

conjunction	1600 Aug 20 17:44	27°Ω43'48	0°36'29	direct	1608 May 23 21:42	12°♄45'42	
minimum elong	1600 Aug 20 17:44	27°Ω43'48	0°36'29				
max. Earth dist.	1600 Aug 19 23:41	27°Ω42'07	31.15228 AU	conjunction	1608 Sep 07 18:58	15°♄17'14	1°04'19
	1600 Nov 05 16:32	0°♄		minimum elong	1608 Sep 07 18:58	15°♄17'14	1°04'19
retrograde	1600 Dec 02 04:08	0°♄12'00		max. Earth dist.	1608 Sep 06 22:14	15°♄15'19	31.20693 AU
	1600 Dec 28 23:28	30°Ω		retrograde	1608 Dec 19 13:56	17°♄44'26	
opposition	1601 Feb 17 09:02	28°Ω49'32	0°40'57	opposition	1609 Mar 06 20:05	16°♄22'12	1°10'21
min. Earth dist.	1601 Feb 18 01:02	28°Ω48'25	29.15664 AU	min. Earth dist.	1609 Mar 07 14:49	16°♄20'54	29.21212 AU
direct	1601 May 08 08:16	27°Ω24'25		direct	1609 May 26 09:48	14°♄56'57	
				max. Earth dist.	1609 Sep 09 08:58	17°♄26'29	31.21628 AU
conjunction	1601 Aug 23 06:30	29°Ω56'09	0°40'13	conjunction	1609 Sep 10 06:38	17°♄28'30	1°07'25
minimum elong	1601 Aug 23 06:30	29°Ω56'09	0°40'13	minimum elong	1609 Sep 10 06:38	17°♄28'30	1°07'25
max. Earth dist.	1601 Aug 22 12:33	29°Ω54'30	31.16003 AU	retrograde	1609 Dec 21 23:44	19°♄55'40	
	1601 Aug 24 23:55	0°♄		opposition	1610 Mar 09 06:31	18°♄33'30	1°13'37
retrograde	1601 Dec 04 12:59	2°♄24'12		min. Earth dist.	1610 Mar 10 01:52	18°♄32'09	29.22170 AU
opposition	1602 Feb 19 19:22	1°♄01'47	0°44'54	direct	1610 May 28 19:58	17°♄08'18	
min. Earth dist.	1602 Feb 20 12:13	1°♄00'37	29.16375 AU				
	1602 Apr 02 02:17	30°Ω		conjunction	1610 Sep 12 18:22	19°♄39'52	1°10'25
direct	1602 May 10 20:55	29°Ω36'37		minimum elong	1610 Sep 12 18:22	19°♄39'52	1°10'25
	1602 Jun 18 03:08	0°♄		max. Earth dist.	1610 Sep 11 21:26	19°♄37'55	31.22574 AU
conjunction	1602 Aug 25 18:59	2°♄08'20	0°43'53	retrograde	1610 Dec 24 08:34	22°♄06'59	
minimum elong	1602 Aug 25 18:59	2°♄08'20	0°43'53	opposition	1611 Mar 11 17:14	20°♄44'54	1°16'46
max. Earth dist.	1602 Aug 24 23:09	2°♄06'30	31.16665 AU	min. Earth dist.	1611 Mar 12 13:03	20°♄43'31	29.23091 AU
retrograde	1602 Dec 07 00:17	4°♄36'15		direct	1611 May 31 07:37	19°♄19'46	
opposition	1603 Feb 22 05:45	3°♄13'50	0°48'47	max. Earth dist.	1611 Sep 14 07:23	21°♄49'14	31.23459 AU
min. Earth dist.	1603 Feb 22 22:48	3°♄12'38	29.17004 AU				
direct	1603 May 13 07:59	1°♄48'37		conjunction	1611 Sep 15 05:46	21°♄51'19	1°13'19
max. Earth dist.	1603 Aug 27 11:57	4°♄18'30	31.17252 AU	minimum elong	1611 Sep 15 05:46	21°♄51'19	1°13'19
				retrograde	1611 Dec 26 19:58	24°♄18'24	
conjunction	1603 Aug 28 07:18	4°♄20'18	0°47'29	opposition	1612 Mar 13 03:53	22°♄56'22	1°19'48
minimum elong	1603 Aug 28 07:18	4°♄20'18	0°47'29	min. Earth dist.	1612 Mar 13 23:38	22°♄55'00	29.23944 AU
retrograde	1603 Dec 09 09:34	6°♄48'03		direct	1612 Jun 01 17:34	21°♄31'17	
opposition	1604 Feb 24 16:12	5°♄25'39	0°52'36	conjunction	1612 Sep 16 17:27	24°♄02'50	1°16'07
min. Earth dist.	1604 Feb 25 10:29	5°♄24'22	29.17571 AU	minimum elong	1612 Sep 16 17:27	24°♄02'49	1°16'06
direct	1604 May 14 20:31	4°♄00'24		max. Earth dist.	1612 Sep 15 19:36	24°♄00'48	31.24245 AU
				retrograde	1612 Dec 28 05:19	26°♄29'52	
conjunction	1604 Aug 29 19:25	6°♄32'01	0°51'01	opposition	1613 Mar 15 14:35	25°♄07'53	1°22'44
minimum elong	1604 Aug 29 19:25	6°♄32'01	0°51'01	min. Earth dist.	1613 Mar 16 11:37	25°♄06'26	29.24672 AU
max. Earth dist.	1604 Aug 28 22:40	6°♄30'06	31.17814 AU	direct	1613 Jun 04 05:36	23°♄42'49	
retrograde	1604 Dec 10 21:28	8°♄59'38		max. Earth dist.	1613 Sep 18 05:39	26°♄12'10	31.24911 AU
opposition	1605 Feb 26 02:21	7°♄37'13	0°56'19				
min. Earth dist.	1605 Feb 26 20:13	7°♄35'59	29.18142 AU	conjunction	1613 Sep 19 04:57	26°♄14'20	1°18'48
direct	1605 May 17 09:53	6°♄11'55		minimum elong	1613 Sep 19 04:57	26°♄14'20	1°18'48
max. Earth dist.	1605 Aug 31 11:14	8°♄41'38	31.18391 AU	retrograde	1613 Dec 30 17:26	28°♄41'19	
				opposition	1614 Mar 18 01:21	27°♄19'21	1°25'32
conjunction	1605 Sep 01 07:36	8°♄43'31	0°54'28	min. Earth dist.	1614 Mar 18 21:55	27°♄17'56	29.25277 AU
minimum elong	1605 Sep 01 07:35	8°♄43'31	0°54'28	direct	1614 Jun 06 18:50	25°♄54'18	
retrograde	1605 Dec 13 07:05	11°♄11'00					
opposition	1606 Feb 28 12:50	9°♄48'36	0°59'58	conjunction	1614 Sep 21 16:23	28°♄25'47	1°21'22
min. Earth dist.	1606 Mar 01 07:58	9°♄47'16	29.18758 AU	minimum elong	1614 Sep 21 16:23	28°♄25'47	1°21'21
direct	1606 May 19 21:59	8°♄23'16		max. Earth dist.	1614 Sep 20 17:24	28°♄23'39	31.25443 AU
					1614 Nov 06 06:45	0°♄	
conjunction	1606 Sep 03 19:26	10°♄54'49	0°57'50	retrograde	1615 Jan 02 03:10	0°♄52'42	
minimum elong	1606 Sep 03 19:26	10°♄54'49	0°57'50		1615 Mar 02 11:06	30°♄	
max. Earth dist.	1606 Sep 02 22:35	10°♄52'54	31.19049 AU	opposition	1615 Mar 20 12:17	29°♄30'45	1°28'13
retrograde	1606 Dec 15 17:48	13°♄22'11		min. Earth dist.	1615 Mar 21 10:15	29°♄29'14	29.25761 AU
opposition	1607 Mar 02 23:11	11°♄59'49	1°03'31	direct	1615 Jun 09 06:41	28°♄05'42	
min. Earth dist.	1607 Mar 03 17:24	11°♄58'33	29.19467 AU		1615 Sep 07 08:27	0°♄	
direct	1607 May 22 11:00	10°♄34'30		max. Earth dist.	1615 Sep 23 04:04	0°♄34'56	31.25882 AU
max. Earth dist.	1607 Sep 05 10:15	13°♄04'05	31.19809 AU				
				conjunction	1615 Sep 24 03:39	0°♄37'08	1°23'49
conjunction	1607 Sep 06 07:16	13°♄06'02	1°01'07	minimum elong	1615 Sep 24 03:38	0°♄37'08	1°23'49
minimum elong	1607 Sep 06 07:16	13°♄06'02	1°01'07	retrograde	1616 Jan 04 13:56	3°♄03'57	
retrograde	1607 Dec 18 04:04	15°♄33'19		opposition	1616 Mar 21 22:59	1°♄42'00	1°30'46
opposition	1608 Mar 04 09:38	14°♄11'00	1°06'59	min. Earth dist.	1616 Mar 22 20:14	1°♄40'32	29.26157 AU
min. Earth dist.	1608 Mar 05 04:44	14°♄09'40	29.20300 AU				

direct	1616 Jun 10 20:08	0° <u>♁</u> 16'56		conjunction	1624 Oct 13 04:18	20° <u>♁</u> 14'13	1°40'02
				minimum elong	1624 Oct 13 04:18	20° <u>♁</u> 14'13	1°40'02
conjunction	1616 Sep 25 14:47	2° <u>♁</u> 48'18	1°26'08	retrograde	1625 Jan 23 07:41	22° <u>♁</u> 40'47	
minimum elong	1616 Sep 25 14:47	2° <u>♁</u> 48'18	1°26'08	opposition	1625 Apr 11 02:15	21° <u>♁</u> 18'59	1°47'27
max. Earth dist.	1616 Sep 24 14:56	2° <u>♁</u> 46'05	31.26239 AU	min. Earth dist.	1625 Apr 11 22:58	21° <u>♁</u> 17'34	29.30832 AU
retrograde	1617 Jan 06 00:42	5° <u>♁</u> 15'03		direct	1625 Jul 01 05:20	19° <u>♁</u> 54'13	
opposition	1617 Mar 24 09:52	3° <u>♁</u> 53'05	1°33'11				
min. Earth dist.	1617 Mar 25 08:03	3° <u>♁</u> 51'33	29.26507 AU	conjunction	1625 Oct 15 14:48	22° <u>♁</u> 25'07	1°41'08
direct	1617 Jun 13 08:14	2° <u>♁</u> 28'00		minimum elong	1625 Oct 15 14:48	22° <u>♁</u> 25'07	1°41'08
max. Earth dist.	1617 Sep 27 02:23	4° <u>♁</u> 57'07	31.26580 AU	max. Earth dist.	1625 Oct 14 16:07	22° <u>♁</u> 23'00	31.30905 AU
				retrograde	1626 Jan 25 19:03	24° <u>♁</u> 51'42	
conjunction	1617 Sep 28 01:48	4° <u>♁</u> 59'17	1°28'20	opposition	1626 Apr 13 13:46	23° <u>♁</u> 29'54	1°48'33
minimum elong	1617 Sep 28 01:48	4° <u>♁</u> 59'17	1°28'20	min. Earth dist.	1626 Apr 14 11:18	23° <u>♁</u> 28'26	29.31186 AU
retrograde	1618 Jan 08 09:52	7° <u>♁</u> 25'57		direct	1626 Jul 03 17:15	22° <u>♁</u> 05'11	
opposition	1618 Mar 26 20:40	6° <u>♁</u> 03'58	1°35'28	max. Earth dist.	1626 Oct 17 03:05	24° <u>♁</u> 33'57	31.31186 AU
min. Earth dist.	1618 Mar 27 18:21	6° <u>♁</u> 02'28	29.26851 AU				
direct	1618 Jun 15 21:43	4° <u>♁</u> 38'53		conjunction	1626 Oct 18 01:19	24° <u>♁</u> 36'02	1°42'06
				minimum elong	1626 Oct 18 01:18	24° <u>♁</u> 36'02	1°42'06
conjunction	1618 Sep 30 12:37	7° <u>♁</u> 10'05	1°30'25	retrograde	1627 Jan 28 04:46	27° <u>♁</u> 02'36	
minimum elong	1618 Sep 30 12:37	7° <u>♁</u> 10'05	1°30'24	opposition	1627 Apr 16 01:17	25° <u>♁</u> 40'49	1°49'30
max. Earth dist.	1618 Sep 29 12:39	7° <u>♁</u> 07'51	31.26949 AU	min. Earth dist.	1627 Apr 16 22:23	25° <u>♁</u> 39'22	29.31386 AU
retrograde	1619 Jan 10 19:08	9° <u>♁</u> 36'41		direct	1627 Jul 06 06:52	24° <u>♁</u> 16'07	
opposition	1619 Mar 29 07:38	8° <u>♁</u> 14'42	1°37'37				
min. Earth dist.	1619 Mar 30 05:16	8° <u>♁</u> 13'12	29.27275 AU	conjunction	1627 Oct 20 11:32	26° <u>♁</u> 46'54	1°42'55
direct	1619 Jun 18 08:19	6° <u>♁</u> 49'36		minimum elong	1627 Oct 20 11:32	26° <u>♁</u> 46'54	1°42'55
				max. Earth dist.	1627 Oct 19 12:30	26° <u>♁</u> 44'45	31.31314 AU
conjunction	1619 Oct 02 23:19	9° <u>♁</u> 20'44	1°32'21	retrograde	1628 Jan 30 14:49	29° <u>♁</u> 13'29	
minimum elong	1619 Oct 02 23:19	9° <u>♁</u> 20'44	1°32'21	opposition	1628 Apr 17 12:48	27° <u>♁</u> 51'41	1°50'18
max. Earth dist.	1619 Oct 02 00:43	9° <u>♁</u> 18'38	31.27413 AU	min. Earth dist.	1628 Apr 18 10:04	27° <u>♁</u> 50'13	29.31454 AU
retrograde	1620 Jan 13 03:04	11° <u>♁</u> 47'18		direct	1628 Jul 07 17:52	26° <u>♁</u> 27'00	
opposition	1620 Mar 30 18:37	10° <u>♁</u> 25'19	1°39'37				
min. Earth dist.	1620 Mar 31 16:09	10° <u>♁</u> 23'50	29.27785 AU	conjunction	1628 Oct 21 21:55	28° <u>♁</u> 57'42	1°43'36
direct	1620 Jun 19 20:14	9° <u>♁</u> 00'15		minimum elong	1628 Oct 21 21:55	28° <u>♁</u> 57'42	1°43'35
max. Earth dist.	1620 Oct 03 10:32	11° <u>♁</u> 29'09	31.27978 AU	max. Earth dist.	1628 Oct 21 00:00	28° <u>♁</u> 55'39	31.31318 AU
					1628 Nov 19 12:15	0° <u>♁</u>	
conjunction	1620 Oct 04 09:57	11° <u>♁</u> 31'20	1°34'10	retrograde	1629 Jan 31 22:53	1° <u>♁</u> 24'17	
minimum elong	1620 Oct 04 09:57	11° <u>♁</u> 31'20	1°34'09	opposition	1629 Apr 20 00:16	0° <u>♁</u> 02'27	1°50'57
retrograde	1621 Jan 14 14:06	13° <u>♁</u> 57'52		min. Earth dist.	1629 Apr 20 21:44	0° <u>♁</u> 00'59	29.31399 AU
opposition	1621 Apr 02 05:25	12° <u>♁</u> 35'55	1°41'29		1629 Apr 21 12:04	30° <u>♁</u>	
min. Earth dist.	1621 Apr 03 02:11	12° <u>♁</u> 34'29	29.28401 AU	direct	1629 Jul 10 06:30	28° <u>♁</u> 37'47	
direct	1621 Jun 22 06:05	11° <u>♁</u> 10'53			1629 Sep 22 16:32	0° <u>♁</u>	
				max. Earth dist.	1629 Oct 23 09:17	1° <u>♁</u> 06'16	31.31234 AU
conjunction	1621 Oct 06 20:44	13° <u>♁</u> 41'56	1°35'51				
minimum elong	1621 Oct 06 20:43	13° <u>♁</u> 41'56	1°35'51	conjunction	1629 Oct 24 08:00	1° <u>♁</u> 08'23	1°44'07
max. Earth dist.	1621 Oct 05 22:33	13° <u>♁</u> 39'52	31.28622 AU	minimum elong	1629 Oct 24 08:00	1° <u>♁</u> 08'23	1°44'07
retrograde	1622 Jan 16 22:48	16° <u>♁</u> 08'28		retrograde	1630 Feb 03 09:55	3° <u>♁</u> 34'58	
opposition	1622 Apr 04 16:36	14° <u>♁</u> 46'33	1°43'12	opposition	1630 Apr 22 11:50	2° <u>♁</u> 13'06	1°51'26
min. Earth dist.	1622 Apr 05 14:03	14° <u>♁</u> 45'05	29.29066 AU	min. Earth dist.	1630 Apr 23 08:23	2° <u>♁</u> 11'42	29.31300 AU
direct	1622 Jun 24 17:40	13° <u>♁</u> 21'37		direct	1630 Jul 12 17:05	0° <u>♁</u> 48'26	
max. Earth dist.	1622 Oct 08 08:18	15° <u>♁</u> 50'29	31.29298 AU				
				conjunction	1630 Oct 26 17:59	3° <u>♁</u> 18'57	1°44'30
conjunction	1622 Oct 09 07:08	15° <u>♁</u> 52'37	1°37'23	minimum elong	1630 Oct 26 17:59	3° <u>♁</u> 18'57	1°44'29
minimum elong	1622 Oct 09 07:08	15° <u>♁</u> 52'37	1°37'23	max. Earth dist.	1630 Oct 25 20:45	3° <u>♁</u> 16'58	31.31123 AU
retrograde	1623 Jan 19 10:23	18° <u>♁</u> 19'09		retrograde	1631 Feb 05 18:09	5° <u>♁</u> 45'33	
opposition	1623 Apr 07 03:43	16° <u>♁</u> 57'17	1°44'46	opposition	1631 Apr 24 23:34	4° <u>♁</u> 23'38	1°51'46
min. Earth dist.	1623 Apr 08 00:10	16° <u>♁</u> 55'53	29.29733 AU	min. Earth dist.	1631 Apr 25 20:27	4° <u>♁</u> 22'12	29.31203 AU
direct	1623 Jun 27 05:20	15° <u>♁</u> 32'24		direct	1631 Jul 15 04:59	2° <u>♁</u> 58'59	
				max. Earth dist.	1631 Oct 28 06:23	5° <u>♁</u> 27'24	31.31059 AU
conjunction	1623 Oct 11 17:47	18° <u>♁</u> 03'23	1°38'46				
minimum elong	1623 Oct 11 17:47	18° <u>♁</u> 03'23	1°38'47	conjunction	1631 Oct 29 03:49	5° <u>♁</u> 29'25	1°44'44
max. Earth dist.	1623 Oct 10 19:38	18° <u>♁</u> 01'19	31.29933 AU	minimum elong	1631 Oct 29 03:49	5° <u>♁</u> 29'25	1°44'44
retrograde	1624 Jan 21 20:27	20° <u>♁</u> 29'56		retrograde	1632 Feb 08 05:10	7° <u>♁</u> 56'01	
opposition	1624 Apr 08 14:58	19° <u>♁</u> 08'06	1°46'11	opposition	1632 Apr 26 10:59	6° <u>♁</u> 34'05	1°51'56
min. Earth dist.	1624 Apr 09 12:33	19° <u>♁</u> 06'37	29.30341 AU	min. Earth dist.	1632 Apr 27 06:21	6° <u>♁</u> 32'46	29.31176 AU
direct	1624 Jun 28 15:57	17° <u>♁</u> 43'17		direct	1632 Jul 16 16:00	5° <u>♁</u> 09'27	
max. Earth dist.	1624 Oct 12 05:53	20° <u>♁</u> 12'08	31.30491 AU				
				conjunction	1632 Oct 30 13:45	7° <u>♁</u> 39'50	1°44'48

minimum elong	1632 Oct 30 13:45	7°M.39'50	1°44'48	opposition	1641 May 16 22:40	26°M.10'40	1°46'13
max. Earth dist.	1632 Oct 29 17:26	7°M.37'55	31.31068 AU	min. Earth dist.	1641 May 17 14:25	26°M.09'36	29.30501 AU
retrograde	1633 Feb 09 15:09	10°M.06'30		direct	1641 Aug 06 02:25	24°M.46'27	
opposition	1633 Apr 28 22:45	8°M.44'32	1°51'56				
min. Earth dist.	1633 Apr 29 18:33	8°M.43'12	29.31231 AU	conjunction	1641 Nov 19 04:59	27°M.16'13	1°38'47
direct	1633 Jul 19 01:48	7°M.19'58		minimum elong	1641 Nov 19 04:59	27°M.16'13	1°38'48
				max. Earth dist.	1641 Nov 18 12:33	27°M.14'40	31.30112 AU
conjunction	1633 Nov 01 23:29	9°M.50'17	1°44'44	retrograde	1642 Mar 01 13:07	29°M.43'26	
minimum elong	1633 Nov 01 23:29	9°M.50'17	1°44'44	opposition	1642 May 19 11:01	28°M.21'17	1°44'49
max. Earth dist.	1633 Nov 01 03:44	9°M.48'26	31.31168 AU	min. Earth dist.	1642 May 20 03:17	28°M.20'11	29.29918 AU
retrograde	1634 Feb 12 02:22	12°M.17'00		direct	1642 Aug 08 12:44	26°M.57'03	
opposition	1634 May 01 10:27	10°M.55'04	1°51'46				
min. Earth dist.	1634 May 02 04:40	10°M.53'49	29.31349 AU	conjunction	1642 Nov 21 14:23	29°M.26'42	1°37'24
direct	1634 Jul 21 15:08	9°M.30'33		minimum elong	1642 Nov 21 14:23	29°M.26'42	1°37'24
				max. Earth dist.	1642 Nov 20 22:44	29°M.25'14	31.29521 AU
conjunction	1634 Nov 04 09:14	12°M.00'50	1°44'30		1642 Dec 06 10:50	0°Z	
minimum elong	1634 Nov 04 09:14	12°M.00'50	1°44'31	retrograde	1643 Mar 04 00:00	1°Z.53'58	
max. Earth dist.	1634 Nov 03 13:48	11°M.59'00	31.31307 AU	opposition	1643 May 21 23:11	0°Z.31'44	1°43'16
retrograde	1635 Feb 14 14:42	14°M.27'37		min. Earth dist.	1643 May 22 13:44	0°Z.30'45	29.29317 AU
opposition	1635 May 03 22:18	13°M.05'41	1°51'27		1643 Jun 10 23:36	30°M.	
min. Earth dist.	1635 May 04 16:44	13°M.04'26	29.31506 AU	direct	1643 Aug 11 01:53	29°M.07'30	
direct	1635 Jul 24 02:30	11°M.41'15			1643 Oct 08 03:23	0°Z	
conjunction	1635 Nov 06 18:56	14°M.11'29	1°44'08	conjunction	1643 Nov 23 23:38	1°Z.37'03	1°35'53
minimum elong	1635 Nov 06 18:56	14°M.11'29	1°44'08	minimum elong	1643 Nov 23 23:38	1°Z.37'03	1°35'53
max. Earth dist.	1635 Nov 06 00:37	14°M.09'46	31.31458 AU	max. Earth dist.	1643 Nov 23 08:24	1°Z.35'37	31.28934 AU
retrograde	1636 Feb 17 00:37	16°M.38'21		retrograde	1644 Mar 05 11:59	4°Z.04'24	
opposition	1636 May 05 10:11	15°M.16'26	1°50'58	opposition	1644 May 23 11:28	2°Z.42'05	1°41'34
min. Earth dist.	1636 May 06 03:49	15°M.15'14	29.31620 AU	min. Earth dist.	1644 May 24 01:50	2°Z.41'07	29.28767 AU
direct	1636 Jul 25 15:40	13°M.52'04		direct	1644 Aug 12 12:45	1°Z.17'52	
max. Earth dist.	1636 Nov 07 09:48	16°M.20'29	31.31539 AU				
				conjunction	1644 Nov 25 08:57	3°Z.47'20	1°34'13
conjunction	1636 Nov 08 04:37	16°M.22'15	1°43'36	minimum elong	1644 Nov 25 08:57	3°Z.47'20	1°34'12
minimum elong	1636 Nov 08 04:37	16°M.22'15	1°43'36	max. Earth dist.	1644 Nov 24 19:21	3°Z.46'03	31.28427 AU
retrograde	1637 Feb 18 11:31	18°M.49'11		retrograde	1645 Mar 07 21:50	6°Z.14'45	
opposition	1637 May 07 22:05	17°M.27'16	1°50'20	opposition	1645 May 25 23:41	4°Z.52'24	1°39'43
min. Earth dist.	1637 May 08 15:33	17°M.26'05	29.31664 AU	min. Earth dist.	1645 May 26 12:39	4°Z.51'32	29.28294 AU
direct	1637 Jul 28 02:40	16°M.02'58		direct	1645 Aug 15 01:36	3°Z.28'14	
conjunction	1637 Nov 10 14:28	18°M.33'05	1°42'56	conjunction	1645 Nov 27 18:09	5°Z.57'38	1°32'26
minimum elong	1637 Nov 10 14:28	18°M.33'05	1°42'56	minimum elong	1645 Nov 27 18:09	5°Z.57'38	1°32'26
max. Earth dist.	1637 Nov 09 21:04	18°M.31'27	31.31526 AU	max. Earth dist.	1645 Nov 27 04:36	5°Z.56'22	31.28015 AU
retrograde	1638 Feb 20 20:38	21°M.00'05		retrograde	1646 Mar 10 09:33	8°Z.25'10	
opposition	1638 May 10 10:17	19°M.38'10	1°49'32	opposition	1646 May 28 12:05	7°Z.02'47	1°37'44
min. Earth dist.	1638 May 11 03:44	19°M.36'59	29.31581 AU	min. Earth dist.	1646 May 29 00:08	7°Z.01'59	29.27933 AU
direct	1638 Jul 30 16:06	18°M.13'54		direct	1646 Aug 17 12:29	5°Z.38'41	
max. Earth dist.	1638 Nov 12 05:55	20°M.42'15	31.31382 AU				
				conjunction	1646 Nov 30 03:22	8°Z.08'02	1°30'30
conjunction	1638 Nov 13 00:02	20°M.43'57	1°42'07	minimum elong	1646 Nov 30 03:22	8°Z.08'02	1°30'29
minimum elong	1638 Nov 13 00:02	20°M.43'57	1°42'06	max. Earth dist.	1646 Nov 29 15:54	8°Z.06'57	31.27695 AU
retrograde	1639 Feb 23 08:15	23°M.11'02		retrograde	1647 Mar 12 19:18	10°Z.35'42	
opposition	1639 May 12 22:24	21°M.49'04	1°48'35	opposition	1647 May 31 00:31	9°Z.13'19	1°35'36
min. Earth dist.	1639 May 13 14:53	21°M.47'57	29.31368 AU	min. Earth dist.	1647 May 31 12:00	9°Z.12'32	29.27631 AU
direct	1639 Aug 02 03:18	20°M.24'50		direct	1647 Aug 20 01:38	7°Z.49'17	
conjunction	1639 Nov 15 09:50	22°M.54'48	1°41'09	conjunction	1647 Dec 02 12:33	10°Z.18'36	1°28'26
minimum elong	1639 Nov 15 09:50	22°M.54'48	1°41'09	minimum elong	1647 Dec 02 12:33	10°Z.18'36	1°28'26
max. Earth dist.	1639 Nov 14 16:53	22°M.53'13	31.31089 AU	max. Earth dist.	1647 Dec 02 00:55	10°Z.17'30	31.27423 AU
retrograde	1640 Feb 25 16:22	25°M.21'56		retrograde	1648 Mar 14 07:29	12°Z.46'23	
opposition	1640 May 14 10:31	23°M.59'55	1°47'29	opposition	1648 Jun 01 12:46	11°Z.24'01	1°33'19
min. Earth dist.	1640 May 15 03:37	23°M.58'46	29.30998 AU	min. Earth dist.	1648 Jun 01 22:51	11°Z.23'20	29.27364 AU
direct	1640 Aug 03 15:10	22°M.35'42		direct	1648 Aug 21 12:25	10°Z.00'03	
conjunction	1640 Nov 16 19:28	25°M.05'34	1°40'02	conjunction	1648 Dec 03 21:56	12°Z.29'21	1°26'14
minimum elong	1640 Nov 16 19:28	25°M.05'34	1°40'02	minimum elong	1648 Dec 03 21:57	12°Z.29'21	1°26'14
max. Earth dist.	1640 Nov 16 02:08	25°M.03'57	31.30663 AU	max. Earth dist.	1648 Dec 03 11:51	12°Z.28'24	31.27145 AU
retrograde	1641 Feb 27 03:10	27°M.32'44		retrograde	1649 Mar 16 16:21	14°Z.57'17	

opposition	1649 Jun 04 01:26	13° \nearrow 34'54	1°30'55	opposition	1657 Jun 22 07:22	1° $\overline{0}$ 04'24	1°07'16
min. Earth dist.	1649 Jun 04 11:42	13° \nearrow 34'13	29.27064 AU	min. Earth dist.	1657 Jun 22 10:54	1° $\overline{0}$ 04'09	29.21438 AU
direct	1649 Aug 23 23:58	12° \nearrow 11'02			1657 Aug 06 12:42	30° \nearrow	
				direct	1657 Sep 10 20:11	29° \nearrow 40'42	
conjunction	1649 Dec 06 07:07	14° \nearrow 40'17	1°23'55		1657 Oct 15 02:44	0° $\overline{0}$	
minimum elong	1649 Dec 06 07:08	14° \nearrow 40'17	1°23'56				
max. Earth dist.	1649 Dec 05 21:11	14° \nearrow 39'21	31.26828 AU	conjunction	1657 Dec 23 09:39	2° $\overline{0}$ 09'22	1°01'21
retrograde	1650 Mar 19 03:44	17° \nearrow 08'22		minimum elong	1657 Dec 23 09:40	2° $\overline{0}$ 09'22	1°01'22
opposition	1650 Jun 06 14:03	15° \nearrow 45'59	1°28'22	max. Earth dist.	1657 Dec 23 06:21	2° $\overline{0}$ 09'03	31.21027 AU
min. Earth dist.	1650 Jun 06 22:40	15° \nearrow 45'24	29.26700 AU	retrograde	1658 Apr 05 21:53	4° $\overline{0}$ 38'23	
direct	1650 Aug 26 10:42	14° \nearrow 22'11		opposition	1658 Jun 24 20:21	3° $\overline{0}$ 15'26	1°03'49
				min. Earth dist.	1658 Jun 24 23:34	3° $\overline{0}$ 15'13	29.20720 AU
conjunction	1650 Dec 08 16:33	16° \nearrow 51'23	1°21'29	direct	1658 Sep 13 08:30	1° $\overline{0}$ 51'47	
minimum elong	1650 Dec 08 16:33	16° \nearrow 51'23	1°21'29				
max. Earth dist.	1650 Dec 08 07:27	16° \nearrow 50'31	31.26412 AU	conjunction	1658 Dec 25 18:54	4° $\overline{0}$ 20'22	0°58'05
retrograde	1651 Mar 21 14:35	19° \nearrow 19'37		minimum elong	1658 Dec 25 18:54	4° $\overline{0}$ 20'22	0°58'05
opposition	1651 Jun 09 02:47	17° \nearrow 57'12	1°25'42	max. Earth dist.	1658 Dec 25 16:14	4° $\overline{0}$ 20'07	31.20371 AU
min. Earth dist.	1651 Jun 09 11:56	17° \nearrow 56'35	29.26233 AU	retrograde	1659 Apr 08 09:36	6° $\overline{0}$ 49'32	
direct	1651 Aug 28 20:19	16° \nearrow 33'27		opposition	1659 Jun 27 09:01	5° $\overline{0}$ 26'32	1°00'17
				min. Earth dist.	1659 Jun 27 10:12	5° $\overline{0}$ 26'28	29.20097 AU
conjunction	1651 Dec 11 01:58	19° \nearrow 02'36	1°18'55	direct	1659 Sep 15 19:50	4° $\overline{0}$ 02'56	
minimum elong	1651 Dec 11 01:58	19° \nearrow 02'36	1°18'56				
max. Earth dist.	1651 Dec 10 17:33	19° \nearrow 01'48	31.25888 AU	conjunction	1659 Dec 28 04:11	6° $\overline{0}$ 31'29	0°54'44
retrograde	1652 Mar 23 02:08	21° \nearrow 30'58		minimum elong	1659 Dec 28 04:12	6° $\overline{0}$ 31'29	0°54'45
opposition	1652 Jun 10 15:27	20° \nearrow 08'31	1°22'54	max. Earth dist.	1659 Dec 28 02:37	6° $\overline{0}$ 31'21	31.19777 AU
min. Earth dist.	1652 Jun 10 23:07	20° \nearrow 08'00	29.25626 AU	retrograde	1660 Apr 09 20:34	9° $\overline{0}$ 00'49	
direct	1652 Aug 30 09:07	18° \nearrow 44'48		opposition	1660 Jun 28 22:01	7° $\overline{0}$ 37'47	0°56'39
				min. Earth dist.	1660 Jun 28 23:19	7° $\overline{0}$ 37'42	29.19526 AU
conjunction	1652 Dec 12 11:19	21° \nearrow 13'53	1°16'15	direct	1660 Sep 17 05:56	6° $\overline{0}$ 14'15	
minimum elong	1652 Dec 12 11:19	21° \nearrow 13'53	1°16'14				
max. Earth dist.	1652 Dec 12 02:50	21° \nearrow 13'05	31.25211 AU	conjunction	1660 Dec 29 13:30	8° $\overline{0}$ 42'46	0°51'18
retrograde	1653 Mar 25 14:57	23° \nearrow 42'22		minimum elong	1660 Dec 29 13:30	8° $\overline{0}$ 42'46	0°51'17
opposition	1653 Jun 13 04:17	22° \nearrow 19'50	1°20'00	max. Earth dist.	1660 Dec 29 13:13	8° $\overline{0}$ 42'44	31.19225 AU
min. Earth dist.	1653 Jun 13 12:04	22° \nearrow 19'19	29.24886 AU	retrograde	1661 Apr 12 08:01	11° $\overline{0}$ 12'15	
direct	1653 Sep 01 19:11	20° \nearrow 56'08		opposition	1661 Jul 01 10:57	9° $\overline{0}$ 49'13	0°52'56
				min. Earth dist.	1661 Jul 01 10:24	9° $\overline{0}$ 49'15	29.18962 AU
conjunction	1653 Dec 14 20:47	23° \nearrow 25'09	1°13'28	direct	1661 Sep 19 17:46	8° $\overline{0}$ 25'45	
minimum elong	1653 Dec 14 20:47	23° \nearrow 25'09	1°13'29				
max. Earth dist.	1653 Dec 14 13:44	23° \nearrow 24'29	31.24420 AU	conjunction	1661 Dec 31 22:53	10° $\overline{0}$ 54'14	0°47'47
retrograde	1654 Mar 28 01:21	25° \nearrow 53'44		minimum elong	1661 Dec 31 22:53	10° $\overline{0}$ 54'14	0°47'47
opposition	1654 Jun 15 17:06	24° \nearrow 31'07	1°16'58	max. Earth dist.	1661 Dec 31 22:45	10° $\overline{0}$ 54'13	31.18654 AU
min. Earth dist.	1654 Jun 15 23:45	24° \nearrow 30'40	29.24032 AU	retrograde	1662 Apr 14 21:04	13° $\overline{0}$ 23'54	
direct	1654 Sep 04 07:48	23° \nearrow 07'25		opposition	1662 Jul 04 00:07	12° $\overline{0}$ 00'49	0°49'08
				min. Earth dist.	1662 Jul 03 23:29	12° $\overline{0}$ 00'52	29.18377 AU
conjunction	1654 Dec 17 05:55	25° \nearrow 36'20	1°10'35	direct	1662 Sep 22 02:55	10° $\overline{0}$ 37'25	
minimum elong	1654 Dec 17 05:56	25° \nearrow 36'20	1°10'35				
max. Earth dist.	1654 Dec 16 22:42	25° \nearrow 35'39	31.23542 AU	conjunction	1663 Jan 03 08:26	13° $\overline{0}$ 05'53	0°44'11
retrograde	1655 Mar 30 13:59	28° \nearrow 05'01		minimum elong	1663 Jan 03 08:26	13° $\overline{0}$ 05'53	0°44'10
opposition	1655 Jun 18 05:55	26° \nearrow 42'18	1°13'50	max. Earth dist.	1663 Jan 03 09:55	13° $\overline{0}$ 06'01	31.18035 AU
min. Earth dist.	1655 Jun 18 11:52	26° \nearrow 41'54	29.23138 AU	retrograde	1663 Apr 17 08:31	15° $\overline{0}$ 35'44	
direct	1655 Sep 06 19:25	25° \nearrow 18'36		opposition	1663 Jul 06 13:13	14° $\overline{0}$ 12'37	0°45'15
				min. Earth dist.	1663 Jul 06 11:29	14° $\overline{0}$ 12'44	29.17699 AU
conjunction	1655 Dec 19 15:18	27° \nearrow 47'24	1°07'36	direct	1663 Sep 24 15:00	12° $\overline{0}$ 49'17	
minimum elong	1655 Dec 19 15:18	27° \nearrow 47'24	1°07'37				
max. Earth dist.	1655 Dec 19 10:04	27° \nearrow 46'55	31.22643 AU	conjunction	1664 Jan 05 18:00	15° $\overline{0}$ 17'43	0°40'32
	1656 Feb 29 17:53	0° $\overline{0}$		minimum elong	1664 Jan 05 18:00	15° $\overline{0}$ 17'43	0°40'32
retrograde	1656 Apr 01 00:32	0° $\overline{0}$ 16'11		max. Earth dist.	1664 Jan 05 19:03	15° $\overline{0}$ 17'49	31.17305 AU
	1656 May 03 01:43	30° \nearrow		retrograde	1664 Apr 18 22:25	17° $\overline{0}$ 47'44	
opposition	1656 Jun 19 18:35	28° \nearrow 53'22	1°10'36	opposition	1664 Jul 08 02:17	16° $\overline{0}$ 24'35	0°41'19
min. Earth dist.	1656 Jun 19 23:55	28° \nearrow 53'01	29.22246 AU	min. Earth dist.	1664 Jul 08 00:08	16° $\overline{0}$ 24'43	29.16910 AU
direct	1656 Sep 08 09:06	27° \nearrow 29'40		direct	1664 Sep 26 01:51	15° $\overline{0}$ 01'16	
conjunction	1656 Dec 21 00:28	29° \nearrow 58'24	1°04'32	conjunction	1665 Jan 07 03:50	17° $\overline{0}$ 29'41	0°36'49
minimum elong	1656 Dec 21 00:28	29° \nearrow 58'24	1°04'31	minimum elong	1665 Jan 07 03:50	17° $\overline{0}$ 29'41	0°36'48
max. Earth dist.	1656 Dec 20 19:18	29° \nearrow 57'55	31.21793 AU	max. Earth dist.	1665 Jan 07 06:29	17° $\overline{0}$ 29'56	31.16442 AU
	1656 Dec 21 17:24	0° $\overline{0}$		retrograde	1665 Apr 21 10:24	19° $\overline{0}$ 59'52	
retrograde	1657 Apr 03 12:43	2° $\overline{0}$ 27'17		opposition	1665 Jul 10 15:36	18° $\overline{0}$ 36'39	0°37'18

min. Earth dist.	1665 Jul 10 13:07	18°☾36'49	29.15968 AU	minimum elong	1673 Jan 24 09:31	5°☾06'18	0°05'40
direct	1665 Sep 28 15:03	17°☾13'22		behind sun begin	1673 Jan 24 03:22	5°☾05'45	
				behind sun end	1673 Jan 24 15:40	5°☾06'51	
conjunction	1666 Jan 09 13:24	19°☾41'44	0°33'03	max. Earth dist.	1673 Jan 24 18:15	5°☾07'07	31.08193 AU
minimum elong	1666 Jan 09 13:25	19°☾41'44	0°33'03	retrograde	1673 May 09 10:36	7°☾37'42	
max. Earth dist.	1666 Jan 09 15:45	19°☾41'57	31.15444 AU	opposition	1673 Jul 29 00:32	6°☾13'53	0°03'49
retrograde	1666 Apr 23 23:38	22°☾12'04		min. Earth dist.	1673 Jul 28 14:31	6°☾14'33	29.07811 AU
opposition	1666 Jul 13 04:49	20°☾48'46	0°33'15	direct	1673 Oct 16 08:38	4°☾50'42	
min. Earth dist.	1666 Jul 13 01:05	20°☾49'01	29.14905 AU				
direct	1666 Oct 01 02:16	19°☾25'29		conjunction	1674 Jan 26 19:27	7°☾18'47	0°01'39
				minimum elong	1674 Jan 26 19:28	7°☾18'47	0°01'39
conjunction	1667 Jan 11 23:12	21°☾53'48	0°29'14	behind sun begin	1674 Jan 26 13:04	7°☾18'12	
minimum elong	1667 Jan 11 23:12	21°☾53'48	0°29'14	behind sun end	1674 Jan 27 01:52	7°☾19'21	
max. Earth dist.	1667 Jan 12 02:50	21°☾54'08	31.14323 AU	max. Earth dist.	1674 Jan 27 06:10	7°☾19'47	31.07420 AU
retrograde	1667 Apr 26 09:50	24°☾24'15		retrograde	1674 May 11 23:07	9°☾50'21	
opposition	1667 Jul 15 17:56	23°☾00'52	0°29'09	desc. node	1674 Jun 21 12:57	9°☾25'22	
min. Earth dist.	1667 Jul 15 14:22	23°☾01'06	29.13745 AU	opposition	1674 Jul 31 13:45	8°☾26'29	0°00'-27
direct	1667 Oct 03 15:06	21°☾37'35		min. Earth dist.	1674 Jul 31 03:15	8°☾27'12	29.07038 AU
				direct	1674 Oct 18 20:38	7°☾03'22	
conjunction	1668 Jan 14 08:53	24°☾05'50	0°25'22				
minimum elong	1668 Jan 14 08:53	24°☾05'50	0°25'23	conjunction	1675 Jan 29 05:33	9°☾31'26	0°-2'-28
max. Earth dist.	1668 Jan 14 12:59	24°☾06'13	31.13153 AU	minimum elong	1675 Jan 29 05:33	9°☾31'26	0°02'30
retrograde	1668 Apr 27 22:22	26°☾36'25		behind sun begin	1675 Jan 28 23:09	9°☾30'51	
opposition	1668 Jul 17 06:59	25°☾12'55	0°25'00	behind sun end	1675 Jan 29 11:56	9°☾32'01	
min. Earth dist.	1668 Jul 17 01:32	25°☾13'17	29.12566 AU	max. Earth dist.	1675 Jan 29 16:06	9°☾32'25	31.06649 AU
direct	1668 Oct 05 03:22	23°☾49'38		retrograde	1675 May 14 13:05	12°☾03'11	
				opposition	1675 Aug 03 02:47	10°☾39'16	0°-4'-45
conjunction	1669 Jan 15 18:26	26°☾17'49	0°21'29	min. Earth dist.	1675 Aug 02 15:07	10°☾40'04	29.06253 AU
minimum elong	1669 Jan 15 18:27	26°☾17'49	0°21'28	direct	1675 Oct 21 07:01	9°☾16'10	
max. Earth dist.	1669 Jan 15 23:32	26°☾18'17	31.11980 AU				
retrograde	1669 Apr 30 09:07	28°☾48'33		conjunction	1676 Jan 31 15:50	11°☾44'15	0°-6'-29
opposition	1669 Jul 19 20:13	27°☾24'58	0°20'49	minimum elong	1676 Jan 31 15:50	11°☾44'15	0°06'30
min. Earth dist.	1669 Jul 19 14:48	27°☾25'20	29.11431 AU	behind sun begin	1676 Jan 31 09:48	11°☾43'42	
direct	1669 Oct 07 14:11	26°☾01'40		behind sun end	1676 Jan 31 21:53	11°☾44'48	
				max. Earth dist.	1676 Feb 01 03:30	11°☾45'21	31.05820 AU
conjunction	1670 Jan 18 04:12	28°☾29'48	0°17'34	retrograde	1676 May 16 01:22	14°☾16'10	
minimum elong	1670 Jan 18 04:12	28°☾29'48	0°17'34	opposition	1676 Aug 04 16:06	12°☾52'12	0°-9'-2
max. Earth dist.	1670 Jan 18 10:48	28°☾30'25	31.10893 AU	min. Earth dist.	1676 Aug 04 04:43	12°☾52'59	29.05385 AU
	1670 Mar 01 14:47	0°☾		direct	1676 Oct 22 19:59	11°☾29'08	
retrograde	1670 May 02 20:07	1°☾00'41					
	1670 Jul 08 02:10	30°☾		conjunction	1677 Feb 02 02:06	13°☾57'12	0°-10'-28
opposition	1670 Jul 22 09:13	29°☾37'01	0°16'37	minimum elong	1677 Feb 02 02:05	13°☾57'12	0°10'30
min. Earth dist.	1670 Jul 22 01:46	29°☾37'32	29.10389 AU	behind sun begin	1677 Feb 01 21:02	13°☾56'45	
direct	1670 Oct 10 02:00	28°☾13'45		behind sun end	1677 Feb 02 07:08	13°☾57'40	
	1671 Jan 01 23:11	0°☾		max. Earth dist.	1677 Feb 02 14:03	13°☾58'19	31.04908 AU
				retrograde	1677 May 18 15:39	16°☾29'16	
conjunction	1671 Jan 20 13:51	0°☾41'51	0°13'37	opposition	1677 Aug 07 05:22	15°☾05'14	0°-13'-19
minimum elong	1671 Jan 20 13:51	0°☾41'51	0°13'36	min. Earth dist.	1677 Aug 06 16:28	15°☾06'07	29.04415 AU
behind sun begin	1671 Jan 20 10:14	0°☾41'31		direct	1677 Oct 25 08:38	13°☾42'10	
behind sun end	1671 Jan 20 17:29	0°☾42'11					
max. Earth dist.	1671 Jan 20 20:43	0°☾42'29	31.09900 AU	conjunction	1678 Feb 04 12:33	16°☾10'13	0°-14'-27
retrograde	1671 May 05 08:40	3°☾12'54		minimum elong	1678 Feb 04 12:33	16°☾10'13	0°14'27
opposition	1671 Jul 24 22:21	1°☾49'10	0°12'22	behind sun begin	1678 Feb 04 09:33	16°☾09'56	
min. Earth dist.	1671 Jul 24 14:35	1°☾49'42	29.09453 AU	behind sun end	1678 Feb 04 15:33	16°☾10'29	
direct	1671 Oct 12 10:44	0°☾25'55		max. Earth dist.	1678 Feb 05 00:49	16°☾11'22	31.03871 AU
				retrograde	1678 May 21 03:01	18°☾42'25	
conjunction	1672 Jan 22 23:42	2°☾54'00	0°09'39	opposition	1678 Aug 09 18:41	17°☾18'18	0°-17'-34
minimum elong	1672 Jan 22 23:43	2°☾54'00	0°09'39	min. Earth dist.	1678 Aug 09 06:26	17°☾19'08	29.03328 AU
behind sun begin	1672 Jan 22 18:24	2°☾53'31		direct	1678 Oct 27 19:51	15°☾55'13	
behind sun end	1672 Jan 23 05:02	2°☾54'29					
max. Earth dist.	1672 Jan 23 08:30	2°☾54'49	31.09008 AU	conjunction	1679 Feb 06 23:06	18°☾23'13	0°-18'-25
retrograde	1672 May 06 20:13	5°☾25'13		minimum elong	1679 Feb 06 23:05	18°☾23'13	0°18'27
opposition	1672 Jul 26 11:18	4°☾01'26	0°08'06	max. Earth dist.	1679 Feb 07 12:22	18°☾24'28	31.02736 AU
min. Earth dist.	1672 Jul 26 02:04	4°☾02'04	29.08593 AU	retrograde	1679 May 23 14:36	20°☾55'33	
direct	1672 Oct 13 22:33	2°☾38'14		opposition	1679 Aug 12 07:47	19°☾31'19	0°-21'-48
				min. Earth dist.	1679 Aug 11 18:05	19°☾32'15	29.02142 AU
conjunction	1673 Jan 24 09:31	5°☾06'18	0°05'40	direct	1679 Oct 30 08:28	18°☾08'13	

conjunction	1680 Feb 09 09:28	20°≈36'10	0°-22'-21	conjunction	1688 Feb 26 23:23	8°✕21'24	0°-52'-16
minimum elong	1680 Feb 09 09:28	20°≈36'10	0°22'22	minimum elong	1688 Feb 26 23:23	8°✕21'24	0°52'17
max. Earth dist.	1680 Feb 09 22:30	20°≈37'24	31.01520 AU	max. Earth dist.	1688 Feb 27 19:25	8°✕23'18	30.94631 AU
retrograde	1680 May 25 02:55	23°≈08'37		retrograde	1688 Jun 12 11:56	10°✕55'02	
opposition	1680 Aug 13 20:57	21°≈44'16	0°-26'00	min. Earth dist.	1688 Aug 31 08:53	9°✕31'41	28.94368 AU
min. Earth dist.	1680 Aug 13 07:24	21°≈45'12	29.00927 AU	opposition	1688 Sep 01 04:42	9°✕30'19	0°-57'-46
direct	1680 Oct 31 18:20	20°≈21'08		direct	1688 Nov 18 13:58	8°✕07'19	
conjunction	1681 Feb 10 20:02	22°≈49'03	0°-26'-16	conjunction	1689 Feb 28 10:39	10°✕35'25	0°-55'-44
minimum elong	1681 Feb 10 20:02	22°≈49'03	0°26'17	minimum elong	1689 Feb 28 10:38	10°✕35'25	0°55'45
max. Earth dist.	1681 Feb 11 10:51	22°≈50'27	31.00313 AU	max. Earth dist.	1689 Mar 01 06:07	10°✕37'16	30.94000 AU
retrograde	1681 May 27 14:25	25°≈21'36		retrograde	1689 Jun 15 01:40	13°✕09'12	
opposition	1681 Aug 16 10:01	23°≈57'10	0°-30'-10	opposition	1689 Sep 03 17:49	11°✕44'27	-1°-1'-25
min. Earth dist.	1681 Aug 15 19:05	23°≈58'11	28.99746 AU	min. Earth dist.	1689 Sep 02 22:35	11°✕45'46	28.93714 AU
direct	1681 Nov 03 06:42	22°≈34'00		direct	1689 Nov 20 23:57	10°✕21'29	
conjunction	1682 Feb 13 06:24	25°≈01'52	0°-30'-8	conjunction	1690 Mar 02 22:12	12°✕49'36	0°-59'-6
minimum elong	1682 Feb 13 06:24	25°≈01'52	0°30'08	minimum elong	1690 Mar 02 22:12	12°✕49'36	0°59'07
max. Earth dist.	1682 Feb 13 21:05	25°≈03'16	30.99176 AU	max. Earth dist.	1690 Mar 03 18:51	12°✕51'33	30.93293 AU
retrograde	1682 May 30 04:05	27°≈34'34		retrograde	1690 Jun 17 13:25	15°✕23'30	
opposition	1682 Aug 18 23:06	26°≈10'02	0°-34'-17	min. Earth dist.	1690 Sep 05 10:50	14°✕00'05	28.92949 AU
min. Earth dist.	1682 Aug 18 07:32	26°≈11'06	28.98672 AU	opposition	1690 Sep 06 06:48	13°✕58'42	-1°-4'-59
direct	1682 Nov 05 16:35	24°≈46'51		direct	1690 Nov 23 12:36	12°✕35'44	
conjunction	1683 Feb 15 17:07	27°≈14'44	0°-33'-57	conjunction	1691 Mar 05 09:45	15°✕03'52	-1°-2'-24
minimum elong	1683 Feb 15 17:07	27°≈14'44	0°33'58	minimum elong	1691 Mar 05 09:45	15°✕03'51	1°02'25
max. Earth dist.	1683 Feb 16 09:41	27°≈16'18	30.98148 AU	max. Earth dist.	1691 Mar 06 05:25	15°✕05'43	30.92476 AU
retrograde	1683 Jun 01 16:03	29°≈47'34		retrograde	1691 Jun 20 02:28	17°✕37'51	
opposition	1683 Aug 21 11:56	28°≈22'58	0°-38'-21	opposition	1691 Sep 08 19:40	16°✕13'00	-1°-8'-27
min. Earth dist.	1683 Aug 20 19:45	28°≈24'04	28.97709 AU	min. Earth dist.	1691 Sep 07 23:53	16°✕14'22	28.92092 AU
direct	1683 Nov 08 03:57	26°≈59'47		direct	1691 Nov 25 22:27	14°✕49'59	
conjunction	1684 Feb 18 03:43	29°≈27'41	0°-37'-44	conjunction	1692 Mar 06 21:26	17°✕18'07	-1°-5'-35
minimum elong	1684 Feb 18 03:43	29°≈27'41	0°37'44	minimum elong	1692 Mar 06 21:26	17°✕18'07	1°05'36
max. Earth dist.	1684 Feb 18 20:19	29°≈29'15	30.97256 AU	max. Earth dist.	1692 Mar 07 18:23	17°✕20'06	30.91572 AU
	1684 Mar 03 10:42	0°✕		retrograde	1692 Jun 21 14:12	19°✕52'11	
retrograde	1684 Jun 03 06:28	2°✕00'39		opposition	1692 Sep 10 08:34	18°✕27'15	-1°-11'-49
min. Earth dist.	1684 Aug 22 07:20	0°✕37'13	28.96888 AU	min. Earth dist.	1692 Sep 09 12:42	18°✕28'37	28.91164 AU
opposition	1684 Aug 23 00:53	0°✕36'01	0°-42'-22	direct	1692 Nov 27 09:46	17°✕04'11	
	1684 Sep 14 14:48	30°≈					
direct	1684 Nov 09 14:05	29°≈12'51		conjunction	1693 Mar 09 08:53	19°✕32'18	-1°-8'-41
	1685 Jan 02 00:37	0°✕		minimum elong	1693 Mar 09 08:53	19°✕32'18	1°08'43
				max. Earth dist.	1693 Mar 10 05:26	19°✕34'15	30.90646 AU
conjunction	1685 Feb 19 14:21	1°✕40'46	0°-41'-27	retrograde	1693 Jun 24 04:27	22°✕06'27	
minimum elong	1685 Feb 19 14:21	1°✕40'46	0°41'29	opposition	1693 Sep 12 21:24	20°✕41'25	-1°-15'-5
max. Earth dist.	1685 Feb 20 08:21	1°✕42'28	30.96483 AU	min. Earth dist.	1693 Sep 12 00:45	20°✕42'50	28.90254 AU
retrograde	1685 Jun 05 19:32	4°✕13'55		direct	1693 Nov 29 20:33	19°✕18'18	
opposition	1685 Aug 25 13:58	2°✕49'14	0°-46'-19				
min. Earth dist.	1685 Aug 24 20:23	2°✕50'27	28.96173 AU	conjunction	1694 Mar 11 20:37	21°✕46'25	-1°-11'-41
direct	1685 Nov 12 02:34	1°✕26'07		minimum elong	1694 Mar 11 20:36	21°✕46'25	1°11'41
				max. Earth dist.	1694 Mar 12 18:07	21°✕48'27	30.89745 AU
conjunction	1686 Feb 22 01:14	3°✕54'05	0°-45'-8	retrograde	1694 Jun 26 17:07	24°✕20'37	
minimum elong	1686 Feb 22 01:14	3°✕54'05	0°45'08	opposition	1694 Sep 15 10:04	22°✕55'29	-1°-18'-14
max. Earth dist.	1686 Feb 22 19:48	3°✕55'50	30.95824 AU	min. Earth dist.	1694 Sep 14 13:44	22°✕56'54	28.89400 AU
retrograde	1686 Jun 08 10:45	6°✕27'23		direct	1694 Dec 02 08:54	21°✕32'20	
min. Earth dist.	1686 Aug 27 07:37	5°✕04'00	28.95553 AU				
opposition	1686 Aug 28 02:47	5°✕02'41	0°-50'-12	conjunction	1695 Mar 14 08:23	24°✕00'27	-1°-14'-34
direct	1686 Nov 14 14:38	3°✕39'36		minimum elong	1695 Mar 14 08:23	24°✕00'27	1°14'36
				max. Earth dist.	1695 Mar 15 06:10	24°✕02'31	30.88944 AU
conjunction	1687 Feb 24 12:12	6°✕07'37	0°-48'-44	retrograde	1695 Jun 29 07:38	26°✕34'43	
minimum elong	1687 Feb 24 12:12	6°✕07'37	0°48'46	opposition	1695 Sep 17 22:38	25°✕09'32	-1°-21'-15
max. Earth dist.	1687 Feb 25 07:12	6°✕09'25	30.95218 AU	min. Earth dist.	1695 Sep 17 00:54	25°✕11'02	28.88658 AU
retrograde	1687 Jun 10 22:56	8°✕41'05		direct	1695 Dec 04 20:53	23°✕46'20	
opposition	1687 Aug 30 15:49	7°✕16'23	0°-54'-1				
min. Earth dist.	1687 Aug 29 21:17	7°✕17'39	28.94968 AU	conjunction	1696 Mar 15 20:03	26°✕14'29	-1°-17'-21
direct	1687 Nov 17 01:26	5°✕53'21		minimum elong	1696 Mar 15 20:03	26°✕14'29	1°17'21
				max. Earth dist.	1696 Mar 16 18:13	26°✕16'34	30.88248 AU

retrograde	1696 Jun 30 20:22	28° ✕ 48'49		retrograde	1704 Jul 20 07:53	16° ∇ 46'09	
opposition	1696 Sep 19 11:21	27° ✕ 23'35	-1°-24'-10	opposition	1704 Oct 08 15:21	15° ∇ 20'51	-1°-42'-32
min. Earth dist.	1696 Sep 18 14:10	27° ✕ 25'03	28.88040 AU	min. Earth dist.	1704 Oct 07 17:17	15° ∇ 22'24	28.84885 AU
direct	1696 Dec 06 08:01	26° ✕ 00'22		direct	1704 Dec 25 03:26	13° ∇ 57'38	
conjunction	1697 Mar 18 08:01	28° ✕ 28'32	-1°-20'00	conjunction	1705 Apr 06 11:49	16° ∇ 26'16	-1°-36'-39
minimum elong	1697 Mar 18 08:01	28° ✕ 28'32	1°20'02	minimum elong	1705 Apr 06 11:48	16° ∇ 26'16	1°36'41
max. Earth dist.	1697 Mar 19 07:16	28° ✕ 30'44	30.87701 AU	max. Earth dist.	1705 Apr 07 10:28	16° ∇ 28'25	30.84467 AU
	1697 Apr 30 09:55	0° ∇		retrograde	1705 Jul 22 20:56	19° ∇ 01'13	
retrograde	1697 Jul 03 10:37	1° ∇ 02'57		min. Earth dist.	1705 Oct 10 06:52	17° ∇ 37'19	28.84272 AU
	1697 Sep 08 10:48	30° ✕		opposition	1705 Oct 11 03:41	17° ∇ 35'52	-1°-44'-10
opposition	1697 Sep 21 23:51	29° ✕ 37'41	-1°-26'-57	direct	1705 Dec 27 14:53	16° ∇ 12'36	
min. Earth dist.	1697 Sep 21 01:18	29° ✕ 39'15	28.87557 AU				
direct	1697 Dec 08 21:05	28° ✕ 14'29		conjunction	1706 Apr 09 00:45	18° ∇ 41'15	-1°-38'-6
	1698 Mar 01 18:55	0° ∇		minimum elong	1706 Apr 09 00:44	18° ∇ 41'15	1°38'07
conjunction	1698 Mar 20 19:56	0° ∇ 42'42	-1°-22'-33	max. Earth dist.	1706 Apr 09 23:52	18° ∇ 43'26	30.83864 AU
minimum elong	1698 Mar 20 19:56	0° ∇ 42'42	1°22'34	retrograde	1706 Jul 25 11:44	21° ∇ 16'11	
max. Earth dist.	1698 Mar 21 18:45	0° ∇ 44'51	30.87272 AU	opposition	1706 Oct 13 15:46	19° ∇ 50'47	-1°-45'-38
retrograde	1698 Jul 06 00:36	3° ∇ 17'12		min. Earth dist.	1706 Oct 12 18:06	19° ∇ 52'18	28.83682 AU
opposition	1698 Sep 24 12:31	1° ∇ 51'55	-1°-29'-36	direct	1706 Dec 30 04:47	18° ∇ 27'28	
min. Earth dist.	1698 Sep 23 14:30	1° ∇ 53'27	28.87190 AU	conjunction	1707 Apr 11 13:34	20° ∇ 56'10	-1°-39'-24
direct	1698 Dec 11 07:42	0° ∇ 28'44		minimum elong	1707 Apr 11 13:34	20° ∇ 56'10	1°39'26
conjunction	1699 Mar 23 08:11	2° ∇ 57'00	-1°-24'-58	max. Earth dist.	1707 Apr 12 11:52	20° ∇ 58'16	30.83297 AU
minimum elong	1699 Mar 23 08:11	2° ∇ 57'00	1°25'00	retrograde	1707 Jul 28 01:16	23° ∇ 31'06	
max. Earth dist.	1699 Mar 24 08:17	2° ∇ 59'17	30.86942 AU	min. Earth dist.	1707 Oct 15 07:06	22° ∇ 07'06	28.83171 AU
retrograde	1699 Jul 08 12:37	5° ∇ 31'35		opposition	1707 Oct 16 03:51	22° ∇ 05'39	-1°-46'-56
min. Earth dist.	1699 Sep 26 02:06	4° ∇ 07'55	28.86890 AU	direct	1708 Jan 01 16:13	20° ∇ 42'16	
opposition	1699 Sep 27 00:52	4° ∇ 06'20	-1°-32'-7	conjunction	1708 Apr 13 02:34	23° ∇ 11'01	-1°-40'-33
direct	1699 Dec 13 20:01	2° ∇ 43'10		minimum elong	1708 Apr 13 02:34	23° ∇ 11'01	1°40'34
conjunction	1700 Mar 25 20:23	5° ∇ 11'30	-1°-27'-15	max. Earth dist.	1708 Apr 14 01:55	23° ∇ 13'13	30.82839 AU
minimum elong	1700 Mar 25 20:23	5° ∇ 11'30	1°27'16	retrograde	1708 Jul 29 13:31	25° ∇ 45'56	
max. Earth dist.	1700 Mar 26 19:35	5° ∇ 13'42	30.86666 AU	opposition	1708 Oct 17 15:49	24° ∇ 20'28	-1°-48'-5
retrograde	1700 Jul 11 02:18	7° ∇ 46'12		min. Earth dist.	1708 Oct 16 18:18	24° ∇ 21'59	28.82773 AU
opposition	1700 Sep 29 13:29	6° ∇ 20'56	-1°-34'-29	direct	1709 Jan 03 04:58	22° ∇ 57'03	
min. Earth dist.	1700 Sep 28 14:58	6° ∇ 22'31	28.86632 AU	conjunction	1709 Apr 15 15:23	25° ∇ 25'50	-1°-41'-33
direct	1700 Dec 16 05:47	4° ∇ 57'48		minimum elong	1709 Apr 15 15:23	25° ∇ 25'50	1°41'34
conjunction	1701 Mar 28 08:49	7° ∇ 26'13	-1°-29'-25	max. Earth dist.	1709 Apr 16 13:44	25° ∇ 27'56	30.82510 AU
minimum elong	1701 Mar 28 08:49	7° ∇ 26'13	1°29'26	retrograde	1709 Aug 01 03:32	28° ∇ 00'45	
max. Earth dist.	1701 Mar 29 09:08	7° ∇ 28'31	30.86389 AU	min. Earth dist.	1709 Oct 19 06:38	26° ∇ 36'46	28.82520 AU
retrograde	1701 Jul 13 14:40	10° ∇ 01'00		opposition	1709 Oct 20 03:51	26° ∇ 35'16	-1°-49'-4
min. Earth dist.	1701 Oct 01 03:47	8° ∇ 37'19	28.86331 AU	direct	1710 Jan 05 15:39	25° ∇ 11'49	
opposition	1701 Oct 02 02:02	8° ∇ 35'45	-1°-36'-43	conjunction	1710 Apr 18 04:35	27° ∇ 40'40	-1°-42'-24
direct	1701 Dec 18 16:55	7° ∇ 12'38		minimum elong	1710 Apr 18 04:35	27° ∇ 40'40	1°42'24
conjunction	1702 Mar 30 21:28	9° ∇ 41'07	-1°-31'-26	max. Earth dist.	1710 Apr 19 04:03	27° ∇ 42'53	30.82318 AU
minimum elong	1702 Mar 30 21:27	9° ∇ 41'07	1°31'26		1710 Jul 03 16:22	0° ♁	
max. Earth dist.	1702 Mar 31 20:42	9° ∇ 43'19	30.86057 AU	retrograde	1710 Aug 03 15:32	0° ♁ 15'35	
retrograde	1702 Jul 16 05:00	12° ∇ 15'58			1710 Sep 03 23:09	30° ∇	
opposition	1702 Oct 04 14:27	10° ∇ 50'44	-1°-38'-49	opposition	1710 Oct 22 15:38	28° ∇ 50'07	-1°-49'-53
min. Earth dist.	1702 Oct 03 16:08	10° ∇ 52'17	28.85957 AU	min. Earth dist.	1710 Oct 21 18:31	28° ∇ 51'36	28.82393 AU
direct	1702 Dec 21 03:30	9° ∇ 27'36		direct	1711 Jan 08 03:09	27° ∇ 26'39	
conjunction	1703 Apr 02 10:18	11° ∇ 56'09	-1°-33'-19	conjunction	1711 Apr 20 17:42	29° ∇ 55'33	-1°-43'-5
minimum elong	1703 Apr 02 10:18	11° ∇ 56'09	1°33'20	minimum elong	1711 Apr 20 17:42	29° ∇ 55'33	1°43'06
max. Earth dist.	1703 Apr 03 09:44	11° ∇ 58'22	30.85613 AU	max. Earth dist.	1711 Apr 21 16:13	29° ∇ 57'41	30.82264 AU
retrograde	1703 Jul 18 17:28	14° ∇ 31'03			1711 Apr 22 16:50	0° ♁	
min. Earth dist.	1703 Oct 06 05:37	13° ∇ 07'17	28.85462 AU	retrograde	1711 Aug 06 04:42	2° ♁ 30'28	
opposition	1703 Oct 07 02:59	13° ∇ 05'48	-1°-40'-45	min. Earth dist.	1711 Oct 24 06:10	1° ♁ 06'32	28.82398 AU
direct	1703 Dec 23 15:29	11° ∇ 42'38		opposition	1711 Oct 25 03:31	1° ♁ 05'02	-1°-50'-32
conjunction	1704 Apr 03 22:58	14° ∇ 11'13	-1°-35'-3	direct	1711 Dec 08 06:23	30° ∇	
minimum elong	1704 Apr 03 22:58	14° ∇ 11'13	1°35'04		1712 Jan 10 13:47	29° ∇ 41'33	
max. Earth dist.	1704 Apr 04 21:55	14° ∇ 13'23	30.85077 AU	direct	1712 Feb 12 07:16	0° ♁	
				conjunction	1712 Apr 22 06:51	2° ♁ 10'32	-1°-43'-36

minimum elong	1712 Apr 22 06:51	2°♃10'32	1°43'37	opposition	1720 Nov 13 12:12	21°♃20'25	-1°-48'-44
max. Earth dist.	1712 Apr 23 05:57	2°♃12'43	30.82307 AU	min. Earth dist.	1720 Nov 12 19:17	21°♃21'37	28.82214 AU
retrograde	1712 Aug 07 16:06	4°♃45'28		direct	1721 Jan 30 00:33	19°♃56'32	
opposition	1712 Oct 26 15:27	3°♃20'03	-1°-51'00				
min. Earth dist.	1712 Oct 25 18:59	3°♃21'30	28.82476 AU	conjunction	1721 May 13 09:55	22°♃26'04	-1°-41'-13
direct	1713 Jan 12 00:42	1°♃56'35		minimum elong	1721 May 13 09:55	22°♃26'04	1°41'15
				max. Earth dist.	1721 May 14 04:33	22°♃27'48	30.82158 AU
conjunction	1713 Apr 24 20:17	4°♃25'39	-1°-43'-58	retrograde	1721 Aug 28 13:39	25°♃00'25	
minimum elong	1713 Apr 24 20:17	4°♃25'39	1°44'00	opposition	1721 Nov 15 23:24	23°♃35'05	-1°-47'-42
max. Earth dist.	1713 Apr 25 18:43	4°♃27'46	30.82418 AU	min. Earth dist.	1721 Nov 15 07:26	23°♃36'13	28.82362 AU
retrograde	1713 Aug 10 06:37	7°♃00'34		direct	1722 Feb 01 11:26	22°♃11'09	
min. Earth dist.	1713 Oct 28 06:15	5°♃36'40	28.82591 AU				
opposition	1713 Oct 29 03:09	5°♃35'12	-1°-51'-19	conjunction	1722 May 15 23:45	24°♃40'45	-1°-40'-11
direct	1714 Jan 14 11:31	4°♃11'42		minimum elong	1722 May 15 23:45	24°♃40'45	1°40'12
				max. Earth dist.	1722 May 16 17:30	24°♃42'25	30.82391 AU
conjunction	1714 Apr 27 09:53	6°♃40'52	-1°-44'-11	retrograde	1722 Aug 31 03:28	27°♃15'02	
minimum elong	1714 Apr 27 09:53	6°♃40'52	1°44'11	opposition	1722 Nov 18 10:32	25°♃49'45	-1°-46'-30
max. Earth dist.	1714 Apr 28 07:44	6°♃42'55	30.82511 AU	min. Earth dist.	1722 Nov 17 17:59	25°♃50'55	28.82665 AU
retrograde	1714 Aug 12 19:06	9°♃15'46		direct	1723 Feb 03 22:02	24°♃25'47	
opposition	1714 Oct 31 15:03	7°♃50'26	-1°-51'-27				
min. Earth dist.	1714 Oct 30 19:45	7°♃51'47	28.82662 AU	conjunction	1723 May 18 13:30	26°♃55'28	-1°-38'-59
direct	1715 Jan 16 22:52	6°♃26'55		minimum elong	1723 May 18 13:30	26°♃55'28	1°39'00
				max. Earth dist.	1723 May 19 07:00	26°♃57'07	30.82762 AU
conjunction	1715 Apr 29 23:36	8°♃56'08	-1°-44'-13	retrograde	1723 Sep 02 14:32	29°♃29'41	
minimum elong	1715 Apr 29 23:36	8°♃56'08	1°44'15	opposition	1723 Nov 20 21:45	28°♃04'28	-1°-45'-8
max. Earth dist.	1715 Apr 30 21:13	8°♃58'10	30.82547 AU	min. Earth dist.	1723 Nov 20 06:30	28°♃05'33	28.83111 AU
retrograde	1715 Aug 15 09:22	11°♃31'00		direct	1724 Feb 06 09:00	26°♃40'30	
min. Earth dist.	1715 Nov 02 07:06	10°♃07'03	28.82649 AU				
opposition	1715 Nov 03 02:44	10°♃05'40	-1°-51'-25	conjunction	1724 May 20 03:25	29°♃10'17	-1°-37'-38
direct	1716 Jan 19 12:29	8°♃42'06		minimum elong	1724 May 20 03:25	29°♃10'17	1°37'39
				max. Earth dist.	1724 May 20 20:50	29°♃11'55	30.83288 AU
conjunction	1716 May 01 13:15	11°♃11'24	-1°-44'-7		1724 Jun 11 15:16	0°♂	
minimum elong	1716 May 01 13:15	11°♃11'24	1°44'07	retrograde	1724 Sep 04 04:05	1°♂44'25	
max. Earth dist.	1716 May 02 09:26	11°♃13'18	30.82492 AU	opposition	1724 Nov 22 08:46	0°♂19'18	-1°-43'-36
retrograde	1716 Aug 16 22:41	13°♃46'12		min. Earth dist.	1724 Nov 21 17:03	0°♂20'24	28.83683 AU
opposition	1716 Nov 04 14:31	12°♃20'52	-1°-51'-12		1724 Dec 03 19:47	30°♂	
min. Earth dist.	1716 Nov 03 20:24	12°♃22'09	28.82562 AU	direct	1725 Feb 07 21:42	28°♃55'19	
direct	1717 Jan 20 23:57	10°♃57'14			1725 Apr 12 11:47	0°♂	
conjunction	1717 May 04 03:02	13°♃26'35	-1°-43'-51	conjunction	1725 May 22 17:21	1°♂25'13	-1°-36'-8
minimum elong	1717 May 04 03:02	13°♃26'35	1°43'52	minimum elong	1725 May 22 17:21	1°♂25'13	1°36'09
max. Earth dist.	1717 May 04 23:31	13°♃28'30	30.82379 AU	max. Earth dist.	1725 May 23 09:35	1°♂26'44	30.83904 AU
retrograde	1717 Aug 19 11:53	16°♃01'17		retrograde	1725 Sep 06 17:05	3°♂59'18	
min. Earth dist.	1717 Nov 06 07:53	14°♃37'14	28.82417 AU	opposition	1725 Nov 24 19:57	2°♂34'16	-1°-41'-55
opposition	1717 Nov 07 02:05	14°♃35'57	-1°-50'-50	min. Earth dist.	1725 Nov 24 05:47	2°♂35'16	28.84327 AU
direct	1718 Jan 23 13:21	13°♃12'15		direct	1726 Feb 10 08:22	1°♂10'17	
conjunction	1718 May 06 16:45	15°♃41'38	-1°-43'-25	conjunction	1726 May 25 07:35	3°♂40'18	-1°-34'-29
minimum elong	1718 May 06 16:45	15°♃41'38	1°43'26	minimum elong	1726 May 25 07:36	3°♂40'18	1°34'29
max. Earth dist.	1718 May 07 11:31	15°♃43'23	30.82232 AU	max. Earth dist.	1726 May 25 23:52	3°♂41'49	30.84558 AU
retrograde	1718 Aug 22 02:08	18°♃16'15		retrograde	1726 Sep 09 06:41	6°♂14'18	
opposition	1718 Nov 09 13:29	16°♃50'53	-1°-50'-18	opposition	1726 Nov 27 06:52	4°♂49'21	-1°-40'-4
min. Earth dist.	1718 Nov 08 20:10	16°♃52'07	28.82281 AU	min. Earth dist.	1726 Nov 26 16:54	4°♂50'20	28.84960 AU
direct	1719 Jan 26 00:57	15°♃27'07		direct	1727 Feb 12 21:25	3°♂25'23	
conjunction	1719 May 09 06:34	17°♃56'33	-1°-42'-51	conjunction	1727 May 27 21:44	5°♂55'29	-1°-32'-41
minimum elong	1719 May 09 06:34	17°♃56'33	1°42'52	minimum elong	1727 May 27 21:44	5°♂55'29	1°32'42
max. Earth dist.	1719 May 10 02:02	17°♃58'22	30.82114 AU	max. Earth dist.	1727 May 28 11:57	5°♂56'49	30.85172 AU
retrograde	1719 Aug 24 13:43	20°♃31'04		retrograde	1727 Sep 11 21:37	8°♂29'24	
min. Earth dist.	1719 Nov 11 07:57	19°♃06'54	28.82191 AU	opposition	1727 Nov 29 18:03	7°♂04'31	-1°-38'-4
opposition	1719 Nov 12 00:53	19°♃05'42	-1°-49'-36	min. Earth dist.	1727 Nov 29 05:14	7°♂05'25	28.85545 AU
direct	1720 Jan 28 13:25	17°♃41'53		direct	1728 Feb 15 09:35	5°♂40'31	
conjunction	1720 May 10 20:05	20°♃11'20	-1°-42'-7	conjunction	1728 May 29 11:58	8°♂10'42	-1°-30'-45
minimum elong	1720 May 10 20:05	20°♃11'20	1°42'07	minimum elong	1728 May 29 11:58	8°♂10'42	1°30'46
max. Earth dist.	1720 May 11 14:17	20°♃13'03	30.82079 AU	max. Earth dist.	1728 May 30 02:18	8°♂12'03	30.85712 AU
retrograde	1720 Aug 26 02:42	22°♃45'47		retrograde	1728 Sep 13 09:15	10°♂44'30	

opposition	1728 Dec 01 05:09	9°II19'40	-1°-35'-56	conjunction	1737 Jun 19 19:14	28°II21'36	-1°-7'-39
min. Earth dist.	1728 Nov 30 17:17	9°II20'30	28.86027 AU	minimum elong	1737 Jun 19 19:14	28°II21'36	1°07'40
direct	1729 Feb 16 22:41	7°II55'38		max. Earth dist.	1737 Jun 20 02:31	28°II22'17	30.90767 AU
					1737 Aug 06 12:01	0°☾	
conjunction	1729 Jun 01 02:13	10°II25'52	-1°-28'-41	retrograde	1737 Oct 03 21:51	0°☾54'00	
minimum elong	1729 Jun 01 02:14	10°II25'52	1°28'42		1737 Dec 02 22:29	30°II	
max. Earth dist.	1729 Jun 01 14:28	10°II27'00	30.86166 AU	opposition	1737 Dec 21 05:18	29°II29'37	-1°-10'-40
retrograde	1729 Sep 15 22:58	12°II59'30		min. Earth dist.	1737 Dec 20 23:39	29°II30'01	28.91293 AU
opposition	1729 Dec 03 16:03	11°II34'42	-1°-33'-39	direct	1738 Mar 09 09:10	28°II05'08	
min. Earth dist.	1729 Dec 03 04:49	11°II35'30	28.86440 AU		1738 Jun 06 04:37	0°☾	
direct	1730 Feb 19 10:27	10°II10'36					
				conjunction	1738 Jun 22 09:22	0°☾35'52	-1°-4'-31
conjunction	1730 Jun 03 16:36	12°II40'54	-1°-26'-28	minimum elong	1738 Jun 22 09:22	0°☾35'52	1°04'32
minimum elong	1730 Jun 03 16:36	12°II40'54	1°26'30	max. Earth dist.	1738 Jun 22 14:40	0°☾36'22	30.91754 AU
max. Earth dist.	1730 Jun 04 04:42	12°II42'01	30.86546 AU	retrograde	1738 Oct 06 11:57	3°☾08'09	
retrograde	1730 Sep 18 10:25	15°II14'22		opposition	1738 Dec 23 15:51	1°☾43'52	-1°-7'-15
opposition	1730 Dec 06 03:01	13°II49'36	-1°-31'-13	min. Earth dist.	1738 Dec 23 10:45	1°☾44'14	28.92280 AU
min. Earth dist.	1730 Dec 05 17:16	13°II50'17	28.86797 AU	direct	1739 Mar 11 20:48	0°☾19'23	
direct	1731 Feb 21 22:14	12°II25'25					
				conjunction	1739 Jun 24 23:33	2°☾50'14	-1°-1'-17
conjunction	1731 Jun 06 06:39	14°II55'44	-1°-24'-9	minimum elong	1739 Jun 24 23:33	2°☾50'14	1°01'18
minimum elong	1731 Jun 06 06:39	14°II55'44	1°24'10	max. Earth dist.	1739 Jun 25 04:47	2°☾50'43	30.92716 AU
max. Earth dist.	1731 Jun 06 17:18	14°II56'44	30.86910 AU	retrograde	1739 Oct 08 23:46	5°☾22'23	
retrograde	1731 Sep 20 23:13	17°II29'03		opposition	1739 Dec 26 02:30	3°☾58'13	-1°-3'-45
opposition	1731 Dec 08 13:45	16°II04'17	-1°-28'-40	min. Earth dist.	1739 Dec 25 23:03	3°☾58'28	28.93207 AU
min. Earth dist.	1731 Dec 08 03:49	16°II05'00	28.87162 AU	direct	1740 Mar 13 08:41	2°☾33'44	
direct	1732 Feb 24 09:47	14°II40'02					
				conjunction	1740 Jun 26 13:46	5°☾04'39	0°-57'-58
conjunction	1732 Jun 07 20:48	17°II10'22	-1°-21'-41	minimum elong	1740 Jun 26 13:46	5°☾04'39	0°57'59
minimum elong	1732 Jun 07 20:48	17°II10'22	1°21'43	max. Earth dist.	1740 Jun 26 17:02	5°☾04'57	30.93610 AU
max. Earth dist.	1732 Jun 08 06:54	17°II11'19	30.87291 AU	retrograde	1740 Oct 10 12:45	7°☾36'40	
retrograde	1732 Sep 22 08:57	19°II43'31		opposition	1740 Dec 27 12:55	6°☾12'35	-1°00'-9
opposition	1732 Dec 10 00:30	18°II18'47	-1°-25'-58	min. Earth dist.	1740 Dec 27 09:39	6°☾12'49	28.94046 AU
min. Earth dist.	1732 Dec 09 16:13	18°II19'22	28.87576 AU	direct	1741 Mar 15 20:26	4°☾48'04	
direct	1733 Feb 25 20:57	16°II54'27					
				conjunction	1741 Jun 29 04:05	7°☾19'04	0°-54'-33
conjunction	1733 Jun 10 10:56	19°II24'49	-1°-19'-7	minimum elong	1741 Jun 29 04:05	7°☾19'04	0°54'34
minimum elong	1733 Jun 10 10:56	19°II24'49	1°19'08	max. Earth dist.	1741 Jun 29 06:23	7°☾19'16	30.94388 AU
max. Earth dist.	1733 Jun 10 20:30	19°II25'43	30.87756 AU	retrograde	1741 Oct 12 22:45	9°☾50'55	
retrograde	1733 Sep 24 21:14	21°II57'48		opposition	1741 Dec 29 23:33	8°☾26'55	0°-56'-27
opposition	1733 Dec 12 11:04	20°II33'06	-1°-23'-9	min. Earth dist.	1741 Dec 29 22:20	8°☾27'00	28.94768 AU
min. Earth dist.	1733 Dec 12 02:27	20°II33'42	28.88077 AU	direct	1742 Mar 18 07:38	7°☾02'21	
direct	1734 Feb 28 09:19	19°II08'41					
				conjunction	1742 Jul 01 18:16	9°☾33'23	0°-51'-4
conjunction	1734 Jun 13 00:59	21°II39'07	-1°-16'-25	minimum elong	1742 Jul 01 18:17	9°☾33'23	0°51'05
minimum elong	1734 Jun 13 00:59	21°II39'07	1°16'26	max. Earth dist.	1742 Jul 01 19:22	9°☾33'30	30.95070 AU
max. Earth dist.	1734 Jun 13 09:24	21°II39'54	30.88309 AU	retrograde	1742 Oct 15 10:52	12°☾05'04	
retrograde	1734 Sep 27 08:37	24°II11'55		opposition	1743 Jan 01 09:53	10°☾41'07	0°-52'-42
opposition	1734 Dec 14 21:42	22°II47'16	-1°-20'-13	min. Earth dist.	1743 Jan 01 08:45	10°☾41'12	28.95397 AU
min. Earth dist.	1734 Dec 14 14:30	22°II47'47	28.88698 AU	direct	1743 Mar 20 19:41	9°☾16'30	
direct	1735 Mar 02 19:36	21°II22'48					
				conjunction	1743 Jul 04 08:20	11°☾47'35	0°-47'-31
conjunction	1735 Jun 15 15:06	23°II53'17	-1°-13'-37	minimum elong	1743 Jul 04 08:20	11°☾47'35	0°47'31
minimum elong	1735 Jun 15 15:06	23°II53'17	1°13'38	max. Earth dist.	1743 Jul 04 07:59	11°☾47'33	30.95671 AU
max. Earth dist.	1735 Jun 15 23:42	23°II54'05	30.89004 AU	retrograde	1743 Oct 17 21:18	14°☾19'05	
retrograde	1735 Sep 29 20:47	26°II25'57		opposition	1744 Jan 03 20:19	12°☾55'10	0°-48'-51
opposition	1735 Dec 17 08:15	25°II01'22	-1°-17'-9	min. Earth dist.	1744 Jan 03 20:57	12°☾55'07	28.95986 AU
min. Earth dist.	1735 Dec 17 00:51	25°II01'53	28.89450 AU	direct	1744 Mar 22 05:38	11°☾30'28	
direct	1736 Mar 04 08:50	23°II36'53					
				conjunction	1744 Jul 05 22:19	14°☾01'35	0°-43'-53
conjunction	1736 Jun 17 04:57	26°II07'26	-1°-10'-41	minimum elong	1744 Jul 05 22:19	14°☾01'35	0°43'54
minimum elong	1736 Jun 17 04:58	26°II07'26	1°10'42	max. Earth dist.	1744 Jul 05 21:44	14°☾01'31	30.96257 AU
max. Earth dist.	1736 Jun 17 11:54	26°II08'04	30.89831 AU	retrograde	1744 Oct 19 08:07	16°☾32'54	
retrograde	1736 Oct 01 10:15	28°II39'58		opposition	1745 Jan 05 06:36	15°☾09'01	0°-44'-57
opposition	1736 Dec 18 18:52	27°II15'27	-1°-13'-58	min. Earth dist.	1745 Jan 05 07:26	15°☾08'58	28.96559 AU
min. Earth dist.	1736 Dec 18 12:21	27°II15'55	28.90336 AU	direct	1745 Mar 24 19:24	13°☾44'15	
direct	1737 Mar 06 20:33	25°II50'58					

conjunction	1745 Jul 08 12:12	16°☾15'23	0°-40'-12	direct	1753 Apr 11 17:29	1°♁30'29	
minimum elong	1745 Jul 08 12:12	16°☾15'23	0°40'13				
max. Earth dist.	1745 Jul 08 09:43	16°☾15'09	30.96848 AU	conjunction	1753 Jul 27 01:25	4°♁01'58	0°-9'-10
retrograde	1745 Oct 21 20:06	18°☾46'31		minimum elong	1753 Jul 27 01:25	4°♁01'58	0°09'10
opposition	1746 Jan 07 16:47	17°☾22'40	0°-40'-59	behind sun begin	1753 Jul 26 19:52	4°♁01'29	
min. Earth dist.	1746 Jan 07 18:38	17°☾22'32	28.97183 AU	behind sun end	1753 Jul 27 06:58	4°♁02'28	
direct	1746 Mar 27 07:10	15°☾57'49		max. Earth dist.	1753 Jul 26 17:22	4°♁01'15	31.04561 AU
				retrograde	1753 Nov 08 14:09	6°♁31'49	
conjunction	1746 Jul 11 02:08	18°☾29'00	0°-36'-28	opposition	1754 Jan 25 02:21	5°♁08'36	0°-7'-37
minimum elong	1746 Jul 11 02:08	18°☾29'00	0°36'29	min. Earth dist.	1754 Jan 25 09:53	5°♁08'04	29.05024 AU
max. Earth dist.	1746 Jul 10 23:59	18°☾28'48	30.97508 AU	direct	1754 Apr 14 06:41	3°♁43'36	
retrograde	1746 Oct 24 06:44	20°☾59'56					
opposition	1747 Jan 10 03:03	19°☾36'08	0°-36'-58	conjunction	1754 Jul 29 14:56	6°♁15'07	0°-5'-11
min. Earth dist.	1747 Jan 10 05:34	19°☾35'57	28.97884 AU	minimum elong	1754 Jul 29 14:56	6°♁15'07	0°05'12
direct	1747 Mar 29 19:41	18°☾11'14		behind sun begin	1754 Jul 29 08:33	6°♁14'33	
				behind sun end	1754 Jul 29 21:19	6°♁15'40	
conjunction	1747 Jul 13 15:36	20°☾42'25	0°-32'-41	max. Earth dist.	1754 Jul 29 04:48	6°♁14'11	31.05458 AU
minimum elong	1747 Jul 13 15:36	20°☾42'25	0°32'42	retrograde	1754 Nov 11 01:30	8°♁44'47	
max. Earth dist.	1747 Jul 13 11:47	20°☾42'04	30.98273 AU	opposition	1755 Jan 27 12:40	7°♁21'37	0°-3'-21
retrograde	1747 Oct 26 20:02	23°☾13'11		min. Earth dist.	1755 Jan 27 21:18	7°♁21'01	29.05882 AU
opposition	1748 Jan 12 13:15	21°☾49'26	0°-32'-53	direct	1755 Apr 16 17:33	5°♁56'35	
min. Earth dist.	1748 Jan 12 15:51	21°☾49'15	28.98717 AU				
direct	1748 Mar 31 08:05	20°☾24'30		conjunction	1755 Aug 01 04:19	8°♁28'06	0°-1'-9
				minimum elong	1755 Aug 01 04:18	8°♁28'06	0°01'10
conjunction	1748 Jul 15 05:21	22°☾55'44	0°-28'-51	behind sun begin	1755 Jul 31 21:43	8°♁27'31	
minimum elong	1748 Jul 15 05:21	22°☾55'44	0°28'52	behind sun end	1755 Aug 01 10:54	8°♁28'41	
max. Earth dist.	1748 Jul 15 01:56	22°☾55'25	30.99169 AU	max. Earth dist.	1755 Jul 31 18:14	8°♁27'11	31.06267 AU
retrograde	1748 Oct 28 07:03	25°☾26'20		retrograde	1755 Nov 13 11:33	10°♁57'37	
opposition	1749 Jan 13 23:24	24°☾02'38	0°-28'-46	asc. node	1755 Nov 12 20:31	10°♁57'36	
min. Earth dist.	1749 Jan 14 03:16	24°☾02'22	28.99676 AU	opposition	1756 Jan 29 22:55	9°♁34'29	0°00'54
direct	1749 Apr 02 20:43	22°☾37'41		min. Earth dist.	1756 Jan 30 08:34	9°♁33'48	29.06646 AU
				direct	1756 Apr 18 06:00	8°♁09'24	
conjunction	1749 Jul 17 18:58	25°☾08'58	0°-24'-58				
minimum elong	1749 Jul 17 18:58	25°☾08'58	0°24'59	conjunction	1756 Aug 02 17:34	10°♁40'55	0°02'56
max. Earth dist.	1749 Jul 17 14:03	25°☾08'31	31.00200 AU	minimum elong	1756 Aug 02 17:35	10°♁40'55	0°02'56
retrograde	1749 Oct 30 19:27	27°☾39'25		behind sun begin	1756 Aug 02 11:00	10°♁40'20	
opposition	1750 Jan 16 09:31	26°☾15'49	0°-24'-35	behind sun end	1756 Aug 03 00:09	10°♁41'30	
min. Earth dist.	1750 Jan 16 13:05	26°☾15'34	29.00753 AU	max. Earth dist.	1756 Aug 02 05:26	10°♁39'48	31.07010 AU
direct	1750 Apr 05 08:59	24°☾50'52		retrograde	1756 Nov 14 23:58	13°♁10'15	
				opposition	1757 Jan 31 08:55	11°♁47'09	0°05'10
conjunction	1750 Jul 20 08:33	27°☾22'13	0°-21'-3	min. Earth dist.	1757 Jan 31 18:59	11°♁46'27	29.07374 AU
minimum elong	1750 Jul 20 08:33	27°☾22'13	0°21'04	direct	1757 Apr 20 18:33	10°♁22'01	
max. Earth dist.	1750 Jul 20 03:21	27°☾21'44	31.01308 AU				
retrograde	1750 Nov 02 05:45	29°☾52'30		conjunction	1757 Aug 05 06:56	12°♁53'33	0°06'55
opposition	1751 Jan 18 19:45	28°☾29'01	0°-20'-23	minimum elong	1757 Aug 05 06:55	12°♁53'33	0°06'55
min. Earth dist.	1751 Jan 19 01:02	28°☾28'39	29.01886 AU	behind sun begin	1757 Aug 05 00:49	12°♁53'01	
direct	1751 Apr 07 19:44	27°☾04'05		behind sun end	1757 Aug 05 13:01	12°♁54'06	
				max. Earth dist.	1757 Aug 04 19:01	12°♁52'28	31.07722 AU
conjunction	1751 Jul 22 22:08	29°☾35'28	0°-17'-6	retrograde	1757 Nov 17 10:12	15°♁22'43	
minimum elong	1751 Jul 22 22:08	29°☾35'28	0°17'07	opposition	1758 Feb 02 19:08	13°♁59'39	0°09'26
max. Earth dist.	1751 Jul 22 15:55	29°☾34'55	31.02455 AU	min. Earth dist.	1758 Feb 03 06:38	13°♁58'50	29.08089 AU
	1751 Aug 02 23:31	0°♁		direct	1758 Apr 23 07:34	12°♁34'28	
retrograde	1751 Nov 04 18:07	2°♁05'37					
opposition	1752 Jan 21 05:51	0°♁42'15	0°-16'-9	conjunction	1758 Aug 07 19:49	15°♁06'00	0°10'52
min. Earth dist.	1752 Jan 21 11:07	0°♁41'52	29.03015 AU	minimum elong	1758 Aug 07 19:49	15°♁06'00	0°10'52
	1752 Feb 16 08:23	30°☾		behind sun begin	1758 Aug 07 14:52	15°♁05'33	
direct	1752 Apr 09 07:32	29°☾17'18		behind sun end	1758 Aug 08 00:46	15°♁06'26	
	1752 May 31 02:49	0°♁		max. Earth dist.	1758 Aug 07 06:29	15°♁04'46	31.08457 AU
				retrograde	1758 Nov 19 21:58	17°♁34'59	
conjunction	1752 Jul 24 11:43	1°♁48'44	0°-13'-8	opposition	1759 Feb 05 05:10	16°♁11'58	0°13'40
minimum elong	1752 Jul 24 11:43	1°♁48'44	0°13'09	min. Earth dist.	1759 Feb 05 16:13	16°♁11'11	29.08855 AU
behind sun begin	1752 Jul 24 07:57	1°♁48'24		direct	1759 Apr 25 20:18	14°♁46'45	
behind sun end	1752 Jul 24 15:29	1°♁49'05					
max. Earth dist.	1752 Jul 24 04:11	1°♁48'03	31.03550 AU	conjunction	1759 Aug 10 08:47	17°♁18'17	0°14'49
retrograde	1752 Nov 06 04:03	4°♁18'45		minimum elong	1759 Aug 10 08:46	17°♁18'17	0°14'49
opposition	1753 Jan 22 16:11	2°♁55'27	0°-11'-54	behind sun begin	1759 Aug 10 06:25	17°♁18'04	
min. Earth dist.	1753 Jan 22 23:16	2°♁54'57	29.04077 AU	behind sun end	1759 Aug 10 11:08	17°♁18'29	

max. Earth dist.	1759 Aug 09 19:25	17°Ω17'03	31.09256 AU	max. Earth dist.	1767 Aug 27 19:01	4°♄54'30	31.17702 AU
retrograde	1759 Nov 22 07:55	19°Ω47'07		retrograde	1767 Dec 09 20:59	7°♄24'11	
opposition	1760 Feb 07 15:19	18°Ω24'08	0°17'53	opposition	1768 Feb 25 01:16	6°♄01'50	0°50'06
min. Earth dist.	1760 Feb 08 03:45	18°Ω23'16	29.09716 AU	min. Earth dist.	1768 Feb 25 17:40	6°♄00'41	29.18126 AU
direct	1760 Apr 27 07:29	16°Ω58'54		direct	1768 May 15 04:36	4°♄36'42	
				max. Earth dist.	1768 Aug 29 07:12	7°♄06'35	31.18446 AU
conjunction	1760 Aug 11 21:35	19°Ω30'27	0°18'44				
minimum elong	1760 Aug 11 21:35	19°Ω30'27	0°18'44	conjunction	1768 Aug 30 02:30	7°♄08'22	0°48'41
max. Earth dist.	1760 Aug 11 07:35	19°Ω29'10	31.10179 AU	minimum elong	1768 Aug 30 02:30	7°♄08'22	0°48'41
retrograde	1760 Nov 23 19:45	21°Ω59'08		retrograde	1768 Dec 11 07:21	9°♄36'09	
opposition	1761 Feb 09 01:23	20°Ω36'14	0°22'04	opposition	1769 Feb 26 11:46	8°♄13'49	0°53'50
min. Earth dist.	1761 Feb 09 13:17	20°Ω35'24	29.10694 AU	min. Earth dist.	1769 Feb 27 05:51	8°♄12'33	29.18827 AU
direct	1761 Apr 29 19:39	19°Ω11'00		direct	1769 May 17 17:01	6°♄48'40	
conjunction	1761 Aug 14 10:23	21°Ω42'35	0°22'38	conjunction	1769 Sep 01 14:45	9°♄20'17	0°52'09
minimum elong	1761 Aug 14 10:23	21°Ω42'35	0°22'39	minimum elong	1769 Sep 01 14:45	9°♄20'17	0°52'10
max. Earth dist.	1761 Aug 13 19:44	21°Ω41'14	31.11213 AU	max. Earth dist.	1769 Aug 31 18:38	9°♄18'26	31.19107 AU
retrograde	1761 Nov 26 04:58	24°Ω11'09		retrograde	1769 Dec 13 18:44	11°♄47'55	
opposition	1762 Feb 11 11:33	22°Ω48'20	0°26'13	opposition	1770 Feb 28 22:05	10°♄25'36	0°57'30
min. Earth dist.	1762 Feb 12 00:38	22°Ω47'25	29.11796 AU	min. Earth dist.	1770 Mar 01 15:50	10°♄24'21	29.19453 AU
direct	1762 May 02 05:26	21°Ω23'08		direct	1770 May 20 06:42	9°♄00'24	
				max. Earth dist.	1770 Sep 03 06:06	11°♄30'04	31.19710 AU
conjunction	1762 Aug 16 23:10	23°Ω54'44	0°26'30				
minimum elong	1762 Aug 16 23:10	23°Ω54'44	0°26'30	conjunction	1770 Sep 04 02:52	11°♄31'59	0°55'33
max. Earth dist.	1762 Aug 16 08:42	23°Ω53'24	31.12368 AU	minimum elong	1770 Sep 04 02:52	11°♄31'59	0°55'32
retrograde	1762 Nov 28 14:27	26°Ω23'12		retrograde	1770 Dec 16 03:40	13°♄59'29	
opposition	1763 Feb 13 21:43	25°Ω00'30	0°30'20	opposition	1771 Mar 03 08:33	12°♄37'09	1°01'05
min. Earth dist.	1763 Feb 14 10:47	24°Ω59'35	29.12978 AU	min. Earth dist.	1771 Mar 04 03:26	12°♄35'50	29.20069 AU
direct	1763 May 04 17:44	23°Ω35'20		direct	1771 May 22 17:28	11°♄11'56	
conjunction	1763 Aug 19 11:39	26°Ω06'59	0°30'20	conjunction	1771 Sep 06 14:45	13°♄43'27	0°58'51
minimum elong	1763 Aug 19 11:39	26°Ω06'59	0°30'21	minimum elong	1771 Sep 06 14:45	13°♄43'27	0°58'52
max. Earth dist.	1763 Aug 18 19:45	26°Ω05'31	31.13567 AU	max. Earth dist.	1771 Sep 05 18:21	13°♄41'33	31.20331 AU
retrograde	1763 Dec 01 01:29	28°Ω35'21		retrograde	1771 Dec 18 12:30	16°♄10'48	
opposition	1764 Feb 16 07:57	27°Ω12'45	0°34'24	opposition	1772 Mar 04 18:56	14°♄48'30	1°04'34
min. Earth dist.	1764 Feb 16 21:46	27°Ω11'47	29.14188 AU	min. Earth dist.	1772 Mar 05 13:39	14°♄47'12	29.20704 AU
direct	1764 May 06 03:14	25°Ω47'37		direct	1772 May 24 06:18	13°♄23'15	
max. Earth dist.	1764 Aug 20 08:48	28°Ω17'51	31.14751 AU	max. Earth dist.	1772 Sep 07 05:03	15°♄52'44	31.20994 AU
conjunction	1764 Aug 21 00:27	28°Ω19'18	0°34'07	conjunction	1772 Sep 08 02:34	15°♄54'43	1°02'04
minimum elong	1764 Aug 21 00:27	28°Ω19'18	0°34'07	minimum elong	1772 Sep 08 02:34	15°♄54'43	1°02'03
	1764 Oct 09 12:34	0°♄		retrograde	1772 Dec 19 22:45	18°♄21'58	
retrograde	1764 Dec 02 11:11	0°♄47'35		opposition	1773 Mar 07 05:17	16°♄59'41	1°07'58
	1765 Jan 27 06:01	30°Ω		min. Earth dist.	1773 Mar 08 00:11	16°♄58'22	29.21424 AU
opposition	1765 Feb 17 18:10	29°Ω25'04	0°38'25	direct	1773 May 26 16:03	15°♄34'25	
min. Earth dist.	1765 Feb 18 09:01	29°Ω24'02	29.15336 AU				
direct	1765 May 08 14:47	27°Ω59'57		conjunction	1773 Sep 10 14:26	18°♄05'52	1°05'12
	1765 Aug 09 05:13	0°♄		minimum elong	1773 Sep 10 14:26	18°♄05'52	1°05'12
				max. Earth dist.	1773 Sep 09 17:49	18°♄03'58	31.21755 AU
conjunction	1765 Aug 23 13:03	0°♄31'40	0°37'51	retrograde	1773 Dec 22 07:29	20°♄33'02	
minimum elong	1765 Aug 23 13:03	0°♄31'40	0°37'52	opposition	1774 Mar 09 15:51	19°♄10'48	1°11'15
max. Earth dist.	1765 Aug 22 19:26	0°♄30'02	31.15853 AU	min. Earth dist.	1774 Mar 10 11:08	19°♄09'27	29.22231 AU
retrograde	1765 Dec 04 23:18	2°♄59'50		direct	1774 May 29 03:52	17°♄45'34	
opposition	1766 Feb 20 04:31	1°♄37'24	0°42'23	max. Earth dist.	1774 Sep 12 04:07	20°♄14'58	31.22611 AU
min. Earth dist.	1766 Feb 20 19:37	1°♄36'20	29.16392 AU				
direct	1766 May 11 03:11	0°♄12'18		conjunction	1774 Sep 13 01:54	20°♄17'00	1°08'14
max. Earth dist.	1766 Aug 25 08:16	2°♄42'24	31.16836 AU	minimum elong	1774 Sep 13 01:54	20°♄17'00	1°08'13
				retrograde	1774 Dec 24 18:45	22°♄44'06	
conjunction	1766 Aug 26 01:37	2°♄44'00	0°41'32	opposition	1775 Mar 12 02:19	21°♄21'55	1°14'26
minimum elong	1766 Aug 26 01:37	2°♄44'00	0°41'31	min. Earth dist.	1775 Mar 12 21:08	21°♄20'37	29.23131 AU
retrograde	1766 Dec 07 09:10	5°♄12'04		direct	1775 May 31 15:05	19°♄56'44	
opposition	1767 Feb 22 15:03	3°♄49'40	0°46'16				
min. Earth dist.	1767 Feb 23 07:41	3°♄48'30	29.17317 AU	conjunction	1775 Sep 15 13:36	22°♄28'10	1°11'10
direct	1767 May 13 15:56	2°♄24'34		minimum elong	1775 Sep 15 13:36	22°♄28'10	1°11'10
				max. Earth dist.	1775 Sep 14 16:43	22°♄26'14	31.23526 AU
conjunction	1767 Aug 28 14:02	4°♄56'16	0°45'09	retrograde	1775 Dec 27 04:18	24°♄55'14	
minimum elong	1767 Aug 28 14:02	4°♄56'16	0°45'09	opposition	1776 Mar 13 12:50	23°♄33'07	1°17'31

min. Earth dist.	1776 Mar 14 08:52	23° \mathring{M} 31'44	29.24055 AU	min. Earth dist.	1784 Apr 01 01:00	11° \mathring{U} 01'44	29.28090 AU
direct	1776 Jun 02 02:34	22° \mathring{M} 07'59		direct	1784 Jun 20 02:10	9° \mathring{U} 38'11	
max. Earth dist.	1776 Sep 16 03:08	24° \mathring{M} 37'24	31.24443 AU				
conjunction	1776 Sep 17 01:09	24° \mathring{M} 39'27	1°13'59	conjunction	1784 Oct 04 18:53	12° \mathring{U} 09'19	1°32'25
minimum elong	1776 Sep 17 01:09	24° \mathring{M} 39'27	1°13'59	minimum elong	1784 Oct 04 18:53	12° \mathring{U} 09'19	1°32'24
retrograde	1776 Dec 28 16:13	27° \mathring{M} 06'28		max. Earth dist.	1784 Oct 03 19:40	12° \mathring{U} 07'09	31.28104 AU
opposition	1777 Mar 15 23:25	25° \mathring{M} 44'26	1°20'29	retrograde	1785 Jan 14 22:12	14° \mathring{U} 35'53	
min. Earth dist.	1777 Mar 16 18:50	25° \mathring{M} 43'05	29.24947 AU	opposition	1785 Apr 02 14:20	13° \mathring{U} 13'55	1°39'39
direct	1777 Jun 04 14:41	24° \mathring{M} 19'21		min. Earth dist.	1785 Apr 03 12:46	13° \mathring{U} 12'23	29.28349 AU
				direct	1785 Jun 22 13:06	11° \mathring{U} 48'53	
conjunction	1777 Sep 19 12:44	26° \mathring{M} 50'49	1°16'43	max. Earth dist.	1785 Oct 06 05:47	14° \mathring{U} 17'44	31.28407 AU
minimum elong	1777 Sep 19 12:44	26° \mathring{M} 50'49	1°16'43				
max. Earth dist.	1777 Sep 18 14:48	26° \mathring{M} 48'47	31.25281 AU	conjunction	1785 Oct 07 05:25	14° \mathring{U} 19'56	1°34'09
retrograde	1777 Dec 31 02:56	29° \mathring{M} 17'48		minimum elong	1785 Oct 07 05:25	14° \mathring{U} 19'56	1°34'09
opposition	1778 Mar 18 10:16	27° \mathring{M} 55'50	1°23'19	retrograde	1786 Jan 17 09:18	16° \mathring{U} 46'28	
min. Earth dist.	1778 Mar 19 07:06	27° \mathring{M} 54'23	29.25747 AU	opposition	1786 Apr 05 01:18	15° \mathring{U} 24'30	1°41'26
direct	1778 Jun 07 02:53	26° \mathring{M} 30'48		min. Earth dist.	1786 Apr 05 22:20	15° \mathring{U} 23'04	29.28703 AU
max. Earth dist.	1778 Sep 21 01:41	29° \mathring{M} 00'10	31.26022 AU	direct	1786 Jun 25 01:05	13° \mathring{U} 59'29	
conjunction	1778 Sep 22 00:13	29° \mathring{M} 02'15	1°19'19	conjunction	1786 Oct 09 16:04	16° \mathring{U} 30'29	1°35'45
minimum elong	1778 Sep 22 00:12	29° \mathring{M} 02'15	1°19'19	minimum elong	1786 Oct 09 16:03	16° \mathring{U} 30'29	1°35'45
	1778 Oct 18 13:00	0° \mathring{U}		max. Earth dist.	1786 Oct 08 17:11	16° \mathring{U} 28'21	31.28806 AU
retrograde	1779 Jan 02 14:39	1° \mathring{U} 29'12		retrograde	1787 Jan 19 19:52	18° \mathring{U} 57'00	
opposition	1779 Mar 20 21:02	0° \mathring{U} 07'16	1°26'03	opposition	1787 Apr 07 12:22	17° \mathring{U} 35'03	1°43'04
min. Earth dist.	1779 Mar 21 17:26	0° \mathring{U} 05'51	29.26423 AU	min. Earth dist.	1787 Apr 08 10:05	17° \mathring{U} 33'33	29.29161 AU
	1779 Mar 25 06:20	30° \mathring{M}		direct	1787 Jun 27 13:08	16° \mathring{U} 10'04	
direct	1779 Jun 09 16:31	28° \mathring{M} 42'16		max. Earth dist.	1787 Oct 11 03:52	18° \mathring{U} 38'55	31.29308 AU
	1779 Aug 20 23:19	0° \mathring{U}					
conjunction	1779 Sep 24 11:35	1° \mathring{U} 13'42	1°21'49	conjunction	1787 Oct 12 02:30	18° \mathring{U} 41'01	1°37'12
minimum elong	1779 Sep 24 11:35	1° \mathring{U} 13'42	1°21'49	minimum elong	1787 Oct 12 02:30	18° \mathring{U} 41'01	1°37'13
max. Earth dist.	1779 Sep 23 12:21	1° \mathring{U} 11'33	31.26621 AU	retrograde	1788 Jan 22 07:07	21° \mathring{U} 07'32	
retrograde	1780 Jan 05 00:02	3° \mathring{U} 40'36		opposition	1788 Apr 08 23:23	19° \mathring{U} 45'36	1°44'33
opposition	1780 Mar 22 07:55	2° \mathring{U} 18'42	1°28'39	min. Earth dist.	1788 Apr 09 20:05	19° \mathring{U} 44'11	29.29676 AU
min. Earth dist.	1780 Mar 23 05:28	2° \mathring{U} 17'12	29.26963 AU	direct	1788 Jun 29 02:29	18° \mathring{U} 20'41	
direct	1780 Jun 11 03:26	0° \mathring{U} 53'43					
				conjunction	1788 Oct 13 12:59	20° \mathring{U} 51'37	1°38'32
conjunction	1780 Sep 25 22:59	3° \mathring{U} 25'07	1°24'11	minimum elong	1788 Oct 13 12:59	20° \mathring{U} 51'37	1°38'31
minimum elong	1780 Sep 25 22:59	3° \mathring{U} 25'07	1°24'10	max. Earth dist.	1788 Oct 12 14:14	20° \mathring{U} 49'29	31.29830 AU
max. Earth dist.	1780 Sep 24 23:57	3° \mathring{U} 22'58	31.27086 AU	retrograde	1789 Jan 23 17:04	23° \mathring{U} 18'08	
retrograde	1781 Jan 06 08:55	5° \mathring{U} 51'56		opposition	1789 Apr 11 10:32	21° \mathring{U} 56'14	1°45'53
opposition	1781 Mar 24 18:42	4° \mathring{U} 30'03	1°31'07	min. Earth dist.	1789 Apr 12 07:49	21° \mathring{U} 54'47	29.30208 AU
min. Earth dist.	1781 Mar 25 16:18	4° \mathring{U} 28'34	29.27356 AU	direct	1789 Jul 01 13:07	20° \mathring{U} 31'23	
direct	1781 Jun 13 16:36	3° \mathring{U} 05'04					
max. Earth dist.	1781 Sep 27 09:56	5° \mathring{U} 34'10	31.27420 AU	conjunction	1789 Oct 15 23:30	23° \mathring{U} 02'16	1°39'42
				minimum elong	1789 Oct 15 23:29	23° \mathring{U} 02'16	1°39'43
conjunction	1781 Sep 28 10:11	5° \mathring{U} 36'25	1°26'26	max. Earth dist.	1789 Oct 15 01:37	23° \mathring{U} 00'14	31.30344 AU
minimum elong	1781 Sep 28 10:11	5° \mathring{U} 36'25	1°26'26	retrograde	1790 Jan 26 02:43	25° \mathring{U} 28'47	
retrograde	1782 Jan 08 19:23	8° \mathring{U} 03'10		opposition	1790 Apr 13 21:52	24° \mathring{U} 06'56	1°47'04
opposition	1782 Mar 27 05:37	6° \mathring{U} 41'17	1°33'27	min. Earth dist.	1790 Apr 14 18:47	24° \mathring{U} 05'30	29.30686 AU
min. Earth dist.	1782 Mar 28 03:27	6° \mathring{U} 39'47	29.27652 AU	direct	1790 Jul 04 02:34	22° \mathring{U} 42'08	
direct	1782 Jun 16 02:43	5° \mathring{U} 16'18		max. Earth dist.	1790 Oct 17 11:00	25° \mathring{U} 10'51	31.30781 AU
conjunction	1782 Sep 30 21:11	7° \mathring{U} 47'34	1°28'33	conjunction	1790 Oct 18 09:44	25° \mathring{U} 12'59	1°40'44
minimum elong	1782 Sep 30 21:11	7° \mathring{U} 47'34	1°28'33	minimum elong	1790 Oct 18 09:44	25° \mathring{U} 12'59	1°40'43
max. Earth dist.	1782 Sep 29 21:51	7° \mathring{U} 45'24	31.27670 AU	retrograde	1791 Jan 28 13:45	27° \mathring{U} 39'31	
retrograde	1783 Jan 11 03:19	10° \mathring{U} 14'16		opposition	1791 Apr 16 09:13	26° \mathring{U} 17'41	1°48'05
opposition	1783 Mar 29 16:34	8° \mathring{U} 52'21	1°35'39	min. Earth dist.	1791 Apr 17 06:03	26° \mathring{U} 16'15	29.31083 AU
min. Earth dist.	1783 Mar 30 14:53	8° \mathring{U} 50'49	29.27871 AU	direct	1791 Jul 06 13:14	24° \mathring{U} 52'56	
direct	1783 Jun 18 15:14	7° \mathring{U} 27'21					
max. Earth dist.	1783 Oct 02 07:35	9° \mathring{U} 56'16	31.27879 AU	conjunction	1791 Oct 20 20:14	27° \mathring{U} 23'43	1°41'38
				minimum elong	1791 Oct 20 20:14	27° \mathring{U} 23'43	1°41'38
conjunction	1783 Oct 03 08:00	9° \mathring{U} 58'32	1°30'33	max. Earth dist.	1791 Oct 19 22:29	27° \mathring{U} 21'41	31.31111 AU
minimum elong	1783 Oct 03 07:59	9° \mathring{U} 58'32	1°30'34	retrograde	1792 Jan 30 21:58	29° \mathring{U} 50'16	
retrograde	1784 Jan 13 13:27	12° \mathring{U} 25'09		opposition	1792 Apr 17 20:34	28° \mathring{U} 28'27	1°48'58
opposition	1784 Mar 31 03:17	11° \mathring{U} 03'13	1°37'43	min. Earth dist.	1792 Apr 18 17:56	28° \mathring{U} 26'59	29.31344 AU
				direct	1792 Jul 08 01:41	27° \mathring{U} 03'44	
				max. Earth dist.	1792 Oct 21 07:42	29° \mathring{U} 32'20	31.31309 AU

conjunction	1792 Oct 22 06:34	29° <u>♁</u> 34'28	1°42'22	minimum elong	1800 Nov 09 13:49	16° <u>♁</u> 58'06	1°43'03
minimum elong	1792 Oct 22 06:34	29° <u>♁</u> 34'28	1°42'22	max. Earth dist.	1800 Nov 08 19:45	16° <u>♁</u> 56'24	31.31196 AU
	1792 Nov 02 16:54	0° <u>♁</u>		retrograde	1801 Feb 19 17:43	19° <u>♁</u> 24'55	
retrograde	1793 Feb 01 08:29	2° <u>♁</u> 01'01		opposition	1801 May 09 05:11	18° <u>♁</u> 02'58	1°49'48
opposition	1793 Apr 20 08:02	0° <u>♁</u> 39'12	1°49'41	min. Earth dist.	1801 May 09 23:02	18° <u>♁</u> 01'45	29.31388 AU
min. Earth dist.	1793 Apr 21 04:44	0° <u>♁</u> 37'47	29.31478 AU	direct	1801 Jul 29 11:57	16° <u>♁</u> 38'34	
	1793 May 15 04:52	30° <u>♁</u>					
direct	1793 Jul 10 12:26	29° <u>♁</u> 14'30		conjunction	1801 Nov 11 23:18	19° <u>♁</u> 08'42	1°42'28
	1793 Sep 02 17:08	0° <u>♁</u>		minimum elong	1801 Nov 11 23:18	19° <u>♁</u> 08'42	1°42'29
				max. Earth dist.	1801 Nov 11 04:50	19° <u>♁</u> 06'58	31.31362 AU
conjunction	1793 Oct 24 16:52	1° <u>♁</u> 45'10	1°42'58	retrograde	1802 Feb 22 04:15	21° <u>♁</u> 35'36	
minimum elong	1793 Oct 24 16:52	1° <u>♁</u> 45'10	1°42'59	opposition	1802 May 11 17:07	20° <u>♁</u> 13'40	1°49'06
max. Earth dist.	1793 Oct 23 19:03	1° <u>♁</u> 43'08	31.31369 AU	min. Earth dist.	1802 May 12 09:46	20° <u>♁</u> 12'32	29.31540 AU
retrograde	1794 Feb 03 17:28	4° <u>♁</u> 11'45		direct	1802 Jul 31 22:25	18° <u>♁</u> 49'20	
opposition	1794 Apr 22 19:43	2° <u>♁</u> 49'53	1°50'15				
min. Earth dist.	1794 Apr 23 17:16	2° <u>♁</u> 48'25	29.31478 AU	conjunction	1802 Nov 14 09:04	21° <u>♁</u> 19'26	1°41'44
direct	1794 Jul 12 23:16	1° <u>♁</u> 25'13		minimum elong	1802 Nov 14 09:04	21° <u>♁</u> 19'26	1°41'44
max. Earth dist.	1794 Oct 26 04:41	3° <u>♁</u> 53'42	31.31325 AU	max. Earth dist.	1802 Nov 13 15:56	21° <u>♁</u> 17'50	31.31480 AU
				retrograde	1803 Feb 24 13:47	23° <u>♁</u> 46'26	
conjunction	1794 Oct 27 02:59	3° <u>♁</u> 55'47	1°43'25	opposition	1803 May 14 05:08	22° <u>♁</u> 24'30	1°48'14
minimum elong	1794 Oct 27 02:59	3° <u>♁</u> 55'47	1°43'25	min. Earth dist.	1803 May 14 22:27	22° <u>♁</u> 23'20	29.31620 AU
retrograde	1795 Feb 06 04:29	6° <u>♁</u> 22'22		direct	1803 Aug 03 08:37	21° <u>♁</u> 00'15	
opposition	1795 Apr 25 07:05	5° <u>♁</u> 00'29	1°50'39				
min. Earth dist.	1795 Apr 26 03:27	4° <u>♁</u> 59'06	29.31388 AU	conjunction	1803 Nov 16 18:43	23° <u>♁</u> 30'17	1°40'52
direct	1795 Jul 15 11:13	3° <u>♁</u> 35'49		minimum elong	1803 Nov 16 18:43	23° <u>♁</u> 30'17	1°40'52
				max. Earth dist.	1803 Nov 16 01:23	23° <u>♁</u> 28'40	31.31515 AU
conjunction	1795 Oct 29 13:03	6° <u>♁</u> 06'18	1°43'44	retrograde	1804 Feb 27 01:00	25° <u>♁</u> 57'22	
minimum elong	1795 Oct 29 13:03	6° <u>♁</u> 06'18	1°43'45	opposition	1804 May 15 17:11	24° <u>♁</u> 35'26	1°47'13
max. Earth dist.	1795 Oct 28 15:19	6° <u>♁</u> 04'16	31.31197 AU	min. Earth dist.	1804 May 16 09:08	24° <u>♁</u> 34'21	29.31586 AU
retrograde	1796 Feb 08 15:03	8° <u>♁</u> 32'54		direct	1804 Aug 04 20:23	23° <u>♁</u> 11'14	
opposition	1796 Apr 26 18:43	7° <u>♁</u> 10'58	1°50'54	max. Earth dist.	1804 Nov 17 11:33	25° <u>♁</u> 39'38	31.31406 AU
min. Earth dist.	1796 Apr 27 15:46	7° <u>♁</u> 09'32	29.31246 AU				
direct	1796 Jul 16 23:10	5° <u>♁</u> 46'18		conjunction	1804 Nov 18 04:25	25° <u>♁</u> 41'13	1°39'50
				minimum elong	1804 Nov 18 04:25	25° <u>♁</u> 41'13	1°39'50
conjunction	1796 Oct 30 22:56	8° <u>♁</u> 16'42	1°43'54	retrograde	1805 Feb 28 12:00	28° <u>♁</u> 08'23	
minimum elong	1796 Oct 30 22:56	8° <u>♁</u> 16'42	1°43'53	opposition	1805 May 18 05:30	26° <u>♁</u> 46'25	1°46'03
max. Earth dist.	1796 Oct 30 01:44	8° <u>♁</u> 14'43	31.31057 AU	min. Earth dist.	1805 May 18 22:06	26° <u>♁</u> 45'17	29.31410 AU
retrograde	1797 Feb 10 01:57	10° <u>♁</u> 43'18		direct	1805 Aug 07 07:21	25° <u>♁</u> 22'15	
opposition	1797 Apr 29 06:14	9° <u>♁</u> 21'20	1°51'00				
min. Earth dist.	1797 Apr 30 01:57	9° <u>♁</u> 19'59	29.31113 AU	conjunction	1805 Nov 20 14:07	27° <u>♁</u> 52'09	1°38'40
direct	1797 Jul 19 12:23	7° <u>♁</u> 56'41		minimum elong	1805 Nov 20 14:07	27° <u>♁</u> 52'09	1°38'41
max. Earth dist.	1797 Nov 01 11:45	10° <u>♁</u> 25'03	31.30953 AU	max. Earth dist.	1805 Nov 19 21:45	27° <u>♁</u> 50'37	31.31163 AU
					1806 Jan 28 00:12	0° <u>♁</u>	
conjunction	1797 Nov 02 08:42	10° <u>♁</u> 27'01	1°43'54	retrograde	1806 Mar 02 23:10	0° <u>♁</u> 19'22	
minimum elong	1797 Nov 02 08:42	10° <u>♁</u> 27'01	1°43'55		1806 Apr 06 22:21	30° <u>♁</u>	
retrograde	1798 Feb 12 12:08	12° <u>♁</u> 53'39		opposition	1806 May 20 17:45	28° <u>♁</u> 57'22	1°44'44
opposition	1798 May 01 17:58	11° <u>♁</u> 31'39	1°50'56	min. Earth dist.	1806 May 21 09:10	28° <u>♁</u> 56'19	29.31080 AU
min. Earth dist.	1798 May 02 13:36	11° <u>♁</u> 30'19	29.31065 AU	direct	1806 Aug 09 19:41	27° <u>♁</u> 33'13	
direct	1798 Jul 21 23:03	10° <u>♁</u> 07'02			1806 Nov 21 15:23	0° <u>♁</u>	
conjunction	1798 Nov 04 18:23	12° <u>♁</u> 37'18	1°43'46	conjunction	1806 Nov 22 23:38	0° <u>♁</u> 03'02	1°37'22
minimum elong	1798 Nov 04 18:23	12° <u>♁</u> 37'18	1°43'46	minimum elong	1806 Nov 22 23:38	0° <u>♁</u> 03'02	1°37'22
max. Earth dist.	1798 Nov 03 22:59	12° <u>♁</u> 35'29	31.30954 AU	max. Earth dist.	1806 Nov 22 07:06	0° <u>♁</u> 01'29	31.30762 AU
retrograde	1799 Feb 14 21:51	15° <u>♁</u> 03'59		retrograde	1807 Mar 05 10:19	2° <u>♁</u> 30'19	
opposition	1799 May 04 05:39	13° <u>♁</u> 41'59	1°50'43	opposition	1807 May 23 06:03	1° <u>♁</u> 08'15	1°43'16
min. Earth dist.	1799 May 05 00:19	13° <u>♁</u> 40'43	29.31102 AU	min. Earth dist.	1807 May 23 21:44	1° <u>♁</u> 07'11	29.30616 AU
direct	1799 Jul 24 12:50	12° <u>♁</u> 17'25			1807 Jul 11 05:22	30° <u>♁</u>	
max. Earth dist.	1799 Nov 06 08:18	14° <u>♁</u> 45'48	31.31042 AU	direct	1807 Aug 12 06:56	29° <u>♁</u> 44'07	
					1807 Sep 12 18:01	0° <u>♁</u>	
conjunction	1799 Nov 07 04:02	14° <u>♁</u> 47'39	1°43'29	conjunction	1807 Nov 25 09:16	2° <u>♁</u> 13'49	1°35'56
minimum elong	1799 Nov 07 04:02	14° <u>♁</u> 47'39	1°43'30	minimum elong	1807 Nov 25 09:16	2° <u>♁</u> 13'49	1°35'56
retrograde	1800 Feb 17 09:20	17° <u>♁</u> 14'23		max. Earth dist.	1807 Nov 24 18:03	2° <u>♁</u> 12'23	31.30242 AU
opposition	1800 May 06 17:14	15° <u>♁</u> 52'24	1°50'20	retrograde	1808 Mar 06 20:41	4° <u>♁</u> 41'08	
min. Earth dist.	1800 May 07 11:09	15° <u>♁</u> 51'11	29.31231 AU	opposition	1808 May 24 18:14	3° <u>♁</u> 18'59	1°41'39
direct	1800 Jul 26 23:40	14° <u>♁</u> 27'55		min. Earth dist.	1808 May 25 09:12	3° <u>♁</u> 17'59	29.30035 AU
				direct	1808 Aug 13 21:13	1° <u>♁</u> 54'51	
conjunction	1800 Nov 09 13:49	16° <u>♁</u> 58'06	1°43'03				

conjunction	1808 Nov 26 18:39	4°♁24'27	1°34'21	retrograde	1817 Mar 26 23:24	24°♁18'16	
minimum elong	1808 Nov 26 18:39	4°♁24'27	1°34'21	opposition	1817 Jun 14 10:43	22°♁55'49	1°20'55
max. Earth dist.	1808 Nov 26 03:04	4°♁22'59	31.29643 AU	min. Earth dist.	1817 Jun 14 18:39	22°♁55'17	29.25822 AU
retrograde	1809 Mar 09 08:25	6°♁51'49		direct	1817 Sep 03 04:19	21°♁32'08	
opposition	1809 May 27 06:36	5°♁29'35	1°39'54				
min. Earth dist.	1809 May 27 20:41	5°♁28'38	29.29430 AU	conjunction	1817 Dec 16 06:22	24°♁01'14	1°14'22
direct	1809 Aug 16 08:48	4°♁05'27		minimum elong	1817 Dec 16 06:22	24°♁01'14	1°14'23
				max. Earth dist.	1817 Dec 15 21:55	24°♁00'26	31.25439 AU
conjunction	1809 Nov 29 03:59	6°♁34'56	1°32'39	retrograde	1818 Mar 29 12:22	26°♁29'44	
minimum elong	1809 Nov 29 03:59	6°♁34'56	1°32'39	opposition	1818 Jun 16 23:35	25°♁07'14	1°17'58
max. Earth dist.	1809 Nov 28 14:19	6°♁33'39	31.29040 AU	min. Earth dist.	1818 Jun 17 06:48	25°♁06'45	29.25128 AU
retrograde	1810 Mar 11 16:57	9°♁02'23		direct	1818 Sep 05 15:31	23°♁43'34	
opposition	1810 May 29 19:02	7°♁40'05	1°38'01				
min. Earth dist.	1810 May 30 08:42	7°♁39'09	29.28842 AU	conjunction	1818 Dec 18 15:57	26°♁12'37	1°11'34
direct	1810 Aug 18 21:40	6°♁15'57		minimum elong	1818 Dec 18 15:58	26°♁12'37	1°11'34
				max. Earth dist.	1818 Dec 18 08:58	26°♁11'58	31.24668 AU
conjunction	1810 Dec 01 13:14	8°♁45'21	1°30'48	retrograde	1819 Mar 31 21:51	28°♁41'14	
minimum elong	1810 Dec 01 13:14	8°♁45'21	1°30'48	opposition	1819 Jun 19 12:20	27°♁18'40	1°14'55
max. Earth dist.	1810 Nov 30 23:31	8°♁44'03	31.28497 AU	min. Earth dist.	1819 Jun 19 19:31	27°♁18'11	29.24277 AU
retrograde	1811 Mar 14 03:39	11°♁12'52		direct	1819 Sep 08 04:25	25°♁55'02	
opposition	1811 Jun 01 07:11	9°♁50'31	1°35'58				
min. Earth dist.	1811 Jun 01 19:12	9°♁49'42	29.28340 AU	conjunction	1819 Dec 21 01:21	28°♁24'00	1°08'39
direct	1811 Aug 21 08:52	8°♁26'25		minimum elong	1819 Dec 21 01:21	28°♁24'00	1°08'40
				max. Earth dist.	1819 Dec 20 18:02	28°♁23'19	31.23766 AU
conjunction	1811 Dec 03 22:38	10°♁55'45	1°28'50				
minimum elong	1811 Dec 03 22:38	10°♁55'45	1°28'50	retrograde	1820 Feb 04 23:34	0°♁	
max. Earth dist.	1811 Dec 03 10:35	10°♁54'37	31.28034 AU		1820 Apr 02 09:23	0°♁52'43	
retrograde	1812 Mar 15 13:21	13°♁23'23			1820 Jun 02 03:35	30°♁	
opposition	1812 Jun 02 19:40	12°♁01'00	1°33'48	opposition	1820 Jun 21 01:09	29°♁30'04	1°11'46
min. Earth dist.	1812 Jun 03 07:43	12°♁00'11	29.27913 AU	min. Earth dist.	1820 Jun 21 06:58	29°♁29'41	29.23312 AU
direct	1812 Aug 22 19:42	10°♁36'58		direct	1820 Sep 09 16:51	28°♁06'25	
					1820 Dec 06 18:04	0°♁	
conjunction	1812 Dec 05 07:46	13°♁06'14	1°26'44	conjunction	1820 Dec 22 10:40	0°♁35'19	1°05'39
minimum elong	1812 Dec 05 07:47	13°♁06'14	1°26'43	minimum elong	1820 Dec 22 10:40	0°♁35'19	1°05'39
max. Earth dist.	1812 Dec 04 20:17	13°♁05'09	31.27654 AU	max. Earth dist.	1820 Dec 22 04:48	0°♁34'45	31.22757 AU
retrograde	1813 Mar 18 00:28	15°♁34'00		retrograde	1821 Apr 04 19:37	3°♁04'08	
opposition	1813 Jun 05 08:04	14°♁11'37	1°31'29	opposition	1821 Jun 23 14:09	1°♁41'23	1°08'30
min. Earth dist.	1813 Jun 05 18:08	14°♁10'56	29.27549 AU	min. Earth dist.	1821 Jun 23 20:07	1°♁40'59	29.22278 AU
direct	1813 Aug 25 07:04	12°♁47'38		direct	1821 Sep 12 04:51	0°♁17'44	
conjunction	1813 Dec 07 17:04	15°♁16'53	1°24'30	conjunction	1821 Dec 24 19:56	2°♁46'30	1°02'33
minimum elong	1813 Dec 07 17:05	15°♁16'53	1°24'31	minimum elong	1821 Dec 24 19:56	2°♁46'30	1°02'34
max. Earth dist.	1813 Dec 07 06:28	15°♁15'53	31.27307 AU	max. Earth dist.	1821 Dec 24 14:45	2°♁46'01	31.21731 AU
retrograde	1814 Mar 20 11:51	17°♁44'48		retrograde	1822 Apr 07 05:56	5°♁15'26	
opposition	1814 Jun 07 20:40	16°♁22'24	1°29'02	opposition	1822 Jun 26 02:51	3°♁52'35	1°05'09
min. Earth dist.	1814 Jun 08 06:55	16°♁21'42	29.27212 AU	min. Earth dist.	1822 Jun 26 06:47	3°♁52'19	29.21260 AU
direct	1814 Aug 27 16:53	14°♁58'30		direct	1822 Sep 14 16:39	2°♁28'55	
conjunction	1814 Dec 10 02:19	17°♁27'42	1°22'09	conjunction	1822 Dec 27 05:08	4°♁57'36	0°59'22
minimum elong	1814 Dec 10 02:19	17°♁27'42	1°22'08	minimum elong	1822 Dec 27 05:09	4°♁57'36	0°59'22
max. Earth dist.	1814 Dec 09 16:49	17°♁26'49	31.26968 AU	max. Earth dist.	1822 Dec 27 00:51	4°♁57'12	31.20736 AU
retrograde	1815 Mar 22 23:22	19°♁55'46		retrograde	1823 Apr 09 16:31	7°♁26'39	
opposition	1815 Jun 10 09:11	18°♁33'22	1°26'27	opposition	1823 Jun 28 15:45	6°♁03'42	1°01'42
min. Earth dist.	1815 Jun 10 17:56	18°♁32'46	29.26836 AU	min. Earth dist.	1823 Jun 28 19:33	6°♁03'27	29.20310 AU
direct	1815 Aug 30 04:11	17°♁09'32		direct	1823 Sep 17 02:40	4°♁40'03	
conjunction	1815 Dec 12 11:36	19°♁38'43	1°19'40	conjunction	1823 Dec 29 14:24	7°♁08'39	0°56'06
minimum elong	1815 Dec 12 11:36	19°♁38'43	1°19'40	minimum elong	1823 Dec 29 14:24	7°♁08'39	0°56'06
max. Earth dist.	1815 Dec 12 02:05	19°♁37'50	31.26560 AU	max. Earth dist.	1823 Dec 29 11:39	7°♁08'24	31.19839 AU
retrograde	1816 Mar 24 11:35	22°♁06'57		retrograde	1824 Apr 11 03:31	9°♁37'50	
opposition	1816 Jun 11 21:52	20°♁44'31	1°23'45	opposition	1824 Jun 30 04:29	8°♁14'49	0°58'09
min. Earth dist.	1816 Jun 12 06:39	20°♁43'56	29.26389 AU	min. Earth dist.	1824 Jun 30 06:16	8°♁14'42	29.19453 AU
direct	1816 Aug 31 14:44	19°♁20'46		direct	1824 Sep 18 13:47	6°♁51'11	
conjunction	1816 Dec 13 21:06	21°♁49'55	1°17'05	conjunction	1824 Dec 30 23:37	9°♁19'44	0°52'45
minimum elong	1816 Dec 13 21:06	21°♁49'55	1°17'04	minimum elong	1824 Dec 30 23:37	9°♁19'44	0°52'44
max. Earth dist.	1816 Dec 13 13:08	21°♁49'10	31.26065 AU	max. Earth dist.	1824 Dec 30 21:14	9°♁19'30	31.19042 AU

retrograde	1825 Apr 13 16:08	11°☾49'04		direct	1833 Oct 08 20:49	26°☾36'58	
opposition	1825 Jul 02 17:28	10°☾26'00	0°54'31				
min. Earth dist.	1825 Jul 02 18:44	10°☾25'54	29.18711 AU	conjunction	1834 Jan 19 13:40	29°☾05'11	0°19'35
direct	1825 Sep 21 00:07	9°☾02'24		minimum elong	1834 Jan 19 13:40	29°☾05'11	0°19'35
				max. Earth dist.	1834 Jan 19 18:18	29°☾05'37	31.11541 AU
conjunction	1826 Jan 02 08:55	11°☾30'54	0°49'18		1834 Feb 13 04:26	0°☾	
minimum elong	1826 Jan 02 08:55	11°☾30'54	0°49'19	retrograde	1834 May 04 04:00	1°☾35'57	
max. Earth dist.	1826 Jan 02 08:39	11°☾30'52	31.18344 AU	opposition	1834 Jul 23 15:16	0°☾12'21	0°18'48
retrograde	1826 Apr 16 04:08	14°☾00'23		min. Earth dist.	1834 Jul 23 09:42	0°☾12'44	29.10975 AU
opposition	1826 Jul 05 06:24	12°☾37'16	0°50'48		1834 Jul 31 05:54	30°☾	
min. Earth dist.	1826 Jul 05 06:24	12°☾37'16	29.18032 AU	direct	1834 Oct 11 07:17	28°☾49'02	
direct	1826 Sep 23 12:24	11°☾13'44			1834 Dec 17 08:11	0°☾	
conjunction	1827 Jan 04 18:14	13°☾42'12	0°45'48	conjunction	1835 Jan 21 23:31	1°☾17'12	0°15'41
minimum elong	1827 Jan 04 18:14	13°☾42'12	0°45'47	minimum elong	1835 Jan 21 23:31	1°☾17'12	0°15'40
max. Earth dist.	1827 Jan 04 17:50	13°☾42'10	31.17696 AU	behind sun begin	1835 Jan 21 21:45	1°☾17'02	
retrograde	1827 Apr 18 17:23	16°☾11'51		behind sun end	1835 Jan 22 01:16	1°☾17'22	
opposition	1827 Jul 07 19:11	14°☾48'42	0°47'01	max. Earth dist.	1835 Jan 22 06:07	1°☾17'49	31.10408 AU
min. Earth dist.	1827 Jul 07 18:12	14°☾48'46	29.17397 AU	retrograde	1835 May 06 15:59	3°☾48'06	
direct	1827 Sep 25 22:28	13°☾25'13		opposition	1835 Jul 26 04:12	2°☾24'25	0°14'37
				min. Earth dist.	1835 Jul 25 21:24	2°☾24'53	29.09866 AU
conjunction	1828 Jan 07 03:46	15°☾53'40	0°42'12	direct	1835 Oct 13 19:11	1°☾01'06	
minimum elong	1828 Jan 07 03:46	15°☾53'40	0°42'13				
max. Earth dist.	1828 Jan 07 05:11	15°☾53'48	31.17056 AU	conjunction	1836 Jan 24 09:12	3°☾29'14	0°11'45
retrograde	1828 Apr 20 04:25	18°☾23'30		minimum elong	1836 Jan 24 09:12	3°☾29'14	0°11'46
opposition	1828 Jul 09 08:18	17°☾00'19	0°43'09	behind sun begin	1836 Jan 24 04:38	3°☾28'49	
min. Earth dist.	1828 Jul 09 06:57	17°☾00'24	29.16740 AU	behind sun end	1836 Jan 24 13:46	3°☾29'39	
direct	1828 Sep 27 11:03	15°☾36'53		max. Earth dist.	1836 Jan 24 15:47	3°☾29'50	31.09349 AU
				retrograde	1836 May 08 05:27	6°☾00'17	
conjunction	1829 Jan 08 13:09	18°☾05'19	0°38'34	opposition	1836 Jul 27 17:21	4°☾36'31	0°10'24
minimum elong	1829 Jan 08 13:09	18°☾05'19	0°38'33	min. Earth dist.	1836 Jul 27 09:21	4°☾37'04	29.08867 AU
max. Earth dist.	1829 Jan 08 14:35	18°☾05'27	31.16388 AU	direct	1836 Oct 15 04:52	3°☾13'13	
retrograde	1829 Apr 22 17:43	20°☾35'18					
opposition	1829 Jul 11 21:23	19°☾12'05	0°39'13	conjunction	1837 Jan 25 18:58	5°☾41'20	0°07'49
min. Earth dist.	1829 Jul 11 18:34	19°☾12'17	29.16038 AU	minimum elong	1837 Jan 25 18:58	5°☾41'20	0°07'49
direct	1829 Sep 29 23:06	17°☾48'43		behind sun begin	1837 Jan 25 13:11	5°☾40'48	
				behind sun end	1837 Jan 26 00:45	5°☾41'51	
conjunction	1830 Jan 10 22:51	20°☾17'08	0°34'51	max. Earth dist.	1837 Jan 26 03:34	5°☾42'08	31.08397 AU
minimum elong	1830 Jan 10 22:51	20°☾17'08	0°34'52	retrograde	1837 May 10 17:19	8°☾12'33	
max. Earth dist.	1830 Jan 11 01:29	20°☾17'22	31.15633 AU	opposition	1837 Jul 30 06:32	6°☾48'44	0°06'10
retrograde	1830 Apr 25 05:06	22°☾47'17		min. Earth dist.	1837 Jul 29 21:49	6°☾49'19	29.07969 AU
opposition	1830 Jul 14 10:32	21°☾24'01	0°35'13	direct	1837 Oct 17 17:25	5°☾25'28	
min. Earth dist.	1830 Jul 14 08:06	21°☾24'11	29.15234 AU				
direct	1830 Oct 02 10:46	20°☾00'42		conjunction	1838 Jan 28 04:49	7°☾53'34	0°03'52
				minimum elong	1838 Jan 28 04:48	7°☾53'34	0°03'53
conjunction	1831 Jan 13 08:35	22°☾29'04	0°31'06	behind sun begin	1838 Jan 27 22:29	7°☾52'59	
minimum elong	1831 Jan 13 08:35	22°☾29'04	0°31'05	behind sun end	1838 Jan 28 11:08	7°☾54'08	
max. Earth dist.	1831 Jan 13 11:36	22°☾29'21	31.14779 AU	max. Earth dist.	1838 Jan 28 13:43	7°☾54'23	31.07563 AU
retrograde	1831 Apr 27 16:35	24°☾59'23		retrograde	1838 May 13 07:51	10°☾24'57	
opposition	1831 Jul 16 23:37	23°☾36'04	0°31'11	opposition	1838 Aug 01 19:29	9°☾01'05	0°01'55
min. Earth dist.	1831 Jul 16 19:33	23°☾36'21	29.14306 AU	min. Earth dist.	1838 Aug 01 09:06	9°☾01'47	29.07184 AU
direct	1831 Oct 04 22:46	22°☾12'46		direct	1838 Oct 20 05:24	7°☾37'52	
				desc. node	1839 Jan 14 10:54	9°☾29'29	
conjunction	1832 Jan 15 18:16	24°☾41'06	0°27'17				
minimum elong	1832 Jan 15 18:16	24°☾41'06	0°27'18	conjunction	1839 Jan 30 14:47	10°☾05'58	0°00'-10
max. Earth dist.	1832 Jan 15 21:34	24°☾41'24	31.13782 AU	minimum elong	1839 Jan 30 14:47	10°☾05'58	0°00'11
retrograde	1832 Apr 29 03:47	27°☾11'35		behind sun begin	1839 Jan 30 08:27	10°☾05'24	
opposition	1832 Jul 18 12:54	25°☾48'10	0°27'05	behind sun end	1839 Jan 30 21:08	10°☾06'32	
min. Earth dist.	1832 Jul 18 09:10	25°☾48'26	29.13254 AU	max. Earth dist.	1839 Jan 31 01:05	10°☾06'55	31.06807 AU
direct	1832 Oct 06 09:13	24°☾24'53		retrograde	1839 May 15 19:55	12°☾37'32	
				opposition	1839 Aug 04 08:41	11°☾13'38	0°-2'-19
conjunction	1833 Jan 17 04:05	26°☾53'09	0°23'27	min. Earth dist.	1839 Aug 03 22:24	11°☾14'20	29.06459 AU
minimum elong	1833 Jan 17 04:05	26°☾53'09	0°23'27	direct	1839 Oct 22 16:49	9°☾50'28	
max. Earth dist.	1833 Jan 17 08:39	26°☾53'35	31.12692 AU				
retrograde	1833 May 01 15:18	29°☾23'46		conjunction	1840 Feb 02 00:45	12°☾18'34	0°-4'-13
opposition	1833 Jul 21 02:03	28°☾00'17	0°22'58	minimum elong	1840 Feb 02 00:45	12°☾18'34	0°04'14
min. Earth dist.	1833 Jul 20 20:41	28°☾00'38	29.12119 AU	behind sun begin	1840 Feb 01 18:26	12°☾17'59	

behind sun end	1840 Feb 02 07:03	12° \approx 19'08		opposition	1847 Aug 22 18:15	28° \approx 58'44	0°-35'-49
max. Earth dist.	1840 Feb 02 11:53	12° \approx 19'36	31.06110 AU	min. Earth dist.	1847 Aug 22 02:38	28° \approx 59'48	28.98965 AU
retrograde	1840 May 17 08:01	14° \approx 50'19		direct	1847 Nov 09 12:02	27° \approx 35'35	
opposition	1840 Aug 05 21:49	13° \approx 26'23	0°-6'-35		1848 Feb 17 23:27	0° \approx	
min. Earth dist.	1840 Aug 05 09:42	13° \approx 27'12	29.05768 AU				
direct	1840 Oct 24 04:57	12° \approx 03'16		conjunction	1848 Feb 19 12:45	0° \approx 03'32	0°-35'-22
				minimum elong	1848 Feb 19 12:45	0° \approx 03'32	0°35'23
conjunction	1841 Feb 03 10:54	14° \approx 31'22	0°-8'-10	max. Earth dist.	1848 Feb 20 04:34	0° \approx 05'02	30.98382 AU
minimum elong	1841 Feb 03 10:54	14° \approx 31'22	0°08'12	retrograde	1848 Jun 04 13:31	2° \approx 36'24	
behind sun begin	1841 Feb 03 05:12	14° \approx 30'51		opposition	1848 Aug 24 07:26	1° \approx 11'50	0°-39'-50
behind sun end	1841 Feb 03 16:36	14° \approx 31'54		min. Earth dist.	1848 Aug 23 15:56	1° \approx 12'54	28.97877 AU
max. Earth dist.	1841 Feb 03 22:26	14° \approx 32'27	31.05412 AU		1848 Oct 15 19:05	30° \approx	
retrograde	1841 May 19 20:21	17° \approx 03'19		direct	1848 Nov 10 23:34	29° \approx 48'41	
opposition	1841 Aug 08 11:09	15° \approx 39'20	0°-10'-50		1848 Dec 06 16:29	0° \approx	
min. Earth dist.	1841 Aug 07 23:23	15° \approx 40'09	29.05067 AU				
direct	1841 Oct 26 15:40	14° \approx 16'17		conjunction	1849 Feb 20 23:31	2° \approx 16'37	0°-39'-6
				minimum elong	1849 Feb 20 23:31	2° \approx 16'37	0°39'07
conjunction	1842 Feb 05 21:16	16° \approx 44'23	0°-12'-8	max. Earth dist.	1849 Feb 21 16:12	2° \approx 18'12	30.97352 AU
minimum elong	1842 Feb 05 21:16	16° \approx 44'23	0°12'09	retrograde	1849 Jun 07 02:56	4° \approx 49'36	
behind sun begin	1842 Feb 05 16:52	16° \approx 43'59		opposition	1849 Aug 26 20:21	3° \approx 24'58	0°-43'-47
behind sun end	1842 Feb 06 01:39	16° \approx 44'47		min. Earth dist.	1849 Aug 26 03:02	3° \approx 26'10	28.96907 AU
max. Earth dist.	1842 Feb 06 10:03	16° \approx 45'35	31.04685 AU	direct	1849 Nov 13 12:05	2° \approx 01'49	
retrograde	1842 May 22 08:36	19° \approx 16'29					
min. Earth dist.	1842 Aug 10 11:10	17° \approx 53'23	29.04294 AU	conjunction	1850 Feb 23 10:17	4° \approx 29'46	0°-42'-46
opposition	1842 Aug 11 00:20	17° \approx 52'29	0°-15'-4	minimum elong	1850 Feb 23 10:16	4° \approx 29'46	0°42'47
direct	1842 Oct 29 03:41	16° \approx 29'27		max. Earth dist.	1850 Feb 24 03:20	4° \approx 31'23	30.96428 AU
				retrograde	1850 Jun 09 16:01	7° \approx 02'54	
conjunction	1843 Feb 08 07:42	18° \approx 57'33	0°-16'-5	opposition	1850 Aug 29 09:26	5° \approx 38'12	0°-47'-41
minimum elong	1843 Feb 08 07:41	18° \approx 57'32	0°16'06	min. Earth dist.	1850 Aug 28 16:21	5° \approx 39'23	28.96049 AU
behind sun begin	1843 Feb 08 06:55	18° \approx 57'28		direct	1850 Nov 15 23:09	4° \approx 15'05	
behind sun end	1843 Feb 08 08:28	18° \approx 57'37					
max. Earth dist.	1843 Feb 08 20:01	18° \approx 58'42	31.03856 AU	conjunction	1851 Feb 25 21:13	6° \approx 43'02	0°-46'-23
retrograde	1843 May 24 21:08	21° \approx 29'49		minimum elong	1851 Feb 25 21:13	6° \approx 43'02	0°46'24
opposition	1843 Aug 13 13:35	20° \approx 05'45	0°-19'-17	max. Earth dist.	1851 Feb 26 15:44	6° \approx 44'48	30.95623 AU
min. Earth dist.	1843 Aug 13 00:43	20° \approx 06'37	29.03415 AU	retrograde	1851 Jun 12 04:25	9° \approx 16'19	
direct	1843 Oct 31 13:50	18° \approx 42'44		opposition	1851 Aug 31 22:16	7° \approx 51'36	0°-51'-30
				min. Earth dist.	1851 Aug 31 03:33	7° \approx 52'53	28.95290 AU
conjunction	1844 Feb 10 18:23	21° \approx 10'48	0°-20'00	direct	1851 Nov 18 11:18	6° \approx 28'30	
minimum elong	1844 Feb 10 18:23	21° \approx 10'48	0°20'01				
max. Earth dist.	1844 Feb 11 08:10	21° \approx 12'06	31.02910 AU	conjunction	1852 Feb 28 08:08	8° \approx 56'30	0°-49'-55
retrograde	1844 May 26 08:52	23° \approx 43'13		minimum elong	1852 Feb 28 08:08	8° \approx 56'29	0°49'56
opposition	1844 Aug 15 02:53	22° \approx 19'04	0°-23'-29	max. Earth dist.	1852 Feb 29 02:28	8° \approx 58'14	30.94908 AU
min. Earth dist.	1844 Aug 14 13:15	22° \approx 20'00	29.02402 AU	retrograde	1852 Jun 13 17:06	11° \approx 29'57	
direct	1844 Nov 02 01:31	20° \approx 56'02		opposition	1852 Sep 02 11:23	10° \approx 05'12	0°-55'-16
				min. Earth dist.	1852 Sep 01 16:46	10° \approx 06'29	28.94623 AU
conjunction	1845 Feb 12 04:49	23° \approx 24'05	0°-23'-54	direct	1852 Nov 19 21:05	8° \approx 42'09	
minimum elong	1845 Feb 12 04:49	23° \approx 24'05	0°23'55				
max. Earth dist.	1845 Feb 12 18:00	23° \approx 25'19	31.01845 AU	conjunction	1853 Mar 01 19:16	11° \approx 10'10	0°-53'-23
retrograde	1845 May 28 22:49	25° \approx 56'37		minimum elong	1853 Mar 01 19:16	11° \approx 10'10	0°53'25
opposition	1845 Aug 17 16:10	24° \approx 32'22	0°-27'-38	max. Earth dist.	1853 Mar 02 15:20	11° \approx 12'05	30.94260 AU
min. Earth dist.	1845 Aug 17 02:04	24° \approx 33'20	29.01292 AU	retrograde	1853 Jun 16 05:02	13° \approx 43'47	
direct	1845 Nov 04 11:35	23° \approx 09'18		min. Earth dist.	1853 Sep 04 04:57	12° \approx 20'22	28.93985 AU
				opposition	1853 Sep 05 00:22	12° \approx 19'02	0°-58'-56
conjunction	1846 Feb 14 15:35	25° \approx 37'18	0°-27'-46	direct	1853 Nov 22 08:13	10° \approx 56'01	
minimum elong	1846 Feb 14 15:34	25° \approx 37'18	0°27'47				
max. Earth dist.	1846 Feb 15 06:11	25° \approx 38'41	31.00690 AU	conjunction	1854 Mar 04 06:32	13° \approx 24'06	0°-56'-47
retrograde	1846 May 31 10:54	28° \approx 09'56		minimum elong	1854 Mar 04 06:32	13° \approx 24'06	0°56'48
opposition	1846 Aug 20 05:12	26° \approx 45'35	0°-31'-45	max. Earth dist.	1854 Mar 05 01:57	13° \approx 25'56	30.93625 AU
min. Earth dist.	1846 Aug 19 14:57	26° \approx 46'34	29.00117 AU	retrograde	1854 Jun 18 19:31	15° \approx 57'52	
direct	1846 Nov 07 00:13	25° \approx 22'29		opposition	1854 Sep 07 13:15	14° \approx 33'06	-1°-2'-31
				min. Earth dist.	1854 Sep 06 17:39	14° \approx 34'27	28.93348 AU
conjunction	1847 Feb 17 02:11	27° \approx 50'27	0°-31'-35	direct	1854 Nov 24 17:34	13° \approx 10'06	
minimum elong	1847 Feb 17 02:10	27° \approx 50'27	0°31'37				
max. Earth dist.	1847 Feb 17 16:45	27° \approx 51'50	30.99519 AU	conjunction	1855 Mar 06 18:05	15° \approx 38'14	-1°00'-6
	1847 Apr 26 02:21	0° \approx		minimum elong	1855 Mar 06 18:04	15° \approx 38'14	1°00'07
retrograde	1847 Jun 03 01:33	0° \approx 23'11		max. Earth dist.	1855 Mar 07 14:38	15° \approx 40'11	30.92947 AU
	1847 Jul 11 23:43	30° \approx		retrograde	1855 Jun 21 08:03	18° \approx 12'09	

min. Earth dist.	1855 Sep 09 06:47	16° ✕ 48'42	28.92636 AU	min. Earth dist.	1863 Sep 27 09:59	4° ∇ 43'02	28.86162 AU
opposition	1855 Sep 10 02:16	16° ✕ 47'22	-1°-6'00	opposition	1863 Sep 28 08:03	4° ∇ 41'30	-1°-29'-59
direct	1855 Nov 27 05:41	15° ✕ 24'23		direct	1863 Dec 15 03:16	3° ∇ 18'15	
conjunction	1856 Mar 08 05:32	17° ✕ 52'33	-1°-3'-19	conjunction	1864 Mar 26 04:09	5° ∇ 46'31	-1°-25'-17
minimum elong	1856 Mar 08 05:31	17° ✕ 52'33	1°03'19	minimum elong	1864 Mar 26 04:09	5° ∇ 46'31	1°25'18
max. Earth dist.	1856 Mar 09 01:34	17° ✕ 54'27	30.92195 AU	max. Earth dist.	1864 Mar 27 03:53	5° ∇ 48'45	30.85864 AU
retrograde	1856 Jun 22 23:15	20° ✕ 26'36		retrograde	1864 Jul 11 06:13	8° ∇ 21'06	
opposition	1856 Sep 11 15:19	19° ✕ 01'45	-1°-9'-24	opposition	1864 Sep 29 20:36	6° ∇ 55'45	-1°-32'-25
min. Earth dist.	1856 Sep 10 19:02	19° ✕ 03'09	28.91837 AU	min. Earth dist.	1864 Sep 28 22:24	6° ∇ 57'18	28.85784 AU
direct	1856 Nov 28 17:04	17° ✕ 38'45		direct	1864 Dec 16 14:45	5° ∇ 32'31	
conjunction	1857 Mar 10 17:16	20° ✕ 06'57	-1°-6'-26	conjunction	1865 Mar 28 16:21	8° ∇ 00'50	-1°-27'-30
minimum elong	1857 Mar 10 17:16	20° ✕ 06'57	1°06'27	minimum elong	1865 Mar 28 16:21	8° ∇ 00'50	1°27'30
max. Earth dist.	1857 Mar 11 13:49	20° ✕ 08'54	30.91331 AU	max. Earth dist.	1865 Mar 29 15:41	8° ∇ 03'03	30.85550 AU
retrograde	1857 Jun 25 11:43	22° ✕ 41'06		retrograde	1865 Jul 13 20:49	10° ∇ 35'30	
min. Earth dist.	1857 Sep 13 08:49	21° ✕ 17'31	28.90932 AU	min. Earth dist.	1865 Oct 01 10:01	9° ∇ 11'46	28.85520 AU
opposition	1857 Sep 14 04:17	21° ✕ 16'11	-1°-12'-41	opposition	1865 Oct 02 08:57	9° ∇ 10'10	-1°-34'-42
direct	1857 Dec 01 04:10	19° ✕ 53'09		direct	1865 Dec 19 01:02	7° ∇ 46'56	
conjunction	1858 Mar 13 05:03	22° ✕ 21'21	-1°-9'-28	conjunction	1866 Mar 31 04:46	10° ∇ 15'20	-1°-29'-34
minimum elong	1858 Mar 13 05:03	22° ✕ 21'21	1°09'29	minimum elong	1866 Mar 31 04:46	10° ∇ 15'20	1°29'35
max. Earth dist.	1858 Mar 14 01:47	22° ✕ 23'19	30.90394 AU	max. Earth dist.	1866 Apr 01 04:42	10° ∇ 17'35	30.85304 AU
retrograde	1858 Jun 28 02:26	24° ✕ 55'33		retrograde	1866 Jul 16 09:29	12° ∇ 50'05	
opposition	1858 Sep 16 17:04	23° ✕ 30'34	-1°-15'-52	opposition	1866 Oct 04 21:28	11° ∇ 24'45	-1°-36'-51
min. Earth dist.	1858 Sep 15 20:29	23° ✕ 31'59	28.89966 AU	min. Earth dist.	1866 Oct 03 23:24	11° ∇ 26'17	28.85296 AU
direct	1858 Dec 03 17:43	22° ✕ 07'29		direct	1866 Dec 21 11:32	10° ∇ 01'32	
conjunction	1859 Mar 15 16:42	24° ✕ 35'41	-1°-12'-23	conjunction	1867 Apr 02 17:14	12° ∇ 30'00	-1°-31'-31
minimum elong	1859 Mar 15 16:41	24° ✕ 35'41	1°12'25	minimum elong	1867 Apr 02 17:14	12° ∇ 30'00	1°31'32
max. Earth dist.	1859 Mar 16 13:19	24° ✕ 37'38	30.89406 AU	max. Earth dist.	1867 Apr 03 17:11	12° ∇ 32'16	30.85088 AU
retrograde	1859 Jun 30 16:14	27° ✕ 09'57		retrograde	1867 Jul 19 00:40	15° ∇ 04'50	
min. Earth dist.	1859 Sep 18 10:01	25° ✕ 46'14	28.88997 AU	min. Earth dist.	1867 Oct 06 10:58	13° ∇ 41'07	28.85070 AU
opposition	1859 Sep 19 05:52	25° ✕ 44'51	-1°-18'-56	opposition	1867 Oct 07 09:51	13° ∇ 39'31	-1°-38'-51
direct	1859 Dec 06 05:45	24° ✕ 21'43		direct	1867 Dec 24 00:26	12° ∇ 16'19	
conjunction	1860 Mar 17 04:31	26° ✕ 49'55	-1°-15'-12	conjunction	1868 Apr 04 05:54	14° ∇ 44'52	-1°-33'-19
minimum elong	1860 Mar 17 04:31	26° ✕ 49'55	1°15'13	minimum elong	1868 Apr 04 05:54	14° ∇ 44'52	1°33'20
max. Earth dist.	1860 Mar 18 02:17	26° ✕ 51'59	30.88465 AU	max. Earth dist.	1868 Apr 05 05:19	14° ∇ 47'05	30.84827 AU
retrograde	1860 Jul 02 04:39	29° ✕ 24'14		retrograde	1868 Jul 20 14:47	17° ∇ 19'46	
opposition	1860 Sep 20 18:29	27° ✕ 59'04	-1°-21'-53	opposition	1868 Oct 08 22:24	15° ∇ 54'27	-1°-40'-42
min. Earth dist.	1860 Sep 19 21:15	28° ✕ 00'32	28.88097 AU	min. Earth dist.	1868 Oct 08 00:47	15° ∇ 55'57	28.84785 AU
direct	1860 Dec 07 18:45	26° ✕ 35'53		direct	1868 Dec 25 11:57	14° ∇ 31'14	
conjunction	1861 Mar 19 16:14	29° ✕ 04'04	-1°-17'-54	conjunction	1869 Apr 06 18:48	16° ∇ 59'51	-1°-34'-59
minimum elong	1861 Mar 19 16:13	29° ✕ 04'04	1°17'55	minimum elong	1869 Apr 06 18:48	16° ∇ 59'51	1°35'00
max. Earth dist.	1861 Mar 20 13:35	29° ✕ 06'05	30.87610 AU	max. Earth dist.	1869 Apr 07 18:33	17° ∇ 02'06	30.84499 AU
retrograde	1861 Apr 13 20:12	0° ∇		retrograde	1869 Jul 23 04:33	19° ∇ 34'47	
opposition	1861 Jul 04 17:20	1° ∇ 38'27		opposition	1869 Oct 11 10:46	18° ∇ 09'28	-1°-42'-24
min. Earth dist.	1861 Sep 22 10:14	0° ∇ 14'39	28.87315 AU	min. Earth dist.	1869 Oct 10 12:28	18° ∇ 11'01	28.84402 AU
opposition	1861 Sep 23 07:10	0° ∇ 13'12	-1°-24'-43	direct	1869 Dec 28 01:07	16° ∇ 46'14	
direct	1861 Oct 01 06:07	30° ✕		conjunction	1870 Apr 09 07:39	19° ∇ 14'53	-1°-36'-30
conjunction	1861 Dec 10 05:19	28° ✕ 49'59		minimum elong	1870 Apr 09 07:39	19° ∇ 14'53	1°36'31
minimum elong	1862 Feb 14 00:06	0° ∇		max. Earth dist.	1870 Apr 10 06:08	19° ∇ 17'01	30.84069 AU
max. Earth dist.	1862 Mar 22 04:15	1° ∇ 18'11	-1°-20'-29	retrograde	1870 Jul 25 18:22	21° ∇ 49'50	
retrograde	1862 Mar 22 04:14	1° ∇ 18'11	1°20'29	opposition	1870 Oct 13 23:04	20° ∇ 24'29	-1°-43'-57
opposition	1862 Mar 23 03:10	1° ∇ 20'22	30.86885 AU	min. Earth dist.	1870 Oct 13 01:52	20° ∇ 25'58	28.83943 AU
min. Earth dist.	1862 Jul 07 05:13	3° ∇ 52'37		direct	1870 Dec 30 12:14	19° ∇ 01'13	
opposition	1862 Sep 25 19:30	2° ∇ 27'19	-1°-27'-25	conjunction	1871 Apr 11 20:39	21° ∇ 29'55	-1°-37'-52
min. Earth dist.	1862 Sep 24 21:46	2° ∇ 28'50	28.86660 AU	minimum elong	1871 Apr 11 20:39	21° ∇ 29'55	1°37'53
direct	1862 Dec 12 17:19	1° ∇ 04'05		max. Earth dist.	1871 Apr 12 20:03	21° ∇ 32'07	30.83585 AU
conjunction	1863 Mar 24 16:09	3° ∇ 32'19	-1°-22'-57	retrograde	1871 Jul 28 07:18	24° ∇ 04'51	
minimum elong	1863 Mar 24 16:09	3° ∇ 32'19	1°22'57	opposition	1871 Oct 16 11:16	22° ∇ 39'28	-1°-45'-20
max. Earth dist.	1863 Mar 25 14:29	3° ∇ 34'26	30.86305 AU	min. Earth dist.	1871 Oct 15 13:48	22° ∇ 40'58	28.83445 AU
retrograde	1863 Jul 09 18:54	6° ∇ 06'50		direct	1872 Jan 02 01:02	21° ∇ 16'09	

conjunction	1872 Apr 13 09:22	23° Υ 44'52	-1°-39'-6	conjunction	1880 May 01 19:16	11° Υ 45'00	-1°-43'-20
minimum elong	1872 Apr 13 09:22	23° Υ 44'52	1°39'07	minimum elong	1880 May 01 19:16	11° Υ 45'00	1°43'21
max. Earth dist.	1872 Apr 14 07:39	23° Υ 46'59	30.83099 AU	max. Earth dist.	1880 May 02 17:37	11° Υ 47'06	30.82812 AU
retrograde	1872 Jul 29 20:26	26° Υ 19'49		retrograde	1880 Aug 17 06:38	14° Υ 19'52	
opposition	1872 Oct 17 23:28	24° Υ 54'23	-1°-46'-34	opposition	1880 Nov 04 22:16	12° Υ 54'35	-1°-50'-25
min. Earth dist.	1872 Oct 17 02:17	24° Υ 55'53	28.82988 AU	min. Earth dist.	1880 Nov 04 02:32	12° Υ 55'58	28.83023 AU
direct	1873 Jan 03 11:48	23° Υ 31'01		direct	1881 Jan 21 09:19	11° Υ 31'05	
conjunction	1873 Apr 15 22:27	25° Υ 59'47	-1°-40'-10	conjunction	1881 May 04 09:02	14° Υ 00'25	-1°-43'-9
minimum elong	1873 Apr 15 22:27	25° Υ 59'47	1°40'11	minimum elong	1881 May 04 09:02	14° Υ 00'25	1°43'09
max. Earth dist.	1873 Apr 16 21:42	26° Υ 01'58	30.82664 AU	max. Earth dist.	1881 May 05 05:32	14° Υ 02'20	30.82980 AU
retrograde	1873 Aug 01 07:14	28° Υ 34'43		retrograde	1881 Aug 19 20:08	16° Υ 35'14	
opposition	1873 Oct 20 11:25	27° Υ 09'16	-1°-47'-38	opposition	1881 Nov 07 09:58	15° Υ 09'59	-1°-50'-8
min. Earth dist.	1873 Oct 19 14:28	27° Υ 10'44	28.82598 AU	min. Earth dist.	1881 Nov 06 15:10	15° Υ 11'18	28.83147 AU
direct	1874 Jan 05 23:30	25° Υ 45'51		direct	1882 Jan 23 20:22	13° Υ 46'26	
conjunction	1874 Apr 18 11:28	28° Υ 14'39	-1°-41'-6	conjunction	1882 May 06 23:01	16° Υ 15'50	-1°-42'-49
minimum elong	1874 Apr 18 11:27	28° Υ 14'39	1°41'07	minimum elong	1882 May 06 23:01	16° Υ 15'50	1°42'50
max. Earth dist.	1874 Apr 19 09:53	28° Υ 16'46	30.82335 AU	max. Earth dist.	1882 May 07 19:43	16° Υ 17'46	30.83045 AU
retrograde	1874 Jun 08 14:57	0° Υ		retrograde	1882 Aug 22 08:06	18° Υ 50'34	
retrograde	1874 Aug 03 21:20	0° Υ 49'34		opposition	1882 Nov 09 21:42	17° Υ 25'19	-1°-49'-41
retrograde	1874 Sep 30 23:09	30° Υ		min. Earth dist.	1882 Nov 09 03:46	17° Υ 26'35	28.83156 AU
opposition	1874 Oct 22 23:21	29° Υ 24'06	-1°-48'-32	direct	1883 Jan 26 08:51	16° Υ 01'44	
min. Earth dist.	1874 Oct 22 01:51	29° Υ 25'37	28.82335 AU	conjunction	1883 May 09 12:41	18° Υ 31'09	-1°-42'-19
direct	1875 Jan 08 09:42	28° Υ 00'39		minimum elong	1883 May 09 12:42	18° Υ 31'09	1°42'20
direct	1875 Apr 07 21:36	0° Υ		max. Earth dist.	1883 May 10 07:47	18° Υ 32'57	30.83025 AU
conjunction	1875 Apr 21 00:26	0° Υ 29'30	-1°-41'-52	retrograde	1883 Aug 24 22:10	21° Υ 05'49	
minimum elong	1875 Apr 21 00:26	0° Υ 29'30	1°41'52	opposition	1883 Nov 12 09:19	19° Υ 40'33	-1°-49'-5
max. Earth dist.	1875 Apr 21 23:26	0° Υ 31'40	30.82125 AU	min. Earth dist.	1883 Nov 11 15:28	19° Υ 41'49	28.83103 AU
retrograde	1875 Aug 06 08:49	3° Υ 04'26		direct	1884 Jan 28 20:00	18° Υ 16'52	
opposition	1875 Oct 25 11:21	1° Υ 38'58	-1°-49'-17	conjunction	1884 May 11 02:36	20° Υ 46'20	-1°-41'-40
min. Earth dist.	1875 Oct 24 14:37	1° Υ 40'25	28.82199 AU	minimum elong	1884 May 11 02:36	20° Υ 46'20	1°41'42
direct	1876 Jan 10 20:04	0° Υ 15'29		max. Earth dist.	1884 May 11 21:40	20° Υ 48'08	30.82949 AU
conjunction	1876 Apr 22 13:35	2° Υ 44'24	-1°-42'-28	retrograde	1884 Aug 26 08:43	23° Υ 20'54	
minimum elong	1876 Apr 22 13:35	2° Υ 44'24	1°42'30	opposition	1884 Nov 13 20:48	21° Υ 55'37	-1°-48'-18
max. Earth dist.	1876 Apr 23 12:32	2° Υ 46'33	30.82073 AU	min. Earth dist.	1884 Nov 13 04:20	21° Υ 56'47	28.83021 AU
retrograde	1876 Aug 07 23:00	5° Υ 19'19		direct	1885 Jan 30 07:09	20° Υ 31'52	
opposition	1876 Oct 26 23:06	3° Υ 53'52	-1°-49'-51	conjunction	1885 May 13 16:29	23° Υ 01'22	-1°-40'-52
min. Earth dist.	1876 Oct 26 01:30	3° Υ 55'23	28.82216 AU	minimum elong	1885 May 13 16:29	23° Υ 01'22	1°40'53
direct	1877 Jan 12 08:50	2° Υ 30'22		max. Earth dist.	1885 May 14 10:48	23° Υ 03'05	30.82889 AU
conjunction	1877 Apr 25 02:46	4° Υ 59'22	-1°-42'-56	retrograde	1885 Aug 28 21:43	25° Υ 35'49	
minimum elong	1877 Apr 25 02:46	4° Υ 59'22	1°42'57	opposition	1885 Nov 16 08:07	24° Υ 10'32	-1°-47'-22
max. Earth dist.	1877 Apr 26 01:24	5° Υ 01'29	30.82147 AU	min. Earth dist.	1885 Nov 15 15:15	24° Υ 11'44	28.82975 AU
retrograde	1877 Aug 10 12:02	7° Υ 34'17		direct	1886 Feb 01 19:42	22° Υ 46'42	
opposition	1877 Oct 29 11:02	6° Υ 08'52	-1°-50'-15	conjunction	1886 May 16 06:16	25° Υ 16'15	-1°-39'-55
min. Earth dist.	1877 Oct 28 14:34	6° Υ 10'18	28.82351 AU	minimum elong	1886 May 16 06:16	25° Υ 16'15	1°39'56
direct	1878 Jan 14 19:42	4° Υ 45'21		max. Earth dist.	1886 May 17 00:00	25° Υ 17'54	30.82867 AU
conjunction	1878 Apr 27 16:13	7° Υ 14'27	-1°-43'-13	retrograde	1886 Aug 31 09:22	27° Υ 50'36	
minimum elong	1878 Apr 27 16:13	7° Υ 14'27	1°43'15	opposition	1886 Nov 18 19:26	26° Υ 25'19	-1°-46'-16
max. Earth dist.	1878 Apr 28 15:12	7° Υ 16'36	30.82334 AU	min. Earth dist.	1886 Nov 18 03:59	26° Υ 26'25	28.83003 AU
retrograde	1878 Aug 13 02:10	9° Υ 49'21		direct	1887 Feb 04 06:18	25° Υ 01'25	
opposition	1878 Oct 31 22:39	8° Υ 23'59	-1°-50'-28	conjunction	1887 May 18 20:08	27° Υ 31'01	-1°-38'-48
min. Earth dist.	1878 Oct 31 01:32	8° Υ 25'28	28.82566 AU	minimum elong	1887 May 18 20:08	27° Υ 31'01	1°38'49
direct	1879 Jan 17 08:22	7° Υ 00'29		max. Earth dist.	1887 May 19 13:56	27° Υ 32'41	30.82958 AU
conjunction	1879 Apr 30 05:36	9° Υ 29'39	-1°-43'-22	retrograde	1887 Aug 16 04:09	0° Υ	
minimum elong	1879 Apr 30 05:36	9° Υ 29'39	1°43'22	retrograde	1887 Sep 02 22:41	0° Υ 05'16	
max. Earth dist.	1879 May 01 03:23	9° Υ 31'42	30.82572 AU	retrograde	1887 Sep 20 20:47	30° Υ	
retrograde	1879 Aug 15 16:55	12° Υ 04'33		opposition	1887 Nov 21 06:34	28° Υ 40'00	-1°-45'00
opposition	1879 Nov 03 10:30	10° Υ 39'14	-1°-50'-32	min. Earth dist.	1887 Nov 20 14:27	28° Υ 41'09	28.83150 AU
min. Earth dist.	1879 Nov 02 14:36	10° Υ 40'38	28.82819 AU	direct	1888 Feb 06 19:08	27° Υ 16'03	
direct	1880 Jan 19 19:47	9° Υ 15'44		conjunction	1888 May 20 09:50	29° Υ 45'43	-1°-37'-33

minimum elong	1888 May 20 09:50	29° ♄ 45'43	1°37'34	minimum elong	1896 Jun 08 02:45	17° ♃ 45'17	1°22'22
max. Earth dist.	1888 May 21 02:27	29° ♄ 47'16	30.83173 AU	max. Earth dist.	1896 Jun 08 13:49	17° ♃ 46'19	30.87235 AU
	1888 May 26 18:28	0° ♃		retrograde	1896 Sep 22 16:43	20° ♃ 18'37	
retrograde	1888 Sep 04 12:21	2° ♃ 19'53		opposition	1896 Dec 10 09:41	18° ♃ 53'54	-1°-26'-42
opposition	1888 Nov 22 17:50	0° ♃ 54'39	-1°-43'-34	min. Earth dist.	1896 Dec 09 23:54	18° ♃ 54'36	28.87472 AU
min. Earth dist.	1888 Nov 22 02:49	0° ♃ 55'43	28.83438 AU	direct	1897 Feb 26 04:31	17° ♃ 29'41	
	1888 Dec 27 18:01	30° ♄					
direct	1889 Feb 08 06:39	29° ♄ 30'40		conjunction	1897 Jun 10 16:56	20° ♃ 00'03	-1°-19'-51
	1889 Mar 22 01:29	0° ♃		minimum elong	1897 Jun 10 16:56	20° ♃ 00'03	1°19'51
				max. Earth dist.	1897 Jun 11 02:18	20° ♃ 00'55	30.87585 AU
conjunction	1889 May 22 23:52	2° ♃ 00'25	-1°-36'-9	retrograde	1897 Sep 25 04:41	22° ♃ 33'12	
minimum elong	1889 May 22 23:52	2° ♃ 00'25	1°36'09	opposition	1897 Dec 12 20:24	21° ♃ 08'31	-1°-23'-59
max. Earth dist.	1889 May 23 17:05	2° ♃ 02'02	30.83535 AU	min. Earth dist.	1897 Dec 12 12:09	21° ♃ 09'06	28.87830 AU
retrograde	1889 Sep 07 01:19	4° ♃ 34'29		direct	1898 Feb 28 16:11	19° ♃ 44'12	
opposition	1889 Nov 25 04:48	3° ♃ 09'20	-1°-41'-59				
min. Earth dist.	1889 Nov 24 13:43	3° ♃ 10'24	28.83857 AU	conjunction	1898 Jun 13 07:08	22° ♃ 14'36	-1°-17'-14
direct	1890 Feb 10 20:03	1° ♃ 45'20		minimum elong	1898 Jun 13 07:09	22° ♃ 14'36	1°17'16
				max. Earth dist.	1898 Jun 13 16:43	22° ♃ 15'29	30.87966 AU
conjunction	1890 May 25 13:44	4° ♃ 15'11	-1°-34'-36	retrograde	1898 Sep 27 16:34	24° ♃ 47'34	
minimum elong	1890 May 25 13:44	4° ♃ 15'11	1°34'37	opposition	1898 Dec 15 07:01	23° ♃ 22'54	-1°-21'-8
max. Earth dist.	1890 May 26 05:26	4° ♃ 16'39	30.84028 AU	min. Earth dist.	1898 Dec 14 22:56	23° ♃ 23'29	28.88230 AU
retrograde	1890 Sep 09 14:59	6° ♃ 49'11		direct	1899 Mar 03 05:43	21° ♃ 58'30	
opposition	1890 Nov 27 15:57	5° ♃ 24'06	-1°-40'-15				
min. Earth dist.	1890 Nov 27 01:32	5° ♃ 25'07	28.84408 AU	conjunction	1899 Jun 15 20:58	24° ♃ 28'56	-1°-14'-31
direct	1891 Feb 13 06:48	4° ♃ 00'05		minimum elong	1899 Jun 15 20:58	24° ♃ 28'56	1°14'31
				max. Earth dist.	1899 Jun 16 04:51	24° ♃ 29'40	30.88414 AU
conjunction	1891 May 28 03:39	6° ♃ 30'02	-1°-32'-54	retrograde	1899 Sep 30 05:37	27° ♃ 01'45	
minimum elong	1891 May 28 03:40	6° ♃ 30'02	1°32'54	opposition	1899 Dec 17 17:39	25° ♃ 37'06	-1°-18'-10
max. Earth dist.	1891 May 28 19:56	6° ♃ 31'34	30.84622 AU	min. Earth dist.	1899 Dec 17 10:19	25° ♃ 37'37	28.88734 AU
retrograde	1891 Sep 12 03:41	9° ♃ 03'58		direct	1900 Mar 05 16:54	24° ♃ 12'37	
opposition	1891 Nov 30 03:02	7° ♃ 38'58	-1°-38'-21				
min. Earth dist.	1891 Nov 29 13:23	7° ♃ 39'56	28.85023 AU	conjunction	1900 Jun 18 11:07	26° ♃ 43'06	-1°-11'-41
direct	1892 Feb 15 19:15	6° ♃ 14'59		minimum elong	1900 Jun 18 11:07	26° ♃ 43'06	1°11'43
				max. Earth dist.	1900 Jun 18 19:30	26° ♃ 43'53	30.88974 AU
conjunction	1892 May 29 17:44	8° ♃ 45'02	-1°-31'-3	retrograde	1900 Oct 02 17:48	29° ♃ 15'43	
minimum elong	1892 May 29 17:44	8° ♃ 45'02	1°31'05	opposition	1900 Dec 20 04:06	27° ♃ 51'07	-1°-15'-5
max. Earth dist.	1892 May 30 08:14	8° ♃ 46'23	30.85262 AU	min. Earth dist.	1900 Dec 19 21:31	27° ♃ 51'35	28.89352 AU
retrograde	1892 Sep 13 18:02	11° ♃ 18'53		direct	1901 Mar 08 06:24	26° ♃ 26'36	
opposition	1892 Dec 01 13:57	9° ♃ 53'59	-1°-36'-18				
min. Earth dist.	1892 Dec 01 00:38	9° ♃ 54'55	28.85658 AU	conjunction	1901 Jun 21 01:06	28° ♃ 57'07	-1°-8'-45
direct	1893 Feb 17 06:12	8° ♃ 29'58		minimum elong	1901 Jun 21 01:06	28° ♃ 57'07	1°08'46
				max. Earth dist.	1901 Jun 21 07:46	28° ♃ 57'44	30.89675 AU
conjunction	1893 Jun 01 08:04	11° ♃ 00'08	-1°-29'-4		1901 Jul 19 23:51	0° ♄	
minimum elong	1893 Jun 01 08:04	11° ♃ 00'08	1°29'05	retrograde	1901 Oct 05 06:56	1° ♄ 29'35	
max. Earth dist.	1893 Jun 01 22:16	11° ♃ 01'27	30.85867 AU	opposition	1901 Dec 22 14:35	0° ♄ 05'02	-1°-11'-53
retrograde	1893 Sep 16 04:38	13° ♃ 33'53		min. Earth dist.	1901 Dec 22 07:56	0° ♄ 05'30	28.90125 AU
opposition	1893 Dec 04 01:03	12° ♃ 09'03	-1°-34'-7		1901 Dec 25 13:37	30° ♃	
min. Earth dist.	1893 Dec 03 13:25	12° ♃ 09'53	28.86226 AU	direct	1902 Mar 10 18:15	28° ♃ 40'28	
direct	1894 Feb 19 17:21	10° ♃ 45'02			1902 May 21 13:29	0° ♄	
conjunction	1894 Jun 03 22:15	13° ♃ 15'15	-1°-26'-57	conjunction	1902 Jun 23 15:04	1° ♄ 11'04	-1°-5'-42
minimum elong	1894 Jun 03 22:16	13° ♃ 15'15	1°26'58	minimum elong	1902 Jun 23 15:04	1° ♄ 11'04	1°05'44
max. Earth dist.	1894 Jun 04 11:01	13° ♃ 16'27	30.86404 AU	max. Earth dist.	1902 Jun 23 21:57	1° ♄ 11'42	30.90515 AU
retrograde	1894 Sep 18 17:22	15° ♃ 48'53		retrograde	1902 Oct 07 17:36	3° ♄ 43'23	
opposition	1894 Dec 06 11:57	14° ♃ 24'07	-1°-31'-47	opposition	1902 Dec 25 01:08	2° ♄ 18'55	-1°-8'-34
min. Earth dist.	1894 Dec 06 00:21	14° ♃ 24'57	28.86711 AU	min. Earth dist.	1902 Dec 24 19:46	2° ♄ 19'18	28.91029 AU
direct	1895 Feb 22 05:25	13° ♃ 00'03		direct	1903 Mar 13 05:33	0° ♄ 54'21	
conjunction	1895 Jun 06 12:31	15° ♃ 30'20	-1°-24'-42	conjunction	1903 Jun 26 05:01	3° ♄ 25'00	-1°-2'-34
minimum elong	1895 Jun 06 12:31	15° ♃ 30'20	1°24'43	minimum elong	1903 Jun 26 05:02	3° ♄ 25'00	1°02'35
max. Earth dist.	1895 Jun 07 00:14	15° ♃ 31'26	30.86845 AU	max. Earth dist.	1903 Jun 26 10:45	3° ♄ 25'32	30.91497 AU
retrograde	1895 Sep 21 04:46	18° ♃ 03'50		retrograde	1903 Oct 10 06:37	5° ♄ 57'11	
opposition	1895 Dec 08 22:56	16° ♃ 39'06	-1°-29'-18	opposition	1903 Dec 27 11:26	4° ♄ 32'50	-1°-5'-10
min. Earth dist.	1895 Dec 08 13:14	16° ♃ 39'47	28.87117 AU	min. Earth dist.	1903 Dec 27 05:52	4° ♄ 33'14	28.92051 AU
direct	1896 Feb 24 15:12	15° ♃ 14'57		direct	1904 Mar 14 17:03	3° ♄ 08'16	
conjunction	1896 Jun 08 02:45	17° ♃ 45'17	-1°-22'-20	conjunction	1904 Jun 27 19:06	5° ♄ 39'01	0°-59'-19

minimum elong	1904 Jun 27 19:06	5° 39 '01	0°59'21	opposition	1913 Jan 15 08:36	24° 37 '31	0°-30'-47
max. Earth dist.	1904 Jun 28 00:09	5° 39 '29	30.92547 AU	min. Earth dist.	1913 Jan 15 11:06	24° 37 '20	28.99688 AU
retrograde	1904 Oct 11 17:47	8° 11 '04		direct	1913 Apr 04 04:57	23° 12 '37	
opposition	1904 Dec 28 21:58	6° 46 '50	-1°-1'-39				
min. Earth dist.	1904 Dec 28 18:17	6° 47 '06	28.93113 AU	conjunction	1913 Jul 19 00:42	25° 43 '49	0°-26'-54
direct	1905 Mar 17 02:33	5° 22 '16		minimum elong	1913 Jul 19 00:42	25° 43 '49	0°26'54
				max. Earth dist.	1913 Jul 18 20:44	25° 43 '28	31.00119 AU
conjunction	1905 Jun 30 09:17	7° 53 '07	0°-56'00	retrograde	1913 Nov 01 03:02	28° 14 '23	
minimum elong	1905 Jun 30 09:17	7° 53 '07	0°56'00	opposition	1914 Jan 17 18:49	26° 50 '44	0°-26'-41
max. Earth dist.	1905 Jun 30 13:30	7° 53 '30	30.93609 AU	min. Earth dist.	1914 Jan 17 22:52	26° 50 '27	29.00606 AU
retrograde	1905 Oct 14 05:22	10° 25 '02		direct	1914 Apr 06 14:48	25° 25 '49	
opposition	1905 Dec 31 08:18	9° 00 '55	0°-58'-2				
min. Earth dist.	1905 Dec 31 04:41	9° 01 '10	28.94143 AU	conjunction	1914 Jul 21 14:18	27° 57 '03	0°-23'-2
direct	1906 Mar 19 15:17	7° 36 '21		minimum elong	1914 Jul 21 14:18	27° 57 '03	0°23'03
				max. Earth dist.	1914 Jul 21 09:50	27° 56 '38	31.01108 AU
conjunction	1906 Jul 02 23:24	10° 07 '16	0°-52'-35		1914 Sep 23 20:20	0° 0	
minimum elong	1906 Jul 02 23:24	10° 07 '16	0°52'36	retrograde	1914 Nov 03 13:17	0° 0 27'26	
max. Earth dist.	1906 Jul 03 01:47	10° 07 '29	30.94604 AU		1914 Dec 14 20:43	30° 0	
retrograde	1906 Oct 16 16:57	12° 39 '04		opposition	1915 Jan 20 04:56	29° 03 '53	0°-22'-32
opposition	1907 Jan 02 18:54	11° 15 '02	0°-54'-21	min. Earth dist.	1915 Jan 20 08:33	29° 03 '37	29.01649 AU
min. Earth dist.	1907 Jan 02 16:57	11° 15 '10	28.95102 AU	direct	1915 Apr 09 03:32	27° 38 '57	
direct	1907 Mar 22 01:58	9° 50 '26			1915 Jul 19 13:30	0° 0	
				conjunction	1915 Jul 24 03:43	0° 0 10'13	0°-19'-8
conjunction	1907 Jul 05 13:28	12° 21 '26	0°-49'-5	minimum elong	1915 Jul 24 03:43	0° 0 10'13	0°19'09
minimum elong	1907 Jul 05 13:29	12° 21 '26	0°49'06	max. Earth dist.	1915 Jul 23 22:06	0° 0 09'43	31.02209 AU
max. Earth dist.	1907 Jul 05 15:34	12° 21 '37	30.95518 AU	retrograde	1915 Nov 05 23:53	2° 0 40'28	
retrograde	1907 Oct 19 04:32	14° 53 '04		opposition	1916 Jan 22 15:11	1° 0 17'00	0°-18'-21
opposition	1908 Jan 05 05:22	13° 29 '07	0°-50'-35	min. Earth dist.	1916 Jan 22 20:04	1° 0 16'40	29.02803 AU
min. Earth dist.	1908 Jan 05 04:01	13° 29 '12	28.95952 AU		1916 Mar 19 15:33	30° 0	
direct	1908 Mar 23 15:01	12° 04 '29		direct	1916 Apr 10 13:12	29° 52 '05	
					1916 May 02 10:39	0° 0	
conjunction	1908 Jul 07 03:32	14° 35 '32	0°-45'-32	conjunction	1916 Jul 25 17:24	2° 0 23'25	0°-15'-13
minimum elong	1908 Jul 07 03:32	14° 35 '32	0°45'34	minimum elong	1916 Jul 25 17:24	2° 0 23'25	0°15'14
max. Earth dist.	1908 Jul 07 03:22	14° 35 '31	30.96329 AU	behind sun begin	1916 Jul 25 15:40	2° 0 23'15	
retrograde	1908 Oct 20 17:12	17° 07 '00		behind sun end	1916 Jul 25 19:07	2° 0 23'34	
opposition	1909 Jan 06 15:40	15° 43 '06	0°-46'-44	max. Earth dist.	1916 Jul 25 11:46	2° 0 22'54	31.03401 AU
min. Earth dist.	1909 Jan 06 15:32	15° 43 '07	28.96726 AU	retrograde	1916 Nov 07 10:37	4° 0 53'31	
direct	1909 Mar 26 02:12	14° 18 '25		opposition	1917 Jan 24 01:14	3° 0 30'10	0°-14'-9
				min. Earth dist.	1917 Jan 24 06:34	3° 0 29'47	29.04000 AU
conjunction	1909 Jul 09 17:41	16° 49 '31	0°-41'-54	direct	1917 Apr 13 01:02	2° 0 05'14	
minimum elong	1909 Jul 09 17:41	16° 49 '31	0°41'55				
max. Earth dist.	1909 Jul 09 17:33	16° 49 '30	30.97069 AU	conjunction	1917 Jul 28 06:56	4° 0 36'38	0°-11'-17
retrograde	1909 Oct 23 05:03	19° 20 '48		minimum elong	1917 Jul 28 06:56	4° 0 36'38	0°11'17
opposition	1910 Jan 09 02:04	17° 56 '57	0°-42'-50	behind sun begin	1917 Jul 28 02:10	4° 0 36'12	
min. Earth dist.	1910 Jan 09 03:04	17° 56 '53	28.97433 AU	behind sun end	1917 Jul 28 11:42	4° 0 37'03	
direct	1910 Mar 28 16:14	16° 32 '14		max. Earth dist.	1917 Jul 27 23:24	4° 0 35'57	31.04602 AU
				retrograde	1917 Nov 09 22:27	7° 0 06'36	
conjunction	1910 Jul 12 07:24	19° 03 '21	0°-38'-14	opposition	1918 Jan 26 11:29	5° 0 43'21	0°-9'-55
minimum elong	1910 Jul 12 07:24	19° 03 '21	0°38'15	min. Earth dist.	1918 Jan 26 17:48	5° 0 42'54	29.05194 AU
max. Earth dist.	1910 Jul 12 05:14	19° 03 '09	30.97774 AU	direct	1918 Apr 15 11:59	4° 0 18'26	
retrograde	1910 Oct 25 17:30	21° 34 '27					
opposition	1911 Jan 11 12:17	20° 10 '38	0°-38'-52	conjunction	1918 Jul 30 20:26	6° 0 49'52	0°-7'-20
min. Earth dist.	1911 Jan 11 13:30	20° 10 '33	28.98140 AU	minimum elong	1918 Jul 30 20:27	6° 0 49'52	0°07'21
direct	1911 Mar 31 04:41	18° 45 '51		behind sun begin	1918 Jul 30 14:25	6° 0 49'20	
				behind sun end	1918 Jul 31 02:28	6° 0 50'24	
conjunction	1911 Jul 14 21:17	21° 17 '00	0°-34'-30	max. Earth dist.	1918 Jul 30 13:03	6° 0 49'12	31.05755 AU
minimum elong	1911 Jul 14 21:17	21° 17 '00	0°34'30	retrograde	1918 Nov 12 09:18	9° 0 19'42	
max. Earth dist.	1911 Jul 14 19:07	21° 16 '48	30.98487 AU	opposition	1919 Jan 28 21:48	7° 0 56'32	0°-5'-40
retrograde	1911 Oct 28 04:02	23° 47 '55		min. Earth dist.	1919 Jan 29 05:21	7° 0 56'00	29.06298 AU
opposition	1912 Jan 13 22:29	22° 24 '10	0°-34'-51	direct	1919 Apr 18 01:28	6° 0 31'36	
min. Earth dist.	1912 Jan 14 01:15	22° 23 '58	28.98875 AU				
direct	1912 Apr 01 16:37	20° 59 '19		conjunction	1919 Aug 02 09:54	9° 0 03'05	0°-3'-22
				minimum elong	1919 Aug 02 09:54	9° 0 03'05	0°03'23
conjunction	1912 Jul 16 11:00	23° 30 '29	0°-30'-43	behind sun begin	1919 Aug 02 03:21	9° 0 02'30	
minimum elong	1912 Jul 16 11:01	23° 30 '29	0°30'44	behind sun end	1919 Aug 02 16:27	9° 0 03'39	
max. Earth dist.	1912 Jul 16 07:27	23° 30 '10	30.99265 AU				
retrograde	1912 Oct 29 16:52	26° 01 '13					

max. Earth dist.	1919 Aug 02 00:15	9°Ω02'12	31.06809 AU	opposition	1927 Feb 15 07:10	25°Ω36'41	0°27'51
retrograde	1919 Nov 14 21:39	11°Ω32'45		min. Earth dist.	1927 Feb 15 20:09	25°Ω35'47	29.12665 AU
opposition	1920 Jan 31 07:56	10°Ω09'39	0°-1'-25	direct	1927 May 05 23:55	24°Ω11'28	
min. Earth dist.	1920 Jan 31 15:52	10°Ω09'05	29.07298 AU				
direct	1920 Apr 19 13:37	8°Ω44'41		conjunction	1927 Aug 20 18:18	26°Ω42'58	0°28'00
asc. node	1920 Jun 03 20:30	9°Ω17'34		minimum elong	1927 Aug 20 18:18	26°Ω42'58	0°28'00
				max. Earth dist.	1927 Aug 20 03:42	26°Ω41'37	31.13131 AU
conjunction	1920 Aug 03 23:31	11°Ω16'11	0°00'41	retrograde	1927 Dec 02 08:53	29°Ω11'21	
minimum elong	1920 Aug 03 23:31	11°Ω16'11	0°00'41	opposition	1928 Feb 17 17:14	27°Ω48'36	0°31'54
behind sun begin	1920 Aug 03 16:57	11°Ω15'37		min. Earth dist.	1928 Feb 18 06:59	27°Ω47'38	29.13660 AU
behind sun end	1920 Aug 04 06:06	11°Ω16'46		direct	1928 May 07 12:31	26°Ω23'24	
max. Earth dist.	1920 Aug 03 13:33	11°Ω15'17	31.07737 AU				
retrograde	1920 Nov 16 08:24	13°Ω45'41		conjunction	1928 Aug 22 06:53	28°Ω54'56	0°31'46
opposition	1921 Feb 01 18:17	12°Ω22'38	0°02'48	minimum elong	1928 Aug 22 06:53	28°Ω54'56	0°31'46
min. Earth dist.	1921 Feb 02 04:03	12°Ω21'57	29.08164 AU	max. Earth dist.	1928 Aug 21 14:42	28°Ω53'26	31.14180 AU
direct	1921 Apr 22 02:07	10°Ω57'39			1928 Sep 21 12:02	0°♄	
				retrograde	1928 Dec 03 20:48	1°♄23'14	
conjunction	1921 Aug 06 12:49	13°Ω29'09	0°04'42	opposition	1929 Feb 19 03:20	0°♄00'34	0°35'54
minimum elong	1921 Aug 06 12:49	13°Ω29'09	0°04'42		1929 Feb 19 11:26	30°Ω	
behind sun begin	1921 Aug 06 06:23	13°Ω28'35		min. Earth dist.	1929 Feb 19 16:52	29°Ω59'37	29.14748 AU
behind sun end	1921 Aug 06 19:16	13°Ω29'43		direct	1929 May 09 23:42	28°Ω35'23	
max. Earth dist.	1921 Aug 06 01:06	13°Ω28'05	31.08554 AU		1929 Jul 24 15:02	0°♄	
retrograde	1921 Nov 18 20:57	15°Ω58'28					
opposition	1922 Feb 04 04:25	14°Ω35'27	0°07'02	conjunction	1929 Aug 24 19:28	1°♄06'58	0°35'30
min. Earth dist.	1922 Feb 04 14:10	14°Ω34'46	29.08930 AU	minimum elong	1929 Aug 24 19:28	1°♄06'58	0°35'30
direct	1922 Apr 24 15:22	13°Ω10'25		max. Earth dist.	1929 Aug 24 03:42	1°♄05'31	31.15277 AU
				retrograde	1929 Dec 06 07:27	3°♄35'11	
conjunction	1922 Aug 09 02:07	15°Ω41'55	0°08'38	opposition	1930 Feb 21 13:39	2°♄12'37	0°39'51
minimum elong	1922 Aug 09 02:07	15°Ω41'55	0°08'38	min. Earth dist.	1930 Feb 22 04:39	2°♄11'34	29.15853 AU
behind sun begin	1922 Aug 08 20:25	15°Ω41'25		direct	1930 May 12 11:55	0°♄47'29	
behind sun end	1922 Aug 09 07:49	15°Ω42'26					
max. Earth dist.	1922 Aug 08 13:48	15°Ω40'48	31.09276 AU	conjunction	1930 Aug 27 07:56	3°♄19'06	0°39'10
retrograde	1922 Nov 21 06:47	18°Ω11'04		minimum elong	1930 Aug 27 07:56	3°♄19'06	0°39'10
opposition	1923 Feb 06 14:40	16°Ω48'05	0°11'15	max. Earth dist.	1930 Aug 26 14:47	3°♄17'31	31.16374 AU
min. Earth dist.	1923 Feb 07 02:13	16°Ω47'16	29.09634 AU	retrograde	1930 Dec 08 20:17	5°♄47'12	
direct	1923 Apr 27 02:19	15°Ω22'59		opposition	1931 Feb 23 23:47	4°♄24'43	0°43'45
				min. Earth dist.	1931 Feb 24 14:32	4°♄23'42	29.16925 AU
conjunction	1923 Aug 11 15:09	17°Ω54'29	0°12'33	direct	1931 May 15 01:10	2°♄59'37	
minimum elong	1923 Aug 11 15:09	17°Ω54'29	0°12'34				
behind sun begin	1923 Aug 11 11:01	17°Ω54'07		conjunction	1931 Aug 29 20:28	5°♄31'16	0°42'47
behind sun end	1923 Aug 11 19:17	17°Ω54'51		minimum elong	1931 Aug 29 20:28	5°♄31'16	0°42'47
max. Earth dist.	1923 Aug 11 02:07	17°Ω53'17	31.09966 AU	max. Earth dist.	1931 Aug 29 02:54	5°♄29'38	31.17392 AU
retrograde	1923 Nov 23 16:52	20°Ω23'26		retrograde	1931 Dec 11 06:19	7°♄59'17	
opposition	1924 Feb 09 00:44	19°Ω00'29	0°15'27	opposition	1932 Feb 26 10:13	6°♄36'52	0°47'35
min. Earth dist.	1924 Feb 09 12:07	18°Ω59'41	29.10306 AU	min. Earth dist.	1932 Feb 27 02:44	6°♄35'43	29.17901 AU
direct	1924 Apr 28 15:25	17°Ω35'21		direct	1932 May 16 12:32	5°♄11'47	
conjunction	1924 Aug 13 04:09	20°Ω06'50	0°16'28	conjunction	1932 Aug 31 08:58	7°♄43'25	0°46'20
minimum elong	1924 Aug 13 04:09	20°Ω06'50	0°16'27	minimum elong	1932 Aug 31 08:58	7°♄43'25	0°46'20
max. Earth dist.	1924 Aug 12 13:55	20°Ω05'31	31.10637 AU	max. Earth dist.	1932 Aug 30 14:36	7°♄41'43	31.18308 AU
retrograde	1924 Nov 25 02:48	22°Ω35'37		retrograde	1932 Dec 12 16:30	10°♄11'18	
opposition	1925 Feb 10 10:51	21°Ω12'42	0°19'37	opposition	1933 Feb 27 20:30	8°♄48'58	0°51'20
min. Earth dist.	1925 Feb 10 23:27	21°Ω11'49	29.11008 AU	min. Earth dist.	1933 Feb 28 12:55	8°♄47'49	29.18751 AU
direct	1925 May 01 01:21	19°Ω47'30		direct	1933 May 19 01:36	7°♄23'52	
conjunction	1925 Aug 15 17:03	22°Ω18'59	0°20'20	conjunction	1933 Sep 02 21:21	9°♄55'30	0°49'49
minimum elong	1925 Aug 15 17:03	22°Ω18'59	0°20'21	minimum elong	1933 Sep 02 21:21	9°♄55'30	0°49'49
max. Earth dist.	1925 Aug 15 03:03	22°Ω17'42	31.11368 AU	max. Earth dist.	1933 Sep 02 01:44	9°♄53'41	31.19092 AU
retrograde	1925 Nov 27 12:22	24°Ω47'37		retrograde	1933 Dec 15 02:59	12°♄23'16	
opposition	1926 Feb 12 21:01	23°Ω24'45	0°23'45	opposition	1934 Mar 02 06:59	11°♄00'57	0°55'00
min. Earth dist.	1926 Feb 13 09:40	23°Ω23'52	29.11776 AU	min. Earth dist.	1934 Mar 03 00:36	10°♄59'43	29.19494 AU
direct	1926 May 03 13:12	21°Ω59'32		direct	1934 May 21 11:52	9°♄35'50	
conjunction	1926 Aug 18 05:33	24°Ω31'00	0°24'11	conjunction	1934 Sep 05 09:30	12°♄07'26	0°53'13
minimum elong	1926 Aug 18 05:33	24°Ω31'00	0°24'11	minimum elong	1934 Sep 05 09:30	12°♄07'26	0°53'12
max. Earth dist.	1926 Aug 17 14:12	24°Ω29'35	31.12188 AU	max. Earth dist.	1934 Sep 04 13:58	12°♄05'37	31.19778 AU
retrograde	1926 Nov 29 23:02	26°Ω59'31		retrograde	1934 Dec 17 11:48	14°♄35'04	

opposition	1935 Mar 04 17:21	13° <u>♏</u> 12'46	0°58'36		1943 Apr 17 10:58	30° <u>♏</u>	
min. Earth dist.	1935 Mar 05 11:21	13° <u>♏</u> 11'31	29.20126 AU	direct	1943 Jun 10 22:05	29° <u>♏</u> 16'38	
direct	1935 May 24 00:15	11° <u>♏</u> 47'38			1943 Aug 02 19:07	0° <u>♏</u>	
conjunction	1935 Sep 07 21:35	14° <u>♏</u> 19'10	0°56'32	conjunction	1943 Sep 25 18:16	1° <u>♏</u> 47'58	1°19'44
minimum elong	1935 Sep 07 21:35	14° <u>♏</u> 19'10	0°56'32	minimum elong	1943 Sep 25 18:16	1° <u>♏</u> 47'58	1°19'44
max. Earth dist.	1935 Sep 07 00:27	14° <u>♏</u> 17'13	31.20372 AU	max. Earth dist.	1943 Sep 24 20:40	1° <u>♏</u> 45'58	31.26422 AU
retrograde	1935 Dec 19 21:24	16° <u>♏</u> 46'40		retrograde	1944 Jan 06 06:23	4° <u>♏</u> 14'49	
opposition	1936 Mar 06 03:34	15° <u>♏</u> 24'23	1°02'06	opposition	1944 Mar 23 15:29	2° <u>♏</u> 52'52	1°26'27
min. Earth dist.	1936 Mar 06 22:05	15° <u>♏</u> 23'06	29.20703 AU	min. Earth dist.	1944 Mar 24 11:49	2° <u>♏</u> 51'27	29.26909 AU
direct	1936 May 25 11:08	13° <u>♏</u> 59'12		direct	1944 Jun 12 10:25	1° <u>♏</u> 27'51	
				max. Earth dist.	1944 Sep 26 06:37	3° <u>♏</u> 57'02	31.27211 AU
conjunction	1936 Sep 09 09:41	16° <u>♏</u> 30'42	0°59'46	conjunction	1944 Sep 27 05:37	3° <u>♏</u> 59'11	1°22'09
minimum elong	1936 Sep 09 09:41	16° <u>♏</u> 30'42	0°59'46	minimum elong	1944 Sep 27 05:36	3° <u>♏</u> 59'11	1°22'09
max. Earth dist.	1936 Sep 08 13:14	16° <u>♏</u> 28'48	31.20925 AU	retrograde	1945 Jan 07 16:34	6° <u>♏</u> 26'00	
retrograde	1936 Dec 21 05:56	18° <u>♏</u> 58'03		opposition	1945 Mar 26 02:19	5° <u>♏</u> 04'05	1°28'59
opposition	1937 Mar 08 14:01	17° <u>♏</u> 35'46	1°05'31	min. Earth dist.	1945 Mar 26 22:55	5° <u>♏</u> 02'40	29.27651 AU
min. Earth dist.	1937 Mar 09 09:22	17° <u>♏</u> 34'25	29.21250 AU	direct	1945 Jun 14 20:50	3° <u>♏</u> 39'07	
direct	1937 May 27 23:14	16° <u>♏</u> 10'33		conjunction	1945 Sep 29 16:53	6° <u>♏</u> 10'26	1°24'27
conjunction	1937 Sep 11 21:18	18° <u>♏</u> 41'59	1°02'55	minimum elong	1945 Sep 29 16:53	6° <u>♏</u> 10'26	1°24'27
minimum elong	1937 Sep 11 21:18	18° <u>♏</u> 41'59	1°02'55	max. Earth dist.	1945 Sep 28 18:40	6° <u>♏</u> 08'22	31.27875 AU
max. Earth dist.	1937 Sep 10 23:35	18° <u>♏</u> 39'58	31.21483 AU	retrograde	1946 Jan 10 01:15	8° <u>♏</u> 37'13	
retrograde	1937 Dec 23 16:57	21° <u>♏</u> 09'13		opposition	1946 Mar 28 13:18	7° <u>♏</u> 15'20	1°31'22
opposition	1938 Mar 11 00:21	19° <u>♏</u> 46'56	1°08'50	min. Earth dist.	1946 Mar 29 10:47	7° <u>♏</u> 13'51	29.28246 AU
min. Earth dist.	1938 Mar 11 19:06	19° <u>♏</u> 45'37	29.21843 AU	direct	1946 Jun 17 08:19	5° <u>♏</u> 50'24	
direct	1938 May 30 10:13	18° <u>♏</u> 21'40		max. Earth dist.	1946 Oct 01 04:23	8° <u>♏</u> 19'28	31.28403 AU
conjunction	1938 Sep 14 09:02	20° <u>♏</u> 53'04	1°05'59	conjunction	1946 Oct 02 04:03	8° <u>♏</u> 21'40	1°26'38
minimum elong	1938 Sep 14 09:02	20° <u>♏</u> 53'03	1°05'58	minimum elong	1946 Oct 02 04:02	8° <u>♏</u> 21'40	1°26'38
max. Earth dist.	1938 Sep 13 12:07	20° <u>♏</u> 51'07	31.22102 AU	retrograde	1947 Jan 12 12:25	10° <u>♏</u> 48'25	
retrograde	1938 Dec 26 02:27	23° <u>♏</u> 20'12		opposition	1947 Mar 31 00:01	9° <u>♏</u> 26'33	1°33'38
opposition	1939 Mar 13 10:45	21° <u>♏</u> 57'55	1°12'03	min. Earth dist.	1947 Mar 31 21:03	9° <u>♏</u> 25'06	29.28714 AU
min. Earth dist.	1939 Mar 14 06:31	21° <u>♏</u> 56'32	29.22519 AU	direct	1947 Jun 19 18:47	8° <u>♏</u> 01'37	
direct	1939 Jun 01 22:38	20° <u>♏</u> 32'39		conjunction	1947 Oct 04 15:18	10° <u>♏</u> 32'51	1°28'41
conjunction	1939 Sep 16 20:34	23° <u>♏</u> 04'00	1°08'56	minimum elong	1947 Oct 04 15:17	10° <u>♏</u> 32'51	1°28'41
minimum elong	1939 Sep 16 20:33	23° <u>♏</u> 04'00	1°08'56	max. Earth dist.	1947 Oct 03 16:08	10° <u>♏</u> 30'41	31.28797 AU
max. Earth dist.	1939 Sep 15 22:52	23° <u>♏</u> 01'59	31.22836 AU	retrograde	1948 Jan 14 22:02	12° <u>♏</u> 59'33	
retrograde	1939 Dec 28 14:15	25° <u>♏</u> 31'02		opposition	1948 Apr 01 11:02	11° <u>♏</u> 37'41	1°35'46
opposition	1940 Mar 14 21:08	24° <u>♏</u> 08'47	1°15'09	min. Earth dist.	1948 Apr 02 09:20	11° <u>♏</u> 36'09	29.29054 AU
min. Earth dist.	1940 Mar 15 15:57	24° <u>♏</u> 07'29	29.23306 AU	direct	1948 Jun 21 07:28	10° <u>♏</u> 12'45	
direct	1940 Jun 03 11:47	22° <u>♏</u> 43'33		max. Earth dist.	1948 Oct 05 02:15	12° <u>♏</u> 41'41	31.29093 AU
max. Earth dist.	1940 Sep 17 10:44	25° <u>♏</u> 12'55	31.23666 AU	conjunction	1948 Oct 06 02:12	12° <u>♏</u> 43'55	1°30'37
conjunction	1940 Sep 18 08:07	25° <u>♏</u> 14'53	1°11'48	minimum elong	1948 Oct 06 02:12	12° <u>♏</u> 43'55	1°30'37
minimum elong	1940 Sep 18 08:06	25° <u>♏</u> 14'53	1°11'48	retrograde	1949 Jan 16 09:36	15° <u>♏</u> 10'33	
retrograde	1940 Dec 30 00:05	27° <u>♏</u> 41'52		opposition	1949 Apr 03 21:54	13° <u>♏</u> 48'40	1°37'45
opposition	1941 Mar 17 07:40	26° <u>♏</u> 19'41	1°18'09	min. Earth dist.	1949 Apr 04 19:22	13° <u>♏</u> 47'12	29.29311 AU
min. Earth dist.	1941 Mar 18 03:33	26° <u>♏</u> 18'18	29.24192 AU	direct	1949 Jun 23 20:46	12° <u>♏</u> 23'44	
direct	1941 Jun 05 22:54	24° <u>♏</u> 54'29		conjunction	1949 Oct 08 13:05	14° <u>♏</u> 54'50	1°32'24
conjunction	1941 Sep 20 19:33	27° <u>♏</u> 25'49	1°14'33	minimum elong	1949 Oct 08 13:05	14° <u>♏</u> 54'50	1°32'25
minimum elong	1941 Sep 20 19:32	27° <u>♏</u> 25'49	1°14'33	max. Earth dist.	1949 Oct 07 13:27	14° <u>♏</u> 52'38	31.29323 AU
max. Earth dist.	1941 Sep 19 22:12	27° <u>♏</u> 23'50	31.24591 AU	retrograde	1950 Jan 18 19:19	17° <u>♏</u> 21'25	
retrograde	1942 Jan 01 10:32	29° <u>♏</u> 52'45		opposition	1950 Apr 06 08:56	15° <u>♏</u> 59'31	1°39'36
opposition	1942 Mar 19 18:12	28° <u>♏</u> 30'38	1°21'02	min. Earth dist.	1950 Apr 07 07:21	15° <u>♏</u> 57'58	29.29549 AU
min. Earth dist.	1942 Mar 20 13:26	28° <u>♏</u> 29'18	29.25131 AU	direct	1950 Jun 26 08:04	14° <u>♏</u> 34'34	
direct	1942 Jun 08 11:44	27° <u>♏</u> 05'30		conjunction	1950 Oct 10 23:40	17° <u>♏</u> 05'35	1°34'04
max. Earth dist.	1942 Sep 22 08:50	29° <u>♏</u> 34'48	31.25526 AU	minimum elong	1950 Oct 10 23:40	17° <u>♏</u> 05'35	1°34'04
conjunction	1942 Sep 23 06:49	29° <u>♏</u> 36'51	1°17'12	max. Earth dist.	1950 Oct 10 00:25	17° <u>♏</u> 03'25	31.29568 AU
minimum elong	1942 Sep 23 06:48	29° <u>♏</u> 36'50	1°17'12	retrograde	1951 Jan 21 05:28	19° <u>♏</u> 32'07	
retrograde	1942 Oct 03 16:59	0° <u>♏</u>		opposition	1951 Apr 08 19:52	18° <u>♏</u> 10'12	1°41'18
retrograde	1943 Jan 03 21:21	2° <u>♏</u> 03'44		min. Earth dist.	1951 Apr 09 17:19	18° <u>♏</u> 08'44	29.29808 AU
opposition	1943 Mar 22 04:51	0° <u>♏</u> 41'42	1°23'49	direct	1951 Jun 28 21:51	16° <u>♏</u> 45'15	
min. Earth dist.	1943 Mar 23 00:54	0° <u>♏</u> 40'18	29.26064 AU				

max. Earth dist.	1951 Oct 12 10:44	19°♃14'02	31.29854 AU	min. Earth dist.	1959 Apr 27 11:30	5°♍34'19	29.32572 AU
				direct	1959 Jul 16 16:51	4°♍11'10	
conjunction	1951 Oct 13 10:16	19°♃16'13	1°35'36	conjunction	1959 Oct 30 21:10	6°♍41'44	1°42'42
minimum elong	1951 Oct 13 10:16	19°♃16'13	1°35'35	minimum elong	1959 Oct 30 21:10	6°♍41'44	1°42'42
retrograde	1952 Jan 23 16:29	21°♃42'43		max. Earth dist.	1959 Oct 29 23:23	6°♍39'42	31.32422 AU
opposition	1952 Apr 10 06:51	20°♃20'48	1°42'51	retrograde	1960 Feb 10 00:07	9°♍08'19	
min. Earth dist.	1952 Apr 11 04:28	20°♃19'19	29.30150 AU	opposition	1960 Apr 28 01:38	7°♍46'29	1°49'50
direct	1952 Jun 30 09:24	18°♃55'52		min. Earth dist.	1960 Apr 28 22:13	7°♍45'05	29.32472 AU
				direct	1960 Jul 18 06:55	6°♍21'54	
conjunction	1952 Oct 14 20:53	21°♃26'47	1°36'59	max. Earth dist.	1960 Oct 31 09:02	8°♍50'18	31.32260 AU
minimum elong	1952 Oct 14 20:52	21°♃26'47	1°36'59	conjunction	1960 Nov 01 07:18	8°♍52'23	1°42'56
max. Earth dist.	1952 Oct 13 22:27	21°♃24'42	31.30239 AU	minimum elong	1960 Nov 01 07:18	8°♍52'23	1°42'57
retrograde	1953 Jan 25 00:57	23°♃53'15		retrograde	1961 Feb 11 11:33	11°♍18'58	
opposition	1953 Apr 12 18:00	22°♃31'22	1°44'16	opposition	1961 Apr 30 13:21	9°♍57'06	1°50'01
min. Earth dist.	1953 Apr 13 15:10	22°♃29'55	29.30568 AU	min. Earth dist.	1961 May 01 10:09	9°♍55'41	29.32267 AU
direct	1953 Jul 02 22:13	21°♃06'29		direct	1961 Jul 20 18:48	8°♍32'31	
max. Earth dist.	1953 Oct 16 08:06	23°♃35'12	31.30697 AU	conjunction	1961 Nov 03 17:14	11°♍02'54	1°43'02
				minimum elong	1961 Nov 03 17:14	11°♍02'54	1°43'02
conjunction	1953 Oct 17 07:08	23°♃37'21	1°38'14	max. Earth dist.	1961 Nov 02 20:10	11°♍00'56	31.32014 AU
minimum elong	1953 Oct 17 07:08	23°♃37'21	1°38'14	retrograde	1962 Feb 13 20:07	13°♍29'30	
retrograde	1954 Jan 27 10:50	26°♃03'50		opposition	1962 May 03 01:01	12°♍07'35	1°50'03
opposition	1954 Apr 15 05:07	24°♃41'58	1°45'31	min. Earth dist.	1962 May 03 21:27	12°♍06'11	29.31983 AU
min. Earth dist.	1954 Apr 16 01:50	24°♃40'33	29.31058 AU	direct	1962 Jul 23 08:12	10°♍42'59	
direct	1954 Jul 05 08:34	23°♃17'09		max. Earth dist.	1962 Nov 05 05:24	13°♍11'16	31.31725 AU
				conjunction	1962 Nov 06 03:02	13°♍13'17	1°42'59
conjunction	1954 Oct 19 17:38	25°♃47'58	1°39'20	minimum elong	1962 Nov 06 03:02	13°♍13'17	1°42'59
minimum elong	1954 Oct 19 17:38	25°♃47'58	1°39'21	retrograde	1963 Feb 16 06:05	15°♍39'54	
max. Earth dist.	1954 Oct 18 19:58	25°♃45'57	31.31192 AU	opposition	1963 May 05 12:29	14°♍17'56	1°49'55
retrograde	1955 Jan 29 19:18	28°♃14'28		min. Earth dist.	1963 May 06 08:14	14°♍16'35	29.31708 AU
opposition	1955 Apr 17 16:16	26°♃52'38	1°46'38	direct	1963 Jul 25 19:14	12°♍53'20	
min. Earth dist.	1955 Apr 18 13:31	26°♃51'11	29.31545 AU	conjunction	1963 Nov 08 12:56	15°♍23'34	1°42'47
direct	1955 Jul 07 19:39	25°♃27'53		minimum elong	1963 Nov 08 12:56	15°♍23'34	1°42'46
max. Earth dist.	1955 Oct 21 05:24	27°♃56'33	31.31662 AU	max. Earth dist.	1963 Nov 07 17:01	15°♍21'42	31.31465 AU
				retrograde	1964 Feb 18 14:29	17°♍50'12	
conjunction	1955 Oct 22 03:58	27°♃58'40	1°40'18	opposition	1964 May 07 00:18	16°♍28'12	1°49'37
minimum elong	1955 Oct 22 03:58	27°♃58'40	1°40'18	min. Earth dist.	1964 May 07 20:00	16°♍26'52	29.31479 AU
	1955 Dec 24 15:19	0°♍		direct	1964 Jul 27 07:01	15°♍03'38	
retrograde	1956 Feb 01 06:32	0°♍25'11		conjunction	1964 Nov 09 22:28	17°♍33'47	1°42'26
	1956 Mar 12 01:56	30°♃		minimum elong	1964 Nov 09 22:28	17°♍33'47	1°42'26
opposition	1956 Apr 19 03:31	29°♃03'23	1°47'35	max. Earth dist.	1964 Nov 09 02:22	17°♍31'54	31.31288 AU
min. Earth dist.	1956 Apr 19 23:53	29°♃01'59	29.31983 AU	retrograde	1965 Feb 20 01:23	20°♍00'29	
direct	1956 Jul 09 06:09	27°♃38'40		opposition	1965 May 09 12:01	18°♍38'28	1°49'11
	1956 Oct 19 09:26	0°♍		min. Earth dist.	1965 May 10 06:02	18°♍37'15	29.31350 AU
conjunction	1956 Oct 23 14:21	0°♍09'25	1°41'07	direct	1965 Jul 29 17:41	17°♍13'57	
minimum elong	1956 Oct 23 14:21	0°♍09'25	1°41'07	conjunction	1965 Nov 12 08:12	19°♍44'03	1°41'56
max. Earth dist.	1956 Oct 22 16:40	0°♍07'24	31.32044 AU	minimum elong	1965 Nov 12 08:12	19°♍44'03	1°41'57
retrograde	1957 Feb 02 15:51	2°♍35'58		max. Earth dist.	1965 Nov 11 13:32	19°♍42'18	31.31203 AU
opposition	1957 Apr 21 15:06	1°♍14'11	1°48'23	retrograde	1966 Feb 22 10:42	22°♍10'49	
min. Earth dist.	1957 Apr 22 12:26	1°♍12'43	29.32314 AU	opposition	1966 May 11 23:49	20°♍48'48	1°48'34
	1957 Jun 15 20:11	30°♃		min. Earth dist.	1966 May 12 18:11	20°♍47'33	29.31308 AU
direct	1957 Jul 11 17:50	29°♃49'32		direct	1966 Aug 01 04:30	19°♍24'21	
	1957 Aug 06 08:21	0°♍		conjunction	1966 Nov 14 17:43	21°♍54'24	1°41'18
max. Earth dist.	1957 Oct 25 02:25	2°♍18'08	31.32317 AU	minimum elong	1966 Nov 14 17:43	21°♍54'24	1°41'19
				max. Earth dist.	1966 Nov 13 23:19	21°♍52'41	31.31202 AU
conjunction	1957 Oct 26 00:39	2°♍20'13	1°41'47	retrograde	1967 Feb 24 22:06	24°♍21'16	
minimum elong	1957 Oct 26 00:39	2°♍20'13	1°41'47	opposition	1967 May 14 11:34	22°♍59'16	1°47'49
retrograde	1958 Feb 05 03:15	4°♍46'47		min. Earth dist.	1967 May 15 04:21	22°♍58'07	29.31313 AU
opposition	1958 Apr 24 02:31	3°♍24'59	1°49'01	direct	1967 Aug 03 15:20	21°♍34'52	
min. Earth dist.	1958 Apr 24 22:52	3°♍23'36	29.32518 AU	max. Earth dist.	1967 Nov 16 09:33	24°♍03'14	31.31208 AU
direct	1958 Jul 14 05:52	2°♍00'22					
conjunction	1958 Oct 28 10:55	4°♍31'00	1°42'19				
minimum elong	1958 Oct 28 10:54	4°♍31'00	1°42'19				
max. Earth dist.	1958 Oct 27 12:51	4°♍28'56	31.32440 AU				
retrograde	1959 Feb 07 13:36	6°♍57'35					
opposition	1959 Apr 26 14:09	5°♍35'47	1°49'31				

conjunction	1967 Nov 17 03:19	24° \mathbb{L} 04'54	1°40'31	minimum elong	1975 Dec 04 07:21	11° \mathbb{A} 30'46	1°29'12
minimum elong	1967 Nov 17 03:19	24° \mathbb{L} 04'54	1°40'30	max. Earth dist.	1975 Dec 03 17:46	11° \mathbb{A} 29'29	31.28266 AU
retrograde	1968 Feb 27 08:55	26° \mathbb{L} 31'52		retrograde	1976 Mar 15 20:39	13° \mathbb{A} 58'18	
opposition	1968 May 15 23:33	25° \mathbb{L} 09'52	1°46'54	opposition	1976 Jun 03 01:20	12° \mathbb{A} 35'57	1°34'15
min. Earth dist.	1968 May 16 16:49	25° \mathbb{L} 08'42	29.31317 AU	min. Earth dist.	1976 Jun 03 13:32	12° \mathbb{A} 35'07	29.28041 AU
direct	1968 Aug 05 01:17	23° \mathbb{L} 45'34		direct	1976 Aug 23 02:04	11° \mathbb{A} 11'49	
conjunction	1968 Nov 18 12:57	26° \mathbb{L} 15'33	1°39'35	conjunction	1976 Dec 05 16:36	13° \mathbb{A} 41'09	1°27'12
minimum elong	1968 Nov 18 12:57	26° \mathbb{L} 15'33	1°39'35	minimum elong	1976 Dec 05 16:37	13° \mathbb{A} 41'09	1°27'12
max. Earth dist.	1968 Nov 17 20:06	26° \mathbb{L} 13'58	31.31201 AU	max. Earth dist.	1976 Dec 05 03:55	13° \mathbb{A} 39'57	31.27682 AU
retrograde	1969 Feb 28 20:20	28° \mathbb{L} 42'36		retrograde	1977 Mar 18 07:35	16° \mathbb{A} 08'47	
opposition	1969 May 18 11:36	27° \mathbb{L} 20'37	1°45'50	opposition	1977 Jun 05 13:50	14° \mathbb{A} 46'22	1°32'02
min. Earth dist.	1969 May 19 03:41	27° \mathbb{L} 19'32	29.31268 AU	min. Earth dist.	1977 Jun 06 01:57	14° \mathbb{A} 45'32	29.27513 AU
direct	1969 Aug 07 14:55	25° \mathbb{L} 56'23		direct	1977 Aug 25 12:07	13° \mathbb{A} 22'16	
conjunction	1969 Nov 20 22:25	28° \mathbb{L} 26'19	1°38'31	conjunction	1977 Dec 08 01:48	15° \mathbb{A} 51'31	1°25'04
minimum elong	1969 Nov 20 22:25	28° \mathbb{L} 26'19	1°38'30	minimum elong	1977 Dec 08 01:48	15° \mathbb{A} 51'31	1°25'04
max. Earth dist.	1969 Nov 20 05:20	28° \mathbb{L} 24'43	31.31111 AU	max. Earth dist.	1977 Dec 07 14:40	15° \mathbb{A} 50'28	31.27210 AU
retrograde	1970 Jan 04 19:54	0° \mathbb{A}		retrograde	1978 Mar 20 18:47	18° \mathbb{A} 19'15	
retrograde	1970 Mar 03 09:01	0° \mathbb{A} 53'28		opposition	1978 Jun 08 02:11	16° \mathbb{A} 56'48	1°29'42
opposition	1970 May 03 01:32	30° \mathbb{L}		min. Earth dist.	1978 Jun 08 12:35	16° \mathbb{A} 56'06	29.27073 AU
min. Earth dist.	1970 May 20 23:45	29° \mathbb{L} 31'28	1°44'36	direct	1978 Aug 28 00:54	15° \mathbb{A} 32'45	
direct	1970 May 21 15:50	29° \mathbb{L} 30'23	29.31135 AU	conjunction	1978 Dec 10 11:00	18° \mathbb{A} 01'57	1°22'49
retrograde	1970 Aug 10 02:21	28° \mathbb{L} 07'17		minimum elong	1978 Dec 10 11:00	18° \mathbb{A} 01'57	1°22'49
retrograde	1970 Nov 06 16:31	0° \mathbb{A}		max. Earth dist.	1978 Dec 09 23:58	18° \mathbb{A} 00'55	31.26819 AU
conjunction	1970 Nov 23 08:07	0° \mathbb{A} 37'11	1°37'18	retrograde	1979 Mar 23 07:35	20° \mathbb{A} 29'49	
minimum elong	1970 Nov 23 08:07	0° \mathbb{A} 37'11	1°37'18	opposition	1979 Jun 10 14:33	19° \mathbb{A} 07'21	1°27'13
max. Earth dist.	1970 Nov 22 16:16	0° \mathbb{A} 35'41	31.30917 AU	min. Earth dist.	1979 Jun 11 00:25	19° \mathbb{A} 06'41	29.26719 AU
retrograde	1971 Mar 05 18:07	3° \mathbb{A} 04'24		direct	1979 Aug 30 11:15	17° \mathbb{A} 43'22	
opposition	1971 May 23 11:49	1° \mathbb{A} 42'23	1°43'14	conjunction	1979 Dec 12 20:21	20° \mathbb{A} 12'33	1°20'26
min. Earth dist.	1971 May 24 03:34	1° \mathbb{A} 41'19	29.30865 AU	minimum elong	1979 Dec 12 20:21	20° \mathbb{A} 12'33	1°20'26
direct	1971 Aug 12 15:14	0° \mathbb{A} 18'14		max. Earth dist.	1979 Dec 12 11:11	20° \mathbb{A} 11'41	31.26491 AU
conjunction	1971 Nov 25 17:43	2° \mathbb{A} 48'04	1°35'56	retrograde	1980 Mar 24 17:42	22° \mathbb{A} 40'33	
minimum elong	1971 Nov 25 17:43	2° \mathbb{A} 48'04	1°35'56	opposition	1980 Jun 12 03:11	21° \mathbb{A} 18'05	1°24'37
max. Earth dist.	1971 Nov 25 01:09	2° \mathbb{A} 46'30	31.30587 AU	min. Earth dist.	1980 Jun 12 12:09	21° \mathbb{A} 17'28	29.26389 AU
retrograde	1972 Mar 07 05:19	5° \mathbb{A} 15'21		direct	1980 Aug 31 23:38	19° \mathbb{A} 54'11	
opposition	1972 May 25 00:06	3° \mathbb{A} 53'18	1°41'43	conjunction	1980 Dec 14 05:26	22° \mathbb{A} 23'20	1°17'56
min. Earth dist.	1972 May 25 15:11	3° \mathbb{A} 52'16	29.30469 AU	minimum elong	1980 Dec 14 05:26	22° \mathbb{A} 23'20	1°17'56
direct	1972 Aug 14 03:09	2° \mathbb{A} 29'10		max. Earth dist.	1980 Dec 13 20:06	22° \mathbb{A} 22'27	31.26173 AU
conjunction	1972 Nov 27 03:16	4° \mathbb{A} 58'55	1°34'27	retrograde	1981 Mar 27 06:08	24° \mathbb{A} 51'29	
minimum elong	1972 Nov 27 03:17	4° \mathbb{A} 58'55	1°34'28	opposition	1981 Jun 14 15:51	23° \mathbb{A} 29'00	1°21'53
max. Earth dist.	1972 Nov 26 12:13	4° \mathbb{A} 57'30	31.30121 AU	min. Earth dist.	1981 Jun 14 23:46	23° \mathbb{A} 28'28	29.26059 AU
retrograde	1973 Mar 09 14:32	7° \mathbb{A} 26'16		direct	1981 Sep 03 11:07	22° \mathbb{A} 05'12	
opposition	1973 May 27 12:31	6° \mathbb{A} 04'09	1°40'03	conjunction	1981 Dec 16 14:53	24° \mathbb{A} 34'19	1°15'19
min. Earth dist.	1973 May 28 03:48	6° \mathbb{A} 03'07	29.29935 AU	minimum elong	1981 Dec 16 14:53	24° \mathbb{A} 34'19	1°15'19
direct	1973 Aug 16 16:06	4° \mathbb{A} 40'02		max. Earth dist.	1981 Dec 16 07:18	24° \mathbb{A} 33'36	31.25813 AU
conjunction	1973 Nov 29 12:42	7° \mathbb{A} 09'40	1°32'50	retrograde	1982 Mar 29 16:38	27° \mathbb{A} 02'37	
minimum elong	1973 Nov 29 12:42	7° \mathbb{A} 09'40	1°32'50	opposition	1982 Jun 17 04:31	25° \mathbb{A} 40'08	1°19'01
max. Earth dist.	1973 Nov 28 21:18	7° \mathbb{A} 08'13	31.29549 AU	min. Earth dist.	1982 Jun 17 12:32	25° \mathbb{A} 39'36	29.25658 AU
retrograde	1974 Mar 12 01:20	9° \mathbb{A} 37'05		direct	1982 Sep 05 23:36	24° \mathbb{A} 16'24	
opposition	1974 May 30 00:40	8° \mathbb{A} 14'53	1°38'15	conjunction	1982 Dec 19 00:14	26° \mathbb{A} 45'29	1°12'35
min. Earth dist.	1974 May 30 14:30	8° \mathbb{A} 13'57	29.29320 AU	minimum elong	1982 Dec 19 00:15	26° \mathbb{A} 45'29	1°12'36
direct	1974 Aug 19 03:38	6° \mathbb{A} 50'46		max. Earth dist.	1982 Dec 18 16:25	26° \mathbb{A} 44'45	31.25374 AU
conjunction	1974 Dec 01 22:08	9° \mathbb{A} 20'17	1°31'05	retrograde	1983 Apr 01 04:27	29° \mathbb{A} 13'57	
minimum elong	1974 Dec 01 22:08	9° \mathbb{A} 20'17	1°31'05	opposition	1983 Jun 19 17:15	27° \mathbb{A} 51'27	1°16'03
max. Earth dist.	1974 Dec 01 07:57	9° \mathbb{A} 18'57	31.28905 AU	min. Earth dist.	1983 Jun 19 23:46	27° \mathbb{A} 51'00	29.25155 AU
retrograde	1975 Mar 14 10:02	11° \mathbb{A} 47'46		direct	1983 Sep 08 11:00	26° \mathbb{A} 27'47	
opposition	1975 Jun 01 13:03	10° \mathbb{A} 25'29	1°36'19	conjunction	1983 Dec 21 09:41	28° \mathbb{A} 56'49	1°09'45
min. Earth dist.	1975 Jun 02 03:12	10° \mathbb{A} 24'31	29.28664 AU	minimum elong	1983 Dec 21 09:41	28° \mathbb{A} 56'49	1°09'45
direct	1975 Aug 21 14:53	9° \mathbb{A} 01'21		max. Earth dist.	1983 Dec 21 02:52	28° \mathbb{A} 56'11	31.24799 AU
conjunction	1975 Dec 04 07:20	11° \mathbb{A} 30'46	1°29'12	retrograde	1984 Jan 19 02:55	0° \mathbb{A}	

retrograde	1984 Apr 02 14:04	1°☾25'26		opposition	1992 Jul 09 13:25	17°☾34'20	0°44'58
opposition	1984 Jun 21 06:15	0°☾02'54	1°12'58	min. Earth dist.	1992 Jul 09 12:14	17°☾34'25	29.17464 AU
min. Earth dist.	1984 Jun 21 13:12	0°☾02'26	29.24510 AU	direct	1992 Sep 27 18:35	16°☾10'51	
	1984 Jun 23 01:10	30°♁					
direct	1984 Sep 09 22:13	28°♁39'17		conjunction	1993 Jan 08 22:03	18°☾39'20	0°40'18
	1984 Nov 21 13:20	0°☾		minimum elong	1993 Jan 08 22:03	18°☾39'20	0°40'19
				max. Earth dist.	1993 Jan 08 23:01	18°☾39'25	31.17101 AU
conjunction	1984 Dec 22 19:10	1°☾08'16	1°06'49	retrograde	1993 Apr 22 22:32	21°☾09'09	
minimum elong	1984 Dec 22 19:11	1°☾08'16	1°06'50	opposition	1993 Jul 12 02:31	19°☾45'59	0°41'06
max. Earth dist.	1984 Dec 22 12:45	1°☾07'39	31.24093 AU	min. Earth dist.	1993 Jul 12 01:26	19°☾46'03	29.16777 AU
retrograde	1985 Apr 05 01:26	3°☾37'01		direct	1993 Sep 30 06:09	18°☾22'34	
opposition	1985 Jun 23 19:05	2°☾14'25	1°09'47				
min. Earth dist.	1985 Jun 24 00:25	2°☾14'04	29.23723 AU	conjunction	1994 Jan 11 07:32	20°☾51'01	0°36'39
direct	1985 Sep 12 09:16	0°☾50'49		minimum elong	1994 Jan 11 07:33	20°☾51'01	0°36'39
				max. Earth dist.	1994 Jan 11 09:22	20°☾51'11	31.16421 AU
conjunction	1985 Dec 25 04:35	3°☾19'44	1°03'48	retrograde	1994 Apr 25 10:36	23°☾21'00	
minimum elong	1985 Dec 25 04:35	3°☾19'44	1°03'48	opposition	1994 Jul 14 15:31	21°☾57'48	0°37'11
max. Earth dist.	1985 Dec 24 22:28	3°☾19'10	31.23237 AU	min. Earth dist.	1994 Jul 14 12:38	21°☾58'00	29.16069 AU
retrograde	1986 Apr 07 12:51	5°☾48'37		direct	1994 Oct 02 17:47	20°☾34'26	
opposition	1986 Jun 26 08:03	4°☾25'57	1°06'30				
min. Earth dist.	1986 Jun 26 13:47	4°☾25'34	29.22806 AU	conjunction	1995 Jan 13 17:06	23°☾02'51	0°32'57
direct	1986 Sep 14 19:39	3°☾02'21		minimum elong	1995 Jan 13 17:06	23°☾02'51	0°32'57
				max. Earth dist.	1995 Jan 13 19:17	23°☾03'03	31.15681 AU
conjunction	1986 Dec 27 14:04	5°☾31'11	1°00'41	retrograde	1995 Apr 27 22:14	25°☾33'01	
minimum elong	1986 Dec 27 14:04	5°☾31'11	1°00'41	opposition	1995 Jul 17 04:42	24°☾09'46	0°33'12
max. Earth dist.	1986 Dec 27 09:16	5°☾30'44	31.22277 AU	min. Earth dist.	1995 Jul 17 02:08	24°☾09'57	29.15299 AU
retrograde	1987 Apr 10 00:12	8°☾00'10		direct	1995 Oct 05 03:56	22°☾46'27	
opposition	1987 Jun 28 20:47	6°☾37'24	1°03'08				
min. Earth dist.	1987 Jun 29 01:04	6°☾37'07	29.21798 AU	conjunction	1996 Jan 16 02:54	25°☾14'50	0°29'12
direct	1987 Sep 17 08:22	5°☾13'48		minimum elong	1996 Jan 16 02:54	25°☾14'50	0°29'12
				max. Earth dist.	1996 Jan 16 06:28	25°☾15'11	31.14869 AU
conjunction	1987 Dec 29 23:20	7°☾42'33	0°57'29	retrograde	1996 Apr 29 09:52	27°☾45'11	
minimum elong	1987 Dec 29 23:21	7°☾42'33	0°57'28	opposition	1996 Jul 18 17:55	26°☾21'53	0°29'10
max. Earth dist.	1987 Dec 29 18:31	7°☾42'06	31.21262 AU	min. Earth dist.	1996 Jul 18 13:59	26°☾22'09	29.14422 AU
retrograde	1988 Apr 11 13:17	10°☾11'39		direct	1996 Oct 06 15:55	24°☾58'36	
opposition	1988 Jun 30 09:46	8°☾48'47	0°59'40				
min. Earth dist.	1988 Jun 30 13:28	8°☾48'32	29.20793 AU	conjunction	1997 Jan 17 12:34	27°☾26'57	0°25'25
direct	1988 Sep 18 18:19	7°☾25'11		minimum elong	1997 Jan 17 12:34	27°☾26'57	0°25'25
				max. Earth dist.	1997 Jan 17 15:45	27°☾27'15	31.13932 AU
conjunction	1988 Dec 31 08:39	9°☾53'51	0°54'12	retrograde	1997 May 01 23:20	29°☾57'28	
minimum elong	1988 Dec 31 08:39	9°☾53'51	0°54'12	opposition	1997 Jul 21 07:15	28°☾34'06	0°25'05
max. Earth dist.	1988 Dec 31 05:54	9°☾53'35	31.20275 AU	min. Earth dist.	1997 Jul 21 03:09	28°☾34'22	29.13425 AU
retrograde	1989 Apr 13 23:35	12°☾23'04		direct	1997 Oct 09 01:28	27°☾10'49	
opposition	1989 Jul 02 22:43	11°☾00'07	0°56'07				
min. Earth dist.	1989 Jul 03 01:16	10°☾59'57	29.19830 AU	conjunction	1998 Jan 19 22:34	29°☾39'08	0°21'35
direct	1989 Sep 21 06:53	9°☾36'31		minimum elong	1998 Jan 19 22:34	29°☾39'08	0°21'35
				max. Earth dist.	1998 Jan 20 03:15	29°☾39'34	31.12863 AU
conjunction	1990 Jan 02 17:55	12°☾05'07	0°50'50		1998 Jan 29 02:52	0°♁	
minimum elong	1990 Jan 02 17:56	12°☾05'07	0°50'50	retrograde	1998 May 04 10:39	2°♁09'47	
max. Earth dist.	1990 Jan 02 15:12	12°☾04'52	31.19362 AU	opposition	1998 Jul 23 20:19	0°♁46'20	0°20'58
retrograde	1990 Apr 16 12:55	14°☾34'28		min. Earth dist.	1998 Jul 23 15:35	0°♁46'39	29.12281 AU
opposition	1990 Jul 05 11:27	13°☾11'26	0°52'29		1998 Aug 23 00:13	30°☾	
min. Earth dist.	1990 Jul 05 12:38	13°☾11'21	29.18966 AU	direct	1998 Oct 11 14:03	29°☾23'03	
direct	1990 Sep 23 18:36	11°☾47'51			1998 Nov 28 01:19	0°♁	
conjunction	1991 Jan 05 03:22	14°☾16'25	0°47'24	conjunction	1999 Jan 22 08:22	1°♁51'19	0°17'44
minimum elong	1991 Jan 05 03:22	14°☾16'25	0°47'24	minimum elong	1999 Jan 22 08:22	1°♁51'19	0°17'44
max. Earth dist.	1991 Jan 05 02:38	14°☾16'21	31.18539 AU	max. Earth dist.	1999 Jan 22 12:39	1°♁51'43	31.11675 AU
retrograde	1991 Apr 19 00:11	16°☾45'55		retrograde	1999 May 07 00:51	4°♁22'06	
opposition	1991 Jul 08 00:27	15°☾22'49	0°48'46	opposition	1999 Jul 26 09:32	2°♁58'33	0°16'50
min. Earth dist.	1991 Jul 08 01:14	15°☾22'46	29.18179 AU	min. Earth dist.	1999 Jul 26 03:52	2°♁58'56	29.11053 AU
direct	1991 Sep 26 07:13	13°☾59'18		direct	1999 Oct 14 01:35	1°♁35'15	
conjunction	1992 Jan 07 12:35	16°☾27'48	0°43'53	conjunction	2000 Jan 24 18:08	4°♁03'28	0°13'51
minimum elong	1992 Jan 07 12:36	16°☾27'48	0°43'53	minimum elong	2000 Jan 24 18:08	4°♁03'28	0°13'50
max. Earth dist.	1992 Jan 07 12:15	16°☾27'46	31.17800 AU	behind sun begin	2000 Jan 24 14:40	4°♁03'09	
retrograde	1992 Apr 20 12:14	18°☾57'27		behind sun end	2000 Jan 24 21:37	4°♁03'47	

max. Earth dist.	2000 Jan 25 00:11	4°04'02"	31.10414 AU	conjunction	2007 Feb 08 15:52	19°29'57"	0°-13'-42"
retrograde	2000 May 08 12:30	6°34'24"		minimum elong	2007 Feb 08 15:52	19°29'57"	0°13'42"
opposition	2000 Jul 27 22:49	5°10'43"	0°12'40"	behind sun begin	2007 Feb 08 12:19	19°29'37"	
min. Earth dist.	2000 Jul 27 16:54	5°11'07"	29.09784 AU	behind sun end	2007 Feb 08 19:25	19°30'16"	
direct	2000 Oct 15 14:12	3°47'25"		max. Earth dist.	2007 Feb 09 04:43	19°31'09"	31.03604 AU
				retrograde	2007 May 25 01:08	22°02'03"	
conjunction	2001 Jan 26 03:55	6°15'34"	0°09'57"	opposition	2007 Aug 13 18:25	20°37'59"	0°-16'-43"
minimum elong	2001 Jan 26 03:55	6°15'34"	0°09'58"	min. Earth dist.	2007 Aug 13 05:39	20°38'51"	29.03236 AU
behind sun begin	2001 Jan 25 22:41	6°15'06"		direct	2007 Oct 31 20:07	19°14'53"	
behind sun end	2001 Jan 26 09:08	6°16'03"					
max. Earth dist.	2001 Jan 26 10:19	6°16'10"	31.09168 AU	conjunction	2008 Feb 11 02:04	21°43'00"	0°-17'-36"
retrograde	2001 May 11 01:13	8°46'38"		minimum elong	2008 Feb 11 02:03	21°43'00"	0°17'37"
opposition	2001 Jul 30 11:48	7°22'51"	0°08'29"	max. Earth dist.	2008 Feb 11 14:36	21°44'10"	31.02846 AU
min. Earth dist.	2001 Jul 30 04:04	7°23'23"	29.08570 AU	retrograde	2008 May 26 16:14	24°15'17"	
direct	2001 Oct 18 01:49	5°59'32"		opposition	2008 Aug 15 07:43	22°51'10"	0°-20'-53"
				min. Earth dist.	2008 Aug 14 18:10	22°52'05"	29.02459 AU
conjunction	2002 Jan 28 13:45	8°27'40"	0°06'03"	direct	2008 Nov 02 06:38	21°28'06"	
minimum elong	2002 Jan 28 13:45	8°27'40"	0°06'03"				
behind sun begin	2002 Jan 28 07:39	8°27'07"		conjunction	2009 Feb 12 12:41	23°56'13"	0°-21'-29"
behind sun end	2002 Jan 28 19:51	8°28'13"		minimum elong	2009 Feb 12 12:41	23°56'13"	0°21'29"
max. Earth dist.	2002 Jan 28 21:22	8°28'22"	31.07984 AU	max. Earth dist.	2009 Feb 13 02:35	23°57'32"	31.02018 AU
retrograde	2002 May 13 12:10	10°58'52"		retrograde	2009 May 29 04:30	26°28'40"	
opposition	2002 Aug 02 00:57	9°35'01"	0°04'17"	opposition	2009 Aug 17 20:55	25°04'30"	0°-25'-2"
min. Earth dist.	2002 Aug 01 17:08	9°35'33"	29.07441 AU	min. Earth dist.	2009 Aug 17 07:34	25°05'25"	29.01586 AU
direct	2002 Oct 20 13:52	8°11'42"		direct	2009 Nov 04 18:10	23°41'27"	
conjunction	2003 Jan 30 23:34	10°39'48"	0°02'07"	conjunction	2010 Feb 14 23:19	26°09'34"	0°-25'-20"
minimum elong	2003 Jan 30 23:34	10°39'48"	0°02'07"	minimum elong	2010 Feb 14 23:19	26°09'34"	0°25'21"
behind sun begin	2003 Jan 30 17:11	10°39'14"		max. Earth dist.	2010 Feb 15 13:02	26°10'52"	31.01097 AU
behind sun end	2003 Jan 31 05:58	10°40'23"		retrograde	2010 May 31 18:48	28°42'09"	
max. Earth dist.	2003 Jan 31 08:22	10°40'37"	31.06917 AU	opposition	2010 Aug 20 10:07	27°17'54"	0°-29'-8"
retrograde	2003 May 16 00:46	13°11'10"		min. Earth dist.	2010 Aug 19 19:32	27°18'54"	29.00607 AU
opposition	2003 Aug 04 13:54	11°47'15"	0°00'05"	direct	2010 Nov 07 06:04	25°54'50"	
min. Earth dist.	2003 Aug 04 03:57	11°47'56"	29.06429 AU				
desc. node	2003 Aug 11 05:47	11°36'25"		conjunction	2011 Feb 17 09:56	28°22'57"	0°-29'-9"
direct	2003 Oct 23 01:54	10°23'58"		minimum elong	2011 Feb 17 09:56	28°22'57"	0°29'10"
				max. Earth dist.	2011 Feb 18 00:13	28°24'18"	31.00052 AU
conjunction	2004 Feb 02 09:29	12°52'04"	0°-1'-55"		2011 Apr 04 13:51	0°	
minimum elong	2004 Feb 02 09:29	12°52'04"	0°01'57"	retrograde	2011 Jun 03 07:28	0°55'39"	
behind sun begin	2004 Feb 02 03:05	12°51'29"			2011 Aug 05 02:53	30°	
behind sun end	2004 Feb 02 15:53	12°52'38"		opposition	2011 Aug 22 23:26	29°31'18"	0°-33'-12"
max. Earth dist.	2004 Feb 02 18:51	12°52'56"	31.05962 AU	min. Earth dist.	2011 Aug 22 09:20	29°32'16"	28.99521 AU
retrograde	2004 May 17 12:13	15°23'37"		direct	2011 Nov 09 18:54	28°08'13"	
opposition	2004 Aug 06 03:08	13°59'38"	0°-4'-7"		2012 Feb 03 19:03	0°	
min. Earth dist.	2004 Aug 05 17:08	14°00'19"	29.05539 AU				
direct	2004 Oct 24 11:56	12°36'24"		conjunction	2012 Feb 19 20:41	0°36'17"	0°-32'-55"
				minimum elong	2012 Feb 19 20:40	0°36'17"	0°32'57"
conjunction	2005 Feb 03 19:28	15°04'29"	0°-5'-52"	max. Earth dist.	2012 Feb 20 11:43	0°37'42"	30.98943 AU
minimum elong	2005 Feb 03 19:29	15°04'29"	0°05'53"	retrograde	2012 Jun 04 21:04	3°09'05"	
behind sun begin	2005 Feb 03 13:21	15°03'55"		opposition	2012 Aug 24 12:32	1°44'38"	0°-37'-12"
behind sun end	2005 Feb 04 01:37	15°05'02"		min. Earth dist.	2012 Aug 23 20:49	1°45'43"	28.98393 AU
max. Earth dist.	2005 Feb 04 06:42	15°05'32"	31.05123 AU	direct	2012 Nov 11 07:52	0°21'31"	
retrograde	2005 May 19 23:35	17°36'13"					
opposition	2005 Aug 08 16:11	16°12'12"	0°-8'-20"	conjunction	2013 Feb 21 07:19	2°49'32"	0°-36'-39"
min. Earth dist.	2005 Aug 08 04:32	16°13'00"	29.04732 AU	minimum elong	2013 Feb 21 07:18	2°49'32"	0°36'40"
direct	2005 Oct 26 23:24	14°49'01"		max. Earth dist.	2013 Feb 21 22:31	2°50'58"	30.97808 AU
				retrograde	2013 Jun 07 08:25	5°22'27"	
conjunction	2006 Feb 06 05:33	17°17'06"	0°-9'-47"	min. Earth dist.	2013 Aug 26 10:22	3°58'57"	28.97285 AU
minimum elong	2006 Feb 06 05:33	17°17'06"	0°09'48"	opposition	2013 Aug 27 01:43	3°57'54"	0°-41'-10"
behind sun begin	2006 Feb 06 00:16	17°16'38"		direct	2013 Nov 13 18:42	2°34'44"	
behind sun end	2006 Feb 06 10:49	17°17'35"					
max. Earth dist.	2006 Feb 06 16:36	17°18'08"	31.04347 AU	conjunction	2014 Feb 23 18:11	5°02'43"	0°-40'-19"
retrograde	2006 May 22 13:05	19°49'01"		minimum elong	2014 Feb 23 18:11	5°02'43"	0°40'20"
opposition	2006 Aug 11 05:14	18°24'59"	0°-12'-32"	max. Earth dist.	2014 Feb 24 11:00	5°04'19"	30.96727 AU
min. Earth dist.	2006 Aug 10 17:18	18°25'48"	29.03985 AU	retrograde	2014 Jun 09 19:50	7°35'44"	
direct	2006 Oct 29 07:56	17°01'50"		opposition	2014 Aug 29 14:33	6°11'06"	0°-45'-4"
				min. Earth dist.	2014 Aug 28 21:42	6°12'15"	28.96247 AU

direct	2014 Nov 16 07:06	4° ♄ 47'55		minimum elong	2023 Mar 15 23:39	25° ♄ 06'58	1°10'08
				max. Earth dist.	2023 Mar 16 21:04	25° ♄ 09'00	30.90527 AU
conjunction	2015 Feb 26 04:55	7° ♄ 15'54	0°-43'-56	retrograde	2023 Jun 30 21:07	27° ♄ 41'13	
minimum elong	2015 Feb 26 04:54	7° ♄ 15'54	0°43'56	opposition	2023 Sep 19 11:17	26° ♄ 16'17	-1°-16'-33
max. Earth dist.	2015 Feb 26 21:31	7° ♄ 17'28	30.95741 AU	min. Earth dist.	2023 Sep 18 14:37	26° ♄ 17'43	28.90182 AU
retrograde	2015 Jun 12 09:08	9° ♄ 49'02		direct	2023 Dec 06 13:22	24° ♄ 53'17	
min. Earth dist.	2015 Aug 31 10:28	8° ♄ 25'30	28.95335 AU				
opposition	2015 Sep 01 03:38	8° ♄ 24'19	0°-48'-54	conjunction	2024 Mar 17 11:22	27° ♄ 21'34	-1°-12'-59
direct	2015 Nov 18 16:31	7° ♄ 01'08		minimum elong	2024 Mar 17 11:22	27° ♄ 21'34	1°13'00
				max. Earth dist.	2024 Mar 18 07:53	27° ♄ 23'31	30.89687 AU
conjunction	2016 Feb 28 15:47	9° ♄ 29'07	0°-47'-29	retrograde	2024 Jul 02 10:41	29° ♄ 55'55	
minimum elong	2016 Feb 28 15:47	9° ♄ 29'07	0°47'30	min. Earth dist.	2024 Sep 20 04:06	28° ♄ 32'18	28.89315 AU
max. Earth dist.	2016 Feb 29 10:18	9° ♄ 30'52	30.94884 AU	opposition	2024 Sep 21 00:16	28° ♄ 30'54	-1°-19'-33
retrograde	2016 Jun 13 20:42	12° ♄ 02'24		direct	2024 Dec 07 23:43	27° ♄ 07'52	
opposition	2016 Sep 02 16:38	10° ♄ 37'37	0°-52'-39				
min. Earth dist.	2016 Sep 01 22:27	10° ♄ 38'53	28.94541 AU	conjunction	2025 Mar 19 23:25	29° ♄ 36'08	-1°-15'-44
direct	2016 Nov 20 04:38	9° ♄ 14'28		minimum elong	2025 Mar 19 23:25	29° ♄ 36'08	1°15'44
				max. Earth dist.	2025 Mar 20 21:10	29° ♄ 38'12	30.88792 AU
conjunction	2017 Mar 02 02:44	11° ♄ 42'27	0°-50'-58		2025 Mar 30 12:00	0° ♄	
minimum elong	2017 Mar 02 02:44	11° ♄ 42'27	0°50'58	retrograde	2025 Jul 04 21:33	2° ♄ 10'32	
max. Earth dist.	2017 Mar 02 21:01	11° ♄ 44'11	30.94156 AU	opposition	2025 Sep 23 12:53	0° ♄ 45'27	-1°-22'-25
retrograde	2017 Jun 16 11:10	14° ♄ 15'53		min. Earth dist.	2025 Sep 22 16:17	0° ♄ 46'53	28.88416 AU
min. Earth dist.	2017 Sep 04 10:28	12° ♄ 52'23	28.93878 AU		2025 Oct 22 09:46	30° ♄	
opposition	2017 Sep 05 05:27	12° ♄ 51'04	0°-56'-21	direct	2025 Dec 10 12:24	29° ♄ 22'21	
direct	2017 Nov 22 14:20	11° ♄ 27'56			2026 Jan 26 17:38	0° ♄	
conjunction	2018 Mar 04 13:54	13° ♄ 55'58	0°-54'-22	conjunction	2026 Mar 22 11:18	1° ♄ 50'38	-1°-18'-22
minimum elong	2018 Mar 04 13:54	13° ♄ 55'58	0°54'24	minimum elong	2026 Mar 22 11:18	1° ♄ 50'38	1°18'23
max. Earth dist.	2018 Mar 05 09:42	13° ♄ 57'51	30.93528 AU	max. Earth dist.	2026 Mar 23 08:22	1° ♄ 52'37	30.87908 AU
retrograde	2018 Jun 18 23:26	16° ♄ 29'33		retrograde	2026 Jul 07 10:54	4° ♄ 25'05	
opposition	2018 Sep 07 18:27	15° ♄ 04'44	0°-59'-57	min. Earth dist.	2026 Sep 25 04:36	3° ♄ 01'23	28.87568 AU
min. Earth dist.	2018 Sep 06 23:26	15° ♄ 06'02	28.93292 AU	opposition	2026 Sep 26 01:36	2° ♄ 59'55	-1°-25'-10
direct	2018 Nov 25 01:08	13° ♄ 41'38		direct	2026 Dec 12 22:18	1° ♄ 36'46	
conjunction	2019 Mar 07 01:00	16° ♄ 09'43	0°-57'-42	conjunction	2027 Mar 24 23:12	4° ♄ 05'03	-1°-20'-52
minimum elong	2019 Mar 07 01:00	16° ♄ 09'43	0°57'43	minimum elong	2027 Mar 24 23:12	4° ♄ 05'03	1°20'53
max. Earth dist.	2019 Mar 07 20:55	16° ♄ 11'36	30.92980 AU	max. Earth dist.	2027 Mar 25 21:36	4° ♄ 07'11	30.87085 AU
retrograde	2019 Jun 21 14:35	18° ♄ 43'27		retrograde	2027 Jul 09 22:41	6° ♄ 39'34	
min. Earth dist.	2019 Sep 09 11:07	17° ♄ 20'01	28.92767 AU	opposition	2027 Sep 28 14:18	5° ♄ 14'20	-1°-27'-48
opposition	2019 Sep 10 07:24	17° ♄ 18'37	-1°-3'-28	min. Earth dist.	2027 Sep 27 17:22	5° ♄ 15'48	28.86800 AU
direct	2019 Nov 27 12:32	15° ♄ 55'34		direct	2027 Dec 15 09:06	3° ♄ 51'09	
conjunction	2020 Mar 08 12:23	18° ♄ 23'42	-1°00'-57	conjunction	2028 Mar 26 11:15	6° ♄ 19'27	-1°-23'-16
minimum elong	2020 Mar 08 12:23	18° ♄ 23'42	1°00'59	minimum elong	2028 Mar 26 11:15	6° ♄ 19'27	1°23'17
max. Earth dist.	2020 Mar 09 08:53	18° ♄ 25'39	30.92450 AU	max. Earth dist.	2028 Mar 27 09:34	6° ♄ 21'34	30.86382 AU
retrograde	2020 Jun 23 04:31	20° ♄ 57'36		retrograde	2028 Jul 11 13:03	8° ♄ 54'01	
opposition	2020 Sep 11 20:26	19° ♄ 32'46	-1°-6'-53	min. Earth dist.	2028 Sep 29 04:47	7° ♄ 30'16	28.86167 AU
min. Earth dist.	2020 Sep 11 00:50	19° ♄ 34'07	28.92241 AU	opposition	2028 Sep 30 02:48	7° ♄ 28'44	-1°-30'-17
direct	2020 Nov 29 00:36	18° ♄ 09'45		direct	2028 Dec 16 20:43	6° ♄ 05'31	
conjunction	2021 Mar 11 00:01	20° ♄ 37'57	-1°-4'-6	conjunction	2029 Mar 28 23:25	8° ♄ 33'51	-1°-25'-32
minimum elong	2021 Mar 11 00:01	20° ♄ 37'57	1°04'07	minimum elong	2029 Mar 28 23:24	8° ♄ 33'51	1°25'32
max. Earth dist.	2021 Mar 11 20:58	20° ♄ 39'56	30.91906 AU	max. Earth dist.	2029 Mar 29 22:16	8° ♄ 36'00	30.85797 AU
retrograde	2021 Jun 25 19:21	23° ♄ 11'59		retrograde	2029 Jul 14 02:09	11° ♄ 08'28	
opposition	2021 Sep 14 09:21	21° ♄ 47'08	-1°-10'-13	opposition	2029 Oct 02 15:24	9° ♄ 43'09	-1°-32'-38
min. Earth dist.	2021 Sep 13 12:34	21° ♄ 48'34	28.91660 AU	min. Earth dist.	2029 Oct 01 17:56	9° ♄ 44'39	28.85653 AU
direct	2021 Dec 01 13:22	20° ♄ 24'09		direct	2029 Dec 19 08:23	8° ♄ 19'55	
conjunction	2022 Mar 13 11:43	22° ♄ 52'24	-1°-7'-10	conjunction	2030 Mar 31 11:38	10° ♄ 48'17	-1°-27'-40
minimum elong	2022 Mar 13 11:43	22° ♄ 52'23	1°07'11	minimum elong	2030 Mar 31 11:38	10° ♄ 48'17	1°27'41
max. Earth dist.	2022 Mar 14 08:12	22° ♄ 54'20	30.91265 AU	max. Earth dist.	2030 Apr 01 11:01	10° ♄ 50'30	30.85349 AU
retrograde	2022 Jun 28 07:55	25° ♄ 26'33		retrograde	2030 Jul 16 16:28	13° ♄ 22'59	
opposition	2022 Sep 16 22:21	24° ♄ 01'41	-1°-13'-26	min. Earth dist.	2030 Oct 04 04:58	11° ♄ 59'14	28.85260 AU
min. Earth dist.	2022 Sep 16 02:33	24° ♄ 03'03	28.90978 AU	opposition	2030 Oct 05 03:45	11° ♄ 57'38	-1°-34'-51
direct	2022 Dec 04 00:14	22° ♄ 38'42		direct	2030 Dec 21 20:39	10° ♄ 34'24	
conjunction	2023 Mar 15 23:39	25° ♄ 06'58	-1°-10'-8	conjunction	2031 Apr 02 23:54	13° ♄ 02'50	-1°-29'-40

minimum elong	2031 Apr 02 23:54	13° Υ 02'50	1°29'41	minimum elong	2039 Apr 21 06:51	1° Υ 02'27	1°40'35
max. Earth dist.	2031 Apr 03 23:05	13° Υ 05'01	30.85003 AU	max. Earth dist.	2039 Apr 22 05:21	1° Υ 04'34	30.81953 AU
retrograde	2031 Jul 19 06:11	15° Υ 37'35		retrograde	2039 Aug 06 15:57	3° Υ 37'23	
opposition	2031 Oct 07 16:21	14° Υ 12'15	-1°-36'-55	opposition	2039 Oct 25 18:23	2° Υ 11'54	-1°-47'-57
min. Earth dist.	2031 Oct 06 18:23	14° Υ 13'46	28.84970 AU	min. Earth dist.	2039 Oct 24 21:08	2° Υ 13'24	28.81871 AU
direct	2031 Dec 24 07:40	12° Υ 49'01		direct	2040 Jan 11 05:08	0° Υ 48'25	
conjunction	2032 Apr 04 12:24	15° Υ 17'30	-1°-31'-32	conjunction	2040 Apr 22 19:52	3° Υ 17'18	-1°-41'-16
minimum elong	2032 Apr 04 12:23	15° Υ 17'30	1°31'34	minimum elong	2040 Apr 22 19:52	3° Υ 17'18	1°41'17
max. Earth dist.	2032 Apr 05 12:38	15° Υ 19'48	30.84746 AU	max. Earth dist.	2040 Apr 23 17:54	3° Υ 19'22	30.81588 AU
retrograde	2032 Jul 20 20:42	17° Υ 52'19		retrograde	2040 Aug 08 05:24	5° Υ 52'13	
min. Earth dist.	2032 Oct 08 06:00	16° Υ 28'35	28.84726 AU	min. Earth dist.	2040 Oct 26 10:10	4° Υ 28'08	28.81578 AU
opposition	2032 Oct 09 04:44	16° Υ 26'59	-1°-38'-50	opposition	2040 Oct 27 06:23	4° Υ 26'43	-1°-48'-36
direct	2032 Dec 25 21:01	15° Υ 03'47		direct	2041 Jan 12 16:36	3° Υ 03'11	
conjunction	2033 Apr 07 01:01	17° Υ 32'20	-1°-33'-16	conjunction	2041 Apr 25 09:08	5° Υ 32'07	-1°-41'-48
minimum elong	2033 Apr 07 01:01	17° Υ 32'20	1°33'16	minimum elong	2041 Apr 25 09:08	5° Υ 32'07	1°41'48
max. Earth dist.	2033 Apr 08 00:10	17° Υ 34'31	30.84504 AU	max. Earth dist.	2041 Apr 26 07:58	5° Υ 34'17	30.81364 AU
retrograde	2033 Jul 23 10:25	20° Υ 07'13		retrograde	2041 Aug 10 19:55	8° Υ 07'01	
opposition	2033 Oct 11 17:06	18° Υ 41'54	-1°-40'-36	opposition	2041 Oct 29 18:01	6° Υ 41'31	-1°-49'-6
min. Earth dist.	2033 Oct 10 19:14	18° Υ 43'25	28.84484 AU	min. Earth dist.	2041 Oct 28 21:01	6° Υ 43'00	28.81423 AU
direct	2033 Dec 28 07:35	17° Υ 18'41		direct	2042 Jan 15 06:18	5° Υ 17'57	
conjunction	2034 Apr 09 13:56	19° Υ 47'18	-1°-34'-51	conjunction	2042 Apr 27 22:14	7° Υ 46'58	-1°-42'-11
minimum elong	2034 Apr 09 13:56	19° Υ 47'18	1°34'52	minimum elong	2042 Apr 27 22:14	7° Υ 46'58	1°42'13
max. Earth dist.	2034 Apr 10 13:55	19° Υ 49'34	30.84229 AU	max. Earth dist.	2042 Apr 28 20:05	7° Υ 49'02	30.81286 AU
retrograde	2034 Jul 25 22:30	22° Υ 22'14		retrograde	2042 Aug 13 09:09	10° Υ 21'51	
min. Earth dist.	2034 Oct 13 07:33	20° Υ 58'27	28.84173 AU	min. Earth dist.	2042 Oct 31 09:33	8° Υ 57'48	28.81430 AU
opposition	2034 Oct 14 05:29	20° Υ 56'55	-1°-42'-13	opposition	2042 Nov 01 05:55	8° Υ 56'22	-1°-49'-25
direct	2034 Dec 30 20:08	19° Υ 33'42		direct	2043 Jan 17 17:04	7° Υ 32'48	
conjunction	2035 Apr 12 02:39	22° Υ 02'23	-1°-36'-17	conjunction	2043 Apr 30 11:27	10° Υ 01'52	-1°-42'-25
minimum elong	2035 Apr 12 02:39	22° Υ 02'23	1°36'17	minimum elong	2043 Apr 30 11:27	10° Υ 01'52	1°42'25
max. Earth dist.	2035 Apr 13 01:17	22° Υ 04'31	30.83879 AU	max. Earth dist.	2043 May 01 10:23	10° Υ 04'02	30.81365 AU
retrograde	2035 Jul 28 12:27	24° Υ 37'21		retrograde	2043 Aug 15 21:56	12° Υ 36'45	
opposition	2035 Oct 16 17:57	23° Υ 12'01	-1°-43'-41	opposition	2043 Nov 03 17:41	11° Υ 11'18	-1°-49'-35
min. Earth dist.	2035 Oct 15 20:16	23° Υ 13'32	28.83782 AU	min. Earth dist.	2043 Nov 02 21:03	11° Υ 12'45	28.81569 AU
direct	2036 Jan 02 06:32	21° Υ 48'45		direct	2044 Jan 20 05:44	9° Υ 47'44	
conjunction	2036 Apr 13 15:47	24° Υ 17'29	-1°-37'-35	conjunction	2044 May 02 00:48	12° Υ 16'53	-1°-42'-29
minimum elong	2036 Apr 13 15:47	24° Υ 17'29	1°37'36	minimum elong	2044 May 02 00:48	12° Υ 16'53	1°42'31
max. Earth dist.	2036 Apr 14 14:59	24° Υ 19'40	30.83434 AU	max. Earth dist.	2044 May 02 22:29	12° Υ 18'56	30.81573 AU
retrograde	2036 Jul 30 00:18	26° Υ 52'28		retrograde	2044 Aug 17 12:37	14° Υ 51'45	
min. Earth dist.	2036 Oct 17 09:18	25° Υ 28'34	28.83298 AU	min. Earth dist.	2044 Nov 04 08:58	13° Υ 27'47	28.81827 AU
opposition	2036 Oct 18 06:12	25° Υ 27'06	-1°-44'-59	opposition	2044 Nov 05 05:19	13° Υ 26'21	-1°-49'-34
direct	2037 Jan 03 17:44	24° Υ 03'48		direct	2045 Jan 21 16:16	12° Υ 02'47	
conjunction	2037 Apr 16 04:49	26° Υ 32'33	-1°-38'-44	conjunction	2045 May 04 14:26	14° Υ 32'03	-1°-42'-24
minimum elong	2037 Apr 16 04:49	26° Υ 32'33	1°38'44	minimum elong	2045 May 04 14:26	14° Υ 32'03	1°42'25
max. Earth dist.	2037 Apr 17 03:08	26° Υ 34'39	30.82935 AU	max. Earth dist.	2045 May 05 12:45	14° Υ 34'09	30.81855 AU
retrograde	2037 Aug 01 13:56	29° Υ 07'31		retrograde	2045 Aug 20 00:17	17° Υ 06'53	
opposition	2037 Oct 20 18:21	27° Υ 42'07	-1°-46'-8	opposition	2045 Nov 07 17:03	15° Υ 41'33	-1°-49'-23
min. Earth dist.	2037 Oct 19 21:04	27° Υ 43'36	28.82784 AU	min. Earth dist.	2045 Nov 06 21:33	15° Υ 42'56	28.82122 AU
direct	2038 Jan 06 05:32	26° Υ 18'44		direct	2046 Jan 24 03:35	14° Υ 18'00	
conjunction	2038 Apr 18 17:47	28° Υ 47'32	-1°-39'-43	conjunction	2046 May 07 03:58	16° Υ 47'19	-1°-42'-9
minimum elong	2038 Apr 18 17:47	28° Υ 47'32	1°39'45	minimum elong	2046 May 07 03:58	16° Υ 47'19	1°42'11
max. Earth dist.	2038 Apr 19 16:13	28° Υ 49'39	30.82410 AU	max. Earth dist.	2046 May 08 01:07	16° Υ 49'19	30.82159 AU
retrograde	2038 May 22 00:18	0° Υ		retrograde	2046 Aug 22 13:24	19° Υ 22'09	
min. Earth dist.	2038 Oct 21 12:18	30° Υ		min. Earth dist.	2046 Nov 09 09:09	17° Υ 58'14	28.82412 AU
opposition	2038 Oct 22 10:13	29° Υ 58'28	28.82284 AU	opposition	2046 Nov 10 04:43	17° Υ 56'52	-1°-49'-2
direct	2038 Oct 23 06:29	29° Υ 57'03	-1°-47'-7	direct	2047 Jan 26 14:52	16° Υ 33'17	
conjunction	2039 Apr 21 06:52	1° Υ 02'27	-1°-40'-34	conjunction	2047 May 09 17:46	19° Υ 02'42	-1°-41'-45
minimum elong	2039 Mar 23 20:41	0° Υ		minimum elong	2047 May 09 17:46	19° Υ 02'42	1°41'46
max. Earth dist.				max. Earth dist.	2047 May 10 14:36	19° Υ 04'39	30.82412 AU
retrograde				retrograde	2047 Aug 25 01:14	21° Υ 37'28	

opposition	2047 Nov 12 16:27	20° 8 12'13	-1°-48'-31	opposition	2055 Nov 30 10:41	8° II 11'14	-1°-38'-37
min. Earth dist.	2047 Nov 11 22:26	20° 8 13'29	28.82630 AU	min. Earth dist.	2055 Nov 29 19:50	8° II 12'17	28.84376 AU
direct	2048 Jan 29 01:24	18° 8 48'37		direct	2056 Feb 16 02:08	6° II 47'11	
conjunction	2048 May 11 07:40	21° 8 18'05	-1°-41'-12	conjunction	2056 May 29 22:41	9° II 17'05	-1°-31'-21
minimum elong	2048 May 11 07:40	21° 8 18'05	1°41'13	minimum elong	2056 May 29 22:41	9° II 17'05	1°31'23
max. Earth dist.	2048 May 12 03:39	21° 8 19'58	30.82598 AU	max. Earth dist.	2056 May 30 14:39	9° II 18'35	30.84614 AU
retrograde	2048 Aug 26 14:59	23° 8 52'47		retrograde	2056 Sep 13 20:46	11° II 50'56	
min. Earth dist.	2048 Nov 13 09:42	22° 8 28'50	28.82763 AU	opposition	2056 Dec 01 21:48	10° II 25'55	-1°-36'-41
opposition	2048 Nov 14 04:01	22° 8 27'33	-1°-47'-50	min. Earth dist.	2056 Dec 01 08:19	10° II 26'53	28.85056 AU
direct	2049 Jan 30 13:23	21° 8 03'52		direct	2057 Feb 17 12:14	9° II 01'53	
conjunction	2049 May 13 21:32	23° 8 33'23	-1°-40'-29	conjunction	2057 Jun 01 12:43	11° II 31'52	-1°-29'-28
minimum elong	2049 May 13 21:32	23° 8 33'23	1°40'29	minimum elong	2057 Jun 01 12:44	11° II 31'52	1°29'28
max. Earth dist.	2049 May 14 16:21	23° 8 35'09	30.82688 AU	max. Earth dist.	2057 Jun 02 03:53	11° II 33'18	30.85351 AU
retrograde	2049 Aug 29 03:11	26° 8 07'59		retrograde	2057 Sep 16 09:52	14° II 05'39	
opposition	2049 Nov 16 15:32	24° 8 42'45	-1°-47'00	opposition	2057 Dec 04 08:39	12° II 40'44	-1°-34'-35
min. Earth dist.	2049 Nov 15 22:53	24° 8 43'56	28.82826 AU	min. Earth dist.	2057 Dec 03 18:50	12° II 41'43	28.85813 AU
direct	2050 Feb 02 01:12	23° 8 19'01		direct	2058 Feb 19 23:28	11° II 16'42	
conjunction	2050 May 16 11:28	25° 8 48'34	-1°-39'-37	conjunction	2058 Jun 04 02:49	13° II 46'48	-1°-27'-26
minimum elong	2050 May 16 11:28	25° 8 48'34	1°39'39	minimum elong	2058 Jun 04 02:49	13° II 46'48	1°27'28
max. Earth dist.	2050 May 17 06:22	25° 8 50'20	30.82745 AU	max. Earth dist.	2058 Jun 04 16:58	13° II 48'08	30.86121 AU
retrograde	2050 Aug 31 16:34	28° 8 23'03		retrograde	2058 Sep 18 21:35	16° II 20'31	
min. Earth dist.	2050 Nov 18 09:58	26° 8 59'00	28.82871 AU	opposition	2058 Dec 06 19:45	14° II 55'42	-1°-32'-21
opposition	2050 Nov 19 02:53	26° 8 57'48	-1°-46'00	min. Earth dist.	2058 Dec 06 07:41	14° II 56'33	28.86585 AU
direct	2051 Feb 04 14:58	25° 8 33'59		direct	2059 Feb 22 10:32	13° II 31'40	
conjunction	2051 May 19 01:08	28° 8 03'34	-1°-38'-37	conjunction	2059 Jun 06 17:02	16° II 01'52	-1°-25'-17
minimum elong	2051 May 19 01:08	28° 8 03'34	1°38'37	minimum elong	2059 Jun 06 17:02	16° II 01'52	1°25'17
max. Earth dist.	2051 May 19 18:36	28° 8 05'12	30.82804 AU	max. Earth dist.	2059 Jun 07 06:50	16° II 03'10	30.86879 AU
retrograde	2051 Jul 16 12:05	0° II		retrograde	2059 Sep 21 10:43	18° II 35'29	
opposition	2051 Sep 03 05:38	0° II 37'56		opposition	2059 Dec 09 06:42	17° II 10'45	-1°-29'-58
min. Earth dist.	2051 Oct 22 23:36	30° 8		min. Earth dist.	2059 Dec 08 18:46	17° II 11'36	28.87294 AU
opposition	2051 Nov 21 14:17	29° 8 12'41	-1°-44'-50	direct	2060 Feb 24 23:37	15° II 46'42	
min. Earth dist.	2051 Nov 20 22:33	29° 8 13'48	28.82958 AU	conjunction	2060 Jun 08 07:21	18° II 17'00	-1°-23'00
direct	2052 Feb 07 02:10	27° 8 48'47		minimum elong	2060 Jun 08 07:21	18° II 17'00	1°23'01
conjunction	2052 May 12 10:16	0° II		max. Earth dist.	2060 Jun 08 19:08	18° II 18'06	30.87542 AU
minimum elong	2052 May 20 15:08	0° II 18'25	-1°-37'-27	retrograde	2060 Sep 22 23:44	20° II 50'30	
max. Earth dist.	2052 May 20 15:08	0° II 18'25	1°37'28	opposition	2060 Dec 10 17:41	19° II 25'50	-1°-27'-27
retrograde	2052 Sep 04 18:30	2° II 52'39		min. Earth dist.	2060 Dec 10 07:26	19° II 26'33	28.87908 AU
min. Earth dist.	2052 Nov 22 09:43	1° II 28'31	28.83114 AU	direct	2061 Feb 26 10:23	18° II 01'44	
opposition	2052 Nov 23 01:21	1° II 27'25	-1°-43'-31	conjunction	2061 Jun 10 21:48	20° II 32'07	-1°-20'-35
direct	2053 Feb 08 15:35	0° II 03'28		minimum elong	2061 Jun 10 21:48	20° II 32'07	1°20'36
conjunction	2053 May 23 04:58	2° II 33'08	-1°-36'-9	max. Earth dist.	2061 Jun 11 09:28	20° II 33'12	30.88106 AU
minimum elong	2053 May 23 04:58	2° II 33'08	1°36'09	retrograde	2061 Sep 25 12:51	23° II 05'27	
max. Earth dist.	2053 May 23 21:25	2° II 34'41	30.83143 AU	opposition	2061 Dec 13 04:36	21° II 40'50	-1°-24'-49
retrograde	2053 Sep 07 08:46	5° II 07'16		min. Earth dist.	2061 Dec 12 18:57	21° II 41'31	28.88410 AU
opposition	2053 Nov 25 12:33	3° II 42'03	-1°-42'-2	direct	2062 Mar 01 00:24	20° II 16'42	
min. Earth dist.	2053 Nov 24 21:15	3° II 43'08	28.83398 AU	conjunction	2062 Jun 13 11:50	22° II 47'07	-1°-18'-3
direct	2054 Feb 11 03:05	2° II 18'03		minimum elong	2062 Jun 13 11:50	22° II 47'07	1°18'05
conjunction	2054 May 25 18:47	4° II 47'47	-1°-34'-41	max. Earth dist.	2062 Jun 13 21:19	22° II 48'00	30.88579 AU
minimum elong	2054 May 25 18:47	4° II 47'47	1°34'43	retrograde	2062 Sep 28 02:45	25° II 20'18	
max. Earth dist.	2054 May 26 11:55	4° II 49'23	30.83487 AU	opposition	2062 Dec 15 15:28	23° II 55'42	-1°-22'-3
retrograde	2054 Sep 09 19:51	7° II 21'49		min. Earth dist.	2062 Dec 15 06:39	23° II 56'20	28.88854 AU
opposition	2054 Nov 27 23:42	5° II 56'38	-1°-40'-24	direct	2063 Mar 03 12:59	22° II 31'29	
min. Earth dist.	2054 Nov 27 09:04	5° II 57'40	28.83809 AU	conjunction	2063 Jun 16 02:09	25° II 01'57	-1°-15'-25
direct	2055 Feb 13 15:02	4° II 32'36		minimum elong	2063 Jun 16 02:09	25° II 01'57	1°15'26
conjunction	2055 May 28 08:39	7° II 02'24	-1°-33'-6	max. Earth dist.	2063 Jun 16 11:45	25° II 02'50	30.89003 AU
minimum elong	2055 May 28 08:39	7° II 02'24	1°33'07	retrograde	2063 Sep 30 13:39	27° II 34'57	
max. Earth dist.	2055 May 29 00:36	7° II 03'54	30.83986 AU	opposition	2063 Dec 18 02:09	26° II 10'23	-1°-19'-10
retrograde	2055 Sep 12 09:04	9° II 36'20		min. Earth dist.	2063 Dec 17 18:34	26° II 10'55	28.89263 AU
				direct	2064 Mar 05 01:39	24° II 46'05	

conjunction	2064 Jun 17 16:17	27°II16'34	-1°-12'-40	conjunction	2072 Jul 06 08:32	15°☾09'03	0°-47'-8
minimum elong	2064 Jun 17 16:17	27°II16'34	1°12'41	minimum elong	2072 Jul 06 08:33	15°☾09'03	0°47'09
max. Earth dist.	2064 Jun 18 00:07	27°II17'18	30.89430 AU	max. Earth dist.	2072 Jul 06 10:52	15°☾09'16	30.95925 AU
retrograde	2064 Oct 02 03:05	29°II49'24		retrograde	2072 Oct 20 00:16	17°☾40'38	
opposition	2064 Dec 19 12:44	28°II24'51	-1°-16'-10	opposition	2073 Jan 06 00:23	16°☾16'40	0°-48'-29
min. Earth dist.	2064 Dec 19 05:17	28°II25'23	28.89702 AU	min. Earth dist.	2073 Jan 05 23:21	16°☾16'44	28.96400 AU
direct	2065 Mar 07 13:47	27°II00'28		direct	2073 Mar 25 11:16	14°☾52'03	
conjunction	2065 Jun 20 06:22	29°II30'59	-1°-9'-48	conjunction	2073 Jul 08 22:29	17°☾23'03	0°-43'-34
minimum elong	2065 Jun 20 06:22	29°II30'59	1°09'49	minimum elong	2073 Jul 08 22:29	17°☾23'03	0°43'35
max. Earth dist.	2065 Jun 20 14:07	29°II31'43	30.89889 AU	max. Earth dist.	2073 Jul 08 22:38	17°☾23'04	30.96813 AU
	2065 Jul 03 07:20	0°☾		retrograde	2073 Oct 22 13:54	19°☾54'28	
retrograde	2065 Oct 04 14:10	2°☾03'38		opposition	2074 Jan 08 10:45	18°☾30'34	0°-44'-39
opposition	2065 Dec 21 23:22	0°☾39'07	-1°-13'-3	min. Earth dist.	2074 Jan 08 10:04	18°☾30'37	28.97238 AU
min. Earth dist.	2065 Dec 21 17:23	0°☾39'32	28.90201 AU	direct	2074 Mar 27 23:45	17°☾05'55	
	2066 Jan 14 20:50	30°II		conjunction	2074 Jul 11 12:34	19°☾36'58	0°-39'-57
direct	2066 Mar 10 00:46	29°II14'40		minimum elong	2074 Jul 11 12:34	19°☾36'58	0°39'58
	2066 May 01 21:57	0°☾		max. Earth dist.	2074 Jul 11 12:18	19°☾36'56	30.97601 AU
conjunction	2066 Jun 22 20:20	1°☾45'12	-1°-6'-51	retrograde	2074 Oct 25 00:55	22°☾08'13	
minimum elong	2066 Jun 22 20:21	1°☾45'12	1°06'52	opposition	2075 Jan 10 21:08	20°☾44'22	0°-40'-45
max. Earth dist.	2066 Jun 23 03:07	1°☾45'50	30.90452 AU	min. Earth dist.	2075 Jan 10 22:22	20°☾44'17	28.97984 AU
retrograde	2066 Oct 07 01:50	4°☾17'40		direct	2075 Mar 30 11:11	19°☾19'40	
opposition	2066 Dec 24 09:46	2°☾53'11	-1°-9'-50	conjunction	2075 Jul 14 02:28	21°☾50'45	0°-36'-17
min. Earth dist.	2066 Dec 24 03:18	2°☾53'39	28.90817 AU	minimum elong	2075 Jul 14 02:28	21°☾50'45	0°36'18
direct	2067 Mar 12 12:40	1°☾28'41		max. Earth dist.	2075 Jul 14 00:40	21°☾50'35	30.98326 AU
conjunction	2067 Jun 25 10:15	3°☾59'15	-1°-3'-47	retrograde	2075 Oct 27 12:33	24°☾21'49	
minimum elong	2067 Jun 25 10:15	3°☾59'15	1°03'48	opposition	2076 Jan 13 07:21	22°☾58'02	0°-36'-47
max. Earth dist.	2067 Jun 25 16:16	3°☾59'49	30.91128 AU	min. Earth dist.	2076 Jan 13 08:30	22°☾57'57	28.98673 AU
retrograde	2067 Oct 09 12:00	6°☾31'33		direct	2076 Mar 31 23:41	21°☾33'15	
opposition	2067 Dec 26 20:21	5°☾07'08	-1°-6'-30	conjunction	2076 Jul 15 16:22	24°☾04'22	0°-32'-33
min. Earth dist.	2067 Dec 26 15:22	5°☾07'29	28.91562 AU	minimum elong	2076 Jul 15 16:22	24°☾04'22	0°32'34
direct	2068 Mar 13 23:22	3°☾42'35		max. Earth dist.	2076 Jul 15 13:31	24°☾04'06	30.98995 AU
conjunction	2068 Jun 27 00:21	6°☾13'12	-1°00'-38	retrograde	2076 Oct 28 22:20	26°☾35'15	
minimum elong	2068 Jun 27 00:21	6°☾13'12	1°00'39	opposition	2077 Jan 14 17:35	25°☾11'30	0°-32'-47
max. Earth dist.	2068 Jun 27 06:09	6°☾13'44	30.91950 AU	min. Earth dist.	2077 Jan 14 20:32	25°☾11'18	28.99345 AU
retrograde	2068 Oct 10 23:52	8°☾45'20		direct	2077 Apr 03 10:20	23°☾46'40	
opposition	2068 Dec 28 06:38	7°☾21'00	-1°-3'-5	conjunction	2077 Jul 18 06:08	26°☾17'48	0°-28'-48
min. Earth dist.	2068 Dec 28 01:26	7°☾21'22	28.92434 AU	minimum elong	2077 Jul 18 06:08	26°☾17'48	0°28'49
direct	2069 Mar 16 11:22	5°☾56'25		max. Earth dist.	2077 Jul 18 02:48	26°☾17'30	30.99684 AU
conjunction	2069 Jun 29 14:18	8°☾27'07	0°-57'-23	retrograde	2077 Oct 31 09:29	28°☾48'30	
minimum elong	2069 Jun 29 14:18	8°☾27'07	0°57'24	opposition	2078 Jan 17 03:43	27°☾24'48	0°-28'-45
max. Earth dist.	2069 Jun 29 18:40	8°☾27'31	30.92886 AU	min. Earth dist.	2078 Jan 17 06:33	27°☾24'36	29.00046 AU
retrograde	2069 Oct 13 11:42	10°☾59'07		direct	2078 Apr 05 22:01	25°☾59'54	
opposition	2069 Dec 30 17:09	9°☾34'52	0°-59'-34	conjunction	2078 Jul 20 19:33	28°☾31'03	0°-24'-59
min. Earth dist.	2069 Dec 30 13:13	9°☾35'08	28.93422 AU	minimum elong	2078 Jul 20 19:33	28°☾31'03	0°25'00
direct	2070 Mar 18 21:32	8°☾10'16		max. Earth dist.	2078 Jul 20 14:53	28°☾30'38	31.00419 AU
conjunction	2070 Jul 02 04:15	10°☾41'02	0°-54'-2		2078 Sep 01 09:46	0°♁	
minimum elong	2070 Jul 02 04:15	10°☾41'03	0°54'04	retrograde	2078 Nov 02 19:48	1°♁01'35	
max. Earth dist.	2070 Jul 02 08:53	10°☾41'28	30.93911 AU		2079 Jan 06 09:45	30°☾	
retrograde	2070 Oct 15 23:36	13°☾12'55		opposition	2079 Jan 19 13:55	29°☾37'56	0°-24'-40
opposition	2071 Jan 02 03:33	11°☾48'46	0°-55'-57	min. Earth dist.	2079 Jan 19 17:56	29°☾37'39	29.00833 AU
min. Earth dist.	2071 Jan 02 00:09	11°☾49'00	28.94451 AU	direct	2079 Apr 08 08:14	28°☾12'59	
direct	2071 Mar 21 10:56	10°☾24'10			2079 Jul 03 06:13	0°♁	
conjunction	2071 Jul 04 18:16	12°☾55'02	0°-50'-37	conjunction	2079 Jul 23 09:12	0°♁44'09	0°-21'-9
minimum elong	2071 Jul 04 18:16	12°☾55'02	0°50'39	minimum elong	2079 Jul 23 09:12	0°♁44'09	0°21'11
max. Earth dist.	2071 Jul 04 20:44	12°☾55'15	30.94945 AU	max. Earth dist.	2079 Jul 23 04:50	0°♁43'45	31.01257 AU
retrograde	2071 Oct 18 12:57	15°☾26'46		retrograde	2079 Nov 05 06:08	3°♁14'30	
opposition	2072 Jan 04 13:53	14°☾02'43	0°-52'-15	opposition	2080 Jan 21 23:54	1°♁50'54	0°-20'-32
min. Earth dist.	2072 Jan 04 11:24	14°☾02'53	28.95471 AU	min. Earth dist.	2080 Jan 22 04:14	1°♁50'36	29.01723 AU
direct	2072 Mar 22 22:46	12°☾38'06		direct	2080 Apr 09 21:29	0°♁25'56	

conjunction	2080 Jul 24 22:38	2°Ω57'08	0°-17'-17	direct	2087 Apr 26 08:45	15°Ω56'17	
minimum elong	2080 Jul 24 22:38	2°Ω57'08	0°17'19				
max. Earth dist.	2080 Jul 24 16:31	2°Ω56'35	31.02218 AU	conjunction	2087 Aug 10 20:06	18°Ω27'45	0°10'13
retrograde	2080 Nov 06 18:19	5°Ω27'20		minimum elong	2087 Aug 10 20:07	18°Ω27'45	0°10'12
opposition	2081 Jan 23 10:02	4°Ω03'48	0°-16'-24	behind sun begin	2087 Aug 10 14:55	18°Ω27'18	
min. Earth dist.	2081 Jan 23 14:41	4°Ω03'29	29.02758 AU	behind sun end	2087 Aug 11 01:19	18°Ω28'13	
direct	2081 Apr 12 08:53	2°Ω38'48		max. Earth dist.	2087 Aug 10 07:51	18°Ω26'38	31.10083 AU
				retrograde	2087 Nov 23 00:16	20°Ω56'53	
conjunction	2081 Jul 27 12:01	5°Ω10'04	0°-13'-24	opposition	2088 Feb 08 09:05	19°Ω33'57	0°12'56
minimum elong	2081 Jul 27 12:01	5°Ω10'04	0°13'26	min. Earth dist.	2088 Feb 08 19:56	19°Ω33'11	29.10521 AU
behind sun begin	2081 Jul 27 08:27	5°Ω09'45		direct	2088 Apr 27 19:21	18°Ω08'54	
behind sun end	2081 Jul 27 15:36	5°Ω10'23					
max. Earth dist.	2081 Jul 27 06:26	5°Ω09'34	31.03313 AU	conjunction	2088 Aug 12 09:23	20°Ω40'22	0°14'06
retrograde	2081 Nov 09 04:54	7°Ω40'07		minimum elong	2088 Aug 12 09:23	20°Ω40'22	0°14'06
opposition	2082 Jan 25 20:10	6°Ω16'41	0°-12'-13	behind sun begin	2088 Aug 12 06:19	20°Ω40'06	
min. Earth dist.	2082 Jan 26 01:47	6°Ω16'17	29.03906 AU	behind sun end	2088 Aug 12 12:27	20°Ω40'38	
direct	2082 Apr 14 20:42	4°Ω51'42		max. Earth dist.	2088 Aug 11 21:06	20°Ω39'14	31.10920 AU
				retrograde	2088 Nov 24 09:35	23°Ω09'19	
conjunction	2082 Jul 30 01:19	7°Ω23'01	0°-9'-30	opposition	2089 Feb 09 19:16	21°Ω46'25	0°17'05
minimum elong	2082 Jul 30 01:18	7°Ω23'01	0°09'31	min. Earth dist.	2089 Feb 10 06:45	21°Ω45'37	29.11319 AU
behind sun begin	2082 Jul 29 19:52	7°Ω22'32		direct	2089 Apr 30 08:08	20°Ω21'20	
behind sun end	2082 Jul 30 06:45	7°Ω23'29					
max. Earth dist.	2082 Jul 29 18:03	7°Ω22'21	31.04521 AU	conjunction	2089 Aug 14 22:11	22°Ω52'46	0°17'58
retrograde	2082 Nov 11 18:29	9°Ω52'55		minimum elong	2089 Aug 14 22:11	22°Ω52'46	0°17'58
opposition	2083 Jan 28 06:08	8°Ω29'36	0°-8'-2	max. Earth dist.	2089 Aug 14 08:03	22°Ω51'28	31.11699 AU
min. Earth dist.	2083 Jan 28 11:46	8°Ω29'12	29.05147 AU	retrograde	2089 Nov 26 20:51	25°Ω21'34	
direct	2083 Apr 17 09:30	7°Ω04'37		opposition	2090 Feb 12 05:23	23°Ω58'41	0°21'12
				min. Earth dist.	2090 Feb 12 17:18	23°Ω57'51	29.12097 AU
conjunction	2083 Aug 01 14:47	9°Ω36'00	0°-5'-36	direct	2090 May 02 19:08	22°Ω33'32	
minimum elong	2083 Aug 01 14:48	9°Ω36'00	0°05'37				
behind sun begin	2083 Aug 01 08:28	9°Ω35'26		conjunction	2090 Aug 17 11:09	25°Ω04'58	0°21'48
behind sun end	2083 Aug 01 21:08	9°Ω36'34		minimum elong	2090 Aug 17 11:08	25°Ω04'58	0°21'49
max. Earth dist.	2083 Aug 01 07:32	9°Ω35'21	31.05769 AU	max. Earth dist.	2090 Aug 16 21:25	25°Ω03'42	31.12471 AU
retrograde	2083 Nov 14 05:13	12°Ω05'46		retrograde	2090 Nov 29 06:23	27°Ω33'35	
opposition	2084 Jan 30 16:21	10°Ω42'33	0°-3'-50	opposition	2091 Feb 14 15:27	26°Ω10'44	0°25'18
min. Earth dist.	2084 Jan 30 23:47	10°Ω42'02	29.06390 AU	min. Earth dist.	2091 Feb 15 04:30	26°Ω09'49	29.12882 AU
direct	2084 Apr 18 21:24	9°Ω17'36		direct	2091 May 05 07:16	24°Ω45'34	
conjunction	2084 Aug 03 04:11	11°Ω49'01	0°-1'-39	conjunction	2091 Aug 19 23:51	27°Ω16'59	0°25'37
minimum elong	2084 Aug 03 04:10	11°Ω49'01	0°01'39	minimum elong	2091 Aug 19 23:51	27°Ω16'58	0°25'36
behind sun begin	2084 Aug 02 21:35	11°Ω48'26		max. Earth dist.	2091 Aug 19 08:31	27°Ω15'34	31.13285 AU
behind sun end	2084 Aug 03 10:46	11°Ω49'36		retrograde	2091 Dec 01 18:49	29°Ω45'26	
max. Earth dist.	2084 Aug 02 19:25	11°Ω48'14	31.06993 AU	opposition	2092 Feb 17 01:30	28°Ω22'37	0°29'20
retrograde	2084 Nov 15 17:07	14°Ω18'39		min. Earth dist.	2092 Feb 17 14:16	28°Ω21'44	29.13735 AU
asc. node	2084 Dec 31 03:49	13°Ω45'45		direct	2092 May 06 20:19	26°Ω57'25	
opposition	2085 Feb 01 02:25	12°Ω55'32	0°00'22				
min. Earth dist.	2085 Feb 01 09:46	12°Ω55'01	29.07576 AU	conjunction	2092 Aug 21 12:33	29°Ω28'51	0°29'22
direct	2085 Apr 21 10:00	11°Ω30'34		minimum elong	2092 Aug 21 12:33	29°Ω28'51	0°29'23
				max. Earth dist.	2092 Aug 20 21:38	29°Ω27'28	31.14169 AU
conjunction	2085 Aug 05 17:35	14°Ω02'02	0°02'24		2092 Sep 04 15:06	0°᠓	
minimum elong	2085 Aug 05 17:36	14°Ω02'02	0°02'23	retrograde	2092 Dec 03 04:41	1°᠓57'10	
behind sun begin	2085 Aug 05 11:00	14°Ω01'27		opposition	2093 Feb 18 11:44	0°᠓34'25	0°33'20
behind sun end	2085 Aug 06 00:11	14°Ω02'37		min. Earth dist.	2093 Feb 19 01:47	0°᠓33'25	29.14677 AU
max. Earth dist.	2085 Aug 05 07:50	14°Ω01'09	31.08126 AU		2093 Mar 11 13:05	30°Ω	
retrograde	2085 Nov 18 03:40	16°Ω31'30		direct	2093 May 09 08:21	29°Ω09'13	
opposition	2086 Feb 03 12:46	15°Ω08'28	0°04'34		2093 Jul 05 13:09	0°᠓	
min. Earth dist.	2086 Feb 03 21:56	15°Ω07'49	29.08668 AU	max. Earth dist.	2093 Aug 23 09:16	1°᠓39'11	31.15173 AU
direct	2086 Apr 23 20:37	13°Ω43'30					
				conjunction	2093 Aug 24 01:04	1°᠓40'39	0°33'06
conjunction	2086 Aug 08 06:50	16°Ω14'58	0°06'19	minimum elong	2093 Aug 24 01:04	1°᠓40'39	0°33'05
minimum elong	2086 Aug 08 06:50	16°Ω14'58	0°06'20	retrograde	2093 Dec 05 16:14	4°᠓08'51	
behind sun begin	2086 Aug 08 00:37	16°Ω14'25		opposition	2094 Feb 20 21:48	2°᠓46'10	0°37'17
behind sun end	2086 Aug 08 13:02	16°Ω15'31		min. Earth dist.	2094 Feb 21 11:09	2°᠓45'14	29.15734 AU
max. Earth dist.	2086 Aug 07 20:16	16°Ω14'00	31.09165 AU	direct	2094 May 11 20:51	1°᠓21'00	
retrograde	2086 Nov 20 14:41	18°Ω44'16					
opposition	2087 Feb 05 22:57	17°Ω21'17	0°08'46	conjunction	2094 Aug 26 13:30	3°᠓52'28	0°36'46
min. Earth dist.	2087 Feb 06 08:19	17°Ω20'37	29.09642 AU	minimum elong	2094 Aug 26 13:30	3°᠓52'28	0°36'46

max. Earth dist.	2094 Aug 25 21:25	3° 00' 50" 59	31.16269 AU
retrograde	2094 Dec 08 02:48	6° 00' 20" 34	
opposition	2095 Feb 23 08:03	4° 00' 57" 59	0° 41' 11
min. Earth dist.	2095 Feb 23 22:45	4° 00' 56" 57	29.16870 AU
direct	2095 May 14 07:28	3° 00' 32" 51	
max. Earth dist.	2095 Aug 28 09:36	6° 00' 02" 50	31.17424 AU
conjunction	2095 Aug 29 02:01	6° 00' 04" 21	0° 40' 23
minimum elong	2095 Aug 29 02:01	6° 00' 04" 21	0° 40' 22
retrograde	2095 Dec 10 13:39	8° 00' 32" 22	
opposition	2096 Feb 25 18:09	7° 00' 09" 54	0° 45' 01
min. Earth dist.	2096 Feb 26 08:47	7° 00' 08" 52	29.18017 AU
direct	2096 May 15 19:18	5° 00' 44" 49	
conjunction	2096 Aug 30 14:27	8° 00' 16" 21	0° 43' 56
minimum elong	2096 Aug 30 14:27	8° 00' 16" 21	0° 43' 57
max. Earth dist.	2096 Aug 29 20:48	8° 00' 14" 43	31.18550 AU
retrograde	2096 Dec 11 23:18	10° 00' 44" 17	
opposition	2097 Feb 27 04:31	9° 00' 21" 54	0° 48' 47
min. Earth dist.	2097 Feb 27 20:17	9° 00' 20" 48	29.19127 AU
direct	2097 May 18 05:32	7° 00' 56" 51	
max. Earth dist.	2097 Sep 01 09:21	10° 00' 26" 48	31.19606 AU
conjunction	2097 Sep 02 02:47	10° 00' 28" 25	0° 47' 26
minimum elong	2097 Sep 02 02:47	10° 00' 28" 25	0° 47' 25
retrograde	2097 Dec 14 08:14	12° 00' 56" 16	
opposition	2098 Mar 01 14:56	11° 00' 33" 58	0° 52' 28
min. Earth dist.	2098 Mar 02 07:19	11° 00' 32" 49	29.20124 AU
direct	2098 May 20 17:30	10° 00' 08" 56	
conjunction	2098 Sep 04 15:03	12° 00' 40" 30	0° 50' 51
minimum elong	2098 Sep 04 15:03	12° 00' 40" 30	0° 50' 51
max. Earth dist.	2098 Sep 03 19:43	12° 00' 38" 42	31.20538 AU
retrograde	2098 Dec 16 19:29	15° 00' 08" 15	
opposition	2099 Mar 04 01:10	13° 00' 46" 00	0° 56' 05
min. Earth dist.	2099 Mar 04 18:02	13° 00' 44" 49	29.21001 AU
direct	2099 May 23 03:30	12° 00' 20" 58	
max. Earth dist.	2099 Sep 06 08:21	14° 00' 50" 45	31.21334 AU
conjunction	2099 Sep 07 03:29	14° 00' 52" 31	0° 54' 12
minimum elong	2099 Sep 07 03:28	14° 00' 52" 31	0° 54' 11
retrograde	2099 Dec 19 04:38	17° 00' 20" 10	