opposition	11600 Mar 14	23:25	0°♎11'25	0°41'24	
min. Earth dist.	11600 Mar 14	17:41	0°♎12'00	18.84434 AU	
	11600 Mar 19	15:41	30°℞♍		
direct	11600 May 29	10:01	28°♍13'43		
	11600 Aug 04	00:35	0°♎		
evening set	11600 Aug 27	19:40	1°♎15'36		
conjunction	11600 Sep 12	21:45	2°♎10'54	0°39'06	
minimum elong	11600 Sep 12	21:45	2°♎10'54	0°39'04	
max. Earth dist.	11600 Sep 13	03:55	2°♎11'47	20.82126 AU	
morning rise	11600 Sep 29	02:30	3°♎06'36		
retrograde	11601 Jan 01	04:06	6°♎15'25		
opposition	11601 Mar 19	08:12	4°♎15'34	0°45'04	
min. Earth dist.	11601 Mar 19	02:17	4°♎16'10	18.79746 AU	
direct	11601 Jun 02	17:51	2°♎17'36		
evening set	11601 Sep 01	04:14	5°♎20'02		
conjunction	11601 Sep 17	06:56	6°♎15'32	0°42'19	
minimum elong	11601 Sep 17	06:56	6°♎15'32	0°42'19	
max. Earth dist.	11601 Sep 17	12:28	6°♎16'20	20.77279 AU	
morning rise	11601 Oct 03	12:16	7°♎11'27		
retrograde	11602 Jan 05	13:50	10°♎20'49		
opposition	11602 Mar 23	17:19	8°♎20'45	0°48'32	
min. Earth dist.	11602 Mar 23	12:51	8°♎21'12	18.74768 AU	
direct	11602 Jun 07	00:30	6°♎22'34		
evening set	11602 Sep 05	13:22	9°♎25'35		
conjunction	11602 Sep 21	16:45	10°♎21'19	0°45'19	
minimum elong	11602 Sep 21	16:45	10°♎21'19	0°45'23	
max. Earth dist.	11602 Sep 21	21:25	10°♎21'59	20.72188 AU	
morning rise	11602 Oct 07	22:46	11°♎17'26		
retrograde	11603 Jan 10	03:03	14°♎27'26		
opposition	11603 Mar 28	02:47	12°♎27'08	0°51'46	
min. Earth dist.	11603 Mar 27	22:06	12°♎27'37	18.69563 AU	
direct	11603 Jun 11	09:04	10°♎28'43		
evening set	11603 Sep 09	23:05	13°♎32'25		
conjunction	11603 Sep 26	03:09	14°♎28'23	0°48'06	
minimum elong	11603 Sep 26	03:09	14°♎28'22	0°48'14	
max. Earth dist.	11603 Sep 26	07:23	14°♎28'59	20.66865 AU	
morning rise	11603 Oct 12	09:48	15°♎24'44		
retrograde	11604 Jan 14	14:03	18°♎35'24		
opposition	11604 Mar 31	12:46	16°♎34'54	0°54'44	
min. Earth dist.	11604 Mar 31	09:27	16°♎35'15	18.64142 AU	
direct	11604 Jun 14	16:07	14°♎36'16		
evening set	11604 Sep 13	09:41	17°♎40'42		
conjunction	11604 Sep 29	14:27	18°♎36'54	0°50'40	
minimum elong	11604 Sep 29	14:27	18°♎36'54	0°50'49	
max. Earth dist.	11604 Sep 29	17:36	18°♎37'22	20.61359 AU	
morning rise	11604 Oct 15	21:49	19°♎33'31		
retrograde	11605 Jan 18	04:41	22°♎44'52		
opposition	11605 Apr 04	22:56	20°♎44'12	0°57'27	
min. Earth dist.	11605 Apr 04	19:40	20°♎44'32	18.58544 AU	
direct	11605 Jun 19	01:38	18°♎45'21		
evening set	11605 Sep 17	21:05	21°♎50'36		
conjunction	11605 Oct 04	02:35	22°♎47'04	0°52'57	
minimum elong	11605 Oct 04	02:34	22°♎47'04	0°53'11	
max. Earth dist.	11605 Oct 04	05:17	22°♎47'28	20.55661 AU	
morning rise	11605 Oct 20	10:30	23°♎43'56		
retrograde	11606 Jan 22	17:21	26°♎56'01		
opposition	11606 Apr 09	09:51	24°♎55'11	0°59'52	
min. Earth dist.	11606 Apr 09	07:59	24°♎55'23	18.52758 AU	
direct	11606 Jun 23	09:25	22°♎56'08		
evening set	11606 Sep 22	09:13	26°♎02'16		
conjunction	11606 Oct 08	15:21	26°♎58'59	0°54'59	
minimum elong	11606 Oct 08	15:20	26°♎58'59	0°55'15	
max. Earth dist.	11606 Oct 08	16:46	26°♎59'12	20.49797 AU	
morning rise	11606 Oct 24	23:59	27°♎56'07		
	11606 Dec 04	22:51	0°♏		
retrograde	11607 Jan 27	09:17	1°♏08'59		
	11607 Mar 23	08:00	30°℞♎		
opposition	11607 Apr 13	21:14	29°♎08'00	1°01'59	
min. Earth dist.	11607 Apr 13	19:40	29°♎08'10	18.46802 AU	
direct	11607 Jun 27	20:17	27°♎08'44		
	11607 Sep 22	07:17	0°♏		
evening set	11607 Sep 26	22:24	0°♏15'47		
conjunction	11607 Oct 13	05:17	1°♏12'49	0°56'44	
minimum elong	11607 Oct 13	05:16	1°♏12'48	0°57'04	
max. Earth dist.	11607 Oct 13	06:13	1°♏12'57	20.43733 AU	
morning rise	11607 Oct 29	14:26	2°♏10'12		
retrograde	11608 Jan 31	23:43	5°♏23'50		
opposition	11608 Apr 17	09:11	3°♏22'43	1°03'47	
min. Earth dist.	11608 Apr 17	09:11	3°♏22'43	18.40637 AU	
direct	11608 Jul 01	05:46	1°♏23'13		
evening set	11608 Sep 30	12:36	4°♏31'14		
conjunction	11608 Oct 16	20:07	5°♏28'33	0°58'11	
minimum elong	11608 Oct 16	20:06	5°♏28'33	0°58'34	
max. Earth dist.	11608 Oct 16	19:11	5°♏28'25	20.37467 AU	
morning rise	11608 Nov 02	05:59	6°♏26'14		
retrograde	11609 Feb 04	16:36	9°♏40'38		
opposition	11609 Apr 21	21:43	7°♏39'21	1°05'15	
min. Earth dist.	11609 Apr 21	22:27	7°♏39'17	18.34258 AU	
direct	11609 Jul 05	17:53	5°♏39'34		
evening set	11609 Oct 05	03:39	8°♏48'35		
conjunction	11609 Oct 21	11:55	9°♏46'12	0°59'20	
minimum elong	11609 Oct 21	11:55	9°♏46'12	0°59'45	
max. Earth dist.	11609 Oct 21	10:23	9°♏45'58	20.30959 AU	
morning rise	11609 Nov 06	22:12	10°♏44'08		
retrograde	11610 Feb 09	08:18	13°♏59'19		
opposition	11610 Apr 26	10:55	11°♏57'50	1°06'22	
min. Earth dist.	11610 Apr 26	13:04	11°♏57'37	18.27642 AU	
direct	11610 Jul 10	06:00	9°♏57'45		
evening set	11610 Oct 09	19:39	13°♏07'46		
conjunction	11610 Oct 26	04:30	14°♏05'40	1°00'09	
minimum elong	11610 Oct 26	04:30	14°♏05'40	1°00'38	
max. Earth dist.	11610 Oct 26	00:51	14°♏05'07	20.24259 AU	
	11610 Nov 10	12:37	15°♏		
morning rise	11610 Nov 11	15:30	15°♏03'54		
retrograde	11611 Feb 14	01:20	18°♏19'49		
opposition	11611 May 01	00:39	16°♏18'07	1°07'07	
min. Earth dist.	11611 May 01	03:39	16°♏17'48	18.20862 AU	
	11611 Jun 03	15:06	15°℞♏		
direct	11611 Jul 14	19:18	14°♏17'40		
	11611 Aug 24	04:02	15°♏		
evening set	11611 Oct 14	12:20	17°♏28'42		
conjunction	11611 Oct 30	22:01	18°♏26'54	1°00'38	
minimum elong	11611 Oct 30	22:01	18°♏26'54	1°01'08	
max. Earth dist.	11611 Oct 30	18:04	18°♏26'19	20.17405 AU	
morning rise	11611 Nov 16	09:26	19°♏25'25		
retrograde	11612 Feb 18	18:27	22°♏42'03		
opposition	11612 May 04	14:59	20°♏40'07	1°07'29	
min. Earth dist.	11612 May 04	19:05	20°♏39'41	18.13956 AU	

direct	11612 Jul 18 09:46	18°♏39'18	
evening set	11612 Oct 18 06:08	21°♏51'21	
conjunction	11612 Nov 03 16:19	22°♏49'52	1°00'46
minimum elong	11612 Nov 03 16:19	22°♏49'52	1°01'19
max. Earth dist.	11612 Nov 03 10:14	22°♏48'57	20.10483 AU
morning rise	11612 Nov 20 04:24	23°♏48'39	
retrograde	11613 Feb 22 11:41	27°♏06'00	
opposition	11613 May 09 05:42	25°♏03'48	1°07'28
min. Earth dist.	11613 May 09 10:45	25°♏03'16	18.07031 AU
direct	11613 Jul 23 00:27	23°♏02'35	
evening set	11613 Oct 23 00:35	26°♏15'42	
conjunction	11613 Nov 08 11:32	27°♏14'30	1°00'32
minimum elong	11613 Nov 08 11:32	27°♏14'30	1°01'08
max. Earth dist.	11613 Nov 08 05:33	27°♏13'37	20.03563 AU
morning rise	11613 Nov 24 23:54	28°♏13'34	
	11613 Dec 28 04:12	0°♐	
retrograde	11614 Feb 27 06:02	1°♐31'36	
	11614 May 01 16:47	30°℞♏	
opposition	11614 May 13 21:07	29°♏29'11	1°07'03
min. Earth dist.	11614 May 14 02:48	29°♏28'35	18.00143 AU
direct	11614 Jul 27 16:23	27°♏27'34	
	11614 Oct 15 16:10	0°♐	
evening set	11614 Oct 27 19:51	0°♐41'44	
conjunction	11614 Nov 13 07:15	1°♐40'50	0°59'57
minimum elong	11614 Nov 13 07:15	1°♐40'50	1°00'34
max. Earth dist.	11614 Nov 12 23:22	1°♐39'39	19.96735 AU
morning rise	11614 Nov 29 20:14	2°♐40'11	
retrograde	11615 Mar 04 00:38	5°♐58'54	
opposition	11615 May 18 13:11	3°♐56'14	1°06'12
min. Earth dist.	11615 May 18 19:44	3°♐55'32	17.93392 AU
direct	11615 Aug 01 08:19	1°♐54'13	
evening set	11615 Nov 01 15:58	5°♐09'28	
conjunction	11615 Nov 18 04:07	6°♐08'52	0°58'59
minimum elong	11615 Nov 18 04:07	6°♐08'52	0°59'39
max. Earth dist.	11615 Nov 17 20:38	6°♐07'44	19.90064 AU
morning rise	11615 Dec 04 17:20	7°♐08'28	
retrograde	11616 Mar 07 20:33	10°♐27'50	
opposition	11616 May 22 05:38	8°♐24'59	1°04'58
min. Earth dist.	11616 May 22 12:28	8°♐24'15	17.86823 AU
direct	11616 Aug 05 01:21	6°♐22'35	
evening set	11616 Nov 05 13:08	9°♐38'56	
conjunction	11616 Nov 22 01:39	10°♐38'36	0°57'39
minimum elong	11616 Nov 22 01:39	10°♐38'36	0°58'20
max. Earth dist.	11616 Nov 21 16:17	10°♐37'11	19.83617 AU
morning rise	11616 Dec 08 15:22	11°♐38'29	
retrograde	11617 Mar 12 16:48	14°♐58'29	
opposition	11617 May 26 22:55	12°♐55'28	1°03'18
min. Earth dist.	11617 May 27 06:42	12°♐54'37	17.80516 AU
direct	11617 Aug 09 18:17	10°♐52'41	
evening set	11617 Nov 10 10:53	14°♐10'08	
conjunction	11617 Nov 27 00:03	15°♐10'05	0°55'58
minimum elong	11617 Nov 27 00:03	15°♐10'05	0°56'41
max. Earth dist.	11617 Nov 26 15:17	15°♐08'45	19.77451 AU
morning rise	11617 Dec 13 13:52	16°♐10'13	
retrograde	11618 Mar 17 14:34	19°♐30'50	
opposition	11618 May 31 16:48	17°♐27'42	1°01'14
min. Earth dist.	11618 Jun 01 00:23	17°♐26'53	17.74504 AU
direct	11618 Aug 14 12:44	15°♐24'37	
evening set	11618 Nov 15 09:43	18°♐43'08	
conjunction	11618 Dec 01 23:10	19°♐43'22	0°53'54
minimum elong	11618 Dec 01 23:10	19°♐43'22	0°54'38
max. Earth dist.	11618 Dec 01 12:46	19°♐41'46	19.71614 AU
morning rise	11618 Dec 18 13:24	20°♐43'44	
retrograde	11619 Mar 22 12:10	24°♐04'58	
opposition	11619 Jun 05 11:23	22°♐01'43	0°58'46
min. Earth dist.	11619 Jun 05 20:05	22°♐00'47	17.68846 AU
direct	11619 Aug 19 06:37	19°♐58'21	
evening set	11619 Nov 20 09:16	23°♐17'58	
conjunction	11619 Dec 06 23:18	24°♐18'28	0°51'29
minimum elong	11619 Dec 06 23:19	24°♐18'28	0°52'14
max. Earth dist.	11619 Dec 06 13:22	24°♐16'57	19.66130 AU
morning rise	11619 Dec 23 13:37	25°♐19'04	
retrograde	11620 Mar 26 11:50	28°♐40'52	
opposition	11620 Jun 09 06:34	26°♐37'35	0°55'55
min. Earth dist.	11620 Jun 09 15:01	26°♐36'40	17.63521 AU
direct	11620 Aug 23 03:02	24°♐33'58	
evening set	11620 Nov 24 09:55	27°♐54'39	
conjunction	11620 Dec 11 00:07	28°♐55'24	0°48'44
minimum elong	11620 Dec 11 00:07	28°♐55'24	0°49'30
max. Earth dist.	11620 Dec 10 12:39	28°♐53'39	19.60969 AU
morning rise	11620 Dec 27 14:37	29°♐56'14	
	11620 Dec 28 15:47	0°♑	
retrograde	11621 Mar 31 10:03	3°♑18'33	
opposition	11621 Jun 14 02:30	1°♑15'15	0°52'41
min. Earth dist.	11621 Jun 14 12:26	1°♑14'10	17.58528 AU
	11621 Jul 15 03:39	30°℞♐	
direct	11621 Aug 27 22:07	29°♐11'23	
	11621 Oct 09 21:32	0°♑	
evening set	11621 Nov 29 11:11	2°♑33'07	
conjunction	11621 Dec 16 01:46	3°♑34'06	0°45'39
minimum elong	11621 Dec 16 01:46	3°♑34'06	0°46'24
max. Earth dist.	11621 Dec 15 14:22	3°♑32'21	19.56132 AU
morning rise	11622 Jan 01 16:15	4°♑35'07	
retrograde	11622 Apr 05 11:08	7°♑57'57	
opposition	11622 Jun 18 23:02	5°♑54'37	0°49'05
min. Earth dist.	11622 Jun 19 08:38	5°♑53'34	17.53839 AU
direct	11622 Sep 01 20:38	3°♑50'31	
evening set	11622 Dec 04 13:12	7°♑13'13	
conjunction	11622 Dec 21 03:55	8°♑14'25	0°42'15
minimum elong	11622 Dec 21 03:55	8°♑14'25	0°43'01
max. Earth dist.	11622 Dec 20 15:17	8°♑12'28	19.51589 AU
morning rise	11623 Jan 06 18:26	9°♑15'37	
retrograde	11623 Apr 10 09:52	12°♑38'52	
opposition	11623 Jun 23 20:21	10°♑35'30	0°45'08
min. Earth dist.	11623 Jun 24 07:32	10°♑34'17	17.49452 AU
direct	11623 Sep 06 17:18	8°♑31'09	
evening set	11623 Dec 09 15:54	11°♑54'47	
conjunction	11623 Dec 26 06:51	12°♑56'10	0°38'33
minimum elong	11623 Dec 26 06:51	12°♑56'10	0°39'18
max. Earth dist.	11623 Dec 25 17:49	12°♑54'09	19.47362 AU
morning rise	11624 Jan 11 21:17	13°♑57'31	
retrograde	11624 Apr 14 11:21	17°♑21'07	
opposition	11624 Jun 27 17:56	15°♑17'43	0°40'53
min. Earth dist.	11624 Jun 28 04:40	15°♑16'33	17.45381 AU
direct	11624 Sep 10 17:47	13°♑13'07	
evening set	11624 Dec 13 19:12	16°♑37'36	
conjunction	11624 Dec 30 10:11	17°♑39'10	0°34'35
minimum elong	11624 Dec 30 10:11	17°♑39'10	0°35'19
max. Earth dist.	11624 Dec 29 20:29	17°♑37'02	19.43461 AU
morning rise	11625 Jan 16 00:25	18°♑40'38	
retrograde	11625 Apr 19 10:13	22°♑04'31	

opposition	11625 Jul	02	16:17	20°♉01'05	0°36'19
min. Earth dist.	11625 Jul	03	04:24	19°♉59'45	17.41670 AU
direct	11625 Sep	15	16:00	17°♉56'14	
evening set	11625 Dec	18	22:42	21°♉21'30	
conjunction	11626 Jan	04	13:39	22°♉23'12	0°30'22
minimum elong	11626 Jan	04	13:40	22°♉23'12	0°31'06
max. Earth dist.	11626 Jan	03	23:28	22°♉20'59	19.39958 AU
morning rise	11626 Jan	21	03:45	23°♉24'46	
retrograde	11626 Apr	24	11:48	26°♉48'53	
opposition	11626 Jul	07	14:54	24°♉45'24	0°31'30
min. Earth dist.	11626 Jul	08	02:19	24°♉44'09	17.38375 AU
direct	11626 Sep	20	18:26	22°♉40'19	
evening set	11626 Dec	24	02:41	26°♉06'17	
conjunction	11627 Jan	09	17:37	27°♉08'05	0°25'56
minimum elong	11627 Jan	09	17:37	27°♉08'05	0°26'37
max. Earth dist.	11627 Jan	09	03:38	27°♉05'55	19.36885 AU
morning rise	11627 Jan	26	07:19	28°♉09'45	
	11627 Feb	28	07:42	0°♒	
retrograde	11627 Apr	29	10:41	1°♒34'00	
	11627 Jul	01	05:33	30°℞♉	
opposition	11627 Jul	12	13:55	29°♉30'30	0°26'26
min. Earth dist.	11627 Jul	13	02:25	29°♉29'07	17.35544 AU
direct	11627 Sep	25	18:08	27°♉25'11	
	11627 Dec	14	16:57	0°♒	
evening set	11627 Dec	29	06:59	0°♒51'46	
conjunction	11628 Jan	14	21:41	1°♒53'39	0°21'18
minimum elong	11628 Jan	14	21:41	1°♒53'39	0°21'59
max. Earth dist.	11628 Jan	14	07:00	1°♒51'22	19.34315 AU
morning rise	11628 Jan	31	11:10	2°♒55'22	
retrograde	11628 May	03	12:15	6°♒19'42	
opposition	11628 Jul	16	13:13	4°♒16'10	0°21'11
min. Earth dist.	11628 Jul	17	00:55	4°♒14'53	17.33236 AU
direct	11628 Sep	29	21:21	2°♒10'39	
evening set	11629 Jan	02	11:17	5°♒37'46	
conjunction	11629 Jan	19	01:50	6°♒39'42	0°16'31
minimum elong	11629 Jan	19	01:50	6°♒39'42	0°17'10
max. Earth dist.	11629 Jan	18	12:11	6°♒37'35	19.32276 AU
morning rise	11629 Feb	04	14:42	7°♒41'26	
retrograde	11629 May	08	12:07	11°♒05'48	
opposition	11629 Jul	21	12:56	9°♒02'16	0°15'46
min. Earth dist.	11629 Jul	22	01:08	9°♒00'56	17.31489 AU
direct	11629 Oct	04	22:20	6°♒56'35	
evening set	11630 Jan	07	15:47	10°♒24'08	
conjunction	11630 Jan	24	05:52	11°♒26'05	0°11'37
minimum elong	11630 Jan	24	05:52	11°♒26'05	0°12'14
behind sun begin	11630 Jan	24	01:25	11°♒25'25	
behind sun end	11630 Jan	24	10:19	11°♒26'46	
max. Earth dist.	11630 Jan	23	15:36	11°♒23'52	19.30843 AU
morning rise	11630 Feb	09	18:24	12°♒27'50	
	11630 Mar	30	16:27	15°♒	
retrograde	11630 May	13	13:30	15°♒52'09	
	11630 Jun	27	13:34	15°℞♒	
opposition	11630 Jul	26	12:46	13°♒48'39	0°10'14
min. Earth dist.	11630 Jul	27	00:02	13°♒47'25	17.30378 AU
direct	11630 Oct	10	00:47	11°♒42'49	
	11631 Jan	09	21:42	15°♒	
evening set	11631 Jan	12	20:07	15°♒10'43	
conjunction	11631 Jan	29	09:59	16°♒12'41	0°06'38
minimum elong	11631 Jan	29	09:59	16°♒12'41	0°07'13
behind sun begin	11631 Jan	29	03:48	16°♒11'44	
behind sun end	11631 Jan	29	16:10	16°♒13'38	
max. Earth dist.	11631 Jan	28	21:19	16°♒10'43	19.30050 AU
morning rise	11631 Feb	14	21:48	17°♒14'24	
retrograde	11631 May	18	14:41	20°♒38'36	
opposition	11631 Jul	31	12:58	18°♒35'11	0°04'38
min. Earth dist.	11631 Aug	01	00:07	18°♒33'58	17.29910 AU
direct	11631 Oct	15	02:11	16°♒29'19	
evening set	11632 Jan	18	00:42	19°♒57'28	
conjunction	11632 Feb	03	13:55	20°♒59'24	0°01'36
minimum elong	11632 Feb	03	13:55	20°♒59'24	0°02'08
behind sun begin	11632 Feb	03	07:10	20°♒58'22	
behind sun end	11632 Feb	03	20:39	21°♒00'26	
max. Earth dist.	11632 Feb	03	00:38	20°♒57'20	19.29922 AU
morning rise	11632 Feb	20	01:14	22°♒01'03	
retrograde	11632 May	22	15:37	25°♒25'07	
desc. node	11632 May	31	16:40	25°♒22'50	
opposition	11632 Aug	04	13:13	23°♒21'49	-0°01'00
min. Earth dist.	11632 Aug	04	23:38	23°♒20'40	17.30118 AU
direct	11632 Oct	19	04:00	21°♒15'56	
evening set	11633 Jan	22	05:00	24°♒44'17	
conjunction	11633 Feb	07	17:49	25°♒46'09	-0°03'34
minimum elong	11633 Feb	07	17:50	25°♒46'09	0°03'04
behind sun begin	11633 Feb	07	11:08	25°♒45'08	
behind sun end	11633 Feb	08	00:32	25°♒47'11	
max. Earth dist.	11633 Feb	07	06:23	25°♒44'22	19.30456 AU
morning rise	11633 Feb	24	04:18	26°♒47'43	
	11633 May	07	07:15	0°♓	
retrograde	11633 May	27	17:18	0°♓11'35	
	11633 Jun	17	05:37	30°℞♒	
opposition	11633 Aug	09	13:45	28°♒08'27	-0°06'37
min. Earth dist.	11633 Aug	09	23:37	28°♒07'22	17.30960 AU
direct	11633 Oct	24	06:09	26°♒02'39	
evening set	11634 Jan	27	09:11	29°♒31'04	
	11634 Feb	04	03:59	0°♓	
conjunction	11634 Feb	12	21:13	0°♓32'51	-0°08'34
minimum elong	11634 Feb	12	21:13	0°♓32'51	0°08'08
behind sun begin	11634 Feb	12	15:16	0°♓31'56	
behind sun end	11634 Feb	13	03:11	0°♓33'46	
max. Earth dist.	11634 Feb	12	09:23	0°♓31'00	19.31607 AU
morning rise	11634 Mar	01	07:07	1°♓34'18	
retrograde	11634 Jun	01	17:06	4°♓57'56	
opposition	11634 Aug	14	14:22	2°♓54'57	-0°12'11
min. Earth dist.	11634 Aug	14	23:57	2°♓53'55	17.32404 AU
direct	11634 Oct	29	08:19	0°♓49'14	
evening set	11635 Feb	01	13:11	4°♓17'39	
conjunction	11635 Feb	18	00:43	5°♓19'19	-0°13'30
minimum elong	11635 Feb	18	00:42	5°♓19'19	0°13'07
behind sun begin	11635 Feb	17	20:46	5°♓18'43	
behind sun end	11635 Feb	18	04:38	5°♓19'55	
max. Earth dist.	11635 Feb	17	14:23	5°♓17'42	19.33321 AU
morning rise	11635 Mar	06	09:42	6°♓20'38	
retrograde	11635 Jun	06	18:00	9°♓43'56	
opposition	11635 Aug	19	14:55	7°♓41'09	-0°17'40
min. Earth dist.	11635 Aug	19	23:46	7°♓40'11	17.34365 AU
direct	11635 Nov	03	11:42	5°♓35'34	
evening set	11636 Feb	06	17:05	9°♓03'51	
conjunction	11636 Feb	23	03:44	10°♓05'22	-0°18'21
minimum elong	11636 Feb	23	03:44	10°♓05'22	0°18'01
max. Earth dist.	11636 Feb	22	17:06	10°♓03'42	19.35525 AU
morning rise	11636 Mar	10	11:57	11°♓06'31	
retrograde	11636 Jun	10	16:43	14°♓29'27	
opposition	11636 Aug	23	15:41	12°♓26'50	-0°23'01
min. Earth dist.	11636 Aug	24	00:35	12°♓25'52	17.36812 AU

direct	11636 Nov 07 14:11	10°♓21'21	
evening set	11637 Feb 10 20:17	13°♓49'25	
conjunction	11637 Feb 27 06:13	14°♓50'45	-0°23'04
minimum elong	11637 Feb 27 06:13	14°♓50'45	0°22'48
max. Earth dist.	11637 Feb 26 20:47	14°♓49'17	19.38190 AU
morning rise	11637 Mar 15 13:31	15°♓51'42	
retrograde	11637 Jun 15 16:53	19°♓14'12	
opposition	11637 Aug 28 16:17	17°♓11'46	-0°28'12
min. Earth dist.	11637 Aug 28 23:59	17°♓10'56	17.39682 AU
direct	11637 Nov 12 18:25	15°♓06'26	
evening set	11638 Feb 15 23:10	18°♓34'08	
conjunction	11638 Mar 04 08:12	19°♓35'16	-0°27'37
minimum elong	11638 Mar 04 08:12	19°♓35'16	0°27'24
max. Earth dist.	11638 Mar 03 22:57	19°♓33'50	19.41265 AU
morning rise	11638 Mar 20 14:39	20°♓36'01	
retrograde	11638 Jun 20 14:32	23°♓58'01	
opposition	11638 Sep 02 16:41	21°♓55'45	-0°33'10
min. Earth dist.	11638 Sep 03 00:40	21°♓54'53	17.42967 AU
direct	11638 Nov 17 20:15	19°♓50'32	
evening set	11639 Feb 21 01:22	23°♓17'49	
conjunction	11639 Mar 09 09:37	24°♓18'43	-0°31'58
minimum elong	11639 Mar 09 09:36	24°♓18'43	0°31'49
max. Earth dist.	11639 Mar 09 01:07	24°♓17'24	19.44744 AU
morning rise	11639 Mar 25 15:12	25°♓19'15	
retrograde	11639 Jun 25 13:59	28°♓40'41	
opposition	11639 Sep 07 16:48	26°♓38'34	-0°37'54
min. Earth dist.	11639 Sep 07 23:18	26°♓37'52	17.46623 AU
direct	11639 Nov 23 00:06	24°♓33'31	
evening set	11640 Feb 26 02:55	28°♓00'15	
conjunction	11640 Mar 13 10:15	29°♓00'55	-0°36'06
minimum elong	11640 Mar 13 10:15	29°♓00'55	0°36'01
max. Earth dist.	11640 Mar 13 02:33	28°♓59'43	19.48581 AU
morning rise	11640 Mar 29 14:52	0°♈01'12	
	11640 Mar 29 06:59	0°♈	
retrograde	11640 Jun 29 10:34	3°♈22'02	
opposition	11640 Sep 11 16:44	1°♈20'05	-0°42'22
min. Earth dist.	11640 Sep 11 23:31	1°♈19'21	17.50653 AU
	11640 Oct 15 10:55	30°℞♓	
direct	11640 Nov 27 01:13	29°♓15'11	
	11641 Jan 07 15:39	0°♈	
evening set	11641 Mar 02 03:38	2°♈41'16	
conjunction	11641 Mar 18 10:03	3°♈41'41	-0°39'58
minimum elong	11641 Mar 18 10:03	3°♈41'41	0°39'56
max. Earth dist.	11641 Mar 18 02:56	3°♈40'34	19.52803 AU
morning rise	11641 Apr 03 13:52	4°♈41'43	
retrograde	11641 Jul 04 08:54	8°♈01'54	
opposition	11641 Sep 16 16:08	6°♈00'05	-0°46'31
min. Earth dist.	11641 Sep 16 21:05	5°♈59'33	17.55056 AU
direct	11641 Dec 02 04:08	3°♈55'21	
evening set	11642 Mar 07 03:22	7°♈20'43	
conjunction	11642 Mar 23 08:58	8°♈20'52	-0°43'33
minimum elong	11642 Mar 23 08:58	8°♈20'52	0°43'37
max. Earth dist.	11642 Mar 23 03:22	8°♈20'00	19.57390 AU
morning rise	11642 Apr 08 11:50	9°♈20'38	
retrograde	11642 Jul 09 04:10	12°♈40'08	
opposition	11642 Sep 21 15:15	10°♈38'28	-0°50'21
min. Earth dist.	11642 Sep 21 20:19	10°♈37'55	17.59837 AU
direct	11642 Dec 07 03:48	8°♈33'55	
evening set	11643 Mar 12 02:24	11°♈58'30	
conjunction	11643 Mar 28 07:00	12°♈58'21	-0°46'51
minimum elong	11643 Mar 28 06:59	12°♈58'21	0°46'56
max. Earth dist.	11643 Mar 28 01:49	12°♈57'33	19.62368 AU
morning rise	11643 Apr 13 09:06	13°♈57'51	
retrograde	11643 Jul 14 01:32	17°♈16'38	
opposition	11643 Sep 26 13:38	15°♈15'07	-0°53'50
min. Earth dist.	11643 Sep 26 16:39	15°♈14'48	17.65012 AU
direct	11643 Dec 12 05:19	13°♈10'47	
evening set	11644 Mar 16 00:26	16°♈34'32	
conjunction	11644 Apr 01 04:14	17°♈34'06	-0°49'48
minimum elong	11644 Apr 01 04:13	17°♈34'06	0°49'58
max. Earth dist.	11644 Apr 01 01:08	17°♈33'37	19.67738 AU
morning rise	11644 Apr 17 05:19	18°♈33'19	
retrograde	11644 Jul 17 19:40	21°♈51'23	
opposition	11644 Sep 30 11:52	19°♈50'04	-0°56'56
min. Earth dist.	11644 Sep 30 14:38	19°♈49'46	17.70588 AU
direct	11644 Dec 16 03:20	17°♈46'00	
evening set	11645 Mar 20 21:30	21°♈08'51	
conjunction	11645 Apr 06 00:16	22°♈08'07	-0°52'26
minimum elong	11645 Apr 06 00:16	22°♈08'07	0°52'39
max. Earth dist.	11645 Apr 05 21:34	22°♈07'42	19.73515 AU
morning rise	11645 Apr 22 00:43	23°♈07'02	
retrograde	11645 Jul 22 16:06	26°♈24'25	
opposition	11645 Oct 05 09:22	24°♈23'18	-0°59'39
min. Earth dist.	11645 Oct 05 10:00	24°♈23'14	17.76551 AU
direct	11645 Dec 21 03:17	22°♈19'34	
evening set	11646 Mar 25 17:39	25°♈41'30	
conjunction	11646 Apr 10 19:43	26°♈40'28	-0°54'43
minimum elong	11646 Apr 10 19:43	26°♈40'28	0°54'59
max. Earth dist.	11646 Apr 10 19:17	26°♈40'24	19.79646 AU
morning rise	11646 Apr 26 19:13	27°♈39'06	
	11646 Jun 11 10:37	0°♉	
retrograde	11646 Jul 27 09:15	0°♉55'44	
	11646 Sep 13 01:38	30°℞♈	
opposition	11646 Oct 10 06:18	28°♈54'54	-1°01'59
min. Earth dist.	11646 Oct 10 06:43	28°♈54'51	17.82833 AU
direct	11646 Dec 26 00:03	26°♈51'31	
	11647 Mar 27 00:58	0°♉	
evening set	11647 Mar 30 13:05	0°♉12'30	
conjunction	11647 Apr 15 14:10	1°♉11'10	-0°56'38
minimum elong	11647 Apr 15 14:10	1°♉11'10	0°56'58
max. Earth dist.	11647 Apr 15 13:48	1°♉11'06	19.86068 AU
morning rise	11647 May 01 13:07	2°♉09'30	
retrograde	11647 Aug 01 04:13	5°♉25'26	
opposition	11647 Oct 15 02:46	3°♉24'51	-1°03'55
min. Earth dist.	11647 Oct 15 01:27	3°♉24'59	17.89369 AU
direct	11647 Dec 30 22:58	1°♉21'50	
evening set	11648 Apr 03 07:22	4°♉41'51	
conjunction	11648 Apr 19 07:47	5°♉40'12	-0°58'13
minimum elong	11648 Apr 19 07:47	5°♉40'12	0°58'35
max. Earth dist.	11648 Apr 19 09:39	5°♉40'29	19.92689 AU
morning rise	11648 May 05 05:51	6°♉38'15	
retrograde	11648 Aug 04 20:07	9°♉53'28	
opposition	11648 Oct 18 22:49	7°♉53'08	-1°05'26
min. Earth dist.	11648 Oct 18 21:11	7°♉53'18	17.96059 AU
direct	11649 Jan 03 19:34	5°♉50'32	
evening set	11649 Apr 08 00:59	9°♉09'31	
conjunction	11649 Apr 24 00:28	10°♉07'33	-0°59'25
minimum elong	11649 Apr 24 00:28	10°♉07'33	0°59'52
max. Earth dist.	11649 Apr 24 02:12	10°♉07'49	19.99435 AU
morning rise	11649 May 09 22:03	11°♉05'19	
retrograde	11649 Aug 09 13:06	14°♉19'49	

opposition	11649 Oct 23 18:10	12°♉19'44	-1°06'34
min. Earth dist.	11649 Oct 23 15:13	12°♉20'02	18.02846 AU
direct	11650 Jan 08 16:49	10°♉17'29	
evening set	11650 Apr 12 17:33	13°♉35'25	
conjunction	11650 Apr 28 16:30	14°♉33'10	-1°00'16
minimum elong	11650 Apr 28 16:29	14°♉33'10	1°00'45
max. Earth dist.	11650 Apr 28 20:10	14°♉33'44	20.06228 AU
	11650 May 06 01:07	15°♉	
morning rise	11650 May 14 13:20	15°♉30'39	
retrograde	11650 Aug 14 04:01	18°♉44'25	
opposition	11650 Oct 28 13:03	16°♉44'34	-1°07'18
min. Earth dist.	11650 Oct 28 09:45	16°♉44'55	18.09626 AU
	11650 Dec 18 02:35	15°℞♉	
direct	11651 Jan 13 12:55	14°♉42'42	
	11651 Feb 08 12:13	15°♉	
evening set	11651 Apr 17 09:28	17°♉59'34	
conjunction	11651 May 03 07:31	18°♉57'00	-1°00'46
minimum elong	11651 May 03 07:31	18°♉57'00	1°01'18
max. Earth dist.	11651 May 03 10:51	18°♉57'30	20.12986 AU
morning rise	11651 May 19 03:58	19°♉54'12	
retrograde	11651 Aug 18 18:45	23°♉07'15	
opposition	11651 Nov 02 07:18	21°♉07'36	-1°07'38
min. Earth dist.	11651 Nov 02 03:03	21°♉08'03	18.16357 AU
direct	11652 Jan 18 08:10	19°♉06'04	
evening set	11652 Apr 21 00:20	22°♉21'52	
conjunction	11652 May 06 21:55	23°♉19'00	-1°00'55
minimum elong	11652 May 06 21:55	23°♉19'00	1°01'29
max. Earth dist.	11652 May 07 03:00	23°♉19'46	20.19663 AU
morning rise	11652 May 22 17:43	24°♉15'56	
retrograde	11652 Aug 22 08:49	27°♉28'15	
opposition	11652 Nov 06 01:01	25°♉28'48	-1°07'35
min. Earth dist.	11652 Nov 05 20:12	25°♉29'17	18.22967 AU
direct	11653 Jan 22 03:03	23°♉27'34	
evening set	11653 Apr 25 14:19	26°♉42'15	
conjunction	11653 May 11 11:12	27°♉39'07	-1°00'43
minimum elong	11653 May 11 11:11	27°♉39'07	1°01'18
max. Earth dist.	11653 May 11 15:55	27°♉39'50	20.26205 AU
morning rise	11653 May 27 06:44	28°♉35'47	
	11653 Jun 21 20:10	0°♊	
retrograde	11653 Aug 26 21:53	1°♊47'24	
	11653 Nov 05 21:36	30°℞♉	
opposition	11653 Nov 10 18:01	29°♉48'04	-1°07'09
min. Earth dist.	11653 Nov 10 12:35	29°♉48'38	18.29438 AU
direct	11654 Jan 26 20:05	27°♉47'08	
	11654 Apr 12 02:13	0°♊	
evening set	11654 Apr 30 03:22	1°♊00'43	
conjunction	11654 May 15 23:54	1°♊57'18	-1°00'10
minimum elong	11654 May 15 23:53	1°♊57'18	1°00'49
max. Earth dist.	11654 May 16 06:12	1°♊58'15	20.32591 AU
morning rise	11654 May 31 18:56	2°♊53'43	
retrograde	11654 Aug 31 10:34	6°♊04'35	
opposition	11654 Nov 15 10:10	4°♊05'24	-1°06'21
min. Earth dist.	11654 Nov 15 04:00	4°♊06'01	18.35731 AU
direct	11655 Jan 31 13:22	2°♊04'43	
evening set	11655 May 04 15:39	5°♊17'11	
conjunction	11655 May 20 11:33	6°♊13'30	-0°59'18
minimum elong	11655 May 20 11:33	6°♊13'30	0°59'57
max. Earth dist.	11655 May 20 17:41	6°♊14'25	20.38809 AU
morning rise	11655 Jun 05 06:26	7°♊09'40	
retrograde	11655 Sep 04 22:26	10°♊19'52	
opposition	11655 Nov 20 01:50	8°♊20'45	-1°05'11
min. Earth dist.	11655 Nov 19 19:09	8°♊21'25	18.41885 AU
direct	11656 Feb 05 04:40	6°♊20'18	
evening set	11656 May 08 02:43	9°♊31'41	
conjunction	11656 May 23 22:20	10°♊27'44	-0°58'06
minimum elong	11656 May 23 22:20	10°♊27'44	0°58'48
max. Earth dist.	11656 May 24 06:15	10°♊28'55	20.44895 AU
morning rise	11656 Jun 08 16:51	11°♊23'41	
retrograde	11656 Sep 08 10:02	14°♊33'11	
opposition	11656 Nov 23 16:46	12°♊34'10	-1°03'40
min. Earth dist.	11656 Nov 23 08:51	12°♊34'58	18.47906 AU
direct	11657 Feb 08 20:09	10°♊33'59	
evening set	11657 May 12 13:13	13°♊44'17	
conjunction	11657 May 28 08:19	14°♊40'06	-0°56'35
minimum elong	11657 May 28 08:19	14°♊40'06	0°57'18
max. Earth dist.	11657 May 28 16:19	14°♊41'18	20.50864 AU
morning rise	11657 Jun 13 02:46	15°♊35'50	
retrograde	11657 Sep 12 20:45	18°♊44'43	
opposition	11657 Nov 28 06:56	16°♊45'47	-1°01'48
min. Earth dist.	11657 Nov 27 22:35	16°♊46'38	18.53836 AU
direct	11658 Feb 13 09:29	14°♊45'51	
evening set	11658 May 16 22:47	17°♊55'10	
conjunction	11658 Jun 01 17:44	18°♊50'45	-0°54'47
minimum elong	11658 Jun 01 17:45	18°♊50'45	0°55'31
max. Earth dist.	11658 Jun 02 03:20	18°♊52'11	20.56739 AU
morning rise	11658 Jun 17 11:57	19°♊46'17	
retrograde	11658 Sep 17 07:40	22°♊54'34	
opposition	11658 Dec 02 20:30	20°♊55'46	-0°59'38
min. Earth dist.	11658 Dec 02 10:45	20°♊56'46	18.59643 AU
direct	11659 Feb 17 23:23	18°♊56'08	
evening set	11659 May 21 07:45	22°♊04'29	
conjunction	11659 Jun 06 02:17	22°♊59'51	-0°52'42
minimum elong	11659 Jun 06 02:17	22°♊59'51	0°53'28
max. Earth dist.	11659 Jun 06 12:02	23°♊01'17	20.62480 AU
morning rise	11659 Jun 21 20:31	23°♊55'12	
retrograde	11659 Sep 21 17:28	27°♊02'58	
opposition	11659 Dec 07 09:38	25°♊04'18	-0°57'10
min. Earth dist.	11659 Dec 06 23:40	25°♊05'19	18.65316 AU
direct	11660 Feb 22 10:45	23°♊04'58	
evening set	11660 May 24 15:57	26°♊12'25	
conjunction	11660 Jun 09 10:26	27°♊07'36	-0°50'22
minimum elong	11660 Jun 09 10:26	27°♊07'36	0°51'07
max. Earth dist.	11660 Jun 09 21:37	27°♊09'14	20.68069 AU
morning rise	11660 Jun 25 04:33	28°♊02'45	
	11660 Aug 02 16:09	0°♋	
retrograde	11660 Sep 25 04:05	1°♋10'03	
	11660 Nov 20 07:02	30°℞♊	
opposition	11660 Dec 10 22:04	29°♊11'33	-0°54'25
min. Earth dist.	11660 Dec 10 10:45	29°♊12'41	18.70795 AU
direct	11661 Feb 25 23:23	27°♊12'32	
	11661 May 23 08:28	0°♋	
evening set	11661 May 28 23:39	0°♋19'06	
conjunction	11661 Jun 13 17:53	1°♋14'06	-0°47'46
minimum elong	11661 Jun 13 17:53	1°♋14'06	0°48'33
max. Earth dist.	11661 Jun 14 05:06	1°♋15'45	20.73432 AU
morning rise	11661 Jun 29 12:09	2°♋09'07	
retrograde	11661 Sep 29 13:04	5°♋15'59	
opposition	11661 Dec 15 10:08	3°♋17'37	-0°51'24
min. Earth dist.	11661 Dec 14 23:03	3°♋18'44	18.76032 AU
direct	11662 Mar 02 08:52	1°♋18'55	
evening set	11662 Jun 02 06:49	4°♋24'41	

conjunction	11662 Jun 18	01:03	5°♋19'31	-0°44'57	
minimum elong	11662 Jun 18	01:03	5°♋19'31	0°45'42	
max. Earth dist.	11662 Jun 18	13:20	5°♋21'19	20.78522 AU	
morning rise	11662 Jul 03	19:18	6°♋14'23		
retrograde	11662 Oct 03	23:20	9°♋20'52		
opposition	11662 Dec 19	21:30	7°♋22'39	-0°48'09	
min. Earth dist.	11662 Dec 19	09:18	7°♋23'52	18.80951 AU	
direct	11663 Mar 06	20:34	5°♋24'14		
evening set	11663 Jun 06	13:38	8°♋29'14		
conjunction	11663 Jun 22	07:42	9°♋23'56	-0°41'55	
minimum elong	11663 Jun 22	07:42	9°♋23'56	0°42'41	
max. Earth dist.	11663 Jun 22	19:49	9°♋25'42	20.83267 AU	
morning rise	11663 Jul 08	02:10	10°♋18'41		
retrograde	11663 Oct 08	07:45	13°♋24'49		
opposition	11663 Dec 24	08:44	11°♋26'43	-0°44'40	
min. Earth dist.	11663 Dec 23	21:06	11°♋27'53	18.85517 AU	
direct	11664 Mar 10	04:46	9°♋28'35		
evening set	11664 Jun 09	19:50	12°♋32'51		
conjunction	11664 Jun 25	14:01	13°♋27'25	-0°38'41	
minimum elong	11664 Jun 25	14:01	13°♋27'25	0°39'26	
max. Earth dist.	11664 Jun 26	02:55	13°♋29'17	20.87630 AU	
morning rise	11664 Jul 11	08:35	14°♋22'03		
retrograde	11664 Oct 11	17:28	17°♋27'53		
opposition	11664 Dec 27	19:23	15°♋29'53	-0°40'59	
min. Earth dist.	11664 Dec 27	06:46	15°♋31'09	18.89653 AU	
direct	11665 Mar 14	15:56	13°♋32'00		
evening set	11665 Jun 14	01:55	16°♋35'35		
conjunction	11665 Jun 29	20:04	17°♋30'02	-0°35'17	
minimum elong	11665 Jun 29	20:04	17°♋30'02	0°36'01	
max. Earth dist.	11665 Jun 30	08:28	17°♋31'50	20.91530 AU	
morning rise	11665 Jul 15	14:56	18°♋24'35		
retrograde	11665 Oct 16	01:39	21°♋30'08		
opposition	11666 Jan 01	05:37	19°♋32'11	-0°37'06	
min. Earth dist.	11665 Dec 31	17:58	19°♋33'21	18.93318 AU	
direct	11666 Mar 18	23:18	17°♋34'29		
evening set	11666 Jun 18	07:34	20°♋37'28		
conjunction	11666 Jul 04	01:55	21°♋31'48	-0°31'42	
minimum elong	11666 Jul 04	01:55	21°♋31'48	0°32'27	
max. Earth dist.	11666 Jul 04	14:40	21°♋33'39	20.94945 AU	
morning rise	11666 Jul 19	20:59	22°♋26'16		
retrograde	11666 Oct 20	10:14	25°♋31'34		
opposition	11667 Jan 05	15:28	23°♋33'39	-0°33'04	
min. Earth dist.	11667 Jan 05	02:56	23°♋34'54	18.96465 AU	
direct	11667 Mar 23	09:53	21°♋36'06		
evening set	11667 Jun 22	12:51	24°♋38'28		
conjunction	11667 Jul 08	07:15	25°♋32'43	-0°27'59	
minimum elong	11667 Jul 08	07:15	25°♋32'43	0°28'42	
max. Earth dist.	11667 Jul 08	19:29	25°♋34'29	20.97835 AU	
morning rise	11667 Jul 24	02:42	26°♋27'07		
retrograde	11667 Oct 24	18:05	29°♋32'13		
opposition	11668 Jan 10	01:07	27°♋34'15	-0°28'52	
min. Earth dist.	11668 Jan 09	13:34	27°♋35'25	18.99109 AU	
direct	11668 Mar 26	16:59	25°♋36'49		
evening set	11668 Jun 25	17:45	28°♋38'37		
conjunction	11668 Jul 11	12:28	29°♋32'48	-0°24'09	
minimum elong	11668 Jul 11	12:28	29°♋32'48	0°24'51	
max. Earth dist.	11668 Jul 12	01:07	29°♋34'37	21.00244 AU	
	11668 Jul 19	09:18	0°♌		
morning rise	11668 Jul 27	08:13	0°♌27'09		
retrograde	11668 Oct 28	01:46	3°♌32'03		
opposition	11669 Jan 13	10:04	1°♌34'01	-0°24'33	
min. Earth dist.	11669 Jan 12	21:33	1°♌35'16	19.01280 AU	
	11669 Feb 27	21:01	30°℞♋		
direct	11669 Mar 31	02:07	29°♋36'39		
	11669 Apr 30	14:10	0°♌		
evening set	11669 Jun 29	22:27	2°♌37'57		
conjunction	11669 Jul 15	17:18	3°♌32'04	-0°20'12	
minimum elong	11669 Jul 15	17:18	3°♌32'04	0°20'52	
max. Earth dist.	11669 Jul 16	05:35	3°♌33'50	21.02193 AU	
morning rise	11669 Jul 31	13:32	4°♌26'23		
retrograde	11669 Nov 01	08:35	7°♌31'09		
opposition	11670 Jan 17	18:51	5°♌33'02	-0°20'07	
min. Earth dist.	11670 Jan 17	07:17	5°♌34'12	19.03030 AU	
direct	11670 Apr 04	08:49	3°♌35'44		
evening set	11670 Jul 04	02:49	6°♌36'35		
conjunction	11670 Jul 19	21:59	7°♌30'40	-0°16'09	
minimum elong	11670 Jul 19	22:00	7°♌30'40	0°16'48	
max. Earth dist.	11670 Jul 20	10:48	7°♌32'30	21.03749 AU	
morning rise	11670 Aug 04	18:32	8°♌24'57		
retrograde	11670 Nov 05	16:17	11°♌29'38		
opposition	11671 Jan 22	03:09	9°♌31'27	-0°15'36	
min. Earth dist.	11671 Jan 21	14:25	9°♌32'43	19.04393 AU	
direct	11671 Apr 08	16:35	7°♌34'11		
evening set	11671 Jul 08	07:10	10°♌34'40		
conjunction	11671 Jul 24	02:33	11°♌28'44	-0°12'03	
minimum elong	11671 Jul 24	02:33	11°♌28'44	0°12'40	
behind sun begin	11671 Jul 23	22:19	11°♌28'09		
behind sun end	11671 Jul 24	06:46	11°♌29'19		
max. Earth dist.	11671 Jul 24	15:07	11°♌30'32	21.04931 AU	
morning rise	11671 Aug 08	23:36	12°♌23'01		
	11671 Oct 07	04:31	15°♌		
retrograde	11671 Nov 09	22:25	15°♌27'42		
	11671 Dec 14	09:17	15°℞♌		
opposition	11672 Jan 26	11:25	13°♌29'25	-0°11'01	
min. Earth dist.	11672 Jan 25	23:36	13°♌30'36	19.05408 AU	
direct	11672 Apr 11	22:24	11°♌32'14		
evening set	11672 Jul 11	11:15	14°♌32'25		
	11672 Jul 19	14:25	15°♌		
conjunction	11672 Jul 27	07:06	15°♌26'28	-0°07'54	
minimum elong	11672 Jul 27	07:05	15°♌26'28	0°08'29	
behind sun begin	11672 Jul 27	01:19	15°♌25'40		
behind sun end	11672 Jul 27	12:51	15°♌27'16		
max. Earth dist.	11672 Jul 27	20:09	15°♌28'20	21.05774 AU	
morning rise	11672 Aug 12	04:34	16°♌20'46		
retrograde	11672 Nov 13	06:48	19°♌25'29		
opposition	11673 Jan 29	19:17	17°♌27'09	-0°06'24	
min. Earth dist.	11673 Jan 29	06:24	17°♌28'26	19.06065 AU	
direct	11673 Apr 16	05:26	15°♌30'00		
evening set	11673 Jul 15	15:35	18°♌29'59		
conjunction	11673 Jul 31	11:42	19°♌24'03	-0°03'43	
minimum elong	11673 Jul 31	11:42	19°♌24'03	0°04'17	
behind sun begin	11673 Jul 31	05:13	19°♌23'09		
behind sun end	11673 Jul 31	18:10	19°♌24'57		
max. Earth dist.	11673 Aug 01	00:21	19°♌25'51	21.06245 AU	
morning rise	11673 Aug 16	09:44	20°♌18'23		
retrograde	11673 Nov 17	12:42	23°♌23'11		
opposition	11674 Feb 03	03:04	21°♌24'48	-0°01'44	
min. Earth dist.	11674 Feb 02	15:20	21°♌25'59	19.06354 AU	
direct	11674 Apr 20	10:11	19°♌27'44		
asc. node	11674 Jun 15	13:44	20°♌44'04		
evening set	11674 Jul 19	19:53	22°♌27'34		
conjunction	11674 Aug 04	16:29	23°♌21'40	0°00'34	

minimum elong	11674 Aug 04 16:29	23°♌21'40	0°00'04
behind sun begin	11674 Aug 04 10:31	23°♌20'50	
behind sun end	11674 Aug 04 22:27	23°♌22'29	
max. Earth dist.	11674 Aug 05 05:25	23°♌23'30	21.06351 AU
morning rise	11674 Aug 20 14:59	24°♌16'02	
retrograde	11674 Nov 21 21:38	27°♌20'59	
opposition	11675 Feb 07 10:46	25°♌22'34	0°02'55
min. Earth dist.	11675 Feb 06 22:10	25°♌23'49	19.06258 AU
direct	11675 Apr 24 16:57	23°♌25'33	
evening set	11675 Jul 24 00:19	26°♌25'18	
conjunction	11675 Aug 08 21:15	27°♌19'27	0°04'51
minimum elong	11675 Aug 08 21:16	27°♌19'27	0°04'21
behind sun begin	11675 Aug 08 14:47	27°♌18'33	
behind sun end	11675 Aug 09 03:45	27°♌20'22	
max. Earth dist.	11675 Aug 09 09:42	27°♌21'13	21.06049 AU
morning rise	11675 Aug 24 20:22	28°♌13'54	
	11675 Sep 28 23:42	0°♍	
retrograde	11675 Nov 26 04:05	1°♍19'05	
	11676 Jan 26 01:25	30°℞♌	
opposition	11676 Feb 11 18:40	29°♌20'36	0°07'34
min. Earth dist.	11676 Feb 11 07:24	29°♌21'44	19.05750 AU
direct	11676 Apr 27 21:21	27°♌23'38	
	11676 Jul 20 03:11	0°♍	
evening set	11676 Jul 27 05:03	0°♍23'24	
conjunction	11676 Aug 12 02:34	1°♍17'37	0°09'01
minimum elong	11676 Aug 12 02:33	1°♍17'36	0°08'35
behind sun begin	11676 Aug 11 20:48	1°♍16'48	
behind sun end	11676 Aug 12 08:18	1°♍18'25	
max. Earth dist.	11676 Aug 12 14:57	1°♍19'22	21.05328 AU
morning rise	11676 Aug 28 02:11	2°♍12'08	
retrograde	11676 Nov 29 13:30	5°♍17'34	
opposition	11677 Feb 15 02:14	3°♍19'03	0°12'11
min. Earth dist.	11677 Feb 14 14:27	3°♍20'13	19.04795 AU
direct	11677 May 02 04:02	1°♍22'06	
evening set	11677 Jul 31 10:13	4°♍21'57	
conjunction	11677 Aug 16 08:07	5°♍16'15	0°13'09
minimum elong	11677 Aug 16 08:07	5°♍16'15	0°12'45
behind sun begin	11677 Aug 16 03:57	5°♍15'40	
behind sun end	11677 Aug 16 12:17	5°♍16'50	
max. Earth dist.	11677 Aug 16 19:36	5°♍17'53	21.04124 AU
morning rise	11677 Sep 01 08:22	6°♍10'52	
retrograde	11677 Dec 03 20:46	9°♍16'37	
opposition	11678 Feb 19 10:09	7°♍18'01	0°16'46
min. Earth dist.	11678 Feb 19 00:02	7°♍19'02	19.03344 AU
direct	11678 May 06 08:38	5°♍21'05	
evening set	11678 Aug 04 15:32	8°♍21'04	
conjunction	11678 Aug 20 14:00	9°♍15'27	0°17'15
minimum elong	11678 Aug 20 14:00	9°♍15'27	0°16'54
max. Earth dist.	11678 Aug 21 01:04	9°♍17'02	21.02414 AU
morning rise	11678 Sep 05 14:46	10°♍10'12	
retrograde	11678 Dec 08 06:30	13°♍16'17	
opposition	11679 Feb 23 18:03	11°♍17'36	0°21'16
min. Earth dist.	11679 Feb 23 07:36	11°♍18'39	19.01360 AU
direct	11679 May 10 15:42	9°♍20'37	
evening set	11679 Aug 08 21:26	12°♍20'47	
conjunction	11679 Aug 24 20:22	13°♍15'18	0°21'16
minimum elong	11679 Aug 24 20:21	13°♍15'18	0°20'58
max. Earth dist.	11679 Aug 25 06:17	13°♍16'43	21.00151 AU
morning rise	11679 Sep 09 21:47	14°♍10'10	
retrograde	11679 Dec 12 14:29	17°♍16'39	
opposition	11680 Feb 28 02:12	15°♍17'48	0°25'41
min. Earth dist.	11680 Feb 27 17:33	15°♍18'41	18.98828 AU
direct	11680 May 13 20:42	13°♍20'45	
evening set	11680 Aug 12 03:30	16°♍21'08	
conjunction	11680 Aug 28 03:06	17°♍15'47	0°25'12
minimum elong	11680 Aug 28 03:06	17°♍15'47	0°24'57
max. Earth dist.	11680 Aug 28 12:23	17°♍17'07	20.97357 AU
morning rise	11680 Sep 13 05:10	18°♍10'47	
retrograde	11680 Dec 16 00:21	21°♍17'40	
opposition	11681 Mar 03 10:15	19°♍18'39	0°29'59
min. Earth dist.	11681 Mar 03 01:23	19°♍19'33	18.95765 AU
direct	11681 May 18 04:10	17°♍21'27	
evening set	11681 Aug 16 10:04	20°♍22'08	
conjunction	11681 Sep 01 10:12	21°♍16'56	0°29'02
minimum elong	11681 Sep 01 10:11	21°♍16'55	0°28'51
max. Earth dist.	11681 Sep 01 18:25	21°♍18'06	20.94041 AU
morning rise	11681 Sep 17 12:54	22°♍12'05	
retrograde	11681 Dec 20 08:35	25°♍19'23	
opposition	11682 Mar 07 18:30	23°♍20'10	0°34'10
min. Earth dist.	11682 Mar 07 11:24	23°♍20'53	18.92223 AU
direct	11682 May 22 09:23	21°♍22'48	
evening set	11682 Aug 20 16:57	24°♍23'50	
conjunction	11682 Sep 05 17:44	25°♍18'47	0°32'44
minimum elong	11682 Sep 05 17:43	25°♍18'47	0°32'35
max. Earth dist.	11682 Sep 06 01:28	25°♍19'53	20.90301 AU
morning rise	11682 Sep 21 21:03	26°♍14'06	
retrograde	11682 Dec 24 19:08	29°♍21'52	
opposition	11683 Mar 12 02:52	27°♍22'26	0°38'11
min. Earth dist.	11683 Mar 11 19:23	27°♍23'11	18.88289 AU
direct	11683 May 26 17:06	25°♍24'52	
evening set	11683 Aug 25 00:14	28°♍26'19	
conjunction	11683 Sep 10 01:36	29°♍21'26	0°36'17
minimum elong	11683 Sep 10 01:36	29°♍21'26	0°36'12
max. Earth dist.	11683 Sep 10 08:36	29°♍22'26	20.86182 AU
	11683 Sep 21 06:00	0°♎	
morning rise	11683 Sep 26 05:37	0°♎16'56	
retrograde	11683 Dec 29 04:03	3°♎25'13	
opposition	11684 Mar 15 11:34	1°♎25'34	0°42'02
min. Earth dist.	11684 Mar 15 05:40	1°♎26'10	18.84012 AU
	11684 Apr 23 14:59	30°℞♍	
direct	11684 May 29 22:35	29°♍27'48	
	11684 Jul 04 11:23	0°♎	
evening set	11684 Aug 28 08:08	2°♎29'43	
conjunction	11684 Sep 13 10:12	3°♎25'02	0°39'39
minimum elong	11684 Sep 13 10:11	3°♎25'02	0°39'37
max. Earth dist.	11684 Sep 13 16:40	3°♎25'58	20.81761 AU
morning rise	11684 Sep 29 14:51	4°♎20'44	
retrograde	11685 Jan 01 15:43	7°♎29'33	
opposition	11685 Mar 19 20:11	5°♎29'41	0°45'41
min. Earth dist.	11685 Mar 19 13:59	5°♎30'19	18.79449 AU
direct	11685 Jun 03 06:26	3°♎31'43	
evening set	11685 Sep 01 16:39	6°♎34'12	
conjunction	11685 Sep 17 19:19	7°♎29'42	0°42'51
minimum elong	11685 Sep 17 19:18	7°♎29'42	0°42'52
max. Earth dist.	11685 Sep 18 01:04	7°♎30'32	20.77056 AU
morning rise	11685 Oct 04 00:36	8°♎25'37	
retrograde	11686 Jan 06 01:53	11°♎35'02	
opposition	11686 Mar 24 05:24	9°♎34'58	0°49'07
min. Earth dist.	11686 Mar 24 00:42	9°♎35'27	18.74627 AU
direct	11686 Jun 07 12:39	7°♎36'48	
evening set	11686 Sep 06 01:35	10°♎39'52	
conjunction	11686 Sep 22 04:56	11°♎35'36	0°45'50

minimum elong	11686 Sep 22 04:56	11°♎35'36	0°45'55
max. Earth dist.	11686 Sep 22 10:06	11°♎36'21	20.72128 AU
morning rise	11686 Oct 08 10:54	12°♎31'44	
retrograde	11687 Jan 10 14:43	15°♎41'46	
opposition	11687 Mar 28 14:53	13°♎41'31	0°52'19
min. Earth dist.	11687 Mar 28 09:52	13°♎42'02	18.69588 AU
direct	11687 Jun 11 20:52	11°♎43'09	
evening set	11687 Sep 10 11:25	14°♎46'54	
conjunction	11687 Sep 26 15:26	15°♎42'52	0°48'36
minimum elong	11687 Sep 26 15:25	15°♎42'52	0°48'43
max. Earth dist.	11687 Sep 26 19:58	15°♎43'31	20.66976 AU
morning rise	11687 Oct 12 22:02	16°♎39'13	
retrograde	11688 Jan 15 02:39	19°♎49'56	
opposition	11688 Apr 01 00:49	17°♎49'30	0°55'16
min. Earth dist.	11688 Mar 31 21:19	17°♎49'52	18.64339 AU
direct	11688 Jun 15 04:10	15°♎50'56	
evening set	11688 Sep 13 21:58	18°♎55'26	
conjunction	11688 Sep 30 02:42	19°♎51'38	0°51'07
minimum elong	11688 Sep 30 02:42	19°♎51'38	0°51'19
max. Earth dist.	11688 Sep 30 06:18	19°♎52'10	20.61635 AU
morning rise	11688 Oct 16 10:00	20°♎48'14	
retrograde	11689 Jan 18 16:49	23°♎59'38	
opposition	11689 Apr 05 11:07	21°♎59'03	0°57'57
min. Earth dist.	11689 Apr 05 07:35	21°♎59'25	18.58893 AU
direct	11689 Jun 19 13:03	20°♎00'17	
evening set	11689 Sep 18 09:22	23°♎05'35	
conjunction	11689 Oct 04 14:45	24°♎02'03	0°53'24
minimum elong	11689 Oct 04 14:45	24°♎02'03	0°53'38
max. Earth dist.	11689 Oct 04 17:41	24°♎02'28	20.56072 AU
morning rise	11689 Oct 20 22:37	24°♎58'54	
retrograde	11690 Jan 23 06:00	28°♎11'01	
opposition	11690 Apr 09 22:03	26°♎10'17	1°00'21
min. Earth dist.	11690 Apr 09 20:08	26°♎10'29	18.53222 AU
direct	11690 Jun 23 21:56	24°♎11'19	
evening set	11690 Sep 22 21:40	27°♎17'28	
conjunction	11690 Oct 09 03:44	28°♎14'11	0°55'24
minimum elong	11690 Oct 09 03:43	28°♎14'11	0°55'43
max. Earth dist.	11690 Oct 09 05:21	28°♎14'25	20.50298 AU
morning rise	11690 Oct 25 12:16	29°♎11'18	
	11690 Nov 09 03:32	0°♏	
retrograde	11691 Jan 27 21:37	2°♏24'10	
opposition	11691 Apr 14 09:27	0°♏23'16	1°02'26
min. Earth dist.	11691 Apr 14 07:50	0°♏23'26	18.47328 AU
	11691 Apr 23 18:47	30°℞♎	
direct	11691 Jun 28 08:12	28°♎24'04	
	11691 Aug 29 19:33	0°♏	
evening set	11691 Sep 27 10:53	1°♏31'06	
conjunction	11691 Oct 13 17:40	2°♏28'06	0°57'07
minimum elong	11691 Oct 13 17:40	2°♏28'06	0°57'28
max. Earth dist.	11691 Oct 13 18:26	2°♏28'13	20.44262 AU
morning rise	11691 Oct 30 02:46	3°♏25'29	
retrograde	11692 Feb 01 11:56	6°♏39'05	
opposition	11692 Apr 17 21:33	4°♏38'01	1°04'12
min. Earth dist.	11692 Apr 17 21:41	4°♏38'00	18.41159 AU
direct	11692 Jul 01 18:40	2°♏38'33	
evening set	11692 Oct 01 01:07	5°♏46'31	
conjunction	11692 Oct 17 08:33	6°♏43'48	0°58'33
minimum elong	11692 Oct 17 08:33	6°♏43'48	0°58'57
max. Earth dist.	11692 Oct 17 07:26	6°♏43'38	20.37964 AU
morning rise	11692 Nov 02 18:19	7°♏41'26	
retrograde	11693 Feb 05 04:26	10°♏55'47	
opposition	11693 Apr 22 09:59	8°♏54'30	1°05'38
min. Earth dist.	11693 Apr 22 10:43	8°♏54'25	18.34728 AU
direct	11693 Jul 06 06:54	6°♏54'42	
evening set	11693 Oct 05 16:07	10°♏03'37	
conjunction	11693 Oct 22 00:18	11°♏01'12	0°59'40
minimum elong	11693 Oct 22 00:18	11°♏01'12	1°00'07
max. Earth dist.	11693 Oct 21 22:26	11°♏00'55	20.31404 AU
morning rise	11693 Nov 07 10:32	11°♏59'07	
	11694 Jan 17 06:31	15°♏	
retrograde	11694 Feb 09 19:38	15°♏14'10	
	11694 Mar 05 13:02	15°℞♏	
opposition	11694 Apr 26 23:12	13°♏12'40	1°06'43
min. Earth dist.	11694 Apr 27 01:27	13°♏12'25	18.28061 AU
direct	11694 Jul 10 18:35	11°♏12'32	
evening set	11694 Oct 10 07:51	14°♏22'24	
	11694 Oct 21 00:09	15°♏	
conjunction	11694 Oct 26 16:38	15°♏20'16	1°00'27
minimum elong	11694 Oct 26 16:38	15°♏20'16	1°00'56
max. Earth dist.	11694 Oct 26 12:56	15°♏19'43	20.24660 AU
morning rise	11694 Nov 12 03:34	16°♏18'28	
retrograde	11695 Feb 14 13:12	19°♏34'15	
opposition	11695 May 01 12:50	17°♏32'29	1°07'26
min. Earth dist.	11695 May 01 15:44	17°♏32'11	18.21247 AU
direct	11695 Jul 15 08:37	15°♏31'59	
evening set	11695 Oct 15 00:29	18°♏42'51	
conjunction	11695 Oct 31 10:04	19°♏41'02	1°00'53
minimum elong	11695 Oct 31 10:04	19°♏41'02	1°01'26
max. Earth dist.	11695 Oct 31 06:03	19°♏40'26	20.17786 AU
morning rise	11695 Nov 16 21:25	20°♏39'30	
retrograde	11696 Feb 19 05:17	23°♏55'59	
opposition	11696 May 05 02:55	21°♏53'59	1°07'45
min. Earth dist.	11696 May 05 07:04	21°♏53'33	18.14342 AU
direct	11696 Jul 18 21:35	19°♏53'06	
evening set	11696 Oct 18 18:07	23°♏05'01	
conjunction	11696 Nov 04 04:14	24°♏03'28	1°00'59
minimum elong	11696 Nov 04 04:14	24°♏03'28	1°01'33
max. Earth dist.	11696 Nov 03 22:19	24°♏02'35	20.10881 AU
morning rise	11696 Nov 20 16:14	25°♏02'14	
retrograde	11697 Feb 22 23:56	28°♏19'26	
opposition	11697 May 09 17:38	26°♏17'11	1°07'41
min. Earth dist.	11697 May 09 22:28	26°♏16'40	18.07449 AU
direct	11697 Jul 23 12:55	24°♏15'54	
evening set	11697 Oct 23 12:20	27°♏28'53	
conjunction	11697 Nov 08 23:11	28°♏27'39	1°00'43
minimum elong	11697 Nov 08 23:11	28°♏27'39	1°01'20
max. Earth dist.	11697 Nov 08 17:24	28°♏26'47	20.04004 AU
morning rise	11697 Nov 25 11:28	29°♏26'41	
	11697 Dec 05 03:23	0°♐	
retrograde	11698 Feb 27 17:21	2°♐44'35	
opposition	11698 May 14 08:59	0°♐42'08	1°07'13
min. Earth dist.	11698 May 14 14:32	0°♐41'32	18.00619 AU
	11698 May 31 04:40	30°℞♏	
direct	11698 Jul 28 03:46	28°♏40'29	
	11698 Sep 22 02:43	0°♐	
evening set	11698 Oct 28 07:38	1°♐54'33	
conjunction	11698 Nov 13 18:57	2°♐53'36	1°00'05
minimum elong	11698 Nov 13 18:56	2°♐53'36	1°00'44
max. Earth dist.	11698 Nov 13 11:22	2°♐52'28	19.97247 AU
morning rise	11698 Nov 30 07:51	3°♐52'55	
retrograde	11699 Mar 04 12:43	7°♐11'32	
opposition	11699 May 19 00:54	5°♐08'52	1°06'20

min. Earth dist.	11699 May 19	07:09	5°♐08'12	17.93950 AU
direct	11699 Aug 01	20:06	3°♐06'51	
evening set	11699 Nov 02	03:40	6°♐22'01	
conjunction	11699 Nov 18	15:44	7°♐21'23	0°59'05
minimum elong	11699 Nov 18	15:44	7°♐21'23	0°59'45
max. Earth dist.	11699 Nov 18	08:32	7°♐20'18	19.90665 AU
morning rise	11699 Dec 05	04:53	8°♐20'58	
retrograde	11700 Mar 09	08:10	11°♐40'15	
opposition	11700 May 23	17:29	9°♐37'26	1°05'03
min. Earth dist.	11700 May 24	00:06	9°♐36'44	17.87473 AU
direct	11700 Aug 06	12:49	7°♐35'05	
evening set	11700 Nov 07	00:46	10°♐51'22	
conjunction	11700 Nov 23	13:12	11°♐51'01	0°57'42
minimum elong	11700 Nov 23	13:12	11°♐51'01	0°58'26
max. Earth dist.	11700 Nov 23	04:10	11°♐49'39	19.84315 AU
morning rise	11700 Dec 10	02:50	12°♐50'52	
retrograde	11701 Mar 14	04:27	16°♐10'51	
opposition	11701 May 28	10:43	14°♐07'54	1°03'20
min. Earth dist.	11701 May 28	18:10	14°♐07'06	17.81262 AU
direct	11701 Aug 11	06:05	12°♐05'14	
evening set	11701 Nov 11	22:34	15°♐22'39	
conjunction	11701 Nov 28	11:40	16°♐22'36	0°55'58
minimum elong	11701 Nov 28	11:40	16°♐22'36	0°56'42
max. Earth dist.	11701 Nov 28	03:13	16°♐21'18	19.78245 AU
morning rise	11701 Dec 15	01:26	17°♐22'42	
retrograde	11702 Mar 19	02:12	20°♐43'19	
opposition	11702 Jun 02	04:38	18°♐40'18	1°01'14
min. Earth dist.	11702 Jun 02	12:07	18°♐39'30	17.75336 AU
direct	11702 Aug 16	00:21	16°♐37'22	
evening set	11702 Nov 16	21:21	19°♐55'54	
conjunction	11702 Dec 03	10:45	20°♐56'07	0°53'52
minimum elong	11702 Dec 03	10:45	20°♐56'07	0°54'38
max. Earth dist.	11702 Dec 03	00:34	20°♐54'34	19.72476 AU
morning rise	11702 Dec 20	00:57	21°♐56'28	
retrograde	11703 Mar 24	00:02	25°♐17'44	
opposition	11703 Jun 06	23:19	23°♐14'40	0°58'43
min. Earth dist.	11703 Jun 07	07:58	23°♐13'44	17.69716 AU
direct	11703 Aug 20	18:38	21°♐11'27	
evening set	11703 Nov 21	21:03	24°♐31'06	
conjunction	11703 Dec 08	11:01	25°♐31'36	0°51'25
minimum elong	11703 Dec 08	11:01	25°♐31'36	0°52'11
max. Earth dist.	11703 Dec 08	01:11	25°♐30'05	19.66994 AU
morning rise	11703 Dec 25	01:16	26°♐32'11	
retrograde	11704 Mar 27	23:49	29°♐54'02	
opposition	11704 Jun 10	18:28	27°♐50'55	0°55'49
min. Earth dist.	11704 Jun 11	03:10	27°♐49'59	17.64364 AU
direct	11704 Aug 24	14:21	25°♐47'28	
evening set	11704 Nov 25	21:47	29°♐08'12	
	11704 Dec 10	01:48	0°♑	
conjunction	11704 Dec 12	11:55	0°♑08'56	0°48'38
minimum elong	11704 Dec 12	11:55	0°♑08'56	0°49'24
max. Earth dist.	11704 Dec 12	00:16	0°♑07'09	19.61773 AU
morning rise	11704 Dec 29	02:23	1°♑09'45	
retrograde	11705 Apr 01	22:50	4°♑32'08	
opposition	11705 Jun 15	14:34	2°♑28'59	0°52'32
min. Earth dist.	11705 Jun 16	00:42	2°♑27'53	17.59280 AU
direct	11705 Aug 29	10:17	0°♑25'15	
evening set	11705 Nov 30	22:56	3°♑47'00	
conjunction	11705 Dec 17	13:29	4°♑47'58	0°45'30
minimum elong	11705 Dec 17	13:29	4°♑47'58	0°46'17

max. Earth dist.	11705 Dec 17	01:57	4°♑46'12	19.56818 AU
morning rise	11706 Jan 03	03:55	5°♑48'59	
retrograde	11706 Apr 06	23:19	9°♑11'51	
opposition	11706 Jun 20	11:11	7°♑08'38	0°48'54
min. Earth dist.	11706 Jun 20	21:04	7°♑07'33	17.54450 AU
direct	11706 Sep 03	07:49	5°♑04'38	
evening set	11706 Dec 06	01:05	8°♑27'20	
conjunction	11706 Dec 22	15:45	9°♑28'31	0°42'04
minimum elong	11706 Dec 22	15:45	9°♑28'31	0°42'50
max. Earth dist.	11706 Dec 22	02:43	9°♑26'30	19.52125 AU
morning rise	11707 Jan 08	06:15	10°♑29'42	
retrograde	11707 Apr 11	22:28	13°♑52'58	
opposition	11707 Jun 25	08:23	11°♑49'40	0°44'55
min. Earth dist.	11707 Jun 25	19:49	11°♑48'26	17.49912 AU
direct	11707 Sep 08	05:30	9°♑45'23	
evening set	11707 Dec 11	03:43	13°♑08'59	
conjunction	11707 Dec 27	18:38	14°♑10'22	0°38'20
minimum elong	11707 Dec 27	18:38	14°♑10'22	0°39'06
max. Earth dist.	11707 Dec 27	05:26	14°♑08'19	19.47751 AU
morning rise	11708 Jan 13	09:03	15°♑11'42	
retrograde	11708 Apr 15	23:11	18°♑35'17	
opposition	11708 Jun 29	06:03	16°♑31'55	0°40'36
min. Earth dist.	11708 Jun 29	16:58	16°♑30'43	17.45701 AU
direct	11708 Sep 12	05:20	14°♑27'20	
evening set	11708 Dec 15	06:51	17°♑51'46	
conjunction	11708 Dec 31	21:46	18°♑53'18	0°34'19
minimum elong	11708 Dec 31	21:47	18°♑53'18	0°35'04
max. Earth dist.	11708 Dec 31	07:50	18°♑51'09	19.43721 AU
morning rise	11709 Jan 17	12:00	19°♑54'46	
retrograde	11709 Apr 20	22:06	23°♑18'38	
opposition	11709 Jul 04	04:19	21°♑15'10	0°36'00
min. Earth dist.	11709 Jul 04	16:32	21°♑13'50	17.41878 AU
direct	11709 Sep 17	04:43	19°♑10'19	
evening set	11709 Dec 20	10:20	22°♑35'30	
max. Earth dist.	11710 Jan 05	11:06	23°♑34'58	19.40125 AU
conjunction	11710 Jan 06	01:16	23°♑37'10	0°30'03
minimum elong	11710 Jan 06	01:17	23°♑37'10	0°30'48
morning rise	11710 Jan 22	15:21	24°♑38'44	
retrograde	11710 Apr 25	22:53	28°♑02'48	
opposition	11710 Jul 09	02:45	25°♑59'16	0°31'08
min. Earth dist.	11710 Jul 09	14:11	25°♑58'01	17.38509 AU
direct	11710 Sep 22	06:07	23°♑54'08	
evening set	11710 Dec 25	14:08	27°♑20'00	
conjunction	11711 Jan 11	05:03	28°♑21'47	0°25'35
minimum elong	11711 Jan 11	05:03	28°♑21'47	0°26'18
max. Earth dist.	11711 Jan 10	14:59	28°♑19'36	19.36995 AU
morning rise	11711 Jan 27	18:47	29°♑23'26	
	11711 Feb 06	23:40	0°♒	
retrograde	11711 Apr 30	22:18	2°♒47'37	
opposition	11711 Jul 14	01:49	0°♒44'02	0°26'02
min. Earth dist.	11711 Jul 14	14:15	0°♒42'40	17.35638 AU
	11711 Jul 31	04:38	30°℞♑	
direct	11711 Sep 27	06:41	28°♑38'40	
	11711 Nov 22	11:29	0°♒	
evening set	11711 Dec 30	18:18	2°♒05'07	
conjunction	11712 Jan 16	08:59	3°♒06'59	0°20'55
minimum elong	11712 Jan 16	08:59	3°♒06'59	0°21'36
max. Earth dist.	11712 Jan 15	18:29	3°♒04'43	19.34402 AU
morning rise	11712 Feb 01	22:27	4°♒08'41	
retrograde	11712 May 04	23:27	7°♒32'56	
opposition	11712 Jul 18	00:56	5°♒29'19	0°20'44

min. Earth dist.	11712 Jul 18 12:23	5°♒28'04	17.33329 AU
direct	11712 Oct 01 09:03	3°♒23'44	
evening set	11713 Jan 03 22:33	6°♒50'43	
conjunction	11713 Jan 20 13:04	7°♒52'38	0°16'06
minimum elong	11713 Jan 20 13:04	7°♒52'38	0°16'46
max. Earth dist.	11713 Jan 19 23:31	7°♒50'32	19.32385 AU
morning rise	11713 Feb 06 01:56	8°♒54'21	
retrograde	11713 May 09 23:18	12°♒18'38	
opposition	11713 Jul 23 00:39	10°♒15'02	0°15'17
min. Earth dist.	11713 Jul 23 12:34	10°♒13'43	17.31628 AU
direct	11713 Oct 06 09:50	8°♒09'17	
evening set	11714 Jan 09 02:51	11°♒36'42	
conjunction	11714 Jan 25 16:56	12°♒38'39	0°11'11
minimum elong	11714 Jan 25 16:57	12°♒38'39	0°11'48
behind sun begin	11714 Jan 25 12:17	12°♒37'56	
behind sun end	11714 Jan 25 21:37	12°♒39'22	
max. Earth dist.	11714 Jan 25 02:58	12°♒36'28	19.31014 AU
morning rise	11714 Feb 11 05:29	13°♒40'22	
	11714 Mar 06 03:11	15°♒	
retrograde	11714 May 15 00:58	17°♒04'38	
opposition	11714 Jul 28 00:30	15°♒01'04	0°09'44
min. Earth dist.	11714 Jul 28 11:18	14°♒59'53	17.30585 AU
	11714 Jul 28 10:12	15°℞♒	
direct	11714 Oct 11 12:28	12°♒55'14	
	11714 Dec 21 08:15	15°♒	
evening set	11715 Jan 14 07:18	16°♒23'01	
conjunction	11715 Jan 30 21:08	17°♒24'58	0°06'11
minimum elong	11715 Jan 30 21:09	17°♒24'58	0°06'45
behind sun begin	11715 Jan 30 14:52	17°♒24'00	
behind sun end	11715 Jan 31 03:26	17°♒25'56	
max. Earth dist.	11715 Jan 30 08:40	17°♒23'01	19.30297 AU
morning rise	11715 Feb 16 08:58	18°♒26'40	
retrograde	11715 May 20 01:24	21°♒50'49	
opposition	11715 Aug 02 00:35	19°♒47'23	0°04'06
min. Earth dist.	11715 Aug 02 11:32	19°♒46'11	17.30192 AU
direct	11715 Oct 16 13:41	17°♒41'32	
evening set	11716 Jan 19 11:55	21°♒09'37	
conjunction	11716 Feb 05 01:10	22°♒11'32	0°01'07
minimum elong	11716 Feb 05 01:08	22°♒11'32	0°01'40
behind sun begin	11716 Feb 04 18:24	22°♒10'30	
behind sun end	11716 Feb 05 07:52	22°♒12'34	
max. Earth dist.	11716 Feb 04 12:03	22°♒09'29	19.30237 AU
morning rise	11716 Feb 21 12:29	23°♒13'10	
desc. node	11716 Apr 26 15:02	26°♒16'14	
retrograde	11716 May 24 03:09	26°♒37'13	
opposition	11716 Aug 06 00:55	24°♒33'56	-0°01'33
min. Earth dist.	11716 Aug 06 11:05	24°♒32'49	17.30446 AU
direct	11716 Oct 20 16:04	22°♒28'06	
evening set	11717 Jan 23 16:10	25°♒56'24	
conjunction	11717 Feb 09 05:00	26°♒58'16	-0°04'04
minimum elong	11717 Feb 09 04:59	26°♒58'16	0°03'35
behind sun begin	11717 Feb 08 22:19	26°♒57'14	
behind sun end	11717 Feb 09 11:39	26°♒59'17	
max. Earth dist.	11717 Feb 08 17:39	26°♒56'30	19.30788 AU
morning rise	11717 Feb 25 15:28	27°♒59'49	
	11717 Apr 02 22:45	0°♓	
retrograde	11717 May 29 04:03	1°♓23'42	
	11717 Jul 26 17:42	30°℞♒	
opposition	11717 Aug 11 01:30	29°♒20'35	-0°07'11
min. Earth dist.	11717 Aug 11 11:26	29°♒19'30	17.31278 AU
direct	11717 Oct 25 17:56	27°♒14'50	
	11718 Jan 16 19:26	0°♓	
evening set	11718 Jan 28 20:35	0°♓43'14	
conjunction	11718 Feb 14 08:37	1°♓45'00	-0°09'05
minimum elong	11718 Feb 14 08:36	1°♓45'00	0°08'38
behind sun begin	11718 Feb 14 02:47	1°♓44'06	
behind sun end	11718 Feb 14 14:26	1°♓45'53	
max. Earth dist.	11718 Feb 13 20:37	1°♓43'07	19.31897 AU
morning rise	11718 Mar 02 18:31	2°♓46'27	
retrograde	11718 Jun 03 05:07	6°♓10'06	
opposition	11718 Aug 16 02:02	4°♓07'09	-0°12'47
min. Earth dist.	11718 Aug 16 11:40	4°♓06'06	17.32655 AU
direct	11718 Oct 30 19:56	2°♓01'29	
evening set	11719 Feb 03 00:38	5°♓29'53	
conjunction	11719 Feb 19 12:10	6°♓31'33	-0°14'02
minimum elong	11719 Feb 19 12:09	6°♓31'33	0°13'39
behind sun begin	11719 Feb 19 08:35	6°♓31'00	
behind sun end	11719 Feb 19 15:44	6°♓32'06	
max. Earth dist.	11719 Feb 19 01:38	6°♓29'54	19.33515 AU
morning rise	11719 Mar 07 21:09	7°♓32'52	
retrograde	11719 Jun 08 05:52	10°♓56'12	
opposition	11719 Aug 21 02:45	8°♓53'26	-0°18'16
min. Earth dist.	11719 Aug 21 11:50	8°♓52'27	17.34499 AU
direct	11719 Nov 04 23:02	6°♓47'52	
evening set	11720 Feb 08 04:30	10°♓16'10	
conjunction	11720 Feb 24 15:07	11°♓17'40	-0°18'53
minimum elong	11720 Feb 24 15:07	11°♓17'40	0°18'35
max. Earth dist.	11720 Feb 24 04:07	11°♓15'57	19.35584 AU
morning rise	11720 Mar 11 23:22	12°♓18'50	
retrograde	11720 Jun 12 05:09	15°♓41'48	
opposition	11720 Aug 25 03:27	13°♓39'12	-0°23'38
min. Earth dist.	11720 Aug 25 12:29	13°♓38'13	17.36799 AU
direct	11720 Nov 09 01:12	11°♓33'44	
evening set	11721 Feb 12 07:46	15°♓01'48	
conjunction	11721 Feb 28 17:43	16°♓03'09	-0°23'37
minimum elong	11721 Feb 28 17:43	16°♓03'08	0°23'20
max. Earth dist.	11721 Feb 28 08:01	16°♓01'38	19.38099 AU
morning rise	11721 Mar 17 01:02	17°♓04'06	
retrograde	11721 Jun 17 05:01	20°♓26'38	
opposition	11721 Aug 30 03:58	18°♓24'12	-0°28'49
min. Earth dist.	11721 Aug 30 12:00	18°♓23'20	17.39515 AU
direct	11721 Nov 14 05:17	16°♓18'52	
evening set	11722 Feb 17 10:31	19°♓46'35	
conjunction	11722 Mar 05 19:36	20°♓47'43	-0°28'10
minimum elong	11722 Mar 05 19:36	20°♓47'43	0°27'59
max. Earth dist.	11722 Mar 05 09:56	20°♓46'13	19.41021 AU
morning rise	11722 Mar 22 02:07	21°♓48'29	
retrograde	11722 Jun 22 02:37	25°♓10'32	
opposition	11722 Sep 04 04:23	23°♓08'14	-0°33'47
min. Earth dist.	11722 Sep 04 12:35	23°♓07'21	17.42647 AU
direct	11722 Nov 19 07:30	21°♓03'00	
evening set	11723 Feb 22 12:41	24°♓30'18	
conjunction	11723 Mar 10 20:59	25°♓31'13	-0°32'31
minimum elong	11723 Mar 10 20:58	25°♓31'13	0°32'23
max. Earth dist.	11723 Mar 10 12:19	25°♓29'52	19.44354 AU
morning rise	11723 Mar 27 02:35	26°♓31'45	
retrograde	11723 Jun 27 01:26	29°♓53'14	
opposition	11723 Sep 09 04:21	27°♓51'04	-0°38'31
min. Earth dist.	11723 Sep 09 11:08	27°♓50'21	17.46171 AU
direct	11723 Nov 24 11:43	25°♓45'59	
evening set	11724 Feb 27 14:11	29°♓12'43	
	11724 Mar 11 07:45	0°♈	

conjunction	11724 Mar 14 21:34	0°♈13'25	-0°36'38
minimum elong	11724 Mar 14 21:34	0°♈13'24	0°36'34
max. Earth dist.	11724 Mar 14 13:37	0°♈12'10	19.48081 AU
morning rise	11724 Mar 31 02:16	1°♈13'43	
retrograde	11724 Jun 30 21:46	4°♈34'35	
opposition	11724 Sep 13 04:14	2°♈32'33	-0°42'57
min. Earth dist.	11724 Sep 13 11:08	2°♈31'49	17.50113 AU
direct	11724 Nov 28 12:48	0°♈27'35	
evening set	11725 Mar 03 14:38	3°♈53'41	
conjunction	11725 Mar 19 21:08	4°♈54'07	-0°40'29
minimum elong	11725 Mar 19 21:07	4°♈54'07	0°40'29
max. Earth dist.	11725 Mar 19 14:08	4°♈53'01	19.52235 AU
morning rise	11725 Apr 05 01:00	5°♈54'10	
retrograde	11725 Jul 05 19:49	9°♈14'23	
opposition	11725 Sep 18 03:32	7°♈12'29	-0°47'06
min. Earth dist.	11725 Sep 18 08:32	7°♈11'57	17.54472 AU
direct	11725 Dec 03 15:32	5°♈07'40	
evening set	11726 Mar 08 14:24	8°♈33'03	
conjunction	11726 Mar 24 20:02	9°♈33'12	-0°44'04
minimum elong	11726 Mar 24 20:02	9°♈33'12	0°44'06
max. Earth dist.	11726 Mar 24 14:30	9°♈32'21	19.56807 AU
morning rise	11726 Apr 09 22:57	10°♈32'59	
retrograde	11726 Jul 10 15:22	13°♈52'31	
opposition	11726 Sep 23 02:27	11°♈50'46	-0°50'54
min. Earth dist.	11726 Sep 23 07:27	11°♈50'14	17.59274 AU
direct	11726 Dec 08 15:18	9°♈46'08	
evening set	11727 Mar 13 13:21	13°♈10'45	
conjunction	11727 Mar 29 18:01	14°♈10'37	-0°47'19
minimum elong	11727 Mar 29 18:00	14°♈10'36	0°47'27
max. Earth dist.	11727 Mar 29 13:11	14°♈09'52	19.61833 AU
morning rise	11727 Apr 14 20:10	15°♈10'07	
retrograde	11727 Jul 15 12:18	18°♈28'57	
opposition	11727 Sep 28 00:54	16°♈27'22	-0°54'21
min. Earth dist.	11727 Sep 28 03:41	16°♈27'04	17.64518 AU
direct	11727 Dec 13 16:01	14°♈22'59	
evening set	11728 Mar 17 11:16	17°♈46'45	
conjunction	11728 Apr 02 15:06	18°♈46'20	-0°50'16
minimum elong	11728 Apr 02 15:05	18°♈46'20	0°50'26
max. Earth dist.	11728 Apr 02 12:17	18°♈45'54	19.67289 AU
morning rise	11728 Apr 18 16:15	19°♈45'33	
retrograde	11728 Jul 19 07:11	23°♈03'40	
opposition	11728 Oct 01 23:05	21°♈02'18	-0°57'25
min. Earth dist.	11728 Oct 02 01:38	21°♈02'02	17.70187 AU
direct	11728 Dec 17 14:43	18°♈58'14	
evening set	11729 Mar 22 08:27	22°♈21'07	
conjunction	11729 Apr 07 11:17	23°♈20'24	-0°52'51
minimum elong	11729 Apr 07 11:17	23°♈20'23	0°53'05
max. Earth dist.	11729 Apr 07 08:57	23°♈20'02	19.73161 AU
morning rise	11729 Apr 23 11:47	24°♈19'20	
retrograde	11729 Jul 24 02:59	27°♈36'45	
opposition	11729 Oct 06 20:28	25°♈35'37	-1°00'07
min. Earth dist.	11729 Oct 06 20:56	25°♈35'34	17.76235 AU
direct	11729 Dec 22 13:54	23°♈31'52	
evening set	11730 Mar 27 04:38	26°♈53'50	
conjunction	11730 Apr 12 06:47	27°♈52'50	-0°55'07
minimum elong	11730 Apr 12 06:46	27°♈52'50	0°55'25
max. Earth dist.	11730 Apr 12 06:32	27°♈52'47	19.79361 AU
morning rise	11730 Apr 28 06:23	28°♈51'28	
	11730 May 18 04:33	0°♉	
retrograde	11730 Jul 28 20:37	2°♉08'10	
opposition	11730 Oct 11 17:37	0°♉07'18	-1°02'25
min. Earth dist.	11730 Oct 11 17:59	0°♉07'16	17.82568 AU
	11730 Oct 14 14:53	30°℞♈	
direct	11730 Dec 27 11:58	28°♈03'55	
	11731 Mar 06 18:59	0°♉	
evening set	11731 Apr 01 00:09	1°♉24'56	
conjunction	11731 Apr 17 01:17	2°♉23'37	-0°57'01
minimum elong	11731 Apr 17 01:17	2°♉23'37	0°57'21
max. Earth dist.	11731 Apr 17 01:06	2°♉23'35	19.85813 AU
morning rise	11731 May 03 00:17	3°♉21'58	
retrograde	11731 Aug 02 15:04	6°♉37'57	
opposition	11731 Oct 16 14:07	4°♉37'20	-1°04'19
min. Earth dist.	11731 Oct 16 12:41	4°♉37'29	17.89116 AU
direct	11732 Jan 01 10:02	2°♉34'19	
evening set	11732 Apr 04 18:40	5°♉54'21	
conjunction	11732 Apr 20 19:08	6°♉52'43	-0°58'33
minimum elong	11732 Apr 20 19:08	6°♉52'43	0°58'58
max. Earth dist.	11732 Apr 20 21:01	6°♉53'01	19.92431 AU
morning rise	11732 May 06 17:15	7°♉50'47	
retrograde	11732 Aug 06 07:27	11°♉06'02	
opposition	11732 Oct 20 10:18	9°♉05'41	-1°05'49
min. Earth dist.	11732 Oct 20 08:43	9°♉05'51	17.95792 AU
direct	11733 Jan 05 07:13	7°♉03'03	
evening set	11733 Apr 09 12:20	10°♉22'03	
conjunction	11733 Apr 25 11:52	11°♉20'07	-0°59'44
minimum elong	11733 Apr 25 11:52	11°♉20'06	1°00'11
max. Earth dist.	11733 Apr 25 13:33	11°♉20'22	19.99149 AU
morning rise	11733 May 11 09:32	12°♉17'53	
	11733 Jul 06 23:56	15°♉	
retrograde	11733 Aug 11 00:33	15°♉32'25	
	11733 Sep 15 21:56	15°℞♉	
opposition	11733 Oct 25 05:45	13°♉32'17	-1°06'54
min. Earth dist.	11733 Oct 25 02:45	13°♉32'36	18.02535 AU
direct	11734 Jan 10 04:02	11°♉30'01	
evening set	11734 Apr 14 05:05	14°♉47'59	
	11734 Apr 17 13:48	15°♉	
conjunction	11734 Apr 30 04:05	15°♉45'44	-1°00'33
minimum elong	11734 Apr 30 04:04	15°♉45'44	1°01'04
max. Earth dist.	11734 Apr 30 07:35	15°♉46'16	20.05886 AU
morning rise	11734 May 16 00:57	16°♉43'13	
retrograde	11734 Aug 15 15:24	19°♉57'00	
opposition	11734 Oct 30 00:36	17°♉57'07	-1°07'36
min. Earth dist.	11734 Oct 29 21:28	17°♉57'27	18.09256 AU
direct	11735 Jan 15 00:09	15°♉55'12	
evening set	11735 Apr 18 21:08	19°♉12'05	
conjunction	11735 May 04 19:15	20°♉09'32	-1°01'01
minimum elong	11735 May 04 19:15	20°♉09'32	1°01'34
max. Earth dist.	11735 May 04 22:20	20°♉10'00	20.12584 AU
morning rise	11735 May 20 15:44	21°♉06'45	
retrograde	11735 Aug 20 07:13	24°♉19'49	
opposition	11735 Nov 03 18:56	22°♉20'07	-1°07'54
min. Earth dist.	11735 Nov 03 14:41	22°♉20'33	18.15923 AU
direct	11736 Jan 19 19:28	20°♉18'31	
evening set	11736 Apr 22 11:55	23°♉34'19	
conjunction	11736 May 08 09:34	24°♉31'29	-1°01'08
minimum elong	11736 May 08 09:34	24°♉31'29	1°01'43
max. Earth dist.	11736 May 08 14:29	24°♉32'13	20.19199 AU
morning rise	11736 May 24 05:25	25°♉28'25	
retrograde	11736 Aug 23 20:22	28°♉40'45	
opposition	11736 Nov 07 12:38	26°♉41'14	-1°07'49
min. Earth dist.	11736 Nov 07 07:59	26°♉41'43	18.22477 AU
direct	11737 Jan 23 14:30	24°♉39'57	

evening set	11737 Apr 27	02:01	27°♉54'38	
conjunction	11737 May 12	22:57	28°♉51'31	-1°00'54
minimum elong	11737 May 12	22:57	28°♉51'31	1°01'31
max. Earth dist.	11737 May 13	03:28	28°♉52'12	20.25698 AU
morning rise	11737 May 28	18:34	29°♉48'12	
	11737 Jun 01	03:27	0°♊	
retrograde	11737 Aug 28	10:23	2°♊59'48	
opposition	11737 Nov 12	05:26	1°♊00'24	-1°07'20
min. Earth dist.	11737 Nov 11	24:00	1°♊00'58	18.28922 AU
	11737 Dec 07	21:10	30°℞♉	
direct	11738 Jan 28	07:51	28°♉59'23	
	11738 Mar 18	18:13	0°♊	
evening set	11738 May 01	15:00	2°♊12'59	
conjunction	11738 May 17	11:36	3°♊09'36	-1°00'19
minimum elong	11738 May 17	11:36	3°♊09'36	1°00'58
max. Earth dist.	11738 May 17	17:55	3°♊10'33	20.32081 AU
morning rise	11738 Jun 02	06:42	4°♊06'01	
retrograde	11738 Sep 01	22:08	7°♊16'54	
opposition	11738 Nov 16	21:41	5°♊17'38	-1°06'29
min. Earth dist.	11738 Nov 16	15:32	5°♊18'16	18.35239 AU
direct	11739 Feb 02	01:17	3°♊16'53	
evening set	11739 May 06	03:09	6°♊29'23	
conjunction	11739 May 21	23:05	7°♊25'43	-0°59'24
minimum elong	11739 May 21	23:05	7°♊25'43	1°00'06
max. Earth dist.	11739 May 22	05:20	7°♊26'39	20.38350 AU
morning rise	11739 Jun 06	18:01	8°♊21'54	
retrograde	11739 Sep 06	10:17	11°♊32'06	
opposition	11739 Nov 21	13:16	9°♊32'57	-1°05'16
min. Earth dist.	11739 Nov 21	06:19	9°♊33'39	18.41477 AU
direct	11740 Feb 06	16:15	7°♊32'28	
evening set	11740 May 09	14:18	10°♊43'54	
conjunction	11740 May 25	09:58	11°♊39'58	-0°58'09
minimum elong	11740 May 25	09:58	11°♊39'58	0°58'52
max. Earth dist.	11740 May 25	18:10	11°♊41'11	20.44547 AU
morning rise	11740 Jun 10	04:30	12°♊35'55	
retrograde	11740 Sep 09	21:26	15°♊45'28	
opposition	11740 Nov 25	04:06	13°♊46'26	-1°03'42
min. Earth dist.	11740 Nov 24	20:02	13°♊47'16	18.47632 AU
direct	11741 Feb 10	07:58	11°♊46'15	
evening set	11741 May 14	00:45	14°♊56'39	
conjunction	11741 May 29	19:55	15°♊52'29	-0°56'36
minimum elong	11741 May 29	19:55	15°♊52'29	0°57'21
max. Earth dist.	11741 May 30	04:08	15°♊53'42	20.50663 AU
morning rise	11741 Jun 14	14:26	16°♊48'13	
retrograde	11741 Sep 14	08:26	19°♊57'10	
opposition	11741 Nov 29	18:21	17°♊58'17	-1°01'49
min. Earth dist.	11741 Nov 29	09:40	17°♊59'09	18.53709 AU
direct	11742 Feb 14	20:22	15°♊58'23	
evening set	11742 May 18	10:20	19°♊07'48	
conjunction	11742 Jun 03	05:20	20°♊03'24	-0°54'46
minimum elong	11742 Jun 03	05:20	20°♊03'24	0°55'31
max. Earth dist.	11742 Jun 03	15:17	20°♊04'52	20.56680 AU
morning rise	11742 Jun 18	23:34	20°♊58'56	
retrograde	11742 Sep 18	19:05	24°♊07'19	
opposition	11742 Dec 04	07:52	22°♊08'36	-0°59'36
min. Earth dist.	11742 Dec 03	22:02	22°♊09'35	18.59647 AU
direct	11743 Feb 19	10:29	20°♊09'02	
evening set	11743 May 22	19:25	23°♊17'29	
conjunction	11743 Jun 07	14:01	24°♊12'53	-0°52'39
minimum elong	11743 Jun 07	14:01	24°♊12'53	0°53'24
max. Earth dist.	11743 Jun 07	23:55	24°♊14'21	20.62544 AU
morning rise	11743 Jun 23	08:18	25°♊08'15	
retrograde	11743 Sep 23	05:32	28°♊16'06	
opposition	11743 Dec 08	21:04	26°♊17'32	-0°57'05
min. Earth dist.	11743 Dec 08	10:58	26°♊18'34	18.65426 AU
direct	11744 Feb 23	21:36	24°♊18'18	
evening set	11744 May 26	03:35	27°♊25'51	
conjunction	11744 Jun 10	22:09	28°♊21'03	-0°50'16
minimum elong	11744 Jun 10	22:09	28°♊21'03	0°51'03
max. Earth dist.	11744 Jun 11	09:33	28°♊22'43	20.68215 AU
morning rise	11744 Jun 26	16:18	29°♊16'14	
	11744 Jul 09	18:23	0°♋	
retrograde	11744 Sep 26	15:47	2°♋23'36	
opposition	11744 Dec 12	09:36	0°♋25'12	-0°54'18
min. Earth dist.	11744 Dec 11	22:24	0°♋26'20	18.70961 AU
	11744 Dec 22	21:29	30°℞♊	
direct	11745 Feb 27	10:05	28°♊26'17	
	11745 May 01	00:53	0°♋	
evening set	11745 May 30	11:30	1°♋32'58	
conjunction	11745 Jun 15	05:47	2°♋27'59	-0°47'39
minimum elong	11745 Jun 15	05:47	2°♋27'59	0°48'25
max. Earth dist.	11745 Jun 15	16:54	2°♋29'37	20.73611 AU
morning rise	11745 Jul 01	00:06	3°♋23'01	
retrograde	11745 Oct 01	01:38	6°♋29'57	
opposition	11745 Dec 16	21:38	4°♋31'41	-0°51'15
min. Earth dist.	11745 Dec 16	10:39	4°♋32'47	18.76212 AU
direct	11746 Mar 03	20:20	2°♋33'03	
evening set	11746 Jun 03	18:49	5°♋38'55	
conjunction	11746 Jun 19	13:07	6°♋33'46	-0°44'47
minimum elong	11746 Jun 19	13:07	6°♋33'46	0°45'35
max. Earth dist.	11746 Jun 20	01:19	6°♋35'33	20.78692 AU
morning rise	11746 Jul 05	07:24	7°♋28'39	
retrograde	11746 Oct 05	11:20	10°♋35'11	
opposition	11746 Dec 21	09:15	8°♋37'03	-0°47'57
min. Earth dist.	11746 Dec 20	21:19	8°♋38'15	18.81100 AU
direct	11747 Mar 08	07:42	6°♋38'42	
evening set	11747 Jun 08	01:42	9°♋43'46	
conjunction	11747 Jun 23	19:48	10°♋38'28	-0°41'43
minimum elong	11747 Jun 23	19:48	10°♋38'28	0°42'30
max. Earth dist.	11747 Jun 24	07:33	10°♋40'11	20.83381 AU
morning rise	11747 Jul 09	14:18	11°♋33'14	
retrograde	11747 Oct 09	20:22	14°♋39'24	
opposition	11747 Dec 25	20:37	12°♋41'22	-0°44'26
min. Earth dist.	11747 Dec 25	09:11	12°♋42'30	18.85587 AU
direct	11748 Mar 11	17:13	10°♋43'15	
evening set	11748 Jun 11	08:08	13°♋47'35	
conjunction	11748 Jun 27	02:23	14°♋42'09	-0°38'27
minimum elong	11748 Jun 27	02:23	14°♋42'09	0°39'14
max. Earth dist.	11748 Jun 27	14:53	14°♋43'58	20.87644 AU
morning rise	11748 Jul 12	20:57	15°♋36'47	
retrograde	11748 Oct 13	05:43	18°♋42'37	
opposition	11748 Dec 29	07:16	16°♋44'38	-0°40'42
min. Earth dist.	11748 Dec 28	19:01	16°♋45'52	18.89607 AU
direct	11749 Mar 16	03:43	14°♋46'44	
evening set	11749 Jun 15	14:18	17°♋50'22	
conjunction	11749 Jul 01	08:30	18°♋44'48	-0°35'01
minimum elong	11749 Jul 01	08:30	18°♋44'48	0°35'47
max. Earth dist.	11749 Jul 01	20:17	18°♋46'31	20.91416 AU
morning rise	11749 Jul 17	03:25	19°♋39'21	
retrograde	11749 Oct 17	13:24	22°♋44'53	
opposition	11750 Jan 02	17:42	20°♋46'55	-0°36'48

min. Earth dist.	11750 Jan	02	06:18	20°♋48'03	18.93135 AU
direct	11750 Mar	20	12:20	18°♋49'10	
evening set	11750 Jun	19	19:54	21°♋52'08	
conjunction	11750 Jul	05	14:18	22°♋46'28	-0°31'24
minimum elong	11750 Jul	05	14:18	22°♋46'28	0°32'09
max. Earth dist.	11750 Jul	06	02:42	22°♋48'16	20.94696 AU
morning rise	11750 Jul	21	09:22	23°♋40'56	
retrograde	11750 Oct	21	22:26	26°♋46'11	
opposition	11751 Jan	07	03:32	24°♋48'12	-0°32'43
min. Earth dist.	11751 Jan	06	15:18	24°♋49'25	18.96158 AU
direct	11751 Mar	24	22:11	22°♋50'34	
evening set	11751 Jun	24	01:15	25°♋52'54	
conjunction	11751 Jul	09	19:41	26°♋47'09	-0°27'39
minimum elong	11751 Jul	09	19:41	26°♋47'10	0°28'24
max. Earth dist.	11751 Jul	10	07:34	26°♋48'52	20.97489 AU
morning rise	11751 Jul	25	15:10	27°♋41'33	
	11751 Sep	12	09:07	0°♌	
retrograde	11751 Oct	26	04:59	0°♌46'35	
	11751 Dec	10	12:13	30℞♋	
opposition	11752 Jan	11	13:07	28°♋48'32	-0°28'29
min. Earth dist.	11752 Jan	11	01:43	28°♋49'41	18.98737 AU
direct	11752 Mar	28	05:24	26°♋51'00	
evening set	11752 Jun	27	06:01	29°♋52'46	
	11752 Jun	29	09:19	0°♌	
conjunction	11752 Jul	13	00:46	0°♌46'57	-0°23'47
minimum elong	11752 Jul	13	00:46	0°♌46'57	0°24'29
max. Earth dist.	11752 Jul	13	13:28	0°♌48'46	20.99860 AU
morning rise	11752 Jul	28	20:33	1°♌41'17	
retrograde	11752 Oct	29	13:36	4°♌46'08	
opposition	11753 Jan	14	22:05	2°♌48'01	-0°24'08
min. Earth dist.	11753 Jan	14	09:40	2°♌49'16	19.00900 AU
direct	11753 Apr	01	14:28	0°♌50'34	
evening set	11753 Jul	01	10:46	3°♌51'50	
conjunction	11753 Jul	17	05:37	4°♌45'58	-0°19'48
minimum elong	11753 Jul	17	05:37	4°♌45'58	0°20'29
max. Earth dist.	11753 Jul	17	17:53	4°♌47'43	21.01830 AU
morning rise	11753 Aug	02	01:50	5°♌40'17	
retrograde	11753 Nov	02	19:53	8°♌45'00	
opposition	11754 Jan	19	06:46	6°♌46'50	-0°19'40
min. Earth dist.	11754 Jan	18	19:09	6°♌48'00	19.02698 AU
direct	11754 Apr	05	20:09	4°♌49'27	
evening set	11754 Jul	05	15:11	7°♌50'19	
conjunction	11754 Jul	21	10:23	8°♌44'24	-0°15'44
minimum elong	11754 Jul	21	10:23	8°♌44'24	0°16'23
max. Earth dist.	11754 Jul	21	23:25	8°♌46'16	21.03457 AU
morning rise	11754 Aug	06	06:55	9°♌38'42	
retrograde	11754 Nov	07	04:03	12°♌43'22	
opposition	11755 Jan	23	15:08	10°♌45'09	-0°15'07
min. Earth dist.	11755 Jan	23	02:22	10°♌46'26	19.04145 AU
direct	11755 Apr	10	04:38	8°♌47'52	
evening set	11755 Jul	09	19:28	11°♌48'23	
conjunction	11755 Jul	25	14:51	12°♌42'28	-0°11'36
minimum elong	11755 Jul	25	14:51	12°♌42'28	0°12'14
behind sun begin	11755 Jul	25	10:25	12°♌41'50	
behind sun end	11755 Jul	25	19:18	12°♌43'05	
max. Earth dist.	11755 Jul	26	03:30	12°♌44'16	21.04728 AU
morning rise	11755 Aug	10	11:56	13°♌36'45	
	11755 Sep	06	02:11	15°♌	
retrograde	11755 Nov	11	11:05	16°♌41'27	
	11756 Jan	20	22:37	15℞♌	
opposition	11756 Jan	27	23:28	14°♌43'11	-0°10'31
min. Earth dist.	11756 Jan	27	11:33	14°♌44'23	19.05248 AU
direct	11756 Apr	13	09:29	12°♌46'00	
	11756 Jun	28	18:21	15°♌	
evening set	11756 Jul	12	23:42	15°♌46'15	
conjunction	11756 Jul	28	19:33	16°♌40'19	-0°07'26
minimum elong	11756 Jul	28	19:34	16°♌40'19	0°08'02
behind sun begin	11756 Jul	28	13:41	16°♌39'30	
behind sun end	11756 Jul	29	01:27	16°♌41'09	
max. Earth dist.	11756 Jul	29	08:46	16°♌42'12	21.05656 AU
morning rise	11756 Aug	13	17:02	17°♌34'38	
retrograde	11756 Nov	14	18:59	20°♌39'22	
opposition	11757 Jan	31	07:14	18°♌41'06	-0°05'52
min. Earth dist.	11757 Jan	30	18:23	18°♌42'23	19.05983 AU
direct	11757 Apr	17	17:06	16°♌44'01	
evening set	11757 Jul	17	04:06	19°♌44'05	
conjunction	11757 Aug	02	00:13	20°♌38'10	-0°03'14
minimum elong	11757 Aug	02	00:13	20°♌38'10	0°03'47
behind sun begin	11757 Aug	01	17:42	20°♌37'15	
behind sun end	11757 Aug	02	06:44	20°♌39'04	
max. Earth dist.	11757 Aug	02	12:47	20°♌39'57	21.06198 AU
morning rise	11757 Aug	17	22:16	21°♌32'31	
retrograde	11757 Nov	19	02:24	24°♌37'22	
opposition	11758 Feb	04	15:13	22°♌39'04	-0°01'11
min. Earth dist.	11758 Feb	04	03:29	22°♌40'15	19.06332 AU
direct	11758 Apr	21	21:49	20°♌42'04	
asc. node	11758 May	04	18:17	20°♌46'16	
evening set	11758 Jul	21	08:24	23°♌42'00	
conjunction	11758 Aug	06	05:01	24°♌36'08	0°01'06
minimum elong	11758 Aug	06	05:00	24°♌36'08	0°00'34
behind sun begin	11758 Aug	05	22:26	24°♌35'13	
behind sun end	11758 Aug	06	11:34	24°♌37'03	
max. Earth dist.	11758 Aug	06	17:58	24°♌37'58	21.06346 AU
morning rise	11758 Aug	22	03:29	25°♌30'32	
retrograde	11758 Nov	23	10:32	28°♌35'34	
opposition	11759 Feb	08	23:01	26°♌37'14	0°03'30
min. Earth dist.	11759 Feb	08	10:28	26°♌38'30	19.06261 AU
direct	11759 Apr	26	04:42	24°♌40'19	
evening set	11759 Jul	25	13:04	27°♌40'12	
conjunction	11759 Aug	10	10:00	28°♌34'22	0°05'22
minimum elong	11759 Aug	10	10:00	28°♌34'22	0°04'54
behind sun begin	11759 Aug	10	03:34	28°♌33'28	
behind sun end	11759 Aug	10	16:25	28°♌35'15	
max. Earth dist.	11759 Aug	10	22:10	28°♌36'05	21.06051 AU
morning rise	11759 Aug	26	09:05	29°♌28'50	
	11759 Sep	04	20:31	0°♍	
retrograde	11759 Nov	27	17:55	2°♍34'06	
opposition	11760 Feb	13	06:54	0°♍35'43	0°08'10
min. Earth dist.	11760 Feb	12	19:48	0°♍36'50	19.05743 AU
	11760 Feb	28	09:14	30℞♌	
direct	11760 Apr	29	09:34	28°♌38'51	
	11760 Jun	26	08:00	0°♍	
evening set	11760 Jul	28	17:52	1°♍38'44	
conjunction	11760 Aug	13	15:22	2°♍32'58	0°09'33
minimum elong	11760 Aug	13	15:22	2°♍32'58	0°09'07
behind sun begin	11760 Aug	13	09:46	2°♍32'11	
behind sun end	11760 Aug	13	20:59	2°♍33'45	
max. Earth dist.	11760 Aug	14	03:33	2°♍34'42	21.05294 AU
morning rise	11760 Aug	29	14:58	3°♍27'31	
retrograde	11760 Dec	01	02:46	6°♍33'03	
opposition	11761 Feb	16	14:40	4°♍34'36	0°12'48
min. Earth dist.	11761 Feb	16	03:08	4°♍35'46	19.04722 AU
direct	11761 May	03	16:19	2°♍37'45	

evening set	11761 Aug 01 23:08	5°♍37'42	
conjunction	11761 Aug 17 20:59	6°♍32'01	0°13'42
minimum elong	11761 Aug 17 20:59	6°♍32'01	0°13'20
behind sun begin	11761 Aug 17 17:10	6°♍31'29	
behind sun end	11761 Aug 18 00:49	6°♍32'33	
max. Earth dist.	11761 Aug 18 08:00	6°♍33'35	21.03998 AU
morning rise	11761 Sep 02 21:12	7°♍26'40	
retrograde	11761 Dec 05 10:00	10°♍32'29	
opposition	11762 Feb 20 22:37	8°♍33'57	0°17'23
min. Earth dist.	11762 Feb 20 12:49	8°♍34'56	19.03160 AU
direct	11762 May 07 21:17	6°♍37'03	
evening set	11762 Aug 06 04:36	9°♍37'08	
conjunction	11762 Aug 22 03:04	10°♍31'32	0°17'49
minimum elong	11762 Aug 22 03:04	10°♍31'32	0°17'29
max. Earth dist.	11762 Aug 22 13:46	10°♍33'04	21.02166 AU
morning rise	11762 Sep 07 03:47	11°♍26'17	
retrograde	11762 Dec 09 19:32	14°♍32'26	
opposition	11763 Feb 25 06:35	12°♍33'45	0°21'54
min. Earth dist.	11763 Feb 24 20:27	12°♍34'46	19.01046 AU
direct	11763 May 12 04:28	10°♍36'46	
evening set	11763 Aug 10 10:21	13°♍36'59	
conjunction	11763 Aug 26 09:17	14°♍31'31	0°21'51
minimum elong	11763 Aug 26 09:17	14°♍31'31	0°21'34
max. Earth dist.	11763 Aug 26 18:47	14°♍32'52	20.99778 AU
morning rise	11763 Sep 11 10:43	15°♍26'23	
retrograde	11763 Dec 14 02:45	18°♍32'52	
opposition	11764 Feb 29 14:44	16°♍34'00	0°26'19
min. Earth dist.	11764 Feb 29 06:24	16°♍34'51	18.98398 AU
direct	11764 May 15 09:38	14°♍36'53	
evening set	11764 Aug 13 16:24	17°♍37'18	
conjunction	11764 Aug 29 16:01	18°♍31'57	0°25'47
minimum elong	11764 Aug 29 16:01	18°♍31'57	0°25'33
max. Earth dist.	11764 Aug 30 01:11	18°♍33'16	20.96892 AU
morning rise	11764 Sep 14 18:02	19°♍26'57	
retrograde	11764 Dec 17 12:44	22°♍33'48	
opposition	11765 Mar 04 22:36	20°♍34'43	0°30'37
min. Earth dist.	11765 Mar 04 13:58	20°♍35'36	18.95276 AU
direct	11765 May 19 16:50	18°♍37'26	
evening set	11765 Aug 17 22:54	21°♍38'07	
conjunction	11765 Sep 02 22:59	22°♍32'54	0°29'36
minimum elong	11765 Sep 02 22:59	22°♍32'54	0°29'25
max. Earth dist.	11765 Sep 03 07:06	22°♍34'04	20.93552 AU
morning rise	11765 Sep 19 01:41	23°♍28'04	
retrograde	11765 Dec 21 20:25	26°♍35'19	
opposition	11766 Mar 09 06:54	24°♍36'01	0°34'47
min. Earth dist.	11766 Mar 08 23:52	24°♍36'43	18.91747 AU
direct	11766 May 23 22:18	22°♍38'32	
evening set	11766 Aug 22 05:32	25°♍39'33	
conjunction	11766 Sep 07 06:18	26°♍34'29	0°33'17
minimum elong	11766 Sep 07 06:17	26°♍34'29	0°33'11
max. Earth dist.	11766 Sep 07 14:16	26°♍35'38	20.89849 AU
morning rise	11766 Sep 23 09:35	27°♍29'48	
	11766 Nov 16 22:44	0°♎	
retrograde	11766 Dec 26 07:11	0°♎37'31	
	11767 Feb 04 11:49	30°℞♍	
opposition	11767 Mar 13 15:12	28°♍37'59	0°38'48
min. Earth dist.	11767 Mar 13 07:39	28°♍38'45	18.87876 AU
direct	11767 May 28 05:40	26°♍40'19	
evening set	11767 Aug 26 12:52	29°♍41'43	
	11767 Aug 31 21:56	0°♎	

conjunction	11767 Sep 11 14:11	0°♎36'50	0°36'50
minimum elong	11767 Sep 11 14:10	0°♎36'50	0°36'45
max. Earth dist.	11767 Sep 11 21:15	0°♎37'51	20.85816 AU
morning rise	11767 Sep 27 18:09	1°♎32'20	
retrograde	11767 Dec 30 15:59	4°♎40'33	
opposition	11768 Mar 16 23:44	2°♎40'48	0°42'38
min. Earth dist.	11768 Mar 16 17:44	2°♎41'25	18.83707 AU
direct	11768 May 31 11:22	0°♎42'57	
evening set	11768 Aug 29 20:38	3°♎44'49	
conjunction	11768 Sep 14 22:40	4°♎40'07	0°40'11
minimum elong	11768 Sep 14 22:40	4°♎40'07	0°40'11
max. Earth dist.	11768 Sep 15 05:25	4°♎41'05	20.81515 AU
morning rise	11768 Oct 01 03:16	5°♎35'48	
retrograde	11769 Jan 03 03:49	8°♎44'34	
opposition	11769 Mar 21 08:27	6°♎44'37	0°46'16
min. Earth dist.	11769 Mar 21 01:58	6°♎45'17	18.79272 AU
direct	11769 Jun 04 19:16	4°♎46'35	
evening set	11769 Sep 03 05:02	7°♎49'00	
conjunction	11769 Sep 19 07:37	8°♎44'30	0°43'21
minimum elong	11769 Sep 19 07:36	8°♎44'30	0°43'24
max. Earth dist.	11769 Sep 19 13:32	8°♎45'21	20.76947 AU
morning rise	11769 Oct 05 12:51	9°♎40'24	
retrograde	11770 Jan 07 13:43	12°♎49'45	
opposition	11770 Mar 25 17:39	10°♎49'37	0°49'40
min. Earth dist.	11770 Mar 25 12:39	10°♎50'08	18.74591 AU
direct	11770 Jun 09 01:20	8°♎51'25	
evening set	11770 Sep 07 14:03	11°♎54'27	
conjunction	11770 Sep 23 17:22	12°♎50'10	0°46'19
minimum elong	11770 Sep 23 17:21	12°♎50'09	0°46'25
max. Earth dist.	11770 Sep 23 22:50	12°♎50'57	20.72163 AU
morning rise	11770 Oct 09 23:14	13°♎46'16	
retrograde	11771 Jan 12 03:00	16°♎56'16	
opposition	11771 Mar 30 03:06	14°♎55'58	0°52'51
min. Earth dist.	11771 Mar 29 21:43	14°♎56'32	18.69694 AU
direct	11771 Jun 13 10:02	12°♎57'35	
evening set	11771 Sep 11 23:50	16°♎01'19	
conjunction	11771 Sep 28 03:47	16°♎57'15	0°49'04
minimum elong	11771 Sep 28 03:47	16°♎57'15	0°49'13
max. Earth dist.	11771 Sep 28 08:27	16°♎57'56	20.67147 AU
morning rise	11771 Oct 14 10:21	17°♎53'36	
retrograde	11772 Jan 16 14:12	21°♎04'16	
opposition	11772 Apr 02 13:07	19°♎03'51	0°55'46
min. Earth dist.	11772 Apr 02 09:24	19°♎04'14	18.64566 AU
direct	11772 Jun 16 16:42	17°♎05'18	
evening set	11772 Sep 15 10:27	20°♎09'46	
conjunction	11772 Oct 01 15:07	21°♎05'57	0°51'34
minimum elong	11772 Oct 01 15:06	21°♎05'57	0°51'46
max. Earth dist.	11772 Oct 01 18:57	21°♎06'31	20.61909 AU
morning rise	11772 Oct 17 22:18	22°♎02'32	
retrograde	11773 Jan 20 04:55	25°♎13'54	
opposition	11773 Apr 06 23:21	23°♎13'21	0°58'25
min. Earth dist.	11773 Apr 06 19:39	23°♎13'44	18.59202 AU
direct	11773 Jun 21 02:24	21°♎14'37	
evening set	11773 Sep 19 21:59	24°♎19'55	
conjunction	11773 Oct 06 03:17	25°♎16'22	0°53'48
minimum elong	11773 Oct 06 03:16	25°♎16'22	0°54'05
max. Earth dist.	11773 Oct 06 06:09	25°♎16'47	20.56407 AU
morning rise	11773 Oct 22 11:03	26°♎13'12	
retrograde	11774 Jan 24 17:42	29°♎25'18	
opposition	11774 Apr 11 10:22	27°♎24'37	1°00'47
min. Earth dist.	11774 Apr 11 08:30	27°♎24'49	18.53570 AU

direct	11774 Jun	25	10:14	25°♎25'41	
evening set	11774 Sep	24	10:12	28°♎31'50	
conjunction	11774 Oct	10	16:12	29°♎28'32	0°55'47
minimum elong	11774 Oct	10	16:12	29°♎28'32	0°56'06
max. Earth dist.	11774 Oct	10	17:51	29°♎28'47	20.50640 AU
	11774 Oct	19	15:04	0°♏	
morning rise	11774 Oct	27	00:39	0°♏25'38	
retrograde	11775 Jan	29	09:38	3°♏38'29	
opposition	11775 Apr	15	21:49	1°♏37'38	1°02'51
min. Earth dist.	11775 Apr	15	20:15	1°♏37'48	18.47655 AU
	11775 May	31	18:25	30°℞♎	
direct	11775 Jun	29	21:14	29°♎38'27	
	11775 Jul	28	14:15	0°♏	
evening set	11775 Sep	28	23:32	2°♏45'29	
conjunction	11775 Oct	15	06:14	3°♏42'29	0°57'29
minimum elong	11775 Oct	15	06:14	3°♏42'29	0°57'51
max. Earth dist.	11775 Oct	15	06:46	3°♏42'33	20.44567 AU
morning rise	11775 Oct	31	15:15	4°♏39'50	
retrograde	11776 Feb	03	00:01	7°♏53'25	
opposition	11776 Apr	19	09:48	5°♏52'22	1°04'35
min. Earth dist.	11776 Apr	19	10:08	5°♏52'20	18.41441 AU
direct	11776 Jul	03	06:53	3°♏52'55	
evening set	11776 Oct	02	13:38	7°♏00'51	
conjunction	11776 Oct	18	21:01	7°♏58'07	0°58'52
minimum elong	11776 Oct	18	21:01	7°♏58'07	0°59'17
max. Earth dist.	11776 Oct	18	19:56	7°♏57'58	20.38230 AU
morning rise	11776 Nov	04	06:42	8°♏55'45	
retrograde	11777 Feb	06	16:34	12°♏10'03	
opposition	11777 Apr	23	22:15	10°♏08'47	1°05'58
min. Earth dist.	11777 Apr	23	23:00	10°♏08'42	18.34984 AU
direct	11777 Jul	07	19:03	8°♏09'00	
evening set	11777 Oct	07	04:23	11°♏17'52	
conjunction	11777 Oct	23	12:29	12°♏15'26	0°59'57
minimum elong	11777 Oct	23	12:29	12°♏15'26	1°00'25
max. Earth dist.	11777 Oct	23	10:41	12°♏15'10	20.31663 AU
morning rise	11777 Nov	08	22:39	13°♏13'20	
	11777 Dec	12	18:58	15°♏	
retrograde	11778 Feb	11	08:03	16°♏28'20	
	11778 Apr	15	03:16	15°℞♏	
opposition	11778 Apr	28	11:22	14°♏26'50	1°07'01
min. Earth dist.	11778 Apr	28	13:40	14°♏26'36	18.28337 AU
direct	11778 Jul	12	06:55	12°♏26'42	
	11778 Oct	01	01:54	15°♏	
evening set	11778 Oct	11	20:05	15°♏36'32	
conjunction	11778 Oct	28	04:49	16°♏34'23	1°00'41
minimum elong	11778 Oct	28	04:49	16°♏34'23	1°01'13
max. Earth dist.	11778 Oct	28	01:26	16°♏33'53	20.24969 AU
morning rise	11778 Nov	13	15:40	17°♏32'34	
retrograde	11779 Feb	16	01:01	20°♏48'17	
opposition	11779 May	03	00:47	18°♏46'31	1°07'41
min. Earth dist.	11779 May	03	03:30	18°♏46'14	18.21604 AU
direct	11779 Jul	16	20:01	16°♏46'01	
evening set	11779 Oct	16	12:34	19°♏56'50	
conjunction	11779 Nov	01	22:04	20°♏54'59	1°01'06
minimum elong	11779 Nov	01	22:04	20°♏54'59	1°01'39
max. Earth dist.	11779 Nov	01	18:19	20°♏54'25	20.18201 AU
morning rise	11779 Nov	18	09:21	21°♏53'26	
retrograde	11780 Feb	20	17:45	25°♏09'51	
opposition	11780 May	06	14:53	23°♏07'51	1°07'58
min. Earth dist.	11780 May	06	18:49	23°♏07'26	18.14830 AU
direct	11780 Jul	20	09:59	21°♏06'59	
evening set	11780 Oct	20	05:57	24°♏18'49	
conjunction	11780 Nov	05	15:59	25°♏17'15	1°01'09
minimum elong	11780 Nov	05	15:59	25°♏17'15	1°01'46
max. Earth dist.	11780 Nov	05	10:35	25°♏16'27	20.11446 AU
morning rise	11780 Nov	22	03:53	26°♏15'59	
retrograde	11781 Feb	24	11:01	29°♏33'06	
opposition	11781 May	11	05:25	27°♏30'52	1°07'51
min. Earth dist.	11781 May	11	09:45	27°♏30'24	18.08107 AU
direct	11781 Jul	25	00:31	25°♏29'37	
evening set	11781 Oct	25	00:06	28°♏42'30	
conjunction	11781 Nov	10	10:52	29°♏41'14	1°00'50
minimum elong	11781 Nov	10	10:52	29°♏41'14	1°01'28
max. Earth dist.	11781 Nov	10	05:30	29°♏40'26	20.04759 AU
	11781 Nov	15	16:00	0°♐	
morning rise	11781 Nov	26	23:05	0°♐40'14	
retrograde	11782 Mar	01	05:03	3°♐58'02	
opposition	11782 May	15	20:40	1°♐55'36	1°07'20
min. Earth dist.	11782 May	16	01:49	1°♐55'03	18.01483 AU
	11782 Jul	14	14:45	30°℞♏	
direct	11782 Jul	29	15:52	29°♏54'00	
	11782 Aug	13	14:39	0°♐	
evening set	11782 Oct	29	19:08	3°♐07'56	
conjunction	11782 Nov	15	06:24	4°♐06'58	1°00'10
minimum elong	11782 Nov	15	06:24	4°♐06'58	1°00'50
max. Earth dist.	11782 Nov	14	23:21	4°♐05'54	19.98219 AU
morning rise	11782 Dec	01	19:14	5°♐06'14	
retrograde	11783 Mar	05	23:45	8°♐24'43	
opposition	11783 May	20	12:32	6°♐22'06	1°06'24
min. Earth dist.	11783 May	20	18:10	6°♐21'30	17.95031 AU
direct	11783 Aug	03	07:52	4°♐20'09	
evening set	11783 Nov	03	15:06	7°♐35'10	
conjunction	11783 Nov	20	03:06	8°♐34'30	0°59'07
minimum elong	11783 Nov	20	03:05	8°♐34'30	0°59'49
max. Earth dist.	11783 Nov	19	20:19	8°♐33'28	19.91854 AU
morning rise	11783 Dec	06	16:09	9°♐34'02	
retrograde	11784 Mar	09	19:15	12°♐53'11	
opposition	11784 May	24	04:56	10°♐50'26	1°05'04
min. Earth dist.	11784 May	24	11:09	10°♐49'46	17.88769 AU
direct	11784 Aug	07	00:25	8°♐48'10	
evening set	11784 Nov	07	12:05	12°♐04'18	
conjunction	11784 Nov	24	00:27	13°♐03'54	0°57'43
minimum elong	11784 Nov	24	00:27	13°♐03'54	0°58'26
max. Earth dist.	11784 Nov	23	15:52	13°♐02'36	19.85714 AU
morning rise	11784 Dec	10	14:01	14°♐03'42	
retrograde	11785 Mar	14	15:45	17°♐23'31	
opposition	11785 May	28	22:09	15°♐20'40	1°03'19
min. Earth dist.	11785 May	29	05:04	15°♐19'56	17.82750 AU
direct	11785 Aug	11	17:29	13°♐18'07	
evening set	11785 Nov	12	09:40	16°♐35'20	
conjunction	11785 Nov	28	22:42	17°♐35'14	0°55'56
minimum elong	11785 Nov	28	22:42	17°♐35'14	0°56'42
max. Earth dist.	11785 Nov	28	14:38	17°♐34'01	19.79808 AU
morning rise	11785 Dec	15	12:25	18°♐35'17	
retrograde	11786 Mar	19	13:23	21°♐55'45	
opposition	11786 Jun	02	16:03	19°♐52'50	1°01'10
min. Earth dist.	11786 Jun	02	23:20	19°♐52'03	17.76952 AU
direct	11786 Aug	16	11:36	17°♐50'01	
evening set	11786 Nov	17	08:32	21°♐08'22	
conjunction	11786 Dec	03	21:50	22°♐08'31	0°53'48
minimum elong	11786 Dec	03	21:50	22°♐08'31	0°54'34

max. Earth dist.	11786 Dec 03 11:49	22°♐06'59	19.74126 AU
morning rise	11786 Dec 20 11:59	23°♐08'49	
retrograde	11787 Mar 24 11:14	26°♐29'55	
opposition	11787 Jun 07 10:33	24°♐26'56	0°58'37
min. Earth dist.	11787 Jun 07 19:04	24°♐26'01	17.71381 AU
direct	11787 Aug 21 05:51	22°♐23'50	
evening set	11787 Nov 22 08:11	25°♐43'16	
conjunction	11787 Dec 08 22:04	26°♐43'42	0°51'19
minimum elong	11787 Dec 08 22:04	26°♐43'42	0°52'06
max. Earth dist.	11787 Dec 08 12:14	26°♐42'12	19.68648 AU
morning rise	11787 Dec 25 12:14	27°♐44'14	
	11788 Feb 06 21:14	0°♑	
retrograde	11788 Mar 28 10:43	1°♑05'53	
	11788 May 19 07:53	30°℞♐	
opposition	11788 Jun 11 05:50	29°♐02'52	0°55'41
min. Earth dist.	11788 Jun 11 14:35	29°♐01'55	17.65994 AU
direct	11788 Aug 25 02:06	26°♐59'29	
	11788 Nov 20 17:51	0°♑	
evening set	11788 Nov 26 08:42	0°♑19'59	
conjunction	11788 Dec 12 22:44	1°♑20'39	0°48'30
minimum elong	11788 Dec 12 22:45	1°♑20'39	0°49'17
max. Earth dist.	11788 Dec 12 10:55	1°♑18'50	19.63360 AU
morning rise	11788 Dec 29 13:08	2°♑21'24	
retrograde	11789 Apr 02 09:01	5°♑43'35	
opposition	11789 Jun 16 01:50	3°♑40'28	0°52'22
min. Earth dist.	11789 Jun 16 11:57	3°♑39'22	17.60818 AU
direct	11789 Aug 29 21:39	1°♑36'48	
evening set	11789 Dec 01 09:50	4°♑58'18	
conjunction	11789 Dec 18 00:19	5°♑59'13	0°45'20
minimum elong	11789 Dec 18 00:19	5°♑59'13	0°46'07
max. Earth dist.	11789 Dec 17 12:38	5°♑57'25	19.58298 AU
morning rise	11790 Jan 03 14:41	7°♑00'09	
retrograde	11790 Apr 07 09:52	10°♑22'48	
opposition	11790 Jun 20 22:16	8°♑19'36	0°48'42
min. Earth dist.	11790 Jun 21 08:18	8°♑18'31	17.55874 AU
direct	11790 Sep 03 20:03	6°♑15'39	
evening set	11790 Dec 06 11:46	9°♑38'05	
conjunction	11790 Dec 23 02:22	10°♑39'12	0°41'52
minimum elong	11790 Dec 23 02:23	10°♑39'13	0°42'40
max. Earth dist.	11790 Dec 22 13:05	10°♑37'09	19.53493 AU
morning rise	11791 Jan 08 16:51	11°♑40'20	
retrograde	11791 Apr 12 08:20	15°♑03'23	
opposition	11791 Jun 25 19:24	13°♑00'06	0°44'40
min. Earth dist.	11791 Jun 26 06:53	12°♑58'51	17.51223 AU
direct	11791 Sep 08 16:46	10°♑55'50	
evening set	11791 Dec 11 14:11	14°♑19'11	
conjunction	11791 Dec 28 05:03	15°♑20'30	0°38'06
minimum elong	11791 Dec 28 05:03	15°♑20'30	0°38'52
max. Earth dist.	11791 Dec 27 15:51	15°♑18'27	19.49011 AU
morning rise	11792 Jan 13 19:23	16°♑21'47	
retrograde	11792 Apr 16 09:46	19°♑45'09	
opposition	11792 Jun 29 16:47	17°♑41'48	0°40'20
min. Earth dist.	11792 Jun 30 03:48	17°♑40'36	17.46916 AU
direct	11792 Sep 12 16:51	15°♑37'15	
evening set	11792 Dec 15 17:11	19°♑01'26	
conjunction	11793 Jan 01 08:02	20°♑02'55	0°34'04
minimum elong	11793 Jan 01 08:02	20°♑02'55	0°34'50
max. Earth dist.	11792 Dec 31 17:59	20°♑00'44	19.44903 AU
morning rise	11793 Jan 17 22:15	21°♑04'20	
retrograde	11793 Apr 21 08:16	24°♑27'59	
opposition	11793 Jul 04 14:53	22°♑24'33	0°35'42
min. Earth dist.	11793 Jul 05 03:08	22°♑23'13	17.43032 AU
direct	11793 Sep 17 14:52	20°♑19'43	
evening set	11793 Dec 20 20:20	23°♑44'41	
conjunction	11794 Jan 06 11:15	24°♑46'18	0°29'46
minimum elong	11794 Jan 06 11:15	24°♑46'18	0°30'32
max. Earth dist.	11794 Jan 05 21:17	24°♑44'08	19.41257 AU
morning rise	11794 Jan 23 01:18	25°♑47'49	
retrograde	11794 Apr 26 09:48	29°♑11'43	
opposition	11794 Jul 09 13:13	27°♑08'12	0°30'48
min. Earth dist.	11794 Jul 10 00:37	27°♑06'57	17.39623 AU
direct	11794 Sep 22 16:42	25°♑03'07	
evening set	11794 Dec 26 00:04	28°♑28'46	
conjunction	11795 Jan 11 14:55	29°♑30'31	0°25'16
minimum elong	11795 Jan 11 14:55	29°♑30'31	0°25'59
max. Earth dist.	11795 Jan 11 00:53	29°♑28'20	19.38102 AU
	11795 Jan 19 12:06	0°♒	
morning rise	11795 Jan 28 04:38	0°♒32'07	
retrograde	11795 May 01 08:10	3°♒56'10	
opposition	11795 Jul 14 12:00	1°♒52'37	0°25'40
min. Earth dist.	11795 Jul 15 00:25	1°♒51'16	17.36747 AU
	11795 Sep 05 21:50	30°℞♑	
direct	11795 Sep 27 15:59	29°♑47'18	
	11795 Oct 19 08:41	0°♒	
evening set	11795 Dec 31 04:03	3°♒13'36	
conjunction	11796 Jan 16 18:42	4°♒15'26	0°20'35
minimum elong	11796 Jan 16 18:43	4°♒15'26	0°21'17
max. Earth dist.	11796 Jan 16 04:33	4°♒13'13	19.35521 AU
morning rise	11796 Feb 02 08:09	5°♒17'05	
retrograde	11796 May 05 09:47	8°♒41'14	
opposition	11796 Jul 18 11:08	6°♒37'41	0°20'21
min. Earth dist.	11796 Jul 18 22:22	6°♒36'27	17.34465 AU
direct	11796 Oct 01 19:02	4°♒32'12	
evening set	11797 Jan 04 08:03	7°♒59'02	
conjunction	11797 Jan 20 22:31	9°♒00'55	0°15'45
minimum elong	11797 Jan 20 22:32	9°♒00'55	0°16'25
max. Earth dist.	11797 Jan 20 09:15	8°♒58'51	19.33542 AU
morning rise	11797 Feb 06 11:24	10°♒02'36	
retrograde	11797 May 10 08:59	13°♒26'49	
opposition	11797 Jul 23 10:46	11°♒23'18	0°14'54
min. Earth dist.	11797 Jul 23 22:33	11°♒22'01	17.32809 AU
direct	11797 Oct 06 19:31	9°♒17'42	
evening set	11798 Jan 09 12:23	12°♒45'01	
conjunction	11798 Jan 26 02:28	13°♒46'55	0°10'49
minimum elong	11798 Jan 26 02:28	13°♒46'55	0°11'26
behind sun begin	11798 Jan 25 21:38	13°♒46'11	
behind sun end	11798 Jan 26 07:18	13°♒47'40	
max. Earth dist.	11798 Jan 25 12:51	13°♒44'48	19.32220 AU
morning rise	11798 Feb 11 15:00	14°♒48'37	
	11798 Feb 14 17:49	15°♒	
retrograde	11798 May 15 10:42	18°♒12'49	
opposition	11798 Jul 28 10:25	16°♒09'24	0°09'19
min. Earth dist.	11798 Jul 28 21:03	16°♒08'14	17.31807 AU
	11798 Aug 25 10:32	15°℞♒	
direct	11798 Oct 11 22:18	14°♒03'44	
	11798 Nov 27 04:57	15°♒	
evening set	11799 Jan 14 16:47	17°♒31'27	
conjunction	11799 Jan 31 06:38	18°♒33'22	0°05'48
minimum elong	11799 Jan 31 06:38	18°♒33'22	0°06'24
behind sun begin	11799 Jan 31 00:17	18°♒32'24	
behind sun end	11799 Jan 31 12:59	18°♒34'20	
max. Earth dist.	11799 Jan 30 18:19	18°♒31'27	19.31529 AU

morning rise	11799 Feb 16 18:28	19°♒35'02	
retrograde	11799 May 20 11:21	22°♒59'11	
opposition	11799 Aug 02 10:34	20°♒55'54	0°03'41
min. Earth dist.	11799 Aug 02 21:35	20°♒54'41	17.31416 AU
direct	11799 Oct 16 23:14	18°♒50'13	
evening set	11800 Jan 19 21:20	22°♒18'14	
conjunction	11800 Feb 05 10:32	23°♒20'08	0°00'43
minimum elong	11800 Feb 05 10:31	23°♒20'08	0°01'14
behind sun begin	11800 Feb 05 03:47	23°♒19'06	
behind sun end	11800 Feb 05 17:15	23°♒21'10	
max. Earth dist.	11800 Feb 04 21:34	23°♒18'06	19.31440 AU
morning rise	11800 Feb 21 21:52	24°♒21'45	
desc. node	11800 Mar 28 18:25	26°♒17'49	
retrograde	11800 May 25 13:08	27°♒45'48	
opposition	11800 Aug 07 10:50	25°♒42'39	-0°02'00
min. Earth dist.	11800 Aug 07 21:01	25°♒41'32	17.31611 AU
direct	11800 Oct 22 01:44	23°♒36'59	
evening set	11801 Jan 25 01:43	27°♒05'13	
conjunction	11801 Feb 10 14:31	28°♒07'03	-0°04'29
minimum elong	11801 Feb 10 14:31	28°♒07'03	0°03'59
behind sun begin	11801 Feb 10 07:52	28°♒06'02	
behind sun end	11801 Feb 10 21:10	28°♒08'04	
max. Earth dist.	11801 Feb 10 03:04	28°♒05'16	19.31897 AU
morning rise	11801 Feb 27 01:00	29°♒08'35	
	11801 Mar 13 10:44	0°♓	
retrograde	11801 May 30 14:19	2°♓32'26	
opposition	11801 Aug 12 11:21	0°♓29'27	-0°07'39
min. Earth dist.	11801 Aug 12 21:39	0°♓28'19	17.32324 AU
	11801 Aug 23 19:46	30°℞♒	
direct	11801 Oct 27 03:13	28°♒23'49	
	11801 Dec 27 18:43	0°♓	
evening set	11802 Jan 30 06:03	1°♓52'08	
conjunction	11802 Feb 15 18:06	2°♓53'53	-0°09'30
minimum elong	11802 Feb 15 18:06	2°♓53'53	0°09'05
behind sun begin	11802 Feb 15 12:24	2°♓53'01	
behind sun end	11802 Feb 15 23:48	2°♓54'46	
max. Earth dist.	11802 Feb 15 05:50	2°♓51'58	19.32861 AU
morning rise	11802 Mar 04 04:03	3°♓55'19	
retrograde	11802 Jun 04 15:02	7°♓18'56	
opposition	11802 Aug 17 11:58	5°♓16'04	-0°13'15
min. Earth dist.	11802 Aug 17 21:48	5°♓15'00	17.33528 AU
direct	11802 Nov 01 05:56	3°♓10'28	
evening set	11803 Feb 04 10:08	6°♓38'47	
conjunction	11803 Feb 20 21:40	7°♓40'25	-0°14'28
minimum elong	11803 Feb 20 21:40	7°♓40'25	0°14'06
behind sun begin	11803 Feb 20 18:26	7°♓39'55	
behind sun end	11803 Feb 21 00:53	7°♓40'54	
max. Earth dist.	11803 Feb 20 10:49	7°♓38'43	19.34285 AU
morning rise	11803 Mar 09 06:40	8°♓41'42	
retrograde	11803 Jun 09 15:29	12°♓04'58	
opposition	11803 Aug 22 12:35	10°♓02'15	-0°18'45
min. Earth dist.	11803 Aug 22 22:07	10°♓01'13	17.35168 AU
direct	11803 Nov 06 08:36	7°♓56'43	
evening set	11804 Feb 09 13:59	11°♓24'53	
conjunction	11804 Feb 26 00:37	12°♓26'23	-0°19'20
minimum elong	11804 Feb 26 00:37	12°♓26'23	0°19'01
max. Earth dist.	11804 Feb 25 13:09	12°♓24'35	19.36149 AU
morning rise	11804 Mar 13 08:55	13°♓27'31	
retrograde	11804 Jun 13 14:41	16°♓50'24	
opposition	11804 Aug 26 13:15	14°♓47'47	-0°24'07
min. Earth dist.	11804 Aug 26 22:31	14°♓46'47	17.37258 AU
direct	11804 Nov 10 11:36	12°♓42'18	
evening set	11805 Feb 13 17:00	16°♓10'14	
conjunction	11805 Mar 02 03:02	17°♓11'33	-0°24'03
minimum elong	11805 Mar 02 03:02	17°♓11'33	0°23'49
max. Earth dist.	11805 Mar 01 17:03	17°♓10'00	19.38452 AU
morning rise	11805 Mar 18 10:24	18°♓12'30	
retrograde	11805 Jun 18 14:08	21°♓34'57	
opposition	11805 Aug 31 13:44	19°♓32'27	-0°29'19
min. Earth dist.	11805 Aug 31 22:07	19°♓31'32	17.39765 AU
direct	11805 Nov 15 15:09	17°♓27'04	
evening set	11806 Feb 18 19:47	20°♓54'38	
conjunction	11806 Mar 07 04:54	21°♓55'45	-0°28'37
minimum elong	11806 Mar 07 04:54	21°♓55'45	0°28'25
max. Earth dist.	11806 Mar 06 18:46	21°♓54'10	19.41174 AU
morning rise	11806 Mar 23 11:29	22°♓56'30	
retrograde	11806 Jun 23 11:53	26°♓18'26	
opposition	11806 Sep 05 13:53	24°♓16'03	-0°34'17
min. Earth dist.	11806 Sep 05 22:17	24°♓15'08	17.42711 AU
direct	11806 Nov 20 17:28	22°♓10'44	
evening set	11807 Feb 23 21:49	25°♓37'52	
conjunction	11807 Mar 12 06:11	26°♓38'47	-0°32'58
minimum elong	11807 Mar 12 06:11	26°♓38'47	0°32'50
max. Earth dist.	11807 Mar 11 21:21	26°♓37'24	19.44338 AU
morning rise	11807 Mar 28 11:51	27°♓39'18	
	11807 May 11 22:10	0°♈	
retrograde	11807 Jun 28 10:34	1°♈00'41	
	11807 Aug 16 15:01	30°℞♓	
opposition	11807 Sep 10 13:51	28°♓58'24	-0°39'00
min. Earth dist.	11807 Sep 10 20:50	28°♓57'39	17.46084 AU
direct	11807 Nov 25 20:58	26°♓53'12	
	11808 Feb 23 11:51	0°♈	
evening set	11808 Feb 28 23:05	0°♈19'48	
conjunction	11808 Mar 16 06:30	1°♈20'28	-0°37'04
minimum elong	11808 Mar 16 06:29	1°♈20'28	0°37'01
max. Earth dist.	11808 Mar 15 22:20	1°♈19'12	19.47933 AU
morning rise	11808 Apr 01 11:17	2°♈20'45	
retrograde	11808 Jul 02 07:02	5°♈41'33	
opposition	11808 Sep 14 13:36	3°♈39'23	-0°43'26
min. Earth dist.	11808 Sep 14 20:29	3°♈38'38	17.49921 AU
direct	11808 Nov 29 22:18	1°♈34'18	
evening set	11809 Mar 04 23:33	5°♈00'17	
conjunction	11809 Mar 21 06:06	6°♈00'42	-0°40'55
minimum elong	11809 Mar 21 06:06	6°♈00'42	0°40'55
max. Earth dist.	11809 Mar 20 23:11	5°♈59'37	19.52008 AU
morning rise	11809 Apr 06 10:01	7°♈00'44	
retrograde	11809 Jul 07 04:46	10°♈20'53	
opposition	11809 Sep 19 12:43	8°♈18'52	-0°47'34
min. Earth dist.	11809 Sep 19 17:41	8°♈18'20	17.54231 AU
direct	11809 Dec 05 00:53	6°♈13'58	
evening set	11810 Mar 09 23:16	9°♈39'16	
conjunction	11810 Mar 26 04:56	10°♈39'25	-0°44'28
minimum elong	11810 Mar 26 04:56	10°♈39'25	0°44'33
max. Earth dist.	11810 Mar 25 23:18	10°♈38'33	19.56555 AU
morning rise	11810 Apr 11 07:56	11°♈39'12	
retrograde	11810 Jul 12 00:07	14°♈58'42	
opposition	11810 Sep 24 11:43	12°♈56'52	-0°51'21
min. Earth dist.	11810 Sep 24 16:31	12°♈56'21	17.59026 AU
direct	11810 Dec 10 00:30	10°♈52'12	
evening set	11811 Mar 14 22:10	14°♈16'46	
conjunction	11811 Mar 31 02:53	15°♈16'38	-0°47'43
minimum elong	11811 Mar 31 02:53	15°♈16'38	0°47'50

max. Earth dist.	11811 Mar 30 22:11	15°♈15'55	19.61588 AU
morning rise	11811 Apr 16 05:04	16°♈16'09	
retrograde	11811 Jul 16 21:22	19°♈35'00	
opposition	11811 Sep 29 10:06	17°♈33'23	-0°54'46
min. Earth dist.	11811 Sep 29 12:43	17°♈33'06	17.64278 AU
direct	11811 Dec 15 01:51	15°♈29'00	
evening set	11812 Mar 18 20:13	18°♈52'47	
conjunction	11812 Apr 04 00:06	19°♈52'23	-0°50'37
minimum elong	11812 Apr 04 00:06	19°♈52'23	0°50'50
max. Earth dist.	11812 Apr 03 21:09	19°♈51'56	19.67053 AU
morning rise	11812 Apr 20 01:21	20°♈51'38	
retrograde	11812 Jul 20 15:46	24°♈09'49	
opposition	11812 Oct 03 08:15	22°♈08'27	-0°57'49
min. Earth dist.	11812 Oct 03 10:47	22°♈08'11	17.69946 AU
direct	11812 Dec 18 23:32	20°♈04'24	
evening set	11813 Mar 23 17:22	23°♈27'21	
conjunction	11813 Apr 08 20:18	24°♈26'40	-0°53'12
minimum elong	11813 Apr 08 20:18	24°♈26'39	0°53'28
max. Earth dist.	11813 Apr 08 17:54	24°♈26'17	19.72904 AU
morning rise	11813 Apr 24 20:53	25°♈25'37	
retrograde	11813 Jul 25 12:28	28°♈43'08	
opposition	11813 Oct 08 05:45	26°♈42'03	-1°00'29
min. Earth dist.	11813 Oct 08 06:17	26°♈41'59	17.75945 AU
direct	11813 Dec 23 23:23	24°♈38'20	
evening set	11814 Mar 28 13:46	28°♈00'25	
conjunction	11814 Apr 13 15:57	28°♈59'26	-0°55'26
minimum elong	11814 Apr 13 15:56	28°♈59'26	0°55'45
max. Earth dist.	11814 Apr 13 15:23	28°♈59'21	19.79030 AU
morning rise	11814 Apr 29 15:36	29°♈58'07	
	11814 Apr 30 04:09	0°♉	
retrograde	11814 Jul 30 05:59	3°♉14'56	
opposition	11814 Oct 13 02:53	1°♉14'07	-1°02'46
min. Earth dist.	11814 Oct 13 03:32	1°♉14'03	17.82188 AU
	11814 Nov 13 14:10	30°℞♈	
direct	11814 Dec 28 20:04	29°♈10'46	
	11815 Feb 10 21:49	0°♉	
evening set	11815 Apr 02 09:26	2°♉31'56	
conjunction	11815 Apr 18 10:38	3°♉30'38	-0°57'19
minimum elong	11815 Apr 18 10:38	3°♉30'38	0°57'42
max. Earth dist.	11815 Apr 18 10:09	3°♉30'34	19.85373 AU
morning rise	11815 May 04 09:41	4°♉29'02	
retrograde	11815 Aug 04 01:13	7°♉45'09	
opposition	11815 Oct 17 23:31	5°♉44'35	-1°04'38
min. Earth dist.	11815 Oct 17 22:23	5°♉44'42	17.88609 AU
direct	11816 Jan 02 19:01	3°♉41'36	
evening set	11816 Apr 06 03:57	7°♉01'47	
conjunction	11816 Apr 22 04:29	8°♉00'12	-0°58'50
minimum elong	11816 Apr 22 04:28	8°♉00'12	0°59'15
max. Earth dist.	11816 Apr 22 05:57	8°♉00'25	19.91846 AU
morning rise	11816 May 08 02:40	8°♉58'17	
retrograde	11816 Aug 07 17:35	12°♉13'42	
opposition	11816 Oct 21 19:46	10°♉13'22	-1°06'07
min. Earth dist.	11816 Oct 21 18:41	10°♉13'29	17.95127 AU
direct	11817 Jan 06 15:23	8°♉10'45	
evening set	11817 Apr 10 21:50	11°♉29'55	
conjunction	11817 Apr 26 21:27	12°♉28'00	-0°59'59
minimum elong	11817 Apr 26 21:27	12°♉28'00	1°00'28
max. Earth dist.	11817 Apr 26 22:42	12°♉28'12	19.98394 AU
morning rise	11817 May 12 19:10	13°♉25'50	
	11817 Jun 10 06:20	15°♉	
retrograde	11817 Aug 12 10:48	16°♉40'29	
	11817 Oct 18 17:54	15°℞♉	
opposition	11817 Oct 26 15:08	14°♉40'23	-1°07'11
min. Earth dist.	11817 Oct 26 12:35	14°♉40'39	18.01691 AU
direct	11818 Jan 11 13:02	12°♉38'05	
	11818 Mar 30 05:34	15°♉	
evening set	11818 Apr 15 14:43	15°♉56'12	
conjunction	11818 May 01 13:47	16°♉54'01	-1°00'47
minimum elong	11818 May 01 13:46	16°♉54'01	1°01'18
max. Earth dist.	11818 May 01 16:48	16°♉54'28	20.04948 AU
morning rise	11818 May 17 10:43	17°♉51'32	
retrograde	11818 Aug 17 01:47	21°♉05'27	
opposition	11818 Oct 31 10:10	19°♉05'32	-1°07'51
min. Earth dist.	11818 Oct 31 07:35	19°♉05'49	18.08228 AU
direct	11819 Jan 16 09:13	17°♉03'34	
evening set	11819 Apr 20 06:43	20°♉20'36	
conjunction	11819 May 06 04:55	21°♉18'06	-1°01'13
minimum elong	11819 May 06 04:54	21°♉18'06	1°01'47
max. Earth dist.	11819 May 06 07:36	21°♉18'31	20.11467 AU
morning rise	11819 May 22 01:28	22°♉15'21	
retrograde	11819 Aug 21 16:43	25°♉28'32	
opposition	11819 Nov 05 04:29	23°♉28'46	-1°08'07
min. Earth dist.	11819 Nov 05 00:33	23°♉29'11	18.14724 AU
direct	11820 Jan 21 05:07	21°♉27'05	
evening set	11820 Apr 23 21:38	24°♉43'01	
conjunction	11820 May 09 19:24	25°♉40'14	-1°01'18
minimum elong	11820 May 09 19:23	25°♉40'14	1°01'55
max. Earth dist.	11820 May 09 24:00	25°♉40'55	20.17929 AU
morning rise	11820 May 25 15:19	26°♉37'12	
retrograde	11820 Aug 25 06:26	29°♉49'38	
opposition	11820 Nov 08 22:06	27°♉50'00	-1°07'59
min. Earth dist.	11820 Nov 08 17:52	27°♉50'26	18.21151 AU
direct	11821 Jan 25 00:02	25°♉48'36	
evening set	11821 Apr 28 11:39	29°♉03'24	
conjunction	11821 May 14 08:42	0°♊00'19	-1°01'01
minimum elong	11821 May 14 08:42	0°♊00'19	1°01'40
	11821 May 14 06:37	0°♊	
max. Earth dist.	11821 May 14 13:03	0°♊00'58	20.24331 AU
morning rise	11821 May 30 04:25	0°♊57'02	
retrograde	11821 Aug 29 19:28	4°♊08'43	
opposition	11821 Nov 13 14:59	2°♊09'12	-1°07'28
min. Earth dist.	11821 Nov 13 09:35	2°♊09'45	18.27531 AU
direct	11822 Jan 29 17:37	0°♊08'02	
evening set	11822 May 03 00:37	3°♊21'43	
conjunction	11822 May 18 21:18	4°♊18'22	-1°00'24
minimum elong	11822 May 18 21:18	4°♊18'22	1°01'06
max. Earth dist.	11822 May 19 03:43	4°♊19'20	20.30684 AU
morning rise	11822 Jun 03 16:28	5°♊14'50	
retrograde	11822 Sep 03 07:47	8°♊25'46	
opposition	11822 Nov 18 07:13	6°♊26'23	-1°06'35
min. Earth dist.	11822 Nov 18 01:06	6°♊27'00	18.33864 AU
direct	11823 Feb 03 10:48	4°♊25'29	
evening set	11823 May 07 12:53	7°♊38'05	
conjunction	11823 May 23 08:54	8°♊34'27	-0°59'27
minimum elong	11823 May 23 08:54	8°♊34'27	1°00'09
max. Earth dist.	11823 May 23 15:17	8°♊35'24	20.37012 AU
morning rise	11823 Jun 08 03:54	9°♊30'40	
retrograde	11823 Sep 07 19:59	12°♊40'56	
opposition	11823 Nov 22 22:52	10°♊41'40	-1°05'19
min. Earth dist.	11823 Nov 22 15:33	10°♊42'25	18.40194 AU
direct	11824 Feb 08 02:06	8°♊41'04	
evening set	11824 May 10 23:59	11°♊52'35	

conjunction	11824 May 26 19:46	12°♊48'42	-0°58'10
minimum elong	11824 May 26 19:46	12°♊48'42	0°58'55
max. Earth dist.	11824 May 27 04:15	12°♊49'58	20.43324 AU
morning rise	11824 Jun 11 14:23	13°♊44'42	
retrograde	11824 Sep 11 07:24	16°♊54'19	
opposition	11824 Nov 26 13:49	14°♊55'12	-1°03'43
min. Earth dist.	11824 Nov 26 05:32	14°♊56'03	18.46476 AU
direct	11825 Feb 11 17:17	12°♊54'56	
evening set	11825 May 15 10:38	16°♊05'26	
conjunction	11825 May 31 05:53	17°♊01'18	-0°56'35
minimum elong	11825 May 31 05:53	17°♊01'18	0°57'20
max. Earth dist.	11825 May 31 14:14	17°♊02'33	20.49579 AU
morning rise	11825 Jun 16 00:28	17°♊57'05	
retrograde	11825 Sep 15 18:50	21°♊06'06	
opposition	11825 Dec 01 04:02	19°♊07'10	-1°01'47
min. Earth dist.	11825 Nov 30 19:00	19°♊08'05	18.52690 AU
direct	11826 Feb 16 06:38	17°♊07'12	
evening set	11826 May 19 20:24	20°♊16'45	
conjunction	11826 Jun 04 15:30	21°♊12'24	-0°54'43
minimum elong	11826 Jun 04 15:30	21°♊12'24	0°55'29
max. Earth dist.	11826 Jun 05 01:39	21°♊13'54	20.55731 AU
morning rise	11826 Jun 20 09:48	22°♊07'58	
retrograde	11826 Sep 20 05:37	25°♊16'26	
opposition	11826 Dec 05 17:50	23°♊17'41	-0°59'31
min. Earth dist.	11826 Dec 05 07:52	23°♊18'41	18.58756 AU
direct	11827 Feb 20 20:27	21°♊18'05	
evening set	11827 May 24 05:33	24°♊26'40	
conjunction	11827 Jun 09 00:13	25°♊22'06	-0°52'34
minimum elong	11827 Jun 09 00:13	25°♊22'06	0°53'21
max. Earth dist.	11827 Jun 09 10:12	25°♊23'34	20.61708 AU
morning rise	11827 Jun 24 18:35	26°♊17'29	
retrograde	11827 Sep 24 16:15	29°♊25'27	
opposition	11827 Dec 10 07:11	27°♊26'52	-0°56'58
min. Earth dist.	11827 Dec 09 20:51	27°♊27'55	18.64633 AU
direct	11828 Feb 25 07:59	25°♊27'37	
evening set	11828 May 27 14:03	28°♊35'18	
conjunction	11828 Jun 12 08:41	29°♊30'32	-0°50'09
minimum elong	11828 Jun 12 08:41	29°♊30'32	0°50'56
max. Earth dist.	11828 Jun 12 20:10	29°♊32'14	20.67459 AU
	11828 Jun 20 17:11	0°♋	
morning rise	11828 Jun 28 02:53	0°♋25'45	
retrograde	11828 Sep 28 02:30	3°♋33'14	
opposition	11828 Dec 13 19:47	1°♋34'50	-0°54'09
min. Earth dist.	11828 Dec 13 08:41	1°♋35'57	18.70234 AU
	11829 Jan 28 04:06	30°℞♊	
direct	11829 Feb 28 20:47	29°♊35'54	
	11829 Mar 31 19:52	0°♋	
evening set	11829 May 31 22:10	2°♋42'44	
conjunction	11829 Jun 16 16:30	3°♋37'47	-0°47'29
minimum elong	11829 Jun 16 16:30	3°♋37'47	0°48'18
max. Earth dist.	11829 Jun 17 03:30	3°♋39'24	20.72902 AU
morning rise	11829 Jul 02 10:53	4°♋32'51	
retrograde	11829 Oct 02 12:15	7°♋39'54	
opposition	11829 Dec 18 08:06	5°♋41'39	-0°51'03
min. Earth dist.	11829 Dec 17 21:08	5°♋42'45	18.75511 AU
direct	11830 Mar 05 06:29	3°♋43'01	
evening set	11830 Jun 05 05:36	6°♋49'02	
conjunction	11830 Jun 20 23:57	7°♋43'55	-0°44'36
minimum elong	11830 Jun 20 23:57	7°♋43'55	0°45'24
max. Earth dist.	11830 Jun 21 12:07	7°♋45'42	20.77984 AU
morning rise	11830 Jul 06 18:14	8°♋38'50	
retrograde	11830 Oct 06 22:03	11°♋45'29	
opposition	11830 Dec 22 19:53	9°♋47'22	-0°47'44
min. Earth dist.	11830 Dec 22 08:12	9°♋48'33	18.80379 AU
direct	11831 Mar 09 18:37	7°♋49'01	
evening set	11831 Jun 09 12:47	10°♋54'15	
conjunction	11831 Jun 25 06:55	11°♋48'59	-0°41'30
minimum elong	11831 Jun 25 06:56	11°♋48'59	0°42'18
max. Earth dist.	11831 Jun 25 18:24	11°♋50'39	20.82638 AU
morning rise	11831 Jul 11 01:28	12°♋43'46	
retrograde	11831 Oct 11 07:08	15°♋50'04	
opposition	11831 Dec 27 07:19	13°♋52'02	-0°44'10
min. Earth dist.	11831 Dec 26 20:06	13°♋53'10	18.84816 AU
direct	11832 Mar 13 03:12	11°♋53'55	
evening set	11832 Jun 12 19:15	14°♋58'24	
conjunction	11832 Jun 28 13:34	15°♋53'00	-0°38'12
minimum elong	11832 Jun 28 13:35	15°♋53'00	0°38'59
max. Earth dist.	11832 Jun 29 01:55	15°♋54'47	20.86835 AU
morning rise	11832 Jul 14 08:11	16°♋47'40	
retrograde	11832 Oct 14 16:15	19°♋53'37	
opposition	11832 Dec 30 18:07	17°♋55'38	-0°40'25
min. Earth dist.	11832 Dec 30 06:15	17°♋56'50	18.88758 AU
direct	11833 Mar 17 14:29	15°♋57'43	
evening set	11833 Jun 17 01:31	19°♋01'29	
conjunction	11833 Jul 02 19:45	19°♋55'58	-0°34'44
minimum elong	11833 Jul 02 19:45	19°♋55'58	0°35'30
max. Earth dist.	11833 Jul 03 07:16	19°♋57'38	20.90535 AU
morning rise	11833 Jul 18 14:42	20°♋50'32	
retrograde	11833 Oct 19 00:42	23°♋56'11	
opposition	11834 Jan 04 04:28	21°♋58'12	-0°36'28
min. Earth dist.	11834 Jan 03 17:17	21°♋59'19	18.92226 AU
direct	11834 Mar 21 22:29	20°♋00'24	
evening set	11834 Jun 21 07:09	23°♋03'30	
conjunction	11834 Jul 07 01:37	23°♋57'53	-0°31'05
minimum elong	11834 Jul 07 01:37	23°♋57'53	0°31'51
max. Earth dist.	11834 Jul 07 14:00	23°♋59'40	20.93780 AU
morning rise	11834 Jul 22 20:43	24°♋52'22	
retrograde	11834 Oct 23 08:49	27°♋57'43	
opposition	11835 Jan 08 14:23	25°♋59'43	-0°32'21
min. Earth dist.	11835 Jan 08 02:17	26°♋00'55	18.95246 AU
direct	11835 Mar 26 08:42	24°♋02'03	
evening set	11835 Jun 25 12:24	27°♋04'31	
conjunction	11835 Jul 11 06:52	27°♋58'48	-0°27'19
minimum elong	11835 Jul 11 06:52	27°♋58'48	0°28'02
max. Earth dist.	11835 Jul 11 18:45	28°♋00'30	20.96598 AU
morning rise	11835 Jul 27 02:25	28°♋53'13	
	11835 Aug 16 21:06	0°♌	
retrograde	11835 Oct 27 16:54	1°♌58'21	
opposition	11836 Jan 12 23:58	0°♌00'17	-0°28'06
min. Earth dist.	11836 Jan 12 12:25	0°♌01'26	18.97882 AU
	11836 Jan 13 02:50	30°℞♋	
direct	11836 Mar 29 15:57	28°♋02'43	
	11836 Jun 08 14:24	0°♌	
evening set	11836 Jun 28 17:18	1°♌04'37	
conjunction	11836 Jul 14 12:05	1°♌58'50	-0°23'25
minimum elong	11836 Jul 14 12:05	1°♌58'50	0°24'08
max. Earth dist.	11836 Jul 15 00:56	2°♌00'41	20.99052 AU
morning rise	11836 Jul 30 07:51	2°♌53'13	
retrograde	11836 Oct 31 00:27	5°♌58'09	
opposition	11837 Jan 16 08:50	4°♌00'03	-0°23'43
min. Earth dist.	11837 Jan 15 20:16	4°♌01'18	19.00154 AU
direct	11837 Apr 03 00:39	2°♌02'35	

evening set	11837 Jul	02	22:08	5°♌04'00	
conjunction	11837 Jul	18	17:00	5°♌58'09	-0°19'24
minimum elong	11837 Jul	18	17:00	5°♌58'10	0°20'05
max. Earth dist.	11837 Jul	19	05:18	5°♌59'55	21.01152 AU
morning rise	11837 Aug	03	13:15	6°♌52'30	
retrograde	11837 Nov	04	07:45	9°♌57'20	
opposition	11838 Jan	20	17:41	7°♌59'11	-0°19'13
min. Earth dist.	11838 Jan	20	05:46	8°♌00'22	19.02091 AU
direct	11838 Apr	07	07:17	6°♌01'49	
evening set	11838 Jul	07	02:30	9°♌02'49	
conjunction	11838 Jul	22	21:44	9°♌56'57	-0°15'19
minimum elong	11838 Jul	22	21:44	9°♌56'57	0°15'59
behind sun begin	11838 Jul	22	20:46	9°♌56'48	
behind sun end	11838 Jul	22	22:43	9°♌57'05	
max. Earth dist.	11838 Jul	23	10:59	9°♌58'50	21.02919 AU
morning rise	11838 Aug	07	18:16	10°♌51'16	
retrograde	11838 Nov	08	15:54	13°♌56'02	
opposition	11839 Jan	25	02:10	11°♌57'52	-0°14'39
min. Earth dist.	11839 Jan	24	13:10	11°♌59'10	19.03676 AU
direct	11839 Apr	11	14:56	10°♌00'36	
evening set	11839 Jul	11	07:00	13°♌01'16	
conjunction	11839 Jul	27	02:25	13°♌55'21	-0°11'10
minimum elong	11839 Jul	27	02:25	13°♌55'21	0°11'48
behind sun begin	11839 Jul	26	21:46	13°♌54'42	
behind sun end	11839 Jul	27	07:03	13°♌56'00	
max. Earth dist.	11839 Jul	27	15:06	13°♌57'10	21.04327 AU
morning rise	11839 Aug	11	23:30	14°♌49'41	
	11839 Aug	15	01:36	15°♌	
retrograde	11839 Nov	12	22:28	17°♌54'27	
opposition	11840 Jan	29	10:31	15°♌56'15	-0°10'02
min. Earth dist.	11840 Jan	28	22:24	15°♌57'27	19.04909 AU
	11840 Feb	22	21:22	15°℞♌	
direct	11840 Apr	14	20:48	13°♌59'06	
	11840 Jun	03	18:27	15°♌	
evening set	11840 Jul	14	11:18	16°♌59'28	
conjunction	11840 Jul	30	07:13	17°♌53'34	-0°06'59
minimum elong	11840 Jul	30	07:13	17°♌53'34	0°07'35
behind sun begin	11840 Jul	30	01:14	17°♌52'44	
behind sun end	11840 Jul	30	13:12	17°♌54'24	
max. Earth dist.	11840 Jul	30	20:36	17°♌55'29	21.05371 AU
morning rise	11840 Aug	15	04:41	18°♌47'54	
retrograde	11840 Nov	16	07:18	21°♌52'43	
opposition	11841 Feb	01	18:34	19°♌54'30	-0°05'21
min. Earth dist.	11841 Feb	01	05:39	19°♌55'47	19.05742 AU
direct	11841 Apr	19	04:00	17°♌57'26	
evening set	11841 Jul	18	15:51	20°♌57'37	
conjunction	11841 Aug	03	11:57	21°♌51'43	-0°02'46
minimum elong	11841 Aug	03	11:57	21°♌51'43	0°03'19
behind sun begin	11841 Aug	03	05:24	21°♌50'48	
behind sun end	11841 Aug	03	18:30	21°♌52'38	
max. Earth dist.	11841 Aug	04	00:33	21°♌53'31	21.05994 AU
morning rise	11841 Aug	19	10:00	22°♌46'05	
retrograde	11841 Nov	20	13:39	25°♌51'01	
opposition	11842 Feb	06	02:40	23°♌52'46	-0°00'39
min. Earth dist.	11842 Feb	05	14:56	23°♌53'56	19.06155 AU
asc. node	11842 Mar	27	02:27	22°♌13'55	
direct	11842 Apr	23	08:58	21°♌55'47	
evening set	11842 Jul	22	20:23	24°♌55'49	
conjunction	11842 Aug	07	17:00	25°♌49'57	0°01'36
minimum elong	11842 Aug	07	17:00	25°♌49'57	0°01'05
behind sun begin	11842 Aug	07	10:26	25°♌49'02	
behind sun end	11842 Aug	07	23:35	25°♌50'52	
max. Earth dist.	11842 Aug	08	06:03	25°♌51'49	21.06187 AU
morning rise	11842 Aug	23	15:27	26°♌44'22	
retrograde	11842 Nov	24	22:43	29°♌49'27	
opposition	11843 Feb	10	10:38	27°♌51'10	0°04'03
min. Earth dist.	11843 Feb	09	22:17	27°♌52'24	19.06107 AU
direct	11843 Apr	27	16:15	25°♌54'16	
evening set	11843 Jul	27	01:11	28°♌54'13	
conjunction	11843 Aug	11	22:05	29°♌48'23	0°05'52
minimum elong	11843 Aug	11	22:06	29°♌48'24	0°05'24
behind sun begin	11843 Aug	11	15:44	29°♌47'30	
behind sun end	11843 Aug	12	04:28	29°♌49'17	
max. Earth dist.	11843 Aug	12	10:05	29°♌50'06	21.05888 AU
	11843 Aug	15	07:05	0°♍	
morning rise	11843 Aug	27	21:12	0°♍42'52	
retrograde	11843 Nov	29	05:43	3°♍48'10	
opposition	11844 Feb	14	18:43	1°♍49'49	0°08'44
min. Earth dist.	11844 Feb	14	07:54	1°♍50'54	19.05555 AU
	11844 Apr	14	01:19	30°℞♌	
direct	11844 Apr	30	20:49	29°♌52'56	
	11844 May	17	13:07	0°♍	
evening set	11844 Jul	30	06:13	2°♍52'53	
conjunction	11844 Aug	15	03:43	3°♍47'07	0°10'04
minimum elong	11844 Aug	15	03:43	3°♍47'07	0°09'40
behind sun begin	11844 Aug	14	22:16	3°♍46'22	
behind sun end	11844 Aug	15	09:10	3°♍47'53	
max. Earth dist.	11844 Aug	15	15:38	3°♍48'49	21.05066 AU
morning rise	11844 Aug	31	03:15	4°♍41'40	
retrograde	11844 Dec	02	14:47	7°♍47'12	
opposition	11845 Feb	18	02:30	5°♍48'46	0°13'23
min. Earth dist.	11845 Feb	17	15:21	5°♍49'53	19.04448 AU
direct	11845 May	05	04:18	3°♍51'52	
evening set	11845 Aug	03	11:37	6°♍51'52	
conjunction	11845 Aug	19	09:28	7°♍46'11	0°14'14
minimum elong	11845 Aug	19	09:28	7°♍46'11	0°13'52
behind sun begin	11845 Aug	19	05:59	7°♍45'42	
behind sun end	11845 Aug	19	12:56	7°♍46'40	
max. Earth dist.	11845 Aug	19	19:58	7°♍47'41	21.03673 AU
morning rise	11845 Sep	04	09:40	8°♍40'50	
retrograde	11845 Dec	06	22:23	11°♍46'38	
opposition	11846 Feb	22	10:38	9°♍48'04	0°17'59
min. Earth dist.	11846 Feb	22	01:10	9°♍49'01	19.02779 AU
direct	11846 May	09	09:11	7°♍51'06	
evening set	11846 Aug	07	16:56	10°♍51'10	
conjunction	11846 Aug	23	15:25	11°♍45'35	0°18'21
minimum elong	11846 Aug	23	15:25	11°♍45'35	0°18'02
max. Earth dist.	11846 Aug	24	01:51	11°♍47'04	21.01736 AU
morning rise	11846 Sep	08	16:08	12°♍40'20	
retrograde	11846 Dec	11	07:30	15°♍46'27	
opposition	11847 Feb	26	18:37	13°♍47'42	0°22'30
min. Earth dist.	11847 Feb	26	08:45	13°♍48'42	19.00568 AU
direct	11847 May	13	16:47	11°♍50'38	
evening set	11847 Aug	11	22:45	14°♍50'51	
conjunction	11847 Aug	27	21:40	15°♍45'22	0°22'24
minimum elong	11847 Aug	27	21:40	15°♍45'22	0°22'07
max. Earth dist.	11847 Aug	28	06:50	15°♍46'41	20.99274 AU
morning rise	11847 Sep	12	23:06	16°♍40'15	
retrograde	11847 Dec	15	15:23	19°♍46'42	
opposition	11848 Mar	02	02:37	17°♍47'45	0°26'56
min. Earth dist.	11848 Mar	01	18:25	17°♍48'34	18.97879 AU
direct	11848 May	16	21:55	15°♍50'32	
evening set	11848 Aug	15	04:42	18°♍50'57	

conjunction	11848 Aug 31 04:19	19°♑45'37	0°26'20
minimum elong	11848 Aug 31 04:18	19°♑45'36	0°26'06
max. Earth dist.	11848 Aug 31 13:27	19°♑46'55	20.96372 AU
morning rise	11848 Sep 16 06:17	20°♑40'37	
retrograde	11848 Dec 19 00:39	23°♑47'26	
opposition	11849 Mar 06 10:34	21°♑48'17	0°31'14
min. Earth dist.	11849 Mar 06 01:53	21°♑49'10	18.94770 AU
direct	11849 May 21 05:20	19°♑50'55	
evening set	11849 Aug 19 11:04	22°♑51'37	
conjunction	11849 Sep 04 11:06	23°♑46'24	0°30'09
minimum elong	11849 Sep 04 11:05	23°♑46'24	0°30'00
max. Earth dist.	11849 Sep 04 19:13	23°♑47'34	20.93069 AU
morning rise	11849 Sep 20 13:45	24°♑41'34	
retrograde	11849 Dec 23 08:53	27°♑48'49	
opposition	11850 Mar 10 18:49	25°♑49'28	0°35'24
min. Earth dist.	11850 Mar 10 11:37	25°♑50'11	18.91304 AU
direct	11850 May 25 10:36	23°♑51'56	
evening set	11850 Aug 23 17:46	26°♑52'59	
conjunction	11850 Sep 08 18:29	27°♑47'55	0°33'50
minimum elong	11850 Sep 08 18:29	27°♑47'55	0°33'43
max. Earth dist.	11850 Sep 09 02:41	27°♑49'06	20.89448 AU
morning rise	11850 Sep 24 21:42	28°♑43'15	
	11850 Oct 19 02:41	0°♎	
retrograde	11850 Dec 27 19:06	1°♎50'59	
	11851 Mar 11 14:27	30°℞♑	
opposition	11851 Mar 15 03:02	29°♑51'25	0°39'23
min. Earth dist.	11851 Mar 14 19:15	29°♑52'12	18.87530 AU
direct	11851 May 29 18:08	27°♑53'44	
	11851 Aug 11 00:22	0°♎	
evening set	11851 Aug 28 01:01	0°♎55'12	
conjunction	11851 Sep 13 02:16	1°♎50'19	0°37'21
minimum elong	11851 Sep 13 02:16	1°♎50'19	0°37'19
max. Earth dist.	11851 Sep 13 09:28	1°♎51'21	20.85523 AU
morning rise	11851 Sep 29 06:12	2°♎45'49	
retrograde	11852 Jan 01 04:02	5°♎54'04	
opposition	11852 Mar 18 11:38	3°♎54'20	0°43'12
min. Earth dist.	11852 Mar 18 05:24	3°♎54'58	18.83470 AU
direct	11852 Jun 01 23:31	1°♎56'29	
evening set	11852 Aug 31 08:47	4°♎58'26	
conjunction	11852 Sep 16 10:45	5°♎53'44	0°40'42
minimum elong	11852 Sep 16 10:45	5°♎53'44	0°40'42
max. Earth dist.	11852 Sep 16 17:49	5°♎54'45	20.81332 AU
morning rise	11852 Oct 02 15:15	6°♎49'26	
retrograde	11853 Jan 04 15:35	9°♎58'15	
opposition	11853 Mar 22 20:15	7°♎58'20	0°46'49
min. Earth dist.	11853 Mar 22 13:33	7°♎59'01	18.79146 AU
direct	11853 Jun 06 07:17	6°♎00'20	
evening set	11853 Sep 04 17:14	9°♎02'51	
conjunction	11853 Sep 20 19:45	9°♎58'21	0°43'51
minimum elong	11853 Sep 20 19:44	9°♎58'21	0°43'55
max. Earth dist.	11853 Sep 21 01:47	9°♎59'14	20.76877 AU
morning rise	11853 Oct 07 00:56	10°♎54'15	
retrograde	11854 Jan 09 01:40	14°♎03'40	
opposition	11854 Mar 27 05:31	12°♎03'37	0°50'13
min. Earth dist.	11854 Mar 27 00:24	12°♎04'08	18.74572 AU
direct	11854 Jun 10 13:23	10°♎05'28	
evening set	11854 Sep 09 02:09	13°♎08'35	
conjunction	11854 Sep 25 05:26	14°♎04'18	0°46'48
minimum elong	11854 Sep 25 05:26	14°♎04'18	0°46'55
max. Earth dist.	11854 Sep 25 11:11	14°♎05'08	20.72187 AU
morning rise	11854 Oct 11 11:15	15°♎00'25	
retrograde	11855 Jan 13 14:44	18°♎10'29	
opposition	11855 Mar 31 15:01	16°♎10'17	0°53'22
min. Earth dist.	11855 Mar 31 09:37	16°♎10'50	18.69748 AU
direct	11855 Jun 14 21:35	14°♎11'58	
evening set	11855 Sep 13 12:06	17°♎15'47	
conjunction	11855 Sep 29 15:59	18°♎11'44	0°49'31
minimum elong	11855 Sep 29 15:58	18°♎11'44	0°49'41
max. Earth dist.	11855 Sep 29 20:35	18°♎12'24	20.67223 AU
morning rise	11855 Oct 15 22:29	19°♎08'05	
retrograde	11856 Jan 18 02:31	22°♎18'48	
opposition	11856 Apr 04 00:57	20°♎18'28	0°56'16
min. Earth dist.	11856 Apr 03 21:27	20°♎18'50	18.64651 AU
direct	11856 Jun 18 04:48	18°♎19'58	
evening set	11856 Sep 16 22:47	21°♎24'32	
conjunction	11856 Oct 03 03:24	22°♎20'44	0°52'00
minimum elong	11856 Oct 03 03:23	22°♎20'44	0°52'14
max. Earth dist.	11856 Oct 03 07:12	22°♎21'17	20.61986 AU
morning rise	11856 Oct 19 10:30	23°♎17'19	
retrograde	11857 Jan 21 16:55	26°♎28'44	
opposition	11857 Apr 08 11:21	24°♎28'15	0°58'54
min. Earth dist.	11857 Apr 08 07:53	24°♎28'36	18.59257 AU
direct	11857 Jun 22 14:03	22°♎29'33	
evening set	11857 Sep 21 10:16	25°♎34'54	
conjunction	11857 Oct 07 15:28	26°♎31'20	0°54'13
minimum elong	11857 Oct 07 15:28	26°♎31'20	0°54'30
max. Earth dist.	11857 Oct 07 17:59	26°♎31'42	20.56421 AU
morning rise	11857 Oct 23 23:11	27°♎28'10	
	11857 Dec 16 20:12	0°♏	
retrograde	11858 Jan 26 05:55	0°♏40'18	
	11858 Mar 08 11:23	30°℞♎	
opposition	11858 Apr 12 22:29	28°♎39'38	1°01'14
min. Earth dist.	11858 Apr 12 20:57	28°♎39'47	18.53535 AU
direct	11858 Jun 26 22:43	26°♎40'42	
evening set	11858 Sep 25 22:37	29°♎46'51	
	11858 Sep 29 18:11	0°♏	
conjunction	11858 Oct 12 04:34	0°♏43'33	0°56'11
minimum elong	11858 Oct 12 04:33	0°♏43'33	0°56'31
max. Earth dist.	11858 Oct 12 05:53	0°♏43'45	20.50544 AU
morning rise	11858 Oct 28 12:56	1°♏40'39	
retrograde	11859 Jan 30 21:42	4°♏53'28	
opposition	11859 Apr 17 09:51	2°♏52'35	1°03'16
min. Earth dist.	11859 Apr 17 08:31	2°♏52'43	18.47498 AU
direct	11859 Jul 01 09:39	0°♏53'21	
evening set	11859 Sep 30 11:49	4°♏00'22	
conjunction	11859 Oct 16 18:28	4°♏57'20	0°57'51
minimum elong	11859 Oct 16 18:27	4°♏57'20	0°58'14
max. Earth dist.	11859 Oct 16 18:30	4°♏57'21	20.44351 AU
morning rise	11859 Nov 02 03:26	5°♏54'41	
retrograde	11860 Feb 04 11:18	9°♏08'12	
opposition	11860 Apr 20 21:53	7°♏07'05	1°04'58
min. Earth dist.	11860 Apr 20 22:27	7°♏07'01	18.41171 AU
direct	11860 Jul 04 19:40	5°♏07'32	
evening set	11860 Oct 04 01:43	8°♏15'24	
conjunction	11860 Oct 20 09:03	9°♏12'40	0°59'12
minimum elong	11860 Oct 20 09:03	9°♏12'39	0°59'39
max. Earth dist.	11860 Oct 20 07:49	9°♏12'29	20.37916 AU
morning rise	11860 Nov 05 18:38	10°♏10'16	
retrograde	11861 Feb 08 03:58	13°♏24'29	
opposition	11861 Apr 25 10:12	11°♏23'06	1°06'20
min. Earth dist.	11861 Apr 25 10:56	11°♏23'01	18.34638 AU
direct	11861 Jul 09 08:13	9°♏23'12	

evening set	11861 Oct 08	16:27	12°♏31'59	
conjunction	11861 Oct 25	00:28	13°♏29'32	1°00'15
minimum elong	11861 Oct 25	00:28	13°♏29'31	1°00'45
max. Earth dist.	11861 Oct 24	22:27	13°♏29'14	20.31303 AU
morning rise	11861 Nov 10	10:35	14°♏27'25	
	11861 Nov 20	00:41	15°♏	
retrograde	11862 Feb 12	18:31	17°♏42'19	
opposition	11862 Apr 29	23:11	15°♏40'41	1°07'20
min. Earth dist.	11862 Apr 30	01:30	15°♏40'26	18.27974 AU
	11862 May 16	09:56	15°℞♏	
direct	11862 Jul 13	19:13	13°♏40'25	
	11862 Sep 08	02:40	15°♏	
evening set	11862 Oct 13	07:55	16°♏50'09	
conjunction	11862 Oct 29	16:36	17°♏47'59	1°00'57
minimum elong	11862 Oct 29	16:36	17°♏47'59	1°01'29
max. Earth dist.	11862 Oct 29	13:20	17°♏47'30	20.24612 AU
morning rise	11862 Nov 15	03:24	18°♏46'08	
retrograde	11863 Feb 17	12:19	22°♏01'45	
opposition	11863 May 04	12:34	19°♏59'52	1°07'57
min. Earth dist.	11863 May 04	15:03	19°♏59'36	18.21263 AU
direct	11863 Jul 18	09:18	17°♏59'14	
evening set	11863 Oct 18	00:20	21°♏09'58	
conjunction	11863 Nov 03	09:45	22°♏08'06	1°01'19
minimum elong	11863 Nov 03	09:45	22°♏08'05	1°01'55
max. Earth dist.	11863 Nov 03	06:03	22°♏07'32	20.17887 AU
morning rise	11863 Nov 19	20:58	23°♏06'32	
retrograde	11864 Feb 22	03:59	26°♏22'50	
opposition	11864 May 08	02:30	24°♏20'44	1°08'11
min. Earth dist.	11864 May 08	06:18	24°♏20'20	18.14554 AU
direct	11864 Jul 21	21:28	22°♏19'45	
evening set	11864 Oct 21	17:37	25°♏31'31	
conjunction	11864 Nov 07	03:35	26°♏29'56	1°01'20
minimum elong	11864 Nov 07	03:35	26°♏29'56	1°01'57
max. Earth dist.	11864 Nov 06	22:31	26°♏29'10	20.11217 AU
morning rise	11864 Nov 23	15:25	27°♏28'38	
	11865 Jan 14	10:42	0°♐	
retrograde	11865 Feb 25	22:57	0°♐45'41	
	11865 Apr 10	03:41	30°℞♏	
opposition	11865 May 12	17:04	28°♏43'22	1°08'02
min. Earth dist.	11865 May 12	21:01	28°♏42'57	18.07933 AU
direct	11865 Jul 26	12:46	26°♏42'02	
evening set	11865 Oct 26	11:32	29°♏54'51	
	11865 Oct 27	22:42	0°♐	
conjunction	11865 Nov 11	22:14	0°♐53'34	1°00'59
minimum elong	11865 Nov 11	22:14	0°♐53'34	1°01'38
max. Earth dist.	11865 Nov 11	17:13	0°♐52'49	20.04645 AU
morning rise	11865 Nov 28	10:24	1°♐52'33	
retrograde	11866 Mar 02	16:08	5°♐10'19	
opposition	11866 May 17	08:21	3°♐07'50	1°07'28
min. Earth dist.	11866 May 17	13:14	3°♐07'19	18.01433 AU
direct	11866 Jul 31	02:49	1°♐06'12	
evening set	11866 Oct 31	06:37	4°♐20'05	
conjunction	11866 Nov 16	17:50	5°♐19'06	1°00'16
minimum elong	11866 Nov 16	17:50	5°♐19'06	1°00'57
max. Earth dist.	11866 Nov 16	11:17	5°♐18'07	19.98237 AU
morning rise	11866 Dec 03	06:36	6°♐18'22	
retrograde	11867 Mar 07	11:58	9°♐36'51	
opposition	11867 May 22	00:06	7°♐34'14	1°06'29
min. Earth dist.	11867 May 22	05:20	7°♐33'40	17.95119 AU
direct	11867 Aug 04	19:08	5°♐32'17	
evening set	11867 Nov 05	02:33	8°♐47'18	
conjunction	11867 Nov 21	14:28	9°♐46'38	0°59'11
minimum elong	11867 Nov 21	14:28	9°♐46'38	0°59'54
max. Earth dist.	11867 Nov 21	08:08	9°♐45'40	19.92012 AU
morning rise	11867 Dec 08	03:29	10°♐46'09	
retrograde	11868 Mar 11	07:06	14°♐05'19	
opposition	11868 May 25	16:39	12°♐02'38	1°05'07
min. Earth dist.	11868 May 25	22:39	12°♐01'59	17.88990 AU
direct	11868 Aug 08	11:19	10°♐00'26	
evening set	11868 Nov 08	23:26	13°♐16'34	
conjunction	11868 Nov 25	11:43	14°♐16'10	0°57'44
minimum elong	11868 Nov 25	11:43	14°♐16'10	0°58'30
max. Earth dist.	11868 Nov 25	03:38	14°♐14'57	19.85991 AU
morning rise	11868 Dec 12	01:14	15°♐15'58	
retrograde	11869 Mar 16	03:46	18°♐35'51	
opposition	11869 May 30	09:53	16°♐33'05	1°03'19
min. Earth dist.	11869 May 30	16:32	16°♐32'22	17.83070 AU
direct	11869 Aug 13	04:53	14°♐30'37	
evening set	11869 Nov 13	21:15	17°♐47'54	
conjunction	11869 Nov 30	10:12	18°♐47'47	0°55'55
minimum elong	11869 Nov 30	10:12	18°♐47'47	0°56'42
max. Earth dist.	11869 Nov 30	02:24	18°♐46'36	19.80159 AU
morning rise	11869 Dec 16	23:50	19°♐47'50	
retrograde	11870 Mar 21	01:00	23°♐08'22	
opposition	11870 Jun 04	03:46	21°♐05'33	1°01'08
min. Earth dist.	11870 Jun 04	11:07	21°♐04'45	17.77324 AU
direct	11870 Aug 17	23:02	19°♐02'50	
evening set	11870 Nov 18	20:10	22°♐21'13	
conjunction	11870 Dec 05	09:24	23°♐21'23	0°53'45
minimum elong	11870 Dec 05	09:24	23°♐21'23	0°54'33
max. Earth dist.	11870 Dec 04	23:28	23°♐19'52	19.74500 AU
morning rise	11870 Dec 21	23:29	24°♐21'40	
retrograde	11871 Mar 25	23:01	27°♐42'50	
opposition	11871 Jun 08	22:26	25°♐39'57	0°58'33
min. Earth dist.	11871 Jun 09	06:54	25°♐39'02	17.71748 AU
direct	11871 Aug 22	17:57	23°♐36'56	
evening set	11871 Nov 23	19:51	26°♐56'24	
conjunction	11871 Dec 10	09:39	27°♐56'49	0°51'14
minimum elong	11871 Dec 10	09:39	27°♐56'49	0°52'02
max. Earth dist.	11871 Dec 09	23:49	27°♐55'19	19.68995 AU
morning rise	11871 Dec 26	23:43	28°♐57'21	
	11872 Jan 14	04:10	0°♑	
retrograde	11872 Mar 29	21:59	2°♑19'03	
opposition	11872 Jun 12	17:39	0°♑16'05	0°55'34
min. Earth dist.	11872 Jun 13	02:32	0°♑15'08	17.66322 AU
	11872 Jun 18	22:43	30°℞♐	
direct	11872 Aug 26	13:48	28°♐12'47	
	11872 Oct 30	22:30	0°♑	
evening set	11872 Nov 27	20:24	1°♑33'17	
conjunction	11872 Dec 14	10:23	2°♑33'56	0°48'22
minimum elong	11872 Dec 14	10:23	2°♑33'56	0°49'10
max. Earth dist.	11872 Dec 13	22:28	2°♑32'07	19.63669 AU
morning rise	11872 Dec 31	00:44	3°♑34'41	
retrograde	11873 Apr 03	21:03	6°♑56'53	
opposition	11873 Jun 17	13:37	4°♑53'49	0°52'13
min. Earth dist.	11873 Jun 17	23:43	4°♑52'43	17.61108 AU
direct	11873 Aug 31	10:03	2°♑50'11	
evening set	11873 Dec 02	21:20	6°♑11'40	
conjunction	11873 Dec 19	11:48	7°♑12'33	0°45'11
minimum elong	11873 Dec 19	11:48	7°♑12'33	0°46'00
max. Earth dist.	11873 Dec 19	00:11	7°♑10'46	19.58574 AU
morning rise	11874 Jan 05	02:08	8°♑13'29	

retrograde	11874 Apr	08	20:58	11°♉36'07	
opposition	11874 Jun	22	10:02	9°♉32'57	0°48'30
min. Earth dist.	11874 Jun	22	20:06	9°♉31'51	17.56135 AU
direct	11874 Sep	05	07:16	7°♉29'01	
evening set	11874 Dec	07	23:14	10°♉51'24	
conjunction	11874 Dec	24	13:47	11°♉52'30	0°41'40
minimum elong	11874 Dec	24	13:48	11°♉52'30	0°42'28
max. Earth dist.	11874 Dec	24	00:28	11°♉50'27	19.53752 AU
morning rise	11875 Jan	10	04:15	12°♉53'37	
retrograde	11875 Apr	13	20:22	16°♉16'37	
opposition	11875 Jun	27	06:57	14°♉13'20	0°44'26
min. Earth dist.	11875 Jun	27	18:20	14°♉12'06	17.51483 AU
direct	11875 Sep	10	04:54	12°♉09'04	
evening set	11875 Dec	13	01:30	15°♉32'21	
conjunction	11875 Dec	29	16:21	16°♉33'38	0°37'52
minimum elong	11875 Dec	29	16:21	16°♉33'38	0°38'40
max. Earth dist.	11875 Dec	29	03:20	16°♉31'38	19.49281 AU
morning rise	11876 Jan	15	06:39	17°♉34'54	
retrograde	11876 Apr	17	20:33	20°♉58'13	
opposition	11876 Jul	01	04:21	18°♉54'50	0°40'03
min. Earth dist.	11876 Jul	01	15:13	18°♉53'39	17.47200 AU
direct	11876 Sep	14	04:05	16°♉50'16	
evening set	11876 Dec	17	04:13	20°♉14'21	
conjunction	11877 Jan	02	19:01	21°♉15'48	0°33'48
minimum elong	11877 Jan	02	19:01	21°♉15'48	0°34'35
max. Earth dist.	11877 Jan	02	05:06	21°♉13'39	19.45208 AU
morning rise	11877 Jan	19	09:15	22°♉17'12	
retrograde	11877 Apr	22	19:35	25°♉40'47	
opposition	11877 Jul	06	02:22	23°♉37'19	0°35'23
min. Earth dist.	11877 Jul	06	14:21	23°♉36'00	17.43362 AU
direct	11877 Sep	19	02:57	21°♉32'27	
evening set	11877 Dec	22	07:21	24°♉57'17	
conjunction	11878 Jan	07	22:15	25°♉58'53	0°29'29
minimum elong	11878 Jan	07	22:15	25°♉58'53	0°30'14
max. Earth dist.	11878 Jan	07	08:38	25°♉56'46	19.41618 AU
morning rise	11878 Jan	24	12:17	27°♉00'23	
	11878 Mar	29	01:26	0°♒	
retrograde	11878 Apr	27	20:07	0°♒24'11	
	11878 May	27	22:23	30°℞♉	
opposition	11878 Jul	11	00:31	28°♉20'38	0°30'28
min. Earth dist.	11878 Jul	11	11:37	28°♉19'25	17.40025 AU
direct	11878 Sep	24	03:55	26°♉15'31	
evening set	11878 Dec	27	10:59	29°♉41'03	
	11879 Jan	01	14:41	0°♒	
max. Earth dist.	11879 Jan	12	11:59	0°♒40'37	19.38547 AU
conjunction	11879 Jan	13	01:48	0°♒42'46	0°24'58
minimum elong	11879 Jan	13	01:48	0°♒42'46	0°25'42
morning rise	11879 Jan	29	15:31	1°♒44'20	
retrograde	11879 May	02	19:25	5°♒08'17	
opposition	11879 Jul	15	23:23	3°♒04'43	0°25'19
min. Earth dist.	11879 Jul	16	11:23	3°♒03'25	17.37245 AU
direct	11879 Sep	29	03:52	0°♒59'25	
evening set	11880 Jan	01	14:49	4°♒25'34	
conjunction	11880 Jan	18	05:27	5°♒27'22	0°20'15
minimum elong	11880 Jan	18	05:27	5°♒27'22	0°20'57
max. Earth dist.	11880 Jan	17	15:44	5°♒25'14	19.36068 AU
morning rise	11880 Feb	03	18:51	6°♒28'59	
retrograde	11880 May	06	20:31	9°♒53'04	
opposition	11880 Jul	19	22:27	7°♒49'31	0°19'58
min. Earth dist.	11880 Jul	20	09:13	7°♒48'20	17.35067 AU
direct	11880 Oct	03	05:56	5°♒44'03	

evening set	11881 Jan	05	18:55	9°♒10'47	
conjunction	11881 Jan	22	09:22	10°♒12'38	0°15'24
minimum elong	11881 Jan	22	09:22	10°♒12'38	0°16'05
max. Earth dist.	11881 Jan	21	20:16	10°♒10'36	19.34200 AU
morning rise	11881 Feb	07	22:15	11°♒14'18	
retrograde	11881 May	11	20:22	14°♒38'26	
opposition	11881 Jul	24	22:01	12°♒34'58	0°14'29
min. Earth dist.	11881 Jul	25	09:28	12°♒33'43	17.33513 AU
direct	11881 Oct	08	06:14	10°♒29'25	
evening set	11882 Jan	10	23:12	13°♒56'38	
conjunction	11882 Jan	27	13:18	14°♒58'32	0°10'26
minimum elong	11882 Jan	27	13:18	14°♒58'32	0°11'04
behind sun begin	11882 Jan	27	08:19	14°♒57'46	
behind sun end	11882 Jan	27	18:18	14°♒59'18	
max. Earth dist.	11882 Jan	26	23:56	14°♒56'27	19.32962 AU
	11882 Jan	27	22:47	15°♒	
morning rise	11882 Feb	13	01:52	16°♒00'12	
retrograde	11882 May	16	22:18	19°♒24'22	
opposition	11882 Jul	29	21:46	17°♒21'00	0°08'53
min. Earth dist.	11882 Jul	30	08:09	17°♒19'52	17.32565 AU
direct	11882 Oct	13	09:02	15°♒15'25	
evening set	11883 Jan	16	03:42	18°♒43'04	
conjunction	11883 Feb	01	17:31	19°♒44'58	0°05'25
minimum elong	11883 Feb	01	17:31	19°♒44'58	0°05'59
behind sun begin	11883 Feb	01	11:06	19°♒43'59	
behind sun end	11883 Feb	01	23:56	19°♒45'57	
max. Earth dist.	11883 Feb	01	05:11	19°♒43'03	19.32291 AU
morning rise	11883 Feb	18	05:21	20°♒46'37	
retrograde	11883 May	21	22:35	24°♒10'44	
opposition	11883 Aug	03	21:54	22°♒07'31	0°03'14
min. Earth dist.	11883 Aug	04	08:57	22°♒06'19	17.32166 AU
direct	11883 Oct	18	10:06	20°♒01'56	
evening set	11884 Jan	21	08:22	23°♒29'54	
conjunction	11884 Feb	06	21:32	24°♒31'46	0°00'17
minimum elong	11884 Feb	06	21:33	24°♒31'46	0°00'50
behind sun begin	11884 Feb	06	14:49	24°♒30'44	
behind sun end	11884 Feb	07	04:17	24°♒32'48	
max. Earth dist.	11884 Feb	06	08:31	24°♒29'44	19.32162 AU
morning rise	11884 Feb	23	08:55	25°♒33'22	
desc. node	11884 Feb	26	16:45	25°♒45'32	
retrograde	11884 May	26	00:30	28°♒57'24	
opposition	11884 Aug	07	22:18	26°♒54'19	-0°02'28
min. Earth dist.	11884 Aug	08	08:29	26°♒53'12	17.32293 AU
direct	11884 Oct	22	13:02	24°♒48'44	
evening set	11885 Jan	25	12:40	28°♒16'55	
conjunction	11885 Feb	11	01:30	29°♒18'44	-0°04'54
minimum elong	11885 Feb	11	01:29	29°♒18'44	0°04'26
behind sun begin	11885 Feb	10	18:53	29°♒17'43	
behind sun end	11885 Feb	11	08:06	29°♒19'45	
max. Earth dist.	11885 Feb	10	13:50	29°♒16'55	19.32524 AU
	11885 Feb	22	00:52	0°♓	
morning rise	11885 Feb	27	12:01	0°♓20'15	
retrograde	11885 May	31	01:14	3°♓44'07	
opposition	11885 Aug	12	22:57	1°♓41'10	-0°08'08
min. Earth dist.	11885 Aug	13	09:28	1°♓40'01	17.32888 AU
	11885 Sep	27	00:10	30°℞♒	
direct	11885 Oct	27	14:56	29°♒35'37	
	11885 Nov	26	20:11	0°♓	
evening set	11886 Jan	30	17:10	3°♓03'53	
conjunction	11886 Feb	16	05:13	4°♓05'37	-0°09'57
minimum elong	11886 Feb	16	05:13	4°♓05'37	0°09'31

behind sun begin	11886 Feb 15 23:38	4°♓04'46	
behind sun end	11886 Feb 16 10:47	4°♓06'28	
max. Earth dist.	11886 Feb 15 16:39	4°♓03'39	19.33353 AU
morning rise	11886 Mar 04 15:11	5°♓07'03	
retrograde	11886 Jun 05 02:24	8°♓30'39	
opposition	11886 Aug 17 23:28	6°♓27'50	-0°13'45
min. Earth dist.	11886 Aug 18 09:27	6°♓26'45	17.33946 AU
direct	11886 Nov 01 17:24	4°♓22'18	
evening set	11887 Feb 04 21:16	7°♓50'34	
conjunction	11887 Feb 21 08:50	8°♓52'12	-0°14'55
minimum elong	11887 Feb 21 08:49	8°♓52'12	0°14'33
behind sun begin	11887 Feb 21 06:00	8°♓51'46	
behind sun end	11887 Feb 21 11:38	8°♓52'38	
max. Earth dist.	11887 Feb 20 21:42	8°♓50'28	19.34629 AU
morning rise	11887 Mar 09 17:50	9°♓53'29	
retrograde	11887 Jun 10 03:01	13°♓16'46	
opposition	11887 Aug 23 00:12	11°♓14'05	-0°19'16
min. Earth dist.	11887 Aug 23 10:01	11°♓13'01	17.35438 AU
direct	11887 Nov 06 20:10	9°♓08'36	
evening set	11888 Feb 10 01:00	12°♓36'44	
conjunction	11888 Feb 26 11:39	13°♓38'13	-0°19'48
minimum elong	11888 Feb 26 11:38	13°♓38'13	0°19'30
max. Earth dist.	11888 Feb 25 23:55	13°♓36'23	19.36347 AU
morning rise	11888 Mar 13 19:59	14°♓39'21	
retrograde	11888 Jun 14 02:29	18°♓02'17	
opposition	11888 Aug 27 00:49	15°♓59'41	-0°24'39
min. Earth dist.	11888 Aug 27 10:11	15°♓58'40	17.37388 AU
direct	11888 Nov 10 22:13	13°♓54'14	
evening set	11889 Feb 14 04:09	17°♓22'09	
conjunction	11889 Mar 02 14:12	18°♓23'28	-0°24'32
minimum elong	11889 Mar 02 14:12	18°♓23'28	0°24'16
max. Earth dist.	11889 Mar 02 04:06	18°♓21'54	19.38522 AU
morning rise	11889 Mar 18 21:35	19°♓24'25	
retrograde	11889 Jun 19 02:15	22°♓46'54	
opposition	11889 Sep 01 01:07	20°♓44'24	-0°29'50
min. Earth dist.	11889 Sep 01 09:47	20°♓43'28	17.39783 AU
direct	11889 Nov 16 02:01	18°♓39'02	
evening set	11890 Feb 19 06:53	22°♓06'36	
conjunction	11890 Mar 07 16:01	23°♓07'44	-0°29'05
minimum elong	11890 Mar 07 16:01	23°♓07'43	0°28'55
max. Earth dist.	11890 Mar 07 05:44	23°♓06'07	19.41150 AU
morning rise	11890 Mar 23 22:40	24°♓08'29	
retrograde	11890 Jun 23 23:38	27°♓30'27	
opposition	11890 Sep 06 01:20	25°♓28'03	-0°34'48
min. Earth dist.	11890 Sep 06 09:46	25°♓27'09	17.42653 AU
direct	11890 Nov 21 04:05	23°♓22'45	
evening set	11891 Feb 24 08:48	26°♓49'53	
conjunction	11891 Mar 12 17:11	27°♓50'48	-0°33'26
minimum elong	11891 Mar 12 17:11	27°♓50'48	0°33'19
max. Earth dist.	11891 Mar 12 08:33	27°♓49'27	19.44257 AU
morning rise	11891 Mar 28 22:52	28°♓51'20	
	11891 Apr 17 13:23	0°♈	
retrograde	11891 Jun 28 22:10	2°♈12'44	
opposition	11891 Sep 11 01:13	0°♈10'27	-0°39'31
min. Earth dist.	11891 Sep 11 08:14	0°♈09'41	17.45998 AU
	11891 Sep 15 02:12	30°℞♓	
direct	11891 Nov 26 08:12	28°♓05'15	
	11892 Feb 02 12:02	0°♈	
evening set	11892 Feb 29 10:07	1°♈31'51	
conjunction	11892 Mar 16 17:32	2°♈32'32	-0°37'32
minimum elong	11892 Mar 16 17:31	2°♈32'32	0°37'29
max. Earth dist.	11892 Mar 16 09:28	2°♈31'16	19.47854 AU
morning rise	11892 Apr 01 22:21	3°♈32'50	
retrograde	11892 Jul 02 18:11	6°♈53'39	
opposition	11892 Sep 15 00:53	4°♈51'29	-0°43'57
min. Earth dist.	11892 Sep 15 07:35	4°♈50'46	17.49867 AU
direct	11892 Nov 30 09:12	2°♈46'25	
evening set	11893 Mar 05 10:27	6°♈12'25	
conjunction	11893 Mar 21 17:04	7°♈12'50	-0°41'22
minimum elong	11893 Mar 21 17:03	7°♈12'50	0°41'24
max. Earth dist.	11893 Mar 21 10:30	7°♈11'49	19.51983 AU
morning rise	11893 Apr 06 21:01	8°♈12'53	
retrograde	11893 Jul 07 16:03	11°♈33'05	
opposition	11893 Sep 20 00:05	9°♈31'05	-0°48'03
min. Earth dist.	11893 Sep 20 04:52	9°♈30'34	17.54243 AU
direct	11893 Dec 05 12:02	7°♈26'13	
evening set	11894 Mar 10 10:16	10°♈51'32	
conjunction	11894 Mar 26 15:57	11°♈51'42	-0°44'54
minimum elong	11894 Mar 26 15:56	11°♈51'42	0°44'59
max. Earth dist.	11894 Mar 26 10:28	11°♈50'51	19.56609 AU
morning rise	11894 Apr 11 18:59	12°♈51'30	
retrograde	11894 Jul 12 11:26	16°♈11'03	
opposition	11894 Sep 24 22:58	14°♈09'15	-0°51'49
min. Earth dist.	11894 Sep 25 03:33	14°♈08'46	17.59119 AU
direct	11894 Dec 10 11:35	12°♈04'38	
evening set	11895 Mar 15 09:14	15°♈29'15	
conjunction	11895 Mar 31 14:01	16°♈29'07	-0°48'07
minimum elong	11895 Mar 31 14:00	16°♈29'07	0°48'17
max. Earth dist.	11895 Mar 31 09:38	16°♈28'27	19.61719 AU
morning rise	11895 Apr 16 16:14	17°♈28'39	
retrograde	11895 Jul 17 08:43	20°♈47'33	
opposition	11895 Sep 29 21:26	18°♈45'59	-0°55'13
min. Earth dist.	11895 Sep 29 23:57	18°♈45'43	17.64432 AU
direct	11895 Dec 15 12:27	16°♈41'40	
evening set	11896 Mar 19 07:14	20°♈05'29	
conjunction	11896 Apr 04 11:09	21°♈05'05	-0°51'01
minimum elong	11896 Apr 04 11:09	21°♈05'05	0°51'14
max. Earth dist.	11896 Apr 04 08:19	21°♈04'39	19.67222 AU
morning rise	11896 Apr 20 12:28	22°♈04'20	
retrograde	11896 Jul 21 03:38	25°♈22'34	
opposition	11896 Oct 03 19:38	23°♈21'15	-0°58'15
min. Earth dist.	11896 Oct 03 22:11	23°♈20'59	17.70113 AU
direct	11896 Dec 19 10:50	21°♈17'15	
evening set	11897 Mar 24 04:36	24°♈40'13	
conjunction	11897 Apr 09 07:35	25°♈39'32	-0°53'35
minimum elong	11897 Apr 09 07:35	25°♈39'32	0°53'51
max. Earth dist.	11897 Apr 09 05:18	25°♈39'11	19.73057 AU
morning rise	11897 Apr 25 08:12	26°♈38'30	
retrograde	11897 Jul 25 23:51	29°♈56'02	
opposition	11897 Oct 08 17:04	27°♈54'58	-1°00'54
min. Earth dist.	11897 Oct 08 17:44	27°♈54'54	17.76074 AU
direct	11897 Dec 24 10:29	25°♈51'17	
evening set	11898 Mar 29 01:07	29°♈13'23	
	11898 Apr 10 18:53	0°♉	
conjunction	11898 Apr 14 03:20	0°♉12'24	-0°55'48
minimum elong	11898 Apr 14 03:19	0°♉12'24	0°56'08
max. Earth dist.	11898 Apr 14 02:37	0°♉12'17	19.79122 AU
morning rise	11898 Apr 30 03:02	1°♉11'04	
retrograde	11898 Jul 30 17:23	4°♉27'54	
opposition	11898 Oct 13 14:22	2°♉27'05	-1°03'09
min. Earth dist.	11898 Oct 13 15:15	2°♉26'59	17.82238 AU
direct	11898 Dec 29 08:05	0°♉23'44	

evening set	11899 Apr 02 20:46	3°♉44'52	
conjunction	11899 Apr 18 22:01	4°♉43'35	-0°57'39
minimum elong	11899 Apr 18 22:00	4°♉43'35	0°58'02
max. Earth dist.	11899 Apr 18 21:24	4°♉43'29	19.85365 AU
morning rise	11899 May 04 21:06	5°♉41'58	
retrograde	11899 Aug 04 12:26	8°♉58'05	
opposition	11899 Oct 18 11:01	6°♉57'29	-1°05'00
min. Earth dist.	11899 Oct 18 10:03	6°♉57'35	17.88542 AU
direct	11900 Jan 03 06:46	4°♉54'28	
evening set	11900 Apr 07 15:26	8°♉14'37	
conjunction	11900 Apr 23 16:01	9°♉13'01	-0°59'08
minimum elong	11900 Apr 23 16:00	9°♉13'01	0°59'36
max. Earth dist.	11900 Apr 23 17:06	9°♉13'11	19.91707 AU
morning rise	11900 May 09 14:15	10°♉11'07	
retrograde	11900 Aug 09 04:21	13°♉26'30	
opposition	11900 Oct 23 07:10	11°♉26'07	-1°06'27
min. Earth dist.	11900 Oct 23 06:24	11°♉26'12	17.94921 AU
direct	11901 Jan 08 03:24	9°♉23'26	
evening set	11901 Apr 12 09:17	12°♉42'33	
conjunction	11901 Apr 28 09:00	13°♉40'39	-1°00'16
minimum elong	11901 Apr 28 08:59	13°♉40'39	1°00'46
max. Earth dist.	11901 Apr 28 09:50	13°♉40'47	19.98110 AU
morning rise	11901 May 14 06:46	14°♉38'28	
	11901 May 20 09:03	15°♉	
retrograde	11901 Aug 13 22:01	17°♉53'06	
opposition	11901 Oct 28 02:39	15°♉52'54	-1°07'29
min. Earth dist.	11901 Oct 28 00:16	15°♉53'09	18.01329 AU
	11901 Nov 18 23:39	15°℞♉	
direct	11902 Jan 13 00:52	13°♉50'31	
	11902 Mar 06 21:51	15°♉	
evening set	11902 Apr 17 02:08	17°♉08'35	
conjunction	11902 May 03 01:15	18°♉06'23	-1°01'02
minimum elong	11902 May 03 01:15	18°♉06'23	1°01'35
max. Earth dist.	11902 May 03 03:51	18°♉06'47	20.04509 AU
morning rise	11902 May 18 22:15	19°♉03'56	
retrograde	11902 Aug 18 12:25	22°♉17'48	
opposition	11902 Nov 01 21:35	20°♉17'47	-1°08'07
min. Earth dist.	11902 Nov 01 19:17	20°♉18'01	18.07720 AU
direct	11903 Jan 17 20:27	18°♉15'42	
evening set	11903 Apr 21 18:08	21°♉32'41	
conjunction	11903 May 07 16:25	22°♉30'11	-1°01'26
minimum elong	11903 May 07 16:25	22°♉30'11	1°02'02
max. Earth dist.	11903 May 07 18:46	22°♉30'33	20.10900 AU
morning rise	11903 May 23 13:04	23°♉27'27	
retrograde	11903 Aug 23 04:32	26°♉40'35	
opposition	11903 Nov 06 15:49	24°♉40'42	-1°08'20
min. Earth dist.	11903 Nov 06 12:00	24°♉41'06	18.14106 AU
direct	11904 Jan 22 16:31	22°♉38'53	
evening set	11904 Apr 25 08:50	25°♉54'46	
conjunction	11904 May 11 06:41	26°♉51'59	-1°01'28
minimum elong	11904 May 11 06:40	26°♉51'59	1°02'06
max. Earth dist.	11904 May 11 11:07	26°♉52'39	20.17276 AU
morning rise	11904 May 27 02:42	27°♉48'59	
	11904 Jul 08 18:32	0°♊	
retrograde	11904 Aug 26 17:12	1°♊01'22	
	11904 Oct 16 18:46	30°℞♉	
opposition	11904 Nov 10 09:25	29°♉01'37	-1°08'10
min. Earth dist.	11904 Nov 10 05:20	29°♉02'02	18.20476 AU
direct	11905 Jan 26 10:53	27°♉00'05	
	11905 Apr 25 16:47	0°♊	
evening set	11905 Apr 29 22:51	0°♊14'52	
conjunction	11905 May 15 19:57	1°♊11'48	-1°01'09
minimum elong	11905 May 15 19:57	1°♊11'48	1°01'50
max. Earth dist.	11905 May 16 00:17	1°♊12'27	20.23653 AU
morning rise	11905 May 31 15:44	2°♊08'32	
retrograde	11905 Aug 31 07:34	5°♊20'11	
opposition	11905 Nov 15 02:06	3°♊20'34	-1°07'36
min. Earth dist.	11905 Nov 14 20:35	3°♊21'08	18.26867 AU
direct	11906 Jan 31 04:56	1°♊19'19	
evening set	11906 May 04 11:49	4°♊33'01	
conjunction	11906 May 20 08:33	5°♊29'41	-1°00'30
minimum elong	11906 May 20 08:33	5°♊29'41	1°01'11
max. Earth dist.	11906 May 20 15:05	5°♊30'40	20.30049 AU
morning rise	11906 Jun 05 03:46	6°♊26'10	
retrograde	11906 Sep 04 19:03	9°♊37'08	
opposition	11906 Nov 19 18:23	7°♊37'40	-1°06'40
min. Earth dist.	11906 Nov 19 12:11	7°♊38'19	18.33271 AU
direct	11907 Feb 04 21:44	5°♊36'44	
evening set	11907 May 08 23:57	8°♊49'23	
conjunction	11907 May 24 20:01	9°♊45'46	-0°59'30
minimum elong	11907 May 24 20:01	9°♊45'46	1°00'15
max. Earth dist.	11907 May 25 02:34	9°♊46'45	20.36465 AU
morning rise	11907 Jun 09 15:05	10°♊42'01	
retrograde	11907 Sep 09 07:49	13°♊52'21	
opposition	11907 Nov 24 09:58	11°♊53'03	-1°05'22
min. Earth dist.	11907 Nov 24 02:24	11°♊53'50	18.39693 AU
direct	11908 Feb 09 13:14	9°♊52'27	
evening set	11908 May 12 11:11	13°♊04'04	
conjunction	11908 May 28 07:01	14°♊00'13	-0°58'12
minimum elong	11908 May 28 07:01	14°♊00'13	0°58'56
max. Earth dist.	11908 May 28 15:41	14°♊01'30	20.42872 AU
morning rise	11908 Jun 13 01:41	14°♊56'14	
retrograde	11908 Sep 12 18:56	18°♊05'56	
opposition	11908 Nov 28 00:47	16°♊06'50	-1°03'43
min. Earth dist.	11908 Nov 27 16:32	16°♊07'41	18.46065 AU
direct	11909 Feb 13 04:21	14°♊06'35	
evening set	11909 May 16 21:52	17°♊17'13	
conjunction	11909 Jun 01 17:11	18°♊13'08	-0°56'34
minimum elong	11909 Jun 01 17:11	18°♊13'08	0°57'21
max. Earth dist.	11909 Jun 02 01:38	18°♊14'23	20.49207 AU
morning rise	11909 Jun 17 11:50	19°♊08'56	
retrograde	11909 Sep 17 06:24	22°♊18'03	
opposition	11909 Dec 02 15:10	20°♊19'10	-1°01'44
min. Earth dist.	11909 Dec 02 06:02	20°♊20'05	18.52345 AU
direct	11910 Feb 17 17:29	18°♊19'15	
evening set	11910 May 21 07:39	21°♊28'56	
conjunction	11910 Jun 06 02:48	22°♊24'36	-0°54'40
minimum elong	11910 Jun 06 02:48	22°♊24'36	0°55'28
max. Earth dist.	11910 Jun 06 13:06	22°♊26'08	20.55406 AU
morning rise	11910 Jun 21 21:07	23°♊20'12	
retrograde	11910 Sep 21 17:08	26°♊28'47	
opposition	11910 Dec 07 05:01	24°♊30'05	-0°59'27
min. Earth dist.	11910 Dec 06 19:12	24°♊31'05	18.58443 AU
direct	11911 Feb 22 07:22	22°♊30'33	
evening set	11911 May 25 17:01	25°♊39'16	
conjunction	11911 Jun 10 11:44	26°♊34'44	-0°52'28
minimum elong	11911 Jun 10 11:44	26°♊34'44	0°53'17
max. Earth dist.	11911 Jun 10 21:40	26°♊36'12	20.61401 AU
morning rise	11911 Jun 26 06:08	27°♊30'09	
	11911 Aug 18 05:28	0°♋	
retrograde	11911 Sep 26 03:54	0°♋38'13	
	11911 Nov 05 09:19	30°℞♊	

opposition	11911 Dec 11	18:22	28°♊39'42	-0°56'52	
min. Earth dist.	11911 Dec 11	08:06	28°♊40'44	18.64325 AU	
direct	11912 Feb 26	19:05	26°♊40'28		
evening set	11912 May 29	01:33	29°♊48'17		
	11912 Jun 01	10:47	0°♋		
conjunction	11912 Jun 13	20:14	0°♋43'34	-0°50'02	
minimum elong	11912 Jun 13	20:15	0°♋43'34	0°50'51	
max. Earth dist.	11912 Jun 14	07:41	0°♋45'14	20.67137 AU	
morning rise	11912 Jun 29	14:29	1°♋38'48		
retrograde	11912 Sep 29	14:03	4°♋46'22		
opposition	11912 Dec 15	07:09	2°♋48'01	-0°54'00	
min. Earth dist.	11912 Dec 14	20:19	2°♋49'07	18.69892 AU	
direct	11913 Mar 02	07:22	0°♋49'07		
evening set	11913 Jun 02	09:49	3°♋56'03		
conjunction	11913 Jun 18	04:10	4°♋51'08	-0°47'20	
minimum elong	11913 Jun 18	04:10	4°♋51'08	0°48'08	
max. Earth dist.	11913 Jun 18	14:54	4°♋52'42	20.72531 AU	
morning rise	11913 Jul 03	22:34	5°♋46'13		
retrograde	11913 Oct 04	00:05	8°♋53'20		
opposition	11913 Dec 19	19:26	6°♋55'06	-0°50'53	
min. Earth dist.	11913 Dec 19	08:37	6°♋56'11	18.75107 AU	
direct	11914 Mar 06	18:22	4°♋56'28		
evening set	11914 Jun 06	17:25	8°♋02'34		
conjunction	11914 Jun 22	11:49	8°♋57'29	-0°44'25	
minimum elong	11914 Jun 22	11:49	8°♋57'29	0°45'14	
max. Earth dist.	11914 Jun 22	23:41	8°♋59'13	20.77542 AU	
morning rise	11914 Jul 08	06:07	9°♋52'25		
retrograde	11914 Oct 08	09:40	12°♋59'06		
opposition	11914 Dec 24	07:18	11°♋00'58	-0°47'30	
min. Earth dist.	11914 Dec 23	19:54	11°♋02'07	18.79898 AU	
direct	11915 Mar 11	05:37	9°♋02'34		
evening set	11915 Jun 11	00:30	12°♋07'51		
conjunction	11915 Jun 26	18:42	13°♋02'36	-0°41'17	
minimum elong	11915 Jun 26	18:42	13°♋02'36	0°42'05	
max. Earth dist.	11915 Jun 27	05:46	13°♋04'13	20.82115 AU	
morning rise	11915 Jul 12	13:18	13°♋57'24		
retrograde	11915 Oct 12	18:45	17°♋03'42		
opposition	11915 Dec 28	18:43	15°♋05'36	-0°43'55	
min. Earth dist.	11915 Dec 28	07:36	15°♋06'43	18.84252 AU	
direct	11916 Mar 14	15:37	13°♋07'24		
evening set	11916 Jun 14	07:03	16°♋11'54		
conjunction	11916 Jun 30	01:27	17°♋06'31	-0°37'57	
minimum elong	11916 Jun 30	01:27	17°♋06'31	0°38'45	
max. Earth dist.	11916 Jun 30	13:30	17°♋08'16	20.86244 AU	
morning rise	11916 Jul 15	20:06	18°♋01'11		
retrograde	11916 Oct 16	03:37	21°♋07'05		
opposition	11917 Jan 01	05:21	19°♋09'01	-0°40'07	
min. Earth dist.	11916 Dec 31	17:41	19°♋10'11	18.88146 AU	
direct	11917 Mar 19	02:15	17°♋10'58		
evening set	11917 Jun 18	13:15	20°♋14'43		
conjunction	11917 Jul 04	07:32	21°♋09'12	-0°34'27	
minimum elong	11917 Jul 04	07:32	21°♋09'13	0°35'14	
max. Earth dist.	11917 Jul 04	18:52	21°♋10'51	20.89927 AU	
morning rise	11917 Jul 20	02:33	22°♋03'48		
retrograde	11917 Oct 20	11:26	25°♋09'21		
opposition	11918 Jan 05	15:45	23°♋11'16	-0°36'09	
min. Earth dist.	11918 Jan 05	04:28	23°♋12'23	18.91634 AU	
direct	11918 Mar 23	10:48	21°♋13'20		
evening set	11918 Jun 22	18:42	24°♋16'24		
conjunction	11918 Jul 08	13:13	25°♋10'47	-0°30'47	
minimum elong	11918 Jul 08	13:13	25°♋10'47	0°31'33	
max. Earth dist.	11918 Jul 09	01:48	25°♋12'36	20.93222 AU	
morning rise	11918 Jul 24	08:21	26°♋05'16		
retrograde	11918 Oct 24	19:57	29°♋10'33		
opposition	11919 Jan 10	01:38	27°♋12'25	-0°32'00	
min. Earth dist.	11919 Jan 09	13:27	27°♋13'39	18.94739 AU	
direct	11919 Mar 27	20:40	25°♋14'38		
evening set	11919 Jun 27	00:03	28°♋17'04		
conjunction	11919 Jul 12	18:32	29°♋11'21	-0°26'59	
minimum elong	11919 Jul 12	18:32	29°♋11'21	0°27'44	
max. Earth dist.	11919 Jul 13	06:37	29°♋13'05	20.96156 AU	
	11919 Jul 26	21:15	0°♌		
morning rise	11919 Jul 28	14:06	0°♌05'47		
retrograde	11919 Oct 29	03:04	3°♌10'50		
opposition	11920 Jan 14	11:06	1°♌12'41	-0°27'43	
min. Earth dist.	11920 Jan 13	23:18	1°♌13'52	18.97518 AU	
	11920 Feb 16	01:59	30°℞♋		
direct	11920 Mar 31	03:26	29°♋15'01		
	11920 May 12	20:38	0°♌		
evening set	11920 Jun 30	04:54	2°♌16'55		
conjunction	11920 Jul 15	23:44	3°♌11'07	-0°23'03	
minimum elong	11920 Jul 15	23:44	3°♌11'07	0°23'46	
max. Earth dist.	11920 Jul 16	12:57	3°♌13'01	20.98767 AU	
morning rise	11920 Jul 31	19:31	4°♌05'30		
retrograde	11920 Nov 01	11:21	7°♌10'23		
opposition	11921 Jan 17	20:07	5°♌12'14	-0°23'18	
min. Earth dist.	11921 Jan 17	07:23	5°♌13'30	18.99952 AU	
direct	11921 Apr 04	12:20	3°♌14'43		
evening set	11921 Jul 04	09:41	6°♌16'08		
conjunction	11921 Jul 20	04:34	7°♌10'17	-0°19'02	
minimum elong	11921 Jul 20	04:34	7°♌10'17	0°19'44	
max. Earth dist.	11921 Jul 20	17:09	7°♌12'06	21.01030 AU	
morning rise	11921 Aug 05	00:49	8°♌04'38		
retrograde	11921 Nov 05	18:36	11°♌09'26		
opposition	11922 Jan 22	04:58	9°♌11'17	-0°18'48	
min. Earth dist.	11922 Jan 21	16:47	9°♌12'30	19.02048 AU	
direct	11922 Apr 08	17:55	7°♌13'54		
evening set	11922 Jul 08	14:11	10°♌14'56		
conjunction	11922 Jul 24	09:28	11°♌09'03	-0°14'55	
minimum elong	11922 Jul 24	09:28	11°♌09'03	0°15'35	
behind sun begin	11922 Jul 24	07:40	11°♌08'48		
behind sun end	11922 Jul 24	11:15	11°♌09'18		
max. Earth dist.	11922 Jul 24	23:02	11°♌11'00	21.02949 AU	
morning rise	11922 Aug 09	05:59	12°♌03'22		
	11922 Oct 22	21:42	15°♌		
retrograde	11922 Nov 10	02:43	15°♌08'08		
	11922 Nov 28	11:24	15°℞♌		
opposition	11923 Jan 26	13:29	13°♌10'00	-0°14'13	
min. Earth dist.	11923 Jan 26	00:25	13°♌11'19	19.03773 AU	
direct	11923 Apr 13	02:11	11°♌12'47		
evening set	11923 Jul 12	18:40	14°♌13'29		
	11923 Jul 26	09:23	15°♌		
conjunction	11923 Jul 28	14:06	15°♌07'35	-0°10'46	
minimum elong	11923 Jul 28	14:06	15°♌07'35	0°11'23	
behind sun begin	11923 Jul 28	09:17	15°♌06'54		
behind sun end	11923 Jul 28	18:56	15°♌08'15		
max. Earth dist.	11923 Jul 29	02:55	15°♌09'25	21.04483 AU	
morning rise	11923 Aug 13	11:14	16°♌01'54		
retrograde	11923 Nov 14	10:45	19°♌06'42		
opposition	11924 Jan 30	21:57	17°♌08'34	-0°09'34	
min. Earth dist.	11924 Jan 30	09:44	17°♌09'48	19.05108 AU	
direct	11924 Apr 16	07:11	15°♌11'29		

evening set	11924 Jul	15	23:08	18°♌11'56	
conjunction	11924 Jul	31	19:02	19°♌06'02	-0°06'33
minimum elong	11924 Jul	31	19:03	19°♌06'02	0°07'09
behind sun begin	11924 Jul	31	12:58	19°♌05'11	
behind sun end	11924 Aug	01	01:07	19°♌06'53	
max. Earth dist.	11924 Aug	01	08:30	19°♌07'57	21.05605 AU
morning rise	11924 Aug	16	16:29	20°♌00'22	
retrograde	11924 Nov	17	18:36	23°♌05'14	
opposition	11925 Feb	03	05:59	21°♌07'07	-0°04'52
min. Earth dist.	11925 Feb	02	17:09	21°♌08'24	19.06000 AU
direct	11925 Apr	20	14:49	19°♌10'09	
evening set	11925 Jul	20	03:50	22°♌10'25	
conjunction	11925 Aug	04	23:56	23°♌04'32	-0°02'19
minimum elong	11925 Aug	04	23:56	23°♌04'32	0°02'52
behind sun begin	11925 Aug	04	17:22	23°♌03'37	
behind sun end	11925 Aug	05	06:30	23°♌05'27	
max. Earth dist.	11925 Aug	05	12:20	23°♌06'18	21.06267 AU
morning rise	11925 Aug	20	21:58	23°♌58'54	
retrograde	11925 Nov	22	02:51	27°♌03'54	
opposition	11926 Feb	07	14:16	25°♌05'46	-0°00'09
min. Earth dist.	11926 Feb	07	02:36	25°♌06'56	19.06427 AU
asc. node	11926 Feb	19	10:37	24°♌37'38	
direct	11926 Apr	24	19:57	23°♌08'54	
evening set	11926 Jul	24	08:24	26°♌09'02	
conjunction	11926 Aug	09	05:02	27°♌03'11	0°02'04
minimum elong	11926 Aug	09	05:01	27°♌03'11	0°01'33
behind sun begin	11926 Aug	08	22:26	27°♌02'16	
behind sun end	11926 Aug	09	11:36	27°♌04'06	
max. Earth dist.	11926 Aug	09	17:52	27°♌05'01	21.06441 AU
morning rise	11926 Aug	25	03:26	27°♌57'36	
	11926 Oct	05	21:50	0°♍	
retrograde	11926 Nov	26	11:08	1°♍02'47	
	11927 Jan	18	21:11	30°℞♌	
opposition	11927 Feb	11	22:22	29°♌04'36	0°04'33
min. Earth dist.	11927 Feb	11	10:16	29°♌05'49	19.06330 AU
direct	11927 Apr	29	03:04	27°♌07'48	
	11927 Jul	26	04:57	0°♍	
evening set	11927 Jul	28	13:27	0°♍07'52	
conjunction	11927 Aug	13	10:21	1°♍02'03	0°06'20
minimum elong	11927 Aug	13	10:21	1°♍02'03	0°05'53
behind sun begin	11927 Aug	13	04:03	1°♍01'10	
behind sun end	11927 Aug	13	16:39	1°♍02'56	
max. Earth dist.	11927 Aug	13	21:49	1°♍03'41	21.06067 AU
morning rise	11927 Aug	29	09:25	1°♍56'33	
retrograde	11927 Nov	30	18:48	5°♍01'55	
opposition	11928 Feb	16	06:25	3°♍03'40	0°09'15
min. Earth dist.	11928 Feb	15	19:53	3°♍04'43	19.05682 AU
direct	11928 May	02	08:39	1°♍06'51	
evening set	11928 Jul	31	18:32	4°♍06'54	
conjunction	11928 Aug	16	16:02	5°♍01'09	0°10'33
minimum elong	11928 Aug	16	16:02	5°♍01'09	0°10'07
behind sun begin	11928 Aug	16	10:44	5°♍00'25	
behind sun end	11928 Aug	16	21:20	5°♍01'54	
max. Earth dist.	11928 Aug	17	03:34	5°♍02'48	21.05132 AU
morning rise	11928 Sep	01	15:33	5°♍55'43	
retrograde	11928 Dec	04	03:41	9°♍01'18	
opposition	11929 Feb	19	14:24	7°♍02'56	0°13'55
min. Earth dist.	11929 Feb	19	03:35	7°♍04'01	19.04450 AU
direct	11929 May	06	15:48	5°♍06'05	
evening set	11929 Aug	04	23:49	8°♍06'09	
conjunction	11929 Aug	20	21:39	9°♍00'28	0°14'44
minimum elong	11929 Aug	20	21:39	9°♍00'28	0°14'22
behind sun begin	11929 Aug	20	18:34	9°♍00'03	
behind sun end	11929 Aug	21	00:43	9°♍00'54	
max. Earth dist.	11929 Aug	21	07:46	9°♍01'55	21.03619 AU
morning rise	11929 Sep	05	21:50	9°♍55'08	
retrograde	11929 Dec	08	10:38	13°♍00'59	
opposition	11930 Feb	23	22:31	11°♍02'26	0°18'32
min. Earth dist.	11930 Feb	23	13:16	11°♍03'21	19.02674 AU
direct	11930 May	10	21:24	9°♍05'29	
evening set	11930 Aug	09	05:11	12°♍05'36	
conjunction	11930 Aug	25	03:41	13°♍00'01	0°18'51
minimum elong	11930 Aug	25	03:40	13°♍00'01	0°18'32
max. Earth dist.	11930 Aug	25	14:00	13°♍01'30	21.01597 AU
morning rise	11930 Sep	10	04:21	13°♍54'47	
retrograde	11930 Dec	12	19:54	17°♍00'54	
opposition	11931 Feb	28	06:23	15°♍02'09	0°23'03
min. Earth dist.	11931 Feb	27	20:44	15°♍03'07	19.00409 AU
direct	11931 May	15	04:47	13°♍05'05	
evening set	11931 Aug	13	10:55	16°♍05'19	
conjunction	11931 Aug	29	09:49	16°♍59'51	0°22'54
minimum elong	11931 Aug	29	09:49	16°♍59'51	0°22'38
max. Earth dist.	11931 Aug	29	18:54	17°♍01'09	20.99110 AU
morning rise	11931 Sep	14	11:13	17°♍54'44	
retrograde	11931 Dec	17	02:51	21°♍01'11	
opposition	11932 Mar	03	14:24	19°♍02'13	0°27'29
min. Earth dist.	11932 Mar	03	06:16	19°♍03'02	18.97724 AU
direct	11932 May	18	09:54	17°♍04'59	
evening set	11932 Aug	16	16:50	20°♍05'26	
conjunction	11932 Sep	01	16:23	21°♍00'04	0°26'50
minimum elong	11932 Sep	01	16:23	21°♍00'04	0°26'38
max. Earth dist.	11932 Sep	02	01:42	21°♍01'24	20.96233 AU
morning rise	11932 Sep	17	18:16	21°♍55'05	
retrograde	11932 Dec	20	12:30	25°♍01'53	
opposition	11933 Mar	07	22:15	23°♍02'43	0°31'47
min. Earth dist.	11933 Mar	07	13:34	23°♍03'36	18.94666 AU
direct	11933 May	22	17:18	21°♍05'21	
evening set	11933 Aug	20	23:15	24°♍06'03	
conjunction	11933 Sep	05	23:14	25°♍00'50	0°30'39
minimum elong	11933 Sep	05	23:14	25°♍00'50	0°30'29
max. Earth dist.	11933 Sep	06	07:24	25°♍02'00	20.93006 AU
morning rise	11933 Sep	22	01:50	25°♍55'59	
retrograde	11933 Dec	24	20:18	29°♍03'14	
opposition	11934 Mar	12	06:32	27°♍03'51	0°35'56
min. Earth dist.	11934 Mar	11	23:14	27°♍04'36	18.91289 AU
direct	11934 May	26	22:26	25°♍06'19	
evening set	11934 Aug	25	05:50	28°♍07'22	
conjunction	11934 Sep	10	06:34	29°♍02'18	0°34'19
minimum elong	11934 Sep	10	06:33	29°♍02'18	0°34'14
max. Earth dist.	11934 Sep	10	14:57	29°♍03'30	20.89481 AU
morning rise	11934 Sep	26	09:43	29°♍57'37	
	11934 Sep	27	02:44	0°♎	
retrograde	11934 Dec	29	06:58	3°♎05'19	
opposition	11935 Mar	16	14:49	1°♎05'46	0°39'55
min. Earth dist.	11935 Mar	16	06:56	1°♎06'34	18.87613 AU
	11935 Apr	14	05:06	30°℞♍	
direct	11935 May	31	05:56	29°♍08'05	
	11935 Jul	15	17:11	0°♎	
evening set	11935 Aug	29	13:13	2°♎09'32	
conjunction	11935 Sep	14	14:26	3°♎04'39	0°37'50
minimum elong	11935 Sep	14	14:26	3°♎04'39	0°37'47
max. Earth dist.	11935 Sep	14	21:36	3°♎05'40	20.85658 AU

morning rise	11935 Sep 30	18:19	4°♎00'08		
retrograde	11936 Jan 02	16:00	7°♎08'21		
opposition	11936 Mar 19	23:22	5°♎08'37	0°43'44	
min. Earth dist.	11936 Mar 19	17:02	5°♎09'16	18.83657 AU	
direct	11936 Jun 03	11:21	3°♎10'47		
evening set	11936 Sep 01	21:01	6°♎12'44		
conjunction	11936 Sep 17	22:58	7°♎08'02	0°41'10	
minimum elong	11936 Sep 17	22:58	7°♎08'02	0°41'11	
max. Earth dist.	11936 Sep 18	06:10	7°♎09'04	20.81569 AU	
morning rise	11936 Oct 04	03:25	8°♎03'43		
retrograde	11937 Jan 06	03:45	11°♎12'29		
opposition	11937 Mar 24	08:11	9°♎12'37	0°47'20	
min. Earth dist.	11937 Mar 24	01:22	9°♎13'19	18.79425 AU	
direct	11937 Jun 07	19:23	7°♎14'38		
evening set	11937 Sep 06	05:25	10°♎17'08		
conjunction	11937 Sep 22	07:54	11°♎12'38	0°44'18	
minimum elong	11937 Sep 22	07:53	11°♎12'38	0°44'22	
max. Earth dist.	11937 Sep 22	13:55	11°♎13'30	20.77195 AU	
morning rise	11937 Oct 08	13:03	12°♎08'31		
retrograde	11938 Jan 10	14:08	15°♎17'55		
opposition	11938 Mar 28	17:35	13°♎17'53	0°50'42	
min. Earth dist.	11938 Mar 28	12:25	13°♎18'25	18.74917 AU	
direct	11938 Jun 12	01:23	11°♎19'46		
evening set	11938 Sep 10	14:34	14°♎22'53		
conjunction	11938 Sep 26	17:48	15°♎18'36	0°47'14	
minimum elong	11938 Sep 26	17:47	15°♎18'36	0°47'22	
max. Earth dist.	11938 Sep 26	23:36	15°♎19'27	20.72549 AU	
morning rise	11938 Oct 12	23:32	16°♎14'42		
retrograde	11939 Jan 15	03:14	19°♎24'45		
opposition	11939 Apr 02	03:04	17°♎24'35	0°53'50	
min. Earth dist.	11939 Apr 01	21:43	17°♎25'08	18.70117 AU	
direct	11939 Jun 16	10:19	15°♎26'19		
evening set	11939 Sep 15	00:37	18°♎30'08		
conjunction	11939 Oct 01	04:25	19°♎26'04	0°49'56	
minimum elong	11939 Oct 01	04:24	19°♎26'04	0°50'08	
max. Earth dist.	11939 Oct 01	08:47	19°♎26'42	20.67581 AU	
morning rise	11939 Oct 17	10:51	20°♎22'24		
retrograde	11940 Jan 19	14:43	23°♎33'07		
opposition	11940 Apr 05	13:13	21°♎32'49	0°56'43	
min. Earth dist.	11940 Apr 05	09:53	21°♎33'10	18.64986 AU	
direct	11940 Jun 19	17:10	19°♎34'22		
evening set	11940 Sep 18	11:19	22°♎38'55		
conjunction	11940 Oct 04	15:51	23°♎35'06	0°52'24	
minimum elong	11940 Oct 04	15:50	23°♎35'06	0°52'39	
max. Earth dist.	11940 Oct 04	19:30	23°♎35'38	20.62277 AU	
morning rise	11940 Oct 20	22:50	24°♎31'40		
retrograde	11941 Jan 23	05:08	27°♎43'04		
opposition	11941 Apr 09	23:41	25°♎42'36	0°59'20	
min. Earth dist.	11941 Apr 09	20:23	25°♎42'56	18.59502 AU	
direct	11941 Jun 24	03:20	23°♎43'55		
evening set	11941 Sep 22	22:56	26°♎49'15		
conjunction	11941 Oct 09	04:04	27°♎45'41	0°54'36	
minimum elong	11941 Oct 09	04:03	27°♎45'41	0°54'55	
max. Earth dist.	11941 Oct 09	06:09	27°♎45'59	20.56610 AU	
morning rise	11941 Oct 25	11:43	28°♎42'30		
	11941 Nov 18	12:21	0°♏		
retrograde	11942 Jan 27	17:44	1°♏54'36		
	11942 Apr 12	00:08	30°℞♎		
opposition	11942 Apr 14	10:48	29°♎53'56	1°01'39	
min. Earth dist.	11942 Apr 14	09:31	29°♎54'04	18.53670 AU	
direct	11942 Jun 28	11:34	27°♎54'59		
	11942 Sep 08	20:18	0°♏		
evening set	11942 Sep 27	11:07	1°♏01'07		
conjunction	11942 Oct 13	17:03	1°♏57'48	0°56'32	
minimum elong	11942 Oct 13	17:02	1°♏57'48	0°56'53	
max. Earth dist.	11942 Oct 13	18:12	1°♏57'58	20.50628 AU	
morning rise	11942 Oct 30	01:21	2°♏54'53		
retrograde	11943 Feb 01	09:10	6°♏07'40		
opposition	11943 Apr 18	22:10	4°♏06'45	1°03'39	
min. Earth dist.	11943 Apr 18	21:00	4°♏06'53	18.47534 AU	
direct	11943 Jul 02	22:40	2°♏07'30		
evening set	11943 Oct 02	00:16	5°♏14'28		
conjunction	11943 Oct 18	06:50	6°♏11'26	0°58'10	
minimum elong	11943 Oct 18	06:49	6°♏11'26	0°58'35	
max. Earth dist.	11943 Oct 18	06:39	6°♏11'25	20.44356 AU	
morning rise	11943 Nov 03	15:44	7°♏08'46		
retrograde	11944 Feb 05	23:08	10°♏22'14		
opposition	11944 Apr 22	10:00	8°♏21'06	1°05'19	
min. Earth dist.	11944 Apr 22	10:45	8°♏21'01	18.41156 AU	
direct	11944 Jul 06	08:23	6°♏21'30		
evening set	11944 Oct 05	14:02	9°♏29'21		
conjunction	11944 Oct 21	21:19	10°♏26'36	0°59'29	
minimum elong	11944 Oct 21	21:18	10°♏26'36	0°59'57	
max. Earth dist.	11944 Oct 21	20:12	10°♏26'26	20.37900 AU	
morning rise	11944 Nov 07	06:50	11°♏24'12		
retrograde	11945 Feb 09	15:19	14°♏38'22		
opposition	11945 Apr 26	22:16	12°♏36'58	1°06'38	
min. Earth dist.	11945 Apr 26	22:59	12°♏36'53	18.34631 AU	
direct	11945 Jul 10	20:16	10°♏37'02		
evening set	11945 Oct 10	04:29	13°♏45'47		
conjunction	11945 Oct 26	12:26	14°♏43'18	1°00'30	
minimum elong	11945 Oct 26	12:26	14°♏43'18	1°01'00	
max. Earth dist.	11945 Oct 26	10:32	14°♏43'02	20.31315 AU	
	11945 Oct 31	05:12	15°♏		
morning rise	11945 Nov 11	22:31	15°♏41'11		
retrograde	11946 Feb 14	06:42	18°♏56'03		
opposition	11946 May 01	11:12	16°♏54'24	1°07'35	
min. Earth dist.	11946 May 01	13:30	16°♏54'10	18.28018 AU	
	11946 Jun 30	09:48	15°℞♏		
direct	11946 Jul 15	07:37	14°♏54'07		
	11946 Jul 30	05:21	15°♏		
evening set	11946 Oct 14	19:53	18°♏03'50		
conjunction	11946 Oct 31	04:31	19°♏01'39	1°01'09	
minimum elong	11946 Oct 31	04:30	19°♏01'38	1°01'44	
max. Earth dist.	11946 Oct 31	01:35	19°♏01'12	20.24694 AU	
morning rise	11946 Nov 16	15:13	19°♏59'48		
retrograde	11947 Feb 18	23:45	23°♏15'22		
opposition	11947 May 06	00:21	21°♏13'29	1°08'09	
min. Earth dist.	11947 May 06	02:37	21°♏13'15	18.21396 AU	
direct	11947 Jul 19	20:28	19°♏12'51		
evening set	11947 Oct 19	12:08	22°♏23'33		
conjunction	11947 Nov 04	21:28	23°♏21'40	1°01'29	
minimum elong	11947 Nov 04	21:27	23°♏21'39	1°02'05	
max. Earth dist.	11947 Nov 04	17:59	23°♏21'09	20.18073 AU	
morning rise	11947 Nov 21	08:37	24°♏20'05		
retrograde	11948 Feb 23	16:15	27°♏36'22		
opposition	11948 May 09	14:18	25°♏34'16	1°08'21	
min. Earth dist.	11948 May 09	17:54	25°♏33'53	18.14805 AU	
direct	11948 Jul 23	09:38	23°♏33'18		
evening set	11948 Oct 23	05:10	26°♏45'01		
conjunction	11948 Nov 08	15:04	27°♏43'25	1°01'27	

minimum elong	11948 Nov 08	15:04	27°♏43'25	1°02'06
max. Earth dist.	11948 Nov 08	10:27	27°♏42'44	20.11531 AU
morning rise	11948 Nov 25	02:48	28°♏42'07	
	11948 Dec 18	16:15	0°♐	
retrograde	11949 Feb 27	10:05	1°♐59'08	
	11949 May 12	23:01	30°℞♏	
opposition	11949 May 14	04:47	29°♏56'50	1°08'08
min. Earth dist.	11949 May 14	08:18	29°♏56'28	18.08318 AU
direct	11949 Jul 28	00:01	27°♏55'33	
	11949 Oct 07	12:16	0°♐	
evening set	11949 Oct 27	23:09	1°♐08'19	
conjunction	11949 Nov 13	09:45	2°♐07'01	1°01'03
minimum elong	11949 Nov 13	09:45	2°♐07'01	1°01'44
max. Earth dist.	11949 Nov 13	04:58	2°♐06'18	20.05100 AU
morning rise	11949 Nov 29	21:51	3°♐06'00	
retrograde	11950 Mar 04	03:57	6°♐23'42	
opposition	11950 May 18	19:56	4°♐21'16	1°07'32
min. Earth dist.	11950 May 19	00:33	4°♐20'47	18.01961 AU
direct	11950 Aug 01	14:38	2°♐19'42	
evening set	11950 Nov 01	18:08	5°♐33'32	
conjunction	11950 Nov 18	05:17	6°♐32'32	1°00'18
minimum elong	11950 Nov 18	05:17	6°♐32'32	1°01'01
max. Earth dist.	11950 Nov 17	23:03	6°♐31'36	19.98831 AU
morning rise	11950 Dec 04	17:59	7°♐31'46	
retrograde	11951 Mar 08	23:11	10°♐50'12	
opposition	11951 May 23	11:44	8°♐47'39	1°06'30
min. Earth dist.	11951 May 23	16:35	8°♐47'08	17.95768 AU
direct	11951 Aug 06	06:50	6°♐45'46	
evening set	11951 Nov 06	14:03	10°♐00'44	
conjunction	11951 Nov 23	01:51	11°♐00'01	0°59'10
minimum elong	11951 Nov 23	01:51	11°♐00'01	0°59'56
max. Earth dist.	11951 Nov 22	19:39	10°♐59'05	19.92705 AU
morning rise	11951 Dec 09	14:47	11°♐59'32	
retrograde	11952 Mar 12	18:26	15°♐18'39	
opposition	11952 May 27	04:12	13°♐16'01	1°05'05
min. Earth dist.	11952 May 27	10:07	13°♐15'23	17.89716 AU
direct	11952 Aug 09	22:52	11°♐13'53	
evening set	11952 Nov 10	11:01	14°♐29'57	
conjunction	11952 Nov 26	23:14	15°♐29'31	0°57'41
minimum elong	11952 Nov 26	23:14	15°♐29'31	0°58'28
max. Earth dist.	11952 Nov 26	15:12	15°♐28'18	19.86735 AU
morning rise	11952 Dec 13	12:40	16°♐29'17	
retrograde	11953 Mar 17	15:21	19°♐49'05	
opposition	11953 May 31	21:25	17°♐46'22	1°03'15
min. Earth dist.	11953 Jun 01	03:58	17°♐45'39	17.83816 AU
direct	11953 Aug 14	16:36	15°♐43'57	
evening set	11953 Nov 15	08:44	19°♐01'07	
conjunction	11953 Dec 01	21:37	20°♐00'58	0°55'51
minimum elong	11953 Dec 01	21:37	20°♐00'58	0°56'39
max. Earth dist.	11953 Dec 01	13:40	19°♐59'46	19.80887 AU
morning rise	11953 Dec 18	11:12	21°♐00'59	
retrograde	11954 Mar 22	12:25	24°♐21'25	
opposition	11954 Jun 05	15:23	22°♐18'37	1°01'01
min. Earth dist.	11954 Jun 05	22:52	22°♐17'48	17.78022 AU
direct	11954 Aug 19	10:35	20°♐15'54	
evening set	11954 Nov 20	07:39	23°♐34'09	
conjunction	11954 Dec 06	20:49	24°♐34'16	0°53'38
minimum elong	11954 Dec 06	20:49	24°♐34'16	0°54'26
max. Earth dist.	11954 Dec 06	10:40	24°♐32'43	19.75159 AU
morning rise	11954 Dec 23	10:50	25°♐34'32	
retrograde	11955 Mar 27	10:14	28°♐55'32	
opposition	11955 Jun 10	09:52	26°♐52'37	0°58'24
min. Earth dist.	11955 Jun 10	18:21	26°♐51'43	17.72364 AU
direct	11955 Aug 24	05:40	24°♐49'35	
evening set	11955 Nov 25	07:10	28°♐08'53	
conjunction	11955 Dec 11	20:55	29°♐09'16	0°51'05
minimum elong	11955 Dec 11	20:55	29°♐09'16	0°51'54
max. Earth dist.	11955 Dec 11	10:55	29°♐07'45	19.69571 AU
	11955 Dec 25	17:53	0°♑	
morning rise	11955 Dec 28	10:57	0°♑09'45	
retrograde	11956 Mar 31	08:53	3°♑31'17	
opposition	11956 Jun 14	05:06	1°♑28'16	0°55'23
min. Earth dist.	11956 Jun 14	14:04	1°♑27'18	17.66859 AU
	11956 Jul 22	03:20	30°℞♐	
direct	11956 Aug 28	01:39	29°♐24'55	
	11956 Oct 03	08:50	0°♑	
evening set	11956 Nov 29	07:24	2°♑45'13	
conjunction	11956 Dec 15	21:20	3°♑45'50	0°48'11
minimum elong	11956 Dec 15	21:20	3°♑45'50	0°49'01
max. Earth dist.	11956 Dec 15	09:23	3°♑44'00	19.64179 AU
morning rise	11957 Jan 01	11:40	4°♑46'32	
retrograde	11957 Apr 05	07:09	8°♑08'34	
opposition	11957 Jun 19	00:55	6°♑05'25	0°51'59
min. Earth dist.	11957 Jun 19	10:55	6°♑04'20	17.61593 AU
direct	11957 Sep 01	21:45	4°♑01'44	
evening set	11957 Dec 04	08:16	7°♑23'00	
conjunction	11957 Dec 20	22:41	8°♑23'51	0°44'57
minimum elong	11957 Dec 20	22:41	8°♑23'51	0°45'46
max. Earth dist.	11957 Dec 20	11:11	8°♑22'05	19.59049 AU
morning rise	11958 Jan 06	12:59	9°♑24'44	
retrograde	11958 Apr 10	07:18	12°♑47'11	
opposition	11958 Jun 23	21:05	10°♑43'57	0°48'14
min. Earth dist.	11958 Jun 24	07:09	10°♑42'51	17.56609 AU
direct	11958 Sep 06	19:36	8°♑39'56	
evening set	11958 Dec 09	09:58	12°♑02'08	
max. Earth dist.	11958 Dec 25	11:19	13°♑01'10	19.54239 AU
conjunction	11958 Dec 26	00:28	13°♑03'11	0°41'25
minimum elong	11958 Dec 26	00:28	13°♑03'11	0°42'15
morning rise	11959 Jan 11	14:54	14°♑04'16	
retrograde	11959 Apr 15	05:45	17°♑27'06	
opposition	11959 Jun 28	17:57	15°♑23'45	0°44'08
min. Earth dist.	11959 Jun 29	05:06	15°♑22'32	17.51992 AU
direct	11959 Sep 11	16:23	13°♑19'25	
evening set	11959 Dec 14	11:56	16°♑42'30	
conjunction	11959 Dec 31	02:43	17°♑43'44	0°37'35
minimum elong	11959 Dec 31	02:43	17°♑43'44	0°38'23
max. Earth dist.	11959 Dec 30	14:12	17°♑41'48	19.49822 AU
morning rise	11960 Jan 16	16:58	18°♑44'58	
retrograde	11960 Apr 19	07:01	22°♑08'08	
opposition	11960 Jul 02	15:10	20°♑04'42	0°39'43
min. Earth dist.	11960 Jul 03	01:48	20°♑03'32	17.47788 AU
direct	11960 Sep 15	15:45	18°♑00'05	
evening set	11960 Dec 18	14:34	21°♑23'59	
conjunction	11961 Jan 04	05:19	22°♑25'24	0°33'29
minimum elong	11961 Jan 04	05:19	22°♑25'24	0°34'17
max. Earth dist.	11961 Jan 03	15:49	22°♑23'19	19.45856 AU
morning rise	11961 Jan 20	19:31	23°♑26'45	
retrograde	11961 Apr 24	05:31	26°♑50'12	
opposition	11961 Jul 07	12:57	24°♑46'42	0°35'01
min. Earth dist.	11961 Jul 08	00:33	24°♑45'26	17.44083 AU
direct	11961 Sep 20	13:31	22°♑41'50	
evening set	11961 Dec 23	17:26	26°♑06'31	

conjunction	11962 Jan 09	08:20	27°♉08'04	0°29'09	
minimum elong	11962 Jan 09	08:20	27°♉08'04	0°29'55	
max. Earth dist.	11962 Jan 08	19:23	27°♉06'04	19.42416 AU	
morning rise	11962 Jan 25	22:19	28°♉09'32		
	11962 Feb 28	04:11	0°♒		
retrograde	11962 Apr 29	07:05	1°♒33'12		
	11962 Jun 30	18:52	30°℞♉		
opposition	11962 Jul 12	11:05	29°♉29'41	0°30'04	
min. Earth dist.	11962 Jul 12	21:43	29°♉28'31	17.40910 AU	
direct	11962 Sep 25	14:18	27°♉24'38		
	11962 Dec 14	17:54	0°♒		
evening set	11962 Dec 28	20:56	0°♒50'00		
conjunction	11963 Jan 14	11:40	1°♒51'41	0°24'36	
minimum elong	11963 Jan 14	11:41	1°♒51'41	0°25'20	
max. Earth dist.	11963 Jan 13	22:22	1°♒49'37	19.39524 AU	
morning rise	11963 Jan 31	01:22	2°♒53'13		
retrograde	11963 May 04	05:35	6°♒17'05		
opposition	11963 Jul 17	09:45	4°♒13'35	0°24'54	
min. Earth dist.	11963 Jul 17	21:16	4°♒12'19	17.38318 AU	
direct	11963 Sep 30	13:17	2°♒08'22		
evening set	11964 Jan 03	00:38	5°♒34'24		
conjunction	11964 Jan 19	15:15	6°♒36'10	0°19'53	
minimum elong	11964 Jan 19	15:15	6°♒36'10	0°20'36	
max. Earth dist.	11964 Jan 19	02:15	6°♒34'08	19.37238 AU	
morning rise	11964 Feb 05	04:38	7°♒37'46		
retrograde	11964 May 08	07:24	11°♒01'46		
opposition	11964 Jul 21	08:44	8°♒58'19	0°19'33	
min. Earth dist.	11964 Jul 21	19:03	8°♒57'12	17.36321 AU	
direct	11964 Oct 04	15:34	6°♒53'02		
evening set	11965 Jan 07	04:30	10°♒19'38		
conjunction	11965 Jan 23	18:56	11°♒21'27	0°15'01	
minimum elong	11965 Jan 23	18:56	11°♒21'28	0°15'41	
behind sun begin	11965 Jan 23	17:55	11°♒21'18		
behind sun end	11965 Jan 23	19:57	11°♒21'37		
max. Earth dist.	11965 Jan 23	06:18	11°♒19'30	19.35530 AU	
morning rise	11965 Feb 09	07:51	12°♒23'05		
	11965 Apr 01	13:07	15°♒		
retrograde	11965 May 13	06:26	15°♒47'11		
	11965 Jun 25	00:41	15°℞♒		
opposition	11965 Jul 26	08:16	13°♒43'51	0°14'03	
min. Earth dist.	11965 Jul 26	19:29	13°♒42'37	17.34895 AU	
direct	11965 Oct 09	15:48	11°♒38'30		
	11966 Jan 10	20:01	15°♒		
evening set	11966 Jan 12	08:51	15°♒05'37		
conjunction	11966 Jan 28	22:56	16°♒07'28	0°10'03	
minimum elong	11966 Jan 28	22:56	16°♒07'28	0°10'40	
behind sun begin	11966 Jan 28	17:47	16°♒06'40		
behind sun end	11966 Jan 29	04:06	16°♒08'15		
max. Earth dist.	11966 Jan 28	10:01	16°♒05'27	19.34381 AU	
morning rise	11966 Feb 14	11:29	17°♒09'06		
retrograde	11966 May 18	08:23	20°♒33'13		
opposition	11966 Jul 31	07:51	18°♒30'00	0°08'26	
min. Earth dist.	11966 Jul 31	18:08	18°♒28'53	17.33998 AU	
direct	11966 Oct 14	18:52	16°♒24'36		
evening set	11967 Jan 17	13:22	19°♒52'08		
conjunction	11967 Feb 03	03:09	20°♒54'00	0°05'00	
minimum elong	11967 Feb 03	03:08	20°♒54'00	0°05'36	
behind sun begin	11967 Feb 02	20:39	20°♒53'01		
behind sun end	11967 Feb 03	09:37	20°♒54'59		
max. Earth dist.	11967 Feb 02	14:54	20°♒52'06	19.33721 AU	
morning rise	11967 Feb 19	14:58	21°♒55'37		
retrograde	11967 May 23	08:27	25°♒19'41		
opposition	11967 Aug 05	08:04	23°♒16'36	0°02'46	
min. Earth dist.	11967 Aug 05	19:12	23°♒15'23	17.33577 AU	
direct	11967 Oct 19	19:59	21°♒11'11		
evening set	11968 Jan 22	17:51	24°♒39'00		
desc. node	11968 Jan 27	11:08	24°♒56'26		
conjunction	11968 Feb 08	07:01	25°♒40'50	-0°00'08	
minimum elong	11968 Feb 08	07:01	25°♒40'50	0°00'23	
behind sun begin	11968 Feb 08	00:18	25°♒39'48		
behind sun end	11968 Feb 08	13:43	25°♒41'51		
max. Earth dist.	11968 Feb 07	18:03	25°♒38'48	19.33533 AU	
morning rise	11968 Feb 24	18:22	26°♒42'24		
	11968 May 12	09:00	0°♓		
retrograde	11968 May 27	10:28	0°♓06'21		
	11968 Jun 11	14:28	30°℞♒		
opposition	11968 Aug 09	08:22	28°♒03'22	-0°02'56	
min. Earth dist.	11968 Aug 09	18:36	28°♒02'15	17.33614 AU	
direct	11968 Oct 23	23:15	25°♒57'55		
evening set	11969 Jan 26	22:15	29°♒25'56		
	11969 Feb 05	02:14	0°♓		
conjunction	11969 Feb 12	11:02	0°♓27'43	-0°05'20	
minimum elong	11969 Feb 12	11:02	0°♓27'43	0°04'50	
behind sun begin	11969 Feb 12	04:28	0°♓26'42		
behind sun end	11969 Feb 12	17:36	0°♓28'43		
max. Earth dist.	11969 Feb 11	23:10	0°♓25'52	19.33783 AU	
morning rise	11969 Feb 28	21:33	1°♓29'12		
retrograde	11969 Jun 01	10:45	4°♓52'57		
opposition	11969 Aug 14	08:48	2°♓50'05	-0°08'37	
min. Earth dist.	11969 Aug 14	19:35	2°♓48'54	17.34081 AU	
direct	11969 Oct 29	00:29	0°♓44'37		
evening set	11970 Feb 01	02:38	4°♓12'43		
conjunction	11970 Feb 17	14:41	5°♓14'24	-0°10'22	
minimum elong	11970 Feb 17	14:41	5°♓14'24	0°09'57	
behind sun begin	11970 Feb 17	09:16	5°♓13'34		
behind sun end	11970 Feb 17	20:07	5°♓15'14		
max. Earth dist.	11970 Feb 17	01:53	5°♓12'24	19.34473 AU	
morning rise	11970 Mar 06	00:40	6°♓15'47		
retrograde	11970 Jun 06	12:06	9°♓39'16		
opposition	11970 Aug 19	09:18	7°♓36'29	-0°14'14	
min. Earth dist.	11970 Aug 19	19:22	7°♓35'24	17.34991 AU	
direct	11970 Nov 03	03:41	5°♓31'00		
evening set	11971 Feb 06	06:34	8°♓59'05		
conjunction	11971 Feb 22	18:06	10°♓00'40	-0°15'21	
minimum elong	11971 Feb 22	18:06	10°♓00'40	0°14'59	
behind sun begin	11971 Feb 22	15:45	10°♓00'18		
behind sun end	11971 Feb 22	20:27	10°♓01'01		
max. Earth dist.	11971 Feb 22	06:46	9°♓58'54	19.35596 AU	
morning rise	11971 Mar 11	03:07	11°♓01'55		
retrograde	11971 Jun 11	11:54	14°♓25'04		
opposition	11971 Aug 24	09:51	12°♓22'22	-0°19'45	
min. Earth dist.	11971 Aug 24	19:55	12°♓21'17	17.36333 AU	
direct	11971 Nov 08	05:36	10°♓16'54		
evening set	11972 Feb 11	10:14	13°♓44'50		
conjunction	11972 Feb 27	20:54	14°♓46'17	-0°20'13	
minimum elong	11972 Feb 27	20:54	14°♓46'17	0°19'55	
max. Earth dist.	11972 Feb 27	08:55	14°♓44'24	19.37176 AU	
morning rise	11972 Mar 15	05:17	15°♓47'23		
retrograde	11972 Jun 15	11:41	19°♓10'08		
opposition	11972 Aug 28	10:15	17°♓07'31	-0°25'07	
min. Earth dist.	11972 Aug 28	19:40	17°♓06'29	17.38155 AU	
direct	11972 Nov 12	08:49	15°♓02'02		
evening set	11973 Feb 15	13:08	18°♓29'45		

conjunction	11973 Mar 03 23:15	19°♓31'02	-0°24'57
minimum elong	11973 Mar 03 23:15	19°♓31'02	0°24'44
max. Earth dist.	11973 Mar 03 13:02	19°♓29'26	19.39233 AU
morning rise	11973 Mar 20 06:42	20°♓31'57	
retrograde	11973 Jun 20 10:28	23°♓54'15	
opposition	11973 Sep 02 10:31	21°♓51'43	-0°30'18
min. Earth dist.	11973 Sep 02 19:20	21°♓50'45	17.40445 AU
direct	11973 Nov 17 11:23	19°♓46'18	
evening set	11974 Feb 20 15:47	23°♓13'39	
conjunction	11974 Mar 09 00:56	24°♓14'45	-0°29'30
minimum elong	11974 Mar 09 00:56	24°♓14'45	0°29'20
max. Earth dist.	11974 Mar 08 14:30	24°♓13'07	19.41773 AU
morning rise	11974 Mar 25 07:38	25°♓15'28	
retrograde	11974 Jun 25 08:43	28°♓37'17	
opposition	11974 Sep 07 10:31	26°♓34'49	-0°35'16
min. Earth dist.	11974 Sep 07 18:49	26°♓33'55	17.43251 AU
direct	11974 Nov 22 14:01	24°♓29'28	
evening set	11975 Feb 25 17:36	27°♓56'25	
conjunction	11975 Mar 14 02:02	28°♓57'18	-0°33'50
minimum elong	11975 Mar 14 02:02	28°♓57'18	0°33'44
max. Earth dist.	11975 Mar 13 17:29	28°♓55'58	19.44841 AU
morning rise	11975 Mar 30 07:45	29°♓57'48	
	11975 Mar 30 22:12	0°♈	
retrograde	11975 Jun 30 06:47	3°♈19'04	
opposition	11975 Sep 12 10:23	1°♈16'44	-0°39'58
min. Earth dist.	11975 Sep 12 17:18	1°♈15'59	17.46581 AU
	11975 Oct 14 08:59	30°℞♓	
direct	11975 Nov 27 16:43	29°♓11'31	
	11976 Jan 09 22:53	0°♈	
evening set	11976 Mar 01 18:44	2°♈37'57	
conjunction	11976 Mar 18 02:11	3°♈38'36	-0°37'55
minimum elong	11976 Mar 18 02:10	3°♈38'36	0°37'53
max. Earth dist.	11976 Mar 17 18:06	3°♈37'20	19.48443 AU
morning rise	11976 Apr 03 07:05	4°♈38'53	
retrograde	11976 Jul 04 03:44	7°♈59'36	
opposition	11976 Sep 16 10:00	5°♈57'25	-0°44'22
min. Earth dist.	11976 Sep 16 16:24	5°♈56'44	17.50467 AU
direct	11976 Dec 01 18:07	3°♈52'22	
evening set	11977 Mar 06 19:10	7°♈18'15	
conjunction	11977 Mar 23 01:50	8°♈18'40	-0°41'44
minimum elong	11977 Mar 23 01:50	8°♈18'39	0°41'46
max. Earth dist.	11977 Mar 22 19:26	8°♈17'40	19.52596 AU
morning rise	11977 Apr 08 05:50	9°♈18'41	
retrograde	11977 Jul 09 01:13	12°♈38'50	
opposition	11977 Sep 21 09:03	10°♈36'51	-0°48'27
min. Earth dist.	11977 Sep 21 13:45	10°♈36'21	17.54865 AU
direct	11977 Dec 06 20:11	8°♈32'03	
evening set	11978 Mar 11 19:01	11°♈57'19	
conjunction	11978 Mar 28 00:45	12°♈57'28	-0°45'15
minimum elong	11978 Mar 28 00:45	12°♈57'28	0°45'22
max. Earth dist.	11978 Mar 27 19:11	12°♈56'37	19.57237 AU
morning rise	11978 Apr 13 03:53	13°♈57'15	
retrograde	11978 Jul 13 21:05	17°♈16'48	
opposition	11978 Sep 26 08:02	15°♈15'04	-0°52'12
min. Earth dist.	11978 Sep 26 12:33	15°♈14'35	17.59738 AU
direct	11978 Dec 11 20:06	13°♈10'33	
evening set	11979 Mar 16 17:55	16°♈35'08	
conjunction	11979 Apr 01 22:46	17°♈35'01	-0°48'28
minimum elong	11979 Apr 01 22:46	17°♈35'01	0°48'37
max. Earth dist.	11979 Apr 01 18:26	17°♈34'21	19.62318 AU
morning rise	11979 Apr 18 01:03	18°♈34'32	
retrograde	11979 Jul 18 18:08	21°♈53'28	
opposition	11979 Oct 01 06:31	19°♈51'59	-0°55'36
min. Earth dist.	11979 Oct 01 09:12	19°♈51'42	17.64997 AU
direct	11979 Dec 16 21:28	17°♈47'47	
evening set	11980 Mar 20 16:10	21°♈11'37	
conjunction	11980 Apr 05 20:07	22°♈11'13	-0°51'21
minimum elong	11980 Apr 05 20:07	22°♈11'13	0°51'35
max. Earth dist.	11980 Apr 05 16:56	22°♈10'44	19.67740 AU
morning rise	11980 Apr 21 21:31	23°♈10'29	
retrograde	11980 Jul 22 12:46	26°♈28'46	
opposition	11980 Oct 05 04:42	24°♈27'33	-0°58'37
min. Earth dist.	11980 Oct 05 07:31	24°♈27'15	17.70577 AU
direct	11980 Dec 20 19:37	22°♈23'39	
evening set	11981 Mar 25 13:36	25°♈46'41	
conjunction	11981 Apr 10 16:40	26°♈46'00	-0°53'53
minimum elong	11981 Apr 10 16:40	26°♈46'00	0°54'11
max. Earth dist.	11981 Apr 10 14:05	26°♈45'36	19.73450 AU
morning rise	11981 Apr 26 17:21	27°♈44'59	
	11981 Jun 08 16:18	0°♉	
retrograde	11981 Jul 27 09:19	1°♉02'35	
	11981 Sep 16 01:57	30°℞♈	
opposition	11981 Oct 10 02:21	29°♈01'37	-1°01'14
min. Earth dist.	11981 Oct 10 03:22	29°♈01'31	17.76389 AU
direct	11981 Dec 25 19:44	26°♈58'03	
	11982 Mar 24 18:19	0°♉	
evening set	11982 Mar 30 10:14	0°♉20'12	
conjunction	11982 Apr 15 12:28	1°♉19'13	-0°56'05
minimum elong	11982 Apr 15 12:28	1°♉19'13	0°56'27
max. Earth dist.	11982 Apr 15 11:13	1°♉19'02	19.79346 AU
morning rise	11982 May 01 12:14	2°♉17'55	
retrograde	11982 Aug 01 02:56	5°♉34'50	
opposition	11982 Oct 14 23:42	3°♉34'06	-1°03'28
min. Earth dist.	11982 Oct 15 00:59	3°♉33'58	17.82372 AU
direct	11982 Dec 30 16:51	1°♉30'50	
evening set	11983 Apr 04 06:02	4°♉52'03	
conjunction	11983 Apr 20 07:21	5°♉50'47	-0°57'55
minimum elong	11983 Apr 20 07:21	5°♉50'47	0°58'21
max. Earth dist.	11983 Apr 20 06:18	5°♉50'37	19.85398 AU
morning rise	11983 May 06 06:30	6°♉49'12	
retrograde	11983 Aug 05 22:02	10°♉05'23	
opposition	11983 Oct 19 20:24	8°♉04'52	-1°05'18
min. Earth dist.	11983 Oct 19 19:52	8°♉04'55	17.88475 AU
direct	11984 Jan 04 15:40	6°♉01'54	
evening set	11984 Apr 08 00:42	9°♉22'08	
conjunction	11984 Apr 24 01:21	10°♉20'34	-0°59'23
minimum elong	11984 Apr 24 01:21	10°♉20'34	0°59'51
max. Earth dist.	11984 Apr 24 01:53	10°♉20'39	19.91534 AU
morning rise	11984 May 09 23:42	11°♉18'42	
retrograde	11984 Aug 09 14:35	14°♉34'10	
opposition	11984 Oct 23 16:39	12°♉33'49	-1°06'43
min. Earth dist.	11984 Oct 23 16:24	12°♉33'50	17.94642 AU
direct	11985 Jan 08 12:03	10°♉31'08	
evening set	11985 Apr 12 18:41	13°♉50'21	
conjunction	11985 Apr 28 18:28	14°♉48'28	-1°00'30
minimum elong	11985 Apr 28 18:28	14°♉48'28	1°01'01
max. Earth dist.	11985 Apr 28 18:54	14°♉48'32	19.97727 AU
	11985 May 01 21:55	15°♉	
morning rise	11985 May 14 16:18	15°♉46'19	
retrograde	11985 Aug 14 07:39	19°♉01'01	
opposition	11985 Oct 28 12:00	17°♉00'50	-1°07'43
min. Earth dist.	11985 Oct 28 10:05	17°♉01'02	18.00848 AU

	11986 Jan 05 14:38	15°℞♉	
direct	11986 Jan 13 09:45	14°♉58'26	
	11986 Jan 21 05:52	15°♉	
evening set	11986 Apr 17 11:34	18°♉16'34	
conjunction	11986 May 03 10:46	19°♉14'25	-1°01'14
minimum elong	11986 May 03 10:45	19°♉14'25	1°01'48
max. Earth dist.	11986 May 03 12:59	19°♉14'45	20.03944 AU
morning rise	11986 May 19 07:51	20°♉11'58	
retrograde	11986 Aug 18 22:32	23°♉25'54	
opposition	11986 Nov 02 07:01	21°♉25'51	-1°08'19
min. Earth dist.	11986 Nov 02 05:09	21°♉26'02	18.07079 AU
direct	11987 Jan 18 05:47	19°♉23'42	
evening set	11987 Apr 22 03:23	22°♉40'45	
conjunction	11987 May 08 01:46	23°♉38'16	-1°01'36
minimum elong	11987 May 08 01:46	23°♉38'16	1°02'13
max. Earth dist.	11987 May 08 04:01	23°♉38'37	20.10199 AU
morning rise	11987 May 23 22:30	24°♉35'34	
retrograde	11987 Aug 23 13:35	27°♉48'45	
opposition	11987 Nov 07 01:10	25°♉48'48	-1°08'30
min. Earth dist.	11987 Nov 06 21:31	25°♉49'10	18.13359 AU
direct	11988 Jan 23 01:43	23°♉46'54	
evening set	11988 Apr 25 18:12	27°♉02'50	
conjunction	11988 May 11 16:06	28°♉00'05	-1°01'36
minimum elong	11988 May 11 16:06	28°♉00'05	1°02'16
max. Earth dist.	11988 May 11 20:30	28°♉00'44	20.16499 AU
morning rise	11988 May 27 12:12	28°♉57'05	
	11988 Jun 15 02:00	0°♊	
retrograde	11988 Aug 27 02:53	2°♊09'31	
opposition	11988 Nov 10 18:37	0°♊09'41	-1°08'17
min. Earth dist.	11988 Nov 10 14:42	0°♊10'06	18.19692 AU
	11988 Nov 14 16:26	30°℞♉	
direct	11989 Jan 26 20:27	28°♉08'04	
	11989 Apr 05 05:35	0°♊	
evening set	11989 Apr 30 08:15	1°♊22'54	
conjunction	11989 May 16 05:25	2°♊19'52	-1°01'15
minimum elong	11989 May 16 05:25	2°♊19'52	1°01'56
max. Earth dist.	11989 May 16 09:48	2°♊20'31	20.22869 AU
morning rise	11989 Jun 01 01:15	3°♊16'37	
retrograde	11989 Aug 31 16:21	6°♊28'19	
opposition	11989 Nov 15 11:26	4°♊28'38	-1°07'41
min. Earth dist.	11989 Nov 15 05:44	4°♊29'13	18.26098 AU
direct	11990 Jan 31 14:09	2°♊27'17	
evening set	11990 May 04 21:11	5°♊41'04	
conjunction	11990 May 20 17:58	6°♊37'45	-1°00'33
minimum elong	11990 May 20 17:58	6°♊37'45	1°01'17
max. Earth dist.	11990 May 21 00:34	6°♊38'44	20.29296 AU
morning rise	11990 Jun 05 13:14	7°♊34'15	
retrograde	11990 Sep 05 04:35	10°♊45'16	
opposition	11990 Nov 20 03:44	8°♊45'45	-1°06'43
min. Earth dist.	11990 Nov 19 21:30	8°♊46'24	18.32541 AU
direct	11991 Feb 05 07:00	6°♊44'45	
evening set	11991 May 09 09:30	9°♊57'29	
conjunction	11991 May 25 05:39	10°♊53'54	-0°59'31
minimum elong	11991 May 25 05:39	10°♊53'54	1°00'16
max. Earth dist.	11991 May 25 12:11	10°♊54'52	20.35755 AU
morning rise	11991 Jun 10 00:47	11°♊50'10	
retrograde	11991 Sep 09 17:26	15°♊00'32	
opposition	11991 Nov 24 19:16	13°♊01'12	-1°05'22
min. Earth dist.	11991 Nov 24 11:34	13°♊01'59	18.38998 AU
direct	11992 Feb 09 22:25	11°♊00'32	
evening set	11992 May 12 20:46	14°♊12'15	
conjunction	11992 May 28 16:42	15°♊08'25	-0°58'10
minimum elong	11992 May 28 16:42	15°♊08'25	0°58'58
max. Earth dist.	11992 May 29 01:17	15°♊09'42	20.42185 AU
morning rise	11992 Jun 13 11:27	16°♊04'28	
retrograde	11992 Sep 13 04:41	19°♊14'13	
opposition	11992 Nov 28 10:18	17°♊15'06	-1°03'41
min. Earth dist.	11992 Nov 28 02:11	17°♊15'56	18.45376 AU
direct	11993 Feb 13 13:32	15°♊14'48	
evening set	11993 May 17 07:37	18°♊25'31	
conjunction	11993 Jun 02 02:59	19°♊21'27	-0°56'31
minimum elong	11993 Jun 02 02:59	19°♊21'27	0°57'19
max. Earth dist.	11993 Jun 02 11:14	19°♊22'40	20.48507 AU
morning rise	11993 Jun 17 21:41	20°♊17'16	
retrograde	11993 Sep 17 16:55	23°♊26'27	
opposition	11993 Dec 03 00:41	21°♊27'32	-1°01'40
min. Earth dist.	11993 Dec 02 15:36	21°♊28'27	18.51627 AU
direct	11994 Feb 18 03:16	19°♊27'35	
evening set	11994 May 21 17:35	22°♊37'20	
conjunction	11994 Jun 06 12:48	23°♊33'03	-0°54'34
minimum elong	11994 Jun 06 12:48	23°♊33'03	0°55'23
max. Earth dist.	11994 Jun 06 22:51	23°♊34'32	20.54664 AU
morning rise	11994 Jun 22 07:11	24°♊28'40	
retrograde	11994 Sep 22 03:18	27°♊37'18	
opposition	11994 Dec 07 14:42	25°♊38'35	-0°59'20
min. Earth dist.	11994 Dec 07 05:11	25°♊39'33	18.57669 AU
direct	11995 Feb 22 17:06	23°♊38'59	
evening set	11995 May 26 02:59	26°♊47'49	
conjunction	11995 Jun 10 21:46	27°♊43'18	-0°52'21
minimum elong	11995 Jun 10 21:47	27°♊43'18	0°53'11
max. Earth dist.	11995 Jun 11 07:20	27°♊44'43	20.60586 AU
morning rise	11995 Jun 26 16:16	28°♊38'45	
	11995 Jul 21 18:52	0°♋	
retrograde	11995 Sep 26 14:37	1°♋46'53	
	11995 Dec 07 08:25	30°℞♊	
opposition	11995 Dec 12 04:09	29°♊48'19	-0°56'43
min. Earth dist.	11995 Dec 11 18:07	29°♊49'20	18.63457 AU
direct	11996 Feb 27 05:09	27°♊49'03	
	11996 May 12 06:31	0°♋	
evening set	11996 May 29 11:45	0°♋56'58	
conjunction	11996 Jun 14 06:31	1°♋52'17	-0°49'52
minimum elong	11996 Jun 14 06:31	1°♋52'17	0°50'41
max. Earth dist.	11996 Jun 14 17:31	1°♋53'54	20.66209 AU
morning rise	11996 Jun 30 00:47	2°♋47'32	
retrograde	11996 Sep 30 00:15	5°♋55'11	
opposition	11996 Dec 15 16:54	3°♋56'47	-0°53'48
min. Earth dist.	11996 Dec 15 06:36	3°♋57'50	18.68901 AU
direct	11997 Mar 02 18:02	1°♋57'49	
evening set	11997 Jun 02 20:09	5°♋04'53	
conjunction	11997 Jun 18 14:35	6°♋00'00	-0°47'08
minimum elong	11997 Jun 18 14:35	6°♋00'00	0°47'59
max. Earth dist.	11997 Jun 19 00:48	6°♋01'29	20.71471 AU
morning rise	11997 Jul 04 09:02	6°♋55'06	
retrograde	11997 Oct 04 10:25	10°♋02'19	
opposition	11997 Dec 20 05:24	8°♋04'01	-0°50'39
min. Earth dist.	11997 Dec 19 18:55	8°♋05'04	18.73974 AU
direct	11998 Mar 07 04:21	6°♋05'18	
evening set	11998 Jun 07 03:43	9°♋11'31	
conjunction	11998 Jun 22 22:12	10°♋06'28	-0°44'11
minimum elong	11998 Jun 22 22:12	10°♋06'28	0°45'01
max. Earth dist.	11998 Jun 23 09:43	10°♋08'09	20.76336 AU
morning rise	11998 Jul 08 16:34	11°♋01'26	

retrograde	11998 Oct	08	19:30	14°♋08'13	
opposition	11998 Dec	24	17:21	12°♋10'00	-0°47'15
min. Earth dist.	11998 Dec	24	06:27	12°♋11'06	18.78622 AU
direct	11999 Mar	11	16:35	10°♋11'31	
evening set	11999 Jun	11	10:57	13°♋16'55	
conjunction	11999 Jun	27	05:14	14°♋11'43	-0°41'01
minimum elong	11999 Jun	27	05:14	14°♋11'43	0°41'51
max. Earth dist.	11999 Jun	27	15:57	14°♋13'16	20.80783 AU
morning rise	11999 Jul	12	23:55	15°♋06'33	
retrograde	11999 Oct	13	04:41	18°♋12'56	
opposition	11999 Dec	29	04:39	16°♋14'45	-0°43'37
min. Earth dist.	11999 Dec	28	17:51	16°♋15'50	18.82872 AU
direct	12000 Mar	15	01:35	14°♋16'26	
evening set	12000 Jun	14	17:26	17°♋21'04	
conjunction	12000 Jun	30	11:55	18°♋15'43	-0°37'40
minimum elong	12000 Jun	30	11:55	18°♋15'43	0°38'29
max. Earth dist.	12000 Jun	30	23:55	18°♋17'27	20.84836 AU
morning rise	12000 Jul	16	06:38	19°♋10'26	
retrograde	12000 Oct	16	13:01	22°♋16'26	
opposition	12001 Jan	01	15:26	20°♋18'16	-0°39'47
min. Earth dist.	12001 Jan	01	04:02	20°♋19'25	18.86728 AU
direct	12001 Mar	19	12:28	18°♋20'07	
evening set	12001 Jun	18	23:35	21°♋24'01	
conjunction	12001 Jul	04	17:54	22°♋18'32	-0°34'07
minimum elong	12001 Jul	04	17:54	22°♋18'32	0°34'55
max. Earth dist.	12001 Jul	05	05:17	22°♋20'11	20.88518 AU
morning rise	12001 Jul	20	12:57	23°♋13'10	
retrograde	12001 Oct	20	21:37	26°♋18'51	
opposition	12002 Jan	06	01:49	24°♋20'40	-0°35'46
min. Earth dist.	12002 Jan	05	14:25	24°♋21'49	18.90256 AU
direct	12002 Mar	23	20:48	22°♋22'39	
evening set	12002 Jun	23	05:09	25°♋25'53	
conjunction	12002 Jul	08	23:43	26°♋20'18	-0°30'26
minimum elong	12002 Jul	08	23:43	26°♋20'18	0°31'13
max. Earth dist.	12002 Jul	09	12:30	26°♋22'09	20.91889 AU
morning rise	12002 Jul	24	18:52	27°♋14'51	
	12002 Sep	26	15:41	0°♌	
retrograde	12002 Oct	25	05:33	0°♌20'15	
	12002 Nov	23	09:44	30°℞♋	
opposition	12003 Jan	10	11:42	28°♋22'05	-0°31'36
min. Earth dist.	12003 Jan	09	23:24	28°♋23'19	18.93471 AU
direct	12003 Mar	28	06:01	26°♋24'14	
evening set	12003 Jun	27	10:27	29°♋26'51	
	12003 Jul	07	02:27	0°♌	
conjunction	12003 Jul	13	05:00	0°♌21'11	-0°26'36
minimum elong	12003 Jul	13	05:00	0°♌21'11	0°27'21
max. Earth dist.	12003 Jul	13	17:12	0°♌22'56	20.94956 AU
morning rise	12003 Jul	29	00:36	1°♌15'39	
retrograde	12003 Oct	29	13:56	4°♌20'51	
opposition	12004 Jan	14	21:15	2°♌22'41	-0°27'17
min. Earth dist.	12004 Jan	14	09:05	2°♌23'54	18.96393 AU
direct	12004 Mar	31	13:26	0°♌25'00	
evening set	12004 Jun	30	15:25	3°♌27'05	
conjunction	12004 Jul	16	10:17	4°♌21'20	-0°22'39
minimum elong	12004 Jul	16	10:17	4°♌21'20	0°23'24
max. Earth dist.	12004 Jul	16	23:43	4°♌23'16	20.97719 AU
morning rise	12004 Aug	01	06:04	5°♌15'45	
retrograde	12004 Nov	01	21:46	8°♌20'47	
opposition	12005 Jan	18	06:15	6°♌22'39	-0°22'51
min. Earth dist.	12005 Jan	17	17:17	6°♌23'57	18.98982 AU
direct	12005 Apr	04	21:34	4°♌25'08	
evening set	12005 Jul	04	20:21	7°♌26'45	
conjunction	12005 Jul	20	15:15	8°♌20'56	-0°18'37
minimum elong	12005 Jul	20	15:15	8°♌20'56	0°19'18
max. Earth dist.	12005 Jul	21	03:57	8°♌22'45	21.00144 AU
morning rise	12005 Aug	05	11:32	9°♌15'19	
retrograde	12005 Nov	06	05:39	12°♌20'16	
opposition	12006 Jan	22	15:17	10°♌22'08	-0°18'20
min. Earth dist.	12006 Jan	22	02:43	10°♌23'24	19.01238 AU
direct	12006 Apr	09	04:17	8°♌24'47	
evening set	12006 Jul	09	00:51	11°♌25'59	
conjunction	12006 Jul	24	20:10	12°♌20'08	-0°14'29
minimum elong	12006 Jul	24	20:10	12°♌20'08	0°15'10
behind sun begin	12006 Jul	24	17:50	12°♌19'49	
behind sun end	12006 Jul	24	22:31	12°♌20'28	
max. Earth dist.	12006 Jul	25	10:00	12°♌22'07	21.02215 AU
morning rise	12006 Aug	09	16:43	13°♌14'29	
	12006 Sep	13	10:59	15°♌	
retrograde	12006 Nov	10	14:10	16°♌19'23	
	12007 Jan	10	13:03	15°℞♌	
opposition	12007 Jan	26	23:58	14°♌21'17	-0°13'43
min. Earth dist.	12007 Jan	26	10:43	14°♌22'37	19.03104 AU
direct	12007 Apr	13	11:57	12°♌24'05	
	12007 Jul	05	16:49	15°♌	
evening set	12007 Jul	13	05:37	15°♌24'57	
conjunction	12007 Jul	29	01:04	16°♌19'04	-0°10'18
minimum elong	12007 Jul	29	01:04	16°♌19'04	0°10'56
behind sun begin	12007 Jul	28	20:04	16°♌18'22	
behind sun end	12007 Jul	29	06:04	16°♌19'46	
max. Earth dist.	12007 Jul	29	13:58	16°♌20'55	21.03878 AU
morning rise	12007 Aug	13	22:11	17°♌13'26	
retrograde	12007 Nov	14	21:21	20°♌18'20	
opposition	12008 Jan	31	08:25	18°♌20'14	-0°09'03
min. Earth dist.	12008 Jan	30	20:03	18°♌21'28	19.04558 AU
direct	12008 Apr	16	17:55	16°♌23'10	
evening set	12008 Jul	16	10:15	19°♌23'45	
conjunction	12008 Aug	01	06:11	20°♌17'52	-0°06'05
minimum elong	12008 Aug	01	06:10	20°♌17'52	0°06'41
behind sun begin	12008 Aug	01	00:01	20°♌17'01	
behind sun end	12008 Aug	01	12:20	20°♌18'44	
max. Earth dist.	12008 Aug	01	19:48	20°♌19'49	21.05101 AU
morning rise	12008 Aug	17	03:36	21°♌12'14	
retrograde	12008 Nov	18	06:17	24°♌17'10	
opposition	12009 Feb	03	16:43	22°♌19'05	-0°04'21
min. Earth dist.	12009 Feb	03	03:58	22°♌20'21	19.05531 AU
direct	12009 Apr	21	01:25	20°♌22'07	
evening set	12009 Jul	20	15:01	23°♌22'29	
conjunction	12009 Aug	05	11:06	24°♌16'37	-0°01'49
minimum elong	12009 Aug	05	11:06	24°♌16'37	0°02'23
behind sun begin	12009 Aug	05	04:31	24°♌15'42	
behind sun end	12009 Aug	05	17:41	24°♌17'32	
max. Earth dist.	12009 Aug	05	23:31	24°♌18'23	21.05819 AU
morning rise	12009 Aug	21	09:07	25°♌11'00	
retrograde	12009 Nov	22	13:17	28°♌16'04	
asc. node	12010 Jan	09	21:39	27°♌23'45	
opposition	12010 Feb	08	01:08	26°♌17'56	0°00'23
min. Earth dist.	12010 Feb	07	13:33	26°♌19'05	19.05993 AU
direct	12010 Apr	25	06:45	24°♌21'02	
evening set	12010 Jul	24	19:52	27°♌21'15	
conjunction	12010 Aug	09	16:29	28°♌15'24	0°02'35
minimum elong	12010 Aug	09	16:29	28°♌15'24	0°02'04
behind sun begin	12010 Aug	09	09:54	28°♌14'29	

behind sun end	12010 Aug 09	23:04	28°♌16'19	
max. Earth dist.	12010 Aug 10	05:18	28°♌17'14	21.06005 AU
morning rise	12010 Aug 25	14:52	29°♌09'50	
	12010 Sep 10	02:17	0°♍	
retrograde	12010 Nov 26	22:05	2°♍15'01	
opposition	12011 Feb 12	09:14	0°♍16'49	0°05'07
min. Earth dist.	12011 Feb 11	21:26	0°♍18'00	19.05889 AU
	12011 Feb 19	10:03	30°℞♌	
direct	12011 Apr 29	14:29	28°♌19'57	
	12011 Jul 03	11:31	0°♍	
evening set	12011 Jul 29	00:56	1°♍20'03	
conjunction	12011 Aug 13	21:49	2°♍14'15	0°06'51
minimum elong	12011 Aug 13	21:50	2°♍14'15	0°06'23
behind sun begin	12011 Aug 13	15:37	2°♍13'23	
behind sun end	12011 Aug 14	04:03	2°♍15'07	
max. Earth dist.	12011 Aug 14	09:03	2°♍15'51	21.05610 AU
morning rise	12011 Aug 29	20:54	3°♍08'45	
retrograde	12011 Dec 01	05:31	6°♍14'06	
opposition	12012 Feb 16	17:25	4°♍15'47	0°09'50
min. Earth dist.	12012 Feb 16	07:03	4°♍16'49	19.05207 AU
direct	12012 May 02	19:27	2°♍18'53	
evening set	12012 Aug 01	05:58	5°♍18'56	
conjunction	12012 Aug 17	03:29	6°♍13'11	0°11'04
minimum elong	12012 Aug 17	03:28	6°♍13'11	0°10'40
behind sun begin	12012 Aug 16	22:22	6°♍12'29	
behind sun end	12012 Aug 17	08:35	6°♍13'54	
max. Earth dist.	12012 Aug 17	14:54	6°♍14'49	21.04644 AU
morning rise	12012 Sep 02	02:56	7°♍07'45	
retrograde	12012 Dec 04	13:51	10°♍13'17	
opposition	12013 Feb 20	01:20	8°♍14'50	0°14'30
min. Earth dist.	12013 Feb 19	14:41	8°♍15'54	19.03957 AU
direct	12013 May 07	03:20	6°♍17'53	
evening set	12013 Aug 05	11:17	9°♍17'55	
conjunction	12013 Aug 21	09:06	10°♍12'15	0°15'15
minimum elong	12013 Aug 21	09:06	10°♍12'15	0°14'53
behind sun begin	12013 Aug 21	06:30	10°♍11'53	
behind sun end	12013 Aug 21	11:42	10°♍12'36	
max. Earth dist.	12013 Aug 21	19:05	10°♍13'40	21.03140 AU
morning rise	12013 Sep 06	09:17	11°♍06'54	
retrograde	12013 Dec 08	21:51	14°♍12'41	
opposition	12014 Feb 24	09:25	12°♍14'02	0°19'07
min. Earth dist.	12014 Feb 24	00:07	12°♍14'58	19.02219 AU
direct	12014 May 11	08:17	10°♍17'00	
evening set	12014 Aug 09	16:30	13°♍17'05	
conjunction	12014 Aug 25	14:59	14°♍11'31	0°19'22
minimum elong	12014 Aug 25	14:59	14°♍11'31	0°19'05
max. Earth dist.	12014 Aug 26	01:26	14°♍13'00	21.01177 AU
morning rise	12014 Sep 10	15:39	15°♍06'16	
retrograde	12014 Dec 13	06:20	18°♍12'20	
opposition	12015 Feb 28	17:19	16°♍13'31	0°23'38
min. Earth dist.	12015 Feb 28	07:32	16°♍14'30	19.00038 AU
direct	12015 May 15	15:45	14°♍16'22	
evening set	12015 Aug 13	22:17	17°♍16'36	
conjunction	12015 Aug 29	21:08	18°♍11'07	0°23'25
minimum elong	12015 Aug 29	21:08	18°♍11'07	0°23'10
max. Earth dist.	12015 Aug 30	06:15	18°♍12'25	20.98796 AU
morning rise	12015 Sep 14	22:31	19°♍06'00	
retrograde	12015 Dec 17	14:34	22°♍12'24	
opposition	12016 Mar 04	01:13	20°♍13'24	0°28'03
min. Earth dist.	12016 Mar 03	16:48	20°♍14'15	18.97480 AU
direct	12016 May 18	20:54	18°♍16'08	
evening set	12016 Aug 17	04:12	21°♍16'35	
conjunction	12016 Sep 02	03:44	22°♍11'15	0°27'20
minimum elong	12016 Sep 02	03:44	22°♍11'15	0°27'08
max. Earth dist.	12016 Sep 02	13:17	22°♍12'37	20.96062 AU
morning rise	12016 Sep 18	05:34	23°♍06'15	
retrograde	12016 Dec 20	23:45	26°♍13'03	
opposition	12017 Mar 08	09:13	24°♍13'53	0°32'20
min. Earth dist.	12017 Mar 08	00:14	24°♍14'47	18.94573 AU
direct	12017 May 23	04:00	22°♍16'30	
evening set	12017 Aug 21	10:30	25°♍17'15	
conjunction	12017 Sep 06	10:26	26°♍12'02	0°31'09
minimum elong	12017 Sep 06	10:26	26°♍12'02	0°31'01
max. Earth dist.	12017 Sep 06	18:48	26°♍13'14	20.92990 AU
morning rise	12017 Sep 22	13:01	27°♍07'12	
	12017 Dec 01	02:27	0°♎	
retrograde	12017 Dec 25	08:21	0°♎14'27	
	12018 Jan 18	21:20	30°℞♍	
opposition	12018 Mar 12	17:34	28°♍15'07	0°36'29
min. Earth dist.	12018 Mar 12	09:55	28°♍15'54	18.91352 AU
direct	12018 May 27	09:26	26°♍17'38	
evening set	12018 Aug 25	17:13	29°♍18'44	
	12018 Sep 06	18:58	0°♎	
conjunction	12018 Sep 10	17:55	0°♎13'41	0°34'48
minimum elong	12018 Sep 10	17:54	0°♎13'41	0°34'43
max. Earth dist.	12018 Sep 11	02:39	0°♎14'56	20.89618 AU
morning rise	12018 Sep 26	21:00	1°♎09'00	
retrograde	12018 Dec 29	18:44	4°♎16'45	
opposition	12019 Mar 17	01:48	2°♎17'16	0°40'28
min. Earth dist.	12019 Mar 16	17:42	2°♎18'06	18.87824 AU
direct	12019 May 31	16:50	0°♎19'40	
evening set	12019 Aug 30	00:37	3°♎21'12	
conjunction	12019 Sep 15	01:47	4°♎16'20	0°38'18
minimum elong	12019 Sep 15	01:47	4°♎16'20	0°38'17
max. Earth dist.	12019 Sep 15	09:10	4°♎17'23	20.85937 AU
morning rise	12019 Oct 01	05:38	5°♎11'50	
retrograde	12020 Jan 03	03:54	8°♎20'07	
opposition	12020 Mar 20	10:33	6°♎20'30	0°44'15
min. Earth dist.	12020 Mar 20	04:01	6°♎21'10	18.83996 AU
direct	12020 Jun 03	22:23	4°♎22'47	
evening set	12020 Sep 02	08:24	7°♎24'49	
conjunction	12020 Sep 18	10:18	8°♎20'08	0°41'38
minimum elong	12020 Sep 18	10:18	8°♎20'08	0°41'39
max. Earth dist.	12020 Sep 18	17:51	8°♎21'13	20.81957 AU
morning rise	12020 Oct 04	14:40	9°♎15'49	
retrograde	12021 Jan 06	15:37	12°♎24'40	
opposition	12021 Mar 24	19:27	10°♎24'56	0°47'50
min. Earth dist.	12021 Mar 24	12:34	10°♎25'38	18.79853 AU
direct	12021 Jun 08	06:26	8°♎27'06	
evening set	12021 Sep 06	17:03	11°♎29'42	
conjunction	12021 Sep 22	19:27	12°♎25'12	0°44'45
minimum elong	12021 Sep 22	19:27	12°♎25'12	0°44'51
max. Earth dist.	12021 Sep 23	01:31	12°♎26'05	20.77652 AU
morning rise	12021 Oct 09	00:33	13°♎21'06	
retrograde	12022 Jan 11	01:48	16°♎30'35	
opposition	12022 Mar 29	04:54	14°♎30'42	0°51'12
min. Earth dist.	12022 Mar 28	23:50	14°♎31'13	18.75389 AU
direct	12022 Jun 12	12:43	12°♎32'43	
evening set	12022 Sep 11	02:16	15°♎35'57	
conjunction	12022 Sep 27	05:27	16°♎31'40	0°47'40
minimum elong	12022 Sep 27	05:26	16°♎31'40	0°47'50
max. Earth dist.	12022 Sep 27	11:14	16°♎32'30	20.73014 AU
morning rise	12022 Oct 13	11:06	17°♎27'46	

retrograde	12023 Jan	15	14:58	20°♎37'53	
opposition	12023 Apr	02	14:34	18°♎37'52	0°54'19
min. Earth dist.	12023 Apr	02	09:28	18°♎38'23	18.70560 AU
direct	12023 Jun	16	21:25	16°♎39'42	
evening set	12023 Sep	15	12:28	19°♎43'36	
conjunction	12023 Oct	01	16:10	20°♎39'32	0°50'22
minimum elong	12023 Oct	01	16:10	20°♎39'32	0°50'35
max. Earth dist.	12023 Oct	01	20:08	20°♎40'07	20.67983 AU
morning rise	12023 Oct	17	22:31	21°♎35'52	
retrograde	12024 Jan	20	02:25	24°♎46'38	
opposition	12024 Apr	06	00:44	22°♎46'25	0°57'11
min. Earth dist.	12024 Apr	05	21:43	22°♎46'44	18.65340 AU
direct	12024 Jun	20	04:59	20°♎48'02	
evening set	12024 Sep	18	23:14	23°♎52'38	
conjunction	12024 Oct	05	03:43	24°♎48'49	0°52'48
minimum elong	12024 Oct	05	03:43	24°♎48'49	0°53'05
max. Earth dist.	12024 Oct	05	07:02	24°♎49'18	20.62575 AU
morning rise	12024 Oct	21	10:38	25°♎45'22	
retrograde	12025 Jan	23	16:38	28°♎56'47	
opposition	12025 Apr	10	11:18	26°♎56'22	0°59'46
min. Earth dist.	12025 Apr	10	08:16	26°♎56'41	18.59739 AU
direct	12025 Jun	24	14:52	24°♎57'43	
evening set	12025 Sep	23	10:41	28°♎03'02	
conjunction	12025 Oct	09	15:45	28°♎59'27	0°54'59
minimum elong	12025 Oct	09	15:45	28°♎59'27	0°55'18
max. Earth dist.	12025 Oct	09	17:24	28°♎59'41	20.56794 AU
morning rise	12025 Oct	25	23:22	29°♎56'15	
	12025 Oct	27	01:39	0°♏	
retrograde	12026 Jan	28	05:08	3°♏08'19	
opposition	12026 Apr	14	22:23	1°♏07'39	1°02'03
min. Earth dist.	12026 Apr	14	21:21	1°♏07'45	18.53800 AU
	12026 May	13	20:48	30°℞♎	
direct	12026 Jun	28	23:28	29°♎08'41	
	12026 Aug	12	21:12	0°♏	
evening set	12026 Sep	27	22:51	2°♏14'46	
conjunction	12026 Oct	14	04:43	3°♏11'26	0°56'53
minimum elong	12026 Oct	14	04:43	3°♏11'26	0°57'17
max. Earth dist.	12026 Oct	14	05:43	3°♏11'35	20.50719 AU
morning rise	12026 Oct	30	12:56	4°♏08'30	
retrograde	12027 Feb	01	20:32	7°♏21'13	
opposition	12027 Apr	19	09:32	5°♏20'16	1°04'02
min. Earth dist.	12027 Apr	19	08:30	5°♏20'22	18.47597 AU
direct	12027 Jul	03	10:46	3°♏20'57	
evening set	12027 Oct	02	11:53	6°♏27'52	
conjunction	12027 Oct	18	18:22	7°♏24'48	0°58'30
minimum elong	12027 Oct	18	18:21	7°♏24'48	0°58'56
max. Earth dist.	12027 Oct	18	18:00	7°♏24'45	20.44405 AU
morning rise	12027 Nov	04	03:13	8°♏22'07	
retrograde	12028 Feb	06	09:38	11°♏35'29	
opposition	12028 Apr	22	21:24	9°♏34'17	1°05'40
min. Earth dist.	12028 Apr	22	22:11	9°♏34'12	18.41202 AU
direct	12028 Jul	06	20:11	7°♏34'38	
evening set	12028 Oct	06	01:24	10°♏42'23	
conjunction	12028 Oct	22	08:37	11°♏39'35	0°59'47
minimum elong	12028 Oct	22	08:36	11°♏39'35	1°00'17
max. Earth dist.	12028 Oct	22	07:40	11°♏39'27	20.37949 AU
morning rise	12028 Nov	07	18:02	12°♏37'10	
	12028 Dec	26	13:14	15°♏	
retrograde	12029 Feb	10	02:22	15°♏51'14	
	12029 Mar	28	13:09	15°℞♏	
opposition	12029 Apr	27	09:36	13°♏49'45	1°06'56
min. Earth dist.	12029 Apr	27	10:08	13°♏49'42	18.34696 AU
direct	12029 Jul	11	08:48	11°♏49'45	
evening set	12029 Oct	10	15:55	14°♏58'24	
	12029 Oct	11	03:00	15°♏	
conjunction	12029 Oct	26	23:46	15°♏55'54	1°00'45
minimum elong	12029 Oct	26	23:46	15°♏55'54	1°01'18
max. Earth dist.	12029 Oct	26	21:52	15°♏55'37	20.31403 AU
morning rise	12029 Nov	12	09:46	16°♏53'45	
retrograde	12030 Feb	14	16:34	20°♏08'31	
opposition	12030 May	01	22:23	18°♏06'47	1°07'51
min. Earth dist.	12030 May	02	00:32	18°♏06'34	18.28140 AU
direct	12030 Jul	15	19:13	16°♏06'26	
evening set	12030 Oct	15	07:12	19°♏16'03	
conjunction	12030 Oct	31	15:46	20°♏13'50	1°01'23
minimum elong	12030 Oct	31	15:46	20°♏13'50	1°01'58
max. Earth dist.	12030 Oct	31	13:05	20°♏13'26	20.24850 AU
morning rise	12030 Nov	17	02:23	21°♏11'57	
retrograde	12031 Feb	19	10:33	24°♏27'25	
opposition	12031 May	06	11:36	22°♏25'29	1°08'23
min. Earth dist.	12031 May	06	13:34	22°♏25'16	18.21594 AU
direct	12031 Jul	20	09:04	20°♏24'47	
evening set	12031 Oct	19	23:23	23°♏35'24	
conjunction	12031 Nov	05	08:36	24°♏33'29	1°01'40
minimum elong	12031 Nov	05	08:35	24°♏33'29	1°02'18
max. Earth dist.	12031 Nov	05	05:15	24°♏32'59	20.18312 AU
morning rise	12031 Nov	21	19:39	25°♏31'52	
retrograde	12032 Feb	24	02:13	28°♏48'04	
opposition	12032 May	10	01:30	26°♏45'57	1°08'32
min. Earth dist.	12032 May	10	04:54	26°♏45'35	18.15093 AU
direct	12032 Jul	23	20:46	24°♏44'57	
evening set	12032 Oct	23	16:26	27°♏56'36	
conjunction	12032 Nov	09	02:16	28°♏54'58	1°01'35
minimum elong	12032 Nov	09	02:16	28°♏54'58	1°02'15
max. Earth dist.	12032 Nov	08	21:58	28°♏54'20	20.11867 AU
morning rise	12032 Nov	25	13:55	29°♏53'39	
	12032 Nov	27	09:40	0°♐	
retrograde	12033 Feb	27	21:29	3°♐10'35	
opposition	12033 May	14	15:59	1°♐08'18	1°08'17
min. Earth dist.	12033 May	14	19:14	1°♐07'57	18.08698 AU
	12033 Jun	12	03:22	30°℞♏	
direct	12033 Jul	28	11:46	29°♏07'01	
	12033 Sep	11	17:26	0°♐	
evening set	12033 Oct	28	10:18	2°♐19'44	
conjunction	12033 Nov	13	20:51	3°♐18'25	1°01'10
minimum elong	12033 Nov	13	20:51	3°♐18'25	1°01'52
max. Earth dist.	12033 Nov	13	16:14	3°♐17'43	20.05520 AU
morning rise	12033 Nov	30	08:55	4°♐17'22	
retrograde	12034 Mar	04	14:54	7°♐35'02	
opposition	12034 May	19	07:14	5°♐32'39	1°07'37
min. Earth dist.	12034 May	19	11:50	5°♐32'09	18.02406 AU
direct	12034 Aug	02	01:18	3°♐31'06	
evening set	12034 Nov	02	05:21	6°♐44'55	
conjunction	12034 Nov	18	16:26	7°♐43'54	1°00'22
minimum elong	12034 Nov	18	16:26	7°♐43'54	1°01'06
max. Earth dist.	12034 Nov	18	10:26	7°♐43'00	19.99293 AU
morning rise	12034 Dec	05	05:04	8°♐43'08	
retrograde	12035 Mar	09	11:10	12°♐01'32	
opposition	12035 May	23	22:54	9°♐59'03	1°06'34
min. Earth dist.	12035 May	24	03:47	9°♐58'32	17.96230 AU
direct	12035 Aug	06	17:33	7°♐57'14	
evening set	12035 Nov	07	01:19	11°♐12'11	

conjunction	12035 Nov 23 13:03	12°♐11'28	0°59'12
minimum elong	12035 Nov 23 13:03	12°♐11'28	0°59'58
max. Earth dist.	12035 Nov 23 06:47	12°♐10'32	19.93153 AU
morning rise	12035 Dec 10 01:55	13°♐10'58	
retrograde	12036 Mar 13 06:14	16°♐30'06	
opposition	12036 May 27 15:32	14°♐27'31	1°05'06
min. Earth dist.	12036 May 27 21:44	14°♐26'51	17.90133 AU
direct	12036 Aug 10 09:36	12°♐25'27	
evening set	12036 Nov 10 22:10	15°♐41'31	
conjunction	12036 Nov 27 10:19	16°♐41'05	0°57'41
minimum elong	12036 Nov 27 10:19	16°♐41'05	0°58'29
max. Earth dist.	12036 Nov 27 02:14	16°♐39'51	19.87103 AU
morning rise	12036 Dec 13 23:42	17°♐40'51	
retrograde	12037 Mar 18 03:01	21°♐00'40	
opposition	12037 Jun 01 08:48	18°♐57'59	1°03'14
min. Earth dist.	12037 Jun 01 15:33	18°♐57'16	17.84122 AU
direct	12037 Aug 15 03:29	16°♐55'37	
evening set	12037 Nov 15 19:59	20°♐12'47	
conjunction	12037 Dec 02 08:47	21°♐12'38	0°55'48
minimum elong	12037 Dec 02 08:47	21°♐12'38	0°56'36
max. Earth dist.	12037 Dec 02 00:31	21°♐11'22	19.81122 AU
morning rise	12037 Dec 18 22:19	22°♐12'38	
retrograde	12038 Mar 22 23:37	25°♐33'05	
opposition	12038 Jun 06 02:40	23°♐30'18	1°00'57
min. Earth dist.	12038 Jun 06 10:31	23°♐29'27	17.78185 AU
direct	12038 Aug 19 21:52	21°♐27'37	
evening set	12038 Nov 20 18:46	24°♐45'51	
conjunction	12038 Dec 07 07:54	25°♐45'58	0°53'33
minimum elong	12038 Dec 07 07:54	25°♐45'58	0°54'23
max. Earth dist.	12038 Dec 06 21:30	25°♐44'22	19.75250 AU
morning rise	12038 Dec 23 21:53	26°♐46'13	
	12039 Mar 11 12:03	0°♑	
retrograde	12039 Mar 27 21:12	0°♑07'14	
	12039 Apr 13 09:54	30°℞♐	
opposition	12039 Jun 10 21:12	28°♐04'19	0°58'17
min. Earth dist.	12039 Jun 11 05:48	28°♐03'23	17.72383 AU
direct	12039 Aug 24 17:17	26°♐01'17	
evening set	12039 Nov 25 18:04	29°♐20'34	
	12039 Dec 06 14:57	0°♑	
conjunction	12039 Dec 12 07:46	0°♑20'56	0°50'57
minimum elong	12039 Dec 12 07:46	0°♑20'56	0°51'48
max. Earth dist.	12039 Dec 11 21:34	0°♑19'23	19.69527 AU
morning rise	12039 Dec 28 21:45	1°♑21'24	
retrograde	12040 Mar 31 19:10	4°♑42'57	
opposition	12040 Jun 14 16:19	2°♑39'55	0°55'13
min. Earth dist.	12040 Jun 15 01:30	2°♑38'55	17.66760 AU
direct	12040 Aug 28 13:08	0°♑36'33	
evening set	12040 Nov 29 18:16	3°♑56'48	
conjunction	12040 Dec 16 08:09	4°♑57'25	0°48'01
minimum elong	12040 Dec 16 08:09	4°♑57'25	0°48'52
max. Earth dist.	12040 Dec 15 20:05	4°♑55'34	19.64036 AU
morning rise	12041 Jan 01 22:28	5°♑58'07	
retrograde	12041 Apr 05 17:56	9°♑20'09	
opposition	12041 Jun 19 11:55	7°♑16'57	0°51'47
min. Earth dist.	12041 Jun 19 21:55	7°♑15'52	17.61416 AU
direct	12041 Sep 02 09:29	5°♑13'13	
evening set	12041 Dec 04 18:55	8°♑34'27	
conjunction	12041 Dec 21 09:19	9°♑35'18	0°44'45
minimum elong	12041 Dec 21 09:19	9°♑35'18	0°45'36
max. Earth dist.	12041 Dec 20 21:48	9°♑33'32	19.58845 AU
morning rise	12042 Jan 06 23:35	10°♑36'11	

retrograde	12042 Apr 10 17:14	13°♑58'38	
opposition	12042 Jun 24 08:05	11°♑55'20	0°47'59
min. Earth dist.	12042 Jun 24 18:10	11°♑54'14	17.56389 AU
direct	12042 Sep 07 06:23	9°♑51'16	
evening set	12042 Dec 09 20:27	13°♑13'25	
conjunction	12042 Dec 26 10:53	14°♑14'28	0°41'11
minimum elong	12042 Dec 26 10:53	14°♑14'28	0°42'00
max. Earth dist.	12042 Dec 25 21:47	14°♑12'26	19.54012 AU
morning rise	12043 Jan 12 01:18	15°♑15'31	
retrograde	12043 Apr 15 16:45	18°♑38'21	
opposition	12043 Jun 29 04:43	16°♑34'55	0°43'51
min. Earth dist.	12043 Jun 29 15:38	16°♑33'44	17.51770 AU
direct	12043 Sep 12 03:47	14°♑30'32	
evening set	12043 Dec 14 22:17	17°♑53'33	
conjunction	12043 Dec 31 13:03	18°♑54'48	0°37'19
minimum elong	12043 Dec 31 13:03	18°♑54'48	0°38'09
max. Earth dist.	12043 Dec 31 00:45	18°♑52'54	19.49615 AU
morning rise	12044 Jan 17 03:16	19°♑56'01	
retrograde	12044 Apr 19 16:39	23°♑19'09	
opposition	12044 Jul 03 01:53	21°♑15'39	0°39'24
min. Earth dist.	12044 Jul 03 12:16	21°♑14'31	17.47608 AU
direct	12044 Sep 16 02:13	19°♑11'00	
evening set	12044 Dec 19 00:42	22°♑34'49	
conjunction	12045 Jan 04 15:24	23°♑36'13	0°33'11
minimum elong	12045 Jan 04 15:25	23°♑36'14	0°33'59
max. Earth dist.	12045 Jan 04 02:05	23°♑34'10	19.45709 AU
morning rise	12045 Jan 21 05:38	24°♑37'35	
retrograde	12045 Apr 24 16:07	28°♑01'01	
opposition	12045 Jul 07 23:40	25°♑57'27	0°34'41
min. Earth dist.	12045 Jul 08 10:49	25°♑56'14	17.43976 AU
direct	12045 Sep 21 00:30	23°♑52'33	
evening set	12045 Dec 24 03:36	27°♑17'09	
conjunction	12046 Jan 09 18:28	28°♑18'42	0°28'49
minimum elong	12046 Jan 09 18:28	28°♑18'42	0°29'35
max. Earth dist.	12046 Jan 09 05:53	28°♑16'45	19.42356 AU
morning rise	12046 Jan 26 08:25	29°♑20'09	
	12046 Feb 06 12:52	0°♒	
retrograde	12046 Apr 29 16:44	2°♒43'48	
opposition	12046 Jul 12 21:41	0°♒40'15	0°29'42
min. Earth dist.	12046 Jul 13 07:57	0°♒39'07	17.40899 AU
	12046 Jul 28 12:30	30°℞♑	
direct	12046 Sep 26 00:53	28°♑35'10	
	12046 Nov 22 12:47	0°♒	
evening set	12046 Dec 29 07:05	2°♒00'29	
conjunction	12047 Jan 14 21:48	3°♒02'09	0°24'15
minimum elong	12047 Jan 14 21:48	3°♒02'09	0°25'00
max. Earth dist.	12047 Jan 14 08:43	3°♒00'07	19.39568 AU
morning rise	12047 Jan 31 11:31	4°♒03'42	
retrograde	12047 May 04 16:15	7°♒27'33	
opposition	12047 Jul 17 20:26	5°♒24'02	0°24'30
min. Earth dist.	12047 Jul 18 07:34	5°♒22'49	17.38405 AU
direct	12047 Oct 01 00:07	3°♒18'50	
evening set	12048 Jan 03 10:41	6°♒44'49	
conjunction	12048 Jan 20 01:18	7°♒46'34	0°19'30
minimum elong	12048 Jan 20 01:18	7°♒46'34	0°20'13
max. Earth dist.	12048 Jan 19 12:43	7°♒44'36	19.37365 AU
morning rise	12048 Feb 05 14:41	8°♒48'09	
retrograde	12048 May 08 17:38	12°♒12'10	
opposition	12048 Jul 21 19:27	10°♒08'44	0°19'07
min. Earth dist.	12048 Jul 22 05:33	10°♒07'38	17.36470 AU
direct	12048 Oct 05 01:57	8°♒03'28	

evening set	12049 Jan	07	14:50	11°♒30'02	
conjunction	12049 Jan	24	05:13	12°♒31'51	0°14'37
minimum elong	12049 Jan	24	05:13	12°♒31'51	0°15'18
behind sun begin	12049 Jan	24	03:24	12°♒31'34	
behind sun end	12049 Jan	24	07:02	12°♒32'07	
max. Earth dist.	12049 Jan	23	16:37	12°♒29'53	19.35695 AU
morning rise	12049 Feb	09	18:09	13°♒33'28	
	12049 Mar	06	21:29	15°♒	
retrograde	12049 May	13	17:30	16°♒57'34	
	12049 Jul	24	14:17	15°℞♒	
opposition	12049 Jul	26	18:55	14°♒54'15	0°13'36
min. Earth dist.	12049 Jul	27	06:06	14°♒53'02	17.35063 AU
direct	12049 Oct	10	02:03	12°♒48'54	
	12049 Dec	21	23:20	15°♒	
evening set	12050 Jan	12	19:16	16°♒15'59	
conjunction	12050 Jan	29	09:20	17°♒17'50	0°09'38
minimum elong	12050 Jan	29	09:20	17°♒17'50	0°10'16
behind sun begin	12050 Jan	29	04:01	17°♒17'01	
behind sun end	12050 Jan	29	14:39	17°♒18'39	
max. Earth dist.	12050 Jan	28	20:30	17°♒15'50	19.34537 AU
morning rise	12050 Feb	14	21:52	18°♒19'28	
retrograde	12050 May	18	19:25	21°♒43'35	
opposition	12050 Jul	31	18:42	19°♒40'22	0°07'58
min. Earth dist.	12050 Aug	01	04:56	19°♒39'15	17.34135 AU
direct	12050 Oct	15	05:14	17°♒34'59	
evening set	12051 Jan	17	23:47	21°♒02'28	
conjunction	12051 Feb	03	13:30	22°♒04'19	0°04'35
minimum elong	12051 Feb	03	13:30	22°♒04'19	0°05'09
behind sun begin	12051 Feb	03	06:58	22°♒03'19	
behind sun end	12051 Feb	03	20:03	22°♒05'19	
max. Earth dist.	12051 Feb	03	01:07	22°♒02'23	19.33828 AU
morning rise	12051 Feb	20	01:20	23°♒05'55	
retrograde	12051 May	23	19:15	26°♒29'59	
opposition	12051 Aug	05	18:55	24°♒26'53	0°02'16
min. Earth dist.	12051 Aug	06	06:05	24°♒25'40	17.33657 AU
direct	12051 Oct	20	06:18	22°♒21'27	
desc. node	12051 Dec	25	22:56	24°♒12'54	
evening set	12052 Jan	23	04:22	25°♒49'14	
conjunction	12052 Feb	08	17:32	26°♒51'03	-0°00'37
minimum elong	12052 Feb	08	17:32	26°♒51'03	0°00'04
behind sun begin	12052 Feb	08	11:17	26°♒50'06	
behind sun end	12052 Feb	08	23:47	26°♒52'00	
max. Earth dist.	12052 Feb	08	04:32	26°♒49'01	19.33583 AU
morning rise	12052 Feb	25	04:53	27°♒52'36	
	12052 Apr	04	04:42	0°♓	
retrograde	12052 May	27	21:00	1°♓16'33	
	12052 Jul	22	14:17	30°℞♒	
opposition	12052 Aug	09	19:10	29°♒13'32	-0°03'26
min. Earth dist.	12052 Aug	10	05:22	29°♒12'26	17.33635 AU
direct	12052 Oct	24	09:55	27°♒08'04	
	12053 Jan	17	08:34	0°♓	
evening set	12053 Jan	27	08:41	0°♓36'02	
conjunction	12053 Feb	12	21:29	1°♓37'49	-0°05'47
minimum elong	12053 Feb	12	21:30	1°♓37'49	0°05'19
behind sun begin	12053 Feb	12	14:59	1°♓36'49	
behind sun end	12053 Feb	13	04:00	1°♓38'48	
max. Earth dist.	12053 Feb	12	09:30	1°♓35'57	19.33777 AU
morning rise	12053 Mar	01	08:03	2°♓39'18	
retrograde	12053 Jun	01	21:05	6°♓03'02	
opposition	12053 Aug	14	19:41	4°♓00'08	-0°09'08
min. Earth dist.	12053 Aug	15	06:32	3°♓58'57	17.34051 AU
direct	12053 Oct	29	11:44	1°♓54'38	
evening set	12054 Feb	01	13:03	5°♓22'41	
conjunction	12054 Feb	18	01:07	6°♓24'22	-0°10'50
minimum elong	12054 Feb	18	01:07	6°♓24'22	0°10'25
behind sun begin	12054 Feb	17	19:52	6°♓23'34	
behind sun end	12054 Feb	18	06:22	6°♓25'10	
max. Earth dist.	12054 Feb	17	12:21	6°♓22'22	19.34427 AU
morning rise	12054 Mar	06	11:07	7°♓25'45	
retrograde	12054 Jun	06	22:04	10°♓49'13	
opposition	12054 Aug	19	20:02	8°♓46'24	-0°14'46
min. Earth dist.	12054 Aug	20	06:00	8°♓45'19	17.34932 AU
direct	12054 Nov	03	14:41	6°♓40'53	
evening set	12055 Feb	06	16:56	10°♓08'55	
conjunction	12055 Feb	23	04:31	11°♓10'30	-0°15'49
minimum elong	12055 Feb	23	04:30	11°♓10'30	0°15'28
behind sun begin	12055 Feb	23	02:52	11°♓10'15	
behind sun end	12055 Feb	23	06:08	11°♓10'45	
max. Earth dist.	12055 Feb	22	17:16	11°♓08'45	19.35539 AU
morning rise	12055 Mar	11	13:34	12°♓11'45	
retrograde	12055 Jun	11	22:16	15°♓34'53	
opposition	12055 Aug	24	20:34	13°♓32'10	-0°20'17
min. Earth dist.	12055 Aug	25	06:37	13°♓31'04	17.36282 AU
direct	12055 Nov	08	16:50	11°♓26'40	
evening set	12056 Feb	11	20:21	14°♓54'33	
conjunction	12056 Feb	28	07:04	15°♓55'59	-0°20'42
minimum elong	12056 Feb	28	07:03	15°♓55'59	0°20'25
max. Earth dist.	12056 Feb	27	19:19	15°♓54'09	19.37140 AU
morning rise	12056 Mar	15	15:31	16°♓57'06	
retrograde	12056 Jun	15	21:56	20°♓19'51	
opposition	12056 Aug	28	20:53	18°♓17'11	-0°25'39
min. Earth dist.	12056 Aug	29	06:04	18°♓16'11	17.38139 AU
direct	12056 Nov	12	18:47	16°♓11'42	
evening set	12057 Feb	15	23:16	19°♓39'21	
conjunction	12057 Mar	04	09:24	20°♓40'39	-0°25'25
minimum elong	12057 Mar	04	09:24	20°♓40'39	0°25'12
max. Earth dist.	12057 Mar	03	23:33	20°♓39'06	19.39249 AU
morning rise	12057 Mar	20	16:53	21°♓41'34	
retrograde	12057 Jun	20	21:33	25°♓03'52	
opposition	12057 Sep	02	20:58	23°♓01'18	-0°30'50
min. Earth dist.	12057 Sep	03	05:40	23°♓00'22	17.40504 AU
direct	12057 Nov	17	21:43	20°♓55'53	
evening set	12058 Feb	21	01:49	24°♓23'13	
conjunction	12058 Mar	09	10:59	25°♓24'18	-0°29'58
minimum elong	12058 Mar	09	10:58	25°♓24'18	0°29'49
max. Earth dist.	12058 Mar	09	00:56	25°♓22'44	19.41884 AU
morning rise	12058 Mar	25	17:44	26°♓25'02	
retrograde	12058 Jun	25	19:11	29°♓46'51	
opposition	12058 Sep	07	21:00	27°♓44'24	-0°35'46
min. Earth dist.	12058 Sep	08	04:52	27°♓43'33	17.43424 AU
direct	12058 Nov	22	23:17	25°♓39'05	
evening set	12059 Feb	26	03:27	29°♓06'00	
	12059 Mar	12	15:54	0°♈	
conjunction	12059 Mar	14	11:54	0°♈06'53	-0°34'17
minimum elong	12059 Mar	14	11:54	0°♈06'53	0°34'11
max. Earth dist.	12059 Mar	14	03:57	0°♈05'39	19.45077 AU
morning rise	12059 Mar	30	17:38	1°♈07'23	
retrograde	12059 Jun	30	17:52	4°♈28'42	
opposition	12059 Sep	12	20:49	2°♈26'24	-0°40'27
min. Earth dist.	12059 Sep	13	03:27	2°♈25'41	17.46888 AU
direct	12059 Nov	28	02:40	0°♈21'16	
evening set	12060 Mar	02	04:41	3°♈47'42	

conjunction	12060 Mar 18 12:10	4°♈48'21	-0°38'21
minimum elong	12060 Mar 18 12:09	4°♈48'21	0°38'20
max. Earth dist.	12060 Mar 18 04:28	4°♈47'09	19.48818 AU
morning rise	12060 Apr 03 17:07	5°♈48'38	
retrograde	12060 Jul 04 14:07	9°♈09'24	
opposition	12060 Sep 16 20:16	7°♈07'18	-0°44'51
min. Earth dist.	12060 Sep 17 02:20	7°♈06'39	17.50904 AU
direct	12060 Dec 02 03:31	5°♈02'21	
evening set	12061 Mar 07 05:07	8°♈28'16	
conjunction	12061 Mar 23 11:52	9°♈28'41	-0°42'09
minimum elong	12061 Mar 23 11:51	9°♈28'40	0°42'12
max. Earth dist.	12061 Mar 23 05:53	9°♈27'45	19.53085 AU
morning rise	12061 Apr 08 15:54	10°♈28'43	
retrograde	12061 Jul 09 12:03	13°♈48'54	
opposition	12061 Sep 21 19:28	11°♈47'02	-0°48'55
min. Earth dist.	12061 Sep 22 00:04	11°♈46'33	17.55389 AU
direct	12061 Dec 07 06:19	9°♈42'22	
evening set	12062 Mar 12 05:02	13°♈07'39	
conjunction	12062 Mar 28 10:47	14°♈07'48	-0°45'39
minimum elong	12062 Mar 28 10:46	14°♈07'48	0°45'47
max. Earth dist.	12062 Mar 28 05:21	14°♈06'58	19.57782 AU
morning rise	12062 Apr 13 13:58	15°♈07'35	
retrograde	12062 Jul 14 07:34	18°♈27'11	
opposition	12062 Sep 26 18:28	16°♈25'33	-0°52'39
min. Earth dist.	12062 Sep 26 22:53	16°♈25'05	17.60291 AU
direct	12062 Dec 12 06:03	14°♈21'09	
evening set	12063 Mar 17 04:08	17°♈45'46	
conjunction	12063 Apr 02 09:02	18°♈45'38	-0°48'51
minimum elong	12063 Apr 02 09:02	18°♈45'38	0°49'03
max. Earth dist.	12063 Apr 02 04:51	18°♈44'59	19.62863 AU
morning rise	12063 Apr 18 11:21	19°♈45'10	
retrograde	12063 Jul 19 04:55	23°♈04'07	
opposition	12063 Oct 01 17:02	21°♈02'45	-0°56'01
min. Earth dist.	12063 Oct 01 19:49	21°♈02'27	17.65524 AU
direct	12063 Dec 17 07:23	18°♈58'38	
evening set	12064 Mar 21 02:26	22°♈22'27	
conjunction	12064 Apr 06 06:26	23°♈22'04	-0°51'43
minimum elong	12064 Apr 06 06:25	23°♈22'04	0°51'59
max. Earth dist.	12064 Apr 06 03:04	23°♈21'33	19.68232 AU
morning rise	12064 Apr 22 07:54	24°♈21'19	
retrograde	12064 Jul 22 23:45	27°♈39'37	
opposition	12064 Oct 05 15:21	25°♈38'28	-0°59'01
min. Earth dist.	12064 Oct 05 18:15	25°♈38'09	17.71026 AU
direct	12064 Dec 21 06:00	23°♈34'38	
evening set	12065 Mar 26 00:02	26°♈57'38	
conjunction	12065 Apr 11 03:09	27°♈56'57	-0°54'15
minimum elong	12065 Apr 11 03:09	27°♈56'57	0°54'34
max. Earth dist.	12065 Apr 11 00:28	27°♈56'32	19.73842 AU
morning rise	12065 Apr 27 03:51	28°♈55'56	
	12065 May 15 15:24	0°♉	
retrograde	12065 Jul 27 20:02	2°♉13'32	
opposition	12065 Oct 10 12:58	0°♉12'36	-1°01'38
min. Earth dist.	12065 Oct 10 14:13	0°♉12'28	17.76722 AU
	12065 Oct 15 12:19	30°℞♈	
direct	12065 Dec 26 06:17	28°♈09'03	
	12066 Mar 03 17:07	0°♉	
evening set	12066 Mar 30 20:48	1°♉31'10	
conjunction	12066 Apr 15 23:05	2°♉30'11	-0°56'25
minimum elong	12066 Apr 15 23:04	2°♉30'11	0°56'48
max. Earth dist.	12066 Apr 15 21:27	2°♉29'56	19.79613 AU
morning rise	12066 May 01 22:55	3°♉28'52	
retrograde	12066 Aug 01 13:29	6°♉45'46	
opposition	12066 Oct 15 10:25	4°♉45'01	-1°03'50
min. Earth dist.	12066 Oct 15 11:55	4°♉44'52	17.82571 AU
direct	12066 Dec 31 03:44	2°♉41'46	
evening set	12067 Apr 04 16:31	6°♉02'55	
conjunction	12067 Apr 20 17:55	7°♉01'39	-0°58'14
minimum elong	12067 Apr 20 17:54	7°♉01'39	0°58'40
max. Earth dist.	12067 Apr 20 16:39	7°♉01'27	19.85523 AU
morning rise	12067 May 06 17:06	8°♉00'03	
retrograde	12067 Aug 06 08:42	11°♉16'13	
opposition	12067 Oct 20 07:07	9°♉15'39	-1°05'38
min. Earth dist.	12067 Oct 20 06:48	9°♉15'41	17.88526 AU
direct	12068 Jan 05 03:02	7°♉12'39	
evening set	12068 Apr 08 11:21	10°♉32'49	
conjunction	12068 Apr 24 12:03	11°♉31'15	-0°59'41
minimum elong	12068 Apr 24 12:03	11°♉31'15	1°00'11
max. Earth dist.	12068 Apr 24 12:09	11°♉31'16	19.91515 AU
morning rise	12068 May 10 10:27	12°♉29'23	
	12068 Jun 29 20:24	15°♉	
retrograde	12068 Aug 10 00:14	15°♉44'47	
	12068 Sep 21 13:52	15°℞♉	
opposition	12068 Oct 24 03:12	13°♉44'23	-1°07'01
min. Earth dist.	12068 Oct 24 03:13	13°♉44'22	17.94560 AU
direct	12069 Jan 08 23:13	11°♉41'38	
evening set	12069 Apr 13 05:18	15°♉00'47	
	12069 Apr 13 00:03	15°♉	
conjunction	12069 Apr 29 05:10	15°♉58'55	-1°00'45
minimum elong	12069 Apr 29 05:10	15°♉58'55	1°01'17
max. Earth dist.	12069 Apr 29 05:22	15°♉58'56	19.97591 AU
morning rise	12069 May 15 03:04	16°♉56'45	
retrograde	12069 Aug 14 18:05	20°♉11'24	
opposition	12069 Oct 28 22:37	18°♉11'08	-1°08'00
min. Earth dist.	12069 Oct 28 20:48	18°♉11'19	18.00666 AU
direct	12070 Jan 13 21:07	16°♉08'38	
evening set	12070 Apr 17 22:04	19°♉26'43	
conjunction	12070 May 03 21:18	20°♉24'33	-1°01'27
minimum elong	12070 May 03 21:18	20°♉24'33	1°02'04
max. Earth dist.	12070 May 03 23:20	20°♉24'52	20.03730 AU
morning rise	12070 May 19 18:28	21°♉22'07	
retrograde	12070 Aug 19 08:06	24°♉36'00	
opposition	12070 Nov 02 17:34	22°♉35'52	-1°08'33
min. Earth dist.	12070 Nov 02 15:45	22°♉36'03	18.06852 AU
direct	12071 Jan 18 15:58	20°♉33'38	
evening set	12071 Apr 22 13:57	23°♉50'38	
conjunction	12071 May 08 12:24	24°♉48'10	-1°01'47
minimum elong	12071 May 08 12:23	24°♉48'10	1°02'26
max. Earth dist.	12071 May 08 14:40	24°♉48'31	20.09972 AU
morning rise	12071 May 24 09:10	25°♉45'28	
retrograde	12071 Aug 24 00:24	28°♉58'36	
opposition	12071 Nov 07 11:36	26°♉58'36	-1°08'42
min. Earth dist.	12071 Nov 07 07:49	26°♉59'00	18.13152 AU
direct	12072 Jan 23 12:19	24°♉56'39	
evening set	12072 Apr 26 04:45	28°♉12'35	
conjunction	12072 May 12 02:43	29°♉09'50	-1°01'45
minimum elong	12072 May 12 02:42	29°♉09'50	1°02'26
max. Earth dist.	12072 May 12 07:06	29°♉10'30	20.16319 AU
	12072 May 26 00:28	0°♊	
morning rise	12072 May 27 22:52	0°♊06'52	
retrograde	12072 Aug 27 13:12	3°♊19'17	
opposition	12072 Nov 11 05:10	1°♊19'27	-1°08'27
min. Earth dist.	12072 Nov 11 01:08	1°♊19'52	18.19550 AU

	12072 Dec 16 03:17	30°℞♉	
direct	12073 Jan 27 05:37	29°♉17'49	
	12073 Mar 09 05:15	0°♊	
evening set	12073 Apr 30 18:48	2°♊32'41	
conjunction	12073 May 16 16:01	3°♊29'39	-1°01'22
minimum elong	12073 May 16 16:01	3°♊29'39	1°02'06
max. Earth dist.	12073 May 16 20:31	3°♊30'20	20.22767 AU
morning rise	12073 Jun 01 11:53	4°♊26'26	
retrograde	12073 Sep 01 04:02	7°♊38'10	
opposition	12073 Nov 15 21:55	5°♊38'31	-1°07'48
min. Earth dist.	12073 Nov 15 16:01	5°♊39'07	18.26036 AU
direct	12074 Feb 01 00:14	3°♊37'13	
evening set	12074 May 05 07:51	6°♊51'04	
conjunction	12074 May 21 04:43	7°♊47'46	-1°00'38
minimum elong	12074 May 21 04:42	7°♊47'46	1°01'22
max. Earth dist.	12074 May 21 11:22	7°♊48'46	20.29275 AU
morning rise	12074 Jun 06 00:03	8°♊44'17	
retrograde	12074 Sep 05 15:55	11°♊55'22	
opposition	12074 Nov 20 14:17	9°♊55'56	-1°06'47
min. Earth dist.	12074 Nov 20 08:05	9°♊56'34	18.32549 AU
direct	12075 Feb 05 16:23	7°♊55'00	
evening set	12075 May 09 20:05	11°♊07'50	
conjunction	12075 May 25 16:20	12°♊04'16	-0°59'34
minimum elong	12075 May 25 16:20	12°♊04'16	1°00'21
max. Earth dist.	12075 May 25 22:57	12°♊05'15	20.35787 AU
morning rise	12075 Jun 10 11:33	13°♊00'34	
retrograde	12075 Sep 10 05:15	16°♊11'01	
opposition	12075 Nov 25 05:54	14°♊11'47	-1°05'24
min. Earth dist.	12075 Nov 24 22:13	14°♊12'34	18.39035 AU
direct	12076 Feb 10 08:44	12°♊11'13	
evening set	12076 May 13 07:34	15°♊23'03	
conjunction	12076 May 29 03:33	16°♊19'15	-0°58'11
minimum elong	12076 May 29 03:33	16°♊19'15	0°58'58
max. Earth dist.	12076 May 29 12:06	16°♊20'31	20.42222 AU
morning rise	12076 Jun 13 22:21	17°♊15'18	
retrograde	12076 Sep 13 16:31	20°♊25'10	
opposition	12076 Nov 28 20:55	18°♊26'08	-1°03'40
min. Earth dist.	12076 Nov 28 13:05	18°♊26'56	18.45403 AU
direct	12077 Feb 13 23:43	16°♊25'56	
evening set	12077 May 17 18:32	19°♊36'47	
conjunction	12077 Jun 02 13:59	20°♊32'44	-0°56'29
minimum elong	12077 Jun 02 13:59	20°♊32'44	0°57'19
max. Earth dist.	12077 Jun 02 22:08	20°♊33'57	20.48517 AU
morning rise	12077 Jun 18 08:44	21°♊28'36	
retrograde	12077 Sep 18 04:15	24°♊37'53	
opposition	12077 Dec 03 11:29	22°♊39'03	-1°01'37
min. Earth dist.	12077 Dec 03 02:35	22°♊39'57	18.51606 AU
direct	12078 Feb 18 13:57	20°♊39'11	
evening set	12078 May 22 04:32	23°♊49'04	
conjunction	12078 Jun 06 23:49	24°♊44'48	-0°54'30
minimum elong	12078 Jun 06 23:49	24°♊44'48	0°55'20
max. Earth dist.	12078 Jun 07 09:42	24°♊46'16	20.54601 AU
morning rise	12078 Jun 22 18:15	25°♊40'27	
retrograde	12078 Sep 22 14:59	28°♊49'11	
opposition	12078 Dec 08 01:36	26°♊50'32	-0°59'15
min. Earth dist.	12078 Dec 07 16:31	26°♊51'27	18.57558 AU
direct	12079 Feb 23 03:45	24°♊50'59	
evening set	12079 May 26 14:11	27°♊59'55	
conjunction	12079 Jun 11 09:01	28°♊55'26	-0°52'15
minimum elong	12079 Jun 11 09:01	28°♊55'26	0°53'05
max. Earth dist.	12079 Jun 11 18:15	28°♊56'48	20.60414 AU
morning rise	12079 Jun 27 03:32	29°♊50'54	
	12079 Jun 29 18:59	0°♋	
retrograde	12079 Sep 27 01:43	2°♋59'07	
opposition	12079 Dec 12 14:59	1°♋00'36	-0°56'35
min. Earth dist.	12079 Dec 12 05:16	1°♋01'35	18.63221 AU
	12080 Jan 07 19:24	30°℞♊	
direct	12080 Feb 27 16:17	29°♊01'20	
	12080 Apr 16 11:56	0°♋	
evening set	12080 May 29 23:02	2°♋09'21	
conjunction	12080 Jun 14 17:51	3°♋04'41	-0°49'44
minimum elong	12080 Jun 14 17:51	3°♋04'41	0°50'35
max. Earth dist.	12080 Jun 15 04:26	3°♋06'14	20.65898 AU
morning rise	12080 Jun 30 12:11	3°♋59'58	
retrograde	12080 Sep 30 11:29	7°♋07'40	
opposition	12080 Dec 16 03:57	5°♋09'16	-0°53'38
min. Earth dist.	12080 Dec 15 18:06	5°♋10'15	18.68513 AU
direct	12081 Mar 03 04:38	3°♋10'15	
evening set	12081 Jun 03 07:24	6°♋17'23	
conjunction	12081 Jun 19 01:53	7°♋12'30	-0°46'58
minimum elong	12081 Jun 19 01:53	7°♋12'30	0°47'48
max. Earth dist.	12081 Jun 19 11:37	7°♋13'56	20.71003 AU
morning rise	12081 Jul 04 20:22	8°♋07'38	
retrograde	12081 Oct 04 21:30	11°♋14'51	
opposition	12081 Dec 20 16:23	9°♋16'31	-0°50'26
min. Earth dist.	12081 Dec 20 06:09	9°♋17'32	18.73430 AU
direct	12082 Mar 07 16:16	7°♋17'43	
evening set	12082 Jun 07 15:01	10°♋23'57	
conjunction	12082 Jun 23 09:34	11°♋18'55	-0°43'58
minimum elong	12082 Jun 23 09:34	11°♋18'55	0°44'50
max. Earth dist.	12082 Jun 23 20:40	11°♋20'32	20.75727 AU
morning rise	12082 Jul 09 03:59	12°♋13'54	
retrograde	12082 Oct 09 06:24	15°♋20'39	
opposition	12082 Dec 25 04:13	13°♋22'20	-0°46'59
min. Earth dist.	12082 Dec 24 17:41	13°♋23'24	18.77958 AU
direct	12083 Mar 12 03:22	11°♋23'44	
evening set	12083 Jun 11 22:04	14°♋29'07	
conjunction	12083 Jun 27 16:25	15°♋23'55	-0°40'46
minimum elong	12083 Jun 27 16:25	15°♋23'55	0°41'36
max. Earth dist.	12083 Jun 28 02:49	15°♋25'26	20.80082 AU
morning rise	12083 Jul 13 11:10	16°♋18'46	
retrograde	12083 Oct 13 15:27	19°♋25'05	
opposition	12083 Dec 29 15:30	17°♋26'47	-0°43'20
min. Earth dist.	12083 Dec 29 04:42	17°♋27'52	18.82146 AU
direct	12084 Mar 15 13:33	15°♋28'19	
evening set	12084 Jun 15 04:30	18°♋32'55	
conjunction	12084 Jun 30 23:01	19°♋27'35	-0°37'23
minimum elong	12084 Jun 30 23:01	19°♋27'35	0°38'12
max. Earth dist.	12084 Jul 01 10:55	19°♋29'19	20.84103 AU
morning rise	12084 Jul 16 17:44	20°♋22'18	
retrograde	12084 Oct 16 23:39	23°♋28'14	
opposition	12085 Jan 02 02:08	21°♋29'56	-0°39'27
min. Earth dist.	12085 Jan 01 14:47	21°♋31'05	18.86010 AU
direct	12085 Mar 19 23:54	19°♋31'38	
evening set	12085 Jun 19 10:39	22°♋35'31	
conjunction	12085 Jul 05 05:00	23°♋30'02	-0°33'49
minimum elong	12085 Jul 05 05:00	23°♋30'02	0°34'37
max. Earth dist.	12085 Jul 05 16:21	23°♋31'41	20.87828 AU
morning rise	12085 Jul 21 00:04	24°♋24'40	
retrograde	12085 Oct 21 07:58	27°♋30'17	
opposition	12086 Jan 06 12:30	25°♋32'00	-0°35'25

min. Earth dist.	12086 Jan	06	00:52	25°♋33'10	18.89605 AU
direct	12086 Mar	24	08:08	23°♋33'51	
evening set	12086 Jun	23	16:05	26°♋37'04	
conjunction	12086 Jul	09	10:41	27°♋31'30	-0°30'05
minimum elong	12086 Jul	09	10:41	27°♋31'30	0°30'52
max. Earth dist.	12086 Jul	09	23:37	27°♋33'22	20.91282 AU
morning rise	12086 Jul	25	05:51	28°♋26'02	
	12086 Aug	24	09:58	0°♌	
retrograde	12086 Oct	25	16:01	1°♌31'24	
	12086 Dec	30	15:49	30°℞♋	
opposition	12087 Jan	10	22:22	29°♋33'08	-0°31'13
min. Earth dist.	12087 Jan	10	10:02	29°♋34'22	18.92909 AU
direct	12087 Mar	28	17:40	27°♋35'11	
	12087 Jun	16	10:37	0°♌	
evening set	12087 Jun	27	21:29	0°♌37'49	
conjunction	12087 Jul	13	16:03	1°♌32'08	-0°26'14
minimum elong	12087 Jul	13	16:04	1°♌32'08	0°27'00
max. Earth dist.	12087 Jul	14	04:20	1°♌33'55	20.94443 AU
morning rise	12087 Jul	29	11:41	2°♌26'37	
retrograde	12087 Oct	30	00:01	5°♌31'47	
opposition	12088 Jan	15	07:45	3°♌33'34	-0°26'52
min. Earth dist.	12088 Jan	14	19:29	3°♌34'47	18.95924 AU
direct	12088 Apr	01	00:09	1°♌35'48	
evening set	12088 Jul	01	02:28	4°♌37'55	
conjunction	12088 Jul	16	21:23	5°♌32'10	-0°22'16
minimum elong	12088 Jul	16	21:23	5°♌32'10	0°23'00
max. Earth dist.	12088 Jul	17	10:59	5°♌34'08	20.97294 AU
morning rise	12088 Aug	01	17:10	6°♌26'35	
retrograde	12088 Nov	02	07:56	9°♌31'37	
opposition	12089 Jan	18	16:55	7°♌33'27	-0°22'25
min. Earth dist.	12089 Jan	18	04:03	7°♌34'45	18.98594 AU
direct	12089 Apr	05	08:51	5°♌35'53	
evening set	12089 Jul	05	07:22	8°♌37'33	
conjunction	12089 Jul	21	02:18	9°♌31'45	-0°18'12
minimum elong	12089 Jul	21	02:18	9°♌31'45	0°18'55
max. Earth dist.	12089 Jul	21	15:05	9°♌33'35	20.99789 AU
morning rise	12089 Aug	05	22:36	10°♌26'08	
retrograde	12089 Nov	06	16:12	13°♌31'06	
opposition	12090 Jan	23	01:58	11°♌32'59	-0°17'52
min. Earth dist.	12090 Jan	22	13:25	11°♌34'14	19.00907 AU
direct	12090 Apr	09	14:41	9°♌35'36	
evening set	12090 Jul	09	12:04	12°♌36'52	
conjunction	12090 Jul	25	07:24	13°♌31'02	-0°14'03
minimum elong	12090 Jul	25	07:24	13°♌31'02	0°14'44
behind sun begin	12090 Jul	25	04:36	13°♌30'39	
behind sun end	12090 Jul	25	10:12	13°♌31'26	
max. Earth dist.	12090 Jul	25	21:16	13°♌33'02	21.01901 AU
morning rise	12090 Aug	10	03:56	14°♌25'24	
	12090 Aug	20	15:56	15°♌	
retrograde	12090 Nov	11	00:08	17°♌30'20	
opposition	12091 Jan	27	10:37	15°♌32'16	-0°13'14
min. Earth dist.	12091 Jan	26	21:38	15°♌33'34	19.02801 AU
	12091 Feb	10	01:49	15°℞♌	
direct	12091 Apr	13	22:35	13°♌35'04	
	12091 Jun	12	10:37	15°♌	
evening set	12091 Jul	13	16:52	16°♌36'01	
conjunction	12091 Jul	29	12:21	17°♌30'09	-0°09'51
minimum elong	12091 Jul	29	12:21	17°♌30'09	0°10'30
behind sun begin	12091 Jul	29	07:11	17°♌29'26	
behind sun end	12091 Jul	29	17:31	17°♌30'53	
max. Earth dist.	12091 Jul	30	01:03	17°♌31'58	21.03574 AU
morning rise	12091 Aug	14	09:29	18°♌24'31	
retrograde	12091 Nov	15	08:51	21°♌29'29	
opposition	12092 Jan	31	19:15	19°♌31'26	-0°08'32
min. Earth dist.	12092 Jan	31	07:02	19°♌32'39	19.04242 AU
direct	12092 Apr	17	04:13	17°♌34'22	
evening set	12092 Jul	16	21:35	20°♌35'04	
conjunction	12092 Aug	01	17:30	21°♌29'12	-0°05'37
minimum elong	12092 Aug	01	17:30	21°♌29'12	0°06'13
behind sun begin	12092 Aug	01	11:16	21°♌28'20	
behind sun end	12092 Aug	01	23:44	21°♌30'04	
max. Earth dist.	12092 Aug	02	06:54	21°♌31'07	21.04759 AU
morning rise	12092 Aug	17	14:53	22°♌23'35	
retrograde	12092 Nov	18	16:40	25°♌28'36	
opposition	12093 Feb	04	03:37	23°♌30'33	-0°03'49
min. Earth dist.	12093 Feb	03	15:10	23°♌31'47	19.05160 AU
direct	12093 Apr	21	11:39	21°♌33'36	
evening set	12093 Jul	21	02:33	24°♌34'05	
conjunction	12093 Aug	05	22:36	25°♌28'14	-0°01'20
minimum elong	12093 Aug	05	22:38	25°♌28'14	0°01'53
behind sun begin	12093 Aug	05	16:03	25°♌27'19	
behind sun end	12093 Aug	06	05:13	25°♌29'09	
max. Earth dist.	12093 Aug	06	10:33	25°♌29'56	21.05409 AU
morning rise	12093 Aug	21	20:39	26°♌22'38	
retrograde	12093 Nov	23	01:19	29°♌27'46	
asc. node	12093 Nov	29	05:26	29°♌26'50	
opposition	12094 Feb	08	12:06	27°♌29'40	0°00'56
min. Earth dist.	12094 Feb	08	00:41	27°♌30'48	19.05539 AU
direct	12094 Apr	25	17:30	25°♌32'46	
evening set	12094 Jul	25	07:19	28°♌33'05	
conjunction	12094 Aug	10	03:59	29°♌27'16	0°03'05
minimum elong	12094 Aug	10	03:58	29°♌27'16	0°02'34
behind sun begin	12094 Aug	09	21:24	29°♌26'21	
behind sun end	12094 Aug	10	10:33	29°♌28'11	
max. Earth dist.	12094 Aug	10	16:23	29°♌29'02	21.05502 AU
	12094 Aug	19	16:35	0°♍	
morning rise	12094 Aug	26	02:21	0°♍21'43	
retrograde	12094 Nov	27	09:26	3°♍26'58	
opposition	12095 Feb	12	20:18	1°♍28'46	0°05'41
min. Earth dist.	12095 Feb	12	08:44	1°♍29'56	19.05338 AU
	12095 Mar	26	19:02	30°℞♌	
direct	12095 Apr	30	00:43	29°♌31'53	
	12095 Jun	02	11:44	0°♍	
evening set	12095 Jul	29	12:25	2°♍32'05	
conjunction	12095 Aug	14	09:20	3°♍26'18	0°07'21
minimum elong	12095 Aug	14	09:20	3°♍26'17	0°06'55
behind sun begin	12095 Aug	14	03:12	3°♍25'26	
behind sun end	12095 Aug	14	15:28	3°♍27'09	
max. Earth dist.	12095 Aug	14	20:09	3°♍27'50	21.05026 AU
morning rise	12095 Aug	30	08:24	4°♍20'48	
retrograde	12095 Dec	01	17:02	7°♍26'12	
opposition	12096 Feb	17	04:20	5°♍27'52	0°10'24
min. Earth dist.	12096 Feb	16	18:03	5°♍28'54	19.04598 AU
direct	12096 May	03	06:48	3°♍30'57	
evening set	12096 Aug	01	17:24	6°♍31'04	
conjunction	12096 Aug	17	14:55	7°♍25'20	0°11'35
minimum elong	12096 Aug	17	14:55	7°♍25'20	0°11'10
behind sun begin	12096 Aug	17	10:01	7°♍24'39	
behind sun end	12096 Aug	17	19:50	7°♍26'01	
max. Earth dist.	12096 Aug	18	02:19	7°♍26'58	21.04035 AU
morning rise	12096 Sep	02	14:23	8°♍19'54	
retrograde	12096 Dec	05	01:45	11°♍25'29	
opposition	12097 Feb	20	12:18	9°♍27'00	0°15'05

min. Earth dist.	12097 Feb 20 01:42	9°♍28'04	19.03361 AU
direct	12097 May 07 13:57	7°♍30'00	
evening set	12097 Aug 05 22:32	10°♍30'06	
conjunction	12097 Aug 21 20:20	11°♍24'26	0°15'46
minimum elong	12097 Aug 21 20:20	11°♍24'26	0°15'26
behind sun begin	12097 Aug 21 18:24	11°♍24'10	
behind sun end	12097 Aug 21 22:17	11°♍24'42	
max. Earth dist.	12097 Aug 22 06:28	11°♍25'53	21.02578 AU
morning rise	12097 Sep 06 20:31	12°♍19'06	
retrograde	12097 Dec 09 08:42	15°♍24'55	
opposition	12098 Feb 24 20:22	13°♍26'15	0°19'41
min. Earth dist.	12098 Feb 24 10:54	13°♍27'12	19.01706 AU
direct	12098 May 11 19:35	11°♍29'09	
evening set	12098 Aug 10 03:50	14°♍29'18	
conjunction	12098 Aug 26 02:18	15°♍23'44	0°19'54
minimum elong	12098 Aug 26 02:17	15°♍23'44	0°19'35
max. Earth dist.	12098 Aug 26 13:06	15°♍25'17	21.00725 AU
morning rise	12098 Sep 11 02:54	16°♍18'30	
retrograde	12098 Dec 13 17:54	19°♍24'35	
opposition	12099 Mar 01 04:06	17°♍25'44	0°24'12
min. Earth dist.	12099 Feb 28 18:13	17°♍26'44	18.99665 AU
direct	12099 May 16 02:49	15°♍28'33	
evening set	12099 Aug 14 09:33	18°♍28'50	
conjunction	12099 Aug 30 08:23	19°♍23'22	0°23'55
minimum elong	12099 Aug 30 08:22	19°♍23'22	0°23'41
max. Earth dist.	12099 Aug 30 17:49	19°♍24'43	20.98504 AU
morning rise	12099 Sep 15 09:43	20°♍18'15	
retrograde	12099 Dec 18 01:10	23°♍24'40	
opposition	12100 Mar 05 12:08	21°♍25'39	0°28'37
min. Earth dist.	12100 Mar 05 03:25	21°♍26'32	18.97279 AU
direct	12100 May 20 07:44	19°♍28'22	
evening set	12100 Aug 18 15:21	22°♍28'52	
conjunction	12100 Sep 03 14:51	23°♍23'30	0°27'51
minimum elong	12100 Sep 03 14:50	23°♍23'30	0°27'40
max. Earth dist.	12100 Sep 04 00:52	23°♍24'56	20.95947 AU
morning rise	12100 Sep 19 16:37	24°♍18'30	
retrograde	12100 Dec 22 10:43	27°♍25'19	
opposition	12101 Mar 09 20:08	25°♍26'09	0°32'54
min. Earth dist.	12101 Mar 09 10:54	25°♍27'05	18.94552 AU
direct	12101 May 24 15:17	23°♍28'47	
evening set	12101 Aug 22 21:46	26°♍29'32	
conjunction	12101 Sep 07 21:40	27°♍24'19	0°31'39
minimum elong	12101 Sep 07 21:40	27°♍24'19	0°31'30
max. Earth dist.	12101 Sep 08 06:19	27°♍25'33	20.93061 AU
morning rise	12101 Sep 24 00:12	28°♍19'28	
	12101 Oct 26 19:10	0°♎	
retrograde	12101 Dec 26 19:11	1°♎26'43	