retrograde	2000 Mar 15 11:53	12°♐54'08	
opposition	2000 Jun 01 18:18	11°♐32'25	11°18'38
min. Earth dist.	2000 Jun 01 05:17	11°♐33'18	29.27385 AU
direct	2000 Aug 20 22:43	10°♐09'08	
evening set	2000 Nov 23 09:03	12°♐18'12	
conjunction	2000 Dec 04 14:05	12°♐44'09	10°19'09
minimum elong	2000 Dec 04 14:27	12°♐44'11	10°19'09
max. Earth dist.	2000 Dec 05 05:05	12°♐45'36	31.29667 AU
morning rise	2000 Dec 15 19:06	13°♐10'06	
retrograde	2001 Mar 18 02:39	15°♐16'46	
opposition	2001 Jun 04 11:51	13°♐55'18	10°43'48
min. Earth dist.	2001 Jun 03 19:02	13°♐56'26	29.39021 AU
direct	2001 Aug 23 16:08	12°♐32'22	
evening set	2001 Nov 25 10:53	14°♐39'15	
conjunction	2001 Dec 07 03:55	15°♐06'10	9°46'17
minimum elong	2001 Dec 07 04:17	15°♐06'12	9°46'16
max. Earth dist.	2001 Dec 07 23:13	15°♐08'01	31.42211 AU
morning rise	2001 Dec 18 20:35	15°♐33'03	
retrograde	2002 Mar 20 14:54	17°♐37'44	
min. Earth dist.	2002 Jun 06 09:24	16°♐17'52	29.51729 AU
opposition	2002 Jun 07 04:44	16°♐16'34	10°08'10
direct	2002 Aug 26 11:00	14°♐54'02	
evening set	2002 Nov 27 13:11	16°♐58'49	
conjunction	2002 Dec 09 16:57	17°♐26'34	9°12'43
minimum elong	2002 Dec 09 17:18	17°♐26'36	9°12'43
max. Earth dist.	2002 Dec 10 14:13	17°♐28'36	31.55797 AU
morning rise	2002 Dec 21 20:38	17°♐54'18	
retrograde	2003 Mar 23 05:12	19°♐57'04	
opposition	2003 Jun 09 20:44	18°♐36'14	9°31'50
min. Earth dist.	2003 Jun 08 21:27	18°♐37'47	29.65467 AU
direct	2003 Aug 29 03:33	17°♐14'07	
evening set	2003 Nov 29 15:33	19°♐16'52	
conjunction	2003 Dec 12 05:28	19°♐45'22	8°38'33
minimum elong	2003 Dec 12 05:49	19°♐45'24	8°38'32
max. Earth dist.	2003 Dec 13 06:37	19°♐47'46	31.70357 AU
morning rise	2003 Dec 24 19:03	20°♐13'52	
retrograde	2004 Mar 24 15:08	22°♐14'48	
min. Earth dist.	2004 Jun 10 11:19	20°♐55'58	29.80158 AU
opposition	2004 Jun 11 12:26	20°♐54'18	8°54'57
direct	2004 Aug 30 19:37	19°♐32'37	
evening set	2004 Nov 30 18:07	21°♐33'24	
conjunction	2004 Dec 13 17:05	22°♐02'33	8°03'54
minimum elong	2004 Dec 13 17:23	22°♐02'35	8°03'54
max. Earth dist.	2004 Dec 14 20:12	22°♐05'07	31.85819 AU
morning rise	2004 Dec 26 15:52	22°♐31'42	
retrograde	2005 Mar 27 02:28	24°♐30'53	
min. Earth dist.	2005 Jun 12 22:27	23°♐12'38	29.95722 AU
opposition	2005 Jun 14 03:15	23°♐10'44	8°17'36
direct	2005 Sep 02 10:51	21°♐49'28	
evening set	2005 Dec 02 20:51	23°♐48'23	
conjunction	2005 Dec 16 04:12	24°♐18'06	7°28'51
minimum elong	2005 Dec 16 04:30	24°♐18'08	7°28'51
max. Earth dist.	2005 Dec 17 10:26	24°♐20'56	32.02085 AU
morning rise	2005 Dec 29 11:20	24°♐47'47	
retrograde	2006 Mar 29 12:40	26°♐45'19	
min. Earth dist.	2006 Jun 15 11:00	25°♐27'29	30.12085 AU
opposition	2006 Jun 16 17:24	25°♐25'29	7°39'53
direct	2006 Sep 04 23:21	24°♐04'39	
evening set	2006 Dec 04 23:46	26°♐01'46	

conjunction	2006 Dec 18 14:40	26°♐31'57	6°53'31
minimum elong	2006 Dec 18 14:56	26°♐31'58	6°53'31
max. Earth dist.	2006 Dec 19 23:02	26°♐34'57	32.19095 AU
morning rise	2007 Jan 01 05:18	27°♐02'07	
retrograde	2007 Mar 31 22:45	28°♐58'01	
min. Earth dist.	2007 Jun 17 21:23	27°♐40'42	30.29156 AU
opposition	2007 Jun 19 06:49	27°♐38'32	7°01'56
direct	2007 Sep 07 14:54	26°♐18'07	
evening set	2007 Dec 07 02:42	28°♐13'29	
conjunction	2007 Dec 21 00:17	28°♐44'02	6°17'58
minimum elong	2007 Dec 21 00:32	28°♐44'04	6°17'58
max. Earth dist.	2007 Dec 22 10:39	28°♐47'13	32.36754 AU
morning rise	2008 Jan 03 21:47	29°♐14'35	
	2008 Jan 26 02:38	0°♑	
retrograde	2008 Apr 02 09:24	1°♑08'57	
	2008 Jun 14 05:12	30°℞♐	
min. Earth dist.	2008 Jun 19 08:16	29°♐52'04	30.46892 AU
opposition	2008 Jun 20 19:42	29°♐49'46	6°23'50
direct	2008 Sep 09 03:14	28°♐29'46	
	2008 Nov 27 01:04	0°♑	
evening set	2008 Dec 08 05:39	0°♑23'27	
conjunction	2008 Dec 22 09:23	0°♑54'19	5°42'18
minimum elong	2008 Dec 22 09:37	0°♑54'20	5°42'19
max. Earth dist.	2008 Dec 23 22:22	0°♑57'42	32.55039 AU
morning rise	2009 Jan 05 12:50	1°♑25'10	
retrograde	2009 Apr 04 17:35	3°♑18'02	
min. Earth dist.	2009 Jun 21 18:12	2°♑01'35	30.65236 AU
opposition	2009 Jun 23 07:42	1°♑59'10	5°45'39
direct	2009 Sep 11 16:57	0°♑39'32	
evening set	2009 Dec 10 08:34	2°♑31'37	
conjunction	2009 Dec 24 17:32	3°♑02'42	5°06'35
minimum elong	2009 Dec 24 17:44	3°♑02'44	5°06'34
max. Earth dist.	2009 Dec 26 07:47	3°♑06'11	32.73900 AU
morning rise	2010 Jan 08 02:32	3°♑33'48	
retrograde	2010 Apr 07 02:34	5°♑25'13	
min. Earth dist.	2010 Jun 24 02:47	4°♑09'12	30.84193 AU
opposition	2010 Jun 25 18:55	4°♑06'38	5°07'29
direct	2010 Sep 14 04:36	2°♑47'23	
evening set	2010 Dec 12 11:18	4°♑37'54	
conjunction	2010 Dec 27 01:04	5°♑09'10	4°30'53
minimum elong	2010 Dec 27 01:15	5°♑09'11	4°30'53
max. Earth dist.	2010 Dec 28 18:29	5°♑12'54	32.93350 AU
morning rise	2011 Jan 10 14:36	5°♑40'25	
retrograde	2011 Apr 09 08:51	7°♑30'27	
min. Earth dist.	2011 Jun 26 11:45	6°♑14'49	31.03762 AU
opposition	2011 Jun 28 05:19	6°♑12'10	4°29'24
direct	2011 Sep 16 18:24	4°♑53'17	
evening set	2011 Dec 14 14:07	6°♑42'19	
conjunction	2011 Dec 29 07:43	7°♑13'40	3°55'15
minimum elong	2011 Dec 29 07:52	7°♑13'41	3°55'15
max. Earth dist.	2011 Dec 31 02:18	7°♑17'29	33.13415 AU
morning rise	2012 Jan 13 01:25	7°♑45'02	
retrograde	2012 Apr 10 16:24	9°♑33'46	
min. Earth dist.	2012 Jun 27 18:05	8°♑18'36	31.23998 AU
opposition	2012 Jun 29 15:02	8°♑15'46	3°51'26
direct	2012 Sep 18 05:07	6°♑57'15	
evening set	2012 Dec 15 16:35	8°♑44'53	
conjunction	2012 Dec 30 13:38	9°♑16'17	3°19'46
minimum elong	2012 Dec 30 13:46	9°♑16'17	3°19'47

max. Earth dist.	2013 Jan	01	11:27	9°♑20'20	33.34125 AU
morning rise	2013 Jan	14	10:40	9°♑47'41	
retrograde	2013 Apr	12	19:35	11°♑35'11	
min. Earth dist.	2013 Jun	30	01:54	10°♑20'25	31.44910 AU
opposition	2013 Jul	02	00:05	10°♑17'30	3°13'41
direct	2013 Sep	20	15:29	8°♑59'23	
evening set	2013 Dec	17	19:11	10°♑45'41	
conjunction	2014 Jan	01	18:57	11°♑17'04	2°44'29
minimum elong	2014 Jan	01	19:03	11°♑17'05	2°44'29
max. Earth dist.	2014 Jan	03	18:10	11°♑21'13	33.55495 AU
morning rise	2014 Jan	16	18:50	11°♑48'27	
retrograde	2014 Apr	14	23:47	13°♑34'49	
min. Earth dist.	2014 Jul	02	06:43	12°♑20'33	31.66483 AU
opposition	2014 Jul	04	08:03	12°♑17'28	2°36'13
direct	2014 Sep	23	00:36	10°♑59'45	
evening set	2014 Dec	19	21:39	12°♑44'49	
conjunction	2015 Jan	03	23:34	13°♑16'08	2°09'27
minimum elong	2015 Jan	03	23:39	13°♑16'09	2°09'28
max. Earth dist.	2015 Jan	06	01:16	13°♑20'29	33.77477 AU
morning rise	2015 Jan	19	01:43	13°♑47'28	
retrograde	2015 Apr	17	03:54	15°♑32'46	
min. Earth dist.	2015 Jul	04	12:52	14°♑18'55	31.88679 AU
opposition	2015 Jul	06	15:38	14°♑15'45	1°59'03
direct	2015 Sep	25	06:58	12°♑58'29	
evening set	2015 Dec	21	23:52	14°♑42'23	
conjunction	2016 Jan	06	03:28	15°♑13'35	1°34'43
minimum elong	2016 Jan	06	03:32	15°♑13'35	1°34'43
max. Earth dist.	2016 Jan	08	07:11	15°♑18'04	34.00031 AU
morning rise	2016 Jan	21	07:12	15°♑44'48	
retrograde	2016 Apr	18	07:26	17°♑29'06	
min. Earth dist.	2016 Jul	05	17:20	16°♑15'45	32.11415 AU
opposition	2016 Jul	07	22:27	16°♑12'28	1°22'17
direct	2016 Sep	26	15:02	14°♑55'38	
evening set	2016 Dec	23	02:12	16°♑38'26	
conjunction	2017 Jan	07	06:45	17°♑09'28	1°00'21
minimum elong	2017 Jan	07	06:47	17°♑09'29	1°00'22
max. Earth dist.	2017 Jan	09	11:46	17°♑14'02	34.23065 AU
morning rise	2017 Jan	22	11:45	17°♑40'33	
retrograde	2017 Apr	20	12:48	19°♑23'55	
min. Earth dist.	2017 Jul	07	21:41	18°♑11'00	32.34638 AU
opposition	2017 Jul	10	04:35	18°♑07'38	0°45'56
direct	2017 Sep	28	19:36	16°♑51'15	
evening set	2017 Dec	25	04:16	18°♑33'01	
conjunction	2018 Jan	09	09:33	19°♑03'52	0°26'23
minimum elong	2018 Jan	09	09:34	19°♑03'52	0°26'22
max. Earth dist.	2018 Jan	11	16:54	19°♑08'35	34.46516 AU
morning rise	2018 Jan	24	15:01	19°♑34'45	
retrograde	2018 Apr	22	15:26	21°♑17'14	
min. Earth dist.	2018 Jul	10	02:13	20°♑04'44	32.58234 AU
opposition	2018 Jul	12	10:04	20°♑01'20	0°10'04
direct	2018 Oct	01	02:03	18°♑45'22	
desc. node	2018 Oct	24	10:19	18°♑53'30	
evening set	2018 Dec	27	06:30	20°♑26'12	
conjunction	2019 Jan	11	11:38	20°♑56'48	-0°07'15
minimum elong	2019 Jan	11	11:38	20°♑56'48	0°07'15
behind sun begin	2019 Jan	11	05:46	20°♑56'20	
behind sun end	2019 Jan	11	17:30	20°♑57'16	
max. Earth dist.	2019 Jan	13	19:23	21°♑01'30	34.70279 AU
morning rise	2019 Jan	26	17:22	21°♑27'27	
retrograde	2019 Apr	24	18:48	23°♑09'06	
min. Earth dist.	2019 Jul	12	04:46	21°♑57'05	32.82141 AU
opposition	2019 Jul	14	14:51	21°♑53'34	-0°25'18
direct	2019 Oct	03	06:39	20°♑38'01	
evening set	2019 Dec	29	08:31	22°♑17'56	
conjunction	2020 Jan	13	13:20	22°♑48'16	-0°40'17
minimum elong	2020 Jan	13	13:19	22°♑48'16	0°40'17
max. Earth dist.	2020 Jan	15	23:22	22°♑53'08	34.94290 AU
morning rise	2020 Jan	28	18:34	23°♑18'39	
retrograde	2020 Apr	25	18:54	24°♑59'32	
min. Earth dist.	2020 Jul	13	08:54	23°♑47'51	33.06278 AU
opposition	2020 Jul	15	19:12	23°♑44'19	-1°00'07
direct	2020 Oct	04	13:32	22°♑29'12	
evening set	2020 Dec	30	10:24	24°♑08'14	
conjunction	2021 Jan	14	14:19	24°♑38'16	-1°12'51
minimum elong	2021 Jan	14	14:16	24°♑38'16	1°12'51
max. Earth dist.	2021 Jan	17	00:28	24°♑43'06	35.18491 AU
morning rise	2021 Jan	29	18:50	25°♑08'20	
retrograde	2021 Apr	27	20:01	26°♑48'29	
min. Earth dist.	2021 Jul	15	10:21	25°♑37'14	33.30593 AU
opposition	2021 Jul	17	22:46	25°♑33'36	-1°34'22
direct	2021 Oct	06	18:29	24°♑18'51	
evening set	2022 Jan	01	12:14	25°♑57'03	
conjunction	2022 Jan	16	14:51	26°♑26'45	-1°44'55
minimum elong	2022 Jan	16	14:47	26°♑26'45	1°44'56
max. Earth dist.	2022 Jan	19	02:32	26°♑31'41	35.42827 AU
morning rise	2022 Jan	31	18:07	26°♑56'30	
retrograde	2022 Apr	29	18:36	28°♑35'56	
min. Earth dist.	2022 Jul	17	13:06	27°♑24'59	33.55066 AU
opposition	2022 Jul	20	01:38	27°♑21'21	-2°08'02
direct	2022 Oct	08	21:56	26°♑06'58	
evening set	2023 Jan	03	13:46	27°♑44'22	
conjunction	2023 Jan	18	14:44	28°♑13'42	-2°16'27
minimum elong	2023 Jan	18	14:40	28°♑13'41	2°16'26
max. Earth dist.	2023 Jan	21	03:21	28°♑18'40	35.67316 AU
morning rise	2023 Feb	02	16:17	28°♑43'05	
	2023 Mar	23	12:23	0°♒	
retrograde	2023 May	01	17:08	0°♒21'51	
	2023 Jun	11	09:35	30°℞♑	
min. Earth dist.	2023 Jul	19	13:41	29°♑11'16	33.79703 AU
opposition	2023 Jul	22	03:52	29°♑07'34	-2°41'05
direct	2023 Oct	11	01:10	27°♑53'31	
evening set	2024 Jan	05	15:04	29°♑30'10	
conjunction	2024 Jan	20	13:46	29°♑59'05	-2°47'25
minimum elong	2024 Jan	20	13:40	29°♑59'05	2°47'25
	2024 Jan	21	00:56	0°♒	
max. Earth dist.	2024 Jan	23	03:20	0°♒04'06	35.91969 AU
morning rise	2024 Feb	04	13:22	0°♒28'05	
retrograde	2024 May	02	17:47	2°♒06'14	
min. Earth dist.	2024 Jul	20	14:10	0°♒55'58	34.04569 AU
opposition	2024 Jul	23	05:38	0°♒52'14	-3°13'30
	2024 Sep	01	23:57	30°℞♑	
direct	2024 Oct	12	00:32	29°♑38'31	
	2024 Nov	19	20:40	0°♒	
evening set	2025 Jan	06	16:07	1°♒14'28	
conjunction	2025 Jan	21	12:29	1°♒42'58	-3°17'47
minimum elong	2025 Jan	21	12:22	1°♒42'58	3°17'47
max. Earth dist.	2025 Jan	24	03:59	1°♒48'06	36.16855 AU
morning rise	2025 Feb	05	09:27	2°♒11'33	
retrograde	2025 May	04	15:27	3°♒49'07	
min. Earth dist.	2025 Jul	22	14:17	2°♒39'10	34.29681 AU
opposition	2025 Jul	25	06:33	2°♒35'24	-3°45'16
direct	2025 Oct	14	02:52	1°♒22'01	

evening set	2026 Jan 08 17:08	2°♒57'20	
conjunction	2026 Jan 23 10:28	3°♒25'24	-3°47'34
minimum elong	2026 Jan 23 10:21	3°♒25'23	3°47'35
max. Earth dist.	2026 Jan 26 02:12	3°♒30'30	36.41989 AU
morning rise	2026 Feb 07 04:47	3°♒53'32	
retrograde	2026 May 06 15:34	5°♒30'34	
min. Earth dist.	2026 Jul 24 12:35	4°♒21'01	34.55068 AU
opposition	2026 Jul 27 06:55	4°♒17'08	-4°16'22
direct	2026 Oct 16 02:40	3°♒04'07	
evening set	2027 Jan 10 17:49	4°♒38'50	
conjunction	2027 Jan 25 08:01	5°♒06'27	-4°16'44
minimum elong	2027 Jan 25 07:53	5°♒06'26	4°16'44
max. Earth dist.	2027 Jan 28 02:02	5°♒11'41	36.67370 AU
morning rise	2027 Feb 08 23:00	5°♒34'08	
retrograde	2027 May 08 12:54	7°♒10'41	
min. Earth dist.	2027 Jul 26 12:15	6°♒01'26	34.80697 AU
opposition	2027 Jul 29 06:48	5°♒57'33	-4°46'46
direct	2027 Oct 18 03:52	4°♒44'54	
evening set	2028 Jan 12 18:28	6°♒19'04	
conjunction	2028 Jan 27 05:03	6°♒46'12	-4°45'17
minimum elong	2028 Jan 27 04:54	6°♒46'11	4°45'17
max. Earth dist.	2028 Jan 29 23:18	6°♒51'26	36.92979 AU
morning rise	2028 Feb 10 16:33	7°♒13'25	
retrograde	2028 May 09 09:29	8°♒49'31	
min. Earth dist.	2028 Jul 27 09:21	7°♒40'41	35.06540 AU
opposition	2028 Jul 30 06:03	7°♒36'43	-5°16'30
direct	2028 Oct 19 03:46	6°♒24'25	
evening set	2029 Jan 13 18:51	7°♒58'05	
conjunction	2029 Jan 28 01:33	8°♒24'43	-5°13'12
minimum elong	2029 Jan 28 01:23	8°♒24'43	5°13'12
max. Earth dist.	2029 Jan 30 21:20	8°♒30'02	37.18751 AU
morning rise	2029 Feb 11 09:15	8°♒51'27	
retrograde	2029 May 11 04:14	10°♒27'10	
min. Earth dist.	2029 Jul 29 08:11	9°♒18'38	35.32536 AU
opposition	2029 Aug 01 04:56	9°♒14'40	-5°45'31
direct	2029 Oct 21 03:56	8°♒02'44	
evening set	2030 Jan 15 19:11	9°♒35'56	
conjunction	2030 Jan 29 21:47	10°♒02'04	-5°40'28
minimum elong	2030 Jan 29 21:36	10°♒02'04	5°40'28
max. Earth dist.	2030 Feb 01 18:15	10°♒07'24	37.44636 AU
morning rise	2030 Feb 13 01:11	10°♒28'17	
retrograde	2030 May 12 23:11	12°♒03'39	
min. Earth dist.	2030 Jul 31 05:12	10°♒55'28	35.58602 AU
opposition	2030 Aug 03 02:59	10°♒51'28	-6°13'52
direct	2030 Oct 23 03:06	9°♒39'53	
evening set	2031 Jan 17 19:31	11°♒12'40	
conjunction	2031 Jan 31 17:27	11°♒38'17	-6°07'07
minimum elong	2031 Jan 31 17:17	11°♒38'16	6°07'07
max. Earth dist.	2031 Feb 03 14:11	11°♒43'36	37.70544 AU
morning rise	2031 Feb 14 16:32	12°♒03'58	
retrograde	2031 May 14 20:27	13°♒39'01	
min. Earth dist.	2031 Aug 02 02:24	12°♒31'09	35.84689 AU
opposition	2031 Aug 05 00:51	12°♒27'08	-6°41'30
direct	2031 Oct 24 23:13	11°♒15'55	
evening set	2032 Jan 19 19:28	12°♒48'18	
conjunction	2032 Feb 02 12:47	13°♒13'22	-6°33'07
minimum elong	2032 Feb 02 12:35	13°♒13'21	6°33'07
max. Earth dist.	2032 Feb 05 10:50	13°♒18'45	37.96425 AU
morning rise	2032 Feb 16 06:55	13°♒38'31	
	2032 Apr 14 03:55	15°♒	
retrograde	2032 May 15 15:54	15°♒13'17	
	2032 Jun 16 22:25	15°℞♒	
min. Earth dist.	2032 Aug 02 23:54	14°♒05'41	36.10706 AU
opposition	2032 Aug 05 22:12	14°♒01'41	-7°08'27
direct	2032 Oct 25 21:09	12°♒50'48	
evening set	2033 Jan 20 19:36	14°♒22'49	
conjunction	2033 Feb 03 07:42	14°♒47'21	-6°58'30
minimum elong	2033 Feb 03 07:31	14°♒47'20	6°58'29
max. Earth dist.	2033 Feb 06 05:00	14°♒52'38	38.22205 AU
	2033 Feb 10 05:59	15°♒	
morning rise	2033 Feb 16 20:56	15°♒11'57	
retrograde	2033 May 17 12:58	16°♒46'25	
min. Earth dist.	2033 Aug 04 19:30	15°♒39'08	36.36616 AU
opposition	2033 Aug 07 18:55	15°♒35'06	-7°34'44
	2033 Sep 03 19:39	15°℞♒	
direct	2033 Oct 27 16:42	14°♒24'31	
	2033 Dec 18 08:12	15°♒	
evening set	2034 Jan 22 19:26	15°♒56'13	
conjunction	2034 Feb 05 02:20	16°♒20'11	-7°23'15
minimum elong	2034 Feb 05 02:07	16°♒20'10	7°23'14
max. Earth dist.	2034 Feb 08 00:48	16°♒25'31	38.47845 AU
morning rise	2034 Feb 18 10:10	16°♒44'14	
retrograde	2034 May 19 06:56	18°♒18'26	
min. Earth dist.	2034 Aug 06 16:43	17°♒11'21	36.62378 AU
opposition	2034 Aug 09 15:18	17°♒07'23	-8°00'19
direct	2034 Oct 29 13:47	15°♒57'06	
evening set	2035 Jan 24 19:02	17°♒28'28	
conjunction	2035 Feb 06 20:18	17°♒51'52	-7°47'22
minimum elong	2035 Feb 06 20:07	17°♒51'51	7°47'22
max. Earth dist.	2035 Feb 09 18:25	17°♒57'08	38.73345 AU
morning rise	2035 Feb 19 22:32	18°♒15'20	
retrograde	2035 May 20 22:55	19°♒49'17	
min. Earth dist.	2035 Aug 08 11:11	18°♒42'31	36.88010 AU
opposition	2035 Aug 11 11:04	18°♒38'29	-8°25'14
direct	2035 Oct 31 11:39	17°♒28'29	
evening set	2036 Jan 26 18:29	18°♒59'34	
conjunction	2036 Feb 08 13:53	19°♒22'22	-8°10'51
minimum elong	2036 Feb 08 13:40	19°♒22'21	8°10'51
max. Earth dist.	2036 Feb 11 12:38	19°♒27'39	38.98730 AU
morning rise	2036 Feb 21 10:22	19°♒45'15	
retrograde	2036 May 21 15:35	21°♒19'01	
min. Earth dist.	2036 Aug 09 06:48	20°♒12'26	37.13580 AU
opposition	2036 Aug 12 06:31	20°♒08'26	-8°49'28
direct	2036 Nov 01 07:56	18°♒58'43	
evening set	2037 Jan 27 17:37	20°♒29'32	
conjunction	2037 Feb 09 07:03	20°♒51'45	-8°33'43
minimum elong	2037 Feb 09 06:51	20°♒51'44	8°33'44
max. Earth dist.	2037 Feb 12 06:37	20°♒57'04	39.24075 AU
morning rise	2037 Feb 21 21:19	21°♒14'02	
retrograde	2037 May 23 07:51	22°♒47'37	
min. Earth dist.	2037 Aug 11 01:04	21°♒41'18	37.39115 AU
opposition	2037 Aug 14 01:19	21°♒37'17	-9°13'01
direct	2037 Nov 03 03:33	20°♒27'51	
evening set	2038 Jan 29 16:48	21°♒58'27	
conjunction	2038 Feb 10 23:45	22°♒20'03	-8°55'56
minimum elong	2038 Feb 10 23:33	22°♒20'03	8°55'55
max. Earth dist.	2038 Feb 13 23:07	22°♒25'19	39.49401 AU
morning rise	2038 Feb 23 07:49	22°♒41'45	
retrograde	2038 May 25 02:25	24°♒15'11	
min. Earth dist.	2038 Aug 12 18:27	23°♒09'09	37.64667 AU
opposition	2038 Aug 15 19:39	23°♒05'07	-9°35'53

direct	2038 Nov 04 20:17	21°♒55'58	
evening set	2039 Jan 31 15:39	23°♒26'23	
conjunction	2039 Feb 12 16:13	23°♒47'23	-9°17'31
minimum elong	2039 Feb 12 16:00	23°♒47'22	9°17'31
max. Earth dist.	2039 Feb 15 17:11	23°♒52'44	39.74747 AU
morning rise	2039 Feb 24 17:36	24°♒08'28	
retrograde	2039 May 26 19:21	25°♒41'47	
min. Earth dist.	2039 Aug 14 12:45	24°♒36'00	37.90226 AU
opposition	2039 Aug 17 13:42	24°♒31'59	-9°58'03
direct	2039 Nov 06 13:55	23°♒23'09	
evening set	2040 Feb 02 14:23	24°♒53'25	
conjunction	2040 Feb 14 08:04	25°♒13'48	-9°38'28
minimum elong	2040 Feb 14 07:51	25°♒13'48	9°38'27
max. Earth dist.	2040 Feb 17 08:31	25°♒19'05	40.00100 AU
morning rise	2040 Feb 26 02:42	25°♒34'16	
retrograde	2040 May 27 13:19	27°♒07'31	
min. Earth dist.	2040 Aug 15 04:52	26°♒02'04	38.15783 AU
opposition	2040 Aug 18 07:18	25°♒57'59	-10°19'33
direct	2040 Nov 07 06:08	24°♒49'27	
evening set	2041 Feb 03 13:00	26°♒19'37	
conjunction	2041 Feb 14 23:46	26°♒39'23	-9°58'47
minimum elong	2041 Feb 14 23:34	26°♒39'22	9°58'47
max. Earth dist.	2041 Feb 18 01:22	26°♒44'42	40.25419 AU
morning rise	2041 Feb 26 11:27	26°♒59'13	
retrograde	2041 May 29 03:23	28°♒32'26	
min. Earth dist.	2041 Aug 16 22:52	27°♒27'12	38.41289 AU
opposition	2041 Aug 20 00:29	27°♒23'11	-10°40'23
direct	2041 Nov 09 00:20	26°♒14'57	
evening set	2042 Feb 05 11:37	27°♒45'02	
conjunction	2042 Feb 16 15:11	28°♒04'11	-10°18'30
minimum elong	2042 Feb 16 14:59	28°♒04'10	10°18'29
max. Earth dist.	2042 Feb 19 16:46	28°♒09'28	40.50667 AU
morning rise	2042 Feb 27 19:31	28°♒23'23	
retrograde	2042 May 30 16:30	29°♒56'34	
min. Earth dist.	2042 Aug 18 14:49	28°♒51'39	38.66678 AU
opposition	2042 Aug 21 17:14	28°♒47'36	-11°00'34
direct	2042 Nov 10 19:29	27°♒39'41	
evening set	2043 Feb 07 10:03	29°♒09'42	
conjunction	2043 Feb 18 06:06	29°♒28'13	-10°37'36
minimum elong	2043 Feb 18 05:53	29°♒28'12	10°37'37
max. Earth dist.	2043 Feb 21 07:33	29°♒33'28	40.75758 AU
morning rise	2043 Mar 01 03:05	29°♒46'47	
	2043 Mar 09 01:03	0°♓	
retrograde	2043 Jun 01 08:41	1°♓19'59	
min. Earth dist.	2043 Aug 20 07:37	0°♓15'18	38.91899 AU
opposition	2043 Aug 23 09:51	0°♓11'17	-11°20'08
	2043 Sep 01 03:11	30°♑℞	
direct	2043 Nov 12 11:27	29°♒03'40	
	2044 Jan 19 09:50	0°♓	
evening set	2044 Feb 09 08:30	0°♓33'39	
conjunction	2044 Feb 19 21:01	0°♓51'30	-10°56'07
minimum elong	2044 Feb 19 20:49	0°♓51'30	10°56'07
max. Earth dist.	2044 Feb 22 23:07	0°♓56'46	41.00649 AU
morning rise	2044 Mar 01 10:11	1°♓09'26	
retrograde	2044 Jun 01 23:17	2°♓42'39	
min. Earth dist.	2044 Aug 21 00:23	1°♓38'11	39.16870 AU
opposition	2044 Aug 24 02:00	1°♓34'13	-11°39'04
direct	2044 Nov 13 04:04	0°♓26'53	
evening set	2045 Feb 10 07:01	1°♓56'50	
conjunction	2045 Feb 20 11:31	2°♓14'03	-11°14'04
minimum elong	2045 Feb 20 11:19	2°♓14'02	11°14'05
max. Earth dist.	2045 Feb 23 12:21	2°♓19'11	41.25262 AU
morning rise	2045 Mar 02 16:51	2°♓31'19	
retrograde	2045 Jun 03 16:40	4°♓04'33	
min. Earth dist.	2045 Aug 22 15:49	3°♓00'20	39.41542 AU
opposition	2045 Aug 25 17:51	2°♓56'22	-11°57'24
direct	2045 Nov 14 17:30	1°♓49'18	
evening set	2046 Feb 12 05:24	3°♓19'14	
conjunction	2046 Feb 22 01:54	3°♓35'47	-11°31'28
minimum elong	2046 Feb 22 01:43	3°♓35'46	11°31'27
max. Earth dist.	2046 Feb 25 03:23	3°♓40'57	41.49544 AU
morning rise	2046 Mar 03 23:03	3°♓52'23	
retrograde	2046 Jun 05 07:21	5°♓25'40	
min. Earth dist.	2046 Aug 24 08:39	4°♓21'34	39.65866 AU
opposition	2046 Aug 27 09:18	4°♓17'41	-12°15'09
direct	2046 Nov 16 08:52	3°♓10'51	
evening set	2047 Feb 14 03:48	4°♓40'48	
conjunction	2047 Feb 23 15:53	4°♓56'41	-11°48'19
minimum elong	2047 Feb 23 15:40	4°♓56'40	11°48'19
max. Earth dist.	2047 Feb 26 16:18	5°♓01'44	41.73498 AU
morning rise	2047 Mar 05 04:32	5°♓12'36	
retrograde	2047 Jun 06 20:40	6°♓45'55	
min. Earth dist.	2047 Aug 25 23:04	5°♓42'02	39.89865 AU
opposition	2047 Aug 29 00:23	5°♓38'08	-12°32'20
direct	2047 Nov 18 00:08	4°♓31'31	
evening set	2048 Feb 16 01:54	6°♓01'29	
conjunction	2048 Feb 25 05:21	6°♓16'41	-12°04'37
minimum elong	2048 Feb 25 05:10	6°♓16'40	12°04'37
max. Earth dist.	2048 Feb 28 05:47	6°♓21'42	41.97139 AU
morning rise	2048 Mar 05 09:29	6°♓31'54	
retrograde	2048 Jun 07 08:07	8°♓05'17	
min. Earth dist.	2048 Aug 26 14:54	7°♓01'32	40.13591 AU
opposition	2048 Aug 29 15:16	6°♓57'42	-12°48'55
direct	2048 Nov 18 17:07	5°♓51'18	
evening set	2049 Feb 17 00:06	7°♓21'17	
conjunction	2049 Feb 25 18:45	7°♓35'47	-12°20'22
minimum elong	2049 Feb 25 18:32	7°♓35'46	12°20'22
max. Earth dist.	2049 Feb 28 19:31	7°♓40'49	42.20543 AU
morning rise	2049 Mar 06 13:47	7°♓50'19	
retrograde	2049 Jun 08 19:13	9°♓23'46	
min. Earth dist.	2049 Aug 28 05:04	8°♓20'12	40.37088 AU
opposition	2049 Aug 31 05:26	8°♓16'22	-13°04'56
direct	2049 Nov 20 09:45	7°♓10'10	
evening set	2050 Feb 18 22:19	8°♓40'14	
conjunction	2050 Feb 27 07:39	8°♓54'02	-12°35'34
minimum elong	2050 Feb 27 07:28	8°♓54'01	12°35'34
max. Earth dist.	2050 Mar 02 07:34	8°♓58'58	42.43746 AU
morning rise	2050 Mar 07 17:33	9°♓07'51	
retrograde	2050 Jun 10 10:04	10°♓41'26	
min. Earth dist.	2050 Aug 29 18:43	9°♓38'03	40.60420 AU
opposition	2050 Sep 01 19:29	9°♓34'13	-13°20'22
direct	2050 Nov 21 22:11	8°♓28'14	
evening set	2051 Feb 20 20:21	9°♓58'24	
conjunction	2051 Feb 28 20:19	10°♓11'28	-12°50'14
minimum elong	2051 Feb 28 20:07	10°♓11'28	12°50'13
max. Earth dist.	2051 Mar 03 21:16	10°♓16'27	42.66794 AU
morning rise	2051 Mar 08 20:37	10°♓24'35	
retrograde	2051 Jun 11 22:48	11°♓58'19	
min. Earth dist.	2051 Aug 31 09:20	10°♓55'05	40.83589 AU
opposition	2051 Sep 03 09:15	10°♓51'18	-13°35'13
direct	2051 Nov 23 12:09	9°♓45'33	

evening set	2052 Feb 22 18:40	11°♓15'51	
conjunction	2052 Mar 01 08:43	11°♓28'12	-13°04'20
minimum elong	2052 Mar 01 08:33	11°♓28'11	13°04'20
max. Earth dist.	2052 Mar 04 08:46	11°♓33'05	42.89701 AU
morning rise	2052 Mar 08 23:07	11°♓40'34	
retrograde	2052 Jun 12 12:08	13°♓14'28	
min. Earth dist.	2052 Aug 31 21:46	12°♓11'30	41.06609 AU
opposition	2052 Sep 03 22:36	12°♓07'41	-13°49'30
direct	2052 Nov 24 00:03	11°♓02'10	
evening set	2053 Feb 23 16:56	12°♓32'39	
conjunction	2053 Mar 02 20:53	12°♓44'16	-13°17'55
minimum elong	2053 Mar 02 20:42	12°♓44'15	13°17'55
max. Earth dist.	2053 Mar 05 21:26	12°♓49'10	43.12438 AU
morning rise	2053 Mar 10 01:09	12°♓55'53	
retrograde	2053 Jun 13 23:57	14°♓30'01	
min. Earth dist.	2053 Sep 02 12:05	13°♓27'11	41.29443 AU
opposition	2053 Sep 05 11:50	13°♓23'27	-14°03'14
direct	2053 Nov 25 13:20	12°♓18'11	
evening set	2054 Feb 25 15:35	13°♓48'54	
conjunction	2054 Mar 04 08:53	13°♓59'44	-13°30'58
minimum elong	2054 Mar 04 08:43	13°♓59'44	13°30'59
max. Earth dist.	2054 Mar 07 09:15	14°♓04'37	43.34979 AU
morning rise	2054 Mar 11 02:23	14°♓10'35	
retrograde	2054 Jun 15 10:00	15°♓44'59	
min. Earth dist.	2054 Sep 04 00:33	14°♓42'24	41.52038 AU
opposition	2054 Sep 07 00:32	14°♓38'39	-14°16'25
direct	2054 Nov 27 03:52	13°♓33'38	
evening set	2055 Feb 27 14:24	15°♓04'38	
conjunction	2055 Mar 05 20:33	15°♓14'40	-13°43'32
minimum elong	2055 Mar 05 20:23	15°♓14'40	13°43'31
max. Earth dist.	2055 Mar 08 20:00	15°♓19'27	43.57261 AU
morning rise	2055 Mar 12 02:57	15°♓24'44	
retrograde	2055 Jun 16 22:51	16°♓59'27	
min. Earth dist.	2055 Sep 05 13:48	15°♓57'03	41.74363 AU
opposition	2055 Sep 08 13:15	15°♓53'20	-14°29'05
direct	2055 Nov 28 16:14	14°♓48'34	
evening set	2056 Feb 29 13:39	16°♓19'54	
conjunction	2056 Mar 06 08:08	16°♓29'06	-13°55'36
minimum elong	2056 Mar 06 07:59	16°♓29'06	13°55'36
max. Earth dist.	2056 Mar 09 08:11	16°♓33'54	43.79237 AU
morning rise	2056 Mar 12 02:42	16°♓38'20	
retrograde	2056 Jun 17 11:31	18°♓13'25	
min. Earth dist.	2056 Sep 06 03:24	17°♓11'09	41.96327 AU
opposition	2056 Sep 09 01:39	17°♓07'32	-14°41'16
direct	2056 Nov 29 04:06	16°♓02'59	
evening set	2057 Mar 02 13:42	17°♓34'42	
conjunction	2057 Mar 07 19:33	17°♓43'02	-14°07'11
minimum elong	2057 Mar 07 19:24	17°♓43'01	14°07'10
max. Earth dist.	2057 Mar 10 17:52	17°♓47'42	44.00833 AU
morning rise	2057 Mar 13 01:30	17°♓51'23	
retrograde	2057 Jun 19 01:37	19°♓26'52	
min. Earth dist.	2057 Sep 07 15:12	18°♓24'49	42.17888 AU
opposition	2057 Sep 10 13:38	18°♓21'12	-14°52'57
direct	2057 Nov 30 13:33	17°♓16'52	
evening set	2058 Mar 04 14:31	18°♓49'01	
conjunction	2058 Mar 09 06:50	18°♓56'26	-14°18'20
minimum elong	2058 Mar 09 06:41	18°♓56'25	14°18'21
max. Earth dist.	2058 Mar 12 05:06	19°♓01'04	44.21995 AU
morning rise	2058 Mar 13 23:10	19°♓03'50	
retrograde	2058 Jun 20 11:39	20°♓39'48	
min. Earth dist.	2058 Sep 09 05:04	19°♓37'49	42.38998 AU
opposition	2058 Sep 12 01:36	19°♓34'18	-15°04'10
direct	2058 Dec 02 02:03	18°♓30'11	
evening set	2059 Mar 06 16:34	20°♓02'51	
conjunction	2059 Mar 10 17:45	20°♓09'15	-14°29'03
minimum elong	2059 Mar 10 17:37	20°♓09'14	14°29'02
morning rise	2059 Mar 14 18:52	20°♓15'37	
max. Earth dist.	2059 Mar 13 15:01	20°♓13'48	44.42724 AU
retrograde	2059 Jun 21 19:57	21°♓52'07	
min. Earth dist.	2059 Sep 10 16:32	20°♓50'19	42.59666 AU
opposition	2059 Sep 13 13:11	20°♓46'48	-15°14'56
direct	2059 Dec 03 15:36	19°♓42'51	
evening set	2060 Mar 07 20:38	21°♓16'13	
conjunction	2060 Mar 11 04:24	21°♓21'26	-14°39'19
minimum elong	2060 Mar 11 04:16	21°♓21'25	14°39'19
morning rise	2060 Mar 14 12:05	21°♓26'39	
max. Earth dist.	2060 Mar 14 00:47	21°♓25'54	44.63031 AU
retrograde	2060 Jun 22 06:04	23°♓03'50	
min. Earth dist.	2060 Sep 11 04:58	22°♓02'07	42.79956 AU
opposition	2060 Sep 14 00:33	21°♓58'40	-15°25'14
direct	2060 Dec 04 04:04	20°♓54'53	
evening set	2061 Mar 10 04:52	22°♓29'11	
conjunction	2061 Mar 12 14:56	22°♓32'58	-14°49'08
minimum elong	2061 Mar 12 14:50	22°♓32'57	14°49'08
morning rise	2061 Mar 15 00:52	22°♓36'44	
max. Earth dist.	2061 Mar 15 11:37	22°♓37'26	44.82994 AU
retrograde	2061 Jun 23 15:10	24°♓14'54	
min. Earth dist.	2061 Sep 12 16:36	23°♓13'18	42.99907 AU
opposition	2061 Sep 15 11:32	23°♓09'53	-15°35'04
direct	2061 Dec 05 17:00	22°♓06'16	
evening set	2062 Mar 13 03:23	23°♓42'27	
conjunction	2062 Mar 14 01:03	23°♓43'52	-14°58'30
minimum elong	2062 Mar 14 00:55	23°♓43'51	14°58'31
evening rise	2062 Mar 14 22:29	23°♓45'15	
max. Earth dist.	2062 Mar 16 20:17	23°♓48'13	45.02660 AU
retrograde	2062 Jun 25 04:02	25°♓25'20	
min. Earth dist.	2062 Sep 14 03:04	24°♓23'53	43.19599 AU
opposition	2062 Sep 16 22:13	24°♓20'29	-15°44'26
direct	2062 Dec 07 01:35	23°♓17'01	
conjunction	2063 Mar 15 11:04	24°♓54'09	-15°07'26
minimum elong	2063 Mar 15 10:58	24°♓54'09	15°07'25
max. Earth dist.	2063 Mar 18 07:01	24°♓58'32	45.22086 AU
retrograde	2063 Jun 26 15:49	26°♓35'11	
min. Earth dist.	2063 Sep 15 14:57	25°♓33'49	43.39058 AU
opposition	2063 Sep 18 08:50	25°♓30'29	-15°53'20
direct	2063 Dec 08 10:25	24°♓27'12	
conjunction	2064 Mar 15 20:47	26°♓03'54	-15°15'54
minimum elong	2064 Mar 15 20:40	26°♓03'53	15°15'54
max. Earth dist.	2064 Mar 18 15:55	26°♓08'12	45.41307 AU
retrograde	2064 Jun 27 00:37	27°♓44'29	
min. Earth dist.	2064 Sep 16 00:30	26°♓43'19	43.58297 AU
opposition	2064 Sep 18 19:04	26°♓39'58	-16°01'45
direct	2064 Dec 08 20:07	25°♓36'51	
conjunction	2065 Mar 17 06:21	27°♓13'07	-15°23'56
minimum elong	2065 Mar 17 06:16	27°♓13'06	15°23'55
max. Earth dist.	2065 Mar 20 01:02	27°♓17'23	45.60299 AU
retrograde	2065 Jun 28 08:05	28°♓53'18	
min. Earth dist.	2065 Sep 17 11:42	27°♓52'14	43.77309 AU
opposition	2065 Sep 20 05:05	27°♓48'56	-16°09'44
direct	2065 Dec 10 08:02	26°♓46'01	

conjunction	2066 Mar 18 15:52	28°♓21'52	-15°31'32
minimum elong	2066 Mar 18 15:46	28°♓21'52	15°31'31
max. Earth dist.	2066 Mar 21 10:47	28°♓26'08	45.79062 AU
	2066 Jun 17 15:36	0°♈	
retrograde	2066 Jun 29 15:14	0°♈01'40	
	2066 Jul 11 21:45	30°℞♓	
min. Earth dist.	2066 Sep 18 21:55	29°♓00'44	43.96047 AU
opposition	2066 Sep 21 14:53	28°♓57'28	-16°17'15
direct	2066 Dec 11 20:30	27°♓54'44	
conjunction	2067 Mar 20 00:55	29°♓30'12	-15°38'42
minimum elong	2067 Mar 20 00:51	29°♓30'11	15°38'43
max. Earth dist.	2067 Mar 22 18:25	29°♓34'21	45.97539 AU
	2067 Apr 08 22:05	0°♈	
retrograde	2067 Jul 01 02:25	1°♈09'37	
min. Earth dist.	2067 Sep 20 07:50	0°♈08'51	44.14486 AU
opposition	2067 Sep 23 00:38	0°♈05'36	-16°24'22
	2067 Sep 27 16:44	30°℞♓	
direct	2067 Dec 13 05:04	29°♓03'03	
	2068 Feb 23 13:43	0°♈	
conjunction	2068 Mar 20 10:10	0°♈38'07	-15°45'29
minimum elong	2068 Mar 20 10:05	0°♈38'07	15°45'29
max. Earth dist.	2068 Mar 23 03:56	0°♈42'17	46.15681 AU
retrograde	2068 Jul 01 12:37	2°♈17'10	
min. Earth dist.	2068 Sep 20 19:04	1°♈16'29	44.32546 AU
opposition	2068 Sep 23 10:06	1°♈13'21	-16°31'03
direct	2068 Dec 13 14:10	0°♈10'58	
conjunction	2069 Mar 21 19:17	1°♈45'40	-15°51'53
minimum elong	2069 Mar 21 19:13	1°♈45'40	15°51'54
max. Earth dist.	2069 Mar 24 11:29	1°♈49'42	46.33428 AU
retrograde	2069 Jul 02 22:47	3°♈24'20	
min. Earth dist.	2069 Sep 22 04:23	2°♈23'48	44.50170 AU
opposition	2069 Sep 24 19:22	2°♈20'40	-16°37'22
direct	2069 Dec 14 21:36	1°♈18'27	
conjunction	2070 Mar 23 04:11	2°♈52'47	-15°57'55
minimum elong	2070 Mar 23 04:07	2°♈52'47	15°57'54
max. Earth dist.	2070 Mar 25 19:29	2°♈56'45	46.50703 AU
retrograde	2070 Jul 04 07:13	4°♈31'05	
min. Earth dist.	2070 Sep 23 15:26	3°♈30'36	44.67312 AU
opposition	2070 Sep 26 04:36	3°♈27'34	-16°43'18
direct	2070 Dec 16 06:30	2°♈25'31	
conjunction	2071 Mar 24 13:03	3°♈59'28	-16°03'36
minimum elong	2071 Mar 24 13:00	3°♈59'28	16°03'36
max. Earth dist.	2071 Mar 27 03:50	4°♈03'23	46.67512 AU
retrograde	2071 Jul 05 13:08	5°♈37'23	
min. Earth dist.	2071 Sep 25 00:56	4°♈37'01	44.83969 AU
opposition	2071 Sep 27 13:31	4°♈34'00	-16°48'53
direct	2071 Dec 17 18:13	3°♈32'05	
conjunction	2072 Mar 24 21:29	5°♈05'39	-16°08'55
minimum elong	2072 Mar 24 21:27	5°♈05'39	16°08'54
max. Earth dist.	2072 Mar 27 10:26	5°♈09'27	46.83857 AU
retrograde	2072 Jul 05 22:17	6°♈43'12	
min. Earth dist.	2072 Sep 25 10:30	5°♈42'54	45.00195 AU
opposition	2072 Sep 27 22:20	5°♈39'57	-16°54'05
direct	2072 Dec 18 03:27	4°♈38'09	
conjunction	2073 Mar 26 05:59	6°♈11'21	-16°13'53
minimum elong	2073 Mar 26 05:56	6°♈11'21	16°13'53
max. Earth dist.	2073 Mar 28 19:15	6°♈15'09	46.99794 AU
retrograde	2073 Jul 07 07:28	7°♈48'32	
min. Earth dist.	2073 Sep 26 20:28	6°♈48'17	45.16031 AU
opposition	2073 Sep 29 06:44	6°♈45'24	-16°58'55
direct	2073 Dec 19 11:50	5°♈43'44	
conjunction	2074 Mar 27 14:09	7°♈16'34	-16°18'29
minimum elong	2074 Mar 27 14:07	7°♈16'34	16°18'28
max. Earth dist.	2074 Mar 30 01:58	7°♈20'16	47.15391 AU
retrograde	2074 Jul 08 17:08	8°♈53'24	
min. Earth dist.	2074 Sep 28 04:18	7°♈53'18	45.31552 AU
opposition	2074 Sep 30 15:01	7°♈50'24	-17°03'23
direct	2074 Dec 20 17:55	6°♈48'52	
conjunction	2075 Mar 28 22:00	8°♈21'22	-16°22'43
minimum elong	2075 Mar 28 21:58	8°♈21'22	16°22'43
max. Earth dist.	2075 Mar 31 09:33	8°♈25'02	47.30688 AU
retrograde	2075 Jul 09 23:44	9°♈57'52	
min. Earth dist.	2075 Sep 29 14:08	8°♈57'48	45.46792 AU
opposition	2075 Oct 01 23:19	8°♈55'00	-17°07'27
direct	2075 Dec 22 02:36	7°♈53'36	
conjunction	2076 Mar 29 05:58	9°♈25'47	-16°26'35
minimum elong	2076 Mar 29 05:58	9°♈25'47	16°26'34
max. Earth dist.	2076 Mar 31 17:24	9°♈29'26	47.45734 AU
retrograde	2076 Jul 10 04:23	11°♈01'58	
min. Earth dist.	2076 Sep 29 21:59	10°♈02'03	45.61765 AU
opposition	2076 Oct 02 07:09	9°♈59'14	-17°11'08
direct	2076 Dec 22 12:43	8°♈57'59	
conjunction	2077 Mar 30 13:40	10°♈29'53	-16°30'04
minimum elong	2077 Mar 30 13:38	10°♈29'53	16°30'05
max. Earth dist.	2077 Apr 01 23:39	10°♈33'26	47.60515 AU
retrograde	2077 Jul 11 12:54	12°♈05'46	
min. Earth dist.	2077 Oct 01 06:30	11°♈05'57	45.76476 AU
opposition	2077 Oct 03 15:02	11°♈03'11	-17°14'27
direct	2077 Dec 23 20:47	10°♈02'05	
conjunction	2078 Mar 31 21:17	11°♈33'41	-16°33'13
minimum elong	2078 Mar 31 21:18	11°♈33'41	16°33'13
max. Earth dist.	2078 Apr 03 07:41	11°♈37'15	47.75022 AU
retrograde	2078 Jul 12 20:43	13°♈09'18	
min. Earth dist.	2078 Oct 02 15:22	12°♈09'35	45.90879 AU
opposition	2078 Oct 04 22:43	12°♈06'53	-17°17'24
direct	2078 Dec 25 05:26	11°♈05'56	
conjunction	2079 Apr 02 04:46	12°♈37'16	-16°36'00
minimum elong	2079 Apr 02 04:46	12°♈37'16	16°36'00
max. Earth dist.	2079 Apr 04 13:34	12°♈40'43	47.89226 AU
retrograde	2079 Jul 14 07:14	14°♈12'36	
min. Earth dist.	2079 Oct 03 22:52	13°♈13'02	46.04954 AU
opposition	2079 Oct 06 06:14	13°♈10'21	-17°20'00
direct	2079 Dec 26 09:44	12°♈09'33	
conjunction	2080 Apr 02 12:11	13°♈40'37	-16°38'28
minimum elong	2080 Apr 02 12:12	13°♈40'38	16°38'28
max. Earth dist.	2080 Apr 04 20:35	13°♈44'02	48.03059 AU
retrograde	2080 Jul 14 16:34	15°♈15'41	
min. Earth dist.	2080 Oct 04 08:27	14°♈16'11	46.18624 AU
opposition	2080 Oct 06 13:46	14°♈13'35	-17°22'16
direct	2080 Dec 26 14:43	13°♈12'57	
conjunction	2081 Apr 03 19:43	14°♈43'46	-16°40'36
minimum elong	2081 Apr 03 19:43	14°♈43'46	16°40'36
max. Earth dist.	2081 Apr 06 03:09	14°♈47'07	48.16465 AU
retrograde	2081 Jul 15 21:02	16°♈18'33	
min. Earth dist.	2081 Oct 05 15:58	15°♈19'10	46.31816 AU
opposition	2081 Oct 07 20:51	15°♈16'36	-17°24'13
direct	2081 Dec 27 23:43	14°♈16'05	
conjunction	2082 Apr 05 03:00	15°♈46'38	-16°42'27

minimum elong	2082 Apr 05 03:01	15°♈46'38	16°42'28
max. Earth dist.	2082 Apr 07 08:25	15°♈49'52	48.29369 AU
retrograde	2082 Jul 17 02:41	17°♈21'10	
min. Earth dist.	2082 Oct 07 00:45	16°♈21'49	46.44498 AU
opposition	2082 Oct 09 04:09	16°♈19'20	-17°25'52
direct	2082 Dec 29 08:53	15°♈18'56	
conjunction	2083 Apr 06 10:12	16°♈49'13	-16°44'01
minimum elong	2083 Apr 06 10:14	16°♈49'13	16°44'00
max. Earth dist.	2083 Apr 08 15:29	16°♈52'25	48.41754 AU
retrograde	2083 Jul 18 09:05	18°♈23'28	
min. Earth dist.	2083 Oct 08 09:24	17°♈24'08	46.56641 AU
opposition	2083 Oct 10 11:15	17°♈21'43	-17°27'14
direct	2083 Dec 30 18:22	16°♈21'25	
conjunction	2084 Apr 06 17:17	17°♈51'25	-16°45'18
minimum elong	2084 Apr 06 17:19	17°♈51'25	16°45'18
max. Earth dist.	2084 Apr 08 20:29	17°♈54'29	48.53631 AU
retrograde	2084 Jul 18 18:20	19°♈25'22	
min. Earth dist.	2084 Oct 08 16:30	18°♈26'07	46.68298 AU
opposition	2084 Oct 10 18:01	18°♈23'43	-17°28'18
direct	2084 Dec 30 23:49	17°♈23'30	
conjunction	2085 Apr 08 00:16	18°♈53'13	-16°46'17
minimum elong	2085 Apr 08 00:18	18°♈53'13	16°46'17
max. Earth dist.	2085 Apr 10 02:49	18°♈56'14	48.65039 AU
retrograde	2085 Jul 20 01:31	20°♈26'53	
min. Earth dist.	2085 Oct 10 01:18	19°♈27'36	46.79516 AU
opposition	2085 Oct 12 00:49	19°♈25'19	-17°29'04
direct	2086 Jan 01 05:34	18°♈25'10	
conjunction	2086 Apr 09 07:02	19°♈54'36	-16°46'58
minimum elong	2086 Apr 09 07:04	19°♈54'36	16°46'59
max. Earth dist.	2086 Apr 11 08:57	19°♈57'34	48.76053 AU
retrograde	2086 Jul 21 06:07	21°♈27'59	
min. Earth dist.	2086 Oct 11 07:51	20°♈28'46	46.90353 AU
opposition	2086 Oct 13 07:18	20°♈26'29	-17°29'32
direct	2087 Jan 02 12:27	19°♈26'25	
conjunction	2087 Apr 10 13:36	20°♈55'36	-16°47'21
minimum elong	2087 Apr 10 13:40	20°♈55'37	16°47'21
max. Earth dist.	2087 Apr 12 14:01	20°♈58'29	48.86717 AU
retrograde	2087 Jul 22 11:45	22°♈28'43	
min. Earth dist.	2087 Oct 12 15:26	21°♈29'32	47.00877 AU
opposition	2087 Oct 14 13:48	21°♈27'18	-17°29'40
direct	2088 Jan 03 19:38	20°♈27'18	
conjunction	2088 Apr 10 20:13	21°♈56'15	-16°47'26
minimum elong	2088 Apr 10 20:16	21°♈56'15	16°47'26
max. Earth dist.	2088 Apr 12 20:52	21°♈59'08	48.97082 AU
retrograde	2088 Jul 22 16:18	23°♈29'07	
min. Earth dist.	2088 Oct 12 22:42	22°♈29'59	47.11085 AU
opposition	2088 Oct 14 20:07	22°♈27'48	-17°29'29
direct	2089 Jan 04 04:26	21°♈27'54	
conjunction	2089 Apr 12 02:40	22°♈56'37	-16°47'11
minimum elong	2089 Apr 12 02:44	22°♈56'37	16°47'11
max. Earth dist.	2089 Apr 14 01:37	22°♈59'23	49.07155 AU
retrograde	2089 Jul 24 00:41	24°♈29'15	
min. Earth dist.	2089 Oct 14 04:50	23°♈30'12	47.21004 AU
opposition	2089 Oct 16 02:10	23°♈28'02	-17°29'00
direct	2090 Jan 05 09:27	22°♈28'14	
conjunction	2090 Apr 13 09:01	23°♈56'45	-16°46'39
minimum elong	2090 Apr 13 09:04	23°♈56'45	16°46'39
max. Earth dist.	2090 Apr 15 07:44	23°♈59'29	49.16925 AU
retrograde	2090 Jul 25 09:13	25°♈29'10	
min. Earth dist.	2090 Oct 15 12:48	24°♈30'09	47.30608 AU
opposition	2090 Oct 17 08:23	24°♈28'04	-17°28'11
direct	2091 Jan 06 13:31	23°♈28'22	
conjunction	2091 Apr 14 15:13	24°♈56'41	-16°45'49
minimum elong	2091 Apr 14 15:18	24°♈56'42	16°45'49
max. Earth dist.	2091 Apr 16 13:14	24°♈59'24	49.26385 AU
retrograde	2091 Jul 26 14:29	26°♈28'55	
min. Earth dist.	2091 Oct 16 18:46	25°♈30'01	47.39863 AU
opposition	2091 Oct 18 14:21	25°♈27'56	-17°27'05
direct	2092 Jan 07 18:55	24°♈28'21	
conjunction	2092 Apr 14 21:26	25°♈56'30	-16°44'41
minimum elong	2092 Apr 14 21:30	25°♈56'30	16°44'41
max. Earth dist.	2092 Apr 16 17:45	25°♈59'06	49.35465 AU
retrograde	2092 Jul 26 19:34	27°♈28'32	
min. Earth dist.	2092 Oct 17 02:23	26°♈29'40	47.48719 AU
opposition	2092 Oct 18 20:15	26°♈27'41	-17°25'41
direct	2093 Jan 08 01:58	25°♈28'12	
conjunction	2093 Apr 16 03:50	26°♈56'12	-16°43'18
minimum elong	2093 Apr 16 03:56	26°♈56'12	16°43'18
max. Earth dist.	2093 Apr 18 00:00	26°♈58'47	49.44113 AU
retrograde	2093 Jul 28 00:01	28°♈28'04	
min. Earth dist.	2093 Oct 18 09:34	27°♈29'14	47.57092 AU
opposition	2093 Oct 20 02:05	27°♈27'19	-17°24'02
direct	2094 Jan 09 10:35	26°♈27'56	
conjunction	2094 Apr 17 09:54	27°♈55'46	-16°41'39
minimum elong	2094 Apr 17 09:59	27°♈55'46	16°41'39
max. Earth dist.	2094 Apr 19 03:44	27°♈58'12	49.52263 AU
retrograde	2094 Jul 29 08:26	29°♈27'27	
min. Earth dist.	2094 Oct 19 15:55	28°♈28'42	47.64951 AU
opposition	2094 Oct 21 07:51	28°♈26'48	-17°22'07
direct	2095 Jan 10 15:10	27°♈27'31	
conjunction	2095 Apr 18 16:05	28°♈55'10	-16°39'46
minimum elong	2095 Apr 18 16:11	28°♈55'10	16°39'47
max. Earth dist.	2095 Apr 20 09:05	28°♈57'33	49.59881 AU
	2095 Jun 09 04:58	0°♉	
retrograde	2095 Jul 30 15:37	0°♉26'40	
	2095 Sep 20 22:06	30°℞♈	
min. Earth dist.	2095 Oct 20 23:58	29°♈27'53	47.72274 AU
opposition	2095 Oct 22 13:36	29°♈26'06	-17°19'58
direct	2096 Jan 11 19:47	28°♈26'53	
conjunction	2096 Apr 18 22:10	29°♈54'22	-16°37'38
minimum elong	2096 Apr 18 22:16	29°♈54'22	16°37'38
max. Earth dist.	2096 Apr 20 13:59	29°♈56'40	49.66994 AU
	2096 Apr 22 23:20	0°♉	
retrograde	2096 Jul 30 20:44	1°♉25'39	
min. Earth dist.	2096 Oct 21 05:44	0°♉26'56	47.79092 AU
opposition	2096 Oct 22 19:05	0°♉25'10	-17°17'34
	2096 Nov 14 14:32	30°℞♈	
direct	2097 Jan 12 00:40	29°♈25'59	
	2097 Mar 10 00:48	0°♉	
conjunction	2097 Apr 20 04:02	0°♉53'18	-16°35'15
minimum elong	2097 Apr 20 04:08	0°♉53'18	16°35'16
max. Earth dist.	2097 Apr 21 17:59	0°♉55'30	49.73621 AU
retrograde	2097 Aug 01 01:00	2°♉24'24	
min. Earth dist.	2097 Oct 22 12:48	1°♉25'38	47.85471 AU
opposition	2097 Oct 24 00:27	1°♉23'57	-17°14'53
direct	2098 Jan 13 06:33	0°♉24'49	
conjunction	2098 Apr 21 09:55	1°♉51'58	-16°32'37
minimum elong	2098 Apr 21 10:02	1°♉51'59	16°32'36

max. Earth dist.	2098 Apr 22 23:52	1°♉54'10	49.79847 AU
retrograde	2098 Aug 02 03:48	3°♉22'53	
min. Earth dist.	2098 Oct 23 18:54	2°♉24'09	47.91461 AU
opposition	2098 Oct 25 05:43	2°♉22'30	-17°11'57
direct	2099 Jan 14 14:51	1°♉23'25	
conjunction	2099 Apr 22 15:25	2°♉50'23	-16°29'42
minimum elong	2099 Apr 22 15:31	2°♉50'23	16°29'42
max. Earth dist.	2099 Apr 24 03:37	2°♉52'29	49.85727 AU
retrograde	2099 Aug 03 10:27	4°♉21'08	
min. Earth dist.	2099 Oct 25 00:28	3°♉22'25	47.97134 AU
opposition	2099 Oct 26 10:55	3°♉20'48	-17°08'44
direct	2100 Jan 15 20:38	2°♉21'45	