06:47	5°♓37'49	
retrograde	2014 Jun 09 19:50	7°♓35'44	
opposition	2014 Aug 29 14:33	6°♓11'06	-0°45'05
min. Earth dist.	2014 Aug 28 21:42	6°♓12'15	28.96244 AU
direct	2014 Nov 16 07:05	4°♓47'55	
evening set	2015 Feb 10 18:46	6°♓41'03	
conjunction	2015 Feb 26 04:55	7°♓15'54	-0°43'57
minimum elong	2015 Feb 26 04:54	7°♓15'54	0°43'56
max. Earth dist.	2015 Feb 26 21:31	7°♓17'28	30.95738 AU
morning rise	2015 Mar 13 18:01	7°♓51'01	
retrograde	2015 Jun 12 09:08	9°♓49'03	
min. Earth dist.	2015 Aug 31 10:28	8°♓25'30	28.95332 AU
opposition	2015 Sep 01 03:38	8°♓24'19	-0°48'55
direct	2015 Nov 18 16:31	7°♓01'09	
evening set	2016 Feb 13 05:11	8°♓54'15	
conjunction	2016 Feb 28 15:47	9°♓29'07	-0°47'30
minimum elong	2016 Feb 28 15:47	9°♓29'07	0°47'30
max. Earth dist.	2016 Feb 29 10:18	9°♓30'52	30.94881 AU
morning rise	2016 Mar 15 05:06	10°♓04'16	
retrograde	2016 Jun 13 20:42	12°♓02'24	
opposition	2016 Sep 02 16:38	10°♓37'38	-0°52'40
min. Earth dist.	2016 Sep 01 22:27	10°♓38'53	28.94538 AU
direct	2016 Nov 20 04:38	9°♓14'28	
evening set	2017 Feb 14 15:58	11°♓07'34	
conjunction	2017 Mar 02 02:44	11°♓42'27	-0°50'59
minimum elong	2017 Mar 02 02:44	11°♓42'27	0°50'58
max. Earth dist.	2017 Mar 02 21:01	11°♓44'11	30.94153 AU
morning rise	2017 Mar 17 16:35	12°♓17'38	
retrograde	2017 Jun 16 11:10	14°♓15'53	
min. Earth dist.	2017 Sep 04 10:28	12°♓52'23	28.93874 AU
opposition	2017 Sep 05 05:28	12°♓51'05	-0°56'22
direct	2017 Nov 22 14:20	11°♓27'56	
evening set	2018 Feb 17 02:43	13°♓21'03	
conjunction	2018 Mar 04 13:54	13°♓55'58	-0°54'23
minimum elong	2018 Mar 04 13:54	13°♓55'58	0°54'24
max. Earth dist.	2018 Mar 05 09:42	13°♓57'51	30.93525 AU
morning rise	2018 Mar 20 04:01	14°♓31'11	
retrograde	2018 Jun 18 23:27	16°♓29'33	
opposition	2018 Sep 07 18:27	15°♓04'44	-0°59'58
min. Earth dist.	2018 Sep 06 23:26	15°♓06'03	28.93289 AU
direct	2018 Nov 25 01:08	13°♓41'38	
evening set	2019 Feb 19 13:35	15°♓34'46	
conjunction	2019 Mar 07 01:00	16°♓09'43	-0°57'43
minimum elong	2019 Mar 07 01:00	16°♓09'43	0°57'43
max. Earth dist.	2019 Mar 07 20:55	16°♓11'36	30.92976 AU
morning rise	2019 Mar 22 15:32	16°♓44'57	
retrograde	2019 Jun 21 14:36	18°♓43'27	
min. Earth dist.	2019 Sep 09 11:08	17°♓20'01	28.92763 AU
opposition	2019 Sep 10 07:24	17°♓18'38	-1°03'29
direct	2019 Nov 27 12:32	15°♓55'34	
evening set	2020 Feb 22 00:40	17°♓48'44	
conjunction	2020 Mar 08 12:23	18°♓23'43	-1°00'58
minimum elong	2020 Mar 08 12:23	18°♓23'42	1°00'59
max. Earth dist.	2020 Mar 09 08:54	18°♓25'39	30.92446 AU
morning rise	2020 Mar 24 03:18	18°♓58'59	
retrograde	2020 Jun 23 04:32	20°♓57'36	
opposition	2020 Sep 11 20:26	19°♓32'46	-1°06'55
min. Earth dist.	2020 Sep 11 00:50	19°♓34'07	28.92238 AU
direct	2020 Nov 29 00:37	18°♓09'45	
evening set	2021 Feb 23 11:53	20°♓02'57	
conjunction	2021 Mar 11 00:01	20°♓37'57	-1°04'08
minimum elong	2021 Mar 11 00:01	20°♓37'57	1°04'07
max. Earth dist.	2021 Mar 11 20:58	20°♓39'56	30.91902 AU
morning rise	2021 Mar 26 15:16	21°♓13'16	
retrograde	2021 Jun 25 19:22	23°♓11'59	
opposition	2021 Sep 14 09:21	21°♓47'08	-1°10'14
min. Earth dist.	2021 Sep 13 12:35	21°♓48'34	28.91657 AU
direct	2021 Dec 01 13:23	20°♓24'09	
evening set	2022 Feb 25 23:24	22°♓17'22	
conjunction	2022 Mar 13 11:43	22°♓52'24	-1°07'11
minimum elong	2022 Mar 13 11:43	22°♓52'24	1°07'12
max. Earth dist.	2022 Mar 14 08:12	22°♓54'20	30.91261 AU
morning rise	2022 Mar 29 03:26	23°♓27'45	
retrograde	2022 Jun 28 07:55	25°♓26'34	
opposition	2022 Sep 16 22:21	24°♓01'41	-1°13'27
min. Earth dist.	2022 Sep 16 02:33	24°♓03'03	28.90974 AU
direct	2022 Dec 04 00:15	22°♓38'42	
evening set	2023 Feb 28 10:49	24°♓31'55	
conjunction	2023 Mar 15 23:39	25°♓06'58	-1°10'09
minimum elong	2023 Mar 15 23:39	25°♓06'58	1°10'08
max. Earth dist.	2023 Mar 16 21:04	25°♓09'00	30.90523 AU
morning rise	2023 Mar 31 15:37	25°♓42'21	
retrograde	2023 Jun 30 21:07	27°♓41'13	
opposition	2023 Sep 19 11:18	26°♓16'18	-1°16'34
min. Earth dist.	2023 Sep 18 14:37	26°♓17'43	28.90178 AU
direct	2023 Dec 06 13:22	24°♓53'18	

evening set	2024 Mar 01 22:20	26°♓46'29		
conjunction	2024 Mar 17 11:22	27°♓21'34	-1°13'00	
minimum elong	2024 Mar 17 11:22	27°♓21'34	1°13'01	
max. Earth dist.	2024 Mar 18 07:53	27°♓23'31	30.89683 AU	
morning rise	2024 Apr 02 03:56	27°♓56'59		
retrograde	2024 Jul 02 10:41	29°♓55'55		
min. Earth dist.	2024 Sep 20 04:07	28°♓32'18	28.89311 AU	
opposition	2024 Sep 21 00:17	28°♓30'54	-1°19'34	
direct	2024 Dec 07 23:43	27°♓07'52		
evening set	2025 Mar 04 09:50	29°♓01'02		
conjunction	2025 Mar 19 23:25	29°♓36'08	-1°15'45	
minimum elong	2025 Mar 19 23:25	29°♓36'08	1°15'44	
max. Earth dist.	2025 Mar 20 21:11	29°♓38'12	30.88788 AU	
	2025 Mar 30 11:58	0°♈		
morning rise	2025 Apr 04 16:14	0°♈11'34		
retrograde	2025 Jul 04 21:33	2°♈10'32		
opposition	2025 Sep 23 12:54	0°♈45'27	-1°22'26	
min. Earth dist.	2025 Sep 22 16:17	0°♈46'53	28.88412 AU	
	2025 Oct 22 09:51	30°♓		
direct	2025 Dec 10 12:23	29°♓22'22		
	2026 Jan 26 17:34	0°♈		
evening set	2026 Mar 06 21:30	1°♈15'31		
conjunction	2026 Mar 22 11:19	1°♈50'38	-1°18'23	
minimum elong	2026 Mar 22 11:18	1°♈50'38	1°18'23	
max. Earth dist.	2026 Mar 23 08:22	1°♈52'38	30.87904 AU	
morning rise	2026 Apr 07 04:41	2°♈26'05		
retrograde	2026 Jul 07 10:55	4°♈25'05		
min. Earth dist.	2026 Sep 25 04:36	3°♈01'23	28.87564 AU	
opposition	2026 Sep 26 01:36	2°♈59'55	-1°25'11	
direct	2026 Dec 12 22:17	1°♈36'47		
evening set	2027 Mar 09 08:57	3°♈29'55		
conjunction	2027 Mar 24 23:13	4°♈05'04	-1°20'54	
minimum elong	2027 Mar 24 23:13	4°♈05'04	1°20'53	
max. Earth dist.	2027 Mar 25 21:37	4°♈07'11	30.87080 AU	
morning rise	2027 Apr 09 16:52	4°♈40'32		
retrograde	2027 Jul 09 22:41	6°♈39'34		
opposition	2027 Sep 28 14:19	5°♈14'21	-1°27'49	
min. Earth dist.	2027 Sep 27 17:22	5°♈15'48	28.86796 AU	
direct	2027 Dec 15 09:06	3°♈51'09		
evening set	2028 Mar 10 20:38	5°♈44'18		
conjunction	2028 Mar 26 11:16	6°♈19'27	-1°23'17	
minimum elong	2028 Mar 26 11:16	6°♈19'27	1°23'17	
max. Earth dist.	2028 Mar 27 09:35	6°♈21'34	30.86377 AU	
morning rise	2028 Apr 11 05:24	6°♈54'57		
retrograde	2028 Jul 11 13:04	8°♈54'01		
min. Earth dist.	2028 Sep 29 04:47	7°♈30'16	28.86162 AU	
opposition	2028 Sep 30 02:48	7°♈28'44	-1°30'18	
direct	2028 Dec 16 20:43	6°♈05'31		
evening set	2029 Mar 13 08:24	7°♈58'40		
conjunction	2029 Mar 28 23:25	8°♈33'51	-1°25'33	
minimum elong	2029 Mar 28 23:25	8°♈33'51	1°25'32	
max. Earth dist.	2029 Mar 29 22:17	8°♈36'01	30.85793 AU	
morning rise	2029 Apr 13 17:58	9°♈09'23		
retrograde	2029 Jul 14 02:11	11°♈08'29		
opposition	2029 Oct 02 15:24	9°♈43'09	-1°32'39	
min. Earth dist.	2029 Oct 01 17:57	9°♈44'39	28.85648 AU	
direct	2029 Dec 19 08:24	8°♈19'55		
evening set	2030 Mar 15 20:10	10°♈13'05		
conjunction	2030 Mar 31 11:39	10°♈48'18	-1°27'41	
minimum elong	2030 Mar 31 11:38	10°♈48'18	1°27'41	
max. Earth dist.	2030 Apr 01 11:02	10°♈50'30	30.85344 AU	
morning rise	2030 Apr 16 06:33	11°♈23'51		
retrograde	2030 Jul 16 16:29	13°♈22'59		
min. Earth dist.	2030 Oct 04 04:59	11°♈59'14	28.85256 AU	
opposition	2030 Oct 05 03:46	11°♈57'39	-1°34'52	
direct	2030 Dec 21 20:40	10°♈34'24		
evening set	2031 Mar 18 08:09	12°♈27'36		
conjunction	2031 Apr 02 23:55	13°♈02'50	-1°29'41	
minimum elong	2031 Apr 02 23:55	13°♈02'50	1°29'41	
max. Earth dist.	2031 Apr 03 23:05	13°♈05'02	30.84999 AU	
morning rise	2031 Apr 18 19:20	13°♈38'25		
retrograde	2031 Jul 19 06:12	15°♈37'36		
opposition	2031 Oct 07 16:21	14°♈12'15	-1°36'56	
min. Earth dist.	2031 Oct 06 18:24	14°♈13'47	28.84965 AU	
direct	2031 Dec 24 07:41	12°♈49'01		
evening set	2032 Mar 19 20:03	14°♈42'14		
conjunction	2032 Apr 04 12:24	15°♈17'31	-1°31'33	
minimum elong	2032 Apr 04 12:24	15°♈17'31	1°31'34	
max. Earth dist.	2032 Apr 05 12:39	15°♈19'48	30.84741 AU	
morning rise	2032 Apr 20 08:08	15°♈53'08		
retrograde	2032 Jul 20 20:43	17°♈52'20		
min. Earth dist.	2032 Oct 08 06:01	16°♈28'35	28.84721 AU	
opposition	2032 Oct 09 04:45	16°♈27'00	-1°38'51	
direct	2032 Dec 25 21:02	15°♈03'47		
evening set	2033 Mar 22 08:26	16°♈57'02		
conjunction	2033 Apr 07 01:02	17°♈32'20	-1°33'17	
minimum elong	2033 Apr 07 01:01	17°♈32'20	1°33'16	
max. Earth dist.	2033 Apr 08 00:11	17°♈34'32	30.84499 AU	
morning rise	2033 Apr 22 21:20	18°♈07'59		
retrograde	2033 Jul 23 10:26	20°♈07'14		
opposition	2033 Oct 11 17:07	18°♈41'54	-1°40'37	
min. Earth dist.	2033 Oct 10 19:15	18°♈43'26	28.84480 AU	
direct	2033 Dec 28 07:35	17°♈18'41		
evening set	2034 Mar 24 20:47	19°♈11'59		
conjunction	2034 Apr 09 13:57	19°♈47'19	-1°34'52	
minimum elong	2034 Apr 09 13:57	19°♈47'19	1°34'52	
max. Earth dist.	2034 Apr 10 13:56	19°♈49'35	30.84224 AU	
morning rise	2034 Apr 25 10:29	20°♈23'00		
retrograde	2034 Jul 25 22:31	22°♈22'15		
min. Earth dist.	2034 Oct 13 07:34	20°♈58'28	28.84168 AU	
opposition	2034 Oct 14 05:30	20°♈56'56	-1°42'14	
direct	2034 Dec 30 20:08	19°♈33'43		
evening set	2035 Mar 27 09:12	21°♈27'02		
conjunction	2035 Apr 12 02:40	22°♈02'23	-1°36'18	
minimum elong	2035 Apr 12 02:40	22°♈02'23	1°36'17	
max. Earth dist.	2035 Apr 13 01:18	22°♈04'32	30.83874 AU	
morning rise	2035 Apr 27 23:47	22°♈38'06		
retrograde	2035 Jul 28 12:27	24°♈37'22		
opposition	2035 Oct 16 17:58	23°♈12'01	-1°43'42	
min. Earth dist.	2035 Oct 15 20:16	23°♈13'32	28.83776 AU	
direct	2036 Jan 02 06:32	21°♈48'46		
evening set	2036 Mar 28 21:46	23°♈42'06		
conjunction	2036 Apr 13 15:47	24°♈17'29	-1°37'36	
minimum elong	2036 Apr 13 15:47	24°♈17'29	1°37'36	
max. Earth dist.	2036 Apr 14 14:59	24°♈19'41	30.83429 AU	
morning rise	2036 Apr 29 13:13	24°♈53'13		
retrograde	2036 Jul 30 00:18	26°♈52'28		
min. Earth dist.	2036 Oct 17 09:19	25°♈28'34	28.83293 AU	
opposition	2036 Oct 18 06:13	25°♈27'06	-1°45'00	
direct	2037 Jan 03 17:44	24°♈03'48		
evening set	2037 Mar 31 10:22	25°♈57'09		

conjunction	2037 Apr 16 04:50	26°♈32'33	-1°38'45	
minimum elong	2037 Apr 16 04:50	26°♈32'33	1°38'44	
max. Earth dist.	2037 Apr 17 03:09	26°♈34'40	30.82930 AU	
morning rise	2037 May 02 02:47	27°♈08'19		
retrograde	2037 Aug 01 13:57	29°♈07'32		
opposition	2037 Oct 20 18:22	27°♈42'07	-1°46'09	
min. Earth dist.	2037 Oct 19 21:05	27°♈43'37	28.82779 AU	
direct	2038 Jan 06 05:32	26°♈18'45		
evening set	2038 Apr 02 22:56	28°♈12'07		
conjunction	2038 Apr 18 17:48	28°♈47'33	-1°39'44	
minimum elong	2038 Apr 18 17:48	28°♈47'33	1°39'45	
max. Earth dist.	2038 Apr 19 16:14	28°♈49'40	30.82405 AU	
morning rise	2038 May 04 16:09	29°♈23'19		
	2038 May 22 00:12	0°♉		
retrograde	2038 Aug 04 01:58	1°♉22'30		
	2038 Oct 21 12:26	30°℞♈		
min. Earth dist.	2038 Oct 22 10:14	29°♈58'28	28.82278 AU	
opposition	2038 Oct 23 06:30	29°♈57'03	-1°47'08	
direct	2039 Jan 08 17:00	28°♈33'37		
	2039 Mar 23 20:36	0°♉		
evening set	2039 Apr 05 11:28	0°♉27'00		
conjunction	2039 Apr 21 06:52	1°♉02'27	-1°40'35	
minimum elong	2039 Apr 21 06:52	1°♉02'27	1°40'35	
max. Earth dist.	2039 Apr 22 05:22	1°♉04'35	30.81947 AU	
morning rise	2039 May 07 05:37	1°♉38'15		
retrograde	2039 Aug 06 15:59	3°♉37'24		
opposition	2039 Oct 25 18:24	2°♉11'55	-1°47'58	
min. Earth dist.	2039 Oct 24 21:09	2°♉13'24	28.81866 AU	
direct	2040 Jan 11 05:09	0°♉48'25		
evening set	2040 Apr 07 00:06	2°♉41'49		
conjunction	2040 Apr 22 19:53	3°♉17'18	-1°41'17	
minimum elong	2040 Apr 22 19:53	3°♉17'18	1°41'17	
max. Earth dist.	2040 Apr 23 17:55	3°♉19'23	30.81583 AU	
morning rise	2040 May 08 19:09	3°♉53'08		
retrograde	2040 Aug 08 05:26	5°♉52'14		
min. Earth dist.	2040 Oct 26 10:11	4°♉28'09	28.81572 AU	
opposition	2040 Oct 27 06:24	4°♉26'43	-1°48'37	
direct	2041 Jan 12 16:37	3°♉03'12		
evening set	2041 Apr 09 12:46	4°♉56'37		
conjunction	2041 Apr 25 09:09	5°♉32'08	-1°41'49	
minimum elong	2041 Apr 25 09:09	5°♉32'08	1°41'48	
max. Earth dist.	2041 Apr 26 07:59	5°♉34'17	30.81359 AU	
morning rise	2041 May 11 08:42	6°♉07'59		
retrograde	2041 Aug 10 19:57	8°♉07'02		
opposition	2041 Oct 29 18:02	6°♉41'32	-1°49'07	
min. Earth dist.	2041 Oct 28 21:02	6°♉43'00	28.81417 AU	
direct	2042 Jan 15 06:19	5°♉17'58		
evening set	2042 Apr 12 01:34	7°♉11'25		
conjunction	2042 Apr 27 22:15	7°♉46'59	-1°42'12	
minimum elong	2042 Apr 27 22:15	7°♉46'59	1°42'13	
max. Earth dist.	2042 Apr 28 20:06	7°♉49'02	30.81281 AU	
morning rise	2042 May 13 22:23	8°♉22'51		
retrograde	2042 Aug 13 09:11	10°♉21'52		
min. Earth dist.	2042 Oct 31 09:34	8°♉57'49	28.81424 AU	
opposition	2042 Nov 01 05:56	8°♉56'23	-1°49'26	
direct	2043 Jan 17 17:05	7°♉32'48		
evening set	2043 Apr 14 14:08	9°♉26'18		
conjunction	2043 Apr 30 11:28	10°♉01'53	-1°42'26	
minimum elong	2043 Apr 30 11:28	10°♉01'53	1°42'26	
max. Earth dist.	2043 May 01 10:24	10°♉04'03	30.81360 AU	
morning rise	2043 May 16 11:52	10°♉37'47		
retrograde	2043 Aug 15 21:57	12°♉36'45		
opposition	2043 Nov 03 17:41	11°♉11'19	-1°49'36	
min. Earth dist.	2043 Nov 02 21:04	11°♉12'46	28.81563 AU	
direct	2044 Jan 20 05:45	9°♉47'45		
evening set	2044 Apr 16 03:09	11°♉41'17		
conjunction	2044 May 02 00:49	12°♉16'54	-1°42'30	
minimum elong	2044 May 02 00:49	12°♉16'54	1°42'31	
max. Earth dist.	2044 May 02 22:30	12°♉18'57	30.81567 AU	
morning rise	2044 May 18 01:49	12°♉52'50		
retrograde	2044 Aug 17 12:37	14°♉51'46		
min. Earth dist.	2044 Nov 04 08:59	13°♉27'48	28.81821 AU	
opposition	2044 Nov 05 05:20	13°♉26'22	-1°49'35	
direct	2045 Jan 21 16:16	12°♉02'48		
evening set	2045 Apr 18 16:12	13°♉56'24		
conjunction	2045 May 04 14:27	14°♉32'03	-1°42'25	
minimum elong	2045 May 04 14:27	14°♉32'03	1°42'25	
max. Earth dist.	2045 May 05 12:46	14°♉34'09	30.81850 AU	
	2045 May 17 00:54	15°♉		
morning rise	2045 May 20 15:43	15°♉08'01		
retrograde	2045 Aug 20 00:17	17°♉06'54		
opposition	2045 Nov 07 17:04	15°♉41'34	-1°49'24	
min. Earth dist.	2045 Nov 06 21:34	15°♉42'56	28.82116 AU	
	2045 Dec 03 10:17	15°℞♉		
direct	2046 Jan 24 03:35	14°♉18'00		
	2046 Mar 15 07:38	15°♉		
evening set	2046 Apr 21 05:21	16°♉11'40		
conjunction	2046 May 07 03:59	16°♉47'20	-1°42'10	
minimum elong	2046 May 07 03:59	16°♉47'20	1°42'11	
max. Earth dist.	2046 May 08 01:08	16°♉49'19	30.82153 AU	
morning rise	2046 May 23 05:43	17°♉23'19		
retrograde	2046 Aug 22 13:25	19°♉22'09		
min. Earth dist.	2046 Nov 09 09:10	17°♉58'15	28.82406 AU	
opposition	2046 Nov 10 04:44	17°♉56'52	-1°49'03	
direct	2047 Jan 26 14:52	16°♉33'18		
evening set	2047 Apr 23 18:41	18°♉27'01		
conjunction	2047 May 09 17:47	19°♉02'43	-1°41'46	
minimum elong	2047 May 09 17:47	19°♉02'43	1°41'46	
max. Earth dist.	2047 May 10 14:37	19°♉04'40	30.82406 AU	
morning rise	2047 May 25 19:53	19°♉38'42		
retrograde	2047 Aug 25 01:15	21°♉37'29		
opposition	2047 Nov 12 16:28	20°♉12'14	-1°48'32	
min. Earth dist.	2047 Nov 11 22:27	20°♉13'30	28.82624 AU	
direct	2048 Jan 29 01:25	18°♉48'38		
evening set	2048 Apr 25 08:01	20°♉42'22		
conjunction	2048 May 11 07:41	21°♉18'06	-1°41'13	
minimum elong	2048 May 11 07:42	21°♉18'06	1°41'13	
max. Earth dist.	2048 May 12 03:40	21°♉19'58	30.82592 AU	
morning rise	2048 May 27 10:11	21°♉54'06		
retrograde	2048 Aug 26 15:00	23°♉52'48		
min. Earth dist.	2048 Nov 13 09:43	22°♉28'51	28.82757 AU	
opposition	2048 Nov 14 04:02	22°♉27'33	-1°47'52	
direct	2049 Jan 30 13:23	21°♉03'53		
evening set	2049 Apr 27 21:32	22°♉57'40		
conjunction	2049 May 13 21:34	23°♉33'24	-1°40'30	
minimum elong	2049 May 13 21:34	23°♉33'24	1°40'29	
max. Earth dist.	2049 May 14 16:22	23°♉35'10	30.82682 AU	
morning rise	2049 May 30 00:30	24°♉09'26		
retrograde	2049 Aug 29 03:12	26°♉08'00		
opposition	2049 Nov 16 15:33	24°♉42'46	-1°47'01	
min. Earth dist.	2049 Nov 15 22:54	24°♉43'56	28.82820 AU	
direct	2050 Feb 02 01:13	23°♉19'02		

evening set	2050 Apr 30 10:50	25°♉12'49	
conjunction	2050 May 16 11:29	25°♉48'35	-1°39'38
minimum elong	2050 May 16 11:29	25°♉48'35	1°39'39
max. Earth dist.	2050 May 17 06:23	25°♉50'21	30.82739 AU
morning rise	2050 Jun 01 14:42	26°♉24'37	
retrograde	2050 Aug 31 16:36	28°♉23'03	
min. Earth dist.	2050 Nov 18 09:59	26°♉59'00	28.82865 AU
opposition	2050 Nov 19 02:55	26°♉57'49	-1°46'01
direct	2051 Feb 04 14:59	25°♉34'00	
evening set	2051 May 03 00:12	27°♉27'47	
conjunction	2051 May 19 01:09	28°♉03'35	-1°38'38
minimum elong	2051 May 19 01:09	28°♉03'35	1°38'37
max. Earth dist.	2051 May 19 18:38	28°♉05'13	30.82798 AU
morning rise	2051 Jun 04 04:54	28°♉39'38	
	2051 Jul 16 11:52	0°♊	
retrograde	2051 Sep 03 05:40	0°♊37'57	
	2051 Oct 22 23:53	30°℞♉	
opposition	2051 Nov 21 14:18	29°♉12'42	-1°44'51
min. Earth dist.	2051 Nov 20 22:34	29°♉13'49	28.82952 AU
direct	2052 Feb 07 02:11	27°♉48'48	
evening set	2052 May 04 13:33	29°♉42'37	
	2052 May 12 10:07	0°♊	
conjunction	2052 May 20 15:09	0°♊18'26	-1°37'28
minimum elong	2052 May 20 15:09	0°♊18'26	1°37'28
max. Earth dist.	2052 May 21 09:12	0°♊20'07	30.82919 AU
morning rise	2052 Jun 05 19:06	0°♊54'30	
retrograde	2052 Sep 04 18:32	2°♊52'40	
min. Earth dist.	2052 Nov 22 09:44	1°♊28'32	28.83109 AU
opposition	2052 Nov 23 01:22	1°♊27'26	-1°43'32
direct	2053 Feb 08 15:36	0°♊03'29	
evening set	2053 May 07 03:07	1°♊57'19	
conjunction	2053 May 23 05:00	2°♊33'09	-1°36'10
minimum elong	2053 May 23 05:00	2°♊33'09	1°36'09
max. Earth dist.	2053 May 23 21:26	2°♊34'42	30.83137 AU
morning rise	2053 Jun 08 09:28	3°♊09'14	
retrograde	2053 Sep 07 08:47	5°♊07'17	
opposition	2053 Nov 25 12:34	3°♊42'04	-1°42'03
min. Earth dist.	2053 Nov 24 21:16	3°♊43'09	28.83392 AU
direct	2054 Feb 11 03:06	2°♊18'04	
evening set	2054 May 09 16:23	4°♊11'56	
conjunction	2054 May 25 18:48	4°♊47'48	-1°34'42
minimum elong	2054 May 25 18:49	4°♊47'48	1°34'43
max. Earth dist.	2054 May 26 11:56	4°♊49'24	30.83481 AU
morning rise	2054 Jun 10 23:27	5°♊23'53	
retrograde	2054 Sep 09 19:52	7°♊21'50	
opposition	2054 Nov 27 23:43	5°♊56'39	-1°40'25
min. Earth dist.	2054 Nov 27 09:05	5°♊57'41	28.83803 AU
direct	2055 Feb 13 15:03	4°♊32'37	
evening set	2055 May 12 05:53	6°♊26'32	
conjunction	2055 May 28 08:41	7°♊02'25	-1°33'07
minimum elong	2055 May 28 08:41	7°♊02'25	1°33'07
max. Earth dist.	2055 May 29 00:37	7°♊03'55	30.83980 AU
morning rise	2055 Jun 13 13:47	7°♊38'32	
retrograde	2055 Sep 12 09:06	9°♊36'21	
opposition	2055 Nov 30 10:42	8°♊11'15	-1°38'38
min. Earth dist.	2055 Nov 29 19:51	8°♊12'18	28.84370 AU
direct	2056 Feb 16 02:09	6°♊47'12	
evening set	2056 May 13 19:25	8°♊41'11	
conjunction	2056 May 29 22:42	9°♊17'06	-1°31'22
minimum elong	2056 May 29 22:43	9°♊17'06	1°31'23
max. Earth dist.	2056 May 30 14:41	9°♊18'36	30.84608 AU
morning rise	2056 Jun 15 04:04	9°♊53'14	
retrograde	2056 Sep 13 20:47	11°♊50'57	
opposition	2056 Dec 01 21:49	10°♊25'56	-1°36'42
min. Earth dist.	2056 Dec 01 08:21	10°♊26'54	28.85050 AU
direct	2057 Feb 17 12:15	9°♊01'54	
evening set	2057 May 16 09:02	10°♊55'57	
conjunction	2057 Jun 01 12:45	11°♊31'54	-1°29'29
minimum elong	2057 Jun 01 12:45	11°♊31'54	1°29'28
max. Earth dist.	2057 Jun 02 03:55	11°♊33'19	30.85345 AU
morning rise	2057 Jun 17 18:25	12°♊08'02	
retrograde	2057 Sep 16 09:53	14°♊05'40	
opposition	2057 Dec 04 08:41	12°♊40'45	-1°34'36
min. Earth dist.	2057 Dec 03 18:51	12°♊41'44	28.85808 AU
direct	2058 Feb 19 23:29	11°♊16'43	
evening set	2058 May 18 22:49	13°♊10'52	
conjunction	2058 Jun 04 02:51	13°♊46'49	-1°27'27
minimum elong	2058 Jun 04 02:51	13°♊46'50	1°27'28
max. Earth dist.	2058 Jun 04 16:59	13°♊48'09	30.86115 AU
morning rise	2058 Jun 20 08:49	14°♊22'59	
retrograde	2058 Sep 18 21:37	16°♊20'32	
opposition	2058 Dec 06 19:46	14°♊55'43	-1°32'22
min. Earth dist.	2058 Dec 06 07:43	14°♊56'34	28.86580 AU
direct	2059 Feb 22 10:33	13°♊31'41	
evening set	2059 May 21 12:30	15°♊25'55	
conjunction	2059 Jun 06 17:04	16°♊01'53	-1°25'18
minimum elong	2059 Jun 06 17:04	16°♊01'53	1°25'17
max. Earth dist.	2059 Jun 07 06:51	16°♊03'11	30.86873 AU
morning rise	2059 Jun 22 23:15	16°♊38'03	
retrograde	2059 Sep 21 10:44	18°♊35'30	
opposition	2059 Dec 09 06:44	17°♊10'46	-1°29'59
min. Earth dist.	2059 Dec 08 18:48	17°♊11'37	28.87288 AU
direct	2060 Feb 24 23:39	15°♊46'43	
evening set	2060 May 23 02:35	17°♊41'01	
conjunction	2060 Jun 08 07:23	18°♊17'01	-1°23'01
minimum elong	2060 Jun 08 07:23	18°♊17'01	1°23'01
max. Earth dist.	2060 Jun 08 19:10	18°♊18'07	30.87536 AU
morning rise	2060 Jun 24 13:57	18°♊53'12	
retrograde	2060 Sep 22 23:45	20°♊50'31	
opposition	2060 Dec 10 17:42	19°♊25'51	-1°27'28
min. Earth dist.	2060 Dec 10 07:27	19°♊26'35	28.87902 AU
direct	2061 Feb 26 10:25	18°♊01'45	
evening set	2061 May 25 16:30	19°♊56'07	
conjunction	2061 Jun 10 21:50	20°♊32'08	-1°20'36
minimum elong	2061 Jun 10 21:50	20°♊32'08	1°20'36
max. Earth dist.	2061 Jun 11 09:30	20°♊33'13	30.88100 AU
morning rise	2061 Jun 27 04:28	21°♊08'18	
retrograde	2061 Sep 25 12:53	23°♊05'28	
opposition	2061 Dec 13 04:38	21°♊40'51	-1°24'50
min. Earth dist.	2061 Dec 12 18:59	21°♊41'32	28.88405 AU
direct	2062 Mar 01 00:26	20°♊16'43	
evening set	2062 May 28 06:21	22°♊11'06	
conjunction	2062 Jun 13 11:51	22°♊47'08	-1°18'04
minimum elong	2062 Jun 13 11:52	22°♊47'08	1°18'05
max. Earth dist.	2062 Jun 13 21:21	22°♊48'01	30.88573 AU
morning rise	2062 Jun 29 18:54	23°♊23'18	
retrograde	2062 Sep 28 02:47	25°♊20'19	
opposition	2062 Dec 15 15:30	23°♊55'43	-1°22'04
min. Earth dist.	2062 Dec 15 06:41	23°♊56'21	28.88849 AU
direct	2063 Mar 03 13:00	22°♊31'30	
evening set	2063 May 30 20:10	24°♊25'55	

conjunction	2063 Jun 16	02:10	25°♊01'58	-1°15'26	
minimum elong	2063 Jun 16	02:11	25°♊01'58	1°15'26	
max. Earth dist.	2063 Jun 16	11:46	25°♊02'51	30.88997 AU	
morning rise	2063 Jul 02	09:16	25°♊38'08		
retrograde	2063 Sep 30	13:41	27°♊34'58		
opposition	2063 Dec 18	02:11	26°♊10'24	-1°19'11	
min. Earth dist.	2063 Dec 17	18:35	26°♊10'56	28.89257 AU	
direct	2064 Mar 05	01:40	24°♊46'07		
evening set	2064 Jun 01	10:04	26°♊40'32		
conjunction	2064 Jun 17	16:19	27°♊16'36	-1°12'41	
minimum elong	2064 Jun 17	16:19	27°♊16'36	1°12'41	
max. Earth dist.	2064 Jun 18	00:09	27°♊17'19	30.89425 AU	
morning rise	2064 Jul 03	23:45	27°♊52'46		
retrograde	2064 Oct 02	03:07	29°♊49'25		
opposition	2064 Dec 19	12:46	28°♊24'52	-1°16'11	
min. Earth dist.	2064 Dec 19	05:18	28°♊25'24	28.89697 AU	
direct	2065 Mar 07	13:49	27°♊00'30		
evening set	2065 Jun 03	23:50	28°♊54'56		
conjunction	2065 Jun 20	06:24	29°♊31'01	-1°09'49	
minimum elong	2065 Jun 20	06:24	29°♊31'01	1°09'49	
max. Earth dist.	2065 Jun 20	14:08	29°♊31'44	30.89884 AU	
	2065 Jul 03	07:08	0°♋		
morning rise	2065 Jul 06	13:51	0°♋07'11		
retrograde	2065 Oct 04	14:12	2°♋03'39		
opposition	2065 Dec 21	23:23	0°♋39'08	-1°13'04	
min. Earth dist.	2065 Dec 21	17:25	0°♋39'33	28.90196 AU	
	2066 Jan 14	21:12	30°℞♊		
direct	2066 Mar 10	00:48	29°♊14'41		
	2066 May 01	21:40	0°♋		
evening set	2066 Jun 06	13:32	1°♋09'09		
conjunction	2066 Jun 22	20:22	1°♋45'13	-1°06'51	
minimum elong	2066 Jun 22	20:22	1°♋45'13	1°06'52	
max. Earth dist.	2066 Jun 23	03:09	1°♋45'51	30.90446 AU	
morning rise	2066 Jul 09	04:02	2°♋21'24		
retrograde	2066 Oct 07	01:52	4°♋17'41		
opposition	2066 Dec 24	09:47	2°♋53'13	-1°09'51	
min. Earth dist.	2066 Dec 24	03:20	2°♋53'40	28.90811 AU	
direct	2067 Mar 12	12:42	1°♋28'42		
evening set	2067 Jun 09	03:12	3°♋23'11		
conjunction	2067 Jun 25	10:17	3°♋59'16	-1°03'48	
minimum elong	2067 Jun 25	10:17	3°♋59'16	1°03'48	
max. Earth dist.	2067 Jun 25	16:18	3°♋59'50	30.91123 AU	
morning rise	2067 Jul 11	18:05	4°♋35'26		
retrograde	2067 Oct 09	12:02	6°♋31'35		
opposition	2067 Dec 26	20:22	5°♋07'09	-1°06'31	
min. Earth dist.	2067 Dec 26	15:23	5°♋07'30	28.91556 AU	
direct	2068 Mar 13	23:23	3°♋42'36		
evening set	2068 Jun 10	16:57	5°♋37'08		
conjunction	2068 Jun 27	00:23	6°♋13'13	-1°00'39	
minimum elong	2068 Jun 27	00:23	6°♋13'13	1°00'38	
max. Earth dist.	2068 Jun 27	06:11	6°♋13'46	30.91944 AU	
morning rise	2068 Jul 13	08:13	6°♋49'23		
retrograde	2068 Oct 10	23:54	8°♋45'22		
opposition	2068 Dec 28	06:40	7°♋21'01	-1°03'06	
min. Earth dist.	2068 Dec 28	01:28	7°♋21'23	28.92429 AU	
direct	2069 Mar 16	11:24	5°♋56'26		
evening set	2069 Jun 13	06:50	7°♋51'02		
conjunction	2069 Jun 29	14:19	8°♋27'08	-0°57'24	
minimum elong	2069 Jun 29	14:20	8°♋27'08	0°57'24	
max. Earth dist.	2069 Jun 29	18:42	8°♋27'32	30.92881 AU	
morning rise	2069 Jul 15	22:20	9°♋03'17		
retrograde	2069 Oct 13	11:44	10°♋59'08		
opposition	2069 Dec 30	17:11	9°♋34'53	-0°59'35	
min. Earth dist.	2069 Dec 30	13:15	9°♋35'10	28.93417 AU	
direct	2070 Mar 18	21:34	8°♋10'17		
evening set	2070 Jun 15	20:26	10°♋04'58		
conjunction	2070 Jul 02	04:17	10°♋41'04	-0°54'03	
minimum elong	2070 Jul 02	04:17	10°♋41'04	0°54'03	
max. Earth dist.	2070 Jul 02	08:55	10°♋41'30	30.93906 AU	
morning rise	2070 Jul 18	12:12	11°♋17'13		
retrograde	2070 Oct 15	23:38	13°♋12'56		
opposition	2071 Jan 02	03:35	11°♋48'47	-0°55'58	
min. Earth dist.	2071 Jan 02	00:11	11°♋49'02	28.94446 AU	
direct	2071 Mar 21	10:58	10°♋24'12		
evening set	2071 Jun 18	10:28	12°♋18'57		
conjunction	2071 Jul 04	18:18	12°♋55'03	-0°50'38	
minimum elong	2071 Jul 04	18:18	12°♋55'03	0°50'39	
max. Earth dist.	2071 Jul 04	20:46	12°♋55'17	30.94940 AU	
morning rise	2071 Jul 21	02:25	13°♋31'11		
retrograde	2071 Oct 18	12:59	15°♋26'47		
opposition	2072 Jan 04	13:55	14°♋02'44	-0°52'16	
min. Earth dist.	2072 Jan 04	11:26	14°♋02'54	28.95466 AU	
direct	2072 Mar 22	22:48	12°♋38'07		
evening set	2072 Jun 20	00:25	14°♋32'58		
conjunction	2072 Jul 06	08:34	15°♋09'04	-0°47'09	
minimum elong	2072 Jul 06	08:35	15°♋09'04	0°47'09	
max. Earth dist.	2072 Jul 06	10:54	15°♋09'17	30.95920 AU	
morning rise	2072 Jul 22	16:31	15°♋45'12		
retrograde	2072 Oct 20	00:18	17°♋40'39		
opposition	2073 Jan 06	00:25	16°♋16'42	-0°48'30	
min. Earth dist.	2073 Jan 05	23:23	16°♋16'46	28.96395 AU	
direct	2073 Mar 25	11:18	14°♋52'04		
evening set	2073 Jun 22	14:25	16°♋46'58		
conjunction	2073 Jul 08	22:31	17°♋23'04	-0°43'35	
minimum elong	2073 Jul 08	22:31	17°♋23'04	0°43'35	
max. Earth dist.	2073 Jul 08	22:40	17°♋23'05	30.96808 AU	
morning rise	2073 Jul 25	06:34	17°♋59'11		
retrograde	2073 Oct 22	13:56	19°♋54'29		
opposition	2074 Jan 08	10:47	18°♋30'36	-0°44'40	
min. Earth dist.	2074 Jan 08	10:06	18°♋30'39	28.97233 AU	
direct	2074 Mar 27	23:47	17°♋05'56		
evening set	2074 Jun 25	04:17	19°♋00'52		
conjunction	2074 Jul 11	12:36	19°♋36'59	-0°39'58	
minimum elong	2074 Jul 11	12:36	19°♋36'59	0°39'58	
max. Earth dist.	2074 Jul 11	12:20	19°♋36'58	30.97596 AU	
morning rise	2074 Jul 27	20:28	20°♋13'05		
retrograde	2074 Oct 25	00:57	22°♋08'14		
opposition	2075 Jan 10	21:10	20°♋44'24	-0°40'46	
min. Earth dist.	2075 Jan 10	22:24	20°♋44'19	28.97979 AU	
direct	2075 Mar 30	11:13	19°♋19'42		
evening set	2075 Jun 27	18:07	21°♋14'40		
conjunction	2075 Jul 14	02:30	21°♋50'46	-0°36'18	
minimum elong	2075 Jul 14	02:30	21°♋50'46	0°36'18	
max. Earth dist.	2075 Jul 14	00:42	21°♋50'36	30.98321 AU	
morning rise	2075 Jul 30	10:26	22°♋26'51		
retrograde	2075 Oct 27	12:35	24°♋21'50		
opposition	2076 Jan 13	07:23	22°♋58'03	-0°36'48	
min. Earth dist.	2076 Jan 13	08:32	22°♋57'58	28.98669 AU	
direct	2076 Mar 31	23:44	21°♋33'17		
evening set	2076 Jun 29	08:00	23°♋28'17		
conjunction	2076 Jul 15	16:24	24°♋04'23	-0°32'34	

minimum elong	2076 Jul 15 16:24	24°♓04'23	0°32'34
max. Earth dist.	2076 Jul 15 13:33	24°♓04'08	30.98991 AU
morning rise	2076 Aug 01 00:12	24°♓40'27	
retrograde	2076 Oct 28 22:22	26°♓35'16	
opposition	2077 Jan 14 17:37	25°♓11'32	-0°32'48
min. Earth dist.	2077 Jan 14 20:34	25°♓11'19	28.99340 AU
direct	2077 Apr 03 10:22	23°♓46'42	
evening set	2077 Jul 01 21:40	25°♓41'44	
conjunction	2077 Jul 18 06:10	26°♓17'50	-0°28'48
minimum elong	2077 Jul 18 06:10	26°♓17'50	0°28'48
max. Earth dist.	2077 Jul 18 02:50	26°♓17'31	30.99680 AU
morning rise	2077 Aug 03 13:49	26°♓53'52	
retrograde	2077 Oct 31 09:31	28°♓48'31	
opposition	2078 Jan 17 03:45	27°♓24'50	-0°28'46
min. Earth dist.	2078 Jan 17 06:35	27°♓24'38	29.00042 AU
direct	2078 Apr 05 22:04	25°♓59'56	
evening set	2078 Jul 04 11:13	27°♓55'00	
conjunction	2078 Jul 20 19:35	28°♓31'05	-0°25'00
minimum elong	2078 Jul 20 19:36	28°♓31'05	0°25'00
max. Earth dist.	2078 Jul 20 14:55	28°♓30'39	31.00414 AU
morning rise	2078 Aug 06 03:12	29°♓07'06	
	2078 Sep 01 09:27	0°♌	
retrograde	2078 Nov 02 19:50	1°♌01'36	
	2079 Jan 06 10:10	30°℞♓	
opposition	2079 Jan 19 13:57	29°♓37'57	-0°24'40
min. Earth dist.	2079 Jan 19 17:58	29°♓37'40	29.00829 AU
direct	2079 Apr 08 08:17	28°♓13'00	
	2079 Jul 03 05:58	0°♌	
evening set	2079 Jul 07 00:43	0°♌08'07	
conjunction	2079 Jul 23 09:14	0°♌44'11	-0°21'10
minimum elong	2079 Jul 23 09:14	0°♌44'11	0°21'11
max. Earth dist.	2079 Jul 23 04:53	0°♌43'47	31.01253 AU
morning rise	2079 Aug 08 16:33	1°♌20'10	
retrograde	2079 Nov 05 06:10	3°♌14'31	
opposition	2080 Jan 21 23:56	1°♌50'56	-0°20'33
min. Earth dist.	2080 Jan 22 04:16	1°♌50'38	29.01718 AU
direct	2080 Apr 09 21:32	0°♌25'57	
evening set	2080 Jul 08 14:24	2°♌21'07	
conjunction	2080 Jul 24 22:40	2°♌57'10	-0°17'18
minimum elong	2080 Jul 24 22:41	2°♌57'10	0°17'18
max. Earth dist.	2080 Jul 24 16:34	2°♌56'37	31.02213 AU
morning rise	2080 Aug 10 05:57	3°♌33'08	
retrograde	2080 Nov 06 18:21	5°♌27'21	
opposition	2081 Jan 23 10:04	4°♌03'50	-0°16'24
min. Earth dist.	2081 Jan 23 14:43	4°♌03'30	29.02754 AU
direct	2081 Apr 12 08:55	2°♌38'50	
evening set	2081 Jul 11 03:43	4°♌34'04	
conjunction	2081 Jul 27 12:04	5°♌10'06	-0°13'25
minimum elong	2081 Jul 27 12:03	5°♌10'06	0°13'26
behind sun begin	2081 Jul 27 08:29	5°♌09'47	
behind sun end	2081 Jul 27 15:38	5°♌10'25	
max. Earth dist.	2081 Jul 27 06:28	5°♌09'36	31.03309 AU
morning rise	2081 Aug 12 18:55	5°♌46'02	
retrograde	2081 Nov 09 04:56	7°♌40'08	
opposition	2082 Jan 25 20:12	6°♌16'43	-0°12'14
min. Earth dist.	2082 Jan 26 01:50	6°♌16'19	29.03902 AU
direct	2082 Apr 14 20:44	4°♌51'44	
evening set	2082 Jul 13 17:15	6°♌47'01	
conjunction	2082 Jul 30 01:21	7°♌23'02	-0°09'31
minimum elong	2082 Jul 30 01:21	7°♌23'02	0°09'31
behind sun begin	2082 Jul 29 19:54	7°♌22'33	
behind sun end	2082 Jul 30 06:47	7°♌23'31	
max. Earth dist.	2082 Jul 29 18:05	7°♌22'23	31.04517 AU
morning rise	2082 Aug 15 08:09	7°♌58'57	
retrograde	2082 Nov 11 18:31	9°♌52'57	
opposition	2083 Jan 28 06:10	8°♌29'37	-0°08'03
min. Earth dist.	2083 Jan 28 11:48	8°♌29'13	29.05143 AU
direct	2083 Apr 17 09:32	7°♌04'39	
evening set	2083 Jul 16 06:45	9°♌00'01	
conjunction	2083 Aug 01 14:50	9°♌36'02	-0°05'37
minimum elong	2083 Aug 01 14:50	9°♌36'02	0°05'37
behind sun begin	2083 Aug 01 08:30	9°♌35'28	
behind sun end	2083 Aug 01 21:10	9°♌36'35	
max. Earth dist.	2083 Aug 01 07:34	9°♌35'23	31.05765 AU
morning rise	2083 Aug 17 21:14	10°♌11'54	
retrograde	2083 Nov 14 05:16	12°♌05'48	
opposition	2084 Jan 30 16:23	10°♌42'35	-0°03'50
min. Earth dist.	2084 Jan 30 23:49	10°♌42'03	29.06386 AU
direct	2084 Apr 18 21:26	9°♌17'38	
evening set	2084 Jul 17 20:23	11°♌13'04	
conjunction	2084 Aug 03 04:14	11°♌49'03	-0°01'40
minimum elong	2084 Aug 03 04:13	11°♌49'03	0°01'39
behind sun begin	2084 Aug 02 21:37	11°♌48'28	
behind sun end	2084 Aug 03 10:48	11°♌49'38	
max. Earth dist.	2084 Aug 02 19:27	11°♌48'16	31.06989 AU
morning rise	2084 Aug 19 10:24	12°♌24'54	
retrograde	2084 Nov 15 17:09	14°♌18'40	
asc. node	2084 Dec 31 00:24	13°♌45'58	
opposition	2085 Feb 01 02:28	12°♌55'33	0°00'22
min. Earth dist.	2085 Feb 01 09:49	12°♌55'02	29.07572 AU
direct	2085 Apr 21 10:03	11°♌30'36	
evening set	2085 Jul 20 10:01	13°♌26'06	
conjunction	2085 Aug 05 17:38	14°♌02'04	0°02'24
minimum elong	2085 Aug 05 17:38	14°♌02'04	0°02'24
behind sun begin	2085 Aug 05 11:03	14°♌01'29	
behind sun end	2085 Aug 06 00:14	14°♌02'39	
max. Earth dist.	2085 Aug 05 07:52	14°♌01'11	31.08122 AU
morning rise	2085 Aug 21 23:26	14°♌37'53	
	2085 Sep 01 10:17	15°♌	
retrograde	2085 Nov 18 03:42	16°♌31'32	
opposition	2086 Feb 03 12:48	15°♌08'29	0°04'34
min. Earth dist.	2086 Feb 03 21:58	15°♌07'50	29.08665 AU
	2086 Feb 08 13:36	15°℞♌	
direct	2086 Apr 23 20:39	13°♌43'31	
	2086 Jul 04 01:00	15°♌	
evening set	2086 Jul 22 23:23	15°♌39'03	
conjunction	2086 Aug 08 06:53	16°♌14'59	0°06'19
minimum elong	2086 Aug 08 06:52	16°♌14'59	0°06'20
behind sun begin	2086 Aug 08 00:40	16°♌14'26	
behind sun end	2086 Aug 08 13:05	16°♌15'32	
max. Earth dist.	2086 Aug 07 20:18	16°♌14'02	31.09162 AU
morning rise	2086 Aug 24 12:22	16°♌50'46	
retrograde	2086 Nov 20 14:44	18°♌44'18	
opposition	2087 Feb 05 22:59	17°♌21'19	0°08'46
min. Earth dist.	2087 Feb 06 08:21	17°♌20'39	29.09638 AU
direct	2087 Apr 26 08:47	15°♌56'19	
evening set	2087 Jul 25 13:00	17°♌51'52	
conjunction	2087 Aug 10 20:09	18°♌27'47	0°10'13
minimum elong	2087 Aug 10 20:09	18°♌27'47	0°10'13
behind sun begin	2087 Aug 10 14:57	18°♌27'19	
behind sun end	2087 Aug 11 01:21	18°♌28'15	
max. Earth dist.	2087 Aug 10 07:53	18°♌26'39	31.10080 AU
morning rise	2087 Aug 27 01:20	19°♌03'32	

retrograde	2087 Nov 23 00:19	20°♌56'55	
opposition	2088 Feb 08 09:07	19°♌33'59	0°12'56
min. Earth dist.	2088 Feb 08 19:58	19°♌33'13	29.10518 AU
direct	2088 Apr 27 19:23	18°♌08'56	
evening set	2088 Jul 27 02:24	20°♌04'31	
conjunction	2088 Aug 12 09:26	20°♌40'24	0°14'06
minimum elong	2088 Aug 12 09:25	20°♌40'24	0°14'07
behind sun begin	2088 Aug 12 06:22	20°♌40'07	
behind sun end	2088 Aug 12 12:29	20°♌40'40	
max. Earth dist.	2088 Aug 11 21:08	20°♌39'16	31.10917 AU
morning rise	2088 Aug 28 14:07	21°♌16'06	
retrograde	2088 Nov 24 09:38	23°♌09'21	
opposition	2089 Feb 09 19:19	21°♌46'27	0°17'05
min. Earth dist.	2089 Feb 10 06:47	21°♌45'38	29.11316 AU
direct	2089 Apr 30 08:11	20°♌21'22	
evening set	2089 Jul 29 15:40	22°♌16'57	
conjunction	2089 Aug 14 22:14	22°♌52'48	0°17'58
minimum elong	2089 Aug 14 22:14	22°♌52'48	0°17'58
max. Earth dist.	2089 Aug 14 08:05	22°♌51'30	31.11695 AU
morning rise	2089 Aug 31 02:41	23°♌28'28	
retrograde	2089 Nov 26 20:53	25°♌21'35	
opposition	2090 Feb 12 05:26	23°♌58'42	0°21'12
min. Earth dist.	2090 Feb 12 17:21	23°♌57'52	29.12094 AU
direct	2090 May 02 19:11	22°♌33'34	
evening set	2090 Aug 01 04:45	24°♌29'11	
conjunction	2090 Aug 17 11:11	25°♌05'00	0°21'48
minimum elong	2090 Aug 17 11:11	25°♌05'00	0°21'49
max. Earth dist.	2090 Aug 16 21:28	25°♌03'44	31.12468 AU
morning rise	2090 Sep 02 15:04	25°♌40'37	
retrograde	2090 Nov 29 06:26	27°♌33'37	
opposition	2091 Feb 14 15:29	26°♌10'46	0°25'18
min. Earth dist.	2091 Feb 15 04:33	26°♌09'51	29.12880 AU
direct	2091 May 05 07:19	24°♌45'35	
evening set	2091 Aug 03 17:56	26°♌41'13	
conjunction	2091 Aug 19 23:54	27°♌17'00	0°25'37
minimum elong	2091 Aug 19 23:54	27°♌17'00	0°25'36
max. Earth dist.	2091 Aug 19 08:33	27°♌15'36	31.13282 AU
morning rise	2091 Sep 05 03:31	27°♌52'35	
retrograde	2091 Dec 01 18:51	29°♌45'28	
opposition	2092 Feb 17 01:33	28°♌22'39	0°29'20
min. Earth dist.	2092 Feb 17 14:18	28°♌21'46	29.13732 AU
direct	2092 May 06 20:22	26°♌57'27	
evening set	2092 Aug 05 06:54	28°♌53'07	
conjunction	2092 Aug 21 12:36	29°♌28'52	0°29'22
minimum elong	2092 Aug 21 12:36	29°♌28'52	0°29'23
max. Earth dist.	2092 Aug 20 21:41	29°♌27'30	31.14166 AU
	2092 Sep 04 14:49	0°♍	
morning rise	2092 Sep 06 15:35	0°♍04'25	
retrograde	2092 Dec 03 04:44	1°♍57'12	
opposition	2093 Feb 18 11:47	0°♍34'26	0°33'20
min. Earth dist.	2093 Feb 19 01:50	0°♍33'27	29.14675 AU
	2093 Mar 11 13:35	30°℞♌	
direct	2093 May 09 08:24	29°♌09'14	
	2093 Jul 05 12:46	0°♍	
evening set	2093 Aug 07 19:52	1°♍04'58	
max. Earth dist.	2093 Aug 23 09:19	1°♍39'13	31.15170 AU
conjunction	2093 Aug 24 01:07	1°♍40'40	0°33'06
minimum elong	2093 Aug 24 01:07	1°♍40'40	0°33'05
morning rise	2093 Sep 09 03:45	2°♍16'10	
retrograde	2093 Dec 05 16:17	4°♍08'53	
opposition	2094 Feb 20 21:51	2°♍46'12	0°37'17
min. Earth dist.	2094 Feb 21 11:11	2°♍45'16	29.15731 AU
direct	2094 May 11 20:54	1°♍21'01	
evening set	2094 Aug 10 08:38	3°♍16'48	
conjunction	2094 Aug 26 13:33	3°♍52'29	0°36'46
minimum elong	2094 Aug 26 13:33	3°♍52'29	0°36'46
max. Earth dist.	2094 Aug 25 21:28	3°♍51'00	31.16266 AU
morning rise	2094 Sep 11 15:40	4°♍27'57	
retrograde	2094 Dec 08 02:51	6°♍20'36	
opposition	2095 Feb 23 08:06	4°♍58'01	0°41'11
min. Earth dist.	2095 Feb 23 22:48	4°♍56'59	29.16867 AU
direct	2095 May 14 07:31	3°♍32'53	
evening set	2095 Aug 12 21:32	5°♍28'43	
max. Earth dist.	2095 Aug 28 09:39	6°♍02'52	31.17421 AU
conjunction	2095 Aug 29 02:04	6°♍04'23	0°40'23
minimum elong	2095 Aug 29 02:04	6°♍04'23	0°40'22
morning rise	2095 Sep 14 03:42	6°♍39'48	
retrograde	2095 Dec 10 13:42	8°♍32'24	
opposition	2096 Feb 25 18:11	7°♍09'56	0°45'01
min. Earth dist.	2096 Feb 26 08:50	7°♍08'54	29.18015 AU
direct	2096 May 15 19:20	5°♍44'50	
evening set	2096 Aug 14 10:31	7°♍40'45	
conjunction	2096 Aug 30 14:30	8°♍16'23	0°43'56
minimum elong	2096 Aug 30 14:30	8°♍16'23	0°43'57
max. Earth dist.	2096 Aug 29 20:51	8°♍14'45	31.18547 AU
morning rise	2096 Sep 15 15:39	8°♍51'46	
retrograde	2096 Dec 11 23:20	10°♍44'19	
opposition	2097 Feb 27 04:34	9°♍21'56	0°48'47
min. Earth dist.	2097 Feb 27 20:20	9°♍20'50	29.19124 AU
direct	2097 May 18 05:34	7°♍56'53	
evening set	2097 Aug 16 23:10	9°♍52'51	
max. Earth dist.	2097 Sep 01 09:24	10°♍26'50	31.19604 AU
conjunction	2097 Sep 02 02:50	10°♍28'27	0°47'26
minimum elong	2097 Sep 02 02:49	10°♍28'27	0°47'25
morning rise	2097 Sep 18 03:20	11°♍03'47	
retrograde	2097 Dec 14 08:17	12°♍56'17	
opposition	2098 Mar 01 14:59	11°♍33'59	0°52'28
min. Earth dist.	2098 Mar 02 07:22	11°♍32'51	29.20122 AU
direct	2098 May 20 17:32	10°♍08'58	
evening set	2098 Aug 19 12:04	12°♍04'58	
conjunction	2098 Sep 04 15:06	12°♍40'31	0°50'51
minimum elong	2098 Sep 04 15:06	12°♍40'31	0°50'51
max. Earth dist.	2098 Sep 03 19:46	12°♍38'44	31.20535 AU
morning rise	2098 Sep 20 15:14	13°♍15'50	
retrograde	2098 Dec 16 19:32	15°♍08'17	
opposition	2099 Mar 04 01:13	13°♍46'01	0°56'05
min. Earth dist.	2099 Mar 04 18:05	13°♍44'51	29.20999 AU
direct	2099 May 23 03:32	12°♍20'59	
evening set	2099 Aug 22 00:47	14°♍17'02	
max. Earth dist.	2099 Sep 06 08:24	14°♍50'47	31.21332 AU
conjunction	2099 Sep 07 03:31	14°♍52'33	0°54'12
minimum elong	2099 Sep 07 03:31	14°♍52'33	0°54'11
morning rise	2099 Sep 23 02:56	15°♍27'49	
retrograde	2099 Dec 19 04:41	17°♍20'12	
opposition	2100 Mar 06 11:44	15°♍57'59	0°59'37
min. Earth dist.	2100 Mar 07 05:55	15°♍56'43	29.21725 AU