direct	1600 Jan 05 20:49	27°♈13'42	
	1600 Mar 31 08:53	0°♉	
evening set	1600 Apr 04 20:28	0°♉14'58	
conjunction	1600 Apr 21 03:50	1°♉10'53	-0°28'43
minimum elong	1600 Apr 21 03:50	1°♉10'53	0°28'43
max. Earth dist.	1600 Apr 21 14:22	1°♉12'23	20.77348 AU
morning rise	1600 May 07 14:56	2°♉07'19	
retrograde	1600 Aug 10 08:14	5°♉17'26	
opposition	1600 Oct 26 10:21	3°♉16'45	-0°30'24
min. Earth dist.	1600 Oct 26 01:27	3°♉17'40	18.74828 AU
direct	1601 Jan 09 03:05	1°♉18'45	
evening set	1601 Apr 09 06:29	4°♉20'42	
conjunction	1601 Apr 25 15:03	5°♉16'52	-0°26'16
minimum elong	1601 Apr 25 15:03	5°♉16'52	0°26'16
max. Earth dist.	1601 Apr 26 01:18	5°♉18'20	20.72244 AU
morning rise	1601 May 12 02:54	6°♉13'32	
retrograde	1601 Aug 14 20:13	9°♉24'05	
opposition	1601 Oct 30 18:26	7°♉23'13	-0°27'36
min. Earth dist.	1601 Oct 30 10:03	7°♉24'05	18.69597 AU
direct	1602 Jan 13 11:17	5°♉24'55	
evening set	1602 Apr 13 17:23	8°♉27'35	
conjunction	1602 Apr 30 02:49	9°♉24'01	-0°23'39
minimum elong	1602 Apr 30 02:49	9°♉24'01	0°23'39
max. Earth dist.	1602 Apr 30 10:29	9°♉25'07	20.66908 AU
morning rise	1602 May 16 15:44	10°♉20'56	
retrograde	1602 Aug 19 07:25	13°♉31'57	
opposition	1602 Nov 04 03:01	11°♉30'54	-0°24'39
min. Earth dist.	1602 Nov 03 20:41	11°♉31'33	18.64163 AU
direct	1603 Jan 17 18:13	9°♉32'16	
evening set	1603 Apr 18 04:57	12°♉35'45	
conjunction	1603 May 04 15:32	13°♉32'28	-0°20'55
minimum elong	1603 May 04 15:32	13°♉32'28	0°20'55
max. Earth dist.	1603 May 04 22:47	13°♉33'30	20.61382 AU
morning rise	1603 May 21 05:06	14°♉29'38	
	1603 May 30 07:51	15°♉	
retrograde	1603 Aug 23 20:40	17°♉41'09	
opposition	1603 Nov 08 11:44	15°♉39'57	-0°21'33
min. Earth dist.	1603 Nov 08 05:51	15°♉40'34	18.58548 AU
	1603 Nov 24 18:12	15°℞♉	
direct	1604 Jan 22 03:09	13°♉41'01	
	1604 Mar 18 09:57	15°♉	
evening set	1604 Apr 21 17:28	16°♉45'23	
conjunction	1604 May 08 04:51	17°♉42'22	-0°18'04
minimum elong	1604 May 08 04:50	17°♉42'22	0°18'03
max. Earth dist.	1604 May 08 09:31	17°♉43'02	20.55701 AU
morning rise	1604 May 24 19:21	18°♉39'48	
retrograde	1604 Aug 27 09:13	21°♉51'52	
opposition	1604 Nov 11 21:08	19°♉50'32	-0°18'19
min. Earth dist.	1604 Nov 11 17:23	19°♉50'55	18.52804 AU
direct	1605 Jan 25 10:49	17°♉51'18	
evening set	1605 Apr 26 06:35	20°♉56'36	
conjunction	1605 May 12 19:05	21°♉53'53	-0°15'05
minimum elong	1605 May 12 19:05	21°♉53'53	0°15'06
behind sun begin	1605 May 12 17:00	21°♉53'35	
behind sun end	1605 May 12 21:10	21°♉54'11	
max. Earth dist.	1605 May 12 23:16	21°♉54'29	20.49898 AU
morning rise	1605 May 29 10:14	22°♉51'36	
retrograde	1605 Sep 01 00:13	26°♉04'14	
opposition	1605 Nov 16 06:54	24°♉02'48	-0°14'58
min. Earth dist.	1605 Nov 16 03:39	24°♉03'08	18.46925 AU
direct	1606 Jan 29 21:05	22°♉03'16	
evening set	1606 Apr 30 21:02	25°♉09'36	
conjunction	1606 May 17 10:17	26°♉07'10	-0°12'01
minimum elong	1606 May 17 10:17	26°♉07'10	0°12'01
behind sun begin	1606 May 17 05:45	26°♉06'32	
behind sun end	1606 May 17 14:48	26°♉07'49	
max. Earth dist.	1606 May 17 11:46	26°♉07'23	20.43957 AU
morning rise	1606 Jun 03 02:16	27°♉05'10	
	1606 Aug 09 15:50	0°♊	
retrograde	1606 Sep 05 13:58	0°♊18'23	
	1606 Oct 02 18:29	30°℞♉	
opposition	1606 Nov 20 17:12	28°♉16'52	-0°11'31
min. Earth dist.	1606 Nov 20 16:29	28°♉16'57	18.40917 AU
direct	1607 Feb 03 05:44	26°♉17'03	
evening set	1607 May 05 12:19	29°♉24'28	
	1607 May 15 17:59	0°♊	
conjunction	1607 May 22 02:34	0°♊22'21	-0°08'52
minimum elong	1607 May 22 02:34	0°♊22'21	0°08'52
behind sun begin	1607 May 21 20:48	0°♊21'32	
behind sun end	1607 May 22 08:20	0°♊23'11	
max. Earth dist.	1607 May 22 03:07	0°♊22'26	20.37877 AU
morning rise	1607 Jun 07 19:02	1°♊20'37	
retrograde	1607 Sep 10 06:50	4°♊34'27	
opposition	1607 Nov 25 04:03	2°♊32'52	-0°07'59
min. Earth dist.	1607 Nov 25 04:04	2°♊32'52	18.34752 AU
direct	1608 Feb 07 17:40	0°♊32'45	
evening set	1608 May 09 04:38	3°♊41'16	
conjunction	1608 May 25 19:29	4°♊39'28	-0°05'39
minimum elong	1608 May 25 19:30	4°♊39'28	0°05'40
behind sun begin	1608 May 25 13:01	4°♊38'32	
behind sun end	1608 May 26 01:59	4°♊40'24	
max. Earth dist.	1608 May 25 17:16	4°♊39'10	20.31624 AU
morning rise	1608 Jun 11 12:38	5°♊38'01	
retrograde	1608 Sep 13 21:34	8°♊52'28	
opposition	1608 Nov 28 15:43	6°♊50'48	-0°04'21
min. Earth dist.	1608 Nov 28 18:27	6°♊50'30	18.28416 AU
direct	1609 Feb 11 03:47	4°♊50'20	
evening set	1609 May 13 21:56	8°♊00'01	
conjunction	1609 May 30 13:42	8°♊58'32	-0°02'21
minimum elong	1609 May 30 13:42	8°♊58'32	0°02'21
behind sun begin	1609 May 30 06:56	8°♊57'33	
behind sun end	1609 May 30 20:27	8°♊59'30	
max. Earth dist.	1609 May 30 10:06	8°♊58'03	20.25202 AU
morning rise	1609 Jun 16 07:14	9°♊57'20	
retrograde	1609 Sep 18 15:58	13°♊12'24	
opposition	1609 Dec 03 03:43	11°♊10'37	-0°00'41
min. Earth dist.	1609 Dec 03 07:18	11°♊10'14	18.21905 AU
asc. node	1610 Feb 09 04:58	9°♊10'56	
direct	1610 Feb 15 17:25	9°♊09'48	
evening set	1610 May 18 16:21	12°♊20'40	
conjunction	1610 Jun 04 08:43	13°♊19'28	0°01'05
minimum elong	1610 Jun 04 08:43	13°♊19'28	0°01'04
behind sun begin	1610 Jun 04 01:57	13°♊18'30	
behind sun end	1610 Jun 04 15:29	13°♊20'27	
max. Earth dist.	1610 Jun 04 02:15	13°♊18'33	20.18608 AU
morning rise	1610 Jun 21 02:44	14°♊18'34	
retrograde	1610 Sep 23 07:46	17°♊34'12	
opposition	1610 Dec 07 16:35	15°♊32'18	0°03'02
min. Earth dist.	1610 Dec 07 22:55	15°♊31'38	18.15246 AU

direct	1611 Feb 20 05:27	13°♊31'04	
evening set	1611 May 23 11:32	16°♊43'08	
conjunction	1611 Jun 09 04:36	17°♊42'15	0°04'28
minimum elong	1611 Jun 09 04:35	17°♊42'15	0°04'28
behind sun begin	1611 Jun 08 21:57	17°♊41'17	
behind sun end	1611 Jun 09 11:14	17°♊43'12	
max. Earth dist.	1611 Jun 08 20:35	17°♊41'05	20.11901 AU
morning rise	1611 Jun 25 22:53	18°♊41'36	
retrograde	1611 Sep 28 02:50	21°♊57'48	
opposition	1611 Dec 12 05:49	19°♊55'46	0°06'45
min. Earth dist.	1611 Dec 12 12:51	19°♊55'01	18.08502 AU
direct	1612 Feb 24 20:35	17°♊54'08	
evening set	1612 May 27 07:41	21°♊07'23	
conjunction	1612 Jun 13 01:13	22°♊06'48	0°07'47
minimum elong	1612 Jun 13 01:13	22°♊06'48	0°07'47
behind sun begin	1612 Jun 12 19:08	22°♊05'55	
behind sun end	1612 Jun 13 07:18	22°♊07'41	
max. Earth dist.	1612 Jun 12 14:54	22°♊05'17	20.05139 AU
morning rise	1612 Jun 29 19:47	23°♊06'24	
retrograde	1612 Oct 01 19:35	26°♊23'11	
opposition	1612 Dec 15 19:49	24°♊21'00	0°10'27
min. Earth dist.	1612 Dec 16 05:23	24°♊19'58	18.01754 AU
direct	1613 Feb 28 10:25	22°♊18'54	
evening set	1613 Jun 01 04:34	25°♊33'24	
conjunction	1613 Jun 17 22:39	26°♊33'06	0°11'06
minimum elong	1613 Jun 17 22:39	26°♊33'06	0°11'05
behind sun begin	1613 Jun 17 17:40	26°♊32'22	
behind sun end	1613 Jun 18 03:37	26°♊33'50	
max. Earth dist.	1613 Jun 17 10:45	26°♊31'20	19.98422 AU
morning rise	1613 Jul 04 17:26	27°♊32'57	
	1613 Aug 23 07:19	0°♋	
retrograde	1613 Oct 06 15:19	0°♋50'16	
	1613 Nov 20 13:25	30°℞♊	
opposition	1613 Dec 20 10:18	28°♊47'56	0°14'07
min. Earth dist.	1613 Dec 20 20:24	28°♊46'51	17.95076 AU
direct	1614 Mar 05 03:14	26°♊45'25	
	1614 Jun 05 18:45	0°♋	
evening set	1614 Jun 06 02:29	0°♋01'08	
conjunction	1614 Jun 22 20:56	1°♋01'08	0°14'21
minimum elong	1614 Jun 22 20:56	1°♋01'08	0°14'22
behind sun begin	1614 Jun 22 18:04	1°♋00'42	
behind sun end	1614 Jun 22 23:48	1°♋01'33	
max. Earth dist.	1614 Jun 22 07:19	0°♋59'05	19.91794 AU
morning rise	1614 Jul 09 15:44	2°♋01'12	
retrograde	1614 Oct 11 08:53	5°♋19'03	
opposition	1614 Dec 25 01:30	3°♋16'35	0°17'43
min. Earth dist.	1614 Dec 25 13:53	3°♋15'15	17.88537 AU
direct	1615 Mar 09 19:07	1°♋13'38	
evening set	1615 Jun 11 01:10	4°♋30'36	
conjunction	1615 Jun 27 19:53	5°♋30'51	0°17'33
minimum elong	1615 Jun 27 19:53	5°♋30'51	0°17'33
max. Earth dist.	1615 Jun 27 04:37	5°♋28'33	19.85358 AU
morning rise	1615 Jul 14 14:43	6°♋31'09	
retrograde	1615 Oct 16 05:09	9°♋49'31	
opposition	1615 Dec 29 17:21	7°♋46'56	0°21'14
min. Earth dist.	1615 Dec 30 05:59	7°♋45'34	17.82223 AU
direct	1616 Mar 13 13:27	5°♋43'35	
evening set	1616 Jun 15 00:28	9°♋01'46	
conjunction	1616 Jul 01 19:26	10°♋02'16	0°20'39
minimum elong	1616 Jul 01 19:26	10°♋02'16	0°20'40
max. Earth dist.	1616 Jul 01 03:14	9°♋59'50	19.79164 AU
morning rise	1616 Jul 18 14:04	11°♋02'47	
retrograde	1616 Oct 20 00:11	14°♋21'40	
opposition	1617 Jan 02 10:02	12°♋18'59	0°24'38
min. Earth dist.	1617 Jan 03 00:29	12°♋17'25	17.76186 AU
direct	1617 Mar 18 07:34	10°♋15'16	
evening set	1617 Jun 20 00:47	13°♋34'40	
conjunction	1617 Jul 06 19:48	14°♋35'25	0°23'39
minimum elong	1617 Jul 06 19:48	14°♋35'25	0°23'39
max. Earth dist.	1617 Jul 06 01:48	14°♋32'41	19.73293 AU
morning rise	1617 Jul 23 14:21	15°♋36'07	
retrograde	1617 Oct 24 21:14	18°♋55'29	
opposition	1618 Jan 07 03:10	16°♋52'45	0°27'55
min. Earth dist.	1618 Jan 07 17:53	16°♋51'10	17.70492 AU
direct	1618 Mar 23 03:26	14°♋48'41	
evening set	1618 Jun 25 01:53	18°♋09'20	
conjunction	1618 Jul 11 21:00	19°♋10'18	0°26'31
minimum elong	1618 Jul 11 21:00	19°♋10'18	0°26'30
max. Earth dist.	1618 Jul 11 02:33	19°♋07'29	19.67767 AU
morning rise	1618 Jul 28 15:06	20°♋11'10	
retrograde	1618 Oct 29 17:59	23°♋31'01	
opposition	1619 Jan 11 21:18	21°♋28'17	0°31'02
min. Earth dist.	1619 Jan 12 13:32	21°♋26'31	17.65156 AU
direct	1619 Mar 27 23:00	19°♋23'55	
evening set	1619 Jun 30 03:41	22°♋45'45	
conjunction	1619 Jul 16 22:34	23°♋46'55	0°29'14
minimum elong	1619 Jul 16 22:34	23°♋46'55	0°29'14
max. Earth dist.	1619 Jul 16 02:12	23°♋43'48	19.62623 AU
morning rise	1619 Aug 02 16:25	24°♋47'57	
retrograde	1619 Nov 03 16:39	28°♋08'16	
opposition	1620 Jan 16 16:01	26°♋05'33	0°33'58
min. Earth dist.	1620 Jan 17 08:38	26°♋03'44	17.60203 AU
direct	1620 Mar 31 20:23	24°♋00'55	
evening set	1620 Jul 04 06:10	27°♋23'55	
max. Earth dist.	1620 Jul 20 04:38	28°♋22'09	19.57842 AU
conjunction	1620 Jul 21 01:02	28°♋25'16	0°31'47
minimum elong	1620 Jul 21 01:02	28°♋25'16	0°31'46
morning rise	1620 Aug 06 18:13	29°♋26'27	
	1620 Aug 16 06:18	0°♌	
retrograde	1620 Nov 07 14:58	2°♌47'10	
opposition	1621 Jan 20 11:30	0°♌44'31	0°36'43
min. Earth dist.	1621 Jan 21 05:30	0°♌42'33	17.55602 AU
	1621 Feb 06 20:10	30°℞♋	
direct	1621 Apr 05 17:11	28°♋39'38	
	1621 May 31 22:51	0°♌	
evening set	1621 Jul 09 09:32	2°♌03'45	
max. Earth dist.	1621 Jul 25 05:20	3°♌01'47	19.53411 AU
conjunction	1621 Jul 26 03:58	3°♌05'16	0°34'08
minimum elong	1621 Jul 26 03:58	3°♌05'16	0°34'09
morning rise	1621 Aug 11 20:46	4°♌06'33	
retrograde	1621 Nov 12 14:53	7°♌27'40	
opposition	1622 Jan 25 07:45	5°♌25'02	0°39'14
min. Earth dist.	1622 Jan 26 02:30	5°♌22'59	17.51342 AU
direct	1622 Apr 10 15:55	3°♌19'54	
evening set	1622 Jul 14 13:21	6°♌45'05	
max. Earth dist.	1622 Jul 30 09:01	7°♌43'16	19.49296 AU
conjunction	1622 Jul 31 07:32	7°♌46'44	0°36'17
minimum elong	1622 Jul 31 07:32	7°♌46'44	0°36'17
morning rise	1622 Aug 16 23:28	8°♌48'07	
retrograde	1622 Nov 17 14:16	12°♌09'33	
opposition	1623 Jan 30 04:45	10°♌06'58	0°41'30
min. Earth dist.	1623 Jan 31 00:27	10°♌04'48	17.47388 AU

direct	1623 Apr 15	14:41	8°♌01'36	
evening set	1623 Jul 19	17:46	11°♌27'44	
max. Earth dist.	1623 Aug 04	10:40	12°♌25'41	19.45507 AU
conjunction	1623 Aug 05	11:18	12°♌29'30	0°38'11
minimum elong	1623 Aug 05	11:18	12°♌29'30	0°38'11
morning rise	1623 Aug 22	02:38	13°♌30'57	
	1623 Sep 17	07:04	15°♌	
retrograde	1623 Nov 22	14:18	16°♌52'40	
	1624 Jan 31	07:35	15°℞♌	
opposition	1624 Feb 04	02:25	14°♌50'05	0°43'30
min. Earth dist.	1624 Feb 04	22:57	14°♌47'50	17.43781 AU
direct	1624 Apr 19	14:34	12°♌44'29	
	1624 Jul 03	07:26	15°♌	
evening set	1624 Jul 23	22:12	16°♌11'29	
conjunction	1624 Aug 09	15:23	17°♌13'21	0°39'51
minimum elong	1624 Aug 09	15:22	17°♌13'21	0°39'51
max. Earth dist.	1624 Aug 08	15:07	17°♌09'35	19.42066 AU
morning rise	1624 Aug 26	05:47	18°♌14'51	
retrograde	1624 Nov 26	14:18	21°♌36'47	
opposition	1625 Feb 08	00:38	19°♌34'12	0°45'13
min. Earth dist.	1625 Feb 08	21:31	19°♌31'55	17.40517 AU
direct	1625 Apr 24	15:27	17°♌28'24	
evening set	1625 Jul 29	03:14	20°♌56'11	
conjunction	1625 Aug 14	19:37	21°♌58'05	0°41'14
minimum elong	1625 Aug 14	19:37	21°♌58'05	0°41'13
max. Earth dist.	1625 Aug 13	17:44	21°♌54'03	19.38996 AU
morning rise	1625 Aug 31	09:15	22°♌59'37	
retrograde	1625 Dec 01	13:46	26°♌21'43	
opposition	1626 Feb 12	23:19	24°♌19'08	0°46'37
min. Earth dist.	1626 Feb 13	21:08	24°♌16'45	17.37663 AU
direct	1626 Apr 29	16:09	22°♌13'07	
evening set	1626 Aug 03	08:15	25°♌41'35	
max. Earth dist.	1626 Aug 18	22:45	26°♌39'35	19.36359 AU
conjunction	1626 Aug 20	00:02	26°♌43'32	0°42'21
minimum elong	1626 Aug 20	00:02	26°♌43'32	0°42'21
morning rise	1626 Sep 05	12:38	27°♌45'03	
	1626 Oct 17	14:34	0°♍	
retrograde	1626 Dec 06	14:18	1°♍07'16	
	1627 Jan 27	01:57	30°℞♌	
opposition	1627 Feb 17	22:33	29°♌04'41	0°47'42
min. Earth dist.	1627 Feb 18	19:59	29°♌02'20	17.35252 AU
direct	1627 May 04	19:00	26°♌58'30	
	1627 Jul 31	22:07	0°♍	
evening set	1627 Aug 08	13:13	0°♍27'32	
max. Earth dist.	1627 Aug 24	02:13	1°♍25'26	19.34192 AU
conjunction	1627 Aug 25	04:06	1°♍29'29	0°43'10
minimum elong	1627 Aug 25	04:06	1°♍29'29	0°43'10
morning rise	1627 Sep 10	15:45	2°♍30'59	
retrograde	1627 Dec 11	13:10	5°♍53'15	
opposition	1628 Feb 22	22:15	3°♍50'41	0°48'28
min. Earth dist.	1628 Feb 23	20:24	3°♍48'15	17.33357 AU
direct	1628 May 08	20:31	1°♍44'20	
evening set	1628 Aug 12	18:09	5°♍13'51	
max. Earth dist.	1628 Aug 28	07:05	6°♍11'50	19.32572 AU
conjunction	1628 Aug 29	08:13	6°♍15'46	0°43'41
minimum elong	1628 Aug 29	08:13	6°♍15'46	0°43'40
morning rise	1628 Sep 14	18:51	7°♍17'12	
retrograde	1628 Dec 15	13:38	10°♍39'29	
opposition	1629 Feb 26	22:05	8°♍36'56	0°48'52
min. Earth dist.	1629 Feb 27	19:13	8°♍34'37	17.32015 AU
direct	1629 May 14	00:50	6°♍30'29	
evening set	1629 Aug 17	23:01	10°♍00'21	
max. Earth dist.	1629 Sep 02	11:20	10°♍58'20	19.31525 AU
conjunction	1629 Sep 03	12:09	11°♍02'13	0°43'54
minimum elong	1629 Sep 03	12:09	11°♍02'13	0°43'54
morning rise	1629 Sep 19	21:40	12°♍03'35	
retrograde	1629 Dec 20	12:10	15°♍25'50	
opposition	1630 Mar 03	22:33	13°♍23'19	0°48'57
min. Earth dist.	1630 Mar 04	20:07	13°♍20'57	17.31288 AU
direct	1630 May 19	03:03	11°♍16'48	
evening set	1630 Aug 23	03:34	14°♍46'56	
conjunction	1630 Sep 08	15:39	15°♍48'43	0°43'49
minimum elong	1630 Sep 08	15:39	15°♍48'43	0°43'48
max. Earth dist.	1630 Sep 07	15:35	15°♍44'56	19.31121 AU
morning rise	1630 Sep 25	00:07	16°♍49'59	
retrograde	1630 Dec 25	12:53	20°♍12'09	
opposition	1631 Mar 08	23:11	18°♍09'42	0°48'41
min. Earth dist.	1631 Mar 09	19:01	18°♍07'32	17.31206 AU
direct	1631 May 24	08:13	16°♍03'12	
evening set	1631 Aug 28	07:50	19°♍33'29	
conjunction	1631 Sep 13	18:57	20°♍35'10	0°43'25
minimum elong	1631 Sep 13	18:57	20°♍35'10	0°43'25
max. Earth dist.	1631 Sep 12	20:11	20°♍31'35	19.31370 AU
morning rise	1631 Sep 30	02:11	21°♍36'19	
retrograde	1631 Dec 30	11:33	24°♍58'21	
opposition	1632 Mar 13	00:08	22°♍56'02	0°48'05
min. Earth dist.	1632 Mar 13	20:09	22°♍53'52	17.31792 AU
direct	1632 May 28	10:19	20°♍49'37	
evening set	1632 Sep 01	11:45	24°♍19'56	
conjunction	1632 Sep 17	21:45	25°♍21'30	0°42'44
minimum elong	1632 Sep 17	21:45	25°♍21'30	0°42'44
max. Earth dist.	1632 Sep 16	23:31	25°♍18'00	19.32290 AU
morning rise	1632 Oct 04	04:01	26°♍22'31	
retrograde	1633 Jan 03	12:32	29°♍44'23	
opposition	1633 Mar 18	01:11	27°♍42'14	0°47'10
min. Earth dist.	1633 Mar 18	19:19	27°♍40'15	17.33013 AU
direct	1633 Jun 02	14:39	25°♍35'56	
evening set	1633 Sep 06	15:18	29°♍06'12	
	1633 Sep 21	00:01	0°♎	
max. Earth dist.	1633 Sep 22	03:59	0°♎04'24	19.33810 AU
conjunction	1633 Sep 23	00:17	0°♎07'36	0°41'46
minimum elong	1633 Sep 23	00:17	0°♎07'36	0°41'45
morning rise	1633 Oct 09	05:16	1°♎08'28	
retrograde	1634 Jan 08	11:54	4°♎30'07	
opposition	1634 Mar 23	02:33	2°♎28'09	0°45'55
min. Earth dist.	1634 Mar 23	20:47	2°♎26'10	17.34817 AU
direct	1634 Jun 07	16:57	0°♎22'01	
evening set	1634 Sep 11	18:29	3°♎52'07	
max. Earth dist.	1634 Sep 27	06:10	4°♎50'11	19.35898 AU
conjunction	1634 Sep 28	02:12	4°♎53'20	0°40'30
minimum elong	1634 Sep 28	02:12	4°♎53'20	0°40'31
morning rise	1634 Oct 14	06:12	5°♎54'01	
retrograde	1635 Jan 13	12:27	9°♎15'25	
opposition	1635 Mar 28	03:58	7°♎13'37	0°44'21
min. Earth dist.	1635 Mar 28	20:20	7°♎11'51	17.37159 AU
direct	1635 Jun 12	20:24	5°♎07'42	
evening set	1635 Sep 16	20:50	8°♎37'28	
max. Earth dist.	1635 Oct 02	09:50	9°♎35'43	19.38481 AU
conjunction	1635 Oct 03	03:34	9°♎38'31	0°38'58
minimum elong	1635 Oct 03	03:34	9°♎38'31	0°38'57
morning rise	1635 Oct 19	06:18	10°♎38'59	

retrograde	1636 Jan 18 11:39	14°♎00'04	
opposition	1636 Apr 01 05:34	11°♎58'27	0°42'29
min. Earth dist.	1636 Apr 01 21:43	11°♎56'43	17.39966 AU
direct	1636 Jun 16 23:16	9°♎52'44	
evening set	1636 Sep 20 22:53	13°♎22'05	
max. Earth dist.	1636 Oct 06 10:39	14°♎20'07	19.41511 AU
conjunction	1636 Oct 07 04:19	14°♎22'53	0°37'10
minimum elong	1636 Oct 07 04:19	14°♎22'53	0°37'10
morning rise	1636 Oct 23 06:08	15°♎23'10	
retrograde	1637 Jan 22 10:43	18°♎43'52	
opposition	1637 Apr 06 06:51	16°♎42'24	0°40'20
min. Earth dist.	1637 Apr 06 21:20	16°♎40'51	17.43200 AU
direct	1637 Jun 22 02:28	14°♎36'54	
evening set	1637 Sep 26 00:06	18°♎05'42	
conjunction	1637 Oct 12 04:34	19°♎06'17	0°35'07
minimum elong	1637 Oct 12 04:34	19°♎06'17	0°35'07
max. Earth dist.	1637 Oct 11 13:18	19°♎03'53	19.44939 AU
morning rise	1637 Oct 28 05:07	20°♎06'19	
retrograde	1638 Jan 27 09:04	23°♎26'36	
opposition	1638 Apr 11 08:20	21°♎25'16	0°37'54
min. Earth dist.	1638 Apr 11 22:08	21°♎23'47	17.46805 AU
direct	1638 Jun 27 06:23	19°♎20'00	
evening set	1638 Oct 01 00:35	22°♎48'08	
conjunction	1638 Oct 17 03:44	23°♎48'27	0°32'50
minimum elong	1638 Oct 17 03:44	23°♎48'27	0°32'50
max. Earth dist.	1638 Oct 16 12:46	23°♎46'06	19.48732 AU
morning rise	1638 Nov 02 03:24	24°♎48'15	
retrograde	1639 Feb 01 06:15	28°♎08'04	
opposition	1639 Apr 16 09:29	26°♎06'51	0°35'14
min. Earth dist.	1639 Apr 16 21:41	26°♎05'33	17.50774 AU
direct	1639 Jul 02 09:25	24°♎01'48	
evening set	1639 Oct 06 00:04	27°♎29'10	
conjunction	1639 Oct 22 02:18	28°♎29'13	0°30'21
minimum elong	1639 Oct 22 02:18	28°♎29'13	0°30'22
max. Earth dist.	1639 Oct 21 13:52	28°♎27'17	19.52873 AU
morning rise	1639 Nov 07 00:51	29°♎28'46	
	1639 Nov 15 16:32	0°♏	
retrograde	1640 Feb 06 03:17	2°♏48'03	
opposition	1640 Apr 20 10:14	0°♏46'56	0°32'21
min. Earth dist.	1640 Apr 20 21:15	0°♏45'46	17.55069 AU
	1640 May 09 07:29	30°℞♎	
direct	1640 Jul 06 13:03	28°♎42'08	
	1640 Aug 31 06:02	0°♏	
evening set	1640 Oct 09 22:48	2°♏08'38	
conjunction	1640 Oct 25 23:50	3°♏08'24	0°27'40
minimum elong	1640 Oct 25 23:50	3°♏08'24	0°27'40
max. Earth dist.	1640 Oct 25 12:00	3°♏06'33	19.57342 AU
morning rise	1640 Nov 10 21:36	4°♏07'41	
retrograde	1641 Feb 09 23:07	7°♏26'26	
opposition	1641 Apr 25 10:43	5°♏25'23	0°29'16
min. Earth dist.	1641 Apr 25 20:18	5°♏24'22	17.59705 AU
direct	1641 Jul 11 14:47	3°♏20'48	
evening set	1641 Oct 14 20:21	6°♏46'22	
conjunction	1641 Oct 30 20:27	7°♏45'50	0°24'49
minimum elong	1641 Oct 30 20:27	7°♏45'50	0°24'50
max. Earth dist.	1641 Oct 30 11:16	7°♏44'25	19.62149 AU
morning rise	1641 Nov 15 17:13	8°♏44'51	
retrograde	1642 Feb 14 19:00	12°♏03'00	
opposition	1642 Apr 30 10:47	10°♏02'03	0°26'00
min. Earth dist.	1642 Apr 30 18:27	10°♏01'15	17.64670 AU
direct	1642 Jul 16 17:18	7°♏57'44	
evening set	1642 Oct 19 17:02	11°♏22'16	
conjunction	1642 Nov 04 16:00	12°♏21'26	0°21'50
minimum elong	1642 Nov 04 16:00	12°♏21'26	0°21'51
max. Earth dist.	1642 Nov 04 08:04	12°♏20'12	19.67298 AU
morning rise	1642 Nov 20 12:00	13°♏20'11	
	1642 Dec 20 05:17	15°♏	
retrograde	1643 Feb 19 13:37	16°♏37'44	
	1643 Apr 26 05:09	15°℞♏	
opposition	1643 May 05 10:25	14°♏36'52	0°22'36
min. Earth dist.	1643 May 05 16:35	14°♏36'13	17.70010 AU
direct	1643 Jul 21 17:03	12°♏32'49	
	1643 Oct 08 11:16	15°♏	
evening set	1643 Oct 24 12:29	15°♏56'17	
conjunction	1643 Nov 09 10:36	16°♏55'09	0°18'45
minimum elong	1643 Nov 09 10:36	16°♏55'09	0°18'44
max. Earth dist.	1643 Nov 09 05:18	16°♏54'20	19.72824 AU
morning rise	1643 Nov 25 05:47	17°♏53'37	
retrograde	1644 Feb 24 08:44	21°♏10'34	
opposition	1644 May 09 09:26	19°♏09'50	0°19'05
min. Earth dist.	1644 May 09 13:04	19°♏09'27	17.75705 AU
direct	1644 Jul 25 17:49	17°♏06'07	
evening set	1644 Oct 28 07:11	20°♏28'28	
conjunction	1644 Nov 13 04:17	21°♏27'02	0°15'33
minimum elong	1644 Nov 13 04:17	21°♏27'02	0°15'33
behind sun begin	1644 Nov 13 02:22	21°♏26'44	
behind sun end	1644 Nov 13 06:11	21°♏27'19	
max. Earth dist.	1644 Nov 13 00:39	21°♏26'29	19.78698 AU
morning rise	1644 Nov 28 22:46	22°♏25'13	
retrograde	1645 Feb 28 02:06	25°♏41'35	
opposition	1645 May 14 07:57	23°♏40'59	0°15'29
min. Earth dist.	1645 May 14 10:16	23°♏40'45	17.81756 AU
direct	1645 Jul 30 15:28	21°♏37'38	
evening set	1645 Nov 02 00:51	24°♏58'53	
conjunction	1645 Nov 17 21:07	25°♏57'08	0°12'17
minimum elong	1645 Nov 17 21:07	25°♏57'08	0°12'17
behind sun begin	1645 Nov 17 16:41	25°♏56'28	
behind sun end	1645 Nov 18 01:34	25°♏57'48	
max. Earth dist.	1645 Nov 17 19:50	25°♏56'57	19.84918 AU
morning rise	1645 Dec 03 14:56	26°♏55'04	
	1646 Feb 12 20:07	0°♐	
retrograde	1646 Mar 04 20:48	0°♐10'49	
	1646 Mar 25 05:19	30°℞♏	
opposition	1646 May 19 05:57	28°♏10'25	0°11'48
min. Earth dist.	1646 May 19 05:28	28°♏10'28	17.88107 AU
direct	1646 Aug 04 14:36	26°♏07'29	
evening set	1646 Nov 06 17:30	29°♏27'34	
	1646 Nov 15 14:53	0°♐	
conjunction	1646 Nov 22 12:55	0°♐25'32	0°08'59
minimum elong	1646 Nov 22 12:55	0°♐25'32	0°08'59
behind sun begin	1646 Nov 22 07:16	0°♐24'41	
behind sun end	1646 Nov 22 18:34	0°♐26'23	
max. Earth dist.	1646 Nov 22 13:38	0°♐25'38	19.91399 AU
morning rise	1646 Dec 08 06:09	1°♐23'11	
retrograde	1647 Mar 09 13:08	4°♐38'23	
opposition	1647 May 24 03:31	2°♐38'10	0°08'05
min. Earth dist.	1647 May 24 02:02	2°♐38'19	17.94704 AU
direct	1647 Aug 09 10:09	0°♐35'40	
evening set	1647 Nov 11 09:20	3°♐54'36	
conjunction	1647 Nov 27 04:02	4°♐52'16	0°05'38
minimum elong	1647 Nov 27 04:01	4°♐52'15	0°05'38
behind sun begin	1647 Nov 26 21:42	4°♐51'19	

behind sun end	1647 Nov 27 10:19	4°♐53'12	
max. Earth dist.	1647 Nov 27 06:35	4°♐52'37	19.98090 AU
morning rise	1647 Dec 12 20:45	5°♐49'39	
retrograde	1648 Mar 13 07:27	9°♐04'15	
opposition	1648 May 28 00:10	7°♐04'15	0°04'21
min. Earth dist.	1648 May 27 20:02	7°♐04'41	18.01453 AU
direct	1648 Aug 13 07:46	5°♐02'12	
evening set	1648 Nov 15 00:22	8°♐19'57	
conjunction	1648 Nov 30 18:19	9°♐17'19	0°02'16
minimum elong	1648 Nov 30 18:20	9°♐17'19	0°02'16
behind sun begin	1648 Nov 30 11:46	9°♐16'21	
behind sun end	1648 Dec 01 00:53	9°♐18'18	
max. Earth dist.	1648 Nov 30 22:51	9°♐17'58	20.04886 AU
morning rise	1648 Dec 16 10:34	10°♐14'27	
retrograde	1649 Mar 17 22:27	13°♐28'29	
opposition	1649 Jun 01 20:37	11°♐28'41	0°00'36
min. Earth dist.	1649 Jun 01 15:50	11°♐29'10	18.08287 AU
desc. node	1649 Jul 30 21:56	9°♐35'24	
direct	1649 Aug 18 01:52	9°♐27'04	
evening set	1649 Nov 19 14:26	12°♐43'38	
conjunction	1649 Dec 05 07:43	13°♐40'42	-0°01'12
minimum elong	1649 Dec 05 07:42	13°♐40'42	0°01'12
behind sun begin	1649 Dec 05 01:09	13°♐39'44	
behind sun end	1649 Dec 05 14:15	13°♐41'40	
max. Earth dist.	1649 Dec 05 13:39	13°♐41'35	20.11733 AU
morning rise	1649 Dec 20 23:35	14°♐37'34	
retrograde	1650 Mar 22 15:58	17°♐51'02	
opposition	1650 Jun 06 16:19	15°♐51'25	-0°03'08
min. Earth dist.	1650 Jun 06 08:54	15°♐52'11	18.15124 AU
direct	1650 Aug 22 22:31	13°♐50'14	
evening set	1650 Nov 24 03:44	17°♐05'36	
conjunction	1650 Dec 09 20:27	18°♐02'23	-0°04'34
minimum elong	1650 Dec 09 20:28	18°♐02'23	0°04'34
behind sun begin	1650 Dec 09 14:02	18°♐01'26	
behind sun end	1650 Dec 10 02:53	18°♐03'20	
max. Earth dist.	1650 Dec 10 04:23	18°♐03'34	20.18540 AU
morning rise	1650 Dec 25 11:58	18°♐59'00	
retrograde	1651 Mar 27 05:46	22°♐11'54	
opposition	1651 Jun 11 11:27	20°♐12'26	-0°06'49
min. Earth dist.	1651 Jun 11 03:39	20°♐13'14	18.21902 AU
direct	1651 Aug 27 15:18	18°♐11'40	
evening set	1651 Nov 28 16:12	21°♐25'49	
conjunction	1651 Dec 14 08:23	22°♐22'19	-0°07'51
minimum elong	1651 Dec 14 08:23	22°♐22'19	0°07'50
behind sun begin	1651 Dec 14 02:28	22°♐21'27	
behind sun end	1651 Dec 14 14:17	22°♐23'12	
max. Earth dist.	1651 Dec 14 17:12	22°♐23'38	20.25262 AU
morning rise	1651 Dec 29 23:43	23°♐18'42	
retrograde	1652 Mar 30 21:30	26°♐31'01	
opposition	1652 Jun 15 05:46	24°♐31'41	-0°10'26
min. Earth dist.	1652 Jun 14 19:34	24°♐32'43	18.28548 AU
direct	1652 Aug 31 10:56	22°♐31'17	
evening set	1652 Dec 02 03:48	25°♐44'15	
conjunction	1652 Dec 17 19:35	26°♐40'29	-0°11'03
minimum elong	1652 Dec 17 19:35	26°♐40'29	0°11'04
behind sun begin	1652 Dec 17 14:38	26°♐39'45	
behind sun end	1652 Dec 18 00:33	26°♐41'12	
max. Earth dist.	1652 Dec 18 06:20	26°♐42'05	20.31816 AU
morning rise	1653 Jan 02 10:38	27°♐36'37	
	1653 Feb 19 18:20	0°♑	
retrograde	1653 Apr 04 09:58	0°♑48'23	
	1653 May 19 20:16	30°℞♐	

opposition	1653 Jun 19 23:35	28°♐49'08	-0°13'58
min. Earth dist.	1653 Jun 19 13:07	28°♐50'12	18.35018 AU
direct	1653 Sep 05 02:49	26°♐49'04	
evening set	1653 Dec 06 14:39	0°♑00'50	
	1653 Dec 06 08:59	0°♑	
conjunction	1653 Dec 22 06:00	0°♑56'47	-0°14'12
minimum elong	1653 Dec 22 06:00	0°♑56'47	0°14'11
behind sun begin	1653 Dec 22 02:41	0°♑56'18	
behind sun end	1653 Dec 22 09:19	0°♑57'17	
max. Earth dist.	1653 Dec 22 17:26	0°♑58'30	20.38199 AU
morning rise	1654 Jan 06 21:03	1°♑52'43	
retrograde	1654 Apr 08 23:56	5°♑03'54	
opposition	1654 Jun 24 16:33	3°♑04'43	-0°17'24
min. Earth dist.	1654 Jun 24 03:45	3°♑06'01	18.41307 AU
direct	1654 Sep 09 20:22	1°♑04'57	
evening set	1654 Dec 11 00:27	4°♑15'31	
conjunction	1654 Dec 26 15:36	5°♑11'14	-0°17'14
minimum elong	1654 Dec 26 15:36	5°♑11'14	0°17'14
max. Earth dist.	1654 Dec 27 05:10	5°♑13'15	20.44388 AU
morning rise	1655 Jan 11 06:33	6°♑06'56	
retrograde	1655 Apr 13 11:05	9°♑17'34	
opposition	1655 Jun 29 08:52	7°♑18'25	-0°20'43
min. Earth dist.	1655 Jun 28 19:43	7°♑19'45	18.47412 AU
direct	1655 Sep 14 11:02	5°♑18'57	
evening set	1655 Dec 15 09:39	8°♑28'20	
conjunction	1655 Dec 31 00:29	9°♑23'48	-0°20'10
minimum elong	1655 Dec 31 00:29	9°♑23'48	0°20'10
max. Earth dist.	1655 Dec 31 14:39	9°♑25'54	20.50412 AU
morning rise	1656 Jan 15 15:34	10°♑19'18	
retrograde	1656 Apr 16 23:11	13°♑29'24	
min. Earth dist.	1656 Jul 02 08:44	11°♑31'49	18.53363 AU
opposition	1656 Jul 03 00:08	11°♑30'16	-0°23'53
direct	1656 Sep 18 01:54	9°♑31'03	
evening set	1656 Dec 18 18:00	12°♑39'19	
conjunction	1657 Jan 03 08:45	13°♑34'34	-0°22'57
minimum elong	1657 Jan 03 08:45	13°♑34'34	0°22'57
max. Earth dist.	1657 Jan 04 01:11	13°♑37'01	20.56282 AU
morning rise	1657 Jan 18 23:47	14°♑29'53	
retrograde	1657 Apr 21 09:27	17°♑39'29	
opposition	1657 Jul 07 15:01	15°♑40'23	-0°26'54
min. Earth dist.	1657 Jul 06 23:02	15°♑41'59	18.59173 AU
direct	1657 Sep 22 14:43	13°♑41'28	
evening set	1657 Dec 23 01:40	16°♑48'39	
conjunction	1658 Jan 07 16:12	17°♑43'41	-0°25'37
minimum elong	1658 Jan 07 16:12	17°♑43'41	0°25'37
max. Earth dist.	1658 Jan 08 09:13	17°♑46'12	20.62028 AU
morning rise	1658 Jan 23 07:31	18°♑38'49	
retrograde	1658 Apr 25 20:40	21°♑47'58	
min. Earth dist.	1658 Jul 11 10:56	19°♑50'44	18.64855 AU
opposition	1658 Jul 12 05:07	19°♑48'54	-0°29'46
direct	1658 Sep 27 03:19	17°♑50'17	
evening set	1658 Dec 27 08:45	20°♑56'27	
conjunction	1659 Jan 11 23:22	21°♑51'17	-0°28'07
minimum elong	1659 Jan 11 23:22	21°♑51'17	0°28'06
max. Earth dist.	1659 Jan 12 18:33	21°♑54'07	20.67621 AU
morning rise	1659 Jan 27 14:48	22°♑46'16	
retrograde	1659 Apr 30 06:12	25°♑54'59	
opposition	1659 Jul 16 18:28	23°♑56'01	-0°32'27
min. Earth dist.	1659 Jul 15 23:50	23°♑57'53	18.70366 AU
direct	1659 Oct 01 14:12	21°♑57'42	
evening set	1659 Dec 31 15:22	25°♑02'54	

conjunction	1660 Jan 16	05:56	25°♉57'34	-0°30'29	
minimum elong	1660 Jan 16	05:56	25°♉57'34	0°30'29	
max. Earth dist.	1660 Jan 17	01:20	26°♉00'25	20.73038 AU	
morning rise	1660 Jan 31	21:47	26°♉52'24		
	1660 Apr 28	06:12	0°♒		
retrograde	1660 May 03	17:14	0°♒00'45		
	1660 May 09	05:23	30°℞♉		
min. Earth dist.	1660 Jul 19	10:53	28°♉03'53	18.75678 AU	
opposition	1660 Jul 20	07:15	28°♉01'51	-0°34'57	
direct	1660 Oct 05	01:01	26°♉03'51		
evening set	1661 Jan 03	21:21	29°♉08'09		
	1661 Jan 18	17:53	0°♒		
conjunction	1661 Jan 19	12:07	0°♒02'40	-0°32'40	
minimum elong	1661 Jan 19	12:07	0°♒02'40	0°32'40	
max. Earth dist.	1661 Jan 20	09:32	0°♒05'48	20.78214 AU	
morning rise	1661 Feb 04	04:10	0°♒57'23		
retrograde	1661 May 08	02:05	4°♒05'24		
opposition	1661 Jul 24	19:37	2°♒06'36	-0°37'17	
min. Earth dist.	1661 Jul 23	22:58	2°♒08'39	18.80720 AU	
direct	1661 Oct 09	10:37	0°♒08'54		
evening set	1662 Jan 08	03:08	3°♒12'22		
conjunction	1662 Jan 23	17:57	4°♒06'44	-0°34'41	
minimum elong	1662 Jan 23	17:57	4°♒06'44	0°34'41	
max. Earth dist.	1662 Jan 24	15:18	4°♒09'51	20.83114 AU	
morning rise	1662 Feb 08	10:34	5°♒01'20		
retrograde	1662 May 12	12:56	8°♒09'04		
min. Earth dist.	1662 Jul 28	09:29	6°♒12'31	18.85463 AU	
opposition	1662 Jul 29	07:21	6°♒10'20	-0°39'24	
direct	1662 Oct 13	20:01	4°♒12'56		
evening set	1663 Jan 12	08:27	7°♒15'38		
conjunction	1663 Jan 27	23:39	8°♒09'53	-0°36'32	
minimum elong	1663 Jan 27	23:39	8°♒09'53	0°36'32	
max. Earth dist.	1663 Jan 28	22:40	8°♒13'14	20.87664 AU	
morning rise	1663 Feb 12	16:36	9°♒04'23		
retrograde	1663 May 16	21:18	12°♒11'52		
opposition	1663 Aug 02	18:37	10°♒13'13	-0°41'20	
min. Earth dist.	1663 Aug 01	20:49	10°♒15'24	18.89817 AU	
direct	1663 Oct 18	04:43	8°♒16'06		
evening set	1664 Jan 16	13:42	11°♒18'04		
conjunction	1664 Feb 01	05:02	12°♒12'12	-0°38'11	
minimum elong	1664 Feb 01	05:02	12°♒12'12	0°38'11	
max. Earth dist.	1664 Feb 02	03:30	12°♒15'28	20.91806 AU	
morning rise	1664 Feb 16	22:37	13°♒06'38		
	1664 Mar 25	08:56	15°♒		
retrograde	1664 May 20	07:26	16°♒13'54		
	1664 Jul 18	01:25	15°℞♒		
min. Earth dist.	1664 Aug 05	06:51	14°♒17'33	18.93740 AU	
opposition	1664 Aug 06	05:20	14°♒15'19	-0°43'03	
direct	1664 Oct 21	12:42	12°♒18'25		
	1665 Jan 13	21:27	15°♒		
evening set	1665 Jan 19	18:37	15°♒19'44		
conjunction	1665 Feb 04	10:26	16°♒13'47	-0°39'39	
minimum elong	1665 Feb 04	10:26	16°♒13'47	0°39'39	
max. Earth dist.	1665 Feb 05	10:09	16°♒17'13	20.95478 AU	
morning rise	1665 Feb 20	04:25	17°♒08'10		
retrograde	1665 May 24	15:30	20°♒15'14		
opposition	1665 Aug 10	15:45	18°♒16'40	-0°44'33	
min. Earth dist.	1665 Aug 09	17:29	18°♒18'53	18.97162 AU	
direct	1665 Oct 25	20:58	16°♒19'59		
evening set	1666 Jan 23	23:21	19°♒20'41		
conjunction	1666 Feb 08	15:28	20°♒14'39	-0°40'55	
minimum elong	1666 Feb 08	15:28	20°♒14'39	0°40'54	
max. Earth dist.	1666 Feb 09	14:17	20°♒17'57	20.98643 AU	
morning rise	1666 Feb 24	10:15	21°♒09'00		
retrograde	1666 May 29	01:05	24°♒15'55		
min. Earth dist.	1666 Aug 14	03:09	22°♒19'34	19.00064 AU	
opposition	1666 Aug 15	01:41	22°♒17'19	-0°45'50	
direct	1666 Oct 30	03:36	20°♒20'46		
evening set	1667 Jan 28	03:52	23°♒20'54		
conjunction	1667 Feb 12	20:38	24°♒14'50	-0°41'58	
minimum elong	1667 Feb 12	20:38	24°♒14'50	0°41'58	
max. Earth dist.	1667 Feb 13	20:23	24°♒18'16	21.01265 AU	
morning rise	1667 Feb 28	15:56	25°♒09'09		
retrograde	1667 Jun 02	08:33	28°♒15'54		
opposition	1667 Aug 19	10:56	26°♒17'16	-0°46'53	
min. Earth dist.	1667 Aug 18	12:47	26°♒19'28	19.02417 AU	
direct	1667 Nov 03	11:27	24°♒20'49		
evening set	1668 Feb 01	08:15	27°♒20'26		
conjunction	1668 Feb 17	01:26	28°♒14'20	-0°42'49	
minimum elong	1668 Feb 17	01:26	28°♒14'20	0°42'49	
max. Earth dist.	1668 Feb 18	00:08	28°♒17'35	21.03369 AU	
morning rise	1668 Mar 03	21:37	29°♒08'38		
	1668 Mar 19	16:46	0°♓		
retrograde	1668 Jun 05	17:44	2°♓15'16		
opposition	1668 Aug 22	19:54	0°♓16'32	-0°47'42	
min. Earth dist.	1668 Aug 21	21:41	0°♓18'45	19.04277 AU	
	1668 Aug 29	18:12	30°℞♒		
direct	1668 Nov 06	17:17	28°♒20'08		
	1669 Jan 10	06:45	0°♓		
evening set	1669 Feb 04	12:14	1°♓19'18		
conjunction	1669 Feb 20	06:08	2°♓13'11	-0°43'28	
minimum elong	1669 Feb 20	06:08	2°♓13'11	0°43'28	
max. Earth dist.	1669 Feb 21	05:55	2°♓16'35	21.04985 AU	
morning rise	1669 Mar 08	02:55	3°♓07'29		
retrograde	1669 Jun 10	00:47	6°♓14'02		
min. Earth dist.	1669 Aug 26	06:22	4°♓17'25	19.05669 AU	
opposition	1669 Aug 27	04:27	4°♓15'12	-0°48'17	
direct	1669 Nov 11	00:10	2°♓18'52		
evening set	1670 Feb 08	16:23	5°♓17'37		
conjunction	1670 Feb 24	10:48	6°♓11'30	-0°43'53	
minimum elong	1670 Feb 24	10:48	6°♓11'30	0°43'53	
max. Earth dist.	1670 Feb 25	09:33	6°♓14'46	21.06172 AU	
morning rise	1670 Mar 12	08:32	7°♓05'50		
retrograde	1670 Jun 14	09:56	10°♓12'21		
opposition	1670 Aug 31	12:31	8°♓13'25	-0°48'38	
min. Earth dist.	1670 Aug 30	14:29	8°♓15'37	19.06661 AU	
direct	1670 Nov 15	05:43	6°♓17'04		
evening set	1671 Feb 12	20:24	9°♓15'32		
conjunction	1671 Feb 28	15:39	10°♓09'27	-0°44'06	
minimum elong	1671 Feb 28	15:39	10°♓09'27	0°44'06	
max. Earth dist.	1671 Mar 01	15:23	10°♓12'51	21.06956 AU	
morning rise	1671 Mar 16	14:05	11°♓03'50		
retrograde	1671 Jun 18	17:04	14°♓10'20		
opposition	1671 Sep 04	20:16	12°♓11'18	-0°48'44	
min. Earth dist.	1671 Sep 03	22:23	12°♓13'30	19.07248 AU	
direct	1671 Nov 19	11:09	10°♓15'00		
evening set	1672 Feb 17	00:32	13°♓13'14		
conjunction	1672 Mar 03	20:22	14°♓07'11	-0°44'06	
minimum elong	1672 Mar 03	20:22	14°♓07'11	0°44'07	
max. Earth dist.	1672 Mar 04	18:55	14°♓10'25	21.07358 AU	
morning rise	1672 Mar 19	19:47	15°♓01'38		
retrograde	1672 Jun 22	02:00	18°♓08'12		

min. Earth dist.	1672 Sep 07 06:10	16°♓11'14	19.07466 AU
opposition	1672 Sep 08 03:48	16°♓09'04	-0°48'38
direct	1672 Nov 22 16:33	14°♓12'47	
evening set	1673 Feb 20 04:44	17°♓10'52	
conjunction	1673 Mar 08 01:30	18°♓04'54	-0°43'54
minimum elong	1673 Mar 08 01:30	18°♓04'54	0°43'53
max. Earth dist.	1673 Mar 09 00:55	18°♓08'15	21.07384 AU
morning rise	1673 Mar 24 01:40	18°♓59'25	
retrograde	1673 Jun 26 09:45	22°♓06'05	
opposition	1673 Sep 12 11:09	20°♓06'53	-0°48'17
min. Earth dist.	1673 Sep 11 13:45	20°♓09'02	19.07297 AU
direct	1673 Nov 26 21:28	18°♓10'37	
evening set	1674 Feb 24 09:12	21°♓08'38	
conjunction	1674 Mar 12 06:42	22°♓02'44	-0°43'29
minimum elong	1674 Mar 12 06:42	22°♓02'44	0°43'29
max. Earth dist.	1674 Mar 13 04:44	22°♓05'53	21.07032 AU
morning rise	1674 Mar 28 07:58	22°♓57'21	
retrograde	1674 Jun 30 18:38	26°♓04'10	
opposition	1674 Sep 16 18:25	24°♓04'54	-0°47'43
min. Earth dist.	1674 Sep 15 21:39	24°♓06'59	19.06746 AU
direct	1674 Dec 01 02:29	22°♓08'38	
evening set	1675 Feb 28 13:58	25°♓06'40	
conjunction	1675 Mar 16 12:28	26°♓00'52	-0°42'52
minimum elong	1675 Mar 16 12:28	26°♓00'52	0°42'51
max. Earth dist.	1675 Mar 17 11:02	26°♓04'06	21.06270 AU
morning rise	1675 Apr 01 14:31	26°♓55'36	
	1675 Jun 24 17:19	0°♈	
retrograde	1675 Jul 05 03:09	0°♈02'36	
	1675 Jul 15 11:54	30°♑℞♓	
min. Earth dist.	1675 Sep 20 05:12	28°♓05'19	19.05765 AU
opposition	1675 Sep 21 01:24	28°♓03'17	-0°46'55
direct	1675 Dec 05 07:42	26°♓07'01	
evening set	1676 Mar 03 19:11	29°♓05'07	
conjunction	1676 Mar 19 18:27	29°♓59'27	-0°42'02
minimum elong	1676 Mar 19 18:27	29°♓59'27	0°42'02
	1676 Mar 19 22:19	0°♈	
max. Earth dist.	1676 Mar 20 15:14	0°♈02'25	21.05081 AU
morning rise	1676 Apr 04 21:36	0°♈54'19	
retrograde	1676 Jul 08 11:53	4°♈01'33	
opposition	1676 Sep 24 08:36	2°♈02'09	-0°45'53
min. Earth dist.	1676 Sep 23 13:27	2°♈04'05	19.04349 AU
direct	1676 Dec 08 12:15	0°♈05'51	
evening set	1677 Mar 08 00:37	3°♈04'07	
conjunction	1677 Mar 24 00:56	3°♈58'35	-0°41'00
minimum elong	1677 Mar 24 00:56	3°♈58'35	0°41'00
max. Earth dist.	1677 Mar 24 21:57	4°♈01'35	21.03422 AU
morning rise	1677 Apr 09 04:55	4°♈53'36	
retrograde	1677 Jul 12 21:15	8°♈01'06	
opposition	1677 Sep 28 15:46	6°♈01'38	-0°44'38
min. Earth dist.	1677 Sep 27 21:26	6°♈03'29	19.02433 AU
direct	1677 Dec 12 18:09	4°♈05'16	
evening set	1678 Mar 12 06:51	7°♈03'45	
conjunction	1678 Mar 28 08:00	7°♈58'23	-0°39'47
minimum elong	1678 Mar 28 08:00	7°♈58'23	0°39'46
max. Earth dist.	1678 Mar 29 02:42	8°♈01'03	21.01257 AU
morning rise	1678 Apr 13 13:08	8°♈53'33	
retrograde	1678 Jul 17 06:09	12°♈01'21	
opposition	1678 Oct 02 22:56	10°♈01'46	-0°43'10
min. Earth dist.	1678 Oct 02 06:10	10°♈03'27	19.00002 AU
direct	1678 Dec 16 22:45	8°♈05'16	
evening set	1679 Mar 16 13:26	11°♈04'03	
conjunction	1679 Apr 01 15:44	11°♈58'51	-0°38'20
minimum elong	1679 Apr 01 15:44	11°♈58'51	0°38'21
max. Earth dist.	1679 Apr 02 10:07	12°♈01'29	20.98547 AU
morning rise	1679 Apr 17 21:41	12°♈54'12	
retrograde	1679 Jul 21 15:45	16°♈02'17	
opposition	1679 Oct 07 06:11	14°♈02'34	-0°41'29
min. Earth dist.	1679 Oct 06 14:22	14°♈04'11	18.97010 AU
direct	1679 Dec 21 05:20	12°♈05'55	
evening set	1680 Mar 19 20:30	15°♈05'02	
conjunction	1680 Apr 04 23:39	16°♈00'01	-0°36'43
minimum elong	1680 Apr 04 23:39	16°♈00'01	0°36'42
max. Earth dist.	1680 Apr 05 15:31	16°♈02'17	20.95300 AU
morning rise	1680 Apr 21 06:45	16°♈55'33	
retrograde	1680 Jul 25 01:18	20°♈03'59	
opposition	1680 Oct 10 13:37	18°♈04'04	-0°39'35
min. Earth dist.	1680 Oct 09 23:28	18°♈05'31	18.93503 AU
direct	1680 Dec 24 10:34	16°♈07'12	
evening set	1681 Mar 24 04:00	19°♈06'43	
conjunction	1681 Apr 09 08:20	20°♈01'54	-0°34'54
minimum elong	1681 Apr 09 08:20	20°♈01'54	0°34'55
max. Earth dist.	1681 Apr 09 23:57	20°♈04'08	20.91552 AU
morning rise	1681 Apr 25 16:17	20°♈57'38	
retrograde	1681 Jul 29 10:57	24°♈06'24	
opposition	1681 Oct 14 20:57	22°♈06'18	-0°37'28
min. Earth dist.	1681 Oct 14 07:40	22°♈07'40	18.89520 AU
direct	1681 Dec 28 17:28	20°♈09'11	
evening set	1682 Mar 28 12:10	23°♈09'10	
conjunction	1682 Apr 13 17:24	24°♈04'34	-0°32'54
minimum elong	1682 Apr 13 17:24	24°♈04'34	0°32'54
max. Earth dist.	1682 Apr 14 06:30	24°♈06'26	20.87371 AU
morning rise	1682 Apr 30 02:32	25°♈00'30	
retrograde	1682 Aug 02 21:23	28°♈09'39	
opposition	1682 Oct 19 04:30	26°♈09'20	-0°35'10
min. Earth dist.	1682 Oct 18 16:59	26°♈10'31	18.85142 AU
direct	1683 Jan 01 23:16	24°♈11'56	
evening set	1683 Apr 01 20:47	27°♈12'27	
conjunction	1683 Apr 18 03:12	28°♈08'06	-0°30'44
minimum elong	1683 Apr 18 03:12	28°♈08'06	0°30'44
max. Earth dist.	1683 Apr 18 16:06	28°♈09'56	20.82811 AU
morning rise	1683 May 04 13:05	29°♈04'15	
	1683 May 21 18:41	0°♉	
retrograde	1683 Aug 07 07:21	2°♉13'47	
opposition	1683 Oct 23 12:00	0°♉13'17	-0°32'41
min. Earth dist.	1683 Oct 23 01:12	0°♉14'24	18.80414 AU
	1683 Oct 28 21:28	30°♑℞♈	
direct	1684 Jan 06 06:26	28°♈15'36	
	1684 Mar 11 23:31	0°♉	
evening set	1684 Apr 05 06:08	1°♉16'45	
conjunction	1684 Apr 21 13:24	2°♉12'37	-0°28'24
minimum elong	1684 Apr 21 13:24	2°♉12'37	0°28'24
max. Earth dist.	1684 Apr 21 23:52	2°♉14'07	20.77947 AU
morning rise	1684 May 08 00:24	3°♉09'01	
retrograde	1684 Aug 10 18:20	6°♉19'00	
opposition	1684 Oct 26 19:56	4°♉18'18	-0°30'02
min. Earth dist.	1684 Oct 26 10:52	4°♉19'14	18.75420 AU
direct	1685 Jan 09 12:54	2°♉20'19	
evening set	1685 Apr 09 15:55	5°♉22'09	
conjunction	1685 Apr 26 00:24	6°♉18'17	-0°25'55
minimum elong	1685 Apr 26 00:24	6°♉18'17	0°25'54
max. Earth dist.	1685 Apr 26 10:43	6°♉19'46	20.72831 AU
morning rise	1685 May 12 12:10	7°♉14'56	

retrograde	1685 Aug 15 05:34	10°♉25'24	
opposition	1685 Oct 31 04:03	8°♉24'32	-0°27'12
min. Earth dist.	1685 Oct 30 19:35	8°♉25'24	18.70183 AU
direct	1686 Jan 13 20:42	6°♉26'16	
evening set	1686 Apr 14 02:46	9°♉28'51	
conjunction	1686 Apr 30 12:06	10°♉25'15	-0°23'17
minimum elong	1686 Apr 30 12:06	10°♉25'15	0°23'17
max. Earth dist.	1686 Apr 30 19:50	10°♉26'22	20.67497 AU
morning rise	1686 May 17 00:55	11°♉22'10	
retrograde	1686 Aug 19 17:07	14°♉33'08	
opposition	1686 Nov 04 12:27	12°♉32'07	-0°24'14
min. Earth dist.	1686 Nov 04 05:57	12°♉32'47	18.64754 AU
direct	1687 Jan 18 03:47	10°♉33'33	
evening set	1687 Apr 18 14:14	13°♉36'59	
conjunction	1687 May 05 00:44	14°♉33'41	-0°20'32
minimum elong	1687 May 05 00:44	14°♉33'41	0°20'31
max. Earth dist.	1687 May 05 08:09	14°♉34'45	20.61979 AU
	1687 May 12 14:32	15°♉	
morning rise	1687 May 21 14:12	15°♉30'50	
retrograde	1687 Aug 24 06:00	18°♉42'21	
opposition	1687 Nov 08 21:18	16°♉41'13	-0°21'07
min. Earth dist.	1687 Nov 08 15:23	16°♉41'50	18.59143 AU
	1687 Dec 27 07:03	15°℞♉	
direct	1688 Jan 22 12:35	14°♉42'23	
	1688 Feb 17 09:04	15°♉	
evening set	1688 Apr 22 02:35	17°♉46'43	
conjunction	1688 May 08 13:51	18°♉43'42	-0°17'39
minimum elong	1688 May 08 13:51	18°♉43'42	0°17'40
max. Earth dist.	1688 May 08 18:40	18°♉44'23	20.56293 AU
morning rise	1688 May 25 04:18	19°♉41'08	
retrograde	1688 Aug 27 18:41	22°♉53'14	
opposition	1688 Nov 12 06:43	20°♉51'59	-0°17'52
min. Earth dist.	1688 Nov 12 02:57	20°♉52'23	18.53377 AU
direct	1689 Jan 25 20:29	18°♉52'52	
evening set	1689 Apr 26 15:51	21°♉58'11	
conjunction	1689 May 13 04:15	22°♉55'28	-0°14'40
minimum elong	1689 May 13 04:15	22°♉55'28	0°14'40
behind sun begin	1689 May 13 01:38	22°♉55'06	
behind sun end	1689 May 13 06:51	22°♉55'50	
max. Earth dist.	1689 May 13 08:32	22°♉56'04	20.50447 AU
morning rise	1689 May 29 19:18	23°♉53'10	
retrograde	1689 Sep 01 09:22	27°♉05'51	
opposition	1689 Nov 16 16:23	25°♉04'32	-0°14'30
min. Earth dist.	1689 Nov 16 13:25	25°♉04'50	18.47435 AU
direct	1690 Jan 30 06:23	23°♉05'08	
evening set	1690 May 01 06:22	26°♉11'29	
conjunction	1690 May 17 19:30	27°♉09'04	-0°11'35
minimum elong	1690 May 17 19:30	27°♉09'04	0°11'35
behind sun begin	1690 May 17 14:45	27°♉08'23	
behind sun end	1690 May 18 00:15	27°♉09'44	
max. Earth dist.	1690 May 17 20:48	27°♉09'15	20.44414 AU
morning rise	1690 Jun 03 11:24	28°♉07'03	
	1690 Jul 10 04:14	0°♊	
retrograde	1690 Sep 05 23:40	1°♊20'21	
	1690 Nov 04 12:25	30°℞♉	
opposition	1690 Nov 21 02:51	29°♉18'56	-0°11'01
min. Earth dist.	1690 Nov 21 02:25	29°♉18'59	18.41305 AU
direct	1691 Feb 03 15:41	27°♉19'13	
	1691 Apr 28 00:12	0°♊	
evening set	1691 May 05 21:39	0°♊26'40	
conjunction	1691 May 22 11:46	1°♊24'33	-0°08'25
minimum elong	1691 May 22 11:46	1°♊24'33	0°08'25
behind sun begin	1691 May 22 05:52	1°♊23'42	
behind sun end	1691 May 22 17:39	1°♊25'23	
max. Earth dist.	1691 May 22 12:04	1°♊24'35	20.38175 AU
morning rise	1691 Jun 08 04:07	2°♊22'48	
retrograde	1691 Sep 10 15:48	5°♊36'43	
opposition	1691 Nov 25 13:44	3°♊35'12	-0°07'28
min. Earth dist.	1691 Nov 25 14:09	3°♊35'09	18.34951 AU
direct	1692 Feb 08 02:54	1°♊35'09	
evening set	1692 May 09 14:06	4°♊43'42	
conjunction	1692 May 26 04:53	5°♊41'54	-0°05'11
minimum elong	1692 May 26 04:52	5°♊41'54	0°05'10
behind sun begin	1692 May 25 22:19	5°♊40'57	
behind sun end	1692 May 26 11:25	5°♊42'50	
max. Earth dist.	1692 May 26 02:02	5°♊41'31	20.31714 AU
morning rise	1692 Jun 11 21:55	6°♊40'26	
retrograde	1692 Sep 14 07:34	9°♊54'57	
opposition	1692 Nov 29 01:22	7°♊53'18	-0°03'50
min. Earth dist.	1692 Nov 29 04:28	7°♊52'58	18.28392 AU
direct	1693 Feb 11 13:51	5°♊52'51	
evening set	1693 May 14 07:17	9°♊02'32	
conjunction	1693 May 30 22:59	10°♊01'02	-0°01'52
minimum elong	1693 May 30 23:00	10°♊01'02	0°01'53
behind sun begin	1693 May 30 16:14	10°♊00'04	
behind sun end	1693 May 31 05:46	10°♊02'01	
max. Earth dist.	1693 May 30 18:55	10°♊00'29	20.25060 AU
morning rise	1693 Jun 16 16:29	10°♊59'51	
retrograde	1693 Sep 19 00:51	14°♊14'57	
opposition	1693 Dec 03 13:27	12°♊13'09	-0°00'09
min. Earth dist.	1693 Dec 03 17:23	12°♊12'43	18.21643 AU
asc. node	1693 Dec 18 03:33	11°♊36'30	
direct	1694 Feb 16 03:03	10°♊12'17	
evening set	1694 May 19 01:40	13°♊23'08	
conjunction	1694 Jun 04 17:56	14°♊21'56	0°01'34
minimum elong	1694 Jun 04 17:56	14°♊21'56	0°01'35
behind sun begin	1694 Jun 04 11:10	14°♊20'58	
behind sun end	1694 Jun 05 00:42	14°♊22'55	
max. Earth dist.	1694 Jun 04 10:53	14°♊20'55	20.18238 AU
morning rise	1694 Jun 21 11:55	15°♊21'01	
retrograde	1694 Sep 23 17:09	18°♊36'41	
opposition	1694 Dec 08 02:10	16°♊34'42	0°03'34
min. Earth dist.	1694 Dec 08 08:47	16°♊34'00	18.14775 AU
direct	1695 Feb 20 15:22	14°♊33'24	
evening set	1695 May 23 20:44	17°♊45'25	
conjunction	1695 Jun 09 13:45	18°♊44'32	0°04'56
minimum elong	1695 Jun 09 13:45	18°♊44'32	0°04'56
behind sun begin	1695 Jun 09 07:10	18°♊43'35	
behind sun end	1695 Jun 09 20:20	18°♊45'30	
max. Earth dist.	1695 Jun 09 05:30	18°♊43'20	20.11344 AU
morning rise	1695 Jun 26 08:00	19°♊43'53	
retrograde	1695 Sep 28 11:35	23°♊00'06	
opposition	1695 Dec 12 15:25	20°♊57'57	0°07'17
min. Earth dist.	1695 Dec 12 22:34	20°♊57'11	18.07865 AU
direct	1696 Feb 25 06:38	18°♊56'12	
evening set	1696 May 27 16:39	22°♊09'25	
conjunction	1696 Jun 13 10:08	23°♊08'50	0°08'16
minimum elong	1696 Jun 13 10:08	23°♊08'50	0°08'16
behind sun begin	1696 Jun 13 04:11	23°♊07'58	
behind sun end	1696 Jun 13 16:06	23°♊09'42	
max. Earth dist.	1696 Jun 12 23:33	23°♊07'16	20.04438 AU
morning rise	1696 Jun 30 04:43	24°♊08'26	
retrograde	1696 Oct 02 04:21	27°♊25'13	

opposition	1696 Dec 16 05:25	25°♊22'54	0°10'58
min. Earth dist.	1696 Dec 16 15:02	25°♊21'51	18.00995 AU
direct	1697 Feb 28 20:20	23°♊20'41	
evening set	1697 Jun 01 13:32	26°♊35'07	
conjunction	1697 Jun 18 07:35	27°♊34'50	0°11'33
minimum elong	1697 Jun 18 07:35	27°♊34'50	0°11'34
behind sun begin	1697 Jun 18 02:49	27°♊34'08	
behind sun end	1697 Jun 18 12:20	27°♊35'32	
max. Earth dist.	1697 Jun 17 19:45	27°♊33'04	19.97617 AU
morning rise	1697 Jul 05 02:20	28°♊34'41	
	1697 Jul 31 01:16	0°♋	
retrograde	1697 Oct 06 23:53	1°♋52'01	
	1697 Dec 16 18:30	30°℞♊	
opposition	1697 Dec 20 19:46	29°♊49'31	0°14'38
min. Earth dist.	1697 Dec 21 05:48	29°♊48'27	17.94236 AU
direct	1698 Mar 05 13:27	27°♊46'53	
	1698 May 18 21:43	0°♋	
evening set	1698 Jun 06 11:24	1°♋02'33	
conjunction	1698 Jun 23 05:47	2°♋02'33	0°14'48
minimum elong	1698 Jun 23 05:47	2°♋02'33	0°14'48
behind sun begin	1698 Jun 23 03:23	2°♋02'12	
behind sun end	1698 Jun 23 08:11	2°♋02'54	
max. Earth dist.	1698 Jun 22 16:08	2°♋00'30	19.90930 AU
morning rise	1698 Jul 10 00:35	3°♋02'38	
retrograde	1698 Oct 11 17:41	6°♋20'31	
opposition	1698 Dec 25 11:05	4°♋17'54	0°18'13
min. Earth dist.	1698 Dec 25 23:18	4°♋16'34	17.87660 AU
direct	1699 Mar 10 04:35	2°♋14'50	
evening set	1699 Jun 11 09:53	5°♋31'45	
conjunction	1699 Jun 28 04:34	6°♋32'01	0°17'59
minimum elong	1699 Jun 28 04:34	6°♋32'01	0°17'59
max. Earth dist.	1699 Jun 27 13:38	6°♋29'46	19.84471 AU
morning rise	1699 Jul 14 23:23	7°♋32'20	
retrograde	1699 Oct 16 14:28	10°♋50'46	
opposition	1699 Dec 30 02:56	8°♋48'02	0°21'43
min. Earth dist.	1699 Dec 30 15:16	8°♋46'42	17.81336 AU
direct	1700 Mar 14 23:29	6°♋44'35	
evening set	1700 Jun 16 09:21	10°♋02'46	
conjunction	1700 Jul 03 04:16	11°♋03'18	0°21'04
minimum elong	1700 Jul 03 04:15	11°♋03'18	0°21'04
max. Earth dist.	1700 Jul 02 12:09	11°♋00'52	19.78283 AU
morning rise	1700 Jul 19 22:54	12°♋03'50	
retrograde	1700 Oct 21 09:23	15°♋22'47	
opposition	1701 Jan 03 19:34	13°♋20'01	0°25'06
min. Earth dist.	1701 Jan 04 09:51	13°♋18'28	17.75316 AU
direct	1701 Mar 19 16:02	11°♋16'13	
evening set	1701 Jun 21 09:41	14°♋35'41	
max. Earth dist.	1701 Jul 07 11:02	15°♋33'46	19.72434 AU
conjunction	1701 Jul 08 04:42	15°♋36'27	0°24'03
minimum elong	1701 Jul 08 04:42	15°♋36'27	0°24'03
morning rise	1701 Jul 24 23:16	16°♋37'11	
retrograde	1701 Oct 26 07:35	19°♋56'40	
opposition	1702 Jan 08 12:53	17°♋53'53	0°28'21
min. Earth dist.	1702 Jan 09 03:21	17°♋52'19	17.69635 AU
direct	1702 Mar 24 12:45	15°♋49'47	
evening set	1702 Jun 26 10:51	19°♋10'30	
max. Earth dist.	1702 Jul 12 11:38	20°♋08'44	19.66910 AU
conjunction	1702 Jul 13 05:57	20°♋11'31	0°26'54
minimum elong	1702 Jul 13 05:56	20°♋11'31	0°26'54
morning rise	1702 Jul 30 00:03	21°♋12'25	
retrograde	1702 Oct 31 03:50	24°♋32'26	
opposition	1703 Jan 13 07:04	22°♋29'40	0°31'27
min. Earth dist.	1703 Jan 13 23:20	22°♋27'54	17.64288 AU
direct	1703 Mar 29 07:26	20°♋25'18	
evening set	1703 Jul 01 12:52	23°♋47'17	
max. Earth dist.	1703 Jul 17 11:36	24°♋45'24	19.61736 AU
conjunction	1703 Jul 18 07:46	24°♋48'29	0°29'36
minimum elong	1703 Jul 18 07:46	24°♋48'29	0°29'35
morning rise	1703 Aug 04 01:38	25°♋49'33	
retrograde	1703 Nov 05 02:55	29°♋10'04	
opposition	1704 Jan 18 01:54	27°♋07'20	0°34'22
min. Earth dist.	1704 Jan 18 18:32	27°♋05'32	17.59283 AU
direct	1704 Apr 02 05:33	25°♋02'43	
evening set	1704 Jul 05 15:28	28°♋25'53	
conjunction	1704 Jul 22 10:20	29°♋27'17	0°32'07
minimum elong	1704 Jul 22 10:20	29°♋27'17	0°32'08
max. Earth dist.	1704 Jul 21 13:54	29°♋24'09	19.56874 AU
	1704 Jul 31 07:26	0°♌	
morning rise	1704 Aug 08 03:35	0°♌28'30	
retrograde	1704 Nov 09 01:06	3°♌49'28	
opposition	1705 Jan 21 21:41	1°♌46'47	0°37'05
min. Earth dist.	1705 Jan 22 15:55	1°♌44'47	17.54576 AU
	1705 Mar 11 21:23	30°℞♋	
direct	1705 Apr 07 02:40	29°♋41'55	
	1705 May 03 02:38	0°♌	
evening set	1705 Jul 10 19:04	3°♌06'13	
conjunction	1705 Jul 27 13:30	4°♌07'46	0°34'27
minimum elong	1705 Jul 27 13:30	4°♌07'46	0°34'27
max. Earth dist.	1705 Jul 26 14:48	4°♌04'17	19.52317 AU
morning rise	1705 Aug 13 06:20	5°♌09'07	
retrograde	1705 Nov 14 00:47	8°♌30'28	
opposition	1706 Jan 26 18:01	6°♌27'49	0°39'35
min. Earth dist.	1706 Jan 27 12:51	6°♌25'45	17.50180 AU
direct	1706 Apr 12 02:03	4°♌22'41	
evening set	1706 Jul 15 23:03	7°♌48'02	
conjunction	1706 Aug 01 17:17	8°♌49'45	0°36'34
minimum elong	1706 Aug 01 17:17	8°♌49'45	0°36'34
max. Earth dist.	1706 Jul 31 18:37	8°♌46'15	19.48065 AU
morning rise	1706 Aug 18 09:15	9°♌51'11	
retrograde	1706 Nov 19 00:41	13°♌12'52	
opposition	1707 Jan 31 15:15	11°♌10'14	0°41'49
min. Earth dist.	1707 Feb 01 11:08	11°♌08'03	17.46092 AU
direct	1707 Apr 17 00:51	9°♌04'52	
evening set	1707 Jul 21 03:28	12°♌31'10	
conjunction	1707 Aug 06 21:02	13°♌33'00	0°38'27
minimum elong	1707 Aug 06 21:02	13°♌32'59	0°38'27
max. Earth dist.	1707 Aug 05 20:23	13°♌29'10	19.44152 AU
morning rise	1707 Aug 23 12:27	14°♌34'31	
	1707 Aug 30 14:57	15°♌	
retrograde	1707 Nov 24 00:35	17°♌56'29	
opposition	1708 Feb 05 12:59	15°♌53'50	0°43'47
min. Earth dist.	1708 Feb 06 09:29	15°♌51'35	17.42371 AU
	1708 Feb 26 17:00	15°℞♌	
direct	1708 Apr 21 01:05	13°♌48'12	
	1708 Jun 12 23:24	15°♌	
evening set	1708 Jul 25 08:10	17°♌15'23	
max. Earth dist.	1708 Aug 10 01:13	18°♌13'33	19.40617 AU
conjunction	1708 Aug 11 01:23	18°♌17'18	0°40'04
minimum elong	1708 Aug 11 01:23	18°♌17'18	0°40'04
morning rise	1708 Aug 27 15:51	19°♌18'52	
retrograde	1708 Nov 28 01:16	22°♌41'02	
opposition	1709 Feb 09 11:10	20°♌38'24	0°45'27

min. Earth dist.	1709 Feb 10 08:10	20°♌36'05	17.39040 AU
direct	1709 Apr 26 01:18	18°♌32'32	
evening set	1709 Jul 30 13:20	22°♌00'30	
max. Earth dist.	1709 Aug 15 04:00	22°♌58'27	19.37507 AU
conjunction	1709 Aug 16 05:45	23°♌02'28	0°41'26
minimum elong	1709 Aug 16 05:45	23°♌02'28	0°41'26
morning rise	1709 Sep 01 19:28	24°♌04'03	
retrograde	1709 Dec 03 00:42	27°♌26'23	
opposition	1710 Feb 14 10:01	25°♌23'43	0°46'49
min. Earth dist.	1710 Feb 15 07:38	25°♌21'21	17.36172 AU
direct	1710 May 01 02:44	23°♌17'37	
evening set	1710 Aug 04 18:19	26°♌46'16	
max. Earth dist.	1710 Aug 20 09:17	27°♌44'23	19.34879 AU
conjunction	1710 Aug 21 10:09	27°♌48'16	0°42'30
minimum elong	1710 Aug 21 10:09	27°♌48'16	0°42'30
morning rise	1710 Sep 06 22:49	28°♌49'51	
	1710 Sep 27 00:13	0°♍	
retrograde	1710 Dec 08 01:08	2°♍12'16	
opposition	1711 Feb 19 09:17	0°♍09'35	0°47'51
min. Earth dist.	1711 Feb 20 06:34	0°♍07'15	17.33799 AU
	1711 Feb 23 00:48	30°℞♌	
direct	1711 May 06 04:49	28°♌03'20	
	1711 Jul 13 22:52	0°♍	
evening set	1711 Aug 09 23:29	1°♍32'31	
conjunction	1711 Aug 26 14:25	2°♍34'31	0°43'16
minimum elong	1711 Aug 26 14:25	2°♍34'31	0°43'16
max. Earth dist.	1711 Aug 25 12:50	2°♍30'31	19.32781 AU
morning rise	1711 Sep 12 02:10	3°♍36'04	
retrograde	1711 Dec 12 23:57	6°♍58'32	
opposition	1712 Feb 24 08:57	4°♍55'51	0°48'34
min. Earth dist.	1712 Feb 25 06:43	4°♍53'28	17.32002 AU
direct	1712 May 10 07:13	2°♍49'25	
evening set	1712 Aug 14 04:27	6°♍19'04	
conjunction	1712 Aug 30 18:37	7°♍21'03	0°43'45
minimum elong	1712 Aug 30 18:37	7°♍21'03	0°43'46
max. Earth dist.	1712 Aug 29 18:02	7°♍17'11	19.31281 AU
morning rise	1712 Sep 16 05:20	8°♍22'32	
retrograde	1712 Dec 17 00:29	11°♍44'59	
opposition	1713 Feb 28 09:02	9°♍42'20	0°48'56
min. Earth dist.	1713 Mar 01 05:43	9°♍40'04	17.30801 AU
direct	1713 May 15 11:11	7°♍35'49	
evening set	1713 Aug 19 09:27	11°♍05'49	
conjunction	1713 Sep 04 22:37	12°♍07'44	0°43'56
minimum elong	1713 Sep 04 22:37	12°♍07'44	0°43'55
max. Earth dist.	1713 Sep 03 22:13	12°♍03'54	19.30393 AU
morning rise	1713 Sep 21 08:13	13°♍09'08	
retrograde	1713 Dec 21 23:08	16°♍31'33	
opposition	1714 Mar 05 09:33	14°♍28'57	0°48'58
min. Earth dist.	1714 Mar 06 06:31	14°♍26'40	17.30248 AU
direct	1714 May 20 13:58	12°♍22'24	
evening set	1714 Aug 24 14:11	15°♍52'40	
max. Earth dist.	1714 Sep 09 02:54	16°♍50'48	19.30175 AU
conjunction	1714 Sep 10 02:22	16°♍54'30	0°43'48
minimum elong	1714 Sep 10 02:22	16°♍54'30	0°43'48
morning rise	1714 Sep 26 10:55	17°♍55'48	
retrograde	1714 Dec 27 00:10	21°♍18'07	
opposition	1715 Mar 10 10:19	19°♍15'38	0°48'39
min. Earth dist.	1715 Mar 11 05:38	19°♍13'32	17.30348 AU
direct	1715 May 25 18:26	17°♍09'08	
evening set	1715 Aug 29 18:30	20°♍39'32	
max. Earth dist.	1715 Sep 14 07:19	21°♍37'44	19.30596 AU
conjunction	1715 Sep 15 05:43	21°♍41'15	0°43'22
minimum elong	1715 Sep 15 05:43	21°♍41'15	0°43'22
morning rise	1715 Oct 01 13:06	22°♍42'27	
retrograde	1715 Dec 31 23:11	26°♍04'38	
opposition	1716 Mar 14 11:26	24°♍02'19	0°48'01
min. Earth dist.	1716 Mar 15 07:03	24°♍00'11	17.31080 AU
direct	1716 May 29 20:54	21°♍55'54	
evening set	1716 Sep 02 22:42	25°♍26'21	
max. Earth dist.	1716 Sep 18 10:57	26°♍24'30	19.31634 AU
conjunction	1716 Sep 19 08:48	26°♍27'57	0°42'39
minimum elong	1716 Sep 19 08:48	26°♍27'57	0°42'39
morning rise	1716 Oct 05 15:10	27°♍29'00	
	1716 Nov 22 23:42	0°♎	
retrograde	1717 Jan 05 00:32	0°♎51'01	
	1717 Feb 18 09:00	30°℞♍	
opposition	1717 Mar 19 12:33	28°♍48'52	0°47'03
min. Earth dist.	1717 Mar 20 06:28	28°♍46'55	17.32392 AU
direct	1717 Jun 04 01:37	26°♍42'35	
	1717 Sep 04 13:34	0°♎	
evening set	1717 Sep 08 02:32	0°♎12'58	
conjunction	1717 Sep 24 11:36	1°♎14'25	0°41'38
minimum elong	1717 Sep 24 11:36	1°♎14'25	0°41'38
max. Earth dist.	1717 Sep 23 15:20	1°♎11'14	19.33216 AU
morning rise	1717 Oct 10 16:41	2°♎15'19	
retrograde	1718 Jan 09 23:24	5°♎37'06	
opposition	1718 Mar 24 14:11	3°♎35'08	0°45'45
min. Earth dist.	1718 Mar 25 08:20	3°♎33'10	17.34233 AU
direct	1718 Jun 09 03:51	1°♎29'02	
evening set	1718 Sep 13 05:48	4°♎59'13	
conjunction	1718 Sep 29 13:36	6°♎00'29	0°40'20
minimum elong	1718 Sep 29 13:36	6°♎00'29	0°40'19
max. Earth dist.	1718 Sep 28 17:37	5°♎57'20	19.35309 AU
morning rise	1718 Oct 15 17:42	7°♎01'12	
retrograde	1719 Jan 15 00:36	10°♎22'44	
opposition	1719 Mar 29 15:46	8°♎20'56	0°44'09
min. Earth dist.	1719 Mar 30 08:04	8°♎19'10	17.36557 AU
direct	1719 Jun 14 08:36	6°♎15'00	
evening set	1719 Sep 18 08:31	9°♎44'53	
conjunction	1719 Oct 04 15:20	10°♎45'57	0°38'45
minimum elong	1719 Oct 04 15:20	10°♎45'57	0°38'46
max. Earth dist.	1719 Oct 03 21:24	10°♎43'08	19.37854 AU
morning rise	1719 Oct 20 18:09	11°♎46'29	
retrograde	1720 Jan 19 22:58	15°♎07'40	
opposition	1720 Apr 02 17:24	13°♎06'02	0°42'14
min. Earth dist.	1720 Apr 03 09:42	13°♎04'17	17.39314 AU
direct	1720 Jun 18 10:42	11°♎00'18	
evening set	1720 Sep 22 10:46	14°♎29'46	
conjunction	1720 Oct 08 16:18	15°♎30'37	0°36'55
minimum elong	1720 Oct 08 16:18	15°♎30'37	0°36'55
max. Earth dist.	1720 Oct 07 22:24	15°♎27'48	19.40824 AU
morning rise	1720 Oct 24 18:12	16°♎30'55	
retrograde	1721 Jan 23 23:17	19°♎51'44	
opposition	1721 Apr 07 18:58	17°♎50'14	0°40'02
min. Earth dist.	1721 Apr 08 09:28	17°♎48'41	17.42477 AU
direct	1721 Jun 23 15:08	15°♎44'43	
evening set	1721 Sep 27 12:04	19°♎13'38	
conjunction	1721 Oct 13 16:37	20°♎14'15	0°34'50
minimum elong	1721 Oct 13 16:37	20°♎14'15	0°34'50
max. Earth dist.	1721 Oct 13 01:08	20°♎11'49	19.44178 AU
morning rise	1721 Oct 29 17:15	21°♎14'19	
retrograde	1722 Jan 28 20:51	24°♎34'43	

opposition	1722 Apr 12 20:32	22°♎33'21	0°37'34
min. Earth dist.	1722 Apr 13 10:31	22°♎31'51	17.46011 AU
direct	1722 Jun 28 17:30	20°♎28'03	
evening set	1722 Oct 02 12:45	23°♎56'17	
conjunction	1722 Oct 18 16:00	24°♎56'39	0°32'31
minimum elong	1722 Oct 18 16:00	24°♎56'39	0°32'32
max. Earth dist.	1722 Oct 18 00:48	24°♎54'16	19.47911 AU
morning rise	1722 Nov 03 15:47	25°♎56'29	
retrograde	1723 Feb 02 19:37	29°♎16'25	
opposition	1723 Apr 17 21:42	27°♎15'09	0°34'52
min. Earth dist.	1723 Apr 18 09:54	27°♎13'51	17.49932 AU
direct	1723 Jul 03 21:24	25°♎10'04	
evening set	1723 Oct 07 12:14	28°♎37'32	
conjunction	1723 Oct 23 14:35	29°♎37'38	0°29'59
minimum elong	1723 Oct 23 14:35	29°♎37'38	0°29'59
max. Earth dist.	1723 Oct 23 02:04	29°♎35'40	19.52020 AU
	1723 Oct 29 13:17	0°♏	
morning rise	1723 Nov 08 13:16	0°♏37'13	
retrograde	1724 Feb 07 15:54	3°♏56'37	
opposition	1724 Apr 21 22:37	1°♏55'27	0°31'56
min. Earth dist.	1724 Apr 22 09:43	1°♏54'16	17.54212 AU
	1724 Jun 18 20:15	30°℞♎	
direct	1724 Jul 08 00:13	29°♎50'36	
	1724 Jul 27 00:06	0°♏	
evening set	1724 Oct 11 11:02	3°♏17'12	
conjunction	1724 Oct 27 12:08	4°♏17'01	0°27'17
minimum elong	1724 Oct 27 12:08	4°♏17'01	0°27'17
max. Earth dist.	1724 Oct 27 00:18	4°♏15'10	19.56497 AU
morning rise	1724 Nov 12 10:00	5°♏16'20	
retrograde	1725 Feb 11 12:22	8°♏35'11	
opposition	1725 Apr 26 23:04	6°♏34'06	0°28'49
min. Earth dist.	1725 Apr 27 08:27	6°♏33'07	17.58885 AU
direct	1725 Jul 13 02:56	4°♏29'29	
evening set	1725 Oct 16 08:40	7°♏55'09	
conjunction	1725 Nov 01 08:51	8°♏54'40	0°24'25
minimum elong	1725 Nov 01 08:51	8°♏54'40	0°24'24
max. Earth dist.	1725 Oct 31 23:56	8°♏53'17	19.61372 AU
morning rise	1725 Nov 17 05:41	9°♏53'43	
retrograde	1726 Feb 16 07:51	13°♏11'59	
opposition	1726 May 01 23:14	11°♏11'01	0°25'32
min. Earth dist.	1726 May 02 06:42	11°♏10'13	17.63952 AU
direct	1726 Jul 18 05:09	9°♏06'41	
evening set	1726 Oct 21 05:19	12°♏31'20	
conjunction	1726 Nov 06 04:21	13°♏30'32	0°21'24
minimum elong	1726 Nov 06 04:21	13°♏30'32	0°21'24
max. Earth dist.	1726 Nov 05 20:43	13°♏29'21	19.66650 AU
morning rise	1726 Nov 22 00:27	14°♏29'19	
	1726 Nov 30 13:33	15°♏	
retrograde	1727 Feb 21 02:34	17°♏47'00	
opposition	1727 May 06 22:54	15°♏46'09	0°22'06
min. Earth dist.	1727 May 07 04:39	15°♏45'32	17.69441 AU
	1727 May 25 16:22	15°℞♏	
direct	1727 Jul 23 05:21	13°♏42'07	
	1727 Sep 17 01:17	15°♏	
evening set	1727 Oct 26 00:59	17°♏05'43	
conjunction	1727 Nov 10 23:10	18°♏04'37	0°18'17
minimum elong	1727 Nov 10 23:11	18°♏04'37	0°18'17
max. Earth dist.	1727 Nov 10 18:19	18°♏03'53	19.72341 AU
morning rise	1727 Nov 26 18:25	19°♏03'07	
retrograde	1728 Feb 25 21:27	22°♏20'12	
opposition	1728 May 10 21:51	20°♏19'30	0°18'34
min. Earth dist.	1728 May 11 01:17	20°♏19'08	17.75308 AU
direct	1728 Jul 27 05:55	18°♏15'50	
evening set	1728 Oct 29 19:52	21°♏38'21	
conjunction	1728 Nov 14 17:01	22°♏36'57	0°15'04
minimum elong	1728 Nov 14 17:01	22°♏36'57	0°15'04
behind sun begin	1728 Nov 14 14:31	22°♏36'34	
behind sun end	1728 Nov 14 19:31	22°♏37'19	
max. Earth dist.	1728 Nov 14 13:40	22°♏36'26	19.78393 AU
morning rise	1728 Nov 30 11:35	23°♏35'11	
retrograde	1729 Mar 01 15:15	26°♏51'39	
opposition	1729 May 15 20:33	24°♏51'08	0°14'56
min. Earth dist.	1729 May 15 22:36	24°♏50'56	17.81527 AU
direct	1729 Aug 01 03:41	22°♏47'52	
evening set	1729 Nov 03 13:33	26°♏09'15	
conjunction	1729 Nov 19 09:54	27°♏07'32	0°11'47
minimum elong	1729 Nov 19 09:54	27°♏07'32	0°11'48
behind sun begin	1729 Nov 19 05:14	27°♏06'50	
behind sun end	1729 Nov 19 14:34	27°♏08'14	
max. Earth dist.	1729 Nov 19 09:02	27°♏07'24	19.84762 AU
morning rise	1729 Dec 05 03:46	28°♏05'29	
	1730 Jan 09 08:34	0°♐	
retrograde	1730 Mar 06 09:48	1°♐21'22	
	1730 May 04 21:17	30°℞♏	
opposition	1730 May 20 18:40	29°♏21'03	0°11'14
min. Earth dist.	1730 May 20 18:08	29°♏21'06	17.88009 AU
direct	1730 Aug 06 02:31	27°♏18'12	
	1730 Oct 28 08:45	0°♐	
evening set	1730 Nov 08 06:30	0°♐38'25	
conjunction	1730 Nov 24 01:58	1°♐36'24	0°08'27
minimum elong	1730 Nov 24 01:58	1°♐36'24	0°08'27
behind sun begin	1730 Nov 23 20:11	1°♐35'32	
behind sun end	1730 Nov 24 07:45	1°♐37'16	
max. Earth dist.	1730 Nov 24 02:46	1°♐36'31	19.91353 AU
morning rise	1730 Dec 09 19:16	2°♐34'05	
retrograde	1731 Mar 11 02:50	5°♐49'21	
opposition	1731 May 25 16:13	3°♐49'14	0°07'30
min. Earth dist.	1731 May 25 14:43	3°♐49'23	17.94696 AU
direct	1731 Aug 10 22:44	1°♐46'48	
evening set	1731 Nov 12 22:26	5°♐05'50	
conjunction	1731 Nov 28 17:11	6°♐03'31	0°05'06
minimum elong	1731 Nov 28 17:12	6°♐03'31	0°05'06
behind sun begin	1731 Nov 28 10:49	6°♐02'34	
behind sun end	1731 Nov 28 23:34	6°♐04'28	
max. Earth dist.	1731 Nov 28 19:55	6°♐03'53	19.98108 AU
morning rise	1731 Dec 14 09:59	7°♐00'55	
retrograde	1732 Mar 14 20:24	10°♐15'35	
opposition	1732 May 29 13:07	8°♐15'39	0°03'44
min. Earth dist.	1732 May 29 09:05	8°♐16'04	18.01485 AU
direct	1732 Aug 14 20:11	6°♐13'39	
evening set	1732 Nov 16 13:34	9°♐31'28	
conjunction	1732 Dec 02 07:34	10°♐28'51	0°01'42
minimum elong	1732 Dec 02 07:34	10°♐28'51	0°01'42
behind sun begin	1732 Dec 02 01:00	10°♐27'52	
behind sun end	1732 Dec 02 14:07	10°♐29'49	
max. Earth dist.	1732 Dec 02 11:59	10°♐29'29	20.04918 AU
morning rise	1732 Dec 17 23:50	11°♐25'59	
retrograde	1733 Mar 19 12:16	14°♐40'03	
desc. node	1733 May 31 10:10	12°♐47'37	
opposition	1733 Jun 03 09:37	12°♐40'17	-0°00'02
min. Earth dist.	1733 Jun 03 04:56	12°♐40'46	18.08314 AU
direct	1733 Aug 19 15:20	10°♐38'41	
evening set	1733 Nov 21 03:49	13°♐55'17	

conjunction	1733 Dec 06 21:08	14°♐52'22	-0°01'47
minimum elong	1733 Dec 06 21:09	14°♐52'22	0°01'47
behind sun begin	1733 Dec 06 14:36	14°♐51'23	
behind sun end	1733 Dec 07 03:42	14°♐53'20	
max. Earth dist.	1733 Dec 07 03:01	14°♐53'14	20.11743 AU
morning rise	1733 Dec 22 13:03	15°♐49'14	
retrograde	1734 Mar 24 04:43	19°♐02'41	
opposition	1734 Jun 08 05:21	17°♐03'05	-0°03'46
min. Earth dist.	1734 Jun 07 22:07	17°♐03'49	18.15112 AU
direct	1734 Aug 24 11:31	15°♐01'52	
evening set	1734 Nov 25 17:06	18°♐17'14	
conjunction	1734 Dec 11 09:54	19°♐14'01	-0°05'08
minimum elong	1734 Dec 11 09:54	19°♐14'01	0°05'08
behind sun begin	1734 Dec 11 03:32	19°♐13'05	
behind sun end	1734 Dec 11 16:15	19°♐14'58	
max. Earth dist.	1734 Dec 11 17:29	19°♐15'09	20.18494 AU
morning rise	1734 Dec 27 01:27	20°♐10'39	
retrograde	1735 Mar 28 18:45	23°♐23'30	
opposition	1735 Jun 13 00:32	21°♐24'00	-0°07'27
min. Earth dist.	1735 Jun 12 16:57	21°♐24'47	18.21818 AU
direct	1735 Aug 29 05:31	19°♐23'10	
evening set	1735 Nov 30 05:37	22°♐37'18	
conjunction	1735 Dec 15 21:51	23°♐33'48	-0°08'25
minimum elong	1735 Dec 15 21:52	23°♐33'48	0°08'26
behind sun begin	1735 Dec 15 16:06	23°♐32'57	
behind sun end	1735 Dec 16 03:38	23°♐34'39	
max. Earth dist.	1735 Dec 16 06:26	23°♐35'04	20.25137 AU
morning rise	1735 Dec 31 13:13	24°♐30'10	
retrograde	1736 Apr 01 10:03	27°♐42'24	
opposition	1736 Jun 16 18:43	25°♐43'00	-0°11'04
min. Earth dist.	1736 Jun 16 08:44	25°♐44'01	18.28383 AU
direct	1736 Sep 01 23:59	23°♐42'30	
evening set	1736 Dec 03 17:14	26°♐55'25	
conjunction	1736 Dec 19 09:04	27°♐51'38	-0°11'38
minimum elong	1736 Dec 19 09:04	27°♐51'38	0°11'37
behind sun begin	1736 Dec 19 04:20	27°♐50'56	
behind sun end	1736 Dec 19 13:48	27°♐52'20	
max. Earth dist.	1736 Dec 19 19:27	27°♐53'11	20.31623 AU
morning rise	1737 Jan 04 00:10	28°♐47'46	
	1737 Jan 25 14:39	0°♑	
retrograde	1737 Apr 05 22:17	1°♑59'25	
opposition	1737 Jun 21 12:32	0°♑00'05	-0°14'36
min. Earth dist.	1737 Jun 21 02:13	0°♑01'08	18.34800 AU
	1737 Jun 21 13:20	30°℞♐	
direct	1737 Sep 06 16:35	27°♐59'54	
	1737 Nov 16 16:11	0°♑	
evening set	1737 Dec 08 03:50	1°♑11'34	
conjunction	1737 Dec 23 19:15	2°♑07'32	-0°14'45
minimum elong	1737 Dec 23 19:15	2°♑07'32	0°14'46
behind sun begin	1737 Dec 23 16:24	2°♑07'07	
behind sun end	1737 Dec 23 22:06	2°♑07'57	
max. Earth dist.	1737 Dec 24 06:37	2°♑09'13	20.37973 AU
morning rise	1738 Jan 08 10:20	3°♑03'26	
retrograde	1738 Apr 10 12:35	6°♑14'30	
opposition	1738 Jun 26 05:24	4°♑15'12	-0°18'01
min. Earth dist.	1738 Jun 25 16:36	4°♑16'30	18.41081 AU
direct	1738 Sep 11 09:22	2°♑15'19	
evening set	1738 Dec 12 13:39	5°♑25'47	
conjunction	1738 Dec 28 04:49	6°♑21'30	-0°17'47
minimum elong	1738 Dec 28 04:49	6°♑21'30	0°17'47
max. Earth dist.	1738 Dec 28 18:17	6°♑23'30	20.44181 AU
morning rise	1739 Jan 12 19:48	7°♑17'11	
retrograde	1739 Apr 14 23:12	10°♑27'42	
opposition	1739 Jun 30 21:28	8°♑28'27	-0°21'18
min. Earth dist.	1739 Jun 30 08:17	8°♑29'47	18.47242 AU
direct	1739 Sep 15 23:51	6°♑28'51	
evening set	1739 Dec 16 22:43	9°♑38'10	
conjunction	1740 Jan 01 13:35	10°♑33'38	-0°20'41
minimum elong	1740 Jan 01 13:35	10°♑33'38	0°20'41
max. Earth dist.	1740 Jan 02 03:54	10°♑35'46	20.50291 AU
morning rise	1740 Jan 17 04:40	11°♑29'08	
retrograde	1740 Apr 18 12:24	14°♑39'07	
opposition	1740 Jul 04 12:46	12°♑39'55	-0°24'27
min. Earth dist.	1740 Jul 03 21:07	12°♑41'29	18.53304 AU
direct	1740 Sep 19 14:43	10°♑40'38	
evening set	1740 Dec 20 06:55	13°♑48'51	
conjunction	1741 Jan 04 21:40	14°♑44'05	-0°23'28
minimum elong	1741 Jan 04 21:40	14°♑44'05	0°23'28
max. Earth dist.	1741 Jan 05 14:14	14°♑46'33	20.56289 AU
morning rise	1741 Jan 20 12:43	15°♑39'23	
retrograde	1741 Apr 22 21:54	18°♑48'54	
min. Earth dist.	1741 Jul 08 11:24	16°♑51'25	18.59255 AU
opposition	1741 Jul 09 03:35	16°♑49'47	-0°27'27
direct	1741 Sep 24 03:18	14°♑50'50	
evening set	1741 Dec 24 14:36	17°♑58'00	
conjunction	1742 Jan 09 05:10	18°♑53'01	-0°26'06
minimum elong	1742 Jan 09 05:10	18°♑53'01	0°26'05
max. Earth dist.	1742 Jan 09 22:26	18°♑55'35	20.62184 AU
morning rise	1742 Jan 24 20:29	19°♑48'09	
retrograde	1742 Apr 27 10:12	22°♑57'14	
opposition	1742 Jul 13 17:30	20°♑58'12	-0°30'17
min. Earth dist.	1742 Jul 12 23:07	21°♑00'03	18.65083 AU
direct	1742 Sep 28 15:58	18°♑59'35	
evening set	1742 Dec 28 21:34	22°♑05'45	
conjunction	1743 Jan 13 12:13	23°♑00'36	-0°28'35
minimum elong	1743 Jan 13 12:13	23°♑00'36	0°28'35
max. Earth dist.	1743 Jan 14 07:33	23°♑03'27	20.67916 AU
morning rise	1743 Jan 29 03:40	23°♑55'34	
retrograde	1743 May 01 19:05	27°♑04'16	
opposition	1743 Jul 18 06:57	25°♑05'20	-0°32'56
min. Earth dist.	1743 Jul 17 12:17	25°♑07'12	18.70720 AU
direct	1743 Oct 03 02:56	23°♑07'04	
evening set	1744 Jan 02 04:09	26°♑12'18	
conjunction	1744 Jan 17 18:43	27°♑06'58	-0°30'55
minimum elong	1744 Jan 17 18:43	27°♑06'57	0°30'54
max. Earth dist.	1744 Jan 18 14:22	27°♑09'51	20.73442 AU
morning rise	1744 Feb 02 10:32	28°♑01'47	
	1744 Mar 12 07:19	0°♒	
retrograde	1744 May 05 06:16	1°♒10'08	
	1744 Jun 30 22:24	30°℞♑	
opposition	1744 Jul 21 19:39	29°♑11'18	-0°35'25
min. Earth dist.	1744 Jul 20 23:13	29°♑13'21	18.76123 AU
direct	1744 Oct 06 13:37	27°♑13'22	
	1744 Dec 31 05:10	0°♒	
evening set	1745 Jan 05 10:14	0°♒17'43	
conjunction	1745 Jan 21 00:59	1°♒12'13	-0°33'04
minimum elong	1745 Jan 21 00:59	1°♒12'13	0°33'05
max. Earth dist.	1745 Jan 21 22:27	1°♒15'22	20.78696 AU
morning rise	1745 Feb 05 17:02	2°♒06'55	
retrograde	1745 May 09 15:07	5°♒14'56	
min. Earth dist.	1745 Jul 25 11:32	3°♒18'16	18.81227 AU
opposition	1745 Jul 26 08:02	3°♒16'13	-0°37'43
direct	1745 Oct 10 23:22	1°♒18'36	

evening set	1746 Jan 09 15:56	4°♒22'06	
conjunction	1746 Jan 25 06:46	5°♒16'28	-0°35'04
minimum elong	1746 Jan 25 06:46	5°♒16'28	0°35'04
max. Earth dist.	1746 Jan 26 04:09	5°♒19'35	20.83632 AU
morning rise	1746 Feb 09 23:21	6°♒11'04	
retrograde	1746 May 14 01:28	9°♒18'48	
opposition	1746 Jul 30 19:46	7°♒20'10	-0°39'48
min. Earth dist.	1746 Jul 29 22:00	7°♒22'20	18.85980 AU
direct	1746 Oct 15 08:35	5°♒22'49	
evening set	1747 Jan 13 21:24	8°♒25'33	
conjunction	1747 Jan 29 12:33	9°♒19'47	-0°36'53
minimum elong	1747 Jan 29 12:32	9°♒19'47	0°36'53
max. Earth dist.	1747 Jan 30 11:18	9°♒23'06	20.88167 AU
morning rise	1747 Feb 14 05:27	10°♒14'17	
retrograde	1747 May 18 09:54	13°♒21'45	
min. Earth dist.	1747 Aug 03 09:25	11°♒25'19	18.90301 AU
opposition	1747 Aug 04 06:54	11°♒23'11	-0°41'42
direct	1747 Oct 19 17:10	9°♒26'06	
evening set	1748 Jan 18 02:39	12°♒28'05	
conjunction	1748 Feb 02 17:58	13°♒22'13	-0°38'30
minimum elong	1748 Feb 02 17:58	13°♒22'13	0°38'30
max. Earth dist.	1748 Feb 03 16:07	13°♒25'26	20.92258 AU
morning rise	1748 Feb 18 11:29	14°♒16'38	
	1748 Mar 02 14:20	15°♒	
retrograde	1748 May 21 19:48	17°♒23'52	
opposition	1748 Aug 07 17:39	15°♒25'19	-0°43'23
min. Earth dist.	1748 Aug 06 19:21	15°♒27'32	18.94154 AU
	1748 Aug 18 09:42	15°℞♒	
direct	1748 Oct 23 01:36	13°♒28'26	
	1748 Dec 23 14:48	15°♒	
evening set	1749 Jan 21 07:24	16°♒29'44	
conjunction	1749 Feb 05 23:11	17°♒23'46	-0°39'56
minimum elong	1749 Feb 05 23:11	17°♒23'46	0°39'55
max. Earth dist.	1749 Feb 06 22:27	17°♒27'09	20.95845 AU
morning rise	1749 Feb 21 17:09	18°♒18'08	
retrograde	1749 May 26 03:38	21°♒25'09	
min. Earth dist.	1749 Aug 11 06:05	19°♒28'46	18.97483 AU
opposition	1749 Aug 12 04:01	19°♒26'35	-0°44'51
direct	1749 Oct 27 09:06	17°♒29'52	
evening set	1750 Jan 25 12:07	20°♒30'31	
conjunction	1750 Feb 10 04:14	21°♒24'28	-0°41'10
minimum elong	1750 Feb 10 04:14	21°♒24'28	0°41'10
max. Earth dist.	1750 Feb 11 02:41	21°♒27'43	20.98924 AU
morning rise	1750 Feb 25 22:57	22°♒18'47	
retrograde	1750 May 30 13:02	25°♒25'35	
opposition	1750 Aug 16 13:40	23°♒26'58	-0°46'05
min. Earth dist.	1750 Aug 15 15:17	23°♒29'11	19.00311 AU
direct	1750 Oct 31 16:59	21°♒30'21	
evening set	1751 Jan 29 16:24	24°♒30'24	
conjunction	1751 Feb 14 09:09	25°♒24'18	-0°42'11
minimum elong	1751 Feb 14 09:08	25°♒24'18	0°42'10
max. Earth dist.	1751 Feb 15 08:38	25°♒27'41	21.01493 AU
morning rise	1751 Mar 02 04:25	26°♒18'35	
retrograde	1751 Jun 03 20:22	29°♒25'12	
opposition	1751 Aug 20 22:54	27°♒26'30	-0°47'05
min. Earth dist.	1751 Aug 20 00:55	27°♒28'42	19.02640 AU
direct	1751 Nov 04 23:34	25°♒29'58	
evening set	1752 Feb 02 20:33	28°♒29'28	
conjunction	1752 Feb 18 13:42	29°♒23'20	-0°43'00
minimum elong	1752 Feb 18 13:42	29°♒23'20	0°43'00
max. Earth dist.	1752 Feb 19 12:26	29°♒26'36	21.03604 AU
	1752 Feb 29 05:11	0°♓	
morning rise	1752 Mar 05 09:48	0°♓17'37	
retrograde	1752 Jun 07 05:00	3°♓24'05	
min. Earth dist.	1752 Aug 23 09:18	1°♓27'31	19.04542 AU
opposition	1752 Aug 24 07:41	1°♓25'17	-0°47'52
	1752 Oct 03 05:05	30°℞♒	
direct	1752 Nov 08 06:30	29°♒28'48	
	1752 Dec 13 09:46	0°♓	
evening set	1753 Feb 06 00:31	2°♓27'50	
conjunction	1753 Feb 21 18:21	3°♓21'41	-0°43'36
minimum elong	1753 Feb 21 18:21	3°♓21'41	0°43'36
max. Earth dist.	1753 Feb 22 18:15	3°♓25'07	21.05295 AU
morning rise	1753 Mar 09 15:04	4°♓15'58	
retrograde	1753 Jun 11 12:17	7°♓22'21	
opposition	1753 Aug 28 16:05	5°♓23'27	-0°48'24
min. Earth dist.	1753 Aug 27 17:56	5°♓25'39	19.06043 AU
direct	1753 Nov 12 12:39	3°♓27'01	
evening set	1754 Feb 10 04:27	6°♓25'40	
conjunction	1754 Feb 25 22:51	7°♓19'31	-0°43'59
minimum elong	1754 Feb 25 22:51	7°♓19'31	0°43'59
max. Earth dist.	1754 Feb 26 21:55	7°♓22'49	21.06615 AU
morning rise	1754 Mar 13 20:31	8°♓13'49	
retrograde	1754 Jun 15 20:46	11°♓20'10	
min. Earth dist.	1754 Sep 01 01:45	9°♓23'24	19.07181 AU
opposition	1754 Sep 02 00:07	9°♓21'10	-0°48'43
direct	1754 Nov 16 17:59	7°♓24'47	
evening set	1755 Feb 14 08:24	10°♓23'08	
conjunction	1755 Mar 02 03:36	11°♓17'01	-0°44'10
minimum elong	1755 Mar 02 03:36	11°♓17'01	0°44'10
max. Earth dist.	1755 Mar 03 03:36	11°♓20'27	21.07557 AU
morning rise	1755 Mar 18 01:56	12°♓11'21	
retrograde	1755 Jun 20 03:56	15°♓17'42	
min. Earth dist.	1755 Sep 05 09:41	13°♓20'52	19.07937 AU
opposition	1755 Sep 06 07:43	13°♓18'39	-0°48'48
direct	1755 Nov 20 23:50	11°♓22'20	
evening set	1756 Feb 18 12:29	14°♓20'28	
conjunction	1756 Mar 05 08:18	15°♓14'23	-0°44'08
minimum elong	1756 Mar 05 08:18	15°♓14'23	0°44'07
max. Earth dist.	1756 Mar 06 07:13	15°♓17'39	21.08139 AU
morning rise	1756 Mar 21 07:38	16°♓08'47	
retrograde	1756 Jun 23 12:46	19°♓15'13	
opposition	1756 Sep 09 15:16	17°♓16'06	-0°48'39
min. Earth dist.	1756 Sep 08 17:16	17°♓18'18	19.08333 AU
direct	1756 Nov 24 04:03	15°♓19'49	
evening set	1757 Feb 21 16:30	18°♓17'49	
conjunction	1757 Mar 09 13:14	19°♓11'48	-0°43'54
minimum elong	1757 Mar 09 13:14	19°♓11'48	0°43'54
max. Earth dist.	1757 Mar 10 12:56	19°♓15'11	21.08334 AU
morning rise	1757 Mar 25 13:21	20°♓06'17	
retrograde	1757 Jun 27 20:15	23°♓12'49	
opposition	1757 Sep 13 22:39	21°♓13'40	-0°48'16
min. Earth dist.	1757 Sep 13 01:08	21°♓15'50	19.08322 AU
direct	1757 Nov 28 09:37	19°♓17'28	
evening set	1758 Feb 25 21:01	22°♓15'23	
conjunction	1758 Mar 13 18:28	23°♓09'27	-0°43'27
minimum elong	1758 Mar 13 18:28	23°♓09'27	0°43'27
max. Earth dist.	1758 Mar 14 16:44	23°♓12'38	21.08128 AU
morning rise	1758 Mar 29 19:40	24°♓04'02	
retrograde	1758 Jul 02 05:48	27°♓10'44	
min. Earth dist.	1758 Sep 17 08:48	25°♓13'39	19.07901 AU

opposition	1758 Sep 18 05:45	25°♓11'33	-0°47'39
direct	1758 Dec 02 13:49	23°♓15'21	
evening set	1759 Mar 02 01:46	26°♓13'19	
conjunction	1759 Mar 18 00:12	27°♓07'29	-0°42'48
minimum elong	1759 Mar 18 00:12	27°♓07'29	0°42'49
max. Earth dist.	1759 Mar 18 22:48	27°♓10'43	21.07472 AU
morning rise	1759 Apr 03 02:10	28°♓02'11	
	1759 May 13 00:23	0°♈	
retrograde	1759 Jul 06 13:43	1°♈09'05	
	1759 Sep 01 01:51	30°℞♓	
opposition	1759 Sep 22 12:53	29°♓09'52	-0°46'49
min. Earth dist.	1759 Sep 21 16:44	29°♓11'54	19.07002 AU
direct	1759 Dec 06 18:48	27°♓13'42	
	1760 Mar 01 17:53	0°♈	
evening set	1760 Mar 05 06:53	0°♈11'45	
conjunction	1760 Mar 21 06:03	1°♈06'02	-0°41'57
minimum elong	1760 Mar 21 06:03	1°♈06'02	0°41'57
max. Earth dist.	1760 Mar 22 02:51	1°♈09'00	21.06335 AU
morning rise	1760 Apr 06 09:07	2°♈00'52	
retrograde	1760 Jul 09 23:52	5°♈08'01	
opposition	1760 Sep 25 20:05	3°♈08'44	-0°45'46
min. Earth dist.	1760 Sep 25 00:54	3°♈10'40	19.05606 AU
direct	1760 Dec 09 23:44	1°♈12'32	
evening set	1761 Mar 09 12:28	4°♈10'45	
conjunction	1761 Mar 25 12:42	5°♈05'11	-0°40'53
minimum elong	1761 Mar 25 12:42	5°♈05'11	0°40'53
max. Earth dist.	1761 Mar 26 09:27	5°♈08'09	21.04664 AU
morning rise	1761 Apr 10 16:35	6°♈00'09	
retrograde	1761 Jul 14 08:11	9°♈07'34	
min. Earth dist.	1761 Sep 29 09:05	7°♈10'02	19.03651 AU
opposition	1761 Sep 30 03:11	7°♈08'13	-0°44'29
direct	1761 Dec 14 04:40	5°♈11'56	
evening set	1762 Mar 13 18:36	8°♈10'22	
conjunction	1762 Mar 29 19:41	9°♈04'57	-0°39'37
minimum elong	1762 Mar 29 19:41	9°♈04'57	0°39'37
max. Earth dist.	1762 Mar 30 14:06	9°♈07'35	21.02435 AU
morning rise	1762 Apr 15 00:44	10°♈00'06	
retrograde	1762 Jul 18 18:25	13°♈07'48	
opposition	1762 Oct 04 10:25	11°♈08'18	-0°42'58
min. Earth dist.	1762 Oct 03 17:42	11°♈10'00	19.01133 AU
direct	1762 Dec 18 10:23	9°♈11'53	
evening set	1763 Mar 18 01:02	12°♈10'36	
conjunction	1763 Apr 03 03:13	13°♈05'21	-0°38'09
minimum elong	1763 Apr 03 03:13	13°♈05'22	0°38'09
max. Earth dist.	1763 Apr 03 21:20	13°♈07'57	20.99631 AU
morning rise	1763 Apr 19 09:04	14°♈00'40	
retrograde	1763 Jul 23 03:03	17°♈08'39	
opposition	1763 Oct 08 17:31	15°♈09'01	-0°41'15
min. Earth dist.	1763 Oct 08 01:54	15°♈10'36	18.98048 AU
direct	1763 Dec 22 16:05	13°♈12'25	
evening set	1764 Mar 21 07:59	16°♈11'27	
conjunction	1764 Apr 06 11:04	17°♈06'23	-0°36'30
minimum elong	1764 Apr 06 11:04	17°♈06'23	0°36'31
max. Earth dist.	1764 Apr 07 02:49	17°♈08'38	20.96308 AU
morning rise	1764 Apr 22 18:04	18°♈01'53	
retrograde	1764 Jul 26 12:43	21°♈10'12	
min. Earth dist.	1764 Oct 11 10:39	19°♈11'48	18.94486 AU
opposition	1764 Oct 12 00:47	19°♈10'21	-0°39'19
direct	1764 Dec 25 21:58	17°♈13'32	
evening set	1765 Mar 25 15:13	20°♈12'57	
conjunction	1765 Apr 10 19:28	21°♈08'06	-0°34'39
minimum elong	1765 Apr 10 19:28	21°♈08'06	0°34'39
max. Earth dist.	1765 Apr 11 11:05	21°♈10'20	20.92521 AU
morning rise	1765 Apr 27 03:20	22°♈03'47	
retrograde	1765 Jul 30 22:26	25°♈12'27	
opposition	1765 Oct 16 08:02	23°♈12'24	-0°37'11
min. Earth dist.	1765 Oct 15 18:51	23°♈13'45	18.90483 AU
direct	1765 Dec 30 04:29	21°♈15'19	
evening set	1766 Mar 29 23:15	24°♈15'12	
conjunction	1766 Apr 15 04:23	25°♈10'34	-0°32'38
minimum elong	1766 Apr 15 04:23	25°♈10'34	0°32'38
max. Earth dist.	1766 Apr 15 17:36	25°♈12'27	20.88340 AU
morning rise	1766 May 01 13:24	26°♈06'28	
retrograde	1766 Aug 04 07:43	29°♈15'30	
opposition	1766 Oct 20 15:19	27°♈15'14	-0°34'52
min. Earth dist.	1766 Oct 20 03:42	27°♈16'25	18.86128 AU
direct	1767 Jan 03 10:19	25°♈17'53	
evening set	1767 Apr 03 07:44	28°♈18'18	
conjunction	1767 Apr 19 14:02	29°♈13'54	-0°30'26
minimum elong	1767 Apr 19 14:02	29°♈13'54	0°30'26
max. Earth dist.	1767 Apr 20 03:04	29°♈15'46	20.83819 AU
	1767 May 03 00:33	0°♉	
morning rise	1767 May 05 23:49	0°♉10'01	
retrograde	1767 Aug 08 18:22	3°♉19'27	
opposition	1767 Oct 24 22:50	1°♉19'00	-0°32'21
min. Earth dist.	1767 Oct 24 11:59	1°♉20'07	18.81453 AU
	1767 Nov 29 00:46	30°℞♈	
direct	1768 Jan 07 17:33	29°♈21'23	
	1768 Feb 15 12:58	0°♉	
evening set	1768 Apr 06 16:48	2°♉22'24	
conjunction	1768 Apr 22 23:58	3°♉18'14	-0°28'05
minimum elong	1768 Apr 22 23:58	3°♉18'14	0°28'05
max. Earth dist.	1768 Apr 23 10:39	3°♉19'46	20.79019 AU
morning rise	1768 May 09 10:52	4°♉14'36	
retrograde	1768 Aug 12 04:26	7°♉24'29	
opposition	1768 Oct 28 06:42	5°♉23'50	-0°29'40
min. Earth dist.	1768 Oct 27 21:25	5°♉24'48	18.76527 AU
direct	1769 Jan 10 23:44	3°♉25'56	
evening set	1769 Apr 11 02:38	6°♉27'38	
conjunction	1769 Apr 27 11:00	7°♉23'44	-0°25'35
minimum elong	1769 Apr 27 11:00	7°♉23'44	0°25'35
max. Earth dist.	1769 Apr 27 21:28	7°♉25'14	20.73972 AU
morning rise	1769 May 13 22:39	8°♉20'20	
retrograde	1769 Aug 16 16:02	11°♉30'41	
opposition	1769 Nov 01 14:41	9°♉29'54	-0°26'50
min. Earth dist.	1769 Nov 01 06:10	9°♉30'47	18.71361 AU
direct	1770 Jan 15 07:37	7°♉31'43	
evening set	1770 Apr 15 13:24	10°♉34'11	
conjunction	1770 May 01 22:38	11°♉30'33	-0°22'57
minimum elong	1770 May 01 22:38	11°♉30'33	0°22'56
max. Earth dist.	1770 May 02 06:29	11°♉31'40	20.68710 AU
morning rise	1770 May 18 11:21	12°♉27'24	
	1770 Jul 12 13:42	15°♉	
retrograde	1770 Aug 21 03:39	15°♉38'17	
	1770 Sep 30 08:11	15°℞♉	
opposition	1770 Nov 05 23:12	13°♉37'20	-0°23'50
min. Earth dist.	1770 Nov 05 16:28	13°♉38'02	18.65995 AU
direct	1771 Jan 19 14:29	11°♉38'52	
evening set	1771 Apr 20 00:45	14°♉42'11	
	1771 Apr 25 06:04	15°♉	
conjunction	1771 May 06 11:08	15°♉38'50	-0°20'10

minimum elong	1771 May 06	11:08	15°♉38'50	0°20'11
max. Earth dist.	1771 May 06	18:41	15°♉39'55	20.63239 AU
morning rise	1771 May 23	00:30	16°♉35'57	
retrograde	1771 Aug 25	16:32	19°♉47'22	
opposition	1771 Nov 10	08:01	17°♉46'19	-0°20'42
min. Earth dist.	1771 Nov 10	02:04	17°♉46'56	18.60414 AU
direct	1772 Jan 23	23:11	15°♉47'35	
evening set	1772 Apr 23	13:14	18°♉51'48	
conjunction	1772 May 10	00:24	19°♉48'44	-0°17'16
minimum elong	1772 May 10	00:24	19°♉48'44	0°17'16
max. Earth dist.	1772 May 10	05:11	19°♉49'25	20.57568 AU
morning rise	1772 May 26	14:45	20°♉46'08	
retrograde	1772 Aug 29	05:35	23°♉58'08	
opposition	1772 Nov 13	17:24	21°♉56'58	-0°17'25
min. Earth dist.	1772 Nov 13	13:34	21°♉57'22	18.54638 AU
direct	1773 Jan 27	07:05	19°♉57'57	
evening set	1773 Apr 28	02:30	23°♉03'09	
conjunction	1773 May 14	14:48	24°♉00'23	-0°14'16
minimum elong	1773 May 14	14:49	24°♉00'23	0°14'16
behind sun begin	1773 May 14	11:48	23°♉59'58	
behind sun end	1773 May 14	17:49	24°♉00'49	
max. Earth dist.	1773 May 14	18:56	24°♉00'59	20.51676 AU
morning rise	1773 May 31	05:46	24°♉58'03	
retrograde	1773 Sep 02	20:10	28°♉10'39	
opposition	1773 Nov 18	03:12	26°♉09'24	-0°14'02
min. Earth dist.	1773 Nov 18	00:24	26°♉09'42	18.48616 AU
direct	1774 Jan 31	17:08	24°♉10'05	
evening set	1774 May 02	17:03	27°♉16'19	
conjunction	1774 May 19	06:04	28°♉13'51	-0°11'10
minimum elong	1774 May 19	06:03	28°♉13'51	0°11'09
behind sun begin	1774 May 19	01:07	28°♉13'09	
behind sun end	1774 May 19	11:00	28°♉14'33	
max. Earth dist.	1774 May 19	07:00	28°♉13'59	20.45529 AU
morning rise	1774 Jun 04	21:51	29°♉11'48	
	1774 Jun 19	10:42	0°♊	
retrograde	1774 Sep 07	10:15	2°♊25'00	
opposition	1774 Nov 22	13:36	0°♊23'38	-0°10'33
min. Earth dist.	1774 Nov 22	13:20	0°♊23'39	18.42343 AU
	1774 Dec 01	23:37	30°℞♉	
direct	1775 Feb 05	02:27	28°♉23'58	
	1775 Apr 08	13:23	0°♊	
evening set	1775 May 07	08:19	1°♊31'17	
conjunction	1775 May 23	22:21	2°♊29'08	-0°07'59
minimum elong	1775 May 23	22:21	2°♊29'08	0°07'58
behind sun begin	1775 May 23	16:20	2°♊28'16	
behind sun end	1775 May 24	04:22	2°♊29'59	
max. Earth dist.	1775 May 23	22:18	2°♊29'07	20.39125 AU
morning rise	1775 Jun 09	14:37	3°♊27'21	
retrograde	1775 Sep 12	02:20	6°♊41'08	
opposition	1775 Nov 27	00:33	4°♊39'39	-0°06'58
min. Earth dist.	1775 Nov 27	01:15	4°♊39'34	18.35808 AU
direct	1776 Feb 09	14:17	2°♊39'37	
evening set	1776 May 11	00:32	5°♊48'01	
conjunction	1776 May 27	15:15	6°♊46'11	-0°04'44
minimum elong	1776 May 27	15:15	6°♊46'11	0°04'44
behind sun begin	1776 May 27	08:39	6°♊45'14	
behind sun end	1776 May 27	21:50	6°♊47'07	
max. Earth dist.	1776 May 27	12:02	6°♊45'45	20.32478 AU
morning rise	1776 Jun 13	08:16	7°♊44'41	
retrograde	1776 Sep 15	17:13	10°♊59'05	
opposition	1776 Nov 30	12:11	8°♊57'25	-0°03'19
min. Earth dist.	1776 Nov 30	15:30	8°♊57'04	18.29060 AU
direct	1777 Feb 13	01:04	6°♊56'59	
evening set	1777 May 15	17:41	10°♊06'31	
conjunction	1777 Jun 01	09:21	11°♊04'59	-0°01'24
minimum elong	1777 Jun 01	09:20	11°♊04'59	0°01'23
behind sun begin	1777 Jun 01	02:35	11°♊04'01	
behind sun end	1777 Jun 01	16:06	11°♊05'58	
max. Earth dist.	1777 Jun 01	05:06	11°♊04'24	20.25645 AU
morning rise	1777 Jun 18	02:45	12°♊03'46	
retrograde	1777 Sep 20	10:44	15°♊18'45	
asc. node	1777 Oct 28	22:33	14°♊42'05	
opposition	1777 Dec 05	00:03	13°♊16'55	0°00'22
min. Earth dist.	1777 Dec 05	04:16	13°♊16'28	18.22149 AU
direct	1778 Feb 17	14:28	11°♊16'03	
evening set	1778 May 20	11:54	14°♊26'46	
conjunction	1778 Jun 06	04:07	15°♊25'32	0°02'03
minimum elong	1778 Jun 06	04:06	15°♊25'32	0°02'02
behind sun begin	1778 Jun 05	21:20	15°♊24'34	
behind sun end	1778 Jun 06	10:52	15°♊26'31	
max. Earth dist.	1778 Jun 05	20:54	15°♊24'30	20.18684 AU
morning rise	1778 Jun 22	22:03	16°♊24'35	
retrograde	1778 Sep 25	02:36	19°♊40'09	
opposition	1778 Dec 09	12:45	17°♊38'09	0°04'05
min. Earth dist.	1778 Dec 09	19:29	17°♊37'26	18.15165 AU
direct	1779 Feb 22	02:44	15°♊36'50	
evening set	1779 May 25	06:40	18°♊48'44	
conjunction	1779 Jun 10	23:37	19°♊47'49	0°05'24
minimum elong	1779 Jun 10	23:37	19°♊47'49	0°05'24
behind sun begin	1779 Jun 10	17:05	19°♊46'52	
behind sun end	1779 Jun 11	06:08	19°♊48'45	
max. Earth dist.	1779 Jun 10	15:32	19°♊46'38	20.11690 AU
morning rise	1779 Jun 27	17:49	20°♊47'08	
retrograde	1779 Sep 29	21:10	24°♊03'17	
opposition	1779 Dec 14	01:53	22°♊01'07	0°07'48
min. Earth dist.	1779 Dec 14	09:06	22°♊00'20	18.08177 AU
direct	1780 Feb 26	17:14	19°♊59'21	
evening set	1780 May 29	02:34	23°♊12'28	
conjunction	1780 Jun 14	19:57	24°♊11'51	0°08'43
minimum elong	1780 Jun 14	19:57	24°♊11'51	0°08'43
behind sun begin	1780 Jun 14	14:07	24°♊11'00	
behind sun end	1780 Jun 15	01:47	24°♊12'42	
max. Earth dist.	1780 Jun 14	09:25	24°♊10'18	20.04727 AU
morning rise	1780 Jul 01	14:30	25°♊11'26	
retrograde	1780 Oct 03	14:23	28°♊28'11	
opposition	1780 Dec 17	15:40	26°♊25'50	0°11'29
min. Earth dist.	1780 Dec 18	01:16	26°♊24'48	18.01272 AU
direct	1781 Mar 02	07:05	24°♊23'37	
evening set	1781 Jun 02	23:15	27°♊37'59	
conjunction	1781 Jun 19	17:15	28°♊37'40	0°12'00
minimum elong	1781 Jun 19	17:15	28°♊37'40	0°12'00
behind sun begin	1781 Jun 19	12:42	28°♊37'00	
behind sun end	1781 Jun 19	21:47	28°♊38'20	
max. Earth dist.	1781 Jun 19	05:42	28°♊35'57	19.97885 AU
morning rise	1781 Jul 06	11:56	29°♊37'31	
	1781 Jul 12	23:51	0°♋	
retrograde	1781 Oct 08	09:52	2°♋54'49	
opposition	1781 Dec 22	06:03	0°♋52'20	0°15'07
min. Earth dist.	1781 Dec 22	15:56	0°♋51'16	17.94507 AU
	1782 Jan 12	03:42	30°℞♊	
direct	1782 Mar 06	23:04	28°♊49'42	
	1782 Apr 28	12:03	0°♋	
evening set	1782 Jun 07	20:55	2°♋05'19	

conjunction	1782 Jun	24	15:12	3°♋05'18	0°15'15
minimum elong	1782 Jun	24	15:12	3°♋05'18	0°15'15
behind sun begin	1782 Jun	24	13:29	3°♋05'02	
behind sun end	1782 Jun	24	16:55	3°♋05'33	
max. Earth dist.	1782 Jun	24	01:41	3°♋03'16	19.91205 AU
morning rise	1782 Jul	11	09:58	4°♋05'23	
retrograde	1782 Oct	13	04:03	7°♋23'16	
opposition	1782 Dec	26	21:14	5°♋20'40	0°18'42
min. Earth dist.	1782 Dec	27	09:15	5°♋19'22	17.87950 AU
direct	1783 Mar	11	14:36	3°♋17'38	
evening set	1783 Jun	12	19:21	6°♋34'32	
conjunction	1783 Jun	29	14:00	7°♋34'47	0°18'25
minimum elong	1783 Jun	29	14:00	7°♋34'47	0°18'24
max. Earth dist.	1783 Jun	28	23:25	7°♋32'35	19.84777 AU
morning rise	1783 Jul	16	08:46	8°♋35'06	
retrograde	1783 Oct	18	00:28	11°♋53'33	
opposition	1783 Dec	31	13:01	9°♋50'52	0°22'11
min. Earth dist.	1784 Jan	01	01:06	9°♋49'34	17.81659 AU
direct	1784 Mar	15	08:25	7°♋47'29	
evening set	1784 Jun	16	18:43	11°♋05'39	
conjunction	1784 Jul	03	13:36	12°♋06'11	0°21'29
minimum elong	1784 Jul	03	13:36	12°♋06'11	0°21'30
max. Earth dist.	1784 Jul	02	21:35	12°♋03'46	19.78621 AU
morning rise	1784 Jul	20	08:15	13°♋06'42	
retrograde	1784 Oct	21	19:55	16°♋25'43	
opposition	1785 Jan	04	05:44	14°♋23'00	0°25'33
min. Earth dist.	1785 Jan	04	19:51	14°♋21'28	17.75656 AU
direct	1785 Mar	20	02:02	12°♋19'18	
evening set	1785 Jun	21	19:06	15°♋38'45	
conjunction	1785 Jul	08	14:05	16°♋39'31	0°24'27
minimum elong	1785 Jul	08	14:05	16°♋39'31	0°24'27
max. Earth dist.	1785 Jul	07	20:39	16°♋36'53	19.72770 AU
morning rise	1785 Jul	25	08:38	17°♋40'15	
retrograde	1785 Oct	26	17:16	20°♋59'49	
opposition	1786 Jan	08	22:56	18°♋57'05	0°28'47
min. Earth dist.	1786 Jan	09	13:18	18°♋55'32	17.69951 AU
direct	1786 Mar	24	21:54	16°♋53'05	
evening set	1786 Jun	26	20:23	20°♋13'49	
conjunction	1786 Jul	13	15:25	21°♋14'49	0°27'17
minimum elong	1786 Jul	13	15:25	21°♋14'49	0°27'17
max. Earth dist.	1786 Jul	12	20:58	21°♋12'00	19.67196 AU
morning rise	1786 Jul	30	09:33	22°♋15'43	
retrograde	1786 Oct	31	14:10	25°♋35'48	
opposition	1787 Jan	13	17:14	23°♋33'06	0°31'52
min. Earth dist.	1787 Jan	14	09:36	23°♋31'19	17.64525 AU
direct	1787 Mar	29	17:25	21°♋28'48	
evening set	1787 Jul	01	22:19	24°♋50'45	
conjunction	1787 Jul	18	17:12	25°♋51'57	0°29'58
minimum elong	1787 Jul	18	17:12	25°♋51'57	0°29'59
max. Earth dist.	1787 Jul	17	20:56	25°♋48'51	19.61908 AU
morning rise	1787 Aug	04	11:04	26°♋53'02	
	1787 Oct	14	05:52	0°♌	
retrograde	1787 Nov	05	12:58	0°♌13'37	
	1787 Nov	28	00:17	30°℞♋	
opposition	1788 Jan	18	12:09	28°♋10'53	0°34'46
min. Earth dist.	1788 Jan	19	04:52	28°♋09'04	17.59375 AU
direct	1788 Apr	02	15:28	26°♋06'18	
evening set	1788 Jul	06	01:07	29°♋29'26	
	1788 Jul	14	10:59	0°♌	
conjunction	1788 Jul	22	19:57	0°♌30'50	0°32'28
minimum elong	1788 Jul	22	19:57	0°♌30'50	0°32'27
max. Earth dist.	1788 Jul	21	23:03	0°♌27'38	19.56873 AU
morning rise	1788 Aug	08	13:12	1°♌32'03	
retrograde	1788 Nov	09	10:59	4°♌53'02	
opposition	1789 Jan	22	07:51	2°♌50'20	0°37'28
min. Earth dist.	1789 Jan	23	02:23	2°♌48'19	17.54481 AU
direct	1789 Apr	07	12:34	0°♌45'26	
evening set	1789 Jul	11	04:42	4°♌09'42	
conjunction	1789 Jul	27	23:08	5°♌11'15	0°34'47
minimum elong	1789 Jul	27	23:08	5°♌11'15	0°34'47
max. Earth dist.	1789 Jul	27	00:04	5°♌07'42	19.52121 AU
morning rise	1789 Aug	13	15:59	6°♌12'36	
retrograde	1789 Nov	14	10:54	9°♌33'58	
opposition	1790 Jan	27	04:15	7°♌31'14	0°39'55
min. Earth dist.	1790 Jan	27	23:12	7°♌29'09	17.49881 AU
direct	1790 Apr	12	12:08	5°♌26'02	
evening set	1790 Jul	16	08:33	8°♌51'19	
max. Earth dist.	1790 Aug	01	03:44	9°♌49'28	19.47666 AU
conjunction	1790 Aug	02	02:46	9°♌53'02	0°36'52
minimum elong	1790 Aug	02	02:46	9°♌53'02	0°36'51
morning rise	1790 Aug	18	18:46	10°♌54'28	
retrograde	1790 Nov	19	10:00	14°♌16'09	
opposition	1791 Feb	01	01:24	12°♌13'24	0°42'07
min. Earth dist.	1791 Feb	01	21:34	12°♌11'12	17.45600 AU
direct	1791 Apr	17	11:02	10°♌07'56	
evening set	1791 Jul	21	13:01	13°♌34'10	
max. Earth dist.	1791 Aug	06	05:39	14°♌32'07	19.43576 AU
conjunction	1791 Aug	07	06:37	14°♌35'59	0°38'42
minimum elong	1791 Aug	07	06:37	14°♌35'59	0°38'42
	1791 Aug	13	17:23	15°♌	
morning rise	1791 Aug	23	22:04	15°♌37'31	
retrograde	1791 Nov	24	10:04	18°♌59'28	
opposition	1792 Feb	05	22:57	16°♌56'40	0°44'03
min. Earth dist.	1792 Feb	06	19:32	16°♌54'25	17.41720 AU
	1792 Apr	02	23:46	15°℞♌	
direct	1792 Apr	21	11:23	14°♌50'55	
	1792 May	09	20:02	15°♌	
evening set	1792 Jul	25	17:37	18°♌18'02	
max. Earth dist.	1792 Aug	10	10:31	19°♌16'10	19.39900 AU
conjunction	1792 Aug	11	10:54	19°♌19'58	0°40'18
minimum elong	1792 Aug	11	10:54	19°♌19'58	0°40'18
morning rise	1792 Aug	28	01:25	20°♌21'32	
retrograde	1792 Nov	28	10:03	23°♌43'41	
opposition	1793 Feb	09	21:12	21°♌40'53	0°45'41
min. Earth dist.	1793 Feb	10	18:22	21°♌38'34	17.38266 AU
direct	1793 Apr	26	12:02	19°♌34'53	
evening set	1793 Jul	30	22:41	23°♌02'47	
conjunction	1793 Aug	16	15:08	24°♌04'46	0°41'36
minimum elong	1793 Aug	16	15:08	24°♌04'46	0°41'36
max. Earth dist.	1793 Aug	15	13:17	24°♌00'44	19.36689 AU
morning rise	1793 Sep	02	04:56	25°♌06'22	
retrograde	1793 Dec	03	09:53	28°♌28'41	
opposition	1794 Feb	14	19:55	26°♌25'52	0°47'00
min. Earth dist.	1794 Feb	15	17:25	26°♌23'30	17.35324 AU
direct	1794 May	01	12:55	24°♌19'38	
evening set	1794 Aug	05	03:40	27°♌48'14	
conjunction	1794 Aug	21	19:33	28°♌50'15	0°42'38
minimum elong	1794 Aug	21	19:33	28°♌50'15	0°42'39
max. Earth dist.	1794 Aug	20	18:49	28°♌46'23	19.34015 AU
morning rise	1794 Sep	07	08:18	29°♌51'51	
	1794 Sep	09	13:59	0°♍	
retrograde	1794 Dec	08	10:38	3°♍14'17	

opposition	1795 Feb 19 19:11	1°♍11'28	0°48'00
min. Earth dist.	1795 Feb 20 16:23	1°♍09'08	17.32936 AU
	1795 Mar 20 16:18	30°℞♌	
direct	1795 May 06 15:13	29°♌05'04	
	1795 Jun 21 15:46	0°♍	
evening set	1795 Aug 10 08:41	2°♍34'15	
conjunction	1795 Aug 26 23:40	3°♍36'16	0°43'23
minimum elong	1795 Aug 26 23:40	3°♍36'16	0°43'23
max. Earth dist.	1795 Aug 25 22:15	3°♍32'18	19.31928 AU
morning rise	1795 Sep 12 11:32	4°♍37'51	
retrograde	1795 Dec 13 09:52	8°♍00'23	
opposition	1796 Feb 24 18:55	5°♍57'35	0°48'40
min. Earth dist.	1796 Feb 25 16:19	5°♍55'14	17.31172 AU
direct	1796 May 10 16:27	3°♍51'04	
evening set	1796 Aug 14 13:44	7°♍20'45	
max. Earth dist.	1796 Aug 30 03:48	8°♍18'57	19.30484 AU
conjunction	1796 Aug 31 03:58	8°♍22'45	0°43'49
minimum elong	1796 Aug 31 03:58	8°♍22'45	0°43'49
morning rise	1796 Sep 16 14:45	9°♍24'16	
retrograde	1796 Dec 17 10:53	12°♍46'49	
opposition	1797 Feb 28 18:56	10°♍44'06	0°49'00
min. Earth dist.	1797 Mar 01 15:22	10°♍41'52	17.30049 AU
direct	1797 May 15 20:23	8°♍37'33	
evening set	1797 Aug 19 18:49	12°♍07'38	
max. Earth dist.	1797 Sep 04 07:55	13°♍05'48	19.29696 AU
conjunction	1797 Sep 05 08:03	13°♍09'35	0°43'58
minimum elong	1797 Sep 05 08:03	13°♍09'35	0°43'58
morning rise	1797 Sep 21 17:46	14°♍11'02	
retrograde	1797 Dec 22 09:45	17°♍33'35	
opposition	1798 Mar 05 19:32	15°♍30'59	0°48'59
min. Earth dist.	1798 Mar 06 16:09	15°♍28'43	17.29601 AU
direct	1798 May 20 22:23	13°♍24'27	
evening set	1798 Aug 24 23:29	16°♍54'50	
conjunction	1798 Sep 10 11:47	17°♍56'42	0°43'48
minimum elong	1798 Sep 10 11:47	17°♍56'42	0°43'48
max. Earth dist.	1798 Sep 09 12:50	17°♍53'05	19.29580 AU
morning rise	1798 Sep 26 20:26	18°♍58'03	
retrograde	1798 Dec 27 10:57	22°♍20'33	
opposition	1799 Mar 10 20:23	20°♍18'06	0°48'39
min. Earth dist.	1799 Mar 11 15:32	20°♍16'01	17.29791 AU
direct	1799 May 26 03:38	18°♍11'40	
evening set	1799 Aug 30 04:08	21°♍42'13	
conjunction	1799 Sep 15 15:25	22°♍43'59	0°43'21
minimum elong	1799 Sep 15 15:25	22°♍43'59	0°43'21
max. Earth dist.	1799 Sep 14 17:12	22°♍40'30	19.30077 AU
morning rise	1799 Oct 01 22:54	23°♍45'14	
retrograde	1800 Jan 01 09:43	27°♍07'37	
opposition	1800 Mar 15 21:30	25°♍05'20	0°47'58
min. Earth dist.	1800 Mar 16 17:02	25°♍03'13	17.30586 AU
direct	1800 May 31 05:59	22°♍59'00	
evening set	1800 Sep 04 08:33	26°♍29'38	
conjunction	1800 Sep 20 18:44	27°♍31'17	0°42'35
minimum elong	1800 Sep 20 18:44	27°♍31'17	0°42'35
max. Earth dist.	1800 Sep 19 21:09	27°♍27'53	19.31155 AU
morning rise	1800 Oct 07 01:11	28°♍32'23	
	1800 Nov 01 08:02	0°♎	
retrograde	1801 Jan 06 11:07	1°♎54'36	
	1801 Mar 18 01:47	30°℞♍	
opposition	1801 Mar 20 22:54	29°♍52'30	0°46'57
min. Earth dist.	1801 Mar 21 16:49	29°♍50'33	17.31917 AU
direct	1801 Jun 05 11:21	27°♍46'18	
	1801 Aug 18 13:48	0°♎	
evening set	1801 Sep 09 12:31	1°♎16'52	
conjunction	1801 Sep 25 21:38	2°♎18'21	0°41'32
minimum elong	1801 Sep 25 21:38	2°♎18'21	0°41'32
max. Earth dist.	1801 Sep 25 01:24	2°♎15'10	19.32733 AU
morning rise	1801 Oct 12 02:48	3°♎19'17	
retrograde	1802 Jan 11 10:20	6°♎41'17	
opposition	1802 Mar 26 00:40	4°♎39'21	0°45'37
min. Earth dist.	1802 Mar 26 18:52	4°♎37'23	17.33742 AU
direct	1802 Jun 10 14:06	2°♎33'18	
evening set	1802 Sep 14 16:04	6°♎03'39	
conjunction	1802 Sep 30 23:58	7°♎04'58	0°40'11
minimum elong	1802 Sep 30 23:58	7°♎04'58	0°40'12
max. Earth dist.	1802 Sep 30 04:03	7°♎01'49	19.34797 AU
morning rise	1802 Oct 17 04:09	8°♎05'44	
retrograde	1803 Jan 16 11:12	11°♎27'25	
opposition	1803 Mar 31 02:18	9°♎25'39	0°43'58
min. Earth dist.	1803 Mar 31 18:41	9°♎23'53	17.36024 AU
direct	1803 Jun 15 18:32	7°♎19'45	
evening set	1803 Sep 19 18:52	10°♎49'45	
max. Earth dist.	1803 Oct 05 07:44	11°♎48'02	19.37291 AU
conjunction	1803 Oct 06 01:48	11°♎50'53	0°38'35
minimum elong	1803 Oct 06 01:48	11°♎50'53	0°38'34
morning rise	1803 Oct 22 04:43	12°♎51'26	
retrograde	1804 Jan 21 10:14	16°♎12'46	
opposition	1804 Apr 04 04:08	14°♎11'08	0°42'01
min. Earth dist.	1804 Apr 04 20:34	14°♎09'21	17.38719 AU
direct	1804 Jun 19 21:17	12°♎05'24	
evening set	1804 Sep 23 21:13	15°♎34'57	
max. Earth dist.	1804 Oct 09 08:55	16°♎33'01	19.40195 AU
conjunction	1804 Oct 10 02:51	16°♎35'51	0°36'42
minimum elong	1804 Oct 10 02:51	16°♎35'51	0°36'42
morning rise	1804 Oct 26 04:50	17°♎36'11	
retrograde	1805 Jan 25 09:56	20°♎57'07	
opposition	1805 Apr 09 05:39	18°♎55'35	0°39'46
min. Earth dist.	1805 Apr 09 20:12	18°♎54'01	17.41815 AU
direct	1805 Jun 25 01:15	16°♎50'01	
evening set	1805 Sep 28 22:38	20°♎19'01	
max. Earth dist.	1805 Oct 14 11:44	21°♎17'13	19.43491 AU
conjunction	1805 Oct 15 03:18	21°♎19'40	0°34'35
minimum elong	1805 Oct 15 03:18	21°♎19'40	0°34'35
morning rise	1805 Oct 31 04:02	22°♎19'46	
retrograde	1806 Jan 30 07:54	25°♎40'13	
opposition	1806 Apr 14 07:14	23°♎38'48	0°37'16
min. Earth dist.	1806 Apr 14 21:20	23°♎37'18	17.45301 AU
direct	1806 Jun 30 04:32	21°♎33'26	
evening set	1806 Oct 03 23:11	25°♎01'43	
max. Earth dist.	1806 Oct 19 11:24	25°♎59'43	19.47186 AU
conjunction	1806 Oct 20 02:34	26°♎02'06	0°32'14
minimum elong	1806 Oct 20 02:34	26°♎02'06	0°32'13
morning rise	1806 Nov 05 02:29	27°♎01'58	
	1807 Jan 07 02:36	0°♏	
retrograde	1807 Feb 04 05:48	0°♏21'56	
	1807 Mar 04 21:45	30°℞♎	
opposition	1807 Apr 19 08:23	28°♎20'35	0°34'32
min. Earth dist.	1807 Apr 19 20:30	28°♎19'17	17.49194 AU
direct	1807 Jul 05 08:00	26°♎15'24	
evening set	1807 Oct 08 22:47	29°♎42'54	
	1807 Oct 13 13:56	0°♏	
conjunction	1807 Oct 25 01:15	0°♏43'01	0°29'41

minimum elong	1807 Oct 25 01:15	0°♏43'01	0°29'41
max. Earth dist.	1807 Oct 24 12:50	0°♏41'04	19.51283 AU
morning rise	1807 Nov 10 00:01	1°♏42'37	
retrograde	1808 Feb 09 02:24	5°♏02'02	
opposition	1808 Apr 23 09:10	3°♏00'46	0°31'34
min. Earth dist.	1808 Apr 23 20:18	2°♏59'35	17.53487 AU
direct	1808 Jul 09 11:13	0°♏55'49	
evening set	1808 Oct 12 21:38	4°♏22'26	
conjunction	1808 Oct 28 22:50	5°♏22'16	0°26'57
minimum elong	1808 Oct 28 22:50	5°♏22'16	0°26'56
max. Earth dist.	1808 Oct 28 11:10	5°♏20'26	19.55798 AU
morning rise	1808 Nov 13 20:48	6°♏21'36	
retrograde	1809 Feb 12 22:52	9°♏40'28	
opposition	1809 Apr 28 09:43	7°♏39'17	0°28'26
min. Earth dist.	1809 Apr 28 18:47	7°♏38'19	17.58225 AU
direct	1809 Jul 14 13:28	5°♏34'34	
evening set	1809 Oct 17 19:14	9°♏00'16	
conjunction	1809 Nov 02 19:31	9°♏59'48	0°24'03
minimum elong	1809 Nov 02 19:31	9°♏59'48	0°24'03
max. Earth dist.	1809 Nov 02 10:55	9°♏58'28	19.60757 AU
morning rise	1809 Nov 18 16:25	10°♏58'52	
retrograde	1810 Feb 17 18:28	14°♏17'09	
opposition	1810 May 03 09:55	12°♏16'06	0°25'07
min. Earth dist.	1810 May 03 17:12	12°♏15'20	17.63394 AU
direct	1810 Jul 19 15:39	10°♏11'42	
evening set	1810 Oct 22 16:07	13°♏36'23	
conjunction	1810 Nov 07 15:14	14°♏35'37	0°21'02
minimum elong	1810 Nov 07 15:14	14°♏35'37	0°21'02
max. Earth dist.	1810 Nov 07 07:44	14°♏34'28	19.66154 AU
	1810 Nov 14 03:47	15°♏	
morning rise	1810 Nov 23 11:26	15°♏34'26	
retrograde	1811 Feb 22 13:54	18°♏52'08	
opposition	1811 May 08 09:29	16°♏51'14	0°21'40
min. Earth dist.	1811 May 08 14:54	16°♏50'40	17.69006 AU
	1811 Jul 02 02:41	15°℞♏	
direct	1811 Jul 24 15:39	14°♏47'11	
	1811 Aug 15 20:43	15°♏	
evening set	1811 Oct 27 11:54	18°♏10'51	
conjunction	1811 Nov 12 10:12	19°♏09'48	0°17'53
minimum elong	1811 Nov 12 10:12	19°♏09'48	0°17'53
max. Earth dist.	1811 Nov 12 05:32	19°♏09'05	19.71965 AU
morning rise	1811 Nov 28 05:31	20°♏08'19	
retrograde	1812 Feb 27 08:50	23°♏25'26	
opposition	1812 May 12 08:40	21°♏24'45	0°18'07
min. Earth dist.	1812 May 12 11:59	21°♏24'24	17.74980 AU
direct	1812 Jul 28 16:20	19°♏21'06	
evening set	1812 Oct 31 06:51	22°♏43'42	
conjunction	1812 Nov 16 04:05	23°♏42'19	0°14'39
minimum elong	1812 Nov 16 04:05	23°♏42'19	0°14'40
behind sun begin	1812 Nov 16 01:11	23°♏41'53	
behind sun end	1812 Nov 16 06:58	23°♏42'45	
max. Earth dist.	1812 Nov 16 00:42	23°♏41'49	19.78107 AU
morning rise	1812 Dec 01 22:45	24°♏40'35	
retrograde	1813 Mar 03 03:04	27°♏57'07	
opposition	1813 May 17 07:28	25°♏56'39	0°14'28
min. Earth dist.	1813 May 17 09:18	25°♏56'27	17.81272 AU
direct	1813 Aug 02 14:26	23°♏53'24	
evening set	1813 Nov 05 00:48	27°♏14'54	
conjunction	1813 Nov 20 21:15	28°♏13'13	0°11'22
minimum elong	1813 Nov 20 21:15	28°♏13'13	0°11'21
behind sun begin	1813 Nov 20 16:24	28°♏12'30	
behind sun end	1813 Nov 21 02:06	28°♏13'57	
max. Earth dist.	1813 Nov 20 20:25	28°♏13'06	19.84529 AU
morning rise	1813 Dec 06 15:11	29°♏11'12	
	1813 Dec 20 12:43	0°♐	
retrograde	1814 Mar 07 21:31	2°♐27'10	
opposition	1814 May 22 05:42	0°♐26'54	0°10'45
min. Earth dist.	1814 May 22 05:15	0°♐26'57	17.87788 AU
	1814 Jun 02 02:33	30°℞♏	
direct	1814 Aug 07 13:46	28°♏24'06	
	1814 Oct 09 00:58	0°♐	
evening set	1814 Nov 09 17:50	1°♐44'27	
conjunction	1814 Nov 25 13:23	2°♐42'28	0°08'01
minimum elong	1814 Nov 25 13:23	2°♐42'28	0°08'01
behind sun begin	1814 Nov 25 07:30	2°♐41'35	
behind sun end	1814 Nov 25 19:17	2°♐43'21	
max. Earth dist.	1814 Nov 25 13:57	2°♐42'32	19.91130 AU
morning rise	1814 Dec 11 06:48	3°♐40'10	
retrograde	1815 Mar 12 14:26	6°♐55'33	
opposition	1815 May 27 03:27	4°♐55'29	0°06'59
min. Earth dist.	1815 May 27 02:01	4°♐55'38	17.94461 AU
direct	1815 Aug 12 09:39	2°♐53'07	
evening set	1815 Nov 14 10:01	6°♐12'18	
conjunction	1815 Nov 30 04:51	7°♐10'00	0°04'38
minimum elong	1815 Nov 30 04:50	7°♐10'00	0°04'38
behind sun begin	1815 Nov 29 22:25	7°♐09'02	
behind sun end	1815 Nov 30 11:16	7°♐10'58	
max. Earth dist.	1815 Nov 30 07:24	7°♐10'21	19.97849 AU
morning rise	1815 Dec 15 21:39	8°♐07'26	
retrograde	1816 Mar 16 08:20	11°♐22'12	
opposition	1816 May 31 00:28	9°♐22'21	0°03'13
min. Earth dist.	1816 May 30 20:43	9°♐22'44	18.01198 AU
direct	1816 Aug 16 07:50	7°♐20'23	
evening set	1816 Nov 18 01:24	10°♐38'22	
conjunction	1816 Dec 03 19:26	11°♐35'47	0°01'13
minimum elong	1816 Dec 03 19:27	11°♐35'47	0°01'13
behind sun begin	1816 Dec 03 12:53	11°♐34'48	
behind sun end	1816 Dec 04 02:00	11°♐36'45	
max. Earth dist.	1816 Dec 03 23:26	11°♐36'21	20.04596 AU
morning rise	1816 Dec 19 11:48	12°♐32'57	
retrograde	1817 Mar 20 23:49	15°♐47'07	
desc. node	1817 Apr 10 09:39	15°♐36'29	
opposition	1817 Jun 04 21:10	13°♐47'26	-0°00'34
min. Earth dist.	1817 Jun 04 16:44	13°♐47'53	18.07952 AU
direct	1817 Aug 21 02:05	11°♐45'52	
evening set	1817 Nov 22 15:42	15°♐02'37	
conjunction	1817 Dec 08 09:08	15°♐59'44	-0°02'17
minimum elong	1817 Dec 08 09:07	15°♐59'44	0°02'16
behind sun begin	1817 Dec 08 02:34	15°♐58'45	
behind sun end	1817 Dec 08 15:40	16°♐00'42	
max. Earth dist.	1817 Dec 08 14:44	16°♐00'33	20.11332 AU
morning rise	1817 Dec 24 01:04	16°♐56'38	
retrograde	1818 Mar 25 16:56	20°♐10'12	
opposition	1818 Jun 09 17:03	18°♐10'38	-0°04'19
min. Earth dist.	1818 Jun 09 10:12	18°♐11'21	18.14649 AU
direct	1818 Aug 25 23:05	16°♐09'28	
evening set	1818 Nov 27 05:14	19°♐24'58	
conjunction	1818 Dec 12 22:04	20°♐21'47	-0°05'38
minimum elong	1818 Dec 12 22:05	20°♐21'48	0°05'38
behind sun begin	1818 Dec 12 15:46	20°♐20'52	
behind sun end	1818 Dec 13 04:23	20°♐22'43	
max. Earth dist.	1818 Dec 13 05:12	20°♐22'51	20.17984 AU
morning rise	1818 Dec 28 13:42	21°♐18'27	

retrograde	1819 Mar 30 06:58	24°♐31'23	
opposition	1819 Jun 14 12:10	22°♐31'56	-0°08'00
min. Earth dist.	1819 Jun 14 04:57	22°♐32'40	18.21261 AU
direct	1819 Aug 30 16:00	20°♐31'05	
evening set	1819 Dec 01 17:49	23°♐45'22	
conjunction	1819 Dec 17 10:09	24°♐41'54	-0°08'55
minimum elong	1819 Dec 17 10:09	24°♐41'53	0°08'54
behind sun begin	1819 Dec 17 04:30	24°♐41'03	
behind sun end	1819 Dec 17 15:48	24°♐42'44	
max. Earth dist.	1819 Dec 17 18:32	24°♐43'09	20.24545 AU
morning rise	1820 Jan 02 01:33	25°♐38'18	
retrograde	1820 Apr 02 22:12	28°♐50'37	
opposition	1820 Jun 18 06:32	26°♐51'14	-0°11'37
min. Earth dist.	1820 Jun 17 20:50	26°♐52'13	18.27760 AU
direct	1820 Sep 03 11:52	24°♐50'42	
evening set	1820 Dec 05 05:20	28°♐03'43	
conjunction	1820 Dec 20 21:13	28°♐59'59	-0°12'07
minimum elong	1820 Dec 20 21:14	28°♐59'59	0°12'07
behind sun begin	1820 Dec 20 16:43	28°♐59'19	
behind sun end	1820 Dec 21 01:44	29°♐00'38	
max. Earth dist.	1820 Dec 21 07:28	29°♐01'30	20.30987 AU
morning rise	1821 Jan 05 12:24	29°♐56'08	
	1821 Jan 06 14:42	0°♑	
retrograde	1821 Apr 07 11:01	3°♑07'51	
opposition	1821 Jun 23 00:21	1°♑08'30	-0°15'08
min. Earth dist.	1821 Jun 22 14:10	1°♑09'32	18.34165 AU
	1821 Jul 22 21:19	30°℞♐	
direct	1821 Sep 08 03:37	29°♐08'17	
	1821 Oct 23 15:26	0°♑	
evening set	1821 Dec 09 16:02	2°♑20'03	
conjunction	1821 Dec 25 07:31	3°♑16'02	-0°15'14
minimum elong	1821 Dec 25 07:31	3°♑16'02	0°15'13
behind sun begin	1821 Dec 25 05:07	3°♑15'41	
behind sun end	1821 Dec 25 09:54	3°♑16'23	
max. Earth dist.	1821 Dec 25 19:03	3°♑17'46	20.37355 AU
morning rise	1822 Jan 09 22:37	4°♑11'58	
retrograde	1822 Apr 12 00:27	7°♑23'05	
opposition	1822 Jun 27 17:06	5°♑23'46	-0°18'33
min. Earth dist.	1822 Jun 27 04:18	5°♑25'04	18.40500 AU
direct	1822 Sep 12 21:19	3°♑23'51	
evening set	1822 Dec 14 01:49	6°♑34'25	
conjunction	1822 Dec 29 17:01	7°♑30'09	-0°18'15
minimum elong	1822 Dec 29 17:01	7°♑30'09	0°18'15
max. Earth dist.	1822 Dec 30 06:37	7°♑32'10	20.43647 AU
morning rise	1823 Jan 14 08:02	8°♑25'51	
retrograde	1823 Apr 16 11:51	11°♑36'25	
opposition	1823 Jul 02 09:18	9°♑37'09	-0°21'49
min. Earth dist.	1823 Jul 01 19:58	9°♑38'30	18.46770 AU
direct	1823 Sep 17 11:36	7°♑37'32	
evening set	1823 Dec 18 10:53	10°♑46'56	
conjunction	1824 Jan 03 01:46	11°♑42'25	-0°21'08
minimum elong	1824 Jan 03 01:46	11°♑42'25	0°21'09
max. Earth dist.	1824 Jan 03 16:26	11°♑44'36	20.49883 AU
morning rise	1824 Jan 18 16:50	12°♑37'55	
retrograde	1824 Apr 20 00:03	15°♑47'57	
min. Earth dist.	1824 Jul 05 08:40	13°♑50'22	18.52970 AU
opposition	1824 Jul 06 00:36	13°♑48'45	-0°24'57
direct	1824 Sep 21 02:38	11°♑49'28	
evening set	1824 Dec 21 19:14	14°♑57'46	
conjunction	1825 Jan 06 09:59	15°♑53'01	-0°23'54
minimum elong	1825 Jan 06 09:59	15°♑53'01	0°23'53
max. Earth dist.	1825 Jan 07 02:42	15°♑55'30	20.56031 AU
morning rise	1825 Jan 22 01:03	16°♑48'20	
retrograde	1825 Apr 24 10:26	19°♑57'52	
opposition	1825 Jul 10 15:27	17°♑58'46	-0°27'55
min. Earth dist.	1825 Jul 09 23:04	18°♑00'25	18.59070 AU
direct	1825 Sep 25 15:08	15°♑59'49	
evening set	1825 Dec 26 02:52	19°♑07'02	
conjunction	1826 Jan 10 17:28	20°♑02'05	-0°26'30
minimum elong	1826 Jan 10 17:28	20°♑02'05	0°26'31
max. Earth dist.	1826 Jan 11 10:59	20°♑04'40	20.62067 AU
morning rise	1826 Jan 26 08:48	20°♑57'13	
retrograde	1826 Apr 28 22:01	24°♑06'19	
min. Earth dist.	1826 Jul 14 10:50	22°♑09'11	18.65023 AU
opposition	1826 Jul 15 05:28	22°♑07'18	-0°30'44
direct	1826 Sep 30 03:58	20°♑08'42	
evening set	1826 Dec 30 10:01	23°♑14'55	
conjunction	1827 Jan 15 00:39	24°♑09'46	-0°28'59
minimum elong	1827 Jan 15 00:39	24°♑09'46	0°28'58
max. Earth dist.	1827 Jan 15 19:57	24°♑12'36	20.67909 AU
morning rise	1827 Jan 30 16:05	25°♑04'44	
retrograde	1827 May 03 07:26	28°♑13'25	
opposition	1827 Jul 19 18:50	26°♑14'31	-0°33'22
min. Earth dist.	1827 Jul 19 00:08	26°♑16'24	18.70758 AU
direct	1827 Oct 04 14:43	24°♑16'15	
evening set	1828 Jan 03 16:42	27°♑21'31	
conjunction	1828 Jan 19 07:17	28°♑16'11	-0°31'17
minimum elong	1828 Jan 19 07:17	28°♑16'11	0°31'17
max. Earth dist.	1828 Jan 20 02:57	28°♑19'04	20.73520 AU
morning rise	1828 Feb 03 23:05	29°♑11'00	
	1828 Feb 18 16:09	0°♒	
retrograde	1828 May 06 18:46	2°♒19'19	
min. Earth dist.	1828 Jul 22 11:11	0°♒22'34	18.76227 AU
opposition	1828 Jul 23 07:41	0°♒20'31	-0°35'49
	1828 Jul 31 21:46	30°℞♑	
direct	1828 Oct 08 01:56	28°♑22'34	
	1828 Dec 10 14:53	0°♒	
evening set	1829 Jan 06 22:48	1°♒26'56	
conjunction	1829 Jan 22 13:31	2°♒21'26	-0°33'25
minimum elong	1829 Jan 22 13:31	2°♒21'26	0°33'25
max. Earth dist.	1829 Jan 23 10:49	2°♒24'33	20.78818 AU
morning rise	1829 Feb 07 05:33	3°♒16'08	
retrograde	1829 May 11 03:23	6°♒24'06	
opposition	1829 Jul 27 20:07	4°♒25'24	-0°38'05
min. Earth dist.	1829 Jul 26 23:47	4°♒27'26	18.81356 AU
direct	1829 Oct 12 11:31	2°♒27'46	
evening set	1830 Jan 11 04:40	5°♒31'16	
conjunction	1830 Jan 26 19:29	6°♒25'37	-0°35'23
minimum elong	1830 Jan 26 19:29	6°♒25'37	0°35'23
max. Earth dist.	1830 Jan 27 16:42	6°♒28'43	20.83757 AU
morning rise	1830 Feb 11 12:00	7°♒20'12	
retrograde	1830 May 15 14:21	10°♒27'52	
min. Earth dist.	1830 Jul 31 10:08	8°♒31'23	18.86094 AU
opposition	1830 Aug 01 07:43	8°♒29'14	-0°40'09
direct	1830 Oct 16 21:16	6°♒31'52	
evening set	1831 Jan 15 10:08	9°♒34'34	
conjunction	1831 Jan 31 01:16	10°♒28'48	-0°37'10
minimum elong	1831 Jan 31 01:16	10°♒28'48	0°37'10
max. Earth dist.	1831 Jan 31 23:40	10°♒32'04	20.88258 AU
morning rise	1831 Feb 15 18:09	11°♒23'17	
retrograde	1831 May 19 22:07	14°♒30'40	
opposition	1831 Aug 05 19:00	12°♒32'05	-0°42'00

min. Earth dist.	1831 Aug 04 21:53	12°♒34'11	18.90363 AU
direct	1831 Oct 21 05:59	10°♒34'57	
evening set	1832 Jan 19 15:16	13°♒36'54	
conjunction	1832 Feb 04 06:35	14°♒31'01	-0°38'46
minimum elong	1832 Feb 04 06:35	14°♒31'01	0°38'45
max. Earth dist.	1832 Feb 05 04:32	14°♒34'12	20.92285 AU
	1832 Feb 12 14:25	15°♒	
morning rise	1832 Feb 20 00:03	15°♒25'25	
retrograde	1832 May 23 08:14	18°♒32'33	
min. Earth dist.	1832 Aug 08 07:38	16°♒36'09	18.94146 AU
opposition	1832 Aug 09 05:43	16°♒33'57	-0°43'39
	1832 Sep 23 18:09	15°℞♒	
direct	1832 Oct 24 14:30	14°♒37'00	
	1832 Nov 23 16:46	15°♒	
evening set	1833 Jan 22 20:02	17°♒38'15	
conjunction	1833 Feb 07 11:49	18°♒32'17	-0°40'09
minimum elong	1833 Feb 07 11:49	18°♒32'17	0°40'10
max. Earth dist.	1833 Feb 08 10:49	18°♒35'36	20.95811 AU
morning rise	1833 Feb 23 05:46	19°♒26'37	
retrograde	1833 May 27 15:26	22°♒33'31	
opposition	1833 Aug 13 15:57	20°♒34'53	-0°45'04
min. Earth dist.	1833 Aug 12 18:22	20°♒37'02	18.97430 AU
direct	1833 Oct 28 22:29	18°♒38'05	
evening set	1834 Jan 27 00:30	21°♒38'40	
conjunction	1834 Feb 11 16:39	22°♒32'37	-0°41'20
minimum elong	1834 Feb 11 16:39	22°♒32'37	0°41'20
max. Earth dist.	1834 Feb 12 15:06	22°♒35'51	20.98866 AU
morning rise	1834 Feb 27 11:22	23°♒26'55	
retrograde	1834 Jun 01 00:38	26°♒33'36	
min. Earth dist.	1834 Aug 17 03:13	24°♒37'08	19.00257 AU
opposition	1834 Aug 18 01:33	24°♒34'54	-0°46'15
direct	1834 Nov 02 05:31	22°♒38'12	
evening set	1835 Jan 31 04:42	25°♒38'11	
conjunction	1835 Feb 15 21:23	26°♒32'05	-0°42'19
minimum elong	1835 Feb 15 21:23	26°♒32'05	0°42'20
max. Earth dist.	1835 Feb 16 20:54	26°♒35'28	21.01463 AU
morning rise	1835 Mar 03 16:37	27°♒26'21	
	1835 Apr 29 09:41	0°♓	
retrograde	1835 Jun 05 07:22	0°♓32'52	
	1835 Jul 13 06:14	30°℞♒	
opposition	1835 Aug 22 10:36	28°♒34'06	-0°47'13
min. Earth dist.	1835 Aug 21 12:39	28°♒36'17	19.02652 AU
direct	1835 Nov 06 12:34	26°♒37'30	
evening set	1836 Feb 04 08:45	29°♒36'57	
	1836 Feb 11 03:28	0°♓	
conjunction	1836 Feb 20 01:52	0°♓30'48	-0°43'05
minimum elong	1836 Feb 20 01:52	0°♓30'48	0°43'05
max. Earth dist.	1836 Feb 21 00:49	0°♓34'06	21.03672 AU
morning rise	1836 Mar 06 21:54	1°♓25'03	
retrograde	1836 Jun 08 16:16	4°♓31'27	
opposition	1836 Aug 25 19:18	2°♓32'37	-0°47'57
min. Earth dist.	1836 Aug 24 20:36	2°♓34'53	19.04680 AU
direct	1836 Nov 09 18:35	0°♓36'06	
evening set	1837 Feb 07 12:29	3°♓35'06	
conjunction	1837 Feb 23 06:16	4°♓28'56	-0°43'39
minimum elong	1837 Feb 23 06:16	4°♓28'56	0°43'39
max. Earth dist.	1837 Feb 24 06:20	4°♓32'23	21.05506 AU
morning rise	1837 Mar 11 02:58	5°♓23'12	
retrograde	1837 Jun 12 22:59	8°♓29'31	
min. Earth dist.	1837 Aug 29 05:15	6°♓32'51	19.06336 AU
opposition	1837 Aug 30 03:37	6°♓30'37	-0°48'27
direct	1837 Nov 14 00:16	4°♓34'12	
evening set	1838 Feb 11 16:23	7°♓32'49	
conjunction	1838 Feb 27 10:44	8°♓26'40	-0°44'00
minimum elong	1838 Feb 27 10:44	8°♓26'40	0°44'00
max. Earth dist.	1838 Feb 28 10:02	8°♓30'00	21.06991 AU
morning rise	1838 Mar 15 08:20	9°♓20'57	
retrograde	1838 Jun 17 08:02	12°♓27'14	
opposition	1838 Sep 03 11:24	10°♓28'17	-0°48'43
min. Earth dist.	1838 Sep 02 12:38	10°♓30'34	19.07643 AU
direct	1838 Nov 18 05:53	8°♓31'56	
evening set	1839 Feb 15 20:12	11°♓30'17	
conjunction	1839 Mar 03 15:21	12°♓24'09	-0°44'09
minimum elong	1839 Mar 03 15:21	12°♓24'09	0°44'09
max. Earth dist.	1839 Mar 04 15:30	12°♓27'36	21.08103 AU
morning rise	1839 Mar 19 13:39	13°♓18'28	
retrograde	1839 Jun 21 15:03	16°♓24'47	
opposition	1839 Sep 07 19:05	14°♓25'48	-0°48'46
min. Earth dist.	1839 Sep 06 20:49	14°♓28'02	19.08564 AU
direct	1839 Nov 22 10:16	12°♓29'33	
evening set	1840 Feb 20 00:04	15°♓27'39	
conjunction	1840 Mar 06 19:51	16°♓21'33	-0°44'05
minimum elong	1840 Mar 06 19:51	16°♓21'33	0°44'06
max. Earth dist.	1840 Mar 07 19:04	16°♓24'52	21.08842 AU
morning rise	1840 Mar 22 19:07	17°♓15'56	
retrograde	1840 Jun 25 00:07	20°♓22'20	
min. Earth dist.	1840 Sep 10 04:15	18°♓25'33	19.09104 AU
opposition	1840 Sep 11 02:36	18°♓23'18	-0°48'34
direct	1840 Nov 25 15:53	16°♓27'07	
evening set	1841 Feb 23 04:11	19°♓25'05	
conjunction	1841 Mar 11 00:50	20°♓19'03	-0°43'49
minimum elong	1841 Mar 11 00:50	20°♓19'03	0°43'49
max. Earth dist.	1841 Mar 12 00:42	20°♓22'28	21.09168 AU
morning rise	1841 Mar 27 00:54	21°♓13'31	
retrograde	1841 Jun 29 07:57	24°♓20'00	
opposition	1841 Sep 15 09:52	22°♓20'58	-0°48'09
min. Earth dist.	1841 Sep 14 12:19	22°♓23'07	19.09210 AU
direct	1841 Nov 29 20:12	20°♓24'50	
evening set	1842 Feb 27 08:39	23°♓22'44	
conjunction	1842 Mar 15 06:02	24°♓16'46	-0°43'21
minimum elong	1842 Mar 15 06:02	24°♓16'46	0°43'21
max. Earth dist.	1842 Mar 16 04:30	24°♓19'59	21.09058 AU
morning rise	1842 Mar 31 07:09	25°♓11'20	
retrograde	1842 Jul 03 17:02	28°♓17'58	
opposition	1842 Sep 19 17:04	26°♓18'53	-0°47'31
min. Earth dist.	1842 Sep 18 20:00	26°♓21'00	19.08859 AU
direct	1842 Dec 04 01:17	24°♓22'46	
evening set	1843 Mar 03 13:22	27°♓20'41	
conjunction	1843 Mar 19 11:40	28°♓14'50	-0°42'40
minimum elong	1843 Mar 19 11:40	28°♓14'50	0°42'39
max. Earth dist.	1843 Mar 20 10:19	28°♓18'03	21.08444 AU
morning rise	1843 Apr 04 13:33	29°♓09'29	
	1843 Apr 20 05:18	0°♈	
retrograde	1843 Jul 08 01:20	2°♈16'19	
min. Earth dist.	1843 Sep 23 04:11	0°♈19'11	19.07979 AU
opposition	1843 Sep 24 00:09	0°♈17'10	-0°46'39
	1843 Oct 01 03:37	30°℞♓	
direct	1843 Dec 08 06:26	28°♓21'04	
	1844 Feb 10 10:51	0°♈	
evening set	1844 Mar 06 18:34	1°♈19'02	
conjunction	1844 Mar 22 17:39	2°♈13'17	-0°41'46

minimum elong	1844 Mar 22 17:39	2°♈13'17	0°41'47
max. Earth dist.	1844 Mar 23 14:24	2°♈16'15	21.07305 AU
morning rise	1844 Apr 07 20:36	3°♈08'05	
retrograde	1844 Jul 11 10:28	6°♈15'07	
opposition	1844 Sep 27 07:17	4°♈15'53	-0°45'33
min. Earth dist.	1844 Sep 26 12:11	4°♈17'48	19.06562 AU
direct	1844 Dec 11 11:04	2°♈19'42	
evening set	1845 Mar 10 23:58	5°♈17'47	
conjunction	1845 Mar 27 00:07	6°♈12'11	-0°40'41
minimum elong	1845 Mar 27 00:07	6°♈12'11	0°40'40
max. Earth dist.	1845 Mar 27 20:39	6°♈15'07	21.05595 AU
morning rise	1845 Apr 12 03:56	7°♈07'07	
retrograde	1845 Jul 15 18:58	10°♈14'22	
opposition	1845 Oct 01 14:23	8°♈15'01	-0°44'14
min. Earth dist.	1845 Sep 30 20:32	8°♈16'49	19.04556 AU
direct	1845 Dec 15 17:01	6°♈18'44	
evening set	1846 Mar 15 05:59	9°♈17'00	
conjunction	1846 Mar 31 07:00	10°♈11'32	-0°39'23
minimum elong	1846 Mar 31 07:00	10°♈11'32	0°39'22
max. Earth dist.	1846 Apr 01 01:16	10°♈14'09	21.03320 AU
morning rise	1846 Apr 16 11:56	11°♈06'37	
retrograde	1846 Jul 20 04:09	14°♈14'07	
opposition	1846 Oct 05 21:17	12°♈14'36	-0°42'42
min. Earth dist.	1846 Oct 05 04:37	12°♈16'17	19.02004 AU
direct	1846 Dec 19 21:53	10°♈18'08	
evening set	1847 Mar 19 12:12	13°♈16'39	
conjunction	1847 Apr 04 14:19	14°♈11'22	-0°37'53
minimum elong	1847 Apr 04 14:19	14°♈11'22	0°37'54
max. Earth dist.	1847 Apr 05 08:19	14°♈13'56	21.00505 AU
morning rise	1847 Apr 20 20:05	15°♈06'37	
retrograde	1847 Jul 24 12:36	18°♈14'22	
opposition	1847 Oct 10 04:18	16°♈14'40	-0°40'57
min. Earth dist.	1847 Oct 09 12:45	16°♈16'15	18.98937 AU
direct	1847 Dec 24 03:54	14°♈18'01	
evening set	1848 Mar 22 18:49	17°♈16'50	
conjunction	1848 Apr 07 21:49	18°♈11'43	-0°36'12
minimum elong	1848 Apr 07 21:49	18°♈11'43	0°36'12
max. Earth dist.	1848 Apr 08 13:43	18°♈13'59	20.97226 AU
morning rise	1848 Apr 24 04:44	19°♈07'09	
retrograde	1848 Jul 27 22:32	22°♈15'14	
opposition	1848 Oct 13 11:23	20°♈15'20	-0°38'59
min. Earth dist.	1848 Oct 12 21:00	20°♈16'48	18.95444 AU
direct	1848 Dec 27 09:19	18°♈18'27	
evening set	1849 Mar 27 01:58	21°♈17'39	
conjunction	1849 Apr 12 06:07	22°♈12'44	-0°34'20
minimum elong	1849 Apr 12 06:07	22°♈12'44	0°34'21
max. Earth dist.	1849 Apr 12 21:52	22°♈14'59	20.93531 AU
morning rise	1849 Apr 28 13:53	23°♈08'22	
retrograde	1849 Aug 01 07:18	26°♈16'46	
opposition	1849 Oct 17 18:22	24°♈16'41	-0°36'50
min. Earth dist.	1849 Oct 17 05:02	24°♈18'03	18.91558 AU
direct	1849 Dec 31 15:07	22°♈19'35	
evening set	1850 Mar 31 09:47	25°♈19'15	
conjunction	1850 Apr 16 14:50	26°♈14'33	-0°32'18
minimum elong	1850 Apr 16 14:50	26°♈14'33	0°32'18
max. Earth dist.	1850 Apr 17 04:22	26°♈16'29	20.89483 AU
morning rise	1850 May 02 23:44	27°♈10'24	
	1850 Jul 08 15:28	0°♉	
retrograde	1850 Aug 05 18:12	0°♉19'12	
	1850 Sep 03 01:03	30°℞♈	
opposition	1850 Oct 22 01:38	28°♈18'55	-0°34'29
min. Earth dist.	1850 Oct 21 13:33	28°♈20'09	18.87347 AU
direct	1851 Jan 04 21:05	26°♈21'34	
evening set	1851 Apr 04 17:58	29°♈21'47	
	1851 Apr 15 23:26	0°♉	
conjunction	1851 Apr 21 00:09	0°♉17'19	-0°30'06
minimum elong	1851 Apr 21 00:09	0°♉17'19	0°30'06
max. Earth dist.	1851 Apr 21 13:33	0°♉19'14	20.85112 AU
morning rise	1851 May 07 09:49	1°♉13'23	
retrograde	1851 Aug 10 03:39	4°♉22'37	
opposition	1851 Oct 26 09:03	2°♉22'11	-0°31'58
min. Earth dist.	1851 Oct 25 21:53	2°♉23'20	18.82825 AU
direct	1852 Jan 09 03:14	0°♉24'36	
evening set	1852 Apr 08 03:01	3°♉25'27	
conjunction	1852 Apr 24 10:05	4°♉21'13	-0°27'44
minimum elong	1852 Apr 24 10:05	4°♉21'13	0°27'44
max. Earth dist.	1852 Apr 24 21:10	4°♉22'49	20.80468 AU
morning rise	1852 May 10 20:52	5°♉17'32	
retrograde	1852 Aug 13 15:10	8°♉27'14	
opposition	1852 Oct 29 16:46	6°♉26'40	-0°29'16
min. Earth dist.	1852 Oct 29 07:02	6°♉27'40	18.78051 AU
direct	1853 Jan 12 09:50	4°♉28'50	
evening set	1853 Apr 12 12:39	7°♉30'23	
conjunction	1853 Apr 28 20:55	8°♉26'26	-0°25'13
minimum elong	1853 Apr 28 20:55	8°♉26'26	0°25'13
max. Earth dist.	1853 Apr 29 07:43	8°♉27'59	20.75562 AU
morning rise	1853 May 15 08:29	9°♉22'59	
retrograde	1853 Aug 18 02:13	12°♉33'12	
opposition	1853 Nov 03 00:47	10°♉32'31	-0°26'25
min. Earth dist.	1853 Nov 02 16:02	10°♉33'25	18.73008 AU
direct	1854 Jan 16 16:57	8°♉34'28	
evening set	1854 Apr 16 23:18	11°♉36'48	
conjunction	1854 May 03 08:25	12°♉33'07	-0°22'34
minimum elong	1854 May 03 08:25	12°♉33'07	0°22'34
max. Earth dist.	1854 May 03 16:36	12°♉34'17	20.70404 AU
morning rise	1854 May 19 21:01	13°♉29'56	
	1854 Jun 17 14:44	15°♉	
retrograde	1854 Aug 22 14:06	16°♉40'41	
	1854 Oct 30 06:21	15°℞♉	
opposition	1854 Nov 07 09:09	14°♉39'54	-0°23'24
min. Earth dist.	1854 Nov 07 02:10	14°♉40'37	18.67723 AU
direct	1855 Jan 21 00:14	12°♉41'36	
	1855 Apr 07 19:29	15°♉	
evening set	1855 Apr 21 10:39	15°♉44'48	
conjunction	1855 May 07 20:54	16°♉41'24	-0°19'47
minimum elong	1855 May 07 20:54	16°♉41'25	0°19'46
max. Earth dist.	1855 May 08 04:37	16°♉42'31	20.64991 AU
morning rise	1855 May 24 10:10	17°♉38'29	
retrograde	1855 Aug 27 02:55	20°♉49'49	
opposition	1855 Nov 11 17:58	18°♉48'56	-0°20'15
min. Earth dist.	1855 Nov 11 12:06	18°♉49'33	18.62170 AU
direct	1856 Jan 25 08:41	16°♉50'24	
evening set	1856 Apr 24 22:59	19°♉54'31	
conjunction	1856 May 11 10:04	20°♉51'25	-0°16'52
minimum elong	1856 May 11 10:04	20°♉51'25	0°16'52
max. Earth dist.	1856 May 11 14:52	20°♉52'06	20.59309 AU
morning rise	1856 May 28 00:20	21°♉48'46	
retrograde	1856 Aug 30 15:43	25°♉00'42	
opposition	1856 Nov 15 03:22	22°♉59'43	-0°16'58
min. Earth dist.	1856 Nov 14 23:41	23°♉00'06	18.56342 AU
direct	1857 Jan 28 16:59	21°♉00'53	
evening set	1857 Apr 29 12:20	24°♉06'00	

conjunction	1857 May 16 00:31	25°♉03'11	-0°13'51
minimum elong	1857 May 16 00:31	25°♉03'11	0°13'50
behind sun begin	1857 May 15 21:08	25°♉02'43	
behind sun end	1857 May 16 03:54	25°♉03'40	
max. Earth dist.	1857 May 16 04:25	25°♉03'45	20.53324 AU
morning rise	1857 Jun 01 15:22	26°♉00'49	
retrograde	1857 Sep 04 05:57	29°♉13'20	
opposition	1857 Nov 19 13:05	27°♉12'14	-0°13'34
min. Earth dist.	1857 Nov 19 10:41	27°♉12'30	18.50195 AU
direct	1858 Feb 02 03:03	25°♉13'05	
evening set	1858 May 04 02:47	28°♉19'13	
conjunction	1858 May 20 15:42	29°♉16'43	-0°10'44
minimum elong	1858 May 20 15:42	29°♉16'43	0°10'44
behind sun begin	1858 May 20 10:35	29°♉15'59	
behind sun end	1858 May 20 20:49	29°♉17'26	
max. Earth dist.	1858 May 20 16:16	29°♉16'47	20.47029 AU
	1858 Jun 02 01:24	0°♊	
morning rise	1858 Jun 06 07:24	0°♊14'36	
retrograde	1858 Sep 08 19:55	3°♊27'44	
opposition	1858 Nov 23 23:33	1°♊26'29	-0°10'04
min. Earth dist.	1858 Nov 23 23:32	1°♊26'29	18.43754 AU
	1859 Jan 01 07:48	30°℞♉	
direct	1859 Feb 06 12:44	29°♉26'57	
	1859 Mar 14 03:36	0°♊	
evening set	1859 May 08 17:46	2°♊34'07	
conjunction	1859 May 25 07:43	3°♊31'55	-0°07'33
minimum elong	1859 May 25 07:42	3°♊31'55	0°07'33
behind sun begin	1859 May 25 01:36	3°♊31'03	
behind sun end	1859 May 25 13:49	3°♊32'48	
max. Earth dist.	1859 May 25 07:22	3°♊31'53	20.40446 AU
morning rise	1859 Jun 10 23:54	4°♊30'06	
retrograde	1859 Sep 13 11:22	7°♊43'48	
opposition	1859 Nov 28 10:25	5°♊42'23	-0°06'29
min. Earth dist.	1859 Nov 28 11:27	5°♊42'17	18.37037 AU
direct	1860 Feb 11 00:13	3°♊42'27	
evening set	1860 May 12 09:57	6°♊50'42	
conjunction	1860 May 29 00:34	7°♊48'48	-0°04'18
minimum elong	1860 May 29 00:33	7°♊48'48	0°04'18
behind sun begin	1860 May 28 17:55	7°♊47'51	
behind sun end	1860 May 29 07:12	7°♊49'45	
max. Earth dist.	1860 May 28 21:00	7°♊48'19	20.33629 AU
morning rise	1860 Jun 14 17:30	8°♊47'16	
retrograde	1860 Sep 17 02:32	12°♊01'33	
opposition	1860 Dec 01 21:48	9°♊59'55	-0°02'50
min. Earth dist.	1860 Dec 02 01:16	9°♊59'33	18.30135 AU
direct	1861 Feb 14 11:15	7°♊59'32	
evening set	1861 May 17 02:52	11°♊08'54	
conjunction	1861 Jun 02 18:26	12°♊07'19	-0°00'57
minimum elong	1861 Jun 02 18:26	12°♊07'19	0°00'58
behind sun begin	1861 Jun 02 11:41	12°♊06'21	
behind sun end	1861 Jun 03 01:11	12°♊08'18	
max. Earth dist.	1861 Jun 02 14:01	12°♊06'43	20.26656 AU
morning rise	1861 Jun 19 11:46	13°♊06'03	
asc. node	1861 Sep 12 17:23	16°♊18'46	
retrograde	1861 Sep 21 19:20	16°♊20'54	
opposition	1861 Dec 06 09:38	14°♊19'06	0°00'51
min. Earth dist.	1861 Dec 06 13:56	14°♊18'38	18.23103 AU
direct	1862 Feb 19 00:13	12°♊18'15	
evening set	1862 May 21 20:48	15°♊28'46	
conjunction	1862 Jun 07 12:53	16°♊27'29	0°02'29
minimum elong	1862 Jun 07 12:52	16°♊27'29	0°02'30
behind sun begin	1862 Jun 07 06:07	16°♊26'31	
behind sun end	1862 Jun 07 19:38	16°♊28'28	
max. Earth dist.	1862 Jun 07 05:33	16°♊26'26	20.19592 AU
morning rise	1862 Jun 24 06:45	17°♊26'30	
retrograde	1862 Sep 26 11:19	20°♊41'56	
opposition	1862 Dec 10 22:07	18°♊39'55	0°04'33
min. Earth dist.	1862 Dec 11 04:44	18°♊39'12	18.16036 AU
direct	1863 Feb 23 12:15	16°♊38'36	
evening set	1863 May 26 15:29	19°♊50'18	
conjunction	1863 Jun 12 08:20	20°♊49'21	0°05'49
minimum elong	1863 Jun 12 08:20	20°♊49'21	0°05'49
behind sun begin	1863 Jun 12 01:52	20°♊48'25	
behind sun end	1863 Jun 12 14:48	20°♊50'17	
max. Earth dist.	1863 Jun 12 00:20	20°♊48'11	20.12533 AU
morning rise	1863 Jun 29 02:27	21°♊48'37	
retrograde	1863 Oct 01 05:42	25°♊04'38	
opposition	1863 Dec 15 11:04	23°♊02'26	0°08'15
min. Earth dist.	1863 Dec 15 18:12	23°♊01'40	18.09004 AU
direct	1864 Feb 28 03:03	21°♊00'40	
evening set	1864 May 30 11:10	24°♊13'35	
conjunction	1864 Jun 16 04:28	25°♊12'55	0°09'07
minimum elong	1864 Jun 16 04:28	25°♊12'55	0°09'08
behind sun begin	1864 Jun 15 22:45	25°♊12'06	
behind sun end	1864 Jun 16 10:10	25°♊13'45	
max. Earth dist.	1864 Jun 15 17:55	25°♊11'22	20.05541 AU
morning rise	1864 Jul 02 22:58	26°♊12'28	
retrograde	1864 Oct 04 22:23	29°♊29'04	
opposition	1864 Dec 19 00:51	27°♊26'42	0°11'56
min. Earth dist.	1864 Dec 19 10:14	27°♊25'41	18.02079 AU
direct	1865 Mar 03 16:13	25°♊24'30	
evening set	1865 Jun 04 07:45	28°♊38'40	
conjunction	1865 Jun 21 01:40	29°♊38'18	0°12'24
minimum elong	1865 Jun 21 01:40	29°♊38'18	0°12'25
behind sun begin	1865 Jun 20 21:21	29°♊37'40	
behind sun end	1865 Jun 21 05:59	29°♊38'56	
max. Earth dist.	1865 Jun 20 14:23	29°♊36'37	19.98688 AU
	1865 Jun 27 02:36	0°♋	
morning rise	1865 Jul 07 20:16	0°♋38'06	
retrograde	1865 Oct 09 18:20	3°♋55'17	
opposition	1865 Dec 23 15:05	1°♋52'47	0°15'33
min. Earth dist.	1865 Dec 24 00:46	1°♋51'45	17.95313 AU
	1866 Feb 17 02:50	30°℞♊	
direct	1866 Mar 08 08:54	29°♊50'11	
	1866 Mar 27 12:01	0°♋	
evening set	1866 Jun 09 05:23	3°♋05'37	
conjunction	1866 Jun 25 23:35	4°♋05'33	0°15'38
minimum elong	1866 Jun 25 23:35	4°♋05'33	0°15'37
behind sun begin	1866 Jun 25 22:43	4°♋05'26	
behind sun end	1866 Jun 26 00:27	4°♋05'41	
max. Earth dist.	1866 Jun 25 10:10	4°♋03'33	19.92018 AU
morning rise	1866 Jul 12 18:19	5°♋05'36	
retrograde	1866 Oct 14 12:05	8°♋23'23	
opposition	1866 Dec 28 06:19	6°♋20'48	0°19'07
min. Earth dist.	1866 Dec 28 18:06	6°♋19'31	17.88767 AU
direct	1867 Mar 12 23:33	4°♋17'49	
evening set	1867 Jun 14 03:38	7°♋34'33	
conjunction	1867 Jun 30 22:15	8°♋34'46	0°18'47
minimum elong	1867 Jun 30 22:15	8°♋34'46	0°18'47
max. Earth dist.	1867 Jun 30 08:01	8°♋32'37	19.85596 AU
morning rise	1867 Jul 17 17:00	9°♋35'02	
retrograde	1867 Oct 19 09:30	12°♋53'26	
opposition	1868 Jan 01 22:07	10°♋50'47	0°22'35
min. Earth dist.	1868 Jan 02 10:04	10°♋49'29	17.82465 AU

direct	1868 Mar 16 17:55	8°♋47'28	
evening set	1868 Jun 18 03:08	12°♋05'31	
conjunction	1868 Jul 04 21:56	13°♋06'00	0°21'51
minimum elong	1868 Jul 04 21:56	13°♋06'00	0°21'50
max. Earth dist.	1868 Jul 04 05:57	13°♋03'36	19.79411 AU
morning rise	1868 Jul 21 16:36	14°♋06'31	
retrograde	1868 Oct 23 04:33	17°♋25'29	
opposition	1869 Jan 05 14:43	15°♋22'50	0°25'56
min. Earth dist.	1869 Jan 06 04:56	15°♋21'17	17.76411 AU
direct	1869 Mar 21 10:22	13°♋19'11	
evening set	1869 Jun 23 03:34	16°♋38'34	
conjunction	1869 Jul 09 22:31	17°♋39'19	0°24'48
minimum elong	1869 Jul 09 22:31	17°♋39'19	0°24'48
max. Earth dist.	1869 Jul 09 05:10	17°♋36'41	19.73478 AU
morning rise	1869 Jul 26 17:01	18°♋40'01	
retrograde	1869 Oct 28 03:13	21°♋59'34	
opposition	1870 Jan 10 08:04	19°♋56'54	0°29'10
min. Earth dist.	1870 Jan 10 22:37	19°♋55'19	17.70593 AU
direct	1870 Mar 26 06:45	17°♋52'58	
evening set	1870 Jun 28 04:47	21°♋13'38	
conjunction	1870 Jul 14 23:45	22°♋14'37	0°27'37
minimum elong	1870 Jul 14 23:45	22°♋14'37	0°27'37
max. Earth dist.	1870 Jul 14 05:02	22°♋11'46	19.67755 AU
morning rise	1870 Jul 31 17:52	23°♋15'31	
retrograde	1870 Nov 01 23:15	26°♋35'36	
opposition	1871 Jan 15 02:23	24°♋32'56	0°32'13
min. Earth dist.	1871 Jan 15 19:07	24°♋31'07	17.64991 AU
direct	1871 Mar 31 01:30	22°♋28'42	
evening set	1871 Jul 03 06:51	25°♋50'36	
max. Earth dist.	1871 Jul 19 05:15	26°♋48'40	19.62265 AU
conjunction	1871 Jul 20 01:43	26°♋51'48	0°30'16
minimum elong	1871 Jul 20 01:43	26°♋51'48	0°30'16
morning rise	1871 Aug 05 19:35	27°♋52'52	
	1871 Sep 14 18:57	0°♌	
retrograde	1871 Nov 06 22:32	1°♌13'28	
	1871 Dec 31 12:36	30°℞♋	
opposition	1872 Jan 19 21:14	29°♋10'46	0°35'06
min. Earth dist.	1872 Jan 20 14:17	29°♋08'54	17.59620 AU
direct	1872 Apr 03 23:55	27°♋06'12	
	1872 Jun 29 02:56	0°♌	
evening set	1872 Jul 07 09:38	0°♌29'18	
max. Earth dist.	1872 Jul 23 07:06	1°♌27'25	19.57000 AU
conjunction	1872 Jul 24 04:27	1°♌30'42	0°32'45
minimum elong	1872 Jul 24 04:27	1°♌30'42	0°32'46
morning rise	1872 Aug 09 21:44	2°♌31'55	
retrograde	1872 Nov 10 19:52	5°♌52'57	
opposition	1873 Jan 23 17:02	3°♌50'13	0°37'46
min. Earth dist.	1873 Jan 24 12:00	3°♌48'09	17.54488 AU
direct	1873 Apr 08 21:15	1°♌45'21	
evening set	1873 Jul 12 13:07	5°♌09'34	
max. Earth dist.	1873 Jul 28 08:15	6°♌07'33	19.52010 AU
conjunction	1873 Jul 29 07:34	6°♌11'08	0°35'02
minimum elong	1873 Jul 29 07:34	6°♌11'08	0°35'02
morning rise	1873 Aug 15 00:25	7°♌12'29	
retrograde	1873 Nov 15 19:30	10°♌33'54	
opposition	1874 Jan 28 13:19	8°♌31'08	0°40'11
min. Earth dist.	1874 Jan 29 08:31	8°♌29'02	17.49658 AU
direct	1874 Apr 13 21:11	6°♌25'56	
evening set	1874 Jul 17 16:58	9°♌51'13	
max. Earth dist.	1874 Aug 02 11:50	10°♌49'19	19.47341 AU

conjunction	1874 Aug 03 11:12	10°♌52'56	0°37'05
minimum elong	1874 Aug 03 11:12	10°♌52'56	0°37'05
morning rise	1874 Aug 20 03:15	11°♌54'23	
	1874 Oct 27 15:55	15°♌	
retrograde	1874 Nov 20 18:14	15°♌16'08	
	1874 Dec 15 03:42	15°℞♌	
opposition	1875 Feb 02 10:23	13°♌13'20	0°42'21
min. Earth dist.	1875 Feb 03 06:53	13°♌11'05	17.45181 AU
direct	1875 Apr 18 19:58	11°♌07'50	
evening set	1875 Jul 22 21:13	14°♌34'04	
	1875 Jul 29 23:05	15°♌	
conjunction	1875 Aug 08 14:53	15°♌35'54	0°38'54
minimum elong	1875 Aug 08 14:53	15°♌35'54	0°38'54
max. Earth dist.	1875 Aug 07 13:47	15°♌32'01	19.43072 AU
morning rise	1875 Aug 25 06:27	16°♌37'27	
retrograde	1875 Nov 25 18:36	19°♌59'29	
opposition	1876 Feb 07 07:57	17°♌56'37	0°44'14
min. Earth dist.	1876 Feb 08 04:35	17°♌54'22	17.41134 AU
direct	1876 Apr 22 20:48	15°♌50'49	
evening set	1876 Jul 27 01:48	19°♌17'57	
conjunction	1876 Aug 12 19:07	20°♌19'53	0°40'27
minimum elong	1876 Aug 12 19:07	20°♌19'53	0°40'26
max. Earth dist.	1876 Aug 11 18:39	20°♌16'05	19.39246 AU
morning rise	1876 Aug 29 09:43	21°♌21'29	
retrograde	1876 Nov 29 18:22	24°♌43'44	
opposition	1877 Feb 11 06:02	22°♌40'51	0°45'50
min. Earth dist.	1877 Feb 12 03:22	22°♌38'31	17.37558 AU
direct	1877 Apr 27 20:29	20°♌34'47	
evening set	1877 Aug 01 06:47	24°♌02'43	
conjunction	1877 Aug 17 23:18	25°♌04'43	0°41'43
minimum elong	1877 Aug 17 23:18	25°♌04'43	0°41'44
max. Earth dist.	1877 Aug 16 21:28	25°♌00'42	19.35938 AU
morning rise	1877 Sep 03 13:11	26°♌06'21	
retrograde	1877 Dec 04 18:50	29°♌28'47	
opposition	1878 Feb 16 04:47	27°♌25'52	0°47'06
min. Earth dist.	1878 Feb 17 02:06	27°♌23'32	17.34541 AU
direct	1878 May 02 22:02	25°♌19'34	
evening set	1878 Aug 06 11:34	28°♌48'12	
max. Earth dist.	1878 Aug 22 03:00	29°♌46'25	19.33208 AU
conjunction	1878 Aug 23 03:31	29°♌50'15	0°42'43
minimum elong	1878 Aug 23 03:31	29°♌50'15	0°42'42
	1878 Aug 25 17:47	0°♍	
morning rise	1878 Sep 08 16:21	0°♍51'53	
retrograde	1878 Dec 09 18:58	4°♍14'26	
opposition	1879 Feb 21 04:02	2°♍11'32	0°48'03
min. Earth dist.	1879 Feb 22 01:09	2°♍09'13	17.32118 AU
direct	1879 May 07 22:56	0°♍05'05	
evening set	1879 Aug 11 16:44	3°♍34'19	
max. Earth dist.	1879 Aug 27 06:27	4°♍32'25	19.31107 AU
conjunction	1879 Aug 28 07:46	4°♍36'23	0°43'25
minimum elong	1879 Aug 28 07:46	4°♍36'23	0°43'24
morning rise	1879 Sep 13 19:44	5°♍37'59	
retrograde	1879 Dec 14 19:00	9°♍00'39	
opposition	1880 Feb 26 03:39	6°♍57'46	0°48'41
min. Earth dist.	1880 Feb 27 00:45	6°♍55'28	17.30355 AU
direct	1880 May 12 01:25	4°♍51'13	
evening set	1880 Aug 15 21:51	8°♍20'59	
conjunction	1880 Sep 01 12:12	9°♍23'02	0°43'49
minimum elong	1880 Sep 01 12:11	9°♍23'02	0°43'49
max. Earth dist.	1880 Aug 31 12:14	9°♍19'16	19.29673 AU
morning rise	1880 Sep 17 23:03	10°♍24'35	

retrograde	1880 Dec 18 19:23	13°♍47'16	
opposition	1881 Mar 02 03:50	11°♍44'31	0°48'59
min. Earth dist.	1881 Mar 03 00:08	11°♍42'17	17.29240 AU
direct	1881 May 17 04:15	9°♍37'56	
evening set	1881 Aug 21 03:00	13°♍08'07	
conjunction	1881 Sep 06 16:18	14°♍10'07	0°43'56
minimum elong	1881 Sep 06 16:18	14°♍10'07	0°43'55
max. Earth dist.	1881 Sep 05 16:10	14°♍06'19	19.28886 AU
morning rise	1881 Sep 23 02:08	15°♍11'36	
retrograde	1881 Dec 23 19:02	18°♍34'18	
opposition	1882 Mar 07 04:28	16°♍31'40	0°48'56
min. Earth dist.	1882 Mar 08 00:54	16°♍29'26	17.28780 AU
direct	1882 May 22 07:21	14°♍25'07	
evening set	1882 Aug 26 07:58	17°♍55'36	
conjunction	1882 Sep 11 20:22	18°♍57'32	0°43'44
minimum elong	1882 Sep 11 20:22	18°♍57'32	0°43'45
max. Earth dist.	1882 Sep 10 21:29	18°♍53'55	19.28738 AU
morning rise	1882 Sep 28 05:07	19°♍58'55	
retrograde	1882 Dec 28 20:00	23°♍21'34	
opposition	1883 Mar 12 05:22	21°♍19'05	0°48'33
min. Earth dist.	1883 Mar 13 00:37	21°♍16'59	17.28918 AU
direct	1883 May 27 11:36	19°♍12'37	
evening set	1883 Aug 31 12:48	22°♍43'18	
max. Earth dist.	1883 Sep 16 01:39	23°♍41'34	19.29158 AU
conjunction	1883 Sep 17 00:10	23°♍45'07	0°43'14
minimum elong	1883 Sep 17 00:10	23°♍45'07	0°43'14
morning rise	1883 Oct 03 07:48	24°♍46'24	
retrograde	1884 Jan 02 19:32	28°♍08'56	
opposition	1884 Mar 16 06:46	26°♍06'37	0°47'50
min. Earth dist.	1884 Mar 17 02:22	26°♍04'28	17.29614 AU
direct	1884 May 31 14:54	24°♍00'13	
evening set	1884 Sep 04 17:25	27°♍30'58	
max. Earth dist.	1884 Sep 20 05:58	28°♍29'14	19.30115 AU
conjunction	1884 Sep 21 03:42	28°♍32'40	0°42'27
minimum elong	1884 Sep 21 03:42	28°♍32'40	0°42'27
morning rise	1884 Oct 07 10:14	29°♍33'49	
	1884 Oct 14 14:35	0°♎	
retrograde	1885 Jan 06 20:48	2°♎56'11	
opposition	1885 Mar 21 08:16	0°♎54'00	0°46'47
min. Earth dist.	1885 Mar 22 02:22	0°♎52'02	17.30810 AU
	1885 Apr 11 18:15	30°℞♍	
direct	1885 Jun 05 20:05	28°♍47'44	
	1885 Jul 29 01:21	0°♎	
evening set	1885 Sep 09 21:38	2°♎18'25	
max. Earth dist.	1885 Sep 25 10:08	3°♎16'41	19.31554 AU
conjunction	1885 Sep 26 06:51	3°♎19'57	0°41'21
minimum elong	1885 Sep 26 06:51	3°♎19'57	0°41'22
morning rise	1885 Oct 12 12:09	4°♎20'56	
retrograde	1886 Jan 11 19:50	7°♎43'04	
opposition	1886 Mar 26 10:10	5°♎41'02	0°45'24
min. Earth dist.	1886 Mar 27 04:33	5°♎39'03	17.32492 AU
direct	1886 Jun 10 23:06	3°♎34'54	
evening set	1886 Sep 15 01:12	7°♎05'22	
conjunction	1886 Oct 01 09:15	8°♎06'43	0°39'59
minimum elong	1886 Oct 01 09:15	8°♎06'43	0°39'58
max. Earth dist.	1886 Sep 30 13:03	8°♎03'32	19.33473 AU
morning rise	1886 Oct 17 13:33	9°♎07'32	
retrograde	1887 Jan 16 20:58	12°♎29'23	
opposition	1887 Mar 31 11:56	10°♎27'29	0°43'43
min. Earth dist.	1887 Apr 01 04:29	10°♎25'42	17.34626 AU
direct	1887 Jun 16 04:25	8°♎21'29	
evening set	1887 Sep 20 04:16	11°♎51'37	
conjunction	1887 Oct 06 11:18	12°♎52'47	0°38'20
minimum elong	1887 Oct 06 11:18	12°♎52'47	0°38'20
max. Earth dist.	1887 Oct 05 16:48	12°♎49'52	19.35829 AU
morning rise	1887 Oct 22 14:21	13°♎53'24	
retrograde	1888 Jan 21 19:12	17°♎14'53	
opposition	1888 Apr 04 13:43	15°♎13'07	0°41'43
min. Earth dist.	1888 Apr 05 06:22	15°♎11'19	17.37201 AU
direct	1888 Jun 20 07:02	13°♎07'16	
evening set	1888 Sep 24 06:46	16°♎36'58	
conjunction	1888 Oct 10 12:32	17°♎37'55	0°36'25
minimum elong	1888 Oct 10 12:32	17°♎37'55	0°36'25
max. Earth dist.	1888 Oct 09 18:24	17°♎35'03	19.38635 AU
morning rise	1888 Oct 26 14:39	18°♎38'19	
retrograde	1889 Jan 25 19:34	21°♎59'23	
opposition	1889 Apr 09 15:23	19°♎57'43	0°39'27
min. Earth dist.	1889 Apr 10 05:59	19°♎56'09	17.40221 AU
direct	1889 Jun 25 11:39	17°♎52'02	
evening set	1889 Sep 29 08:11	21°♎21'10	
conjunction	1889 Oct 15 12:57	22°♎21'52	0°34'16
minimum elong	1889 Oct 15 12:57	22°♎21'52	0°34'16
max. Earth dist.	1889 Oct 14 21:18	22°♎19'25	19.41881 AU
morning rise	1889 Oct 31 13:50	23°♎22'03	
retrograde	1890 Jan 30 17:14	26°♎42'40	
opposition	1890 Apr 14 17:02	24°♎41'06	0°36'55
min. Earth dist.	1890 Apr 15 07:12	24°♎39'35	17.43689 AU
direct	1890 Jun 30 13:55	22°♎35'36	
evening set	1890 Oct 04 08:56	26°♎04'03	
conjunction	1890 Oct 20 12:26	27°♎04'30	0°31'53
minimum elong	1890 Oct 20 12:26	27°♎04'30	0°31'54
max. Earth dist.	1890 Oct 19 21:23	27°♎02'08	19.45592 AU
morning rise	1890 Nov 05 12:29	28°♎04'26	
	1890 Dec 10 06:56	0°♏	
retrograde	1891 Feb 04 16:06	1°♏24'32	
	1891 Apr 05 02:56	30°℞♎	
opposition	1891 Apr 19 18:05	29°♎23'05	0°34'08
min. Earth dist.	1891 Apr 20 06:03	29°♎21'48	17.47635 AU
direct	1891 Jul 05 17:40	27°♎17'46	
	1891 Sep 26 15:32	0°♏	
evening set	1891 Oct 09 08:37	0°♏45'27	
conjunction	1891 Oct 25 11:12	1°♏45'38	0°29'19
minimum elong	1891 Oct 25 11:12	1°♏45'38	0°29'18
max. Earth dist.	1891 Oct 24 23:02	1°♏43'44	19.49777 AU
morning rise	1891 Nov 10 10:04	2°♏45'18	
retrograde	1892 Feb 09 12:42	6°♏04'53	
opposition	1892 Apr 23 19:07	4°♏03'32	0°31'09
min. Earth dist.	1892 Apr 24 06:03	4°♏02'22	17.52054 AU
direct	1892 Jul 09 19:58	1°♏58'30	
evening set	1892 Oct 13 07:31	5°♏25'19	
conjunction	1892 Oct 29 08:49	6°♏25'12	0°26'33
minimum elong	1892 Oct 29 08:49	6°♏25'12	0°26'34
max. Earth dist.	1892 Oct 28 21:31	6°♏23'26	19.54449 AU
morning rise	1892 Nov 14 06:53	7°♏24'37	
retrograde	1893 Feb 13 09:48	10°♏43'39	
opposition	1893 Apr 28 19:43	8°♏42'26	0°27'59
min. Earth dist.	1893 Apr 29 04:17	8°♏41'31	17.56973 AU
direct	1893 Jul 14 22:40	6°♏37'41	
evening set	1893 Oct 18 05:19	10°♏03'35	
conjunction	1893 Nov 03 05:44	11°♏03'11	0°23'39
minimum elong	1893 Nov 03 05:44	11°♏03'11	0°23'38

max. Earth dist.	1893 Nov 02 21:34	11°♏01'55	19.59611 AU
morning rise	1893 Nov 19 02:44	12°♏02'19	
	1894 Jan 21 17:10	15°♏	
retrograde	1894 Feb 18 05:38	15°♏20'47	
	1894 Mar 18 07:41	15°℞♏	
opposition	1894 May 03 19:58	13°♏19'45	0°24'39
min. Earth dist.	1894 May 04 02:57	13°♏19'00	17.62354 AU
direct	1894 Jul 20 00:34	11°♏15'22	
evening set	1894 Oct 23 02:14	14°♏40'16	
	1894 Oct 28 11:02	15°♏	
conjunction	1894 Nov 08 01:30	15°♏39'34	0°20'36
minimum elong	1894 Nov 08 01:30	15°♏39'34	0°20'36
max. Earth dist.	1894 Nov 07 18:21	15°♏38'28	19.65217 AU
morning rise	1894 Nov 23 21:50	16°♏38'26	
retrograde	1895 Feb 23 00:55	19°♏56'20	
opposition	1895 May 08 19:44	17°♏55'29	0°21'11
min. Earth dist.	1895 May 09 00:43	17°♏54'58	17.68158 AU
direct	1895 Jul 25 01:22	15°♏51'29	
evening set	1895 Oct 27 22:13	19°♏15'22	
conjunction	1895 Nov 12 20:38	20°♏14'22	0°17'26
minimum elong	1895 Nov 12 20:38	20°♏14'22	0°17'26
max. Earth dist.	1895 Nov 12 16:23	20°♏13'43	19.71201 AU
morning rise	1895 Nov 28 16:02	21°♏12'57	
retrograde	1896 Feb 27 20:03	24°♏30'15	
opposition	1896 May 12 19:01	22°♏29'38	0°17'36
min. Earth dist.	1896 May 12 22:15	22°♏29'17	17.74284 AU
direct	1896 Jul 29 02:05	20°♏26'02	
evening set	1896 Oct 31 17:26	23°♏48'51	
conjunction	1896 Nov 16 14:46	24°♏47'32	0°14'12
minimum elong	1896 Nov 16 14:46	24°♏47'32	0°14'11
behind sun begin	1896 Nov 16 11:28	24°♏47'02	
behind sun end	1896 Nov 16 18:03	24°♏48'01	
max. Earth dist.	1896 Nov 16 11:34	24°♏47'03	19.77473 AU
morning rise	1896 Dec 02 09:32	25°♏45'50	
retrograde	1897 Mar 03 14:13	29°♏02'33	
opposition	1897 May 17 18:01	27°♏02'08	0°13'56
min. Earth dist.	1897 May 17 19:42	27°♏01'58	17.80681 AU
direct	1897 Aug 03 00:40	24°♏58'57	
evening set	1897 Nov 05 11:28	28°♏20'38	
conjunction	1897 Nov 21 08:02	29°♏19'00	0°10'53
minimum elong	1897 Nov 21 08:02	29°♏19'00	0°10'53
behind sun begin	1897 Nov 21 03:00	29°♏18'15	
behind sun end	1897 Nov 21 13:04	29°♏19'46	
max. Earth dist.	1897 Nov 21 07:26	29°♏18'55	19.83969 AU
	1897 Dec 02 09:56	0°♐	
morning rise	1897 Dec 07 02:02	0°♐17'01	
retrograde	1898 Mar 08 08:42	3°♐33'08	
opposition	1898 May 22 16:26	1°♐32'56	0°10'12
min. Earth dist.	1898 May 22 16:08	1°♐32'58	17.87244 AU
	1898 Jul 03 23:09	30°℞♏	
direct	1898 Aug 07 23:45	29°♏30'10	
	1898 Sep 11 02:14	0°♐	
evening set	1898 Nov 10 04:52	2°♐50'40	
conjunction	1898 Nov 26 00:29	3°♐48'44	0°07'31
minimum elong	1898 Nov 26 00:29	3°♐48'44	0°07'31
behind sun begin	1898 Nov 25 18:28	3°♐47'50	
behind sun end	1898 Nov 26 06:29	3°♐49'38	
max. Earth dist.	1898 Nov 26 00:55	3°♐48'47	19.90592 AU
morning rise	1898 Dec 11 17:57	4°♐46'28	
retrograde	1899 Mar 13 01:52	8°♐01'58	
opposition	1899 May 27 14:11	6°♐01'56	0°06'26
min. Earth dist.	1899 May 27 12:52	6°♐02'04	17.93919 AU
direct	1899 Aug 12 20:40	3°♐59'34	
evening set	1899 Nov 14 21:15	7°♐18'53	
conjunction	1899 Nov 30 16:10	8°♐16'38	0°04'08
minimum elong	1899 Nov 30 16:10	8°♐16'38	0°04'09
behind sun begin	1899 Nov 30 09:42	8°♐15'40	
behind sun end	1899 Nov 30 22:39	8°♐17'36	
max. Earth dist.	1899 Nov 30 18:39	8°♐16'58	19.97291 AU
morning rise	1899 Dec 16 09:02	9°♐14'06	
retrograde	1900 Mar 17 19:27	12°♐28'57	
opposition	1900 Jun 01 11:27	10°♐29'06	0°02'39
min. Earth dist.	1900 Jun 01 07:58	10°♐29'27	18.00617 AU
direct	1900 Aug 17 18:17	8°♐27'07	
evening set	1900 Nov 19 12:43	11°♐45'12	
conjunction	1900 Dec 05 06:49	12°♐42'38	0°00'41
minimum elong	1900 Dec 05 06:49	12°♐42'38	0°00'41
behind sun begin	1900 Dec 05 00:16	12°♐41'39	
behind sun end	1900 Dec 05 13:22	12°♐43'36	
max. Earth dist.	1900 Dec 05 10:29	12°♐43'09	20.03983 AU
morning rise	1900 Dec 20 23:14	13°♐39'50	
desc. node	1901 Feb 15 05:04	16°♐21'20	
retrograde	1901 Mar 22 11:25	16°♐54'03	
opposition	1901 Jun 06 08:14	14°♐54'19	-0°01'08
min. Earth dist.	1901 Jun 06 03:57	14°♐54'46	18.07306 AU
direct	1901 Aug 22 13:55	12°♐52'43	
evening set	1901 Nov 24 03:12	16°♐09'33	
conjunction	1901 Dec 09 20:42	17°♐06'40	-0°02'48
minimum elong	1901 Dec 09 20:43	17°♐06'40	0°02'47
behind sun begin	1901 Dec 09 14:11	17°♐05'42	
behind sun end	1901 Dec 10 03:15	17°♐07'39	
max. Earth dist.	1901 Dec 10 02:08	17°♐07'28	20.10650 AU
morning rise	1901 Dec 25 12:42	18°♐03'36	
retrograde	1902 Mar 27 03:49	21°♐17'11	
opposition	1902 Jun 11 04:02	19°♐17'34	-0°04'53
min. Earth dist.	1902 Jun 10 21:27	19°♐18'14	18.13935 AU
direct	1902 Aug 27 10:19	17°♐16'17	
evening set	1902 Nov 28 16:44	20°♐31'51	
conjunction	1902 Dec 14 09:39	21°♐28'41	-0°06'08
minimum elong	1902 Dec 14 09:39	21°♐28'41	0°06'08
behind sun begin	1902 Dec 14 03:25	21°♐27'46	
behind sun end	1902 Dec 14 15:53	21°♐29'37	
max. Earth dist.	1902 Dec 14 16:24	21°♐29'41	20.17242 AU
morning rise	1902 Dec 30 01:21	22°♐25'22	
retrograde	1903 Mar 31 17:50	25°♐38'18	
opposition	1903 Jun 15 23:18	23°♐38'45	-0°08'34
min. Earth dist.	1903 Jun 15 16:10	23°♐39'29	18.20499 AU
direct	1903 Sep 01 04:19	21°♐37'47	
evening set	1903 Dec 03 05:14	24°♐52'05	
conjunction	1903 Dec 18 21:39	25°♐48'38	-0°09'24
minimum elong	1903 Dec 18 21:39	25°♐48'38	0°09'25
behind sun begin	1903 Dec 18 16:08	25°♐47'49	
behind sun end	1903 Dec 19 03:09	25°♐49'27	
max. Earth dist.	1903 Dec 19 06:02	25°♐49'53	20.23774 AU
morning rise	1904 Jan 03 13:04	26°♐45'03	
retrograde	1904 Apr 04 09:09	29°♐57'21	
opposition	1904 Jun 19 17:39	27°♐57'52	-0°12'10
min. Earth dist.	1904 Jun 19 07:58	27°♐58'51	18.26996 AU
direct	1904 Sep 04 23:11	25°♐57'13	
evening set	1904 Dec 06 16:53	29°♐10'16	
	1904 Dec 20 13:33	0°♑	
conjunction	1904 Dec 22 08:48	0°♑06'31	-0°12'36
minimum elong	1904 Dec 22 08:48	0°♑06'31	0°12'36

behind sun begin	1904 Dec	22	04:31	0°♉05'54	
behind sun end	1904 Dec	22	13:05	0°♉07'09	
max. Earth dist.	1904 Dec	22	18:57	0°♉08'03	20.30247 AU
morning rise	1905 Jan	07	00:01	1°♉02'42	
retrograde	1905 Apr	08	21:20	4°♉14'24	
opposition	1905 Jun	24	11:28	2°♉14'57	-0°15'41
min. Earth dist.	1905 Jun	24	01:08	2°♉16'01	18.33467 AU
direct	1905 Sep	09	15:17	0°♉14'38	
evening set	1905 Dec	11	03:30	3°♉26'26	
conjunction	1905 Dec	26	19:03	4°♉22'26	-0°15'43
minimum elong	1905 Dec	26	19:03	4°♉22'26	0°15'43
behind sun begin	1905 Dec	26	17:19	4°♉22'11	
behind sun end	1905 Dec	26	20:47	4°♉22'42	
max. Earth dist.	1905 Dec	27	06:46	4°♉24'12	20.36705 AU
morning rise	1906 Jan	11	10:10	5°♉18'23	
retrograde	1906 Apr	13	11:54	8°♉29'30	
opposition	1906 Jun	29	04:17	6°♉30'08	-0°19'04
min. Earth dist.	1906 Jun	28	15:16	6°♉31'27	18.39909 AU
direct	1906 Sep	14	08:12	4°♉30'08	
evening set	1906 Dec	15	13:28	7°♉40'46	
conjunction	1906 Dec	31	04:41	8°♉36'31	-0°18'42
minimum elong	1906 Dec	31	04:40	8°♉36'31	0°18'42
max. Earth dist.	1906 Dec	31	18:15	8°♉38'33	20.43120 AU
morning rise	1907 Jan	15	19:41	9°♉32'15	
retrograde	1907 Apr	17	22:43	12°♉42'49	
opposition	1907 Jul	03	20:25	10°♉43'33	-0°22'19
min. Earth dist.	1907 Jul	03	06:54	10°♉44'55	18.46312 AU
direct	1907 Sep	18	22:04	8°♉43'55	
evening set	1907 Dec	19	22:40	11°♉53'25	
conjunction	1908 Jan	04	13:36	12°♉48'55	-0°21'35
minimum elong	1908 Jan	04	13:36	12°♉48'55	0°21'35
max. Earth dist.	1908 Jan	05	04:25	12°♉51'08	20.49495 AU
morning rise	1908 Jan	20	04:40	13°♉44'26	
retrograde	1908 Apr	21	12:18	16°♉54'31	
opposition	1908 Jul	07	11:51	14°♉55'21	-0°25'26
min. Earth dist.	1908 Jul	06	19:46	14°♉56'59	18.52642 AU
direct	1908 Sep	22	13:25	12°♉56'05	
evening set	1908 Dec	23	07:00	16°♉04'30	
conjunction	1909 Jan	07	21:47	16°♉59'47	-0°24'20
minimum elong	1909 Jan	07	21:47	16°♉59'47	0°24'20
max. Earth dist.	1909 Jan	08	14:30	17°♉02'16	20.55761 AU
morning rise	1909 Jan	23	12:53	17°♉55'07	
retrograde	1909 Apr	25	22:27	21°♉04'44	
min. Earth dist.	1909 Jul	11	10:27	19°♉07'21	18.58845 AU
opposition	1909 Jul	12	02:49	19°♉05'42	-0°28'24
direct	1909 Sep	27	01:29	17°♉06'49	
evening set	1909 Dec	27	14:51	20°♉14'11	
conjunction	1910 Jan	12	05:31	21°♉09'15	-0°26'56
minimum elong	1910 Jan	12	05:31	21°♉09'15	0°26'55
max. Earth dist.	1910 Jan	12	23:07	21°♉11'51	20.61882 AU
morning rise	1910 Jan	27	20:50	22°♉04'24	
retrograde	1910 Apr	30	10:51	25°♉13'35	
opposition	1910 Jul	16	16:48	23°♉14'41	-0°31'11
min. Earth dist.	1910 Jul	15	22:18	23°♉16'32	18.64864 AU
direct	1910 Oct	01	15:05	21°♉16'09	
evening set	1910 Dec	31	22:08	24°♉22'31	
conjunction	1911 Jan	16	12:47	25°♉17'24	-0°29'23
minimum elong	1911 Jan	16	12:47	25°♉17'24	0°29'23
max. Earth dist.	1911 Jan	17	07:59	25°♉20'14	20.67769 AU
morning rise	1911 Feb	01	04:15	26°♉12'24	
retrograde	1911 May	04	20:18	29°♉21'11	
opposition	1911 Jul	21	06:28	27°♉22'23	-0°33'48
min. Earth dist.	1911 Jul	20	12:02	27°♉24'14	18.70623 AU
direct	1911 Oct	06	01:53	25°♉24'13	
evening set	1912 Jan	05	04:52	28°♉29'38	
conjunction	1912 Jan	20	19:28	29°♉24'20	-0°31'40
minimum elong	1912 Jan	20	19:28	29°♉24'20	0°31'40
max. Earth dist.	1912 Jan	21	15:07	29°♉27'13	20.73377 AU
	1912 Jan	30	22:38	0°♒	
morning rise	1912 Feb	05	11:15	0°♒19'11	
retrograde	1912 May	08	07:34	3°♒27'36	
opposition	1912 Jul	24	19:28	1°♒28'55	-0°36'14
min. Earth dist.	1912 Jul	23	23:14	1°♒30'56	18.76066 AU
	1912 Sep	04	16:55	30°℞♉	
direct	1912 Oct	09	13:43	29°♉31'03	
	1912 Nov	12	08:37	0°♒	
evening set	1913 Jan	08	11:14	2°♒35'34	
conjunction	1913 Jan	24	01:57	3°♒30'06	-0°33'47
minimum elong	1913 Jan	24	01:57	3°♒30'06	0°33'48
max. Earth dist.	1913 Jan	24	22:55	3°♒33'10	20.78625 AU
morning rise	1913 Feb	08	17:59	4°♒24'49	
retrograde	1913 May	12	16:33	7°♒32'54	
opposition	1913 Jul	29	07:59	5°♒34'16	-0°38'29
min. Earth dist.	1913 Jul	28	12:05	5°♒36'15	18.81126 AU
direct	1913 Oct	13	23:23	3°♒36'42	
evening set	1914 Jan	12	17:10	6°♒40'21	
conjunction	1914 Jan	28	08:01	7°♒34'43	-0°35'44
minimum elong	1914 Jan	28	08:01	7°♒34'43	0°35'44
max. Earth dist.	1914 Jan	29	04:54	7°♒37'46	20.83474 AU
morning rise	1914 Feb	13	00:32	8°♒29'20	
retrograde	1914 May	17	02:40	11°♒37'06	
opposition	1914 Aug	02	19:48	9°♒38'30	-0°40'31
min. Earth dist.	1914 Aug	01	22:32	9°♒40'37	18.85751 AU
direct	1914 Oct	18	09:40	7°♒41'09	
evening set	1915 Jan	16	22:44	10°♒43'59	
conjunction	1915 Feb	01	13:50	11°♒38'14	-0°37'29
minimum elong	1915 Feb	01	13:50	11°♒38'14	0°37'29
max. Earth dist.	1915 Feb	02	11:41	11°♒41'25	20.87849 AU
morning rise	1915 Feb	17	06:42	12°♒32'44	
	1915 Apr	10	18:54	15°♒	
retrograde	1915 May	21	10:48	15°♒40'11	
	1915 Jul	02	11:34	15°℞♒	
min. Earth dist.	1915 Aug	06	10:21	13°♒43'40	18.89892 AU
opposition	1915 Aug	07	07:05	13°♒41'36	-0°42'20
direct	1915 Oct	22	18:11	11°♒44'27	
evening set	1916 Jan	21	03:54	14°♒46'29	
	1916 Jan	25	02:44	15°♒	
conjunction	1916 Feb	05	19:15	15°♒40'37	-0°39'02
minimum elong	1916 Feb	05	19:15	15°♒40'37	0°39'03
max. Earth dist.	1916 Feb	06	16:49	15°♒43'45	20.91761 AU
morning rise	1916 Feb	21	12:42	16°♒35'02	
retrograde	1916 May	24	20:13	19°♒42'12	
opposition	1916 Aug	10	17:49	17°♒43'34	-0°43'56
min. Earth dist.	1916 Aug	09	19:54	17°♒45'45	18.93572 AU
direct	1916 Oct	26	03:19	15°♒46'33	
evening set	1917 Jan	24	08:32	18°♒47'51	
conjunction	1917 Feb	09	00:19	19°♒41'53	-0°40'24
minimum elong	1917 Feb	09	00:19	19°♒41'53	0°40'23
max. Earth dist.	1917 Feb	09	22:57	19°♒45'10	20.95205 AU
morning rise	1917 Feb	24	18:16	20°♒36'14	
retrograde	1917 May	29	03:27	23°♒43'08	
min. Earth dist.	1917 Aug	14	06:37	21°♒46'34	18.96803 AU

opposition	1917 Aug 15 04:02	21°♒44'26	-0°45'19
direct	1917 Oct 30 10:32	19°♒47'33	
evening set	1918 Jan 28 13:00	22°♒48'09	
conjunction	1918 Feb 13 05:08	23°♒42'06	-0°41'32
minimum elong	1918 Feb 13 05:08	23°♒42'06	0°41'33
max. Earth dist.	1918 Feb 14 03:30	23°♒45'20	20.98237 AU
morning rise	1918 Feb 28 23:48	24°♒36'24	
retrograde	1918 Jun 02 12:30	27°♒43'04	
opposition	1918 Aug 19 13:24	25°♒44'17	-0°46'27
min. Earth dist.	1918 Aug 18 15:01	25°♒46'30	18.99643 AU
direct	1918 Nov 03 18:27	23°♒47'28	
evening set	1919 Feb 01 17:08	26°♒47'29	
conjunction	1919 Feb 17 09:48	27°♒41'22	-0°42'29
minimum elong	1919 Feb 17 09:47	27°♒41'22	0°42'28
max. Earth dist.	1919 Feb 18 09:16	27°♒44'45	21.00879 AU
morning rise	1919 Mar 05 05:00	28°♒35'38	
	1919 Apr 01 01:44	0°♓	
retrograde	1919 Jun 06 19:12	1°♓42'07	
	1919 Aug 16 22:11	30°℞♒	
opposition	1919 Aug 23 22:32	29°♒43'16	-0°47'22
min. Earth dist.	1919 Aug 23 00:32	29°♒45'28	19.02110 AU
direct	1919 Nov 08 00:36	27°♒46'34	
	1920 Jan 22 18:29	0°♓	
evening set	1920 Feb 05 21:01	0°♓46'01	
conjunction	1920 Feb 21 14:07	1°♓39'52	-0°43'13
minimum elong	1920 Feb 21 14:07	1°♓39'52	0°43'13
max. Earth dist.	1920 Feb 22 13:19	1°♓43'13	21.03178 AU
morning rise	1920 Mar 08 10:06	2°♓34'07	
retrograde	1920 Jun 10 04:07	5°♓40'29	
min. Earth dist.	1920 Aug 26 08:17	3°♓43'51	19.04242 AU
opposition	1920 Aug 27 07:12	3°♓41'34	-0°48'03
direct	1920 Nov 11 07:16	1°♓44'58	
evening set	1921 Feb 09 00:50	4°♓43'58	
conjunction	1921 Feb 24 18:36	5°♓37'48	-0°43'44
minimum elong	1921 Feb 24 18:35	5°♓37'48	0°43'43
max. Earth dist.	1921 Feb 25 18:47	5°♓41'17	21.05126 AU
morning rise	1921 Mar 12 15:15	6°♓32'04	
retrograde	1921 Jun 14 10:56	9°♓38'20	
opposition	1921 Aug 31 15:26	7°♓39'23	-0°48'31
min. Earth dist.	1921 Aug 30 17:03	7°♓41'37	19.06017 AU
direct	1921 Nov 15 12:50	5°♓42'53	
evening set	1922 Feb 13 04:40	8°♓41'31	
conjunction	1922 Feb 28 23:01	9°♓35'21	-0°44'03
minimum elong	1922 Feb 28 23:01	9°♓35'21	0°44'03
max. Earth dist.	1922 Mar 01 22:35	9°♓38'44	21.06731 AU
morning rise	1922 Mar 16 20:34	10°♓29'38	
retrograde	1922 Jun 18 19:50	13°♓35'54	
opposition	1922 Sep 04 23:22	11°♓36'54	-0°48'45
min. Earth dist.	1922 Sep 04 00:25	11°♓39'12	19.07435 AU
direct	1922 Nov 19 18:06	9°♓40'31	
evening set	1923 Feb 17 08:27	12°♓38'51	
conjunction	1923 Mar 05 03:32	13°♓32'43	-0°44'09
minimum elong	1923 Mar 05 03:31	13°♓32'43	0°44'10
max. Earth dist.	1923 Mar 06 03:50	13°♓36'11	21.07944 AU
morning rise	1923 Mar 21 01:46	14°♓27'02	
retrograde	1923 Jun 23 02:41	17°♓33'19	
min. Earth dist.	1923 Sep 08 08:49	15°♓36'32	19.08448 AU
opposition	1923 Sep 09 07:05	15°♓34'19	-0°48'45
direct	1923 Nov 23 23:29	13°♓38'02	
evening set	1924 Feb 21 12:27	16°♓36'10	

conjunction	1924 Mar 08 08:11	17°♓30'03	-0°44'03
minimum elong	1924 Mar 08 08:11	17°♓30'03	0°44'03
max. Earth dist.	1924 Mar 09 07:34	17°♓33'24	21.08764 AU
morning rise	1924 Mar 24 07:24	18°♓24'26	
retrograde	1924 Jun 26 12:02	21°♓30'48	
opposition	1924 Sep 12 14:35	19°♓31'47	-0°48'31
min. Earth dist.	1924 Sep 11 16:11	19°♓34'02	19.09053 AU
direct	1924 Nov 27 04:03	17°♓35'35	
evening set	1925 Feb 24 16:36	20°♓33'35	
conjunction	1925 Mar 12 13:12	21°♓27'32	-0°43'45
minimum elong	1925 Mar 12 13:12	21°♓27'32	0°43'46
max. Earth dist.	1925 Mar 13 12:56	21°♓30'56	21.09132 AU
morning rise	1925 Mar 28 13:12	22°♓22'00	
retrograde	1925 Jun 30 19:12	25°♓28'29	
opposition	1925 Sep 16 21:58	23°♓29'27	-0°48'04
min. Earth dist.	1925 Sep 16 00:37	23°♓31'35	19.09176 AU
direct	1925 Dec 01 09:02	21°♓33'19	
evening set	1926 Feb 28 21:11	24°♓31'15	
conjunction	1926 Mar 16 18:30	25°♓25'17	-0°43'14
minimum elong	1926 Mar 16 18:30	25°♓25'17	0°43'13
max. Earth dist.	1926 Mar 17 16:46	25°♓28'28	21.09012 AU
morning rise	1926 Apr 01 19:30	26°♓19'50	
retrograde	1926 Jul 05 05:02	29°♓26'29	
min. Earth dist.	1926 Sep 20 08:07	27°♓29'31	19.08792 AU
opposition	1926 Sep 21 05:03	27°♓27'25	-0°47'23
direct	1926 Dec 05 13:51	25°♓31'18	
evening set	1927 Mar 05 02:00	28°♓29'15	
conjunction	1927 Mar 21 00:14	29°♓23'23	-0°42'31
minimum elong	1927 Mar 21 00:14	29°♓23'23	0°42'31
max. Earth dist.	1927 Mar 21 22:24	29°♓26'33	21.08345 AU
	1927 Mar 31 17:23	0°♈	
morning rise	1927 Apr 06 02:02	0°♈18'03	
retrograde	1927 Jul 09 12:31	3°♈24'52	
opposition	1927 Sep 25 12:17	1°♈25'44	-0°46'28
min. Earth dist.	1927 Sep 24 16:36	1°♈27'43	19.07839 AU
	1927 Nov 04 10:36	30°℞♓	
direct	1927 Dec 09 18:15	29°♓29'37	
	1928 Jan 13 08:41	0°♈	
evening set	1928 Mar 08 07:03	2°♈27'37	
conjunction	1928 Mar 24 06:07	3°♈21'52	-0°41'35
minimum elong	1928 Mar 24 06:07	3°♈21'52	0°41'35
max. Earth dist.	1928 Mar 25 02:31	3°♈24'46	21.07117 AU
morning rise	1928 Apr 09 09:00	4°♈16'39	
retrograde	1928 Jul 12 22:34	7°♈23'42	
opposition	1928 Sep 28 19:26	5°♈24'27	-0°45'20
min. Earth dist.	1928 Sep 28 00:28	5°♈26'21	19.06320 AU
direct	1928 Dec 12 23:57	3°♈28'14	
evening set	1929 Mar 12 12:30	6°♈26'21	
conjunction	1929 Mar 28 12:36	7°♈20'44	-0°40'27
minimum elong	1929 Mar 28 12:36	7°♈20'44	0°40'27
max. Earth dist.	1929 Mar 29 08:44	7°♈23'37	21.05310 AU
morning rise	1929 Apr 13 16:22	8°♈15'40	
retrograde	1929 Jul 17 06:25	11°♈22'55	
min. Earth dist.	1929 Oct 02 08:48	9°♈25'18	19.04232 AU
opposition	1929 Oct 03 02:22	9°♈23'32	-0°43'58
direct	1929 Dec 17 04:19	7°♈27'12	
evening set	1930 Mar 16 18:20	10°♈25'29	
conjunction	1930 Apr 01 19:20	11°♈20'01	-0°39'07
minimum elong	1930 Apr 01 19:20	11°♈20'01	0°39'08
max. Earth dist.	1930 Apr 02 13:32	11°♈22'37	21.02976 AU
morning rise	1930 Apr 18 00:12	12°♈15'06	

retrograde	1930 Jul 21 16:09	15°♈22'35	
opposition	1930 Oct 07 09:20	13°♈23'02	-0°42'23
min. Earth dist.	1930 Oct 06 16:37	13°♈24'43	19.01648 AU
direct	1930 Dec 21 10:18	11°♈26'31	
evening set	1931 Mar 21 00:20	14°♈25'02	
conjunction	1931 Apr 06 02:22	15°♈19'45	-0°37'36
minimum elong	1931 Apr 06 02:22	15°♈19'45	0°37'36
max. Earth dist.	1931 Apr 06 20:28	15°♈22'20	21.00155 AU
morning rise	1931 Apr 22 08:06	16°♈15'00	
retrograde	1931 Jul 26 00:36	19°♈22'46	
opposition	1931 Oct 11 16:18	17°♈23'01	-0°40'36
min. Earth dist.	1931 Oct 11 00:45	17°♈24'36	18.98608 AU
direct	1931 Dec 25 15:28	15°♈26'20	
evening set	1932 Mar 24 06:57	18°♈25'09	
conjunction	1932 Apr 09 09:53	19°♈20'02	-0°35'53
minimum elong	1932 Apr 09 09:53	19°♈20'02	0°35'54
max. Earth dist.	1932 Apr 10 02:07	19°♈22'21	20.96934 AU
morning rise	1932 Apr 25 16:44	20°♈15'28	
retrograde	1932 Jul 29 10:14	23°♈23'33	
opposition	1932 Oct 14 23:14	21°♈23'37	-0°38'37
min. Earth dist.	1932 Oct 14 08:35	21°♈25'06	18.95203 AU
direct	1932 Dec 28 21:01	19°♈26'42	
evening set	1933 Mar 28 13:58	22°♈25'55	
conjunction	1933 Apr 13 18:02	23°♈21'00	-0°34'00
minimum elong	1933 Apr 13 18:02	23°♈21'00	0°33'59
max. Earth dist.	1933 Apr 14 10:06	23°♈23'18	20.93347 AU
morning rise	1933 Apr 30 01:45	24°♈16'38	
retrograde	1933 Aug 02 19:44	27°♈25'03	
opposition	1933 Oct 19 06:17	25°♈24'57	-0°36'26
min. Earth dist.	1933 Oct 18 16:45	25°♈26'20	18.91444 AU
direct	1934 Jan 02 03:05	23°♈27'50	
evening set	1934 Apr 01 21:40	26°♈27'30	
conjunction	1934 Apr 18 02:37	27°♈22'48	-0°31'56
minimum elong	1934 Apr 18 02:37	27°♈22'48	0°31'56
max. Earth dist.	1934 Apr 18 16:36	27°♈24'48	20.89442 AU
morning rise	1934 May 04 11:25	28°♈18'38	
	1934 Jun 06 15:37	0°♉	
retrograde	1934 Aug 07 05:24	1°♉27'27	
	1934 Oct 10 00:41	30°℞♈	
opposition	1934 Oct 23 13:25	29°♈27'11	-0°34'04
min. Earth dist.	1934 Oct 23 00:54	29°♈28'28	18.87391 AU
direct	1935 Jan 06 08:34	27°♈29'50	
	1935 Mar 28 02:54	0°♉	
evening set	1935 Apr 06 05:51	0°♉30'04	
conjunction	1935 Apr 22 11:57	1°♉25'35	-0°29'42
minimum elong	1935 Apr 22 11:57	1°♉25'35	0°29'42
max. Earth dist.	1935 Apr 23 01:41	1°♉27'33	20.85243 AU
morning rise	1935 May 08 21:33	2°♉21'39	
retrograde	1935 Aug 11 15:50	5°♉30'52	
opposition	1935 Oct 27 20:52	3°♉30'28	-0°31'31
min. Earth dist.	1935 Oct 27 09:24	3°♉31'39	18.83050 AU
direct	1936 Jan 10 15:20	1°♉32'56	
evening set	1936 Apr 09 14:44	4°♉33'45	
conjunction	1936 Apr 25 21:45	5°♉29'31	-0°27'19
minimum elong	1936 Apr 25 21:45	5°♉29'31	0°27'19
max. Earth dist.	1936 Apr 26 09:17	5°♉31'10	20.80782 AU
morning rise	1936 May 12 08:29	6°♉25'49	
retrograde	1936 Aug 15 02:36	9°♉35'31	
opposition	1936 Oct 31 04:38	7°♉34'59	-0°28'48
min. Earth dist.	1936 Oct 30 18:25	7°♉36'02	18.78451 AU
direct	1937 Jan 13 21:32	5°♉37'13	
evening set	1937 Apr 14 00:27	8°♉38'44	
conjunction	1937 Apr 30 08:38	9°♉34'46	-0°24'47
minimum elong	1937 Apr 30 08:38	9°♉34'46	0°24'47
max. Earth dist.	1937 Apr 30 19:44	9°♉36'22	20.76044 AU
morning rise	1937 May 16 20:08	10°♉31'18	
retrograde	1937 Aug 19 13:49	13°♉41'29	
opposition	1937 Nov 04 12:33	11°♉40'52	-0°25'55
min. Earth dist.	1937 Nov 04 03:36	11°♉41'47	18.73566 AU
direct	1938 Jan 18 04:53	9°♉42'53	
evening set	1938 Apr 18 11:07	12°♉45'11	
conjunction	1938 May 04 20:09	13°♉41'28	-0°22'07
minimum elong	1938 May 04 20:09	13°♉41'28	0°22'07
max. Earth dist.	1938 May 05 04:39	13°♉42'41	20.71030 AU
morning rise	1938 May 21 08:41	14°♉38'16	
	1938 May 27 21:01	15°♉	
retrograde	1938 Aug 24 02:09	17°♉48'59	
opposition	1938 Nov 08 21:02	15°♉48'15	-0°22'54
min. Earth dist.	1938 Nov 08 13:45	15°♉49'01	18.68402 AU
	1938 Nov 28 20:29	15°℞♉	
direct	1939 Jan 22 12:05	13°♉50'01	
	1939 Mar 16 09:13	15°♉	
evening set	1939 Apr 22 22:24	16°♉53'10	
conjunction	1939 May 09 08:33	17°♉49'45	-0°19'19
minimum elong	1939 May 09 08:33	17°♉49'45	0°19'19
max. Earth dist.	1939 May 09 16:27	17°♉50'52	20.65705 AU
morning rise	1939 May 25 21:45	18°♉46'47	
retrograde	1939 Aug 28 14:27	21°♉58'04	
opposition	1939 Nov 13 05:57	19°♉57'15	-0°19'43
min. Earth dist.	1939 Nov 13 00:03	19°♉57'52	18.62907 AU
direct	1940 Jan 26 20:26	17°♉58'45	
evening set	1940 Apr 26 10:55	21°♉02'48	
conjunction	1940 May 12 21:53	21°♉59'39	-0°16'23
minimum elong	1940 May 12 21:53	21°♉59'39	0°16'22
max. Earth dist.	1940 May 13 02:43	22°♉00'21	20.60050 AU
morning rise	1940 May 29 12:03	22°♉56'58	
retrograde	1940 Sep 01 04:00	26°♉08'49	
opposition	1940 Nov 16 15:17	24°♉07'52	-0°16'25
min. Earth dist.	1940 Nov 16 11:29	24°♉08'16	18.57078 AU
direct	1941 Jan 30 05:02	22°♉09'03	
evening set	1941 May 01 00:13	25°♉14'03	
conjunction	1941 May 17 12:18	26°♉11'13	-0°13'21
minimum elong	1941 May 17 12:18	26°♉11'13	0°13'22
behind sun begin	1941 May 17 08:34	26°♉10'41	
behind sun end	1941 May 17 16:02	26°♉11'45	
max. Earth dist.	1941 May 17 16:07	26°♉11'45	20.54039 AU
morning rise	1941 Jun 03 03:04	27°♉08'48	
	1941 Aug 07 15:26	0°♊	
retrograde	1941 Sep 05 17:36	0°♊21'13	
	1941 Oct 05 02:15	30°℞♉	
opposition	1941 Nov 21 01:06	28°♉20'07	-0°13'01
min. Earth dist.	1941 Nov 20 22:44	28°♉20'22	18.50886 AU
direct	1942 Feb 03 14:50	26°♉20'58	
evening set	1942 May 05 14:29	29°♉26'57	
	1942 May 15 04:02	0°♊	
conjunction	1942 May 22 03:18	0°♊24'24	-0°10'14
minimum elong	1942 May 22 03:18	0°♊24'24	0°10'13
behind sun begin	1942 May 21 21:59	0°♊23'39	
behind sun end	1942 May 22 08:36	0°♊25'09	
max. Earth dist.	1942 May 22 03:51	0°♊24'29	20.47693 AU
morning rise	1942 Jun 07 18:55	1°♊22'16	
retrograde	1942 Sep 10 07:42	4°♊35'16	

opposition	1942 Nov 25 11:26	2°♊33'59	-0°09'30
min. Earth dist.	1942 Nov 25 11:18	2°♊34'00	18.44392 AU
direct	1943 Feb 08 00:53	0°♊34'26	
evening set	1943 May 10 05:27	3°♊41'27	
conjunction	1943 May 26 19:18	4°♊39'13	-0°07'02
minimum elong	1943 May 26 19:18	4°♊39'13	0°07'02
behind sun begin	1943 May 26 13:05	4°♊38'20	
behind sun end	1943 May 27 01:32	4°♊40'07	
max. Earth dist.	1943 May 26 19:00	4°♊39'11	20.41068 AU
morning rise	1943 Jun 12 11:24	5°♊37'21	
retrograde	1943 Sep 14 22:36	8°♊50'55	
opposition	1943 Nov 29 22:09	6°♊49'28	-0°05'55
min. Earth dist.	1943 Nov 29 23:13	6°♊49'21	18.37649 AU
direct	1944 Feb 12 12:15	4°♊49'31	
evening set	1944 May 13 21:26	7°♊57'36	
conjunction	1944 May 30 11:58	8°♊55'40	-0°03'47
minimum elong	1944 May 30 11:58	8°♊55'40	0°03'47
behind sun begin	1944 May 30 05:17	8°♊54'43	
behind sun end	1944 May 30 18:39	8°♊56'38	
max. Earth dist.	1944 May 30 08:33	8°♊55'13	20.34240 AU
morning rise	1944 Jun 16 04:52	9°♊54'06	
retrograde	1944 Sep 18 13:31	13°♊08'15	
opposition	1944 Dec 03 09:29	11°♊06'36	-0°02'16
min. Earth dist.	1944 Dec 03 12:48	11°♊06'15	18.30749 AU
direct	1945 Feb 15 23:25	9°♊06'11	
evening set	1945 May 18 14:15	12°♊15'25	
conjunction	1945 Jun 04 05:44	13°♊13'48	-0°00'25
minimum elong	1945 Jun 04 05:43	13°♊13'48	0°00'24
behind sun begin	1945 Jun 03 22:59	13°♊12'50	
behind sun end	1945 Jun 04 12:26	13°♊14'46	
max. Earth dist.	1945 Jun 04 01:34	13°♊13'14	20.27281 AU
morning rise	1945 Jun 20 22:57	14°♊12'30	
asc. node	1945 Jul 19 07:09	15°♊43'24	
retrograde	1945 Sep 23 05:56	17°♊27'14	
opposition	1945 Dec 07 21:08	15°♊25'24	0°01'25
min. Earth dist.	1945 Dec 08 01:22	15°♊24'57	18.23751 AU
direct	1946 Feb 20 12:13	13°♊24'34	
evening set	1946 May 23 08:05	16°♊34'57	
conjunction	1946 Jun 09 00:04	17°♊33'39	0°03'00
minimum elong	1946 Jun 09 00:04	17°♊33'39	0°02'59
behind sun begin	1946 Jun 08 17:19	17°♊32'41	
behind sun end	1946 Jun 09 06:48	17°♊34'37	
max. Earth dist.	1946 Jun 08 17:01	17°♊32'38	20.20271 AU
morning rise	1946 Jun 25 17:53	18°♊32'37	
retrograde	1946 Sep 27 22:01	21°♊47'58	
opposition	1946 Dec 12 09:35	19°♊45'57	0°05'07
min. Earth dist.	1946 Dec 12 15:57	19°♊45'17	18.16753 AU
direct	1947 Feb 25 00:30	17°♊44'40	
evening set	1947 May 28 02:29	20°♊56'16	
conjunction	1947 Jun 13 19:16	21°♊55'16	0°06'19
minimum elong	1947 Jun 13 19:17	21°♊55'16	0°06'19
behind sun begin	1947 Jun 13 12:54	21°♊54'21	
behind sun end	1947 Jun 14 01:40	21°♊56'12	
max. Earth dist.	1947 Jun 13 11:44	21°♊54'11	20.13290 AU
morning rise	1947 Jun 30 13:20	22°♊54'31	
retrograde	1947 Oct 02 16:05	26°♊10'28	
opposition	1947 Dec 16 22:34	24°♊08'19	0°08'48
min. Earth dist.	1947 Dec 17 05:28	24°♊07'34	18.09806 AU
direct	1948 Feb 29 14:23	22°♊06'37	
evening set	1948 May 31 22:11	25°♊19'27	
conjunction	1948 Jun 17 15:24	26°♊18'45	0°09'37
minimum elong	1948 Jun 17 15:24	26°♊18'45	0°09'36
behind sun begin	1948 Jun 17 09:51	26°♊17'57	
behind sun end	1948 Jun 17 20:57	26°♊19'34	
max. Earth dist.	1948 Jun 17 05:11	26°♊17'15	20.06393 AU
morning rise	1948 Jul 04 09:52	27°♊18'16	
	1948 Aug 30 15:36	0°♋	
retrograde	1948 Oct 06 09:51	0°♋34'50	
	1948 Nov 12 13:32	30°℞♊	
opposition	1948 Dec 20 12:12	28°♊32'33	0°12'28
min. Earth dist.	1948 Dec 20 21:15	28°♊31'34	18.02984 AU
direct	1949 Mar 05 04:09	26°♊30'26	
evening set	1949 Jun 05 18:41	29°♊44'33	
	1949 Jun 10 04:05	0°♋	
conjunction	1949 Jun 22 12:33	0°♋44'10	0°12'53
minimum elong	1949 Jun 22 12:33	0°♋44'10	0°12'52
behind sun begin	1949 Jun 22 08:31	0°♋43'34	
behind sun end	1949 Jun 22 16:36	0°♋44'45	
max. Earth dist.	1949 Jun 22 01:42	0°♋42'33	19.99646 AU
morning rise	1949 Jul 09 07:06	1°♋43'56	
retrograde	1949 Oct 11 05:14	5°♋01'06	
opposition	1949 Dec 25 02:32	2°♋58'44	0°16'04
min. Earth dist.	1949 Dec 25 11:54	2°♋57'43	17.96321 AU
direct	1950 Mar 09 19:24	0°♋56'16	
evening set	1950 Jun 10 16:09	4°♋11'39	
conjunction	1950 Jun 27 10:17	5°♋11'33	0°16'05
minimum elong	1950 Jun 27 10:17	5°♋11'33	0°16'06
max. Earth dist.	1950 Jun 26 21:08	5°♋09'36	19.93073 AU
morning rise	1950 Jul 14 05:00	6°♋11'35	
retrograde	1950 Oct 16 00:18	9°♋29'23	
opposition	1950 Dec 29 17:44	7°♋26'56	0°19'37
min. Earth dist.	1950 Dec 30 05:13	7°♋25'42	17.89857 AU
direct	1951 Mar 14 10:41	5°♋24'07	
evening set	1951 Jun 15 14:33	8°♋40'49	
conjunction	1951 Jul 02 09:07	9°♋41'01	0°19'14
minimum elong	1951 Jul 02 09:07	9°♋41'01	0°19'13
max. Earth dist.	1951 Jul 01 19:10	9°♋38'56	19.86711 AU
morning rise	1951 Jul 19 03:48	10°♋41'17	
retrograde	1951 Oct 20 20:56	13°♋59'41	
opposition	1952 Jan 03 09:26	11°♋57'12	0°23'05
min. Earth dist.	1952 Jan 03 21:17	11°♋55'55	17.83591 AU
direct	1952 Mar 18 04:12	9°♋54'04	
evening set	1952 Jun 19 14:06	13°♋12'05	
conjunction	1952 Jul 06 08:50	14°♋12'33	0°22'17
minimum elong	1952 Jul 06 08:50	14°♋12'33	0°22'18
max. Earth dist.	1952 Jul 05 16:45	14°♋10'07	19.80531 AU
morning rise	1952 Jul 23 03:28	15°♋13'02	
retrograde	1952 Oct 24 16:47	18°♋32'02	
opposition	1953 Jan 07 02:10	16°♋29'31	0°26'25
min. Earth dist.	1953 Jan 07 16:24	16°♋27'58	17.77509 AU
direct	1953 Mar 22 21:22	14°♋26'03	
evening set	1953 Jun 24 14:30	17°♋45'22	
conjunction	1953 Jul 11 09:23	18°♋46'05	0°25'13
minimum elong	1953 Jul 11 09:23	18°♋46'05	0°25'14
max. Earth dist.	1953 Jul 10 16:02	18°♋43'27	19.74530 AU
morning rise	1953 Jul 28 03:50	19°♋46'47	
retrograde	1953 Oct 29 14:19	23°♋06'20	
opposition	1954 Jan 11 19:30	21°♋03'46	0°29'38
min. Earth dist.	1954 Jan 12 10:06	21°♋02'11	17.71593 AU
direct	1954 Mar 27 17:31	18°♋59'58	
evening set	1954 Jun 29 15:48	22°♋20'33	
conjunction	1954 Jul 16 10:42	23°♋21'30	0°28'01

minimum elong	1954 Jul	16	10:42	23°♋21'30	0°28'01
max. Earth dist.	1954 Jul	15	15:37	23°♋18'36	19.68691 AU
morning rise	1954 Aug	02	04:49	24°♋22'23	
retrograde	1954 Nov	03	10:58	27°♋42'26	
opposition	1955 Jan	16	13:50	25°♋39'50	0°32'40
min. Earth dist.	1955 Jan	17	06:40	25°♋38'00	17.65859 AU
direct	1955 Apr	01	12:50	23°♋35'40	
evening set	1955 Jul	04	17:42	26°♋57'27	
conjunction	1955 Jul	21	12:34	27°♋58'38	0°30'39
minimum elong	1955 Jul	21	12:34	27°♋58'38	0°30'40
max. Earth dist.	1955 Jul	20	15:54	27°♋55'28	19.63057 AU
morning rise	1955 Aug	07	06:26	28°♋59'40	
	1955 Aug	24	18:01	0°♌	
retrograde	1955 Nov	08	09:29	2°♌20'12	
opposition	1956 Jan	21	08:42	0°♌17'31	0°35'31
min. Earth dist.	1956 Jan	22	01:47	0°♌15'40	17.60333 AU
	1956 Jan	28	02:00	30°℞♋	
direct	1956 Apr	05	11:22	28°♋13'00	
	1956 Jun	10	01:45	0°♌	
evening set	1956 Jul	08	20:27	1°♌35'57	
conjunction	1956 Jul	25	15:14	2°♌37'19	0°33'07
minimum elong	1956 Jul	25	15:14	2°♌37'19	0°33'06
max. Earth dist.	1956 Jul	24	17:30	2°♌33'59	19.57641 AU
morning rise	1956 Aug	11	08:31	3°♌38'31	
retrograde	1956 Nov	12	06:51	6°♌59'26	
opposition	1957 Jan	25	04:19	4°♌56'42	0°38'08
min. Earth dist.	1957 Jan	25	23:24	4°♌54'37	17.55060 AU
direct	1957 Apr	10	08:20	2°♌51'49	
evening set	1957 Jul	13	23:49	6°♌15'53	
conjunction	1957 Jul	30	18:16	7°♌17'24	0°35'21
minimum elong	1957 Jul	30	18:16	7°♌17'24	0°35'21
max. Earth dist.	1957 Jul	29	18:52	7°♌13'48	19.52526 AU
morning rise	1957 Aug	16	11:08	8°♌18'44	
retrograde	1957 Nov	17	06:27	11°♌40'02	
opposition	1958 Jan	30	00:33	9°♌37'13	0°40'31
min. Earth dist.	1958 Jan	30	19:42	9°♌35'07	17.50119 AU
direct	1958 Apr	15	08:27	7°♌31'59	
evening set	1958 Jul	19	03:23	10°♌57'04	
conjunction	1958 Aug	04	21:36	11°♌58'45	0°37'22
minimum elong	1958 Aug	04	21:36	11°♌58'45	0°37'22
max. Earth dist.	1958 Aug	03	22:09	11°♌55'07	19.47760 AU
morning rise	1958 Aug	21	13:42	13°♌00'10	
	1958 Sep	27	09:14	15°♌	
retrograde	1958 Nov	22	04:49	16°♌21'48	
	1959 Jan	18	22:53	15°℞♌	
opposition	1959 Feb	03	21:30	14°♌18'55	0°42'39
min. Earth dist.	1959 Feb	04	18:03	14°♌16'40	17.45562 AU
direct	1959 Apr	20	06:57	12°♌13'21	
	1959 Jul	13	05:06	15°♌	
evening set	1959 Jul	24	07:37	15°♌39'24	
max. Earth dist.	1959 Aug	09	00:18	16°♌37'20	19.43428 AU
conjunction	1959 Aug	10	01:17	16°♌41'12	0°39'08
minimum elong	1959 Aug	10	01:17	16°♌41'12	0°39'08
morning rise	1959 Aug	26	16:52	17°♌42'43	
retrograde	1959 Nov	27	04:46	21°♌04'37	
opposition	1960 Feb	08	18:47	19°♌01'40	0°44'29
min. Earth dist.	1960 Feb	09	15:19	18°♌59'25	17.41473 AU
direct	1960 Apr	24	07:47	16°♌55'48	
evening set	1960 Jul	28	12:05	20°♌22'45	
max. Earth dist.	1960 Aug	13	05:04	21°♌20'52	19.39579 AU
conjunction	1960 Aug	14	05:24	21°♌24'39	0°40'39
minimum elong	1960 Aug	14	05:24	21°♌24'39	0°40'39
morning rise	1960 Aug	30	20:01	22°♌26'13	
retrograde	1960 Dec	01	04:20	25°♌48'21	
opposition	1961 Feb	12	16:55	23°♌45'23	0°46'02
min. Earth dist.	1961 Feb	13	14:11	23°♌43'03	17.37894 AU
direct	1961 Apr	29	07:50	21°♌39'16	
evening set	1961 Aug	02	16:52	25°♌07'01	
max. Earth dist.	1961 Aug	18	07:50	26°♌05'00	19.36284 AU
conjunction	1961 Aug	19	09:22	26°♌08'59	0°41'53
minimum elong	1961 Aug	19	09:21	26°♌08'59	0°41'52
morning rise	1961 Sep	04	23:16	27°♌10'35	
	1961 Nov	01	15:57	0°♍	
retrograde	1961 Dec	06	04:27	0°♍32'55	
	1962 Jan	10	05:57	30°℞♌	
opposition	1962 Feb	17	15:31	28°♌29'57	0°47'15
min. Earth dist.	1962 Feb	18	12:30	28°♌27'39	17.34908 AU
direct	1962 May	04	08:57	26°♌23'37	
evening set	1962 Aug	07	21:41	29°♌52'07	
	1962 Aug	10	01:17	0°♍	
conjunction	1962 Aug	24	13:40	0°♍54'08	0°42'50
minimum elong	1962 Aug	24	13:40	0°♍54'08	0°42'50
max. Earth dist.	1962 Aug	23	13:25	0°♍50'21	19.33600 AU
morning rise	1962 Sep	10	02:30	1°♍55'45	
retrograde	1962 Dec	11	05:12	5°♍18'14	
opposition	1963 Feb	22	14:38	3°♍15'18	0°48'10
min. Earth dist.	1963 Feb	23	11:37	3°♍13'00	17.32540 AU
direct	1963 May	09	10:16	1°♍08'52	
evening set	1963 Aug	13	02:48	4°♍38'00	
conjunction	1963 Aug	29	17:53	5°♍40'02	0°43'30
minimum elong	1963 Aug	29	17:53	5°♍40'02	0°43'30
max. Earth dist.	1963 Aug	28	16:44	5°♍36'06	19.31558 AU
morning rise	1963 Sep	15	05:56	6°♍41'39	
retrograde	1963 Dec	16	05:12	10°♍04'15	
opposition	1964 Feb	27	14:18	8°♍01'25	0°48'45
min. Earth dist.	1964 Feb	28	11:08	7°♍59'08	17.30823 AU
direct	1964 May	13	11:26	5°♍54'54	
evening set	1964 Aug	17	07:55	9°♍24'37	
conjunction	1964 Sep	02	22:17	10°♍26'39	0°43'52
minimum elong	1964 Sep	02	22:17	10°♍26'39	0°43'51
max. Earth dist.	1964 Sep	01	22:36	10°♍22'55	19.30153 AU
morning rise	1964 Sep	19	09:11	11°♍28'12	
retrograde	1964 Dec	20	06:45	14°♍50'53	
opposition	1965 Mar	03	14:24	12°♍48'11	0°49'00
min. Earth dist.	1965 Mar	04	10:46	12°♍45'57	17.29716 AU
direct	1965 May	18	14:32	10°♍41'41	
evening set	1965 Aug	22	13:10	14°♍11'50	
max. Earth dist.	1965 Sep	07	02:21	15°♍10'02	19.29350 AU
conjunction	1965 Sep	08	02:30	15°♍13'50	0°43'56
minimum elong	1965 Sep	08	02:30	15°♍13'50	0°43'56
morning rise	1965 Sep	24	12:25	16°♍15'20	
retrograde	1965 Dec	25	06:06	19°♍38'03	
opposition	1966 Mar	08	15:02	17°♍35'29	0°48'55
min. Earth dist.	1966 Mar	09	11:31	17°♍33'14	17.29214 AU
direct	1966 May	23	16:37	15°♍29'01	
evening set	1966 Aug	27	18:02	18°♍59'30	
max. Earth dist.	1966 Sep	12	07:40	19°♍57'50	19.29125 AU
conjunction	1966 Sep	13	06:31	20°♍01'26	0°43'42
minimum elong	1966 Sep	13	06:31	20°♍01'26	0°43'41
morning rise	1966 Sep	29	15:20	21°♍02'50	
retrograde	1966 Dec	30	07:31	24°♍25'32	
opposition	1967 Mar	13	16:00	22°♍23'06	0°48'29

min. Earth dist.	1967 Mar 14 11:34	22°♍20'58	17.29243 AU
direct	1967 May 28 21:37	20°♍16'43	
evening set	1967 Sep 01 23:01	23°♍47'24	
max. Earth dist.	1967 Sep 17 11:33	24°♍45'37	19.29410 AU
conjunction	1967 Sep 18 10:26	24°♍49'13	0°43'09
minimum elong	1967 Sep 18 10:26	24°♍49'13	0°43'09
morning rise	1967 Oct 04 18:08	25°♍50'31	
retrograde	1968 Jan 04 06:14	29°♍13'06	
opposition	1968 Mar 17 17:16	27°♍10'49	0°47'43
min. Earth dist.	1968 Mar 18 13:12	27°♍08'39	17.29786 AU
direct	1968 Jun 02 00:36	25°♍04'29	
evening set	1968 Sep 06 03:39	28°♍35'15	
conjunction	1968 Sep 22 14:01	29°♍36'57	0°42'19
minimum elong	1968 Sep 22 14:01	29°♍36'57	0°42'18
max. Earth dist.	1968 Sep 21 16:03	29°♍33'29	19.30199 AU
	1968 Sep 28 16:08	0°♎	
morning rise	1968 Oct 08 20:37	0°♎38'07	
retrograde	1969 Jan 08 07:29	4°♎00'31	
opposition	1969 Mar 22 18:49	1°♎58'22	0°46'37
min. Earth dist.	1969 Mar 23 13:19	1°♎56'21	17.30802 AU
	1969 May 20 20:57	30°℞♍	
direct	1969 Jun 07 06:34	29°♍52'08	
	1969 Jun 24 10:30	0°♎	
evening set	1969 Sep 11 07:45	3°♎22'48	
conjunction	1969 Sep 27 17:02	4°♎24'22	0°41'11
minimum elong	1969 Sep 27 17:02	4°♎24'22	0°41'10
max. Earth dist.	1969 Sep 26 19:53	4°♎21'02	19.31448 AU
morning rise	1969 Oct 13 22:26	5°♎25'22	
retrograde	1970 Jan 13 06:09	8°♎47'33	
opposition	1970 Mar 27 20:38	6°♎45'30	0°45'11
min. Earth dist.	1970 Mar 28 15:21	6°♎43'28	17.32291 AU
direct	1970 Jun 12 09:40	4°♎39'21	
evening set	1970 Sep 16 11:24	8°♎09'50	
conjunction	1970 Oct 02 19:32	9°♎11'12	0°39'46
minimum elong	1970 Oct 02 19:32	9°♎11'12	0°39'46
max. Earth dist.	1970 Oct 01 23:05	9°♎07'59	19.33178 AU
morning rise	1970 Oct 18 23:55	10°♎12'02	
retrograde	1971 Jan 18 06:54	13°♎33'54	
opposition	1971 Apr 01 22:10	11°♎31'58	0°43'27
min. Earth dist.	1971 Apr 02 15:06	11°♎30'08	17.34242 AU
direct	1971 Jun 17 14:51	9°♎25'54	
evening set	1971 Sep 21 14:25	12°♎56'04	
conjunction	1971 Oct 07 21:33	13°♎57'15	0°38'04
minimum elong	1971 Oct 07 21:33	13°♎57'15	0°38'04
max. Earth dist.	1971 Oct 07 02:40	13°♎54'17	19.35363 AU
morning rise	1971 Oct 24 00:43	14°♎57'53	
retrograde	1972 Jan 23 05:26	18°♎19'23	
opposition	1972 Apr 05 24:00	16°♎17'32	0°41'25
min. Earth dist.	1972 Apr 06 16:57	16°♎15'42	17.36661 AU
direct	1972 Jun 21 17:28	14°♎11'36	
evening set	1972 Sep 25 16:43	17°♎41'18	
conjunction	1972 Oct 11 22:36	18°♎42'15	0°36'07
minimum elong	1972 Oct 11 22:36	18°♎42'15	0°36'08
max. Earth dist.	1972 Oct 11 04:23	18°♎39'23	19.38030 AU
morning rise	1972 Oct 28 00:49	19°♎42'41	
retrograde	1973 Jan 27 05:30	23°♎03'45	
opposition	1973 Apr 11 01:32	21°♎01'59	0°39'06
min. Earth dist.	1973 Apr 11 16:15	21°♎00'24	17.39564 AU
direct	1973 Jun 26 22:01	18°♎56'11	
evening set	1973 Sep 30 18:07	22°♎25'18	
conjunction	1973 Oct 16 23:00	23°♎26'02	0°33'56
minimum elong	1973 Oct 16 23:00	23°♎26'02	0°33'56
max. Earth dist.	1973 Oct 16 07:14	23°♎23'33	19.41186 AU
morning rise	1973 Nov 02 00:00	24°♎26'13	
retrograde	1974 Feb 01 02:56	27°♎46'50	
opposition	1974 Apr 16 03:02	25°♎45'09	0°36'32
min. Earth dist.	1974 Apr 16 17:17	25°♎43'37	17.42976 AU
direct	1974 Jul 02 00:16	23°♎39'31	
evening set	1974 Oct 05 18:42	27°♎07'57	
conjunction	1974 Oct 21 22:20	28°♎08'25	0°31'32
minimum elong	1974 Oct 21 22:20	28°♎08'25	0°31'32
max. Earth dist.	1974 Oct 21 07:22	28°♎06'04	19.44869 AU
morning rise	1974 Nov 06 22:30	29°♎08'22	
	1974 Nov 21 09:31	0°♏	
retrograde	1975 Feb 06 01:48	2°♏28'29	
opposition	1975 Apr 21 04:09	0°♏26'54	0°33'44
min. Earth dist.	1975 Apr 21 15:53	0°♏25'38	17.46917 AU
	1975 May 01 17:48	30°℞♎	
direct	1975 Jul 07 03:58	28°♎21'28	
	1975 Sep 08 05:15	0°♏	
evening set	1975 Oct 10 18:24	1°♏49'09	
conjunction	1975 Oct 26 21:04	2°♏49'21	0°28'56
minimum elong	1975 Oct 26 21:04	2°♏49'21	0°28'56
max. Earth dist.	1975 Oct 26 09:02	2°♏47'28	19.49075 AU
morning rise	1975 Nov 11 20:02	3°♏49'03	
retrograde	1976 Feb 10 22:11	7°♏08'38	
opposition	1976 Apr 25 05:05	5°♏07'11	0°30'43
min. Earth dist.	1976 Apr 25 15:51	5°♏06'02	17.51383 AU
direct	1976 Jul 11 06:05	3°♏02'03	
evening set	1976 Oct 14 17:24	6°♏28'53	
conjunction	1976 Oct 30 18:48	7°♏28'48	0°26'09
minimum elong	1976 Oct 30 18:48	7°♏28'48	0°26'09
max. Earth dist.	1976 Oct 30 07:38	7°♏27'03	19.53816 AU
morning rise	1976 Nov 15 16:58	8°♏28'14	
retrograde	1977 Feb 14 19:50	11°♏47'17	
opposition	1977 Apr 30 05:42	9°♏46'00	0°27'32
min. Earth dist.	1977 Apr 30 13:55	9°♏45'08	17.56375 AU
direct	1977 Jul 16 08:41	7°♏41'12	
evening set	1977 Oct 19 15:09	11°♏07'08	
conjunction	1977 Nov 04 15:41	12°♏06'46	0°23'14
minimum elong	1977 Nov 04 15:42	12°♏06'46	0°23'14
max. Earth dist.	1977 Nov 04 07:41	12°♏05'31	19.59050 AU
morning rise	1977 Nov 20 12:49	13°♏05'55	
	1977 Dec 25 01:01	15°♏	
retrograde	1978 Feb 19 15:25	16°♏24'26	
	1978 Apr 20 13:52	15°℞♏	
opposition	1978 May 05 06:01	14°♏23'22	0°24'11
min. Earth dist.	1978 May 05 12:57	14°♏22'38	17.61818 AU
direct	1978 Jul 21 10:03	12°♏18'56	
	1978 Oct 12 03:49	15°♏	
evening set	1978 Oct 24 12:21	15°♏43'55	
conjunction	1978 Nov 09 11:42	16°♏43'15	0°20'10
minimum elong	1978 Nov 09 11:42	16°♏43'15	0°20'10
max. Earth dist.	1978 Nov 09 04:32	16°♏42'08	19.64707 AU
morning rise	1978 Nov 25 08:08	17°♏42'08	
retrograde	1979 Feb 24 11:58	21°♏00'05	
opposition	1979 May 10 05:43	18°♏59'14	0°20'42
min. Earth dist.	1979 May 10 10:38	18°♏58'43	17.67659 AU
direct	1979 Jul 26 10:59	16°♏55'12	
evening set	1979 Oct 29 08:31	20°♏19'11	
conjunction	1979 Nov 14 07:03	21°♏18'12	0°16'59

minimum elong	1979 Nov 14 07:03	21°♏18'12	0°16'59
max. Earth dist.	1979 Nov 14 02:46	21°♏17'33	19.70712 AU
morning rise	1979 Nov 30 02:31	22°♏16'49	
retrograde	1980 Feb 29 06:40	25°♏34'11	
opposition	1980 May 14 05:16	23°♏33'34	0°17'06
min. Earth dist.	1980 May 14 08:40	23°♏33'12	17.73794 AU
direct	1980 Jul 30 11:39	21°♏29'58	
evening set	1980 Nov 02 03:51	24°♏52'52	
conjunction	1980 Nov 18 01:14	25°♏51'35	0°13'43
minimum elong	1980 Nov 18 01:14	25°♏51'35	0°13'44
behind sun begin	1980 Nov 17 21:38	25°♏51'02	
behind sun end	1980 Nov 18 04:51	25°♏52'07	
max. Earth dist.	1980 Nov 17 21:51	25°♏51'04	19.76974 AU
morning rise	1980 Dec 03 20:06	26°♏49'55	
	1981 Feb 17 09:00	0°♐	
retrograde	1981 Mar 05 01:47	0°♐06'43	
	1981 Mar 20 23:18	30°℞♏	
opposition	1981 May 19 04:22	28°♏06'18	0°13'24
min. Earth dist.	1981 May 19 06:05	28°♏06'07	17.80169 AU
direct	1981 Aug 04 10:50	26°♏03'06	
evening set	1981 Nov 06 22:11	29°♏24'54	
	1981 Nov 16 12:04	0°♐	
conjunction	1981 Nov 22 18:49	0°♐23'18	0°10'24
minimum elong	1981 Nov 22 18:49	0°♐23'18	0°10'23
behind sun begin	1981 Nov 22 13:36	0°♐22'31	
behind sun end	1981 Nov 23 00:02	0°♐24'05	
max. Earth dist.	1981 Nov 22 18:02	0°♐23'11	19.83435 AU
morning rise	1981 Dec 08 12:53	1°♐21'21	
retrograde	1982 Mar 09 19:41	4°♐37'32	
opposition	1982 May 24 02:48	2°♐37'20	0°09'39
min. Earth dist.	1982 May 24 02:48	2°♐37'20	17.86690 AU
direct	1982 Aug 09 10:21	0°♐34'33	
evening set	1982 Nov 11 15:42	3°♐55'11	
conjunction	1982 Nov 27 11:23	4°♐53'16	0°07'01
minimum elong	1982 Nov 27 11:23	4°♐53'16	0°07'02
behind sun begin	1982 Nov 27 05:17	4°♐52'21	
behind sun end	1982 Nov 27 17:29	4°♐54'11	
max. Earth dist.	1982 Nov 27 11:25	4°♐53'16	19.90007 AU
morning rise	1982 Dec 13 04:57	5°♐51'03	
retrograde	1983 Mar 14 13:03	9°♐06'37	
opposition	1983 May 29 00:47	7°♐06'35	0°05'52
min. Earth dist.	1983 May 28 23:35	7°♐06'43	17.93304 AU
direct	1983 Aug 14 07:11	5°♐04'12	
evening set	1983 Nov 16 08:09	8°♐23'38	
conjunction	1983 Dec 02 03:10	9°♐21'25	0°03'37
minimum elong	1983 Dec 02 03:09	9°♐21'25	0°03'37
behind sun begin	1983 Dec 01 20:38	9°♐20'26	
behind sun end	1983 Dec 02 09:39	9°♐22'23	
max. Earth dist.	1983 Dec 02 05:25	9°♐21'43	19.96639 AU
morning rise	1983 Dec 17 20:02	10°♐18'54	
retrograde	1984 Mar 18 06:13	13°♐33'50	
opposition	1984 Jun 01 22:06	11°♐33'58	0°02'04
min. Earth dist.	1984 Jun 01 18:54	11°♐34'18	17.99933 AU
direct	1984 Aug 18 05:40	9°♐31'58	
evening set	1984 Nov 19 23:47	12°♐50'10	
conjunction	1984 Dec 05 17:57	13°♐47'38	0°00'09
minimum elong	1984 Dec 05 17:57	13°♐47'38	0°00'09
behind sun begin	1984 Dec 05 11:29	13°♐46'40	
behind sun end	1984 Dec 06 00:25	13°♐48'36	
max. Earth dist.	1984 Dec 05 21:15	13°♐48'05	20.03271 AU
morning rise	1984 Dec 21 10:26	14°♐44'51	
desc. node	1984 Dec 21 01:34	14°♐43'32	
retrograde	1985 Mar 22 22:02	17°♐59'09	
opposition	1985 Jun 06 18:50	15°♐59'24	-0°01'43
min. Earth dist.	1985 Jun 06 14:44	15°♐59'50	18.06571 AU
direct	1985 Aug 23 00:19	13°♐57'44	
evening set	1985 Nov 24 14:09	17°♐14'41	
conjunction	1985 Dec 10 07:48	18°♐11'51	-0°03'19
minimum elong	1985 Dec 10 07:47	18°♐11'51	0°03'19
behind sun begin	1985 Dec 10 01:16	18°♐10'52	
behind sun end	1985 Dec 10 14:18	18°♐12'49	
max. Earth dist.	1985 Dec 10 13:08	18°♐12'38	20.09900 AU
morning rise	1985 Dec 25 23:51	19°♐08'48	
retrograde	1986 Mar 27 14:17	22°♐22'26	
opposition	1986 Jun 11 14:41	20°♐22'47	-0°05'27
min. Earth dist.	1986 Jun 11 08:21	20°♐23'26	18.13175 AU
direct	1986 Aug 27 21:15	18°♐21'27	
evening set	1986 Nov 29 03:45	21°♐37'07	
conjunction	1986 Dec 14 20:42	22°♐33'59	-0°06'39
minimum elong	1986 Dec 14 20:43	22°♐33'59	0°06'40
behind sun begin	1986 Dec 14 14:34	22°♐33'05	
behind sun end	1986 Dec 15 02:52	22°♐34'54	
max. Earth dist.	1986 Dec 15 03:21	22°♐34'58	20.16489 AU
morning rise	1986 Dec 30 12:29	23°♐30'41	
retrograde	1987 Apr 01 04:35	26°♐43'40	
opposition	1987 Jun 16 09:48	24°♐44'05	-0°09'08
min. Earth dist.	1987 Jun 16 02:43	24°♐44'49	18.19766 AU
direct	1987 Sep 01 14:23	22°♐43'04	
evening set	1987 Dec 03 16:16	25°♐57'29	
conjunction	1987 Dec 19 08:45	26°♐54'03	-0°09'55
minimum elong	1987 Dec 19 08:45	26°♐54'03	0°09'55
behind sun begin	1987 Dec 19 03:23	26°♐53'15	
behind sun end	1987 Dec 19 14:06	26°♐54'50	
max. Earth dist.	1987 Dec 19 17:21	26°♐55'20	20.23080 AU
morning rise	1988 Jan 04 00:12	27°♐50'29	
	1988 Feb 15 00:11	0°♑	
retrograde	1988 Apr 04 19:25	1°♑02'50	
	1988 May 27 01:17	30°℞♐	
opposition	1988 Jun 20 04:11	29°♐03'20	-0°12'43
min. Earth dist.	1988 Jun 19 18:29	29°♐04'19	18.26353 AU
direct	1988 Sep 05 09:41	27°♐02'38	
	1988 Dec 02 15:35	0°♑	
evening set	1988 Dec 07 03:50	0°♑15'47	
conjunction	1988 Dec 22 19:47	1°♑12'05	-0°13'06
minimum elong	1988 Dec 22 19:47	1°♑12'05	0°13'07
behind sun begin	1988 Dec 22 15:46	1°♑11'30	
behind sun end	1988 Dec 22 23:47	1°♑12'40	
max. Earth dist.	1988 Dec 23 06:05	1°♑13'37	20.29665 AU
morning rise	1989 Jan 07 11:03	2°♑08'17	
retrograde	1989 Apr 09 08:54	5°♑20'02	
opposition	1989 Jun 24 22:01	3°♑20'36	-0°16'13
min. Earth dist.	1989 Jun 24 11:30	3°♑21'40	18.32955 AU
direct	1989 Sep 10 01:14	1°♑20'15	
evening set	1989 Dec 11 14:35	4°♑32'11	
conjunction	1989 Dec 27 06:12	5°♑28'13	-0°16'11
minimum elong	1989 Dec 27 06:12	5°♑28'12	0°16'11
behind sun begin	1989 Dec 27 05:29	5°♑28'06	
behind sun end	1989 Dec 27 06:54	5°♑28'19	
max. Earth dist.	1989 Dec 27 18:14	5°♑30'00	20.36266 AU
morning rise	1990 Jan 11 21:20	6°♑24'11	
retrograde	1990 Apr 13 22:21	9°♑35'21	
opposition	1990 Jun 29 14:43	7°♑36'01	-0°19'35
min. Earth dist.	1990 Jun 29 01:34	7°♑37'21	18.39545 AU
direct	1990 Sep 14 18:29	5°♑36'02	

evening set	1990 Dec	16	00:36	8°♉46'48	
conjunction	1990 Dec	31	15:51	9°♉42'34	-0°19'10
minimum elong	1990 Dec	31	15:51	9°♉42'34	0°19'10
max. Earth dist.	1991 Jan	01	05:31	9°♉44'36	20.42830 AU
morning rise	1991 Jan	16	06:56	10°♉38'19	
retrograde	1991 Apr	18	10:33	13°♉48'57	
opposition	1991 Jul	04	07:04	11°♉49'44	-0°22'49
min. Earth dist.	1991 Jul	03	17:23	11°♉51'07	18.46088 AU
direct	1991 Sep	19	08:37	9°♉50'08	
evening set	1991 Dec	20	09:45	12°♉59'45	
conjunction	1992 Jan	05	00:45	13°♉55'17	-0°22'02
minimum elong	1992 Jan	05	00:45	13°♉55'17	0°22'02
max. Earth dist.	1992 Jan	05	15:50	13°♉57'32	20.49331 AU
morning rise	1992 Jan	20	15:50	14°♉50'49	
retrograde	1992 Apr	21	23:19	18°♉00'58	
opposition	1992 Jul	07	22:38	16°♉01'52	-0°25'55
min. Earth dist.	1992 Jul	07	06:26	16°♉03'30	18.52526 AU
direct	1992 Sep	22	23:45	14°♉02'39	
evening set	1992 Dec	23	18:21	17°♉11'11	
conjunction	1993 Jan	08	09:09	18°♉06'28	-0°24'46
minimum elong	1993 Jan	08	09:09	18°♉06'28	0°24'45
max. Earth dist.	1993 Jan	09	01:49	18°♉08'57	20.55688 AU
morning rise	1993 Jan	24	00:17	19°♉01'49	
retrograde	1993 Apr	26	10:03	22°♉11'30	
opposition	1993 Jul	12	13:39	20°♉12'32	-0°28'52
min. Earth dist.	1993 Jul	11	21:18	20°♉14'10	18.58805 AU
direct	1993 Sep	27	12:29	18°♉13'41	
evening set	1993 Dec	28	02:17	21°♉21'09	
conjunction	1994 Jan	12	16:59	22°♉16'14	-0°27'21
minimum elong	1994 Jan	12	16:59	22°♉16'14	0°27'22
max. Earth dist.	1994 Jan	13	10:35	22°♉18'50	20.61860 AU
morning rise	1994 Jan	28	08:18	23°♉11'24	
retrograde	1994 Apr	30	22:18	26°♉20'38	
min. Earth dist.	1994 Jul	16	09:26	24°♉23'38	18.64849 AU
opposition	1994 Jul	17	03:54	24°♉21'47	-0°31'38
direct	1994 Oct	02	01:47	22°♉23'17	
evening set	1995 Jan	01	09:45	25°♉29'45	
conjunction	1995 Jan	17	00:22	26°♉24'38	-0°29'47
minimum elong	1995 Jan	17	00:22	26°♉24'38	0°29'47
max. Earth dist.	1995 Jan	17	19:16	26°♉27'25	20.67748 AU
morning rise	1995 Feb	01	15:49	27°♉19'38	
	1995 Apr	01	12:11	0°♒	
retrograde	1995 May	05	07:48	0°♒28'28	
	1995 Jun	09	01:42	30°℞♉	
opposition	1995 Jul	21	17:40	28°♉29'43	-0°34'14
min. Earth dist.	1995 Jul	20	23:25	28°♉31'33	18.70590 AU
direct	1995 Oct	06	12:58	26°♉31'34	
evening set	1996 Jan	05	16:44	29°♉37'03	
	1996 Jan	12	07:13	0°♒	
conjunction	1996 Jan	21	07:21	0°♒31'45	-0°32'03
minimum elong	1996 Jan	21	07:21	0°♒31'45	0°32'04
max. Earth dist.	1996 Jan	22	02:44	0°♒34'36	20.73321 AU
morning rise	1996 Feb	05	23:05	1°♒26'36	
retrograde	1996 May	08	19:35	4°♒35'03	
min. Earth dist.	1996 Jul	24	10:47	2°♒38'23	18.75977 AU
opposition	1996 Jul	25	06:49	2°♒36'22	-0°36'39
direct	1996 Oct	10	00:55	0°♒38'31	
evening set	1997 Jan	08	23:10	3°♒43'05	
conjunction	1997 Jan	24	13:53	4°♒37'37	-0°34'09
minimum elong	1997 Jan	24	13:53	4°♒37'37	0°34'08
max. Earth dist.	1997 Jan	25	10:21	4°♒40'36	20.78492 AU
morning rise	1997 Feb	09	05:55	5°♒32'20	
retrograde	1997 May	13	04:05	8°♒40'25	
opposition	1997 Jul	29	19:29	6°♒41'48	-0°38'52
min. Earth dist.	1997 Jul	28	23:56	6°♒43'45	18.80943 AU
direct	1997 Oct	14	10:48	4°♒44'12	
evening set	1998 Jan	13	05:16	7°♒47'52	
conjunction	1998 Jan	28	20:08	8°♒42'15	-0°36'04
minimum elong	1998 Jan	28	20:08	8°♒42'15	0°36'04
max. Earth dist.	1998 Jan	29	16:39	8°♒45'15	20.83236 AU
morning rise	1998 Feb	13	12:36	9°♒36'52	
retrograde	1998 May	17	15:01	12°♒44'36	
min. Earth dist.	1998 Aug	02	10:17	10°♒48'04	18.85458 AU
opposition	1998 Aug	03	07:12	10°♒45'59	-0°40'52
direct	1998 Oct	18	21:24	8°♒48'35	
evening set	1999 Jan	17	10:52	11°♒51'26	
conjunction	1999 Feb	02	01:59	12°♒45'41	-0°37'47
minimum elong	1999 Feb	02	01:58	12°♒45'41	0°37'47
max. Earth dist.	1999 Feb	02	23:24	12°♒48'48	20.87513 AU
morning rise	1999 Feb	17	18:50	13°♒40'11	
	1999 Mar	14	18:28	15°♒	
retrograde	1999 May	21	22:25	16°♒47'36	
	1999 Aug	03	03:51	15°℞♒	
opposition	1999 Aug	07	18:38	14°♒48'58	-0°42'39
min. Earth dist.	1999 Aug	06	22:17	14°♒51'00	18.89516 AU
direct	1999 Oct	23	06:12	12°♒51'45	
	2000 Jan	05	05:32	15°♒	
evening set	2000 Jan	21	15:52	15°♒53'47	
conjunction	2000 Feb	06	07:14	16°♒47'55	-0°39'18
minimum elong	2000 Feb	06	07:14	16°♒47'55	0°39'18
max. Earth dist.	2000 Feb	07	04:46	16°♒51'03	20.91362 AU
morning rise	2000 Feb	22	00:40	17°♒42'20	
retrograde	2000 May	25	08:21	20°♒49'28	
min. Earth dist.	2000 Aug	10	07:36	18°♒52'56	18.93159 AU
opposition	2000 Aug	11	05:20	18°♒50'46	-0°44'12
direct	2000 Oct	26	15:24	16°♒53'42	
evening set	2001 Jan	24	20:34	19°♒55'00	
conjunction	2001 Feb	09	12:19	20°♒49'02	-0°40'37
minimum elong	2001 Feb	09	12:19	20°♒49'02	0°40'38
max. Earth dist.	2001 Feb	10	10:55	20°♒52'19	20.94799 AU
morning rise	2001 Feb	25	06:16	21°♒43'23	
retrograde	2001 May	29	15:11	24°♒50'16	
opposition	2001 Aug	15	15:25	22°♒51'30	-0°45'33
min. Earth dist.	2001 Aug	14	18:11	22°♒53'37	18.96420 AU
direct	2001 Oct	30	22:55	20°♒54'34	
evening set	2002 Jan	29	00:58	23°♒55'12	
conjunction	2002 Feb	13	17:06	24°♒49'10	-0°41'44
minimum elong	2002 Feb	13	17:06	24°♒49'10	0°41'43
max. Earth dist.	2002 Feb	14	15:39	24°♒52'25	20.97885 AU
morning rise	2002 Mar	01	11:42	25°♒43'28	
retrograde	2002 Jun	03	00:11	28°♒50'07	
min. Earth dist.	2002 Aug	19	02:23	26°♒53'34	18.99336 AU
opposition	2002 Aug	20	00:54	26°♒51'19	-0°46'39
direct	2002 Nov	04	06:28	24°♒54'30	
evening set	2003 Feb	02	05:02	27°♒54'33	
conjunction	2003 Feb	17	21:38	28°♒48'27	-0°42'38
minimum elong	2003 Feb	17	21:38	28°♒48'27	0°42'39
max. Earth dist.	2003 Feb	18	21:11	28°♒51'51	21.00619 AU
morning rise	2003 Mar	05	16:47	29°♒42'43	
	2003 Mar	10	20:54	0°♓	
retrograde	2003 Jun	07	06:59	2°♓49'14	

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

conjunction	2010 Mar 17 06:50	26°♓34'18	-0°43'07
minimum elong	2010 Mar 17 06:50	26°♓34'18	0°43'07
max. Earth dist.	2010 Mar 18 04:53	26°♓37'27	21.09088 AU
morning rise	2010 Apr 02 07:45	27°♓28'51	
	2010 May 28 01:46	0°♈	
retrograde	2010 Jul 05 16:48	0°♈35'30	
	2010 Aug 14 03:34	30°℞♓	
opposition	2010 Sep 21 16:58	28°♓36'27	-0°47'13
min. Earth dist.	2010 Sep 20 20:18	28°♓38'31	19.08817 AU
direct	2010 Dec 06 01:50	26°♓40'19	
evening set	2011 Mar 05 14:13	29°♓38'17	
	2011 Mar 12 00:50	0°♈	
conjunction	2011 Mar 21 12:24	0°♈32'25	-0°42'21
minimum elong	2011 Mar 21 12:24	0°♈32'25	0°42'20
max. Earth dist.	2011 Mar 22 10:14	0°♈35'32	21.08311 AU
morning rise	2011 Apr 06 14:10	1°♈27'04	
retrograde	2011 Jul 10 00:34	4°♈33'52	
min. Earth dist.	2011 Sep 25 04:59	2°♈36'38	19.07746 AU
opposition	2011 Sep 26 00:15	2°♈34'42	-0°46'15
direct	2011 Dec 10 07:04	0°♈38'31	
evening set	2012 Mar 08 19:17	3°♈36'29	
conjunction	2012 Mar 24 18:20	4°♈30'43	-0°41'22
minimum elong	2012 Mar 24 18:20	4°♈30'43	0°41'23
max. Earth dist.	2012 Mar 25 14:32	4°♈33'36	21.06973 AU
morning rise	2012 Apr 09 21:09	5°♈25'30	
retrograde	2012 Jul 13 09:49	8°♈32'28	
opposition	2012 Sep 29 07:15	6°♈33'08	-0°45'04
min. Earth dist.	2012 Sep 28 12:29	6°♈35'02	19.06129 AU
direct	2012 Dec 13 12:02	4°♈36'50	
evening set	2013 Mar 13 00:34	7°♈34'52	
conjunction	2013 Mar 29 00:38	8°♈29'15	-0°40'12
minimum elong	2013 Mar 29 00:38	8°♈29'15	0°40'12
max. Earth dist.	2013 Mar 29 20:30	8°♈32'05	21.05088 AU
morning rise	2013 Apr 14 04:22	9°♈24'10	
retrograde	2013 Jul 17 17:19	12°♈31'18	
opposition	2013 Oct 03 14:12	10°♈31'49	-0°43'40
min. Earth dist.	2013 Oct 02 20:50	10°♈33'34	19.03988 AU
direct	2013 Dec 17 17:39	8°♈35'22	
evening set	2014 Mar 17 06:13	11°♈33'33	
conjunction	2014 Apr 02 07:09	12°♈28'04	-0°38'50
minimum elong	2014 Apr 02 07:09	12°♈28'04	0°38'50
max. Earth dist.	2014 Apr 03 01:23	12°♈30'40	21.02726 AU
morning rise	2014 Apr 18 11:55	13°♈23'08	
retrograde	2014 Jul 22 02:53	16°♈30'30	
opposition	2014 Oct 07 20:58	14°♈30'49	-0°42'03
min. Earth dist.	2014 Oct 07 04:07	14°♈32'31	19.01408 AU
direct	2014 Dec 21 22:45	12°♈34'11	
evening set	2015 Mar 21 12:11	15°♈32'36	
conjunction	2015 Apr 06 14:08	16°♈27'17	-0°37'16
minimum elong	2015 Apr 06 14:08	16°♈27'17	0°37'17
max. Earth dist.	2015 Apr 07 08:11	16°♈29'52	20.99938 AU
morning rise	2015 Apr 22 19:47	17°♈22'31	
retrograde	2015 Jul 26 10:38	20°♈30'10	
opposition	2015 Oct 12 03:49	18°♈30'18	-0°40'13
min. Earth dist.	2015 Oct 11 12:12	18°♈31'53	18.98428 AU
direct	2015 Dec 26 03:52	16°♈33'30	
evening set	2016 Mar 24 18:33	19°♈32'13	
conjunction	2016 Apr 09 21:27	20°♈27'05	-0°35'32
minimum elong	2016 Apr 09 21:27	20°♈27'05	0°35'31
max. Earth dist.	2016 Apr 10 13:51	20°♈29'25	20.96794 AU
morning rise	2016 Apr 26 04:13	21°♈22'30	

retrograde	2016 Jul 29 21:06	24°♈30'28	
opposition	2016 Oct 15 10:43	22°♈30'26	-0°38'12
min. Earth dist.	2016 Oct 14 19:43	22°♈31'58	18.95110 AU
direct	2016 Dec 29 09:29	20°♈33'26	
evening set	2017 Mar 29 01:32	23°♈32'34	
conjunction	2017 Apr 14 05:30	24°♈27'38	-0°33'36
minimum elong	2017 Apr 14 05:30	24°♈27'38	0°33'37
max. Earth dist.	2017 Apr 14 21:38	24°♈29'56	20.93304 AU
morning rise	2017 Apr 30 13:08	25°♈23'14	
retrograde	2017 Aug 03 05:31	28°♈31'33	
opposition	2017 Oct 19 17:35	26°♈31'23	-0°35'59
min. Earth dist.	2017 Oct 19 03:52	26°♈32'48	18.91460 AU
direct	2018 Jan 02 14:11	24°♈34'13	
evening set	2018 Apr 02 09:06	27°♈33'49	
conjunction	2018 Apr 18 14:00	28°♈29'06	-0°31'31
minimum elong	2018 Apr 18 14:00	28°♈29'06	0°31'30
max. Earth dist.	2018 Apr 19 04:16	28°♈31'08	20.89517 AU
morning rise	2018 May 04 22:43	29°♈24'55	
	2018 May 15 15:18	0°♉	
retrograde	2018 Aug 07 16:50	2°♉33'39	
min. Earth dist.	2018 Oct 23 11:51	0°♉34'41	18.87521 AU
opposition	2018 Oct 24 00:47	0°♉33'21	-0°33'36
	2018 Nov 06 18:57	30°℞♈	
direct	2019 Jan 06 20:26	28°♈36'00	
	2019 Mar 06 08:28	0°♉	
evening set	2019 Apr 06 17:06	1°♉36'10	
conjunction	2019 Apr 22 23:07	2°♉31'41	-0°29'16
minimum elong	2019 Apr 22 23:07	2°♉31'41	0°29'16
max. Earth dist.	2019 Apr 23 13:07	2°♉33'41	20.85429 AU
morning rise	2019 May 09 08:40	3°♉27'43	
retrograde	2019 Aug 12 02:27	6°♉36'55	
opposition	2019 Oct 28 08:15	4°♉36'31	-0°31'01
min. Earth dist.	2019 Oct 27 20:37	4°♉37'43	18.83282 AU
direct	2020 Jan 11 01:48	2°♉38'59	
evening set	2020 Apr 10 02:04	5°♉39'47	
conjunction	2020 Apr 26 09:01	6°♉35'32	-0°26'52
minimum elong	2020 Apr 26 09:01	6°♉35'32	0°26'52
max. Earth dist.	2020 Apr 26 20:53	6°♉37'14	20.81059 AU
morning rise	2020 May 12 19:40	7°♉31'50	
retrograde	2020 Aug 15 14:26	10°♉41'31	
opposition	2020 Oct 31 15:53	8°♉41'02	-0°28'17
min. Earth dist.	2020 Oct 31 05:28	8°♉42'06	18.78760 AU
direct	2021 Jan 14 08:36	6°♉43'18	
evening set	2021 Apr 14 11:49	9°♉44'50	
conjunction	2021 Apr 30 19:54	10°♉40'51	-0°24'18
minimum elong	2021 Apr 30 19:54	10°♉40'51	0°24'19
max. Earth dist.	2021 May 01 07:09	10°♉42'28	20.76377 AU
morning rise	2021 May 17 07:19	11°♉37'23	
retrograde	2021 Aug 20 01:40	14°♉47'35	
opposition	2021 Nov 04 23:58	12°♉47'01	-0°25'23
min. Earth dist.	2021 Nov 04 15:06	12°♉47'56	18.73907 AU
direct	2022 Jan 18 15:26	10°♉49'06	
evening set	2022 Apr 18 22:25	13°♉51'25	
conjunction	2022 May 05 07:22	14°♉47'42	-0°21'37
minimum elong	2022 May 05 07:22	14°♉47'42	0°21'37
max. Earth dist.	2022 May 05 15:59	14°♉48'56	20.71364 AU
	2022 May 08 20:28	15°♉	
morning rise	2022 May 21 19:46	15°♉44'29	
retrograde	2022 Aug 24 13:54	18°♉55'15	
opposition	2022 Nov 09 08:26	16°♉54'35	-0°22'20
min. Earth dist.	2022 Nov 09 01:11	16°♉55'20	18.68717 AU
	2023 Jan 11 06:51	15°℞♉	
direct	2023 Jan 22 22:58	14°♉56'26	
	2023 Feb 03 14:10	15°♉	
evening set	2023 Apr 23 09:53	17°♉59'36	
conjunction	2023 May 09 19:56	18°♉56'10	-0°18'47
minimum elong	2023 May 09 19:56	18°♉56'10	0°18'47
max. Earth dist.	2023 May 10 03:39	18°♉57'16	20.65987 AU
morning rise	2023 May 26 09:02	19°♉53'12	
retrograde	2023 Aug 29 02:39	23°♉04'31	
opposition	2023 Nov 13 17:21	21°♉03'45	-0°19'08
min. Earth dist.	2023 Nov 13 11:44	21°♉04'20	18.63149 AU
direct	2024 Jan 27 07:35	19°♉05'18	
evening set	2024 Apr 26 22:19	22°♉09'21	
conjunction	2024 May 13 09:14	23°♉06'13	-0°15'51
minimum elong	2024 May 13 09:14	23°♉06'13	0°15'51
max. Earth dist.	2024 May 13 13:51	23°♉06'52	20.60242 AU
morning rise	2024 May 29 23:19	24°♉03'32	
retrograde	2024 Sep 01 15:18	27°♉15'24	
opposition	2024 Nov 17 02:45	25°♉14'29	-0°15'49
min. Earth dist.	2024 Nov 16 23:02	25°♉14'52	18.57218 AU
direct	2025 Jan 30 16:22	23°♉15'41	
evening set	2025 May 01 11:33	26°♉20'41	
conjunction	2025 May 17 23:32	27°♉17'50	-0°12'48
minimum elong	2025 May 17 23:32	27°♉17'50	0°12'48
behind sun begin	2025 May 17 19:26	27°♉17'15	
behind sun end	2025 May 18 03:38	27°♉18'25	
max. Earth dist.	2025 May 18 03:06	27°♉18'20	20.54132 AU
morning rise	2025 Jun 03 14:13	28°♉15'25	
	2025 Jul 07 07:47	0°♊	
retrograde	2025 Sep 06 04:51	1°♊27'49	
	2025 Nov 08 02:20	30°℞♉	
opposition	2025 Nov 21 12:25	29°♉26'44	-0°12'24
min. Earth dist.	2025 Nov 21 10:16	29°♉26'58	18.50940 AU
direct	2026 Feb 04 02:33	27°♉27'35	
	2026 Apr 26 00:52	0°♊	
evening set	2026 May 06 01:41	0°♊33'32	
conjunction	2026 May 22 14:26	1°♊30'59	-0°09'41
minimum elong	2026 May 22 14:26	1°♊30'59	0°09'41
behind sun begin	2026 May 22 08:56	1°♊30'12	
behind sun end	2026 May 22 19:57	1°♊31'46	
max. Earth dist.	2026 May 22 14:55	1°♊31'03	20.47725 AU
morning rise	2026 Jun 08 06:00	2°♊28'50	
retrograde	2026 Sep 10 18:27	5°♊41'49	
opposition	2026 Nov 25 22:41	3°♊40'31	-0°08'53
min. Earth dist.	2026 Nov 25 22:27	3°♊40'33	18.44411 AU
direct	2027 Feb 08 12:29	1°♊40'57	
evening set	2027 May 10 16:24	4°♊47'56	
conjunction	2027 May 27 06:12	5°♊45'41	-0°06'29
minimum elong	2027 May 27 06:12	5°♊45'41	0°06'29
behind sun begin	2027 May 26 23:52	5°♊44'47	
behind sun end	2027 May 27 12:32	5°♊46'35	
max. Earth dist.	2027 May 27 05:58	5°♊45'39	20.41088 AU
morning rise	2027 Jun 12 22:16	6°♊43'48	
retrograde	2027 Sep 15 09:09	9°♊57'20	
opposition	2027 Nov 30 09:22	7°♊55'51	-0°05'18
min. Earth dist.	2027 Nov 30 10:22	7°♊55'45	18.37680 AU
direct	2028 Feb 12 23:49	5°♊55'52	
evening set	2028 May 14 08:20	9°♊03'54	
conjunction	2028 May 30 22:46	10°♊01'57	-0°03'14
minimum elong	2028 May 30 22:47	10°♊01'57	0°03'13
behind sun begin	2028 May 30 16:05	10°♊00'59	

behind sun end	2028 May 31	05:30	10°♊02'54	
max. Earth dist.	2028 May 30	19:33	10°♊01'31	20.34297 AU
morning rise	2028 Jun 16	15:38	11°♊00'21	
retrograde	2028 Sep 19	00:01	14°♊14'27	
opposition	2028 Dec 03	20:29	12°♊12'46	-0°01'39
min. Earth dist.	2028 Dec 03	23:29	12°♊12'27	18.30843 AU
direct	2029 Feb 16	10:52	10°♊12'20	
evening set	2029 May 19	01:00	13°♊21'28	
asc. node	2029 May 19	19:38	13°♊24'09	
conjunction	2029 Jun 04	16:23	14°♊19'50	0°00'09
minimum elong	2029 Jun 04	16:23	14°♊19'50	0°00'09
behind sun begin	2029 Jun 04	09:45	14°♊18'53	
behind sun end	2029 Jun 04	23:02	14°♊20'47	
max. Earth dist.	2029 Jun 04	12:34	14°♊19'20	20.27419 AU
morning rise	2029 Jun 21	09:34	15°♊18'31	
retrograde	2029 Sep 23	16:22	18°♊33'11	
opposition	2029 Dec 08	08:11	16°♊31'19	0°02'01
min. Earth dist.	2029 Dec 08	12:06	16°♊30'54	18.23945 AU
direct	2030 Feb 20	23:23	14°♊30'28	
evening set	2030 May 23	18:33	17°♊40'45	
conjunction	2030 Jun 09	10:28	18°♊39'25	0°03'32
minimum elong	2030 Jun 09	10:27	18°♊39'25	0°03'33
behind sun begin	2030 Jun 09	03:45	18°♊38'27	
behind sun end	2030 Jun 09	17:10	18°♊40'23	
max. Earth dist.	2030 Jun 09	03:50	18°♊38'28	20.20524 AU
morning rise	2030 Jun 26	04:14	19°♊38'22	
retrograde	2030 Sep 28	08:27	22°♊53'39	
opposition	2030 Dec 12	20:36	20°♊51'36	0°05'42
min. Earth dist.	2030 Dec 13	02:25	20°♊50'59	18.17072 AU
direct	2031 Feb 25	11:24	18°♊50'19	
evening set	2031 May 28	13:00	22°♊01'48	
conjunction	2031 Jun 14	05:44	23°♊00'47	0°06'50
minimum elong	2031 Jun 14	05:43	23°♊00'47	0°06'50
behind sun begin	2031 Jun 13	23:26	22°♊59'52	
behind sun end	2031 Jun 14	12:00	23°♊01'41	
max. Earth dist.	2031 Jun 13	22:38	22°♊59'45	20.13674 AU
morning rise	2031 Jun 30	23:43	24°♊00'00	
retrograde	2031 Oct 03	02:43	27°♊15'53	
opposition	2031 Dec 17	09:27	25°♊13'42	0°09'23
min. Earth dist.	2031 Dec 17	15:57	25°♊13'01	18.10262 AU
direct	2032 Mar 01	01:34	23°♊12'01	
evening set	2032 Jun 01	08:36	26°♊24'45	
conjunction	2032 Jun 18	01:46	27°♊24'01	0°10'07
minimum elong	2032 Jun 18	01:46	27°♊24'01	0°10'07
behind sun begin	2032 Jun 17	20:23	27°♊23'15	
behind sun end	2032 Jun 18	07:08	27°♊24'48	
max. Earth dist.	2032 Jun 17	15:56	27°♊22'34	20.06915 AU
morning rise	2032 Jul 04	20:11	28°♊23'31	
	2032 Aug 03	18:23	0°♋	
retrograde	2032 Oct 06	19:52	1°♋40'01	
	2032 Dec 12	06:19	30°℞♊	
opposition	2032 Dec 20	23:11	29°♊37'44	0°13'02
min. Earth dist.	2032 Dec 21	07:45	29°♊36'49	18.03566 AU
direct	2033 Mar 05	14:41	27°♊35'40	
	2033 May 22	13:17	0°♋	
evening set	2033 Jun 06	05:01	0°♋49'40	
conjunction	2033 Jun 22	22:49	1°♋49'15	0°13'23
minimum elong	2033 Jun 22	22:49	1°♋49'15	0°13'23
behind sun begin	2033 Jun 22	19:07	1°♋48'43	
behind sun end	2033 Jun 23	02:31	1°♋49'48	
max. Earth dist.	2033 Jun 22	12:28	1°♋47'43	20.00279 AU
morning rise	2033 Jul 09	17:17	2°♋49'00	
retrograde	2033 Oct 11	16:04	6°♋06'08	
opposition	2033 Dec 25	13:28	4°♋03'47	0°16'38
min. Earth dist.	2033 Dec 25	22:35	4°♋02'48	17.96995 AU
direct	2034 Mar 10	06:49	2°♋01'23	
evening set	2034 Jun 11	02:36	5°♋16'41	
conjunction	2034 Jun 27	20:38	6°♋16'34	0°16'35
minimum elong	2034 Jun 27	20:38	6°♋16'34	0°16'34
max. Earth dist.	2034 Jun 27	07:45	6°♋14'39	19.93777 AU
morning rise	2034 Jul 14	15:20	7°♋16'34	
retrograde	2034 Oct 16	10:16	10°♋34'20	
opposition	2034 Dec 30	04:38	8°♋31'57	0°20'10
min. Earth dist.	2034 Dec 30	16:01	8°♋30'43	17.90572 AU
direct	2035 Mar 14	21:30	6°♋29'12	
evening set	2035 Jun 16	00:58	9°♋45'50	
conjunction	2035 Jul 02	19:30	10°♋46'01	0°19'43
minimum elong	2035 Jul 02	19:30	10°♋46'01	0°19'43
max. Earth dist.	2035 Jul 02	05:49	10°♋43'57	19.87416 AU
morning rise	2035 Jul 19	14:10	11°♋46'15	
retrograde	2035 Oct 21	08:02	15°♋04'38	
opposition	2036 Jan 03	20:30	13°♋02'13	0°23'36
min. Earth dist.	2036 Jan 04	08:28	13°♋00'55	17.84265 AU
direct	2036 Mar 18	15:29	10°♋59'09	
evening set	2036 Jun 20	00:41	14°♋17'06	
conjunction	2036 Jul 06	19:19	15°♋17'33	0°22'45
minimum elong	2036 Jul 06	19:19	15°♋17'33	0°22'45
max. Earth dist.	2036 Jul 06	03:06	15°♋15'06	19.81156 AU
morning rise	2036 Jul 23	13:56	16°♋18'01	
retrograde	2036 Oct 25	03:23	19°♋37'00	
opposition	2037 Jan 07	13:14	17°♋34'32	0°26'56
min. Earth dist.	2037 Jan 08	03:39	17°♋32'59	17.78074 AU
direct	2037 Mar 23	08:26	15°♋31'07	
evening set	2037 Jun 25	01:08	18°♋50'23	
conjunction	2037 Jul 11	19:59	19°♋51'05	0°25'40
minimum elong	2037 Jul 11	19:59	19°♋51'05	0°25'40
max. Earth dist.	2037 Jul 11	02:33	19°♋48'26	19.75023 AU
morning rise	2037 Jul 28	14:23	20°♋51'46	
retrograde	2037 Oct 30	01:59	24°♋11'18	
opposition	2038 Jan 12	06:42	22°♋08'47	0°30'06
min. Earth dist.	2038 Jan 12	21:30	22°♋07'11	17.72006 AU
direct	2038 Mar 28	04:27	20°♋05'01	
evening set	2038 Jun 30	02:18	23°♋25'32	
conjunction	2038 Jul 16	21:10	24°♋26'29	0°28'27
minimum elong	2038 Jul 16	21:10	24°♋26'29	0°28'27
max. Earth dist.	2038 Jul 16	01:48	24°♋23'32	19.69021 AU
morning rise	2038 Aug 02	15:18	25°♋27'21	
retrograde	2038 Nov 03	22:01	28°♋47'25	
opposition	2039 Jan 17	01:03	26°♋44'49	0°33'07
min. Earth dist.	2039 Jan 17	18:08	26°♋42'58	17.66103 AU
direct	2039 Apr 01	23:32	24°♋40'41	
evening set	2039 Jul 05	04:19	28°♋02'26	
conjunction	2039 Jul 21	23:11	29°♋03'35	0°31'03
minimum elong	2039 Jul 21	23:10	29°♋03'35	0°31'02
max. Earth dist.	2039 Jul 21	02:26	29°♋00'25	19.63222 AU
	2039 Aug 06	10:03	0°♌	
morning rise	2039 Aug 07	17:01	0°♌04'38	
retrograde	2039 Nov 08	21:05	3°♌25'10	
opposition	2040 Jan 21	19:46	1°♌22'30	0°35'56
min. Earth dist.	2040 Jan 22	13:05	1°♌20'37	17.60421 AU
	2040 Feb 25	07:35	30°℞♋	
direct	2040 Apr 05	21:44	29°♋17'59	
	2040 May 15	22:17	0°♌	

evening set	2040 Jul	09	07:03	2°♌40'55	
max. Earth dist.	2040 Jul	25	03:52	3°♌38'55	19.57664 AU
conjunction	2040 Jul	26	01:49	3°♌42'17	0°33'28
minimum elong	2040 Jul	26	01:49	3°♌42'17	0°33'29
morning rise	2040 Aug	11	19:07	4°♌43'28	
retrograde	2040 Nov	12	17:54	8°♌04'26	
opposition	2041 Jan	25	15:28	6°♌01'41	0°38'31
min. Earth dist.	2041 Jan	26	10:43	5°♌59'34	17.55025 AU
direct	2041 Apr	10	19:05	3°♌56'49	
evening set	2041 Jul	14	10:14	7°♌20'51	
max. Earth dist.	2041 Jul	30	05:25	8°♌18'48	19.52441 AU
conjunction	2041 Jul	31	04:41	8°♌22'23	0°35'41
minimum elong	2041 Jul	31	04:40	8°♌22'23	0°35'40
morning rise	2041 Aug	16	21:33	9°♌23'42	
retrograde	2041 Nov	17	17:17	12°♌45'04	
opposition	2042 Jan	30	11:36	10°♌42'13	0°40'52
min. Earth dist.	2042 Jan	31	06:45	10°♌40'08	17.49993 AU
direct	2042 Apr	15	18:57	8°♌37'00	
evening set	2042 Jul	19	13:53	12°♌02'05	
max. Earth dist.	2042 Aug	04	08:39	13°♌00'09	19.47605 AU
conjunction	2042 Aug	05	08:06	13°♌03'46	0°37'39
minimum elong	2042 Aug	05	08:06	13°♌03'46	0°37'40
morning rise	2042 Aug	22	00:14	14°♌05'12	
	2042 Sep	06	15:38	15°♌	
retrograde	2042 Nov	22	15:16	17°♌26'54	
opposition	2043 Feb	04	08:26	15°♌24'00	0°42'57
min. Earth dist.	2043 Feb	05	05:01	15°♌21'44	17.45392 AU
	2043 Feb	13	12:36	15°℞♌	
direct	2043 Apr	20	17:49	13°♌18'27	
	2043 Jun	23	10:17	15°♌	
evening set	2043 Jul	24	18:03	16°♌44'31	
max. Earth dist.	2043 Aug	09	10:57	17°♌42'29	19.43248 AU
conjunction	2043 Aug	10	11:44	17°♌46'20	0°39'23
minimum elong	2043 Aug	10	11:44	17°♌46'19	0°39'24
morning rise	2043 Aug	27	03:21	18°♌47'51	
retrograde	2043 Nov	27	15:38	22°♌09'50	
opposition	2044 Feb	09	05:50	20°♌06'53	0°44'45
min. Earth dist.	2044 Feb	10	02:05	20°♌04'40	17.41295 AU
direct	2044 Apr	24	18:51	18°♌01'02	
evening set	2044 Jul	28	22:30	21°♌28'01	
conjunction	2044 Aug	14	15:48	22°♌29'56	0°40'51
minimum elong	2044 Aug	14	15:48	22°♌29'56	0°40'51
max. Earth dist.	2044 Aug	13	15:39	22°♌26'10	19.39409 AU
morning rise	2044 Aug	31	06:27	23°♌31'30	
retrograde	2044 Dec	01	14:46	26°♌53'44	
opposition	2045 Feb	13	03:57	24°♌50'47	0°46'14
min. Earth dist.	2045 Feb	14	00:59	24°♌48'28	17.37747 AU
direct	2045 Apr	29	18:21	22°♌44'42	
evening set	2045 Aug	03	03:22	26°♌12'30	
conjunction	2045 Aug	19	19:54	27°♌14'29	0°42'03
minimum elong	2045 Aug	19	19:54	27°♌14'29	0°42'03
max. Earth dist.	2045 Aug	18	18:36	27°♌10'33	19.36165 AU
morning rise	2045 Sep	05	09:51	28°♌16'07	
	2045 Oct	06	07:14	0°♍	
retrograde	2045 Dec	06	16:02	1°♍38'33	
	2046 Feb	08	18:49	30°℞♌	
opposition	2046 Feb	18	02:35	29°♌35'36	0°47'25
min. Earth dist.	2046 Feb	18	23:08	29°♌33'21	17.34820 AU
direct	2046 May	04	19:52	27°♌29'21	
	2046 Jul	22	22:33	0°♍	
evening set	2046 Aug	08	08:08	0°♍57'54	
max. Earth dist.	2046 Aug	24	00:10	1°♍56'11	19.33543 AU
conjunction	2046 Aug	25	00:11	1°♍59'56	0°42'58
minimum elong	2046 Aug	25	00:11	1°♍59'56	0°42'57
morning rise	2046 Sep	10	13:07	3°♍01'35	
retrograde	2046 Dec	11	16:09	6°♍24'11	
opposition	2047 Feb	23	01:50	4°♍21'19	0°48'17
min. Earth dist.	2047 Feb	23	22:38	4°♍19'02	17.32504 AU
direct	2047 May	09	20:10	2°♍14'57	
evening set	2047 Aug	13	13:27	5°♍44'10	
max. Earth dist.	2047 Aug	29	03:33	6°♍42'18	19.31540 AU
conjunction	2047 Aug	30	04:35	6°♍46'13	0°43'35
minimum elong	2047 Aug	30	04:35	6°♍46'13	0°43'35
morning rise	2047 Sep	15	16:42	7°♍47'51	
retrograde	2047 Dec	16	17:22	11°♍10'35	
opposition	2048 Feb	28	01:27	9°♍07'48	0°48'49
min. Earth dist.	2048 Feb	28	22:05	9°♍05'32	17.30807 AU
direct	2048 May	13	22:37	7°♍01'23	
evening set	2048 Aug	17	18:44	10°♍31'09	
max. Earth dist.	2048 Sep	02	09:32	11°♍29'30	19.30131 AU
conjunction	2048 Sep	03	09:10	11°♍33'13	0°43'54
minimum elong	2048 Sep	03	09:10	11°♍33'13	0°43'54
morning rise	2048 Sep	19	20:08	12°♍34'48	
retrograde	2048 Dec	20	17:43	15°♍57'35	
opposition	2049 Mar	04	01:45	13°♍54'56	0°49'01
min. Earth dist.	2049 Mar	04	22:12	13°♍52'42	17.29672 AU
direct	2049 May	19	00:47	11°♍48'31	
evening set	2049 Aug	22	24:00	15°♍18'43	
conjunction	2049 Sep	08	13:22	16°♍20'44	0°43'56
minimum elong	2049 Sep	08	13:22	16°♍20'44	0°43'55
max. Earth dist.	2049 Sep	07	13:03	16°♍16'54	19.29270 AU
morning rise	2049 Sep	24	23:24	17°♍22'15	
retrograde	2049 Dec	25	18:12	20°♍45'04	
opposition	2050 Mar	09	02:30	18°♍42'31	0°48'53
min. Earth dist.	2050 Mar	09	22:59	18°♍40'17	17.29085 AU
direct	2050 May	24	04:13	16°♍36'05	
evening set	2050 Aug	28	05:08	20°♍06'37	
conjunction	2050 Sep	13	17:41	21°♍08'34	0°43'39
minimum elong	2050 Sep	13	17:41	21°♍08'34	0°43'39
max. Earth dist.	2050 Sep	12	18:38	21°♍04'56	19.28935 AU
morning rise	2050 Sep	30	02:33	22°♍09'59	
retrograde	2050 Dec	30	18:44	25°♍32'45	
opposition	2051 Mar	14	03:29	23°♍30'19	0°48'24
min. Earth dist.	2051 Mar	14	23:18	23°♍28'09	17.28989 AU
direct	2051 May	29	08:25	21°♍23'55	
evening set	2051 Sep	02	10:15	24°♍54'37	
conjunction	2051 Sep	18	21:43	25°♍56'28	0°43'03
minimum elong	2051 Sep	18	21:43	25°♍56'28	0°43'03
max. Earth dist.	2051 Sep	17	22:23	25°♍52'47	19.29082 AU
morning rise	2051 Oct	05	05:31	26°♍57'47	
	2051 Dec	08	20:48	0°♎	
retrograde	2052 Jan	04	18:25	0°♎20'25	
	2052 Feb	01	03:02	30°℞♍	
opposition	2052 Mar	18	04:56	28°♍18'05	0°47'35
min. Earth dist.	2052 Mar	19	00:59	28°♍15'54	17.29382 AU
direct	2052 Jun	02	12:16	26°♍11'42	
evening set	2052 Sep	06	14:53	29°♍42'29	
	2052 Sep	11	08:10	0°♎	
max. Earth dist.	2052 Sep	22	03:07	0°♎40'41	19.29713 AU
conjunction	2052 Sep	23	01:19	0°♎44'12	0°42'10
minimum elong	2052 Sep	23	01:20	0°♎44'12	0°42'10

morning rise	2052 Oct 09 07:59	1°♎45'22	
retrograde	2053 Jan 08 19:07	5°♎07'49	
opposition	2053 Mar 23 06:31	3°♎05'35	0°46'25
min. Earth dist.	2053 Mar 24 01:16	3°♎03'33	17.30239 AU
direct	2053 Jun 07 17:37	0°♎59'16	
evening set	2053 Sep 11 19:09	4°♎29'57	
max. Earth dist.	2053 Sep 27 06:54	5°♎28'07	19.30813 AU
conjunction	2053 Sep 28 04:30	5°♎31'31	0°40'59
minimum elong	2053 Sep 28 04:30	5°♎31'31	0°40'59
morning rise	2053 Oct 14 10:00	6°♎32'33	
retrograde	2054 Jan 13 18:00	9°♎54'45	
opposition	2054 Mar 28 08:16	7°♎52'36	0°44'56
min. Earth dist.	2054 Mar 29 03:10	7°♎50'33	17.31589 AU
direct	2054 Jun 12 21:07	5°♎46'20	
evening set	2054 Sep 16 22:44	9°♎16'49	
max. Earth dist.	2054 Oct 02 10:22	10°♎14'58	19.32415 AU
conjunction	2054 Oct 03 07:00	10°♎18'13	0°39'31
minimum elong	2054 Oct 03 07:01	10°♎18'13	0°39'30
morning rise	2054 Oct 19 11:30	11°♎19'04	
retrograde	2055 Jan 18 18:31	14°♎40'58	
opposition	2055 Apr 02 09:55	12°♎38'54	0°43'09
min. Earth dist.	2055 Apr 03 03:00	12°♎37'03	17.33422 AU
direct	2055 Jun 18 02:40	10°♎32'43	
evening set	2055 Sep 22 01:46	14°♎02'52	
conjunction	2055 Oct 08 08:58	15°♎04'05	0°37'46
minimum elong	2055 Oct 08 08:58	15°♎04'05	0°37'47
max. Earth dist.	2055 Oct 07 13:49	15°♎01'04	19.34500 AU
morning rise	2055 Oct 24 12:15	16°♎04'44	
retrograde	2056 Jan 23 16:29	19°♎26'15	
opposition	2056 Apr 06 11:37	17°♎24'17	0°41'03
min. Earth dist.	2056 Apr 07 04:40	17°♎22'26	17.35767 AU
direct	2056 Jun 22 05:33	15°♎18'13	
evening set	2056 Sep 26 04:05	18°♎47'55	
conjunction	2056 Oct 12 10:04	19°♎48'54	0°35'47
minimum elong	2056 Oct 12 10:04	19°♎48'54	0°35'47
max. Earth dist.	2056 Oct 11 15:54	19°♎46'02	19.37122 AU
morning rise	2056 Oct 28 12:23	20°♎49'21	
retrograde	2057 Jan 27 16:30	24°♎10'28	
opposition	2057 Apr 11 13:10	22°♎08'34	0°38'42
min. Earth dist.	2057 Apr 12 03:49	22°♎06'59	17.38652 AU
direct	2057 Jun 27 10:05	20°♎02'39	
evening set	2057 Oct 01 05:22	23°♎31'47	
conjunction	2057 Oct 17 10:20	24°♎32'33	0°33'33
minimum elong	2057 Oct 17 10:20	24°♎32'33	0°33'33
max. Earth dist.	2057 Oct 16 18:37	24°♎30'05	19.40285 AU
morning rise	2057 Nov 02 11:27	25°♎32'46	
retrograde	2058 Feb 01 14:07	28°♎53'26	
opposition	2058 Apr 16 14:40	26°♎51'39	0°36'05
min. Earth dist.	2058 Apr 17 04:48	26°♎50'08	17.42098 AU
direct	2058 Jul 02 12:06	24°♎45'56	
evening set	2058 Oct 06 06:05	28°♎14'26	
conjunction	2058 Oct 22 09:48	29°♎14'56	0°31'07
minimum elong	2058 Oct 22 09:48	29°♎14'56	0°31'07
max. Earth dist.	2058 Oct 21 19:02	29°♎12'37	19.44025 AU
	2058 Nov 03 09:27	0°♏	
morning rise	2058 Nov 07 10:02	0°♏14'55	
retrograde	2059 Feb 06 13:04	3°♏35'06	
opposition	2059 Apr 21 15:38	1°♏33'28	0°33'15
min. Earth dist.	2059 Apr 22 03:10	1°♏32'14	17.46115 AU
	2059 Jun 01 19:14	30°℞♎	
direct	2059 Jul 07 15:19	29°♎28'00	
	2059 Aug 11 18:50	0°♏	
evening set	2059 Oct 11 05:53	2°♏55'46	
conjunction	2059 Oct 27 08:38	3°♏56'01	0°28'29
minimum elong	2059 Oct 27 08:38	3°♏56'01	0°28'28
max. Earth dist.	2059 Oct 26 20:46	3°♏54'10	19.48323 AU
morning rise	2059 Nov 12 07:41	4°♏55'45	
retrograde	2060 Feb 11 10:15	8°♏15'27	
opposition	2060 Apr 25 16:41	6°♏13'59	0°30'12
min. Earth dist.	2060 Apr 26 03:22	6°♏12'51	17.50676 AU
direct	2060 Jul 11 16:55	4°♏08'51	
evening set	2060 Oct 15 04:50	7°♏35'49	
conjunction	2060 Oct 31 06:20	8°♏35'46	0°25'41
minimum elong	2060 Oct 31 06:20	8°♏35'46	0°25'41
max. Earth dist.	2060 Oct 30 19:23	8°♏34'04	19.53154 AU
morning rise	2060 Nov 16 04:36	9°♏35'15	
retrograde	2061 Feb 15 08:02	12°♏54'26	
opposition	2061 Apr 30 17:19	10°♏53'11	0°26'59
min. Earth dist.	2061 May 01 01:25	10°♏52'19	17.55744 AU
direct	2061 Jul 16 19:12	8°♏48'24	
evening set	2061 Oct 20 02:50	12°♏14'30	
conjunction	2061 Nov 05 03:27	13°♏14'11	0°22'43
minimum elong	2061 Nov 05 03:27	13°♏14'11	0°22'43
max. Earth dist.	2061 Nov 04 19:34	13°♏12'57	19.58447 AU
morning rise	2061 Nov 21 00:40	14°♏13'22	
	2061 Dec 04 02:44	15°♏	
retrograde	2062 Feb 20 04:17	17°♏32'02	
opposition	2062 May 05 17:35	15°♏31'00	0°23'36
min. Earth dist.	2062 May 06 00:41	15°♏30'15	17.61231 AU
	2062 May 18 01:51	15°℞♏	
direct	2062 Jul 21 20:54	13°♏26'37	
	2062 Sep 21 06:57	15°♏	
evening set	2062 Oct 25 00:08	16°♏51'46	
conjunction	2062 Nov 09 23:35	17°♏51'08	0°19'38
minimum elong	2062 Nov 09 23:35	17°♏51'08	0°19'38
max. Earth dist.	2062 Nov 09 16:24	17°♏50'01	19.64125 AU
morning rise	2062 Nov 25 20:06	18°♏50'04	
retrograde	2063 Feb 25 00:11	22°♏08'10	
opposition	2063 May 10 17:31	20°♏07'21	0°20'05
min. Earth dist.	2063 May 10 22:28	20°♏06'49	17.67071 AU
direct	2063 Jul 26 22:07	18°♏03'21	
evening set	2063 Oct 29 20:24	21°♏27'30	
conjunction	2063 Nov 14 18:59	22°♏26'34	0°16'26
minimum elong	2063 Nov 14 18:59	22°♏26'34	0°16'26
max. Earth dist.	2063 Nov 14 14:42	22°♏25'54	19.70105 AU
morning rise	2063 Nov 30 14:31	23°♏25'12	
retrograde	2064 Feb 29 19:29	26°♏42'43	
opposition	2064 May 14 17:08	24°♏42'07	0°16'28
min. Earth dist.	2064 May 14 20:47	24°♏41'44	17.73166 AU
direct	2064 Jul 30 23:16	22°♏38'32	
evening set	2064 Nov 02 15:56	26°♏01'36	
conjunction	2064 Nov 18 13:24	27°♏00'20	0°13'09
minimum elong	2064 Nov 18 13:24	27°♏00'21	0°13'09
behind sun begin	2064 Nov 18 09:25	26°♏59'44	
behind sun end	2064 Nov 18 17:23	27°♏00'57	
max. Earth dist.	2064 Nov 18 09:48	26°♏59'48	19.76315 AU
morning rise	2064 Dec 04 08:20	27°♏58'43	
	2065 Jan 10 19:55	0°♐	
retrograde	2065 Mar 05 13:50	1°♐15'38	
	2065 May 01 08:59	30°℞♏	
opposition	2065 May 19 16:14	29°♏15'12	0°12'45
min. Earth dist.	2065 May 19 18:06	29°♏15'01	17.79477 AU

direct	2065 Aug 04 22:39	27°♏12'00	
	2065 Oct 28 21:05	0°♐	
evening set	2065 Nov 07 10:16	0°♐33'56	
conjunction	2065 Nov 23 07:02	1°♐32'22	0°09'48
minimum elong	2065 Nov 23 07:01	1°♐32'22	0°09'48
behind sun begin	2065 Nov 23 01:37	1°♐31'33	
behind sun end	2065 Nov 23 12:26	1°♐33'11	
max. Earth dist.	2065 Nov 23 06:03	1°♐32'13	19.82697 AU
morning rise	2065 Dec 09 01:09	2°♐30'27	
retrograde	2066 Mar 10 07:58	5°♐46'44	
opposition	2066 May 24 14:47	3°♐46'29	0°08'59
min. Earth dist.	2066 May 24 15:08	3°♐46'27	17.85905 AU
direct	2066 Aug 09 22:08	1°♐43'40	
evening set	2066 Nov 12 03:55	5°♐04'24	
conjunction	2066 Nov 27 23:40	6°♐02'31	0°06'25
minimum elong	2066 Nov 27 23:40	6°♐02'31	0°06'24
behind sun begin	2066 Nov 27 17:27	6°♐01'35	
behind sun end	2066 Nov 28 05:52	6°♐03'27	
max. Earth dist.	2066 Nov 27 23:20	6°♐02'28	19.89172 AU
morning rise	2066 Dec 13 17:17	7°♐00'19	
retrograde	2067 Mar 15 01:07	10°♐15'57	
opposition	2067 May 29 12:40	8°♐15'51	0°05'12
min. Earth dist.	2067 May 29 11:39	8°♐15'58	17.92421 AU
direct	2067 Aug 14 19:41	6°♐13'23	
evening set	2067 Nov 16 20:26	9°♐32'54	
conjunction	2067 Dec 02 15:32	10°♐30'42	0°03'01
minimum elong	2067 Dec 02 15:32	10°♐30'42	0°03'01
behind sun begin	2067 Dec 02 09:00	10°♐29'43	
behind sun end	2067 Dec 02 22:05	10°♐31'41	
max. Earth dist.	2067 Dec 02 17:36	10°♐30'58	19.95715 AU
morning rise	2067 Dec 18 08:29	11°♐28'13	
retrograde	2068 Mar 18 18:13	14°♐43'11	
opposition	2068 Jun 02 10:04	12°♐43'13	0°01'24
min. Earth dist.	2068 Jun 02 07:08	12°♐43'31	17.98972 AU
direct	2068 Aug 18 17:28	10°♐41'05	
desc. node	2068 Oct 16 06:54	12°♐05'45	
evening set	2068 Nov 20 11:56	13°♐59'20	
conjunction	2068 Dec 06 06:12	14°♐56'49	-0°00'29
minimum elong	2068 Dec 06 06:12	14°♐56'49	0°00'29
behind sun begin	2068 Dec 05 23:39	14°♐55'51	
behind sun end	2068 Dec 06 12:44	14°♐57'48	
max. Earth dist.	2068 Dec 06 09:14	14°♐57'14	20.02287 AU
morning rise	2068 Dec 21 22:47	15°♐54'04	
retrograde	2069 Mar 23 10:03	19°♐08'22	
opposition	2069 Jun 07 06:46	17°♐08'29	-0°02'23
min. Earth dist.	2069 Jun 07 02:40	17°♐08'54	18.05570 AU
direct	2069 Aug 23 13:18	15°♐06'40	
evening set	2069 Nov 25 02:22	18°♐23'38	
conjunction	2069 Dec 10 20:05	19°♐20'49	-0°03'55
minimum elong	2069 Dec 10 20:06	19°♐20'49	0°03'55
behind sun begin	2069 Dec 10 13:37	19°♐19'51	
behind sun end	2069 Dec 11 02:35	19°♐21'47	
max. Earth dist.	2069 Dec 11 01:28	19°♐21'36	20.08903 AU
morning rise	2069 Dec 26 12:13	20°♐17'48	
retrograde	2070 Mar 28 01:56	23°♐31'25	
opposition	2070 Jun 12 02:28	21°♐31'37	-0°06'07
min. Earth dist.	2070 Jun 11 20:09	21°♐32'16	18.12198 AU
direct	2070 Aug 28 09:39	19°♐30'07	
evening set	2070 Nov 29 15:57	22°♐45'48	
conjunction	2070 Dec 15 08:59	23°♐42'41	-0°07'15
minimum elong	2070 Dec 15 08:58	23°♐42'41	0°07'14
behind sun begin	2070 Dec 15 02:56	23°♐41'47	
behind sun end	2070 Dec 15 15:01	23°♐43'35	
max. Earth dist.	2070 Dec 15 15:38	23°♐43'40	20.15553 AU
morning rise	2070 Dec 31 00:49	24°♐39'24	
retrograde	2071 Apr 01 16:05	27°♐52'22	
opposition	2071 Jun 16 21:43	25°♐52'38	-0°09'47
min. Earth dist.	2071 Jun 16 14:19	25°♐53'24	18.18889 AU
direct	2071 Sep 02 03:17	23°♐51'29	
evening set	2071 Dec 04 04:23	27°♐05'54	
conjunction	2071 Dec 19 20:55	28°♐02'29	-0°10'30
minimum elong	2071 Dec 19 20:55	28°♐02'29	0°10'30
behind sun begin	2071 Dec 19 15:46	28°♐01'43	
behind sun end	2071 Dec 20 02:05	28°♐03'15	
max. Earth dist.	2071 Dec 20 05:52	28°♐03'50	20.22273 AU
morning rise	2072 Jan 04 12:24	28°♐58'56	
	2072 Jan 22 11:30	0°♑	
retrograde	2072 Apr 05 07:16	2°♑11'17	
opposition	2072 Jun 20 16:08	0°♑11'40	-0°13'22
min. Earth dist.	2072 Jun 20 06:05	0°♑12'41	18.25633 AU
	2072 Jun 25 10:28	30°℞♐	
direct	2072 Sep 05 22:05	28°♐10'52	
	2072 Nov 12 05:01	0°♑	
evening set	2072 Dec 07 16:06	1°♑24'03	
conjunction	2072 Dec 23 08:06	2°♑20'21	-0°13'40
minimum elong	2072 Dec 23 08:05	2°♑20'21	0°13'39
behind sun begin	2072 Dec 23 04:24	2°♑19'49	
behind sun end	2072 Dec 23 11:46	2°♑20'54	
max. Earth dist.	2072 Dec 23 18:34	2°♑21'55	20.29038 AU
morning rise	2073 Jan 07 23:24	3°♑16'34	
retrograde	2073 Apr 09 19:57	6°♑28'19	
opposition	2073 Jun 25 09:51	4°♑28'49	-0°16'50
min. Earth dist.	2073 Jun 24 22:56	4°♑29'56	18.32429 AU
direct	2073 Sep 10 13:23	2°♑28'24	
evening set	2073 Dec 12 02:50	5°♑40'24	
conjunction	2073 Dec 27 18:30	6°♑36'26	-0°16'45
minimum elong	2073 Dec 27 18:31	6°♑36'26	0°16'45
max. Earth dist.	2073 Dec 28 06:54	6°♑38'17	20.35837 AU
morning rise	2074 Jan 12 09:40	7°♑32'24	
retrograde	2074 Apr 14 10:39	10°♑43'36	
opposition	2074 Jun 30 02:43	8°♑44'15	-0°20'12
min. Earth dist.	2074 Jun 29 13:17	8°♑45'37	18.39208 AU
direct	2074 Sep 15 06:21	6°♑44'15	
evening set	2074 Dec 16 12:53	9°♑55'04	
conjunction	2075 Jan 01 04:10	10°♑50'51	-0°19'43
minimum elong	2075 Jan 01 04:10	10°♑50'51	0°19'43
max. Earth dist.	2075 Jan 01 18:01	10°♑52'55	20.42582 AU
morning rise	2075 Jan 16 19:16	11°♑46'37	
retrograde	2075 Apr 18 22:11	14°♑57'17	
opposition	2075 Jul 04 19:05	12°♑58'05	-0°23'25
min. Earth dist.	2075 Jul 04 05:10	12°♑59'30	18.45919 AU
direct	2075 Sep 19 19:46	10°♑58'30	
evening set	2075 Dec 20 22:13	14°♑08'12	
conjunction	2076 Jan 05 13:16	15°♑03'44	-0°22'34
minimum elong	2076 Jan 05 13:16	15°♑03'44	0°22'34
max. Earth dist.	2076 Jan 06 04:39	15°♑06'02	20.49237 AU
morning rise	2076 Jan 21 04:20	15°♑59'17	
retrograde	2076 Apr 22 11:56	19°♑09'28	
opposition	2076 Jul 08 10:44	17°♑10'26	-0°26'30
min. Earth dist.	2076 Jul 07 18:27	17°♑12'04	18.52494 AU
direct	2076 Sep 23 11:33	15°♑11'15	
evening set	2076 Dec 24 06:51	18°♑19'51	

conjunction	2077 Jan 08	21:40	19°♑15'10	-0°25'16	
minimum elong	2077 Jan 08	21:40	19°♑15'10	0°25'17	
max. Earth dist.	2077 Jan 09	14:23	19°♑17'39	20.55707 AU	
morning rise	2077 Jan 24	12:50	20°♑10'32		
retrograde	2077 Apr 26	22:55	23°♑20'15		
min. Earth dist.	2077 Jul 12	09:32	21°♑23'00	18.58860 AU	
opposition	2077 Jul 13	01:52	21°♑21'21	-0°29'25	
direct	2077 Sep 27	23:24	19°♑22'33		
evening set	2077 Dec 28	14:58	22°♑30'07		
conjunction	2078 Jan 13	05:42	23°♑25'13	-0°27'50	
minimum elong	2078 Jan 13	05:41	23°♑25'13	0°27'50	
max. Earth dist.	2078 Jan 13	23:22	23°♑27'50	20.61939 AU	
morning rise	2078 Jan 28	20:58	24°♑20'23		
retrograde	2078 May 01	11:10	27°♑29'40		
opposition	2078 Jul 17	16:03	25°♑30'54	-0°32'10	
min. Earth dist.	2078 Jul 16	21:47	25°♑32'44	18.64940 AU	
direct	2078 Oct 02	13:53	23°♑32'28		
evening set	2079 Jan 01	22:36	26°♑39'01		
conjunction	2079 Jan 17	13:12	27°♑33'55	-0°30'15	
minimum elong	2079 Jan 17	13:12	27°♑33'55	0°30'16	
max. Earth dist.	2079 Jan 18	07:54	27°♑36'41	20.67840 AU	
morning rise	2079 Feb 02	04:39	28°♑28'56		
	2079 Mar 02	17:06	0°♒		
retrograde	2079 May 05	21:21	1°♒37'48		
	2079 Jul 13	12:32	30°℞♑		
min. Earth dist.	2079 Jul 21	11:59	29°♑40'56	18.70671 AU	
opposition	2079 Jul 22	05:59	29°♑39'08	-0°34'45	
direct	2079 Oct 07	00:45	27°♑41'02		
	2079 Dec 23	06:32	0°♒		
evening set	2080 Jan 06	05:32	0°♒46'36		
conjunction	2080 Jan 21	20:10	1°♒41'19	-0°32'30	
minimum elong	2080 Jan 21	20:09	1°♒41'19	0°32'29	
max. Earth dist.	2080 Jan 22	15:25	1°♒44'08	20.73374 AU	
morning rise	2080 Feb 06	11:52	2°♒36'10		
retrograde	2080 May 09	08:26	5°♒44'39		
opposition	2080 Jul 25	19:09	3°♒46'03	-0°37'07	
min. Earth dist.	2080 Jul 24	23:25	3°♒48'01	18.75996 AU	
direct	2080 Oct 10	13:28	1°♒48'13		
evening set	2081 Jan 09	12:06	4°♒52'51		
conjunction	2081 Jan 25	02:49	5°♒47'24	-0°34'34	
minimum elong	2081 Jan 25	02:49	5°♒47'24	0°34'34	
max. Earth dist.	2081 Jan 25	22:51	5°♒50'20	20.78470 AU	
morning rise	2081 Feb 09	18:51	6°♒42'08		
retrograde	2081 May 13	17:27	9°♒50'13		
opposition	2081 Jul 30	07:39	7°♒51'38	-0°39'18	
min. Earth dist.	2081 Jul 29	12:28	7°♒53'33	18.80881 AU	
direct	2081 Oct 14	23:17	5°♒54'02		
evening set	2082 Jan 13	18:04	8°♒57'46		
conjunction	2082 Jan 29	08:58	9°♒52'10	-0°36'27	
minimum elong	2082 Jan 29	08:58	9°♒52'10	0°36'26	
max. Earth dist.	2082 Jan 30	05:15	9°♒55'08	20.83137 AU	
morning rise	2082 Feb 14	01:25	10°♒46'46		
retrograde	2082 May 18	03:14	13°♒54'30		
opposition	2082 Aug 03	19:27	11°♒55'54	-0°41'16	
min. Earth dist.	2082 Aug 02	22:44	11°♒57'58	18.85325 AU	
direct	2082 Oct 19	10:13	9°♒58'29		
evening set	2083 Jan 17	23:30	13°♒01'22		
conjunction	2083 Feb 02	14:36	13°♒55'37	-0°38'08	
minimum elong	2083 Feb 02	14:36	13°♒55'37	0°38'08	
max. Earth dist.	2083 Feb 03	11:46	13°♒58'42	20.87360 AU	
morning rise	2083 Feb 18	07:27	14°♒50'07		
	2083 Feb 21	05:23	15°♒		
retrograde	2083 May 22	11:05	17°♒57'31		
min. Earth dist.	2083 Aug 07	10:34	16°♒00'53	18.89357 AU	
opposition	2083 Aug 08	06:48	15°♒58'52	-0°43'01	
	2083 Sep 03	00:16	15°℞♒		
direct	2083 Oct 23	18:43	14°♒01'37		
	2083 Dec 11	07:05	15°♒		
evening set	2084 Jan 22	04:32	17°♒03'40		
conjunction	2084 Feb 06	19:54	17°♒57'49	-0°39'37	
minimum elong	2084 Feb 06	19:54	17°♒57'49	0°39'37	
max. Earth dist.	2084 Feb 07	17:24	18°♒00'56	20.91209 AU	
morning rise	2084 Feb 22	13:17	18°♒52'13		
retrograde	2084 May 25	20:18	21°♒59'20		
opposition	2084 Aug 11	17:22	20°♒00'37	-0°44'32	
min. Earth dist.	2084 Aug 10	19:34	20°♒02'47	18.93031 AU	
direct	2084 Oct 27	04:04	18°♒03'30		
evening set	2085 Jan 25	09:10	21°♒04'49		
conjunction	2085 Feb 10	00:53	21°♒58'51	-0°40'54	
minimum elong	2085 Feb 10	00:53	21°♒58'51	0°40'54	
max. Earth dist.	2085 Feb 10	23:22	22°♒02'07	20.94700 AU	
morning rise	2085 Feb 25	18:49	22°♒53'12		
retrograde	2085 May 30	03:20	26°♒00'03		
min. Earth dist.	2085 Aug 15	06:11	24°♒03'25	18.96361 AU	
opposition	2085 Aug 16	03:32	24°♒01'17	-0°45'50	
direct	2085 Oct 31	10:59	22°♒04'19		
evening set	2086 Jan 29	13:34	25°♒04'58		
conjunction	2086 Feb 14	05:40	25°♒58'56	-0°41'58	
minimum elong	2086 Feb 14	05:40	25°♒58'56	0°41'59	
max. Earth dist.	2086 Feb 15	04:19	26°♒02'12	20.97869 AU	
morning rise	2086 Mar 02	00:12	26°♒53'13		
retrograde	2086 Jun 03	12:34	29°♒59'51		
opposition	2086 Aug 20	12:56	28°♒01'03	-0°46'53	
min. Earth dist.	2086 Aug 19	14:14	28°♒03'19	18.99367 AU	
direct	2086 Nov 04	18:53	26°♒04'14		
evening set	2087 Feb 02	17:43	29°♒04'18		
conjunction	2087 Feb 18	10:17	29°♒58'12	-0°42'50	
minimum elong	2087 Feb 18	10:17	29°♒58'12	0°42'49	
	2087 Feb 18	22:46	0°♓		
max. Earth dist.	2087 Feb 19	09:48	0°♓01'35	21.00700 AU	
morning rise	2087 Mar 06	05:25	0°♓52'28		
retrograde	2087 Jun 07	19:11	3°♓58'57		
opposition	2087 Aug 24	22:12	2°♓00'08	-0°47'44	
min. Earth dist.	2087 Aug 24	00:03	2°♓02'20	19.02037 AU	
direct	2087 Nov 09	00:49	0°♓03'27		
evening set	2088 Feb 06	21:36	3°♓03'00		
conjunction	2088 Feb 22	14:42	3°♓56'51	-0°43'30	
minimum elong	2088 Feb 22	14:42	3°♓56'51	0°43'30	
max. Earth dist.	2088 Feb 23	14:14	4°♓00'15	21.03204 AU	
morning rise	2088 Mar 09	10:36	4°♓51'06		
retrograde	2088 Jun 11	04:36	7°♓57'29		
min. Earth dist.	2088 Aug 27	07:43	6°♓00'58	19.04356 AU	
opposition	2088 Aug 28	06:56	5°♓58'39	-0°48'20	
direct	2088 Nov 12	07:31	4°♓02'07		
evening set	2089 Feb 10	01:34	7°♓01'14		
conjunction	2089 Feb 25	19:16	7°♓55'05	-0°43'57	
minimum elong	2089 Feb 25	19:16	7°♓55'05	0°43'56	
max. Earth dist.	2089 Feb 26	19:23	7°♓58'32	21.05323 AU	
morning rise	2089 Mar 13	15:52	8°♓49'20		
retrograde	2089 Jun 15	11:16	11°♓55'39		
opposition	2089 Sep 01	15:17	9°♓56'49	-0°48'43	
min. Earth dist.	2089 Aug 31	16:59	9°♓59'02	19.06279 AU	

direct	2089 Nov 16	12:52	8°♓00'25	
evening set	2090 Feb 14	05:32	10°♓59'11	
conjunction	2090 Mar 01	23:50	11°♓53'01	-0°44'11
minimum elong	2090 Mar 01	23:50	11°♓53'01	0°44'11
max. Earth dist.	2090 Mar 02	23:32	11°♓56'25	21.07046 AU
morning rise	2090 Mar 17	21:15	12°♓47'18	
retrograde	2090 Jun 19	20:37	15°♓53'37	
opposition	2090 Sep 05	23:22	13°♓54'46	-0°48'51
min. Earth dist.	2090 Sep 05	00:25	13°♓57'04	19.07780 AU
direct	2090 Nov 20	18:38	11°♓58'30	
evening set	2091 Feb 18	09:27	14°♓56'58	
conjunction	2091 Mar 06	04:26	15°♓50'50	-0°44'13
minimum elong	2091 Mar 06	04:25	15°♓50'50	0°44'13
max. Earth dist.	2091 Mar 07	04:25	15°♓54'16	21.08305 AU
morning rise	2091 Mar 22	02:36	16°♓45'09	
retrograde	2091 Jun 24	03:33	19°♓51'31	
min. Earth dist.	2091 Sep 09	09:34	17°♓54'50	19.08798 AU
opposition	2091 Sep 10	07:23	17°♓52'39	-0°48'46
direct	2091 Nov 24	23:47	15°♓56'29	
evening set	2092 Feb 22	13:41	18°♓54'44	
conjunction	2092 Mar 09	09:21	19°♓48'38	-0°44'02
minimum elong	2092 Mar 09	09:21	19°♓48'38	0°44'02
max. Earth dist.	2092 Mar 10	08:29	19°♓51'57	21.09078 AU
morning rise	2092 Mar 25	08:25	20°♓43'01	
retrograde	2092 Jun 27	13:02	23°♓49'27	
opposition	2092 Sep 13	14:59	21°♓50'34	-0°48'27
min. Earth dist.	2092 Sep 12	17:00	21°♓52'45	19.09304 AU
direct	2092 Nov 28	05:14	19°♓54'26	
evening set	2093 Feb 25	18:06	22°♓52'33	
conjunction	2093 Mar 13	14:34	23°♓46'31	-0°43'39
minimum elong	2093 Mar 13	14:34	23°♓46'31	0°43'39
max. Earth dist.	2093 Mar 14	13:27	23°♓49'47	21.09293 AU
morning rise	2093 Mar 29	14:29	24°♓40'59	
retrograde	2093 Jul 01	20:03	27°♓47'31	
opposition	2093 Sep 17	22:34	25°♓48'33	-0°47'54
min. Earth dist.	2093 Sep 17	02:02	25°♓50'37	19.09230 AU
direct	2093 Dec 02	09:56	23°♓52'27	
evening set	2094 Mar 01	22:41	26°♓50'28	
conjunction	2094 Mar 17	19:56	27°♓44'30	-0°43'03
minimum elong	2094 Mar 17	19:56	27°♓44'30	0°43'02
max. Earth dist.	2094 Mar 18	17:30	27°♓47'35	21.08935 AU
morning rise	2094 Apr 02	20:46	28°♓39'03	
	2094 Apr 28	18:15	0°♈	
retrograde	2094 Jul 06	05:36	1°♈45'43	
	2094 Sep 16	16:24	30°♉♓	
min. Earth dist.	2094 Sep 21	09:26	29°♓48'42	19.08576 AU
opposition	2094 Sep 22	05:50	29°♓46'39	-0°47'07
direct	2094 Dec 06	15:40	27°♓50'30	
	2095 Feb 19	03:02	0°♈	
evening set	2095 Mar 06	03:27	0°♈48'29	
conjunction	2095 Mar 22	01:35	1°♈42'37	-0°42'14
minimum elong	2095 Mar 22	01:35	1°♈42'37	0°42'15
max. Earth dist.	2095 Mar 22	22:48	1°♈45'39	21.07993 AU
morning rise	2095 Apr 07	03:19	2°♈37'17	
retrograde	2095 Jul 10	12:35	5°♈44'05	
opposition	2095 Sep 26	13:05	3°♈44'53	-0°46'06
min. Earth dist.	2095 Sep 25	18:10	3°♈46'47	19.07356 AU
direct	2095 Dec 10	19:47	1°♈48'39	
evening set	2096 Mar 09	08:21	4°♈46'38	
conjunction	2096 Mar 25	07:23	5°♈40'53	-0°41'13
minimum elong	2096 Mar 25	07:23	5°♈40'53	0°41'13
max. Earth dist.	2096 Mar 26	03:19	5°♈43'44	21.06526 AU
morning rise	2096 Apr 10	10:10	6°♈35'40	
retrograde	2096 Jul 13	22:10	9°♈42'38	
opposition	2096 Sep 29	20:03	7°♈43'16	-0°44'52
min. Earth dist.	2096 Sep 29	01:24	7°♈45'09	19.05634 AU
direct	2096 Dec 14	01:49	5°♈46'55	
evening set	2097 Mar 13	13:37	8°♈45'00	
conjunction	2097 Mar 29	13:36	9°♈39'22	-0°40'00
minimum elong	2097 Mar 29	13:36	9°♈39'22	0°40'00
max. Earth dist.	2097 Mar 30	09:14	9°♈42'10	21.04563 AU
morning rise	2097 Apr 14	17:16	10°♈34'17	
retrograde	2097 Jul 18	05:37	13°♈41'27	
min. Earth dist.	2097 Oct 03	09:38	11°♈43'40	19.03450 AU
opposition	2097 Oct 04	02:49	11°♈41'55	-0°43'25
direct	2097 Dec 18	05:46	9°♈45'25	
evening set	2098 Mar 17	19:12	12°♈43'40	
conjunction	2098 Apr 02	20:05	13°♈38'11	-0°38'35
minimum elong	2098 Apr 02	20:05	13°♈38'11	0°38'35
max. Earth dist.	2098 Apr 03	14:24	13°♈40'48	21.02188 AU
morning rise	2098 Apr 19	00:47	14°♈33'16	
retrograde	2098 Jul 22	15:06	17°♈40'40	
opposition	2098 Oct 08	09:37	15°♈40'58	-0°41'45
min. Earth dist.	2098 Oct 07	16:41	15°♈42'41	19.00881 AU
direct	2098 Dec 22	11:33	13°♈44'18	
evening set	2099 Mar 22	00:59	16°♈42'47	
conjunction	2099 Apr 07	02:51	17°♈37'29	-0°36'59
minimum elong	2099 Apr 07	02:51	17°♈37'29	0°36'59
max. Earth dist.	2099 Apr 07	21:00	17°♈40'04	20.99430 AU
morning rise	2099 Apr 23	08:28	18°♈32'43	
retrograde	2099 Jul 26	23:37	21°♈40'26	
opposition	2099 Oct 12	16:30	19°♈40'34	-0°39'54
min. Earth dist.	2099 Oct 12	00:54	19°♈42'09	18.97946 AU
direct	2099 Dec 26	16:12	17°♈43'45	
evening set	2100 Mar 26	07:25	20°♈42'33	
conjunction	2100 Apr 11	10:16	21°♈37'25	-0°35'13
minimum elong	2100 Apr 11	10:16	21°♈37'25	0°35'13
max. Earth dist.	2100 Apr 12	02:55	21°♈39'48	20.96342 AU
morning rise	2100 Apr 27	16:58	22°♈32'51	
retrograde	2100 Jul 31	09:31	25°♈40'53	
opposition	2100 Oct 16	23:16	23°♈40'51	-0°37'50
min. Earth dist.	2100 Oct 16	08:09	23°♈42'24	18.94694 AU
direct	2100 Dec 30	21:26	21°♈43'52	
evening set	2101 Mar 30	14:23	24°♈43'04	
conjunction	2101 Apr 15	18:17	25°♈38'09	-0°33'15
minimum elong	2101 Apr 15	18:17	25°♈38'09	0°33'15
max. Earth dist.	2101 Apr 16	10:31	25°♈40'28	20.92923 AU
morning rise	2101 May 02	01:52	26°♈33'47	
retrograde	2101 Aug 04	18:52	29°♈42'10	
opposition	2101 Oct 21	06:20	27°♈42'02	-0°35'35
min. Earth dist.	2101 Oct 20	16:36	27°♈43'26	18.91114 AU
direct	2102 Jan 04	03:05	25°♈44'53	