retrograde	1600 Feb 06 16:13	28°♎32'16	
opposition	1600 Apr 15 01:02	25°♎13'30	2°46'51
min. Earth dist.	1600 Apr 14 23:28	25°♎13'48	8.78434 AU
direct	1600 Jun 24 17:49	21°♎49'40	
evening set	1600 Oct 07 12:45	29°♎17'16	
	1600 Oct 13 12:57	0°♏	
conjunction	1600 Oct 24 11:07	1°♏18'36	2°13'58
minimum elong	1600 Oct 24 11:07	1°♏18'36	2°13'58
max. Earth dist.	1600 Oct 24 12:15	1°♏18'56	10.83411 AU
morning rise	1600 Nov 10 05:23	3°♏18'45	
retrograde	1601 Feb 17 16:12	10°♏25'18	
opposition	1601 Apr 27 12:39	7°♏07'24	2°40'06
min. Earth dist.	1601 Apr 27 12:46	7°♏07'23	8.88310 AU
direct	1601 Jul 07 12:16	3°♏44'50	
evening set	1601 Oct 19 14:52	11°♏04'56	
conjunction	1601 Nov 05 10:14	13°♏04'22	2°05'56
minimum elong	1601 Nov 05 10:16	13°♏04'22	2°05'55
max. Earth dist.	1601 Nov 05 09:19	13°♏04'05	10.92536 AU
	1601 Nov 21 16:38	15°♏	
morning rise	1601 Nov 22 02:16	15°♏02'49	
retrograde	1602 Mar 01 13:00	22°♏04'50	
opposition	1602 May 09 20:19	18°♏47'33	2°26'51
min. Earth dist.	1602 May 09 21:20	18°♏47'21	8.96580 AU
direct	1602 Jul 20 00:21	15°♏26'10	
evening set	1602 Oct 31 09:41	22°♏39'31	
conjunction	1602 Nov 17 02:58	24°♏37'32	1°52'51
minimum elong	1602 Nov 17 03:00	24°♏37'33	1°52'51
max. Earth dist.	1602 Nov 17 00:59	24°♏36'57	10.99885 AU
morning rise	1602 Dec 03 17:31	26°♏34'46	
	1603 Jan 04 12:22	0°♐	
retrograde	1603 Mar 13 06:55	3°♐33'40	
opposition	1603 May 22 00:49	0°♐16'40	2°07'57
min. Earth dist.	1603 May 22 02:18	0°♐16'24	9.02886 AU
	1603 May 25 18:59	30°℞♏	
direct	1603 Aug 01 07:09	26°♏56'21	
	1603 Oct 04 00:37	0°♐	
evening set	1603 Nov 11 22:43	4°♐04'03	
conjunction	1603 Nov 28 14:43	6°♐01'06	1°35'26
minimum elong	1603 Nov 28 14:45	6°♐01'06	1°35'27
max. Earth dist.	1603 Nov 28 12:13	6°♐00'22	11.05114 AU
morning rise	1603 Dec 15 04:27	7°♐57'33	
retrograde	1604 Mar 24 01:36	14°♐54'53	
opposition	1604 Jun 02 03:12	11°♐37'58	1°44'15
min. Earth dist.	1604 Jun 02 05:47	11°♐37'29	9.06923 AU
direct	1604 Aug 12 08:49	8°♐18'31	
evening set	1604 Nov 22 08:03	15°♐21'56	
conjunction	1604 Dec 08 23:08	17°♐18'26	1°14'26
minimum elong	1604 Dec 08 23:10	17°♐18'27	1°14'26
max. Earth dist.	1604 Dec 08 19:04	17°♐17'15	11.07979 AU
morning rise	1604 Dec 25 12:46	19°♐14'35	
retrograde	1605 Apr 04 18:51	26°♐11'58	
opposition	1605 Jun 14 04:35	22°♐54'52	1°16'42
min. Earth dist.	1605 Jun 14 08:48	22°♐54'05	9.08549 AU
direct	1605 Aug 24 05:37	19°♐36'05	
evening set	1605 Dec 03 15:17	26°♐36'40	
conjunction	1605 Dec 20 05:53	28°♐33'02	0°50'36
minimum elong	1605 Dec 20 05:55	28°♐33'03	0°50'37
max. Earth dist.	1605 Dec 20 00:06	28°♐31'20	11.08432 AU
	1606 Jan 01 14:46	0°♑	

morning rise	1606 Jan 05 20:08	0°♑29'19	
retrograde	1606 Apr 16 13:43	7°♑28'23	
opposition	1606 Jun 26 06:05	4°♑10'46	0°46'15
min. Earth dist.	1606 Jun 26 11:16	4°♑09'49	9.07780 AU
direct	1606 Sep 05 02:59	0°♑52'23	
evening set	1606 Dec 14 21:53	7°♑51'36	
conjunction	1606 Dec 31 12:38	9°♑48'14	0°24'49
minimum elong	1606 Dec 31 12:39	9°♑48'14	0°24'48
max. Earth dist.	1606 Dec 31 06:30	9°♑46'26	11.06516 AU
morning rise	1607 Jan 17 03:47	11°♑45'01	
retrograde	1607 Apr 28 12:12	18°♑47'18	
opposition	1607 Jul 08 08:27	15°♑28'53	0°13'53
min. Earth dist.	1607 Jul 08 13:25	15°♑27'58	9.04687 AU
direct	1607 Sep 16 22:30	12°♑10'41	
desc. node	1607 Dec 13 14:57	17°♑44'20	
evening set	1607 Dec 26 05:49	19°♑10'00	
conjunction	1608 Jan 11 21:06	21°♑07'15	-0°02'10
minimum elong	1608 Jan 11 21:07	21°♑07'15	0°02'11
behind sun begin	1608 Jan 11 14:08	21°♑05'13	
behind sun end	1608 Jan 12 04:05	21°♑09'17	
max. Earth dist.	1608 Jan 11 15:24	21°♑05'35	11.02320 AU
morning rise	1608 Jan 28 13:24	23°♑04'52	
	1608 Apr 24 00:06	0°♒	
retrograde	1608 May 09 14:40	0°♒11'52	
	1608 May 25 07:24	30°℞♑	
opposition	1608 Jul 19 12:37	26°♑52'26	-0°19'18
min. Earth dist.	1608 Jul 19 17:24	26°♑51'33	8.99401 AU
direct	1608 Sep 27 17:35	23°♑34'08	
	1608 Dec 31 15:11	0°♒	
evening set	1609 Jan 05 16:43	0°♒35'06	
conjunction	1609 Jan 22 08:42	2°♒33'19	-0°29'12
minimum elong	1609 Jan 22 08:41	2°♒33'19	0°29'12
max. Earth dist.	1609 Jan 22 02:34	2°♒31'30	10.96017 AU
morning rise	1609 Feb 08 02:34	4°♒32'08	
retrograde	1609 May 21 22:43	11°♒45'16	
opposition	1609 Jul 31 20:00	8°♒24'37	-0°52'11
min. Earth dist.	1609 Aug 01 01:01	8°♒23'41	8.92135 AU
direct	1609 Oct 09 13:48	5°♒05'59	
evening set	1610 Jan 17 07:57	12°♒10'08	
conjunction	1610 Feb 03 00:56	14°♒09'37	-0°55'26
minimum elong	1610 Feb 03 00:54	14°♒09'36	0°55'26
max. Earth dist.	1610 Feb 02 18:16	14°♒07'37	10.87853 AU
	1610 Feb 10 01:00	15°♒	
morning rise	1610 Feb 19 20:48	16°♒09'58	
retrograde	1610 Jun 03 10:58	23°♒30'34	
opposition	1610 Aug 13 07:12	20°♒08'32	-1°23'31
min. Earth dist.	1610 Aug 13 12:29	20°♒07'33	8.83164 AU
direct	1610 Oct 21 13:16	16°♒49'22	
evening set	1611 Jan 29 05:17	23°♒58'12	
conjunction	1611 Feb 14 23:52	25°♒59'18	-1°19'47
minimum elong	1611 Feb 14 23:49	25°♒59'17	1°19'46
max. Earth dist.	1611 Feb 14 17:57	25°♒57'30	10.78130 AU
morning rise	1611 Mar 03 21:55	28°♒01'28	
	1611 Mar 21 02:12	0°♓	
retrograde	1611 Jun 16 06:48	5°♓30'37	
opposition	1611 Aug 25 22:48	2°♓07'08	-1°51'57
min. Earth dist.	1611 Aug 26 03:21	2°♓06'16	8.72822 AU
	1611 Sep 25 02:36	30°℞♒	
direct	1611 Nov 02 18:04	28°♒47'14	
	1611 Dec 10 08:37	0°♓	

evening set	1612 Feb 10 10:02	6°♓02'07	
conjunction	1612 Feb 27 06:43	8°♓05'10	-1°41'06
minimum elong	1612 Feb 27 06:40	8°♓05'10	1°41'06
max. Earth dist.	1612 Feb 27 02:06	8°♓03'45	10.67214 AU
morning rise	1612 Mar 15 07:13	10°♓09'27	
retrograde	1612 Jun 28 12:10	17°♓47'57	
opposition	1612 Sep 06 19:51	14°♓23'00	-2°16'04
min. Earth dist.	1612 Sep 06 23:06	14°♓22'22	8.61511 AU
direct	1612 Nov 14 01:54	11°♓02'14	
evening set	1613 Feb 21 23:21	18°♓24'18	
conjunction	1613 Mar 10 22:36	20°♓29'35	-1°58'14
minimum elong	1613 Mar 10 22:33	20°♓29'35	1°58'14
max. Earth dist.	1613 Mar 10 18:59	20°♓28'28	10.55562 AU
morning rise	1613 Mar 28 02:05	22°♓36'15	
	1613 Jun 19 23:15	0°♈	
retrograde	1613 Jul 12 00:01	0°♈24'27	
	1613 Aug 03 02:23	30°℞♓	
opposition	1613 Sep 19 22:49	26°♓58'06	-2°34'24
min. Earth dist.	1613 Sep 20 00:55	26°♓57'41	8.49720 AU
direct	1613 Nov 26 16:16	23°♓36'19	
	1614 Feb 25 18:27	0°♈	
evening set	1614 Mar 06 22:30	1°♈06'32	
conjunction	1614 Mar 24 00:52	3°♈14'19	-2°10'02
minimum elong	1614 Mar 24 00:51	3°♈14'18	2°10'02
max. Earth dist.	1614 Mar 23 21:36	3°♈13'17	10.43707 AU
morning rise	1614 Apr 10 07:57	5°♈23'35	
retrograde	1614 Jul 25 19:29	13°♈21'16	
opposition	1614 Oct 03 07:44	9°♈53'38	-2°45'32
min. Earth dist.	1614 Oct 03 09:20	9°♈53'19	8.38006 AU
direct	1614 Dec 09 14:10	6°♈30'44	
evening set	1615 Mar 20 07:50	14°♈09'37	
conjunction	1615 Apr 06 14:05	16°♈20'07	-2°15'28
minimum elong	1615 Apr 06 14:05	16°♈20'07	2°15'28
max. Earth dist.	1615 Apr 06 11:46	16°♈19'23	10.32236 AU
morning rise	1615 Apr 24 01:11	18°♈32'08	
retrograde	1615 Aug 08 22:27	26°♈38'28	
opposition	1615 Oct 16 22:38	23°♈09'49	-2°48'15
min. Earth dist.	1615 Oct 16 23:32	23°♈09'38	8.26971 AU
direct	1615 Dec 22 19:16	19°♈45'43	
evening set	1616 Apr 02 03:24	27°♈33'21	
conjunction	1616 Apr 19 14:07	29°♈46'38	-2°13'43
minimum elong	1616 Apr 19 14:09	29°♈46'38	2°13'44
max. Earth dist.	1616 Apr 19 13:37	29°♈46'28	10.21763 AU
	1616 Apr 21 07:49	0°♉	
morning rise	1616 May 07 05:28	2°♉01'23	
retrograde	1616 Aug 22 06:59	10°♉14'57	
opposition	1616 Oct 29 18:57	6°♉45'31	-2°41'43
min. Earth dist.	1616 Oct 29 18:33	6°♉45'36	8.17233 AU
direct	1617 Jan 04 09:05	3°♉20'16	
evening set	1617 Apr 16 08:59	11°♉16'13	
conjunction	1617 May 04 00:35	13°♉32'11	-2°04'25
minimum elong	1617 May 04 00:37	13°♉32'12	2°04'26
max. Earth dist.	1617 May 04 02:21	13°♉32'46	10.12911 AU
	1617 May 15 08:51	15°♉	
morning rise	1617 May 21 20:11	15°♉49'29	
retrograde	1617 Sep 05 19:33	24°♉08'11	
opposition	1617 Nov 12 19:43	20°♉38'19	-2°25'40
min. Earth dist.	1617 Nov 12 17:39	20°♉38'44	8.09392 AU
direct	1618 Jan 18 06:13	17°♉11'58	
evening set	1618 Apr 30 23:31	25°♉15'15	
conjunction	1618 May 18 19:54	27°♉33'38	-1°47'41
minimum elong	1618 May 18 19:58	27°♉33'39	1°47'41
max. Earth dist.	1618 May 18 23:46	27°♉34'53	10.06237 AU
morning rise	1618 Jun 05 19:26	29°♉53'04	
	1618 Jun 06 17:14	0°♊	
retrograde	1618 Sep 20 11:09	8°♊14'20	
opposition	1618 Nov 26 23:52	4°♊44'24	-2°00'37
min. Earth dist.	1618 Nov 26 20:14	4°♊45'09	8.03950 AU
direct	1619 Feb 01 09:08	1°♊17'05	
evening set	1619 May 15 21:18	9°♊26'13	
conjunction	1619 Jun 02 21:44	11°♊46'26	-1°24'16
minimum elong	1619 Jun 02 21:48	11°♊46'27	1°24'16
max. Earth dist.	1619 Jun 03 03:04	11°♊48'10	10.02179 AU
morning rise	1619 Jun 21 00:17	14°♊07'21	
retrograde	1619 Oct 05 03:22	22°♊28'23	
opposition	1619 Dec 11 05:51	18°♊58'47	-1°27'55
min. Earth dist.	1619 Dec 11 01:18	18°♊59'44	8.01280 AU
direct	1620 Feb 15 16:25	15°♊30'38	
evening set	1620 May 29 23:53	23°♊43'45	
conjunction	1620 Jun 17 03:14	26°♊04'59	-0°55'33
minimum elong	1620 Jun 17 03:17	26°♊05'00	0°55'33
max. Earth dist.	1620 Jun 17 09:28	26°♊07'02	10.01018 AU
morning rise	1620 Jul 05 07:32	28°♊26'32	
	1620 Jul 17 17:39	0°♋	
retrograde	1620 Oct 18 18:00	6°♋44'37	
opposition	1620 Dec 24 12:04	3°♋15'41	-0°49'40
min. Earth dist.	1620 Dec 24 07:08	3°♋16'42	8.01571 AU
	1621 Feb 13 21:57	30°℞♊	
direct	1621 Mar 01 04:26	29°♊46'51	
	1621 Mar 16 12:31	0°♋	
evening set	1621 Jun 14 04:25	8°♋01'49	
conjunction	1621 Jul 02 09:08	10°♋23'09	-0°23'26
minimum elong	1621 Jul 02 09:09	10°♋23'09	0°23'26
max. Earth dist.	1621 Jul 02 15:38	10°♋25'15	10.02814 AU
morning rise	1621 Jul 20 13:36	12°♋44'22	
retrograde	1621 Nov 02 03:15	20°♋57'05	
opposition	1622 Jan 07 16:48	17°♋29'04	-0°08'32
min. Earth dist.	1622 Jan 07 11:58	17°♋30'04	8.04764 AU
direct	1622 Mar 15 18:53	13°♋59'50	
asc. node	1622 Mar 26 09:44	14°♋06'08	
evening set	1622 Jun 29 07:55	22°♋14'25	
conjunction	1622 Jul 17 12:11	24°♋34'50	0°09'57
minimum elong	1622 Jul 17 12:11	24°♋34'50	0°09'57
behind sun begin	1622 Jul 17 06:17	24°♋32'57	
behind sun end	1622 Jul 17 18:04	24°♋36'44	
max. Earth dist.	1622 Jul 17 18:14	24°♋36'47	10.07374 AU
morning rise	1622 Aug 04 14:59	26°♋54'45	
	1622 Aug 30 04:23	0°♌	
retrograde	1622 Nov 16 05:38	5°♌00'18	
opposition	1623 Jan 21 18:27	1°♌33'26	0°32'39
min. Earth dist.	1623 Jan 21 13:48	1°♌34'23	8.10558 AU
	1623 Feb 10 10:47	30°℞♋	
direct	1623 Mar 30 08:30	28°♋04'05	
	1623 May 16 13:38	0°♌	
evening set	1623 Jul 14 07:16	6°♌16'13	
conjunction	1623 Aug 01 09:26	8°♌34'55	0°42'16
minimum elong	1623 Aug 01 09:24	8°♌34'54	0°42'16
max. Earth dist.	1623 Aug 01 14:50	8°♌36'39	10.14290 AU
morning rise	1623 Aug 19 08:59	10°♌52'44	
	1623 Sep 23 18:23	15°♌	
retrograde	1623 Nov 30 01:29	18°♌50'06	
opposition	1624 Feb 04 16:02	15°♌24'30	1°11'13

min. Earth dist.	1624 Feb 04 11:28	15°♌25'26	8.18472 AU
	1624 Feb 09 16:42	15°℞♌	
direct	1624 Apr 12 18:43	11°♌55'23	
	1624 Jun 12 19:16	15°♌	
evening set	1624 Jul 27 23:58	20°♌03'22	
conjunction	1624 Aug 14 22:44	22°♌19'44	1°11'40
minimum elong	1624 Aug 14 22:41	22°♌19'43	1°11'40
max. Earth dist.	1624 Aug 15 03:39	22°♌21'18	10.23056 AU
morning rise	1624 Sep 01 17:49	24°♌34'55	
	1624 Oct 21 08:19	0°♍	
retrograde	1624 Dec 12 15:18	2°♍23'37	
	1625 Feb 04 15:29	30°℞♌	
opposition	1625 Feb 17 08:46	28°♌59'24	1°44'57
min. Earth dist.	1625 Feb 17 04:27	29°♌00'16	8.28012 AU
direct	1625 Apr 26 23:57	25°♌30'49	
	1625 Jul 11 17:35	0°♍	
evening set	1625 Aug 11 08:32	3°♍33'14	
conjunction	1625 Aug 29 02:53	5°♍46'50	1°36'33
minimum elong	1625 Aug 29 02:49	5°♍46'49	1°36'33
max. Earth dist.	1625 Aug 29 07:22	5°♍48'14	10.33212 AU
morning rise	1625 Sep 15 16:46	7°♍59'02	
retrograde	1625 Dec 25 21:05	15°♍38'55	
opposition	1626 Mar 02 20:14	12°♍16'06	2°12'11
min. Earth dist.	1626 Mar 02 16:33	12°♍16'50	8.38722 AU
direct	1626 May 11 00:29	8°♍48'16	
evening set	1626 Aug 25 07:22	16°♍43'55	
conjunction	1626 Sep 11 20:46	18°♍54'31	1°55'49
minimum elong	1626 Sep 11 20:43	18°♍54'31	1°55'49
max. Earth dist.	1626 Sep 12 00:37	18°♍55'43	10.44286 AU
morning rise	1626 Sep 29 05:20	21°♍03'41	
retrograde	1627 Jan 07 18:55	28°♍34'57	
opposition	1627 Mar 16 02:18	25°♍13'26	2°31'54
min. Earth dist.	1627 Mar 15 23:52	25°♍13'55	8.50093 AU
direct	1627 May 24 18:53	21°♍46'33	
evening set	1627 Sep 07 19:29	29°♍34'31	
	1627 Sep 11 07:30	0°♎	
conjunction	1627 Sep 25 03:53	1°♎42'09	2°08'50
minimum elong	1627 Sep 25 03:51	1°♎42'09	2°08'50
max. Earth dist.	1627 Sep 25 06:15	1°♎42'53	10.55745 AU
morning rise	1627 Oct 12 07:33	3°♎48'22	
retrograde	1628 Jan 20 09:47	11°♎11'32	
opposition	1628 Mar 28 02:39	7°♎51'11	2°43'41
min. Earth dist.	1628 Mar 28 01:19	7°♎51'26	8.61566 AU
direct	1628 Jun 06 06:12	4°♎25'22	
evening set	1628 Sep 19 21:04	12°♎05'14	
conjunction	1628 Oct 07 00:53	14°♎10'07	2°15'25
minimum elong	1628 Oct 07 00:52	14°♎10'07	2°15'25
max. Earth dist.	1628 Oct 07 01:37	14°♎10'21	10.67036 AU
morning rise	1628 Oct 24 00:17	16°♎13'39	
retrograde	1629 Jan 31 16:34	23°♎29'29	
opposition	1629 Apr 09 21:23	20°♎10'07	2°47'33
min. Earth dist.	1629 Apr 09 20:40	20°♎10'15	8.72590 AU
direct	1629 Jun 19 11:22	16°♎45'25	
evening set	1629 Oct 02 12:25	24°♎17'11	
conjunction	1629 Oct 19 12:22	26°♎19'38	2°15'42
minimum elong	1629 Oct 19 12:22	26°♎19'38	2°15'42
max. Earth dist.	1629 Oct 19 12:19	26°♎19'37	10.77639 AU
morning rise	1629 Nov 05 08:10	28°♎20'51	
	1629 Nov 19 15:46	0°♏	
retrograde	1630 Feb 12 19:41	5°♏30'24	
opposition	1630 Apr 22 11:18	2°♏11'48	2°43'56
min. Earth dist.	1630 Apr 22 10:46	2°♏11'54	8.82674 AU
	1630 May 24 01:20	30°℞♎	
direct	1630 Jul 02 09:49	28°♎48'18	
	1630 Aug 10 01:56	0°♏	
evening set	1630 Oct 14 18:20	6°♏12'13	
conjunction	1630 Oct 31 15:11	8°♏12'38	2°10'06
minimum elong	1630 Oct 31 15:12	8°♏12'39	2°10'05
max. Earth dist.	1630 Oct 31 15:07	8°♏12'37	10.87099 AU
morning rise	1630 Nov 17 08:10	10°♏11'58	
	1631 Jan 03 00:19	15°♏	
retrograde	1631 Feb 24 19:30	17°♏16'26	
	1631 Apr 20 23:40	15°℞♏	
opposition	1631 May 04 20:57	13°♏58'25	2°33'27
min. Earth dist.	1631 May 04 21:20	13°♏58'21	8.91410 AU
direct	1631 Jul 14 23:34	10°♏36'03	
	1631 Sep 30 12:44	15°♏	
evening set	1631 Oct 26 16:28	17°♏52'51	
conjunction	1631 Nov 12 10:51	19°♏51'39	1°59'09
minimum elong	1631 Nov 12 10:53	19°♏51'40	1°59'09
max. Earth dist.	1631 Nov 12 09:45	19°♏51'20	10.95045 AU
morning rise	1631 Nov 29 01:59	21°♏49'34	
retrograde	1632 Mar 07 13:43	28°♏50'14	
opposition	1632 May 16 02:53	25°♏32'38	2°16'55
min. Earth dist.	1632 May 16 04:41	25°♏32'17	8.98472 AU
direct	1632 Jul 26 07:42	22°♏11'17	
evening set	1632 Nov 06 08:14	29°♏22'00	
	1632 Nov 11 18:48	0°♐	
conjunction	1632 Nov 23 00:46	1°♐19'36	1°43'33
minimum elong	1632 Nov 23 00:48	1°♐19'37	1°43'33
max. Earth dist.	1632 Nov 22 21:59	1°♐18'47	11.01189 AU
morning rise	1632 Dec 09 14:58	3°♐16'33	
retrograde	1633 Mar 19 07:25	10°♐14'54	
opposition	1633 May 28 06:19	6°♐57'28	1°55'11
min. Earth dist.	1633 May 28 09:02	6°♐56'58	9.03600 AU
direct	1633 Aug 07 12:39	3°♐37'05	
evening set	1633 Nov 17 19:03	10°♐42'49	
conjunction	1633 Dec 04 10:28	12°♐39'40	1°24'00
minimum elong	1633 Dec 04 10:30	12°♐39'41	1°24'00
max. Earth dist.	1633 Dec 04 06:59	12°♐38'38	11.05307 AU
morning rise	1633 Dec 21 00:19	14°♐36'04	
retrograde	1634 Mar 31 00:28	21°♐33'39	
opposition	1634 Jun 09 08:06	18°♐16'09	1°29'11
min. Earth dist.	1634 Jun 09 10:39	18°♐15'41	9.06611 AU
direct	1634 Aug 19 12:20	14°♐56'37	
evening set	1634 Nov 29 02:51	21°♐58'39	
conjunction	1634 Dec 15 17:49	23°♐55'10	1°01'18
minimum elong	1634 Dec 15 17:51	23°♐55'10	1°01'19
max. Earth dist.	1634 Dec 15 14:36	23°♐54'13	11.07246 AU
morning rise	1635 Jan 01 07:45	25°♐51'27	
	1635 Feb 10 06:32	0°♑	
retrograde	1635 Apr 11 20:01	2°♑49'48	
	1635 Jun 15 00:38	30°℞♐	
opposition	1635 Jun 21 09:10	29°♐32'01	0°59'51
min. Earth dist.	1635 Jun 21 11:55	29°♐31'30	9.07399 AU
direct	1635 Aug 31 09:28	26°♐13'08	
	1635 Nov 10 11:17	0°♑	
evening set	1635 Dec 10 09:24	3°♑12'55	
conjunction	1635 Dec 27 00:13	5°♑09'29	0°36'16
minimum elong	1635 Dec 27 00:14	5°♑09'29	0°36'16
max. Earth dist.	1635 Dec 26 20:21	5°♑08'20	11.06933 AU
morning rise	1636 Jan 12 14:51	7°♑06'02	

retrograde	1636 Apr 22 16:35	14°♑06'40		
opposition	1636 Jul 02 10:49	10°♑48'24	0°28'12	
min. Earth dist.	1636 Jul 02 14:28	10°♑47'44	9.05934 AU	
direct	1636 Sep 11 03:19	7°♑29'58		
evening set	1636 Dec 20 16:24	14°♑29'02		
conjunction	1637 Jan 06 07:18	16°♑25'56	0°09'47	
minimum elong	1637 Jan 06 07:18	16°♑25'56	0°09'46	
behind sun begin	1637 Jan 06 01:33	16°♑24'16		
behind sun end	1637 Jan 06 13:03	16°♑27'37		
max. Earth dist.	1637 Jan 06 02:12	16°♑24'27	11.04377 AU	
morning rise	1637 Jan 22 23:06	18°♑23'08		
retrograde	1637 May 04 15:16	25°♑27'39		
desc. node	1637 May 21 19:40	25°♑13'34		
opposition	1637 Jul 14 13:59	22°♑08'40	-0°04'44	
min. Earth dist.	1637 Jul 14 18:17	22°♑07'52	9.02273 AU	
direct	1637 Sep 22 22:23	18°♑50'26		
evening set	1638 Jan 01 01:29	25°♑50'17		
conjunction	1638 Jan 17 17:00	27°♑47'57	-0°17'22	
minimum elong	1638 Jan 17 16:59	27°♑47'56	0°17'23	
max. Earth dist.	1638 Jan 17 12:06	27°♑46'30	10.99674 AU	
morning rise	1638 Feb 03 10:11	29°♑46'06		
	1638 Feb 05 10:13	0°♒		
retrograde	1638 May 16 20:53	6°♒55'59		
opposition	1638 Jul 26 19:34	3°♒36'03	-0°37'50	
min. Earth dist.	1638 Jul 26 23:25	3°♒35'20	8.96551 AU	
direct	1638 Oct 04 19:21	0°♒17'49		
evening set	1639 Jan 12 14:15	7°♒19'56		
conjunction	1639 Jan 29 06:49	9°♒18'41	-0°44'03	
minimum elong	1639 Jan 29 06:47	9°♒18'41	0°44'03	
max. Earth dist.	1639 Jan 29 02:42	9°♒17'27	10.92983 AU	
morning rise	1639 Feb 15 01:36	11°♒18'09		
	1639 Mar 21 08:37	15°♒		
retrograde	1639 May 29 07:19	18°♒34'42		
opposition	1639 Aug 08 04:28	15°♒13'39	-1°09'55	
min. Earth dist.	1639 Aug 08 07:37	15°♒13'04	8.88962 AU	
	1639 Aug 11 05:32	15°℞♒		
direct	1639 Oct 16 16:21	11°♒55'12		
	1639 Dec 17 20:12	15°♒		
evening set	1640 Jan 24 08:29	19°♒01'07		
conjunction	1640 Feb 10 02:15	21°♒01'14	-1°09'18	
minimum elong	1640 Feb 10 02:13	21°♒01'14	1°09'18	
max. Earth dist.	1640 Feb 09 22:09	21°♒00'00	10.84541 AU	
morning rise	1640 Feb 26 23:00	23°♒02'18		
	1640 May 17 15:34	0°♓		
retrograde	1640 Jun 10 00:23	0°♓26'41		
	1640 Jul 03 13:08	30°℞♒		
opposition	1640 Aug 19 17:35	27°♒04'25	-1°39'42	
min. Earth dist.	1640 Aug 19 20:38	27°♒03'50	8.79784 AU	
direct	1640 Oct 27 17:25	23°♒45'28		
	1641 Jan 27 08:43	0°♓		
evening set	1641 Feb 04 09:28	0°♓56'35		
conjunction	1641 Feb 21 04:50	2°♓58'25	-1°32'02	
minimum elong	1641 Feb 21 04:48	2°♓58'24	1°32'01	
max. Earth dist.	1641 Feb 21 00:17	2°♓57'01	10.74675 AU	
morning rise	1641 Mar 10 04:03	5°♓01'24		
retrograde	1641 Jun 23 00:51	12°♓34'30		
opposition	1641 Sep 01 11:48	9°♓10'54	-2°05'47	
min. Earth dist.	1641 Sep 01 15:04	9°♓10'16	8.69368 AU	
direct	1641 Nov 08 22:38	5°♓51'14		
evening set	1642 Feb 16 18:13	13°♓08'45		
conjunction	1642 Mar 05 15:54	15°♓12'37	-1°51'05	
minimum elong	1642 Mar 05 15:52	15°♓12'36	1°51'05	
max. Earth dist.	1642 Mar 05 11:44	15°♓11'20	10.63748 AU	
morning rise	1642 Mar 22 17:56	17°♓17'48		
retrograde	1642 Jul 06 06:54	25°♓00'12		
opposition	1642 Sep 14 11:20	21°♓35'12	-2°26'45	
min. Earth dist.	1642 Sep 14 14:25	21°♓34'36	8.58085 AU	
direct	1642 Nov 21 10:52	18°♓14'35		
evening set	1643 Mar 01 12:06	25°♓39'38		
conjunction	1643 Mar 18 12:48	27°♓45'50	-2°05'20	
minimum elong	1643 Mar 18 12:46	27°♓45'49	2°05'20	
max. Earth dist.	1643 Mar 18 09:40	27°♓44'51	10.52150 AU	
morning rise	1643 Apr 04 17:58	29°♓53'27		
	1643 Apr 05 15:30	0°♈		
retrograde	1643 Jul 19 21:57	7°♈45'18		
opposition	1643 Sep 27 16:29	4°♈18'58	-2°41'12	
min. Earth dist.	1643 Sep 27 18:42	4°♈18'32	8.46361 AU	
direct	1643 Dec 04 05:15	0°♈57'17		
evening set	1644 Mar 13 15:47	8°♈30'41		
conjunction	1644 Mar 30 20:05	10°♈39'29	-2°13'42	
minimum elong	1644 Mar 30 20:05	10°♈39'29	2°13'42	
max. Earth dist.	1644 Mar 30 17:56	10°♈38'49	10.40388 AU	
morning rise	1644 Apr 17 04:55	12°♈49'47		
retrograde	1644 Aug 01 21:31	20°♈50'45		
opposition	1644 Oct 10 03:43	17°♈23'12	-2°47'49	
min. Earth dist.	1644 Oct 10 04:43	17°♈23'00	8.34786 AU	
direct	1644 Dec 16 05:18	14°♈00'19		
evening set	1645 Mar 27 05:38	21°♈42'27		
conjunction	1645 Apr 13 14:06	23°♈54'01	-2°15'17	
minimum elong	1645 Apr 13 14:07	23°♈54'02	2°15'17	
max. Earth dist.	1645 Apr 13 12:42	23°♈53'35	10.29139 AU	
morning rise	1645 May 01 03:07	26°♈07'06		
	1645 Jun 03 12:58	0°♉		
retrograde	1645 Aug 16 03:25	4°♉16'04		
opposition	1645 Oct 23 20:41	0°♉47'30	-2°45'35	
min. Earth dist.	1645 Oct 23 20:52	0°♉47'28	8.24061 AU	
	1645 Nov 02 19:06	30°℞♈		
direct	1645 Dec 29 13:35	27°♈23'19		
	1646 Feb 22 03:54	0°♉		
evening set	1646 Apr 10 05:48	5°♉14'04		
conjunction	1646 Apr 27 18:53	7°♉28'26	-2°09'29	
minimum elong	1646 Apr 27 18:55	7°♉28'27	2°09'29	
max. Earth dist.	1646 Apr 27 18:15	7°♉28'14	10.19099 AU	
morning rise	1646 May 15 12:21	9°♉44'12		
	1646 Jul 01 10:16	15°♉		
retrograde	1646 Aug 30 13:04	17°♉59'22		
	1646 Oct 31 14:53	15°℞♉		
opposition	1646 Nov 06 18:28	14°♉30'04	-2°33'58	
min. Earth dist.	1646 Nov 06 18:05	14°♉30'09	8.14856 AU	
direct	1647 Jan 12 06:29	11°♉04'33		
	1647 Mar 21 03:24	15°♉		
evening set	1647 Apr 24 15:18	19°♉03'15		
conjunction	1647 May 12 09:11	21°♉20'13	-1°56'11	
minimum elong	1647 May 12 09:14	21°♉20'14	1°56'11	
max. Earth dist.	1647 May 12 09:37	21°♉20'21	10.10896 AU	
morning rise	1647 May 30 06:53	23°♉38'23		
	1647 Jul 28 11:14	0°♊		
retrograde	1647 Sep 14 02:09	1°♊57'28		
	1647 Nov 01 10:02	30°℞♉		
opposition	1647 Nov 20 20:17	28°♉27'45	-2°13'06	
min. Earth dist.	1647 Nov 20 19:12	28°♉27'58	8.07751 AU	
direct	1648 Jan 26 06:06	25°♉00'58		
	1648 Apr 12 18:10	0°♊		

evening set	1648 May 08	08:34	3°♊06'23	
conjunction	1648 May 26	06:56	5°♊25'31	-1°35'49
minimum elong	1648 May 26	07:00	5°♊25'32	1°35'50
max. Earth dist.	1648 May 26	09:03	5°♊26'12	10.05050 AU
morning rise	1648 Jun 13	08:13	7°♊45'34	
retrograde	1648 Sep 27	16:44	16°♊05'57	
opposition	1648 Dec 04	00:38	12°♊36'10	-1°43'54
min. Earth dist.	1648 Dec 03	22:22	12°♊36'38	8.03200 AU
direct	1649 Feb 08	11:27	9°♊08'16	
evening set	1649 May 23	07:58	17°♊18'46	
conjunction	1649 Jun 10	10:02	19°♊39'25	-1°09'29
minimum elong	1649 Jun 10	10:05	19°♊39'26	1°09'29
max. Earth dist.	1649 Jun 10	13:51	19°♊40'39	10.01929 AU
morning rise	1649 Jun 28	13:45	22°♊00'36	
	1649 Sep 23	12:51	0°♋	
retrograde	1649 Oct 12	06:45	0°♋19'33	
	1649 Oct 31	01:31	30°℞♊	
opposition	1649 Dec 18	05:50	26°♊50'04	-1°08'06
min. Earth dist.	1649 Dec 18	02:21	26°♊50'47	8.01487 AU
direct	1650 Feb 22	21:21	23°♊21'15	
	1650 May 25	19:41	0°♋	
evening set	1650 Jun 07	10:55	1°♋34'54	
conjunction	1650 Jun 25	15:16	3°♋56'12	-0°38'49
minimum elong	1650 Jun 25	15:18	3°♋56'13	0°38'49
max. Earth dist.	1650 Jun 25	20:23	3°♋57'52	10.01717 AU
morning rise	1650 Jul 13	19:51	6°♋17'36	
retrograde	1650 Oct 26	17:31	14°♋32'39	
opposition	1651 Jan 01	10:36	11°♋03'48	-0°28'06
min. Earth dist.	1651 Jan 01	06:11	11°♋04'43	8.02708 AU
direct	1651 Mar 09	09:40	7°♋34'22	
evening set	1651 Jun 22	14:20	15°♋49'00	
conjunction	1651 Jul 10	19:10	18°♋09'58	-0°05'54
minimum elong	1651 Jul 10	19:11	18°♋09'58	0°05'54
behind sun begin	1651 Jul 10	12:10	18°♋07'43	
behind sun end	1651 Jul 11	02:12	18°♋12'14	
max. Earth dist.	1651 Jul 11	01:14	18°♋11'54	10.04403 AU
morning rise	1651 Jul 28	22:53	20°♋30'36	
asc. node	1651 Sep 15	09:48	25°♋57'33	
retrograde	1651 Nov 09	23:25	28°♋39'42	
opposition	1652 Jan 15	13:21	25°♋11'48	0°13'20
min. Earth dist.	1652 Jan 15	08:32	25°♋12'48	8.06769 AU
direct	1652 Mar 22	21:51	21°♋42'02	
evening set	1652 Jul 06	15:27	29°♋55'31	
	1652 Jul 07	05:38	0°♌	
conjunction	1652 Jul 24	19:00	2°♌15'14	0°27'12
minimum elong	1652 Jul 24	18:59	2°♌15'13	0°27'12
max. Earth dist.	1652 Jul 25	01:12	2°♌17'13	10.09798 AU
morning rise	1652 Aug 11	20:12	4°♌34'12	
retrograde	1652 Nov 22	23:34	12°♌35'48	
opposition	1653 Jan 28	12:40	9°♌09'04	0°53'25
min. Earth dist.	1653 Jan 28	08:16	9°♌09'58	8.13396 AU
direct	1653 Apr 06	08:21	5°♌39'17	
evening set	1653 Jul 21	11:30	13°♌49'38	
	1653 Jul 30	17:48	15°♌	
conjunction	1653 Aug 08	12:08	16°♌07'18	0°58'11
minimum elong	1653 Aug 08	12:05	16°♌07'17	0°58'11
max. Earth dist.	1653 Aug 08	17:33	16°♌09'02	10.17540 AU
morning rise	1653 Aug 26	09:29	18°♌23'55	
retrograde	1653 Dec 06	16:39	26°♌17'01	
opposition	1654 Feb 11	07:41	22°♌51'37	1°29'40
min. Earth dist.	1654 Feb 11	03:46	22°♌52'25	8.22156 AU
direct	1654 Apr 20	16:05	19°♌22'12	
evening set	1654 Aug 04	24:00	27°♌27'38	
conjunction	1654 Aug 22	20:28	29°♌42'40	1°25'21
minimum elong	1654 Aug 22	20:25	29°♌42'39	1°25'21
max. Earth dist.	1654 Aug 23	00:59	29°♌44'06	10.27145 AU
	1654 Aug 25	03:05	0°♍	
morning rise	1654 Sep 09	13:01	1°♍56'26	
retrograde	1654 Dec 20	00:08	9°♍40'40	
opposition	1655 Feb 24	21:33	6°♍16'42	2°00'07
min. Earth dist.	1655 Feb 24	17:50	6°♍17'26	8.32520 AU
direct	1655 May 04	20:37	2°♍47'59	
evening set	1655 Aug 19	03:14	10°♍47'05	
conjunction	1655 Sep 05	18:57	12°♍59'10	1°47'22
minimum elong	1655 Sep 05	18:54	12°♍59'09	1°47'22
max. Earth dist.	1655 Sep 05	22:46	13°♍00'22	10.38063 AU
morning rise	1655 Sep 23	06:18	15°♍09'52	
retrograde	1656 Jan 02	00:47	22°♍45'16	
opposition	1656 Mar 09	05:47	19°♍22'43	2°23'28
min. Earth dist.	1656 Mar 09	02:01	19°♍23'28	8.43903 AU
direct	1656 May 17	18:03	15°♍55'00	
evening set	1656 Aug 31	20:11	23°♍46'44	
conjunction	1656 Sep 18	07:03	25°♍55'49	2°03'22
minimum elong	1656 Sep 18	07:01	25°♍55'48	2°03'23
max. Earth dist.	1656 Sep 18	10:37	25°♍56'56	10.49694 AU
morning rise	1656 Oct 05	13:11	28°♍03'28	
	1656 Oct 22	00:04	0°♎	
retrograde	1657 Jan 13	19:48	5°♎30'27	
opposition	1657 Mar 22	08:28	2°♎09'16	2°39'00
min. Earth dist.	1657 Mar 22	05:07	2°♎09'55	8.55687 AU
	1657 Apr 21	04:59	30°℞♍	
direct	1657 May 31	07:40	28°♍42'45	
	1657 Jul 09	23:37	0°♎	
evening set	1657 Sep 14	02:40	6°♎26'31	
conjunction	1657 Oct 01	08:49	8°♎32'44	2°13'00
minimum elong	1657 Oct 01	08:48	8°♎32'43	2°13'00
max. Earth dist.	1657 Oct 01	12:03	8°♎33'43	10.61434 AU
morning rise	1657 Oct 18	10:08	10°♎37'31	
retrograde	1658 Jan 26	07:26	17°♎56'46	
opposition	1658 Apr 04	05:50	14°♎36'51	2°46'34
min. Earth dist.	1658 Apr 04	03:40	14°♎37'16	8.67295 AU
direct	1658 Jun 13	14:17	11°♎11'37	
evening set	1658 Sep 26	22:54	18°♎47'15	
conjunction	1658 Oct 14	00:44	20°♎50'51	2°16'13
minimum elong	1658 Oct 14	00:43	20°♎50'51	2°16'14
max. Earth dist.	1658 Oct 14	02:40	20°♎51'26	10.72736 AU
morning rise	1658 Oct 30	22:04	22°♎53'08	
	1659 Jan 28	05:29	0°♏	
retrograde	1659 Feb 07	12:33	0°♏05'34	
	1659 Feb 17	20:52	30°℞♎	
opposition	1659 Apr 16	22:10	26°♎46'45	2°46'24
min. Earth dist.	1659 Apr 16	21:25	26°♎46'54	8.78206 AU
direct	1659 Jun 26	15:31	23°♎22'50	
	1659 Oct 02	03:51	0°♏	
evening set	1659 Oct 09	09:23	0°♏50'30	
conjunction	1659 Oct 26	07:35	2°♏51'50	2°13'20
minimum elong	1659 Oct 26	07:36	2°♏51'50	2°13'20
max. Earth dist.	1659 Oct 26	07:44	2°♏51'53	10.83110 AU
morning rise	1659 Nov 12	01:56	4°♏52'01	
retrograde	1660 Feb 19	13:02	11°♏58'46	
opposition	1660 Apr 28	09:54	8°♏40'48	2°39'03
min. Earth dist.	1660 Apr 28	10:00	8°♏40'47	8.87944 AU

direct	1660 Jul 08 09:39	5°♏18'12	
evening set	1660 Oct 20 11:30	12°♏38'23	
conjunction	1660 Nov 06 06:54	14°♏37'53	2°04'50
minimum elong	1660 Nov 06 06:56	14°♏37'54	2°04'49
max. Earth dist.	1660 Nov 06 05:59	14°♏37'37	10.92111 AU
	1660 Nov 09 08:59	15°♏	
morning rise	1660 Nov 22 22:59	16°♏36'25	
retrograde	1661 Mar 02 09:39	23°♏38'44	
opposition	1661 May 10 17:41	20°♏21'21	2°25'15
min. Earth dist.	1661 May 10 18:06	20°♏21'17	8.96098 AU
direct	1661 Jul 20 22:01	16°♏59'58	
evening set	1661 Nov 01 06:27	24°♏13'30	
conjunction	1661 Nov 17 23:53	26°♏11'36	1°51'19
minimum elong	1661 Nov 17 23:55	26°♏11'37	1°51'19
max. Earth dist.	1661 Nov 17 22:41	26°♏11'15	10.99366 AU
morning rise	1661 Dec 04 14:24	28°♏08'54	
	1661 Dec 21 01:22	0°♐	
retrograde	1662 Mar 14 06:03	5°♐08'11	
opposition	1662 May 22 22:39	1°♐51'09	2°05'51
min. Earth dist.	1662 May 22 23:52	1°♐50'55	9.02334 AU
	1662 Jun 18 11:27	30°℞♏	
direct	1662 Aug 02 04:27	28°♏30'50	
	1662 Sep 14 17:43	0°♐	
evening set	1662 Nov 12 19:46	5°♐38'43	
conjunction	1662 Nov 29 11:46	7°♐35'52	1°33'32
minimum elong	1662 Nov 29 11:48	7°♐35'53	1°33'32
max. Earth dist.	1662 Nov 29 09:29	7°♐35'11	11.04559 AU
morning rise	1662 Dec 16 01:35	9°♐32'25	
retrograde	1663 Mar 25 23:12	16°♐30'08	
opposition	1663 Jun 04 01:31	13°♐13'10	1°41'44
min. Earth dist.	1663 Jun 04 04:29	13°♐12'37	9.06370 AU
direct	1663 Aug 14 05:16	9°♐53'43	
evening set	1663 Nov 24 05:24	16°♐57'21	
conjunction	1663 Dec 10 20:26	18°♐53'56	1°12'13
minimum elong	1663 Dec 10 20:28	18°♐53'57	1°12'13
max. Earth dist.	1663 Dec 10 15:55	18°♐52'36	11.07441 AU
morning rise	1663 Dec 27 10:19	20°♐50'12	
retrograde	1664 Apr 05 16:47	27°♐47'59	
opposition	1664 Jun 15 03:06	24°♐30'50	1°13'51
min. Earth dist.	1664 Jun 15 07:23	24°♐30'02	9.08014 AU
direct	1664 Aug 25 04:33	21°♐12'02	
evening set	1664 Dec 04 12:52	28°♐12'52	
	1664 Dec 19 19:50	0°♑	
conjunction	1664 Dec 21 03:35	0°♑09'21	0°48'10
minimum elong	1664 Dec 21 03:37	0°♑09'21	0°48'10
max. Earth dist.	1664 Dec 20 22:12	0°♑07'46	11.07900 AU
morning rise	1665 Jan 06 17:57	2°♑05'44	
retrograde	1665 Apr 17 12:41	9°♑05'14	
opposition	1665 Jun 27 04:52	5°♑47'35	0°43'10
min. Earth dist.	1665 Jun 27 09:18	5°♑46'46	9.07240 AU
direct	1665 Sep 06 01:07	2°♑29'15	
evening set	1665 Dec 15 19:48	9°♑28'44	
conjunction	1666 Jan 01 10:43	11°♑25'28	0°22'14
minimum elong	1666 Jan 01 10:44	11°♑25'28	0°22'14
max. Earth dist.	1666 Jan 01 05:35	11°♑23'58	11.05970 AU
morning rise	1666 Jan 18 01:51	13°♑22'21	
retrograde	1666 Apr 29 11:52	20°♑25'10	
opposition	1666 Jul 09 07:41	17°♑06'44	0°10'42
min. Earth dist.	1666 Jul 09 11:57	17°♑05'57	9.04137 AU
direct	1666 Sep 17 20:54	13°♑48'35	
desc. node	1666 Nov 08 01:57	15°♑53'09	
evening set	1666 Dec 27 04:14	20°♑48'13	
conjunction	1667 Jan 12 19:32	22°♑45'34	-0°04'48
minimum elong	1667 Jan 12 19:33	22°♑45'34	0°04'48
behind sun begin	1667 Jan 12 12:44	22°♑43'35	
behind sun end	1667 Jan 13 02:22	22°♑47'34	
max. Earth dist.	1667 Jan 12 13:54	22°♑43'56	11.01772 AU
morning rise	1667 Jan 29 11:58	24°♑43'19	
	1667 Mar 24 01:15	0°♒	
retrograde	1667 May 11 15:43	1°♒50'51	
	1667 Jun 30 20:04	30°℞♑	
opposition	1667 Jul 21 12:21	28°♑31'25	-0°22'30
min. Earth dist.	1667 Jul 21 17:16	28°♑30'30	8.98860 AU
direct	1667 Sep 29 15:58	25°♑13'09	
	1667 Dec 18 14:54	0°♒	
evening set	1668 Jan 07 15:35	2°♒14'29	
conjunction	1668 Jan 24 07:34	4°♒12'47	-0°31'46
minimum elong	1668 Jan 24 07:33	4°♒12'47	0°31'46
max. Earth dist.	1668 Jan 24 01:02	4°♒10'51	10.95486 AU
morning rise	1668 Feb 10 01:40	6°♒11'44	
retrograde	1668 May 22 21:38	13°♒25'25	
opposition	1668 Aug 01 20:04	10°♒04'45	-0°55'15
min. Earth dist.	1668 Aug 02 01:24	10°♒03'45	8.91618 AU
direct	1668 Oct 10 12:31	6°♒46'09	
evening set	1669 Jan 18 07:15	13°♒50'41	
	1669 Jan 28 00:53	15°♒	
conjunction	1669 Feb 04 00:21	15°♒50'16	-0°57'50
minimum elong	1669 Feb 04 00:19	15°♒50'15	0°57'50
max. Earth dist.	1669 Feb 03 18:12	15°♒48'25	10.87352 AU
morning rise	1669 Feb 20 20:19	17°♒50'42	
retrograde	1669 Jun 04 11:27	25°♒11'52	
opposition	1669 Aug 14 07:34	21°♒49'48	-1°26'18
min. Earth dist.	1669 Aug 14 12:23	21°♒48'54	8.82690 AU
direct	1669 Oct 22 14:16	18°♒30'40	
evening set	1670 Jan 30 05:00	25°♒39'49	
conjunction	1670 Feb 15 23:45	27°♒41'01	-1°21'54
minimum elong	1670 Feb 15 23:43	27°♒41'00	1°21'53
max. Earth dist.	1670 Feb 15 18:58	27°♒39'34	10.77679 AU
morning rise	1670 Mar 04 21:48	29°♒43'17	
	1670 Mar 07 06:23	0°♓	
retrograde	1670 Jun 17 09:12	7°♓12'56	
opposition	1670 Aug 26 23:29	3°♓49'24	-1°54'20
min. Earth dist.	1670 Aug 27 03:03	3°♓48'43	8.72415 AU
direct	1670 Nov 03 17:30	0°♓29'32	
evening set	1671 Feb 11 10:14	7°♓44'41	
conjunction	1671 Feb 28 07:00	9°♓47'48	-1°42'50
minimum elong	1671 Feb 28 06:58	9°♓47'48	1°42'49
max. Earth dist.	1671 Feb 28 02:45	9°♓46'30	10.66844 AU
morning rise	1671 Mar 17 07:37	11°♓52'10	
retrograde	1671 Jun 30 13:15	19°♓31'02	
opposition	1671 Sep 08 20:44	16°♓06'03	-2°17'54
min. Earth dist.	1671 Sep 08 23:32	16°♓05'30	8.61197 AU
direct	1671 Nov 16 01:39	12°♓45'17	
evening set	1672 Feb 24 00:02	20°♓07'36	
conjunction	1672 Mar 11 23:16	22°♓12'56	-1°59'28
minimum elong	1672 Mar 11 23:14	22°♓12'55	1°59'28
max. Earth dist.	1672 Mar 11 19:12	22°♓11'41	10.55299 AU
morning rise	1672 Mar 29 02:58	24°♓19'40	
	1672 May 22 13:24	0°♈	
retrograde	1672 Jul 13 01:15	2°♈08'04	
	1672 Sep 03 20:05	30°℞♓	
opposition	1672 Sep 20 23:45	28°♓41'42	-2°35'34

min. Earth dist.	1672 Sep 21 02:08	28°♓41'14	8.49520 AU
direct	1672 Nov 27 16:52	25°♓19'53	
	1673 Feb 11 16:46	0°♈	
evening set	1673 Mar 07 23:22	2°♈50'14	
conjunction	1673 Mar 25 01:50	4°♈58'03	-2°10'41
minimum elong	1673 Mar 25 01:49	4°♈58'03	2°10'41
max. Earth dist.	1673 Mar 24 22:29	4°♈57'00	10.43573 AU
morning rise	1673 Apr 11 09:07	7°♈07'23	
retrograde	1673 Jul 26 20:45	15°♈05'07	
opposition	1673 Oct 04 08:41	11°♈37'28	-2°45'57
min. Earth dist.	1673 Oct 04 10:34	11°♈37'06	8.37942 AU
direct	1673 Dec 10 14:44	8°♈14'30	
evening set	1674 Mar 21 08:44	15°♈53'25	
conjunction	1674 Apr 07 15:13	18°♈03'56	-2°15'29
minimum elong	1674 Apr 07 15:13	18°♈03'56	2°15'29
max. Earth dist.	1674 Apr 07 13:38	18°♈03'26	10.32238 AU
morning rise	1674 Apr 25 02:28	20°♈15'59	
retrograde	1674 Aug 09 22:50	28°♈22'12	
opposition	1674 Oct 17 23:22	24°♈53'30	-2°47'52
min. Earth dist.	1674 Oct 17 23:57	24°♈53'22	8.27042 AU
direct	1674 Dec 23 20:53	21°♈29'21	
evening set	1675 Apr 04 04:25	29°♈16'54	
	1675 Apr 09 21:05	0°♉	
conjunction	1675 Apr 21 15:27	1°♉30'11	-2°13'06
minimum elong	1675 Apr 21 15:29	1°♉30'12	2°13'06
max. Earth dist.	1675 Apr 21 15:49	1°♉30'19	10.21893 AU
morning rise	1675 May 09 06:52	3°♉44'56	
retrograde	1675 Aug 24 06:32	11°♉58'11	
opposition	1675 Oct 31 19:15	8°♉28'42	-2°40'32
min. Earth dist.	1675 Oct 31 18:14	8°♉28'55	8.17425 AU
direct	1676 Jan 06 10:23	5°♉03'24	
evening set	1676 Apr 17 09:54	12°♉59'08	
	1676 May 03 02:58	15°♉	
conjunction	1676 May 05 01:44	15°♉15'07	-2°03'11
minimum elong	1676 May 05 01:47	15°♉15'08	2°03'12
max. Earth dist.	1676 May 05 03:59	15°♉15'50	10.13155 AU
morning rise	1676 May 22 21:25	17°♉32'22	
retrograde	1676 Sep 06 19:54	25°♉50'37	
opposition	1676 Nov 13 19:43	22°♉20'42	-2°23'46
min. Earth dist.	1676 Nov 13 17:11	22°♉21'13	8.09686 AU
direct	1677 Jan 19 05:45	18°♉54'17	
evening set	1677 May 02 00:09	26°♉57'14	
conjunction	1677 May 19 20:39	29°♉15'36	-1°45'54
minimum elong	1677 May 19 20:42	29°♉15'37	1°45'54
max. Earth dist.	1677 May 20 00:16	29°♉16'46	10.06578 AU
	1677 May 25 13:18	0°♊	
morning rise	1677 Jun 06 20:18	1°♊34'59	
retrograde	1677 Sep 21 11:50	9°♊55'40	
opposition	1677 Nov 27 23:29	6°♊25'43	-1°58'06
min. Earth dist.	1677 Nov 27 20:02	6°♊26'25	8.04326 AU
direct	1678 Feb 02 08:07	2°♊58'18	
evening set	1678 May 16 21:40	11°♊07'06	
conjunction	1678 Jun 03 22:09	13°♊27'14	-1°22'04
minimum elong	1678 Jun 03 22:13	13°♊27'15	1°22'03
max. Earth dist.	1678 Jun 04 02:35	13°♊28'41	10.02593 AU
morning rise	1678 Jun 22 00:52	15°♊48'06	
retrograde	1678 Oct 06 03:28	24°♊08'27	
opposition	1678 Dec 12 04:59	20°♊38'52	-1°24'58
min. Earth dist.	1678 Dec 12 01:10	20°♊39'40	8.01714 AU
direct	1679 Feb 16 16:27	17°♊10'37	
evening set	1679 May 31 23:53	25°♊23'25	

conjunction	1679 Jun 19 03:14	27°♊44'34	-0°53'04
minimum elong	1679 Jun 19 03:16	27°♊44'35	0°53'04
max. Earth dist.	1679 Jun 19 08:25	27°♊46'15	10.01476 AU
	1679 Jul 06 12:48	0°♋	
morning rise	1679 Jul 07 07:39	0°♋06'02	
retrograde	1679 Oct 20 16:12	8°♋23'27	
opposition	1679 Dec 26 10:48	4°♋54'33	-0°46'28
min. Earth dist.	1679 Dec 26 06:30	4°♋55'27	8.02039 AU
direct	1680 Mar 02 05:02	1°♋25'42	
evening set	1680 Jun 15 03:53	9°♋40'19	
conjunction	1680 Jul 03 08:33	12°♋01'32	-0°20'51
minimum elong	1680 Jul 03 08:34	12°♋01'33	0°20'51
max. Earth dist.	1680 Jul 03 14:23	12°♋03'25	10.03298 AU
morning rise	1680 Jul 21 13:01	14°♋22'38	
retrograde	1680 Nov 03 00:07	22°♋34'48	
opposition	1681 Jan 08 15:07	19°♋06'51	-0°05'18
min. Earth dist.	1681 Jan 08 10:22	19°♋07'50	8.05260 AU
asc. node	1681 Feb 25 23:48	15°♋57'02	
direct	1681 Mar 16 18:27	15°♋37'38	
evening set	1681 Jun 30 06:59	23°♋51'53	
conjunction	1681 Jul 18 11:14	26°♋12'12	0°12'30
minimum elong	1681 Jul 18 11:13	26°♋12'12	0°12'30
behind sun begin	1681 Jul 18 06:35	26°♋10'43	
behind sun end	1681 Jul 18 15:51	26°♋13'41	
max. Earth dist.	1681 Jul 18 17:18	26°♋14'09	10.07892 AU
morning rise	1681 Aug 05 13:53	28°♋31'58	
	1681 Aug 17 08:44	0°♌	
retrograde	1681 Nov 17 03:06	6°♌37'02	
opposition	1682 Jan 22 16:21	3°♌10'13	0°35'43
min. Earth dist.	1682 Jan 22 11:11	3°♌11'17	8.11102 AU
	1682 Mar 12 12:33	30°℞♋	
direct	1682 Mar 31 06:50	29°♋40'55	
	1682 Apr 19 00:03	0°♌	
evening set	1682 Jul 15 06:00	7°♌52'42	
conjunction	1682 Aug 02 08:06	10°♌11'17	0°44'37
minimum elong	1682 Aug 02 08:04	10°♌11'16	0°44'37
max. Earth dist.	1682 Aug 02 14:11	10°♌13'14	10.14869 AU
morning rise	1682 Aug 20 07:20	12°♌28'56	
	1682 Sep 10 01:56	15°♌	
retrograde	1682 Nov 30 23:36	20°♌25'46	
opposition	1683 Feb 05 13:37	17°♌00'14	1°13'57
min. Earth dist.	1683 Feb 05 08:38	17°♌01'15	8.19078 AU
	1683 Mar 03 20:46	15°℞♌	
direct	1683 Apr 14 16:21	13°♌31'10	
	1683 May 26 03:32	15°♌	
evening set	1683 Jul 29 22:13	21°♌38'44	
conjunction	1683 Aug 16 20:47	23°♌54'55	1°13'41
minimum elong	1683 Aug 16 20:44	23°♌54'54	1°13'41
max. Earth dist.	1683 Aug 17 02:18	23°♌56'41	10.23674 AU
morning rise	1683 Sep 03 15:28	26°♌09'56	
	1683 Oct 06 16:34	0°♍	
retrograde	1683 Dec 14 12:29	3°♍58'07	
opposition	1684 Feb 19 06:04	0°♍33'59	1°47'11
min. Earth dist.	1684 Feb 19 02:02	0°♍34'47	8.28620 AU
	1684 Feb 26 07:34	30°℞♌	
direct	1684 Apr 27 21:48	27°♌05'26	
	1684 Jun 26 15:58	0°♍	
evening set	1684 Aug 12 06:13	5°♍07'29	
conjunction	1684 Aug 30 00:17	7°♍20'54	1°38'09
minimum elong	1684 Aug 30 00:13	7°♍20'53	1°38'09
max. Earth dist.	1684 Aug 30 04:33	7°♍22'15	10.33778 AU
morning rise	1684 Sep 16 13:51	9°♍32'57	

retrograde	1684 Dec 26 17:52	17°♍12'27	
opposition	1685 Mar 03 17:12	13°♍49'44	2°13'51
min. Earth dist.	1685 Mar 03 14:29	13°♍50'16	8.39234 AU
direct	1685 May 11 21:28	10°♍21'57	
evening set	1685 Aug 26 04:39	18°♍17'20	
conjunction	1685 Sep 12 17:42	20°♍27'49	1°56'55
minimum elong	1685 Sep 12 17:40	20°♍27'48	1°56'55
max. Earth dist.	1685 Sep 12 20:22	20°♍28'39	10.44713 AU
morning rise	1685 Sep 30 02:07	22°♍36'52	
	1685 Dec 27 13:49	0°♎	
retrograde	1686 Jan 08 15:33	0°♎07'55	
	1686 Jan 20 17:38	30°℞♍	
opposition	1686 Mar 16 23:03	26°♍46'29	2°32'57
min. Earth dist.	1686 Mar 16 21:26	26°♍46'48	8.50437 AU
direct	1686 May 25 15:39	23°♍19'40	
	1686 Aug 30 05:30	0°♎	
evening set	1686 Sep 08 16:28	1°♎07'32	
conjunction	1686 Sep 26 00:35	3°♎15'06	2°09'26
minimum elong	1686 Sep 26 00:33	3°♎15'06	2°09'26
max. Earth dist.	1686 Sep 26 01:43	3°♎15'27	10.55981 AU
morning rise	1686 Oct 13 04:08	5°♎21'15	
retrograde	1687 Jan 21 05:12	12°♎44'24	
opposition	1687 Mar 29 23:22	9°♎24'07	2°44'05
min. Earth dist.	1687 Mar 29 22:04	9°♎24'22	8.61702 AU
direct	1687 Jun 08 03:56	5°♎58'22	
evening set	1687 Sep 21 17:47	13°♎38'16	
conjunction	1687 Oct 08 21:30	15°♎43'07	2°15'29
minimum elong	1687 Oct 08 21:29	15°♎43'07	2°15'29
max. Earth dist.	1687 Oct 08 22:03	15°♎43'17	10.67062 AU
morning rise	1687 Oct 25 20:45	17°♎46'39	
retrograde	1688 Feb 02 13:57	25°♎02'38	
opposition	1688 Apr 10 18:15	21°♎43'19	2°47'20
min. Earth dist.	1688 Apr 10 17:17	21°♎43'30	8.72507 AU
direct	1688 Jun 20 09:03	18°♎18'43	
evening set	1688 Oct 03 09:05	25°♎50'35	
conjunction	1688 Oct 20 09:04	27°♎53'05	2°15'16
minimum elong	1688 Oct 20 09:04	27°♎53'05	2°15'16
max. Earth dist.	1688 Oct 20 09:19	27°♎53'09	10.77447 AU
morning rise	1688 Nov 06 04:42	29°♎54'19	
	1688 Nov 06 23:56	0°♏	
retrograde	1689 Feb 13 18:03	7°♏04'08	
opposition	1689 Apr 23 08:27	3°♏45'36	2°43'06
min. Earth dist.	1689 Apr 23 08:20	3°♏45'37	8.82372 AU
direct	1689 Jul 03 05:13	0°♏22'09	
evening set	1689 Oct 15 15:15	7°♏46'18	
conjunction	1689 Nov 01 12:03	9°♏46'48	2°09'10
minimum elong	1689 Nov 01 12:04	9°♏46'49	2°09'09
max. Earth dist.	1689 Nov 01 11:35	9°♏46'40	10.86690 AU
morning rise	1689 Nov 18 05:00	11°♏46'13	
	1689 Dec 17 14:20	15°♏	
retrograde	1690 Feb 25 16:06	18°♏51'03	
opposition	1690 May 05 18:33	15°♏33'04	2°32'02
min. Earth dist.	1690 May 05 19:53	15°♏32'49	8.90901 AU
	1690 May 13 03:20	15°℞♏	
direct	1690 Jul 15 20:15	12°♏10'43	
	1690 Sep 14 17:14	15°♏	
evening set	1690 Oct 27 13:38	19°♏27'51	
conjunction	1690 Nov 13 07:55	21°♏26'45	1°57'45
minimum elong	1690 Nov 13 07:58	21°♏26'45	1°57'45
max. Earth dist.	1690 Nov 13 05:46	21°♏26'06	10.94442 AU
morning rise	1690 Nov 29 23:13	23°♏24'47	

	1691 Feb 14 20:16	0°♐	
retrograde	1691 Mar 09 12:08	0°♐25'56	
	1691 Apr 01 10:53	30°℞♏	
opposition	1691 May 18 01:02	27°♏08'18	2°14'58
min. Earth dist.	1691 May 18 03:11	27°♏07'54	8.97779 AU
direct	1691 Jul 28 06:21	23°♏46'58	
	1691 Oct 30 18:17	0°♐	
evening set	1691 Nov 08 05:34	0°♐58'01	
conjunction	1691 Nov 24 22:10	2°♐55'46	1°41'44
minimum elong	1691 Nov 24 22:13	2°♐55'47	1°41'44
max. Earth dist.	1691 Nov 24 19:12	2°♐54'53	11.00414 AU
morning rise	1691 Dec 11 12:31	4°♐52'51	
retrograde	1692 Mar 20 05:34	11°♐51'47	
opposition	1692 May 29 04:52	8°♐34'15	1°52'46
min. Earth dist.	1692 May 29 07:03	8°♐33'51	9.02742 AU
direct	1692 Aug 08 10:26	5°♐13'51	
evening set	1692 Nov 18 16:48	12°♐19'59	
conjunction	1692 Dec 05 08:25	14°♐16'59	1°21'50
minimum elong	1692 Dec 05 08:27	14°♐17'00	1°21'50
max. Earth dist.	1692 Dec 05 05:40	14°♐16'10	11.04378 AU
morning rise	1692 Dec 21 22:17	16°♐13'32	
retrograde	1693 Apr 01 00:20	23°♐11'46	
opposition	1693 Jun 10 07:09	19°♐54'08	1°26'22
min. Earth dist.	1693 Jun 10 09:24	19°♐53'43	9.05613 AU
direct	1693 Aug 20 11:14	16°♐34'32	
evening set	1693 Nov 30 01:09	23°♐37'02	
conjunction	1693 Dec 16 16:11	25°♐33'42	0°58'51
minimum elong	1693 Dec 16 16:13	25°♐33'43	0°58'51
max. Earth dist.	1693 Dec 16 12:57	25°♐32'45	11.06196 AU
morning rise	1694 Jan 02 06:14	27°♐30'09	
	1694 Jan 24 23:15	0°♑	
retrograde	1694 Apr 12 20:08	4°♑29'10	
opposition	1694 Jun 22 08:59	1°♑11'15	0°56'44
min. Earth dist.	1694 Jun 22 12:07	1°♑10'41	9.06305 AU
	1694 Jul 08 20:44	30°℞♐	
direct	1694 Sep 01 07:18	27°♐52'17	
	1694 Oct 23 13:26	0°♑	
evening set	1694 Dec 11 08:12	4°♑52'33	
conjunction	1694 Dec 27 23:00	6°♑49'15	0°33'37
minimum elong	1694 Dec 27 23:01	6°♑49'16	0°33'37
max. Earth dist.	1694 Dec 27 18:35	6°♑47'57	11.05810 AU
morning rise	1695 Jan 13 13:54	8°♑46'00	
retrograde	1695 Apr 24 15:43	15°♑47'23	
opposition	1695 Jul 04 11:12	12°♑28'56	0°24'54
min. Earth dist.	1695 Jul 04 15:07	12°♑28'13	9.04788 AU
direct	1695 Sep 13 03:11	9°♑10'22	
evening set	1695 Dec 22 15:46	16°♑09'58	
conjunction	1696 Jan 08 06:49	18°♑07'03	0°07'02
minimum elong	1696 Jan 08 06:49	18°♑07'03	0°07'02
behind sun begin	1696 Jan 08 00:21	18°♑05'10	
behind sun end	1696 Jan 08 13:17	18°♑08'56	
max. Earth dist.	1696 Jan 08 02:02	18°♑05'40	11.03218 AU
morning rise	1696 Jan 24 22:47	20°♑04'25	
desc. node	1696 Apr 14 09:43	26°♑47'36	
retrograde	1696 May 05 16:50	27°♑09'41	
opposition	1696 Jul 15 14:44	23°♑50'30	-0°08'07
min. Earth dist.	1696 Jul 15 18:26	23°♑49'49	9.01108 AU
direct	1696 Sep 23 23:35	20°♑32'09	
evening set	1697 Jan 02 01:27	27°♑32'33	
conjunction	1697 Jan 18 17:10	29°♑30'22	-0°20'07
minimum elong	1697 Jan 18 17:10	29°♑30'22	0°20'08

max. Earth dist.	1697 Jan 18 13:16	29°♓29'13	10.98507 AU
	1697 Jan 22 20:53	0°♒	
morning rise	1697 Feb 04 10:24	1°♒28'43	
retrograde	1697 May 17 22:30	8°♒39'21	
opposition	1697 Jul 27 20:54	5°♒19'13	-0°41'10
min. Earth dist.	1697 Jul 27 23:52	5°♒18'40	8.95398 AU
direct	1697 Oct 05 19:09	2°♒00'53	
evening set	1698 Jan 13 14:53	9°♒03'34	
conjunction	1698 Jan 30 07:30	11°♒02'28	-0°46'41
minimum elong	1698 Jan 30 07:29	11°♒02'27	0°46'41
max. Earth dist.	1698 Jan 30 03:42	11°♒01'20	10.91851 AU
morning rise	1698 Feb 16 02:25	13°♒02'06	
	1698 Mar 05 10:42	15°♒	
retrograde	1698 May 30 10:10	20°♒19'25	
opposition	1698 Aug 09 06:28	16°♒58'12	-1°13'03
min. Earth dist.	1698 Aug 09 09:22	16°♒57'39	8.87870 AU
	1698 Sep 06 10:28	15℞♒	
direct	1698 Oct 17 17:21	13°♒39'37	
	1698 Nov 26 20:00	15°♒	
evening set	1699 Jan 25 09:48	20°♒46'05	
conjunction	1699 Feb 11 03:36	22°♒46'22	-1°11'42
minimum elong	1699 Feb 11 03:34	22°♒46'22	1°11'42
max. Earth dist.	1699 Feb 10 23:11	22°♒45'02	10.83500 AU
morning rise	1699 Feb 28 00:39	24°♒47'38	
	1699 Apr 19 23:19	0°♓	
retrograde	1699 Jun 12 03:15	2°♓12'43	
	1699 Aug 06 03:11	30℞♒	
opposition	1699 Aug 21 20:03	28°♒50'18	-1°42'28
min. Earth dist.	1699 Aug 21 23:20	28°♒49'40	8.78808 AU
direct	1699 Oct 29 18:24	25°♒31'14	
	1700 Jan 13 12:20	0°♓	
evening set	1700 Feb 06 11:21	2°♓42'54	
conjunction	1700 Feb 23 06:54	4°♓44'53	-1°34'04
minimum elong	1700 Feb 23 06:51	4°♓44'52	1°34'04
max. Earth dist.	1700 Feb 23 02:53	4°♓43'40	10.73772 AU
morning rise	1700 Mar 12 06:18	6°♓48'02	
retrograde	1700 Jun 25 02:35	14°♓21'47	
opposition	1700 Sep 03 14:37	10°♓58'03	-2°08'03
min. Earth dist.	1700 Sep 03 17:31	10°♓57'30	8.68559 AU
direct	1700 Nov 11 01:26	7°♓38'19	
evening set	1701 Feb 18 20:38	14°♓56'20	
conjunction	1701 Mar 07 18:34	17°♓00'20	-1°52'39
minimum elong	1701 Mar 07 18:32	17°♓00'20	1°52'39
max. Earth dist.	1701 Mar 07 15:50	16°♓59'30	10.63038 AU
morning rise	1701 Mar 24 20:40	19°♓05'39	
retrograde	1701 Jul 08 10:51	26°♓48'37	
opposition	1701 Sep 16 14:29	23°♓23'31	-2°28'22
min. Earth dist.	1701 Sep 16 16:23	23°♓23'08	8.57511 AU
direct	1701 Nov 23 13:54	20°♓02'53	
evening set	1702 Mar 03 15:02	27°♓28'16	
conjunction	1702 Mar 20 15:56	29°♓34'35	-2°06'19
minimum elong	1702 Mar 20 15:55	29°♓34'34	2°06'19
max. Earth dist.	1702 Mar 20 14:03	29°♓33'59	10.51711 AU
	1702 Mar 24 01:38	0°♈	
morning rise	1702 Apr 06 21:14	1°♈42'18	
retrograde	1702 Jul 22 03:00	9°♈34'29	
opposition	1702 Sep 29 19:48	6°♈08'05	-2°42'01
min. Earth dist.	1702 Sep 29 20:55	6°♈07'52	8.46083 AU
direct	1702 Dec 06 06:59	2°♈46'23	
evening set	1703 Mar 16 19:09	10°♈19'58	
conjunction	1703 Apr 02 23:35	12°♈28'50	-2°14'02
minimum elong	1703 Apr 02 23:35	12°♈28'49	2°14'02
max. Earth dist.	1703 Apr 02 21:38	12°♈28'13	10.40251 AU
morning rise	1703 Apr 20 08:40	14°♈39'12	
retrograde	1703 Aug 05 01:36	22°♈40'11	
opposition	1703 Oct 13 07:02	19°♈12'39	-2°47'47
min. Earth dist.	1703 Oct 13 07:47	19°♈12'30	8.34788 AU
direct	1703 Dec 19 08:03	15°♈49'46	
evening set	1704 Mar 29 09:10	23°♈31'57	
conjunction	1704 Apr 15 17:45	25°♈43'33	-2°14'54
minimum elong	1704 Apr 15 17:46	25°♈43'33	2°14'55
max. Earth dist.	1704 Apr 15 16:04	25°♈43'01	10.29263 AU
morning rise	1704 May 03 07:03	27°♈56'39	
	1704 May 20 06:32	0°♉	
retrograde	1704 Aug 18 06:09	6°♉05'27	
opposition	1704 Oct 25 23:51	2°♉36'57	-2°44'40
min. Earth dist.	1704 Oct 26 00:19	2°♉36'51	8.24299 AU
	1704 Dec 02 03:22	30℞♈	
direct	1704 Dec 31 17:10	29°♈12'47	
	1705 Jan 29 23:13	0°♉	
evening set	1705 Apr 12 09:17	7°♉03'27	
conjunction	1705 Apr 29 22:34	9°♉17'49	-2°08'24
minimum elong	1705 Apr 29 22:37	9°♉17'50	2°08'25
max. Earth dist.	1705 Apr 29 21:58	9°♉17'37	10.19444 AU
morning rise	1705 May 17 16:17	11°♉33'35	
	1705 Jun 15 15:03	15°♉	
retrograde	1705 Sep 01 16:02	19°♉48'23	
opposition	1705 Nov 08 21:22	16°♉19'11	-2°32'12
min. Earth dist.	1705 Nov 08 21:09	16°♉19'14	8.15297 AU
	1705 Nov 25 13:07	15℞♉	
direct	1706 Jan 14 09:20	12°♉53'43	
	1706 Mar 03 22:03	15°♉	
evening set	1706 Apr 26 18:38	20°♉52'11	
conjunction	1706 May 14 12:48	23°♉09'08	-1°54'28
minimum elong	1706 May 14 12:51	23°♉09'09	1°54'28
max. Earth dist.	1706 May 14 13:47	23°♉09'26	10.11427 AU
morning rise	1706 Jun 01 10:41	25°♉27'16	
	1706 Jul 10 13:33	0°♊	
retrograde	1706 Sep 16 04:52	3°♊45'47	
opposition	1706 Nov 22 22:42	0°♊16'12	-2°10'35
min. Earth dist.	1706 Nov 22 21:21	0°♊16'28	8.08358 AU
	1706 Nov 26 05:46	30℞♉	
direct	1707 Jan 28 09:10	26°♉49'29	
	1707 Mar 29 18:29	0°♊	
evening set	1707 May 11 11:46	4°♊54'34	
conjunction	1707 May 29 10:25	7°♊13'38	-1°33'35
minimum elong	1707 May 29 10:28	7°♊13'39	1°33'35
max. Earth dist.	1707 May 29 13:19	7°♊14'34	10.05726 AU
morning rise	1707 Jun 16 11:42	9°♊33'36	
retrograde	1707 Sep 30 18:43	17°♊53'17	
opposition	1707 Dec 07 02:28	14°♊23'38	-1°40'49
min. Earth dist.	1707 Dec 06 23:38	14°♊24'13	8.03932 AU
direct	1708 Feb 11 14:26	10°♊55'50	
evening set	1708 May 25 10:48	19°♊05'53	
conjunction	1708 Jun 12 13:00	21°♊26'26	-1°06'51
minimum elong	1708 Jun 12 13:03	21°♊26'26	1°06'52
max. Earth dist.	1708 Jun 12 17:23	21°♊27'51	10.02714 AU
morning rise	1708 Jun 30 16:38	23°♊47'28	
	1708 Aug 26 13:29	0°♋	
retrograde	1708 Oct 14 07:51	2°♋05'39	
	1708 Dec 02 22:58	30℞♊	
opposition	1708 Dec 20 07:11	28°♊36'19	-1°04'39
min. Earth dist.	1708 Dec 20 03:25	28°♊37'05	8.02312 AU

direct	1709 Feb 24 23:17	25°♊07'36	
	1709 May 12 21:00	0°♋	
evening set	1709 Jun 09 13:14	3°♋20'43	
conjunction	1709 Jun 27 17:35	5°♋41'52	-0°35'59
minimum elong	1709 Jun 27 17:37	5°♋41'53	0°35'59
max. Earth dist.	1709 Jun 27 22:42	5°♋43'32	10.02575 AU
morning rise	1709 Jul 15 22:03	8°♋03'05	
retrograde	1709 Oct 28 18:31	16°♋17'20	
opposition	1710 Jan 03 11:26	12°♋48'38	-0°24'32
min. Earth dist.	1710 Jan 03 07:22	12°♋49'29	8.03583 AU
direct	1710 Mar 11 09:53	9°♋19'15	
evening set	1710 Jun 24 16:15	17°♋33'22	
conjunction	1710 Jul 12 20:54	19°♋54'09	-0°03'04
minimum elong	1710 Jul 12 20:55	19°♋54'10	0°03'04
behind sun begin	1710 Jul 12 13:35	19°♋51'48	
behind sun end	1710 Jul 13 04:16	19°♋56'31	
max. Earth dist.	1710 Jul 13 02:12	19°♋55'50	10.05284 AU
morning rise	1710 Jul 31 00:28	22°♋14'35	
asc. node	1710 Aug 16 05:19	24°♋14'49	
	1710 Oct 22 18:48	0°♌	
retrograde	1710 Nov 12 00:33	0°♌22'52	
	1710 Dec 02 05:25	30°℞♋	
opposition	1711 Jan 17 13:37	26°♋55'07	0°16'48
min. Earth dist.	1711 Jan 17 09:44	26°♋55'55	8.07645 AU
direct	1711 Mar 25 22:15	23°♋25'22	
	1711 Jun 26 10:44	0°♌	
evening set	1711 Jul 09 16:46	1°♌38'21	
conjunction	1711 Jul 27 20:01	3°♌57'52	0°29'52
minimum elong	1711 Jul 27 19:59	3°♌57'51	0°29'53
max. Earth dist.	1711 Jul 28 00:54	3°♌59'26	10.10653 AU
morning rise	1711 Aug 14 21:02	6°♌16'38	
retrograde	1711 Nov 25 23:14	14°♌17'27	
opposition	1712 Jan 31 12:29	10°♌50'51	0°56'34
min. Earth dist.	1712 Jan 31 08:50	10°♌51'36	8.14226 AU
direct	1712 Apr 08 09:37	7°♌21'06	
	1712 Jul 19 08:37	15°♌	
evening set	1712 Jul 23 12:01	15°♌30'57	
conjunction	1712 Aug 10 12:20	17°♌48'24	1°00'33
minimum elong	1712 Aug 10 12:18	17°♌48'23	1°00'34
max. Earth dist.	1712 Aug 10 16:39	17°♌49'47	10.18324 AU
morning rise	1712 Aug 28 09:30	20°♌04'49	
retrograde	1712 Dec 08 14:09	27°♌57'16	
opposition	1713 Feb 13 06:59	24°♌31'58	1°32'21
min. Earth dist.	1713 Feb 13 03:14	24°♌32'43	8.22891 AU
direct	1713 Apr 22 17:59	21°♌02'34	
evening set	1713 Aug 06 23:55	29°♌07'32	
	1713 Aug 13 23:48	0°♍	
conjunction	1713 Aug 24 20:10	1°♍22'23	1°27'18
minimum elong	1713 Aug 24 20:07	1°♍22'22	1°27'19
max. Earth dist.	1713 Aug 25 00:12	1°♍23'39	10.27809 AU
morning rise	1713 Sep 11 12:26	3°♍35'57	
retrograde	1713 Dec 21 22:11	11°♍19'40	
opposition	1714 Feb 26 20:22	7°♍55'44	2°02'14
min. Earth dist.	1714 Feb 26 16:30	7°♍56'30	8.33110 AU
direct	1714 May 06 20:22	4°♍27'02	
evening set	1714 Aug 21 02:37	12°♍25'42	
conjunction	1714 Sep 07 18:09	14°♍37'39	1°48'50
minimum elong	1714 Sep 07 18:06	14°♍37'38	1°48'50
max. Earth dist.	1714 Sep 07 22:07	14°♍38'54	10.38565 AU
morning rise	1714 Sep 25 05:07	16°♍48'11	
retrograde	1715 Jan 04 00:14	24°♍23'12	
opposition	1715 Mar 12 04:28	21°♍00'39	2°24'56
min. Earth dist.	1715 Mar 12 00:47	21°♍01'23	8.44315 AU
direct	1715 May 20 16:13	17°♍32'56	
evening set	1715 Sep 03 19:00	25°♍24'18	
conjunction	1715 Sep 21 05:40	27°♍33'17	2°04'18
minimum elong	1715 Sep 21 05:38	27°♍33'17	2°04'18
max. Earth dist.	1715 Sep 21 09:23	27°♍34'26	10.50010 AU
morning rise	1715 Oct 08 11:27	29°♍40'49	
	1715 Oct 11 02:54	0°♎	
retrograde	1716 Jan 16 17:57	7°♎07'33	
opposition	1716 Mar 24 07:03	3°♎46'21	2°39'48
min. Earth dist.	1716 Mar 24 04:29	3°♎46'52	8.55911 AU
direct	1716 Jun 02 06:10	0°♎19'48	
evening set	1716 Sep 16 01:09	8°♎03'20	
conjunction	1716 Oct 03 07:03	10°♎09'28	2°13'22
minimum elong	1716 Oct 03 07:01	10°♎09'28	2°13'22
max. Earth dist.	1716 Oct 03 09:30	10°♎10'14	10.61557 AU
morning rise	1716 Oct 20 08:12	12°♎14'12	
retrograde	1717 Jan 28 05:02	19°♎33'20	
opposition	1717 Apr 06 04:14	16°♎13'24	2°46'41
min. Earth dist.	1717 Apr 06 02:59	16°♎13'39	8.67327 AU
direct	1717 Jun 15 13:34	12°♎48'07	
evening set	1717 Sep 28 21:08	20°♎23'39	
conjunction	1717 Oct 15 22:44	22°♎27'13	2°16'02
minimum elong	1717 Oct 15 22:44	22°♎27'13	2°16'02
max. Earth dist.	1717 Oct 15 23:29	22°♎27'27	10.72667 AU
morning rise	1717 Nov 01 20:04	24°♎29'29	
	1717 Dec 26 14:44	0°♏	
retrograde	1718 Feb 09 10:10	1°♏41'57	
	1718 Mar 27 17:23	30°℞♎	
opposition	1718 Apr 18 20:35	28°♎23'05	2°45'51
min. Earth dist.	1718 Apr 18 20:03	28°♎23'11	8.78042 AU
direct	1718 Jun 28 13:58	24°♎59'09	
	1718 Sep 19 15:29	0°♏	
evening set	1718 Oct 11 07:23	2°♏26'48	
conjunction	1718 Oct 28 05:31	4°♏28'10	2°12'37
minimum elong	1718 Oct 28 05:32	4°♏28'10	2°12'36
max. Earth dist.	1718 Oct 28 05:21	4°♏28'07	10.82852 AU
morning rise	1718 Nov 13 23:49	6°♏28'22	
retrograde	1719 Feb 21 10:50	13°♏35'20	
opposition	1719 May 01 08:28	10°♏17'17	2°37'52
min. Earth dist.	1719 May 01 08:04	10°♏17'22	8.87592 AU
direct	1719 Jul 11 08:57	6°♏54'40	
evening set	1719 Oct 23 09:26	14°♏14'59	
	1719 Oct 29 18:34	15°♏	
conjunction	1719 Nov 09 04:56	16°♏14'32	2°03'36
minimum elong	1719 Nov 09 04:58	16°♏14'33	2°03'36
max. Earth dist.	1719 Nov 09 04:39	16°♏14'27	10.91682 AU
morning rise	1719 Nov 25 20:56	18°♏13'07	
retrograde	1720 Mar 04 09:46	25°♏15'46	
opposition	1720 May 12 16:29	21°♏58'20	2°23'29
min. Earth dist.	1720 May 12 16:54	21°♏58'15	8.95587 AU
direct	1720 Jul 22 20:29	18°♏36'57	
evening set	1720 Nov 03 04:36	25°♏50'41	
conjunction	1720 Nov 19 22:03	27°♏48'53	1°49'39
minimum elong	1720 Nov 19 22:06	27°♏48'54	1°49'39
max. Earth dist.	1720 Nov 19 20:52	27°♏48'32	10.98795 AU
morning rise	1720 Dec 06 12:37	29°♏46'18	
	1720 Dec 08 12:00	0°♐	
retrograde	1721 Mar 16 04:30	6°♐45'58	
opposition	1721 May 24 21:50	3°♐28'54	2°03'34

min. Earth dist.	1721 May 24 23:40	3°♐28'33	9.01710 AU
direct	1721 Aug 04 01:38	0°♐08'34	
evening set	1721 Nov 14 18:14	7°♐16'47	
conjunction	1721 Dec 01 10:10	9°♐14'01	1°31'28
minimum elong	1721 Dec 01 10:12	9°♐14'02	1°31'28
max. Earth dist.	1721 Dec 01 07:14	9°♐13'09	11.03905 AU
morning rise	1721 Dec 18 00:10	11°♐10'42	
retrograde	1722 Mar 27 22:20	18°♐08'56	
opposition	1722 Jun 06 01:09	14°♐51'55	1°39'01
min. Earth dist.	1722 Jun 06 04:17	14°♐51'20	9.05697 AU
direct	1722 Aug 16 05:15	11°♐32'27	
evening set	1722 Nov 26 04:05	18°♐36'25	
conjunction	1722 Dec 12 19:12	20°♐33'07	1°09'49
minimum elong	1722 Dec 12 19:14	20°♐33'07	1°09'50
max. Earth dist.	1722 Dec 12 14:59	20°♐31'52	11.06768 AU
morning rise	1722 Dec 29 09:14	22°♐29'30	
retrograde	1723 Apr 08 16:57	29°♐27'49	
opposition	1723 Jun 18 03:06	26°♐10'35	1°10'48
min. Earth dist.	1723 Jun 18 06:38	26°♐09'56	9.07338 AU
direct	1723 Aug 28 04:11	22°♐51'48	
evening set	1723 Dec 07 11:49	29°♐52'57	
	1723 Dec 08 12:17	0°♑	
conjunction	1723 Dec 24 02:45	1°♑49'33	0°45'33
minimum elong	1723 Dec 24 02:46	1°♑49'33	0°45'33
max. Earth dist.	1723 Dec 23 22:22	1°♑48'15	11.07220 AU
morning rise	1724 Jan 09 17:08	3°♑46'03	
retrograde	1724 Apr 19 13:44	10°♑46'08	
opposition	1724 Jun 29 05:13	7°♑28'25	0°39'52
min. Earth dist.	1724 Jun 29 08:59	7°♑27'43	9.06551 AU
direct	1724 Sep 08 00:53	4°♑10'05	
evening set	1724 Dec 17 19:17	11°♑09'56	
conjunction	1725 Jan 03 10:16	13°♑06'48	0°19'28
minimum elong	1725 Jan 03 10:16	13°♑06'48	0°19'28
max. Earth dist.	1725 Jan 03 05:20	13°♑05'22	11.05271 AU
morning rise	1725 Jan 20 01:30	15°♑03'49	
retrograde	1725 May 01 13:49	22°♑07'12	
opposition	1725 Jul 11 08:32	18°♑48'45	0°07'17
min. Earth dist.	1725 Jul 11 12:57	18°♑47'57	9.03431 AU
direct	1725 Sep 19 20:08	15°♑30'37	
desc. node	1725 Oct 02 05:00	15°♑38'10	
evening set	1725 Dec 29 04:14	22°♑30'40	
conjunction	1726 Jan 14 19:30	24°♑28'08	-0°07'35
minimum elong	1726 Jan 14 19:30	24°♑28'08	0°07'35
behind sun begin	1726 Jan 14 13:09	24°♑26'17	
behind sun end	1726 Jan 15 01:51	24°♑30'00	
max. Earth dist.	1726 Jan 14 13:20	24°♑26'20	11.01062 AU
morning rise	1726 Jan 31 12:09	26°♑26'02	
	1726 Mar 05 18:23	0°♒	
retrograde	1726 May 13 15:45	3°♒34'13	
opposition	1726 Jul 23 13:48	0°♒14'44	-0°25'54
min. Earth dist.	1726 Jul 23 19:01	0°♒13'46	8.98152 AU
	1726 Jul 26 21:24	30°℞♑	
direct	1726 Oct 01 15:42	26°♑56'30	
	1726 Dec 03 04:32	0°♒	
evening set	1727 Jan 09 16:01	3°♒58'17	
conjunction	1727 Jan 26 08:07	5°♒56'42	-0°34'30
minimum elong	1727 Jan 26 08:05	5°♒56'42	0°34'30
max. Earth dist.	1727 Jan 26 01:58	5°♒54'53	10.94781 AU
morning rise	1727 Feb 12 02:22	7°♒55'47	
	1727 May 11 14:49	15°♒	
retrograde	1727 May 26 00:05	15°♒10'09	
	1727 Jun 09 12:18	15°℞♒	
opposition	1727 Aug 04 21:54	11°♒49'26	-0°58'30
min. Earth dist.	1727 Aug 05 02:47	11°♒48'31	8.90921 AU
direct	1727 Oct 13 15:07	8°♒30'51	
	1728 Jan 16 05:26	15°♒	
evening set	1728 Jan 21 08:19	15°♒35'49	
conjunction	1728 Feb 07 01:37	17°♒35'32	-1°00'22
minimum elong	1728 Feb 07 01:35	17°♒35'32	1°00'22
max. Earth dist.	1728 Feb 06 20:29	17°♒34'00	10.86658 AU
morning rise	1728 Feb 23 21:36	19°♒36'07	
retrograde	1728 Jun 06 14:58	26°♒57'54	
opposition	1728 Aug 16 09:43	23°♒35'48	-1°29'16
min. Earth dist.	1728 Aug 16 13:37	23°♒35'04	8.82016 AU
direct	1728 Oct 24 14:52	20°♒16'40	
evening set	1729 Feb 01 06:43	27°♒26'16	
conjunction	1729 Feb 18 01:33	29°♒27'35	-1°24'08
minimum elong	1729 Feb 18 01:31	29°♒27'34	1°24'08
max. Earth dist.	1729 Feb 17 21:04	29°♒26'13	10.77021 AU
	1729 Feb 22 12:25	0°♓	
morning rise	1729 Mar 06 23:42	1°♓29'58	
retrograde	1729 Jun 19 12:07	9°♓00'12	
opposition	1729 Aug 29 02:11	5°♓36'37	-1°56'50
min. Earth dist.	1729 Aug 29 05:21	5°♓36'01	8.71793 AU
direct	1729 Nov 05 18:54	2°♓16'44	
evening set	1730 Feb 13 12:30	9°♓32'18	
conjunction	1730 Mar 02 09:17	11°♓35'32	-1°44'38
minimum elong	1730 Mar 02 09:14	11°♓35'31	1°44'38
max. Earth dist.	1730 Mar 02 04:40	11°♓34'07	10.66260 AU
morning rise	1730 Mar 19 10:08	13°♓40'01	
retrograde	1730 Jul 02 17:08	21°♓19'23	
opposition	1730 Sep 10 23:51	17°♓54'20	-2°19'49
min. Earth dist.	1730 Sep 11 02:55	17°♓53'45	8.60661 AU
direct	1730 Nov 18 04:11	14°♓33'31	
evening set	1731 Feb 26 02:51	21°♓56'11	
conjunction	1731 Mar 15 02:14	24°♓01'38	-2°00'44
minimum elong	1731 Mar 15 02:12	24°♓01'37	2°00'44
max. Earth dist.	1731 Mar 14 22:09	24°♓00'22	10.54817 AU
morning rise	1731 Apr 01 06:12	26°♓08'29	
	1731 May 05 12:46	0°♈	
retrograde	1731 Jul 16 04:50	3°♈57'14	
opposition	1731 Sep 24 02:59	0°♈30'48	-2°36'46
min. Earth dist.	1731 Sep 24 05:36	0°♈30'17	8.49099 AU
	1731 Sep 30 17:01	30°℞♓	
direct	1731 Nov 30 19:22	27°♓08'55	
	1732 Jan 27 18:51	0°♈	
evening set	1732 Mar 10 02:34	4°♈39'34	
conjunction	1732 Mar 27 05:19	6°♈47'29	-2°11'19
minimum elong	1732 Mar 27 05:18	6°♈47'29	2°11'19
max. Earth dist.	1732 Mar 27 02:47	6°♈46'41	10.43210 AU
morning rise	1732 Apr 13 12:45	8°♈56'53	
retrograde	1732 Jul 28 23:28	16°♈54'50	
opposition	1732 Oct 06 12:01	13°♈27'07	-2°46'19
min. Earth dist.	1732 Oct 06 13:27	13°♈26'50	8.37649 AU
direct	1732 Dec 12 18:48	10°♈04'05	
evening set	1733 Mar 23 12:11	17°♈43'10	
conjunction	1733 Apr 09 18:59	19°♈53'47	-2°15'26
minimum elong	1733 Apr 09 19:00	19°♈53'47	2°15'26
max. Earth dist.	1733 Apr 09 18:25	19°♈53'36	10.32009 AU
morning rise	1733 Apr 27 06:21	22°♈05'53	
	1733 Jul 27 21:16	0°♉	
retrograde	1733 Aug 12 02:00	0°♉12'10	

	1733 Aug 27 08:42	30°℞♈	
opposition	1733 Oct 20 02:40	26°♈43'22	-2°47'21
min. Earth dist.	1733 Oct 20 02:26	26°♈43'25	8.26888 AU
direct	1733 Dec 26 00:28	23°♈19'10	
	1734 Mar 28 08:17	0°♉	
evening set	1734 Apr 06 08:08	1°♉06'45	
conjunction	1734 Apr 23 19:27	3°♉20'07	-2°12'20
minimum elong	1734 Apr 23 19:28	3°♉20'08	2°12'21
max. Earth dist.	1734 Apr 23 20:11	3°♉20'21	10.21810 AU
morning rise	1734 May 11 11:04	5°♉34'55	
retrograde	1734 Aug 26 11:14	13°♉48'01	
opposition	1734 Nov 02 22:24	10°♉18'28	-2°39'09
min. Earth dist.	1734 Nov 02 20:59	10°♉18'45	8.17413 AU
direct	1735 Jan 08 12:10	6°♉53'04	
evening set	1735 Apr 20 13:46	14°♉48'45	
	1735 Apr 22 01:17	15°♉	
conjunction	1735 May 08 05:47	17°♉04'46	-2°01'45
minimum elong	1735 May 08 05:50	17°♉04'47	2°01'45
max. Earth dist.	1735 May 08 07:34	17°♉05'21	10.13214 AU
morning rise	1735 May 26 01:44	19°♉22'05	
retrograde	1735 Sep 10 00:16	27°♉39'56	
opposition	1735 Nov 16 22:39	24°♉10'00	-2°21'34
min. Earth dist.	1735 Nov 16 20:24	24°♉10'27	8.09806 AU
direct	1736 Jan 22 08:39	20°♉43'28	
evening set	1736 May 04 03:49	28°♉46'19	
	1736 May 13 17:15	0°♊	
conjunction	1736 May 22 00:27	1°♊04'39	-1°43'52
minimum elong	1736 May 22 00:31	1°♊04'40	1°43'53
max. Earth dist.	1736 May 22 03:13	1°♊05'33	10.06766 AU
morning rise	1736 Jun 09 00:23	3°♊24'03	
retrograde	1736 Sep 23 14:27	11°♊44'13	
opposition	1736 Nov 30 02:08	8°♊14'16	-1°55'15
min. Earth dist.	1736 Nov 29 23:21	8°♊14'51	8.04568 AU
direct	1737 Feb 04 12:01	4°♊46'45	
evening set	1737 May 19 01:04	12°♊55'21	
conjunction	1737 Jun 06 01:43	15°♊15'27	-1°19'34
minimum elong	1737 Jun 06 01:46	15°♊15'28	1°19'34
max. Earth dist.	1737 Jun 06 05:30	15°♊16'41	10.02896 AU
morning rise	1737 Jun 24 04:39	17°♊36'17	
retrograde	1737 Oct 08 04:36	25°♊56'03	
opposition	1737 Dec 14 07:12	22°♊26'30	-1°21'37
min. Earth dist.	1737 Dec 14 03:47	22°♊27'12	8.02060 AU
direct	1738 Feb 18 20:13	18°♊58'10	
evening set	1738 Jun 03 03:00	27°♊10'42	
conjunction	1738 Jun 21 06:30	29°♊31'47	-0°50'16
minimum elong	1738 Jun 21 06:32	29°♊31'48	0°50'16
max. Earth dist.	1738 Jun 21 11:30	29°♊33'25	10.01867 AU
	1738 Jun 24 20:58	0°♋	
morning rise	1738 Jul 09 10:59	1°♋53'11	
retrograde	1738 Oct 22 16:58	10°♋09'59	
opposition	1738 Dec 28 12:32	6°♋41'08	-0°42'52
min. Earth dist.	1738 Dec 28 08:09	6°♋42'02	8.02460 AU
direct	1739 Mar 05 07:24	3°♋12'15	
evening set	1739 Jun 18 06:39	11°♋26'35	
conjunction	1739 Jul 06 11:23	13°♋47'43	-0°17'56
minimum elong	1739 Jul 06 11:24	13°♋47'44	0°17'56
max. Earth dist.	1739 Jul 06 17:33	13°♋49'43	10.03750 AU
morning rise	1739 Jul 24 15:42	16°♋08'42	
retrograde	1739 Nov 06 01:49	24°♋20'18	
opposition	1740 Jan 11 16:27	20°♋52'24	-0°01'40
min. Earth dist.	1740 Jan 11 11:13	20°♋53'29	8.05738 AU
asc. node	1740 Jan 26 23:17	19°♋38'26	
direct	1740 Mar 18 20:18	17°♋23'13	
evening set	1740 Jul 02 09:19	25°♋37'11	
conjunction	1740 Jul 20 13:31	27°♋57'23	0°15'21
minimum elong	1740 Jul 20 13:30	27°♋57'23	0°15'21
behind sun begin	1740 Jul 20 11:47	27°♋56'50	
behind sun end	1740 Jul 20 15:14	27°♋57'56	
max. Earth dist.	1740 Jul 20 20:19	27°♋59'35	10.08402 AU
	1740 Aug 05 10:16	0°♌	
morning rise	1740 Aug 07 15:53	0°♌17'01	
retrograde	1740 Nov 19 04:27	8°♌21'34	
opposition	1741 Jan 24 17:20	4°♌54'51	0°39'09
min. Earth dist.	1741 Jan 24 11:51	4°♌55'58	8.11647 AU
direct	1741 Apr 02 08:24	1°♌25'36	
evening set	1741 Jul 17 07:56	9°♌37'06	
conjunction	1741 Aug 04 09:53	11°♌55'32	0°47'15
minimum elong	1741 Aug 04 09:51	11°♌55'31	0°47'15
max. Earth dist.	1741 Aug 04 16:31	11°♌57'39	10.15457 AU
morning rise	1741 Aug 22 08:46	14°♌13'01	
	1741 Aug 28 15:40	15°♌	
retrograde	1741 Dec 03 00:07	22°♌09'20	
opposition	1742 Feb 07 14:18	18°♌43'55	1°17'00
min. Earth dist.	1742 Feb 07 09:33	18°♌44'53	8.19719 AU
direct	1742 Apr 16 17:38	15°♌14'53	
evening set	1742 Jul 31 23:46	23°♌22'06	
conjunction	1742 Aug 18 21:59	25°♌38'05	1°15'56
minimum elong	1742 Aug 18 21:56	25°♌38'05	1°15'57
max. Earth dist.	1742 Aug 19 03:21	25°♌39'48	10.24362 AU
morning rise	1742 Sep 05 16:20	27°♌52'53	
	1742 Sep 23 05:05	0°♍	
retrograde	1742 Dec 16 12:39	5°♍40'31	
opposition	1743 Feb 21 06:23	2°♍16'28	1°49'41
min. Earth dist.	1743 Feb 21 03:00	2°♍17'09	8.29350 AU
	1743 Mar 24 04:23	30°℞♌	
direct	1743 Apr 30 22:10	28°♌47'58	
	1743 Jun 07 11:32	0°♍	
evening set	1743 Aug 15 07:05	6°♍49'33	
conjunction	1743 Sep 02 00:42	9°♍02'46	1°39'54
minimum elong	1743 Sep 02 00:39	9°♍02'45	1°39'55
max. Earth dist.	1743 Sep 02 04:07	9°♍03'50	10.34511 AU
morning rise	1743 Sep 19 14:01	11°♍14'37	
retrograde	1743 Dec 29 17:23	18°♍53'35	
opposition	1744 Mar 05 17:06	15°♍30'56	2°15'41
min. Earth dist.	1744 Mar 05 14:52	15°♍31'23	8.39960 AU
direct	1744 May 13 22:01	12°♍03'12	
evening set	1744 Aug 28 04:44	19°♍58'09	
conjunction	1744 Sep 14 17:27	22°♍08'27	1°58'08
minimum elong	1744 Sep 14 17:24	22°♍08'26	1°58'08
max. Earth dist.	1744 Sep 14 19:14	22°♍09'01	10.45389 AU
morning rise	1744 Oct 02 01:39	24°♍17'21	
	1744 Nov 26 03:39	0°♎	
retrograde	1745 Jan 10 13:19	1°♎47'59	
	1745 Feb 26 08:05	30°℞♍	
opposition	1745 Mar 18 22:32	28°♍26'38	2°34'05
min. Earth dist.	1745 Mar 18 20:47	28°♍26'59	8.51054 AU
direct	1745 May 27 17:02	24°♍59'53	
	1745 Aug 17 11:16	0°♎	
evening set	1745 Sep 10 16:03	2°♎47'24	
conjunction	1745 Sep 27 23:58	4°♎54'50	2°10'03
minimum elong	1745 Sep 27 23:56	4°♎54'49	2°10'04
max. Earth dist.	1745 Sep 28 00:58	4°♎55'08	10.56513 AU

morning rise	1745 Oct 15 03:15	7°♎00'51	
retrograde	1746 Jan 23 04:23	14°♎23'45	
opposition	1746 Mar 31 22:38	11°♎03'32	2°44'30
min. Earth dist.	1746 Mar 31 21:06	11°♎03'50	8.62141 AU
direct	1746 Jun 10 04:10	7°♎37'54	
evening set	1746 Sep 23 16:59	15°♎17'32	
conjunction	1746 Oct 10 20:36	17°♎22'19	2°15'32
minimum elong	1746 Oct 10 20:35	17°♎22'18	2°15'32
max. Earth dist.	1746 Oct 10 21:28	17°♎22'35	10.67399 AU
morning rise	1746 Oct 27 19:32	19°♎25'44	
retrograde	1747 Feb 04 14:10	26°♎41'38	
opposition	1747 Apr 13 17:38	23°♎22'23	2°47'02
min. Earth dist.	1747 Apr 13 17:04	23°♎22'30	8.72739 AU
direct	1747 Jun 23 06:41	19°♎57'53	
evening set	1747 Oct 06 08:01	27°♎29'35	
conjunction	1747 Oct 23 07:50	29°♎32'03	2°14'44
minimum elong	1747 Oct 23 07:51	29°♎32'03	2°14'44
max. Earth dist.	1747 Oct 23 07:47	29°♎32'02	10.77568 AU
	1747 Oct 27 04:16	0°♏	
morning rise	1747 Nov 09 03:21	1°♏33'17	
retrograde	1748 Feb 16 16:26	8°♏43'08	
opposition	1748 Apr 25 07:56	5°♏24'39	2°42'07
min. Earth dist.	1748 Apr 25 08:47	5°♏24'30	8.82385 AU
direct	1748 Jul 05 04:37	2°♏01'15	
evening set	1748 Oct 17 14:11	9°♏25'25	
conjunction	1748 Nov 03 10:49	11°♏25'54	2°08'06
minimum elong	1748 Nov 03 10:51	11°♏25'55	2°08'05
max. Earth dist.	1748 Nov 03 09:08	11°♏25'24	10.86588 AU
morning rise	1748 Nov 20 03:51	13°♏25'20	
	1748 Dec 03 22:17	15°♏	
retrograde	1749 Feb 27 15:24	20°♏30'21	
opposition	1749 May 07 18:06	17°♏12'24	2°30'27
min. Earth dist.	1749 May 07 19:57	17°♏12'03	8.90686 AU
	1749 Jun 08 20:38	15°℞♏	
direct	1749 Jul 17 20:25	13°♏50'04	
	1749 Aug 25 03:44	15°♏	
evening set	1749 Oct 29 12:35	21°♏07'19	
conjunction	1749 Nov 15 06:51	23°♏06'16	1°56'13
minimum elong	1749 Nov 15 06:54	23°♏06'17	1°56'12
max. Earth dist.	1749 Nov 15 04:10	23°♏05'28	10.94113 AU
morning rise	1749 Dec 01 22:13	25°♏04'22	
	1750 Jan 19 14:47	0°♐	
retrograde	1750 Mar 11 11:13	2°♐05'51	
	1750 May 03 14:25	30°℞♏	
opposition	1750 May 20 00:54	28°♏48'10	2°12'49
min. Earth dist.	1750 May 20 02:45	28°♏47'49	8.97330 AU
direct	1750 Jul 30 05:47	25°♏26'51	
	1750 Oct 17 07:22	0°♐	
evening set	1750 Nov 10 04:33	2°♐38'04	
conjunction	1750 Nov 26 21:18	4°♐35'55	1°39'45
minimum elong	1750 Nov 26 21:20	4°♐35'55	1°39'45
max. Earth dist.	1750 Nov 26 18:48	4°♐35'10	10.99858 AU
morning rise	1750 Dec 13 11:37	6°♐33'06	
retrograde	1751 Mar 23 06:49	13°♐32'29	
opposition	1751 Jun 01 05:10	10°♐14'52	1°50'08
min. Earth dist.	1751 Jun 01 07:08	10°♐14'30	9.02072 AU
direct	1751 Aug 11 10:56	6°♐54'27	
evening set	1751 Nov 21 16:11	14°♐00'50	
conjunction	1751 Dec 08 07:53	15°♐57'58	1°19'30
minimum elong	1751 Dec 08 07:55	15°♐57'59	1°19'30
max. Earth dist.	1751 Dec 08 05:06	15°♐57'09	11.03610 AU

morning rise	1751 Dec 24 21:49	17°♐54'39	
retrograde	1752 Apr 03 01:31	24°♐53'23	
opposition	1752 Jun 12 07:52	21°♐35'40	1°23'20
min. Earth dist.	1752 Jun 12 10:45	21°♐35'08	9.04746 AU
direct	1752 Aug 22 10:13	18°♐16'00	
evening set	1752 Dec 02 01:00	25°♐18'52	
conjunction	1752 Dec 18 16:00	27°♐15'40	0°56'14
minimum elong	1752 Dec 18 16:02	27°♐15'41	0°56'14
max. Earth dist.	1752 Dec 18 11:52	27°♐14'27	11.05244 AU
morning rise	1753 Jan 04 06:18	29°♐12'17	
	1753 Jan 11 05:33	0°♑	
retrograde	1753 Apr 14 19:48	6°♑11'56	
opposition	1753 Jun 24 10:14	2°♑53'53	0°53'25
min. Earth dist.	1753 Jun 24 13:57	2°♑53'11	9.05269 AU
	1753 Aug 11 08:09	30°℞♐	
direct	1753 Sep 03 07:49	29°♐34'48	
	1753 Sep 26 02:26	0°♑	
evening set	1753 Dec 13 08:27	6°♑35'33	
conjunction	1753 Dec 29 23:20	8°♑32'24	0°30'48
minimum elong	1753 Dec 29 23:21	8°♑32'25	0°30'48
max. Earth dist.	1753 Dec 29 18:48	8°♑31'04	11.04704 AU
morning rise	1754 Jan 15 14:24	10°♑29'19	
retrograde	1754 Apr 26 18:06	17°♑31'27	
opposition	1754 Jul 06 13:01	14°♑12'50	0°21'22
min. Earth dist.	1754 Jul 06 16:35	14°♑12'11	9.03615 AU
direct	1754 Sep 15 05:14	10°♑54'10	
evening set	1754 Dec 24 16:34	17°♑54'17	
conjunction	1755 Jan 10 07:50	19°♑51'33	0°04'08
minimum elong	1755 Jan 10 07:50	19°♑51'33	0°04'08
behind sun begin	1755 Jan 10 00:57	19°♑49'33	
behind sun end	1755 Jan 10 14:42	19°♑53'34	
max. Earth dist.	1755 Jan 10 03:55	19°♑50'26	11.01989 AU
morning rise	1755 Jan 26 23:52	21°♑49'07	
desc. node	1755 Mar 07 20:30	25°♑59'01	
retrograde	1755 May 08 19:34	28°♑55'13	
opposition	1755 Jul 18 17:05	25°♑35'50	-0°11'42
min. Earth dist.	1755 Jul 18 20:03	25°♑35'17	8.99831 AU
direct	1755 Sep 27 00:36	22°♑17'23	
evening set	1756 Jan 05 02:59	29°♑18'23	
	1756 Jan 11 01:05	0°♒	
conjunction	1756 Jan 21 18:49	1°♒16'25	-0°23'02
minimum elong	1756 Jan 21 18:48	1°♒16'25	0°23'01
max. Earth dist.	1756 Jan 21 15:02	1°♒15'18	10.97189 AU
morning rise	1756 Feb 07 12:11	3°♒14'57	
retrograde	1756 May 20 02:32	10°♒26'29	
opposition	1756 Jul 29 23:53	7°♒06'10	-0°44'41
min. Earth dist.	1756 Jul 30 02:53	7°♒05'37	8.94053 AU
direct	1756 Oct 07 21:08	3°♒47'42	
evening set	1757 Jan 15 17:10	10°♒51'05	
conjunction	1757 Feb 01 09:47	12°♒50'11	-0°49'28
minimum elong	1757 Feb 01 09:46	12°♒50'11	0°49'27
max. Earth dist.	1757 Feb 01 05:27	12°♒48'53	10.90490 AU
morning rise	1757 Feb 18 04:58	14°♒50'03	
	1757 Feb 19 15:00	15°♒	
retrograde	1757 Jun 01 14:00	22°♒08'18	
opposition	1757 Aug 11 10:10	18°♒46'55	-1°16'20
min. Earth dist.	1757 Aug 11 13:27	18°♒46'18	8.86508 AU
direct	1757 Oct 19 19:03	15°♒28'12	
evening set	1758 Jan 27 12:46	22°♒35'27	
conjunction	1758 Feb 13 06:42	24°♒35'56	-1°14'14
minimum elong	1758 Feb 13 06:40	24°♒35'55	1°14'13

max. Earth dist.	1758 Feb 13 02:31	24°♒34'40	10.82148 AU
morning rise	1758 Mar 02 03:58	26°♒37'24	
	1758 Apr 01 17:22	0°♓	
retrograde	1758 Jun 14 06:57	4°♓03'30	
opposition	1758 Aug 24 00:25	0°♓40'53	-1°45'22
min. Earth dist.	1758 Aug 24 03:31	0°♓40'18	8.77484 AU
	1758 Sep 02 01:50	30°℞♒	
direct	1758 Oct 31 22:37	27°♒21'42	
	1758 Dec 27 14:54	0°♓	
evening set	1759 Feb 08 15:05	4°♓34'10	
conjunction	1759 Feb 25 10:55	6°♓36'22	-1°36'13
minimum elong	1759 Feb 25 10:53	6°♓36'22	1°36'12
max. Earth dist.	1759 Feb 25 08:03	6°♓35'30	10.72480 AU
morning rise	1759 Mar 14 10:28	8°♓39'44	
retrograde	1759 Jun 27 08:49	16°♓14'29	
opposition	1759 Sep 05 19:30	12°♓50'35	-2°10'24
min. Earth dist.	1759 Sep 05 21:28	12°♓50'12	8.67328 AU
direct	1759 Nov 13 05:58	9°♓30'45	
evening set	1760 Feb 21 01:18	16°♓49'34	
conjunction	1760 Mar 08 23:28	18°♓53'46	-1°54'17
minimum elong	1760 Mar 08 23:26	18°♓53'46	1°54'17
max. Earth dist.	1760 Mar 08 21:36	18°♓53'12	10.61870 AU
morning rise	1760 Mar 26 01:43	20°♓59'19	
retrograde	1760 Jul 09 18:16	28°♓43'09	
opposition	1760 Sep 17 19:57	25°♓17'56	-2°30'01
min. Earth dist.	1760 Sep 17 20:56	25°♓17'44	8.56446 AU
direct	1760 Nov 24 17:07	21°♓57'14	
evening set	1761 Mar 04 20:34	29°♓23'22	
	1761 Mar 09 20:05	0°♈	
conjunction	1761 Mar 21 21:37	1°♈29'52	-2°07'19
minimum elong	1761 Mar 21 21:35	1°♈29'51	2°07'20
max. Earth dist.	1761 Mar 21 19:54	1°♈29'20	10.50764 AU
morning rise	1761 Apr 08 03:11	3°♈37'48	
retrograde	1761 Jul 23 09:37	11°♈30'40	
opposition	1761 Oct 01 01:54	8°♈04'12	-2°42'51
min. Earth dist.	1761 Oct 01 02:38	8°♈04'03	8.45285 AU
direct	1761 Dec 07 12:19	4°♈42'26	
evening set	1762 Mar 18 01:21	12°♈16'35	
conjunction	1762 Apr 04 05:59	14°♈25'37	-2°14'18
minimum elong	1762 Apr 04 05:59	14°♈25'37	2°14'19
max. Earth dist.	1762 Apr 04 04:04	14°♈25'01	10.39612 AU
morning rise	1762 Apr 21 15:27	16°♈36'10	
retrograde	1762 Aug 06 08:20	24°♈37'33	
opposition	1762 Oct 14 13:27	21°♈09'59	-2°47'39
min. Earth dist.	1762 Oct 14 14:20	21°♈09'48	8.34308 AU
direct	1762 Dec 20 14:09	17°♈47'02	
evening set	1763 Mar 31 15:58	25°♈29'36	
conjunction	1763 Apr 18 00:52	27°♈41'20	-2°14'24
minimum elong	1763 Apr 18 00:53	27°♈41'21	2°14'24
max. Earth dist.	1763 Apr 17 23:41	27°♈40'58	10.28931 AU
morning rise	1763 May 05 14:30	29°♈54'34	
	1763 May 06 07:56	0°♉	
retrograde	1763 Aug 20 13:13	8°♉03'29	
opposition	1763 Oct 28 06:15	4°♉35'00	-2°43'33
min. Earth dist.	1763 Oct 28 06:37	4°♉34'55	8.24109 AU
direct	1764 Jan 02 23:15	1°♉10'48	
evening set	1764 Apr 13 16:21	9°♉01'41	
conjunction	1764 May 01 06:03	11°♉16'09	-2°07'07
minimum elong	1764 May 01 06:05	11°♉16'10	2°07'08
max. Earth dist.	1764 May 01 06:24	11°♉16'16	10.19385 AU
morning rise	1764 May 18 23:58	13°♉32'00	
	1764 May 30 20:59	15°♉	
retrograde	1764 Sep 02 22:44	21°♉46'41	
opposition	1764 Nov 10 03:45	18°♉17'32	-2°30'08
min. Earth dist.	1764 Nov 10 02:54	18°♉17'42	8.15367 AU
	1765 Jan 03 19:08	15°℞♉	
direct	1765 Jan 15 16:37	14°♉52'04	
	1765 Jan 27 12:11	15°♉	
evening set	1765 Apr 28 01:48	22°♉50'34	
conjunction	1765 May 15 20:23	25°♉07'35	-1°52'28
minimum elong	1765 May 15 20:26	25°♉07'36	1°52'28
max. Earth dist.	1765 May 15 22:25	25°♉08'14	10.11620 AU
morning rise	1765 Jun 02 18:23	27°♉25'44	
	1765 Jun 23 19:45	0°♊	
retrograde	1765 Sep 17 10:57	5°♊43'56	
opposition	1765 Nov 24 04:53	2°♊14'24	-2°07'41
min. Earth dist.	1765 Nov 24 02:43	2°♊14'51	8.08669 AU
	1765 Dec 23 23:32	30°℞♉	
direct	1766 Jan 29 15:53	28°♉47'44	
	1766 Mar 06 20:54	0°♊	
evening set	1766 May 12 19:05	6°♊52'40	
conjunction	1766 May 30 18:01	9°♊11'45	-1°30'58
minimum elong	1766 May 30 18:04	9°♊11'47	1°30'58
max. Earth dist.	1766 May 30 21:26	9°♊12'52	10.06152 AU
morning rise	1766 Jun 17 19:25	11°♊31'40	
retrograde	1766 Oct 02 01:00	19°♊50'48	
opposition	1766 Dec 08 08:18	16°♊21'15	-1°37'15
min. Earth dist.	1766 Dec 08 05:10	16°♊21'54	8.04462 AU
direct	1767 Feb 12 19:59	12°♊53'29	
evening set	1767 May 27 18:00	21°♊03'15	
conjunction	1767 Jun 14 20:18	23°♊23'44	-1°03'49
minimum elong	1767 Jun 14 20:21	23°♊23'45	1°03'49
max. Earth dist.	1767 Jun 15 00:29	23°♊25'06	10.03348 AU
morning rise	1767 Jul 02 23:58	25°♊44'41	
	1767 Aug 08 01:15	0°♋	
retrograde	1767 Oct 16 14:19	4°♋02'07	
opposition	1767 Dec 22 12:43	0°♋32'54	-1°00'41
min. Earth dist.	1767 Dec 22 09:14	0°♋33'38	8.03035 AU
	1767 Dec 29 04:23	30°℞♊	
direct	1768 Feb 27 04:17	27°♊04'14	
	1768 Apr 25 08:09	0°♋	
evening set	1768 Jun 10 19:58	5°♋16'55	
conjunction	1768 Jun 29 00:13	7°♋37'56	-0°32'44
minimum elong	1768 Jun 29 00:15	7°♋37'56	0°32'43
max. Earth dist.	1768 Jun 29 04:40	7°♋39'23	10.03387 AU
morning rise	1768 Jul 17 04:42	9°♋59'00	
retrograde	1768 Oct 30 00:26	18°♋12'22	
opposition	1769 Jan 04 16:28	14°♋43'49	-0°20'25
min. Earth dist.	1769 Jan 04 13:00	14°♋44'32	8.04467 AU
direct	1769 Mar 12 16:03	11°♋14'29	
evening set	1769 Jun 25 22:28	19°♋28'03	
asc. node	1769 Jul 11 02:18	21°♋25'05	
conjunction	1769 Jul 14 03:00	21°♋48'39	0°00'17
minimum elong	1769 Jul 14 02:59	21°♋48'39	0°00'17
behind sun begin	1769 Jul 13 19:39	21°♋46'18	
behind sun end	1769 Jul 14 10:18	21°♋51'00	
max. Earth dist.	1769 Jul 14 07:21	21°♋50'01	10.06233 AU
morning rise	1769 Aug 01 06:28	24°♋08'53	
	1769 Sep 23 11:50	0°♌	
retrograde	1769 Nov 13 04:04	2°♌16'11	
	1770 Jan 03 23:45	30°℞♋	
opposition	1770 Jan 18 18:00	28°♋48'36	0°20'47
min. Earth dist.	1770 Jan 18 14:32	28°♋49'19	8.08641 AU

direct	1770 Mar 27 04:58	25°♋18'55	
	1770 Jun 11 08:06	0°♌	
evening set	1770 Jul 10 22:20	3°♌31'17	
conjunction	1770 Jul 29 01:21	5°♌50'33	0°32'57
minimum elong	1770 Jul 29 01:19	5°♌50'32	0°32'58
max. Earth dist.	1770 Jul 29 05:37	5°♌51'55	10.11680 AU
morning rise	1770 Aug 16 02:10	8°♌09'04	
	1770 Oct 22 14:00	15°♌	
retrograde	1770 Nov 27 01:21	16°♌08'57	
	1771 Jan 01 22:55	15°℞♌	
opposition	1771 Feb 01 16:15	12°♌42'29	1°00'11
min. Earth dist.	1771 Feb 01 12:30	12°♌43'15	8.15268 AU
direct	1771 Apr 10 15:22	9°♌12'49	
	1771 Jul 06 03:29	15°♌	
evening set	1771 Jul 25 16:41	17°♌21'57	
conjunction	1771 Aug 12 16:45	19°♌39'09	1°03'16
minimum elong	1771 Aug 12 16:42	19°♌39'08	1°03'16
max. Earth dist.	1771 Aug 12 21:06	19°♌40'32	10.19363 AU
morning rise	1771 Aug 30 13:32	21°♌55'17	
retrograde	1771 Dec 10 16:45	29°♌46'54	
opposition	1772 Feb 15 10:07	26°♌21'40	1°35'25
min. Earth dist.	1772 Feb 15 06:01	26°♌22'30	8.23914 AU
direct	1772 Apr 23 21:44	22°♌52'21	
	1772 Jul 31 11:05	0°♍	
evening set	1772 Aug 08 03:42	0°♍56'35	
conjunction	1772 Aug 25 23:42	3°♍11'11	1°29'31
minimum elong	1772 Aug 25 23:39	3°♍11'10	1°29'32
max. Earth dist.	1772 Aug 26 04:09	3°♍12'36	10.28799 AU
morning rise	1772 Sep 12 15:31	5°♍24'29	
retrograde	1772 Dec 23 01:17	13°♍07'26	
opposition	1773 Feb 27 22:53	9°♍43'33	2°04'37
min. Earth dist.	1773 Feb 27 19:10	9°♍44'18	8.34053 AU
direct	1773 May 07 22:56	6°♍14'54	
evening set	1773 Aug 22 05:37	14°♍12'55	
conjunction	1773 Sep 08 20:51	16°♍24'37	1°50'28
minimum elong	1773 Sep 08 20:48	16°♍24'36	1°50'28
max. Earth dist.	1773 Sep 09 00:50	16°♍25'52	10.39441 AU
morning rise	1773 Sep 26 07:22	18°♍34'55	
retrograde	1774 Jan 05 01:29	26°♍09'16	
opposition	1774 Mar 13 06:32	22°♍46'47	2°26'34
min. Earth dist.	1774 Mar 13 03:43	22°♍47'21	8.45119 AU
direct	1774 May 21 19:08	19°♍19'04	
evening set	1774 Sep 04 21:16	27°♍09'53	
conjunction	1774 Sep 22 07:31	29°♍18'39	2°05'19
minimum elong	1774 Sep 22 07:28	29°♍18'38	2°05'19
max. Earth dist.	1774 Sep 22 10:24	29°♍19'32	10.50720 AU
	1774 Sep 27 20:58	0°♎	
morning rise	1774 Oct 09 12:59	1°♎25'58	
retrograde	1775 Jan 17 18:49	8°♎52'13	
opposition	1775 Mar 26 08:44	5°♎31'03	2°40'38
min. Earth dist.	1775 Mar 26 07:07	5°♎31'22	8.56536 AU
direct	1775 Jun 04 08:33	2°♎04'30	
evening set	1775 Sep 18 02:39	9°♎47'34	
conjunction	1775 Oct 05 08:11	11°♎53'32	2°13'44
minimum elong	1775 Oct 05 08:09	11°♎53'32	2°13'44
max. Earth dist.	1775 Oct 05 09:23	11°♎53'54	10.62072 AU
morning rise	1775 Oct 22 09:12	13°♎58'08	
retrograde	1776 Jan 30 05:12	21°♎16'55	
opposition	1776 Apr 07 05:30	17°♎56'59	2°46'45
min. Earth dist.	1776 Apr 07 04:31	17°♎57'11	8.67739 AU
direct	1776 Jun 16 15:23	14°♎31'43	
evening set	1776 Sep 29 22:00	22°♎06'54	
conjunction	1776 Oct 16 23:27	24°♎10'22	2°15'47
minimum elong	1776 Oct 16 23:26	24°♎10'22	2°15'47
max. Earth dist.	1776 Oct 16 23:42	24°♎10'26	10.72960 AU
morning rise	1776 Nov 02 20:39	26°♎12'34	
	1776 Dec 07 11:17	0°♏	
retrograde	1777 Feb 10 10:13	3°♏24'53	
opposition	1777 Apr 19 21:37	0°♏05'59	2°45'11
min. Earth dist.	1777 Apr 19 20:52	0°♏06'08	8.78210 AU
	1777 Apr 21 05:04	30°℞♎	
direct	1777 Jun 29 16:36	26°♎42'04	
	1777 Sep 03 13:12	0°♏	
evening set	1777 Oct 12 07:55	4°♏09'31	
conjunction	1777 Oct 29 06:02	6°♏10'50	2°11'47
minimum elong	1777 Oct 29 06:03	6°♏10'51	2°11'46
max. Earth dist.	1777 Oct 29 06:08	6°♏10'52	10.82896 AU
morning rise	1777 Nov 15 00:08	8°♏11'01	
	1778 Feb 03 20:10	15°♏	
retrograde	1778 Feb 22 12:51	15°♏18'01	
	1778 Mar 13 08:31	15°℞♏	
opposition	1778 May 02 09:33	11°♏59'57	2°36'31
min. Earth dist.	1778 May 02 09:19	12°♏00'00	8.87508 AU
direct	1778 Jul 12 09:29	8°♏37'21	
	1778 Oct 16 02:03	15°♏	
evening set	1778 Oct 24 09:48	15°♏57'35	
conjunction	1778 Nov 10 05:15	17°♏57'10	2°02'14
minimum elong	1778 Nov 10 05:17	17°♏57'11	2°02'14
max. Earth dist.	1778 Nov 10 04:52	17°♏57'03	10.91479 AU
morning rise	1778 Nov 26 21:10	19°♏55'47	
retrograde	1779 Mar 06 10:18	26°♏58'37	
opposition	1779 May 14 17:50	23°♏41'10	2°21'31
min. Earth dist.	1779 May 14 19:03	23°♏40'56	8.95270 AU
direct	1779 Jul 24 20:13	20°♏19'47	
evening set	1779 Nov 05 04:57	27°♏33'37	
conjunction	1779 Nov 21 22:19	29°♏31'52	1°47'47
minimum elong	1779 Nov 21 22:21	29°♏31'53	1°47'47
max. Earth dist.	1779 Nov 21 20:11	29°♏31'14	10.98371 AU
	1779 Nov 25 21:07	0°♐	
morning rise	1779 Dec 08 13:02	1°♐29'23	
retrograde	1780 Mar 17 05:37	8°♐29'25	
opposition	1780 May 25 23:21	5°♐12'19	2°01'03
min. Earth dist.	1780 May 26 01:43	5°♐11'52	9.01187 AU
direct	1780 Aug 05 03:46	1°♐51'59	
evening set	1780 Nov 15 18:44	9°♐00'26	
conjunction	1780 Dec 02 10:41	10°♐57'46	1°29'11
minimum elong	1780 Dec 02 10:44	10°♐57'47	1°29'12
max. Earth dist.	1780 Dec 02 07:25	10°♐56'48	11.03295 AU
morning rise	1780 Dec 19 00:50	12°♐54'35	
retrograde	1781 Mar 28 23:54	19°♐53'18	
opposition	1781 Jun 07 02:55	16°♐36'13	1°36'02
min. Earth dist.	1781 Jun 07 05:37	16°♐35'44	9.05010 AU
direct	1781 Aug 17 06:20	13°♐16'47	
evening set	1781 Nov 27 04:50	20°♐21'03	
conjunction	1781 Dec 13 20:07	22°♐17'53	1°07'13
minimum elong	1781 Dec 13 20:09	22°♐17'53	1°07'13
max. Earth dist.	1781 Dec 13 16:44	22°♐16'53	11.06026 AU
morning rise	1781 Dec 30 10:09	24°♐14'24	
	1782 Mar 01 20:45	0°♑	
retrograde	1782 Apr 09 19:18	1°♑13'19	
	1782 May 19 19:43	30°℞♐	
opposition	1782 Jun 19 05:26	27°♐56'00	1°07'27

min. Earth dist.	1782 Jun 19 08:17	27°♐55'29	9.06548 AU
direct	1782 Aug 29 05:55	24°♐37'14	
	1782 Nov 23 21:01	0°♑	
evening set	1782 Dec 08 12:56	1°♑38'43	
conjunction	1782 Dec 25 03:57	3°♑35'27	0°42'41
minimum elong	1782 Dec 25 03:58	3°♑35'28	0°42'41
max. Earth dist.	1782 Dec 24 23:55	3°♑34'16	11.06396 AU
morning rise	1783 Jan 10 18:26	5°♑32'06	
retrograde	1783 Apr 21 17:48	12°♑32'49	
opposition	1783 Jul 01 08:03	9°♑15'02	0°36'17
min. Earth dist.	1783 Jul 01 11:58	9°♑14'19	9.05690 AU
direct	1783 Sep 10 02:24	5°♑56'42	
evening set	1783 Dec 19 21:01	12°♑56'58	
conjunction	1784 Jan 05 11:58	14°♑53'58	0°16'29
minimum elong	1784 Jan 05 11:58	14°♑53'58	0°16'28
max. Earth dist.	1784 Jan 05 06:26	14°♑52'21	11.04375 AU
morning rise	1784 Jan 22 03:26	16°♑51'09	
retrograde	1784 May 02 15:50	23°♑55'15	
opposition	1784 Jul 12 11:49	20°♑36'44	0°03'34
min. Earth dist.	1784 Jul 12 16:44	20°♑35'49	9.02500 AU
desc. node	1784 Aug 22 00:45	18°♑00'55	
direct	1784 Sep 20 21:44	17°♑18'34	
evening set	1784 Dec 30 06:31	24°♑19'10	
conjunction	1785 Jan 15 21:52	26°♑16'47	-0°10'37
minimum elong	1785 Jan 15 21:52	26°♑16'47	0°10'37
behind sun begin	1785 Jan 15 16:25	26°♑15'11	
behind sun end	1785 Jan 16 03:19	26°♑18'23	
max. Earth dist.	1785 Jan 15 15:45	26°♑14'59	11.00099 AU
morning rise	1785 Feb 01 14:41	28°♑14'50	
	1785 Feb 17 03:23	0°♒	
retrograde	1785 May 14 19:55	5°♒23'51	
opposition	1785 Jul 24 17:43	2°♒04'17	-0°29'36
min. Earth dist.	1785 Jul 24 22:36	2°♒03'23	8.97159 AU
	1785 Aug 23 22:28	30°℞♑	
direct	1785 Oct 02 20:03	28°♑46'02	
	1785 Nov 10 14:20	0°♒	
evening set	1786 Jan 10 18:55	5°♒48'24	
conjunction	1786 Jan 27 11:13	7°♒47'00	-0°37'27
minimum elong	1786 Jan 27 11:12	7°♒47'00	0°37'27
max. Earth dist.	1786 Jan 27 06:01	7°♒45'27	10.93762 AU
morning rise	1786 Feb 13 05:31	9°♒46'15	
	1786 Apr 06 08:45	15°♒	
retrograde	1786 May 27 05:58	17°♒01'30	
	1786 Jul 18 21:44	15°℞♒	
opposition	1786 Aug 06 02:28	13°♒40'42	-1°02'02
min. Earth dist.	1786 Aug 06 06:30	13°♒39'57	8.89891 AU
direct	1786 Oct 14 18:05	10°♒22'07	
	1786 Dec 31 15:07	15°♒	
evening set	1787 Jan 22 12:09	17°♒27'43	
conjunction	1787 Feb 08 05:36	19°♒27'36	-1°03'08
minimum elong	1787 Feb 08 05:34	19°♒27'36	1°03'07
max. Earth dist.	1787 Feb 08 00:50	19°♒26'10	10.85618 AU
morning rise	1787 Feb 25 01:42	21°♒28'22	
retrograde	1787 Jun 08 20:49	28°♒51'02	
opposition	1787 Aug 18 14:53	25°♒28'50	-1°32'28
min. Earth dist.	1787 Aug 18 18:26	25°♒28'10	8.80984 AU
direct	1787 Oct 26 18:39	22°♒09'41	
evening set	1788 Feb 03 11:26	29°♒19'58	
	1788 Feb 09 01:19	0°♓	
conjunction	1788 Feb 20 06:19	1°♓21'27	-1°26'33
minimum elong	1788 Feb 20 06:17	1°♓21'26	1°26'32
max. Earth dist.	1788 Feb 20 01:20	1°♓19'56	10.76003 AU
morning rise	1788 Mar 08 04:44	3°♓24'01	
retrograde	1788 Jun 20 19:03	10°♓55'05	
opposition	1788 Aug 30 08:03	7°♓31'26	-1°59'33
min. Earth dist.	1788 Aug 30 11:32	7°♓30'47	8.70804 AU
direct	1788 Nov 06 23:29	4°♓11'30	
evening set	1789 Feb 14 17:56	11°♓27'43	
conjunction	1789 Mar 03 14:51	13°♓31'07	-1°46'34
minimum elong	1789 Mar 03 14:49	13°♓31'06	1°46'34
max. Earth dist.	1789 Mar 03 10:19	13°♓29'43	10.65313 AU
morning rise	1789 Mar 20 15:58	15°♓35'48	
retrograde	1789 Jul 03 23:42	23°♓15'56	
opposition	1789 Sep 12 06:18	19°♓50'48	-2°21'53
min. Earth dist.	1789 Sep 12 09:26	19°♓50'11	8.59771 AU
direct	1789 Nov 19 09:29	16°♓29'54	
evening set	1790 Feb 27 09:01	23°♓53'12	
conjunction	1790 Mar 16 08:43	25°♓58'48	-2°02'04
minimum elong	1790 Mar 16 08:41	25°♓58'48	2°02'04
max. Earth dist.	1790 Mar 16 05:38	25°♓57'51	10.53989 AU
morning rise	1790 Apr 02 12:52	28°♓05'49	
	1790 Apr 18 15:10	0°♈	
retrograde	1790 Jul 17 11:14	5°♈55'14	
opposition	1790 Sep 25 09:49	2°♈28'41	-2°38'01
min. Earth dist.	1790 Sep 25 11:49	2°♈28'17	8.48352 AU
	1790 Oct 31 00:19	30°℞♓	
direct	1790 Dec 02 02:48	29°♓06'44	
	1791 Jan 02 14:49	0°♈	
evening set	1791 Mar 12 09:29	6°♈37'54	
conjunction	1791 Mar 29 12:36	8°♈46'00	-2°11'57
minimum elong	1791 Mar 29 12:35	8°♈46'00	2°11'58
max. Earth dist.	1791 Mar 29 11:09	8°♈45'33	10.42541 AU
morning rise	1791 Apr 15 20:13	10°♈55'33	
retrograde	1791 Jul 31 07:55	18°♈53'58	
opposition	1791 Oct 08 19:06	15°♈26'08	-2°46'39
min. Earth dist.	1791 Oct 08 19:37	15°♈26'02	8.37078 AU
direct	1791 Dec 15 01:03	12°♈03'03	
evening set	1792 Mar 24 19:43	19°♈42'31	
conjunction	1792 Apr 11 02:47	21°♈53'16	-2°15'17
minimum elong	1792 Apr 11 02:47	21°♈53'16	2°15'18
max. Earth dist.	1792 Apr 11 02:35	21°♈53'12	10.31534 AU
morning rise	1792 Apr 28 14:24	24°♈05'31	
	1792 Jun 22 21:48	0°♉	
retrograde	1792 Aug 13 11:16	2°♉12'01	
	1792 Oct 05 01:39	30°℞♈	
opposition	1792 Oct 21 09:59	28°♈43'09	-2°46'42
min. Earth dist.	1792 Oct 21 09:18	28°♈43'18	8.26525 AU
direct	1792 Dec 27 06:20	25°♈18'52	
	1793 Mar 12 12:38	0°♉	
evening set	1793 Apr 07 16:04	3°♉06'43	
conjunction	1793 Apr 25 03:36	5°♉20'11	-2°11'24
minimum elong	1793 Apr 25 03:38	5°♉20'11	2°11'24
max. Earth dist.	1793 Apr 25 04:05	5°♉20'20	10.21564 AU
morning rise	1793 May 12 19:36	7°♉35'06	
	1793 Jul 28 11:27	15°♉	
retrograde	1793 Aug 27 19:33	15°♉48'08	
	1793 Sep 27 05:00	15°℞♉	
opposition	1793 Nov 04 05:47	12°♉18'33	-2°37'30
min. Earth dist.	1793 Nov 04 04:33	12°♉18'48	8.17282 AU
direct	1794 Jan 09 19:48	8°♉53'03	
	1794 Apr 07 04:57	15°♉	
evening set	1794 Apr 21 21:55	16°♉48'51	

conjunction	1794 May 09 14:13	19°♉04'57	-2°00'02
minimum elong	1794 May 09 14:16	19°♉04'57	2°00'03
max. Earth dist.	1794 May 09 15:35	19°♉05'23	10.13205 AU
morning rise	1794 May 27 10:34	21°♉22'19	
retrograde	1794 Sep 11 07:01	29°♉39'51	
opposition	1794 Nov 18 05:51	26°♉09'54	-2°19'00
min. Earth dist.	1794 Nov 18 04:02	26°♉10'17	8.09906 AU
direct	1795 Jan 23 16:44	22°♉43'17	
	1795 Apr 30 09:49	0°♊	
evening set	1795 May 06 12:00	0°♊46'03	
conjunction	1795 May 24 08:54	3°♊04'26	-1°41'30
minimum elong	1795 May 24 08:58	3°♊04'27	1°41'30
max. Earth dist.	1795 May 24 11:34	3°♊05'18	10.06979 AU
morning rise	1795 Jun 11 09:05	5°♊23'49	
retrograde	1795 Sep 25 20:50	13°♊43'27	
opposition	1795 Dec 02 08:54	10°♊13'31	-1°51'56
min. Earth dist.	1795 Dec 02 06:13	10°♊14'04	8.04880 AU
direct	1796 Feb 06 19:32	6°♊45'55	
evening set	1796 May 20 08:55	14°♊54'16	
conjunction	1796 Jun 07 09:49	17°♊14'21	-1°16'40
minimum elong	1796 Jun 07 09:52	17°♊14'22	1°16'41
max. Earth dist.	1796 Jun 07 14:02	17°♊15'44	10.03307 AU
morning rise	1796 Jun 25 12:51	19°♊35'07	
retrograde	1796 Oct 09 10:53	27°♊54'12	
opposition	1796 Dec 15 13:27	24°♊24'39	-1°17'46
min. Earth dist.	1796 Dec 15 09:38	24°♊25'27	8.02555 AU
direct	1797 Feb 20 03:14	20°♊56'17	
evening set	1797 Jun 04 10:23	29°♊08'26	
	1797 Jun 11 02:57	0°♋	
conjunction	1797 Jun 22 14:05	1°♋29'27	-0°47'04
minimum elong	1797 Jun 22 14:07	1°♋29'27	0°47'04
max. Earth dist.	1797 Jun 22 19:46	1°♋31'18	10.02442 AU
morning rise	1797 Jul 10 18:30	3°♋50'43	
retrograde	1797 Oct 23 22:57	12°♋06'44	
opposition	1797 Dec 29 18:08	8°♋37'55	-0°38'46
min. Earth dist.	1797 Dec 29 13:16	8°♋38'55	8.03095 AU
direct	1798 Mar 06 14:10	5°♋09'01	
evening set	1798 Jun 19 13:37	13°♋22'55	
conjunction	1798 Jul 07 18:22	15°♋43'55	-0°14'37
minimum elong	1798 Jul 07 18:23	15°♋43'55	0°14'37
behind sun begin	1798 Jul 07 15:33	15°♋43'00	
behind sun end	1798 Jul 07 21:14	15°♋44'50	
max. Earth dist.	1798 Jul 08 01:00	15°♋46'03	10.04441 AU
morning rise	1798 Jul 25 22:27	18°♋04'43	
retrograde	1798 Nov 07 06:41	26°♋15'30	
asc. node	1798 Dec 21 14:46	24°♋32'41	
opposition	1799 Jan 12 21:26	22°♋47'41	0°02'26
min. Earth dist.	1799 Jan 12 16:09	22°♋48'47	8.06471 AU
direct	1799 Mar 21 02:08	19°♋18'31	
evening set	1799 Jul 04 15:40	27°♋32'01	
conjunction	1799 Jul 22 19:40	29°♋52'02	0°18'33
minimum elong	1799 Jul 22 19:40	29°♋52'02	0°18'34
max. Earth dist.	1799 Jul 23 02:29	29°♋54'14	10.09173 AU
	1799 Jul 23 20:18	0°♌	
morning rise	1799 Aug 09 21:44	2°♌11'27	
retrograde	1799 Nov 21 09:04	10°♌15'14	
opposition	1800 Jan 26 21:52	6°♌48'38	0°43'00
min. Earth dist.	1800 Jan 26 16:52	6°♌49'40	8.12455 AU
direct	1800 Apr 04 12:48	3°♌19'25	
evening set	1800 Jul 19 13:32	11°♌30'26	
conjunction	1800 Aug 06 15:08	13°♌48'39	0°50'10
minimum elong	1800 Aug 06 15:06	13°♌48'39	0°50'11
max. Earth dist.	1800 Aug 06 21:14	13°♌50'37	10.16298 AU
	1800 Aug 15 21:48	15°♌	
morning rise	1800 Aug 24 13:45	16°♌05'55	
retrograde	1800 Dec 05 04:29	24°♌01'30	
opposition	1801 Feb 09 18:19	20°♌36'13	1°20'22
min. Earth dist.	1801 Feb 09 14:15	20°♌37'03	8.20604 AU
direct	1801 Apr 18 21:53	17°♌07'15	
evening set	1801 Aug 03 04:45	25°♌13'56	
conjunction	1801 Aug 21 02:32	27°♌29'42	1°18'25
minimum elong	1801 Aug 21 02:29	27°♌29'41	1°18'26
max. Earth dist.	1801 Aug 21 07:01	27°♌31'07	10.25285 AU
morning rise	1801 Sep 07 20:37	29°♌44'15	
	1801 Sep 09 23:22	0°♍	
retrograde	1801 Dec 18 15:21	7°♍31'06	
opposition	1802 Feb 23 09:49	4°♍07'11	1°52'25
min. Earth dist.	1802 Feb 23 06:38	4°♍07'49	8.30318 AU
direct	1802 May 03 03:16	0°♍38'44	
evening set	1802 Aug 17 11:13	8°♍39'41	
conjunction	1802 Sep 04 04:26	10°♍52'38	1°41'50
minimum elong	1802 Sep 04 04:23	10°♍52'37	1°41'51
max. Earth dist.	1802 Sep 04 07:18	10°♍53'32	10.35497 AU
morning rise	1802 Sep 21 17:26	13°♍04'15	
retrograde	1802 Dec 31 18:05	20°♍42'28	
opposition	1803 Mar 08 20:01	17°♍19'54	2°17'40
min. Earth dist.	1803 Mar 08 17:28	17°♍20'25	8.40945 AU
direct	1803 May 17 03:30	13°♍52'16	
evening set	1803 Aug 31 07:48	21°♍46'30	
conjunction	1803 Sep 17 20:14	23°♍56'34	1°59'26
minimum elong	1803 Sep 17 20:11	23°♍56'33	1°59'26
max. Earth dist.	1803 Sep 17 22:09	23°♍57'09	10.46336 AU
morning rise	1803 Oct 05 04:04	26°♍05'12	
	1803 Nov 08 22:01	0°♎	
retrograde	1804 Jan 13 15:51	3°♎35'15	
opposition	1804 Mar 21 00:55	0°♎13'58	2°35'16
min. Earth dist.	1804 Mar 20 22:54	0°♎14'22	8.51940 AU
	1804 Mar 24 00:09	30°℞♍	
direct	1804 May 29 19:43	26°♍47'19	
	1804 Aug 01 21:01	0°♎	
evening set	1804 Sep 12 18:22	4°♎34'11	
conjunction	1804 Sep 30 02:06	6°♎41'27	2°10'42
minimum elong	1804 Sep 30 02:04	6°♎41'26	2°10'42
max. Earth dist.	1804 Sep 30 03:26	6°♎41'52	10.57314 AU
morning rise	1804 Oct 17 05:00	8°♎47'16	
retrograde	1805 Jan 25 06:45	16°♎09'42	
opposition	1805 Apr 03 00:37	12°♎49'34	2°44'52
min. Earth dist.	1805 Apr 02 23:38	12°♎49'45	8.62842 AU
direct	1805 Jun 12 05:18	9°♎24'01	
evening set	1805 Sep 25 18:47	17°♎03'10	
conjunction	1805 Oct 12 22:08	19°♎07'49	2°15'32
minimum elong	1805 Oct 12 22:08	19°♎07'49	2°15'31
max. Earth dist.	1805 Oct 12 22:34	19°♎07'57	10.67984 AU
morning rise	1805 Oct 29 20:50	21°♎11'08	
retrograde	1806 Feb 06 14:38	28°♎26'44	
opposition	1806 Apr 15 19:33	25°♎07'34	2°46'38
min. Earth dist.	1806 Apr 15 19:59	25°♎07'29	8.73207 AU
direct	1806 Jun 25 09:11	21°♎43'08	
evening set	1806 Oct 08 09:22	29°♎14'32	
	1806 Oct 14 17:57	0°♏	
conjunction	1806 Oct 25 08:55	1°♏16'54	2°14'07
minimum elong	1806 Oct 25 08:55	1°♏16'54	2°14'06

max. Earth dist.	1806 Oct 25 07:41	1°♏16'32	10.77908 AU
morning rise	1806 Nov 11 04:22	3°♏18'04	
retrograde	1807 Feb 18 17:57	10°♏27'51	
opposition	1807 Apr 28 09:50	7°♏09'25	2°40'59
min. Earth dist.	1807 Apr 28 11:16	7°♏09'09	8.82599 AU
direct	1807 Jul 08 06:52	3°♏46'05	
evening set	1807 Oct 20 15:16	11°♏10'04	
conjunction	1807 Nov 06 11:48	13°♏10'33	2°06'54
minimum elong	1807 Nov 06 11:50	13°♏10'33	2°06'53
max. Earth dist.	1807 Nov 06 09:22	13°♏09'49	10.86671 AU
	1807 Nov 21 18:55	15°♏	
morning rise	1807 Nov 23 04:51	15°♏09'59	
retrograde	1808 Mar 01 16:22	22°♏15'05	
opposition	1808 May 09 19:57	18°♏57'08	2°28'39
min. Earth dist.	1808 May 09 21:36	18°♏56'49	8.90630 AU
direct	1808 Jul 19 22:16	15°♏34'52	
evening set	1808 Oct 31 13:37	22°♏52'05	
conjunction	1808 Nov 17 07:58	24°♏51'04	1°54'29
minimum elong	1808 Nov 17 08:00	24°♏51'05	1°54'28
max. Earth dist.	1808 Nov 17 05:33	24°♏50'21	10.93924 AU
morning rise	1808 Dec 03 23:16	26°♏49'12	
	1809 Jan 02 01:59	0°♐	
retrograde	1809 Mar 13 13:46	3°♐50'58	
opposition	1809 May 22 03:03	0°♐33'16	2°10'25
min. Earth dist.	1809 May 22 04:50	0°♐32'56	8.96996 AU
	1809 May 29 14:26	30°℞♏	
direct	1809 Aug 01 08:20	27°♏11'59	
	1809 Sep 30 22:57	0°♐	
evening set	1809 Nov 12 05:48	4°♐23'19	
conjunction	1809 Nov 28 22:35	6°♐21'14	1°37'34
minimum elong	1809 Nov 28 22:37	6°♐21'15	1°37'34
max. Earth dist.	1809 Nov 28 20:05	6°♐20'29	10.99395 AU
morning rise	1809 Dec 15 12:53	8°♐18'30	
retrograde	1810 Mar 25 09:41	15°♐18'17	
opposition	1810 Jun 03 07:50	12°♐00'38	1°47'13
min. Earth dist.	1810 Jun 03 10:28	12°♐00'09	9.01476 AU
direct	1810 Aug 13 11:38	8°♐40'13	
evening set	1810 Nov 23 17:44	15°♐46'50	
conjunction	1810 Dec 10 09:23	17°♐44'04	1°16'55
minimum elong	1810 Dec 10 09:25	17°♐44'05	1°16'55
max. Earth dist.	1810 Dec 10 05:44	17°♐43'00	11.02899 AU
morning rise	1810 Dec 26 23:32	19°♐40'54	
retrograde	1811 Apr 06 03:23	26°♐40'11	
opposition	1811 Jun 15 10:58	23°♐22'23	1°20'00
min. Earth dist.	1811 Jun 15 14:37	23°♐21'42	9.03919 AU
direct	1811 Aug 25 12:42	20°♐02'39	
evening set	1811 Dec 05 02:55	27°♐05'55	
conjunction	1811 Dec 21 17:59	29°♐02'51	0°53'21
minimum elong	1811 Dec 21 18:01	29°♐02'52	0°53'21
max. Earth dist.	1811 Dec 21 13:25	29°♐01'30	11.04311 AU
	1811 Dec 29 19:53	0°♑	
morning rise	1812 Jan 07 08:29	0°♑59'38	
retrograde	1812 Apr 16 23:44	7°♑59'58	
opposition	1812 Jun 26 13:44	4°♑41'47	0°49'46
min. Earth dist.	1812 Jun 26 17:20	4°♑41'07	9.04230 AU
direct	1812 Sep 05 11:43	1°♑22'38	
evening set	1812 Dec 15 10:50	8°♑23'53	
conjunction	1813 Jan 01 01:55	10°♑20'55	0°27'44
minimum elong	1813 Jan 01 01:55	10°♑20'55	0°27'43
max. Earth dist.	1812 Dec 31 21:57	10°♑19'45	11.03569 AU
morning rise	1813 Jan 17 17:01	12°♑18'01	
retrograde	1813 Apr 28 22:18	19°♑20'58	
opposition	1813 Jul 08 17:05	16°♑02'11	0°17'33
min. Earth dist.	1813 Jul 08 20:05	16°♑01'37	9.02392 AU
direct	1813 Sep 17 08:00	12°♑43'26	
evening set	1813 Dec 26 19:36	19°♑44'09	
conjunction	1814 Jan 12 10:59	21°♑41'37	0°00'56
minimum elong	1814 Jan 12 10:58	21°♑41'37	0°00'56
behind sun begin	1814 Jan 12 04:00	21°♑39'35	
behind sun end	1814 Jan 12 17:57	21°♑43'39	
max. Earth dist.	1814 Jan 12 07:19	21°♑40'35	11.00689 AU
desc. node	1814 Jan 24 21:57	23°♑09'54	
morning rise	1814 Jan 29 03:06	23°♑39'23	
	1814 Apr 10 01:02	0°♒	
retrograde	1814 May 11 01:36	0°♒46'25	
	1814 Jun 11 13:15	30°℞♑	
opposition	1814 Jul 20 21:54	27°♑26'52	-0°15'35
min. Earth dist.	1814 Jul 21 00:53	27°♑26'19	8.98469 AU
direct	1814 Sep 29 04:14	24°♑08'18	
	1814 Dec 28 02:00	0°♒	
evening set	1815 Jan 07 06:43	1°♒10'01	
conjunction	1815 Jan 23 22:35	3°♒08'15	-0°26'10
minimum elong	1815 Jan 23 22:34	3°♒08'14	0°26'10
max. Earth dist.	1815 Jan 23 18:10	3°♒06'56	10.95774 AU
morning rise	1815 Feb 09 16:14	5°♒07'02	
retrograde	1815 May 23 08:07	12°♒19'33	
opposition	1815 Aug 02 05:22	8°♒59'04	-0°48'28
min. Earth dist.	1815 Aug 02 08:54	8°♒58'24	8.92598 AU
direct	1815 Oct 11 00:31	5°♒40'28	
evening set	1816 Jan 18 21:42	12°♒44'40	
conjunction	1816 Feb 04 14:26	14°♒43'59	-0°52'27
minimum elong	1816 Feb 04 14:24	14°♒43'58	0°52'27
max. Earth dist.	1816 Feb 04 10:02	14°♒42'39	10.89001 AU
	1816 Feb 06 19:52	15°♒	
morning rise	1816 Feb 21 09:50	16°♒44'05	
retrograde	1816 Jun 03 19:22	24°♒03'26	
opposition	1816 Aug 13 16:17	20°♒41'50	-1°19'52
min. Earth dist.	1816 Aug 13 19:32	20°♒41'13	8.85001 AU
direct	1816 Oct 22 01:01	17°♒22'59	
evening set	1817 Jan 29 18:07	24°♒31'06	
conjunction	1817 Feb 15 12:18	26°♒31'50	-1°16'56
minimum elong	1817 Feb 15 12:15	26°♒31'50	1°16'55
max. Earth dist.	1817 Feb 15 09:02	26°♒30'51	10.80628 AU
morning rise	1817 Mar 04 09:39	28°♒33'33	
	1817 Mar 16 19:58	0°♓	
retrograde	1817 Jun 16 15:28	6°♓00'48	
opposition	1817 Aug 26 07:18	2°♓37'58	-1°48'29
min. Earth dist.	1817 Aug 26 09:31	2°♓37'33	8.75977 AU
	1817 Oct 05 09:45	30°℞♒	
direct	1817 Nov 03 04:33	29°♒18'40	
	1817 Dec 01 10:30	0°♓	
evening set	1818 Feb 10 21:21	6°♓32'01	
conjunction	1818 Feb 27 17:25	8°♓34'28	-1°38'29
minimum elong	1818 Feb 27 17:22	8°♓34'27	1°38'29
max. Earth dist.	1818 Feb 27 15:18	8°♓33'49	10.70986 AU
morning rise	1818 Mar 16 17:06	10°♓38'06	
retrograde	1818 Jun 29 17:54	18°♓13'58	
opposition	1818 Sep 08 03:08	14°♓49'52	-2°12'55
min. Earth dist.	1818 Sep 08 04:18	14°♓49'39	8.65878 AU
direct	1818 Nov 15 11:22	11°♓29'55	
evening set	1819 Feb 23 08:42	18°♓49'39	
conjunction	1819 Mar 12 07:00	20°♓54'07	-1°55'59

minimum elong	1819 Mar 12 06:58	20°♓54'06	1°56'00
max. Earth dist.	1819 Mar 12 05:01	20°♓53'30	10.60472 AU
morning rise	1819 Mar 29 09:33	22°♓59'54	
	1819 Jun 13 02:58	0°♈	
retrograde	1819 Jul 13 02:59	0°♈44'46	
	1819 Aug 12 08:46	30°℞♓	
opposition	1819 Sep 21 04:13	27°♓19'24	-2°31'45
min. Earth dist.	1819 Sep 21 05:06	27°♓19'14	8.55130 AU
direct	1819 Nov 28 00:38	23°♓58'35	
	1820 Feb 24 06:33	0°♈	
evening set	1820 Mar 07 04:54	1°♈25'37	
conjunction	1820 Mar 24 06:08	3°♈32'22	-2°08'20
minimum elong	1820 Mar 24 06:06	3°♈32'21	2°08'21
max. Earth dist.	1820 Mar 24 04:21	3°♈31'49	10.49549 AU
morning rise	1820 Apr 10 12:05	5°♈40'33	
retrograde	1820 Jul 25 19:49	13°♈34'17	
opposition	1820 Oct 03 10:52	10°♈07'43	-2°43'39
min. Earth dist.	1820 Oct 03 11:38	10°♈07'34	8.44201 AU
direct	1820 Dec 09 20:02	6°♈45'50	
evening set	1821 Mar 20 10:26	14°♈20'45	
conjunction	1821 Apr 06 15:25	16°♈30'00	-2°14'31
minimum elong	1821 Apr 06 15:24	16°♈30'00	2°14'32
max. Earth dist.	1821 Apr 06 14:20	16°♈29'40	10.38679 AU
morning rise	1821 Apr 24 01:13	18°♈40'46	
retrograde	1821 Aug 08 18:23	26°♈42'46	
opposition	1821 Oct 16 22:50	23°♈15'06	-2°47'26
min. Earth dist.	1821 Oct 16 23:19	23°♈15'00	8.33543 AU
direct	1821 Dec 22 23:09	19°♈52'03	
evening set	1822 Apr 03 01:49	27°♈35'11	
conjunction	1822 Apr 20 11:12	29°♈47'06	-2°13'46
minimum elong	1822 Apr 20 11:13	29°♈47'07	2°13'46
max. Earth dist.	1822 Apr 20 11:19	29°♈47'09	10.28329 AU
	1822 Apr 22 03:41	0°♉	
morning rise	1822 May 08 01:05	2°♉00'30	
retrograde	1822 Aug 22 22:47	10°♉09'41	
opposition	1822 Oct 30 15:44	6°♉41'08	-2°42'15
min. Earth dist.	1822 Oct 30 15:17	6°♉41'13	8.23666 AU
direct	1823 Jan 05 09:30	3°♉16'52	
evening set	1823 Apr 17 02:47	11°♉08'07	
conjunction	1823 May 04 16:56	13°♉22'45	-2°05'39
minimum elong	1823 May 04 16:58	13°♉22'45	2°05'39
max. Earth dist.	1823 May 04 18:18	13°♉23'11	10.19086 AU
	1823 May 17 08:39	15°♉	
morning rise	1823 May 22 11:05	15°♉38'42	
retrograde	1823 Sep 06 08:29	23°♉53'24	
opposition	1823 Nov 13 13:19	20°♉24'14	-2°27'47
min. Earth dist.	1823 Nov 13 11:40	20°♉24'34	8.15208 AU
direct	1824 Jan 19 02:03	16°♉58'45	
evening set	1824 Apr 30 12:34	24°♉57'25	
conjunction	1824 May 18 07:28	27°♉14'32	-1°50'12
minimum elong	1824 May 18 07:31	27°♉14'33	1°50'12
max. Earth dist.	1824 May 18 09:53	27°♉15'19	10.11597 AU
morning rise	1824 Jun 05 05:43	29°♉32'45	
	1824 Jun 08 20:14	0°♊	
retrograde	1824 Sep 19 22:09	7°♊50'42	
opposition	1824 Nov 26 14:29	4°♊21'13	-2°04'24
min. Earth dist.	1824 Nov 26 12:01	4°♊21'43	8.08774 AU
direct	1825 Feb 01 00:13	0°♊54'31	
evening set	1825 May 15 06:05	8°♊59'29	
conjunction	1825 Jun 02 05:14	11°♊18'36	-1°28'02
minimum elong	1825 Jun 02 05:17	11°♊18'38	1°28'02
max. Earth dist.	1825 Jun 02 08:18	11°♊19'36	10.06393 AU
morning rise	1825 Jun 20 06:54	13°♊38'33	
retrograde	1825 Oct 04 12:11	21°♊57'09	
opposition	1825 Dec 10 17:44	18°♊27'43	-1°33'15
min. Earth dist.	1825 Dec 10 14:57	18°♊28'17	8.04822 AU
direct	1826 Feb 15 05:27	14°♊59'55	
evening set	1826 May 30 05:03	23°♊09'36	
conjunction	1826 Jun 17 07:27	25°♊30'02	-1°00'25
minimum elong	1826 Jun 17 07:30	25°♊30'03	1°00'25
max. Earth dist.	1826 Jun 17 10:52	25°♊31'08	10.03833 AU
morning rise	1826 Jul 05 11:19	27°♊50'56	
	1826 Jul 22 20:24	0°♋	
retrograde	1826 Oct 18 23:58	6°♋07'38	
opposition	1826 Dec 24 21:54	2°♋38'34	-0°56'14
min. Earth dist.	1826 Dec 24 18:59	2°♋39'11	8.03627 AU
	1827 Jan 30 08:19	30°℞♊	
direct	1827 Mar 01 15:07	29°♊09'54	
	1827 Mar 31 18:52	0°♋	
evening set	1827 Jun 14 06:43	7°♋22'20	
conjunction	1827 Jul 02 10:58	9°♋43'13	-0°29'04
minimum elong	1827 Jul 02 11:00	9°♋43'13	0°29'04
max. Earth dist.	1827 Jul 02 14:50	9°♋44'28	10.04087 AU
morning rise	1827 Jul 20 15:27	12°♋04'09	
retrograde	1827 Nov 02 07:59	20°♋16'41	
opposition	1828 Jan 08 01:13	16°♋48'18	-0°15'49
min. Earth dist.	1828 Jan 07 21:53	16°♋48'59	8.05262 AU
direct	1828 Mar 15 02:58	13°♋19'00	
asc. node	1828 Jun 01 08:56	18°♋17'07	
evening set	1828 Jun 28 08:41	21°♋32'08	
conjunction	1828 Jul 16 13:08	23°♋52'33	0°04'00
minimum elong	1828 Jul 16 13:07	23°♋52'33	0°04'00
behind sun begin	1828 Jul 16 05:52	23°♋50'13	
behind sun end	1828 Jul 16 20:23	23°♋54'53	
max. Earth dist.	1828 Jul 16 17:27	23°♋53'55	10.07116 AU
morning rise	1828 Aug 03 16:27	26°♋12'34	
	1828 Sep 04 15:00	0°♌	
retrograde	1828 Nov 15 11:12	4°♌19'00	
opposition	1829 Jan 21 02:10	0°♌51'33	0°25'14
min. Earth dist.	1829 Jan 20 22:23	0°♌52'20	8.09596 AU
	1829 Jan 31 15:23	30°℞♋	
direct	1829 Mar 29 14:04	27°♋21'57	
	1829 May 24 03:58	0°♌	
evening set	1829 Jul 13 07:55	5°♌33'44	
conjunction	1829 Jul 31 10:48	7°♌52'47	0°36'24
minimum elong	1829 Jul 31 10:47	7°♌52'46	0°36'24
max. Earth dist.	1829 Jul 31 15:27	7°♌54'17	10.12693 AU
morning rise	1829 Aug 18 11:16	10°♌11'02	
	1829 Sep 29 18:30	15°♌	
retrograde	1829 Nov 29 09:16	18°♌10'01	
	1830 Jan 31 15:52	15°℞♌	
opposition	1830 Feb 03 23:48	14°♌43'41	1°04'14
min. Earth dist.	1830 Feb 03 19:38	14°♌44'32	8.16322 AU
direct	1830 Apr 12 23:28	11°♌14'07	
	1830 Jun 19 23:22	15°♌	
evening set	1830 Jul 28 01:33	19°♌22'36	
conjunction	1830 Aug 15 01:20	21°♌39'32	1°06'18
minimum elong	1830 Aug 15 01:17	21°♌39'31	1°06'18
max. Earth dist.	1830 Aug 15 06:14	21°♌41'06	10.20442 AU
morning rise	1830 Sep 01 21:35	23°♌55'22	
	1830 Oct 29 11:10	0°♍	
retrograde	1830 Dec 12 23:54	1°♍46'06	
	1831 Jan 27 10:34	30°℞♌	

opposition	1831 Feb 17 17:07	28°♌21'01	1°38'50
min. Earth dist.	1831 Feb 17 13:08	28°♌21'50	8.25006 AU
direct	1831 Apr 27 05:30	24°♌51'48	
	1831 Jul 17 18:21	0°♍	
evening set	1831 Aug 11 11:38	2°♍55'20	
conjunction	1831 Aug 29 07:14	5°♍09'39	1°32'00
minimum elong	1831 Aug 29 07:11	5°♍09'38	1°32'00
max. Earth dist.	1831 Aug 29 11:46	5°♍11'05	10.29885 AU
morning rise	1831 Sep 15 22:32	7°♍22'40	
retrograde	1831 Dec 26 06:55	15°♍04'47	
opposition	1832 Mar 02 05:20	11°♍41'02	2°07'15
min. Earth dist.	1832 Mar 02 02:20	11°♍41'38	8.35128 AU
direct	1832 May 10 06:30	8°♍12'27	
evening set	1832 Aug 24 12:36	16°♍09'46	
conjunction	1832 Sep 11 03:21	18°♍21'12	1°52'16
minimum elong	1832 Sep 11 03:18	18°♍21'11	1°52'17
max. Earth dist.	1832 Sep 11 06:33	18°♍22'12	10.40475 AU
morning rise	1832 Sep 28 13:30	20°♍31'13	
retrograde	1833 Jan 07 07:00	28°♍04'50	
opposition	1833 Mar 15 12:22	24°♍42'27	2°28'20
min. Earth dist.	1833 Mar 15 10:22	24°♍42'51	8.46114 AU
direct	1833 May 24 01:26	21°♍14'48	
evening set	1833 Sep 07 03:24	29°♍04'56	
	1833 Sep 14 15:33	0°♎	
conjunction	1833 Sep 24 13:10	1°♎13'28	2°06'24
minimum elong	1833 Sep 24 13:08	1°♎13'27	2°06'25
max. Earth dist.	1833 Sep 24 14:55	1°♎14'00	10.51645 AU
morning rise	1833 Oct 11 18:22	3°♎20'34	
retrograde	1834 Jan 19 22:32	10°♎46'10	
opposition	1834 Mar 28 14:01	7°♎25'05	2°41'31
min. Earth dist.	1834 Mar 28 12:36	7°♎25'21	8.57392 AU
direct	1834 Jun 06 15:11	3°♎58'34	
evening set	1834 Sep 20 07:51	11°♎41'01	
conjunction	1834 Oct 07 13:03	13°♎46'48	2°14'07
minimum elong	1834 Oct 07 13:02	13°♎46'47	2°14'07
max. Earth dist.	1834 Oct 07 13:47	13°♎47'01	10.62840 AU
morning rise	1834 Oct 24 13:47	15°♎51'13	
retrograde	1835 Feb 01 08:40	23°♎09'33	
opposition	1835 Apr 10 10:23	19°♎49'38	2°46'45
min. Earth dist.	1835 Apr 10 09:03	19°♎49'53	8.68414 AU
direct	1835 Jun 19 22:06	16°♎24'24	
evening set	1835 Oct 03 02:17	23°♎59'02	
conjunction	1835 Oct 20 03:37	26°♎02'22	2°15'28
minimum elong	1835 Oct 20 03:37	26°♎02'22	2°15'28
max. Earth dist.	1835 Oct 20 04:13	26°♎02'33	10.73532 AU
morning rise	1835 Nov 06 00:32	28°♎04'25	
	1835 Nov 22 17:37	0°♏	
retrograde	1836 Feb 13 15:38	5°♏16'26	
opposition	1836 Apr 22 02:08	1°♏57'32	2°44'22
min. Earth dist.	1836 Apr 22 01:30	1°♏57'39	8.78670 AU
	1836 May 19 13:24	30°℞♎	
direct	1836 Jul 01 20:46	28°♎33'40	
	1836 Aug 13 09:18	0°♏	
evening set	1836 Oct 14 11:43	6°♏00'40	
conjunction	1836 Oct 31 09:42	8°♏01'55	2°10'48
minimum elong	1836 Oct 31 09:43	8°♏01'55	2°10'48
max. Earth dist.	1836 Oct 31 09:44	8°♏01'56	10.83241 AU
morning rise	1836 Nov 17 03:38	10°♏02'01	
	1837 Jan 04 14:29	15°♏	
retrograde	1837 Feb 24 15:58	17°♏08'49	
	1837 Apr 18 22:20	15°℞♏	

opposition	1837 May 04 13:52	13°♏50'46	2°34'57
min. Earth dist.	1837 May 04 14:30	13°♏50'38	8.87733 AU
direct	1837 Jul 14 12:52	10°♏28'11	
	1837 Oct 01 06:43	15°♏	
evening set	1837 Oct 26 13:13	17°♏48'08	
conjunction	1837 Nov 12 08:29	19°♏47'41	2°00'40
minimum elong	1837 Nov 12 08:31	19°♏47'42	2°00'40
max. Earth dist.	1837 Nov 12 07:05	19°♏47'16	10.91584 AU
morning rise	1837 Nov 29 00:27	21°♏46'17	
retrograde	1838 Mar 08 13:29	28°♏49'08	
opposition	1838 May 16 22:10	25°♏31'39	2°19'16
min. Earth dist.	1838 May 17 00:02	25°♏31'19	8.95256 AU
direct	1838 Jul 27 01:21	22°♏10'16	
evening set	1838 Nov 07 07:59	29°♏23'58	
	1838 Nov 12 11:24	0°♐	
conjunction	1838 Nov 24 01:17	1°♐22'14	1°45'42
minimum elong	1838 Nov 24 01:20	1°♐22'14	1°45'42
max. Earth dist.	1838 Nov 23 22:34	1°♐21'25	10.98242 AU
morning rise	1838 Dec 10 16:07	3°♐19'46	
retrograde	1839 Mar 20 09:23	10°♐20'00	
opposition	1839 May 29 03:42	7°♐02'49	1°58'13
min. Earth dist.	1839 May 29 05:49	7°♐02'26	9.00939 AU
direct	1839 Aug 08 07:55	3°♐42'30	
evening set	1839 Nov 18 21:43	10°♐50'57	
conjunction	1839 Dec 05 13:49	12°♐48'21	1°26'40
minimum elong	1839 Dec 05 13:51	12°♐48'21	1°26'40
max. Earth dist.	1839 Dec 05 10:59	12°♐47'30	11.02942 AU
morning rise	1839 Dec 22 03:59	14°♐45'14	
retrograde	1840 Mar 31 04:22	21°♐44'17	
opposition	1840 Jun 09 07:22	18°♐27'08	1°32'43
min. Earth dist.	1840 Jun 09 09:36	18°♐26'43	9.04550 AU
direct	1840 Aug 19 10:47	15°♐07'42	
evening set	1840 Nov 29 08:02	22°♐12'05	
conjunction	1840 Dec 15 23:24	24°♐09'01	1°04'20
minimum elong	1840 Dec 15 23:26	24°♐09'02	1°04'20
max. Earth dist.	1840 Dec 15 20:23	24°♐08'08	11.05484 AU
morning rise	1841 Jan 01 13:29	26°♐05'38	
	1841 Feb 07 17:33	0°♑	
retrograde	1841 Apr 12 01:12	3°♑05'01	
	1841 Jun 18 15:07	30°℞♐	
opposition	1841 Jun 21 10:22	29°♐47'38	1°03'46
min. Earth dist.	1841 Jun 21 13:23	29°♐47'04	9.05929 AU
direct	1841 Aug 31 09:43	26°♐28'51	
	1841 Nov 07 18:39	0°♑	
evening set	1841 Dec 10 16:28	3°♑30'32	
conjunction	1841 Dec 27 07:26	5°♑27'22	0°39'34
minimum elong	1841 Dec 27 07:28	5°♑27'23	0°39'33
max. Earth dist.	1841 Dec 27 02:54	5°♑26'02	11.05724 AU
morning rise	1842 Jan 12 22:08	7°♑24'10	
retrograde	1842 Apr 23 21:24	14°♑25'25	
opposition	1842 Jul 03 13:28	11°♑07'31	0°32'22
min. Earth dist.	1842 Jul 03 17:50	11°♑06'43	9.04964 AU
direct	1842 Sep 12 05:58	7°♑49'09	
evening set	1842 Dec 22 00:56	14°♑49'44	
conjunction	1843 Jan 07 15:56	16°♑46'50	0°13'13
minimum elong	1843 Jan 07 15:57	16°♑46'50	0°13'13
behind sun begin	1843 Jan 07 11:44	16°♑45'37	
behind sun end	1843 Jan 07 20:09	16°♑48'04	
max. Earth dist.	1843 Jan 07 10:15	16°♑45'10	11.03600 AU
morning rise	1843 Jan 24 07:38	18°♑44'09	
retrograde	1843 May 05 21:46	25°♑48'55	

desc. node	1843 Jul 10 14:28	22°♑52'55	
opposition	1843 Jul 15 17:30	22°♑30'16	-0°00'27
min. Earth dist.	1843 Jul 15 22:18	22°♑29'23	9.01665 AU
direct	1843 Sep 24 04:02	19°♑12'03	
evening set	1844 Jan 02 10:57	26°♑13'04	
conjunction	1844 Jan 19 02:30	28°♑10'51	-0°13'53
minimum elong	1844 Jan 19 02:29	28°♑10'51	0°13'53
behind sun begin	1844 Jan 18 22:44	28°♑09'44	
behind sun end	1844 Jan 19 06:15	28°♑11'57	
max. Earth dist.	1844 Jan 18 21:08	28°♑09'16	10.99201 AU
	1844 Feb 03 12:15	0°♒	
morning rise	1844 Feb 04 19:22	0°♒09'03	
retrograde	1844 May 17 02:56	7°♒18'49	
opposition	1844 Jul 26 23:51	3°♒59'09	-0°33'34
min. Earth dist.	1844 Jul 27 04:01	3°♒58'23	8.96202 AU
direct	1844 Oct 05 00:52	0°♒40'53	
evening set	1845 Jan 13 00:03	7°♒43'46	
conjunction	1845 Jan 29 16:27	9°♒42'31	-0°40'37
minimum elong	1845 Jan 29 16:26	9°♒42'31	0°40'37
max. Earth dist.	1845 Jan 29 11:36	9°♒41'05	10.92745 AU
morning rise	1845 Feb 15 10:49	11°♒41'57	
	1845 Mar 17 15:23	15°♒	
retrograde	1845 May 29 13:05	18°♒58'05	
opposition	1845 Aug 08 09:19	15°♒37'10	-1°05'48
min. Earth dist.	1845 Aug 08 13:05	15°♒36'28	8.88828 AU
	1845 Aug 16 17:21	15℞♒	
direct	1845 Oct 16 23:22	12°♒18'34	
	1845 Dec 13 20:03	15°♒	
evening set	1846 Jan 24 18:08	19°♒24'49	
conjunction	1846 Feb 10 11:36	21°♒24'53	-1°06'03
minimum elong	1846 Feb 10 11:34	21°♒24'52	1°06'03
max. Earth dist.	1846 Feb 10 06:21	21°♒23'18	10.84517 AU
morning rise	1846 Feb 27 07:58	23°♒25'51	
	1846 May 10 07:08	0°♓	
retrograde	1846 Jun 11 05:43	0°♓49'27	
	1846 Jul 13 13:08	30℞♒	
opposition	1846 Aug 20 22:28	27°♒27'10	-1°35'52
min. Earth dist.	1846 Aug 21 02:25	27°♒26'25	8.79858 AU
direct	1846 Oct 29 00:32	24°♒07'57	
	1847 Jan 25 11:29	0°♓	
evening set	1847 Feb 05 18:16	1°♓18'58	
conjunction	1847 Feb 22 13:17	3°♓20'39	-1°29'06
minimum elong	1847 Feb 22 13:14	3°♓20'39	1°29'05
max. Earth dist.	1847 Feb 22 08:04	3°♓19'04	10.74858 AU
morning rise	1847 Mar 11 11:58	5°♓23'27	
retrograde	1847 Jun 24 03:05	12°♓55'29	
opposition	1847 Sep 02 16:15	9°♓31'44	-2°02'25
min. Earth dist.	1847 Sep 02 20:00	9°♓31'01	8.69655 AU
direct	1847 Nov 10 06:31	6°♓11'43	
evening set	1848 Feb 18 01:39	13°♓28'46	
conjunction	1848 Mar 05 22:51	15°♓32'22	-1°48'36
minimum elong	1848 Mar 05 22:49	15°♓32'22	1°48'36
max. Earth dist.	1848 Mar 05 19:04	15°♓31'13	10.64163 AU
morning rise	1848 Mar 23 00:08	17°♓37'16	
retrograde	1848 Jul 06 08:31	25°♓18'23	
opposition	1848 Sep 14 15:09	21°♓53'08	-2°24'01
min. Earth dist.	1848 Sep 14 17:45	21°♓52'38	8.58646 AU
direct	1848 Nov 21 18:30	18°♓32'11	
evening set	1849 Mar 01 17:42	25°♓56'16	
conjunction	1849 Mar 18 17:43	28°♓02'07	-2°03'27
minimum elong	1849 Mar 18 17:41	28°♓02'06	2°03'27
max. Earth dist.	1849 Mar 18 15:32	28°♓01'26	10.52891 AU
	1849 Apr 03 15:18	0°♈	
morning rise	1849 Apr 04 22:01	0°♈09'21	
retrograde	1849 Jul 19 22:55	7°♈59'41	
opposition	1849 Sep 27 19:20	4°♈33'01	-2°39'17
min. Earth dist.	1849 Sep 27 20:29	4°♈32'47	8.47311 AU
direct	1849 Dec 04 10:43	1°♈11'00	
evening set	1850 Mar 14 19:09	8°♈42'55	
conjunction	1850 Mar 31 22:33	10°♈51'15	-2°12'34
minimum elong	1850 Mar 31 22:32	10°♈51'15	2°12'34
max. Earth dist.	1850 Mar 31 21:19	10°♈50'52	10.41558 AU
morning rise	1850 Apr 18 06:29	13°♈01'03	
retrograde	1850 Aug 02 19:55	21°♈00'11	
opposition	1850 Oct 11 05:11	17°♈32'17	-2°46'54
min. Earth dist.	1850 Oct 11 05:20	17°♈32'15	8.36175 AU
direct	1850 Dec 17 09:29	14°♈09'06	
evening set	1851 Mar 28 06:19	21°♈49'18	
conjunction	1851 Apr 14 13:39	24°♈00'15	-2°15'03
minimum elong	1851 Apr 14 13:39	24°♈00'16	2°15'03
max. Earth dist.	1851 Apr 14 13:00	24°♈00'03	10.30720 AU
morning rise	1851 May 02 01:41	26°♈12'43	
	1851 Jun 03 16:12	0°♉	
retrograde	1851 Aug 16 22:22	4°♉19'43	
opposition	1851 Oct 24 20:27	0°♉50'49	-2°45'52
min. Earth dist.	1851 Oct 24 20:01	0°♉50'54	8.25812 AU
	1851 Nov 04 12:00	30℞♈	
direct	1851 Dec 30 16:38	27°♈26'26	
	1852 Feb 22 17:37	0°♉	
evening set	1852 Apr 10 03:18	5°♉14'52	
conjunction	1852 Apr 27 15:10	7°♉28'32	-2°10'16
minimum elong	1852 Apr 27 15:12	7°♉28'33	2°10'17
max. Earth dist.	1852 Apr 27 15:25	7°♉28'37	10.20967 AU
morning rise	1852 May 15 07:35	9°♉43'38	
	1852 Jul 01 11:58	15°♉	
retrograde	1852 Aug 30 06:19	17°♉56'56	
	1852 Oct 30 22:57	15℞♉	
opposition	1852 Nov 06 16:32	14°♉27'19	-2°35'34
min. Earth dist.	1852 Nov 06 15:35	14°♉27'31	8.16805 AU
direct	1853 Jan 12 06:42	11°♉01'43	
	1853 Mar 21 15:25	15°♉	
evening set	1853 Apr 24 09:32	18°♉57'55	
conjunction	1853 May 12 02:17	21°♉14'10	-1°58'04
minimum elong	1853 May 12 02:20	21°♉14'11	1°58'04
max. Earth dist.	1853 May 12 04:03	21°♉14'45	10.12859 AU
morning rise	1853 May 29 22:59	23°♉31'42	
	1853 Jul 29 20:06	0°♊	
retrograde	1853 Sep 13 18:18	1°♊49'12	
	1853 Oct 30 06:50	30℞♉	
opposition	1853 Nov 20 16:35	28°♉19'14	-2°16'04
min. Earth dist.	1853 Nov 20 14:35	28°♉19'39	8.09687 AU
direct	1854 Jan 26 03:33	24°♉52'31	
	1854 Apr 14 22:21	0°♊	
evening set	1854 May 09 00:01	2°♊55'31	
conjunction	1854 May 26 21:23	5°♊14'00	-1°38'47
minimum elong	1854 May 26 21:26	5°♊14'01	1°38'47
max. Earth dist.	1854 May 27 00:49	5°♊15'07	10.06891 AU
morning rise	1854 Jun 13 21:45	7°♊33'28	
retrograde	1854 Sep 28 07:56	15°♊52'46	
opposition	1854 Dec 04 19:21	12°♊22'50	-1°48'09
min. Earth dist.	1854 Dec 04 16:06	12°♊23'30	8.04917 AU
direct	1855 Feb 09 07:04	8°♊55'09	
evening set	1855 May 23 20:58	17°♊03'31	

conjunction	1855 Jun 10 22:12	19°♊23'38	-1°13'23
minimum elong	1855 Jun 10 22:16	19°♊23'39	1°13'23
max. Earth dist.	1855 Jun 11 03:15	19°♊25'17	10.03471 AU
morning rise	1855 Jun 29 01:16	21°♊44'23	
	1855 Oct 05 15:34	0°♋	
retrograde	1855 Oct 12 21:11	0°♋02'56	
	1855 Oct 20 03:19	30°℞♊	
opposition	1855 Dec 18 23:38	26°♊33'23	-1°13'24
min. Earth dist.	1855 Dec 18 19:11	26°♊34'18	8.02836 AU
direct	1856 Feb 23 14:25	23°♊04'57	
	1856 May 27 17:13	0°♋	
evening set	1856 Jun 06 22:10	1°♋16'55	
conjunction	1856 Jun 25 02:00	3°♋37'53	-0°43'24
minimum elong	1856 Jun 25 02:02	3°♋37'54	0°43'24
max. Earth dist.	1856 Jun 25 08:10	3°♋39'54	10.02840 AU
morning rise	1856 Jul 13 06:22	5°♋59'03	
retrograde	1856 Oct 26 08:43	14°♋14'23	
opposition	1857 Jan 01 03:55	10°♋45'36	-0°34'05
min. Earth dist.	1856 Dec 31 22:59	10°♋46'37	8.03597 AU
direct	1857 Mar 09 00:22	7°♋16'37	
evening set	1857 Jun 22 01:07	15°♋30'13	
conjunction	1857 Jul 10 05:48	17°♋51'05	-0°10'51
minimum elong	1857 Jul 10 05:48	17°♋51'05	0°10'51
behind sun begin	1857 Jul 10 00:17	17°♋49'19	
behind sun end	1857 Jul 10 11:20	17°♋52'52	
max. Earth dist.	1857 Jul 10 12:11	17°♋53'08	10.05043 AU
morning rise	1857 Jul 28 09:44	20°♋11'43	
retrograde	1857 Nov 09 16:22	28°♋21'40	
asc. node	1857 Nov 11 03:10	28°♋21'32	
opposition	1858 Jan 15 06:40	24°♋53'55	0°07'05
min. Earth dist.	1858 Jan 15 01:55	24°♋54'54	8.07159 AU
direct	1858 Mar 23 11:18	21°♋24'41	
evening set	1858 Jul 07 02:37	29°♋37'47	
	1858 Jul 10 00:37	0°♌	
conjunction	1858 Jul 25 06:21	1°♌57'37	0°22'12
minimum elong	1858 Jul 25 06:20	1°♌57'37	0°22'13
max. Earth dist.	1858 Jul 25 12:23	1°♌59'34	10.09939 AU
morning rise	1858 Aug 12 08:12	4°♌16'49	
retrograde	1858 Nov 23 18:23	12°♌19'43	
opposition	1859 Jan 29 06:38	8°♌53'13	0°47'21
min. Earth dist.	1859 Jan 29 02:13	8°♌54'07	8.13293 AU
direct	1859 Apr 06 22:49	5°♌24'00	
evening set	1859 Jul 21 23:38	13°♌34'30	
	1859 Aug 02 05:05	15°♌	
conjunction	1859 Aug 09 00:50	15°♌52'28	0°53'29
minimum elong	1859 Aug 09 00:47	15°♌52'27	0°53'29
max. Earth dist.	1859 Aug 09 06:09	15°♌54'11	10.17198 AU
morning rise	1859 Aug 26 23:10	18°♌09'30	
retrograde	1859 Dec 07 11:20	26°♌04'12	
opposition	1860 Feb 12 02:29	22°♌39'03	1°24'10
min. Earth dist.	1860 Feb 11 22:29	22°♌39'51	8.21571 AU
direct	1860 Apr 20 08:28	19°♌10'07	
evening set	1860 Aug 04 13:59	27°♌16'13	
conjunction	1860 Aug 22 11:24	29°♌31'41	1°21'13
minimum elong	1860 Aug 22 11:21	29°♌31'40	1°21'14
max. Earth dist.	1860 Aug 22 15:40	29°♌33'03	10.26312 AU
	1860 Aug 26 04:30	0°♍	
morning rise	1860 Sep 09 05:08	1°♍45'59	
retrograde	1860 Dec 19 21:05	9°♍31'58	
opposition	1861 Feb 24 17:17	6°♍08'10	1°55'29
min. Earth dist.	1861 Feb 24 13:33	6°♍08'55	8.31411 AU
direct	1861 May 04 13:01	2°♍39'48	
evening set	1861 Aug 18 19:31	10°♍40'00	
conjunction	1861 Sep 05 12:24	12°♍52'39	1°44'00
minimum elong	1861 Sep 05 12:21	12°♍52'38	1°44'00
max. Earth dist.	1861 Sep 05 15:51	12°♍53'44	10.36650 AU
morning rise	1861 Sep 23 00:55	15°♍03'57	
retrograde	1862 Jan 02 00:57	22°♍41'16	
opposition	1862 Mar 10 02:53	19°♍18'47	2°19'53
min. Earth dist.	1862 Mar 09 23:49	19°♍19'24	8.42139 AU
direct	1862 May 18 10:44	15°♍51'14	
evening set	1862 Sep 01 14:59	23°♍44'33	
conjunction	1862 Sep 19 03:05	25°♍54'20	2°00'53
minimum elong	1862 Sep 19 03:02	25°♍54'19	2°00'53
max. Earth dist.	1862 Sep 19 05:39	25°♍55'08	10.47545 AU
morning rise	1862 Oct 06 10:22	28°♍02'40	
	1862 Oct 22 23:06	0°♎	
retrograde	1863 Jan 14 21:47	5°♎31'49	
opposition	1863 Mar 23 07:10	2°♎10'37	2°36'33
min. Earth dist.	1863 Mar 23 05:25	2°♎10'58	8.53135 AU
	1863 Apr 22 10:54	30°℞♍	
direct	1863 Jun 01 02:00	28°♍44'03	
	1863 Jul 10 08:32	0°♎	
evening set	1863 Sep 15 00:30	6°♎30'02	
conjunction	1863 Oct 02 07:51	8°♎37'01	2°11'24
minimum elong	1863 Oct 02 07:49	8°♎37'01	2°11'24
max. Earth dist.	1863 Oct 02 09:01	8°♎37'23	10.58461 AU
morning rise	1863 Oct 19 10:22	10°♎42'35	
retrograde	1864 Jan 27 10:55	18°♎04'15	
opposition	1864 Apr 04 06:14	14°♎44'13	2°45'15
min. Earth dist.	1864 Apr 04 06:11	14°♎44'14	8.63923 AU
direct	1864 Jun 13 11:58	11°♎18'44	
evening set	1864 Sep 27 00:02	18°♎57'08	
conjunction	1864 Oct 14 03:00	21°♎01'34	2°15'30
minimum elong	1864 Oct 14 03:00	21°♎01'33	2°15'29
max. Earth dist.	1864 Oct 14 02:16	21°♎01'20	10.68967 AU
morning rise	1864 Oct 31 01:32	23°♎04'40	
	1865 Jan 19 10:40	0°♏	
retrograde	1865 Feb 07 18:49	0°♏19'42	
	1865 Feb 27 07:18	30°℞♎	
opposition	1865 Apr 17 00:39	27°♎00'38	2°46'08
min. Earth dist.	1865 Apr 17 01:42	27°♎00'26	8.74083 AU
direct	1865 Jun 26 15:13	23°♎36'17	
	1865 Sep 29 23:27	0°♏	
evening set	1865 Oct 09 13:54	1°♏07'04	
conjunction	1865 Oct 26 13:11	3°♏09'17	2°13'23
minimum elong	1865 Oct 26 13:12	3°♏09'17	2°13'23
max. Earth dist.	1865 Oct 26 11:07	3°♏08'39	10.78655 AU
morning rise	1865 Nov 12 08:32	5°♏10'19	
retrograde	1866 Feb 19 21:11	12°♏19'45	
opposition	1866 Apr 29 14:39	9°♏01'23	2°39'41
min. Earth dist.	1866 Apr 29 15:59	9°♏01'07	8.83209 AU
direct	1866 Jul 09 12:18	5°♏38'10	
evening set	1866 Oct 21 19:13	13°♏01'41	
conjunction	1866 Nov 07 15:42	15°♏02'04	2°05'32
minimum elong	1866 Nov 07 15:44	15°♏02'05	2°05'32
	1866 Nov 07 08:48	15°♏	
max. Earth dist.	1866 Nov 07 13:24	15°♏01'23	10.87137 AU
morning rise	1866 Nov 24 08:37	17°♏01'26	
retrograde	1867 Mar 03 21:23	24°♏06'26	
opposition	1867 May 12 00:40	20°♏48'31	2°26'37
min. Earth dist.	1867 May 12 02:17	20°♏48'13	8.90938 AU
direct	1867 Jul 22 03:34	17°♏26'22	

evening set	1867 Nov 02	17:17	24°♏43'18	
conjunction	1867 Nov 19	11:40	26°♏42'17	1°52'33
minimum elong	1867 Nov 19	11:42	26°♏42'18	1°52'34
max. Earth dist.	1867 Nov 19	09:13	26°♏41'33	10.94075 AU
morning rise	1867 Dec 06	02:54	28°♏40'24	
	1867 Dec 17	17:28	0°♐	
retrograde	1868 Mar 14	18:53	5°♐42'13	
opposition	1868 May 23	07:51	2°♐24'34	2°07'46
min. Earth dist.	1868 May 23	10:26	2°♐24'05	8.96980 AU
	1868 Jun 28	11:57	30℞♏	
direct	1868 Aug 02	11:40	29°♏03'22	
	1868 Sep 05	22:25	0°♐	
evening set	1868 Nov 13	09:30	6°♐14'38	
conjunction	1868 Nov 30	02:12	8°♐12'35	1°35'09
minimum elong	1868 Nov 30	02:15	8°♐12'35	1°35'10
max. Earth dist.	1868 Nov 29	22:39	8°♐11'31	10.99216 AU
morning rise	1868 Dec 16	16:39	10°♐09'55	
retrograde	1869 Mar 26	13:19	17°♐09'58	
opposition	1869 Jun 04	12:52	13°♐52'20	1°44'02
min. Earth dist.	1869 Jun 04	16:29	13°♐51'40	9.01131 AU
direct	1869 Aug 14	16:11	10°♐31'56	
evening set	1869 Nov 24	21:31	17°♐38'42	
conjunction	1869 Dec 11	13:10	19°♐36'01	1°14'07
minimum elong	1869 Dec 11	13:12	19°♐36'02	1°14'07
max. Earth dist.	1869 Dec 11	08:38	19°♐34'41	11.02395 AU
morning rise	1869 Dec 28	03:30	21°♐32'57	
retrograde	1870 Apr 07	08:53	28°♐32'45	
opposition	1870 Jun 16	16:24	25°♐14'53	1°16'23
min. Earth dist.	1870 Jun 16	20:12	25°♐14'11	9.03254 AU
direct	1870 Aug 26	18:07	21°♐55'10	
evening set	1870 Dec 06	06:51	28°♐58'42	
	1870 Dec 15	01:02	0°♑	
conjunction	1870 Dec 22	22:07	0°♑55'47	0°50'15
minimum elong	1870 Dec 22	22:08	0°♑55'48	0°50'15
max. Earth dist.	1870 Dec 22	17:49	0°♑54'32	11.03494 AU
morning rise	1871 Jan 08	12:43	2°♑52'44	
retrograde	1871 Apr 19	05:31	9°♑53'46	
opposition	1871 Jun 28	19:34	6°♑35'28	0°45'50
min. Earth dist.	1871 Jun 28	22:46	6°♑34'52	9.03259 AU
direct	1871 Sep 07	16:27	3°♑16'17	
evening set	1871 Dec 17	15:22	10°♑18'00	
conjunction	1872 Jan 03	06:35	12°♑15'13	0°24'25
minimum elong	1872 Jan 03	06:36	12°♑15'13	0°24'24
max. Earth dist.	1872 Jan 03	02:45	12°♑14'05	11.02455 AU
morning rise	1872 Jan 19	21:48	14°♑12'30	
retrograde	1872 Apr 30	06:08	21°♑16'19	
opposition	1872 Jul 09	23:30	17°♑57'24	0°13'26
min. Earth dist.	1872 Jul 10	02:44	17°♑56'49	9.01144 AU
direct	1872 Sep 18	13:35	14°♑38'35	
desc. node	1872 Dec 10	00:07	19°♑38'43	
evening set	1872 Dec 28	00:51	21°♑39'56	
conjunction	1873 Jan 13	16:13	23°♑37'37	-0°02'34
minimum elong	1873 Jan 13	16:13	23°♑37'37	0°02'34
behind sun begin	1873 Jan 13	09:15	23°♑35'34	
behind sun end	1873 Jan 13	23:11	23°♑39'40	
max. Earth dist.	1873 Jan 13	11:48	23°♑36'21	10.99322 AU
morning rise	1873 Jan 30	08:36	25°♑35'37	
	1873 Mar 13	20:00	0°♒	
retrograde	1873 May 12	08:40	2°♒43'41	
	1873 Jul 14	01:55	30℞♑	
opposition	1873 Jul 22	05:13	29°♑23'58	-0°19'45
min. Earth dist.	1873 Jul 22	08:52	29°♑23'17	8.96993 AU
direct	1873 Sep 30	08:55	26°♑05'17	
	1873 Dec 10	21:45	0°♒	
evening set	1874 Jan 08	12:41	3°♒07'47	
conjunction	1874 Jan 25	04:38	5°♒06'15	-0°29'31
minimum elong	1874 Jan 25	04:37	5°♒06'15	0°29'31
max. Earth dist.	1874 Jan 24	23:48	5°♒04'49	10.94204 AU
morning rise	1874 Feb 10	22:33	7°♒05'17	
retrograde	1874 May 24	15:24	14°♒19'01	
opposition	1874 Aug 03	13:27	10°♒58'19	-0°52'31
min. Earth dist.	1874 Aug 03	17:09	10°♒57'38	8.90946 AU
direct	1874 Oct 12	08:10	7°♒39'34	
evening set	1875 Jan 20	04:37	14°♒44'42	
	1875 Jan 22	08:33	15°♒	
conjunction	1875 Feb 05	21:37	16°♒44'17	-0°55'38
minimum elong	1875 Feb 05	21:35	16°♒44'17	0°55'38
max. Earth dist.	1875 Feb 05	17:48	16°♒43'08	10.87274 AU
morning rise	1875 Feb 22	17:10	18°♒44'40	
retrograde	1875 Jun 06	05:58	26°♒05'18	
opposition	1875 Aug 16	01:01	22°♒43'28	-1°23'38
min. Earth dist.	1875 Aug 16	03:42	22°♒42'58	8.83221 AU
direct	1875 Oct 24	09:13	19°♒24'28	
evening set	1876 Feb 01	02:08	26°♒33'37	
conjunction	1876 Feb 17	20:33	28°♒34'39	-1°19'48
minimum elong	1876 Feb 17	20:30	28°♒34'38	1°19'47
max. Earth dist.	1876 Feb 17	17:50	28°♒33'49	10.78798 AU
	1876 Feb 29	15:08	0°♓	
morning rise	1876 Mar 05	18:02	0°♓36'40	
retrograde	1876 Jun 18	02:16	8°♓05'14	
opposition	1876 Aug 27	17:00	4°♓42'11	-1°51'47
min. Earth dist.	1876 Aug 27	18:37	4°♓41'53	8.74128 AU
direct	1876 Nov 04	11:52	1°♓22'43	
evening set	1877 Feb 12	06:30	8°♓37'11	
conjunction	1877 Mar 01	02:41	10°♓39'56	-1°40'53
minimum elong	1877 Mar 01	02:39	10°♓39'55	1°40'53
max. Earth dist.	1877 Mar 01	00:22	10°♓39'13	10.69130 AU
morning rise	1877 Mar 18	02:41	12°♓43'53	
retrograde	1877 Jul 01	05:27	20°♓21'07	
opposition	1877 Sep 09	13:52	16°♓56'48	-2°15'33
min. Earth dist.	1877 Sep 09	15:01	16°♓56'34	8.64044 AU
direct	1877 Nov 16	20:47	13°♓36'39	
evening set	1878 Feb 24	19:05	20°♓57'33	
conjunction	1878 Mar 13	17:37	23°♓02'20	-1°57'46
minimum elong	1878 Mar 13	17:35	23°♓02'19	1°57'46
max. Earth dist.	1878 Mar 13	15:22	23°♓01'38	10.58681 AU
morning rise	1878 Mar 30	20:36	25°♓08'28	
	1878 May 14	20:15	0°♈	
retrograde	1878 Jul 14	15:57	2°♈54'37	
	1878 Sep 15	23:55	30℞♓	
opposition	1878 Sep 22	15:49	29°♓29'03	-2°33'33
min. Earth dist.	1878 Sep 22	16:56	29°♓28'50	8.53406 AU
direct	1878 Nov 29	10:42	26°♓08'03	
	1879 Feb 06	00:53	0°♈	
evening set	1879 Mar 09	16:28	3°♈36'15	
conjunction	1879 Mar 26	18:06	5°♈43'19	-2°09'21
minimum elong	1879 Mar 26	18:04	5°♈43'18	2°09'22
max. Earth dist.	1879 Mar 26	16:59	5°♈42'58	10.47912 AU
morning rise	1879 Apr 13	00:26	7°♈51'50	
retrograde	1879 Jul 28	08:44	15°♈46'44	
opposition	1879 Oct 05	23:16	12°♈19'59	-2°44'26
min. Earth dist.	1879 Oct 05	23:38	12°♈19'55	8.42687 AU

direct	1879 Dec 12 07:42	8°♈57'57	
evening set	1880 Mar 21 23:08	16°♈33'57	
conjunction	1880 Apr 08 04:37	18°♈43'31	-2°14'40
minimum elong	1880 Apr 08 04:37	18°♈43'31	2°14'40
max. Earth dist.	1880 Apr 08 05:02	18°♈43'38	10.37310 AU
morning rise	1880 Apr 25 14:43	20°♈54'34	
retrograde	1880 Aug 10 07:42	28°♈57'30	
opposition	1880 Oct 18 11:57	25°♈29'40	-2°47'04
min. Earth dist.	1880 Oct 18 11:17	25°♈29'48	8.32361 AU
direct	1880 Dec 24 12:22	22°♈06'30	
evening set	1881 Apr 04 15:36	29°♈50'27	
	1881 Apr 05 22:10	0°♉	
conjunction	1881 Apr 22 01:29	2°♉02'40	-2°12'59
minimum elong	1881 Apr 22 01:30	2°♉02'40	2°12'59
max. Earth dist.	1881 Apr 22 02:59	2°♉03'08	10.27344 AU
morning rise	1881 May 09 15:43	4°♉16'18	
retrograde	1881 Aug 24 13:41	12°♉26'01	
opposition	1881 Nov 01 05:21	8°♉57'21	-2°40'41
min. Earth dist.	1881 Nov 01 03:48	8°♉57'40	8.22891 AU
direct	1882 Jan 06 22:06	5°♉32'58	
evening set	1882 Apr 18 17:29	13°♉24'47	
	1882 May 01 04:41	15°♉	
conjunction	1882 May 06 08:02	15°♉39'37	-2°03'55
minimum elong	1882 May 06 08:05	15°♉39'38	2°03'55
max. Earth dist.	1882 May 06 09:54	15°♉40'13	10.18511 AU
morning rise	1882 May 24 02:36	17°♉55'46	
retrograde	1882 Sep 08 00:28	26°♉10'35	
opposition	1882 Nov 15 03:12	22°♉41'23	-2°25'04
min. Earth dist.	1882 Nov 15 01:11	22°♉41'48	8.14824 AU
direct	1883 Jan 20 14:35	19°♉15'48	
evening set	1883 May 03 03:50	27°♉14'50	
conjunction	1883 May 20 23:02	29°♉32'04	-1°47'35
minimum elong	1883 May 20 23:05	29°♉32'05	1°47'35
max. Earth dist.	1883 May 21 01:18	29°♉32'48	10.11405 AU
	1883 May 24 13:24	0°♊	
morning rise	1883 Jun 07 21:41	1°♊50'26	
retrograde	1883 Sep 22 13:32	10°♊08'09	
opposition	1883 Nov 29 04:27	6°♊38'43	-2°00'40
min. Earth dist.	1883 Nov 29 02:09	6°♊39'11	8.08761 AU
direct	1884 Feb 03 14:49	3°♊11'58	
evening set	1884 May 16 21:34	11°♊17'04	
conjunction	1884 Jun 03 20:58	13°♊36'14	-1°24'42
minimum elong	1884 Jun 03 21:01	13°♊36'15	1°24'42
max. Earth dist.	1884 Jun 03 23:46	13°♊37'09	10.06565 AU
morning rise	1884 Jun 21 22:57	15°♊56'13	
retrograde	1884 Oct 06 01:48	24°♊14'18	
opposition	1884 Dec 12 07:34	20°♊44'58	-1°28'44
min. Earth dist.	1884 Dec 12 05:01	20°♊45'30	8.05165 AU
direct	1885 Feb 16 20:42	17°♊17'10	
evening set	1885 May 31 20:32	25°♊26'44	
conjunction	1885 Jun 18 23:08	27°♊47'09	-0°56'34
minimum elong	1885 Jun 18 23:11	27°♊47'10	0°56'34
max. Earth dist.	1885 Jun 19 02:32	27°♊48'15	10.04348 AU
	1885 Jul 06 02:09	0°♋	
morning rise	1885 Jul 07 03:09	0°♋07'58	
retrograde	1885 Oct 20 12:39	8°♋23'55	
opposition	1885 Dec 26 11:18	4°♋55'01	-0°51'13
min. Earth dist.	1885 Dec 26 08:17	4°♋55'38	8.04295 AU
direct	1886 Mar 03 05:53	1°♋26'22	
evening set	1886 Jun 15 22:02	9°♋38'29	

conjunction	1886 Jul 04 02:21	11°♋59'15	-0°24'58
minimum elong	1886 Jul 04 02:22	11°♋59'15	0°24'58
max. Earth dist.	1886 Jul 04 06:37	12°♋00'38	10.04902 AU
morning rise	1886 Jul 22 06:42	14°♋20'00	
retrograde	1886 Nov 03 20:37	22°♋31'36	
opposition	1887 Jan 09 14:03	19°♋03'23	-0°10'40
min. Earth dist.	1887 Jan 09 10:11	19°♋04'11	8.06209 AU
direct	1887 Mar 17 16:39	15°♋34'10	
asc. node	1887 Apr 17 19:09	16°♋26'47	
evening set	1887 Jun 30 23:24	23°♋46'47	
conjunction	1887 Jul 19 03:46	26°♋06'59	0°08'04
minimum elong	1887 Jul 19 03:45	26°♋06'59	0°08'04
behind sun begin	1887 Jul 18 21:14	26°♋04'53	
behind sun end	1887 Jul 19 10:16	26°♋09'04	
max. Earth dist.	1887 Jul 19 08:48	26°♋08'35	10.08186 AU
morning rise	1887 Aug 06 06:42	28°♋26'44	
	1887 Aug 18 19:05	0°♌	
retrograde	1887 Nov 17 23:59	6°♌32'08	
opposition	1888 Jan 23 14:23	3°♌04'52	0°30'11
min. Earth dist.	1888 Jan 23 10:05	3°♌05'44	8.10771 AU
	1888 Mar 09 20:01	30°℞♋	
direct	1888 Mar 31 03:16	29°♋35'22	
	1888 Apr 21 10:01	0°♌	
evening set	1888 Jul 14 21:50	7°♌46'28	
conjunction	1888 Aug 02 00:29	10°♌05'14	0°40'13
minimum elong	1888 Aug 02 00:27	10°♌05'13	0°40'13
max. Earth dist.	1888 Aug 02 05:42	10°♌06'55	10.13958 AU
morning rise	1888 Aug 20 00:26	12°♌23'10	
	1888 Sep 10 14:54	15°♌	
retrograde	1888 Nov 30 20:37	20°♌21'02	
opposition	1889 Feb 05 11:19	16°♌54'55	1°08'41
min. Earth dist.	1889 Feb 05 07:14	16°♌55'45	8.17658 AU
	1889 Mar 02 08:48	15°℞♌	
direct	1889 Apr 14 12:12	13°♌25'28	
	1889 May 27 06:15	15°♌	
evening set	1889 Jul 29 14:39	21°♌33'10	
conjunction	1889 Aug 16 13:59	23°♌49'46	1°09'38
minimum elong	1889 Aug 16 13:56	23°♌49'45	1°09'38
max. Earth dist.	1889 Aug 16 18:48	23°♌51'18	10.21825 AU
morning rise	1889 Sep 03 09:42	26°♌05'15	
	1889 Oct 07 03:33	0°♍	
retrograde	1889 Dec 14 10:19	3°♍54'51	
opposition	1890 Feb 19 03:53	0°♍30'00	1°42'33
min. Earth dist.	1890 Feb 19 00:38	0°♍30'39	8.26425 AU
	1890 Feb 25 08:41	30°℞♌	
direct	1890 Apr 28 17:09	27°♌00'53	
	1890 Jun 28 04:53	0°♍	
evening set	1890 Aug 12 23:38	5°♍03'35	
conjunction	1890 Aug 30 18:39	7°♍17'32	1°34'40
minimum elong	1890 Aug 30 18:35	7°♍17'31	1°34'41
max. Earth dist.	1890 Aug 30 22:19	7°♍18'42	10.31309 AU
morning rise	1890 Sep 17 09:28	9°♍30'11	
retrograde	1890 Dec 27 16:31	17°♍11'14	
opposition	1891 Mar 04 15:23	13°♍47'41	2°10'05
min. Earth dist.	1891 Mar 04 13:06	13°♍48'09	8.36554 AU
direct	1891 May 12 17:21	10°♍19'14	
evening set	1891 Aug 26 23:15	18°♍15'37	
conjunction	1891 Sep 13 13:26	20°♍26'43	1°54'12
minimum elong	1891 Sep 13 13:23	20°♍26'42	1°54'12
max. Earth dist.	1891 Sep 13 15:35	20°♍27'23	10.41866 AU
morning rise	1891 Sep 30 23:12	22°♍36'25	
	1891 Dec 27 17:42	0°♎	

retrograde	1892 Jan 09 14:20	0°♎09'03	
	1892 Jan 22 12:49	30°℞♍	
opposition	1892 Mar 16 21:34	26°♍46'49	2°30'12
min. Earth dist.	1892 Mar 16 19:43	26°♍47'11	8.47465 AU
direct	1892 May 25 12:42	23°♍19'16	
	1892 Aug 29 23:07	0°♎	
evening set	1892 Sep 08 12:51	1°♎08'31	
conjunction	1892 Sep 25 22:13	3°♎16'44	2°07'33
minimum elong	1892 Sep 25 22:11	3°♎16'43	2°07'33
max. Earth dist.	1892 Sep 25 23:28	3°♎17'07	10.52923 AU
morning rise	1892 Oct 13 03:01	5°♎23'33	
retrograde	1893 Jan 21 05:42	12°♎48'18	
opposition	1893 Mar 29 22:25	9°♎27'19	2°42'24
min. Earth dist.	1893 Mar 29 20:46	9°♎27'38	8.58591 AU
direct	1893 Jun 08 01:42	6°♎00'54	
evening set	1893 Sep 21 16:09	13°♎42'29	
conjunction	1893 Oct 08 21:06	15°♎48'01	2°14'28
minimum elong	1893 Oct 08 21:05	15°♎48'01	2°14'28
max. Earth dist.	1893 Oct 08 22:04	15°♎48'19	10.63939 AU
morning rise	1893 Oct 25 21:24	17°♎52'10	
retrograde	1894 Feb 02 16:55	25°♎09'50	
opposition	1894 Apr 11 18:17	21°♎49'58	2°46'41
min. Earth dist.	1894 Apr 11 17:07	21°♎50'12	8.69403 AU
direct	1894 Jun 21 05:53	18°♎24'51	
evening set	1894 Oct 04 09:32	25°♎58'39	
conjunction	1894 Oct 21 10:36	28°♎01'48	2°15'03
minimum elong	1894 Oct 21 10:37	28°♎01'48	2°15'03
max. Earth dist.	1894 Oct 21 11:11	28°♎01'59	10.74401 AU
	1894 Nov 06 18:50	0°♏	
morning rise	1894 Nov 07 07:13	0°♏03'40	
retrograde	1895 Feb 14 21:42	7°♏15'10	
opposition	1895 Apr 24 09:37	3°♏56'18	2°43'24
min. Earth dist.	1895 Apr 24 09:49	3°♏56'16	8.79416 AU
direct	1895 Jul 04 03:44	0°♏32'29	
evening set	1895 Oct 16 18:14	7°♏58'51	
conjunction	1895 Nov 02 15:57	9°♏59'57	2°09'41
minimum elong	1895 Nov 02 15:58	9°♏59'57	2°09'40
max. Earth dist.	1895 Nov 02 14:58	9°♏59'39	10.83852 AU
morning rise	1895 Nov 19 09:48	11°♏59'57	
	1895 Dec 16 10:27	15°♏	
retrograde	1896 Feb 26 21:56	19°♏06'24	
opposition	1896 May 05 20:52	15°♏48'21	2°33'10
min. Earth dist.	1896 May 05 22:20	15°♏48'04	8.88208 AU
	1896 May 16 16:03	15°℞♏	
direct	1896 Jul 15 21:09	12°♏25'47	
	1896 Sep 11 17:17	15°♏	
evening set	1896 Oct 27 19:08	19°♏45'16	
conjunction	1896 Nov 13 14:14	21°♏44'44	1°58'55
minimum elong	1896 Nov 13 14:16	21°♏44'45	1°58'54
max. Earth dist.	1896 Nov 13 11:52	21°♏44'02	10.91917 AU
morning rise	1896 Nov 30 06:14	23°♏43'17	
	1897 Feb 07 14:32	0°♐	
retrograde	1897 Mar 09 19:19	0°♐45'59	
	1897 Apr 09 14:28	30°℞♏	
opposition	1897 May 18 04:58	27°♏28'28	2°16'46
min. Earth dist.	1897 May 18 06:49	27°♏28'08	8.95439 AU
direct	1897 Jul 28 08:15	24°♏07'07	
	1897 Oct 27 18:33	0°♐	
evening set	1897 Nov 08 13:27	1°♐20'28	
conjunction	1897 Nov 25 06:47	3°♐18'44	1°43'24
minimum elong	1897 Nov 25 06:50	3°♐18'44	1°43'24
max. Earth dist.	1897 Nov 25 04:13	3°♐17'58	10.98285 AU
morning rise	1897 Dec 11 21:34	5°♐16'16	
retrograde	1898 Mar 21 15:14	12°♐16'35	
opposition	1898 May 30 10:30	8°♐59'20	1°55'06
min. Earth dist.	1898 May 30 12:18	8°♐59'00	9.00831 AU
direct	1898 Aug 09 14:56	5°♐39'02	
evening set	1898 Nov 20 03:04	12°♐47'19	
conjunction	1898 Dec 06 19:16	14°♐44'45	1°23'54
minimum elong	1898 Dec 06 19:18	14°♐44'46	1°23'54
max. Earth dist.	1898 Dec 06 16:42	14°♐44'00	11.02704 AU
morning rise	1898 Dec 23 09:26	16°♐41'41	
retrograde	1899 Apr 02 12:15	23°♐40'59	
opposition	1899 Jun 11 14:18	20°♐23'46	1°29'07
min. Earth dist.	1899 Jun 11 16:52	20°♐23'18	9.04179 AU
direct	1899 Aug 21 16:55	17°♐04'20	
evening set	1899 Dec 01 13:34	24°♐08'45	
conjunction	1899 Dec 18 04:55	26°♐05'45	1°01'13
minimum elong	1899 Dec 18 04:57	26°♐05'46	1°01'13
max. Earth dist.	1899 Dec 18 01:14	26°♐04'40	11.05001 AU
morning rise	1900 Jan 03 19:11	28°♐02'29	
	1900 Jan 21 08:09	0°♑	
retrograde	1900 Apr 14 06:59	5°♑02'15	
opposition	1900 Jun 23 17:36	1°♑44'47	0°59'47
min. Earth dist.	1900 Jun 23 21:21	1°♑44'06	9.05342 AU
	1900 Jul 18 17:34	30°℞♐	
direct	1900 Sep 02 15:16	28°♐25'59	
	1900 Oct 17 05:01	0°♑	
evening set	1900 Dec 12 22:16	5°♑27'53	
conjunction	1900 Dec 29 13:14	7°♑24'48	0°36'11
minimum elong	1900 Dec 29 13:15	7°♑24'49	0°36'11
max. Earth dist.	1900 Dec 29 08:16	7°♑23'20	11.05057 AU
morning rise	1901 Jan 15 04:09	9°♑21'43	
retrograde	1901 Apr 26 04:34	16°♑23'32	
opposition	1901 Jul 05 21:05	13°♑05'32	0°28'08
min. Earth dist.	1901 Jul 06 01:23	13°♑04'44	9.04222 AU
direct	1901 Sep 14 14:09	9°♑47'07	
evening set	1901 Dec 24 07:02	16°♑47'59	
conjunction	1902 Jan 09 22:13	18°♑45'13	0°09'43
minimum elong	1902 Jan 09 22:13	18°♑45'14	0°09'43
behind sun begin	1902 Jan 09 16:27	18°♑43'32	
behind sun end	1902 Jan 10 03:59	18°♑46'55	
max. Earth dist.	1902 Jan 09 17:15	18°♑43'46	11.02794 AU
morning rise	1902 Jan 26 14:00	20°♑42'41	
retrograde	1902 May 08 06:18	27°♑48'07	
desc. node	1902 May 24 18:36	27°♑34'59	
opposition	1902 Jul 18 01:33	24°♑29'20	-0°04'46
min. Earth dist.	1902 Jul 18 05:39	24°♑28'34	9.00794 AU
direct	1902 Sep 26 10:54	21°♑11'06	
evening set	1903 Jan 04 17:36	28°♑12'30	
	1903 Jan 19 22:14	0°♒	
conjunction	1903 Jan 21 09:20	0°♒10'26	-0°17'24
minimum elong	1903 Jan 21 09:19	0°♒10'25	0°17'24
max. Earth dist.	1903 Jan 21 04:29	0°♒09'00	10.98259 AU
morning rise	1903 Feb 07 02:17	2°♒08'48	
retrograde	1903 May 20 12:08	9°♒19'22	
opposition	1903 Jul 30 08:27	5°♒59'35	-0°37'50
min. Earth dist.	1903 Jul 30 12:21	5°♒58'51	8.95194 AU
direct	1903 Oct 08 08:06	2°♒41'17	
evening set	1904 Jan 16 07:32	9°♒44'44	
conjunction	1904 Feb 01 23:57	11°♒43'40	-0°44'00
minimum elong	1904 Feb 01 23:55	11°♒43'40	0°44'00

max. Earth dist.	1904 Feb 01 18:34	11°♒42'04	10.91671 AU
morning rise	1904 Feb 18 18:33	13°♒43'17	
	1904 Feb 29 21:35	15°♒	
retrograde	1904 May 31 23:27	21°♒00'21	
opposition	1904 Aug 10 18:38	17°♒39'21	-1°09'50
min. Earth dist.	1904 Aug 10 22:51	17°♒38'34	8.87700 AU
	1904 Sep 20 23:16	15°℞♒	
direct	1904 Oct 19 06:57	14°♒20'42	
	1904 Nov 16 03:49	15°♒	
evening set	1905 Jan 27 02:24	21°♒27'40	
conjunction	1905 Feb 12 19:56	23°♒27'55	-1°09'10
minimum elong	1905 Feb 12 19:54	23°♒27'55	1°09'10
max. Earth dist.	1905 Feb 12 14:19	23°♒26'14	10.83340 AU
morning rise	1905 Mar 01 16:34	25°♒29'07	
	1905 Apr 13 08:38	0°♓	
retrograde	1905 Jun 13 15:09	2°♓53'46	
	1905 Aug 17 00:43	30°℞♒	
opposition	1905 Aug 23 08:37	29°♒31'24	-1°39'29
min. Earth dist.	1905 Aug 23 12:49	29°♒30'36	8.78646 AU
direct	1905 Oct 31 09:03	26°♒12'08	
	1906 Jan 08 12:46	0°♓	
evening set	1906 Feb 08 03:25	3°♓23'59	
conjunction	1906 Feb 24 22:41	5°♓25'54	-1°31'47
minimum elong	1906 Feb 24 22:39	5°♓25'53	1°31'47
max. Earth dist.	1906 Feb 24 18:08	5°♓24'31	10.73615 AU
morning rise	1906 Mar 13 21:35	7°♓28'55	
retrograde	1906 Jun 26 14:37	15°♓02'06	
opposition	1906 Sep 05 03:06	11°♓38'14	-2°05'26
min. Earth dist.	1906 Sep 05 06:22	11°♓37'37	8.68400 AU
direct	1906 Nov 12 17:09	8°♓18'11	
evening set	1907 Feb 20 11:56	15°♓36'07	
conjunction	1907 Mar 09 09:26	17°♓39'59	-1°50'43
minimum elong	1907 Mar 09 09:24	17°♓39'58	1°50'43
max. Earth dist.	1907 Mar 09 06:29	17°♓39'04	10.62894 AU
morning rise	1907 Mar 26 10:52	19°♓45'07	
retrograde	1907 Jul 09 22:15	27°♓27'21	
opposition	1907 Sep 18 02:39	24°♓02'00	-2°26'14
min. Earth dist.	1907 Sep 18 04:27	24°♓01'39	8.57395 AU
direct	1907 Nov 25 04:06	20°♓41'01	
evening set	1908 Mar 04 05:06	28°♓06'02	
	1908 Mar 19 14:22	0°♈	
conjunction	1908 Mar 21 05:20	0°♈12'07	-2°04'51
minimum elong	1908 Mar 21 05:19	0°♈12'07	2°04'51
max. Earth dist.	1908 Mar 21 03:14	0°♈11'28	10.51661 AU
morning rise	1908 Apr 07 09:56	2°♈19'38	
retrograde	1908 Jul 22 12:46	10°♈10'59	
opposition	1908 Sep 30 07:40	6°♈44'14	-2°40'33
min. Earth dist.	1908 Sep 30 08:31	6°♈44'04	8.46131 AU
direct	1908 Dec 06 21:04	3°♈22'10	
evening set	1909 Mar 17 07:32	10°♈55'00	
conjunction	1909 Apr 03 11:10	13°♈03'35	-2°13'08
minimum elong	1909 Apr 03 11:09	13°♈03'34	2°13'08
max. Earth dist.	1909 Apr 03 09:35	13°♈03'05	10.40440 AU
morning rise	1909 Apr 20 19:33	15°♈13'39	
retrograde	1909 Aug 05 09:32	23°♈13'39	
opposition	1909 Oct 13 18:10	19°♈45'41	-2°47'04
min. Earth dist.	1909 Oct 13 18:33	19°♈45'37	8.35135 AU
direct	1909 Dec 19 21:51	16°♈22'25	
evening set	1910 Mar 30 19:45	24°♈03'27	
conjunction	1910 Apr 17 03:28	26°♈14'41	-2°14'41
minimum elong	1910 Apr 17 03:28	26°♈14'41	2°14'41
max. Earth dist.	1910 Apr 17 02:42	26°♈14'26	10.29773 AU
morning rise	1910 May 04 15:58	28°♈27'24	
	1910 May 17 07:29	0°♉	
retrograde	1910 Aug 19 12:50	6°♉35'01	
opposition	1910 Oct 27 09:48	3°♉06'05	-2°44'51
min. Earth dist.	1910 Oct 27 09:37	3°♉06'07	8.24967 AU
	1910 Dec 14 23:13	30°℞♈	
direct	1911 Jan 02 05:19	29°♈41'35	
	1911 Jan 20 09:18	0°♉	
evening set	1911 Apr 13 17:30	7°♉30'44	
conjunction	1911 May 01 05:52	9°♉44'38	-2°08'58
minimum elong	1911 May 01 05:54	9°♉44'39	2°08'58
max. Earth dist.	1911 May 01 06:42	9°♉44'54	10.20238 AU
morning rise	1911 May 18 22:41	11°♉59'58	
	1911 Jun 12 23:23	15°♉	
retrograde	1911 Sep 02 20:57	20°♉13'37	
opposition	1911 Nov 10 06:11	16°♉43'58	-2°33'23
min. Earth dist.	1911 Nov 10 04:55	16°♉44'13	8.16199 AU
	1911 Dec 02 14:31	15°℞♉	
direct	1912 Jan 15 20:23	13°♉18'16	
	1912 Feb 28 03:41	15°♉	
evening set	1912 Apr 27 00:18	21°♉15'00	
conjunction	1912 May 14 17:34	23°♉31'26	-1°55'51
minimum elong	1912 May 14 17:37	23°♉31'27	1°55'51
max. Earth dist.	1912 May 14 20:21	23°♉32'20	10.12385 AU
morning rise	1912 Jun 01 14:34	25°♉49'07	
	1912 Jul 07 06:11	0°♊	
retrograde	1912 Sep 16 08:36	4°♊06'42	
opposition	1912 Nov 23 06:19	0°♊36'42	-2°12'47
min. Earth dist.	1912 Nov 23 03:37	0°♊37'15	8.09348 AU
	1912 Nov 30 18:20	30°℞♉	
direct	1913 Jan 28 18:13	27°♉09'53	
	1913 Mar 26 13:05	0°♊	
evening set	1913 May 11 15:16	5°♊13'11	
conjunction	1913 May 29 13:06	7°♊31'49	-1°35'46
minimum elong	1913 May 29 13:09	7°♊31'50	1°35'46
max. Earth dist.	1913 May 29 17:19	7°♊33'11	10.06694 AU
morning rise	1913 Jun 16 13:41	9°♊51'22	
retrograde	1913 Sep 30 21:49	18°♊10'25	
opposition	1913 Dec 07 08:59	14°♊40'28	-1°43'58
min. Earth dist.	1913 Dec 07 05:12	14°♊41'15	8.04855 AU
direct	1914 Feb 11 20:52	11°♊12'41	
evening set	1914 May 26 12:29	19°♊21'09	
conjunction	1914 Jun 13 13:59	21°♊41'20	-1°09'45
minimum elong	1914 Jun 13 14:02	21°♊41'21	1°09'45
max. Earth dist.	1914 Jun 13 19:14	21°♊43'03	10.03549 AU
morning rise	1914 Jul 01 17:10	24°♊02'05	
	1914 Aug 24 17:26	0°♋	
retrograde	1914 Oct 15 11:41	2°♋20'05	
	1914 Dec 07 06:50	30°℞♊	
opposition	1914 Dec 21 13:07	28°♊50'34	-1°08'36
min. Earth dist.	1914 Dec 21 08:39	28°♊51'29	8.03042 AU
direct	1915 Feb 26 03:25	25°♊22'01	
	1915 May 11 21:22	0°♋	
evening set	1915 Jun 10 13:29	3°♋33'52	
conjunction	1915 Jun 28 17:21	5°♋54'48	-0°39'24
minimum elong	1915 Jun 28 17:23	5°♋54'48	0°39'24
max. Earth dist.	1915 Jun 28 23:08	5°♋56'40	10.03178 AU
morning rise	1915 Jul 16 21:44	8°♋15'53	
retrograde	1915 Oct 29 22:58	16°♋30'28	
opposition	1916 Jan 04 17:04	13°♋01'43	-0°28'59
min. Earth dist.	1916 Jan 04 12:37	13°♋02'38	8.04053 AU

direct	1916 Mar	11	13:51	9°♋32'38	
evening set	1916 Jun	24	16:01	17°♋45'56	
conjunction	1916 Jul	12	20:34	20°♋06'40	-0°06'46
minimum elong	1916 Jul	12	20:34	20°♋06'41	0°06'45
behind sun begin	1916 Jul	12	13:43	20°♋04'28	
behind sun end	1916 Jul	13	03:25	20°♋08'53	
max. Earth dist.	1916 Jul	13	02:10	20°♋08'28	10.05616 AU
morning rise	1916 Jul	31	00:27	22°♋27'10	
asc. node	1916 Sep	27	18:34	28°♋45'40	
	1916 Oct	17	15:33	0°♌	
retrograde	1916 Nov	12	05:10	0°♌36'13	
	1916 Dec	07	19:24	30°℞♋	
opposition	1917 Jan	17	19:15	27°♋08'32	0°12'09
min. Earth dist.	1917 Jan	17	15:00	27°♋09'25	8.07833 AU
direct	1917 Mar	26	01:54	23°♋39'14	
	1917 Jun	24	13:52	0°♌	
evening set	1917 Jul	09	16:56	1°♌51'55	
conjunction	1917 Jul	27	20:26	4°♌11'31	0°26'10
minimum elong	1917 Jul	27	20:24	4°♌11'31	0°26'10
max. Earth dist.	1917 Jul	28	01:46	4°♌13'15	10.10704 AU
morning rise	1917 Aug	14	22:04	6°♌30'31	
retrograde	1917 Nov	26	04:38	14°♌32'28	
opposition	1918 Jan	31	18:37	11°♌06'03	0°52'04
min. Earth dist.	1918 Jan	31	14:15	11°♌06'57	8.14137 AU
direct	1918 Apr	09	13:34	7°♌36'49	
	1918 Jul	18	06:35	15°♌	
evening set	1918 Jul	24	13:10	15°♌46'47	
conjunction	1918 Aug	11	14:02	18°♌04'29	0°57'04
minimum elong	1918 Aug	11	13:59	18°♌04'28	0°57'04
max. Earth dist.	1918 Aug	11	19:15	18°♌06'09	10.18109 AU
morning rise	1918 Aug	29	11:57	20°♌21'13	
retrograde	1918 Dec	09	21:31	28°♌15'03	
opposition	1919 Feb	14	13:52	24°♌49'59	1°28'16
min. Earth dist.	1919 Feb	14	09:21	24°♌50'54	8.22546 AU
direct	1919 Apr	23	21:10	21°♌21'06	
evening set	1919 Aug	08	02:34	29°♌26'32	
	1919 Aug	12	13:51	0°♍	
conjunction	1919 Aug	25	23:38	1°♍41'44	1°24'14
minimum elong	1919 Aug	25	23:35	1°♍41'43	1°24'14
max. Earth dist.	1919 Aug	26	04:34	1°♍43'18	10.27346 AU
morning rise	1919 Sep	12	16:49	3°♍55'42	
retrograde	1919 Dec	23	08:08	11°♍40'51	
opposition	1920 Feb	28	04:04	8°♍17'08	1°58'46
min. Earth dist.	1920 Feb	27	23:50	8°♍17'59	8.32505 AU
direct	1920 May	07	00:04	4°♍48'51	
evening set	1920 Aug	21	07:13	12°♍48'18	
conjunction	1920 Sep	07	23:43	15°♍00'40	1°46'18
minimum elong	1920 Sep	07	23:40	15°♍00'39	1°46'18
max. Earth dist.	1920 Sep	08	04:00	15°♍02'01	10.37804 AU
morning rise	1920 Sep	25	11:38	17°♍11'39	
retrograde	1921 Jan	04	10:52	24°♍48'04	
opposition	1921 Mar	12	13:06	21°♍25'41	2°22'13
min. Earth dist.	1921 Mar	12	10:10	21°♍26'17	8.43355 AU
direct	1921 May	20	21:37	17°♍58'13	
evening set	1921 Sep	04	01:47	25°♍50'41	
conjunction	1921 Sep	21	13:21	28°♍00'08	2°02'24
minimum elong	1921 Sep	21	13:18	28°♍00'07	2°02'24
max. Earth dist.	1921 Sep	21	16:01	28°♍00'58	10.48804 AU
	1921 Oct	07	17:21	0°♎	
morning rise	1921 Oct	08	20:07	0°♎08'09	
retrograde	1922 Jan	17	05:56	7°♎36'22	
opposition	1922 Mar	25	16:47	4°♎15'17	2°37'54
min. Earth dist.	1922 Mar	25	15:37	4°♎15'31	8.54425 AU
direct	1922 Jun	03	13:07	0°♎48'48	
evening set	1922 Sep	17	10:08	8°♎33'51	
conjunction	1922 Oct	04	16:56	10°♎40'31	2°12'07
minimum elong	1922 Oct	04	16:55	10°♎40'31	2°12'07
max. Earth dist.	1922 Oct	04	17:23	10°♎40'39	10.59740 AU
morning rise	1922 Oct	21	19:08	12°♎45'48	
retrograde	1923 Jan	29	18:45	20°♎06'36	
opposition	1923 Apr	07	15:09	16°♎46'41	2°45'35
min. Earth dist.	1923 Apr	07	15:28	16°♎46'37	8.65175 AU
direct	1923 Jun	16	21:41	13°♎21'19	
evening set	1923 Sep	30	08:30	20°♎58'48	
conjunction	1923 Oct	17	11:05	23°♎02'59	2°15'24
minimum elong	1923 Oct	17	11:05	23°♎02'59	2°15'24
max. Earth dist.	1923 Oct	17	09:40	23°♎02'33	10.70153 AU
morning rise	1923 Nov	03	09:23	25°♎05'52	
	1923 Dec	20	04:24	0°♏	
retrograde	1924 Feb	11	01:16	2°♏20'12	
	1924 Apr	06	08:37	30°℞♎	
opposition	1924 Apr	19	08:52	29°♎01'13	2°45'31
min. Earth dist.	1924 Apr	19	09:42	29°♎01'04	8.75185 AU
direct	1924 Jun	29	00:44	25°♎37'01	
	1924 Sep	13	21:58	0°♏	
evening set	1924 Oct	11	21:28	3°♏07'02	
conjunction	1924 Oct	28	20:35	5°♏09'03	2°12'33
minimum elong	1924 Oct	28	20:35	5°♏09'03	2°12'32
max. Earth dist.	1924 Oct	28	18:38	5°♏08'28	10.79652 AU
morning rise	1924 Nov	14	15:39	7°♏09'54	
retrograde	1925 Feb	22	04:52	14°♏18'52	
opposition	1925 May	01	22:26	11°♏00'35	2°38'12
min. Earth dist.	1925 May	01	23:38	11°♏00'21	8.84083 AU
direct	1925 Jul	11	21:18	7°♏37'32	
evening set	1925 Oct	24	02:06	15°♏00'25	
	1925 Oct	24	00:40	15°♏	
conjunction	1925 Nov	09	22:29	17°♏00'42	2°04'01
minimum elong	1925 Nov	09	22:31	17°♏00'42	2°04'01
max. Earth dist.	1925 Nov	09	20:19	17°♏00'03	10.87882 AU
morning rise	1925 Nov	26	15:09	18°♏59'56	
retrograde	1926 Mar	06	04:53	26°♏04'38	
opposition	1926 May	14	08:20	22°♏46'50	2°24'21
min. Earth dist.	1926 May	14	10:33	22°♏46'25	8.91544 AU
direct	1926 Jul	24	09:37	19°♏24'49	
evening set	1926 Nov	04	23:39	26°♏41'18	
conjunction	1926 Nov	21	17:52	28°♏40'13	1°50'26
minimum elong	1926 Nov	21	17:54	28°♏40'14	1°50'26
max. Earth dist.	1926 Nov	21	14:38	28°♏39'15	10.94537 AU
	1926 Dec	02	22:34	0°♐	
morning rise	1926 Dec	08	09:07	0°♐38'19	
retrograde	1927 Mar	18	00:48	7°♐40'02	
opposition	1927 May	26	15:24	4°♐22'28	2°04'50
min. Earth dist.	1927 May	26	18:56	4°♐21'48	8.97290 AU
direct	1927 Aug	05	18:58	1°♐01'21	
evening set	1927 Nov	16	15:39	8°♐12'24	
conjunction	1927 Dec	03	08:15	10°♐10'20	1°32'31
minimum elong	1927 Dec	03	08:18	10°♐10'20	1°32'32
max. Earth dist.	1927 Dec	03	03:38	10°♐08'57	10.99372 AU
morning rise	1927 Dec	19	22:50	12°♐07'40	
retrograde	1928 Mar	28	20:37	19°♐07'52	
opposition	1928 Jun	06	20:18	15°♐50'15	1°40'33
min. Earth dist.	1928 Jun	07	00:11	15°♐49'32	9.01121 AU

direct	1928 Aug 17 00:17	12°♐29'56	
evening set	1928 Nov 27 03:32	19°♐36'37	
conjunction	1928 Dec 13 19:16	21°♐34'00	1°11'04
minimum elong	1928 Dec 13 19:18	21°♐34'00	1°11'04
max. Earth dist.	1928 Dec 13 14:44	21°♐32'39	11.02224 AU
morning rise	1928 Dec 30 09:39	23°♐31'00	
	1929 Mar 15 13:46	0°♑	
retrograde	1929 Apr 09 16:01	0°♑31'08	
	1929 May 05 04:20	30°℞♐	
opposition	1929 Jun 19 00:05	27°♐13'14	1°12'28
min. Earth dist.	1929 Jun 19 03:34	27°♐12'35	9.02912 AU
direct	1929 Aug 29 00:57	23°♐53'34	
	1929 Nov 30 04:22	0°♑	
evening set	1929 Dec 08 12:57	0°♑57'12	
conjunction	1929 Dec 25 04:21	2°♑54'23	0°46'54
minimum elong	1929 Dec 25 04:22	2°♑54'23	0°46'54
max. Earth dist.	1929 Dec 25 00:19	2°♑53'11	11.02993 AU
morning rise	1930 Jan 10 18:59	4°♑51'24	
retrograde	1930 Apr 21 14:31	11°♑53'00	
opposition	1930 Jul 01 03:38	8°♑34'37	0°41'38
min. Earth dist.	1930 Jul 01 07:01	8°♑34'00	9.02596 AU
direct	1930 Sep 09 23:54	5°♑15'27	
evening set	1930 Dec 19 21:56	12°♑17'26	
conjunction	1931 Jan 05 13:10	14°♑14'46	0°20'54
minimum elong	1931 Jan 05 13:11	14°♑14'46	0°20'53
max. Earth dist.	1931 Jan 05 08:34	14°♑13'25	11.01642 AU
morning rise	1931 Jan 22 04:35	16°♑12'12	
retrograde	1931 May 03 14:28	23°♑16'42	
opposition	1931 Jul 13 07:57	19°♑57'41	0°09'04
min. Earth dist.	1931 Jul 13 12:01	19°♑56'56	9.00184 AU
direct	1931 Sep 21 19:54	16°♑38'48	
desc. node	1931 Oct 24 10:57	17°♑30'48	
evening set	1931 Dec 31 07:55	23°♑40'38	
conjunction	1932 Jan 16 23:19	25°♑38'27	-0°06'09
minimum elong	1932 Jan 16 23:20	25°♑38'27	0°06'09
behind sun begin	1932 Jan 16 16:42	25°♑36'31	
behind sun end	1932 Jan 17 05:57	25°♑40'24	
max. Earth dist.	1932 Jan 16 18:06	25°♑36'56	10.98226 AU
morning rise	1932 Feb 02 15:58	27°♑36'39	
	1932 Feb 24 02:46	0°♒	
retrograde	1932 May 14 16:46	4°♒45'36	
opposition	1932 Jul 24 14:12	1°♒25'43	-0°24'07
min. Earth dist.	1932 Jul 24 18:19	1°♒24'57	8.95764 AU
	1932 Aug 13 11:15	30°℞♑	
direct	1932 Oct 02 17:39	28°♑06'55	
	1932 Nov 20 02:09	0°♒	
evening set	1933 Jan 10 20:20	5°♒10'04	
conjunction	1933 Jan 27 12:28	7°♒08'44	-0°33'03
minimum elong	1933 Jan 27 12:26	7°♒08'43	0°33'02
max. Earth dist.	1933 Jan 27 07:56	7°♒07'23	10.92853 AU
morning rise	1933 Feb 13 06:30	9°♒07'59	
	1933 Apr 15 11:29	15°♒	
retrograde	1933 May 27 02:19	16°♒22'46	
	1933 Jul 08 17:48	15°℞♒	
opposition	1933 Aug 05 23:05	13°♒01'51	-0°56'45
min. Earth dist.	1933 Aug 06 02:22	13°♒01'14	8.89484 AU
direct	1933 Oct 14 17:14	9°♒42'58	
	1934 Jan 06 16:02	15°♒	
evening set	1934 Jan 22 13:08	16°♒48'52	
conjunction	1934 Feb 08 06:21	18°♒48'42	-0°58'57
minimum elong	1934 Feb 08 06:19	18°♒48'41	0°58'56
max. Earth dist.	1934 Feb 08 03:00	18°♒47'41	10.85708 AU
morning rise	1934 Feb 25 02:02	20°♒49'20	
retrograde	1934 Jun 08 17:05	28°♒11'08	
opposition	1934 Aug 18 11:22	24°♒49'03	-1°27'32
min. Earth dist.	1934 Aug 18 13:38	24°♒48'38	8.81572 AU
direct	1934 Oct 26 17:18	21°♒29'54	
evening set	1935 Feb 03 11:42	28°♒39'59	
	1935 Feb 14 14:08	0°♓	
conjunction	1935 Feb 20 06:15	0°♓41'16	-1°22'45
minimum elong	1935 Feb 20 06:13	0°♓41'16	1°22'44
max. Earth dist.	1935 Feb 20 03:05	0°♓40'19	10.77071 AU
morning rise	1935 Mar 09 04:02	2°♓43'35	
retrograde	1935 Jun 21 14:27	10°♓13'25	
opposition	1935 Aug 31 04:14	6°♓50'07	-1°55'10
min. Earth dist.	1935 Aug 31 06:08	6°♓49'45	8.72346 AU
direct	1935 Nov 07 22:00	3°♓30'27	
evening set	1936 Feb 15 17:10	10°♓45'59	
conjunction	1936 Mar 03 13:30	12°♓49'02	-1°43'20
minimum elong	1936 Mar 03 13:27	12°♓49'01	1°43'19
max. Earth dist.	1936 Mar 03 10:33	12°♓48'08	10.67306 AU
morning rise	1936 Mar 20 13:52	14°♓53'18	
retrograde	1936 Jul 03 18:52	22°♓31'51	
opposition	1936 Sep 12 02:04	19°♓07'17	-2°18'14
min. Earth dist.	1936 Sep 12 03:43	19°♓06'58	8.62201 AU
direct	1936 Nov 19 07:07	15°♓46'55	
evening set	1937 Feb 27 06:51	23°♓08'59	
conjunction	1937 Mar 16 05:43	25°♓14'05	-1°59'33
minimum elong	1937 Mar 16 05:41	25°♓14'04	1°59'33
max. Earth dist.	1937 Mar 16 03:49	25°♓13'29	10.56836 AU
morning rise	1937 Apr 02 09:03	27°♓20'33	
	1937 Apr 25 06:29	0°♈	
retrograde	1937 Jul 17 05:18	5°♈08'03	
opposition	1937 Sep 25 04:58	1°♈42'14	-2°35'19
min. Earth dist.	1937 Sep 25 05:56	1°♈42'03	8.51587 AU
	1937 Oct 18 03:42	30°℞♓	
direct	1937 Dec 01 23:03	28°♓21'01	
	1938 Jan 14 10:30	0°♈	
evening set	1938 Mar 12 05:32	5°♈50'26	
conjunction	1938 Mar 29 07:39	7°♈57'51	-2°10'19
minimum elong	1938 Mar 29 07:38	7°♈57'51	2°10'20
max. Earth dist.	1938 Mar 29 07:33	7°♈57'49	10.46133 AU
morning rise	1938 Apr 15 14:19	10°♈06'43	
retrograde	1938 Jul 30 23:14	18°♈02'54	
opposition	1938 Oct 08 13:16	14°♈35'55	-2°45'08
min. Earth dist.	1938 Oct 08 12:51	14°♈36'00	8.40984 AU
direct	1938 Dec 14 21:34	11°♈13'43	
evening set	1939 Mar 25 13:35	18°♈50'53	
conjunction	1939 Apr 11 19:32	21°♈00'49	-2°14'43
minimum elong	1939 Apr 11 19:32	21°♈00'49	2°14'44
max. Earth dist.	1939 Apr 11 20:52	21°♈01'14	10.35702 AU
morning rise	1939 Apr 29 06:00	23°♈12'13	
	1939 Jul 06 05:44	0°♉	
retrograde	1939 Aug 14 01:03	1°♉16'16	
	1939 Sep 22 05:19	30°℞♈	
opposition	1939 Oct 22 02:50	27°♈48'16	-2°46'34
min. Earth dist.	1939 Oct 22 01:14	27°♈48'35	8.30893 AU
direct	1939 Dec 28 01:11	24°♈24'57	
	1940 Mar 20 09:40	0°♉	
evening set	1940 Apr 07 07:19	2°♉09'58	
conjunction	1940 Apr 24 17:37	4°♉22'29	-2°12'03
minimum elong	1940 Apr 24 17:38	4°♉22'30	2°12'03

max. Earth dist.	1940 Apr 24 19:33	4°♉23'07	10.26045 AU
morning rise	1940 May 12 08:19	6°♉36'28	
retrograde	1940 Aug 27 07:43	14°♉46'57	
opposition	1940 Nov 03 21:01	11°♉18'10	-2°38'56
min. Earth dist.	1940 Nov 03 18:59	11°♉18'35	8.21789 AU
direct	1941 Jan 09 12:20	7°♉53'38	
	1941 Apr 15 05:48	15°♉	
evening set	1941 Apr 21 10:12	15°♉46'17	
conjunction	1941 May 09 01:11	18°♉01'23	-2°01'59
minimum elong	1941 May 09 01:13	18°♉01'24	2°01'59
max. Earth dist.	1941 May 09 03:00	18°♉01'58	10.17616 AU
morning rise	1941 May 26 20:17	20°♉17'48	
retrograde	1941 Sep 10 17:39	28°♉32'59	
opposition	1941 Nov 17 19:19	25°♉03'44	-2°22'06
min. Earth dist.	1941 Nov 17 17:24	25°♉04'08	8.14126 AU
direct	1942 Jan 23 07:01	21°♉38'01	
evening set	1942 May 05 21:26	29°♉37'42	
	1942 May 08 19:39	0°♊	
conjunction	1942 May 23 17:03	1°♊55'08	-1°44'44
minimum elong	1942 May 23 17:06	1°♊55'09	1°44'44
max. Earth dist.	1942 May 23 19:14	1°♊55'50	10.10903 AU
morning rise	1942 Jun 10 16:08	4°♊13'40	
retrograde	1942 Sep 25 05:38	12°♊31'24	
opposition	1942 Dec 01 20:43	9°♊02'01	-1°56'37
min. Earth dist.	1942 Dec 01 18:32	9°♊02'28	8.08442 AU
direct	1943 Feb 06 07:52	5°♊35'11	
evening set	1943 May 20 15:36	13°♊40'41	
conjunction	1943 Jun 07 15:23	15°♊59'59	-1°21'05
minimum elong	1943 Jun 07 15:27	16°♊00'00	1°21'06
max. Earth dist.	1943 Jun 07 18:33	16°♊01'01	10.06434 AU
morning rise	1943 Jun 25 17:38	18°♊20'04	
retrograde	1943 Oct 09 18:17	26°♊37'54	
opposition	1943 Dec 15 23:52	23°♊08'40	-1°23'51
min. Earth dist.	1943 Dec 15 20:59	23°♊09'15	8.05211 AU
direct	1944 Feb 20 13:18	19°♊40'50	
evening set	1944 Jun 03 14:44	27°♊50'34	
	1944 Jun 20 07:47	0°♋	
conjunction	1944 Jun 21 17:39	0°♋11'01	-0°52'25
minimum elong	1944 Jun 21 17:42	0°♋11'02	0°52'25
max. Earth dist.	1944 Jun 21 21:52	0°♋12'23	10.04574 AU
morning rise	1944 Jul 09 21:44	2°♋31'50	
retrograde	1944 Oct 23 05:37	10°♋47'18	
opposition	1944 Dec 29 03:25	7°♋18'31	-0°45'50
min. Earth dist.	1944 Dec 28 23:40	7°♋19'17	8.04688 AU
direct	1945 Mar 05 22:43	3°♋49'54	
evening set	1945 Jun 18 16:20	12°♋01'58	
conjunction	1945 Jul 06 20:47	14°♋22'40	-0°20'33
minimum elong	1945 Jul 06 20:48	14°♋22'40	0°20'33
max. Earth dist.	1945 Jul 07 01:57	14°♋24'20	10.05463 AU
morning rise	1945 Jul 25 00:57	16°♋43'18	
retrograde	1945 Nov 06 13:02	24°♋54'10	
opposition	1946 Jan 12 05:49	21°♋26'07	-0°05'08
min. Earth dist.	1946 Jan 12 01:24	21°♋27'02	8.06922 AU
asc. node	1946 Feb 28 12:37	18°♋18'41	
direct	1946 Mar 20 09:29	17°♋56'59	
evening set	1946 Jul 03 17:26	26°♋09'20	
conjunction	1946 Jul 21 21:39	28°♋29'22	0°12'27
minimum elong	1946 Jul 21 21:38	28°♋29'21	0°12'28
behind sun begin	1946 Jul 21 16:59	28°♋27'52	
behind sun end	1946 Jul 22 02:18	28°♋30'51	
max. Earth dist.	1946 Jul 22 03:16	28°♋31'10	10.09046 AU
	1946 Aug 02 14:41	0°♌	
morning rise	1946 Aug 09 00:13	0°♌48'54	
retrograde	1946 Nov 20 15:21	8°♌53'24	
opposition	1947 Jan 26 05:49	5°♌26'21	0°35'30
min. Earth dist.	1947 Jan 26 01:31	5°♌27'14	8.11767 AU
direct	1947 Apr 03 19:38	1°♌56'58	
evening set	1947 Jul 18 15:09	10°♌07'34	
conjunction	1947 Aug 05 17:24	12°♌26'04	0°44'19
minimum elong	1947 Aug 05 17:22	12°♌26'03	0°44'20
max. Earth dist.	1947 Aug 05 22:37	12°♌27'44	10.15075 AU
morning rise	1947 Aug 23 16:55	14°♌43'42	
	1947 Aug 25 20:56	15°♌	
retrograde	1947 Dec 04 11:34	22°♌40'35	
opposition	1948 Feb 09 02:13	19°♌14'42	1°13'28
min. Earth dist.	1948 Feb 08 22:35	19°♌15'26	8.18887 AU
direct	1948 Apr 17 03:19	15°♌45'21	
evening set	1948 Aug 01 07:08	23°♌52'23	
conjunction	1948 Aug 19 05:56	26°♌08'39	1°13'12
minimum elong	1948 Aug 19 05:53	26°♌08'38	1°13'12
max. Earth dist.	1948 Aug 19 10:05	26°♌09'59	10.23141 AU
morning rise	1948 Sep 06 01:12	28°♌23'48	
	1948 Sep 19 04:35	0°♍	
retrograde	1948 Dec 17 00:20	6°♍12'19	
opposition	1949 Feb 21 18:01	2°♍47'41	1°46'32
min. Earth dist.	1949 Feb 21 15:14	2°♍48'15	8.27819 AU
	1949 Apr 03 03:41	30°℞♌	
direct	1949 May 01 08:34	29°♌18'42	
	1949 May 29 12:57	0°♍	
evening set	1949 Aug 15 15:03	7°♍20'35	
conjunction	1949 Sep 02 09:28	9°♍34'11	1°37'32
minimum elong	1949 Sep 02 09:25	9°♍34'10	1°37'33
max. Earth dist.	1949 Sep 02 12:22	9°♍35'05	10.32749 AU
morning rise	1949 Sep 19 23:49	11°♍46'28	
retrograde	1949 Dec 30 04:04	19°♍26'26	
opposition	1950 Mar 07 04:49	16°♍03'05	2°13'06
min. Earth dist.	1950 Mar 07 02:25	16°♍03'34	8.38030 AU
direct	1950 May 15 09:23	12°♍34'46	
evening set	1950 Aug 29 13:18	20°♍30'12	
conjunction	1950 Sep 16 02:58	22°♍40'55	1°56'15
minimum elong	1950 Sep 16 02:55	22°♍40'54	1°56'15
max. Earth dist.	1950 Sep 16 05:01	22°♍41'34	10.43349 AU
morning rise	1950 Oct 03 12:12	24°♍50'16	
	1950 Nov 20 15:49	0°♎	
retrograde	1951 Jan 12 01:18	2°♎21'54	
	1951 Mar 07 12:14	30°℞♍	
opposition	1951 Mar 20 10:11	28°♍59'48	2°32'09
min. Earth dist.	1951 Mar 20 07:53	29°♍00'15	8.48942 AU
direct	1951 May 29 03:37	25°♍32'24	
	1951 Aug 13 16:43	0°♎	
evening set	1951 Sep 12 01:35	3°♎20'35	
conjunction	1951 Sep 29 10:33	5°♎28'28	2°08'43
minimum elong	1951 Sep 29 10:31	5°♎28'27	2°08'43
max. Earth dist.	1951 Sep 29 12:17	5°♎29'00	10.54372 AU
morning rise	1951 Oct 16 14:48	7°♎34'55	
retrograde	1952 Jan 24 17:55	14°♎58'43	
opposition	1952 Apr 01 10:11	11°♎37'50	2°43'17
min. Earth dist.	1952 Apr 01 08:32	11°♎38'09	8.59993 AU
direct	1952 Jun 10 13:19	8°♎11'33	
evening set	1952 Sep 24 03:43	15°♎52'04	
conjunction	1952 Oct 11 08:17	17°♎57'18	2°14'47
minimum elong	1952 Oct 11 08:16	17°♎57'18	2°14'46

max. Earth dist.	1952 Oct 11 09:25	17°♎57'39	10.65276 AU
morning rise	1952 Oct 28 08:07	20°♎01'10	
retrograde	1953 Feb 05 02:31	27°♎17'55	
opposition	1953 Apr 14 05:25	23°♎58'09	2°46'31
min. Earth dist.	1953 Apr 14 05:00	23°♎58'13	8.70663 AU
direct	1953 Jun 23 17:26	20°♎33'06	
evening set	1953 Oct 06 20:00	28°♎05'55	
	1953 Oct 22 15:35	0°♏	
conjunction	1953 Oct 23 20:38	0°♏08'48	2°14'33
minimum elong	1953 Oct 23 20:39	0°♏08'48	2°14'32
max. Earth dist.	1953 Oct 23 20:27	0°♏08'44	10.75567 AU
morning rise	1953 Nov 09 16:59	2°♏10'26	
retrograde	1954 Feb 17 06:16	9°♏21'11	
opposition	1954 Apr 26 20:07	6°♏02'22	2°42'16
min. Earth dist.	1954 Apr 26 21:03	6°♏02'11	8.80483 AU
direct	1954 Jul 06 15:53	2°♏38'35	
evening set	1954 Oct 19 03:37	10°♏04'03	
conjunction	1954 Nov 05 01:02	12°♏04'57	2°08'25
minimum elong	1954 Nov 05 01:03	12°♏04'57	2°08'25
max. Earth dist.	1954 Nov 04 23:08	12°♏04'23	10.84805 AU
morning rise	1954 Nov 21 18:49	14°♏04'46	
	1954 Nov 29 17:03	15°♏	
retrograde	1955 Mar 01 06:19	21°♏10'38	
opposition	1955 May 09 06:40	17°♏52'34	2°31'10
min. Earth dist.	1955 May 09 08:10	17°♏52'17	8.89035 AU
	1955 Jun 24 05:47	15°℞♏	
direct	1955 Jul 19 07:29	14°♏30'03	
	1955 Aug 13 04:21	15°♏	
evening set	1955 Oct 31 03:38	21°♏48'46	
conjunction	1955 Nov 16 22:40	23°♏48'06	1°56'59
minimum elong	1955 Nov 16 22:42	23°♏48'07	1°56'59
max. Earth dist.	1955 Nov 16 20:14	23°♏47'23	10.92610 AU
morning rise	1955 Dec 03 14:33	25°♏46'32	
	1956 Jan 12 18:45	0°♐	
retrograde	1956 Mar 12 03:29	2°♐48'50	
	1956 May 14 03:46	30°℞♏	
opposition	1956 May 20 14:16	29°♏31'17	2°14'02
min. Earth dist.	1956 May 20 15:52	29°♏30'59	8.95980 AU
direct	1956 Jul 30 18:36	26°♏09'57	
	1956 Oct 10 15:10	0°♐	
evening set	1956 Nov 10 21:22	3°♐22'43	
conjunction	1956 Nov 27 14:43	5°♐20'54	1°40'54
minimum elong	1956 Nov 27 14:45	5°♐20'55	1°40'54
max. Earth dist.	1956 Nov 27 12:25	5°♐20'13	10.98677 AU
morning rise	1956 Dec 14 05:23	7°♐18'22	
retrograde	1957 Mar 24 00:45	14°♐18'30	
opposition	1957 Jun 01 19:40	11°♐01'12	1°51'45
min. Earth dist.	1957 Jun 01 21:50	11°♐00'48	9.01065 AU
direct	1957 Aug 11 23:57	7°♐40'55	
evening set	1957 Nov 22 10:40	14°♐48'48	
conjunction	1957 Dec 09 02:46	16°♐46'13	1°20'56
minimum elong	1957 Dec 09 02:49	16°♐46'14	1°20'56
max. Earth dist.	1957 Dec 08 23:35	16°♐45'17	11.02789 AU
morning rise	1957 Dec 25 17:02	18°♐43'09	
retrograde	1958 Apr 04 19:38	25°♐42'29	
opposition	1958 Jun 13 23:27	22°♐25'12	1°25'15
min. Earth dist.	1958 Jun 14 02:53	22°♐24'34	9.04113 AU
direct	1958 Aug 24 00:31	19°♐05'45	
evening set	1958 Dec 03 20:58	26°♐10'01	
conjunction	1958 Dec 20 12:17	28°♐07'02	0°57'53
minimum elong	1958 Dec 20 12:19	28°♐07'03	0°57'53

max. Earth dist.	1958 Dec 20 07:45	28°♐05'42	11.04794 AU
	1959 Jan 05 13:32	0°♑	
morning rise	1959 Jan 06 02:47	0°♑03'50	
retrograde	1959 Apr 16 15:32	7°♑03'52	
opposition	1959 Jun 26 02:46	3°♑46'19	0°55'34
min. Earth dist.	1959 Jun 26 06:49	3°♑45'34	9.04994 AU
direct	1959 Sep 05 01:01	0°♑27'30	
evening set	1959 Dec 15 05:45	7°♑29'27	
conjunction	1959 Dec 31 20:51	9°♑26'27	0°32'37
minimum elong	1959 Dec 31 20:52	9°♑26'27	0°32'37
max. Earth dist.	1959 Dec 31 16:07	9°♑25'03	11.04583 AU
morning rise	1960 Jan 17 11:51	11°♑23'27	
retrograde	1960 Apr 27 14:06	18°♑25'45	
opposition	1960 Jul 07 06:25	15°♑07'38	0°23'41
min. Earth dist.	1960 Jul 07 10:11	15°♑06'57	9.03631 AU
direct	1960 Sep 15 22:48	11°♑49'14	
evening set	1960 Dec 25 14:51	18°♑50'18	
conjunction	1961 Jan 11 06:10	20°♑47'39	0°06'03
minimum elong	1961 Jan 11 06:10	20°♑47'39	0°06'03
behind sun begin	1961 Jan 10 23:31	20°♑45'42	
behind sun end	1961 Jan 11 12:48	20°♑49'35	
max. Earth dist.	1961 Jan 11 01:46	20°♑46'22	11.02101 AU
morning rise	1961 Jan 27 22:00	22°♑45'14	
desc. node	1961 Apr 04 18:56	28°♑52'44	
retrograde	1961 May 09 16:21	29°♑51'19	
opposition	1961 Jul 19 11:24	26°♑32'24	-0°09'17
min. Earth dist.	1961 Jul 19 15:12	26°♑31'42	9.00006 AU
direct	1961 Sep 27 19:31	23°♑14'10	
	1962 Jan 03 19:01	0°♒	
evening set	1962 Jan 06 01:55	0°♒15'55	
conjunction	1962 Jan 22 17:39	2°♒13'59	-0°21'03
minimum elong	1962 Jan 22 17:38	2°♒13'59	0°21'03
max. Earth dist.	1962 Jan 22 12:25	2°♒12'26	10.97378 AU
morning rise	1962 Feb 08 10:49	4°♒12'31	
retrograde	1962 May 21 23:22	11°♒23'53	
opposition	1962 Jul 31 18:49	8°♒04'00	-0°42'15
min. Earth dist.	1962 Jul 31 23:14	8°♒03'11	8.94221 AU
direct	1962 Oct 09 16:25	4°♒45'40	
evening set	1963 Jan 17 16:36	11°♒49'42	
conjunction	1963 Feb 03 09:03	13°♒48'48	-0°47'31
minimum elong	1963 Feb 03 09:01	13°♒48'47	0°47'30
max. Earth dist.	1963 Feb 03 02:59	13°♒46'59	10.90602 AU
	1963 Feb 13 07:19	15°♒	
morning rise	1963 Feb 20 03:55	15°♒48'37	
retrograde	1963 Jun 03 09:39	23°♒06'39	
opposition	1963 Aug 13 05:32	19°♒45'34	-1°13'59
min. Earth dist.	1963 Aug 13 10:17	19°♒44'40	8.86544 AU
direct	1963 Oct 21 16:22	16°♒26'52	
evening set	1964 Jan 29 12:16	23°♒34'39	
conjunction	1964 Feb 15 06:00	25°♒35'07	-1°12'22
minimum elong	1964 Feb 15 05:58	25°♒35'06	1°12'22
max. Earth dist.	1964 Feb 15 00:40	25°♒33'30	10.82097 AU
morning rise	1964 Mar 03 02:48	27°♒36'31	
	1964 Mar 24 04:17	0°♓	
retrograde	1964 Jun 15 03:26	5°♓02'21	
opposition	1964 Aug 24 20:18	1°♓39'52	-1°43'11
min. Earth dist.	1964 Aug 25 00:13	1°♓39'08	8.77332 AU
	1964 Sep 16 21:04	30°℞♒	
direct	1964 Nov 01 20:44	28°♒20'35	
	1964 Dec 16 05:38	0°♓	
evening set	1965 Feb 09 14:16	5°♓33'21	

conjunction	1965 Feb 26 09:49	7°♓35'32	-1°34'31
minimum elong	1965 Feb 26 09:47	7°♓35'31	1°34'31
max. Earth dist.	1965 Feb 26 05:54	7°♓34'20	10.72231 AU
morning rise	1965 Mar 15 08:51	9°♓38'49	
retrograde	1965 Jun 28 05:32	17°♓13'16	
opposition	1965 Sep 06 15:39	13°♓49'18	-2°08'29
min. Earth dist.	1965 Sep 06 18:18	13°♓48'48	8.66975 AU
direct	1965 Nov 14 03:17	10°♓29'14	
evening set	1966 Feb 22 00:07	17°♓48'12	
conjunction	1966 Mar 10 21:51	19°♓52'21	-1°52'51
minimum elong	1966 Mar 10 21:49	19°♓52'20	1°52'51
max. Earth dist.	1966 Mar 10 18:47	19°♓51'24	10.61433 AU
morning rise	1966 Mar 27 23:35	21°♓57'47	
retrograde	1966 Jul 11 13:02	29°♓41'17	
opposition	1966 Sep 19 16:02	26°♓15'51	-2°28'27
min. Earth dist.	1966 Sep 19 17:44	26°♓15'31	8.55924 AU
direct	1966 Nov 26 15:34	22°♓54'48	
	1967 Mar 03 21:31	0°♈	
evening set	1967 Mar 06 18:33	0°♈20'58	
conjunction	1967 Mar 23 19:01	2°♈27'22	-2°06'13
minimum elong	1967 Mar 23 19:00	2°♈27'21	2°06'13
max. Earth dist.	1967 Mar 23 16:17	2°♈26'30	10.50195 AU
morning rise	1967 Apr 10 00:05	4°♈35'12	
retrograde	1967 Jul 25 04:08	12°♈27'45	
opposition	1967 Oct 02 22:03	9°♈00'56	-2°41'45
min. Earth dist.	1967 Oct 02 23:17	9°♈00'42	8.44691 AU
direct	1967 Dec 09 10:27	5°♈38'47	
evening set	1968 Mar 18 22:07	13°♈12'44	
conjunction	1968 Apr 05 02:08	15°♈21'38	-2°13'36
minimum elong	1968 Apr 05 02:08	15°♈21'38	2°13'37
max. Earth dist.	1968 Apr 05 00:28	15°♈21'07	10.39050 AU
morning rise	1968 Apr 22 11:00	17°♈32'03	
retrograde	1968 Aug 07 02:23	25°♈33'09	
opposition	1968 Oct 15 09:25	22°♈05'06	-2°47'07
min. Earth dist.	1968 Oct 15 10:01	22°♈04'59	8.33814 AU
direct	1968 Dec 21 11:38	18°♈41'44	
evening set	1969 Apr 01 11:30	26°♈23'50	
conjunction	1969 Apr 18 19:48	28°♈35'23	-2°14'12
minimum elong	1969 Apr 18 19:48	28°♈35'23	2°14'12
max. Earth dist.	1969 Apr 18 19:46	28°♈35'22	10.28543 AU
	1969 Apr 29 22:23	0°♉	
morning rise	1969 May 06 08:46	0°♉48'25	
retrograde	1969 Aug 21 05:43	8°♉56'54	
opposition	1969 Oct 29 01:42	5°♉27'53	-2°43'39
min. Earth dist.	1969 Oct 29 01:09	5°♉27'59	8.23844 AU
direct	1970 Jan 03 21:07	2°♉03'16	
evening set	1970 Apr 15 10:25	9°♉53'22	
conjunction	1970 May 02 23:25	12°♉07'35	-2°07'28
minimum elong	1970 May 02 23:27	12°♉07'35	2°07'28
max. Earth dist.	1970 May 03 01:20	12°♉08'11	10.19237 AU
morning rise	1970 May 20 16:37	14°♉23'10	
	1970 May 25 14:35	15°♉	
retrograde	1970 Sep 04 13:57	22°♉37'23	
opposition	1970 Nov 11 22:34	19°♉07'40	-2°30'55
min. Earth dist.	1970 Nov 11 20:30	19°♉08'06	8.15334 AU
direct	1971 Jan 17 13:01	15°♉41'52	
evening set	1971 Apr 29 18:05	23°♉39'18	
conjunction	1971 May 17 11:53	25°♉56'01	-1°53'23
minimum elong	1971 May 17 11:56	25°♉56'02	1°53'23
max. Earth dist.	1971 May 17 15:28	25°♉57'10	10.11672 AU
morning rise	1971 Jun 04 09:14	28°♉13'54	
	1971 Jun 18 16:08	0°♊	
retrograde	1971 Sep 19 02:17	6°♊31'43	
opposition	1971 Nov 25 23:05	3°♊01'40	-2°09'10
min. Earth dist.	1971 Nov 25 19:44	3°♊02'21	8.08795 AU
	1972 Jan 10 03:44	30°℞♉	
direct	1972 Jan 31 10:22	29°♉34'44	
	1972 Feb 21 14:51	0°♊	
evening set	1972 May 13 09:42	7°♊38'30	
conjunction	1972 May 31 07:55	9°♊57'18	-1°32'27
minimum elong	1972 May 31 07:58	9°♊57'19	1°32'27
max. Earth dist.	1972 May 31 12:22	9°♊58'45	10.06317 AU
morning rise	1972 Jun 18 08:51	12°♊17'00	
retrograde	1972 Oct 02 16:26	20°♊35'54	
opposition	1972 Dec 09 01:52	17°♊05'55	-1°39'24
min. Earth dist.	1972 Dec 08 22:01	17°♊06'43	8.04649 AU
direct	1973 Feb 13 12:49	13°♊37'59	
evening set	1973 May 28 07:16	21°♊46'40	
conjunction	1973 Jun 15 09:00	24°♊06'56	-1°05'47
minimum elong	1973 Jun 15 09:03	24°♊06'56	1°05'47
max. Earth dist.	1973 Jun 15 13:55	24°♊08'31	10.03524 AU
morning rise	1973 Jul 03 12:27	26°♊27'44	
	1973 Aug 01 22:20	0°♋	
retrograde	1973 Oct 17 05:50	4°♋45'13	
opposition	1973 Dec 23 05:51	1°♋15'42	-1°03'22
min. Earth dist.	1973 Dec 23 01:47	1°♋16'32	8.03186 AU
	1974 Jan 07 20:27	30°℞♊	
direct	1974 Feb 27 21:13	27°♊47'00	
	1974 Apr 18 22:33	0°♋	
evening set	1974 Jun 12 08:17	5°♋58'49	
conjunction	1974 Jun 30 12:11	8°♋19'42	-0°35'04
minimum elong	1974 Jun 30 12:13	8°♋19'42	0°35'04
max. Earth dist.	1974 Jun 30 17:25	8°♋21'24	10.03493 AU
morning rise	1974 Jul 18 16:38	10°♋40'43	
retrograde	1974 Oct 31 14:56	18°♋54'30	
opposition	1975 Jan 06 09:25	15°♋25'47	-0°23'28
min. Earth dist.	1975 Jan 06 05:12	15°♋26'39	8.04528 AU
direct	1975 Mar 14 08:32	11°♋56'36	
evening set	1975 Jun 27 10:19	20°♋09'36	
conjunction	1975 Jul 15 14:46	22°♋30'10	-0°02'20
minimum elong	1975 Jul 15 14:46	22°♋30'10	0°02'20
behind sun begin	1975 Jul 15 07:25	22°♋27'48	
behind sun end	1975 Jul 15 22:08	22°♋32'32	
max. Earth dist.	1975 Jul 15 20:10	22°♋31'53	10.06244 AU
morning rise	1975 Aug 02 18:31	24°♋50'28	
asc. node	1975 Aug 10 15:41	25°♋49'50	
	1975 Sep 17 04:56	0°♌	
retrograde	1975 Nov 14 19:25	2°♌58'33	
	1976 Jan 14 13:17	30°℞♋	
opposition	1976 Jan 20 11:00	29°♋30'56	0°17'36
min. Earth dist.	1976 Jan 20 06:31	29°♋31'52	8.08602 AU
direct	1976 Mar 27 19:58	26°♋01'34	
	1976 Jun 05 05:08	0°♌	
evening set	1976 Jul 11 10:30	4°♌13'42	
conjunction	1976 Jul 29 13:49	6°♌33'05	0°30'24
minimum elong	1976 Jul 29 13:47	6°♌33'05	0°30'25
max. Earth dist.	1976 Jul 29 19:25	6°♌34'53	10.11598 AU
morning rise	1976 Aug 16 15:05	8°♌51'47	
	1976 Oct 12 22:32	15°♌	
retrograde	1976 Nov 27 18:46	16°♌52'42	
	1977 Jan 13 13:46	15°℞♌	
opposition	1977 Feb 02 09:36	13°♌26'20	0°57'06
min. Earth dist.	1977 Feb 02 04:42	13°♌27'20	8.15140 AU

direct	1977 Apr 11 05:41	9°♌57'06	
	1977 Jun 30 04:32	15°♌	
evening set	1977 Jul 26 05:55	18°♌06'22	
conjunction	1977 Aug 13 06:28	20°♌23'47	1°00'52
minimum elong	1977 Aug 13 06:26	20°♌23'46	1°00'52
max. Earth dist.	1977 Aug 13 12:18	20°♌25'39	10.19204 AU
morning rise	1977 Aug 31 03:49	22°♌40'10	
	1977 Nov 17 02:41	0°♍	
retrograde	1977 Dec 11 12:11	0°♍32'55	
	1978 Jan 05 00:46	30℞♌	
opposition	1978 Feb 16 04:08	27°♌07'56	1°32'36
min. Earth dist.	1978 Feb 15 23:15	27°♌08'56	8.23721 AU
direct	1978 Apr 25 12:16	23°♌39'07	
	1978 Jul 26 12:02	0°♍	
evening set	1978 Aug 09 18:16	1°♍43'44	
conjunction	1978 Aug 27 14:53	3°♍58'37	1°27'23
minimum elong	1978 Aug 27 14:49	3°♍58'36	1°27'24
max. Earth dist.	1978 Aug 27 20:24	4°♍00'22	10.28588 AU
morning rise	1978 Sep 14 07:24	6°♍12'14	
retrograde	1978 Dec 24 21:12	13°♍56'19	
opposition	1979 Mar 01 17:42	10°♍32'44	2°02'12
min. Earth dist.	1979 Mar 01 13:39	10°♍33'33	8.33813 AU
direct	1979 May 09 14:54	7°♍04'33	
evening set	1979 Aug 23 21:43	15°♍03'07	
conjunction	1979 Sep 10 13:40	17°♍15'08	1°48'41
minimum elong	1979 Sep 10 13:36	17°♍15'07	1°48'42
max. Earth dist.	1979 Sep 10 18:01	17°♍16'30	10.39165 AU
morning rise	1979 Sep 28 01:02	19°♍25'46	
retrograde	1980 Jan 06 22:42	27°♍01'10	
opposition	1980 Mar 14 02:02	23°♍38'58	2°24'37
min. Earth dist.	1980 Mar 13 23:35	23°♍39'27	8.44779 AU
direct	1980 May 22 11:50	20°♍11'37	
evening set	1980 Sep 05 15:10	28°♍03'07	
	1980 Sep 21 10:48	0°♎	
conjunction	1980 Sep 23 02:08	0°♎12'12	2°03'56
minimum elong	1980 Sep 23 02:05	0°♎12'11	2°03'57
max. Earth dist.	1980 Sep 23 04:15	0°♎12'51	10.50275 AU
morning rise	1980 Oct 10 08:28	2°♎19'52	
retrograde	1981 Jan 18 16:58	9°♎47'03	
opposition	1981 Mar 27 04:53	6°♎26'07	2°39'13
min. Earth dist.	1981 Mar 27 03:51	6°♎26'19	8.55941 AU
direct	1981 Jun 05 02:12	2°♎59'47	
evening set	1981 Sep 18 22:12	10°♎43'44	
conjunction	1981 Oct 06 04:30	12°♎50'04	2°12'47
minimum elong	1981 Oct 06 04:28	12°♎50'04	2°12'47
max. Earth dist.	1981 Oct 06 04:30	12°♎50'04	10.61269 AU
morning rise	1981 Oct 23 06:18	14°♎55'02	
retrograde	1982 Jan 31 03:46	22°♎14'51	
opposition	1982 Apr 09 02:30	18°♎55'03	2°45'51
min. Earth dist.	1982 Apr 09 02:23	18°♎55'04	8.66690 AU
direct	1982 Jun 18 11:06	15°♎29'51	
evening set	1982 Oct 01 19:07	23°♎06'14	
conjunction	1982 Oct 18 21:24	25°♎10'06	2°15'14
minimum elong	1982 Oct 18 21:24	25°♎10'06	2°15'14
max. Earth dist.	1982 Oct 18 20:18	25°♎09'46	10.71620 AU
morning rise	1982 Nov 04 19:20	27°♎12'42	
	1982 Nov 29 10:29	0°♏	
retrograde	1983 Feb 12 11:18	4°♏26'14	
opposition	1983 Apr 21 19:27	1°♏07'22	2°44'47
min. Earth dist.	1983 Apr 21 19:56	1°♏07'16	8.76573 AU
	1983 May 06 19:30	30℞♎	

direct	1983 Jul 01 12:31	27°♎43'21	
	1983 Aug 24 11:53	0°♏	
evening set	1983 Oct 14 07:02	5°♏12'21	
conjunction	1983 Oct 31 05:56	7°♏14'09	2°11'35
minimum elong	1983 Oct 31 05:57	7°♏14'09	2°11'35
max. Earth dist.	1983 Oct 31 04:22	7°♏13'40	10.80941 AU
morning rise	1983 Nov 17 00:41	9°♏14'46	
	1984 Jan 15 01:04	15°♏	
retrograde	1984 Feb 24 14:36	16°♏23'03	
	1984 Apr 06 05:53	15℞♏	
opposition	1984 May 03 08:21	13°♏04'55	2°36'33
min. Earth dist.	1984 May 03 10:06	13°♏04'35	8.85251 AU
direct	1984 Jul 13 06:15	9°♏42'03	
	1984 Oct 07 04:14	15°♏	
evening set	1984 Oct 25 10:53	17°♏04'08	
conjunction	1984 Nov 11 07:01	19°♏04'13	2°02'21
minimum elong	1984 Nov 11 07:03	19°♏04'14	2°02'21
max. Earth dist.	1984 Nov 11 04:11	19°♏03'23	10.88918 AU
morning rise	1984 Nov 27 23:34	21°♏03'20	
retrograde	1985 Mar 07 12:38	28°♏07'34	
opposition	1985 May 15 17:57	24°♏49'54	2°21'54
min. Earth dist.	1985 May 15 21:03	24°♏49'19	8.92435 AU
direct	1985 Jul 25 19:34	21°♏28'03	
evening set	1985 Nov 06 07:45	28°♏43'55	
	1985 Nov 17 02:09	0°♐	
conjunction	1985 Nov 23 01:45	0°♐42'42	1°48'09
minimum elong	1985 Nov 23 01:48	0°♐42'43	1°48'09
max. Earth dist.	1985 Nov 22 21:27	0°♐41'25	10.95276 AU
morning rise	1985 Dec 09 17:03	2°♐40'43	
retrograde	1986 Mar 19 09:27	9°♐42'14	
opposition	1986 May 28 00:42	6°♐24'45	2°01'42
min. Earth dist.	1986 May 28 04:35	6°♐24'02	8.97866 AU
direct	1986 Aug 07 04:49	3°♐03'48	
evening set	1986 Nov 17 23:19	10°♐14'23	
conjunction	1986 Dec 04 15:56	12°♐12'17	1°29'44
minimum elong	1986 Dec 04 15:59	12°♐12'18	1°29'44
max. Earth dist.	1986 Dec 04 11:04	12°♐10'51	10.99783 AU
morning rise	1986 Dec 21 06:32	14°♐09'36	
retrograde	1987 Mar 31 04:42	21°♐09'47	
opposition	1987 Jun 09 05:20	17°♐52'13	1°36'51
min. Earth dist.	1987 Jun 09 09:00	17°♐51'32	9.01350 AU
direct	1987 Aug 19 08:53	14°♐32'01	
evening set	1987 Nov 29 11:03	21°♐38'29	
conjunction	1987 Dec 16 02:53	23°♐35'52	1°07'52
minimum elong	1987 Dec 16 02:55	23°♐35'52	1°07'52
max. Earth dist.	1987 Dec 15 22:33	23°♐34'35	11.02278 AU
morning rise	1988 Jan 01 17:15	25°♐32'53	
	1988 Feb 13 23:50	0°♑	
retrograde	1988 Apr 11 02:08	2°♑33'13	
	1988 Jun 10 05:22	30℞♐	
opposition	1988 Jun 20 09:13	29°♐15'20	1°08'22
min. Earth dist.	1988 Jun 20 12:55	29°♐14'39	9.02779 AU
direct	1988 Aug 30 10:07	25°♐55'45	
	1988 Nov 12 09:26	0°♑	
evening set	1988 Dec 09 20:35	2°♑59'20	
conjunction	1988 Dec 26 11:57	4°♑56'34	0°43'25
minimum elong	1988 Dec 26 11:58	4°♑56'35	0°43'24
max. Earth dist.	1988 Dec 26 07:17	4°♑55'12	11.02688 AU
morning rise	1989 Jan 12 02:42	6°♑53'41	
retrograde	1989 Apr 22 23:37	13°♑55'39	
opposition	1989 Jul 02 13:08	10°♑37'15	0°37'14

min. Earth dist.	1989 Jul 02 17:26	10°♑36'27	9.02116 AU
direct	1989 Sep 11 07:10	7°♑18'05	
evening set	1989 Dec 21 05:49	14°♑20'14	
conjunction	1990 Jan 06 21:02	16°♑17'39	0°17'14
minimum elong	1990 Jan 06 21:03	16°♑17'39	0°17'14
max. Earth dist.	1990 Jan 06 15:26	16°♑16'00	11.01003 AU
morning rise	1990 Jan 23 12:42	18°♑15'14	
retrograde	1990 May 04 22:43	25°♑20'20	
opposition	1990 Jul 14 17:44	22°♑01'12	0°04'32
min. Earth dist.	1990 Jul 14 22:27	22°♑00'19	8.99385 AU
desc. node	1990 Sep 04 05:12	18°♑59'49	
direct	1990 Sep 23 05:10	18°♑42'15	
evening set	1991 Jan 01 16:10	25°♑44'28	
conjunction	1991 Jan 18 07:45	27°♑42'26	-0°09'50
minimum elong	1991 Jan 18 07:44	27°♑42'26	0°09'50
behind sun begin	1991 Jan 18 02:00	27°♑40'45	
behind sun end	1991 Jan 18 13:28	27°♑44'07	
max. Earth dist.	1991 Jan 18 02:31	27°♑40'54	10.97273 AU
morning rise	1991 Feb 04 00:32	29°♑40'47	
	1991 Feb 06 18:51	0°♒	
retrograde	1991 May 17 04:05	6°♒50'32	
opposition	1991 Jul 27 00:21	3°♒30'28	-0°28'38
min. Earth dist.	1991 Jul 27 04:19	3°♒29'44	8.94665 AU
direct	1991 Oct 05 03:57	0°♒11'35	
evening set	1992 Jan 13 05:14	7°♒15'16	
conjunction	1992 Jan 29 21:33	9°♒14'08	-0°36'40
minimum elong	1992 Jan 29 21:31	9°♒14'07	0°36'39
max. Earth dist.	1992 Jan 29 17:25	9°♒12'54	10.91612 AU
morning rise	1992 Feb 15 15:39	11°♒13'35	
	1992 Mar 21 16:50	15°♒	
retrograde	1992 May 28 13:35	18°♒29'20	
opposition	1992 Aug 07 09:53	15°♒08'12	-1°01'04
min. Earth dist.	1992 Aug 07 12:50	15°♒07'39	8.88120 AU
	1992 Aug 09 05:43	15°℞♒	
direct	1992 Oct 16 02:06	11°♒49'12	
	1992 Dec 18 09:54	15°♒	
evening set	1993 Jan 23 22:52	18°♒55'50	
conjunction	1993 Feb 09 16:10	20°♒55'52	-1°02'20
minimum elong	1993 Feb 09 16:08	20°♒55'51	1°02'19
max. Earth dist.	1993 Feb 09 12:26	20°♒54'44	10.84228 AU
morning rise	1993 Feb 26 12:04	22°♒56'44	
	1993 May 21 04:58	0°♓	
retrograde	1993 Jun 10 05:28	0°♓19'40	
	1993 Jun 30 08:29	30°℞♒	
opposition	1993 Aug 19 23:01	26°♒57'21	-1°31'30
min. Earth dist.	1993 Aug 20 01:36	26°♒56'52	8.79998 AU
direct	1993 Oct 28 03:40	23°♒38'00	
	1994 Jan 28 23:43	0°♓	
evening set	1994 Feb 04 22:24	0°♓49'00	
conjunction	1994 Feb 21 17:03	2°♓50'32	-1°25'45
minimum elong	1994 Feb 21 17:00	2°♓50'31	1°25'44
max. Earth dist.	1994 Feb 21 13:07	2°♓49'20	10.75413 AU
morning rise	1994 Mar 10 15:11	4°♓53'08	
retrograde	1994 Jun 23 03:57	12°♓24'11	
opposition	1994 Sep 01 16:40	9°♓00'39	-1°58'34
min. Earth dist.	1994 Sep 01 19:13	9°♓00'09	8.70621 AU
direct	1994 Nov 09 08:36	5°♓40'45	
evening set	1995 Feb 17 04:56	12°♓57'21	
conjunction	1995 Mar 06 01:32	15°♓00'41	-1°45'46
minimum elong	1995 Mar 06 01:30	15°♓00'40	1°45'47
max. Earth dist.	1995 Mar 05 22:36	14°♓59'47	10.65523 AU
morning rise	1995 Mar 23 02:12	17°♓05'15	
retrograde	1995 Jul 06 07:46	24°♓45'07	
opposition	1995 Sep 14 15:19	21°♓20'18	-2°20'53
min. Earth dist.	1995 Sep 14 17:02	21°♓19'58	8.60387 AU
direct	1995 Nov 21 19:48	17°♓59'43	
evening set	1996 Feb 29 19:47	25°♓22'56	
conjunction	1996 Mar 17 19:04	27°♓28'22	-2°01'17
minimum elong	1996 Mar 17 19:02	27°♓28'22	2°01'18
max. Earth dist.	1996 Mar 17 17:59	27°♓28'02	10.54999 AU
morning rise	1996 Apr 03 22:38	29°♓35'10	
	1996 Apr 07 08:49	0°♈	
retrograde	1996 Jul 18 20:29	7°♈24'02	
opposition	1996 Sep 26 19:11	3°♈57'58	-2°37'02
min. Earth dist.	1996 Sep 26 19:27	3°♈57'54	8.49762 AU
direct	1996 Dec 03 12:39	0°♈36'32	
evening set	1997 Mar 13 19:46	8°♈07'08	
conjunction	1997 Mar 30 22:20	10°♈14'56	-2°11'14
minimum elong	1997 Mar 30 22:19	10°♈14'55	2°11'14
max. Earth dist.	1997 Mar 30 22:49	10°♈15'05	10.44330 AU
morning rise	1997 Apr 17 05:21	12°♈24'10	
retrograde	1997 Aug 01 16:57	20°♈21'39	
opposition	1997 Oct 10 04:26	16°♈54'27	-2°45'43
min. Earth dist.	1997 Oct 10 03:19	16°♈54'40	8.39240 AU
direct	1997 Dec 16 10:29	13°♈32'03	
evening set	1998 Mar 27 05:20	21°♈10'28	
conjunction	1998 Apr 13 11:41	23°♈20'46	-2°14'40
minimum elong	1998 Apr 13 11:41	23°♈20'46	2°14'40
max. Earth dist.	1998 Apr 13 12:56	23°♈21'09	10.34038 AU
morning rise	1998 Apr 30 22:38	25°♈32'33	
	1998 Jun 09 06:07	0°♉	
retrograde	1998 Aug 15 19:09	3°♉37'42	
opposition	1998 Oct 23 18:49	0°♉09'34	-2°45'55
min. Earth dist.	1998 Oct 23 17:03	0°♉09'55	8.29344 AU
	1998 Oct 25 18:41	30°℞♈	
direct	1998 Dec 29 15:45	26°♈46'04	
	1999 Mar 01 01:26	0°♉	
evening set	1999 Apr 10 00:21	4°♉32'18	
conjunction	1999 Apr 27 11:04	6°♉45'11	-2°10'58
minimum elong	1999 Apr 27 11:05	6°♉45'12	2°10'58
max. Earth dist.	1999 Apr 27 12:50	6°♉45'45	10.24647 AU
morning rise	1999 May 15 02:21	8°♉59'30	
	1999 Jul 10 00:42	15°♉	
retrograde	1999 Aug 30 01:23	17°♉10'51	
	1999 Oct 21 01:43	15°℞♉	
opposition	1999 Nov 06 13:53	13°♉42'00	-2°37'00
min. Earth dist.	1999 Nov 06 11:53	13°♉42'24	8.20572 AU
direct	2000 Jan 12 04:59	10°♉17'18	
	2000 Mar 27 13:22	15°♉	
evening set	2000 Apr 23 04:16	18°♉10'57	
conjunction	2000 May 10 19:45	20°♉26'22	-1°59'54
minimum elong	2000 May 10 19:48	20°♉26'23	1°59'53
max. Earth dist.	2000 May 10 21:56	20°♉27'04	10.16612 AU
morning rise	2000 May 28 15:24	22°♉43'04	
	2000 Aug 10 02:26	0°♊	
retrograde	2000 Sep 12 11:34	0°♊58'43	
	2000 Oct 16 00:45	30°℞♉	
opposition	2000 Nov 19 12:41	27°♉29'26	-2°18'55
min. Earth dist.	2000 Nov 19 10:39	27°♉29'51	8.13335 AU
direct	2001 Jan 25 00:24	24°♉03'34	
	2001 Apr 20 21:59	0°♊	
evening set	2001 May 07 16:22	2°♊03'57	

conjunction	2001 May 25	12:33	4°♊21'38	-1°41'43
minimum elong	2001 May 25	12:37	4°♊21'39	1°41'43
max. Earth dist.	2001 May 25	15:29	4°♊22'34	10.10326 AU
morning rise	2001 Jun 12	12:03	6°♊40'22	
retrograde	2001 Sep 27	00:05	14°♊58'11	
opposition	2001 Dec 03	14:13	11°♊28'48	-1°52'22
min. Earth dist.	2001 Dec 03	11:35	11°♊29'21	8.08060 AU
direct	2002 Feb 08	01:32	8°♊01'53	
evening set	2002 May 22	11:07	16°♊07'52	
conjunction	2002 Jun 09	11:24	18°♊27'19	-1°17'18
minimum elong	2002 Jun 09	11:27	18°♊27'20	1°17'18
max. Earth dist.	2002 Jun 09	15:29	18°♊28'39	10.06242 AU
morning rise	2002 Jun 27	13:50	20°♊47'30	
retrograde	2002 Oct 11	13:01	29°♊05'07	
opposition	2002 Dec 17	17:28	25°♊35'57	-1°18'46
min. Earth dist.	2002 Dec 17	13:50	25°♊36'42	8.05195 AU
direct	2003 Feb 22	07:41	22°♊08'07	
	2003 Jun 04	01:28	0°♋	
evening set	2003 Jun 06	10:27	0°♋18'05	
conjunction	2003 Jun 24	13:39	2°♋38'35	-0°48'06
minimum elong	2003 Jun 24	13:42	2°♋38'35	0°48'06
max. Earth dist.	2003 Jun 24	18:45	2°♋40'14	10.04735 AU
morning rise	2003 Jul 12	17:43	4°♋59'23	
retrograde	2003 Oct 25	23:42	13°♋14'24	
opposition	2003 Dec 31	20:57	9°♋45'45	-0°40'15
min. Earth dist.	2003 Dec 31	16:40	9°♋46'38	8.05013 AU
direct	2004 Mar 07	16:51	6°♋17'10	
evening set	2004 Jun 20	12:07	14°♋29'14	
conjunction	2004 Jul 08	16:38	16°♋49'53	-0°16'00
minimum elong	2004 Jul 08	16:39	16°♋49'53	0°15'59
max. Earth dist.	2004 Jul 08	22:12	16°♋51'41	10.05952 AU
morning rise	2004 Jul 26	20:39	19°♋10'24	
retrograde	2004 Nov 08	06:54	27°♋20'36	
asc. node	2005 Jan 08	17:08	24°♋18'39	
opposition	2005 Jan 13	23:06	23°♋52'45	0°00'34
min. Earth dist.	2005 Jan 13	18:45	23°♋53'39	8.07562 AU
direct	2005 Mar 22	02:54	20°♋23'39	
evening set	2005 Jul 05	13:01	28°♋35'49	
	2005 Jul 16	12:30	0°♌	
conjunction	2005 Jul 23	17:01	0°♌55'41	0°16'57
minimum elong	2005 Jul 23	17:00	0°♌55'41	0°16'58
max. Earth dist.	2005 Jul 23	22:24	0°♌57'24	10.09830 AU
morning rise	2005 Aug 10	19:19	3°♌15'00	
retrograde	2005 Nov 22	09:01	11°♌18'40	
opposition	2006 Jan 27	22:48	7°♌51'50	0°40'57
min. Earth dist.	2006 Jan 27	18:59	7°♌52'37	8.12684 AU
direct	2006 Apr 05	12:54	4°♌22'32	
evening set	2006 Jul 20	10:06	12°♌32'43	
conjunction	2006 Aug 07	11:54	14°♌50'57	0°48'30
minimum elong	2006 Aug 07	11:52	14°♌50'57	0°48'30
max. Earth dist.	2006 Aug 07	16:28	14°♌52'25	10.16111 AU
	2006 Aug 08	16:06	15°♌	
morning rise	2006 Aug 25	11:02	17°♌08'19	
retrograde	2006 Dec 06	04:07	25°♌04'16	
opposition	2007 Feb 10	18:42	21°♌38'35	1°18'20
min. Earth dist.	2007 Feb 10	15:23	21°♌39'16	8.20036 AU
direct	2007 Apr 19	21:24	18°♌09'21	
evening set	2007 Aug 04	01:11	26°♌15'47	
conjunction	2007 Aug 21	23:28	28°♌31'43	1°16'49
minimum elong	2007 Aug 21	23:25	28°♌31'42	1°16'49
max. Earth dist.	2007 Aug 22	03:05	28°♌32'52	10.24381 AU
	2007 Sep 02	13:48	0°♍	
morning rise	2007 Sep 08	18:17	0°♍46'33	
retrograde	2007 Dec 19	14:09	8°♍34'04	
opposition	2008 Feb 24	09:48	5°♍09'38	1°50'34
min. Earth dist.	2008 Feb 24	06:49	5°♍10'14	8.29140 AU
direct	2008 May 03	03:07	1°♍40'48	
evening set	2008 Aug 17	08:04	9°♍41'53	
conjunction	2008 Sep 04	02:00	11°♍55'07	1°40'25
minimum elong	2008 Sep 04	01:56	11°♍55'06	1°40'25
max. Earth dist.	2008 Sep 04	04:55	11°♍56'03	10.34125 AU
morning rise	2008 Sep 21	15:47	14°♍07'04	
retrograde	2008 Dec 31	18:08	21°♍46'01	
opposition	2009 Mar 08	19:53	18°♍22'51	2°16'07
min. Earth dist.	2009 Mar 08	16:59	18°♍23'25	8.39445 AU
direct	2009 May 17	02:06	14°♍54'41	
evening set	2009 Aug 31	05:10	22°♍49'11	
conjunction	2009 Sep 17	18:22	24°♍59'33	1°58'16
minimum elong	2009 Sep 17	18:19	24°♍59'32	1°58'17
max. Earth dist.	2009 Sep 17	21:03	25°♍00'23	10.44783 AU
morning rise	2009 Oct 05	02:56	27°♍08'30	
	2009 Oct 29	17:09	0°♎	
retrograde	2010 Jan 13	15:57	4°♎39'09	
opposition	2010 Mar 22	00:37	1°♎17'12	2°34'04
min. Earth dist.	2010 Mar 21	22:13	1°♎17'40	8.50381 AU
	2010 Apr 07	18:52	30°℞♍	
direct	2010 May 30	18:08	27°♍49'57	
	2010 Jul 21	15:10	0°♎	
evening set	2010 Sep 13	16:12	5°♎37'05	
conjunction	2010 Oct 01	00:42	7°♎44'38	2°09'51
minimum elong	2010 Oct 01	00:40	7°♎44'38	2°09'51
max. Earth dist.	2010 Oct 01	02:50	7°♎45'18	10.55796 AU
morning rise	2010 Oct 18	04:22	9°♎50'46	
retrograde	2011 Jan 26	06:09	17°♎13'36	
opposition	2011 Apr 03	23:56	13°♎52'49	2°44'04
min. Earth dist.	2011 Apr 03	22:51	13°♎53'02	8.61393 AU
direct	2011 Jun 13	03:52	10°♎26'39	
evening set	2011 Sep 26	17:09	18°♎06'07	
conjunction	2011 Oct 13	21:13	20°♎11'02	2°15'00
minimum elong	2011 Oct 13	21:12	20°♎11'02	2°15'00
max. Earth dist.	2011 Oct 13	21:48	20°♎11'13	10.66628 AU
morning rise	2011 Oct 30	20:41	22°♎14'37	
retrograde	2012 Feb 07	14:04	29°♎30'29	
opposition	2012 Apr 15	18:26	26°♎10'47	2°46'14
min. Earth dist.	2012 Apr 15	18:42	26°♎10'44	8.71961 AU
direct	2012 Jun 25	08:00	22°♎45'49	
	2012 Oct 05	20:34	0°♏	
evening set	2012 Oct 08	08:20	0°♏17'37	
conjunction	2012 Oct 25	08:32	2°♏20'14	2°13'55
minimum elong	2012 Oct 25	08:33	2°♏20'14	2°13'55
max. Earth dist.	2012 Oct 25	07:27	2°♏19'54	10.76788 AU
morning rise	2012 Nov 11	04:40	4°♏21'37	
retrograde	2013 Feb 18	17:02	11°♏31'35	
opposition	2013 Apr 28	08:27	8°♏12'48	2°40'59
min. Earth dist.	2013 Apr 28	09:22	8°♏12'37	8.81619 AU
direct	2013 Jul 08	05:12	4°♏49'06	
evening set	2013 Oct 20	14:50	12°♏13'35	
conjunction	2013 Nov 06	12:01	14°♏14'17	2°07'01
minimum elong	2013 Nov 06	12:02	14°♏14'17	2°07'01
max. Earth dist.	2013 Nov 06	10:06	14°♏13'42	10.85846 AU
	2013 Nov 12	20:30	15°♏	
morning rise	2013 Nov 23	05:35	16°♏13'55	

retrograde	2014 Mar 02	16:19	23°♏19'10	
opposition	2014 May 10	18:28	20°♏01'05	2°29'00
min. Earth dist.	2014 May 10	19:32	20°♏00'53	8.89967 AU
direct	2014 Jul 20	20:35	16°♏38'38	
evening set	2014 Nov 01	13:52	23°♏56'29	
conjunction	2014 Nov 18	08:50	25°♏55'40	1°54'53
minimum elong	2014 Nov 18	08:52	25°♏55'40	1°54'54
max. Earth dist.	2014 Nov 18	06:53	25°♏55'05	10.93429 AU
morning rise	2014 Dec 05	00:33	27°♏53'57	
	2014 Dec 23	16:34	0°♐	
retrograde	2015 Mar 14	15:02	4°♐55'48	
opposition	2015 May 23	01:35	1°♐38'14	2°11'05
min. Earth dist.	2015 May 23	03:20	1°♐37'54	8.96670 AU
	2015 Jun 15	00:36	30°℞♏	
direct	2015 Aug 02	05:53	28°♏16'57	
	2015 Sep 18	02:49	0°♐	
evening set	2015 Nov 13	07:03	5°♐29'01	
conjunction	2015 Nov 30	00:16	7°♐27'06	1°38'13
minimum elong	2015 Nov 30	00:18	7°♐27'07	1°38'14
max. Earth dist.	2015 Nov 29	21:36	7°♐26'19	10.99239 AU
morning rise	2015 Dec 16	14:54	9°♐24'29	
retrograde	2016 Mar 25	10:01	16°♐24'19	
opposition	2016 Jun 03	06:37	13°♐07'00	1°48'10
min. Earth dist.	2016 Jun 03	09:38	13°♐06'27	9.01490 AU
direct	2016 Aug 13	09:50	9°♐46'45	
evening set	2016 Nov 23	19:53	16°♐54'09	
conjunction	2016 Dec 10	11:51	18°♐51'30	1°17'47
minimum elong	2016 Dec 10	11:53	18°♐51'31	1°17'48
max. Earth dist.	2016 Dec 10	07:41	18°♐50'16	11.03082 AU
morning rise	2016 Dec 27	02:15	20°♐48'25	
retrograde	2017 Apr 06	05:06	27°♐47'41	
opposition	2017 Jun 15	10:18	24°♐30'22	1°21'11
min. Earth dist.	2017 Jun 15	14:03	24°♐29'40	9.04267 AU
direct	2017 Aug 25	12:08	21°♐10'56	
evening set	2017 Dec 05	05:46	28°♐14'53	
	2017 Dec 20	04:49	0°♑	
conjunction	2017 Dec 21	21:08	0°♑11'54	0°54'24
minimum elong	2017 Dec 21	21:10	0°♑11'55	0°54'24
max. Earth dist.	2017 Dec 21	16:38	0°♑10'35	11.04818 AU
morning rise	2018 Jan 07	11:44	2°♑08'43	
retrograde	2018 Apr 18	01:47	9°♑08'56	
opposition	2018 Jun 27	13:28	5°♑51'19	0°51'09
min. Earth dist.	2018 Jun 27	17:05	5°♑50'39	9.04882 AU
direct	2018 Sep 06	11:08	2°♑32'32	
evening set	2018 Dec 16	14:35	9°♑34'22	
conjunction	2019 Jan 02	05:50	11°♑31'25	0°28'55
minimum elong	2019 Jan 02	05:50	11°♑31'25	0°28'54
max. Earth dist.	2019 Jan 02	01:40	11°♑30'11	11.04348 AU
morning rise	2019 Jan 18	20:51	13°♑28'28	
retrograde	2019 Apr 30	00:54	20°♑31'08	
opposition	2019 Jul 09	17:07	17°♑12'57	0°19'05
min. Earth dist.	2019 Jul 09	20:34	17°♑12'19	9.03279 AU
direct	2019 Sep 18	08:47	13°♑54'35	
evening set	2019 Dec 27	23:56	20°♑55'44	
conjunction	2020 Jan 13	15:16	22°♑53'10	0°02'15
minimum elong	2020 Jan 13	15:16	22°♑53'10	0°02'15
behind sun begin	2020 Jan 13	08:17	22°♑51'07	
behind sun end	2020 Jan 13	22:14	22°♑55'12	
max. Earth dist.	2020 Jan 13	10:39	22°♑51'50	11.01652 AU
morning rise	2020 Jan 30	07:14	24°♑50'50	
desc. node	2020 Feb 13	05:53	26°♑25'25	
	2020 Mar 22	03:59	0°♒	
retrograde	2020 May 11	04:09	1°♒57'25	
	2020 Jul 01	23:37	30°℞♑	
opposition	2020 Jul 20	22:28	28°♑38'28	-0°13'56
min. Earth dist.	2020 Jul 21	02:38	28°♑37'41	8.99470 AU
direct	2020 Sep 29	05:11	25°♑20'14	
	2020 Dec 17	05:04	0°♒	
evening set	2021 Jan 07	11:19	2°♒22'12	
conjunction	2021 Jan 24	03:01	4°♒20'21	-0°24'48
minimum elong	2021 Jan 24	03:00	4°♒20'21	0°24'48
max. Earth dist.	2021 Jan 23	21:13	4°♒18'38	10.96766 AU
morning rise	2021 Feb 09	20:26	6°♒19'01	
retrograde	2021 May 23	09:19	13°♒31'02	
opposition	2021 Aug 02	06:14	10°♒11'04	-0°46'45
min. Earth dist.	2021 Aug 02	11:06	10°♒10'10	8.93529 AU
direct	2021 Oct 11	02:17	6°♒52'43	
evening set	2022 Jan 19	02:29	13°♒57'09	
	2022 Jan 27	22:49	15°♒	
conjunction	2022 Feb 04	19:05	15°♒56'23	-0°51'04
minimum elong	2022 Feb 04	19:03	15°♒56'22	0°51'03
max. Earth dist.	2022 Feb 04	13:11	15°♒54'37	10.89826 AU
morning rise	2022 Feb 21	14:07	17°♒56'21	
retrograde	2022 Jun 04	21:47	25°♒15'11	
opposition	2022 Aug 14	17:11	21°♒54'00	-1°18'10
min. Earth dist.	2022 Aug 14	21:47	21°♒53'09	8.85684 AU
direct	2022 Oct 23	04:08	18°♒35'18	
evening set	2023 Jan 30	22:51	25°♒43'38	
conjunction	2023 Feb 16	16:48	27°♒44'17	-1°15'35
minimum elong	2023 Feb 16	16:46	27°♒44'17	1°15'34
max. Earth dist.	2023 Feb 16	12:05	27°♒42'52	10.81143 AU
morning rise	2023 Mar 05	13:41	29°♒45'52	
	2023 Mar 07	13:35	0°♓	
retrograde	2023 Jun 17	17:27	7°♓12'39	
opposition	2023 Aug 27	08:28	3°♓50'05	-1°46'52
min. Earth dist.	2023 Aug 27	11:50	3°♓49'27	8.76301 AU
direct	2023 Nov 04	07:03	0°♓30'49	
evening set	2024 Feb 12	01:45	7°♓44'19	
conjunction	2024 Feb 28	21:26	9°♓46'41	-1°37'14
minimum elong	2024 Feb 28	21:23	9°♓46'40	1°37'14
max. Earth dist.	2024 Feb 28	17:21	9°♓45'26	10.71121 AU
morning rise	2024 Mar 16	20:39	11°♓50'11	
retrograde	2024 Jun 29	19:06	19°♓25'41	
opposition	2024 Sep 08	04:35	16°♓01'39	-2°11'28
min. Earth dist.	2024 Sep 08	07:12	16°♓01'09	8.65807 AU
direct	2024 Nov 15	14:21	12°♓41'33	
evening set	2025 Feb 23	12:36	20°♓01'24	
conjunction	2025 Mar 12	10:29	22°♓05'47	-1°54'55
minimum elong	2025 Mar 12	10:27	22°♓05'47	1°54'55
max. Earth dist.	2025 Mar 12	06:40	22°♓04'37	10.60217 AU
morning rise	2025 Mar 29	12:37	24°♓11'29	
	2025 May 25	03:36	0°♈	
retrograde	2025 Jul 13	04:07	1°♈56'04	
	2025 Sep 01	08:06	30°℞♓	
opposition	2025 Sep 21	05:46	28°♓30'34	-2°30'35
min. Earth dist.	2025 Sep 21	08:01	28°♓30'08	8.54677 AU
direct	2025 Nov 28	03:52	25°♓09'27	
	2026 Feb 14	00:12	0°♈	
evening set	2026 Mar 08	08:07	2°♈36'35	
conjunction	2026 Mar 25	08:55	4°♈43'16	-2°07'30
minimum elong	2026 Mar 25	08:54	4°♈43'15	2°07'30
max. Earth dist.	2026 Mar 25	05:51	4°♈42'18	10.48931 AU

morning rise	2026 Apr 11 14:24	6°♈51'24		
retrograde	2026 Jul 26 19:56	14°♈45'00		
opposition	2026 Oct 04 12:29	11°♈18'07	-2°42'49	
min. Earth dist.	2026 Oct 04 14:10	11°♈17'47	8.43425 AU	
direct	2026 Dec 10 23:31	7°♈55'52		
evening set	2027 Mar 21 12:49	15°♈30'51		
conjunction	2027 Apr 07 17:18	17°♈40'03	-2°13'59	
minimum elong	2027 Apr 07 17:18	17°♈40'03	2°14'00	
max. Earth dist.	2027 Apr 07 16:09	17°♈39'41	10.37798 AU	
morning rise	2027 Apr 25 02:31	19°♈50'45		
retrograde	2027 Aug 09 18:06	27°♈52'49		
opposition	2027 Oct 18 00:36	24°♈24'42	-2°47'01	
min. Earth dist.	2027 Oct 18 00:55	24°♈24'38	8.32600 AU	
direct	2027 Dec 24 02:47	21°♈01'14		
evening set	2028 Apr 03 03:20	28°♈44'19		
	2028 Apr 13 03:40	0°♉		
conjunction	2028 Apr 20 12:10	0°♉56'11	-2°13'35	
minimum elong	2028 Apr 20 12:11	0°♉56'11	2°13'35	
max. Earth dist.	2028 Apr 20 12:59	0°♉56'27	10.27382 AU	
morning rise	2028 May 08 01:29	3°♉09'31		
retrograde	2028 Aug 22 22:17	11°♉18'49		
opposition	2028 Oct 30 17:34	7°♉49'42	-2°42'17	
min. Earth dist.	2028 Oct 30 16:21	7°♉49'57	8.22757 AU	
direct	2029 Jan 05 12:39	4°♉25'00		
evening set	2029 Apr 17 03:24	12°♉15'58		
conjunction	2029 May 04 16:57	14°♉30'30	-2°05'51	
minimum elong	2029 May 04 16:59	14°♉30'31	2°05'51	
max. Earth dist.	2029 May 04 19:16	14°♉31'15	10.18241 AU	
	2029 May 08 12:45	15°♉		
morning rise	2029 May 22 10:35	16°♉46'23		
retrograde	2029 Sep 06 08:35	25°♉01'09		
opposition	2029 Nov 13 15:00	21°♉31'22	-2°28'19	
min. Earth dist.	2029 Nov 13 12:32	21°♉31'52	8.14441 AU	
direct	2030 Jan 19 03:54	18°♉05'25		
evening set	2030 May 01 12:09	26°♉03'38		
conjunction	2030 May 19 06:22	28°♉20'36	-1°50'48	
minimum elong	2030 May 19 06:25	28°♉20'37	1°50'48	
max. Earth dist.	2030 May 19 09:43	28°♉21'41	10.10901 AU	
	2030 Jun 01 02:34	0°♊		
morning rise	2030 Jun 06 04:09	0°♊38'44		
retrograde	2030 Sep 20 21:30	8°♊56'47		
opposition	2030 Nov 27 15:56	5°♊26'42	-2°05'25	
min. Earth dist.	2030 Nov 27 12:43	5°♊27'21	8.08153 AU	
direct	2031 Feb 02 02:25	1°♊59'37		
evening set	2031 May 16 04:26	10°♊03'59		
conjunction	2031 Jun 03 02:59	12°♊22'58	-1°29'02	
minimum elong	2031 Jun 03 03:02	12°♊22'59	1°29'02	
max. Earth dist.	2031 Jun 03 06:53	12°♊24'14	10.05826 AU	
morning rise	2031 Jun 21 04:19	14°♊42'50		
retrograde	2031 Oct 05 10:50	23°♊01'40		
opposition	2031 Dec 11 19:00	19°♊31'40	-1°34'43	
min. Earth dist.	2031 Dec 11 15:34	19°♊32'23	8.04307 AU	
direct	2032 Feb 16 07:00	16°♊03'36		
evening set	2032 May 30 02:23	24°♊12'40		
conjunction	2032 Jun 17 04:23	26°♊33'00	-1°01'44	
minimum elong	2032 Jun 17 04:26	26°♊33'01	1°01'44	
max. Earth dist.	2032 Jun 17 08:53	26°♊34'28	10.03344 AU	
morning rise	2032 Jul 05 08:07	28°♊53'53		
	2032 Jul 14 02:16	0°♋		
retrograde	2032 Oct 18 22:27	7°♋11'00		
opposition	2032 Dec 24 22:55	3°♋41'30	-0°58'03	
min. Earth dist.	2032 Dec 24 19:04	3°♋42'18	8.03160 AU	
direct	2033 Mar 01 16:03	0°♋12'40		
evening set	2033 Jun 14 03:35	8°♋24'38		
conjunction	2033 Jul 02 07:39	10°♋45'30	-0°30'38	
minimum elong	2033 Jul 02 07:40	10°♋45'30	0°30'38	
max. Earth dist.	2033 Jul 02 12:50	10°♋47'11	10.03623 AU	
morning rise	2033 Jul 20 12:08	13°♋06'28		
retrograde	2033 Nov 02 07:04	21°♋19'39		
opposition	2034 Jan 08 02:12	17°♋50'58	-0°17'51	
min. Earth dist.	2034 Jan 07 21:44	17°♋51'54	8.04806 AU	
direct	2034 Mar 16 02:30	14°♋21'41		
asc. node	2034 Jun 21 15:38	21°♋37'32		
evening set	2034 Jun 29 05:22	22°♋34'33		
conjunction	2034 Jul 17 09:49	24°♋55'02	0°02'18	
minimum elong	2034 Jul 17 09:49	24°♋55'02	0°02'18	
behind sun begin	2034 Jul 17 02:27	24°♋52'41		
behind sun end	2034 Jul 17 17:10	24°♋57'24		
max. Earth dist.	2034 Jul 17 15:41	24°♋56'55	10.06667 AU	
morning rise	2034 Aug 04 13:18	27°♋15'11		
	2034 Aug 27 02:46	0°♌		
retrograde	2034 Nov 16 12:01	5°♌22'31		
opposition	2035 Jan 22 03:25	1°♌54'55	0°23'07	
min. Earth dist.	2035 Jan 21 22:16	1°♌55'58	8.09161 AU	
	2035 Feb 15 19:35	30°℞♋		
direct	2035 Mar 30 13:13	28°♋25'29		
	2035 May 11 20:45	0°♌		
evening set	2035 Jul 14 04:54	6°♌37'16		
conjunction	2035 Aug 01 08:04	8°♌56'28	0°34'42	
minimum elong	2035 Aug 01 08:02	8°♌56'28	0°34'43	
max. Earth dist.	2035 Aug 01 14:29	8°♌58'32	10.12283 AU	
morning rise	2035 Aug 19 08:53	11°♌14'57		
	2035 Sep 20 04:01	15°♌		
retrograde	2035 Nov 30 11:07	19°♌14'59		
opposition	2036 Feb 05 01:32	15°♌48'41	1°02'11	
min. Earth dist.	2036 Feb 04 20:14	15°♌49'46	8.15939 AU	
	2036 Feb 15 02:11	15°℞♌		
direct	2036 Apr 12 22:37	12°♌19'26		
	2036 Jun 08 09:19	15°♌		
evening set	2036 Jul 27 23:41	20°♌28'12		
conjunction	2036 Aug 14 23:53	22°♌45'21	1°04'42	
minimum elong	2036 Aug 14 23:50	22°♌45'20	1°04'43	
max. Earth dist.	2036 Aug 15 06:12	22°♌47'22	10.20105 AU	
morning rise	2036 Sep 01 20:40	25°♌01'27		
	2036 Oct 16 07:34	0°♍		
retrograde	2036 Dec 13 02:58	2°♍53'16		
	2037 Feb 11 06:46	30°℞♌		
opposition	2037 Feb 17 19:27	29°♌28'24	1°36'57	
min. Earth dist.	2037 Feb 17 14:50	29°♌29'20	8.24715 AU	
direct	2037 Apr 27 04:57	25°♌59'36		
	2037 Jul 07 02:31	0°♍		
evening set	2037 Aug 11 11:08	4°♍03'37		
conjunction	2037 Aug 29 07:12	6°♍18'11	1°30'34	
minimum elong	2037 Aug 29 07:09	6°♍18'10	1°30'35	
max. Earth dist.	2037 Aug 29 12:34	6°♍19'53	10.29657 AU	
morning rise	2037 Sep 15 23:10	8°♍31'28		
retrograde	2037 Dec 26 11:36	16°♍14'39		
opposition	2038 Mar 03 08:33	12°♍51'13	2°05'37	
min. Earth dist.	2038 Mar 03 04:59	12°♍51'56	8.34959 AU	
direct	2038 May 11 06:22	9°♍23'07		
evening set	2038 Aug 25 13:24	17°♍20'56		
conjunction	2038 Sep 12 04:43	19°♍32'38	1°51'04	

minimum elong	2038 Sep 12 04:40	19°♍32'37	1°51'04
max. Earth dist.	2038 Sep 12 08:31	19°♍33'49	10.40370 AU
morning rise	2038 Sep 29 15:37	21°♍42'56	
retrograde	2039 Jan 08 11:55	29°♍17'27	
opposition	2039 Mar 16 16:13	25°♍55'25	2°26'59
min. Earth dist.	2039 Mar 16 13:48	25°♍55'53	8.46053 AU
direct	2039 May 25 03:06	22°♍28'12	
	2039 Sep 05 15:15	0°♎	
evening set	2039 Sep 08 05:43	0°♎18'52	
conjunction	2039 Sep 25 16:08	2°♎27'38	2°05'26
minimum elong	2039 Sep 25 16:06	2°♎27'37	2°05'26
max. Earth dist.	2039 Sep 25 18:01	2°♎28'13	10.51607 AU
morning rise	2039 Oct 12 22:04	4°♎34'59	
retrograde	2040 Jan 21 04:13	12°♎01'17	
opposition	2040 Mar 28 18:15	8°♎40'29	2°40'29
min. Earth dist.	2040 Mar 28 16:34	8°♎40'49	8.57333 AU
direct	2040 Jun 06 17:55	5°♎14'19	
evening set	2040 Sep 20 11:32	12°♎57'18	
conjunction	2040 Oct 07 17:26	15°♎03'19	2°13'24
minimum elong	2040 Oct 07 17:25	15°♎03'18	2°13'23
max. Earth dist.	2040 Oct 07 18:05	15°♎03'31	10.62712 AU
morning rise	2040 Oct 24 18:47	17°♎07'57	
retrograde	2041 Feb 01 16:02	24°♎26'53	
opposition	2041 Apr 10 15:12	21°♎07'12	2°46'01
min. Earth dist.	2041 Apr 10 14:25	21°♎07'21	8.68160 AU
direct	2041 Jun 20 01:10	17°♎42'11	
evening set	2041 Oct 03 07:09	25°♎17'27	
conjunction	2041 Oct 20 09:07	27°♎21'02	2°14'59
minimum elong	2041 Oct 20 09:07	27°♎21'02	2°14'58
max. Earth dist.	2041 Oct 20 08:50	27°♎20'57	10.73095 AU
morning rise	2041 Nov 06 06:36	29°♎23'20	
	2041 Nov 11 10:58	0°♏	
retrograde	2042 Feb 13 22:50	6°♏35'58	
opposition	2042 Apr 23 07:28	3°♏17'14	2°43'55
min. Earth dist.	2042 Apr 23 08:05	3°♏17'07	8.78021 AU
	2042 Jun 21 10:26	30°℞♎	
direct	2042 Jul 02 23:48	29°♎53'25	
	2042 Jul 14 13:59	0°♏	
evening set	2042 Oct 15 17:56	7°♏21'19	
conjunction	2042 Nov 01 16:31	9°♏22'52	2°10'32
minimum elong	2042 Nov 01 16:33	9°♏22'53	2°10'31
max. Earth dist.	2042 Nov 01 14:49	9°♏22'21	10.82340 AU
morning rise	2042 Nov 18 11:02	11°♏23'16	
	2042 Dec 21 13:50	15°♏	
retrograde	2043 Feb 25 23:40	18°♏30'46	
opposition	2043 May 05 19:38	15°♏12'46	2°34'46
min. Earth dist.	2043 May 05 22:06	15°♏12'18	8.86577 AU
	2043 May 08 15:18	15°℞♏	
direct	2043 Jul 15 18:07	11°♏50'04	
	2043 Sep 18 09:46	15°♏	
evening set	2043 Oct 27 20:50	19°♏11'11	
conjunction	2043 Nov 13 16:40	21°♏11'04	2°00'34
minimum elong	2043 Nov 13 16:42	21°♏11'05	2°00'34
max. Earth dist.	2043 Nov 13 12:55	21°♏09'57	10.90151 AU
morning rise	2043 Nov 30 09:11	23°♏09'59	
	2044 Feb 21 14:21	0°♐	
retrograde	2044 Mar 08 22:26	0°♐13'38	
	2044 Mar 25 10:02	30°℞♏	
opposition	2044 May 17 04:37	26°♏56'04	2°19'19
min. Earth dist.	2044 May 17 08:02	26°♏55'26	8.93555 AU
direct	2044 Jul 27 07:28	23°♏34'24	
	2044 Oct 31 12:52	0°♐	
evening set	2044 Nov 07 16:53	0°♐49'26	
conjunction	2044 Nov 24 10:46	2°♐48'05	1°45'46
minimum elong	2044 Nov 24 10:48	2°♐48'05	1°45'46
max. Earth dist.	2044 Nov 24 06:13	2°♐46'43	10.96274 AU
morning rise	2044 Dec 11 02:00	4°♐45'57	
retrograde	2045 Mar 20 18:13	11°♐47'04	
opposition	2045 May 29 10:58	8°♐29'39	1°58'26
min. Earth dist.	2045 May 29 14:29	8°♐29'00	8.98720 AU
direct	2045 Aug 08 15:01	5°♐08'53	
evening set	2045 Nov 19 07:50	12°♐18'48	
conjunction	2045 Dec 06 00:30	14°♐16'36	1°26'50
minimum elong	2045 Dec 06 00:32	14°♐16'36	1°26'51
max. Earth dist.	2045 Dec 05 20:06	14°♐15'18	11.00495 AU
morning rise	2045 Dec 22 15:00	16°♐13'50	
retrograde	2046 Apr 01 14:46	23°♐13'49	
opposition	2046 Jun 10 15:22	19°♐56'17	1°33'03
min. Earth dist.	2046 Jun 10 19:03	19°♐55'36	9.01900 AU
direct	2046 Aug 20 19:12	16°♐36'14	
evening set	2046 Nov 30 19:17	23°♐42'12	
conjunction	2046 Dec 17 11:07	25°♐39'33	1°04'35
minimum elong	2046 Dec 17 11:09	25°♐39'33	1°04'35
max. Earth dist.	2046 Dec 17 06:22	25°♐38'08	11.02668 AU
morning rise	2047 Jan 03 01:32	27°♐36'32	
	2047 Jan 24 15:41	0°♑	
retrograde	2047 Apr 13 11:47	4°♑36'50	
opposition	2047 Jun 22 19:09	1°♑18'58	1°04'10
min. Earth dist.	2047 Jun 22 23:42	1°♑18'08	9.02995 AU
	2047 Jul 11 02:59	30°℞♐	
direct	2047 Sep 01 18:30	27°♐59'28	
	2047 Oct 22 11:10	0°♑	
evening set	2047 Dec 12 04:46	5°♑02'46	
conjunction	2047 Dec 28 20:03	7°♑00'00	0°39'52
minimum elong	2047 Dec 28 20:04	7°♑00'00	0°39'51
max. Earth dist.	2047 Dec 28 14:18	6°♑58'18	11.02735 AU
morning rise	2048 Jan 14 10:59	8°♑57'09	
retrograde	2048 Apr 24 07:54	15°♑59'18	
opposition	2048 Jul 03 23:05	12°♑40'51	0°32'47
min. Earth dist.	2048 Jul 04 04:09	12°♑39'55	9.01986 AU
direct	2048 Sep 12 16:56	9°♑21'41	
evening set	2048 Dec 22 14:00	16°♑23'48	
conjunction	2049 Jan 08 05:17	18°♑21'16	0°13'33
minimum elong	2049 Jan 08 05:17	18°♑21'16	0°13'32
behind sun begin	2049 Jan 08 01:17	18°♑20'06	
behind sun end	2049 Jan 08 09:17	18°♑22'26	
max. Earth dist.	2049 Jan 07 23:23	18°♑19'32	11.00702 AU
morning rise	2049 Jan 24 21:04	20°♑18'54	
retrograde	2049 May 06 09:12	27°♑24'26	
desc. node	2049 Jul 15 20:32	24°♑06'32	
opposition	2049 Jul 16 03:51	24°♑05'11	-0°00'02
min. Earth dist.	2049 Jul 16 08:31	24°♑04'19	8.98910 AU
direct	2049 Sep 24 15:34	20°♑46'13	
evening set	2050 Jan 03 00:34	27°♑48'32	
conjunction	2050 Jan 19 16:18	29°♑46'37	-0°13'32
minimum elong	2050 Jan 19 16:18	29°♑46'37	0°13'32
behind sun begin	2050 Jan 19 12:18	29°♑45'26	
behind sun end	2050 Jan 19 20:18	29°♑47'47	
max. Earth dist.	2050 Jan 19 11:27	29°♑45'11	10.96626 AU
	2050 Jan 21 13:16	0°♒	
morning rise	2050 Feb 05 09:09	1°♒45'05	
retrograde	2050 May 18 14:28	8°♒55'26	
opposition	2050 Jul 28 10:43	5°♒35'13	-0°33'08

min. Earth dist.	2050 Jul 28 14:27	5°♒34'31	8.93853 AU
direct	2050 Oct 06 12:43	2°♒16'17	
evening set	2051 Jan 14 14:15	9°♒20'20	
conjunction	2051 Jan 31 06:37	11°♒19'19	-0°40'15
minimum elong	2051 Jan 31 06:36	11°♒19'18	0°40'15
max. Earth dist.	2051 Jan 31 02:02	11°♒17'57	10.90637 AU
morning rise	2051 Feb 17 00:52	13°♒18'55	
	2051 Mar 03 19:14	15°♒	
retrograde	2051 May 31 01:17	20°♒35'28	
opposition	2051 Aug 09 20:41	17°♒14'10	-1°05'21
min. Earth dist.	2051 Aug 10 00:07	17°♒13'31	8.86996 AU
	2051 Sep 11 14:35	15°℞♒	
direct	2051 Oct 18 11:52	13°♒55'03	
	2051 Nov 23 11:44	15°♒	
evening set	2052 Jan 26 08:35	21°♒02'16	
conjunction	2052 Feb 12 01:53	23°♒02'30	-1°05'39
minimum elong	2052 Feb 12 01:51	23°♒02'29	1°05'39
max. Earth dist.	2052 Feb 11 21:04	23°♒01'02	10.82964 AU
morning rise	2052 Feb 28 22:03	25°♒03'35	
	2052 Apr 16 13:54	0°♓	
retrograde	2052 Jun 11 17:22	2°♓27'30	
	2052 Aug 09 03:35	30°℞♒	
opposition	2052 Aug 21 10:32	29°♒05'00	-1°35'22
min. Earth dist.	2052 Aug 21 13:58	29°♒04'21	8.78608 AU
direct	2052 Oct 29 13:19	25°♒45'29	
	2053 Jan 11 02:52	0°♓	
evening set	2053 Feb 06 08:51	2°♓57'17	
conjunction	2053 Feb 23 03:41	4°♓59'02	-1°28'39
minimum elong	2053 Feb 23 03:39	4°♓59'02	1°28'39
max. Earth dist.	2053 Feb 22 23:30	4°♓57'46	10.73906 AU
morning rise	2053 Mar 12 02:05	7°♓01'53	
retrograde	2053 Jun 24 15:28	14°♓34'09	
opposition	2053 Sep 03 04:53	11°♓10'21	-2°01'52
min. Earth dist.	2053 Sep 03 07:41	11°♓09'49	8.69015 AU
direct	2053 Nov 10 20:13	7°♓50'17	
evening set	2054 Feb 18 16:30	15°♓07'53	
conjunction	2054 Mar 07 13:27	17°♓11'31	-1°48'07
minimum elong	2054 Mar 07 13:24	17°♓11'30	1°48'07
max. Earth dist.	2054 Mar 07 10:56	17°♓10'44	10.63822 AU
morning rise	2054 Mar 24 14:18	19°♓16'23	
retrograde	2054 Jul 07 22:05	26°♓57'33	
opposition	2054 Sep 16 04:11	23°♓32'29	-2°23'24
min. Earth dist.	2054 Sep 16 05:32	23°♓32'13	8.58620 AU
direct	2054 Nov 23 08:06	20°♓11'43	
evening set	2055 Mar 03 08:34	27°♓36'05	
conjunction	2055 Mar 20 08:11	29°♓41'52	-2°02'55
minimum elong	2055 Mar 20 08:09	29°♓41'52	2°02'56
max. Earth dist.	2055 Mar 20 07:17	29°♓41'35	10.53170 AU
	2055 Mar 22 18:30	0°♈	
morning rise	2055 Apr 06 12:01	1°♈49'01	
retrograde	2055 Jul 21 12:50	9°♈39'14	
opposition	2055 Sep 29 09:02	6°♈12'56	-2°38'35
min. Earth dist.	2055 Sep 29 08:54	6°♈12'58	8.47906 AU
direct	2055 Dec 06 00:06	2°♈51'20	
evening set	2056 Mar 15 09:49	10°♈23'13	
conjunction	2056 Apr 01 12:41	12°♈31'22	-2°12'01
minimum elong	2056 Apr 01 12:41	12°♈31'22	2°12'01
max. Earth dist.	2056 Apr 01 12:44	12°♈31'23	10.42465 AU
morning rise	2056 Apr 18 20:10	14°♈40'59	
retrograde	2056 Aug 03 09:26	22°♈39'50	
opposition	2056 Oct 11 19:20	19°♈12'27	-2°46'10
min. Earth dist.	2056 Oct 11 18:20	19°♈12'39	8.37394 AU
direct	2056 Dec 17 23:54	15°♈49'51	
evening set	2057 Mar 28 20:48	23°♈29'38	
conjunction	2057 Apr 15 03:34	25°♈40'20	-2°14'29
minimum elong	2057 Apr 15 03:35	25°♈40'20	2°14'30
max. Earth dist.	2057 Apr 15 04:15	25°♈40'33	10.32244 AU
morning rise	2057 May 02 15:08	27°♈52'32	
	2057 May 20 06:00	0°♉	
retrograde	2057 Aug 17 11:51	5°♉58'56	
opposition	2057 Oct 25 10:40	2°♉30'40	-2°45'08
min. Earth dist.	2057 Oct 25 09:18	2°♉30'56	8.27625 AU
	2057 Nov 29 18:50	30°℞♈	
direct	2057 Dec 31 06:59	29°♈06'59	
	2058 Jan 31 09:16	0°♉	
evening set	2058 Apr 11 17:13	6°♉54'35	
conjunction	2058 Apr 29 04:29	9°♉07'52	-2°09'46
minimum elong	2058 Apr 29 04:31	9°♉07'53	2°09'46
max. Earth dist.	2058 Apr 29 06:22	9°♉08'29	10.23043 AU
morning rise	2058 May 16 20:21	11°♉22'36	
	2058 Jun 16 14:28	15°♉	
retrograde	2058 Aug 31 19:38	19°♉35'00	
opposition	2058 Nov 08 06:38	16°♉06'04	-2°34'55
min. Earth dist.	2058 Nov 08 04:35	16°♉06'29	8.19111 AU
	2058 Nov 22 03:00	15°℞♉	
direct	2059 Jan 13 20:42	12°♉41'14	
	2059 Mar 05 22:57	15°♉	
evening set	2059 Apr 25 22:21	20°♉36'05	
conjunction	2059 May 13 14:28	22°♉51'52	-1°57'41
minimum elong	2059 May 13 14:31	22°♉51'53	1°57'41
max. Earth dist.	2059 May 13 17:43	22°♉52'55	10.15338 AU
morning rise	2059 May 31 10:34	25°♉08'56	
	2059 Jul 12 19:58	0°♊	
retrograde	2059 Sep 15 06:28	3°♊25'18	
	2059 Nov 21 10:20	30°℞♉	
opposition	2059 Nov 22 06:10	29°♉55'57	-2°15'36
min. Earth dist.	2059 Nov 22 03:22	29°♉56'32	8.12273 AU
direct	2060 Jan 27 17:51	26°♉29'59	
	2060 Mar 31 11:50	0°♊	
evening set	2060 May 09 11:33	4°♊31'16	
conjunction	2060 May 27 08:21	6°♊49'14	-1°38'35
minimum elong	2060 May 27 08:24	6°♊49'15	1°38'35
max. Earth dist.	2060 May 27 12:41	6°♊50'38	10.09495 AU
morning rise	2060 Jun 14 08:11	9°♊08'13	
retrograde	2060 Sep 28 18:55	17°♊26'18	
opposition	2060 Dec 05 08:05	13°♊56'54	-1°47'58
min. Earth dist.	2060 Dec 05 04:29	13°♊57'39	8.07449 AU
direct	2061 Feb 09 19:58	10°♊29'54	
evening set	2061 May 24 07:09	18°♊36'30	
conjunction	2061 Jun 11 07:52	20°♊56'09	-1°13'25
minimum elong	2061 Jun 11 07:55	20°♊56'10	1°13'25
max. Earth dist.	2061 Jun 11 12:54	20°♊57'47	10.05847 AU
morning rise	2061 Jun 29 10:30	23°♊16'27	
	2061 Sep 01 07:39	0°♋	
retrograde	2061 Oct 13 07:46	1°♋33'59	
	2061 Nov 24 19:04	30°℞♊	
opposition	2061 Dec 19 11:35	28°♊04'52	-1°13'33
min. Earth dist.	2061 Dec 19 07:25	28°♊05'43	8.04996 AU
direct	2062 Feb 24 01:55	24°♊36'59	
	2062 May 16 10:50	0°♋	
evening set	2062 Jun 08 06:56	2°♋47'18	
conjunction	2062 Jun 26 10:18	5°♋07'52	-0°43'42

minimum elong	2062 Jun 26	10:20	5°♋07'53	0°43'42	
max. Earth dist.	2062 Jun 26	15:43	5°♋09'38	10.04735 AU	
morning rise	2062 Jul 14	14:24	7°♋28'41		
retrograde	2062 Oct 27	18:58	15°♋43'20		
opposition	2063 Jan 02	15:08	12°♋14'47	-0°34'35	
min. Earth dist.	2063 Jan 02	10:52	12°♋15'40	8.05199 AU	
direct	2063 Mar 10	10:20	8°♋46'11		
evening set	2063 Jun 23	08:41	16°♋58'22		
conjunction	2063 Jul 11	13:06	19°♋18'58	-0°11'22	
minimum elong	2063 Jul 11	13:07	19°♋18'58	0°11'23	
behind sun begin	2063 Jul 11	07:51	19°♋17'17		
behind sun end	2063 Jul 11	18:23	19°♋20'40		
max. Earth dist.	2063 Jul 11	18:26	19°♋20'41	10.06324 AU	
morning rise	2063 Jul 29	17:03	21°♋39'24		
retrograde	2063 Nov 11	02:17	29°♋48'58		
asc. node	2063 Nov 19	04:09	29°♋45'16		
opposition	2064 Jan 16	17:08	26°♋21'16	0°06'20	
min. Earth dist.	2064 Jan 16	13:11	26°♋22'05	8.08109 AU	
direct	2064 Mar 23	21:33	22°♋52'11		
	2064 Jun 28	19:27	0°♌		
evening set	2064 Jul 07	09:22	1°♌04'13		
conjunction	2064 Jul 25	13:06	3°♌23'55	0°21'30	
minimum elong	2064 Jul 25	13:05	3°♌23'55	0°21'31	
max. Earth dist.	2064 Jul 25	17:53	3°♌25'28	10.10542 AU	
morning rise	2064 Aug 12	15:11	5°♌43'04		
retrograde	2064 Nov 24	02:33	13°♌45'53		
opposition	2065 Jan 29	16:28	10°♌19'15	0°46'26	
min. Earth dist.	2065 Jan 29	12:51	10°♌19'59	8.13552 AU	
direct	2065 Apr 07	08:46	6°♌49'59		
evening set	2065 Jul 22	05:57	14°♌59'49		
	2065 Jul 22	06:31	15°♌		
conjunction	2065 Aug 09	07:20	17°♌17'47	0°52'42	
minimum elong	2065 Aug 09	07:17	17°♌17'46	0°52'42	
max. Earth dist.	2065 Aug 09	11:34	17°♌19'09	10.17115 AU	
morning rise	2065 Aug 27	06:03	19°♌34'52		
retrograde	2065 Dec 07	19:33	27°♌29'52		
opposition	2066 Feb 12	11:51	24°♌04'23	1°23'11	
min. Earth dist.	2066 Feb 12	08:11	24°♌05'08	8.21172 AU	
direct	2066 Apr 21	17:23	20°♌35'16		
evening set	2066 Aug 05	20:05	28°♌41'04		
	2066 Aug 16	07:25	0°♍		
conjunction	2066 Aug 23	17:55	0°♍56'41	1°20'25	
minimum elong	2066 Aug 23	17:52	0°♍56'40	1°20'26	
max. Earth dist.	2066 Aug 23	21:52	0°♍57'56	10.25625 AU	
morning rise	2066 Sep 10	12:10	3°♍11'09		
retrograde	2066 Dec 21	05:57	10°♍57'40		
opposition	2067 Feb 26	02:20	7°♍33'25	1°54'33	
min. Earth dist.	2067 Feb 25	22:43	7°♍34'08	8.30484 AU	
direct	2067 May 05	20:43	4°♍04'43		
evening set	2067 Aug 20	01:50	12°♍04'57		
conjunction	2067 Sep 06	19:20	14°♍17'51	1°43'15	
minimum elong	2067 Sep 06	19:17	14°♍17'50	1°43'16	
max. Earth dist.	2067 Sep 06	22:59	14°♍19'00	10.35544 AU	
morning rise	2067 Sep 24	08:28	16°♍29'24		
retrograde	2068 Jan 03	10:21	24°♍07'18		
opposition	2068 Mar 10	11:45	20°♍44'18	2°19'03	
min. Earth dist.	2068 Mar 10	08:37	20°♍44'55	8.40924 AU	
direct	2068 May 18	18:17	17°♍16'17		
evening set	2068 Sep 01	21:53	25°♍09'48		
conjunction	2068 Sep 19	10:34	27°♍19'49	2°00'14	
minimum elong	2068 Sep 19	10:32	27°♍19'48	2°00'14	
max. Earth dist.	2068 Sep 19	13:41	27°♍20'47	10.46298 AU	
morning rise	2068 Oct 06	18:29	29°♍28'24		
	2068 Oct 11	02:56	0°♎		
retrograde	2069 Jan 15	06:00	6°♎57'57		
opposition	2069 Mar 23	15:48	3°♎36'10	2°35'53	
min. Earth dist.	2069 Mar 23	13:52	3°♎36'33	8.51920 AU	
direct	2069 Jun 01	10:30	0°♎09'04		
evening set	2069 Sep 15	07:40	7°♎55'08		
conjunction	2069 Oct 02	15:34	10°♎02'19	2°10'53	
minimum elong	2069 Oct 02	15:32	10°♎02'19	2°10'53	
max. Earth dist.	2069 Oct 02	17:19	10°♎02'52	10.57334 AU	
morning rise	2069 Oct 19	18:45	12°♎08'06		
retrograde	2070 Jan 27	19:01	19°♎29'54		
opposition	2070 Apr 05	14:27	16°♎09'16	2°44'45	
min. Earth dist.	2070 Apr 05	13:55	16°♎09'22	8.62925 AU	
direct	2070 Jun 14	20:01	12°♎43'13		
evening set	2070 Sep 28	07:11	20°♎21'33		
conjunction	2070 Oct 15	10:44	22°♎26'09	2°15'08	
minimum elong	2070 Oct 15	10:44	22°♎26'09	2°15'08	
max. Earth dist.	2070 Oct 15	10:35	22°♎26'06	10.68124 AU	
morning rise	2070 Nov 01	09:56	24°♎29'25		
	2070 Dec 25	20:46	0°♏		
retrograde	2071 Feb 09	01:59	1°♏44'19		
	2071 Mar 27	18:16	30°℞♎		
opposition	2071 Apr 18	08:06	28°♎24'43	2°45'49	
min. Earth dist.	2071 Apr 18	08:19	28°♎24'40	8.73413 AU	
direct	2071 Jun 27	22:35	24°♎59'52		
	2071 Sep 18	17:23	0°♏		
evening set	2071 Oct 10	21:08	2°♏30'33		
conjunction	2071 Oct 27	21:01	4°♏32'53	2°13'12	
minimum elong	2071 Oct 27	21:02	4°♏32'53	2°13'11	
max. Earth dist.	2071 Oct 27	19:48	4°♏32'31	10.78173 AU	
morning rise	2071 Nov 13	16:53	6°♏34'01		
retrograde	2072 Feb 21	04:08	13°♏43'08		
opposition	2072 Apr 29	21:15	10°♏24'23	2°39'34	
min. Earth dist.	2072 Apr 29	21:42	10°♏24'18	8.82922 AU	
direct	2072 Jul 09	19:46	7°♏00'48		
evening set	2072 Oct 22	02:28	14°♏24'15		
	2072 Oct 27	03:48	15°♏		
conjunction	2072 Nov 07	23:30	16°♏24'42	2°05'31	
minimum elong	2072 Nov 07	23:32	16°♏24'43	2°05'31	
max. Earth dist.	2072 Nov 07	22:08	16°♏24'18	10.87059 AU	
morning rise	2072 Nov 24	16:46	18°♏24'07		
retrograde	2073 Mar 04	04:31	25°♏28'41		
opposition	2073 May 12	06:46	22°♏10'38	2°26'42	
min. Earth dist.	2073 May 12	07:52	22°♏10'25	8.91070 AU	
direct	2073 Jul 22	09:21	18°♏48'18		
evening set	2073 Nov 03	00:29	26°♏05'09		
conjunction	2073 Nov 19	19:18	28°♏04'10	1°52'43	
minimum elong	2073 Nov 19	19:20	28°♏04'11	1°52'43	
max. Earth dist.	2073 Nov 19	17:16	28°♏03'34	10.94423 AU	
morning rise	2073 Dec 06	10:53	0°♐02'19		
	2073 Dec 06	02:56	0°♐		
retrograde	2074 Mar 16	00:57	7°♐03'37		
opposition	2074 May 24	13:21	3°♐46'04	2°08'03	
min. Earth dist.	2074 May 24	15:48	3°♐45'36	8.97543 AU	
direct	2074 Aug 03	16:33	0°♐24'52		
evening set	2074 Nov 14	16:58	7°♐36'09		
conjunction	2074 Dec 01	10:00	9°♐34'06	1°35'29	
minimum elong	2074 Dec 01	10:02	9°♐34'07	1°35'29	
max. Earth dist.	2074 Dec 01	06:24	9°♐33'02	10.99988 AU	

morning rise	2074 Dec 18 00:44	11°♐31'24	
retrograde	2075 Mar 27 19:45	18°♐30'52	
opposition	2075 Jun 05 17:47	15°♐13'34	1°44'31
min. Earth dist.	2075 Jun 05 21:19	15°♐12'55	9.02103 AU
direct	2075 Aug 15 22:01	11°♐53'22	
evening set	2075 Nov 26 05:12	19°♐00'11	
conjunction	2075 Dec 12 21:08	20°♐57'28	1°14'36
minimum elong	2075 Dec 12 21:10	20°♐57'28	1°14'36
max. Earth dist.	2075 Dec 12 16:38	20°♐56'08	11.03560 AU
morning rise	2075 Dec 29 11:36	22°♐54'19	
retrograde	2076 Apr 07 15:16	29°♐53'27	
opposition	2076 Jun 16 21:10	26°♐36'06	1°17'04
min. Earth dist.	2076 Jun 17 00:37	26°♐35'28	9.04595 AU
direct	2076 Aug 26 23:06	23°♐16'45	
	2076 Dec 03 16:03	0°♑	
evening set	2076 Dec 06 14:41	0°♑20'17	
conjunction	2076 Dec 23 06:09	2°♑17'17	0°50'53
minimum elong	2076 Dec 23 06:10	2°♑17'17	0°50'53
max. Earth dist.	2076 Dec 23 02:09	2°♑16'06	11.05006 AU
morning rise	2077 Jan 08 20:43	4°♑14'05	
retrograde	2077 Apr 19 12:15	11°♑14'24	
opposition	2077 Jun 29 00:15	7°♑56'44	0°46'42
min. Earth dist.	2077 Jun 29 03:33	7°♑56'07	9.04924 AU
direct	2077 Sep 07 21:30	4°♑38'01	
evening set	2077 Dec 17 23:28	11°♑39'38	
conjunction	2078 Jan 03 14:44	13°♑36'43	0°25'12
minimum elong	2078 Jan 03 14:45	13°♑36'43	0°25'11
max. Earth dist.	2078 Jan 03 10:29	13°♑35'28	11.04261 AU
morning rise	2078 Jan 20 05:52	15°♑33'49	
retrograde	2078 May 01 12:16	22°♑36'43	
opposition	2078 Jul 11 03:54	19°♑18'32	0°14'28
min. Earth dist.	2078 Jul 11 07:48	19°♑17'49	9.03066 AU
direct	2078 Sep 19 18:04	16°♑00'11	
desc. node	2078 Dec 23 21:09	22°♑23'29	
evening set	2078 Dec 29 09:00	23°♑01'21	
conjunction	2079 Jan 15 00:17	24°♑58'50	-0°01'38
minimum elong	2079 Jan 15 00:17	24°♑58'49	0°01'39
behind sun begin	2079 Jan 14 17:18	24°♑56'47	
behind sun end	2079 Jan 15 07:15	25°♑00'52	
max. Earth dist.	2079 Jan 14 18:52	24°♑57'15	11.01330 AU
morning rise	2079 Jan 31 16:29	26°♑56'36	
	2079 Feb 28 17:26	0°♒	
retrograde	2079 May 13 13:31	4°♒03'36	
opposition	2079 Jul 23 09:24	0°♒44'36	-0°18'33
min. Earth dist.	2079 Jul 23 14:09	0°♒43'43	8.99050 AU
	2079 Aug 02 12:25	30°℞♑	
direct	2079 Oct 01 14:33	27°♑26'22	
	2079 Nov 27 14:20	0°♒	
evening set	2080 Jan 09 20:36	4°♒28'33	
conjunction	2080 Jan 26 12:22	6°♒26'46	-0°28'31
minimum elong	2080 Jan 26 12:21	6°♒26'46	0°28'30
max. Earth dist.	2080 Jan 26 06:40	6°♒25'05	10.96262 AU
morning rise	2080 Feb 12 05:55	8°♒25'32	
	2080 Apr 26 20:02	15°♒	
retrograde	2080 May 24 20:35	15°♒38'08	
	2080 Jun 22 07:32	15°℞♒	
opposition	2080 Aug 03 17:25	12°♒18'05	-0°51'12
min. Earth dist.	2080 Aug 03 22:04	12°♒17'13	8.92949 AU
direct	2080 Oct 12 14:09	8°♒59'44	
	2081 Jan 11 05:00	15°♒	
evening set	2081 Jan 20 12:09	16°♒04'27	

conjunction	2081 Feb 06 04:55	18°♒03'48	-0°54'34
minimum elong	2081 Feb 06 04:53	18°♒03'47	0°54'32
max. Earth dist.	2081 Feb 05 23:48	18°♒02'16	10.89165 AU
morning rise	2081 Feb 23 00:01	20°♒03'53	
retrograde	2081 Jun 06 10:28	27°♒23'25	
opposition	2081 Aug 16 04:39	24°♒02'09	-1°22'15
min. Earth dist.	2081 Aug 16 08:39	24°♒01'24	8.84948 AU
direct	2081 Oct 24 13:44	20°♒43'27	
evening set	2082 Feb 01 09:10	27°♒52'13	
conjunction	2082 Feb 18 03:15	29°♒53'01	-1°18'42
minimum elong	2082 Feb 18 03:13	29°♒53'00	1°18'42
max. Earth dist.	2082 Feb 17 22:33	29°♒51'35	10.80319 AU
	2082 Feb 19 02:21	0°♓	
morning rise	2082 Mar 07 00:17	1°♓54'45	
retrograde	2082 Jun 19 05:50	9°♓22'21	
opposition	2082 Aug 28 20:23	5°♓59'42	-1°50'26
min. Earth dist.	2082 Aug 28 23:44	5°♓59'04	8.75404 AU
direct	2082 Nov 05 17:18	2°♓40'25	
evening set	2083 Feb 13 12:55	9°♓54'33	
conjunction	2083 Mar 02 08:39	11°♓57'06	-1°39'51
minimum elong	2083 Mar 02 08:37	11°♓57'05	1°39'51
max. Earth dist.	2083 Mar 02 03:47	11°♓55'36	10.70148 AU
morning rise	2083 Mar 19 08:09	14°♓00'48	
retrograde	2083 Jul 02 08:43	21°♓37'13	
opposition	2083 Sep 10 17:09	18°♓13'07	-2°14'20
min. Earth dist.	2083 Sep 10 20:20	18°♓12'30	8.64774 AU
direct	2083 Nov 18 01:50	14°♓52'59	
evening set	2084 Feb 26 00:37	22°♓13'35	
conjunction	2084 Mar 13 22:41	24°♓18'11	-1°56'52
minimum elong	2084 Mar 13 22:39	24°♓18'11	1°56'53
max. Earth dist.	2084 Mar 13 18:29	24°♓16'54	10.59134 AU
morning rise	2084 Mar 31 01:08	26°♓24'08	
	2084 May 01 21:27	0°♈	
retrograde	2084 Jul 14 18:17	4°♈09'41	
opposition	2084 Sep 22 19:03	0°♈44'08	-2°32'33
min. Earth dist.	2084 Sep 22 21:44	0°♈43'36	8.53559 AU
	2084 Oct 02 07:52	30°℞♓	
direct	2084 Nov 29 15:31	27°♓22'56	
	2085 Jan 24 04:58	0°♈	
evening set	2085 Mar 09 21:06	4°♈50'56	
conjunction	2085 Mar 26 22:19	6°♈57'52	-2°08'40
minimum elong	2085 Mar 26 22:18	6°♈57'52	2°08'41
max. Earth dist.	2085 Mar 26 19:44	6°♈57'04	10.47788 AU
morning rise	2085 Apr 13 04:06	9°♈06'15	
retrograde	2085 Jul 28 09:59	17°♈00'51	
opposition	2085 Oct 06 02:25	13°♈33'53	-2°43'45
min. Earth dist.	2085 Oct 06 03:53	13°♈33'36	8.42277 AU
direct	2085 Dec 12 13:22	10°♈11'33	
evening set	2086 Mar 23 03:01	17°♈47'28	
conjunction	2086 Apr 09 07:59	19°♈56'57	-2°14'15
minimum elong	2086 Apr 09 07:59	19°♈56'57	2°14'15
max. Earth dist.	2086 Apr 09 07:30	19°♈56'48	10.36652 AU
morning rise	2086 Apr 26 17:28	22°♈07'55	
	2086 Jul 27 23:36	0°♉	
retrograde	2086 Aug 11 09:40	0°♉10'53	
	2086 Aug 25 21:38	30°℞♈	
opposition	2086 Oct 19 15:07	26°♈42'41	-2°46'46
min. Earth dist.	2086 Oct 19 14:49	26°♈42'44	8.31483 AU
direct	2086 Dec 25 16:44	23°♈19'08	
	2087 Mar 28 05:51	0°♉	
evening set	2087 Apr 05 18:40	1°♉03'07	

conjunction	2087 Apr 23 03:56	3°♉15'17	-2°12'52
minimum elong	2087 Apr 23 03:57	3°♉15'17	2°12'53
max. Earth dist.	2087 Apr 23 04:53	3°♉15'35	10.26309 AU
morning rise	2087 May 10 17:38	5°♉28'54	
retrograde	2087 Aug 25 16:04	13°♉38'56	
opposition	2087 Nov 02 08:49	10°♉09'45	-2°40'49
min. Earth dist.	2087 Nov 02 07:17	10°♉10'04	8.21749 AU
direct	2088 Jan 08 01:47	6°♉44'56	
evening set	2088 Apr 18 19:45	14°♉36'46	
	2088 Apr 21 21:18	15°♉	
conjunction	2088 May 06 09:42	16°♉51'34	-2°04'09
minimum elong	2088 May 06 09:45	16°♉51'34	2°04'09
max. Earth dist.	2088 May 06 11:37	16°♉52'11	10.17319 AU
morning rise	2088 May 24 03:51	19°♉07'43	
retrograde	2088 Sep 08 02:33	27°♉22'59	
opposition	2088 Nov 15 06:50	23°♉53'10	-2°25'37
min. Earth dist.	2088 Nov 15 04:36	23°♉53'37	8.13615 AU
direct	2089 Jan 20 19:10	20°♉27'06	
evening set	2089 May 03 05:31	28°♉26'05	
	2089 May 15 10:24	0°♊	
conjunction	2089 May 21 00:09	0°♊43'17	-1°48'09
minimum elong	2089 May 21 00:12	0°♊43'18	1°48'09
max. Earth dist.	2089 May 21 02:50	0°♊44'09	10.10195 AU
morning rise	2089 Jun 07 22:26	3°♊01'39	
retrograde	2089 Sep 22 14:19	11°♊19'53	
opposition	2089 Nov 29 08:04	7°♊49'49	-2°01'37
min. Earth dist.	2089 Nov 29 05:23	7°♊50'22	8.07565 AU
direct	2090 Feb 03 19:23	4°♊22'35	
evening set	2090 May 17 22:28	12°♊27'35	
conjunction	2090 Jun 04 21:24	14°♊46'45	-1°25'35
minimum elong	2090 Jun 04 21:27	14°♊46'46	1°25'35
max. Earth dist.	2090 Jun 05 01:01	14°♊47'55	10.05378 AU
morning rise	2090 Jun 22 23:06	17°♊06'46	
retrograde	2090 Oct 07 02:59	25°♊25'32	
opposition	2090 Dec 13 11:21	21°♊55'34	-1°30'01
min. Earth dist.	2090 Dec 13 08:04	21°♊56'15	8.03995 AU
direct	2091 Feb 18 00:26	18°♊27'22	
evening set	2091 Jun 01 20:43	26°♊36'48	
conjunction	2091 Jun 19 23:03	28°♊57'16	-0°57'42
minimum elong	2091 Jun 19 23:06	28°♊57'17	0°57'41
max. Earth dist.	2091 Jun 20 03:52	28°♊58'50	10.03181 AU
	2091 Jun 27 23:57	0°♋	
morning rise	2091 Jul 08 02:57	1°♋18'12	
retrograde	2091 Oct 21 14:49	9°♋35'01	
opposition	2091 Dec 27 15:15	6°♋05'32	-0°52'45
min. Earth dist.	2091 Dec 27 11:02	6°♋06'25	8.03138 AU
direct	2092 Mar 03 08:55	2°♋36'37	
evening set	2092 Jun 15 22:08	10°♋48'43	
conjunction	2092 Jul 04 02:25	13°♋09'37	-0°26'16
minimum elong	2092 Jul 04 02:26	13°♋09'37	0°26'15
max. Earth dist.	2092 Jul 04 08:15	13°♋11'30	10.03747 AU
morning rise	2092 Jul 22 06:49	15°♋30'33	
retrograde	2092 Nov 04 00:03	23°♋43'11	
opposition	2093 Jan 09 18:17	20°♋14'32	-0°12'20
min. Earth dist.	2093 Jan 09 13:15	20°♋15'34	8.05064 AU
direct	2093 Mar 17 19:31	16°♋45'10	
asc. node	2093 May 03 09:04	18°♋39'58	
evening set	2093 Jun 30 23:50	24°♋58'00	
conjunction	2093 Jul 19 04:17	27°♋18'24	0°06'43
minimum elong	2093 Jul 19 04:16	27°♋18'24	0°06'43
behind sun begin	2093 Jul 18 21:25	27°♋16'12	
behind sun end	2093 Jul 19 11:07	27°♋20'36	
max. Earth dist.	2093 Jul 19 10:49	27°♋20'30	10.07056 AU
morning rise	2093 Aug 06 07:27	29°♋38'24	
	2093 Aug 09 03:52	0°♌	
retrograde	2093 Nov 18 04:14	7°♌45'02	
opposition	2094 Jan 23 19:18	4°♌17'30	0°28'31
min. Earth dist.	2094 Jan 23 13:51	4°♌18'37	8.09671 AU
direct	2094 Apr 01 06:14	0°♌48'02	
evening set	2094 Jul 15 22:50	8°♌59'33	
conjunction	2094 Aug 03 01:43	11°♌18'34	0°38'53
minimum elong	2094 Aug 03 01:41	11°♌18'34	0°38'54
max. Earth dist.	2094 Aug 03 08:28	11°♌20'45	10.12907 AU
morning rise	2094 Aug 21 02:05	13°♌36'49	
	2094 Sep 01 06:52	15°♌	
retrograde	2094 Dec 02 02:23	21°♌36'05	
opposition	2095 Feb 06 17:00	18°♌09'52	1°07'07
min. Earth dist.	2095 Feb 06 11:59	18°♌10'54	8.16669 AU
	2095 Mar 27 15:22	15°℞♌	
direct	2095 Apr 15 15:02	14°♌40'36	
	2095 May 04 15:23	15°♌	
evening set	2095 Jul 30 16:54	22°♌48'57	
conjunction	2095 Aug 17 16:39	25°♌05'51	1°08'25
minimum elong	2095 Aug 17 16:36	25°♌05'50	1°08'25
max. Earth dist.	2095 Aug 17 22:38	25°♌07'46	10.20926 AU
morning rise	2095 Sep 04 12:59	27°♌21'40	
	2095 Sep 26 12:46	0°♍	
retrograde	2095 Dec 15 17:45	5°♍12'39	
opposition	2096 Feb 20 10:22	1°♍47'54	1°41'09
min. Earth dist.	2096 Feb 20 06:18	1°♍48'43	8.25624 AU
	2096 Mar 14 20:20	30°℞♌	
direct	2096 Apr 28 20:27	28°♌19'07	
	2096 Jun 12 10:22	0°♍	
evening set	2096 Aug 13 03:29	6°♍22'35	
conjunction	2096 Aug 30 22:59	8°♍36'52	1°33'36
minimum elong	2096 Aug 30 22:56	8°♍36'51	1°33'37
max. Earth dist.	2096 Aug 31 03:36	8°♍38'20	10.30629 AU
morning rise	2096 Sep 17 14:30	10°♍49'52	
retrograde	2096 Dec 28 01:15	18°♍32'11	
opposition	2097 Mar 04 22:53	15°♍08'53	2°08'53
min. Earth dist.	2097 Mar 04 19:31	15°♍09'34	8.35995 AU
direct	2097 May 12 22:12	11°♍40'51	
evening set	2097 Aug 27 04:40	19°♍38'03	
conjunction	2097 Sep 13 19:25	21°♍49'26	1°53'18
minimum elong	2097 Sep 13 19:22	21°♍49'25	1°53'19
max. Earth dist.	2097 Sep 13 22:50	21°♍50'30	10.41451 AU
morning rise	2097 Oct 01 05:52	23°♍59'27	
	2097 Nov 29 00:37	0°♎	
retrograde	2098 Jan 09 23:37	1°♎33'10	
	2098 Feb 21 23:52	30°℞♍	
opposition	2098 Mar 18 05:58	28°♍11'15	2°29'12
min. Earth dist.	2098 Mar 18 03:01	28°♍11'50	8.47182 AU
direct	2098 May 26 19:17	24°♍44'10	
	2098 Aug 18 17:55	0°♎	
evening set	2098 Sep 09 19:48	2°♎34'05	
conjunction	2098 Sep 27 05:49	4°♎42'33	2°06'49
minimum elong	2098 Sep 27 05:47	4°♎42'32	2°06'49
max. Earth dist.	2098 Sep 27 08:15	4°♎43'18	10.52778 AU
morning rise	2098 Oct 14 11:15	6°♎49'37	
retrograde	2099 Jan 22 16:52	14°♎15'10	
opposition	2099 Mar 31 07:22	10°♎54'30	2°41'36
min. Earth dist.	2099 Mar 31 04:59	10°♎54'57	8.58547 AU
direct	2099 Jun 09 08:09	7°♎28'30	

evening set	2099 Sep	23	00:34	15°♎10'37	
conjunction	2099 Oct	10	06:09	17°♎16'21	2°13'53
minimum elong	2099 Oct	10	06:08	17°♎16'21	2°13'53
max. Earth dist.	2099 Oct	10	07:49	17°♎16'52	10.63972 AU
morning rise	2099 Oct	27	07:00	19°♎20'42	
retrograde	2100 Feb	04	04:29	26°♎38'49	
opposition	2100 Apr	13	03:46	23°♎19'16	2°46'04
min. Earth dist.	2100 Apr	13	02:54	23°♎19'26	8.69458 AU
direct	2100 Jun	22	13:01	19°♎54'25	
evening set	2100 Oct	05	19:12	27°♎28'42	
conjunction	2100 Oct	22	20:47	29°♎32'01	2°14'38
minimum elong	2100 Oct	22	20:47	29°♎32'01	2°14'37
max. Earth dist.	2100 Oct	22	20:46	29°♎32'00	10.74423 AU
	2100 Oct	26	17:04	0°♏	
morning rise	2100 Nov	08	17:53	1°♏34'03	
retrograde	2101 Feb	16	08:45	8°♏45'51	
opposition	2101 Apr	25	19:28	5°♏27'15	2°42'57
min. Earth dist.	2101 Apr	25	20:32	5°♏27'02	8.79357 AU
direct	2101 Jul	05	12:53	2°♏03'33	
evening set	2101 Oct	18	04:53	9°♏30'27	
conjunction	2101 Nov	04	03:05	11°♏31'44	2°09'23
minimum elong	2101 Nov	04	03:06	11°♏31'44	2°09'23
max. Earth dist.	2101 Nov	04	00:48	11°♏31'03	10.83659 AU
morning rise	2101 Nov	20	21:27	13°♏31'54	
	2101 Dec	03	15:28	15°♏	