	2000 Jan 05 05:32	15°♒	
evening set	2000 Jan 21 15:52	15°♒53'47	
conjunction	2000 Feb 06 07:14	16°♒47'55	-0°39'18
minimum elong	2000 Feb 06 07:14	16°♒47'55	0°39'18
max. Earth dist.	2000 Feb 07 04:46	16°♒51'03	20.91362 AU
morning rise	2000 Feb 22 00:40	17°♒42'20	
retrograde	2000 May 25 08:21	20°♒49'28	
min. Earth dist.	2000 Aug 10 07:36	18°♒52'56	18.93159 AU
opposition	2000 Aug 11 05:20	18°♒50'46	-0°44'12
direct	2000 Oct 26 15:24	16°♒53'42	
evening set	2001 Jan 24 20:34	19°♒55'00	
conjunction	2001 Feb 09 12:19	20°♒49'02	-0°40'37
minimum elong	2001 Feb 09 12:19	20°♒49'02	0°40'38
max. Earth dist.	2001 Feb 10 10:55	20°♒52'19	20.94799 AU
morning rise	2001 Feb 25 06:16	21°♒43'23	
retrograde	2001 May 29 15:11	24°♒50'16	
opposition	2001 Aug 15 15:25	22°♒51'30	-0°45'33
min. Earth dist.	2001 Aug 14 18:11	22°♒53'37	18.96420 AU
direct	2001 Oct 30 22:55	20°♒54'34	
evening set	2002 Jan 29 00:58	23°♒55'12	
conjunction	2002 Feb 13 17:06	24°♒49'10	-0°41'44
minimum elong	2002 Feb 13 17:06	24°♒49'10	0°41'43
max. Earth dist.	2002 Feb 14 15:39	24°♒52'25	20.97885 AU
morning rise	2002 Mar 01 11:42	25°♒43'28	
retrograde	2002 Jun 03 00:11	28°♒50'07	
min. Earth dist.	2002 Aug 19 02:23	26°♒53'34	18.99336 AU
opposition	2002 Aug 20 00:54	26°♒51'19	-0°46'39
direct	2002 Nov 04 06:28	24°♒54'30	
evening set	2003 Feb 02 05:02	27°♒54'33	
conjunction	2003 Feb 17 21:38	28°♒48'27	-0°42'38
minimum elong	2003 Feb 17 21:38	28°♒48'27	0°42'39
max. Earth dist.	2003 Feb 18 21:11	28°♒51'51	21.00619 AU
morning rise	2003 Mar 05 16:47	29°♒42'43	
	2003 Mar 10 20:54	0°♓	
retrograde	2003 Jun 07 06:59	2°♓49'14	
min. Earth dist.	2003 Aug 23 11:56	0°♓52'35	19.01909 AU
opposition	2003 Aug 24 10:02	0°♓50'23	-0°47'31
	2003 Sep 15 03:45	30°♑℞♒	
direct	2003 Nov 08 12:44	28°♒53'42	
	2003 Dec 30 09:15	0°♓	
evening set	2004 Feb 06 09:02	1°♓53'14	
conjunction	2004 Feb 22 02:07	2°♓47'06	-0°43'19
minimum elong	2004 Feb 22 02:07	2°♓47'06	0°43'19
max. Earth dist.	2004 Feb 23 01:28	2°♓50'27	21.03035 AU
morning rise	2004 Mar 08 22:02	3°♓41'21	
retrograde	2004 Jun 10 15:47	6°♓47'46	
opposition	2004 Aug 27 18:41	4°♓48'53	-0°48'10
min. Earth dist.	2004 Aug 26 19:30	4°♓51'12	19.04158 AU
direct	2004 Nov 11 19:12	2°♓52'19	
evening set	2005 Feb 09 12:49	5°♓51'26	
conjunction	2005 Feb 25 06:33	6°♓45'16	-0°43'49
minimum elong	2005 Feb 25 06:33	6°♓45'16	0°43'49
max. Earth dist.	2005 Feb 26 06:43	6°♓48'44	21.05098 AU
morning rise	2005 Mar 13 03:10	7°♓39'32	
retrograde	2005 Jun 14 22:38	10°♓45'53	
min. Earth dist.	2005 Aug 31 04:32	8°♓49'14	19.06038 AU
opposition	2005 Sep 01 03:02	8°♓47'00	-0°48'35
direct	2005 Nov 16 00:08	6°♓50'34	
evening set	2006 Feb 13 16:43	9°♓49'18	
conjunction	2006 Mar 01 11:02	10°♓43'09	-0°44'05
minimum elong	2006 Mar 01 11:02	10°♓43'09	0°44'05
max. Earth dist.	2006 Mar 02 10:40	10°♓46'32	21.06796 AU
morning rise	2006 Mar 17 08:30	11°♓37'26	
retrograde	2006 Jun 19 07:40	14°♓43'45	
min. Earth dist.	2006 Sep 04 11:47	12°♓47'10	19.07537 AU
opposition	2006 Sep 05 10:54	12°♓44'52	-0°48'46
direct	2006 Nov 20 06:09	10°♓48'33	
evening set	2007 Feb 17 20:38	13°♓47'00	
conjunction	2007 Mar 05 15:39	14°♓40'52	-0°44'09
minimum elong	2007 Mar 05 15:39	14°♓40'52	0°44'09
max. Earth dist.	2007 Mar 06 15:50	14°♓44'20	21.08080 AU
morning rise	2007 Mar 21 13:52	15°♓35'11	
retrograde	2007 Jun 23 14:42	18°♓41'33	
opposition	2007 Sep 09 18:46	16°♓42'39	-0°48'43
min. Earth dist.	2007 Sep 08 20:34	16°♓44'52	19.08605 AU
direct	2007 Nov 24 10:15	14°♓46'27	
evening set	2008 Feb 22 00:36	17°♓44'40	
conjunction	2008 Mar 08 20:19	18°♓38'34	-0°44'01
minimum elong	2008 Mar 08 20:19	18°♓38'34	0°44'01
max. Earth dist.	2008 Mar 09 19:41	18°♓41'54	21.08931 AU
morning rise	2008 Mar 24 19:27	19°♓32'57	
retrograde	2008 Jun 27 00:01	22°♓39'23	
min. Earth dist.	2008 Sep 12 04:02	20°♓42'41	19.09214 AU
opposition	2008 Sep 13 02:21	20°♓40'27	-0°48'27
direct	2008 Nov 27 16:09	18°♓44'19	
evening set	2009 Feb 25 04:56	21°♓42'23	
conjunction	2009 Mar 13 01:27	22°♓36'21	-0°43'40
minimum elong	2009 Mar 13 01:27	22°♓36'21	0°43'39
max. Earth dist.	2009 Mar 14 00:56	22°♓39'42	21.09276 AU
morning rise	2009 Mar 29 01:24	23°♓30'49	
retrograde	2009 Jul 01 07:37	26°♓37'20	
opposition	2009 Sep 17 09:41	24°♓38'22	-0°47'57
min. Earth dist.	2009 Sep 16 12:44	24°♓40'28	19.09293 AU
direct	2009 Dec 01 20:27	22°♓42'16	
evening set	2010 Mar 01 09:32	25°♓40'15	
conjunction	2010 Mar 17 06:50	26°♓34'18	-0°43'07
minimum elong	2010 Mar 17 06:50	26°♓34'18	0°43'07
max. Earth dist.	2010 Mar 18 04:53	26°♓37'27	21.09088 AU
morning rise	2010 Apr 02 07:45	27°♓28'51	
	2010 May 28 01:46	0°♈	
retrograde	2010 Jul 05 16:48	0°♈35'30	
	2010 Aug 14 03:34	30°♑℞♓	
opposition	2010 Sep 21 16:58	28°♓36'27	-0°47'13
min. Earth dist.	2010 Sep 20 20:18	28°♓38'31	19.08817 AU
direct	2010 Dec 06 01:50	26°♓40'19	
evening set	2011 Mar 05 14:13	29°♓38'17	
	2011 Mar 12 00:50	0°♈	
conjunction	2011 Mar 21 12:24	0°♈32'25	-0°42'21
minimum elong	2011 Mar 21 12:24	0°♈32'25	0°42'20
max. Earth dist.	2011 Mar 22 10:14	0°♈35'32	21.08311 AU
morning rise	2011 Apr 06 14:10	1°♈27'04	
retrograde	2011 Jul 10 00:34	4°♈33'52	
min. Earth dist.	2011 Sep 25 04:59	2°♈36'38	19.07746 AU
opposition	2011 Sep 26 00:15	2°♈34'42	-0°46'15
direct	2011 Dec 10 07:04	0°♈38'31	
evening set	2012 Mar 08 19:17	3°♈36'29	
conjunction	2012 Mar 24 18:20	4°♈30'43	-0°41'22
minimum elong	2012 Mar 24 18:20	4°♈30'43	0°41'23

max. Earth dist.	2012 Mar 25 14:32	4°♈33'36	21.06973 AU
morning rise	2012 Apr 09 21:09	5°♈25'30	
retrograde	2012 Jul 13 09:49	8°♈32'28	
opposition	2012 Sep 29 07:15	6°♈33'08	-0°45'04
min. Earth dist.	2012 Sep 28 12:29	6°♈35'02	19.06129 AU
direct	2012 Dec 13 12:02	4°♈36'50	
evening set	2013 Mar 13 00:34	7°♈34'52	
conjunction	2013 Mar 29 00:38	8°♈29'15	-0°40'12
minimum elong	2013 Mar 29 00:38	8°♈29'15	0°40'12
max. Earth dist.	2013 Mar 29 20:30	8°♈32'05	21.05088 AU
morning rise	2013 Apr 14 04:22	9°♈24'10	
retrograde	2013 Jul 17 17:19	12°♈31'18	
opposition	2013 Oct 03 14:12	10°♈31'49	-0°43'40
min. Earth dist.	2013 Oct 02 20:50	10°♈33'34	19.03988 AU
direct	2013 Dec 17 17:39	8°♈35'22	
evening set	2014 Mar 17 06:13	11°♈33'33	
conjunction	2014 Apr 02 07:09	12°♈28'04	-0°38'50
minimum elong	2014 Apr 02 07:09	12°♈28'04	0°38'50
max. Earth dist.	2014 Apr 03 01:23	12°♈30'40	21.02726 AU
morning rise	2014 Apr 18 11:55	13°♈23'08	
retrograde	2014 Jul 22 02:53	16°♈30'30	
opposition	2014 Oct 07 20:58	14°♈30'49	-0°42'03
min. Earth dist.	2014 Oct 07 04:07	14°♈32'31	19.01408 AU
direct	2014 Dec 21 22:45	12°♈34'11	
evening set	2015 Mar 21 12:11	15°♈32'36	
conjunction	2015 Apr 06 14:08	16°♈27'17	-0°37'16
minimum elong	2015 Apr 06 14:08	16°♈27'17	0°37'17
max. Earth dist.	2015 Apr 07 08:11	16°♈29'52	20.99938 AU
morning rise	2015 Apr 22 19:47	17°♈22'31	
retrograde	2015 Jul 26 10:38	20°♈30'10	
opposition	2015 Oct 12 03:49	18°♈30'18	-0°40'13
min. Earth dist.	2015 Oct 11 12:12	18°♈31'53	18.98428 AU
direct	2015 Dec 26 03:52	16°♈33'30	
evening set	2016 Mar 24 18:33	19°♈32'13	
conjunction	2016 Apr 09 21:27	20°♈27'05	-0°35'32
minimum elong	2016 Apr 09 21:27	20°♈27'05	0°35'31
max. Earth dist.	2016 Apr 10 13:51	20°♈29'25	20.96794 AU
morning rise	2016 Apr 26 04:13	21°♈22'30	
retrograde	2016 Jul 29 21:06	24°♈30'28	
opposition	2016 Oct 15 10:43	22°♈30'26	-0°38'12
min. Earth dist.	2016 Oct 14 19:43	22°♈31'58	18.95110 AU
direct	2016 Dec 29 09:29	20°♈33'26	
evening set	2017 Mar 29 01:32	23°♈32'34	
conjunction	2017 Apr 14 05:30	24°♈27'38	-0°33'36
minimum elong	2017 Apr 14 05:30	24°♈27'38	0°33'37
max. Earth dist.	2017 Apr 14 21:38	24°♈29'56	20.93304 AU
morning rise	2017 Apr 30 13:08	25°♈23'14	
retrograde	2017 Aug 03 05:31	28°♈31'33	
opposition	2017 Oct 19 17:35	26°♈31'23	-0°35'59
min. Earth dist.	2017 Oct 19 03:52	26°♈32'48	18.91460 AU
direct	2018 Jan 02 14:11	24°♈34'13	
evening set	2018 Apr 02 09:06	27°♈33'49	
conjunction	2018 Apr 18 14:00	28°♈29'06	-0°31'31
minimum elong	2018 Apr 18 14:00	28°♈29'06	0°31'30
max. Earth dist.	2018 Apr 19 04:16	28°♈31'08	20.89517 AU
morning rise	2018 May 04 22:43	29°♈24'55	
	2018 May 15 15:18	0°♉	
retrograde	2018 Aug 07 16:50	2°♉33'39	
min. Earth dist.	2018 Oct 23 11:51	0°♉34'41	18.87521 AU
opposition	2018 Oct 24 00:47	0°♉33'21	-0°33'36
	2018 Nov 06 18:57	30°℞♈	
direct	2019 Jan 06 20:26	28°♈36'00	
	2019 Mar 06 08:28	0°♉	
evening set	2019 Apr 06 17:06	1°♉36'10	
conjunction	2019 Apr 22 23:07	2°♉31'41	-0°29'16
minimum elong	2019 Apr 22 23:07	2°♉31'41	0°29'16
max. Earth dist.	2019 Apr 23 13:07	2°♉33'41	20.85429 AU
morning rise	2019 May 09 08:40	3°♉27'43	
retrograde	2019 Aug 12 02:27	6°♉36'55	
opposition	2019 Oct 28 08:15	4°♉36'31	-0°31'01
min. Earth dist.	2019 Oct 27 20:37	4°♉37'43	18.83282 AU
direct	2020 Jan 11 01:48	2°♉38'59	
evening set	2020 Apr 10 02:04	5°♉39'47	
conjunction	2020 Apr 26 09:01	6°♉35'32	-0°26'52
minimum elong	2020 Apr 26 09:01	6°♉35'32	0°26'52
max. Earth dist.	2020 Apr 26 20:53	6°♉37'14	20.81059 AU
morning rise	2020 May 12 19:40	7°♉31'50	
retrograde	2020 Aug 15 14:26	10°♉41'31	
opposition	2020 Oct 31 15:53	8°♉41'02	-0°28'17
min. Earth dist.	2020 Oct 31 05:28	8°♉42'06	18.78760 AU
direct	2021 Jan 14 08:36	6°♉43'18	
evening set	2021 Apr 14 11:49	9°♉44'50	
conjunction	2021 Apr 30 19:54	10°♉40'51	-0°24'18
minimum elong	2021 Apr 30 19:54	10°♉40'51	0°24'19
max. Earth dist.	2021 May 01 07:09	10°♉42'28	20.76377 AU
morning rise	2021 May 17 07:19	11°♉37'23	
retrograde	2021 Aug 20 01:40	14°♉47'35	
opposition	2021 Nov 04 23:58	12°♉47'01	-0°25'23
min. Earth dist.	2021 Nov 04 15:06	12°♉47'56	18.73907 AU
direct	2022 Jan 18 15:26	10°♉49'06	
evening set	2022 Apr 18 22:25	13°♉51'25	
conjunction	2022 May 05 07:22	14°♉47'42	-0°21'37
minimum elong	2022 May 05 07:22	14°♉47'42	0°21'37
max. Earth dist.	2022 May 05 15:59	14°♉48'56	20.71364 AU
	2022 May 08 20:28	15°♉	
morning rise	2022 May 21 19:46	15°♉44'29	
retrograde	2022 Aug 24 13:54	18°♉55'15	
opposition	2022 Nov 09 08:26	16°♉54'35	-0°22'20
min. Earth dist.	2022 Nov 09 01:11	16°♉55'20	18.68717 AU
	2023 Jan 11 06:51	15°℞♉	
direct	2023 Jan 22 22:58	14°♉56'26	
	2023 Feb 03 14:10	15°♉	
evening set	2023 Apr 23 09:53	17°♉59'36	
conjunction	2023 May 09 19:56	18°♉56'10	-0°18'47
minimum elong	2023 May 09 19:56	18°♉56'10	0°18'47
max. Earth dist.	2023 May 10 03:39	18°♉57'16	20.65987 AU
morning rise	2023 May 26 09:02	19°♉53'12	
retrograde	2023 Aug 29 02:39	23°♉04'31	
opposition	2023 Nov 13 17:21	21°♉03'45	-0°19'08
min. Earth dist.	2023 Nov 13 11:44	21°♉04'20	18.63149 AU
direct	2024 Jan 27 07:35	19°♉05'18	
evening set	2024 Apr 26 22:19	22°♉09'21	
conjunction	2024 May 13 09:14	23°♉06'13	-0°15'51
minimum elong	2024 May 13 09:14	23°♉06'13	0°15'51
max. Earth dist.	2024 May 13 13:51	23°♉06'52	20.60242 AU
morning rise	2024 May 29 23:19	24°♉03'32	
retrograde	2024 Sep 01 15:18	27°♉15'24	
opposition	2024 Nov 17 02:45	25°♉14'29	-0°15'49
min. Earth dist.	2024 Nov 16 23:02	25°♉14'52	18.57218 AU
direct	2025 Jan 30 16:22	23°♉15'41	
evening set	2025 May 01 11:33	26°♉20'41	

conjunction	2025 May 17	23:32	27°♉17'50	-0°12'48
minimum elong	2025 May 17	23:32	27°♉17'50	0°12'48
behind sun begin	2025 May 17	19:26	27°♉17'15	
behind sun end	2025 May 18	03:38	27°♉18'25	
max. Earth dist.	2025 May 18	03:06	27°♉18'20	20.54132 AU
morning rise	2025 Jun 03	14:13	28°♉15'25	
	2025 Jul 07	07:47	0°♊	
retrograde	2025 Sep 06	04:51	1°♊27'49	
	2025 Nov 08	02:20	30°℞♉	
opposition	2025 Nov 21	12:25	29°♉26'44	-0°12'24
min. Earth dist.	2025 Nov 21	10:16	29°♉26'58	18.50940 AU
direct	2026 Feb 04	02:33	27°♉27'35	
	2026 Apr 26	00:52	0°♊	
evening set	2026 May 06	01:41	0°♊33'32	
conjunction	2026 May 22	14:26	1°♊30'59	-0°09'41
minimum elong	2026 May 22	14:26	1°♊30'59	0°09'41
behind sun begin	2026 May 22	08:56	1°♊30'12	
behind sun end	2026 May 22	19:57	1°♊31'46	
max. Earth dist.	2026 May 22	14:55	1°♊31'03	20.47725 AU
morning rise	2026 Jun 08	06:00	2°♊28'50	
retrograde	2026 Sep 10	18:27	5°♊41'49	
opposition	2026 Nov 25	22:41	3°♊40'31	-0°08'53
min. Earth dist.	2026 Nov 25	22:27	3°♊40'33	18.44411 AU
direct	2027 Feb 08	12:29	1°♊40'57	
evening set	2027 May 10	16:24	4°♊47'56	
conjunction	2027 May 27	06:12	5°♊45'41	-0°06'29
minimum elong	2027 May 27	06:12	5°♊45'41	0°06'29
behind sun begin	2027 May 26	23:52	5°♊44'47	
behind sun end	2027 May 27	12:32	5°♊46'35	
max. Earth dist.	2027 May 27	05:58	5°♊45'39	20.41088 AU
morning rise	2027 Jun 12	22:16	6°♊43'48	
retrograde	2027 Sep 15	09:09	9°♊57'20	
opposition	2027 Nov 30	09:22	7°♊55'51	-0°05'18
min. Earth dist.	2027 Nov 30	10:22	7°♊55'45	18.37680 AU
direct	2028 Feb 12	23:49	5°♊55'52	
evening set	2028 May 14	08:20	9°♊03'54	
conjunction	2028 May 30	22:46	10°♊01'57	-0°03'14
minimum elong	2028 May 30	22:47	10°♊01'57	0°03'13
behind sun begin	2028 May 30	16:05	10°♊00'59	
behind sun end	2028 May 31	05:30	10°♊02'54	
max. Earth dist.	2028 May 30	19:33	10°♊01'31	20.34297 AU
morning rise	2028 Jun 16	15:38	11°♊00'21	
retrograde	2028 Sep 19	00:01	14°♊14'27	
opposition	2028 Dec 03	20:29	12°♊12'46	-0°01'39
min. Earth dist.	2028 Dec 03	23:29	12°♊12'27	18.30843 AU
direct	2029 Feb 16	10:52	10°♊12'20	
evening set	2029 May 19	01:00	13°♊21'28	
asc. node	2029 May 19	19:38	13°♊24'09	
conjunction	2029 Jun 04	16:23	14°♊19'50	0°00'09
minimum elong	2029 Jun 04	16:23	14°♊19'50	0°00'09
behind sun begin	2029 Jun 04	09:45	14°♊18'53	
behind sun end	2029 Jun 04	23:02	14°♊20'47	
max. Earth dist.	2029 Jun 04	12:34	14°♊19'20	20.27419 AU
morning rise	2029 Jun 21	09:34	15°♊18'31	
retrograde	2029 Sep 23	16:22	18°♊33'11	
opposition	2029 Dec 08	08:11	16°♊31'19	0°02'01
min. Earth dist.	2029 Dec 08	12:06	16°♊30'54	18.23945 AU
direct	2030 Feb 20	23:23	14°♊30'28	
evening set	2030 May 23	18:33	17°♊40'45	
conjunction	2030 Jun 09	10:28	18°♊39'25	0°03'32
minimum elong	2030 Jun 09	10:27	18°♊39'25	0°03'33
behind sun begin	2030 Jun 09	03:45	18°♊38'27	
behind sun end	2030 Jun 09	17:10	18°♊40'23	
max. Earth dist.	2030 Jun 09	03:50	18°♊38'28	20.20524 AU
morning rise	2030 Jun 26	04:14	19°♊38'22	
retrograde	2030 Sep 28	08:27	22°♊53'39	
opposition	2030 Dec 12	20:36	20°♊51'36	0°05'42
min. Earth dist.	2030 Dec 13	02:25	20°♊50'59	18.17072 AU
direct	2031 Feb 25	11:24	18°♊50'19	
evening set	2031 May 28	13:00	22°♊01'48	
conjunction	2031 Jun 14	05:44	23°♊00'47	0°06'50
minimum elong	2031 Jun 14	05:43	23°♊00'47	0°06'50
behind sun begin	2031 Jun 13	23:26	22°♊59'52	
behind sun end	2031 Jun 14	12:00	23°♊01'41	
max. Earth dist.	2031 Jun 13	22:38	22°♊59'45	20.13674 AU
morning rise	2031 Jun 30	23:43	24°♊00'00	
retrograde	2031 Oct 03	02:43	27°♊15'53	
opposition	2031 Dec 17	09:27	25°♊13'42	0°09'23
min. Earth dist.	2031 Dec 17	15:57	25°♊13'01	18.10262 AU
direct	2032 Mar 01	01:34	23°♊12'01	
evening set	2032 Jun 01	08:36	26°♊24'45	
conjunction	2032 Jun 18	01:46	27°♊24'01	0°10'07
minimum elong	2032 Jun 18	01:46	27°♊24'01	0°10'07
behind sun begin	2032 Jun 17	20:23	27°♊23'15	
behind sun end	2032 Jun 18	07:08	27°♊24'48	
max. Earth dist.	2032 Jun 17	15:56	27°♊22'34	20.06915 AU
morning rise	2032 Jul 04	20:11	28°♊23'31	
	2032 Aug 03	18:23	0°♋	
retrograde	2032 Oct 06	19:52	1°♋40'01	
	2032 Dec 12	06:19	30°℞♊	
opposition	2032 Dec 20	23:11	29°♊37'44	0°13'02
min. Earth dist.	2032 Dec 21	07:45	29°♊36'49	18.03566 AU
direct	2033 Mar 05	14:41	27°♊35'40	
	2033 May 22	13:17	0°♋	
evening set	2033 Jun 06	05:01	0°♋49'40	
conjunction	2033 Jun 22	22:49	1°♋49'15	0°13'23
minimum elong	2033 Jun 22	22:49	1°♋49'15	0°13'23
behind sun begin	2033 Jun 22	19:07	1°♋48'43	
behind sun end	2033 Jun 23	02:31	1°♋49'48	
max. Earth dist.	2033 Jun 22	12:28	1°♋47'43	20.00279 AU
morning rise	2033 Jul 09	17:17	2°♋49'00	
retrograde	2033 Oct 11	16:04	6°♋06'08	
opposition	2033 Dec 25	13:28	4°♋03'47	0°16'38
min. Earth dist.	2033 Dec 25	22:35	4°♋02'48	17.96995 AU
direct	2034 Mar 10	06:49	2°♋01'23	
evening set	2034 Jun 11	02:36	5°♋16'41	
conjunction	2034 Jun 27	20:38	6°♋16'34	0°16'35
minimum elong	2034 Jun 27	20:38	6°♋16'34	0°16'34
max. Earth dist.	2034 Jun 27	07:45	6°♋14'39	19.93777 AU
morning rise	2034 Jul 14	15:20	7°♋16'34	
retrograde	2034 Oct 16	10:16	10°♋34'20	
opposition	2034 Dec 30	04:38	8°♋31'57	0°20'10
min. Earth dist.	2034 Dec 30	16:01	8°♋30'43	17.90572 AU
direct	2035 Mar 14	21:30	6°♋29'12	
evening set	2035 Jun 16	00:58	9°♋45'50	
conjunction	2035 Jul 02	19:30	10°♋46'01	0°19'43
minimum elong	2035 Jul 02	19:30	10°♋46'01	0°19'43
max. Earth dist.	2035 Jul 02	05:49	10°♋43'57	19.87416 AU
morning rise	2035 Jul 19	14:10	11°♋46'15	
retrograde	2035 Oct 21	08:02	15°♋04'38	
opposition	2036 Jan 03	20:30	13°♋02'13	0°23'36
min. Earth dist.	2036 Jan 04	08:28	13°♋00'55	17.84265 AU
direct	2036 Mar 18	15:29	10°♋59'09	
evening set	2036 Jun 20	00:41	14°♋17'06	

conjunction	2036 Jul 06	19:19	15°♋17'33	0°22'45	
minimum elong	2036 Jul 06	19:19	15°♋17'33	0°22'45	
max. Earth dist.	2036 Jul 06	03:06	15°♋15'06	19.81156 AU	
morning rise	2036 Jul 23	13:56	16°♋18'01		
retrograde	2036 Oct 25	03:23	19°♋37'00		
opposition	2037 Jan 07	13:14	17°♋34'32	0°26'56	
min. Earth dist.	2037 Jan 08	03:39	17°♋32'59	17.78074 AU	
direct	2037 Mar 23	08:26	15°♋31'07		
evening set	2037 Jun 25	01:08	18°♋50'23		
conjunction	2037 Jul 11	19:59	19°♋51'05	0°25'40	
minimum elong	2037 Jul 11	19:59	19°♋51'05	0°25'40	
max. Earth dist.	2037 Jul 11	02:33	19°♋48'26	19.75023 AU	
morning rise	2037 Jul 28	14:23	20°♋51'46		
retrograde	2037 Oct 30	01:59	24°♋11'18		
opposition	2038 Jan 12	06:42	22°♋08'47	0°30'06	
min. Earth dist.	2038 Jan 12	21:30	22°♋07'11	17.72006 AU	
direct	2038 Mar 28	04:27	20°♋05'01		
evening set	2038 Jun 30	02:18	23°♋25'32		
conjunction	2038 Jul 16	21:10	24°♋26'29	0°28'27	
minimum elong	2038 Jul 16	21:10	24°♋26'29	0°28'27	
max. Earth dist.	2038 Jul 16	01:48	24°♋23'32	19.69021 AU	
morning rise	2038 Aug 02	15:18	25°♋27'21		
retrograde	2038 Nov 03	22:01	28°♋47'25		
opposition	2039 Jan 17	01:03	26°♋44'49	0°33'07	
min. Earth dist.	2039 Jan 17	18:08	26°♋42'58	17.66103 AU	
direct	2039 Apr 01	23:32	24°♋40'41		
evening set	2039 Jul 05	04:19	28°♋02'26		
conjunction	2039 Jul 21	23:11	29°♋03'35	0°31'03	
minimum elong	2039 Jul 21	23:10	29°♋03'35	0°31'02	
max. Earth dist.	2039 Jul 21	02:26	29°♋00'25	19.63222 AU	
	2039 Aug 06	10:03	0°♌		
morning rise	2039 Aug 07	17:01	0°♌04'38		
retrograde	2039 Nov 08	21:05	3°♌25'10		
opposition	2040 Jan 21	19:46	1°♌22'30	0°35'56	
min. Earth dist.	2040 Jan 22	13:05	1°♌20'37	17.60421 AU	
	2040 Feb 25	07:35	30°℞♋		
direct	2040 Apr 05	21:44	29°♋17'59		
	2040 May 15	22:17	0°♌		
evening set	2040 Jul 09	07:03	2°♌40'55		
max. Earth dist.	2040 Jul 25	03:52	3°♌38'55	19.57664 AU	
conjunction	2040 Jul 26	01:49	3°♌42'17	0°33'28	
minimum elong	2040 Jul 26	01:49	3°♌42'17	0°33'29	
morning rise	2040 Aug 11	19:07	4°♌43'28		
retrograde	2040 Nov 12	17:54	8°♌04'26		
opposition	2041 Jan 25	15:28	6°♌01'41	0°38'31	
min. Earth dist.	2041 Jan 26	10:43	5°♌59'34	17.55025 AU	
direct	2041 Apr 10	19:05	3°♌56'49		
evening set	2041 Jul 14	10:14	7°♌20'51		
max. Earth dist.	2041 Jul 30	05:25	8°♌18'48	19.52441 AU	
conjunction	2041 Jul 31	04:41	8°♌22'23	0°35'41	
minimum elong	2041 Jul 31	04:40	8°♌22'23	0°35'40	
morning rise	2041 Aug 16	21:33	9°♌23'42		
retrograde	2041 Nov 17	17:17	12°♌45'04		
opposition	2042 Jan 30	11:36	10°♌42'13	0°40'52	
min. Earth dist.	2042 Jan 31	06:45	10°♌40'08	17.49993 AU	
direct	2042 Apr 15	18:57	8°♌37'00		
evening set	2042 Jul 19	13:53	12°♌02'05		
max. Earth dist.	2042 Aug 04	08:39	13°♌00'09	19.47605 AU	
conjunction	2042 Aug 05	08:06	13°♌03'46	0°37'39	
minimum elong	2042 Aug 05	08:06	13°♌03'46	0°37'40	
morning rise	2042 Aug 22	00:14	14°♌05'12		
	2042 Sep 06	15:38	15°♌		
retrograde	2042 Nov 22	15:16	17°♌26'54		
opposition	2043 Feb 04	08:26	15°♌24'00	0°42'57	
min. Earth dist.	2043 Feb 05	05:01	15°♌21'44	17.45392 AU	
	2043 Feb 13	12:36	15°℞♌		
direct	2043 Apr 20	17:49	13°♌18'27		
	2043 Jun 23	10:17	15°♌		
evening set	2043 Jul 24	18:03	16°♌44'31		
max. Earth dist.	2043 Aug 09	10:57	17°♌42'29	19.43248 AU	
conjunction	2043 Aug 10	11:44	17°♌46'20	0°39'23	
minimum elong	2043 Aug 10	11:44	17°♌46'19	0°39'24	
morning rise	2043 Aug 27	03:21	18°♌47'51		
retrograde	2043 Nov 27	15:38	22°♌09'50		
opposition	2044 Feb 09	05:50	20°♌06'53	0°44'45	
min. Earth dist.	2044 Feb 10	02:05	20°♌04'40	17.41295 AU	
direct	2044 Apr 24	18:51	18°♌01'02		
evening set	2044 Jul 28	22:30	21°♌28'01		
conjunction	2044 Aug 14	15:48	22°♌29'56	0°40'51	
minimum elong	2044 Aug 14	15:48	22°♌29'56	0°40'51	
max. Earth dist.	2044 Aug 13	15:39	22°♌26'10	19.39409 AU	
morning rise	2044 Aug 31	06:27	23°♌31'30		
retrograde	2044 Dec 01	14:46	26°♌53'44		
opposition	2045 Feb 13	03:57	24°♌50'47	0°46'14	
min. Earth dist.	2045 Feb 14	00:59	24°♌48'28	17.37747 AU	
direct	2045 Apr 29	18:21	22°♌44'42		
evening set	2045 Aug 03	03:22	26°♌12'30		
conjunction	2045 Aug 19	19:54	27°♌14'29	0°42'03	
minimum elong	2045 Aug 19	19:54	27°♌14'29	0°42'03	
max. Earth dist.	2045 Aug 18	18:36	27°♌10'33	19.36165 AU	
morning rise	2045 Sep 05	09:51	28°♌16'07		
	2045 Oct 06	07:14	0°♍		
retrograde	2045 Dec 06	16:02	1°♍38'33		
	2046 Feb 08	18:49	30°℞♌		
opposition	2046 Feb 18	02:35	29°♌35'36	0°47'25	
min. Earth dist.	2046 Feb 18	23:08	29°♌33'21	17.34820 AU	
direct	2046 May 04	19:52	27°♌29'21		
	2046 Jul 22	22:33	0°♍		
evening set	2046 Aug 08	08:08	0°♍57'54		
max. Earth dist.	2046 Aug 24	00:10	1°♍56'11	19.33543 AU	
conjunction	2046 Aug 25	00:11	1°♍59'56	0°42'58	
minimum elong	2046 Aug 25	00:11	1°♍59'56	0°42'57	
morning rise	2046 Sep 10	13:07	3°♍01'35		
retrograde	2046 Dec 11	16:09	6°♍24'11		
opposition	2047 Feb 23	01:50	4°♍21'19	0°48'17	
min. Earth dist.	2047 Feb 23	22:38	4°♍19'02	17.32504 AU	
direct	2047 May 09	20:10	2°♍14'57		
evening set	2047 Aug 13	13:27	5°♍44'10		
max. Earth dist.	2047 Aug 29	03:33	6°♍42'18	19.31540 AU	
conjunction	2047 Aug 30	04:35	6°♍46'13	0°43'35	
minimum elong	2047 Aug 30	04:35	6°♍46'13	0°43'35	
morning rise	2047 Sep 15	16:42	7°♍47'51		
retrograde	2047 Dec 16	17:22	11°♍10'35		
opposition	2048 Feb 28	01:27	9°♍07'48	0°48'49	
min. Earth dist.	2048 Feb 28	22:05	9°♍05'32	17.30807 AU	
direct	2048 May 13	22:37	7°♍01'23		
evening set	2048 Aug 17	18:44	10°♍31'09		
max. Earth dist.	2048 Sep 02	09:32	11°♍29'30	19.30131 AU	
conjunction	2048 Sep 03	09:10	11°♍33'13	0°43'54	
minimum elong	2048 Sep 03	09:10	11°♍33'13	0°43'54	
morning rise	2048 Sep 19	20:08	12°♍34'48		
retrograde	2048 Dec 20	17:43	15°♍57'35		

opposition	2049 Mar 04 01:45	13°♑54'56	0°49'01
min. Earth dist.	2049 Mar 04 22:12	13°♑52'42	17.29672 AU
direct	2049 May 19 00:47	11°♑48'31	
evening set	2049 Aug 22 24:00	15°♑18'43	
conjunction	2049 Sep 08 13:22	16°♑20'44	0°43'56
minimum elong	2049 Sep 08 13:22	16°♑20'44	0°43'55
max. Earth dist.	2049 Sep 07 13:03	16°♑16'54	19.29270 AU
morning rise	2049 Sep 24 23:24	17°♑22'15	
retrograde	2049 Dec 25 18:12	20°♑45'04	
opposition	2050 Mar 09 02:30	18°♑42'31	0°48'53
min. Earth dist.	2050 Mar 09 22:59	18°♑40'17	17.29085 AU
direct	2050 May 24 04:13	16°♑36'05	
evening set	2050 Aug 28 05:08	20°♑06'37	
conjunction	2050 Sep 13 17:41	21°♑08'34	0°43'39
minimum elong	2050 Sep 13 17:41	21°♑08'34	0°43'39
max. Earth dist.	2050 Sep 12 18:38	21°♑04'56	19.28935 AU
morning rise	2050 Sep 30 02:33	22°♑09'59	
retrograde	2050 Dec 30 18:44	25°♑32'45	
opposition	2051 Mar 14 03:29	23°♑30'19	0°48'24
min. Earth dist.	2051 Mar 14 23:18	23°♑28'09	17.28989 AU
direct	2051 May 29 08:25	21°♑23'55	
evening set	2051 Sep 02 10:15	24°♑54'37	
conjunction	2051 Sep 18 21:43	25°♑56'28	0°43'03
minimum elong	2051 Sep 18 21:43	25°♑56'28	0°43'03
max. Earth dist.	2051 Sep 17 22:23	25°♑52'47	19.29082 AU
morning rise	2051 Oct 05 05:31	26°♑57'47	
	2051 Dec 08 20:48	0°♎	
retrograde	2052 Jan 04 18:25	0°♎20'25	
	2052 Feb 01 03:02	30°℞♑	
opposition	2052 Mar 18 04:56	28°♑18'05	0°47'35
min. Earth dist.	2052 Mar 19 00:59	28°♑15'54	17.29382 AU
direct	2052 Jun 02 12:16	26°♑11'42	
evening set	2052 Sep 06 14:53	29°♑42'29	
	2052 Sep 11 08:10	0°♎	
max. Earth dist.	2052 Sep 22 03:07	0°♎40'41	19.29713 AU
conjunction	2052 Sep 23 01:19	0°♎44'12	0°42'10
minimum elong	2052 Sep 23 01:20	0°♎44'12	0°42'10
morning rise	2052 Oct 09 07:59	1°♎45'22	
retrograde	2053 Jan 08 19:07	5°♎07'49	
opposition	2053 Mar 23 06:31	3°♎05'35	0°46'25
min. Earth dist.	2053 Mar 24 01:16	3°♎03'33	17.30239 AU
direct	2053 Jun 07 17:37	0°♎59'16	
evening set	2053 Sep 11 19:09	4°♎29'57	
max. Earth dist.	2053 Sep 27 06:54	5°♎28'07	19.30813 AU
conjunction	2053 Sep 28 04:30	5°♎31'31	0°40'59
minimum elong	2053 Sep 28 04:30	5°♎31'31	0°40'59
morning rise	2053 Oct 14 10:00	6°♎32'33	
retrograde	2054 Jan 13 18:00	9°♎54'45	
opposition	2054 Mar 28 08:16	7°♎52'36	0°44'56
min. Earth dist.	2054 Mar 29 03:10	7°♎50'33	17.31589 AU
direct	2054 Jun 12 21:07	5°♎46'20	
evening set	2054 Sep 16 22:44	9°♎16'49	
max. Earth dist.	2054 Oct 02 10:22	10°♎14'58	19.32415 AU
conjunction	2054 Oct 03 07:00	10°♎18'13	0°39'31
minimum elong	2054 Oct 03 07:01	10°♎18'13	0°39'30
morning rise	2054 Oct 19 11:30	11°♎19'04	
retrograde	2055 Jan 18 18:31	14°♎40'58	
opposition	2055 Apr 02 09:55	12°♎38'54	0°43'09
min. Earth dist.	2055 Apr 03 03:00	12°♎37'03	17.33422 AU
direct	2055 Jun 18 02:40	10°♎32'43	
evening set	2055 Sep 22 01:46	14°♎02'52	

conjunction	2055 Oct 08 08:58	15°♎04'05	0°37'46
minimum elong	2055 Oct 08 08:58	15°♎04'05	0°37'47
max. Earth dist.	2055 Oct 07 13:49	15°♎01'04	19.34500 AU
morning rise	2055 Oct 24 12:15	16°♎04'44	
retrograde	2056 Jan 23 16:29	19°♎26'15	
opposition	2056 Apr 06 11:37	17°♎24'17	0°41'03
min. Earth dist.	2056 Apr 07 04:40	17°♎22'26	17.35767 AU
direct	2056 Jun 22 05:33	15°♎18'13	
evening set	2056 Sep 26 04:05	18°♎47'55	
conjunction	2056 Oct 12 10:04	19°♎48'54	0°35'47
minimum elong	2056 Oct 12 10:04	19°♎48'54	0°35'47
max. Earth dist.	2056 Oct 11 15:54	19°♎46'02	19.37122 AU
morning rise	2056 Oct 28 12:23	20°♎49'21	
retrograde	2057 Jan 27 16:30	24°♎10'28	
opposition	2057 Apr 11 13:10	22°♎08'34	0°38'42
min. Earth dist.	2057 Apr 12 03:49	22°♎06'59	17.38652 AU
direct	2057 Jun 27 10:05	20°♎02'39	
evening set	2057 Oct 01 05:22	23°♎31'47	
conjunction	2057 Oct 17 10:20	24°♎32'33	0°33'33
minimum elong	2057 Oct 17 10:20	24°♎32'33	0°33'33
max. Earth dist.	2057 Oct 16 18:37	24°♎30'05	19.40285 AU
morning rise	2057 Nov 02 11:27	25°♎32'46	
retrograde	2058 Feb 01 14:07	28°♎53'26	
opposition	2058 Apr 16 14:40	26°♎51'39	0°36'05
min. Earth dist.	2058 Apr 17 04:48	26°♎50'08	17.42098 AU
direct	2058 Jul 02 12:06	24°♎45'56	
evening set	2058 Oct 06 06:05	28°♎14'26	
conjunction	2058 Oct 22 09:48	29°♎14'56	0°31'07
minimum elong	2058 Oct 22 09:48	29°♎14'56	0°31'07
max. Earth dist.	2058 Oct 21 19:02	29°♎12'37	19.44025 AU
	2058 Nov 03 09:27	0°♏	
morning rise	2058 Nov 07 10:02	0°♏14'55	
retrograde	2059 Feb 06 13:04	3°♏35'06	
opposition	2059 Apr 21 15:38	1°♏33'28	0°33'15
min. Earth dist.	2059 Apr 22 03:10	1°♏32'14	17.46115 AU
	2059 Jun 01 19:14	30°℞♎	
direct	2059 Jul 07 15:19	29°♎28'00	
	2059 Aug 11 18:50	0°♏	
evening set	2059 Oct 11 05:53	2°♏55'46	
conjunction	2059 Oct 27 08:38	3°♏56'01	0°28'29
minimum elong	2059 Oct 27 08:38	3°♏56'01	0°28'28
max. Earth dist.	2059 Oct 26 20:46	3°♏54'10	19.48323 AU
morning rise	2059 Nov 12 07:41	4°♏55'45	
retrograde	2060 Feb 11 10:15	8°♏15'27	
opposition	2060 Apr 25 16:41	6°♏13'59	0°30'12
min. Earth dist.	2060 Apr 26 03:22	6°♏12'51	17.50676 AU
direct	2060 Jul 11 16:55	4°♏08'51	
evening set	2060 Oct 15 04:50	7°♏35'49	
conjunction	2060 Oct 31 06:20	8°♏35'46	0°25'41
minimum elong	2060 Oct 31 06:20	8°♏35'46	0°25'41
max. Earth dist.	2060 Oct 30 19:23	8°♏34'04	19.53154 AU
morning rise	2060 Nov 16 04:36	9°♏35'15	
retrograde	2061 Feb 15 08:02	12°♏54'26	
opposition	2061 Apr 30 17:19	10°♏53'11	0°26'59
min. Earth dist.	2061 May 01 01:25	10°♏52'19	17.55744 AU
direct	2061 Jul 16 19:12	8°♏48'24	
evening set	2061 Oct 20 02:50	12°♏14'30	
conjunction	2061 Nov 05 03:27	13°♏14'11	0°22'43
minimum elong	2061 Nov 05 03:27	13°♏14'11	0°22'43
max. Earth dist.	2061 Nov 04 19:34	13°♏12'57	19.58447 AU
morning rise	2061 Nov 21 00:40	14°♏13'22	

	2061 Dec 04 02:44	15°♏	
retrograde	2062 Feb 20 04:17	17°♏32'02	
opposition	2062 May 05 17:35	15°♏31'00	0°23'36
min. Earth dist.	2062 May 06 00:41	15°♏30'15	17.61231 AU
	2062 May 18 01:51	15°℞♏	
direct	2062 Jul 21 20:54	13°♏26'37	
	2062 Sep 21 06:57	15°♏	
evening set	2062 Oct 25 00:08	16°♏51'46	
conjunction	2062 Nov 09 23:35	17°♏51'08	0°19'38
minimum elong	2062 Nov 09 23:35	17°♏51'08	0°19'38
max. Earth dist.	2062 Nov 09 16:24	17°♏50'01	19.64125 AU
morning rise	2062 Nov 25 20:06	18°♏50'04	
retrograde	2063 Feb 25 00:11	22°♏08'10	
opposition	2063 May 10 17:31	20°♏07'21	0°20'05
min. Earth dist.	2063 May 10 22:28	20°♏06'49	17.67071 AU
direct	2063 Jul 26 22:07	18°♏03'21	
evening set	2063 Oct 29 20:24	21°♏27'30	
conjunction	2063 Nov 14 18:59	22°♏26'34	0°16'26
minimum elong	2063 Nov 14 18:59	22°♏26'34	0°16'26
max. Earth dist.	2063 Nov 14 14:42	22°♏25'54	19.70105 AU
morning rise	2063 Nov 30 14:31	23°♏25'12	
retrograde	2064 Feb 29 19:29	26°♏42'43	
opposition	2064 May 14 17:08	24°♏42'07	0°16'28
min. Earth dist.	2064 May 14 20:47	24°♏41'44	17.73166 AU
direct	2064 Jul 30 23:16	22°♏38'32	
evening set	2064 Nov 02 15:56	26°♏01'36	
conjunction	2064 Nov 18 13:24	27°♏00'20	0°13'09
minimum elong	2064 Nov 18 13:24	27°♏00'21	0°13'09
behind sun begin	2064 Nov 18 09:25	26°♏59'44	
behind sun end	2064 Nov 18 17:23	27°♏00'57	
max. Earth dist.	2064 Nov 18 09:48	26°♏59'48	19.76315 AU
morning rise	2064 Dec 04 08:20	27°♏58'43	
	2065 Jan 10 19:55	0°♐	
retrograde	2065 Mar 05 13:50	1°♐15'38	
	2065 May 01 08:59	30°℞♏	
opposition	2065 May 19 16:14	29°♏15'12	0°12'45
min. Earth dist.	2065 May 19 18:06	29°♏15'01	17.79477 AU
direct	2065 Aug 04 22:39	27°♏12'00	
	2065 Oct 28 21:05	0°♐	
evening set	2065 Nov 07 10:16	0°♐33'56	
conjunction	2065 Nov 23 07:02	1°♐32'22	0°09'48
minimum elong	2065 Nov 23 07:01	1°♐32'22	0°09'48
behind sun begin	2065 Nov 23 01:37	1°♐31'33	
behind sun end	2065 Nov 23 12:26	1°♐33'11	
max. Earth dist.	2065 Nov 23 06:03	1°♐32'13	19.82697 AU
morning rise	2065 Dec 09 01:09	2°♐30'27	
retrograde	2066 Mar 10 07:58	5°♐46'44	
opposition	2066 May 24 14:47	3°♐46'29	0°08'59
min. Earth dist.	2066 May 24 15:08	3°♐46'27	17.85905 AU
direct	2066 Aug 09 22:08	1°♐43'40	
evening set	2066 Nov 12 03:55	5°♐04'24	
conjunction	2066 Nov 27 23:40	6°♐02'31	0°06'25
minimum elong	2066 Nov 27 23:40	6°♐02'31	0°06'24
behind sun begin	2066 Nov 27 17:27	6°♐01'35	
behind sun end	2066 Nov 28 05:52	6°♐03'27	
max. Earth dist.	2066 Nov 27 23:20	6°♐02'28	19.89172 AU
morning rise	2066 Dec 13 17:17	7°♐00'19	
retrograde	2067 Mar 15 01:07	10°♐15'57	
opposition	2067 May 29 12:40	8°♐15'51	0°05'12
min. Earth dist.	2067 May 29 11:39	8°♐15'58	17.92421 AU
direct	2067 Aug 14 19:41	6°♐13'23	
evening set	2067 Nov 16 20:26	9°♐32'54	
conjunction	2067 Dec 02 15:32	10°♐30'42	0°03'01
minimum elong	2067 Dec 02 15:32	10°♐30'42	0°03'01
behind sun begin	2067 Dec 02 09:00	10°♐29'43	
behind sun end	2067 Dec 02 22:05	10°♐31'41	
max. Earth dist.	2067 Dec 02 17:36	10°♐30'58	19.95715 AU
morning rise	2067 Dec 18 08:29	11°♐28'13	
retrograde	2068 Mar 18 18:13	14°♐43'11	
opposition	2068 Jun 02 10:04	12°♐43'13	0°01'24
min. Earth dist.	2068 Jun 02 07:08	12°♐43'31	17.98972 AU
direct	2068 Aug 18 17:28	10°♐41'05	
desc. node	2068 Oct 16 06:54	12°♐05'45	
evening set	2068 Nov 20 11:56	13°♐59'20	
conjunction	2068 Dec 06 06:12	14°♐56'49	-0°00'29
minimum elong	2068 Dec 06 06:12	14°♐56'49	0°00'29
behind sun begin	2068 Dec 05 23:39	14°♐55'51	
behind sun end	2068 Dec 06 12:44	14°♐57'48	
max. Earth dist.	2068 Dec 06 09:14	14°♐57'14	20.02287 AU
morning rise	2068 Dec 21 22:47	15°♐54'04	
retrograde	2069 Mar 23 10:03	19°♐08'22	
opposition	2069 Jun 07 06:46	17°♐08'29	-0°02'23
min. Earth dist.	2069 Jun 07 02:40	17°♐08'54	18.05570 AU
direct	2069 Aug 23 13:18	15°♐06'40	
evening set	2069 Nov 25 02:22	18°♐23'38	
conjunction	2069 Dec 10 20:05	19°♐20'49	-0°03'55
minimum elong	2069 Dec 10 20:06	19°♐20'49	0°03'55
behind sun begin	2069 Dec 10 13:37	19°♐19'51	
behind sun end	2069 Dec 11 02:35	19°♐21'47	
max. Earth dist.	2069 Dec 11 01:28	19°♐21'36	20.08903 AU
morning rise	2069 Dec 26 12:13	20°♐17'48	
retrograde	2070 Mar 28 01:56	23°♐31'25	
opposition	2070 Jun 12 02:28	21°♐31'37	-0°06'07
min. Earth dist.	2070 Jun 11 20:09	21°♐32'16	18.12198 AU
direct	2070 Aug 28 09:39	19°♐30'07	
evening set	2070 Nov 29 15:57	22°♐45'48	
conjunction	2070 Dec 15 08:59	23°♐42'41	-0°07'15
minimum elong	2070 Dec 15 08:58	23°♐42'41	0°07'14
behind sun begin	2070 Dec 15 02:56	23°♐41'47	
behind sun end	2070 Dec 15 15:01	23°♐43'35	
max. Earth dist.	2070 Dec 15 15:38	23°♐43'40	20.15553 AU
morning rise	2070 Dec 31 00:49	24°♐39'24	
retrograde	2071 Apr 01 16:05	27°♐52'22	
opposition	2071 Jun 16 21:43	25°♐52'38	-0°09'47
min. Earth dist.	2071 Jun 16 14:19	25°♐53'24	18.18889 AU
direct	2071 Sep 02 03:17	23°♐51'29	
evening set	2071 Dec 04 04:23	27°♐05'54	
conjunction	2071 Dec 19 20:55	28°♐02'29	-0°10'30
minimum elong	2071 Dec 19 20:55	28°♐02'29	0°10'30
behind sun begin	2071 Dec 19 15:46	28°♐01'43	
behind sun end	2071 Dec 20 02:05	28°♐03'15	
max. Earth dist.	2071 Dec 20 05:52	28°♐03'50	20.22273 AU
morning rise	2072 Jan 04 12:24	28°♐58'56	
	2072 Jan 22 11:30	0°♑	
retrograde	2072 Apr 05 07:16	2°♑11'17	
opposition	2072 Jun 20 16:08	0°♑11'40	-0°13'22
min. Earth dist.	2072 Jun 20 06:05	0°♑12'41	18.25633 AU
	2072 Jun 25 10:28	30°℞♐	
direct	2072 Sep 05 22:05	28°♐10'52	
	2072 Nov 12 05:01	0°♑	
evening set	2072 Dec 07 16:06	1°♑24'03	
conjunction	2072 Dec 23 08:06	2°♑20'21	-0°13'40
minimum elong	2072 Dec 23 08:05	2°♑20'21	0°13'39
behind sun begin	2072 Dec 23 04:24	2°♑19'49	

behind sun end	2072 Dec 23 11:46	2°♉20'54	
max. Earth dist.	2072 Dec 23 18:34	2°♉21'55	20.29038 AU
morning rise	2073 Jan 07 23:24	3°♉16'34	
retrograde	2073 Apr 09 19:57	6°♉28'19	
opposition	2073 Jun 25 09:51	4°♉28'49	-0°16'50
min. Earth dist.	2073 Jun 24 22:56	4°♉29'56	18.32429 AU
direct	2073 Sep 10 13:23	2°♉28'24	
evening set	2073 Dec 12 02:50	5°♉40'24	
conjunction	2073 Dec 27 18:30	6°♉36'26	-0°16'45
minimum elong	2073 Dec 27 18:31	6°♉36'26	0°16'45
max. Earth dist.	2073 Dec 28 06:54	6°♉38'17	20.35837 AU
morning rise	2074 Jan 12 09:40	7°♉32'24	
retrograde	2074 Apr 14 10:39	10°♉43'36	
opposition	2074 Jun 30 02:43	8°♉44'15	-0°20'12
min. Earth dist.	2074 Jun 29 13:17	8°♉45'37	18.39208 AU
direct	2074 Sep 15 06:21	6°♉44'15	
evening set	2074 Dec 16 12:53	9°♉55'04	
conjunction	2075 Jan 01 04:10	10°♉50'51	-0°19'43
minimum elong	2075 Jan 01 04:10	10°♉50'51	0°19'43
max. Earth dist.	2075 Jan 01 18:01	10°♉52'55	20.42582 AU
morning rise	2075 Jan 16 19:16	11°♉46'37	
retrograde	2075 Apr 18 22:11	14°♉57'17	
opposition	2075 Jul 04 19:05	12°♉58'05	-0°23'25
min. Earth dist.	2075 Jul 04 05:10	12°♉59'30	18.45919 AU
direct	2075 Sep 19 19:46	10°♉58'30	
evening set	2075 Dec 20 22:13	14°♉08'12	
conjunction	2076 Jan 05 13:16	15°♉03'44	-0°22'34
minimum elong	2076 Jan 05 13:16	15°♉03'44	0°22'34
max. Earth dist.	2076 Jan 06 04:39	15°♉06'02	20.49237 AU
morning rise	2076 Jan 21 04:20	15°♉59'17	
retrograde	2076 Apr 22 11:56	19°♉09'28	
opposition	2076 Jul 08 10:44	17°♉10'26	-0°26'30
min. Earth dist.	2076 Jul 07 18:27	17°♉12'04	18.52494 AU
direct	2076 Sep 23 11:33	15°♉11'15	
evening set	2076 Dec 24 06:51	18°♉19'51	
conjunction	2077 Jan 08 21:40	19°♉15'10	-0°25'16
minimum elong	2077 Jan 08 21:40	19°♉15'10	0°25'17
max. Earth dist.	2077 Jan 09 14:23	19°♉17'39	20.55707 AU
morning rise	2077 Jan 24 12:50	20°♉10'32	
retrograde	2077 Apr 26 22:55	23°♉20'15	
min. Earth dist.	2077 Jul 12 09:32	21°♉23'00	18.58860 AU
opposition	2077 Jul 13 01:52	21°♉21'21	-0°29'25
direct	2077 Sep 27 23:24	19°♉22'33	
evening set	2077 Dec 28 14:58	22°♉30'07	
conjunction	2078 Jan 13 05:42	23°♉25'13	-0°27'50
minimum elong	2078 Jan 13 05:41	23°♉25'13	0°27'50
max. Earth dist.	2078 Jan 13 23:22	23°♉27'50	20.61939 AU
morning rise	2078 Jan 28 20:58	24°♉20'23	
retrograde	2078 May 01 11:10	27°♉29'40	
opposition	2078 Jul 17 16:03	25°♉30'54	-0°32'10
min. Earth dist.	2078 Jul 16 21:47	25°♉32'44	18.64940 AU
direct	2078 Oct 02 13:53	23°♉32'28	
evening set	2079 Jan 01 22:36	26°♉39'01	
conjunction	2079 Jan 17 13:12	27°♉33'55	-0°30'15
minimum elong	2079 Jan 17 13:12	27°♉33'55	0°30'16
max. Earth dist.	2079 Jan 18 07:54	27°♉36'41	20.67840 AU
morning rise	2079 Feb 02 04:39	28°♉28'56	
	2079 Mar 02 17:06	0°♒	
retrograde	2079 May 05 21:21	1°♒37'48	
	2079 Jul 13 12:32	30°℞♉	
min. Earth dist.	2079 Jul 21 11:59	29°♉40'56	18.70671 AU
opposition	2079 Jul 22 05:59	29°♉39'08	-0°34'45
direct	2079 Oct 07 00:45	27°♉41'02	
	2079 Dec 23 06:32	0°♒	
evening set	2080 Jan 06 05:32	0°♒46'36	
conjunction	2080 Jan 21 20:10	1°♒41'19	-0°32'30
minimum elong	2080 Jan 21 20:09	1°♒41'19	0°32'29
max. Earth dist.	2080 Jan 22 15:25	1°♒44'08	20.73374 AU
morning rise	2080 Feb 06 11:52	2°♒36'10	
retrograde	2080 May 09 08:26	5°♒44'39	
opposition	2080 Jul 25 19:09	3°♒46'03	-0°37'07
min. Earth dist.	2080 Jul 24 23:25	3°♒48'01	18.75996 AU
direct	2080 Oct 10 13:28	1°♒48'13	
evening set	2081 Jan 09 12:06	4°♒52'51	
conjunction	2081 Jan 25 02:49	5°♒47'24	-0°34'34
minimum elong	2081 Jan 25 02:49	5°♒47'24	0°34'34
max. Earth dist.	2081 Jan 25 22:51	5°♒50'20	20.78470 AU
morning rise	2081 Feb 09 18:51	6°♒42'08	
retrograde	2081 May 13 17:27	9°♒50'13	
opposition	2081 Jul 30 07:39	7°♒51'38	-0°39'18
min. Earth dist.	2081 Jul 29 12:28	7°♒53'33	18.80881 AU
direct	2081 Oct 14 23:17	5°♒54'02	
evening set	2082 Jan 13 18:04	8°♒57'46	
conjunction	2082 Jan 29 08:58	9°♒52'10	-0°36'27
minimum elong	2082 Jan 29 08:58	9°♒52'10	0°36'26
max. Earth dist.	2082 Jan 30 05:15	9°♒55'08	20.83137 AU
morning rise	2082 Feb 14 01:25	10°♒46'46	
retrograde	2082 May 18 03:14	13°♒54'30	
opposition	2082 Aug 03 19:27	11°♒55'54	-0°41'16
min. Earth dist.	2082 Aug 02 22:44	11°♒57'58	18.85325 AU
direct	2082 Oct 19 10:13	9°♒58'29	
evening set	2083 Jan 17 23:30	13°♒01'22	
conjunction	2083 Feb 02 14:36	13°♒55'37	-0°38'08
minimum elong	2083 Feb 02 14:36	13°♒55'37	0°38'08
max. Earth dist.	2083 Feb 03 11:46	13°♒58'42	20.87360 AU
morning rise	2083 Feb 18 07:27	14°♒50'07	
	2083 Feb 21 05:23	15°♒	
retrograde	2083 May 22 11:05	17°♒57'31	
min. Earth dist.	2083 Aug 07 10:34	16°♒00'53	18.89357 AU
opposition	2083 Aug 08 06:48	15°♒58'52	-0°43'01
	2083 Sep 03 00:16	15°℞♒	
direct	2083 Oct 23 18:43	14°♒01'37	
	2083 Dec 11 07:05	15°♒	
evening set	2084 Jan 22 04:32	17°♒03'40	
conjunction	2084 Feb 06 19:54	17°♒57'49	-0°39'37
minimum elong	2084 Feb 06 19:54	17°♒57'49	0°39'37
max. Earth dist.	2084 Feb 07 17:24	18°♒00'56	20.91209 AU
morning rise	2084 Feb 22 13:17	18°♒52'13	
retrograde	2084 May 25 20:18	21°♒59'20	
opposition	2084 Aug 11 17:22	20°♒00'37	-0°44'32
min. Earth dist.	2084 Aug 10 19:34	20°♒02'47	18.93031 AU
direct	2084 Oct 27 04:04	18°♒03'30	
evening set	2085 Jan 25 09:10	21°♒04'49	
conjunction	2085 Feb 10 00:53	21°♒58'51	-0°40'54
minimum elong	2085 Feb 10 00:53	21°♒58'51	0°40'54
max. Earth dist.	2085 Feb 10 23:22	22°♒02'07	20.94700 AU
morning rise	2085 Feb 25 18:49	22°♒53'12	
retrograde	2085 May 30 03:20	26°♒00'03	
min. Earth dist.	2085 Aug 15 06:11	24°♒03'25	18.96361 AU
opposition	2085 Aug 16 03:32	24°♒01'17	-0°45'50
direct	2085 Oct 31 10:59	22°♒04'19	
evening set	2086 Jan 29 13:34	25°♒04'58	

conjunction	2086 Feb 14 05:40	25°♒58'56	-0°41'58
minimum elong	2086 Feb 14 05:40	25°♒58'56	0°41'59
max. Earth dist.	2086 Feb 15 04:19	26°♒02'12	20.97869 AU
morning rise	2086 Mar 02 00:12	26°♒53'13	
retrograde	2086 Jun 03 12:34	29°♒59'51	
opposition	2086 Aug 20 12:56	28°♒01'03	-0°46'53
min. Earth dist.	2086 Aug 19 14:14	28°♒03'19	18.99367 AU
direct	2086 Nov 04 18:53	26°♒04'14	
evening set	2087 Feb 02 17:43	29°♒04'18	
conjunction	2087 Feb 18 10:17	29°♒58'12	-0°42'50
minimum elong	2087 Feb 18 10:17	29°♒58'12	0°42'49
	2087 Feb 18 22:46	0°♓	
max. Earth dist.	2087 Feb 19 09:48	0°♓01'35	21.00700 AU
morning rise	2087 Mar 06 05:25	0°♓52'28	
retrograde	2087 Jun 07 19:11	3°♓58'57	
opposition	2087 Aug 24 22:12	2°♓00'08	-0°47'44
min. Earth dist.	2087 Aug 24 00:03	2°♓02'20	19.02037 AU
direct	2087 Nov 09 00:49	0°♓03'27	
evening set	2088 Feb 06 21:36	3°♓03'00	
conjunction	2088 Feb 22 14:42	3°♓56'51	-0°43'30
minimum elong	2088 Feb 22 14:42	3°♓56'51	0°43'30
max. Earth dist.	2088 Feb 23 14:14	4°♓00'15	21.03204 AU
morning rise	2088 Mar 09 10:36	4°♓51'06	
retrograde	2088 Jun 11 04:36	7°♓57'29	
min. Earth dist.	2088 Aug 27 07:43	6°♓00'58	19.04356 AU
opposition	2088 Aug 28 06:56	5°♓58'39	-0°48'20
direct	2088 Nov 12 07:31	4°♓02'07	
evening set	2089 Feb 10 01:34	7°♓01'14	
conjunction	2089 Feb 25 19:16	7°♓55'05	-0°43'57
minimum elong	2089 Feb 25 19:16	7°♓55'05	0°43'56
max. Earth dist.	2089 Feb 26 19:23	7°♓58'32	21.05323 AU
morning rise	2089 Mar 13 15:52	8°♓49'20	
retrograde	2089 Jun 15 11:16	11°♓55'39	
opposition	2089 Sep 01 15:17	9°♓56'49	-0°48'43
min. Earth dist.	2089 Aug 31 16:59	9°♓59'02	19.06279 AU
direct	2089 Nov 16 12:52	8°♓00'25	
evening set	2090 Feb 14 05:32	10°♓59'11	
conjunction	2090 Mar 01 23:50	11°♓53'01	-0°44'11
minimum elong	2090 Mar 01 23:50	11°♓53'01	0°44'11
max. Earth dist.	2090 Mar 02 23:32	11°♓56'25	21.07046 AU
morning rise	2090 Mar 17 21:15	12°♓47'18	
retrograde	2090 Jun 19 20:37	15°♓53'37	
opposition	2090 Sep 05 23:22	13°♓54'46	-0°48'51
min. Earth dist.	2090 Sep 05 00:25	13°♓57'04	19.07780 AU
direct	2090 Nov 20 18:38	11°♓58'30	
evening set	2091 Feb 18 09:27	14°♓56'58	
conjunction	2091 Mar 06 04:26	15°♓50'50	-0°44'13
minimum elong	2091 Mar 06 04:25	15°♓50'50	0°44'13
max. Earth dist.	2091 Mar 07 04:25	15°♓54'16	21.08305 AU
morning rise	2091 Mar 22 02:36	16°♓45'09	
retrograde	2091 Jun 24 03:33	19°♓51'31	
min. Earth dist.	2091 Sep 09 09:34	17°♓54'50	19.08798 AU
opposition	2091 Sep 10 07:23	17°♓52'39	-0°48'46
direct	2091 Nov 24 23:47	15°♓56'29	
evening set	2092 Feb 22 13:41	18°♓54'44	
conjunction	2092 Mar 09 09:21	19°♓48'38	-0°44'02
minimum elong	2092 Mar 09 09:21	19°♓48'38	0°44'02
max. Earth dist.	2092 Mar 10 08:29	19°♓51'57	21.09078 AU
morning rise	2092 Mar 25 08:25	20°♓43'01	
retrograde	2092 Jun 27 13:02	23°♓49'27	
opposition	2092 Sep 13 14:59	21°♓50'34	-0°48'27
min. Earth dist.	2092 Sep 12 17:00	21°♓52'45	19.09304 AU
direct	2092 Nov 28 05:14	19°♓54'26	
evening set	2093 Feb 25 18:06	22°♓52'33	
conjunction	2093 Mar 13 14:34	23°♓46'31	-0°43'39
minimum elong	2093 Mar 13 14:34	23°♓46'31	0°43'39
max. Earth dist.	2093 Mar 14 13:27	23°♓49'47	21.09293 AU
morning rise	2093 Mar 29 14:29	24°♓40'59	
retrograde	2093 Jul 01 20:03	27°♓47'31	
opposition	2093 Sep 17 22:34	25°♓48'33	-0°47'54
min. Earth dist.	2093 Sep 17 02:02	25°♓50'37	19.09230 AU
direct	2093 Dec 02 09:56	23°♓52'27	
evening set	2094 Mar 01 22:41	26°♓50'28	
conjunction	2094 Mar 17 19:56	27°♓44'30	-0°43'03
minimum elong	2094 Mar 17 19:56	27°♓44'30	0°43'02
max. Earth dist.	2094 Mar 18 17:30	27°♓47'35	21.08935 AU
morning rise	2094 Apr 02 20:46	28°♓39'03	
	2094 Apr 28 18:15	0°♈	
retrograde	2094 Jul 06 05:36	1°♈45'43	
	2094 Sep 16 16:24	30°℞♓	
min. Earth dist.	2094 Sep 21 09:26	29°♓48'42	19.08576 AU
opposition	2094 Sep 22 05:50	29°♓46'39	-0°47'07
direct	2094 Dec 06 15:40	27°♓50'30	
	2095 Feb 19 03:02	0°♈	
evening set	2095 Mar 06 03:27	0°♈48'29	
conjunction	2095 Mar 22 01:35	1°♈42'37	-0°42'14
minimum elong	2095 Mar 22 01:35	1°♈42'37	0°42'15
max. Earth dist.	2095 Mar 22 22:48	1°♈45'39	21.07993 AU
morning rise	2095 Apr 07 03:19	2°♈37'17	
retrograde	2095 Jul 10 12:35	5°♈44'05	
opposition	2095 Sep 26 13:05	3°♈44'53	-0°46'06
min. Earth dist.	2095 Sep 25 18:10	3°♈46'47	19.07356 AU
direct	2095 Dec 10 19:47	1°♈48'39	
evening set	2096 Mar 09 08:21	4°♈46'38	
conjunction	2096 Mar 25 07:23	5°♈40'53	-0°41'13
minimum elong	2096 Mar 25 07:23	5°♈40'53	0°41'13
max. Earth dist.	2096 Mar 26 03:19	5°♈43'44	21.06526 AU
morning rise	2096 Apr 10 10:10	6°♈35'40	
retrograde	2096 Jul 13 22:10	9°♈42'38	
opposition	2096 Sep 29 20:03	7°♈43'16	-0°44'52
min. Earth dist.	2096 Sep 29 01:24	7°♈45'09	19.05634 AU
direct	2096 Dec 14 01:49	5°♈46'55	
evening set	2097 Mar 13 13:37	8°♈45'00	
conjunction	2097 Mar 29 13:36	9°♈39'22	-0°40'00
minimum elong	2097 Mar 29 13:36	9°♈39'22	0°40'00
max. Earth dist.	2097 Mar 30 09:14	9°♈42'10	21.04563 AU
morning rise	2097 Apr 14 17:16	10°♈34'17	
retrograde	2097 Jul 18 05:37	13°♈41'27	
min. Earth dist.	2097 Oct 03 09:38	11°♈43'40	19.03450 AU
opposition	2097 Oct 04 02:49	11°♈41'55	-0°43'25
direct	2097 Dec 18 05:46	9°♈45'25	
evening set	2098 Mar 17 19:12	12°♈43'40	
conjunction	2098 Apr 02 20:05	13°♈38'11	-0°38'35
minimum elong	2098 Apr 02 20:05	13°♈38'11	0°38'35
max. Earth dist.	2098 Apr 03 14:24	13°♈40'48	21.02188 AU
morning rise	2098 Apr 19 00:47	14°♈33'16	
retrograde	2098 Jul 22 15:06	17°♈40'40	
opposition	2098 Oct 08 09:37	15°♈40'58	-0°41'45
min. Earth dist.	2098 Oct 07 16:41	15°♈42'41	19.00881 AU
direct	2098 Dec 22 11:33	13°♈44'18	
evening set	2099 Mar 22 00:59	16°♈42'47	

conjunction	2099 Apr 07 02:51	17°♈37'29	-0°36'59
minimum elong	2099 Apr 07 02:51	17°♈37'29	0°36'59
max. Earth dist.	2099 Apr 07 21:00	17°♈40'04	20.99430 AU
morning rise	2099 Apr 23 08:28	18°♈32'43	
retrograde	2099 Jul 26 23:37	21°♈40'26	
opposition	2099 Oct 12 16:30	19°♈40'34	-0°39'54
min. Earth dist.	2099 Oct 12 00:54	19°♈42'09	18.97946 AU
direct	2099 Dec 26 16:12	17°♈43'45	